

VEICHI



Manual

AC600 Series AC Drive

Preface

Thank you for purchasing AC600 series AC drive designed and manufactured by VEICHI. For optimal product performance, please read this manual carefully before using the product (installation, wiring, operation, maintenance, inspection, etc.).

The AC600 series high-performance vector AC drive is designed for controlling and regulating the speed and torque of three-phase AC synchronous and asynchronous motors.

Featuring high-performance vector control technology, the AC600 series offers superior motor drive performance. It includes user-programmable functions, background software monitoring, communication bus capabilities, and supports multiple encoder types. With capacity for up to 4 extension cards, it offers a versatile and powerful combination of functions with stable performance. Optional accessories are available to achieve IP54 protection. The AC600 series drive is suitable for driving equipment across various industries, including oil and gas, metallurgy, textiles, papermaking, wire drawing, machine tools, packaging, food processing, fans, pumps, and other automated production systems.

This manual primarily covers safety precautions, technical data, installation, keypad layout and operation instructions, parameter and function code descriptions, and routine maintenance for the AC600 series drive. VEICHI reserves the right to continuously improve the product and update the manual accordingly, on which, VEICHI also has the final interpretation right.

If there are doubts about functions and performance, please consult VEICHI support staff.

Instructions for Special Purpose

If you need to use this product for special purposes such as manned, medical, aerospace, nuclear energy, electric power, submarine relay communication equipment or systems, please consult our agents or sales persons in charge.

Related Manuals

Name	Description
AC600 PG01 Incremental Encoder Extension Manual	The PG01 extension card is designed for the AC600 series AC drive to provide real-time speed feedback for precise speed control.
AC600 CANopen Extension Manual	The CANopen extension card works with AC600 series AC drive to convert the AC600 into a CANopen slave device, enabling it to receive control commands from a PLC or other master devices.
AC600 Modbus TCP Industrial Ethernet Extension Manual	The Modbus TCP extension card works with AC600 series AC drive to convert the AC600 into a Modbus TCP industrial Ethernet server capable of receiving commands from Modbus TCP clients.
AC600 IO Black Box Extension Manual	The IO Black Box extension card is designed for the AC600 series AC drive, offering good compatibility and convenient installation and operation.
AC600 PROFINET IO Industrial Ethernet Extension Manual	The PROFINET IO extension card works with AC600 series AC drive to make the AC600 a standard PROFINET IO slave device controlled by a PROFINET IO master.

Catalog

Version Change Log	1
Terminology	2
Chapter 1 Safety Precautions	3
Chapter 2 Product Information	5
2.1 Nameplate and Naming Rules	5
2.2 Product Model Table	6
2.3 Component Description	6
2.3.1 V1~V3 Plastic Housing Components	7
2.3.2 V4~V5 Hybrid Plastic/Metal Housing Components	7
2.3.3 V6~V11 Metal Housing Components	8
2.4 Compliance Standards	8
Chapter 3 Technical Data	9
3.1 Model Specifications	9
3.2 General Specification	10
3.3 ACC/DEC Time	12
3.4 Voltage Protection	13
3.5 Carrier Frequency	13
3.6 Types and Characteristics of Control Modes	13
Chapter 4 Installation and Wiring	15
4.1 Safety Precautions	15
4.2 System Connection Diagram	16
4.3 Installation Flowchart	17
4.4 Installation Environment	17
4.5 Handling and Packaging Inspection	20
4.5.1 Storage	20
4.5.2 Handling Before Unpacking	21
4.5.3 Packaging Checklist	22
4.5.4 Handling and Lifting After Unpacking	23
4.6 Mechanical Installation	24
4.6.1 Installation Method	24
4.6.2 Mechanical Installation Tools	24
4.6.3 Installation Direction and Space	25
4.6.4 Outer Dimension	25
4.6.5 Model Installation	32
4.7 Electrical Installation	34
4.7.1 Pre-installation Inspection	34
Check assembly insulation	34
Check compatibility with IT and corner-grounded TN systems	34
4.7.2 Electrical Installation Tools	35
4.7.3 Standard Wiring	35
Wiring diagram	35
STO Overview	36
Illustration and Description of DIP Switch	37
Multi-Function Digital Input Wiring	38
Jumper Settings for “+24V”, “PLC”, and “COM”	38
4.7.4 Main Circuit Wiring	39
Main Circuit Terminal Layout and Definitions	39
Recommended Main Circuit Components Specification	47
Recommended Main Circuit Cable Specifications (CE)	48
Recommended Main Circuit Cable Specifications (UL)	49
Recommended Ground Cable Specifications (CE)	50
Recommended Ground Cable Specifications (UL)	51
Cable Length Requirements for Different Power Ratings	52
4.7.5 Control Circuit Wiring	52
Control Circuit Terminal Arrangement	52
Control Circuit Terminal Wiring Specifications	53
4.7.6 Wiring Installation	54
Chapter 5 Initial Use and Test Run	55
5.1 Safety Precautions	55
5.2 Name and Function	55

5.3 Keypad Operation Method	57
5.4 Check Items at Initial Startup	57
5.5 Initial Startup Steps	58
5.6 G/P-type Model Parameter Settings	60
5.7 Auto-tuning	60
5.8 Trial Operation	62
5.8.1 No-load Test Operation	62
5.8.2 No-load Test Operation	63
5.9 Fine Adjustment During Test Operation (Control Optimization)	63
5.10 Test Run Checklist	65
Chapter 6 Network Communication	68
6.1 Safety Precautions	68
6.2 Modbus Communication	68
6.2.1 Master/Slave Composition	68
6.2.2 Communication Rules	68
6.2.3 Information Format	68
Slave Address	68
Command Code	69
Data	69
Check	69
6.2.4 Communication Command Examples	69
6.2.5 Communication Data List	72
6.2.6 Error Code	77
Chapter 7 Troubleshooting	78
7.1 Safety Precautions	78
7.2 Error, Alarm, and Prompt Codes	78
7.3 Error and Alarm Codes	79
7.4 Error	81
7.5 Alarm	94
7.6 Common Troubleshooting Guide	96
7.7 Fault Reset Procedure	97
7.8 Troubleshooting for Abnormal Operation Without Fault Alarms	97
Chapter 8 Inspection and Maintenance	100
8.1 Inspection	100
8.2 Maintenance	102
8.3 Replacement	102
8.3.1 Cooling Fan	102
8.3.2 AC Drive	103
8.4 Storage Instructions	104
8.5 Product Warranty	104
Chapter 9 External Devices and Options	105
9.1 External Devices	105
9.1.1 Circuit Breakers, Fuses, and Contactors	105
9.1.2 DC Reactors and I/O Reactors	106
9.1.3 Braking Units and Braking Resistors	106
9.2 Extension	110
9.2.1 Extension Overview	110
9.2.2 Extension Instructions	111
9.3 Operation Keypad	111
Chapter 10 STO Function	112
10.1 Compliance Standards	112
10.2 Installation	112
10.2.1 Terminal Layout and Definition	112
10.2.2 Electrical Specifications and Wiring of Input Terminals	112
10.3 Commissioning and O&M Requirements	114
10.3.1 Basic requirements	114
10.3.2 Commissioning Steps and Acceptance Checklist	115
10.4 Safety Function Monitoring	115
10.4.1 Safety Function Error Codes	115
10.4.2 Safety Function Troubleshooting	116
10.4.3 STO Reset	116
10.5 Precautions	117

10.5.1 Safety Measures	117
10.5.2 Risk Assessment	117
Chapter 11 International Standards Compliance	118
11.1 CE	118
11.1.1 CE mark	118
11.1.2 Low Voltage Directive Requirements	118
11.1.3 Conditions for EMC Compliance	120
11.1.4 EMC Standard Overview	120
11.1.5 Cable and Wiring Requirements	120
11.1.6 Routing Recommendations	121
11.1.7 Leakage Current Suppression	123
11.1.8 Recommendations for Common EMC Issues	123
11.2 UL	124
Chapter 12 FBD Visual Programming	125
12.1 Overview	125
12.2 Free Module Application	125
12.2.1 Logic Operation	125
Logical AND	125
Logical OR	126
Logic NOT	126
Logical XOR	126
Logic XNOR	127
Logic Invert	127
12.2.2 Arithmetic Operation	128
Absolute	128
Additive Operations	128
Subtractive Operations	128
Multiplicative Operations	129
Division Operations	129
Arithmetic Square Roots	130
12.2.3 Signal Processing	130
Limit Processing	130
Differential Processing	131
Hysteresis	131
Maximum	132
Minimum	132
Average	132
Filter	133
Level-Pulse Conversion	133
Pulse-Level Conversion	134
Logic Delay	134
Pulse Generator	135
Ramp Processing	136
Transfer	136
Opposite Number	136
Equals (EQ)	137
Greater Than or Equal To (GE)	137
Greater Than (GT)	137
Less Than or Equal To (LE)	138
Less Than (LT)	138
Not Equal (NE)	139
Pulse Counter	139
RS or SR	140
12.2.4 Switching Signal (SEL)	140
Fault Code Monitoring	140
Fault Subcode Monitoring	141
Write Function Codes	141
Chapter 13 Parameter and Function Code Description	143
13.1 Terms and Marks	143
13.2 Parameter Group	143
13.3 F00: Environment	148
F00.0x: Environment Setting	148

F00.1x: System Settings	149
F00.2x: System Time	150
F00.30: Connector Frequency Source	150
13.4 F01: Basic Command Parameters	150
F01.0x: Basic Commands	150
F01.1x: FrequencyRange	152
F01.2x~F01.3x: ACC/DEC Time	153
F01.4x: PWM Control	154
13.5 F02: Motor 1 Parameters	156
F02.0x:Basic Parameters and Auto-tuning	156
F02.1x: AM Parameters	157
F02.2x: PM Parameters	158
F02.4x~F02.5x:PM D/Q-Axis Inductance Saturation Coefficient	158
F02.6x~ F02.7x:Motor Tuning Extension	160
13.6 F03: Vector Control	161
F03.0x: ASRControl	161
F03.1x: ACR and Torque Limit	161
F03.2x: Torque Optimization	162
F03.3x: Flux Optimization	163
F03.4x:PM HF Injection	164
F03.5x-03.8x:Extension Control	164
13.7 F04: V/F Control	166
F04.0x: V/F Control	166
F04.1x: User-defined V/F Curves	167
F04.2x: Coil Voltage-Frequency/Current-Frequency Decoupled Control	167
F04.3x: V/F ECO Control	168
F04.4x: V/F PM Anti-oscillation	169
F04.5x: V/F PM Flux Control	169
F04.6x: V/F PM Current Control	170
13.8 F05: DI Terminal	171
F05.0x:Terminal Function	171
F05.1x~F05.2x:Terminal Operation Mode	173
F05.3x:PUL Terminal	174
F05.4x: vX Terminal	174
13.9 F06: DO Terminal	175
F06.0x:Terminal Operation	175
F06.1x:Terminal Delay	178
F06.3x~F06.5x: vY Terminal	178
13.10 F07: AI Terminal	179
F07.0x: Type	179
F07.1x: Line Setting	180
F07.2x: Curve 1 Setting	180
F07.3x: Curve 2 Setting	181
F07.4x: AI as X Terminal	182
F07.5x: AI Disconnection	182
13.11 F08: AO Terminal	183
F08.0x: AO1	183
F08.1x: AO2	184
13.12 F09: Operation Control	185
F09.0x: Start Control	185
F09.1x: Stop Control	186
F09.2x: DC Braking	186
F09.3x: Jogging	187
F09.4x: Start/Stop Hold Frequency and Jump Frequency	187
F09.5x: Fly Track	188
13.13 F10: Protection Parameters	188
F10.0x: Current Protection	188
F10.1x: Voltage Protection	189
F10.2x: Auxiliary Protection	190
F10.3x: Load Protection	191
F10.4x: Overspeed Protection	192
F10.5x: Motor Overload	192

F10.6x~F10.9x: Error Handling	193
13.14 F11: Keypad Operation	196
F11.0x: Key Operation	196
F11.1x: Status Interface Cyclic Monitoring	197
F11.2x: Monitoring Parameters	199
F11.3x: Monitoring Parameters	199
13.15 F12: Communication Parameters	200
F12.0x: Modbus Slave	200
F12.1x: Modbus Master	201
F12.3x: Continuous Read/Write for Discontinuous Addresses	201
13.16 F13: PID Control	202
F13.00~F13.06: PID Setting and Feedback	202
F13.07~F13.24: PID Control	203
F13.25~F13.28: PID Feedback Disconnection	204
F13.29~F13.38: Sleep	205
13.17 F14: Simulated PLC for Multi-frequency	206
F14.00~F14.14: Multi-frequency Control Parameters	206
F14.15: PLC Operation Mode	207
F14.16~F14.30: PLC Runtime	207
F14.31~F14.45: Multi-frequency Direction and ACC/DEC Time	208
13.18 F15: Torque Control	209
F15.0x: Torque Setting	209
F15.1x~F15.2x: Torque Control	210
13.19 F16: Auxiliary Function 1	211
F16.0x: Counting and Timing	211
F16.1x: Wobble Frequency	212
F16.4x: Frequency Detection	212
F16.5x~F16.6x: Comparator	213
13.20 F25: Factory Calibration	213
F25.00~F25.11: AI1 Correction	213
F25.12~F25.23: AI2 Correction	214
F25.24~F25.35: AO1 Correction	215
F25.36~F25.47: AO2 Correction	216
13.21 A00: Default Parameters	216
13.22 A01: Brake Control	219
A01.0x: Brake Logic	219
A01.1x: Brake Control Delay	220
A01.2x: Multi-function	221
A01.3x: Brake Protection	221
A01.5x: Brake Debug	222
A01.6x: Translation Mechanism Brake	222
13.23 d00: Motor Parameters	223
d00.0x: Motor Control	223
13.24 d01: Motor 2 Parameters	224
d01.0x: Basic Parameters and Auto-tuning	224
d01.1x: AM Parameters	225
d01.2x: PM Parameters	225
d01.4x~d01.5x: PM D/Q-Axis Inductance Saturation Coefficient	226
d01.6x~d01.7x: Tuning Extension	227
13.25 d02: Motor 2 Vector Control	228
d02.0x: ASR Control	228
d02.1x: ACR and Torque Limit	229
d02.2x: Torque Optimization	230
d02.3x: Flux Optimization	231
d02.4x: PM HF Injection	231
d02.5x~d02.6x: Vector Control Extension	232
13.26 d03: Motor 2 V/F Control	233
d03.0x: V/F Control	233
d03.1x: User-defined V/F Curves	234
d03.2x: Coil Voltage-Frequency/Current-Frequency Decoupled Control	234
d03.3x: V/F ECO Control	235
d03.4x: V/F PM Anti-oscillation	236

d03.5x: V/F PM Flux Control	236
d03.6x: V/F PM Current Control	237
13.27 d04: Motor 3 Parameters	238
d04.0x: Basic Parameters and Auto-tuning	238
d04.1x: AM Parameters	239
d04.2x: PM Parameters	240
d04.4x~d04.5x: PM D/Q-Axis Inductance Saturation Coefficient	240
d04.6x~d04.7x: Tuning Extension	242
13.28 d05: Motor 3 Vector Control	243
d05.0x: ASR Control	243
d05.1x: ACR and Torque Limit	244
d05.2x: Torque Optimization	245
d05.3x: Flux Optimization	245
d05.4x: PM HF Injection	246
d05.5x~d05.6x: VC Extension Control	246
13.29 d06: Motor 3 V/F Control	247
d06.0x: V/F Control	247
d06.1x: User-defined V/F Curves	248
d06.3x: V/F ECO Control	250
d06.4x: V/F PM Anti-oscillation	250
d06.5x: V/F PM Flux Control	251
d06.6x: V/F PM Current Control	251
13.30 d07: Motor 4 Parameters	252
d07.0x: Basic Parameters and Auto-tuning	252
d07.1x: AM Parameters	253
d07.2x: PM Parameters	254
d07.4x~d07.5x: PM D/Q-Axis Inductance Saturation Coefficient	254
d07.6x~d07.7x: Tuning Extension	256
13.31 d08: Motor 4 Vector Control	257
d08.0x: ASR Control	257
d08.1x: ACR and Torque Limit	257
d08.2x: Torque Optimization	258
d08.3x: Flux Optimization	259
d08.4x: PM HF Injection	260
d08.5x~d08.6x: VC Extension Control	260
13.32 d09: Motor 4 V/F Control	261
d09.0x: V/F Control	261
d09.1x: User-defined V/F Curves	262
d09.3x: V/F ECO Control	264
d09.4x: V/F PM Anti-oscillation	264
d09.5x: V/F PM Flux Control	264
d09.6x: V/F PM Current Control	265
13.33 E00: IO Extension Input	266
E00.0x: Extension Parameters	266
E00.1x~3x: Extension DI Terminal	267
E00.4x~5x: Extension AI Terminal	267
E00.5x~7x: Extension PT Terminal	268
13.34 E01: IO Extension Output	269
E01.0x~1x: Extension DO Terminal	269
E01.3x: Extension AO3	270
13.35 E02: Encoder 1 Extension Parameters	271
E02.0x: Encoder 1 Environment	271
E02.1x: ABZ Parameters	271
E02.2x: Resolver Encoder 1	272
E02.3x: Sine/Cosine Encoder 1	272
13.36 E03: Encoder 2 Extension Parameters	272
E03.0x: Encoder 2 Environment	272
E03.1x: ABZ Parameters	273
E03.2x: Resolver Encoder 2	273
E03.3x: Sine/Cosine Encoder 2	273
13.37 E04: Bus EX1 Common Parameters	274
13.38 E05: Bus EX2 Common Parameters	276

13.39 E06: CAN/DP Parameters	279
13.40 E07: Ethernet Extension Parameters	283
13.41 E08: PLC Extension Parameters	285
13.42 E10: Black Box	285
13.43 L00: Free Function Block	286
L00.0x: Module 1	286
L00.1x: Module 2	286
L00.2x: Module 3	287
L00.3x: Module 4	288
L00.4x: Module 5	289
L00.5x: Module 6	289
L00.6x: Module 7	290
L00.7x: Module 8	291
L00.8x: Module 9	291
L00.9x: Module 10	292
13.44 L01: Bit-Word Function Block Input	293
L01.00~L01.47: Bit-Word Function Block Input 1	293
L01.48~L01.95: Bit-Word Function Block Input 2	296
13.45 U0x: Connector	299
U00.xx: Bit Connector 1 (Digital Status)	299
U01.xx: Bit Connector 2 (Function Status Indicator)	302
U03.xx: Word Connector 1 (Typical Frequency/Voltage)	305
U04.xx: Word Connector 2 (Internal Parameter Word 1)	307
U05.xx: Word Connector 3 (Internal Parameter Word 2)	308
U06.xx: Communication Connector	311
U07.xx: Dual Word Connector	314
U08.xx: Bit-Word Function Block Input Monitoring	315
13.46 C0x: Monitoring Parameters	316
C00.xx: Basic Monitoring	316
C01.xx: ErrorRecord 1	318
C02.xx: Error Record 2	335
C03.xx: Operation Monitoring	353
C04.xx: System Monitoring	354
C05.xx: Factory Monitoring	356
C11.xx: IO Communication Monitoring	357
C12.xx: Bus Communication Monitoring	358
13.47 Terminal I/O Functions	359
13.48 Free Module Functions	361
Chapter 14 Parameter Details	363
14.1 Safety Precautions	363
14.2 F00: Environment	363
14.2.1 F00.0x: Environment Setting	363
14.2.2 F00.1x: System Setting	365
14.2.3 F00.2x: System Time	366
14.2.4 F00.3x: Connector Frequency Source	367
14.3 F01: Basic Settings	367
14.3.1 F01.0x: Basic Commands	367
Control Mode	368
Run Command Source	368
Frequency Source	369
14.3.2 F01.1x: Frequency Upper and Lower Limit	373
14.3.3 F01.2x~F01.3x: ACC/DEC Time	374
ACC/DEC Time 1~4	374
S-curve	377
ACC/DEC Time Shift Frequency	378
14.3.4 F01.4x: PWM Control	378
14.4 F02: Motor 1 Parameters	380
14.4.1 F02.0x: Basic Motor Parameters and Auto-tuning	380
14.4.2 F02.1x: AM Advanced Parameters	381
14.4.3 F02.2x: PM Advanced Parameters	383
14.5 F03: Vector Control	386
14.5.1 F03.0x: ASR	386

14.5.2 F03.1x: ACR and Torque Limit	388
14.5.3 F03.2x: Torque Optimization	390
PM Pull-in Current	390
Slip Compensation	391
14.5.4 F03.25~F03.3x: Flux Optimization	391
Field-weakening control	392
Over-excitation Brake	392
ECO Mode	393
14.5.5 F03.4x: PM HF Injection	393
14.5.6 F03.5x~F03.9x: VC Extension Control	394
IF Control	394
Fly Track	394
MTPA Function	395
Direct Flux Vector	396
14.6 F04: V/F Control	396
14.6.1 F04.0x: V/F Control	396
V/F Curve	396
Torque Boost	397
Slip Compensation	397
Anti-oscillation	398
V/F output voltage ratio	398
14.6.2 F04.1x: User-defined V/F Curves	398
14.6.3 F04.2x: Voltage-Frequency/Current-Frequency Decoupled Control	400
14.6.4 F04.3x: V/F ECO Mode	402
14.7 F05: DI Terminal	403
14.7.1 F05.0x: Terminal Function	403
X1~X6 Function	403
Multi-function Input Setting	405
14.7.2 F05.1x: Terminal Operation Mode	410
14.7.3 F05.3x: PUL Terminal	414
14.7.4 F05.4x: vX Terminal	415
14.8 F06: DO Terminal	418
14.8.1 F06.0x: Multi-function Y Terminal	418
14.8.2 F06.3x~F06.5x: vY Terminal	421
14.8.3 F06.4x: Frequency Detection	422
14.8.4 F06.5x: Monitor Comparator	424
14.9 F07: AI Terminal	425
14.9.1 F07.0x: AI Type	425
14.9.2 F07.1x: Line Setting	426
14.9.3 F07.2x: AI Curve 1	427
14.9.4 F07.3x: AI Curve 2	428
14.9.5 F07.4x: AI as DI Terminal	429
14.10 F08: AO Terminal	430
14.10.1 F08.0x: AO (Analog Output)	430
14.10.2 F08.1x: AO2	433
14.11 F09: Operation Control	434
14.11.1 F09.0x: Start Control	434
14.11.2 F09.1x: Stop and Zero-frequency Control	437
14.11.3 F09.2x: DC Brake and Fly Track	439
14.11.4 F09.3x: Jog	440
14.11.5 F09.4x: Hold and Jump Frequency during Start/Stop	441
14.11.6 F09.5x: Fly Track	443
14.12 F10: Protection Parameters	444
14.12.1 F10.0x: Current Protection	444
14.12.2 F10.1x: Voltage Protection	446
14.12.3 F10.2x: Auxiliary Protection	449
14.12.4 F10.3x: Load Protection	451
14.12.5 F10.4x: Overspeed Protection	452
14.12.6 F10.5x: Motor Overload	454
F10.50~F10.54: Motor Overload Protection	454
14.12.7 F10.6x~F10.9x: Error Handling	455
F10.61~F10.73: Auto Error Reset	455

14.13 F11: Keypad Parameters	461
14.13.1 F11.0x: Key Operation	461
14.13.2 F11.1x: Status Interface Cyclic Monitoring	463
14.13.3 F11.2x: Monitoring Parameters	464
14.13.4 F11.3x: Special Keypad Functions	466
14.14 F12: Communication Parameters	466
14.14.1 F12.0x: Modbus Slave Parameters	466
14.14.2 F12.1x: Modbus Master Parameters	469
14.14.3 F12.3x: PROFIBUS-DP Communication	470
14.14.4 F12.4x: CAN Communication	470
14.14.5 F12.5x: Extension Communication of EX_A and EX_B	471
14.15 F13: PID Control	473
14.15.1 F13.00~F13.06: PID Setting and Feedback	473
14.15.2 F13.07~F13.24: PID Control	475
14.15.3 F13.25~F13.28: PID Feedback Disconnection	479
14.15.4 F13.29~F13.33: Sleep	480
14.16 F14: Simulated PLC for Multi-frequency	482
14.16.1 F14.00~F14.14: Multi-frequency Setting	482
14.16.2 F14.15: PLC Operation Mode	485
14.16.3 F14.16~F14.30: PLC Runtime	486
14.16.4 F14.31~14.45: PLC Direction and ACC/DEC Time	488
14.17 F15: Torque Control	490
14.17.1 F15.0x: Torque Setting	490
14.17.2 F15.1x: Torque Control	491
14.18 F16: Auxiliary Control 1	493
14.18.1 F16.0x: Counting and Timing	493
Counting	493
Fixed-length control:	494
Timer	495
14.18.2 F16.3x: Wobble Frequency	496
14.18.3 F16.4x: Frequency Detection	497
14.18.4 F16.5x: Monitor Comparator	498
14.19 F17: Reserved	500
14.20 F18: Reserved	500
14.21 F19: Reserved	500
14.22 F20: Reserved	500
14.23 F21: Reserved	500
14.24 F22: Reserved	500
14.25 F23: Reserved	500
14.26 F24: Reserved	500
14.27 F25: AI/AO Correction	500
14.27.1 F25.00~F25.11: AI1 Correction	500
14.27.2 F25.12~F25.23: AI2 Correction	501
14.27.3 F25.24~F25.35: AO1 Correction	502
14.27.4 F25.36~F25.47: AO2 Correction	503
14.28 A00: Default Parameters	504
14.29 A01: Brake Control	506
14.29.1 A01.0x: Brake Logic	507
14.29.2 A01.1x: Brake Control Delay	509
14.29.3 A01.2x: Multi-function	510
14.29.4 A01.3x: Brake Protection	511
14.29.5 A01.6x: Translation Mechanism Brake	512
14.30 d00: Motor Parameters	512
d00.0x: Motor Control	512
14.31 d01: Motor 2 Parameters	514
14.31.1 d01.0x: Basic Parameters and Auto-tuning	514
14.31.2 d01.1x: AM Advanced Parameters	516
14.31.3 d01.2x: PM Advanced Parameters	518
14.32 d02: Motor 2 Vector Control	520
14.32.1 d02.0x: ASR	520
14.32.2 d02.1x: ACR and Torque Limit	523
14.32.3 d02.2x: Torque Optimization	525

PM Pull-in Current	525
Slip Compensation	525
14.32.4 d02.25~d02.3x: Flux Optimization	526
Field-weakening Control	526
Over-excitation Brake	527
ECO Mode	527
14.32.5 d02.4x: PM HF Injection	528
14.32.6 d02.5x~d02.9x: VC Extension Control	529
IF Control	529
Fly Track	529
MTPA Function	530
Direct Flux Vector	530
14.33 d03: Motor 2 V/F Control	530
14.33.1 d03.0x: V/F Control	530
V/F Curve	530
Torque Boost	531
Slip Compensation	532
Anti-oscillation	532
V/F Output Voltage Ratio	533
14.33.2 d03.1x: User-defined V/F Curves	533
14.33.3 d03.2x: Voltage-Frequency/Current-Frequency Decoupled Control	534
14.33.4 d03.3x: V/F ECO Mode	536
14.34 d04: Motor 3 Parameters	537
14.34.1 d04.0x: Basic Parameters and Auto-tuning	537
14.34.2 d04.1x: AM Advanced Parameters	539
14.34.3 d04.2x: PM Advanced Parameters	541
14.35 d05: Motor 3 Vector Control	543
14.35.1 d05.0x: ASR	543
14.35.2 d05.1x: ACR and Torque Limit	546
14.35.3 d05.2x: Torque Optimization	548
PM Pull-in Current	548
Slip Compensation	548
14.35.4 d05.25~d05.3x: Flux Optimization	549
Field-weakening Control	549
Over-excitation Brake	550
ECO Mode	550
14.35.5 d05.4x: PM HF Injection	551
14.35.6 d05.5x~d05.9x: VC Extension Control	552
IF Control	552
Fly Track	552
MTPA Function	553
Direct Flux Vector	553
14.36 d06: Motor 3 V/F Control	553
14.36.1 d06.0x: V/F Control	553
V/F Curve	553
Torque Boost	554
Slip Compensation	555
Anti-oscillation	555
V/F output voltage ratio	556
14.36.2 d06.1x: User-defined V/F Curves	556
14.36.3 d06.2x: Voltage-Frequency/Current-Frequency Decoupled Control	557
14.36.4 d06.3x: V/F ECO Mode	559
14.37 d07: Motor 4 Parameters	560
14.37.1 d07.0x: Basic Parameters and Auto-tuning	560
14.37.2 d07.1x: AM Advanced Parameters	562
14.37.3 d07.2x: PM Advanced Parameters	564
14.37.4 d07.6x~d07.7x: Tuning Extension	565
14.38 d08: Vector Control	566
14.38.1 d08.0x: ASR	566
14.38.2 d08.1x: ACR and Torque Limit	569
14.38.3 d08.2x: Torque Optimization	571
PM Pull-in Current	571

Slip Compensation	571
14.38.4 d08.25~d08.3x: Flux Optimization	572
Field-weakening Control	572
Over-excitation Brake	573
ECO Mode	573
14.38.5 d08.4x: PM HF Injection	574
14.38.6 d08.5x~d08.9x: VC Extension Control	575
IF Control	575
Fly Track	575
MTPA Function	576
Direct Flux Vector	576
14.39 d09: V/F Control	576
14.39.1 d09.0x: V/F Control	576
V/F Curve	576
Torque Boost	577
Slip Compensation	578
Anti Oscillation Gain	578
V/F Output Voltage Ratio	579
14.39.2 d09.1x: User-defined V/F Curves	579
14.39.3 d09.2x: Voltage-Frequency/Current-Frequency Decoupled Control	580
14.39.4 d09.3x: V/F ECO Mode	582
14.40 E00: IO Extension Input	583
E00.0x: Extension Parameters	583
E00.1x~3x: Extension DI Terminal	584
E00.4x~5x: Extension AI Terminal	585
E00.5x~7x: Extension PT Terminal	587
14.41 E01: IO Extension Output	588
E01.0x~1x: Extension DO Terminal	588
E01.3x: Extension AO3 Terminal	589
14.42 E02: Encoder 1 Extension Parameters	590
14.42.1 E02.0x: Encoder 1 Environment	590
14.42.2 E02.1x: ABZ Encoder	591
14.42.3 E02.2x: Resolver	592
14.42.4 E02.3x: Sine/Cosine Encoder	593
14.43 E03: Encoder 2 Extension Parameters	593
14.43.1 E03.0x: Encoder 1 Environment	593
14.43.2 E03.1x: ABZ Encoder	594
14.43.3 E03.2x: Resolver	596
14.43.4 E03.3x: Sine/Cosine Encoder	596
14.44 E04: Bus 1 Common Parameters	596
14.45 E05: Bus 2 Common Parameters	599
14.46 E06: CAN/DP Communication Parameters	602
14.46.1 E06.00~E06.09: DP Communication Parameters	602
14.46.2 E06.10~E06.15: CAN Communication Parameters	602
14.46.3 E06.7x: Extension RS485 Parameters	604
14.47 E07: Ethernet Extension Parameters	605
14.47.1 E07.00~E07.23: EtherCAT Communication Parameters	606
14.47.2 E07.24~E07.47: ModbusTCP Communication Parameters	607
14.47.3 E07.48~E07.71: EtherNet/IP Communication Parameters	609
14.48 E10: Black Box Parameters	610
14.48.1 E10.00~E10.05: Black Box	610
14.48.2 E10.06~E10.10: Black Box Custom Channels	611
14.49 L00: Free Function Block	612
L00.0x: Module 1	612
L00.1x: Module 2	613
L00.2x: Module 3	613
L00.3x: Module 4	614
L00.4x: Module 5	615
L00.5x: Module 6	616
L00.6x: Module 7	616
L00.7x: Module 8	617
L00.8x: Module 9	618

L00.9x: Module 10	618
14.50 L01: Bit-Word Function Block Input	619
L01.00~L01.47: Bit-Word Function Block Input 1	619
L01.48~L01.95: Bit-Word Function Block Input 2	622
Appendix I: Terminal Wiring Methods	626

Version Change Log

Date	Version	Content
2026.01	V1.1	Version 1.1 – Summary of Structural Updates and Content Enhancements 1. Preface updated with notes on special-purpose use and references to related manuals. 2. New Terminology chapter added. 3. Overview chapter reorganized: a) Safety Precautions moved to Chapter 1. b) Before Use and compliance content restructured as Chapter 2 Product Information. “Before Use” renamed to Nameplate and Naming Rules. c) Technical Data reorganized as Chapter 3. 4. Chapter 2 Product Information updates: a) 2.1 Nameplate images, naming rules, and descriptions updated. b) 2.2 Product Model Table added. c) 2.3 Component Description added. 5. Chapter 3 Technical Data updates: a) 3.1 Model Specifications added. b) Original technical data moved to 3.2 General Specifications. c) 3.3~3.6 new sections added. 6. Chapter 4 Installation and Wiring updates: a) 4.2 System Wiring Diagram, 4.3 Installation Flowchart, and 4.5 Handling and Packaging Inspection added. b) 4.6 Mechanical Installation added, including installation tools; installation method, direction/clearance, and dimensions consolidated and optimized. c) 4.7 Electrical Installation added, including pre-installation checks and electrical tools; standard wiring diagrams and main/control circuit wiring incorporated and improved. 7. Chapter 5 Initial Use and Test Run added. 8. Chapter 6 Network Communication added; Modbus appendix moved here. 9. Chapter 7 Troubleshooting added; error and alarm lists moved here. 10. Chapter 8 Maintenance expanded with 8.3 Component Replacement and 8.4 Storage Requirements. 11. Chapter 9 External Devices and Options added. 12. Chapter 11 International Standards added. 13. Chapter 12 FBD Visual Programming optimized and completed. 14. Chapter 13 Parameter and Funcode Description optimized and completed. 15. Chapter 14 Detailed Parameter Information added.
2024.12	V1.0	First version released

Terminology

Term	Description
AC drive	AC600
AM-V/F	Asynchronous Motor- VF Control
AM-FVC	Asynchronous Motor- Vector Control without PG
AM-SVC	Asynchronous Motor- Vector control with PG
AM-V/F-SPLIT	Asynchronous Motor- Voltage Frequency Split
PM-V/F	Permanent Magnet Synchronous Motor- V/F Control
PM-FVC	Permanent Magnet Synchronous Motor-Vector Control without PG
PM-SVC	Permanent Magnet Synchronous Motor-Vector control with PG
PG	Speed Feedback
Bit	Bits in Binary

Chapter 1 Safety Precautions

Please use this product only after the safety precautions described in this manual are fully understood to protect both persons and the products.

Signs and Meanings

The following signs are used in this manual to highlight the key safety points. Failure to observe these points may result in damages to this product and the associated system, or even personal injuries.

 DANGER	Incorrect operation will result in death or major safety incidents.
 WARNING	Incorrect operation may result in death or major safety incidents.
 CAUTION	Incorrect operation may result in minor injuries.
Note	Incorrect operation may result in damage to the product and the associated system.

General Cautions

- In order to introduce the details of the product, the illustrations in this manual sometimes show the product with the outer cover or safety cover removed. When using this product, please be sure to install the outer cover or safety cover as required, and operate according to the regulations in this manual.
- The figures in this manual are only representative examples, and may be different from the products you ordered.
- Due to product improvements or specification changes, as well as to improve the convenience of the manual itself, this manual may be changed without notice.
- To order a replacement for a damaged or lost manual, contact our agency or the nearest sales office listed on the back cover, and provide the reference number on the front cover.



Please pay attention to all information in this manual regarding safety. Failure to observe them may result in death or serious injuries. VEICHI will not be held liable for injuries and equipment damage caused by your company or your customers' failure to comply with the contents of this manual.

To prevent electric shock

Do not perform inspection or wiring work while the power is on. Before wiring or repairing, be sure to cut off the power to the AC drive. Even if the power is cut off, there is still residual voltage in the capacitor inside the product. Wait at least 10 minutes after power-off to prevent electric shock. After the indicators light is off completely, remove the front cover and terminal cover, and measure the input power voltage and the main circuit DC voltage to make sure the voltage is safe.



For mechanical safety

- After the wiring work and parameter setting are completed, be sure to perform a test run to make sure that the AC drive can operate safely; otherwise, it may cause personal injury or equipment damage.
- Be sure to verify the set points of parameters for the virtual input/output function before the test run of AC drive.
- The virtual input/output function is based on the virtual wiring of the input/output terminals inside the AC drive. Therefore, even if there is no physical wiring on the input/output terminals, the operation may be different from the factory settings. If lack of verification, unexpected actions may cause personal accidents.
- Before turning on the power supply, please make sure that there are no people around drive, motor and machines. In addition, please make sure that the cover, coupling, shaft key and machinery of the drive have been effectively protected.
- In some systems, the machines may suddenly move when the main circuit is energized, which may cause death or serious injury.
- When it is external terminal control, the function of the input/output terminals of the AC drive will be different from the factory setting, so the action may be different from the description in the manual. Before the test run, please use external terminal control to confirm the input/output signals of the AC drive and the internal sequence control.

To prevent electric shock

- It is strictly forbidden to modify the AC drive.
- We will not take any responsibility for the modification of the product by your company or your customers.
- Non-electrical professionals are not allowed to perform wiring, installation, maintenance, inspection, component replacement or repair operations.
- Do not remove the outer cover of the product or touch the printed circuit board when the power is on.

To prevent fire

- Ensure to use the correct voltage of the main circuit power supply. Before energizing, please confirm whether the rated voltage of the AC drive is consistent with the power supply voltage.
- Please follow local standards to set up bypass protection circuits. Improper wiring may cause fire or personal accidents.



CAUTION

To prevent injury

- Do not move the AC drive by holding the front cover or terminal cover, and make sure that the screws are properly tightened before moving.
- Otherwise, the AC drive may fall due to loose screws, which may cause injury.

Note

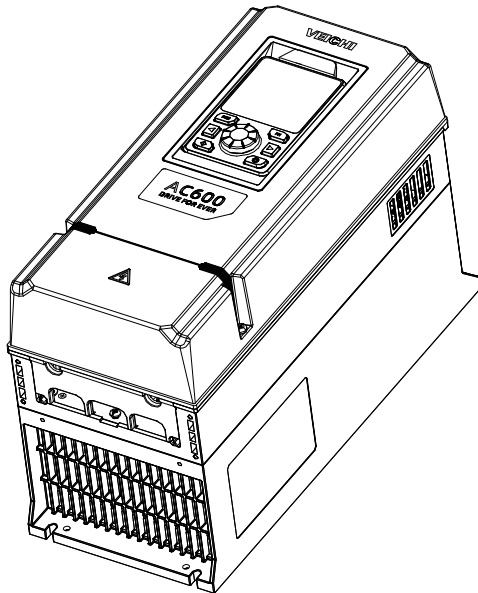
- Use a motor that meets the insulation requirements of the PWM AC drive to prevent short circuits or ground short circuits due to deterioration of the insulation.
- When operating the AC drive or disassembling the printed circuit board, follow the procedures specified in the electro-static discharge (ESD). Wrong operation may damage the circuits inside the AC drive due to static electricity.
- Voltage withstand tests cannot be performed on any part of the AC drive, as it contains precision instruments that may be damaged by high voltage.
- Do not connect or operate the damaged machine if it is visibly damaged or has missing parts, as this may aggravate damage to the machine and other problems may occur.
- When the fuse is blown or the leakage circuit breaker trips, please do not immediately turn on the power supply or operate the machine. Check whether the cable wiring and the selection of peripheral machines are correct and find out the cause of the problem. If the causes can't be identified, please contact our company and do not switch on the power supply or operate the machine without authorization.
- When the packaging are wood materials need to be disinfected and disinfected, methods other than fumigation must be used, such as heat treatment (over 30 minutes with the core temperature of 56°C). In addition, please process the package materials before packaging, rather than processing the whole product after packaging.
- When fumigated wood materials are used to package electrical products (stand-alone or mechanical products), the gases and vapors produced by the packaging materials may cause fatal damage to electronic products. In particular, halogen disinfectants (fluorine, chlorine, bromine, iodine, etc.) may cause internal corrosion of capacitors, and DOP gas (phthalate ester) may cause cracks in resins, etc.

Chapter 2 Product Information

2.1 Nameplate and Naming Rules

Please check the outer packaging for any damage upon receiving the ordered products. And then check the product inside for any damage, scratches, or dirt. (Please note that damage during transportation is not covered by the Three Guarantees warranty policy.) If the product received is damaged during transportation, please contact us or the transportation company immediately. After confirming that the product received is complete and undamaged, please double-check that the received model is the same as what you have ordered.

The product nameplate information and naming rules are as follows:



AC600-T4-011G/015P-BLIV-XX (a)

① ② ③ ④ ⑤ ⑥

Table 2-1 Nameplate and Naming Rules of AC600 Series Drive

No.	Meaning	Description
①	Product series	AC600 series drive
②	Voltage level	T: Three-phase power; S: Single-phase power; 4: AC380V~AC480V power; 2: AC220V power; 6: AC660V power
③	Torque load	G: Constant torque load, P: Variable torque load 011: 11kW, 015: 15kW, 1R5: 1.5kW
④	Configuration	B: Built-in brake unit; blank indicates no built-in brake unit. L: Built-in DC reactor. I: STO card configuration; blank indicates not configured. V: IP54 (CE)/Enclosed type (UL); blank indicates IP20 (CE)/Open type (UL).
⑤	EMC configuration	E3: Built-in EMC C3 filter; E2: Built-in EMC C2 filter
⑥	Product management code	For internal product management; not a standard configuration. The “(a)” model may include the suffix “XXXXXXXXXX,” which may be blank or any combination of letters, numbers, and/or symbols representing customer identification.

2.2 Product Model Table

The relationship between product models and sizes is shown below.

Table 2-2 Product Model and Size Mapping

Product Model (220V)	Product Model (380V)	Size
AC600-T/S2-R75G-* AC600-T/S2-1R5G-* AC600-T/S2-2R2G-*	AC600-T4-R75G/1R5P-* AC600-T4-1R5G/2R2P-* AC600-T4-2R2G/004P-* AC600-T4-004G/5R5P-* AC600-T4-5R5G/7R5P-*	V1
AC600-T/S2-004G-* AC600-T/S2-5R5G-*	AC600-T4-7R5G/011P-* AC600-T4-011G/015P-*	V2
AC600-T/S2-7R5G-* AC600-T/S2-011G-*	AC600-T4-015G/018P-* AC600-T4-018G/022P-* AC600-T4-022G/030P-*	V3
AC600-T/S2-015G-* AC600-T2-018G-*	AC600-T4-030G/037P-* AC600-T4-037G/045P-*	V4
AC600-T2-022G-* AC600-T2-030G-* AC600-T2-037G-*	AC600-T4-045G/055P-* AC600-T4-055G/075P-* AC600-T4-075G/090P-*	V5
AC600-T2-045G-* AC600-T2-055G-*	AC600-T4-090G/110P-* AC600-T4-110G/132P-*	V6
-	AC600-T4-132G/160P-* AC600-T4-160G/185P-*	V7
-	AC600-T4-185G/200P-* AC600-T4-200G/220P-* AC600-T4-220G/250P-*	V8
-	AC600-T4-250G/280P-* AC600-T4-280G/315P-*	V9
-	AC600-T4-315G/355P-* AC600-T4-355G/400P-* AC600-T4-400G/450P-*	V10
-	AC600-T4-450G/500P-* AC600-T4-500G/560P-* AC600-T4-560G/630P-*	V11

2.3 Component Description

The AC600 series AC drive includes three structural types:

- Plastic housing units for sizes V1~V3
- Hybrid plastic/metal housing units for sizes V4~V5
- Metal housing units for sizes V6~V11

2.3.1 V1~V3 Plastic Housing Components

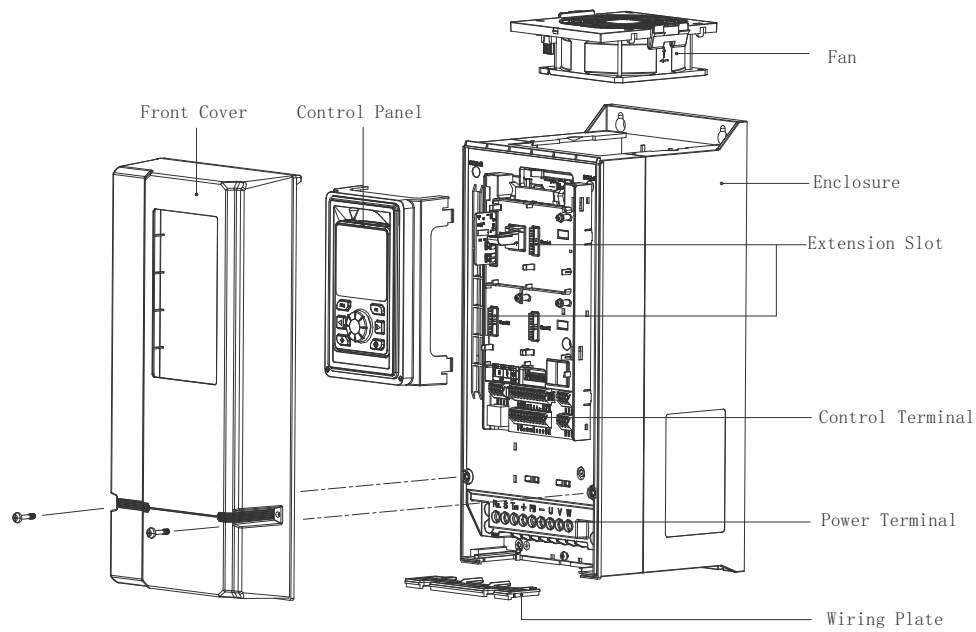


Figure 2-1 Product Component Diagram (V1~V3)

2.3.2 V4~V5 Hybrid Plastic/Metal Housing Components

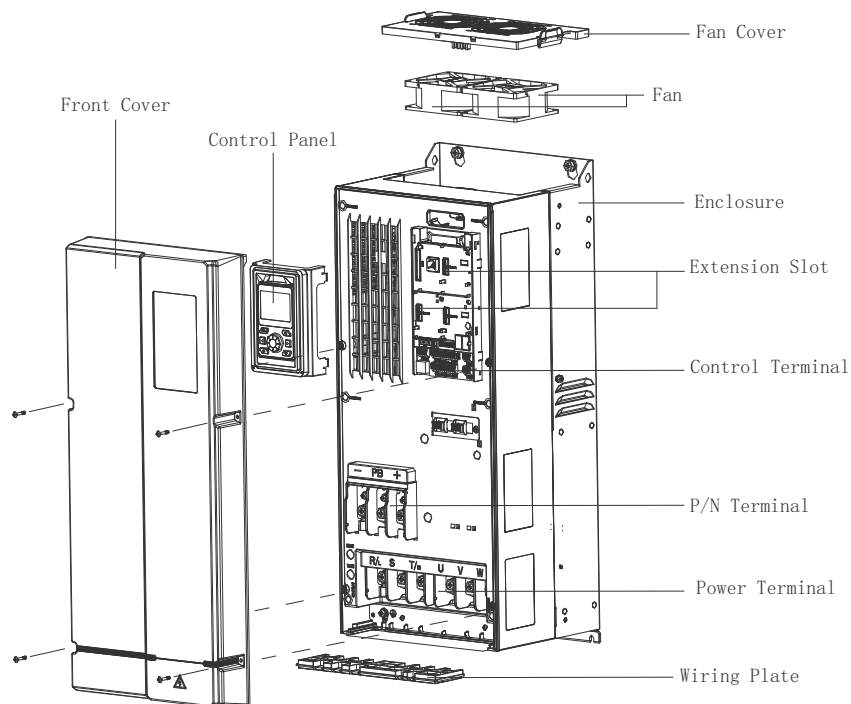


Figure 2-2 Product Component Diagram (V4~V5)

2.3.3 V6~V11 Metal Housing Components

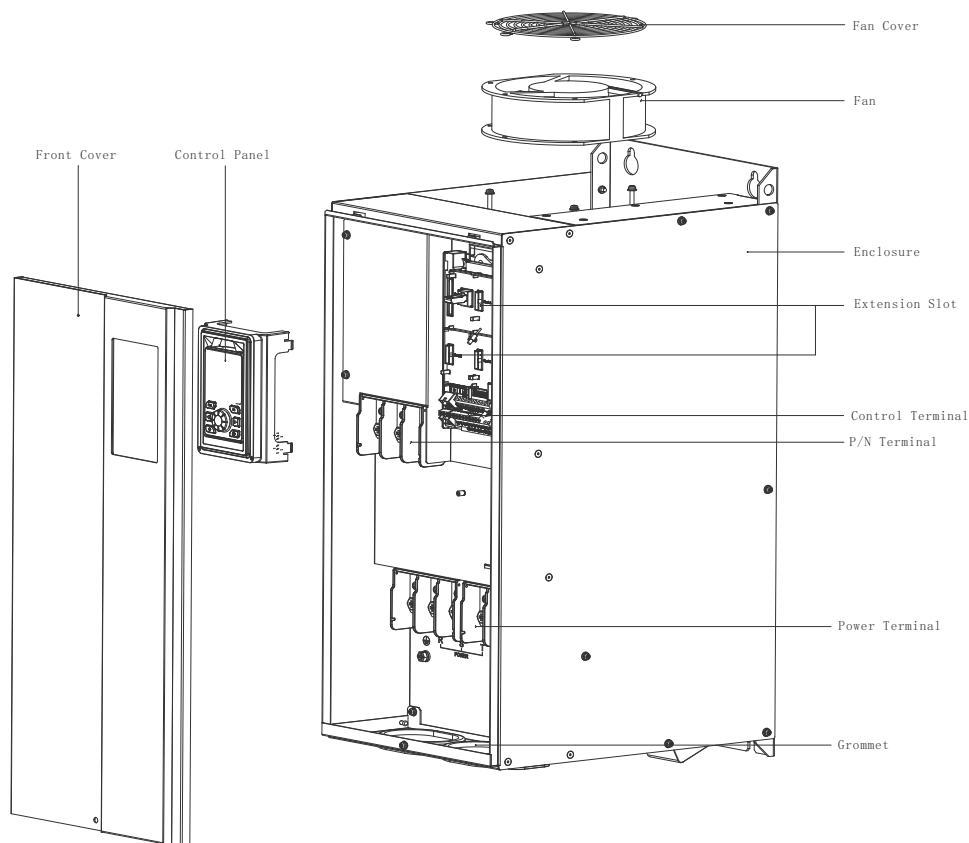


Figure 2-3 Product Component Diagram (V6~V11)

2.4 Compliance Standards

The table below lists the relevant certification directives and standards. Certification status is indicated on the product nameplate.

Certificate	Directive		Standard
CE	EMC	2014/30/EU	EN IEC 61800-3
	LVD	2014/35/EU	EN 61800-5-1
	RoHS	2011/65/EU	EN 50581
UL/CUL	-		UL61800-5-1
			C22.2 No.274-17

Chapter 3 Technical Data

3.1 Model Specifications

● Three-phase 380V

Table 3-1 (380V) (V1~V4)

Type			V1					V2		V3			V4	
Power (kW)			0.75	1.5	2.2	4	5.5	7.5	11	15	18.5	22	30	37
Output	Motor (kW)	G-type	0.75	1.5	2.2	4	5.5	7.5	11	15	18.5	22	30	37
		P-type	1.5	2.2	4	5.5	7.5	11	15	18.5	22	30	37	45
	Rated current (A)	G-type	3	4	6	10	13	17	25	32	38	45	60	75
		P-type	4	6	10	13	17	25	32	38	45	60	75	90
	Voltage		3-phase 0V~input voltage											
	Frequency		0Hz~599Hz											
	Carrier frequency		1.0kHz~16.0kHz (automatically adjustable based on load characteristics)											
	Overload capacity		G-type: 150% rated current for 90s; 180% rated current for 10s; 200% rated current for 3s P-type: 120% rated current for 35s; 140% rated current for 7s; 150% rated current for 3s											
Input	Rated current (A)	G-type	2.3	3.1	4.8	8.6	10.7	14.5	21.9	28	33.1	39.4	53.5	67.6
		P-type	3.1	4.8	8.6	10.7	14.5	21.9	28	33.1	39.4	53.5	67.6	83.3
	Power capacity (kVA)	G-type	3.1	4.5	6.8	11.6	15	20	29	38	46.5	54	69	86
		P-type	4.5	6.8	11.6	15	20	29	38	46.5	54	69	86	90
	Rated voltage/frequency		Three-phase AC power: 380V~480V, 50Hz/60Hz											
	Grid		TN/TT, IT											
	Allowable voltage fluctuation		-15%~+10%, with a range of AC323V~AC528V											
	Allowable frequency fluctuation		±5%, with a range of 47.5Hz to 63Hz											

Table 3-2 (380V) (V5~V9)

Type			V5			V6		V7		V8			V9	
Power (kW)			45	55	75	90	110	132	160	185	200	220	250	280
Output	Motor (kW)	G-type	45	55	75	90	110	132	160	185	200	220	250	280
		P-type	55	75	90	110	132	160	185	200	220	250	280	315
	Rated current (A)	G-type	90	110	150	180	210	250	310	340	380	415	470	510
		P-type	110	150	180	210	250	310	340	380	415	470	510	600
	Voltage		3-phase 0V~input voltage											
	Frequency		0Hz~599Hz											
	Carrier frequency		1.0kHz~16.0kHz (automatically adjustable based on load characteristics)											
	Overload capacity		G-type: 150% rated current for 90s; 180% rated current for 10s; 200% rated current for 3s P-type: 120% rated current for 35s; 140% rated current for 7s; 150% rated current for 3s											
Input	Rated current (A)	G-type	83.3	104	139	167.7	196	237	293	323	368	400	446	486
		P-type	104	139	167.7	196	237	293	323	368	400	446	486	580
	Power capacity (kVA)	G-type	90	95	127	154	179	217	268	295	336	365	408	444
		P-type	95	127	154	179	217	268	295	336	365	408	444	530
	Rated voltage/frequency		Three-phase AC power: 380V~480V, 50Hz/60Hz											
	Grid		TN/TT, IT											
	Allowable voltage fluctuation		-15%~+10%, with a range of AC323V~AC528V											
	Allowable frequency fluctuation		±5%, with a range of 47.5Hz to 63.0Hz											

Table 3-3 (380V) (V10~V11)

Type			V10			V11		
Power (kW)			315	355	400	450	500	560
Output	Motor (kW)	G-type	315	355	400	450	500	560
		P-type	355	400	450	500	560	630
	Rated current (A)	G-type	600	670	750	800	860	990
		P-type	670	750	800	860	990	1100
	Voltage		3-phase 0V~input voltage					
	Frequency		0Hz~599Hz					
	Carrier frequency		1.0kHz~16.0kHz (automatically adjustable based on load characteristics)					
	Overload capacity		G-type: 150% rated current for 90s; 180% rated current for 10s; 200% rated current for 3s P-type: 120% rated current for 35s; 140% rated current for 7s; 150% rated current for 3s					
Input	Rated input current (A)	G-type	580	636	710	763	801	925
		P-type	636	710	763	801	925	1025
	Power capacity (kVA)	G-type	530	582	650	698	733	846
		P-type	582	650	698	733	846	914
	Rated voltage/frequency		Three-phase AC power: 380V~480V, 50Hz/60Hz					
	Grid		TN/TT, IT					
	Allowable voltage fluctuation		-15%~+10%, with a range of AC323V~AC528V					
	Allowable frequency fluctuation		±5%, with a range of 47.5Hz to 63.0Hz					

3.2 General Specification

Table 3-4 General Technical Specification

Item		Specification
Main Control Performance	Motor type	Three-phase asynchronous motors, permanent magnet synchronous motors, and
	Control mode	V/F control, open-loop vector control, closed-loop vector control, voltage-frequency split
	Modulation	SVPWM
	Velocity control range	● SVC: Rated load 1:200 ● FVC: Rated load 1:1000
	Speed stabilizing accuracy	● SVC: ±0.5% (three-phase AM), ±0.1% (PM) ● FVC: ±0.02%
	Starting torque	● SVC: 150% rated torque at 0.25Hz ● FVC: 200% rated torque at 0Hz
	Torque response	SVC: <10ms; FVC: <5ms
	Torque accuracy	SVC: ±5%; FVC: ±2.5%
	Frequency accuracy	Digit setting: Max. frequency ×(±0.01%); analog setting: Max. frequency ×(±0.2 %)
	Frequency	Digit setting: 0.01Hz; analog setting: Max. frequency ×0.05 %
	Input current	Max. THDI < 48% at 100% load, compliant with IEC 61000-3-12
Basic Function	Torque control	Torque calculation and speed limit in torque mode
	DC brake	Starting frequency: 0.00Hz~50.00Hz; braking time: 0.0s~60.0s; braking current: 0.0%~150.0% of rated current
	Torque Boost	Auto torque boost; Manual torque boost: 0.1%~30.0%

	V/F curve	4 patterns: Linear torque characteristic curve, self-defined V/F curve, torque drop characteristic curve (1.1~1.9 power), and square V/F curve
	ACC/DEC curve	2 patterns: Linear and S-curve acceleration/deceleration Four sets of acceleration and deceleration time; the default time unit is 0.01s, allowing a maximum setting of 650.00s. If the time unit is set to 0.1s or 1s, the maximum adjustable time becomes 6500.0s or 65000s, respectively.
	Rated output voltage	With the power voltage compensation function, it can be set within 50%~100% with the rated voltage of the motor as 100% (the output cannot exceed the input voltage)
	Auto voltage	The output voltage can be automatically kept constant during the grid voltage fluctuation
	Auto ECO mode	Output voltage is automatically optimized according to the load under V/F control mode to
	Auto current limit	Auto current limit works during operation to prevent frequent tripping due to over-current
	Instantaneous	Uninterrupted operation is realized through bus voltage control in case of instantaneous
	Standard function	PID control, fly track and restart after power down, jump frequency, upper/lower frequency limit control, programmed operation, multi-frequency, RS485, analog output, frequency pulse output, parameter access level setting, common parameter setting, monitoring comparator output, counting and timing, and wobble frequency
	Frequency source	Keypad, analog voltage/current terminal AI1 and AI2, communication, terminal combination, and frequency source combination
	Feedback input	AI1 and AI2, communication, and PUL terminal
	Run command	Operation panel, external terminals and communication
	Input command signal	Start, stop, forward and reverse, jog, multi-frequency, free stop, reset, acceleration/deceleration time, frequency source, and external fault alarms
	External output signal	2 × relay output, 1 × open collector output, and 2 × analog output can be selected to 0V~10V, 0mA~20mA or 4mA~20mA, or frequency pulse output.
	External power	DC 24V ±15%, maximum current 1200mA (compliant with CE and UL requirements)
	Extension card	Supports CARD-A, CARD-B, CARD-C, and STO cards
	Fan speed control/fault	Supports fan speed control and fan fault detection functions
	STO	Products with STO: comply with STO (Safe Torque Off) SIL 3
	DC reactor	Standard
Protection		Over-voltage, under-voltage, current limit, over-current, overload, overheat, over-voltage stall, data, over-speed, and I/O phase loss protections
Keypad	Display	Segment screen or LCD display
	Parameter copy	Uploads and downloads the function code information of the AC drive to realize fast
	Status monitoring	All parameters of the monitoring parameter group, including output frequency, target frequency, output current, input voltage, output voltage, motor speed, PID feedback, PID
	Fault alarm	OV, UV, OC, SC, phase loss, OL, OT, OV stall, current limit, data damaged, operating conditions of current faults, and fault history
Environment	Installation	<1000 meters, derate 1% for every 100 meters rise when above 1000m. The max. altitude is 4800m.

	Operating temperature	-10°C~+40°C, derating is required between 40°C~50°C CE: IP20: 40°C~50°C, derate 1.5% for every 1°C rise when above 40°C IP54: 40°C~50°C, derate 2.5% for every 1°C rise when above 40°C UL: Open type:-10°C~40°C(surrounding air temperatures) Enclosed type :-10°C~40°C(ambient) 40°C~50°C, derate 2.5% for every 1°C rise when above 40°C
	Humidity	5%RH~95%RH, no condensation
	Vibration	5.9m/s ² (0.6g) at 9Hz~200Hz
	Storage temperature	-30°C~+60°C, with air temperature change <1°C/min
	Installation method	Wall-mounted, cabinet
	Protection rating	IP20 or IP54
	Pollution degree	PD 2
	Overvoltage	OVC III
	Protection	Class I
	Cooling	Forced air-cooling

Note: For IP54 protection, the machine's air duct section is not included.

3.3 ACC/DEC Time

The AC drive's default acceleration/deceleration varies by power rating, as shown in the table below.

Drive Power (kW)	Default ACC/DEC Time (s)
0.75	6.00
1.5	6.00
2.2	6.00
4.0	6.00
5.5	6.00
7.5	6.00
11.0	6.00
15.0	6.00
18.5	6.00
22.0	12.00
30.0	12.00
37.0	12.00
45.0	18.00
55.0	18.00
75.0	24.00
90.0	30.00
110.0	36.00
160.0	48.00
185.0	54.00
200.0 and above	60.00

3.4 Voltage Protection

The default voltage value of the AC drive includes voltage level, rated voltage, undervoltage suppression point, undervoltage point, overvoltage suppression point, overvoltage point and dynamic braking point. See the table below for details.

Note: The units for the values in the table are all volts (V).

Voltage Level	Rated Voltage	Anti-LU Limit	Undervoltage Point	Anti-OU Limit	Overvoltage Point	Dynamic Braking
220	311.1	240	190	370	400	360
380	537.4	430	320	780	820	740

3.5 Carrier Frequency

The carrier frequency defaults are as follows:

Voltage Level (V)	Power	G-type Default Carrier (kHz)	P-type Default Carrier (kHz)
220	≤5.5kW	5.5	-
	7.5kW~18kW	4.0	-
	22kW~37kW	3.0	-
	45kW~55kW	2.0	-
380	≤11kW	5.5	2.0
	15kW~37kW	4.0	2.0
	45kW~75kW	3.0	2.0
	≥90kW	2.0	2.0

Note: When operating the AC drive at a high carrier frequency, derating is required; the higher the carrier frequency, the greater the derating.

The carrier derating factors are as follows:

Power Freq.	0.75 kW	1.5 kW	2.2 kW	4 kW	5.5 kW	7.5 kW	11 kW	15 kW	18.5 kW	22 kW	30 kW	37 kW	45 kW	55 kW	75 kW
1kHz	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2kHz	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
3kHz	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
4kHz	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92
5kHz	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.94	1.00	1.00	0.83
6kHz	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	1.00	0.88	1.00	1.00	0.78
7kHz	0.95	0.95	0.95	0.95	0.95	0.88	0.88	0.88	0.88	0.88	1.00	0.81	1.00	0.94	0.73
8kHz	0.90	0.90	0.90	0.90	0.90	0.81	0.81	0.81	0.81	0.81	0.95	0.75	0.94	0.88	0.69
9kHz	0.85	0.85	0.85	0.85	0.85	0.74	0.74	0.74	0.74	0.74	0.90	0.68	0.88	0.82	0.64
10kHz	0.80	0.80	0.80	0.80	0.80	0.67	0.67	0.67	0.67	0.67	0.85	0.62	0.81	0.76	0.59
11kHz	0.75	0.75	0.75	0.75	0.75	0.60	0.60	0.60	0.60	0.60	0.80	0.55	0.74	0.70	0.54
12kHz	0.71	0.71	0.71	0.71	0.71	0.57	0.57	0.57	0.57	0.57	0.75	0.52	0.70	0.66	0.50
13kHz	0.67	0.67	0.67	0.67	0.67	0.53	0.53	0.53	0.53	0.53	0.70	0.50	0.66	0.62	0.46
14kHz	0.63	0.63	0.63	0.63	0.63	0.50	0.50	0.50	0.50	0.50	0.65	0.47	0.62	0.58	0.43
15kHz	0.59	0.59	0.59	0.59	0.59	0.46	0.46	0.46	0.46	0.46	0.60	0.45	0.58	0.54	0.39
16kHz	0.55	0.55	0.55	0.55	0.55	0.43	0.43	0.43	0.43	0.43	0.55	0.42	0.54	0.50	0.35

Note: The values in the table represent output current derating factors. A factor of 1 indicates no derating, while a factor <1 indicates derating is required. Maximum output current after derating = Rated Current × Derating Factor.

3.6 Types and Characteristics of Control Modes

The AC drive can be set to AM-V/F control (initial setting), AM - open-loop vector control, AM - closed-loop vector control, PM-V/F control, PM - open-loop vector control, PM - closed-loop vector control, and V/F Split control.

● AM V/F Control

- When the frequency (F) is variable, the ratio of the control frequency to the voltage (V) remains constant.
- This control mode suits all variable speed control applications that do not require fast response and precise speed control, or scenarios where one AC drive works for multiple motors. It is also used when the motor parameters are not clear or auto-tuning cannot be performed.

● AM SVC Control

- The current of the AC drive can be calculated through vector calculation, and divided into excitation current and torque current, to carry out frequency and voltage compensation, so that the motor current matching the load torque can flow to improve the low-speed torque. At the same time, the output frequency compensation (slip compensation) is implemented to make the actual rotation speed of the motor closer to the speed instruction value.
- This control mode is used for applications that require precise speed control and fast speed and torque response so that it can output high torque at low speeds. It is suitable for general high-performance control scenarios, with one AC drive for one motor.

● AM FVC Control

- This mode is used where high-precision speed control or torque control is required, and high-precision speed control is required even at zero speed.
- An encoder must be installed at the motor end, and the AC drive must be equipped with a PG card of the same type as the encoder, with one AC drive for one motor.

● PM V/F Control (PMV/F)

- When the frequency (F) is variable, the ratio of the control frequency to the voltage (V) remains constant.
- This control mode suits all variable speed control applications that do not require fast response and precise speed control. It is also used when the motor parameters are not clear or auto-tuning cannot be performed.

● PM SVC Control (PMSVC)

- By combining with PM (permanent magnet) motors, which are more efficient than induction motors, this method achieves high-precision speed control with enhanced efficiency. It estimates motor speed using the AC drive's output voltage and current, eliminating the need for speed sensors like PG. Additionally, it optimizes motor efficiency by minimizing current during load application.
- This control mode is used for applications that require precise speed control and torque limit.

● PM FVC Control (PMFVC)

- This control mode is used for applications requiring high-precision speed or torque control, including accurate control down to zero speed.
- An encoder must be installed at the motor end, and the AC drive must be equipped with a PG card of the same type as the encoder, with one AC drive for one motor.

● Voltage-frequency Split Control (V/F_SPLIT)

This control mode is used for applications where the output voltage and frequency are controlled separately.

Note:

- In order to obtain the best control, please input the correct motor parameters and perform motor auto-tuning. F02.0x are basic motor parameters.
- In SVC and FVC control mode, the AC drive can only drive only one motor. The drive's power rating should not differ significantly from the motor's rating: it may be up to two levels higher or one level lower than the motor. Exceeding this range may degrade control performance or prevent the drive system from operating properly.

Chapter 4 Installation and Wiring

4.1 Safety Precautions

This section explains the various precautions that must be followed to ensure safe use, maximized performance, and reliable operation of the AC drive.

Cautions on use of AC drive

 WARNING	When installing the AC drive in a closed cabinet, please configure a cooling fan or cooling air conditioner for full cooling. Make sure that the air inlet temperature of the drive is below 40°C to ensure safe and reliable operation.
 CAUTION	● During installation, please cover the upper part of the AC drive with cloth or paper to prevent metal chips, oil, water and other debris from falling inside during installation and drilling operations. Please remove such cover carefully after installation. ● Please follow the measures and methods specified in ESD prevention measures during operation on the AC drive, otherwise it may be damaged. ● If multiple AC drives are installed in a cabinet, be sure to reserve sufficient space on the upper part to facilitate the replacement of the cooling fan. ● Do not use the AC drive beyond the rated range, otherwise it may be damaged. ● When moving the AC drive, please hold on the fixed case. Holding only the front cover may cause the AC drive body to fall, creating a risk of personal injury or equipment damage.

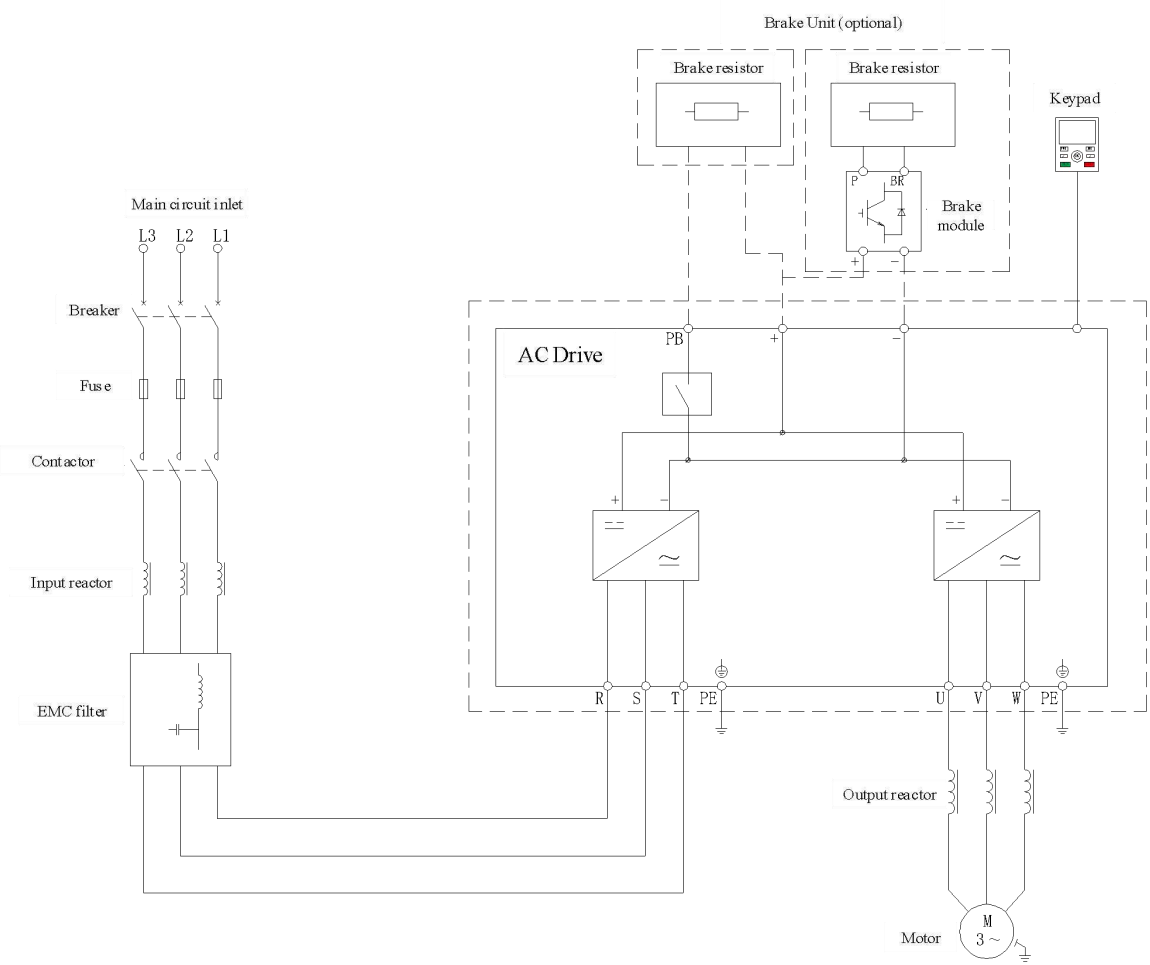
Cautions on use of motor

 CAUTION	● The max. allowable speed varies with motor models. Please do not exceed the max. allowable speed of the motor. ● At low speeds, the AC drive's motor self-cooling effect is significantly reduced, risking overheating damage. For prolonged low-speed use, employ a motor special for this AC drive. ● When a machine running at a constant speed is operated at a variable speed, resonance may occur. Please install anti-vibration rubber under the motor bracket or use the hopping frequency control function to avoid it. ● The torque characteristics of the motor driven by variable frequency and the industrial frequency are different. Please confirm the torque characteristics of the mechanical equipment to be connected. ● The rated current of the submersible motor is greater than that of the standard motor. Please confirm the rated current of the motor and select an appropriate AC drive. ● When the distance between the motor and the AC drive is large, the maximum torque of the motor will be reduced due to the voltage drop. Therefore, please use a cable thick enough for connecting over a long distance.

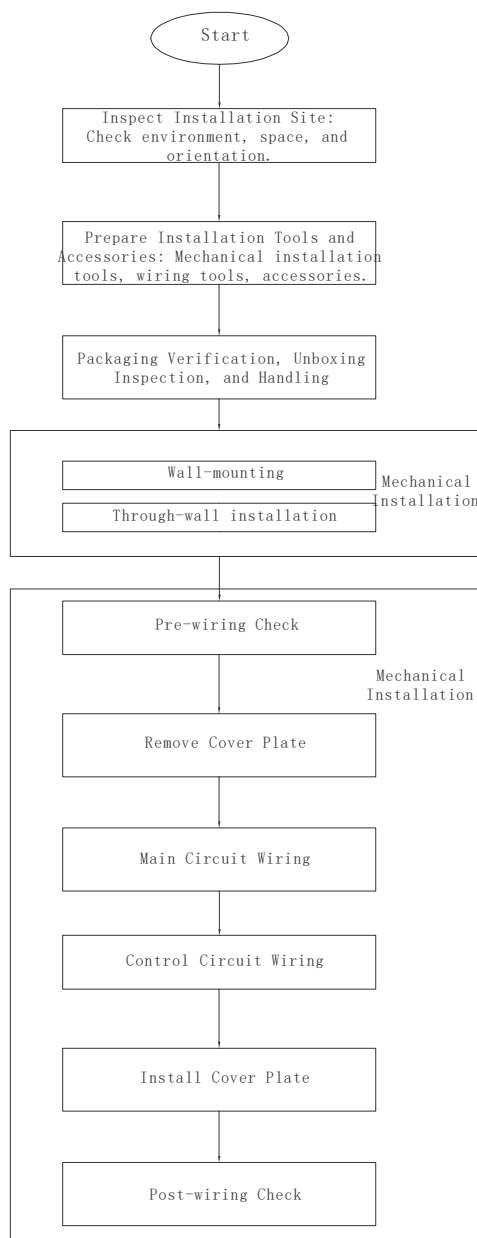
Cautions on grounding

 WARNING	Ignoring these precautions may result in personal injury and death, increased electromagnetic interference, and equipment damage. ● Always ground the drive, motor, and connected equipment to ensure safety and reduce electromagnetic emissions and interference. ● Ensure the grounding conductor size meets local safety standards. ● Ground (PE) each drive separately when installing multiple units. ● To suppress electromagnetic interference, EMC radiation must be minimized. Therefore, cables entering and exiting the cabinet need 360° high-frequency grounding. Additionally, connect cable shields to the ground (PE) for safety compliance. ● Disconnect the VAR EMC grounding screw in floating ground or high-impedance grounding systems (over 30ohms).
 CAUTION	● Ensure grounding resistance is less than or equal to 1ohm. ● When grounding multiple drives, directly ground each one; do not form loops or series connections with grounding wires. ● According to EN 61800-5-1, if the AC drive's rated touch current exceeds 3.5mA (AC) or 10mA (DC), one or more of the following measures must be applied: ■ The protective earth (PE) conductor shall have a cross-section of at least 10mm² (copper) or 16mm² (aluminum). ■ Automatic disconnection of the power supply in the event of a PE conductor interruption. ■ Provision of an additional terminal for connecting a second PE conductor with the same cross-section as the original.

4.2 System Connection Diagram



4.3 Installation Flowchart



4.4 Installation Environment

To ensure product reliability, install the AC drive in an environment without rapid temperature changes. When used inside enclosed spaces such as control cabinets, install cooling fans or air-conditioning to prevent internal temperature from exceeding the allowable limit. Avoid freezing conditions; excessively low temperatures may cause component failure due to frost.

● Ambient Temperature Derating (CE)

Model	Derating
IP20	1.5% current derating per 1°C increase between 40°C and 50°C
IP54	2.5% current derating per 1°C increase between 40°C and 50°C

● When ambient temperature exceeds the allowable range, apply derating as shown below:

IP20: In the temperature range of 40°C to 50°C, the rated output current must be derated by 1.5% for each 1°C increase.

The output current can be calculated by multiplying the rated value by the derating factor (k):

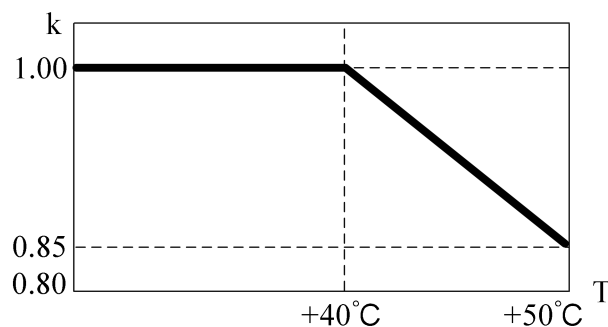


Figure 4-1 IP20 Temperature Derating Curve

IP54: In the temperature range of 40°C to 50°C, the rated output current must be derated by 2.5% for each 1°C increase.

The output current can be calculated by multiplying the rated value by the derating factor (k):

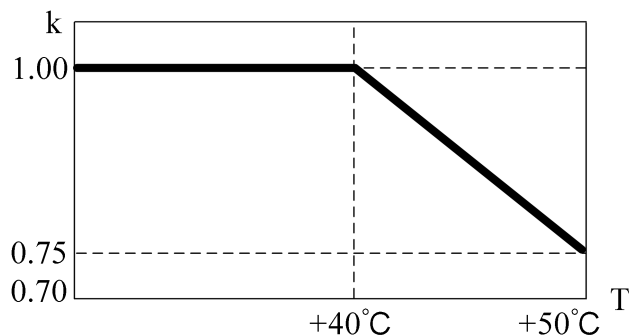


Figure 4-2 IP54 Temperature Derating Curve

● Ambient Temperature Derating (UL)

Model	Derating
Enclosed type/Open type	2.5% current derating per 1°C increase between 40°C and 50°C

● When ambient temperature exceeds the allowable range, apply derating as shown below:

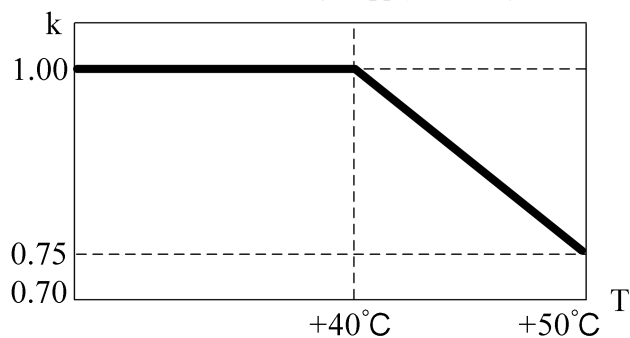


Figure 4-3 IP20/IP54 Temperature Derating Curve

● Apply derating according to the table when altitude exceeds the allowable limit:

Altitude	Grid				Derating
	Power supply voltage	TT/TN	IT	Corner Ground	
<1000m	200V~240V	yes	yes	yes	No derating
	380V~480V	yes	yes	yes	
1000m~2000m	200V~240V	yes	yes	yes	1% current derating per 100m rise
	380V~480V	yes	yes	yes	
2000m~3000m	200V~240V	yes	yes	yes	1% current derating per 100m

	380V~480V	yes	yes	no	
3000m~3800m	200V~240V	yes	yes	yes	1% current derating per 100m rise
	380V~480V	yes	yes	no	
3800m~4800m	200V~240V	yes	yes	yes	1% current derating per 100m rise
	380V~480V	yes	no	No	

Note: For IT (ungrounded) or corner-grounded TN systems, disconnect the EMC filter or MOV grounding connection before connecting the AC drive to the power grid.

- When input voltage exceeds the allowable range, apply derating as shown below:

Model	Three-phase AC 400V drive
Input voltage	380VAC~480VAC (tolerance: -15% to +10%), 47Hz to 63Hz Current derating at high input voltage: Output current is derated by 20% for every 100V increase in input voltage.
	When the ambient temperature is $\geq 40^{\circ}\text{C}$, apply temperature derating only; voltage derating does not apply.

Heat Dissipation Power/Cooling Airflow

Table 4-1 Heat Dissipation Power and Recommended Cooling Airflow

Model	Power (kW)	Cooling Airflow (m ³ /h)
AC600-T/S2-R75G-*	0.024	60
AC600-T/S2-1R5G-*	0.047	60
AC600-T/S2-2R2G-*	0.071	60
AC600-T/S2-004G-*	0.123	60
AC600-T/S2-5R5G-*	0.175	60
AC600-T/S2-7R5G-*	0.230	60
AC600-T/S2-011G-*	0.360	85
AC600-T/S2-015G-*	0.465	85
AC600-T2-018G-*	0.480	85
AC600-T2-022G-*	0.565	85
AC600-T2-030G-*	0.700	145
AC600-T2-037G-*	0.830	145
AC600-T2-045G-*	1.150	145
AC600-T2-055G-*	1.350	145

AC600-T4-R75G/1R5P-*	0.051	60
AC600-T4-1R5G/2R2P-*	0.046	60
AC600-T4-2R2G/004P-*	0.093	60
AC600-T4-004G/5R5P-*	0.177	60
AC600-T4-5R5G/7R5P-*	0.246	60
AC600-T4-7R5G/011P-*	0.300	85
AC600-T4-011G/015P-*	0.346	85
AC600-T4-015G/018P-*	0.510	145
AC600-T4-018G/022P-*	0.475	145
AC600-T4-022G/030P-*	0.730	145
AC600-T4-030G/037P-*	0.600	220
AC600-T4-037G/045P-*	0.800	220
AC600-T4-045G/055P-*	1.150	300
AC600-T4-055G/075P-*	1.726	300
AC600-T4-075G/090P-*	2.600	300
AC600-T4-090G/110P-*	1.850	450
AC600-T4-110G/132P-*	2.260	450
AC600-T4-132G/160P-*	2.904	700
AC600-T4-160G/185P-*	4.010	700
AC600-T4-185G/200P-*	4.070	1100
AC600-T4-200G/220P-*	4.400	1100
AC600-T4-220G/250P-*	4.840	1100
AC600-T4-250G/280P-*	5.500	1200
AC600-T4-280G/315P-*	5.600	1200
AC600-T4-315G/355P-*	6.300	1300
AC600-T4-355G/400P-*	7.100	1300
AC600-T4-400G/450P-*	7.200	1300
AC600-T4-450G/500P-*	8.100	2200
AC600-T4-500G/560P-*	9.000	2200
AC600-T4-560G/630P-*	9.520	2200

4.5 Handling and Packaging Inspection

4.5.1 Storage

- Store the equipment in a clean, dry area with a temperature range of -30°C to $+60^{\circ}\text{C}$, with temperature change $<1^{\circ}\text{C}/\text{min}$.
- For long-term storage, cover the unit or take appropriate measures to prevent contamination or environmental impact.
- Whenever possible, store the unit in its original packaging.
- Do not store the AC drive for long periods in humid, high-temperature, or direct outdoor sunlight environments.
- Long-term storage may cause deterioration of electrolytic capacitors. Power the AC drive at least once every 6

months for at least 5 hours. The input voltage must be raised slowly to the rated value using a voltage regulator, or consult VEICHI technical support.

4.5.2 Handling Before Unpacking

Models V1~V11

Handling notes for V1~V11 models:

- V1~V4 models: Small and lightweight, suitable for manual handling.
- V5~V11 models: Heavy units, must use appropriate lifting equipment.
- When using a forklift, fix the equipment to a wooden pallet. When using a crane, lift the equipment together with the pallet, as shown in the figure.

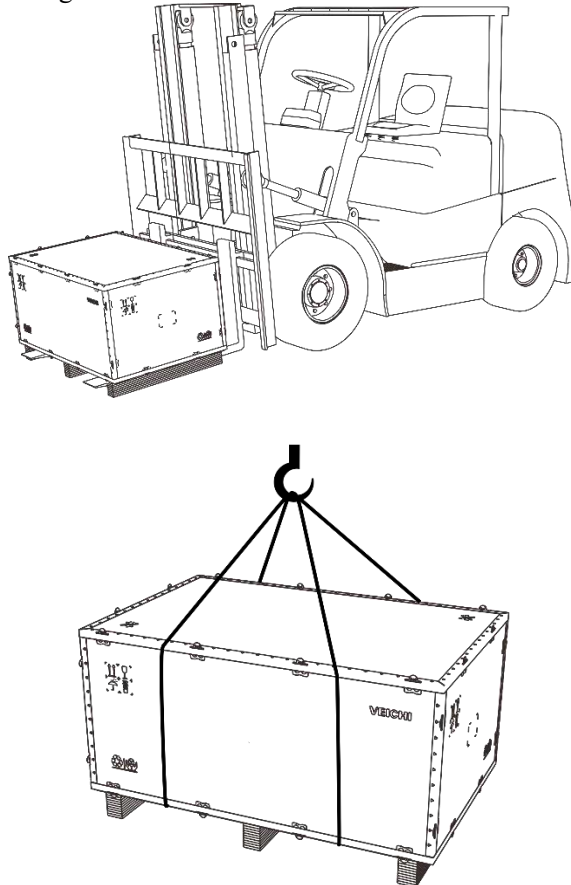


Figure 4-4 Equipment Lifting Diagram

- For V10~V11 models, the equipment is heavy with a high center of gravity. Do not place the unit on a slope exceeding 5°. The installation site must be level, firm, and capable of supporting the equipment weight.
- Transport the equipment only in the upright position as indicated on the packaging. Do not invert or lay the equipment flat.

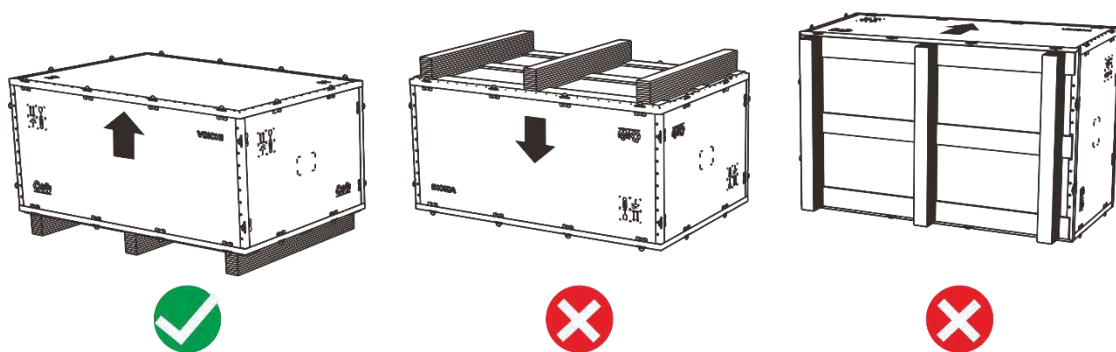
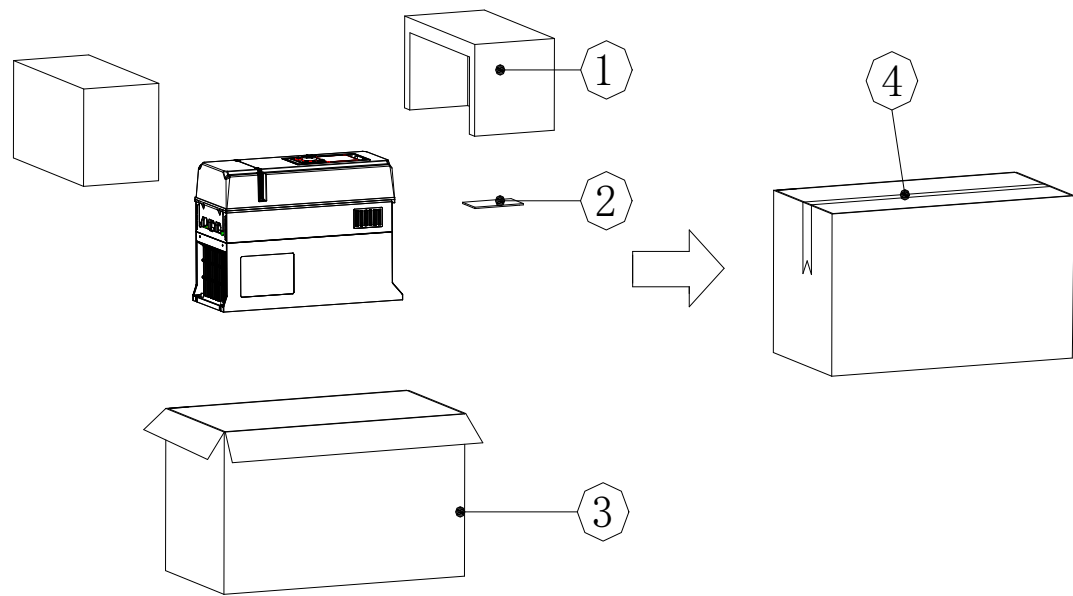


Figure 4-5 Equipment Placement Diagram

4.5.3 Packaging Checklist

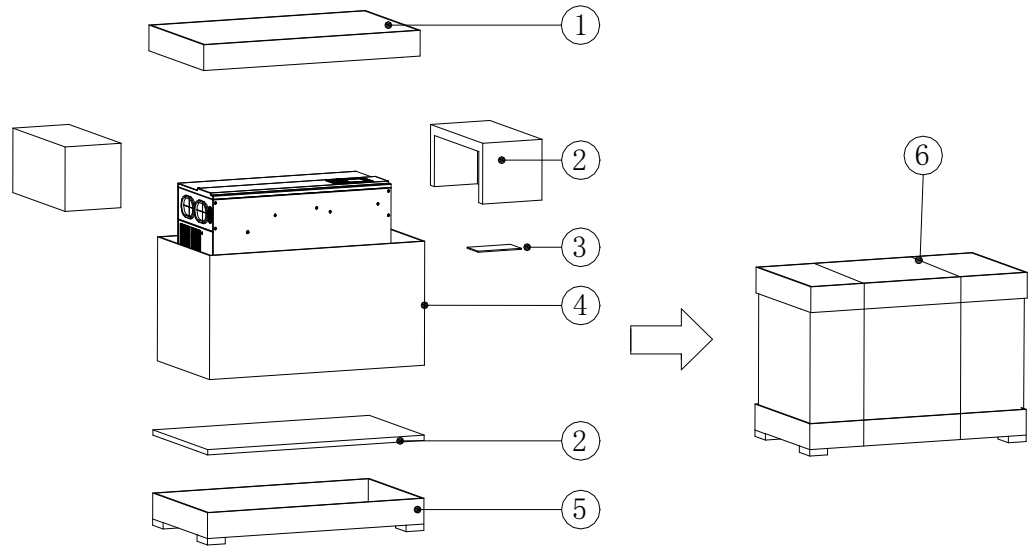
Packaging List for V1~V5 Models



No.	Name
①	Padding block
②	User manual
③	Carton box
④	Packing strap

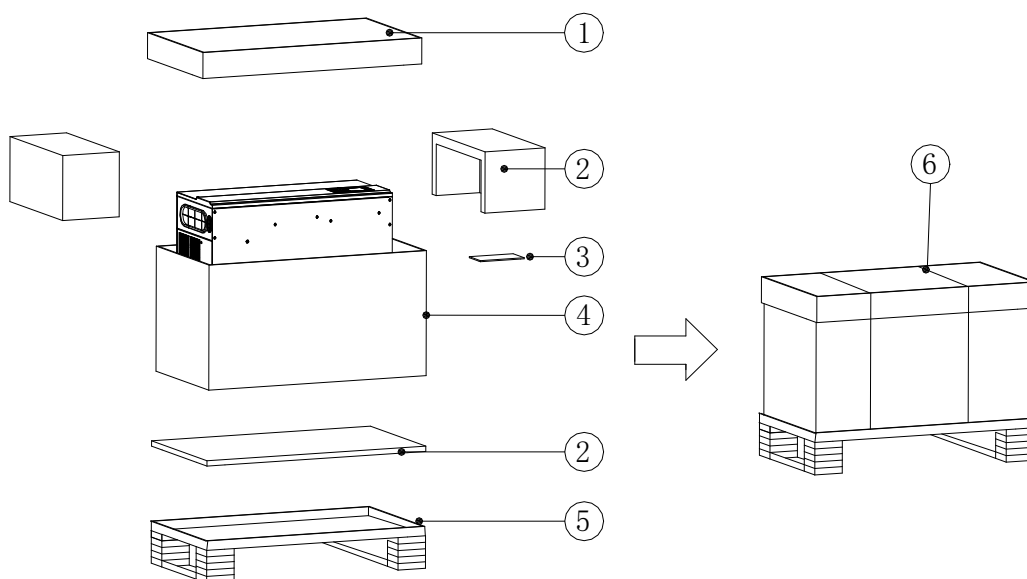
Packaging List for V6~V11 Models

- V6 models use carton packaging.
Components include:



No.	Name
①	Carton top cover
②	Padding block
③	User manual
④	Carton box
⑤	Carton base
⑥	Packing strap

- V7~V11 models use carton packaging with a plywood pallet. Components include:



No.	Name
①	Carton top cover
②	Padding block
③	User manual
④	Carton box
⑤	Wooden pallet
⑥	Packing strap

4.5.4 Handling and Lifting After Unpacking

V1~V3 models: Small and lightweight, suitable for manual handling.

V4~V11 models: Heavy units, must use appropriate lifting equipment.

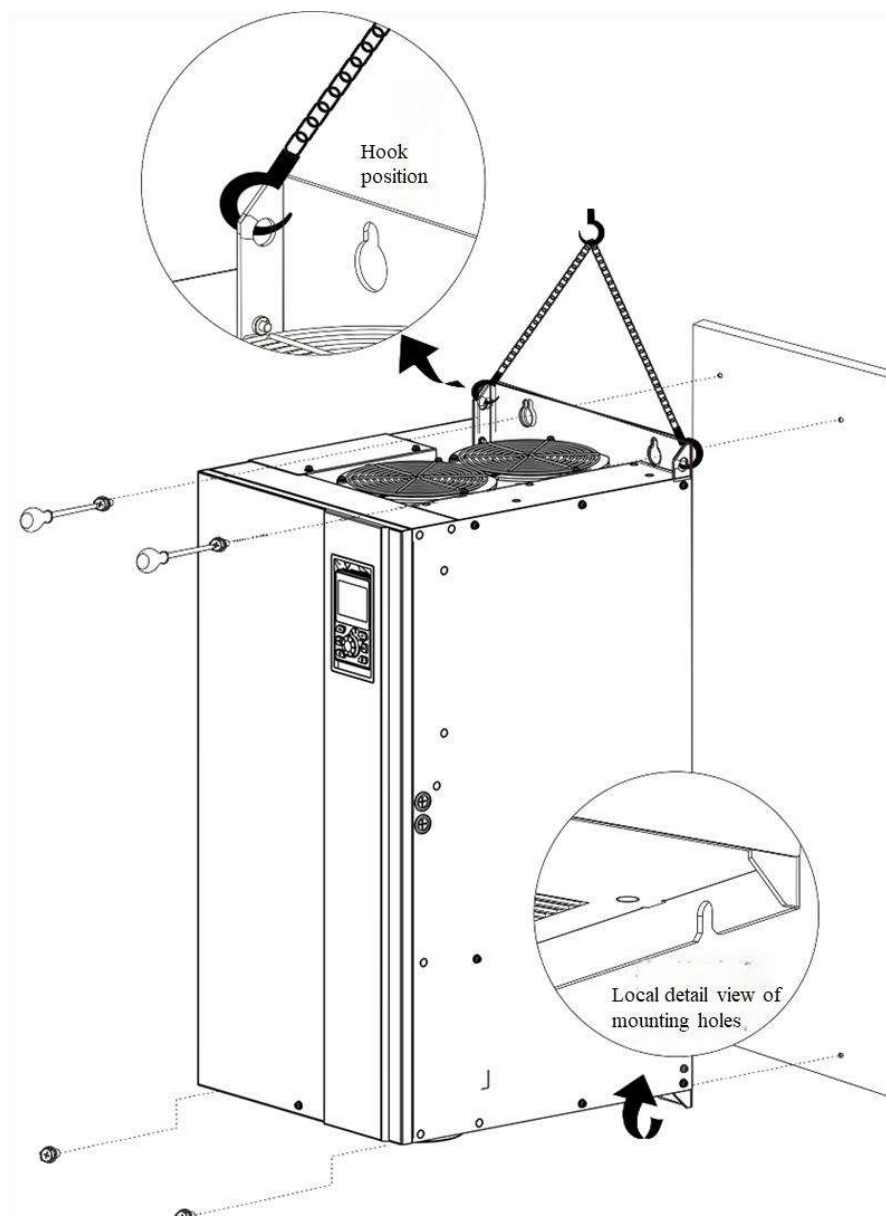
Weight	Required Personnel
<15kg	1 person
≥15kg	2 or more persons with suitable lifting device

Handling and Lifting Precautions:

- Follow local regulations when handling the equipment.
- Do not lift the AC drive by the top cover or outer casing. Ensure all screws are tightened before lifting to prevent the unit from falling.
- For V4~V11 models, ensure the four wall-mounting holes on the back are securely fastened to the mounting beam.
- The equipment must be placed upright before lifting, as it is shipped lying flat.
- When using a crane, ensure lifting capacity exceeds the AC drive weight.
- Before vertical lifting, ensure all components (top cover, terminals, etc.) are securely fastened with screws to prevent accidents.
- Avoid excessive vibration or impact when lifting.
- Do not allow the AC drive to rotate or remain suspended for long periods during lifting.

Lifting Steps for V4~V11 Models:

1. Hook the lifting ropes to the two auxiliary lifting rings on top of the equipment. Use a lifting angle of $\geq 45^\circ$, and keep lift height $\leq 0.3\text{m}$.



2. Slowly raise the equipment with the crane. Confirm the ropes are taut before lifting.
3. Slowly lower the equipment, pause at intermediate height, then continue to the floor or mounting surface.
4. Install the AC drive into the control cabinet.

4.6 Mechanical Installation

4.6.1 Installation Method

All models (V1~V11) support wall-mounted installation. Some models (V1~V5) also support through-wall installation.

Through-wall installation is suitable for:

- “Isolated” scenarios with significant environmental differences (primary application)
- “Compact layout” scenarios with extremely limited space
- Safety scenarios requiring “physical isolation”
- Scenarios requiring “concealed installation” for aesthetics or compliance

4.6.2 Mechanical Installation Tools

The required installation tools are as follows:

Table 4-2 Mechanical Installation Tools

Tool	Description
Electric drill with suitable bits	Drill mounting holes on the installation surface
Nut wrench or socket wrench	Tighten or loosen screws during installation
Phillips and flathead screwdrivers	Tighten or loosen screws during installation

Torque wrench	Tighten or loosen screws during installation
Pry bar	Open the cover or top plate for installation
Hoist	Lift the equipment during installation
Tape measure	Measure installation dimensions
Gloves	Wear gloves to prevent static during installation
Screw	Fix the equipment to the installation surface

Recommended screw specifications and torque by model:

Size	Qty & Spec.	Torque (N·m)
V1	4×M4 combined screws	1.2
V2	4×M5 combined screws	2.8
V3	4×M6 combined screws	3.2
V4	4×M6 combined screws	3.2
V5	4×M8 combined screws	15
V6	4×M8 combined screws	15
V7	4×M8 combined screws	15
V8	4×M16 combined screws	130
V9	4×M16 combined screws	130
V10	4×M16 combined screws	130
V11	4×M16 combined screws	130

4.6.3 Installation Direction and Space

- **Direction**
Be sure to install the AC drive vertically to avoid reducing the cooling effect.
- **Space**
To ensure the ventilation space and wiring space required for cooling, please install the AC drive with its back closely attached to the wall to make the cooling air around the cooling fan flow smoothly.

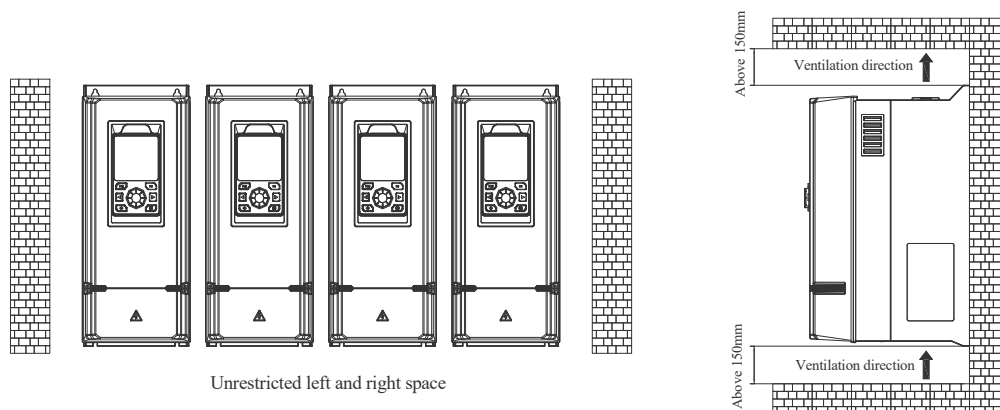


Figure 4-6 Installation Space for V1~V3

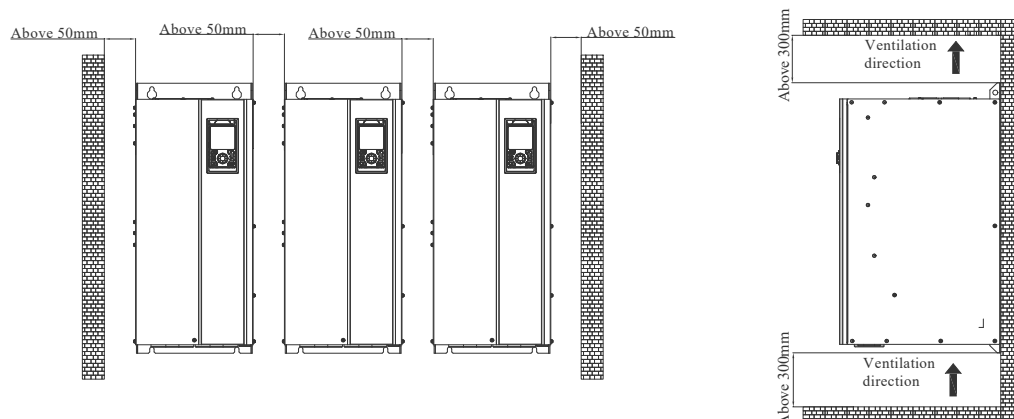


Figure 4-7 Installation Space for V4~V11

4.6.4 Outer Dimension

The dimensions and model illustrations in this section refer to standard models. For optional or variant models, refer to the product naming.

IP20 Overall Dimensions

● V1~V3 (Plastic)

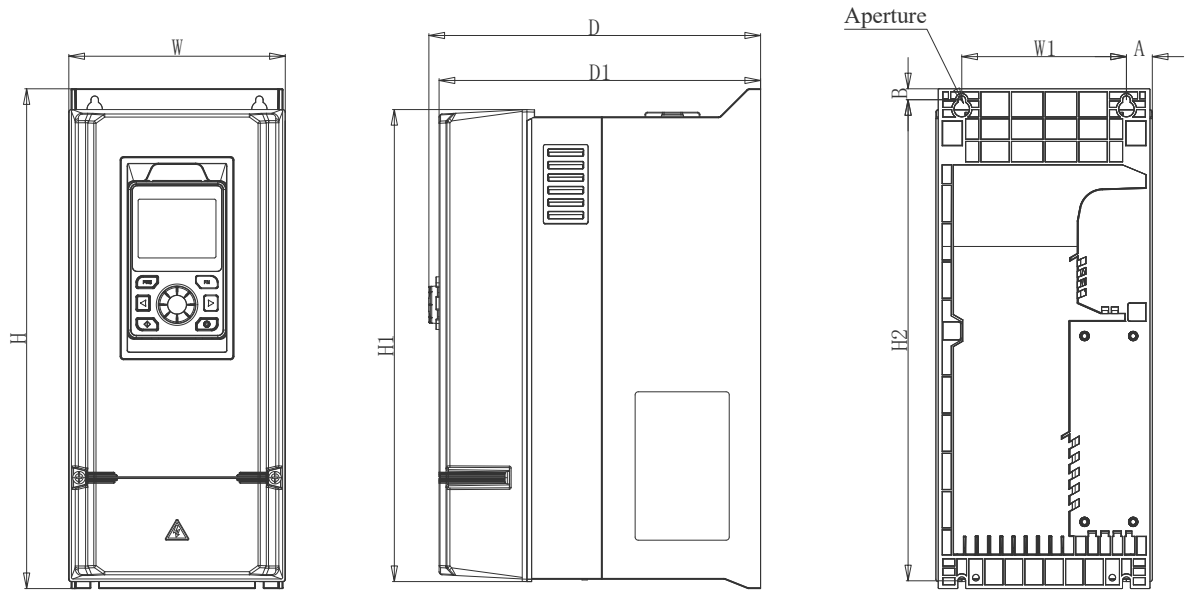


Figure 4-8 V1~V3 Overall Dimensions and Hole Size

Table 4-3 V1~V3 Overall Dimensions and Hole Size

Size	Model	Outer Dimension (mm)					Hole Position (mm)				Net Weight (kg)	Aperture (mm)
		W	H	H1	D	D1	W1	H2	A	B		
V1	AC600-T4-R75G/1R5P-*	138	320	302.2	211.5	205	105	308	16.5	7	5.6	4-M4
	AC600-T4-1R5G/2R2P-*											
	AC600-T4-2R2G/004P-*											
	AC600-T4-004G/5R5P-*											
	AC600-T4-5R5G/7R5P-*											
V2	AC600-T4-7R5G/011P-*	155	348	328.2	211.5	205	115	336	20	7	5.8	4-M5
	AC600-T4-011G/015P-*											
	AC600-T4-015G/018P-*											
V3	AC600-T4-018G/022P-*	190	455	435.2	236.5	230	155	443.5	17.5	6.5	10.4	4-M6
	AC600-T4-022G/030P-*											

● V4~V5 (Semi-Plastic/Semi-Metal)

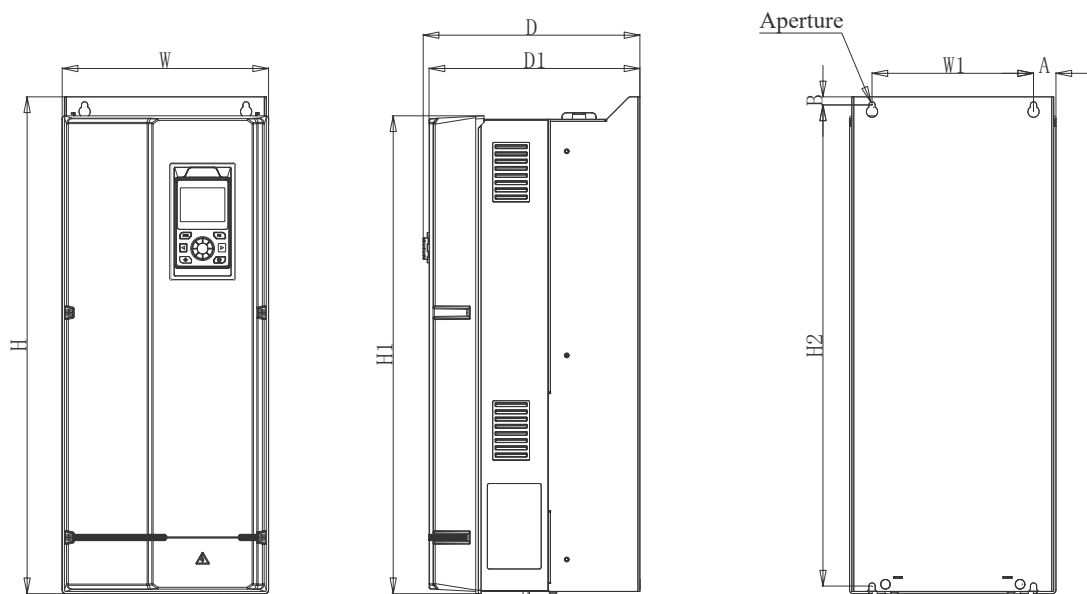


Figure 4-9 V4~V5 Overall Dimensions and Hole Size

Table 4-4 V4~V5 Overall Dimensions and Hole Size

Size	Model	Outer Dimension (mm)					Hole Position (mm)				Net Weight (kg)	Aperture (mm)
		W	H	H1	D	D1	W1	H2	A	B		
V4	AC600-T4-030G/037P-*	230	552.5	531.5	241.5	235	180	535	25	9	19.8	4-M6
	AC600-T4-037G/045P-*											
V5	AC600-T4-045G/055P-*	265	631.5	606.3	280.5	274	190	613	37.5	9	29.8	4-M8
	AC600-T4-075G/090P-*											

● V6~V11 (Metal)

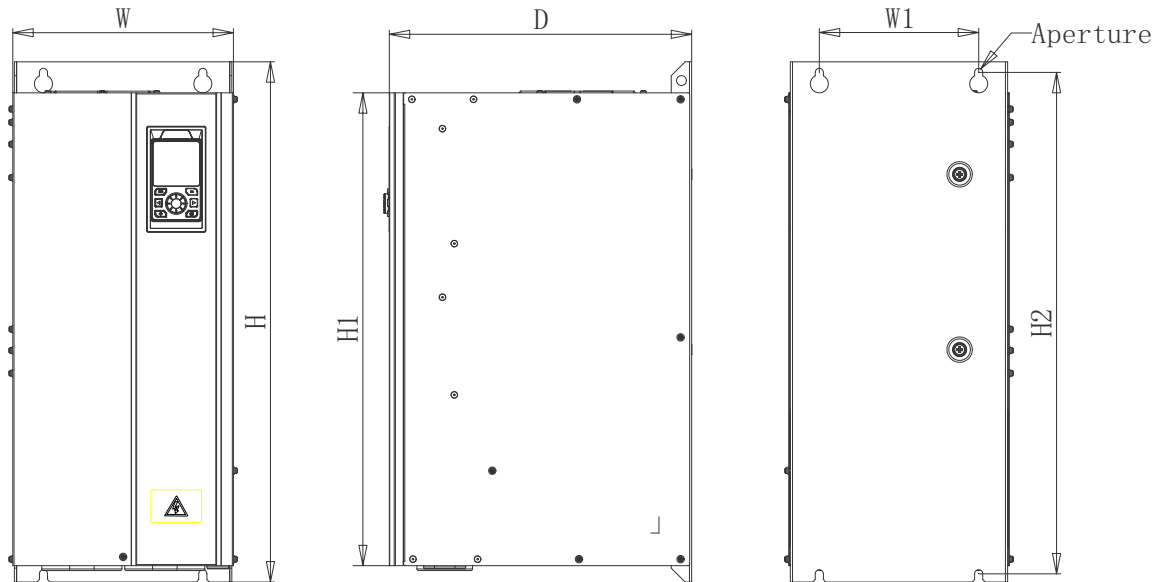


Figure 4-10 V6~V11 Overall Dimensions and Hole Size

Table 4-5 V6~V11 Overall Dimensions and Hole Size

Size	Model	Outer Dimension (mm)				Hole Position (mm)		Net Weight (kg)	Aperture (mm)
		W	H	H1	D	W1	H2		
V6	AC600-T4-090G/110P-*	270	658	600	370	195	635	35	4-M8
	AC600-T4-110G/132P-*								
V7	AC600-T4-132G/160P-*	350	738	680	410	220	715	66.5	4-M8
	AC600-T4-160G/185P-*								
V8	AC600-T4-185G/200P-*	360	940	850	486	200	910	97	4-M16
	AC600-T4-200G/220P-*								
	AC600-T4-220G/250P-*								
V9	AC600-T4-250G/280P-*	370	1140	1050	560	200	1110	126.5	4-M16
	AC600-T4-280G/315P-*								
V10	AC600-T4-315G/355P-*	400	1250	1140	568	240	1213	167	4-M16
	AC600-T4-355G/400P-*								
	AC600-T4-400G/450P-*								
V11	AC600-T4-450G/500P-*	463	1400	1293	590	300	1363	235	4-M16
	AC600-T4-500G/560P-*								
	AC600-T4-560G/630P-*								

Note: For T4 power supply, only 0.75kW~37kW frame products support EMC C2 built-in options.

IP54 Overall Dimensions

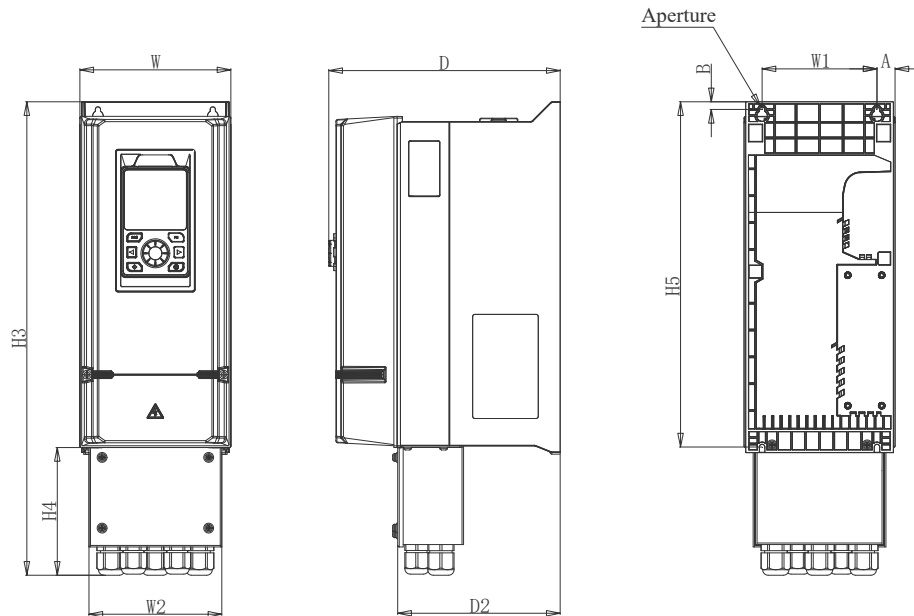


Figure 4-11 V1~V3 Junction Box Overall Dimensions

Table 4-6 V1~V3 Overall Dimensions and Hole Size

Size	Model	Outer Dimension (mm)					Hole Position (mm)					Aperture (mm)
		W	H3	H4	D	D2	W1	W2	H5	A	B	
V1	AC600-T4-R75G/1R5P-*V*	138	434	118.5	211.5	148.5	105	122	308	16.5	7	4-M4
	AC600-T4-1R5G/2R2P-*V*											
	AC600-T4-2R2G/004P-*V*											
	AC600-T4-004G/5R5P-*V*											
	AC600-T4-5R5G/7R5P-*V*											
V2	AC600-T4-7R5G/011P-*V*	155	467	123.5	211.5	148.5	115	138	336	20	7	4-M5
	AC600-T4-011G/015P-*V*											
V3	AC600-T4-015G/018P-*V*	190	584	133.5	236.5	174.5	155	173	443.5	17.5	6.5	4-M6
	AC600-T4-018G/022P-*V*											
	AC600-T4-022G/030P-*V*											

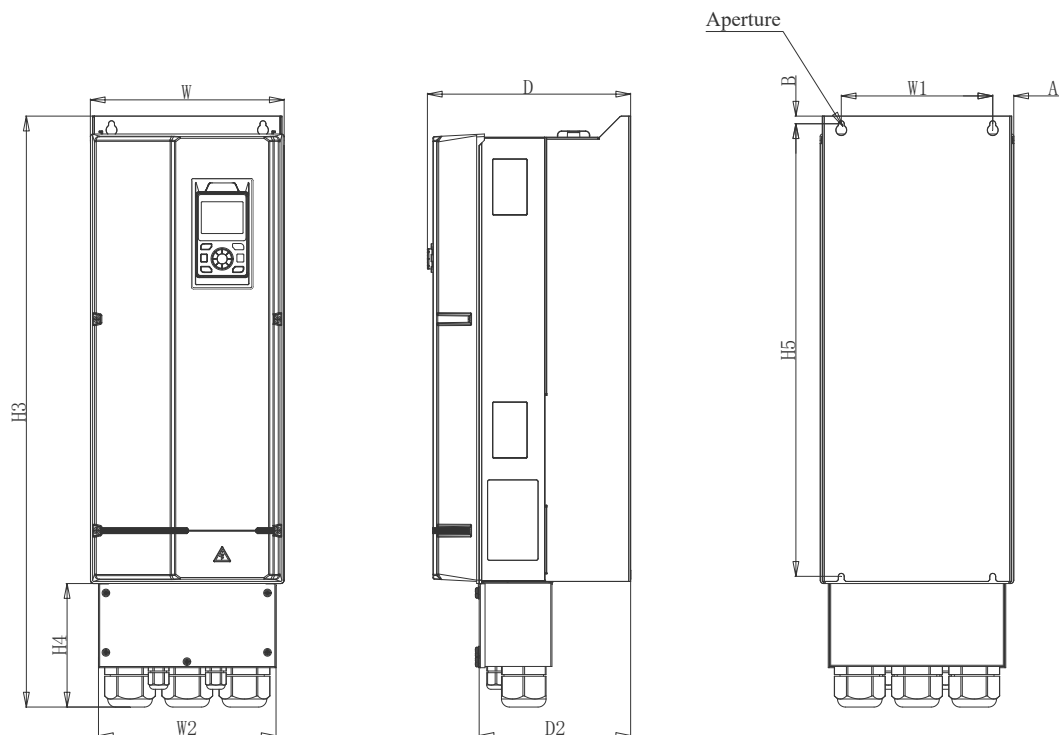


Figure 4-12 V4~V5 Junction Box Overall Dimensions

Table 4-7 V4~V5 Junction Box Overall Dimensions

Size	Model	Outer Dimension (mm)						Hole Position (mm)				Aperture (mm)
		W	W2	H3	H4	D	D2	W1	H5	A	B	
V4	AC600-T4-030G/037P-* V*	230	212	698	145.5	241.5	180	180	535	25	9	4-M6
	AC600-T4-037G/045P-* V*											
V5	AC600-T4-045G/055P-* V*	265	247	798	166.5	280.5	229	190	613	37.5	9.5	4-M8
	AC600-T4-055G/075P-* V*											
	AC600-T4-075G/090P-* V*											

Note: For T4 power supply, only 0.75kW~75kW frame products support IP54 protection.

Wall-through drive installation dimensions

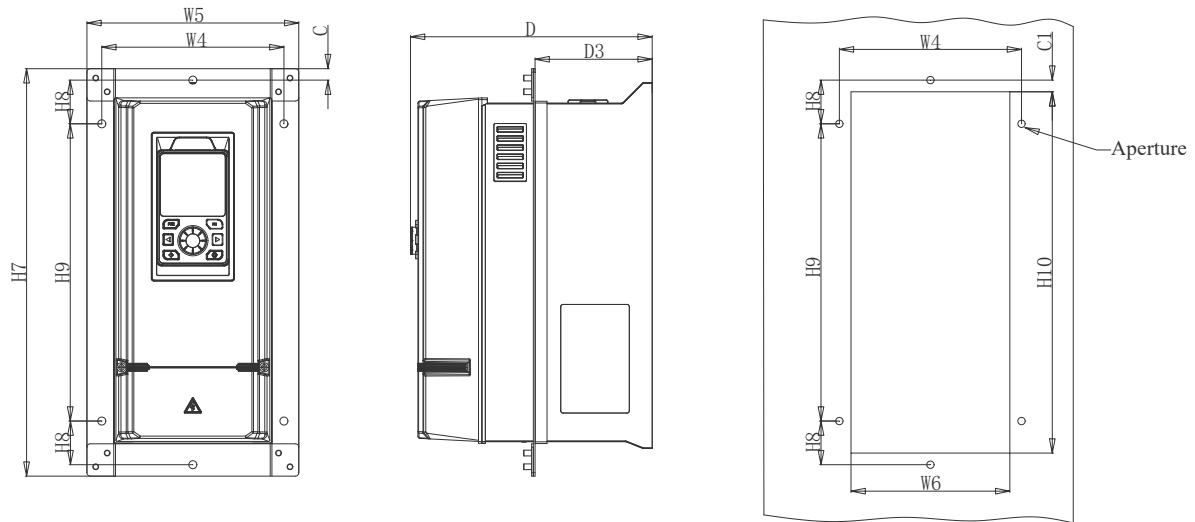


Figure 4-13 V1~V3 Wall-through Drive Installation Dimensions

Table 4-8 V1~V3 Wall-through Drive Installation Dimensions

Size	Model	Outer Dimension (mm)					Hole Position (mm)						Aperture (mm)
		W5	H7	D	D3	C	W4	W6	H8	H9	H10	C1	
V1	AC600-T4-R75G/1R5P-*	185.4	356.4	211.5	102.5	10	159.4	139	38.2	260	316	10.2	6-M4
	AC600-T4-1R5G/2R2P-*												
	AC600-T4-2R2G/004P-*												
	AC600-T4-004G/5R5P-*												
	AC600-T4-5R5G/7R5P-*												
V2	AC600-T4-7R5G/011P-*	202.4	382.4	211.5	103.5	10	176.4	156	51.2	260	342	10.2	6-M5
	AC600-T4-011G/015P-*												
V3	AC600-T4-015G/018P-*	237.4	489.4	237.5	107.5	10	211.4	193	104.7	260	449	10.2	6-M5
	AC600-T4-018G/022P-*												
	AC600-T4-022G/030P-*												

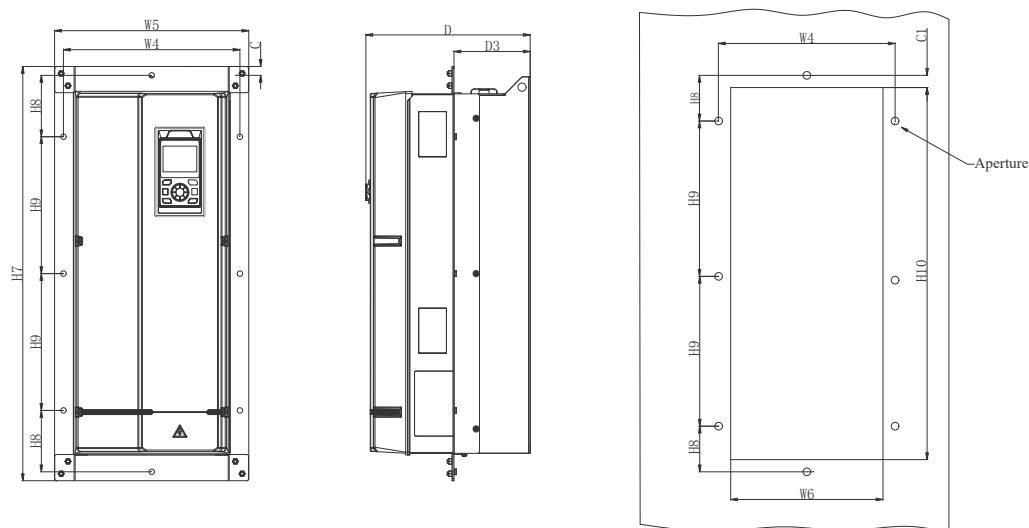


Figure 4-14 V4~V5 Wall-through Drive Installation Dimensions

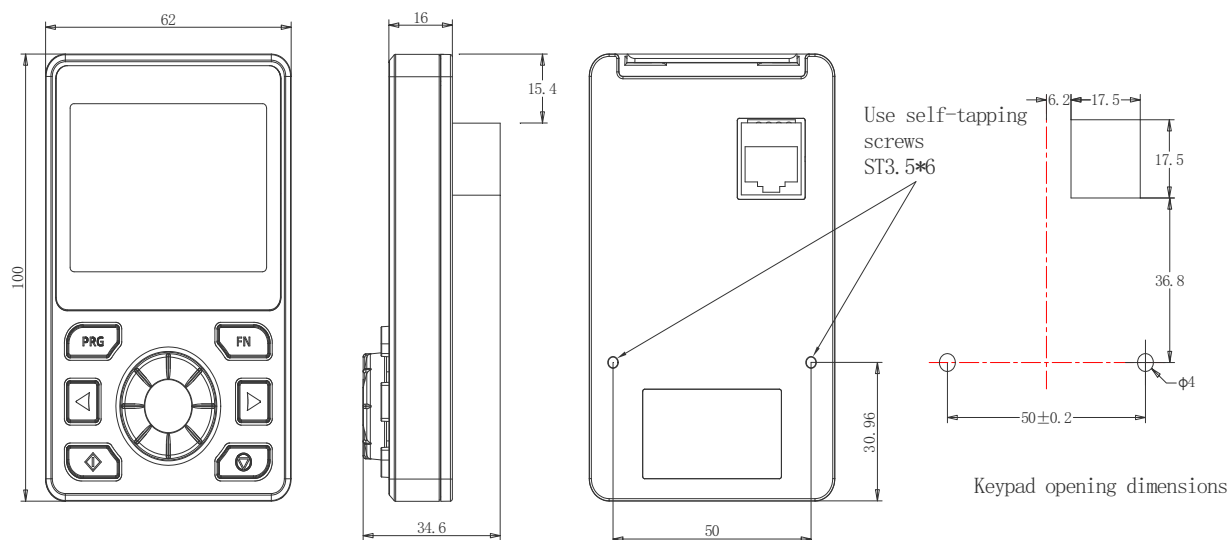
Table 4-9 V4~V5 Wall-through Drive Installation Dimensions

Size	Model	Outer Dimension (mm)					Hole Position (mm)						Aperture (mm)
		W5	H7	D	D3	C	W4	W6	H8	H9	H10	C1	
V4	AC600-T4-030G /037P-*	285.4	605.4	241.5	112	13	259.4	245	89.7	200	559	10.2	8-M5
	AC600-T4-037G /045P-*												
V5	AC600-T4-045G /055P-*	326.4	690.4	280.5	117	13	300.4	283	107.2	225	644	10.2	8-M6
	AC600-T4-055G /075P-*												
	AC600-T4-075G /090P-*												

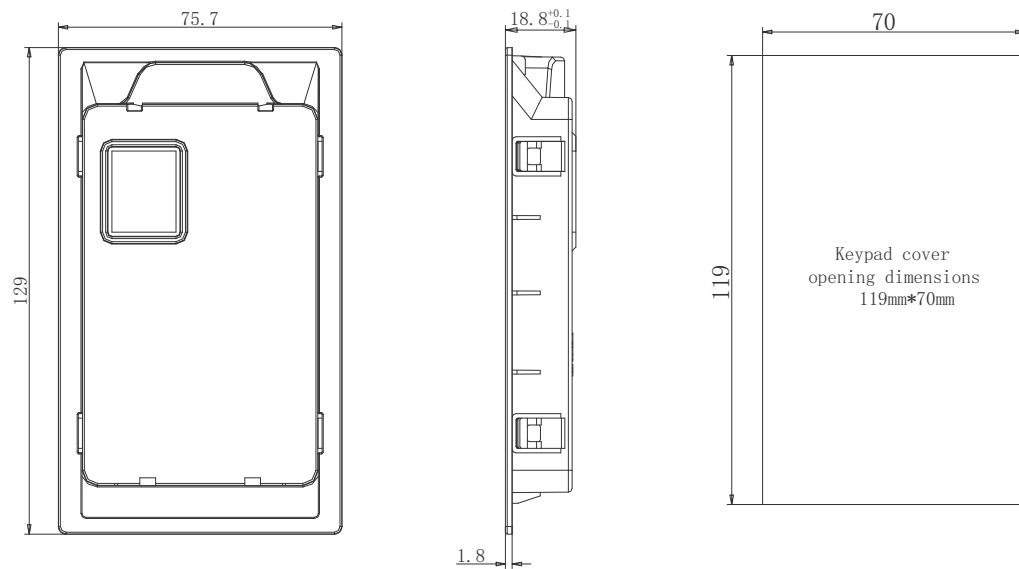
Note: For T4 power supply, only 0.75kW~75kW frame products support through-wall installation.

Keypad and Opening Dimensions

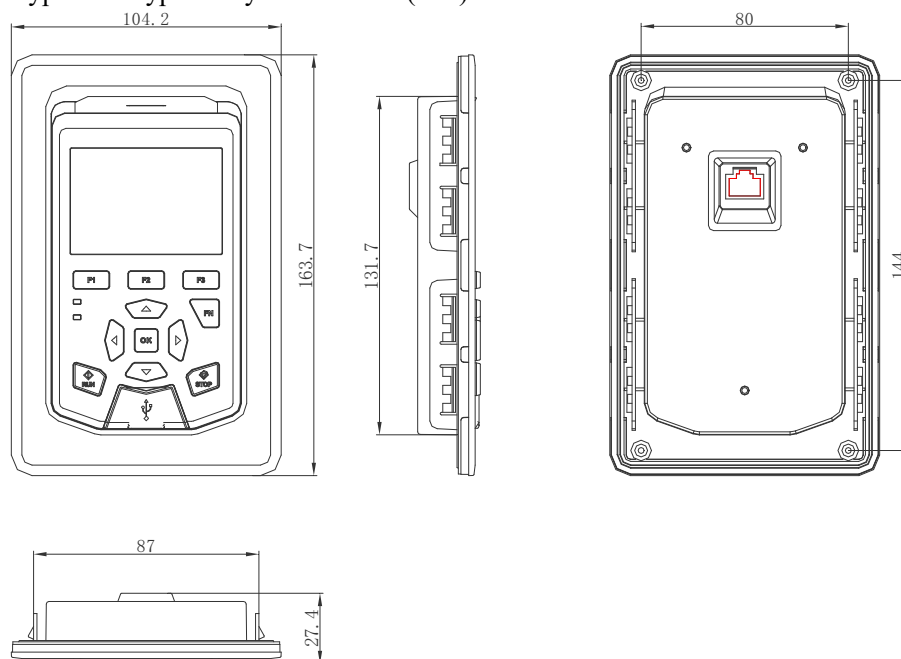
- KBD600-25 and KBD600-L1 Keypad and Opening Dimensions (mm)



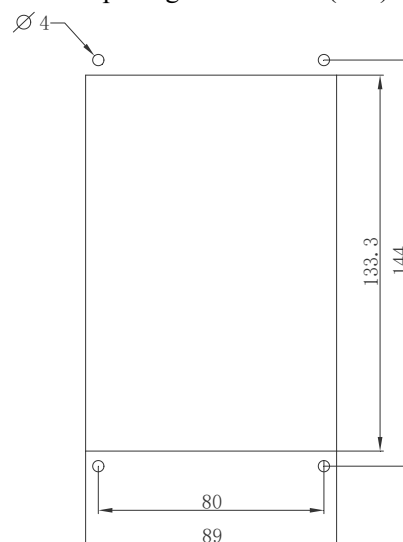
- KBD600-25 and KBD600-L1 keypad Pocket and Opening Dimensions (mm)



- IOP-10-800 Keypad + Keypad Tray Dimensions (mm)



- IOP-10-800 Keypad + Tray Cabinet Door Opening Dimensions (mm)



4.6.5 Model Installation

Wall-Mounted Installation

When performing wall-mounted installation, all four mounting screws must be secured. Do not secure only the top two screws, as uneven load may cause parts to detach or be damaged during long-term operation.

- **V1~V3 (Plastic)**

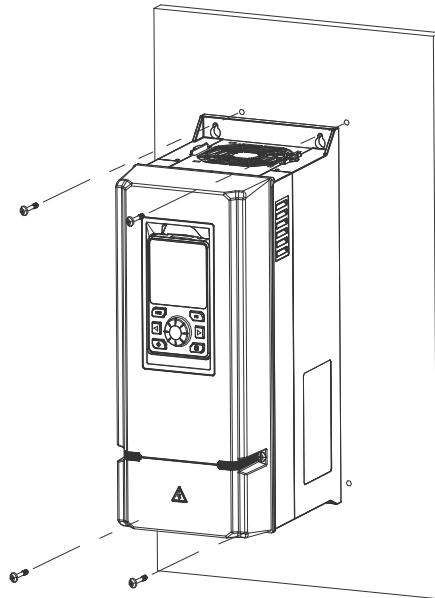


Figure 4-15 V1~V3 Wall-mounted Installation

- **V4~V5 (Semi-Plastic/Semi-Metal)**

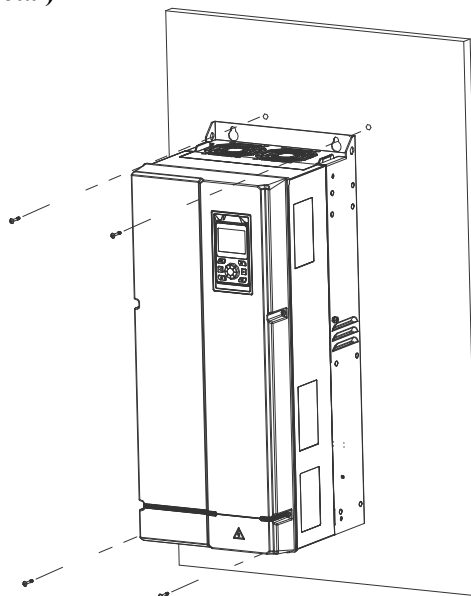


Figure 4-16 V4~V5 Wall-mounted Installation

- V6~V11 (Metal)

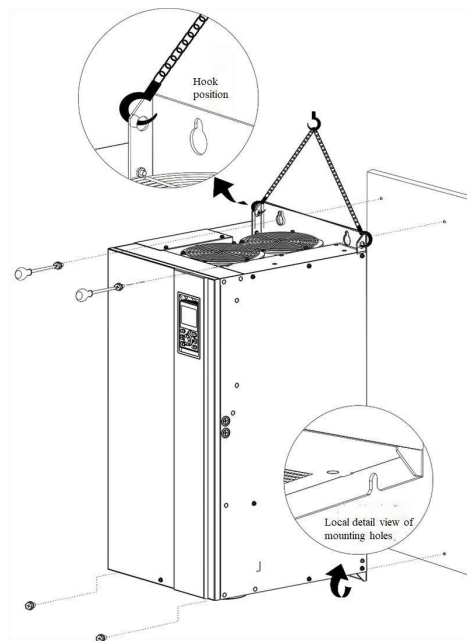
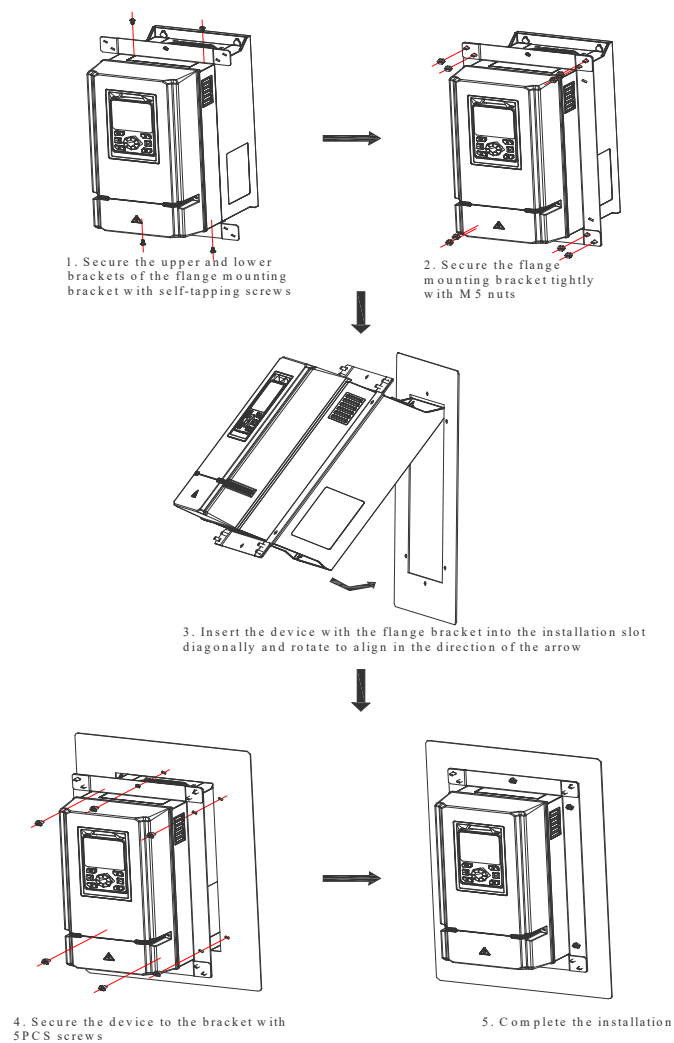


Figure 4-17 V6~V11 Wall-mounted Installation

Through-Wall Installation

- V1~V5



4.7 Electrical Installation

4.7.1 Pre-installation Inspection

Check assembly insulation

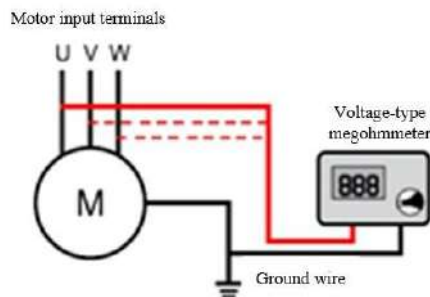
Warning: Do not perform any high-voltage or insulation resistance tests on the AC drive, as this may damage it. Each AC drive is factory-tested for insulation between the main circuit and the enclosure.

Check motor and motor-cable insulation

Before initial use, after long-term storage, and during periodic inspections, verify motor insulation to prevent drive damage due to motor winding failure. Follow these steps to check the motor and motor-cable insulation:

1. Ensure motor cables are disconnected from the drive unit output terminals U, V, W.
2. Measure the insulation resistance between each phase and protective earth with a 500VDC insulation tester (megger). The motor insulation resistance shall be no less than $5M\Omega$. (For motor insulation requirements, refer to the motor manufacturer's instructions.)

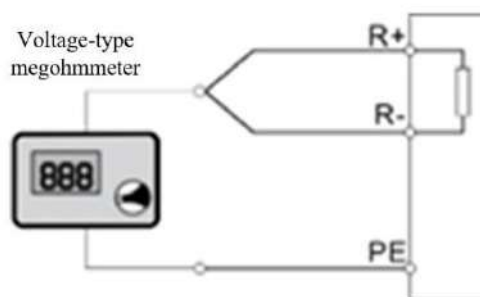
Note: Moisture inside the motor housing reduces insulation resistance. If moisture is present, dry the motor and measure again.



Check insulation of the braking resistor unit

Follow these steps to check the insulation of the braking resistor unit (if installed):

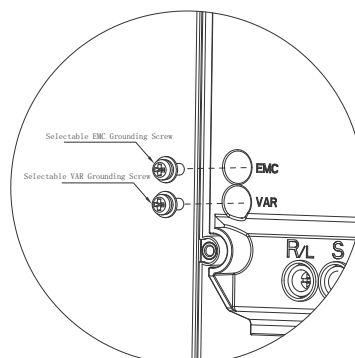
1. Ensure cables are connected to the resistor and disconnected from drive terminals PB and +.
2. Measure the insulation resistance between the resistor-terminal cables and protective earth with a 500VDC insulation tester (megger). The insulation resistance shall be no less than $1M\Omega$.



Check compatibility with IT and corner-grounded TN systems

The product's built-in EMC filters are not suitable for IT (floating) systems or corner-grounded TN systems. Before connecting the drive to the network in these systems, disconnect the EMC filter or MOV connection to earth. When used in IT systems, an external IMD insulation device is required at the front end.

If a residual-current device trips during startup, remove the EMC safety capacitor connection to earth.



⚠ WARNING

- Do not install the drive with built-in EMC filter in an IT system; the system may connect to earth through the EMC filter, causing danger or drive damage.
- Do not install the drive with built-in EMC filter in a corner-grounded TN system; this may damage the drive.

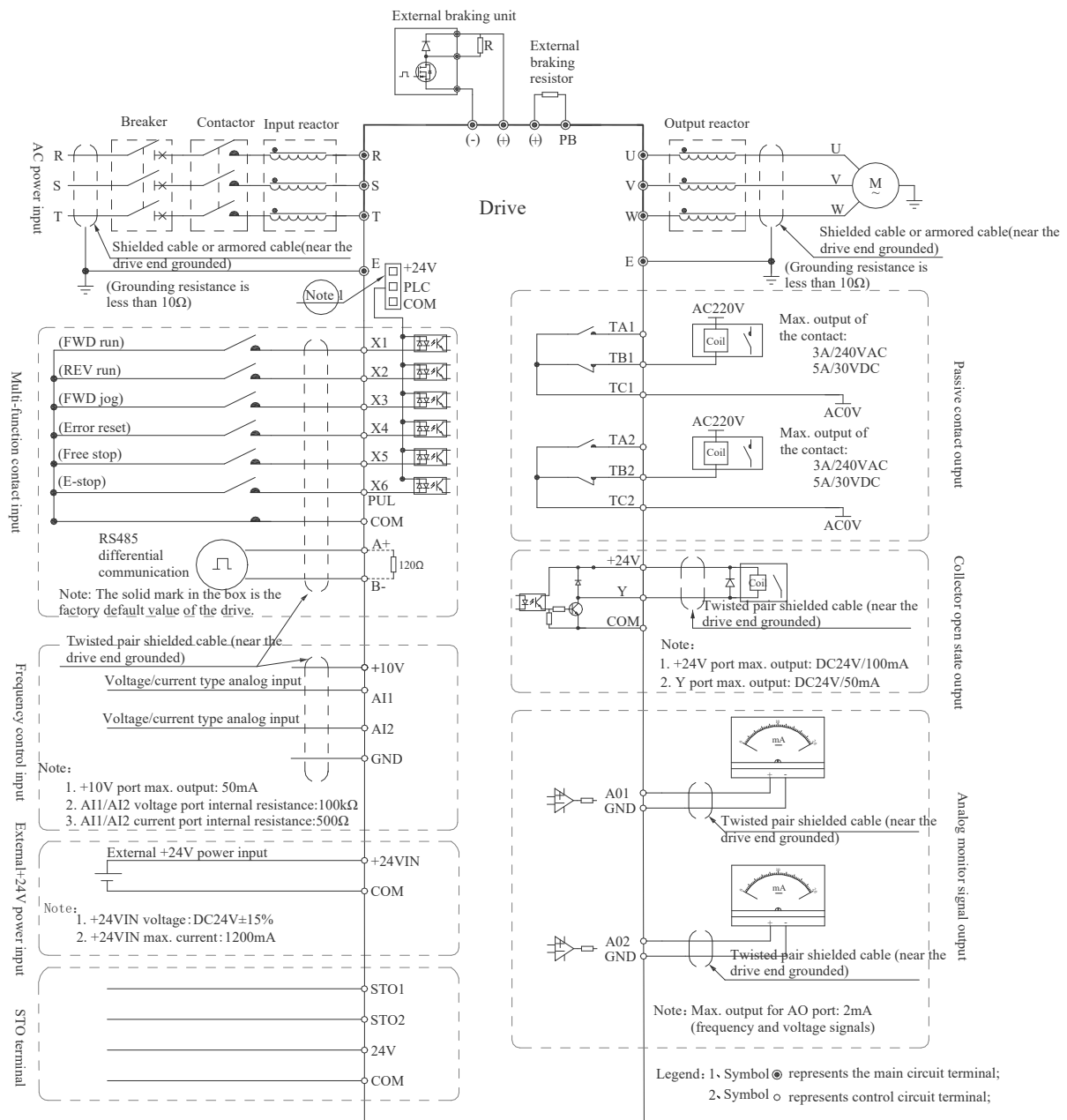
4.7.2 Electrical Installation Tools

Table 4-10 Electrical Installation Tools

Tool Name	Description
Wire stripper	For stripping wires for wiring
Small Phillips and small flathead screwdrivers	For control-circuit wiring
Large Phillips and large flathead screwdrivers	For main-circuit wiring

4.7.3 Standard Wiring

Wiring diagram



1. For T4-22kW and below models with built-in braking units, a brake resistor can be connected as required; For models without built-in brake units, an external brake unit can be installed as required.
2. Terminals (X1–X6 / PUL) support NPN or PNP transistor input signals. Bias voltage can be selected from the drive internal power supply (+24V terminal) or an external source (PLC terminal).

STO Overview

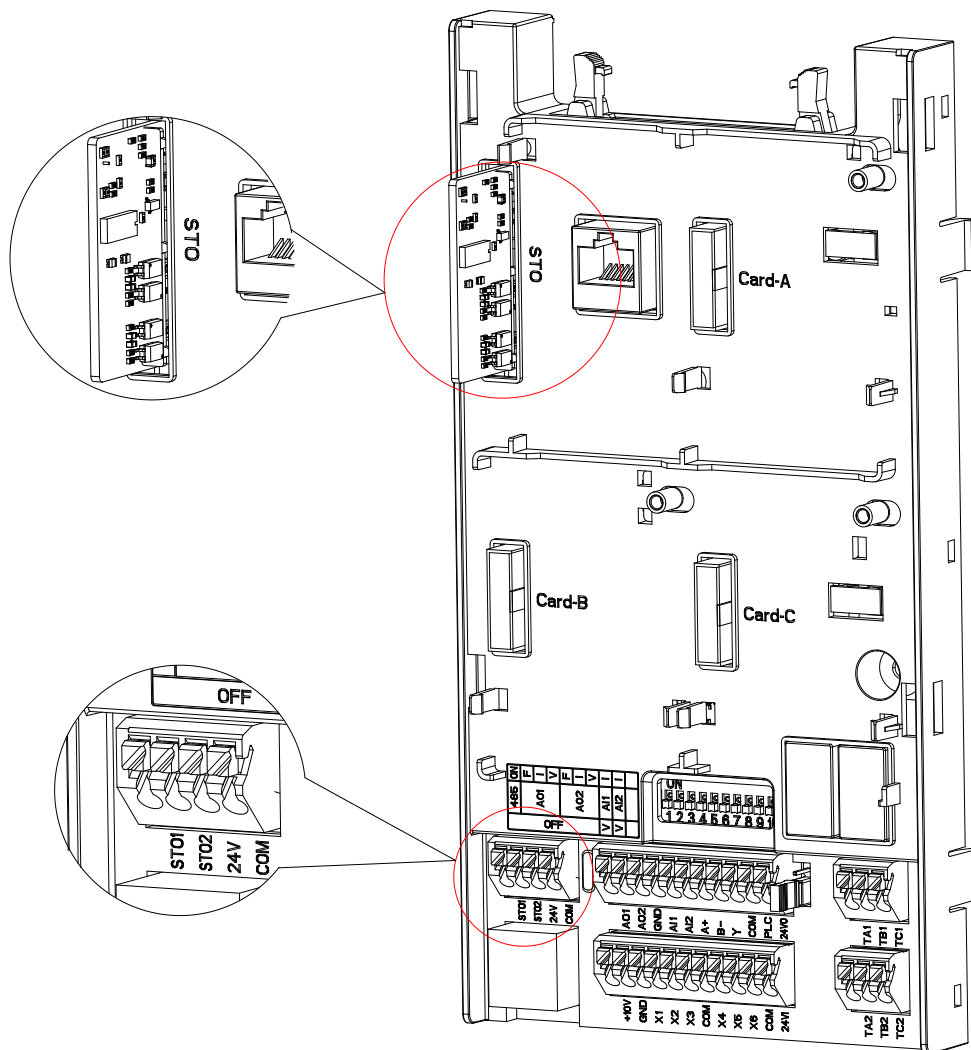
Safe Torque Off (STO) is a safety function compliant with IEC 61800-5-2:2016. The AC600 series support models with STO configuration.

The STO function disables the PWM gate signals of the drive, cutting off the output of the power devices, which removes motor torque, ensuring the machine enters a safe torque-free state and preventing unintended startup. When STO is activated while the motor is running, it stops automatically.

The STO function blocks the PWM signal output to the power devices through external redundant hardware terminals STO1 and STO2, thus preventing the motor from operation.

Both STO1 and STO2 inputs must be active (shorted to +24V) to enable normal drive operation.

The STO board has four PIN terminals, namely STO1, STO2, +24V and COM, and has one SPI extension port, as shown in the following figure:

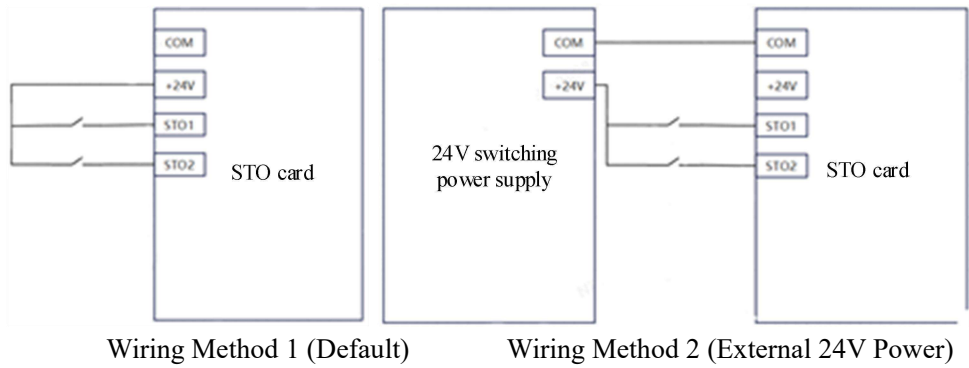


STO Logic Table

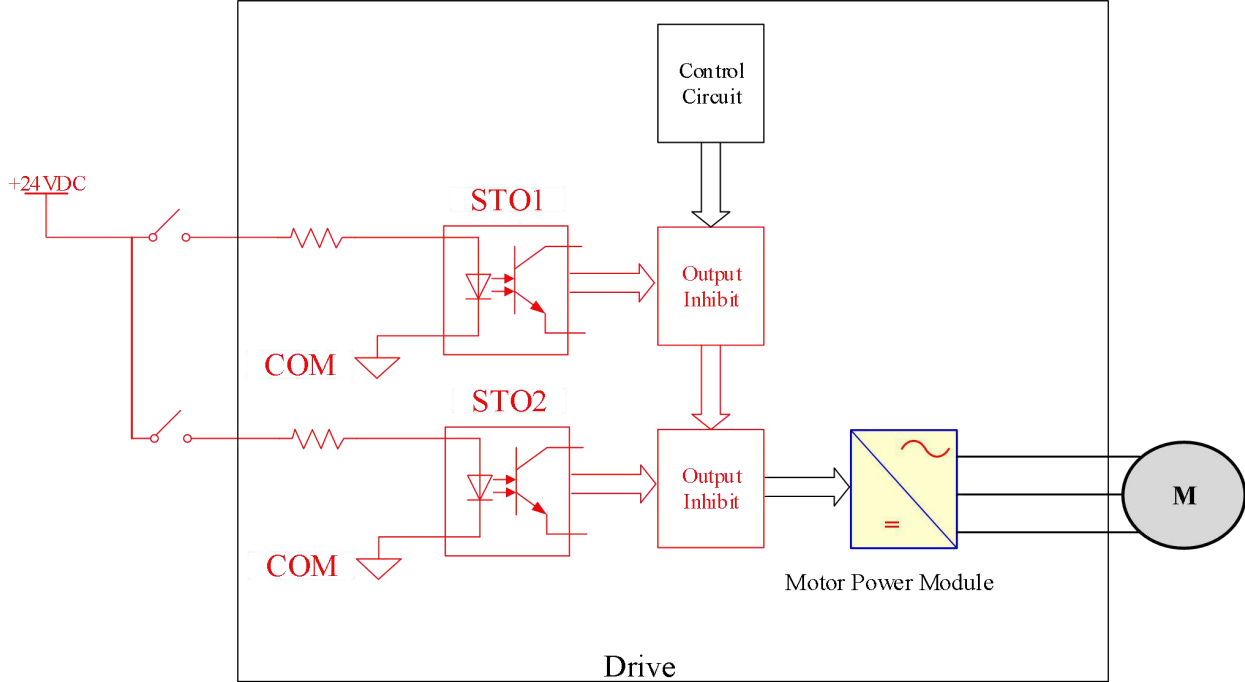
(STO1, +24V)	(STO2, +24V)	PWM Output
Shorted	Shorted	Enabled
Shorted	Open	Disabled
Open	Shorted	Disabled
Open	Open	Disabled

STO Wiring Options

1. Default: STO1 and STO2 shorted to the STO card +24V.
2. External 24V Power: External +24V COM shorted to STO COM; STO1 and STO2 shorted to external +24V.



- Note 1:** LED indicator logic on the STO card:
- LED2: Program running flag detected.
 - LED1 + LED2: Chip self-check loop active.
 - LED1: Chip startup check.
 - Diagnostic results are read via serial communication. (LED logic is independent of STO triggering.)



For detailed STO information, see [Chapter 10 STO Function](#).

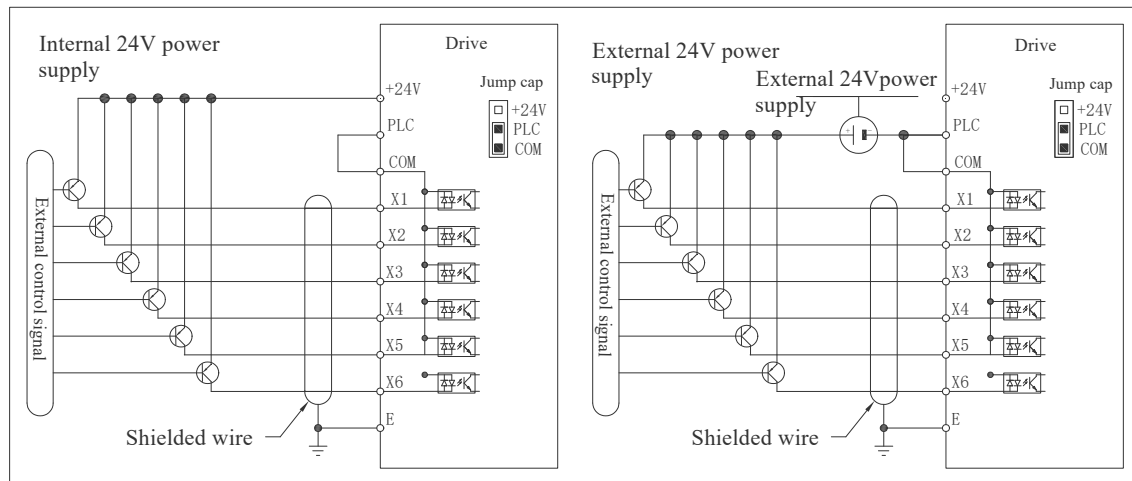
Illustration and Description of DIP Switch

Pin	Jumper Position	Description
	485 terminating resistor	RS485 dialed to ON, and then communication circuit is connected to a 120Ω terminating resistor
	AO1 - Frequency	0.0kHz~100.0kHz frequency output from AO interface AO1-F dialed to ON, and voltage needs to be increased by adding external appliances (typically increased to 10V by connecting a 5.1kΩ resistor)
	AO1 - Current	AO1-I dialed to ON to output current of 0mA~20mA or 4mA~20mA
	AO1 - Voltage	AO1-V dialed to ON to output voltage of 0V~10V
	AO2 - Frequency	0.0kHz~100.0kHz frequency output from AO2 interface AO-F dialed to ON, and voltage needs to be increased by adding external appliances (typically increased to 10V by connecting a 5.1kΩ resistor)

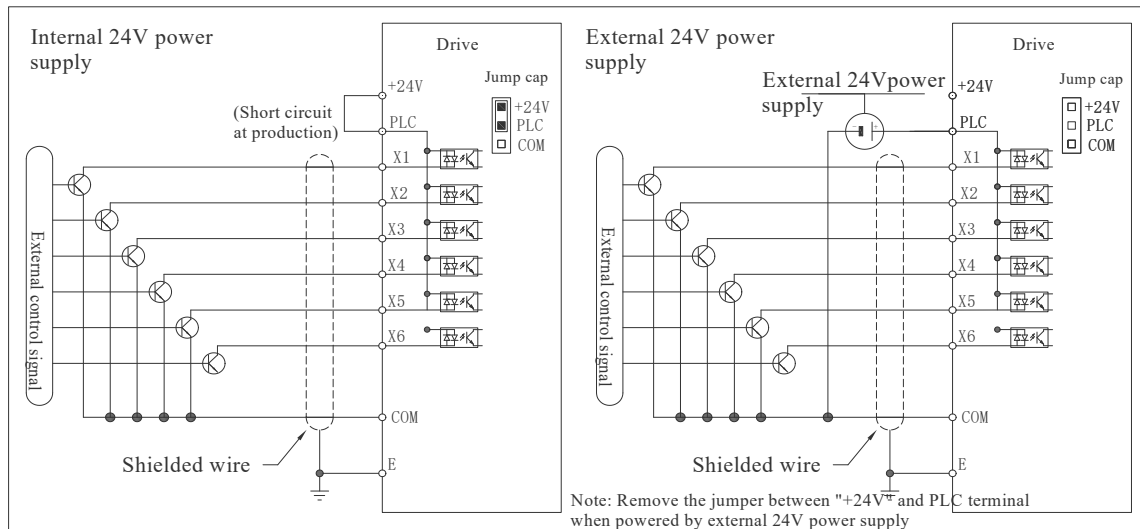
	AO2 - Current	AO2-I dialed to ON to output current of 0mA~20mA or 4mA~20mA
	AO2 - Voltage	AO2-V dialed to ON to output voltage of 0V~10V
	AI1 - Current/Voltage	AI1 dialed to ON to input current of 0mA~20mA AI1 dialed to OFF to input voltage of 0V~10V
	AI2 - Current/Voltage	AI2 dialed to ON to input current of -20mA~20mA AI2 dialed to OFF to input voltage of -10V~10V

Multi-Function Digital Input Wiring

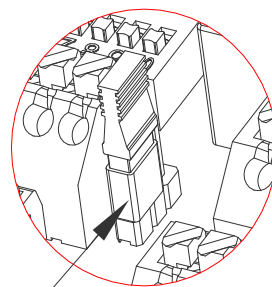
Wiring method for PNP-type transistor inputs:



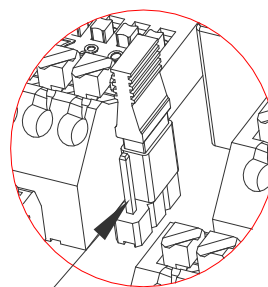
Wiring method for NPN-type transistor inputs:



Jumper Settings for "+24V", "PLC", and "COM"



PLC short
to COM



PLC short
to 24V

4.7.4 Main Circuit Wiring

Main Circuit Terminal Layout and Definitions

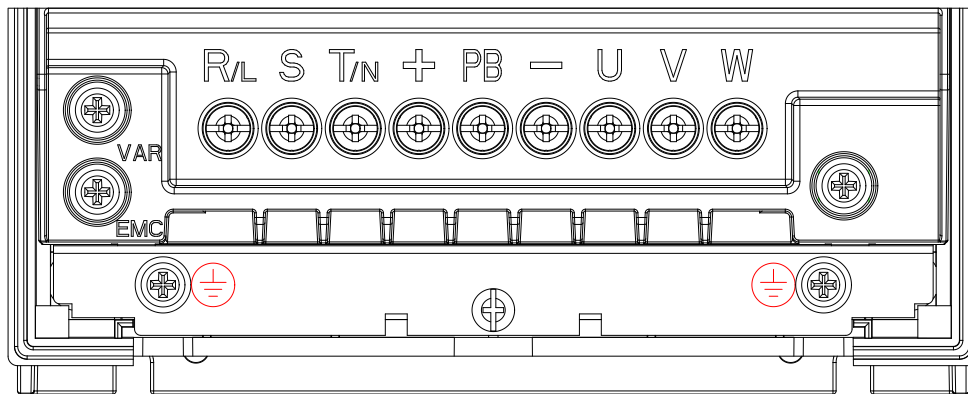


Table 4-11 AC600 Series Main Circuit Terminal Layout and Definitions

Mark	Name	Description
(-)	DC power terminal	Output DC power; (-) is the cathode of the DC bus, and (+) is the anode of the DC bus; for connecting to an external braking unit
(+)		
(+) PB	Brake resistor terminal	For connecting to the external braking resistors to realize quick stop
R/L S T/N	Drive input terminal	For connecting to three-phase AC supply
U V W	Drive output terminal	For connecting to the motor
	Ground	Grounding terminal, with the grounding resistance <10Ω
VAR	Ground	Varistor grounding terminal (disconnectable)
EMC	Ground	Input-side EMC grounding terminal (disconnectable)

- Connection of braking resistor for drives below 37kW (inclusive):

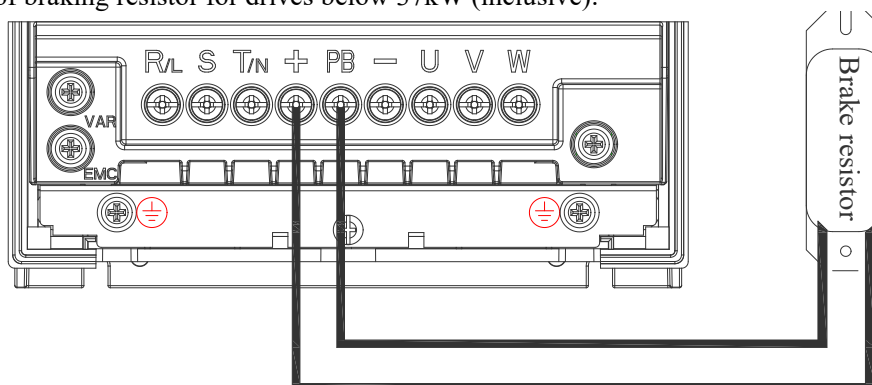


Figure 4-18 Connection of Braking Resistor for Models ≤ 37kW

- Connection of braking resistor for drives of 45kW~75kW:

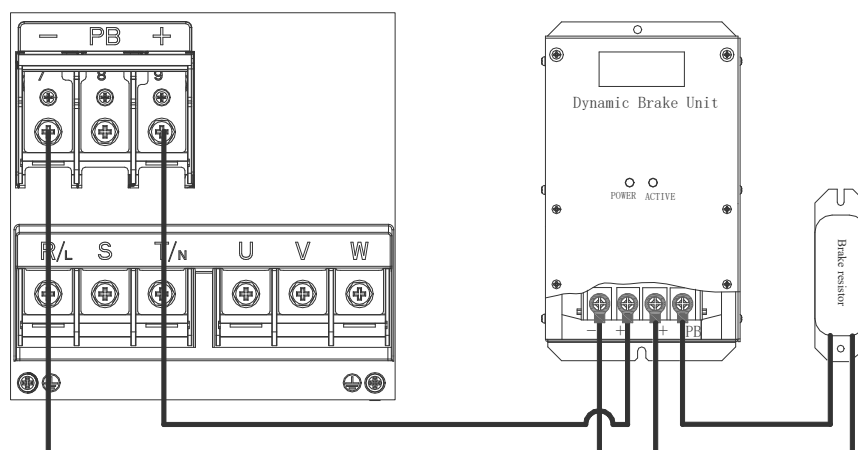


Figure 4-19 Connection of Braking Resistor for Models of 45kW~75kW

- Connection of braking resistor for drives above 90kW (inclusive):

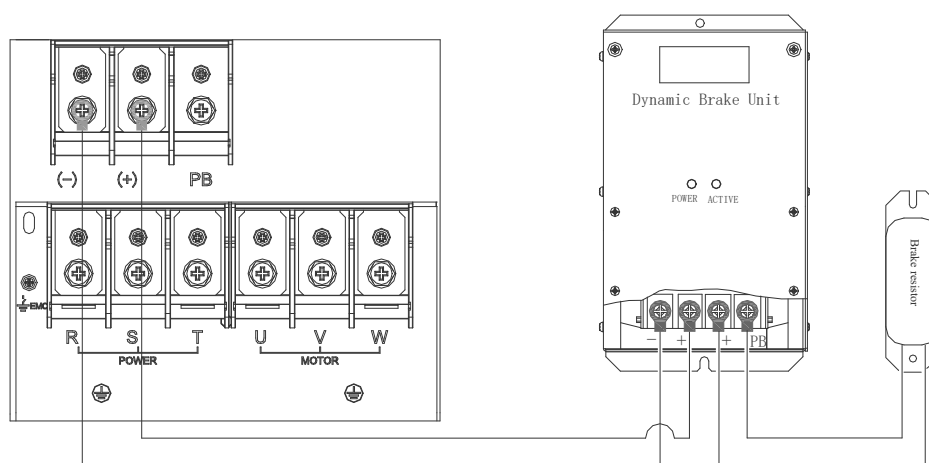


Figure 4-20 Connection of Braking Resistor for Models ≥ 90 kW

Note: The drives of T4-22kW and below comes with a built-in braking unit, the drives of T4-30kW~110kW available with an optional built-in braking unit, and the drives of T4-132kW and above can be externally connected to a braking unit. If a built-in braking unit is present, no external connection is required. If connecting an external braking unit, select the braking resistor based on both the external unit and the drive's limitations. For specifications or inquiries, contact the Customer Service Department of Suzhou Veichi Electric Co., Ltd. if needed.

- Recommended Brake Resistor Specifications

The braking resistor value and power ratings listed below are verified according to the normal inertia loads and intermittent braking mode. For applications involving high inertia or frequent/long-duration braking, please adjust the braking resistor value and power rating appropriately according to the specifications of the selected drive and the rated parameters of the braking unit. If there is any doubt, please consult the Customer Service Department of Suzhou VEICHI Electric Co., Ltd.

Table 4-12 Recommended Braking Resistor Specifications for AC600 Series Drive

Three-Phase 380V~480V			
Motor Power (kW)	Resistance (Ω)	Power Rating (kW)	Braking Torque (%)
0.75	750	0.15	100
1.5	400	0.30	100
2.2	250	0.40	100
4.0	150	0.50	100
5.5	100	0.60	100
7.5	75	0.78	100

11	50	1.2	100
15	40	1.5	100
18.5	32	2.0	100
22	32	2.0	100
30	24	3.0	100
37	20	3.7	100
45	16	4.5	100
55	13	5.5	100
75	9.0	7.5	100%
90	6.8	9.3	100%
110	6.2	11.0	100%
132	4.7	13.0	100%
160	3.9	15.0	100%
185	3.3	17.0	100%
200	3.0	18.5	100%
220	2.7	20.0	100%
250	2.4	22.5	100%
280	2.0	25.5	100%
315	1.8	30.0	100%
355	1.5	33.0	100%
400	1.2	42.0	100%
450	1.2	42.0	100%
500	1.0	42.0	100%
560	1.0	50.0	100%

● Max. Braking Capacity of Built-in Braking Unit

The built-in braking unit for the AC600 series low-power models should be configured according to the recommended braking resistor specifications in Table 4-13. In applications with high inertia and frequent long-term braking, increasing the braking torque may be necessary. The table below outlines the maximum braking force; exceeding these limits in practice may damage the equipment. If there is any doubt, please consult the Customer Service Department of Suzhou VEICHI Electric Co., Ltd.

Table 4-13 Max. Braking Output of AC600 Series Built-in Braking Unit

Three-Phase 380V~480V			
Model	Motor Power (kW)	Max. Braking Current	Min. Resistance (Ω)
AC600-T4-R75G/1R5P-*	0.75	3.5	200
AC600-T4-1R5G/2R2P-*	1.50	3.5	200
AC600-T4-2R2G/004P-*	2.2	7.0	100
AC600-T4-004G/5R5P-*	4.0	10	75
AC600-T4-5R5G/7R5G-*	5.5	10	75
AC600-T4-7R5G/011P-*	7.5	14	50
AC600-T4-011G/015P-*	11.0	17	40

AC600-T4-015G/018P-*	15.0	23	30
AC600-T4-018G/022P-*	18.5	28	25
AC600-T4-022G/030P-*	22.0	28	25

Note: “-*” indicates product variant models; all variants follow the same selection criteria.

Dimensions of Main Circuit Terminals for Each Frame Size

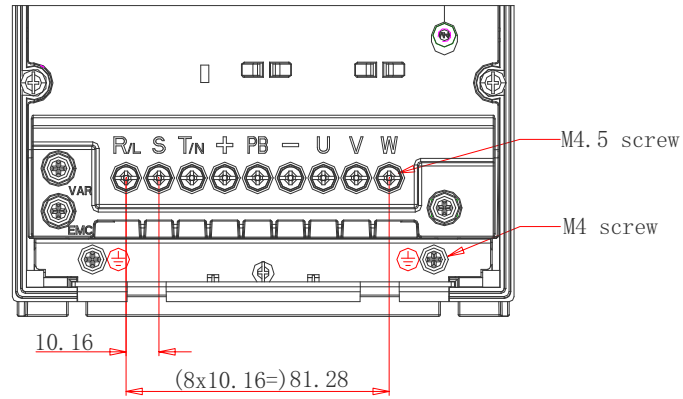


Figure 4-21 V1~V2 Terminal Dimensions

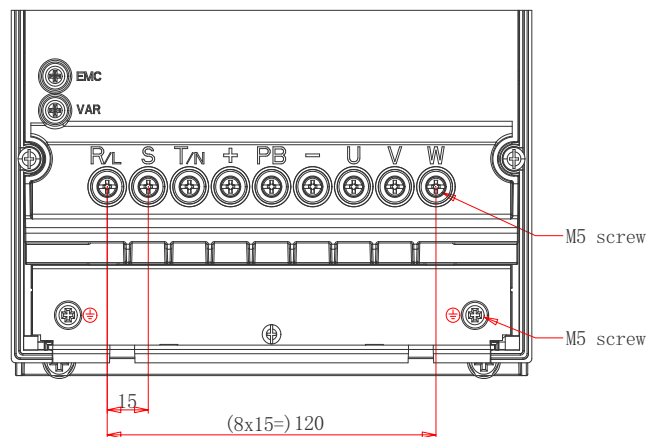


Figure 4-22 V3 Terminal Dimensions

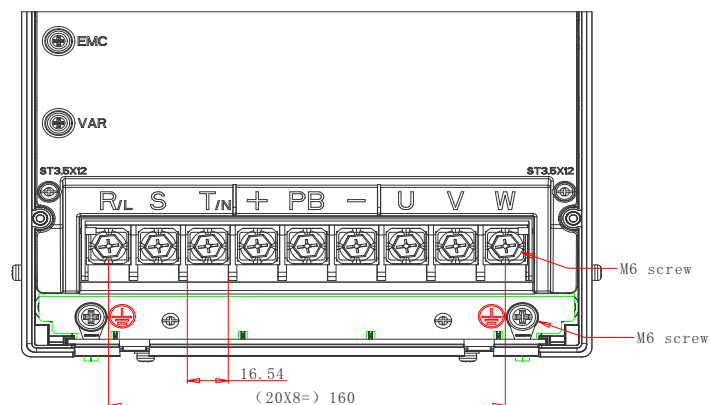


Figure 4-23 V4 Terminal Dimensions

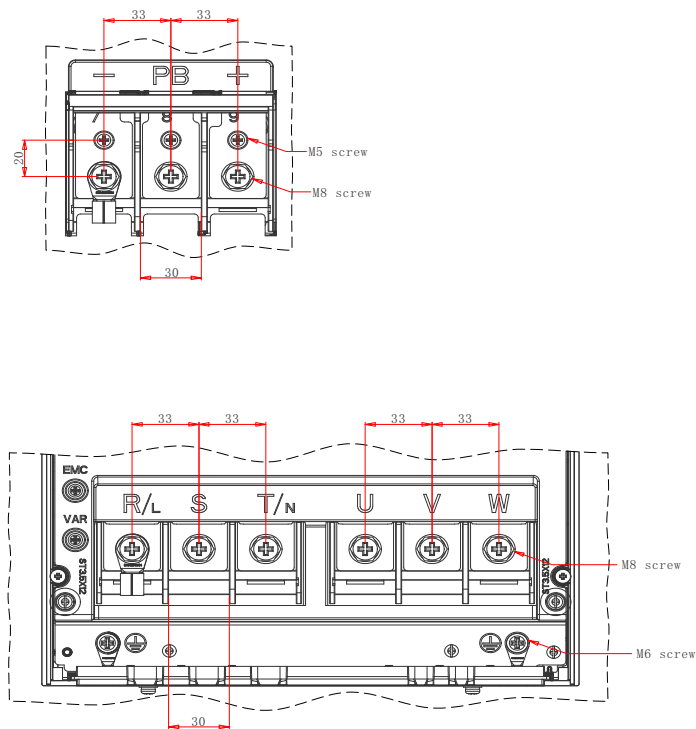


Figure 4-24 V5 Terminal Dimensions

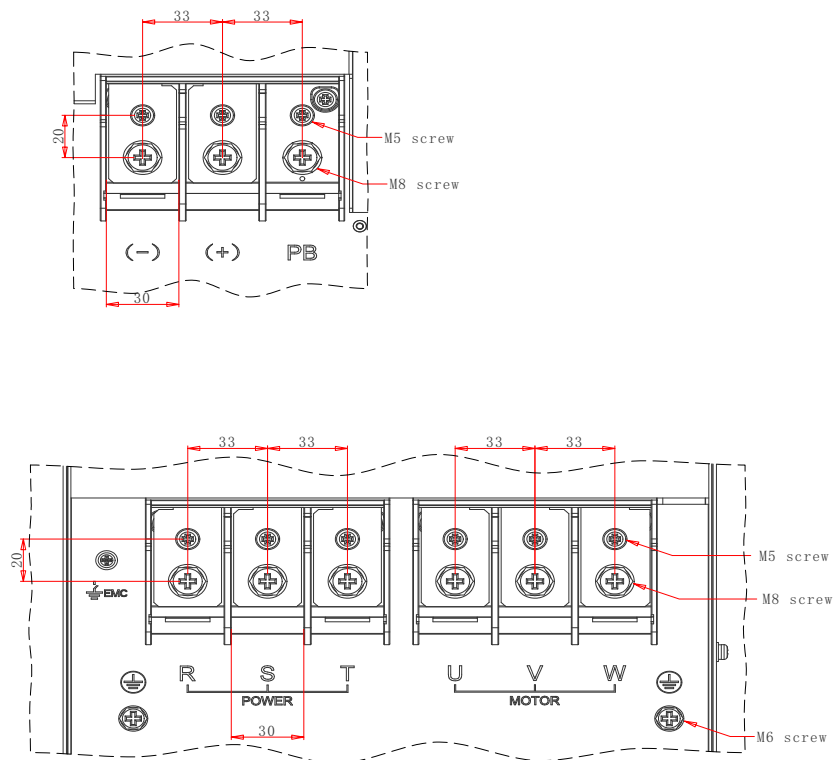


Figure 4-25 V6~V7 Terminal Dimensions

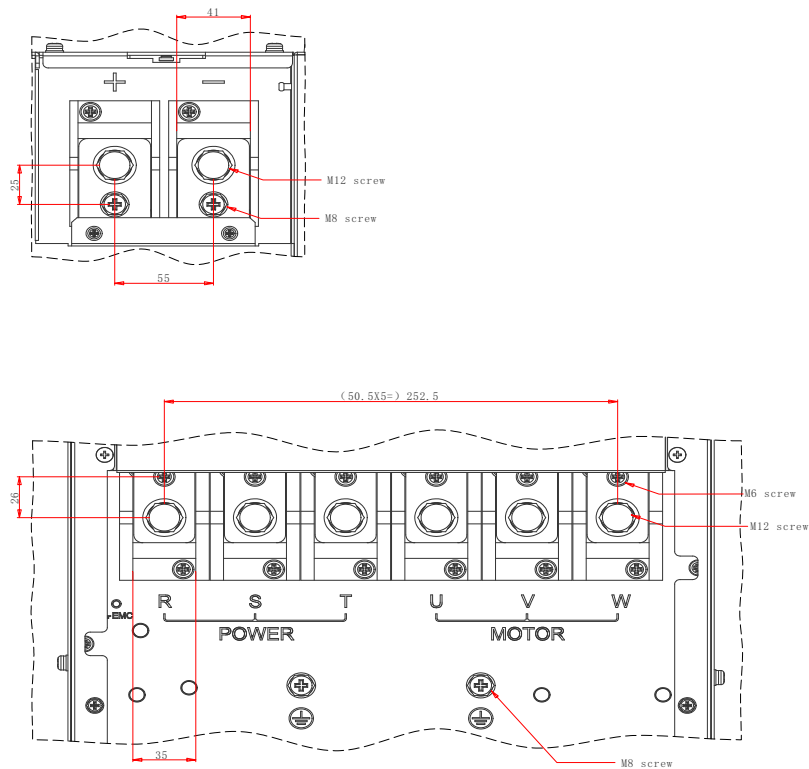


Figure 4-26 V8 Terminal Dimensions

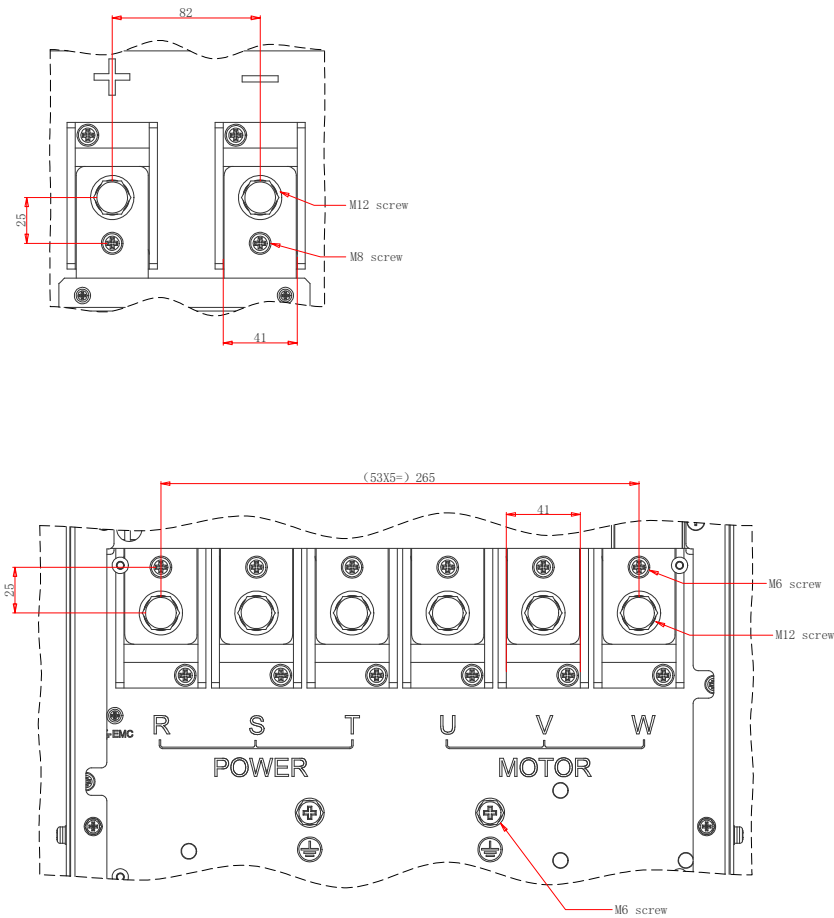


Figure 4-27 V9 Terminal Dimensions (without busbar adapter)

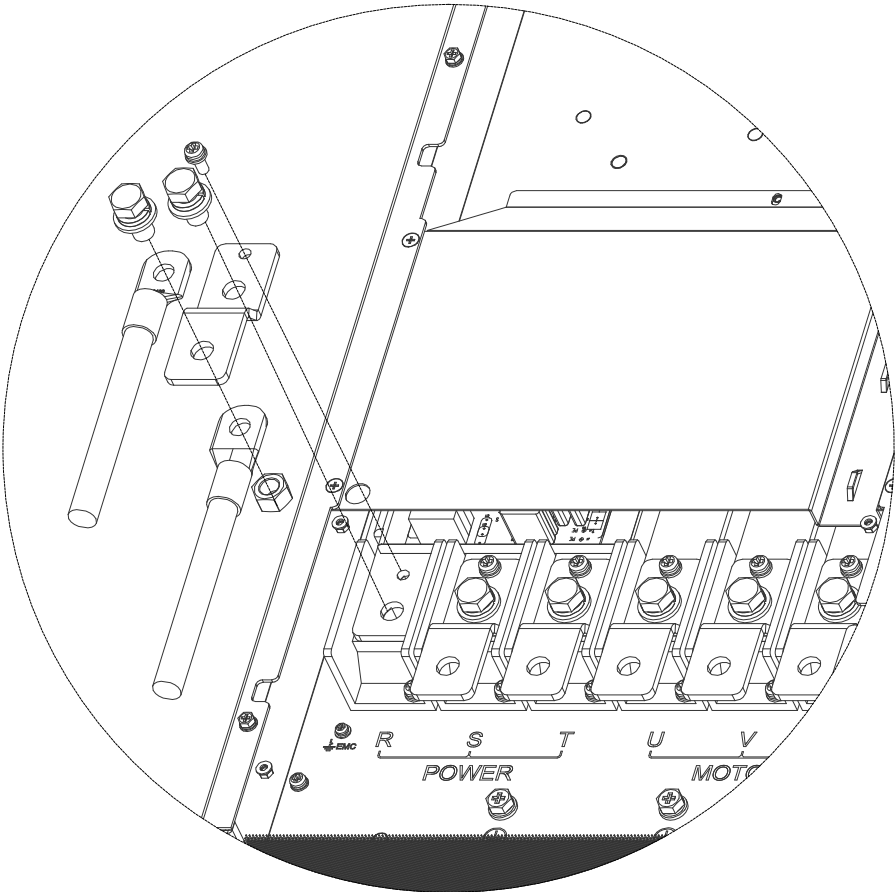


Figure 4-28 Installation Method for Frame V9 with Busbar Adapter

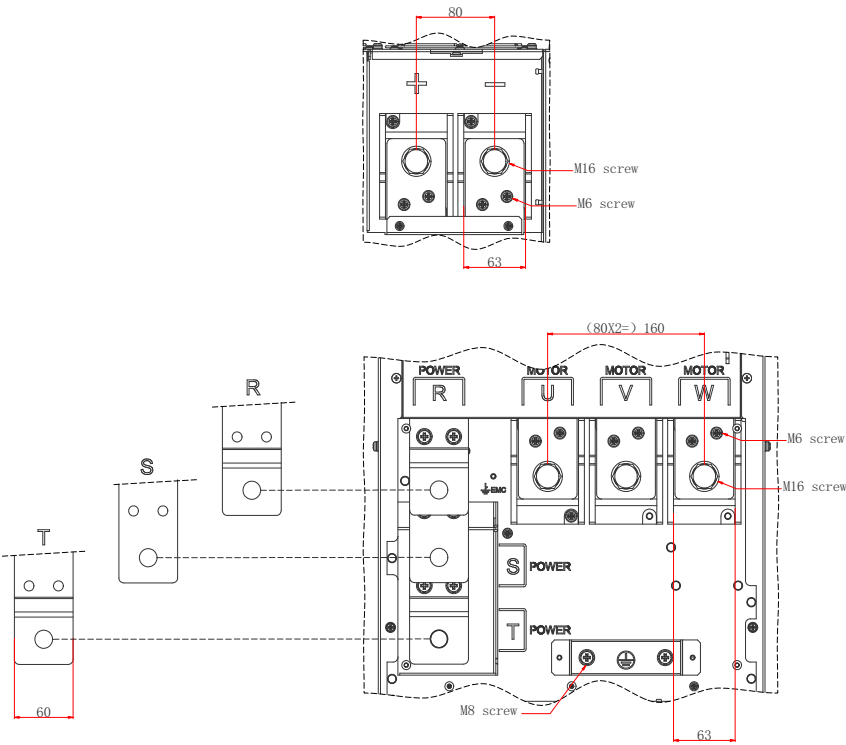


Figure 4-29 V10 Terminal Dimensions (without busbar adapter)

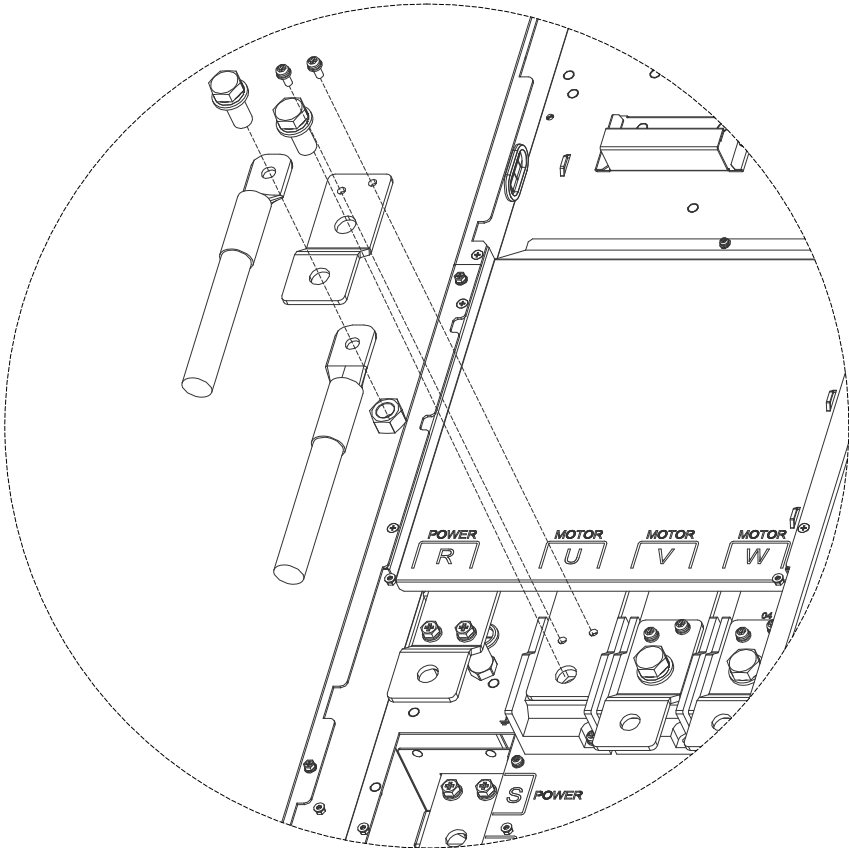


Figure 4-30 Installation Method for Frame V10 with Busbar Adapter

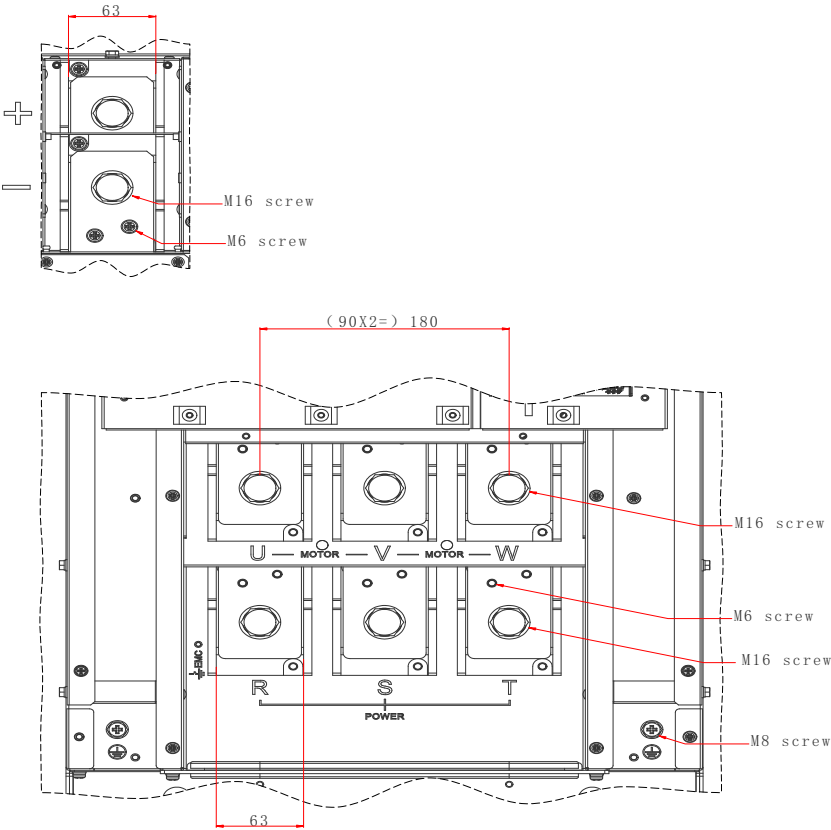


Figure 4-31 V11 Terminal Dimensions (without busbar adapter)

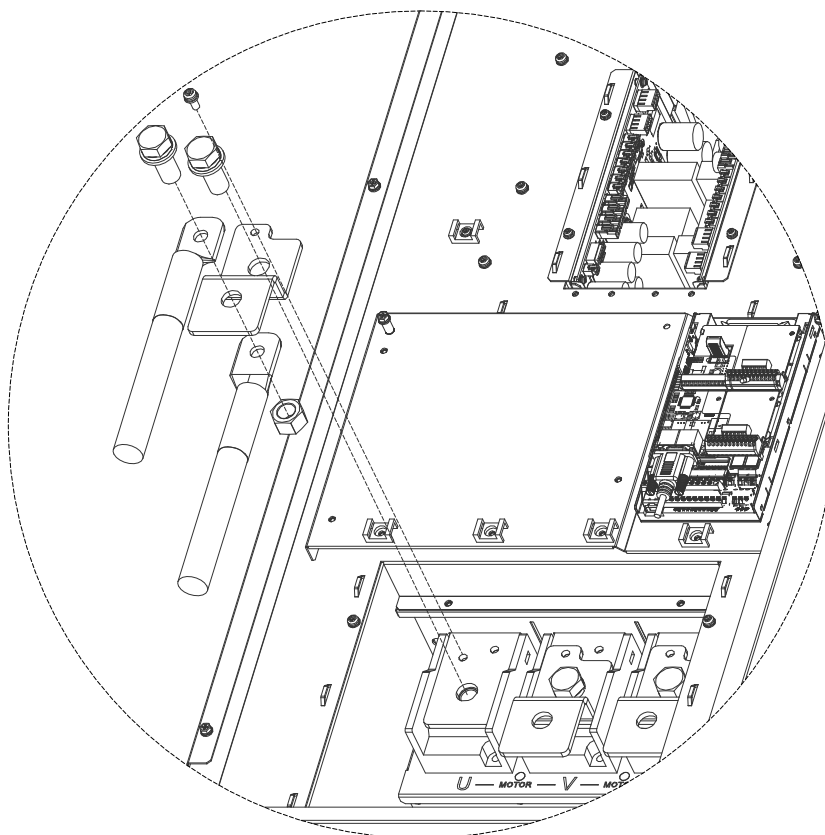


Figure 4-32 Installation Method for Frame V11 with Busbar Adapter

Recommended Main Circuit Components Specification

Model	Contactor Specs (A)	Breaker Specs (A)	Fuse Specs (A)	Fuse Model	Input Reactor	Sinusoidal Filter
AC600-T4-R75G-*	9	10	10	FWH-10A14F	VC-ACL-C-03P7A-T3-2M24	JL-SWF-4-004
AC600-T4-1R5G-*	9	10	10	FWH-10A14F	VC-ACL-C-03P7A-T3-2M24	JL-SWF-4-004
AC600-T4-2R2G-*	18	16	15	FWH-10A14F	VC-ACL-C-05P5A-T3-2M18	JL-SWF-4-008
AC600-T4-004G-*	18	20	30	FWH-35C	VC-ACL-C-0009A-T3-1M85	JL-SWF-4-017
AC600-T4-5R5G-*	25	20	30	FWH-35C	VC-ACL-C-0013A-T3-1M56	JL-SWF-4-017
AC600-T4-7R5G-*	25	30	40	FWH-50C	VC-ACL-C-0018A-T3-1M00	JL-SWF-4-017
AC600-T4-011G-*	32	40	60	FWH-70C	VC-ACL-C-0024A-T3-M520	JL-SWF-4-024
AC600-T4-015G-*	40	50	80	FWH-70C	VC-ACL-C-0034A-T3-M400	JL-SWF-4-032
AC600-T4-018G-*	50	60	100	FWH-90C	VC-ACL-C-0038A-T3-M350	JL-SWF-4-038
AC600-T4-022G-*	50	75	100	FWH-100C	VC-ACL-C-0050A-T3-M260	JL-SWF-4-048
AC600-T4-030G-*	63	100	150	FWH-125C	VC-ACL-C-0060A-T3-M240	JL-SWF-4-062
AC600-T4-037G-*	80	125	200	FWH-125C	VC-ACL-C-0075A-T3-M235	JL-SWF-4-072
AC600-T4-045G-*	100	150	200	FWH-150C	VC-ACL-C-0091A-T3-M170	JL-SWF-4-115
AC600-T4-055G-*	125	175	250	FWH-200C	VC-ACL-A-0112A-T3-M110	JL-SWF-4-115

AC600-T4-075G-*	160	200	325	FWH-250C	VC-ACL-A-0150A-T3-M082	JL-SWF-4-180
AC600-T4-090G-*	220	250	400	FWH-275C	VC-ACL-A-0200A-T3-M070	JL-SWF-4-180
AC600-T4-110G-*	220	300	500	FWH-325C	VC-ACL-A-0224A-T3-M056	JL-SWF-4-260
AC600-T4-132G-*	250	400	600	FWH-400A	VC-ACL-A-0280A-T3-46U6	JL-SWF-4-260
AC600-T4-160G-*	300	500	700	FWH-500A	VC-ACL-A-0315A-T3-38U8	JL-SWF-4-410
AC600-T4-185G-*	400	600	800	FWH-600A	VC-ACL-A-0400A-T3-36U8	JL-SWF-4-410
AC600-T4-200G-*	400	700	800	FWH-600A	VC-ACL-A-0400A-T3-36U8	JL-SWF-4-410
AC600-T4-220G-*	630	800	1000	FWH-700A	VC-ACL-A-0450A-T3-33U3	JL-SWF-4-480
AC600-T4-250G-*	630	1000	1000	FWH-800A	VC-ACL-A-0560A-T3-26U4	JL-SWF-4-480
AC600-T4-280G-*	630	1200	1000	FWH-800A	VC-ACL-A-0560A-T3-26U4	JL-SWF-4-660
AC600-T4-315G-*	630	1200	1400	170M5016	VC-ACL-A-0630A-T3-23U3	JL-SWF-4-660
AC600-T4-355G-*	800	1400	1600	170M5016	VC-ACL-A-0720A-T3-18U4	JL-SWF-4-750
AC600-T4-400G-*	1000	1600	1600	170M6017	VC-ACL-A-0720A-T3-18U4	JL-SWF-4-750
AC600-T4-450G-*	1000	2000	1800	170M6017	VC-ACL-A-1000A-T3-14U7	JL-SWF-4-880
AC600-T4-500G-*	1000	2000	1800	170M6017	VC-ACL-A-1000A-T3-14U7	JL-SWF-4-880
AC600-T4-560G-*	1200	2000	-	-	VC-ACL-A-1250A-T3-11U6	JL-SWF-4-1200

Recommended Main Circuit Cable Specifications (CE)

Model	Screw (mm)	Torque(N·m) (lb·in)	Copper Cable (mm ²) (CE)
AC600-T4-R75G-*	M4.5	1.8N·m (16)	1.5mm ²
AC600-T4-1R5G-*	M4.5	1.8N·m (16)	1.5mm ²
AC600-T4-2R2G-*	M4.5	1.8N·m (16)	2.5mm ²
AC600-T4-004G-*	M4.5	1.8N·m (16)	4mm ²
AC600-T4-5R5G-*	M4.5	1.8N·m (16)	6mm ²
AC600-T4-7R5G-*	M4.5	1.8N·m (16)	6mm ²
AC600-T4-011G-*	M4.5	1.8N·m (16)	10mm ²
AC600-T4-015G-*	M5	5.6N·m (50)	10mm ²
AC600-T4-018G-*	M5	5.6N·m (50)	16mm ²
AC600-T4-022G-*	M5	5.6N·m (50)	16mm ²
AC600-T4-030G-*	M5	2.5N·m(22)	25mm ²
AC600-T4-037G-*	M5	2.5N·m(22)	25mm ²
AC600-T4-045G-*	M8	9.5N·m (84)	35mm ²

AC600-T4-055G-*	M8	9.5N·m (84)	35mm ²
AC600-T4-075G-*	M8	9.5N·m (84)	50mm ²
AC600-T4-090G-*	M8	8N·m (70.8)	50mm ²
AC600-T4-110G-*	M8	8N·m (70.8)	70mm ²
AC600-T4-132G-*	M12	14N·m (123.9)	95mm ²
AC600-T4-160G-*	M12	14N·m (123.9)	95mm ²
AC600-T4-185G-*	M12	14N·m (123.9)	120mm ²
AC600-T4-200G-*	M12	14N·m (123.9)	150mm ²
AC600-T4-220G-*	M12	14N·m (123.9)	150mm ²
AC600-T4-250G-*	M12	14N·m (123.9)	185mm ²
AC600-T4-280G-*	M12	14N·m (123.9)	185mm ²
AC600-T4-315G-*	M16	20N·m (177)	240mm ²
AC600-T4-355G-*	M16	20N·m (177)	240mm ²
AC600-T4-400G-*	M16	20N·m (177)	300mm ²
AC600-T4-450G-*	M16	20N·m (177)	400mm ²
AC600-T4-500G-*	M16	20N·m (177)	400mm ²
AC600-T4-560G-*	M16	20N·m (177)	500mm ²

Recommended Main Circuit Cable Specifications (UL)

Model	Screw (mm)	Torque (N·m) (lb·in)	Copper Cable (AWG/kcmil)
AC600-T4-R75G-*	M4.5	1.8N·m (16)	14
AC600-T4-1R5G-*	M4.5	1.8N·m (16)	14
AC600-T4-2R2G-*	M4.5	1.8N·m (16)	14
AC600-T4-004G-*	M4.5	1.8N·m (16)	12
AC600-T4-5R5G-*	M4.5	1.8N·m (16)	10
AC600-T4-7R5G-*	M4.5	1.8N·m (16)	8
AC600-T4-011G-*	M4.5	1.8N·m (16)	8
AC600-T4-015G-*	M5	5.6N·m (50)	8
AC600-T4-018G-*	M5	5.6N·m (50)	6
AC600-T4-022G-*	M5	5.6N·m (50)	4
AC600-T4-030G-*	M5	2.5N·m(22)	2
AC600-T4-037G-*	M5	2.5N·m(22)	2
AC600-T4-045G-*	M8	9.5N·m (84)	1/0
AC600-T4-055G-*	M8	9.5N·m (84)	3/0
AC600-T4-075G-*	M8	9.5N·m (84)	4/0

AC600-T4-090G-*	M8	8N·m (70.8)	3/0
AC600-T4-110G-*	M8	8N·m (70.8)	4/0
AC600-T4-132G-*	M12	14N·m (123.9)	300 MCM
AC600-T4-160G-*	M12	14N·m (123.9)	300 MCM
AC600-T4-185G-*	M12	14N·m (123.9)	2x200 MCM
AC600-T4-200G-*	M12	14N·m (123.9)	2x200 MCM
AC600-T4-220G-*	M12	14N·m (123.9)	2x250 MCM
AC600-T4-250G-*	M12	14N·m (123.9)	2x300 MCM
AC600-T4-280G-*	M12	14N·m (123.9)	2x350 MCM
AC600-T4-315G-*	M16	20N·m (177)	2x500 MCM
AC600-T4-355G-*	M16	20N·m (177)	2x500 MCM
AC600-T4-400G-*	M16	20N·m (177)	2x600 MCM
AC600-T4-450G-*	M16	20N·m (177)	2x700 MCM
AC600-T4-500G-*	M16	20N·m (177)	2x700 MCM
AC600-T4-560G-*	M16	20N·m (177)	2x800 MCM

Recommended Ground Cable Specifications (CE)

Model	Ground Screw (mm)	Recommended Torque N·m (lb·in)	Copper Cable (mm ²)
AC600-T4-R75G-*	M4	1.6N·m (14)	1.5mm ²
AC600-T4-1R5G-*	M4	1.6N·m (14)	1.5mm ²
AC600-T4-2R2G-*	M4	1.6N·m (14)	1.5mm ²
AC600-T4-004G-*	M4	1.6N·m (14)	4mm ²
AC600-T4-5R5G-*	M4	1.6N·m (14)	6mm ²
AC600-T4-7R5G-*	M4	1.6N·m (14)	6mm ²
AC600-T4-011G-*	M4	1.6N·m (14)	10mm ²
AC600-T4-015G-*	M5	1.6N·m (14)	10mm ²
AC600-T4-018G-*	M5	1.6N·m (14)	16mm ²
AC600-T4-022G-*	M5	1.6N·m (14)	16mm ²
AC600-T4-030G-*	M6	1.8N·m (16)	16mm ²
AC600-T4-037G-*	M6	1.8N·m (16)	16mm ²
AC600-T4-045G-*	M6	1.8N·m (16)	16mm ²
AC600-T4-055G-*	M6	1.8N·m (16)	16mm ²
AC600-T4-075G-*	M6	1.8N·m (16)	25mm ²
AC600-T4-090G-*	M6	1.8N·m (16)	25mm ²
AC600-T4-110G-*	M6	1.8N·m (16)	35mm ²
AC600-T4-132G-*	M8	8N·m (70.8)	50mm ²

AC600-T4-160G-*	M8	8N·m (70.8)	50mm ²
AC600-T4-185G-*	M8	8N·m (70.8)	70mm ²
AC600-T4-200G-*	M8	8N·m (70.8)	95mm ²
AC600-T4-220G-*	M8	8N·m (70.8)	95mm ²
AC600-T4-250G-*	M8	8N·m (70.8)	95mm ²
AC600-T4-280G-*	M8	8N·m (70.8)	95mm ²
AC600-T4-315G-*	M8	8N·m (70.8)	120mm ²
AC600-T4-355G-*	M8	8N·m (70.8)	120mm ²
AC600-T4-400G-*	M8	8N·m (70.8)	150mm ²
AC600-T4-450G-*	M8	8N·m (70.8)	240mm ²
AC600-T4-500G-*	M8	8N·m (70.8)	240mm ²
AC600-T4-560G-*	M8	8N·m (70.8)	300mm ²

Recommended Ground Cable Specifications (UL)

Model	Ground Screw (mm)	Recommended Torque N·m (lb·in)	Copper Cable (AWG/kcmil)
AC600-T4-R75G-*	M4	1.6N·m (14)	14
AC600-T4-1R5G-*	M4	1.6N·m (14)	14
AC600-T4-2R2G-*	M4	1.6N·m (14)	14
AC600-T4-004G-*	M4	1.6N·m (14)	12
AC600-T4-5R5G-*	M4	1.6N·m (14)	10
AC600-T4-7R5G-*	M4	1.6N·m (14)	8
AC600-T4-011G-*	M4	1.6N·m (14)	8
AC600-T4-015G-*	M5	1.6N·m (14)	8
AC600-T4-018G-*	M5	1.6N·m (14)	6
AC600-T4-022G-*	M5	1.6N·m (14)	6
AC600-T4-030G-*	M6	1.8N·m (16)	6
AC600-T4-037G-*	M6	1.8N·m (16)	6
AC600-T4-045G-*	M6	1.8N·m (16)	6
AC600-T4-055G-*	M6	1.8N·m (16)	6
AC600-T4-075G-*	M6	1.8N·m (16)	2
AC600-T4-090G-*	M6	1.8N·m (16)	1
AC600-T4-110G-*	M6	1.8N·m (16)	0
AC600-T4-132G-*	M8	8N·m (70.8)	4/0
AC600-T4-160G-*	M8	8N·m (70.8)	4/0
AC600-T4-185G-*	M8	8N·m (70.8)	200 MCM
AC600-T4-200G-*	M8	8N·m (70.8)	200 MCM
AC600-T4-220G-*	M8	8N·m (70.8)	250 MCM

AC600-T4-250G-*	M8	8N·m (70.8)	300 MCM
AC600-T4-280G-*	M8	8N·m (70.8)	350 MCM
AC600-T4-315G-*	M8	8N·m (70.8)	500 MCM
AC600-T4-355G-*	M8	8N·m (70.8)	500 MCM
AC600-T4-400G-*	M8	8N·m (70.8)	600 MCM
AC600-T4-450G-*	M8	8N·m (70.8)	700 MCM
AC600-T4-500G-*	M8	8N·m (70.8)	700 MCM
AC600-T4-560G-*	M8	8N·m (70.8)	800 MCM

Cable Length Requirements for Different Power Ratings

Long wiring distance between the drive and the motor, especially at low-frequency output, causes voltage drop that reduces motor torque. Excessive wiring length between the drive and the motor, or excessive total length when motors are connected in parallel, increases high-frequency leakage current due to distributed capacitance, which in turn increases the drive output current. This may cause overcurrent trips and seriously affect the accuracy of current detection. Refer to the table below to adjust the carrier frequency. For cable lengths over 100m, do not use metal conduits. Use separate single-core cables for each phase to reduce distributed capacitance.

Table 4-14 Correspondence Between Cable Length and Carrier Frequency

Length (L)	L < 20m	20m ≤ L < 50m	50m ≤ L < 100m	L ≥ 100m
Carrier frequency	≤ 16kHz	≤ 8kHz	≤ 4kHz	≤ 2kHz

4.7.5 Control Circuit Wiring

Control Circuit Terminal Arrangement

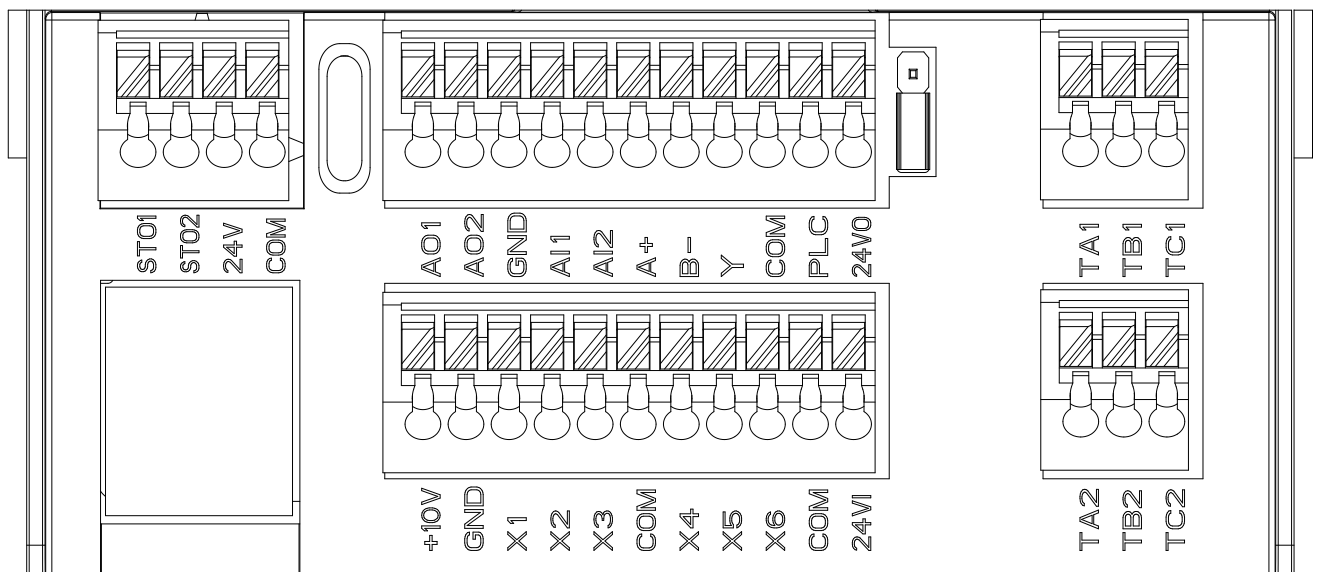


Table 4-15 Arrangement and Definition of AC600 Series Control Circuit Terminals

Item	Mark	Name	Description
Power	+10V-GND	External +10V power supply	Provide +10V power supply with maximum output current of 50mA; generally used as the power supply for external potentiometer with the resistance range of 1kΩ~5kΩ
	+24V-COM	External +24V power supply	Provide +24V power supply, generally used as the power supply for DI and DO terminals and external sensors Max. output current: 100mA
	+24VIN-COM	External 24V input	External 24V input for control power. Input voltage range: DC24V ±15%, max. current 1200mA

	PLC	External common terminal	Connect to +24V by factory default. When driving X1-X6/PUL with external signals, connect the PLC to the external power supply and disconnect it from the +24V supply (refer to the “+24V”, “PLC”, and “COM” diagrams).
STO Terminal	STO1	STO 24V power supply terminal	Connected to an external power supply or to the onboard +24V power supply.
	STO2	STO 24V power supply terminal	
AI	AI1-GND	Voltage/current AI	1. Range: DC 0V~10V/0mA~20mA 2. Voltage impedance: 100k Ω 3. Current impedance: 500 Ω
	AI2-GND	Voltage/current AI	1. Range: DC -10V~10V/-20mA~20mA 2. Voltage impedance: 100K Ω 3. Current impedance: 500 Ω
DI	X1-PLC	Multi-function terminal input 1	Optocoupler isolated, compatible with bipolar input. 1. Input impedance: 4.4k Ω 2. Voltage range at high-level: 10V~30V 3. Voltage range at low-level: 0V~5V
	X2-PLC	Multi-function terminal input 2	
	X3-PLC	Multi-function terminal input 3	
	X4-PLC	Multi-function terminal input 4	
	X5-PLC	Multi-function terminal input 5	
	X6-PLC	Multi-function terminal input 6	
	X6/PUL-PLC	Multi-function terminal input 6/High-speed pulse input	Except for the features of X1~X5, X6 can be used for high-speed pulse input (special model). 1. Opto-isolator, compatible with bipolar input, max. frequency 100kHz 2. Input impedance: 1.5k Ω 3. Pulse input level range: 10V~30V
AO	AO1-GND	Analog output 1	1. Voltage range: DC 0V~10V 2. Current range: DC 0mA~20mA 3. Pulse range: 0kHz~50kHz
	AO2-GND	Analog output 2	
DO	Y-COM	Digital output 1	Opto-isolator, open collector output 1. Voltage range: DC 0V~30V 2. Current range: DC 0mA~50mA
RO	TA1-TC1	Normally open contact	Contact rating: 240VAC, 3A 30VDC, 5A
	TB1-TC1	Normally closed contact	
	TA2-TC2	Normally open contact	
	TB2-TC2	Normally closed contact	
Communication Terminal	A+	Communication terminal A+	RS485 communication port According to the illustration and description of DIP switch function, the position of the RS485 DIP switch determines whether the RS485 communication is connected to 120 Ω terminal resistor
	B-	Communication terminal B-	

Control Circuit Terminal Wiring Specifications

Table 4-16 Control Circuit Terminal Wiring Specifications

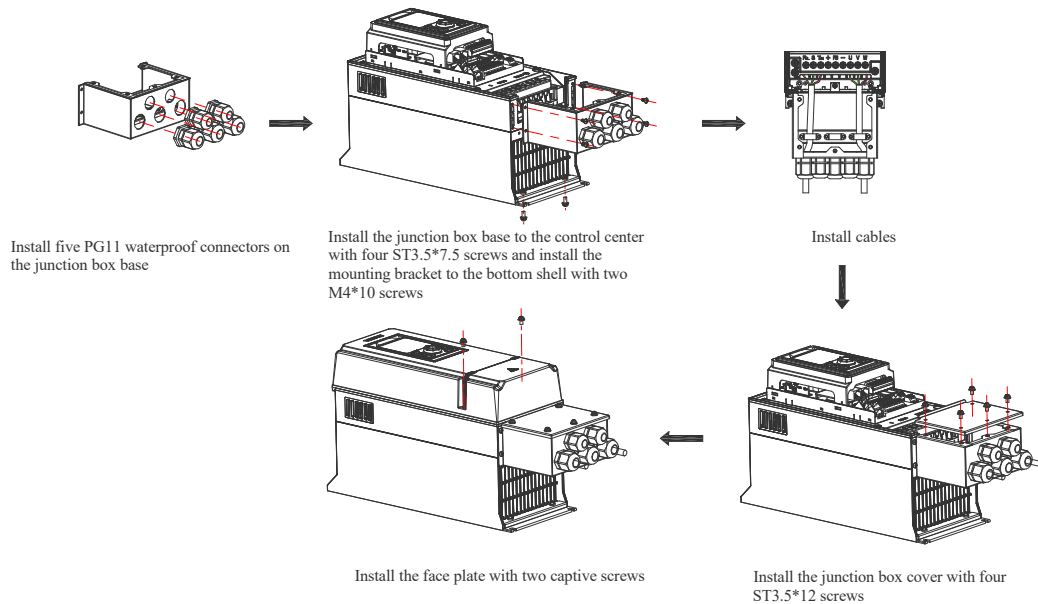
Name	Cable Size (mm ²) (AWG)	Cable Type
A+, B-	0.5mm ² (20)	Shielded twisted pair

+10V GND A01 AO2 AI1 AI2	0.5mm ² (20)	Shielded twisted pair
+24VIN +24V COM Y TA TB TC PLC X1 X2 X3 X4 X5 X6/PUL STO1 STO2	0.5mm ² (20)	Shielded cable

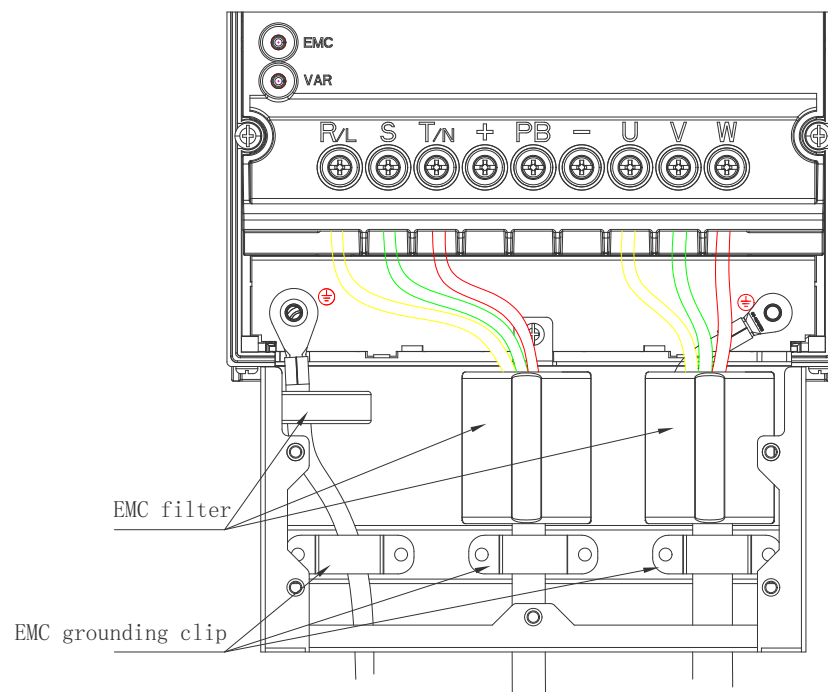
4.7.6 Wiring Installation

For IP54 protection requirements, a cable entry box must be used to ensure equipment reliability and electrical safety. When using the C2 configuration, an additional EMC filter is required to suppress electromagnetic interference and ensure system EMC performance. A grounding clip must also be installed to guarantee proper protective grounding and prevent electrical faults caused by poor grounding.

- Example: Cable entry box installation for 5.5kW model



- Illustration: Optional EMC filter and grounding clip installation



Chapter 5 Initial Use and Test Run

5.1 Safety Precautions



Please pay attention to all information in this manual regarding safety.

Failure to observe the warnings may result in death or serious injuries. VEICHI will not be held liable for injuries and equipment damage caused by your company or your customers' failure to comply with the contents of this manual.

5.2 Name and Function

Description



Figure 5-1 Key Description

Table 5-1 Keypad Indicator Description

Section	Mark	Name	Description
A		User-defined display	Configured by parameter F11.19; default shows keypad address
B		Fault indicator	Lights on fault and flashes on alarm
		Run indicator	ON or flashes when there is an operation command
		Stop indicator	ON during stop
		FWD indicator	ON during forward operation
		REV indicator	ON during reverse operation
		Parameter status indicator	ON when parameters are read-only.
		Parameter initialization indicator	ON when parameters cannot be initialized.

C		Control mode	ON for asynchronous motor control
			ON for synchronous motor control
			ON for reluctance motor control
		Speed mode indicator	ON in speed mode
		Torque mode indicator	ON in torque mode
		Multi-function key indicator	ON when multi-function key enabled
		Operation mode indicator	LOC ON: Local control (via keypad) REM ON: Remote control (via terminals) REM flashing: Remote control (via communication) LOC flashing: Keypad communication error
D		Unit indicator	Indicates parameter units; no indicator lights if not among the 9 units listed.
E		PRG	Short press: Return/Cancel; Long press: Enter Monitor C parameter interface
		Multi-function key	Short press to activate
		Left, Right	In main interface: Cycle through the two rows of monitoring parameters; in other interfaces: Shift left/right.
		RUN	Short press to run
		Stop	Short press to stop
		Digital potentiometer knob	Press to confirm, rotate clockwise to increase value, and rotate counterclockwise to decrease value.

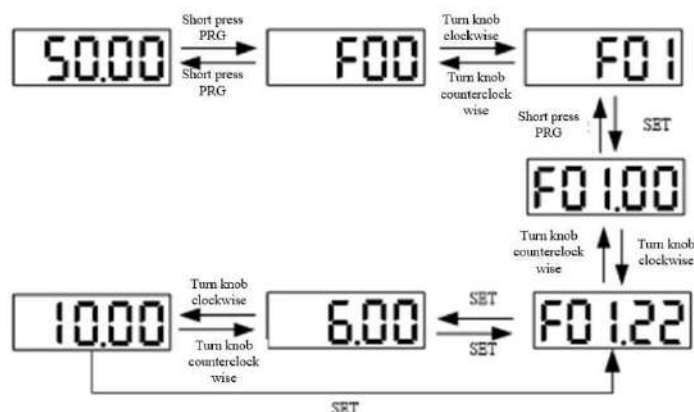
Table 5-2 Keypad Function Description

Function/Icon	Description
FWD operation	Operation indicator  and FWD indicator  ON
REV operation	Operation indicator  and REV indicator  ON
Jogging	Operation indicator  flashes, 1s interval.
Stop, no fault	Stop indicator  is ON.
Stop, fault	Fault indicator  is ON.
Stop, alarm	Fault indicator  flashes, 1s interval.
Forward operation, alarm	Operation indicator  and FWD indicator  ON, and fault indicator  flashes, 1s interval.
Reverse operation, alarm	Operation indicator  and REV indicator  ON, and fault indicator  flashes, 1s interval.
	Enter Self-test interface: Press any key individually to display key count on screen.
	Exit Self-test or Keypad Parameter interface.
	Enter Keypad Parameter interface.
	All indicators in Self-test interface ON.

5.3 Keypad Operation Method

- Set the basic parameters

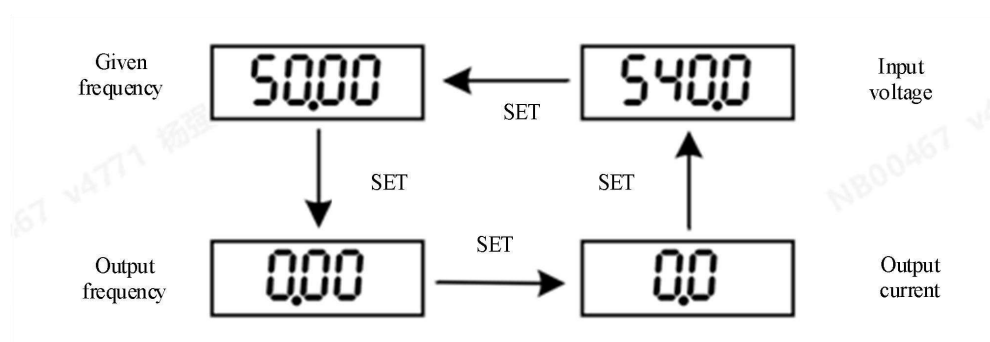
Take F01.22 [ACC Time 1]= 10.00s as an example.



Note: To modify the tens-, hundreds- and thousands-bit of a parameter, use the shift key to quickly select it.

- Check the monitoring status of the operation

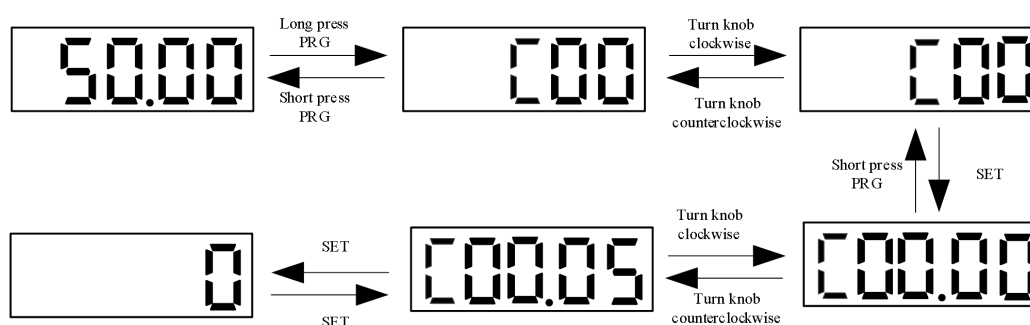
Take the default monitoring state check as an example.



Note: Use the left shift key to cycle the first row of monitoring parameters and the right shift key to cycle the second row when using an external keypad.

- Check the monitoring parameters

Take the C00.05 [Mechanical Speed] as an example.



5.4 Check Items at Initial Startup

Items to be checked before power on:

Before applying power, ensure the following items are checked to guarantee user and equipment safety.

Item	Content
Input power voltage	Verify that the input voltage rating is correct. Single-phase 220V, 50Hz/60Hz Three-phase 220V, 50Hz/60Hz Three-phase 380V~480V, 50Hz/60Hz Three-phase 660V, 50Hz/60Hz
	Ensure supply voltage has no large fluctuations.
	Confirm proper grounding of both the AC drive and motor.

Drive input/output wiring	Verify correct wiring of power input terminals R/S/T.
	Verify correct wiring between drive output terminals U/V/W and the motor.
	Ensure power and motor wires are not reversed; incorrect wiring may damage the drive.
Control terminal wiring	Verify that all control terminal wiring is correct.
Control terminal status	Confirm that all external switch inputs connected to control terminals are OFF.
Motor and mechanical installation	Confirm that the motor is properly mounted and mechanically connected.

Checks after power on:

After connecting the power supply, check whether the AC drive shows a fault. If it is normal, go on the next steps, or if a fault occurs, conduct troubleshooting according to the fault codes, and perform the rest operations.

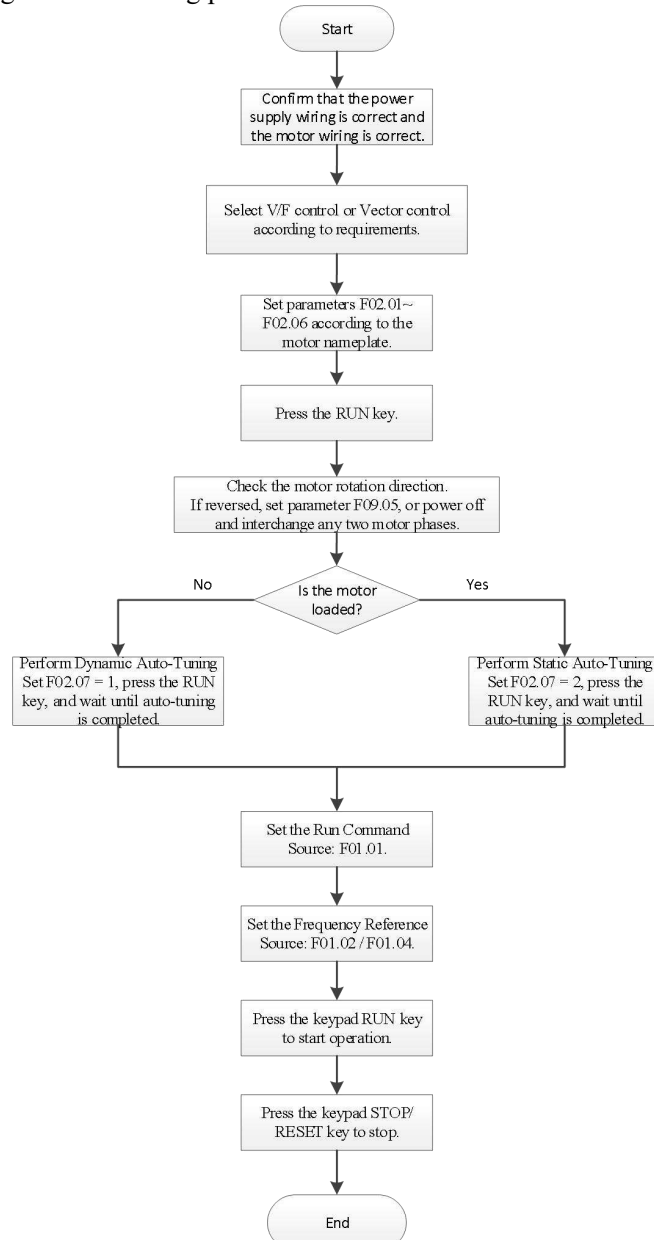
5.5 Initial Startup Steps

The basic initial startup steps of our AC drives are explained as below. Please refer to the corresponding flowchart according to the actual situations; and please note that only the most basic settings are introduced here: Flowchart 1: Basic operation; Flowchart 2: Motor auto-tuning operation; Flowchart 3: Vector operation optimization.

Note: All commissioning guidance in this section is based on Motor 1.

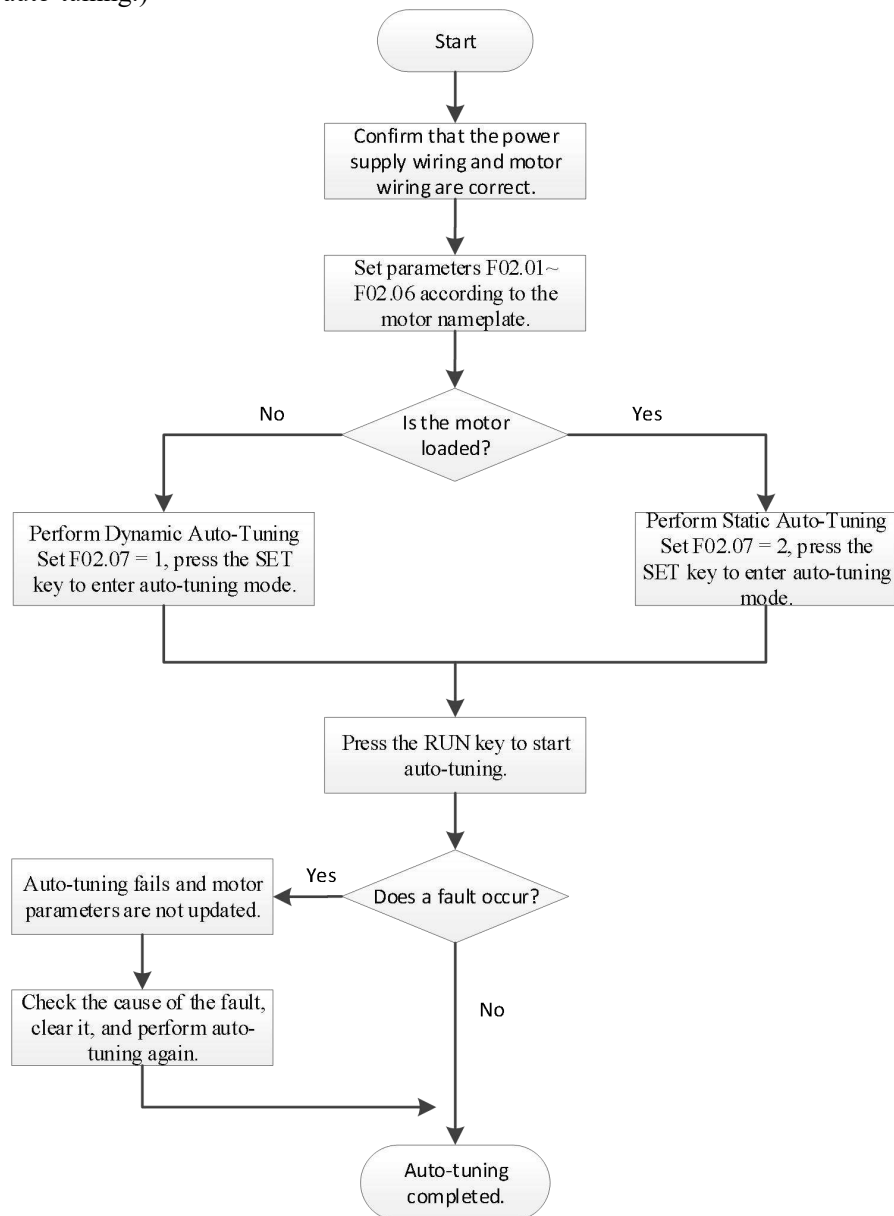
Flowchart 1

Flowchart 1 is a guide for commissioning and test operation. When the AC drive is commissioned for the first time, please operate according to the following process.



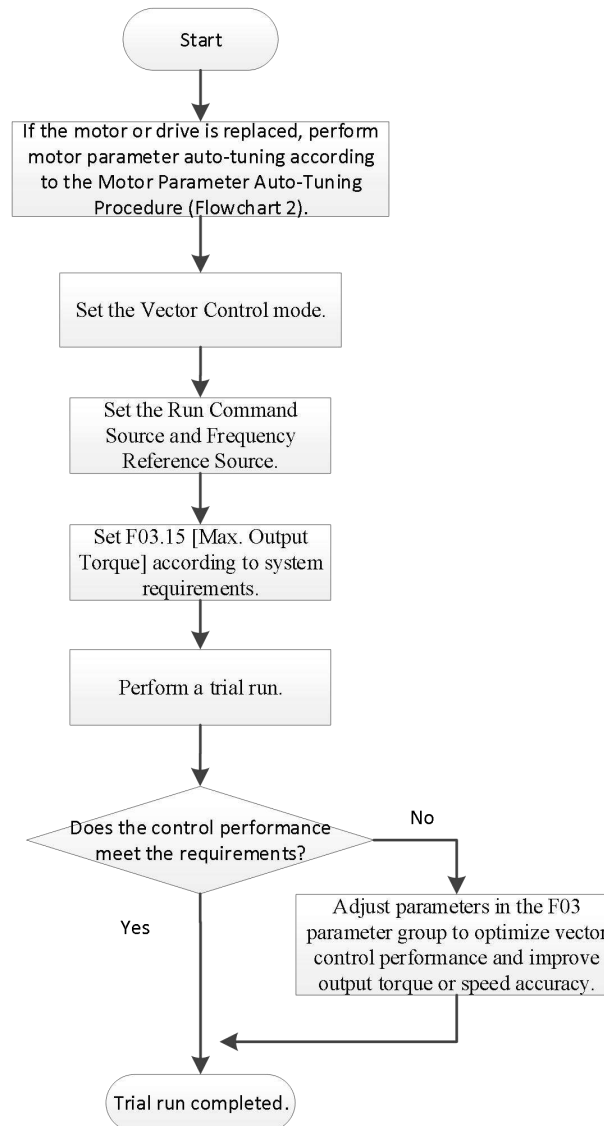
Flowchart 2

Flowchart 2 is the process of motor parameter auto-tuning for better control. (Note: The rated motor parameters must be set before auto-tuning.)



Flowchart 3

Flowchart 3 is the vector control process for commissioning the vector mode, so as to achieve better frequency control performance.



5.6 G/P-type Model Parameter Settings

By configuring F00.01, the drive automatically optimizes all relevant parameters for the selected application. The product supports two primary application types: General Purpose (G-type) and Pump/Fan (P-type). Select the appropriate application according to system requirements to achieve optimal control performance (refer to detailed description of F00.01).

5.7 Auto-tuning

Auto-tuning is to automatically detect the motor characteristic values required for vector control and automatically set them to the function codes of the AC drive. The methods for the AC drive to obtain the internal electrical parameters of the controlled motor include: dynamic auto-tuning, static auto-tuning, stator resistance auto-tuning, and manual input of motor parameters. Please select the most suitable auto-tuning mode according to the motor type, the control mode of the AC drive, and the installation environment, and input the necessary parameters according to the selected auto-tuning mode and the control mode set by F01.00.



WARNING

For mechanical safety: During dynamic auto-tuning, the motor will rotate at a speed above 50% of the rated frequency, please confirm safety around. Otherwise, it may cause personal accidents or mechanical damage.

Asynchronous motor auto-tuning

The following describes the parameter auto-tuning method for asynchronous motors. Before tuning, set:

- Motor parameters: F02.01~F02.06.
- Speed feedback parameters: E02.xx~E03.xx (under FVC).

Note: Static auto-tuning is an alternative function when dynamic auto-tuning is unavailable. Sometimes the measurement results of static auto-tuning may have a large error with the actual motor characteristic parameters. Please confirm the measured motor characteristic values through the parameters after the auto-tuning is completed.

Table 5-3 Asynchronous Motor Auto-Tuning Method

Auto-tuning Parameter Setting	Condition/Advantage	Control Mode (F01.00)		
		V/F (0)	SVC (1)	FVC (2)
Dynamic Auto-Tuning F02.07=1	● Motor rotation allowed during tuning ● For motors requiring constant output characteristics ● Precise motor control is required ● For motors with <30% mechanical load that cannot be decoupled	Valid	Valid	Valid
Static Auto-Tuning F02.07=2	● Motor cannot rotate during tuning ● For motors with >30% mechanical load that cannot be decoupled Note: When the motor load is below 20%, slight movement may occur during auto-tuning. Any rotation during static auto-tuning may result in abnormal parameter identification. For higher power ratings, the auto-tuning time will be longer (in the order of minutes).	Valid	Valid	Valid
Stator Resistance Auto-Tuning F02.07=3	● After previous tuning, cable length changes to >50m ● For V/F control with cable >50m ● When the motor output is different from the AC drive capacity.	Valid	Valid	Valid

Input data of asynchronous motor auto-tuning

Before auto-tuning, please confirm the test report of the motor or the data on the motor nameplate, and enter the items marked with ○ in the following table.

Table 5-4 Input Data of Asynchronous Motor Auto-Tuning

Name	Funcode	Unit	Dynamic Auto-Tuning (F02.07=1)	Static Auto-Tuning (F02.07=2)	Stator Resistance Auto-Tuning (F02.07=3)
Pole No.	F02.01	-	○	○	-
Rated Power	F02.02	kW	○	○	○
Rated Frequency	F02.03	Hz	○	○	-
Rated Speed	F02.04	RPM	○	○	-
Rated Voltage	F02.05	V	○	○	○
Rated Current	F02.06	A	○	○	○
Encoder Motor	E02.00	-	Required when F01.00=2 (AMFVC); use encoder 1 parameter settings.		
Encoder Type	E02.01				
ABZ Encoder Line No.	E02.12	-			
Resolver Pole No.	E02.20	-			
Sine-cosine Encoder Type	E02.30	-			
Sine-cosine Encoder Line No.	E02.31	-			

Synchronous motor auto-tuning

The following describes the parameter auto-tuning method for synchronous motors. Before tuning, set:

- Motor parameters: F02.01~F02.06.
- Speed feedback parameters: E02.xx~E03.xx (under FVC).

Note: Static auto-tuning is an alternative function when dynamic auto-tuning is unavailable. Static tuning cannot measure back-EMF; back-EMF must be entered manually.

Table 5-5 Synchronous Motor Auto-Tuning Method

Auto-tuning Parameter Setting	Condition/Advantage	Control Mode (F01.00)		
		V/F (10)	SVC (11)	FVC (12)
Dynamic Auto-Tuning F02.07=1	- Motor rotation allowed during tuning - For motors requiring constant output characteristics - Precise motor control is required - For motors with <30% mechanical load that cannot be decoupled	Valid	Valid	Valid
Static Auto-Tuning F02.07=2	- Motor cannot rotate during tuning - For motors with >30% mechanical load that cannot be decoupled Note: When the motor load is below 20%, slight movement may occur during auto-tuning. Any rotation during static auto-tuning may result in abnormal parameter identification.	Valid	Valid	Valid
Stator Resistance Auto-Tuning F02.07=3	- After previous tuning, cable length changes to >50m - For V/F control with cable >50m - When the motor output is different from the AC drive capacity.	Valid	Valid	Valid

Input data of synchronous motor auto-tuning

Table 5-6 Synchronous Motor Auto-Tuning Method

Name	Funcode	Unit	Dynamic Auto-Tuning (F02.07=1)	Static Auto-Tuning (F02.07=2)	Stator Resistance Auto-Tuning (F02.07=3)
Pole No.	F02.01	-	○	○	-
Rated Power	F02.02	kW	○	○	○
Rated Frequency	F02.03	Hz	○	○	-
Rated Speed	F02.04	RPM	○	○	-
Rated Voltage	F02.05	V	○	○	○
Rated Current	F02.06	A	○	○	○
Encoder Motor	E02.00	-	Required when F01.00=12 (PMFVC); use encoder 1 parameter settings.		
Encoder Type	E02.01	-			
ABZ Encoder Line No.	E02.12	-			
Resolver Pole No.	E02.20	-			
Sine-cosine Encoder Type	E02.30	-			

5.8 Trial Operation

Set the basic parameters and begin the test run after motor auto-tuning is completed.



WARNING

After wiring and parameter settings are finished, always perform a trial operation to ensure that the AC drive operates safely; otherwise, personal injury or equipment damage may occur.

5.8.1 No-load Test Operation

The steps for the no-load test operation are as follows:

- Power on the AC drive, and the keypad will display normally.
- Press PRG to set the frequency command parameter F01.09, and set it to 5.00Hz.
- Press RUN; the RUN indicator lights up, and the motor rotates forward at 5.00Hz.
- Confirm that the motor rotates in the correct direction and that no fault is displayed. If a fault occurs, troubleshoot before proceeding.
- Increase the frequency command by using the Up/Down keys to change the value of F01.09, checking motor response at each step. Adjust F01.09 in increments of 10Hz.
- Each time the frequency command is increased, check the AC drive output current via C00.02 [Output Current]. Operation is normal if the output current does not exceed the motor's rated current.
Example: 5.00Hz→10.00Hz→20.00Hz→30.00Hz→40.00Hz→50.00Hz
- After confirming that the motor runs normally, press STOP. The RUN indicator will turn off when the motor has completely stopped.

After confirming normal operation under no-load conditions, connect the motor to the mechanical system and perform a load test.

- ◆ Items to be confirmed before operation:
 - Ensure safety around the motor and mechanical system.
 - Confirm that the motor has completely stopped.
 - Ensure the motor is correctly connected to the mechanical system. Check that all mounting screws are tightened and the motor shaft is securely coupled to the load.
 - Be prepared to press STOP immediately in case of abnormal operation.
- ◆ Items to be confirmed during operation:
 - Verify that the motor runs in the correct direction.
 - Confirm that motor acceleration and deceleration are smooth.

5.8.2 No-load Test Operation

After connecting the load to the motor, perform the test run using the same procedure as the no-load test operation.

Check whether C00.02 [Output Current] is excessively high.

1. Power on the AC drive, and the keypad will display normally.
2. Press PRG to set the frequency command parameter F01.09, and set it to 5.00Hz.
3. Press RUN; the RUN indicator lights up, and the motor rotates forward at 5.00Hz.
4. Confirm that the motor rotates in the correct direction and that no fault is displayed. If a fault occurs, troubleshoot before proceeding.
5. Increase the frequency command by using the Up/Down keys to change the value of F01.09, checking motor response at each step. Adjust F01.09 in increments of 10Hz.
6. Each time the frequency command is increased, check the AC drive output current via C00.02 [Output Current]. Operation is normal if the output current does not exceed the motor's rated current.
Example: 5.00Hz→10.00Hz→20.00Hz→30.00Hz→40.00Hz→50.00Hz
7. After confirming that the motor runs normally, press STOP. The RUN indicator will turn off when the motor has completely stopped.
8. Change the frequency command and rotation direction to verify whether any abnormal noise or vibration occurs.
9. If control issues such as imbalance or vibration occur, please adjust the settings accordingly.

5.9 Fine Adjustment During Test Operation (Control Optimization)

The following describes how to correct control issues such as imbalance or vibration that may occur during the test operation. Adjust the corresponding parameters in the table according to the control mode used and the operating state of the AC drive.

Note: This section lists only the parameters that require frequent adjustment. For more precise tuning, please contact us.

- V/F Control Mode

Table 5-7 Parameters for Fine Tuning (V/F Control)

Error	Code	Solution	Default	REC.
1: High motor electromagnetic noise 2: Instability or vibration at low (<10Hz) or medium (10Hz~40Hz) speeds	F01.40 [Carrier Frequency]	● Increase carrier frequency if motor noise is high. ● Reduce carrier frequency if instability or vibration occurs at low/medium speed.	Up to model	1.0~Upper limit
1. Low torque at low speed (<10Hz) 2. Instability or vibration	F04.01 [Torque Boost]	● Increase the set value if low-speed torque is insufficient. ● Decrease the set value if instability/vibration occurs under light load.	Up to model	0.0~Upper limit
Poor speed accuracy	F04.03 [Slip Compensation Gain]	Adjust after setting F02.06 [Rated Current], F02.04 [Rated Speed], and F02.10 [No-load Current].	0.0%	50.0%~150.0%

➤ AM Vector Control Mode

Table 5-8 Parameters for Fine Tuning (SVC)

Error	Code	Solution	Default	REC.
1. Slow torque and speed response 2. Instability or vibration at medium speed (10Hz~40Hz)	F03.02 [ASR H-speed Proportional Gain] F03.06 [ASR L-speed Proportional Gain]	● Increase in 1.00 increments to improve torque/speed response. ● Reduce in 1.00 increments if instability/vibration occurs. ● Reduce if motor has >10 pole pairs.	10.00	0.01~100.00
	F03.03 [ASR H-speed Integral Time] F03.07 [ASR L-speed Integral Time]	● Reduce in 0.05 increments to improve response. ● Increase in 0.05 increments if instability/vibration or high load inertia occurs.	0.100	0.000s~6.000s
1. Overvoltage at acceleration end, deceleration start, or load changes 2. Low mechanical stiffness causing vibration	F03.04 [ASR H-speed Filter Time] F03.08 [ASR L-speed Filter Time]	● Increase in 1ms increments if overvoltage or vibration occurs. ● Reduce in 1ms increments if response is slow.	0.0ms	0.0ms~100.0ms
Low-speed/high-speed response insufficient	F03.05 [ASR H-speed Shift Frequency] F03.09 [ASR L-speed Shift Frequency]	Adjust ASR gain and integral time based on output frequency.	0.0Hz	0.0Hz~Max. output frequency
Poor SVC speed accuracy	F03.23 [Slip Compensation]	● Increase by 10% if speed is slow. ● Decrease by 10% if speed is fast.	100%	80%~160%
Weak FVC load capability	F03.23 [Slip Compensation]	● Reduce if current reaches rated but output torque is low. ● Usually after high-power dynamic auto-learning; otherwise, no adjustment needed.	100%	80%~120%
1. High motor electromagnetic noise 2: Instability or vibration at low speed (<10Hz)	F01.40 [Carrier Frequency]	● Increase if motor noise is high. ● Reduce if instability/vibration occurs at low/medium speed.	Up to model	1.0kHz~Upper limit

➤ PM Vector Control Mode

Table 5-9 Parameters for Fine Tuning (PM SVC)

Error	Code	Solution	Default	REC.
Motor does not follow command	F02 motor parameters, F02.20~F02.29 parameters	● Check F02.03 [Motor Rated Frequency] setting. ● Check the PM parameters and confirm all motor-related parameters are set correctly.	-	-

1. Slow torque and speed response 2. Instability or vibration at medium speed (10Hz~40Hz)	F03.02 [ASR H-speed Proportional Gain] F03.06 [ASR L-speed Proportional Gain]	● Increase in 1.00 increments to improve torque/speed response. ● Reduce in 1.00 increments if instability/vibration occurs. ● Reduce if motor has >10 pole pairs.	10.00	0.01~100.00
	F03.03 [ASR H-speed Integral Time] F03.07 [ASR L-speed Integral Time]	● Reduce in 0.05 increments to improve response. ● Increase in 0.05 increments if instability/vibration or high load inertia occurs.	0.100	0.000s~6.000s
1. Overvoltage at acceleration end, deceleration start, or load changes 2. Low mechanical stiffness causing vibration	F03.04 [ASR H-speed Filter Time] F03.08 [ASR L-speed Filter Time]	● Increase in 1ms increments if overvoltage or vibration occurs. ● Reduce in 1ms increments if response is slow.	0.0ms	0.0ms~100.0ms
Low-speed/high-speed response insufficient	F03.05 [ASR H-speed Shift Frequency] F03.09 [ASR L-speed Shift Frequency]	Adjust ASR gain and integral time based on output frequency.	0.0Hz	0.0Hz~Max. output frequency
Excessive current at high frequency	F03.20 [HF Pull-in Current]	Reduce in 5% increments.	10.0%	0%~20%
Load-connected motor stalls or vibrates	F03.20 [LF Pull-in Current] F03.21 [HF Pull-in Current]	Increase gradually in 5% increments.	F03.20: 20.0% F03.20: 10.0%	0%~40%
Instability or vibration	F03.04 [ASR H-speed Filter Time] F03.08 [ASR L-speed Filter Time]	● Increase by 1ms if mechanical stiffness is low. ● Reduce by 1ms if response is slow.	0.0	0.0ms~100.0ms

5.10 Test Run Checklist

➤ Please check the following items before performing a test run.

Pass	No.	Content
	1	Read this manual carefully before the test operation.
	2	Main circuit wiring is correct.
	3	AC drive power supply is connected.
	4	Input power voltage matches the AC drive model.

Please check the necessary items based on the control mode.



WARNING

Safety Note for Restarting the Device

Ensure that the Run/Stop circuit and safety circuit are wired correctly, and verify that the machine operates normally after power-on. Incorrect parameter settings may cause the machine to start unexpectedly, leading to personal injury.

➤ V/F Control [F01.00=0]

Pass	No.	Content
	5	The optimal V/F curve is selected according to the motor application and specifications.

➤ SVC Control [F01.00=1]

Pass	No.	Content
	6	Dynamic or static auto-tuning has been performed.
	7	Motor nameplate data have been correctly set before auto-tuning: Pole No. Rated Output Power (kW) Rated Voltage (V) Rated Current (A) Rated Frequency (Hz) Rated Speed (RPM)
	8	For dynamic auto-tuning: the motor shaft is disconnected from the mechanical load. For static auto-tuning: the motor remains stationary.

➤ FVC Control [F01.00=2]

Pass	No.	Content
	9	Dynamic auto-tuning has been performed.
	10	Motor nameplate data have been correctly set before auto-tuning: Pole No. Rated Output Power (kW) Rated Voltage (V) Rated Current (A) Rated Frequency (Hz) Rated Speed (RPM) Encoder parameters have been set correctly for Encoder 1 (E02.00 [Encoder 1 Motor], E02.01 [Encoder 1 Type], E02.12 [Encoder 1 Line No.], E02.20 [RT Pole No.]) or Encoder 2 (E03.00 [Encoder 2 Motor], E03.01 [Encoder 2 Type], E03.12 [Encoder 2 Line No.], E03.20 [RT Pole No.]). Refer to the AC600-PG01 Extension Card Manual for details. For dynamic auto-tuning: the motor shaft is disconnected from the mechanical load.

➤ PM V/F Control [F01.00=10]

Pass	No.	Content
	11	Motor parameters have been correctly set and auto-tuning has been completed.

➤ PM SVC Control [F01.00=11]

Pass	No.	Content
	12	Dynamic auto-tuning has been performed. If static auto-tuning is used, the back-EMF value must be set manually.
	13	Motor nameplate data have been correctly set before auto-tuning: • Pole No. • Rated Output Power (kW) • Rated Voltage (V) • Rated Current (A) • Rated Frequency (Hz) • Rated Speed (RPM)
	14	For dynamic auto-tuning: the motor shaft is disconnected from the mechanical load. For static auto-tuning: the motor remains stationary.

➤ PM FVC Control [F01.00=12]

Pass	No.	Content
	15	Dynamic auto-tuning has been performed.
	16	Motor nameplate data have been correctly set before auto-tuning: • Pole No. • Rated Output Power (kW) • Rated Voltage (V) • Rated Current (A) • Rated Frequency (Hz) • Rated Speed (RPM) Encoder parameters have been set correctly for Encoder 1 (E02.00 [Encoder 1 Motor], E02.01 [Encoder 1 Type], E02.12 [Encoder 1 Line No.], E02.20 [RT Pole No.]) or Encoder 2 (E03.00 [Encoder 2 Motor], E03.01 [Encoder 2 Type], E03.12 [Encoder 2 Line No.], E03.20 [RT Pole No.]). Refer to the AC600-PG01 Extension Card Manual for details. For dynamic auto-tuning: the motor shaft is disconnected from the mechanical load.

➤ After checking No.5~No.15, please check the following items:

Pass	No.	Content
	17	The keypad display operates normally when starting the drive.
	18	Before entering run and frequency commands via the keypad, parameters F01.01=0 and F01.02=0 are set.
	19	If the motor rotates in the wrong direction during test run, U, V, W output terminals have been corrected by swapping any two phases.
	20	Parameters F10.55 [Motor Overload Mode] and F10.56 [Motor Insulation Class] are correctly set to ensure proper motor overload protection.
	21	Before entering run and frequency commands via control terminals, parameters F01.01=1 and F01.02=2 are set. (All)

	22	When frequency command is input via AI1: ● Voltage input – DIP switch for AI1 is set to OFF. – F01.02 [Frequency Source A] =2: AI1. ● Current input – DIP switch for AI1 is set to ON. – F01.02 [Frequency Source A] =2: AI1.
	23	When frequency command is input via AI2: ● Voltage input – DIP switch for AI2 is set to OFF. – F01.02 [Frequency Source A] =3: AI2. ● Current input – DIP switch for AI2 is set to ON. – F01.02 [Frequency Source A] =3: AI2.
	24	Frequency command reaches the required minimum and maximum values. If the desired values are not reached, check: Gain adjustment: Set the maximum voltage/current value and adjust the analog input gain until the target frequency is reached. (F01.03 [Frequency Source A Gain]; F01.05 [Frequency Source B Gain].) Bias adjustment: Set the maximum voltage/current value and adjust the analog input bias until the minimum frequency value is correct. (When input from AI1: F07.10~F07.13; from AI2: F07.15~F07.18.)

Chapter 6 Network Communication

6.1 Safety Precautions

Please pay attention to all information in this manual regarding safety.

Failure to observe the precautions may result in death or serious injuries. VEICHI will not be held liable for injuries and equipment damage caused by your company or your customers' failure to comply with the precautions of this manual.

6.2 Modbus Communication

The AC600 series drive is equipped with RS485 communication ports as standard, and its communication adopts international standard Modbus protocol. Users can realize centralized control via PC/PLC or master AC drive, which allows for commands setting, operational frequency setting, function parameters adjustment, and AC drive status and faults monitoring, to satisfy special application requirements.

6.2.1 Master/Slave Composition

Communication between a master and a slave (serial communication) means the master sends a message and the slave responds to it. The master presets addresses for each slave and assigns signals through the addresses. A slave that receives a command from the master performs the function specified by the master and responds to the master.

6.2.2 Communication Rules

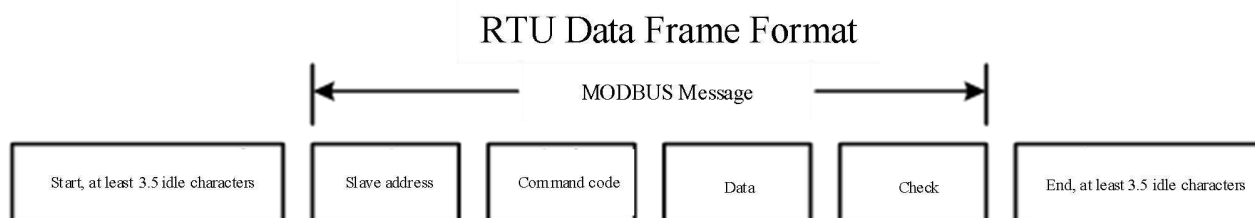
The format of Modbus communication is shown in the table below.

Item	Description
Interface	RS-485 (RS232 port requires additional RS232/RS485 adapter)
Sync method	Unsynchronized
Communication frame	Baud rate: 1200bps, 2400bps, 4800bps, 9600bps, 19200bps, 38400bps, 57600bps, 115200bps
	Data length: 8 bits (fixed)
	Parity: odd, even, none
	Stop bits: 1, 2
Communication protocol	Modbus protocol (RTU mode only)

Note: The AC600 series only supports RTU mode.

6.2.3 Information Format

In RTU mode, a new frame requires to start with a transmission pause interval of at least 3.5 bytes. Then it is followed by the slave address, operation command code, data and parity words. After the final byte of these words has been transmitted, there is a minimum of a 3.5-byte transmission pause interval to indicate the end of this frame. The format of RTU data frame is shown in the table below.



Slave Address

Please set a value in the range of 0~247 (decimal). When the slave address is set to 0, the master is for broadcasting and all slaves receive commands.

For broadcast mode, the slave does not send response messages to the master.

Command Code

Command Code	Function
03H	Read slave parameters
06H	Write slave parameters
08H	Circuit self-detection
10H	Write continuous parameters

Data

Data is formed from AC drive parameter code and its associated data which includes data for reading and writing codes or specific addresses.

Check

Standard Modbus communication uses two kinds of error checking methods. Parity check is for each characteristic and the Cyclical Redundancy Check (CRC) is for a frame.

1. Parity

Users can configure controllers for odd, even parity or no parity. This will determine how the parity bit is set in each character.

If either even or odd parity is specified, the quantity of "1" bits will be counted in the data portion of each character (7 data bits for ASCII mode, or 8 for RTU). For example, the RTU character frame contains the following 8 data bits: 1 1 0 0 1 0 1, and the total quantity of "1" bits is 4.

If even parity is used, the frame's parity bit will be a 0, making the total quantity of "1" bits remains 4. If odd parity is used, the frame's parity bit will be a 1, making the total quantity of "1" bits is 5.

If no parity bit is specified, no parity bit is transmitted and no parity can be made. An additional stop bit is transmitted to fill out the character frame.

2. CRC-16 (Cyclical Redundancy Check)

RTU frame format is used here. The frame includes CRC-based error detection field for all of the contents of the entire frame. The CRC field is a two-byte binary value containing 16 bits. It is calculated by the transmission device and then added to the frame. The receiving device recalculates the CRC of the received frame and compares it with the value in the received CRC field. If the two CRC values are not equal, an error is indicated in the transmission.

The CRC is stored to 0xFFFF firstly and then applies a process to handle the successive 6-bit bytes of the frame to the current contents of the register. Only the 8Bit data in each character is valid for CRC. Start/stop and the even/odd parity bits are invalid.

During the generation of the CRC, each 8-bit character is XOR with the register contents respectively. Then the result is shifted to the least significant bit (LSB), with a zero filled into the most significant bit (MSB) position. The LSB is extracted and examined. If the LSB is 1, the register is XOR with pre-settings respectively. If the LSB is 0, no XOR will be done. Repeat this process for 8 times and after completing the last bit (8th bit), the next 8-bit byte will be processed XOR with the current register values again. The final contents of the register, after all the bytes of the message have been applied, is the CRC value.

This calculation of CRC adopts the international standard CRC checksum rule. When editing the CRC algorithm, please refer to the relevant standard CRC algorithm.

6.2.4 Communication Command Examples

For reading slave **parameters command code: 03H**, read N words, up to 20 words consecutively.

For example, if an AC drive with a slave address of 01H and a memory starting address of 2100H ([C00.00]) that reads three consecutive words, the framing is described as follows:

RTU master command:

START	Transmission time for 3.5 bytes
Slave address	01H
Command code	03H
Starting address high	21H
Starting address low	00H
Data count high	00H
Data count low	03H
CRC CHK low	0FH
CRC CHK high	F7H
END	Transmission time for 3.5 bytes

RTU slave response (normal):

START	Transmission time for 3.5 bytes
Slave address	01H
Command code	03H
Byte count low	06H
Data address 2100H high	13H
Data address 2100H low	88H
Data address 2101H high	00H
Data address 2101H low	00H
Data address 2102H high	00H
Data address 2102H low	00H
CRC CHK low	C3H
CRC CHK high	C9H
END	Transmission time for 3.5 bytes

RTU slave response (abnormal):

START	Transmission time for 3.5 bytes
Slave address	01H
Command code	83H
Error code	04H
CRC CHK low	40H
CRC CHK high	F3H
END	Transmission time for 3.5 bytes

For writing slave **parameters command code: 06H**, it allows for writing a word into the designated address, which can be used to modify the AC drive parameters.

For example: write 5000 (1388H) to the address 3000H of the AC drive at slave address 1. The description for the frame format is as below:

RTU master command:

START	Transmission time for 3.5 bytes
Slave address	01H
Command code	06H
Write data address high	30H
Write data address low	00H
Data content high	13H
Data content low	88H
CRC CHK low	8BH
CRC CHK high	9CH
END	Transmission time for 3.5 bytes

RTU slave response (normal):

START	Transmission time for 3.5 bytes
Slave address	01H
Command code	06H
Write data address high	30H
Write data address low	00H
Data content high	13H
Data content low	88H
CRC CHK low	8BH
CRC CHK high	9CH
END	Transmission time for 3.5 bytes

RTU slave response (abnormal):

START	Transmission time for 3.5 bytes
Slave address	01H
Command code	86H
Error code	01H
CRC CHK low	83H
CRC CHK high	A0H
END	Transmission time for 3.5 bytes

For circuit self-examination command code: **08H**, it sends back the same slave response information as the command information of the master, which is applied to check if the signal transmission between the master and the

slave is normal or not. The check code and data can be set arbitrarily, and the check code has nothing to do with the parameter address of the AC drive.

For example: Write 5000 (1388H) to the check address 0000H of the AC drive at slave address 1. The description for the frame format is as below:

RTU master command:

START	Transmission time for 3.5 bytes
Slave address	01H
Command code	08H
Check code high byte	00H
Check code low byte	00H
Data high byte	13H
Data low byte	88H
CRC CHK low	EDH
CRC CHK high	5DH
END	Transmission time for 3.5 bytes

RTU slave response (normal):

START	Transmission time for 3.5 bytes
Slave address	01H
Command code	08H
Check code high byte	00H
Check code low byte	00H
Data high byte	13H
Data low byte	88H
CRC CHK low	EDH
CRC CHK high	5DH
END	Transmission time for 3.5 bytes

RTU slave response (abnormal):

START	Transmission time for 3.5 bytes
Slave address	01H
Command code	88H
Error code	03H
CRC CHK low	06H
CRC CHK high	01H
END	Transmission time for 3.5 bytes

For writing continuous slave **parameters command code: 10H**, it allows for writing multiple words into the designated consecutive addresses, which can be used to modify the consecutive AC drive parameters. Up to 5 consecutive writes supported.

For example: write 600 (0258H), 800 (0320H) to the address 0116H, 0117H of the AC drive at slave address 1. The description for the frame format is as below:

RTU master command:

START	Transmission time for 3.5 bytes
Slave address	01H
Command code	10H
Write data address high	01H
Write data address low	16H
Data count high	00H
Data count low	02H
Byte	04H
Data 0116H content high	02H
Data 0116H content low	58H
Data 0117H content high	03H
Data 0117H content low	20H
CRC CHK low	FEH
CRC CHK high	5AH
END	Transmission time for 3.5 bytes

RTU slave response (normal):

START	Transmission time for 3.5 bytes
Slave address	01H
Command code	10H
Write data address high	01H
Write data address low	16H
Data count high	00H
Data count low	02H
CRC CHK low	A1H
CRC CHK high	F0H
END	Transmission time for 3.5 bytes

RTU slave response (abnormal):

START	Transmission time for 3.5 bytes
Slave address	01H
Command code	90H
Error code	05H
CRC CHK low	8CH
CRC CHK high	03H
END	Transmission time for 3.5 bytes

6.2.5 Communication Data List

AC600 Series Parameter Addressing Rules

The AC drive function parameter code is used as the register address, which is divided into two parts: the high byte and the low byte. The high byte indicates the parameter group number, and the low byte indicates the parameter index within the group, both converted to hexadecimal.

High-byte definition:

Parameter Group	Parameter Address
F00 Environment	Not stored in EEPROM: 0x00xx Stored in EEPROM: (0x00xx 0x0080)
F01 Basic Command Parameters	Not stored in EEPROM: 0x01xx Stored in EEPROM: (0x01xx 0x0080)
F02 Motor 1 Parameters	Not stored in EEPROM: 0x02xx Stored in EEPROM: (0x02xx 0x0080)
F03 Motor 1 Vector Control Parameters	Not stored in EEPROM: 0x03xx Stored in EEPROM: (0x03xx 0x0080)
F04 Motor 1 V/F Control Parameters	Not stored in EEPROM: 0x04xx Stored in EEPROM: (0x04xx 0x0080)
F05 DI Terminal Parameters	Not stored in EEPROM: 0x05xx Stored in EEPROM: (0x05xx 0x0080)
F06: DO Terminal Parameters	Not stored in EEPROM: 0x06xx Stored in EEPROM: (0x06xx 0x0080)
F07 AI Terminal Parameters	Not stored in EEPROM: 0x07xx Stored in EEPROM: (0x07xx 0x0080)
F08 AO Terminal Parameters	Not stored in EEPROM: 0x08xx Stored in EEPROM: (0x08xx 0x0080)
F09 Operation Control	Not stored in EEPROM: 0x09xx Stored in EEPROM: (0x09xx 0x0080)
F10 Protection Parameters	Not stored in EEPROM: 0x0Axx Stored in EEPROM: (0x09xx 0x0080)
F11 Keypad Parameters	Not stored in EEPROM: 0x0Bxx Stored in EEPROM: (0x0Bxx 0x0080)
F12 Communication Parameters	Not stored in EEPROM: 0x0Cxx Stored in EEPROM: (0x0Cxx 0x0080)
F13 PID Parameters	Not stored in EEPROM: 0x0Dxx Stored in EEPROM: (0x0Dxx 0x0080)
F14 Simulated PLC for Multi-frequency	Not stored in EEPROM: 0x0Exx Stored in EEPROM: (0x0Exx 0x0080)

F15 Torque Control	Not stored in EEPROM: 0x0Fxx Stored in EEPROM: (0x0Fxx 0x0080)
F16 Auxiliary Function 1	Not stored in EEPROM: 0x10xx Stored in EEPROM: (0x10xx 0x0080)
F25 Factory Calibration	Not stored in EEPROM: 0x19xx Stored in EEPROM: (0x19xx 0x0080)
A00 Default Parameters	Not stored in EEPROM: 0x40xx Stored in EEPROM: (0x40xx 0x0080)
A01 Brake Control	Not stored in EEPROM: 0x41xx Stored in EEPROM: (0x41xx 0x0080)
d00 Motor Parameters	Not stored in EEPROM: 0x60xx Stored in EEPROM: (0x60xx 0x0080)
d01 Motor 2 Parameters	Not stored in EEPROM: 0x61xx Stored in EEPROM: (0x61xx 0x0080)
d02 Motor 2 Vector Control	Not stored in EEPROM: 0x62xx Stored in EEPROM: (0x62xx 0x0080)
d03 Motor 2 V/F Control	Not stored in EEPROM: 0x63xx Stored in EEPROM: (0x63xx 0x0080)
d04 Motor 3 Parameters	Not stored in EEPROM: 0x64xx Stored in EEPROM: (0x64xx 0x0080)
d05 Motor 3 Vector Control	Not stored in EEPROM: 0x65xx Stored in EEPROM: (0x65xx 0x0080)
d06 Motor 3 V/F Control	Not stored in EEPROM: 0x66xx Stored in EEPROM: (0x66xx 0x0080)
d07 Motor 4 Parameters	Not stored in EEPROM: 0x67xx Stored in EEPROM: (0x67xx 0x0080)
d08 Motor 4 Vector Control	Not stored in EEPROM: 0x68xx Stored in EEPROM: (0x68xx 0x0080)
d09 Motor 4 V/F Control	Not stored in EEPROM: 0x69xx Stored in EEPROM: (0x69xx 0x0080)
E00 IO Extension X Terminal Parameters	Not stored in EEPROM: 0x70xx Stored in EEPROM: (0x70xx 0x0080)
E01 IO Extension Y Terminal Parameters	Not stored in EEPROM: 0x71xx Stored in EEPROM: (0x71xx 0x0080)
E02 Encoder 1 Extension Parameters	Not stored in EEPROM: 0x72xx Stored in EEPROM: (0x72xx 0x0080)
E03 Encoder 2 Extension Parameters	Not stored in EEPROM: 0x73xx Stored in EEPROM: (0x73xx 0x0080)
E04 Bus Extension 1 Common Parameters	Not stored in EEPROM: 0x74xx Stored in EEPROM: (0x74xx 0x0080)
E05 Bus Extension 2 Common Parameters	Not stored in EEPROM: 0x75xx Stored in EEPROM: (0x75xx 0x0080)
E06 CAN/DP/Extension 485 Parameters	Not stored in EEPROM: 0x76xx Stored in EEPROM: (0x76xx 0x0080)
E07 Industrial Ethernet Extension Parameters	Not stored in EEPROM: 0x77xx Stored in EEPROM: (0x77xx 0x0080)
E08 PLC Extension Parameters	Not stored in EEPROM: 0x78xx Stored in EEPROM: (0x78xx 0x0080)
E10 Black Box Extension Parameters	Not stored in EEPROM: 0x7Axx Stored in EEPROM: (0x7Axx 0x0080)
L00 Free Function Block	Not stored in EEPROM: 0x80xx Stored in EEPROM: (0x80xx 0x0080)
L01 Bit-Word Function Block Input	Not stored in EEPROM: 0x81xx Stored in EEPROM: (0x81xx 0x0080)
U00 Digital Status	0xA0xx (Read-only)
U01 Function Status	0xA1xx (Read-only)
U02 Extension Function Status	0xA2xx (Read-only)
U03 Frequency/Voltage/Current Value	0xA3xx (Read-only)
U04 Internal Parameter Word 1	0xA4xx (Read-only)

U05 Internal Parameter Word 2	0xA5xx (Read-only)
U06 Communication Connector	0xA6xx (Read-only)
U07 Free Function Block	0xA7xx (Read-only)
U08 Bit-Word Function Block Input Monitoring	0xA8xx (Read-only)
C00 Basic Monitoring	0x21xx (Read-only)
C01 Fault Monitoring Parameters	0x22xx (Read-only)
C02 APP Monitoring Parameters	0x23xx (Read-only)
C03 Maintenance Monitoring Parameters	0x24xx (Read-only)
C04 Industrial Application Monitoring Parameters	0x25xx (Read-only)
C05 Control Monitoring Parameters	0x26xx (Read-only)
C06 Option Card Monitoring Group A	0x27xx (Read-only)
C07 Option Card Monitoring Group B	0x28xx (Read-only)
Modbus Communication Control Parameters	0x30xx
Option Card Communication Control Parameters	0x31xx

Note: EEPROM storage is triggered with each parameter update via communication. Frequent updates will reduce the EEPROM's service life. Actually for some function codes, users only need to change the value in the RAM without storage to realize certain functions. The AC600 protocol dictates that for the write command (06H), if the highest bit of the low byte of the parameter address is 0, it is only written to AC drive's RAM, namely, data will not be stored in power loss; if the highest bit of the low byte of the parameter address is 1, it is written to EEPROM, namely, data will be stored in power loss.

Example 1: Parameter F00.14

If it is not stored in the EEPROM, the address is 000EH, and if it is stored in the EEPROM, the address is 008EH.

Example 2: Parameter F01.40

If it is not stored in the EEPROM, the address is 0128H, and if it is stored in the EEPROM, the address is 01A8H.

Modbus Communication Control Parameters

Address	Name	R/W	Scale (Range)	Content
0x3000	Target Frequency	R/W	0.01Hz (0.00Hz~320.00Hz)	Frequency given via communication.
0x3001	Given Command 1	R/W	0x0000 (0x0~0x0103)	0x0000: None 0x0001: Forward 0x0002: Reverse 0x0003: Forward jogging 0x0004: Reverse jogging 0x0005: Deceleration stop 0x0006: Free stop 0x0007: Reset 0x0008: Operation disable, when writing 8 to address 3001 through communication, AC drive freely stops. It needs writing 9 to address 3001 or re-power on to run. 0x0009: Operation enable 0x0101: Equivalent to F02.07 = 1 [Dynamic auto-tuning], plus operation command. 0x0102: Equivalent to F02.07 = 2 [Static auto-tuning], plus operation command. 0x0103: Equivalent to F02.07 = 3 [Stator resistance auto-tuning], plus operation command.

0x3002	Drive Status 1	R	Binary	Bit0: 0—Stop 1—Operation Bit1: 0—Non-acceleration 1—Acceleration Bit2: 0—Non-deceleration 1—Deceleration Bit3: 0—Forward 1—Reverse Bit4: 0—Normal AC drive 1—Faulty Bit5: 0—Unlocked 1—Locked Bit6: 0—No warning 1—Warning Bit7: 0—Operation disable 1—Operation enable
0x3003	Drive Error Code	R	0 (0~127)	Read the corresponding value of the error code via communication.
0x3004	Upper Limit Frequency	R/W	0.01Hz (0.00Hz~320.00Hz)	Upper limit frequency given via communication.
0x3005	Torque Setting	R/W	0.0% (0.0%~100.0%)	Torque setting given via communication.
0x3006	Torque-controlled FWD Speed Limit	R/W	0.0% (0.0%~100.0%)	Torque-controlled FWD speed limit given via communication.
0x3007	Torque-controlled REV Speed Limit	R/W	0.0% (0.0%~100.0%)	Torque-controlled REV speed limit given via communication.
0x3008	PID Setting	R/W	0.0% (0.0%~100.0%)	PID setting given via communication.
0x3009	PID Feedback	R/W	0.0% (0.0%~100.0%)	PID feedback given via communication.
0x300A	Coil-controlled Voltage/Current Percentage	R/W	0.0% (0.0%~100.0%)	Frequency conversion-specific power supply application parameters
0x300B	Tension Setting	R/W	0.0N/0N (0N~Max. tension)	-
0x300C	Roll Diameter	R/W	0mm (0mm~max. roll diameter)	-
0x300D	Linear Speed	R/W	0.0m/min (0.0m/min ~Max. linear speed)	-
0x300E	ACC Time 1	R/W	0.00s (0.00s~600.00s)	Read and write F01.22.
0x300F	DEC Time 1	R/W	0.00s (0.00s~600.00s)	Read and write F01.23.
0x3010	Error/Alarm Code	R	0 (0~65535)	1~127: Error code, 128~159: Alarm code, and 0 means no error.
0x3011	Torque Current Component	R	0.0% (0.0%~400.0%)	Belt-specific unit application parameters
0x3012	Torque Filter Time	R/W	0.000s (0.000s~6.000s)	Read and write F15.09.

0x3013	Tension PID Feedback	R/W	0.0%~1000.0% (Corresponds to 400%)	-
0x3014	Motoring Torque Limit	R/W	0.0%~4000.0% (Corresponds to 400%)	-
0x3015	Generating Torque Limit	R/W	0.0%~4000.0% (Corresponds to 400%)	-
0x3016	Reserved	R/W	-	Use with extension cards.
0x3017	Reserved	R/W	-	Use with extension cards.
0x3018	Terminal Output	W	Binary	Output terminal function, set F06.00~F06.02 to 30: Communication control output. Bit0: Y terminal Bit1: Relay 1 Bit2: Relay 2 Bit3: Reserved
0x3019	AO1	W	0.01 (0.00~100.00)	F08.00=18 [AO Function= Communication output].
0x301A	AO2	W	0.01 (0.00~100.00)	F08.01=18 [AO2 Function= Communication output].
0x301B	Given Command 2	R/W	0 (0~65535)	Bit0: 0-> 1: Operation 1: OFF 1 (per stop mode) Bit1: 1: Run requirement 0: OFF2 (coasting stop) Bit2: 1: Run requirement 0: OFF3 (deceleration stop) Bit3: 1: Operation enable 0: Operation disable Bit4: Reserved Bit5: Reserved Bit6: Reserved Bit7: 0->1: Rising edge, fault reset Bit8: 1: Jog Bit9: Reserved Bit10: 1: PLC control active 2: Not PLC control Bit11: Reserved Bit12: Reserved Bit13: Reserved Bit14: Reserved Bit15: Reserved

0x301C	Drive Status 2	R	Binary	Bit0: 1: Power-up ready 0: System not ready Bit1: 1: Run ready (DC bus charged) 0: Not ready Bit2: 1: Running 0: Stopped Bit3: 1: Fault active 0: No fault Bit4: 1: No coast stop (OFF2 inactive) 2: Coast stop (OFF2 active) Bit5: 1: No deceleration stop (OFF2 inactive) 2: Deceleration stop (OFF2 active) Bit6: 1: Closing prohibited (Start-up lock) 0: Closing allowed Bit7: 1: Warning active 0: No warning Bit8: 1: Speed reached 0: Speed not reached Bit9: 1: PLC active 0: PLC inactive Bit10: Reserved Bit11: Reserved Bit12: Reserved Bit13: Reserved Bit14: Reserved Bit15: Reserved
0x301D	Reserved	R/W	0 (0~65535)	-
0x301E	Frequency Percentage	R/W	0.0% (0.0%~100.0%)	100% corresponds to maximum frequency.
0x301F	Reserved	R/W	0 (0~65535)	-

6.2.6 Error Code

The error codes of Modbus communication are shown in the table below. Upon malfunction, please eliminate the error before new communication.

Error Code	Description
1	Command code error
2	Communication format error
3	CRC parity error
4	Invalid address
5	Invalid data
6	Parameters cannot be changed during operation.
7	System locked
8	Drive busy (saving to EEPROM)
9	Parameter over range
10	Reserved parameter, cannot be modified
11	Error in reading parameter bytes
12	Read-only parameter, write not allowed
13	Parameter protected, modification not allowed

Chapter 7 Troubleshooting

7.1 Safety Precautions

 WARNING	• This product is equipped with hazardous voltage to control potentially dangerous motion mechanisms. Non-compliance with regulations or failure to operate in accordance with this manual may lead to damage to the product and associated systems or even personal injury and death. • This product is exclusively for use by trained professionals who must thoroughly understand all safety precautions and operational procedures outlined in the manual prior to use. Proper operation and maintenance are essential for safe operation and stable performance of the product. • Do not work on wiring while power is on, as it poses a risk of fatal electric shock. Prior to any wiring, inspection, or maintenance work, ensure that the power supply to all associated equipment is disconnected, and confirm that the DC voltage in the main circuit has dropped to a safe level. Wait for 10 minutes before commencing the work.
 CAUTION	• Prevent children and the public from contacting or approaching this product. • This product is intended for use in accordance with the manufacturer's specified purpose. Unauthorized use for special fields such as emergency, rescue, marine, medical, aviation, nuclear facility-related settings is prohibited. • Unauthorized modifications or using of spare parts not sold or recommended by the manufacturer of this product may cause malfunctions.
NOTE	• Ensure this manual is provided directly to the actual user, who must read it thoroughly prior to use. • Ensure that you have thoroughly read and comprehended the associated safety guidelines and warning notices before installing and adjusting the AC drive.

7.2 Error, Alarm, and Prompt Codes

If the AC drive or motor operates abnormally, first check that the displayed code and prompts on the keypad.

If the issue still exists despite consulting the manual, please double-check the following items prior to contacting our agent or calling VEICHI's customer service (refer to the back cover for details).

1. Model of the AC drive
2. Software version
3. Purchase date
4. Inquiry content (malfunction status)

Refer to the following table for the description of the errors, alarms, and prompts that occur during operation of the AC drive.

Table 7-1 Error, Alarm, and Prompt Codes

Type	AC Drive Response
Error	The following conditions will occur upon an error is detected. The AC drive fails to operate until it is restored to a normal status by error reset. • An error warning appears on the keypad. • The AC drive cuts off output and the motor stops freely. • When an error is detected, turn ON terminals set via F06.00~F06.02 = 4 [Terminal Y = Fault Output]. If not set, no signal is output.
Alarm	The following conditions occur when an alarm is detected, and no reset is required. • Alarm code appears on the keypad. • The AC drive continues to operate. • When an alarm is detected, turn ON terminals set via F06.00~F06.02 = 29 [Terminal Y = Alarm Output]. If not set, no signal is output.
Note	• "Pon" indicates that the panel is powered up. • "SAvE" indicates that it is reset to factory settings. • "T-00" indicates that the auto-tuning is on after setting. • "CoPy" indicates parameters uploading, and "LoAd" indicates downloading.

7.3 Error and Alarm Codes

Note: The numbers in brackets in the code column are error codes and alarm codes. (Dec. indicates decimal).

Display (Dec.)	Name	Type	Display (Dec.)	Name	Type
E.SC1 (1)	System failure during acceleration	Error	E. LoC (85)	Program protection	Error
E. SC2 (2)	System failure during deceleration	Error	E. EEP (86)	Funcode write error	Error
E. SC3 (3)	System failure during constant speed	Error	E. PLL (87)	PLL error	Error
E. SC4 (4)	System failure during stop	Error	E. Eb1 (91)	Extension 1 communication lost	Error
E. oC1 (5)	Overcurrent during acceleration	Error	E. Eb2 (92)	Extension 2 communication lost	Error
E. oC2 (6)	Overcurrent during deceleration	Error	E. Eb3 (93)	Extension 3 communication lost	Error
E. oC3 (7)	Overcurrent during constant speed	Error	E.ECn1 (94)	Extension 2 bus communication with PLC lost	Error
E. ou1 (9)	Overvoltage during acceleration	Error	E.ECn2 (95)	Extension 3 bus communication with PLC lost	Error
E. ou2 (10)	Overvoltage during deceleration	Error	E. CP1 (96)	Comparator 1 error	Error
E. ou3 (11)	Overvoltage during constant speed	Error	E. CP2 (97)	Comparator 2 error	Error
E. Lu (13)	Undervoltage during operation	Error	E. CP3 (98)	Comparator 3 error	Error
E. oL1 (14)	Motor overload	Error	E. CP4 (99)	Comparator 4 error	Error
E. oL2 (15)	Drive overcurrent	Error	E. BOC (100)	Low brake release current	Error
E. oL3 (16)	Drive CBC overload	Error	E. BLC (101)	Low brake release running current	Error
E. oL4 (17)	Single-phase overload	Error	E. BOF (102)	Brake release error	Error
E. iLF (18)	Input phase loss	Error	E. BFF (103)	Brake apply error	Error
E. oLF (19)	Three-phase output phase loss	Error	E. nOP1 (104)	Extension 2 bus external non-OP operation	Error
E. oLF1 (20)	U phase loss	Error	E. nOP2 (105)	Extension 3 bus external non-OP operation	Error
E. oLF2 (21)	V phase loss	Error	E. FA1 (110)	Reserved for extension 1	Error
E. oLF3 (22)	W phase loss	Error	E. FA2 (112)	Reserved for extension 2	Error
E. oLF4 (23)	Three-phase current imbalance	Error	E. FrA (118)	Material fracture	Error
E. SD (25)	SD latch error	Error	The following are alarm codes:		
E. oCE (26)	Abnormal current protection reference point	Error	A. Lu1 (128)	Low voltage during stop	Alarm
E. H1b (27)	Internal temp sensor 1 break	Error	A. ou (129)	High voltage during stop	Alarm
E. H2b (28)	Internal temp sensor 2 break	Error	A. EEP (130)	Parameter storage failure	Alarm
E. oH1 (30)	Drive overheat	Error	A. LSF (131)	Brake release target frequency below start frequency	Alarm

E. oH2 (31)	Rectifier overheat	Error	A. LOF (132)	Target frequency below brake release frequency	Alarm
E. oH3 (32)	Motor overheat	Error	A. LFF (133)	Brake target frequency below brake frequency	Alarm
E. EF (33)	External error	Error	A. BER (134)	Brake failure protection	Alarm
E. CE (34)	RS485 communication error	Error	A. PoH1 (141)	Module overheat	Alarm
E. HAL1 (35)	Large U-phase zero drift	Error	A. PoH3 (142)	Motor overheat	Alarm
E. HAL2 (36)	Large V-phase zero drift	Error	A. run1 (143)	Operation command conflict	Alarm
E. HAL (37)	Non-0 current sum of three phases	Error	A. run2 (148)	Jogging terminal startup protection	Alarm
E. HAL3 (38)	Large W-phase zero drift	Error	A. run3 (149)	Terminal startup protection	Alarm
E. PoS (39)	24V power short circuit	Error	A. PA2 (144)	External keypad break	Alarm
E. SG (40)	Short to ground	Error	-	-	-
E. FSG (41)	Fan short to ground	Error	-	-	-
E. PiD (42)	PID feedback disconnection	Error	-	-	-
E. CoP (43)	Parameter copy error	Alarm	-	-	-
E. PG (44)	PG error	Error	-	-	-
E. bru (50)	Brake unit error	Error	-	-	-
E. E51 (51)	Reserved	Error	-	-	-
E. TE (52)	Motor auto-tuning error	Error	-	-	-
E. FS (55)	Fan error	Error	-	-	-
STOEN (56)	STO E-stop enable	Error	-	-	-
E. ST (57)	STO single terminal fault	Error	-	-	-
E. STO (58)	STO hardware feedback error	Error	-	-	-
E. iAE1 (71)	Initial angle tuning failure 1	Error	-	-	-
E. iAE2 (72)	Initial angle tuning failure 2	Error	-	-	-
E. iAE3 (73)	Initial angle tuning failure 3	Error	-	-	-
E. PST1 (74)	PM step loss 1	Error	-	-	-
E. PST2 (75)	PM step loss 2	Error	-	-	-
E. PST3 (76)	PM step loss 3	Error	-	-	-
E. DEF (77)	Excessive speed deviation	Error	-	-	-
E. SPD (78)	Overspeed	Error	-	-	-
E. LD1 (79)	Load protection 1	Error	-	-	-
E. LD2 (80)	Load protection 2	Error	-	-	-
E. CPU (81)	CPU timeout	Error	-	-	-

E. DAT (84)	Parameter setting error	Error	-	-	-

7.4 Error

Don't run the AC drive in the event of a malfunction. Please refer to the table below for potential causes and solutions.

Note: All errors have to be removed by reset operation.

Code	Name	Cause	Solution
E. SC1 (01)	System failure during acceleration	Short circuit on the output side of the drive or short circuit to ground.	Check the main circuit to solve the short circuits.
		AC drive output cable length beyond limit	Shorten the distance between AC drive and motor or add output reactor.
		Malfunction caused by interference	Check the wiring of the main and control circuit and grounding to remove the interference sources.
		Motor damage	Measure resistance between motor cables and replace motor immediately if conductive.
		High torque boost	Decrease the F04.01 [Torque Boost]
		Overload	Reduce the load or replace with a large-capacity AC drive. Reduce the load change frequency of the impact load or replace with a large-capacity AC drive.
		Short acceleration time	Increase the F01.22 [ACC Time 1]. Replace with a large-capacity AC drive.

Note: This fault is detected when the drive output is short-circuited, short-circuited to ground, or when the IGBT module is faulty.

Code	Name	Cause	Solution
E. SC2 (02)	System failure during deceleration	Short circuit on the output side of the drive or short circuit to ground.	Check the main circuit to solve the short circuits.
		AC drive output cable length beyond limit	Shorten the distance between AC drive and motor or add output reactor.
		Malfunction caused by interference	Check the wiring of the main and control circuit and grounding to remove the interference sources.
		Motor damage	Measure resistance between motor cables and replace motor immediately if conductive.
		High torque boost	Decrease the F04.01 [Torque Boost]
		Overload	Reduce the load or replace with a large-capacity AC drive. Reduce the load change frequency of the impact load or replace with a large-capacity AC drive.
		Short deceleration time	Increase the F01.23 [DEC Time 1]. Replace with a large-capacity AC drive.

Note: This fault is detected when the drive output is short-circuited, short-circuited to ground, or when the IGBT module is faulty.

Code	Name	Cause	Solution
E. SC3 (03)	System failure in constant running	Short circuit on the output side of the drive or short circuit to ground.	Check the main circuit to solve the short circuits.
		AC drive output cable length beyond limit	Shorten the distance between AC drive and motor or add output reactor.
		Malfunction caused by interference	Check the wiring of the main and control circuit and grounding to remove the interference sources.
		Motor damage	Measure resistance between motor cables and replace motor immediately if conductive.

		High torque boost	Decrease the F04.01 [Torque Boost]
		Overload	Reduce the load or replace with a large-capacity AC drive. Reduce the load change frequency of the impact load or replace with a large-capacity AC drive.
Note: This fault is detected when the drive output is short-circuited, short-circuited to ground, or when the IGBT module is faulty.			
Code	Name	Cause	Solution
E. SC4 (04)	System failure during stop	Short circuit on the output side of the drive or short circuit to ground.	Check the main circuit to solve the short circuits, and repower-up.
		Malfunction caused by interference	Check the wiring of the main and control circuit and grounding to remove the interference sources.
		Disturbances or damage to the control board	Seek for technical support if it is not eliminated after power cut and restart.
Note: This fault is detected when the drive is short-circuited to ground or when the IGBT module is faulty.			
Code	Name	Cause	Solution
E. oC1 (05)	Overcurrent during acceleration	Overload	Reduce the load or replace with a large-capacity AC drive. Reduce the load change frequency of the impact load or replace with a large-capacity AC drive.
		Short circuit on the output side of the drive or short circuit to ground.	Check the main circuit to solve the short circuits.
		Motor damage	Measure resistance between motor cables and replace motor immediately if conductive.
		Short acceleration time	Increase the F01.22 [ACC Time 1]. Replace with a large-capacity AC drive.
		Acceleration overcurrent faults may be generated during overvoltage suppression step-up.	Reduce the F10.13 [Anti-OU Gain].
		AC drive output cable length beyond limit	Shorten the distance between AC drive and motor or add output reactor.
		Malfunction caused by interference	Check the wiring of the main and control circuit and grounding to remove the interference sources.
Note: This error is detected when the drive output current exceeds the overcurrent point.			
Code	Name	Cause	Solution
E. oC2 (06)	Overcurrent during deceleration	Overload	Reduce the load or replace with a large-capacity AC drive. Reduce the load change frequency of the impact load or replace with a large-capacity AC drive.
		Short circuit on the output side of the drive or short circuit to ground.	Check the main circuit to solve the short circuits.
		Motor damage	Measure resistance between motor cables and replace motor immediately if conductive.
		Short deceleration time	Increase the F01.23 [DEC Time 1]. Replace with a large-capacity AC drive.
		Deceleration overcurrent faults during overvoltage suppression step-down	Increase the F10.02 [Anti-OC Gain] and reduce the load.
		AC drive output cable length beyond limit	Shorten the distance between AC drive and motor or add output reactor.

		Malfunction caused by interference	Check the wiring of the main and control circuit and grounding to remove the interference sources.
Note: This error is detected when the drive output current exceeds the overcurrent point.			
Code	Name	Cause	Solution
E. oC3 (07)	Overcurrent in constant running	Overload	Reduce the load or replace with a large-capacity AC drive. Reduce the load change frequency of the impact load or replace with a large-capacity AC drive.
		Short circuit on the output side of the drive or short circuit to ground.	Check the main circuit to solve the short circuits.
		Motor damage	Measure resistance between motor cables and replace motor immediately if conductive.
		AC drive output cable length beyond limit	Shorten the distance between AC drive and motor or add output reactor.
		Malfunction caused by interference	Check the wiring of the main and control circuit and grounding to remove the interference sources.
Note: This error is detected when the drive output current exceeds the overcurrent point.			
Code	Name	Cause	Solution
E. ou1 (09)	Overvoltage during acceleration	High power supply voltage	Set the power supply voltage within the specified range.
		Drive output short circuit or short circuit to ground	Check the main circuit to solve the short circuits.
		Short acceleration time	Check if the malfunction is detected when stopping under rapid acceleration. Increase the F01.22 [ACC Time 1].
		Acceleration overvoltage faults during overvoltage suppression step-up.	Reduce the F10.13 [Anti-OU Gain].
		Large braking loads	Use a braking resistor.
		Surge voltage mixed in the input voltage	Add a reactor on the input side.
		Improper setting of fly track parameters	Modify the fly track parameters (F09.25~F09.28).
Note: This error is detected when the bus voltage exceeds the overvoltage point. The overvoltage point is 820V for three-phase input and 400V for single-phase input.			
Code	Name	Cause	Solution
E. ou2 (10)	Overvoltage during deceleration	High power supply voltage	Set the power supply voltage within the specified range.
		Drive output short circuit or short circuit to ground	Check the main circuit to solve the short circuits.
		Short deceleration time	Increase the F01.23 [DEC Time 1]. Use a braking resistor.
		Deceleration overvoltage faults during overcurrent suppression step-down.	Reduce the F10.02 [Anti-OC Gain] and reduce the load.
		Large braking loads	Use a braking resistor.
		Surge voltage mixed in the input voltage	Add a reactor on the input side.
		Improper setting of fly track parameters	Modify the fly track parameters (F09.25~F09.28).
Note: This error is detected when the bus voltage exceeds the overvoltage point. The overvoltage point is 820V for T3 models and 400V for S2/T2 models.			

Code	Name	Cause	Solution
E. ou3 (11)	Overvoltage in constant running	High power supply voltage	Set the power supply voltage within the specified range.
		Drive output short circuit or short circuit to ground	Check the main circuit to solve the short circuits.
		Large braking loads	Use a braking resistor.
		Surge voltage mixed in the input voltage	Add a reactor on the input side.
		Improper setting of fly track parameters	Modify the fly track parameters (F09.25~F09.28).
Note: This error is detected when the bus voltage exceeds the overvoltage point. The overvoltage point is 820V for three-phase input and 400V for single-phase input.			
Code	Name	Cause	Solution
E. ou4	Overvoltage during stop	High power supply voltage	Set the power supply voltage within the specified range.
		Drive output short circuit or short circuit to ground	Check the main circuit to solve the short circuits.
		Surge voltage mixed in the input voltage	Add a reactor on the input side.
Note: This error is detected when the bus voltage exceeds the overvoltage point. The overvoltage point is 820V for three-phase input and 400V for single-phase input.			
Code	Name	Cause	Solution
E. Lu (13)	Undervoltage during operation	Power cut or instantaneous power failure	Check the power supply, reset and restart.
		Input power supply phase loss	Check the main circuit wiring.
		Large fluctuation of input voltage	Improve the power supply to meet the rated voltage of the drive. If the main circuit power supply is OK, check whether there is any problem with the electromagnetic contactor on the main circuit side.
Note: This error is detected when the bus voltage falls below the F10.19 [Low-voltage Protection Level] during drive operation.			
Code	Name	Cause	Solution
E. oL1 (14)	Motor overload	Overload	Reduce the load. Increase the motor overload protection curve factor appropriately.
		Short acceleration/deceleration time	Increase the F01.22 [ACC Time] and F01.23 [DEC Time].
		High torque boost	Reduce the F04.01 [Torque Boost]
		Incorrect V/F curve setting	Confirm the relationship between voltage and frequency for the V/F curve setting, and modify the F04.00 [V/F Curve]. If a user-defined V/F curve is used, modify F04.10~F04.19 parameters related to this user-defined V/F curve.
		Inconsistent characteristics of the electronic thermal relay with motor load.	Use an external thermal relay.
		Abnormal output current due to input phase loss	Check the main circuit to solve input phase loss.
Code	Name	Cause	Solution
E. oL2 (15)	Drive overload 1	Overload	Reduce the load. Increase the motor overload protection curve factor appropriately.
		Short acceleration/deceleration time	Increase the F01.22 [ACC Time] and F01.23 [DEC Time].
		High torque boost	Reduce the F04.01 [Torque Boost]

		Incorrect V/F curve setting	Confirm the relationship between voltage and frequency for the V/F curve setting, and modify the F04.00 [V/F Curve]. If a user-defined V/F curve is used, modify F04.10~F04.19 parameters related to this user-defined V/F curve.
		Abnormal output current due to input phase loss	Check the main circuit to solve input phase loss.
Code	Name	Cause	Solution
E. oL3 (16)	AC drive overload 2 (CBC)	Overload	Reduce the load. Increase the motor overload protection curve factor appropriately.
		Short acceleration/deceleration time	Increase the F01.22 [ACC Time] and F01.23 [DEC Time].
		High torque boost	Reduce the F04.01 [Torque Boost]
		Incorrect V/F curve setting	Confirm the relationship between voltage and frequency for the V/F curve setting, and modify the F04.00 [V/F Curve]. If a user-defined V/F curve is used, modify F04.10~F04.19 parameters related to this user-defined V/F curve.
		Abnormal output current due to input phase loss	Check the main circuit to solve input phase loss.
E. oL4 (17)	Single-phase overload	Overload	Reduce the load. Increase the motor overload protection curve factor appropriately.
		Short acceleration/deceleration time	Increase the F01.22 [ACC Time] and F01.23 [DEC Time].
		High torque boost	Reduce the F04.01 [Torque Boost]
		Incorrect V/F curve setting	Confirm the relationship between voltage and frequency for the V/F curve setting, and modify the F04.00 [V/F Curve]. If a user-defined V/F curve is used, modify F04.10~F04.19 parameters related to this user-defined V/F curve.
		Abnormal output current due to input phase loss	Check the main circuit to solve input phase loss.
Code	Name	Cause	Solution
E. LoC (18)	Input phase loss	Loose main circuit terminals of drive	Repower and restart after tightening the screws.
		Large fluctuation of input voltage	Improve the power supply to meet the rated voltage of the drive. If the main circuit power supply is OK, check whether there is any problem with the electromagnetic contactor on the main circuit side.
		Imbalance of three-phase voltage	Confirm whether there is any problem with the input voltage to solve the power supply imbalance.
Note: Select whether or not to turn on the input phase loss detection function through the F10.20 [I/O Phase Loss Protection] by the tens-bit.			
Code	Name	Cause	Solution
E. LoC (19)	All output phase loss	Two or more phases on the output side of the drive are disconnected.	Check whether the three-phase connection of the motor is normal. Check whether the drive output terminal screws are loose.

		Motor damage	Measure resistance between motor cables and replace motor immediately if conductive.
		Low rated power	Reset the drive or motor power.
Note: Select whether or not to turn on the output phase loss detection function via the F10.20 [I/O Phase Loss Protection] by the ones-bit.			
Code	Name	Cause	Solution
E. oLF1 (20)	U phase loss	U-phase disconnection on the output side	Check whether the three-phase connection of the motor is normal. Check whether the drive output terminal screws are loose.
		Motor damage	Measure resistance between motor cables and replace motor immediately if conductive.
		Low rated power	Reset the drive or motor power.
Code	Name	Cause	Solution
E. oLF2 (21)	V phase loss	V-phase disconnection on the output side	Check whether the V-phase connection of the motor is normal. Check whether the drive output terminal screws are loose.
		Motor damage	Measure resistance between motor cables and replace motor immediately if conductive.
		Low rated power	Reset the drive or motor power.
Code	Name	Cause	Solution
E. oLF3 (22)	W phase loss	W-phase disconnection on the output side	Check whether the W-phase connection of the motor is normal. Check whether the drive output terminal screws are loose.
		Motor damage	Measure resistance between motor cables and replace motor immediately if conductive.
		Low rated power	Reset the drive or motor power.
Code	Name	Cause	Solution
E. oLF4 (23)	Current imbalance	Phase loss on the output side.	Check whether the drive output wiring is disconnected or loose.
		Output circuit malfunction	Replace the circuit board or AC drive.
		Three-phase imbalance in motor impedance	Measure the resistance between the wires of the motor to confirm that the three phases are not deviated or disconnected.
		Low current imbalance threshold	Increase the F10.05 [Current Imbalance Threshold].
Note: In the case of one drive for several motors, lack of one or two phases of a motor can be effectively protected against errors.			
Code	Name	Cause	Solution
E.sd (25)	Latch error	SD latch failed	Seek support from the manufacturer.
Code	Name	Cause	Solution
E. H1b (27)	Internal temp sensor 1 break	Internal temp sensor 1 break	Check the internal temperature sensor
		Overload	Reduce the load.
		Fan error	Confirm that the fan is operating normally. If the fan is abnormal, replace the fan and restart.
Code	Name	Cause	Solution
E. H2b (28)	Internal temp sensor 2 break	Internal temp sensor 2 break	Check the internal temperature sensor
		Overload	Reduce the load.
		Fan error	Confirm that the fan is operating normally. If the fan is abnormal, replace

			the fan and restart.
Code	Name	Cause	Solution
E. oH1 (30)	Rectifier overheat	Working environment overheat	Lower the ambient temperature.
		Overload	Reduce the load.
		Fan error	Confirm that the fan is operating normally. If the fan is abnormal, replace the fan and restart.
Code	Name	Cause	Solution
E. oH2 (31)	IGBT module overheat	Working environment overheat	Lower the ambient temperature.
		Overload	Reduce the load. Reduce the F01.40 [Carrier Frequency].
		Fan error	Confirm that the fan is operating normally. If the fan is abnormal, replace the fan and restart.
Code	Name	Cause	Solution
E. oH3 (32)	Motor overheat	Abnormal motor heat dissipation	Improve the motor heat dissipation.
		Overload	Reduce the load.
Note: This function requires optional IO extension cards. The error is reported when the motor temperature exceeds the specified threshold. For details, refer to the AC600 Black Box I/O Card Manual.			
Code	Name	Cause	Solution
E. EF (33)	External fault	External fault signal input to the multi-function input terminal	Remove the external fault. Disable the external fault input via multi-function terminal.
Note: This external fault detection can be realized by configuring any X terminal from F05.00 to F05.05.			
Code	Name	Cause	Solution
E. CE (34)	RS485 communication error	Communication line malfunction, such as short circuit and disconnection	Check the communication wiring.
		Abnormal communication data due to interference	Check the cabinet grounding wiring. Change to shielded communication cables.
Note: Report this error if the drive A+/B- terminal communication data is incorrect and the time exceeds F12.06 [Modbus Timeout]. Set the F12.07 [Communication Disconnection Mode] when this error is detected.			
Code	Name	Cause	Solution
E. HAL1 (35)	Large U-phase zero drift	Abnormal U-phase current signal due to interference	Check the grounding and remove U-phase Hall interference sources.
		Abnormal AC drive hardware	Seek supports from the manufacturer.
Code	Name	Cause	Solution
E. HAL2 (36)	Large V-phase zero drift	Abnormal V-phase current signal due to interference	Check the grounding and remove V-phase Hall interference sources.
		Abnormal AC drive hardware	Seek supports from the manufacturer.
Code	Name	Cause	Solution
E. HAL (37)	Three-phase current fault	Abnormal phase current detection signal due to interference	Check the grounding and remove interference sources.
		Short circuit between motor phases	Check the motor wiring and repower.
		Loose drive output terminal screws	Repower and restart after tightening the screws.
		Abnormal AC drive hardware	Seek supports from the manufacturer.
Code	Name	Cause	Solution
E. HAL3 (38)	Large W-phase zero drift	Abnormal W-phase current detection signal due to interference	Check the grounding and remove W-phase Hall interference sources.
		Abnormal AC drive hardware	Seek supports from the manufacturer.
Code	Name	Cause	Solution
E. PoS (39)	Internal 24V	Short circuit in the power supply board due to dust	Remove dust inside the machine.

	power short circuit	Aging of power board components	Replace the power board.
-			
Code	Name	Cause	Solution
E. SG (40)	Output shorted to ground	Burnt motor or insulation deterioration	Measure the wire-to-wire resistance of the motor and replace the motor if it is conducting or if insulation deterioration has occurred.
		Large distributed capacitance between the output cable and the ground terminal, and large leakage current	Reduce the carrier frequency when the cable length exceeds 100m.
		Hardware failure on the drive	Seek supports from the manufacturer.
Note: Use error sub-code "xy" to locate the specific phase with short-circuit to ground, the error sub-code smaller than 16 means U phase, smaller than 32 means V phase, otherwise, it is W phase. Manual reset after the occurrence of the fault is invalid, repower up after troubleshooting and the drive will be reset. Subtract 16 from the sub-code "xy" until the tens-bit becomes 0 to identify the fault cause: When the processed y is 1, take this error as a system fault; If it is 2, it means overcurrent; When it is 4, it indicates drive overload 2. And if it is 8, it indicates overvoltage.			
Code	Name	Cause	Solution
E. FSG(41)	Fan short to ground	The cooling fan of the drive is damaged.	Seek for technical support if it is not eliminated after power cut and restart.
Note: Manual reset after the occurrence of the error is invalid. Repower up after troubleshooting and the drive will be reset.			
Code	Name	Cause	Solution
E. PiD(42)	PID feedback disconnection	Improper setting of PID disconnection detection-related parameters	Adjust the F13.27 [Feedback Disconnection Upper Limit], F13.28 [Feedback Disconnection Lower Limit] and F13.26 [Feedback Disconnection Time].
		Improper PID feedback wiring	Check if the PID feedback wiring is normal.
		PID feedback sensor error	Check if the sensor is normal.
		Abnormal PID feedback circuit on the drive board	Seek supports from the manufacturer.
Note: Report this error if the PID feedback input is outside the range set by F13.27 [Feedback Disconnection Upper Limit] and F13.28 [Feedback Disconnection Lower Limit], after exceeding the time set by F13.26 [Feedback Disconnection Time]. Set the motor action via F13.25 [PID Feedback Disconnection] when this error is detected.			
Code	Name	Cause	Solution
E. CoP(43)	Parameter copy error	Communication failure	Confirm whether the keypad and drive wiring is normal, plug and re-copy.
		The drive model or software version does not match the parameters stored in the keypad.	Re-copy the parameters and then download them to the drive.
		Hardware failure of keypad parameter copying	Seek technical support from the manufacturer if copy fails after replacement of the keypad.
Code	Name	Cause	Solution
E. PG (44)	PG error	Encoder error	Note: Detailed troubleshooting information is available in the Error Countermeasures Remarks table.
Code	Name	Cause	Solution
E. Bru (50)	Brake unit error	Small braking resistance value	Replace with a larger resistor for braking.
		Brake unit error	Seek supports from the manufacturer.
Code	Name	Cause	Solution

E. TE (52)	Auto-tuning failure	AC drive output current beyond limit during auto-tuning	Check whether the motor connection is correct, re-tune after reset, and seek manufacturer's support if it still reports error.
Note: Detailed troubleshooting information for parameter tuning errors is available in the Error Countermeasures Remarks table.			
Code	Name	Cause	Solution
STOEN (56)	STO E-stop error	STO E-stop enable	Check whether the STO emergency stop button is pressed. Seek supports from the manufacturer.
Code	Name	Cause	Solution
E.ST (57)	STO channel fault	Refer to Chapter 10 STO Function.	Seek supports from the manufacturer.
Code	Name	Cause	Solution
E. STO(58)	STO hardware feedback error	Refer to Chapter 10 STO Function.	Seek supports from the manufacturer.
Code	Name	Cause	Solution
E. iAE1 (71)	PM initial angle tuning error 1	Auto-tuning current over range	Check motor parameters. Retuning when the motor is still.
Code	Name	Cause	Solution
E. iAE2 (72)	PM initial angle tuning error 2	Parameter setting error	Check motor parameters. Retuning when the motor is still.
Code	Name	Cause	Solution
E. PST2 (75)	Step loss	Poor motor angle control	Check if the motor parameters and encoder parameters are correct. If there is an error, please correct it.
			Make sure to retry auto-tuning after changing motor or encoder parameters.
			Increase the F3.63 [PM Step Loss Time].
Code	Name	Cause	Solution
E. DEF (77)	Excessive speed deviation	Overload	Reduce the load.
		Short acceleration/deceleration time	Increase the F01.22 [ACC Time] and F01.23 [DEC Time].
		Improper setting of speed detection-related parameters.	Adjust the F10.41 [Speed Deviation Detection Threshold] and F10.42 [Speed Deviation Detection Time].
		Motor electromagnetic brake in applying position.	Release the brake.
Note: This error is reported after the percentage of output motor speed relative to F01.10 [Max. Frequency] is greater than F10.41 [Speed Deviation Detection Threshold] for a duration of F10.42 [Speed Deviation Detection Time]. F10.40 [Excessive Speed Deviation Protection] can be used to enable error detection and set the motor operation mode when the error is detected.			
Code	Name	Cause	Solution
E. SPD(78)	Overspeed	Improper setting of the number of encoder lines or poles.	Adjust the F02.33 [Line No.] or F02.34 [RT Pole No.].
		Improper setting of overspeed detection-related parameters.	Adjust the F10.44 [Overspeed Threshold] and F10.45 [Overspeed Time].
Note: This error is reported when the percentage of the output motor speed relative to F01.10 [Max. Frequency] is greater than F10.44 [Overspeed Detection Threshold] and lasts for a period of F10.45 [Overspeed Detection Time]. F10.43 [Overspeed Protection] can be used to enable error detection and set the motor operation mode when the error is detected.			
Code	Name	Cause	Solution
E. LD1 (79)	Load warning 1	Failure on the mechanical side, such as a broken pulley belt	Check the machine for troubleshooting.
		Improper parameter settings of load warning 1	Adjust the F10.33 [Load Warning Level 1] and F10.34 [Load Warning Time 1].

Note: This error is reported when the drive output current exceeds F10.33 [Load Warning Level 1], the duration exceeds F10.34 [Load Warning Time 1], and F10.32 [Load Warning Setting] ones and tens-bits are set to enable this error detection and to report the error and free stop.			
Code	Name	Cause	Solution
E. LD2 (80)	Load warning 2	Failure on the mechanical side, such as a broken pulley belt	Check the machine for troubleshooting.
		Improper parameter settings of load warning 2	Adjust the F10.35 [Load Warning Level 2] and F10.36 [Load Warning Time 2].
Note: This error is reported when the drive output current exceeds F10.35 [Load Warning Level 2], the duration exceeds F10.36 [Load Warning Time 2], and F10.32 [Load Warning Setting] ones and tens-bits are set to enable this error detection and to report the error and free stop.			
Code	Name	Cause	Solution
E. CPU(81)	CPU timeout	Software calculation timeout due to strong interference to the main chip	Remove the source of strong interference, power off and restart.
		Hardware problem of the main chip	Seek supports from the manufacturer.
Note: Manual reset after the occurrence of the error is invalid. Repower up after troubleshooting and the drive will be reset.			
Code	Name	Cause	Solution
E. LoC(85)	Chip locked	Mismatch between software version and control board	Seek supports from the manufacturer.
Note: Manual reset after the occurrence of the error is invalid. Repower up after troubleshooting and the drive will be reset.			
Code	Name	Cause	Solution
E. EEP (86)	EEPROM error	Interference during read and write parameter operation to EEPROM	Re-read and write parameters after checking and removing interference sources.
		EEPROM hardware error	Power off and restart to confirm if the error will occur again. Seek technical support from the manufacturer if it still exists.
Note: Manual reset after the occurrence of the error is invalid. Repower up after troubleshooting and the drive will be reset.			
Code	Name	Cause	Solution
E. PLL (87)	PLL error	CPU chip under strong interference	Restart the drive to confirm whether the error persists, and seek technical support from the manufacturer if the error persists and cannot be reset.
Note: Manual reset after the occurrence of the error is invalid. Repower up after troubleshooting and the drive will be reset.			
Code	Name	Cause	Solution
E. BuS1 (91)	Extension 1 communication lost	Data transmission failure due to strong interference sources	Check the grounding and remove interference sources.
		Improper wiring or disconnection on extension A	Check the extension card 1 wiring.
Note: F10.89 [Extension Disconnection Mode] ones-bit can be used to set the action to be taken when the extension card inserted into the EX-1 port is detected as disconnection with the drive. "Extension card 1" refers to the card inserted into the Extension port 1, "Extension card 2" refers to the card inserted into the Extension port 2, and "Extension card 3" refers to the card inserted into the Extension port 3.			
Code	Name	Cause	Solution
E. BuS2 (92)	Extension 2 communication lost	Data transmission failure due to strong interference sources	Check the grounding and remove interference sources.
		Improper wiring or disconnection on extension B	Check the extension card 2 wiring.
Note: F10.89 [Extension Disconnection Mode] tens-bit can be used to set the action to be taken when the extension card inserted into the EX-2 port is detected as disconnection with the drive.			
Code	Name	Cause	Solution
E. BuS3 (93)	Extension 3 communication lost	Data transmission failure due to strong interference sources	Check the grounding and remove interference sources.
		Improper wiring or disconnection on extension card	Check the extension card wiring.

Note: F10.89 [Extension Disconnection Mode] hundreds-bit can be used to set the action to be taken when the extension card inserted into the EX-3 port is detected as disconnection with the drive.			
Code	Name	Cause	Solution
E. ECn1 (94)	Extension 2 bus communication with PLC lost	Data transmission failure due to strong interference sources	Check the grounding and remove interference sources.
		Improper wiring or disconnection on communication bus extension card.	Check the bus extension card wiring.
Note: F10.90 [Bus Extension Disconnection Mode] ones-bit can be used to set the action to be taken when the extension card inserted into the EX-2 port is detected as disconnection with the drive.			
Code	Name	Cause	Solution
E. ECn2 (95)	Extension 3 bus communication with PLC lost	Data transmission failure due to strong interference sources	Check the grounding and remove interference sources.
		Improper wiring or disconnection on communication bus extension card.	Check the bus extension card wiring.
Note: F10.90 [Bus Extension Disconnection Mode] tens-bit can be used to set the action to be taken when the extension card inserted into the EX-3 port is detected as disconnection with the drive.			
Code	Name	Cause	Solution
E. CP1 (97)	Comparator output 1 error	F06.50 [Comparator 1 Monitoring] above F06.51 [Comparator 1 Upper Limit] or below F06.52 [Comparator 1 Lower Limit].	Check the status of monitoring 1 and troubleshoot the problem.
Note: F06.54 [Comparator 1 Warning] can be used to set the motor operation mode when the fault is detected.			
Code	Name	Cause	Solution
E. CP2 (98)	Comparator output 2 error	F06.55 [Comparator 2 Monitoring] above F06.56 [Comparator 2 Upper Limit] or below F06.57 [Comparator 2 Lower Limit].	Check the status of monitoring 2 and troubleshoot the problem.
Note: F06.59 [Comparator 2 Warning] can be used to set the motor operation mode when the fault is detected.			
Code	Name	Cause	Solution
E. DAT (99)	Parameter setting error	Wrong parameter setting	Set as per the given parameter range.
Code	Name	Cause	Solution
E.BOC (100)	Low brake release current	The current before brake release does not reach the value set in A01.04 [Brake Release Current Ratio] (100% = rated motor current).	1. Check the brake-release current setting. 2. Check output current and load condition.
Code	Name	Cause	Solution
E.BLC (101)	Low running current	The AC drive monitors output current during operation. If the current stays below A01.31 [Output Current Error Detection Threshold] (100% = rated motor current) longer than A01.32 [Output Current Error Detection Time], it is judged abnormal.	1. Check abnormal-current detection settings. 2. Check output current and load condition.
Code	Name	Cause	Solution
E.BOF (102)	Brake release error	If the AC drive does not receive the feedback signal within A01.21 [Brake Feedback Detection Delay], brake release is judged abnormal.	1. Check brake condition. 2. Check wiring connections.
Code	Name	Cause	Solution

E.BFF (103)	Brake apply error	If the AC drive does not receive the feedback signal within A01.21 [Brake Feedback Detection Delay], brake application is judged abnormal.	1. Check brake condition. 2. Check wiring connections.
Code	Name	Cause	Solution
E.nOP1 (104)	Extension 2 external non-OP operation	The bus communication at Ex-2 port indicates external non-OP operation.	1. Check the grounding and remove interference sources. 2. Check the bus extension card wiring. 3. Check communication method.
Code	Name	Cause	Solution
E.nOP2 (105)	Extension 3 external non-OP operation	The bus communication at Ex-3 port indicates external non-OP operation.	1. Check the grounding and remove interference sources. 2. Check the bus extension card wiring. 3. Check communication method.
Code	Name	Cause	Solution
E. Fax (11x)	Reserved external extension error	Reserved, the industry-specific machines correspond to different meanings	Check the user manual of the corresponding industry-specific machines to confirm the specific error.
Code	Name	Cause	Solution
E. FrA (118)	Material fracture	Material loses tension during winding and unwinding	Check the machine for troubleshooting.

Encoder Fault Sub-Code Description

Encoder Fault E.PG (44) detailed diagnostic information:

Subcode	Error Info	Solution
1	Encoder 1 gear ratio parameter error	1. Check encoder wiring. 2. Verify encoder gear-ratio parameter settings.
2	Encoder 1 Z-pulse fault	1. Check Z-pulse wiring. 2. Verify related encoder parameters.
3	Resolver encoder 1 parity error	1. Check for external interference. 2. Check encoder wiring.
4	Resolver encoder 1 disconnection	1. Check encoder power supply. 2. Check resolver excitation signal.
8	Motor encoder 1 Z-pulse logic fault	1. Check Z-pulse wiring. 2. Verify related encoder parameters.
10	Motor encoder 1 Z-pulse disconnection	1. Check Z-pulse wiring. 2. Verify related encoder parameters.
12	Large PM encoder 1 installation angle deviation	1. Re-tune encoder installation angle.
13	ABZ encoder 1 disconnection	1. Check if encoder is plugged in. 2. Check encoder wiring.
15	Encoder 1 hardware not detected	1. Check if encoder is plugged in. 2. Check encoder wiring.
16	Encoder 2 gear ratio parameter error	1. Check encoder wiring. 2. Verify encoder gear-ratio parameter settings.
17	Encoder 2 Z-pulse fault	1. Check Z-pulse wiring. 2. Verify related encoder parameters.
18	Resolver encoder 2 parity error	1. Check for external interference. 2. Check encoder wiring.
19	Resolver encoder 2 disconnection	1. Check encoder power supply. 2. Check resolver excitation signal.
23	Motor encoder 2 Z-pulse logic fault	1. Check Z-pulse wiring. 2. Verify related encoder parameters.
25	Motor encoder 2 Z-pulse disconnection	1. Check Z-pulse wiring. 2. Verify related encoder parameters.
27	Large PM encoder 2 installation angle deviation	1. Re-tune encoder installation angle.

28	ABZ encoder 2 disconnection	1. Check if encoder is plugged in. 2. Check encoder wiring.
30	Encoder 2 hardware not detected	1. Check if encoder is plugged in. 2. Check encoder wiring.
31	Encoder selection duplicated	1. Check [E02.00] and [E03.00] settings to ensure they are not assigned to the same motor.

Auto-tuning Fault Sub-Code Description

Encoder Fault E.TE (52) detailed diagnostic information:

Subcode	Error Info	Solution
1	Current saturation, Hall detection error or large output current.	1. Check whether there is a short circuit between phases in the motor wires, and connect the motor wires correctly if there is any error. 2. The synchronous motor may rotate at a certain angle during the DC tuning period, resulting in excessive current. Retry auto-tuning. 3. The internal wiring of the drive is abnormal or damaged. Please contact the manufacturer.
2	Excessive zero-bias of the current	1. Check if the Hall sensor fails. 2. If the fault is not removed after several auto-tuning attempts, please contact the manufacturer.
3	Current imbalance	1. Check whether there is phase loss during motor wiring, and correct it if there is any error. 2. Measure the resistance value between the motor wires. If there is a deviation, please replace the cable wires.
4	Current oscillation	1. Check whether there is a short circuit between phases in the motor wires, and connect the motor wires correctly if there is any error. 2. Check if the input motor nameplate parameters are correct. 3. Large acceleration and deceleration time setting will cause current oscillation, so reduce F01.22 [ACC Time 1] and F01.23 [DEC Time 1] appropriately. 4. Adjust the F04.06 [Anti-oscillation Gain] according to the parameter description.
5	Static auto-tuning current over range	1. Check whether there is a short circuit between phases in the motor wires, and connect the motor wires correctly if there is any error. 2. Check if the input motor nameplate parameters are correct. 3. Make sure the motor rated current is lower than the drive output current limit point.
6	U-phase current above limit during static auto-tuning	Check the U-phase motor wiring for short circuits between phases or to ground, and correct it if there is any error.
7	V-phase current above limit during static auto-tuning	Check the V-phase motor wiring for short circuits between phases or to ground, and correct it if there is any error.
8	W-phase current above limit during static auto-tuning	Check the W-phase motor wiring for short circuits between phases or to ground, and correct it if there is any error.
9	Current always above limit during dynamic auto-tuning	1. Check whether there is a short circuit between phases in the motor wires, and connect the motor wires correctly if there is any error. 2. Check if the input motor nameplate parameters are correct. 3. Ensure that the load carried by the motor does not exceed 50% of the rated load. 4. Increase the F01.22 [ACC Time 1] and F01.23 [DEC Time 1] appropriately.
10	Voltage saturation	1. Check whether there is an open circuit in the motor wiring, and correct it if there is any error. 2. Check if the input motor nameplate parameters are correct. 3. Shorten the motor power line length (<1000m) or increase the motor power line diameter.
15	Excessive rotor resistance	1. Check if the input motor nameplate parameters are correct. 2. Shorten the motor power line length (<1000m) or increase the motor power line diameter.
16	Excessive inductance	1. Check if the input motor nameplate parameters are correct. 2. If the fault is not removed after several auto-tuning attempts, please contact the manufacturer.

40	Auto-tuning timeout	1. Check if the input motor nameplate parameters are correct. 2. Check if there's a large difference between the power levels of the AC drive and the motor (> 3 level). 3. If the fault is not removed after several auto-tuning attempts, please contact the manufacturer.
41	Parameter setting error	Re-enter the motor nameplate parameters correctly to ensure that the motor's rated frequency is within the range of 10Hz~500Hz.
44	Negative rotor resistance	1. Check if the input motor nameplate parameters are correct. 2. If the fault is not removed after several auto-tuning attempts, please contact the manufacturer.
45	PM output voltage over range	Check whether the input parameters (especially the keypad input rated frequency) are correct against of the motor nameplate, and correct them if there is any error.
46	High back emf. voltage during tuning	Check whether the input parameters (especially the keypad input rated frequency) are correct against of the motor nameplate, and correct them if there is any error.
47	Low back emf. voltage during tuning	1. Check whether the input parameters (especially the keypad input rated frequency) are correct against of the motor nameplate, and correct them if there is any error. 2. Check if the motor demagnetized.
50	Wrong motor operation direction	1. Check whether the number of encoder lines is set correctly. 2. Check if the motor load is too high (>30%). 3. Separate the motor from the machine and try auto-tuning again.
52	PM Z-pulse not detected	1. Check whether the encoder Z pulse wiring is normal. 2. Check if the encoder wiring is poor and causes too much interference. 3. Make sure the encoder outputs Z-pulse normally.
53	Excessive deviation of PM Z-pulse	1. Check whether the number of encoder lines is set correctly. 2. Check if the encoder wiring is poor and causes too much interference.
61	Max. frequency under limit	The set max. frequency of AC drive is lower than the rated frequency of the motor. Please reset the max. frequency and upper limit frequency of AC drive and then perform tuning again.
62	Excessive deviation between the AC drive and motor currents	Check if there's a large difference between the power levels of the AC drive and the motor. Keep it within 2 levels.
90	Shutdown command given during auto-tuning	Failure to complete the parameter tuning, need to retry.
Other subcodes	Multiple faults at the same time while tuning	1. Check if the motor wiring is correct. 2. If the subcode fault is still reported in tuning after rewiring, please seek technical support from the manufacturer.

7.5 Alarm

When an alarm occurs, the drive can continue to operate. The following table explains the causes of the alarm and the corresponding measures.

Note 1: All alarms can be cleared automatically once they do not meet the detection conditions.

Note 2: By setting fault action attributes in F10.8x~F10.9x to Level 2 (frequency limit), 3 (current limit), 4 (power limit), or 5 (warning), the AC drive will generate an alarm instead of a fault. Alarm events are not stored in the fault log.

the fault log:

Code	Name	Cause	Solution
A. Lu1	Undervoltage during stop	Low input power supply voltage	Increase the input supply voltage
		Input power supply phase loss	Check if the main circuit wiring is normal
		Loose input power supply terminals	Tighten the screws in the main circuit terminals
		Aged AC drive main circuit capacitor	Seek technical supports
Note: A.LU1 may appear after power-off due to capacitor discharge—this is normal.			
Code	Name	Cause	Solution

A. ou	Overvoltage during stop	High power supply voltage	Set the power supply voltage within the specified range.
		Drive output short circuit or short circuit to ground	Check the main circuit to solve the short circuits.
		Surge voltage mixed in the input voltage	Add a reactor on the input side.
Note: This alarm is detected when the bus voltage exceeds the overvoltage point. The overvoltage point is 820V for T3 models and 400V for S2/T2 models.			
Code	Name	Cause	Solution
A. EEP	EEPROM read/write alarm	Interference during read and write parameter operation to EEPROM.	Re-read and write parameters after checking and removing interference sources.
Code	Name	Cause	Solution
A. LSF	Brake release target frequency below start frequency	In brake-control mode, the target operating frequency is lower than F09.02 [Start Frequency].	Check parameters and verify the target frequency setting and the start frequency setting.
Code	Name	Cause	Solution
A. LOF	Brake release target frequency below brake release frequency	In brake-control mode, the target operating frequency is lower than the set brake release frequency.	Check parameters and verify the target frequency setting and the brake release frequency setting.
Code	Name	Cause	Solution
A. LFF	Brake target frequency below brake frequency	In brake-control mode, the target operating frequency is lower than the set brake release frequency.	Check parameters and verify the target frequency setting and the brake release frequency setting.
Code	Name	Cause	Solution
A. BER	Brake failure protection	Brake failure leading to unintended motion (refer to Brake Failure Protection function).	1. Check brake condition 2. Check encoder for errors
Code	Name	Cause	Solution
A. poH1	Module overheat	Working environment overheat	Lower the ambient temperature.
		Overload	Reduce the load.
		Fan error	Confirm that the fan is operating normally. If the fan is abnormal, replace the fan and restart.
This alarm is reported when the motor temperature exceeds the F10.27 [Drive oH1 Warning Level].			
Code	Name	Cause	Solution
A. poH3	Motor overheat warning	Abnormal motor heat dissipation	Improve the motor heat dissipation.
		Overload	Reduce the load.
Note: This alarm is reported when the motor temperature exceeds the [Motor oH Warning Level]. This function requires optional IO extension cards.			
Code	Name	Cause	Solution
A. run1	Operation command conflict	Stop signal is valid when another command is valid	Remove stop signals, including stop and emergency stop signal.
Code	Name	Cause	Solution
A. run2	Jogging terminal startup protection	Prevent direct jogging operation caused by valid terminal signal at the moment of power up.	Remove the command and re-enable it for normal operation.
Code	Name	Cause	Solution
A. run3	Terminal startup protection	Prevent direct operation caused by valid terminal signal at the moment of power up	Remove the command and re-enable it for normal operation.
Code	Name	Cause	Solution
A. PA2	External keypad break	Data transmission failure due to strong interference sources	Remove the source of strong interference.
		Improper wiring or disconnection of the external keypad	Check whether the external keypad cable is faulty, re-plug the keypad. Or seek technical supports from the manufacturer if it still can't work.

Note: When the external keypad disconnection warning occurs, and re-plugging can't solve it. After the warning is canceled, commands are switched to the built-in keypad.

7.6 Common Troubleshooting Guide

No.	Issue	Cause	Solution
1	No display at power-on	Abnormal input power	Check input voltage; use a multimeter to verify three-phase supply.
		Poor connection between control board and keypad (metal-housing models)	Check RJ45 cable and keypad connection.
		Main circuit pre-charge resistor open or power supply circuit faulty	Contact manufacturer service.
		Keypad circuit fault on control board	
		Rectifier bridge damaged	
		Main circuit fault on power board	
2	Keypad shows "POn" at power-on	Poor connection between control board and keypad (metal-housing models)	Reconnect keypad cable on control board.
		Keypad circuit fault on control board (plastic-housing models)	Power cycle the drive; if issue persists, contact manufacturer service.
3	X-terminal input not working	24V/PLC/COM jumper missing or incorrect	Check jumper installation according to wiring requirements.
		External wiring incorrect or X-terminal function not assigned	Check C00.14 for X-terminal signal; short X-terminal to COM to test. Check F05 parameter group to verify X-terminal function assignments.
		24V supply missing on control board	Contact manufacturer service.
		X-terminal hardware circuit fault	
4	Analog input cannot control frequency	Parameter or analog input configuration incorrect	Check DIP switch for voltage/current selection; Verify that F01.02 [Frequency Source] is set to analog speed control; Monitor signals C00.16/C00.17 to check for readings.
		Wiring error	If using an analog current signal, confirm whether the source is active or passive; passive signals require an external power supply.
		Hardware circuit malfunction	Contact manufacturer service.
5	Fan not running	Parameter set for temperature-based fan start/stop	Check whether parameter F10.23 is set to "2".
		Poor contact in fan wiring or connector	Inspect wiring and connector for loose or faulty contact.
		Fan control circuit fault or fan damage	Contact manufacturer service.
6	Trip occurs at power-on or during operation	Power cable short to ground	Check for damaged insulation or reduced dielectric strength.
		Undersized upstream circuit breaker	Select a breaker with capacity appropriate for the drive rating.
		RCD leakage threshold too low	Increase leakage current threshold to an appropriate level.
		Drive main circuit fault	Contact manufacturer service.
7	Communication or analog command occasionally lost during operation (Normal when stopped)	System electromagnetic interference	Try inserting or removing the EMC screw for verification.
			Ensure motor cables and signal cables are routed in separate ducts.
			If the AC drive and sensitive devices share the same power supply, add an isolation transformer and filter on the sensitive device side.
			Use shielded signal cables with single-end grounding.

			Avoid common grounding or use floating ground between sensitive devices and the AC drive.

7.7 Fault Reset Procedure

If the AC drive stops running due to a malfunction, follow the steps below for troubleshooting and restart the AC drive after taking appropriate solutions.

Fault Occurs With Power Off



WARNING

- Wear protective goggles before performing maintenance, inspection, or component replacement.
- When the fuse is blown or the leakage circuit breaker is tripped, do not restart the AC drive or run external equipment within 10 minutes. Please confirm the wiring and the ratings of the external equipment to find out the cause of the trip. Or please consult the technical support department, otherwise it may cause a personal accident or drive damage.

1. Supply power to the control circuit using an external 24V power source.
2. Use fault monitoring parameters C01.xx and C02.xx to confirm the fault code and the drive status at the time of the fault.
3. Please refer to the fault diagnosis section and eliminate the cause.

Note

- C01.00 [Current Fault Information] shows which fault caused the power shutdown. C01.01~C01.15 display operating data at the time of the current fault (frequency, current, voltage, etc.).
- C01.16 [Previous Fault Information] shows which fault caused the previous power shutdown. C01.17~C01.31 display operating data at the time of the previous fault.
- If a fault remains displayed after re-powering, remove the cause before performing a fault reset.

Fault Occurs Without Power Off

1. Check the fault code displayed on the keypad.
2. Please refer to the sections on troubleshooting to eliminate the fault.
3. Perform a fault reset.

Fault Reset

To restore the AC drive to normal operation, first remove the cause of the malfunction and then reset the fault.

There are four fault reset methods:

1. Press the STOP/RESET key on the keypad when a fault occurs.
2. Use a multifunction input terminal configured for fault reset and activate the terminal.
3. Send a fault reset command via communication.
4. Power-cycle the AC drive.

7.8 Troubleshooting for Abnormal Operation Without Fault Alarms

If no fault or error code is displayed on the keypad but the drive or motor operates abnormally, refer to this section for corrective actions.

◆ The parameter cannot be modified, the keypad displays "- - - -"

Cause	Solution
Attempting to modify parameters that cannot be changed during operation	Stop the drive before modifying the parameter.
Attempting to modify read-only parameters	Read-only parameters cannot be modified.

◆ The motor does not rotate after the running command input

Cause	Solution
Wrong channel setting of running command	Check the F01.01 [Command Source] and confirm the correct setting.
Improper setting of the frequency reference setting results in a given frequency of 0	Check the F01.02 [Frequency Source] setting and confirm that the reference source is valid.
Emergency stop signal is active	Release the emergency stop signal.
Wrong wiring when using terminal commands	Verify wiring of the control circuit terminals. Check terminal status via C00.14 [Input Terminal Status]

Low given frequency	Confirm C00.00 [Target Frequency] is higher than F01.13 [Lower Limit Frequency].

◆ Motor direction opposite to the command

Cause	Solution
Improper wiring of the motor	Check whether the wiring from drive to motor is correct Exchange any two wires of U/V/W of the motor
Wrong motor operation direction setting	Check whether the wiring from drive to motor is correct Change the F09.05 [Motor Direction] ones-bit to reverse the direction

◆ Motor runs in only one direction

Cause	Solution
Direction inhibit function enabled	Modify the F09.05 [Motor Direction] tens-bit.

◆ Abnormal motor temperature

Cause	Solution
Overload	Reduce the load Replace with motor of higher power
Long-term motor operation at very low speed	Change the operating speed Replace with motor dedicated to the drive
Vector control enabled without motor auto-tuning	Perform motor auto-tuning If possible, switch the control mode to V/F control.
Motor cooling fan blocked by dust, causing stall or stop	Clean the fan Improve the clean condition of the operating environment.

◆ Acceleration/deceleration not following set time

Cause	Solution
Overload	Reduce the load Replace with motor of higher power
Output current reaches limit	Reduce the load Replace with motor of higher power
Short ACC/DEC time	Increase F01.22 [ACC Time] and F01.23 [DEC Time]
Improper motor characteristic parameters	Check the F4.00 [V/F Curve] and select a V/F curve that matches the motor characteristics. Perform dynamic auto-tuning
Vector control is set but auto-tuning is not performed	Perform motor auto-tuning If possible, switch the control mode to V/F control.

◆ Significant deviation between the motor speed and the frequency command

Cause	Solution
Incorrect gain/offset settings for analog frequency input	Check analog input parameter settings: Terminal AI1: F07 AI1 related parameters Terminal AI2: F07 AI2 related parameters
Multiple frequency command sources overlapping	Check F1.07 [Frequency Source] and confirm the correct command source.

◆ Mechanical vibration or imbalance during motor rotation

Cause	Solution
Analog frequency command input from an external source	Check if external signal wiring is affected by noise. Separate main circuit wiring from control circuit wiring. Use shielded or twisted-pair signal cables. Increase the setting of the analog input filter time
Excessive cable length between the drive and motor	Shorten the cable length if possible.
Improper PID parameter tuning	Set the F13.xx [PID Parameters] properly.

◆ Output frequency cannot reach the command frequency

Cause	Solution
Command frequency falls within the skip-frequency range	Adjust F09.44, F09.46 [Jump Frequency 1/2] and F09.45, F09.47 [Jump Frequency Range 1/2] Note: When the jump frequency is valid, the output frequency remains constant within the jump frequency range
Command frequency exceeds the upper frequency limit	Check F01.11 [Upper Limit Frequency Source] and verify the upper frequency limit value.

Chapter 8 Inspection and Maintenance

8.1 Inspection

The drives consist of semiconductor devices, passive electronic devices, and motion devices. All components have a finite service life, and even under normal operating conditions, characteristics may degrade or components may fail after long-term use. To prevent faults caused by aging, daily inspection, periodic inspection, and preventive component replacement are required. It is recommended to inspect the AC drive every 3~4 months after installation.

Daily Inspection

To prevent performance degradation and product damage, perform the following daily checks and keep proper records.

CAUTION

Do not perform wiring, inspection or repair work while the power is on. Before starting work, be sure to switch off the power of all machines. After power-off, residual voltage remains in the drive's internal capacitors. Confirm that the main circuit voltage has dropped to a safe level, and wait at least 10 minutes before performing any work to avoid personal injury.

Item	Content	Solution
Surroundings	Whether the installation environment is suitable.	Remove pollution sources or improve the installation environment.
Power supply	Whether the power supply voltage meets the requirements and whether there is a lack of phase.	Use power supply according to the nameplate requirements.
Motor	Whether the motor has abnormal vibration or sound.	Confirm the connection with the machine; Tighten the screws at the connection; Do lubrication treatment.
Load	Whether the output current of the drive is higher than the rated value of the motor and it runs for a certain period of time.	Check if the drive is overloaded; Confirm whether the settings of the motor parameters are correct.
Cooling system	Whether there is abnormal heating and discoloration of the drive and motor.	Check if the drive is overloaded; Tighten the screws. Check whether the heat sink of the drive and the motor are dirty.
	Whether the cooling fan is working properly.	Check whether the fan is blocked or damaged.

Regular Inspection

Under normal circumstances, a regular inspection is performed every 3 months to 4 months, but it needs to be combined with the usage and working environment to consider shortening the inspection cycle. Make relevant confirmations and make valid records during the inspection.

CAUTION

Do not perform wiring, inspection or repair work while the power is on. Before starting work, be sure to switch off the power of all machines. After power-off, residual voltage remains in the drive's internal capacitors. Confirm that the main circuit voltage has dropped to a safe level, and wait at least 10 minutes before performing any work to avoid personal injury.

Item	Content	Solution
Overall	Check the environment to see if there is any dirt or dust.	Confirm whether the relevant cabinet doors can be closed tightly; Clean dirt or dust and improve the operating environment.
	Whether there is any discoloration due to overheating and aging; Whether there is any damage, deformation, or abnormal operation of the device.	Replace related components; If it cannot be repaired, the entire AC drive needs to be replaced.
Electrical connections	Check if the wires and connections are free of discoloration, broken insulation, cracks and signs of deterioration Check whether connection terminals are worn, damaged, or loose Grounding check	Replace damaged wires; Tighten loose terminals and replace damaged ones; Measure the grounding resistance and tighten the corresponding grounding terminals.
Mechanical connections	Check for abnormal vibration, unusual noise, and loose fastenings	Tighten and lubricate parts, and replace defective ones
Semiconductor devices	Check for dirt and dust; Check for visible changes in appearance.	Clean the operating environment; Replace the damaged parts.
Electrolytic capacitor	Check for fluid leakage, discoloration, cracks, and exposed, expanded, ruptured, or leaked valves.	Replace the damaged parts.
Peripherals protection	Check the appearance and insulation of peripheral equipment.	Clean the environment and replace damaged parts.
Printed circuit board	Check for odor, discoloration, and severe rust, and whether connectors are correct and reliable.	Fasten connectors; Clean the printed circuit board; Replace the damaged printed circuit board.
Cooling system	Check the cooling fan for damage and blockage; Check for dirt and dust on the heat sinks; Check that the air inlet and exhaust ports are not clogged or contaminated with foreign matter.	Clean the operating environment; Replace the damaged parts.
Keypad	Check the keypad for damage and blockage;	Replace the damaged parts.
Motor	Check whether the motor has abnormal vibration or sound.	Tighten mechanical and electrical connections and lubricate mechanical parts.

CAUTION

Do not carry out work with the power supply on, as there is a risk of electric shock and death. Before performing wiring, inspection, maintenance, etc., disconnect the power supply to all associated equipment and make sure that the DC voltage in the main circuit has dropped to a safe level for 10 minutes.

8.2 Maintenance

All equipment and components have a service life. Proper maintenance can ensure that the service life is extended, but it cannot solve the damage of the equipment and components. Please replace the devices that have reached or are about to reach the end of their service life as required.

Name	Life
Fan	≥5 years
Electrolytic capacitor	≥5 years
Printed circuit board	≥10 years



CAUTION

- Do not perform wiring, inspection or repair work while the power is on. Before starting work, be sure to switch off the power of all machines. After power-off, residual voltage remains in the drive's internal capacitors. Confirm that the main circuit voltage has dropped to a safe level, and wait at least 10 minutes before performing any work to avoid personal injury.
- Under the following conditions, users can determine replacement cycles based on operating hours.
 - Environment: 40°C
 - Load ratio: 80%
 - Operation rate: 24 hours/day

8.3 Replacement

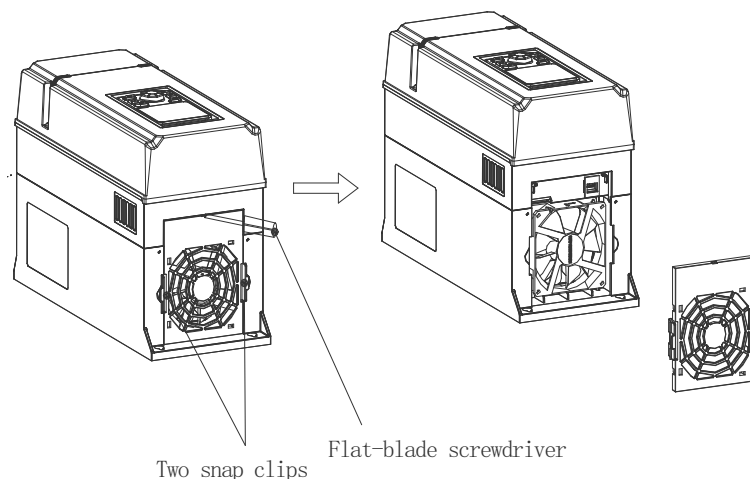
8.3.1 Cooling Fan

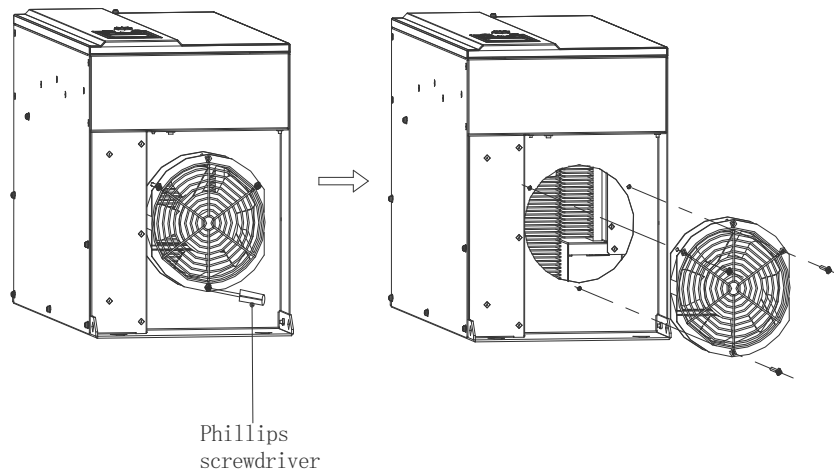
When replacing the cooling fan, please contact the agent where you purchased the product or the sales department of our company for original fan. For models equipped with multiple cooling fans in the AC drive, please replace all fans at the same time to maximize the service life of the product.

Replacement of other devices requires maintenance techniques and product knowledge, and replacement must be strictly tested before it is put into use, so we do not recommend users to replace other internal devices. If replacement is indeed necessary, please contact the agent from whom you purchased the product or our sales department.

Cooling Fan Replacement Procedure

1. Stop the drive and disconnect the AC power supply. Wait at least the required discharge time.
2. For plastic-housing models, press down and pull out the fan cover to remove it. For large metal-housing models, remove the screws securing the fan cover using a screwdriver.
3. Gently pull the fan out from the air duct (do not pull hard to avoid damaging the fan cable).
4. Disconnect the fan from the fan adapter cable and remove it.
5. Connect the new fan by firmly plugging the fan connector into the adapter cable connector to ensure proper contact.
6. Reinstall the fan cover in the reverse order of removal.
7. Restore power to the drive.





CAUTION

Do not perform wiring, inspection or repair work while the power is on. Before starting work, be sure to switch off the power of all machines. After power-off, residual voltage remains in the drive's internal capacitors. Confirm that the main circuit voltage has dropped to a safe level, and wait at least 10 minutes before performing any work to avoid personal injury.

8.3.2 AC Drive

CAUTION

Do not perform wiring, inspection or repair work while the power is on. Before starting work, be sure to switch off the power of all machines. After power-off, residual voltage remains in the drive's internal capacitors. Confirm that the main circuit voltage has dropped to a safe level, and wait at least 10 minutes before performing any work to avoid personal injury. Non-electrical professionals are not allowed to perform wiring, installation, maintenance, inspection, component replacement or repair operations. Otherwise, there will be a risk of electric shock.

Note

When operating the AC drive or disassembling the printed circuit board, follow the procedures specified in the electro-static discharge (ESD). Wrong operation may damage the circuits inside the AC drive due to static electricity.

Notes for Main Circuit Terminal Wiring

1. Please use copper wire. Do not use aluminum or any conductors other than copper.
2. Please be careful not to allow foreign objects to enter the wiring parts of the terminal block.
3. Strip the conductor insulation to the lengths specified in this manual.
4. Do not use wires that are bent or squeezed. Trim and discard any deformed conductor ends caused by bending before use.
5. Do not solder when using stranded core wire.
6. When using twisted core wire, please do not make wire whiskers appear at the connection. Do not twist the stranded core wire excessively.
7. Insert conductors fully into the terminal block. After stripping to the specified length, the insulation must enter the resin protection hole.
8. Each terminal has a specific tightening torque. Tighten screws to the specified torque.
9. Use tools such as torque wrenches that match the screws. Use a flat or hex driver for screw-type terminals. Select tools in accordance with the recommended conditions in this manual.
10. When using an electric screwdriver, please pay attention to tightening at a low speed of 300r/min~400r/min.
11. Wiring tools can also be purchased from our company. For details, please contact our agent or sales person in charge.
12. When replacing older equipment, some existing conductors may exceed the allowable size. Regarding the size of the wire, please consult our company's agent or sales person in charge.
13. When tightening the terminal screws, do not tilt more than 5°.
14. When tightening the slotted screw, be sure to insert the screwdriver vertically into the slotted slot of the screw,

and the bit should not go out of the slot.

15. Pull the conductors lightly after wiring to confirm they will not come loose.
16. Please cut only the wire cover at the terminal to be wired.
17. Periodically re-tighten terminal screws to the specified torque.
18. If the wiring may be exposed to external forces, use a cable clamp to reinforce the connection.

8.4 Storage Instructions

Drives, like other electronic products, use electrolytic capacitors that are prone to chemical reactions, as well as tiny electronic parts. For long-term storage, in order to ensure service life and reliability, please observe the following precautions:

◆ Storage sites

Ambient temperature and humidity: Please keep it in a place where the temperature is $-30^{\circ}\text{C} \sim +60^{\circ}\text{C}$, below 95%RH, no condensation and ice, and no direct sunlight.

During transportation, please pack the AC drive and keep it properly to avoid vibration or impact.

Dust and oil mist: Do not store it in the environment where there is a lot of dust and oil mist, such as cement factories and textile factories.

Corrosive gas: Do not store it in places where corrosive gas may be generated, such as chemical plants, oil refineries, or sewage treatment plants.

Salt erosion: Do not store it in salt-eroded places such as near the coast, especially in certain salt-eroded areas.

In addition, please do not store it in other harsh environments, but should be stored in warehouses, offices, etc. that are not affected by the above factors.

◆ Regularly power-on

In order to prevent the capacitors from deteriorating, please energize them for at least 30 minutes per year.

If there is no power on for more than two years, please use the adjustable power supply to slowly increase the voltage from 0V to the rated voltage of the AC drive within 2~3 minutes, and then activate the main circuit electrolytic capacitor (no-load power on for more than 1 hour). In the subsequent operation, please perform normal wiring and confirm that there is no abnormality of the AC drive, overcurrent, motor vibration, speed change, etc. during operation.

8.5 Product Warranty

1. If the product malfunctions during the warranty period, please see the warranty terms in the warranty card for coverage.
2. Primary troubleshooting will be carried out by users, but the service can be provided also by our company or service network for a fee at your request. If the cause of the malfunction is attributable to our company, we will provide complimentary service as per our agreement with your company.
3. Liability Exemption: The Company shall not be held liable for any inconvenience caused to your company or your customers, or for damage to non-Company products resulting from malfunctions of the Company's products, regardless of whether such malfunctions occur within the warranty period.

Chapter 9 External Devices and Options

9.1 External Devices

9.1.1 Circuit Breakers, Fuses, and Contactors

Table 9-1 Selection Guide for Circuit Breakers, Fuses, and Contactors (Three-phase 380V Class)

Model	Breaker Specs (A)	Fuse Specs (A)	Contactor Specs (A)
AC600-T4-R75G-*	10	10	9
AC600-T4-1R5G-*	10	10	9
AC600-T4-2R2G-*	16	15	18
AC600-T4-004G-*	20	30	18
AC600-T4-5R5G-*	20	30	25
AC600-T4-7R5G-*	30	40	25
AC600-T4-011G-*	40	60	32
AC600-T4-015G-*	50	80	40
AC600-T4-018G-*	60	100	50
AC600-T4-022G-*	75	100	50
AC600-T4-030G-*	100	150	63
AC600-T4-037G-*	125	200	80
AC600-T4-045G-*	150	200	100
AC600-T4-055G-*	175	250	125
AC600-T4-075G-*	200	325	160
AC600-T4-090G-*	250	400	220
AC600-T4-110G-*	300	500	220
AC600-T4-132G-*	400	600	250
AC600-T4-160G-*	500	700	300
AC600-T4-185G-*	600	800	400
AC600-T4-200G-*	700	800	400
AC600-T4-220G-*	800	1000	630
AC600-T4-250G-*	1000	1000	630
AC600-T4-280G-*	1200	1000	630
AC600-T4-315G-*	1200	1400	630
AC600-T4-355G-*	1400	1600	800
AC600-T4-400G-*	1600	1600	1000
AC600-T4-450G-*	2000	1800	1000
AC600-T4-500G-*	2000	1800	1000
AC600-T4-560G-*	2000	-	1200

9.1.2 DC Reactors and I/O Reactors

Model	DC Reactor	Input Reactor	Output Reactor
AC600-T4-R75G-*	Standard	VC-ACL-C-03P7A-T3-2M24	JL-SWF-4-004
AC600-T4-1R5G-*	Standard	VC-ACL-C-03P7A-T3-2M24	JL-SWF-4-004
AC600-T4-2R2G-*	Standard	VC-ACL-C-05P5A-T3-2M18	JL-SWF-4-008
AC600-T4-004G-*	Standard	VC-ACL-C-0009A-T3-1M85	JL-SWF-4-017
AC600-T4-5R5G-*	Standard	VC-ACL-C-0013A-T3-1M56	JL-SWF-4-017
AC600-T4-7R5G-*	Standard	VC-ACL-C-0018A-T3-1M00	JL-SWF-4-017
AC600-T4-011G-*	Standard	VC-ACL-C-0024A-T3-M520	JL-SWF-4-024
AC600-T4-015G-*	Standard	VC-ACL-C-0034A-T3-M400	JL-SWF-4-032
AC600-T4-018G-*	Standard	VC-ACL-C-0038A-T3-M350	JL-SWF-4-038
AC600-T4-022G-*	Standard	VC-ACL-C-0050A-T3-M260	JL-SWF-4-048
AC600-T4-030G-*	Standard	VC-ACL-C-0060A-T3-M240	JL-SWF-4-062
AC600-T4-037G-*	Standard	VC-ACL-C-0075A-T3-M235	JL-SWF-4-072
AC600-T4-045G-*	Standard	VC-ACL-C-0091A-T3-M170	JL-SWF-4-115
AC600-T4-055G-*	Standard	VC-ACL-A-0112A-T3-M110	JL-SWF-4-115
AC600-T4-075G-*	Standard	VC-ACL-A-0150A-T3-M082	JL-SWF-4-180
AC600-T4-090G-*	Standard	VC-ACL-A-0200A-T3-M070	JL-SWF-4-180
AC600-T4-110G-*	Standard	VC-ACL-A-0224A-T3-M056	JL-SWF-4-260
AC600-T4-132G-*	Standard	VC-ACL-A-0280A-T3-46U6	JL-SWF-4-260
AC600-T4-160G-*	Standard	VC-ACL-A-0315A-T3-38U8	JL-SWF-4-410
AC600-T4-185G-*	Standard	VC-ACL-A-0400A-T3-36U8	JL-SWF-4-410
AC600-T4-200G-*	Standard	VC-ACL-A-0400A-T3-36U8	JL-SWF-4-410
AC600-T4-220G-*	Standard	VC-ACL-A-0450A-T3-33U3	JL-SWF-4-480
AC600-T4-250G-*	Standard	VC-ACL-A-0560A-T3-26U4	JL-SWF-4-480
AC600-T4-280G-*	Standard	VC-ACL-A-0560A-T3-26U4	JL-SWF-4-660
AC600-T4-315G-*	Standard	VC-ACL-A-0630A-T3-23U3	JL-SWF-4-660
AC600-T4-355G-*	Standard	VC-ACL-A-0720A-T3-18U4	JL-SWF-4-750
AC600-T4-400G-*	Standard	VC-ACL-A-0720A-T3-18U4	JL-SWF-4-750
AC600-T4-450G-*	Standard	VC-ACL-A-1000A-T3-14U7	JL-SWF-4-880
AC600-T4-500G-*	Standard	VC-ACL-A-1000A-T3-14U7	JL-SWF-4-880
AC600-T4-560G-*	Standard	VC-ACL-A-1250A-T3-11U6	JL-SWF-4-1200

9.1.3 Braking Units and Braking Resistors

Braking Unit Configuration

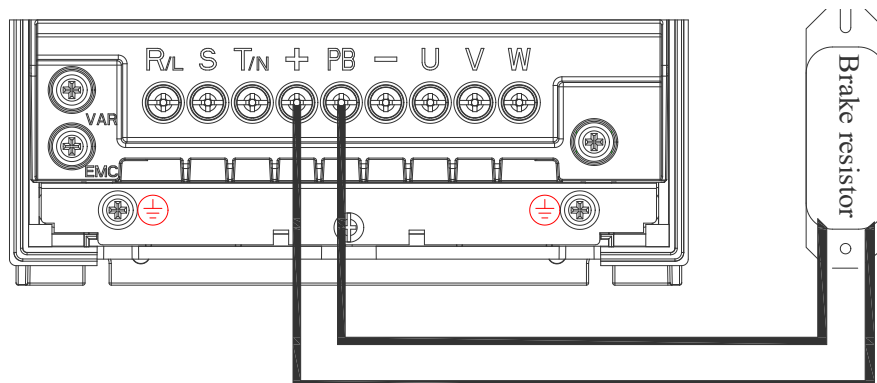
AC600 series AC drive have different braking unit configurations depending on voltage and power rating.

Three-phase / Single-phase 220V Supply

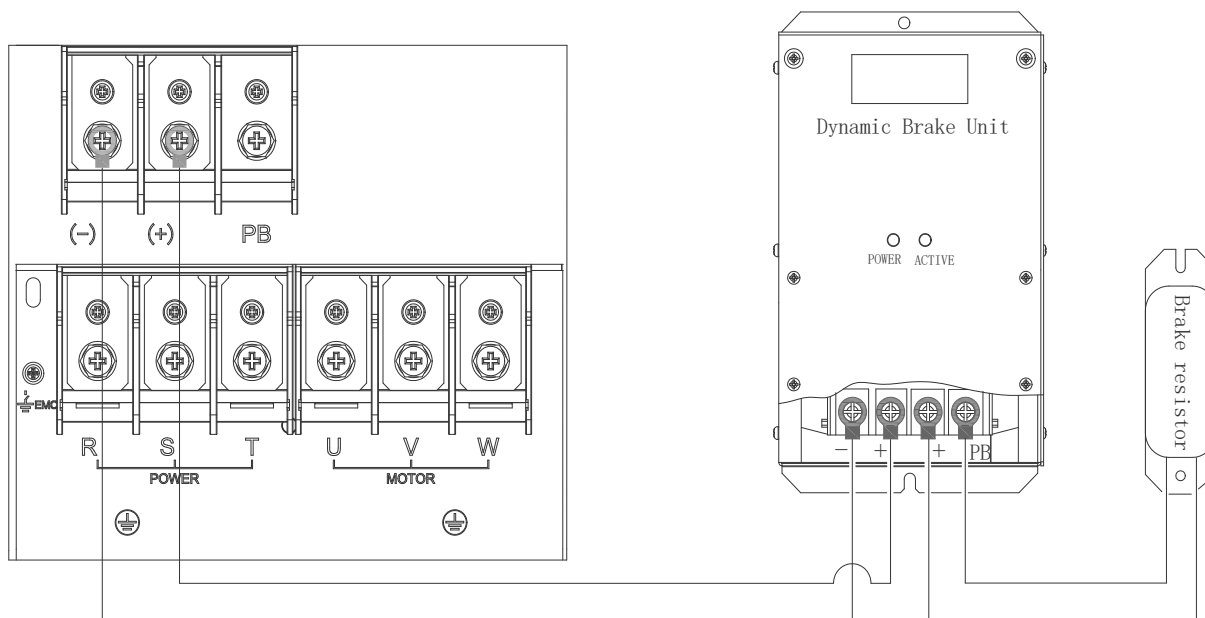
- 0.75kW~11kW: Standard built-in braking unit.
- 15kW~55kW: Optional built-in braking unit or external braking unit.

- 75kW and above: External braking unit available.
Three-phase 380V~480V Supply
- 0.75kW~22kW: Standard built-in braking unit.
- 30kW~110kW: Optional built-in braking unit or external braking unit.
- 132kW and above: External braking unit available.

For AC drives equipped with a built-in braking unit, braking resistors can be connected through the main circuit terminals PB and +.



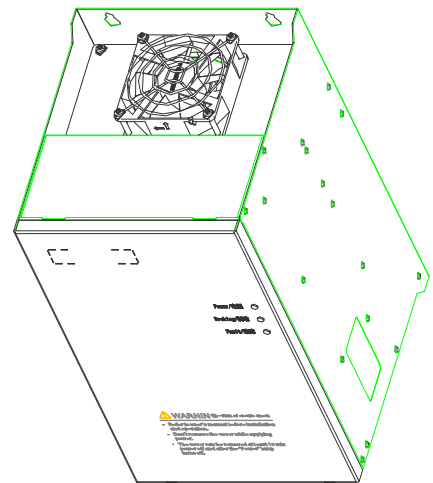
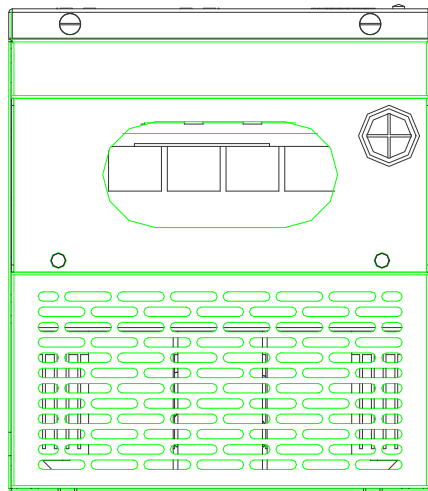
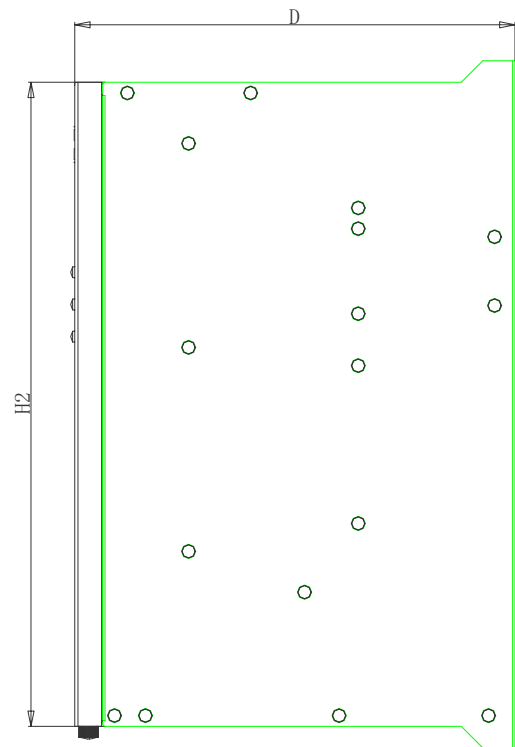
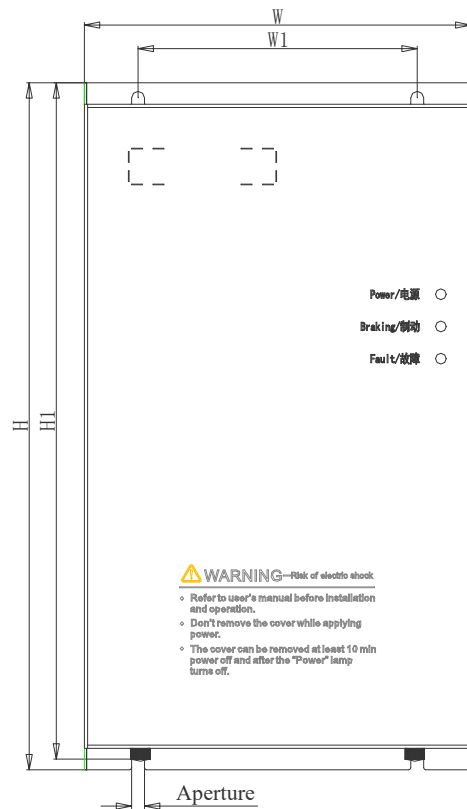
For AC drives with an external braking unit, connect the + terminal of the drive to the + terminal of the braking unit, and the - terminal of the drive to the - terminal of the braking unit. The braking resistor must be connected to the PB and + terminals of the braking unit. The wiring method is shown below (example: 132kW).



Recommended External Braking Unit Specifications

Braking Unit Model	Min. Resistance (Ω)	Peak Braking Current (A)	Suitable Drive Power	
			Light Load/kW	Heavy Load/kW
BU30-3-075	12	75	55~75	22~45
BU30-3-100	9	100	90~110	55~75
BU30-3-150	6.2	150	132~160	90~110
BU30-3-300	3	300	185~250	132~160
BU30-6-075	12	75	55~110	22~55
BU30-6-100	9	100	132~160	75~110

Mechanical Dimensions of Braking Unit



Braking Unit Model	Dimensions (mm)				Hole Position (mm)		Hole Diameter (mm)
	W	H	D	H2	W1	H1	
BU30-3-075	150	274	180	256	120	262	Φ6
BU30-3-100							
BU30-3-150							
BU30-3-300	190	355	210	335	130	343	Φ6
BU30-6-075	180	320	205	300	130	308	Φ6
BU30-6-100							

The braking resistor value and power ratings listed below are verified according to the normal inertia loads and intermittent braking mode. For applications involving high inertia or frequent/long-duration braking, please adjust the braking resistor value and power rating appropriately according to the specifications of the selected drive and the rated parameters of the braking unit. If there is any doubt, please consult the Customer Service Department of Suzhou VEICHI Electric Co., Ltd.

Table 9-2 Recommended Braking Resistor Specifications for AC600 Series Drive

Three-Phase 380V~480V			
Motor Power (kW)	Resistance (Ω)	Resistance Power (kW)	Braking Torque (%)
0.75	750	0.15	100
1.5	400	0.30	100
2.2	250	0.40	100
4.0	150	0.50	100
5.5	100	0.60	100
7.5	75	0.78	100
11	50	1.2	100
15	40	1.5	100
18.5	32	2.0	100
22	32	2.0	100
30	24	3.0	100
37	20	3.7	100
45	16	4.5	100
55	13	5.5	100
75	9.0	7.5	100%
90	6.8	9.3	100%
110	6.2	11.0	100%
132	4.7	13.0	100%
160	3.9	15.0	100%
185	3.3	17.0	100%
200	3.0	18.5	100%
220	2.7	20.0	100%
250	2.4	22.5	100%
280	2.0	25.5	100%
315	1.8	30.0	100%
355	1.5	33.0	100%
400	1.2	42.0	100%
450	1.2	42.0	100%
500	1.0	42.0	100%
560	1.0	50.0	100%

Table 9-3 Braking Unit and Resistor Selection (Three-phase/Single-phase 220V)

Three/Single Phase 220V			
Motor Power (kW)	Resistance (Ω)	Resistance Power (kW)	Braking Torque (%)
0.75	200	0.12	100%
1.5	100	0.3	100%

2.2	75.0	0.3	100%
4.0	50.0	0.5	100%
5.5	36.0	0.7	100%
7.5	24.0	1.0	100%
11	17.0	1.5	100%
15	13.0	2.0	100%
18.5	10.0	2.5	100%
22	9.0	2.8	100%
30	6.5	4.0	100%
37	5.5	4.5	100%
45	4.5	5.5	100%
55	3.5	7.5	100%

**CAUTION**

The AC600 series low power products are designed with built-in braking units, which can be selected according to the recommended braking resistor specifications in the table. For high-inertia loads or frequent long-duration braking, braking torque may need to be increased. The selected resistor value must not be lower than the minimum listed above, otherwise equipment damage may occur. If there is any doubt, please consult the Customer Service Department of Suzhou VEICHI Electric Co., Ltd.

Recommended Braking Rates for Common Applications

Application	Crane	Elevator	Winding/Unwinding	Centrifuge	Occasional Braking	General Applications
Braking Rate	30%~40%	20%~30%	20%~30%	50%~60%	5%	10%

9.2 Extension

9.2.1 Extension Overview

Name	Model	Description
Multifunction PG card	AC600PG1	PG card with 5V, 12V, and 15V power supplies. Supports incremental differential output and incremental open-collector output encoders.
IO extension card 1	AC600IO1	4×DI, 1×AI, 1×AO, 1×RO, 1×Y-terminal output. Supports three temperature sensors (PT100, PT1000, KTY84). Includes black-box function to record pre- and post-fault data in real time.
CANopen extension	AC600CAN1	CANopen communication bus extension card
Profinet extension	AC600PN1	Profinet communication bus extension card
Modbus TCP extension	AC600TCP1	Modbus TCP industrial Ethernet communication extension card
EtherCAT extension	AC600EC1	AC600 EtherCAT industrial Ethernet communication extension card
EtherNet/IP extension	AC600EIP1	EtherNet/IP communication bus extension card
Profibus-DP extension	AC600DP1	Profibus-DP communication bus extension card
BACnet extension	AC600BNT1	BACnet communication bus extension card
GPRS card	IOT-BMC410-A C600	4G GPRS wireless communication
Position extension card	AC600PG2	Receives pulse signals for position control. Supports incremental encoders, closed-loop control, and unlimited division output.
Sin/Cos encoder extension	AC600PG3	Supports Sin/Cos encoders and closed-loop control.

Absolute encoder card	AC600PG4	Supports absolute encoders and closed-loop control.
Resolver extension	AC600RT1	Supports resolvers and closed-loop control.

9.2.2 Extension Instructions

For details, refer to the user manual of each extension card model.

9.3 Operation Keypad

Table 9-1 Overview of Operation Keypad

Image	Name	Model	Description
	Digital keypad	KB600-25	Display keypad with silicone buttons and digital potentiometer.
	LCD keypad	KBD600-L1	User-friendly human-machine interface.
	External LCD keypad	IOP-10-800	External LCD display keypad with silicone buttons, USB interface, and Bluetooth.

Chapter 10 STO Function

10.1 Compliance Standards

- Safety Standards

Table 10-1 Safety Standards

Item	Standards
Function safety	EN/ISO 13849-1: 2015 EN/IEC 61508: 2010, Parts 1-7 EN/IEC 62061: 2021 EN/IEC 61800-5-2: 2017
EMC	EN/IEC 61326-3-1: 2017

- Safety Performance

Table 10-2 Safety Performance

Item	Performance
Safety Integrity Level (SIL)	SIL3
Probability of Failure Per Hour (PFH)	7.61×10^{-10} [1/h]
Performance Level (PL)	PLe/Cat.3
Mean Time to Dangerous Failure (MTTFd)	High
Diagnostic Coverage (DC)	Medium
Service time	20 years
Mission time	20 years
Hardware Fault Tolerance (HFT)	1
Application mode	High demand
Response time	5ms
Process safety time	25ms

CAUTION

To meet the requirements of SIL3/PLe/Cat.3, the AC drive must trigger the STO function at least once every three months for troubleshooting.

10.2 Installation

CAUTION

Designers and installers must be trained to understand the safety requirements related to their work.

10.2.1 Terminal Layout and Definition

The STO function is integrated in the drive. See "[2 Installation](#)" for STO input terminal layout and definitions.

10.2.2 Electrical Specifications and Wiring of Input Terminals

- Electrical Specification

Table 10-3 STO Input Signal Electrical Specifications

Item	Specification
Input voltage	24V DC ($\pm 10\%$)
Input current	7mA (per channel)
Input impedance	4k Ω

- Logic Level

Table 10-4 STO Input Signals

Channel	State	Description
STO1	High level	Normal operation of the drive
	Low level	Trigger STO function
STO2	High level	Normal operation of the drive
	Low level	Trigger STO function

- Wiring Description

- Single drive

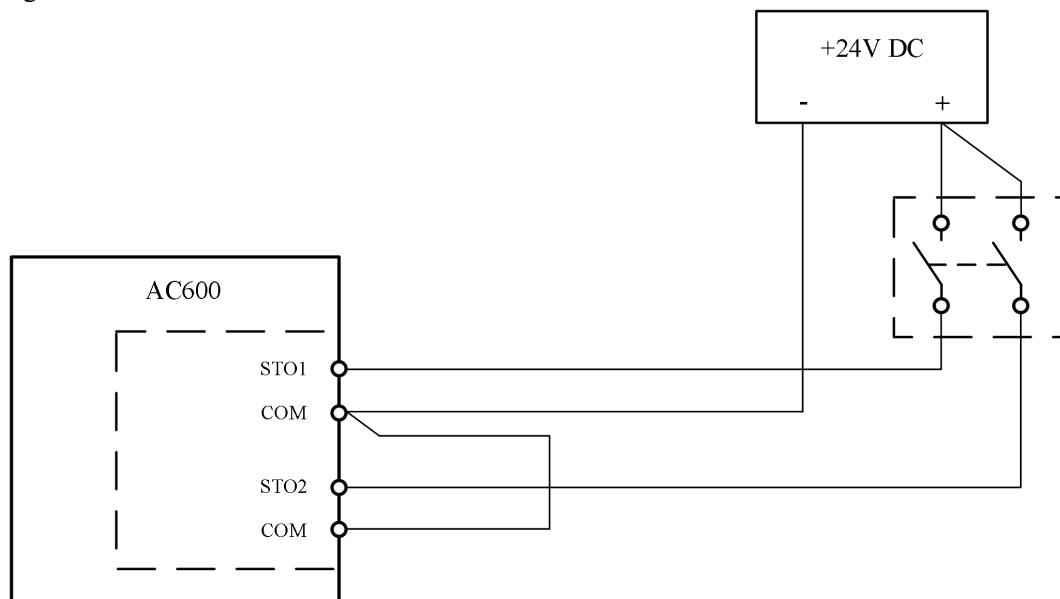


Figure 10-1 AC600 Series Drive STO Terminal Connection

■ Parallel drives

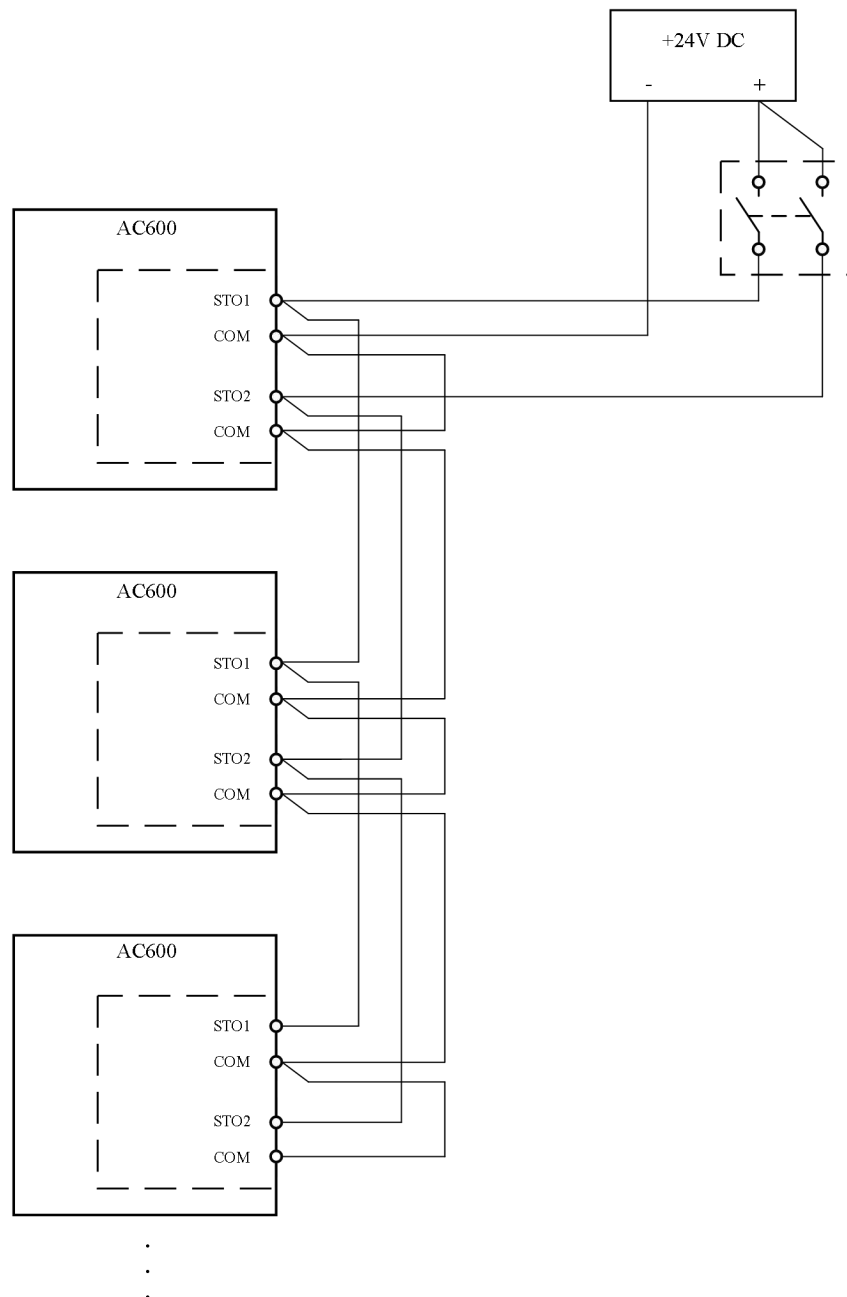


Figure 10-2 Parallel AC600 Series Drives STO Terminal Connection



CAUTION

The AC600 series drives support up to 2 parallel extensions. Configure the STO terminals on all drives and see the wiring diagram provided above.

● EMC Requirements

To prevent short circuits between adjacent conductors, use a shielded cable connected to ground, with a maximum length of 20m between the AC drive and the safety switch.

10.3 Commissioning and O&M Requirements

10.3.1 Basic requirements

- Technicians shall be trained in the requirements and principles of safety system design and commissioning.

- Operating and maintenance personnel shall be trained in the requirements and principles of safety system design and operation.
- Operators shall be trained in the requirements and principles of safety system design and operation.
- If the safety circuits fail, replace the circuit board with a new one, as it is not repairable.

10.3.2 Commissioning Steps and Acceptance Checklist

EN/IEC 61508, EN/IEC 62061, and EN/ISO 13849 standards require acceptance testing of safety functions at the following stages:

- Initial start-up;
- Post-changes (wiring, components, settings, etc.);
- Post-maintenance

Safety function acceptance testing shall be performed by qualified professionals, documented, and signed off by the tester. All staff, including technicians, operators, and maintenance personnel, must be trained in the requirements and principles of safety system design and operation.

The signed acceptance test report must be kept in the product logbook, detailing start-up activities, test results, fault reports, and corrective actions. Any new tests required due to changes or maintenance shall also be recorded.

Table 10-5 STO Test Steps and Acceptance Checklist

Step	Method	Result
1	Ensure the drive operates and stops normally during debugging	
2	Stop the drive by disconnecting the main input power and control power	
3	Check STO circuit wiring according to the manual	
4	Connect control and main power supply to the drive	
	Do not start the AC drive, and ensure that the motor is stopped	
	Connect STO1 and STO2 channels to a 24V power supply via a safety switch, setting to high level	
	Disconnect the safety switch, setting STO1 and STO2 both low level	
	Keypad displays "STO fault/ trigger, safe torque off"	
	Start the drive and ensure that the motor remains stopped	
	Reset the safety switch, setting STO1 and STO2 to high level, and manually clear the STO fault via the keypad	
5	Start the drive, ensure the motor operates normally, then stop the drive and wait for the motor shaft to come to a complete stop	
	Start the drive and ensure the motor operates normally	
	Disconnect the safety switch, setting STO1 and STO2 both low level	
	Keypad displays "STO fault/ trigger, safe torque off"	
	Ensure the drive stops output and the motor coasts to a stop, waiting for the motor shaft to come to a complete stop	
	Keep the safety switch disconnected and manually clear the STO fault via the keypad	
	Ensure the keypad still displays "STO fault/trigger, safe torque off," STO status cannot be restored	
	Start the drive and ensure that the motor remains stopped	
6	Reset the safety switch, setting STO1 and STO2 to high level, and manually clear the STO fault via the keypad	
	Record and sign the acceptance test report to certify that the STO function is normal and ready for operation	

10.4 Safety Function Monitoring

10.4.1 Safety Function Error Codes

Upon the STO function triggered or fails, the keypad will display the error name and code, see the table below

for details.

Table 10-6 STO Function Error Codes

Error Code	Name	Subcode	Description
56	STOEN	00	Emergency stop fault, can be reset
57	E.ST	01	Channel 1 fault after two channel comparison
57		02	Channel 2 fault after two channel comparison
58	E.STO	00	Reserved
		01	Channel 1 optocoupler error
		02	Channel 2 optocoupler error
		03	Channel 1 phase inverter error
		04	Channel 2 phase inverter error
		05	Channel 1 buffer error
		06	Channel 2 buffer error
		07	Reserved
		08	Reserved
		09	Power disconnection error
		10	Reserved
		11	Reserved
		12	MCU self-diagnostic fault 0- CPU error
		13	MCU self-diagnosing fault 1- RAM error
		14	MCU self-diagnosis fault 2- Flash error
15	MCU self-diagnosis fault 3- Stack error		

10.4.2 Safety Function Troubleshooting

Refer to the table for safety function failure solutions. If the issue persists, record the fault code and contact VEICHI support.

Table 10-7 Fault Causes and Solutions

Name	Cause	Solution
Safety torque off	STO is triggered, or the 24V STO power supply is not properly connected	Check that the safety switch is triggered, and the dual STO inputs are wired correctly
Hardware error	Hardware error in dual STO circuits detected	Replace the STO extension card and contact VEICHI support
Power error	Overvoltage or undervoltage in the STO power supply detected	Replace the STO extension card and contact VEICHI support
MCU error	MCU malfunction detected	Replace the STO extension card and contact VEICHI support

10.4.3 STO Reset

CAUTION

Before resetting STO, ensure the AC drive is returned to normal operation. Only the safety switch-triggered STO can be reset; for Other Considerations faults, contact VEICHI support directly.

When the safety switch triggers STO, the AC drive stops. To resume normal operation, manually reset the STO via the keypad and follow these steps:

1. Reset the safety switch to reconnect the STO dual channels to the 24V supply. Ensure the AC drive system is ready for normal operation before proceeding.
2. Disconnect and reconnect the power supply to release the STO status.

10.5 Precautions

Read the safety precautions, risk assessments, and limitations to ensure proper understanding and application of safety features.

CAUTION

Expertise is essential for designing safety systems. For overall control system safety, adhere to established safety principles throughout the design. While an individual sub-system with the STO function, though designed for safety-related purposes, doesn't ensure complete system safety.

10.5.1 Safety Measures

When using this function, please read and follow these key precautions:

- The STO function is not an alternative for the emergency stop. It cannot disconnect power or de-energize the motor and AC drive's high-voltage components without extra safety measures, which may lead to electric shock hazards. Therefore, perform maintenance only after disconnecting the drive from the main power supply.
- STO can be integrated into an emergency stop system, adhering to specific application standards and needs. However, it is used for specialized safety control to prevent hazards, not for emergency stopping.
- The emergency stop function allows operators to quickly halt devices when they spot unexpected dangers, preventing accidents.
- The emergency stop design differs from safety interlocks, often requiring independence from complex or smart controls. It might employ a basic electromechanical device to cut power or achieve a quick and controlled stop through methods like dynamic or regenerative braking.
- The STO function can stop the AC drive in emergencies, but it relies on motor inertia for a gradual stop. If immediate cessation is needed, opt for other rapid stop methods instead of STO.

10.5.2 Risk Assessment

- Conduct a preliminary risk assessment for the drive system when using STO to ensure SIL standards are met.
- Even with the safety function active, residual risks may exist. Always consider safety during risk assessments.
- External forces (like gravity on a vertical axis) can cause motor running during safety function operation. Use a mechanical brake to secure the motor.
- In the event of a drive failure, the motor can operate within a 180-degree range to ensure safety in hazardous conditions.

Chapter 11 International Standards Compliance

11.1 CE

11.1.1 CE mark

The "CE Marking" signifies compliance with European safety and environmental requirements for products traded (production, import and sale) within the market. CE standards encompass mechanical directives (for mechanical products), low-voltage directives (for electrical products), and EMC directives (pertaining to electromagnetic compatibility), etc.

1. Commercial trade (production, import and sale) in Europe must include CE marking.



2. This AC drive complies with low voltage directive and EMC directive, and is marked with CE certification.
 - Low voltage directive: 2014/35/EC
 - EMC directive: 2014/30/EC
3. Machinery and devices equipped with AC drives must also marked with CE certification.
4. When the CE marking is attached to the product with AC drive, the responsibility shall be borne by the customer who finally assembled the product. Customer should please confirm if the machinery and equipment of the final product are in compliance with CE standards.

11.1.2 Low Voltage Directive Requirements

The AC drive is tested according to EN61800-5-1 and confirmed to comply with the low voltage directive.

To ensure compliance with low voltage directives, machines and devices equipped with this AC drive must meet the following requirements.

- Installation place

The installation of the AC drive must comply with the conditions stipulated for Overvoltage Category III and Pollution Degree 2 as specified in the IEC 60664 standards.

- Connection of input side (primary side) fuse

To prevent accidents due to short circuit, make sure to connect a fuse on the input side. The input-side fuse must conform to UL standard.

Select fuses according to the specifications in the table below.

For drive input and output currents, refer to [Chapter 3 Technical Data](#).

Model	Contactor Specs (A)	Breaker Specs (A)	Fuse Specs (A)	Fuse Model	Input reactor	Sinusoidal Filter
AC600-T4-R75G-*	10	10	10	KTK-10	VC-ACL-C-03P7A-T3-2M24	JL-SWF-4-004
AC600-T4-1R5G-*	10	10	10	KTK-10	VC-ACL-C-03P7A-T3-2M24	JL-SWF-4-004
AC600-T4-2R2G-*	16	15	15	KTK-15	VC-ACL-C-05P5A-T3-2M18	JL-SWF-4-008
AC600-T4-004G-*	16	20	30	KTK-30	VC-ACL-C-0009A-T3-1M85	JL-SWF-4-017
AC600-T4-5R5G-*	25	20	30	KTK-30	VC-ACL-C-0013A-T3-1M56	JL-SWF-4-017
AC600-T4-7R5G-*	25	30	40	FWH-50C	VC-ACL-C-0018A-T3-1M00	JL-SWF-4-017
AC600-T4-011G-*	32	40	60	FWH-70C	VC-ACL-C-0024A-T3-M520	JL-SWF-4-024
AC600-T4-015G-*	40	50	80	FWH-70C	VC-ACL-C-0034A-T3-M400	JL-SWF-4-032
AC600-T4-018G-*	50	60	100	FWH-90C	VC-ACL-C-0038A-T3-M350	JL-SWF-4-038
AC600-T4-022G-*	50	75	100	FWH-100C	VC-ACL-C-0050A-T3-M260	JL-SWF-4-048
AC600-T4-030G-*	63	100	150	FWH-125C	VC-ACL-C-0060A-T3-M240	JL-SWF-4-062
AC600-T4-037G-*	80	125	200	FWH-125C	VC-ACL-C-0075A-T3-M235	JL-SWF-4-072
AC600-T4-045G-*	100	150	200	FWH-150C	VC-ACL-C-0091A-T3-M170	JL-SWF-4-115
AC600-T4-055G-*	125	175	250	FWH-200C	VC-ACL-A-0112A-T3-M110	JL-SWF-4-115
AC600-T4-075G-*	160	200	325	FWH-250C	VC-ACL-A-0150A-T3-M082	JL-SWF-4-180
AC600-T4-090G-*	220	250	400	FWH-275C	VC-ACL-A-0200A-T3-M070	JL-SWF-4-180
AC600-T4-110G-*	220	300	500	FWH-325C	VC-ACL-A-0224A-T3-M056	JL-SWF-4-260
AC600-T4-132G-*	250	400	600	FWH-400A	VC-ACL-A-0280A-T3-46U6	JL-SWF-4-260
AC600-T4-160G-*	300	500	700	FWH-500A	VC-ACL-A-0315A-T3-38U8	JL-SWF-4-410
AC600-T4-185G-*	400	600	800	FWH-600A	VC-ACL-A-0400A-T3-36U8	JL-SWF-4-410
AC600-T4-200G-*	400	700	800	FWH-600A	VC-ACL-A-0400A-T3-36U8	JL-SWF-4-410
AC600-T4-220G-*	630	800	1000	FWH-700A	VC-ACL-A-0450A-T3-33U3	JL-SWF-4-480
AC600-T4-250G-*	630	1000	1000	FWH-800A	VC-ACL-A-0560A-T3-26U4	JL-SWF-4-480
AC600-T4-280G-*	630	1200	1000	FWH-800A	VC-ACL-A-0560A-T3-26U4	JL-SWF-4-660
AC600-T4-315G-*	630	1200	1400	170M5016	VC-ACL-A-0630A-T3-23U3	JL-SWF-4-660
AC600-T4-355G-*	800	1400	1600	170M5016	VC-ACL-A-0720A-T3-18U4	JL-SWF-4-750
AC600-T4-400G-*	1000	1600	1600	170M6017	VC-ACL-A-0720A-T3-18U4	JL-SWF-4-750
AC600-T4-450G-*	1000	2000	1800	170M6017	VC-ACL-A-1000A-T3-14U7	JL-SWF-4-880

AC600-T4-500G-*	1000	2000	1800	170M6017	VC-ACL-A-1000A-T3-14U7	JL-SWF-4-880
AC600-T4-560G-*	1200	2000	-	-	VC-ACL-A-1250A-T3-11U6	JL-SWF-4-1200

Note:

1. Do not immediately power on or operate the machine if a fuse blows or a circuit breaker trips. Check cable connections and verify the selection of peripheral equipment. If the cause cannot be determined, contact the manufacturer. Do not power on or operate the machine without authorization.
2. Fuses must be installed on all input lines of the drive. If one fuse blows, replace all fuses.

- Prevent foreign object ingress

The AC600 series is designed for cabinet installation. The final system must provide appropriate fireproof, electrical, and mechanical protective enclosures in compliance with local regulations and relevant IEC standards.

11.1.3 Conditions for EMC Compliance

Electromagnetic Compatibility (EMC) refers to the ability of electrical and electronic equipment to operate correctly in an environment with electromagnetic interference (EMI), while not emitting excessive EMI that could affect other equipment. EMC requirements include:

Emission Limits: The equipment must not exceed specified EMI limits during normal operation.

Immunity: The equipment must operate correctly in the presence of EMI from the environment.

The AC600 series AC drive comply with European EMC Directive 2004/108/EC and meet EN 61800-3:2004 +A1:2012, C2 requirements, applicable to both first- and second-class environments.

Warning: When used in first-class environments, the drive may cause radio interference. In addition to the CE compliance measures described in this chapter, users must take necessary actions to prevent interference.

To ensure EMC compliance: Install an EMC filter at the drive input and use shielded cables at the output. Ensure reliable grounding of the filter and 360° grounding of the output cable shield. For EMC filter selection, output cable choice, and installation, refer to [Section 4.7.4 Main Circuit Wiring](#).

The system manufacturer is responsible for ensuring that the complete system meets European EMC Directive requirements. Depending on the application environment, the system must comply with EN 61800-3:2004 +A1:2012 Class C2, C3, or C4 requirements.

11.1.4 EMC Standard Overview

- First Environment: Includes residential facilities and low-voltage networks directly supplying residential buildings without an intermediate transformer.
- Second Environment: Includes facilities other than those directly connected to low-voltage networks supplying residential buildings.
- Equipment Category C1: Electrical drive systems with rated supply voltage below 1000V, intended for use in the first environment.
- Equipment Category C2: Electrical drive systems with rated voltage below 1000V, not plug-in or portable equipment. In the first environment, installation and commissioning must be performed by professionals.
- Equipment Category C3: Electrical drive systems with rated voltage below 1000V, intended for the second environment only. Not suitable for first-environment residential low-voltage networks, where RF interference may occur.
- Equipment Category C4: Electrical drive systems with rated voltage $\geq 1000V$, or rated current $\geq 400A$, or intended for use in the complex system in the second environment.

11.1.5 Cable and Wiring Requirements

- To meet CE EMC requirements, shielded cables with three or four phase conductors must be used. If the shield conductivity is insufficient, add a separate PE wire, or use a four-conductor cable with one conductor as PE. Shields should be made of coaxial copper braid with $\geq 90\%$ braid density for effective RF suppression. Refer to [Section 4.7.4 “Recommended Wiring Cable Specifications \(CE/UL\)”](#) for cable selection and grounding.
- Motor cables and their PE shielding conductors (twisted shield) should be as short as possible to reduce electromagnetic radiation as well as stray and capacitive currents outside the cable. An output filter or dv/dt reactor is necessary for cables over 100 meters in length.
- It is recommended to use shielded cables for all control lines.
- Motor cables should be routed away from other cables, but cables for multiple drives can be wired in parallel.
- It is recommended to route the motor cable, input power cable and control cable in separate raceways. To minimize electromagnetic interference from the AC drive's rapid output voltage changes, please avoid long

parallel runs between motor cables and other cables.

- When control cables must be routed across power cables, ensure that the angle between the two cables remains as close to 90° as possible. Do not route other cables through the drive.
- The I/O lines of the drive power and the weak signal line (such as control lines) should not be routed in parallel. If possible, please arrange them vertically.
- Cable trays must be well interconnected and properly grounded. Aluminum trays can be used to improve the equal potential.
- The filter, drive, and motor should all be well lapped to the system (machinery or device), protected by applying a spray on the mounted portion, and securely connected to the conductive metal.

11.1.6 Routing Recommendations

1. Route the cables that carry different signals separately. Reserve a proper distance between interference cables and sensitive cables; a distance of 30 cm is recommended. If the two types of cables must cross, arrange them at an angle of 90° to prevent interference.

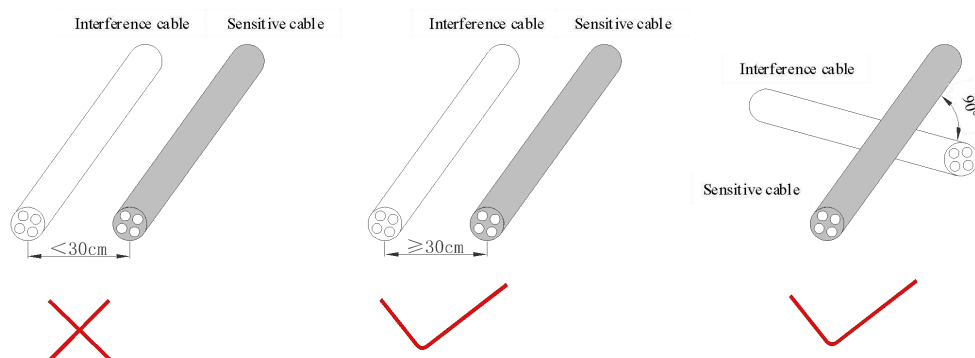


Figure 11-1 Routing of Interference and Sensitive Cables

2. It is advised to separately route cables of different signal types, using equipotential signals as isolation between them. For cables carrying the same signal type, the outer layer should consist of equipotential signal cables, with additional equipotential signals distributed throughout the inner arrangement where possible, as shown in the figure below:

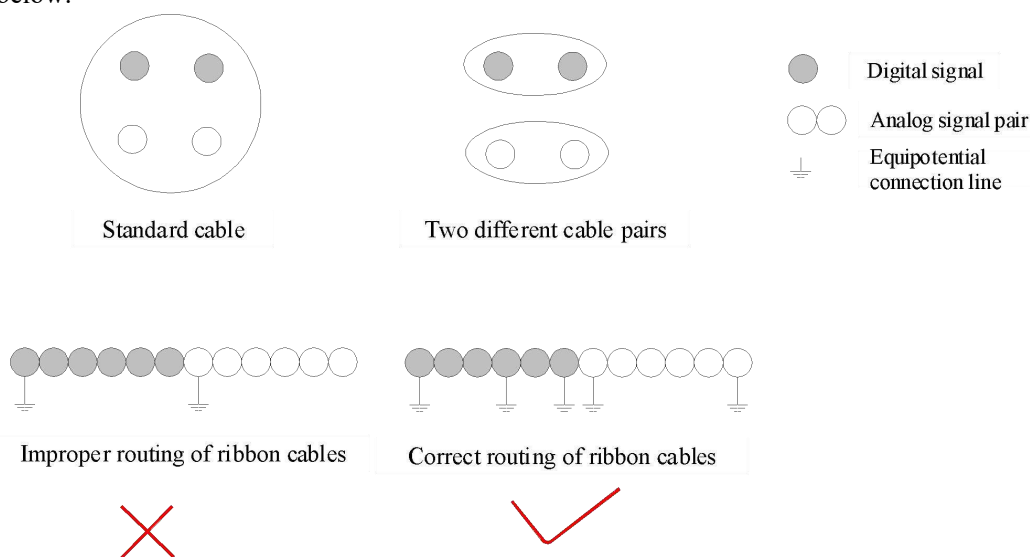


Figure 11-2 Separate Routing of Different Types of Signal Cables

3. For multi-core cables, it is recommended to use a single cable for each signal type. If different signal types must share a cable, ensure its internal core wires are shielded, as shown in the following figure:

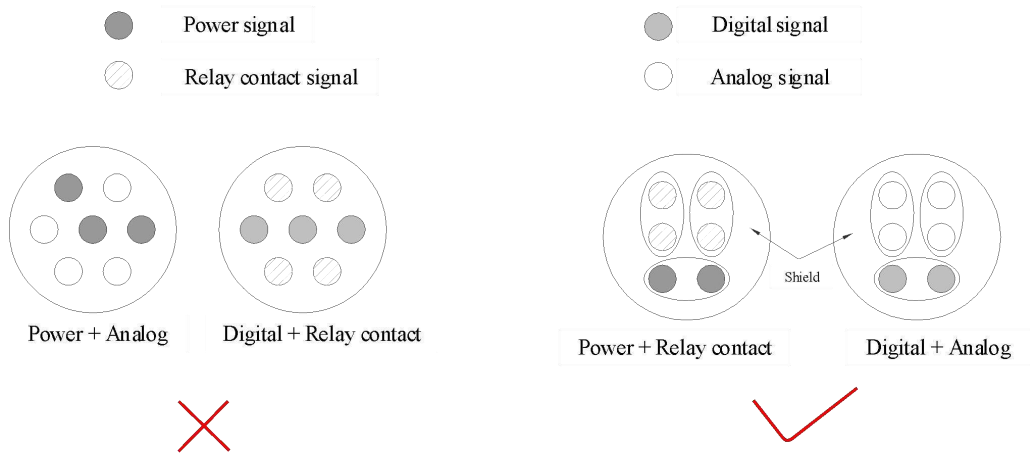


Figure 11-3 Routing of Multicore Cables

4. When using multi-core cables to connect equipment, if spare cores are present, all unused (or spare) wires must be connected to the equipotential bonding point.

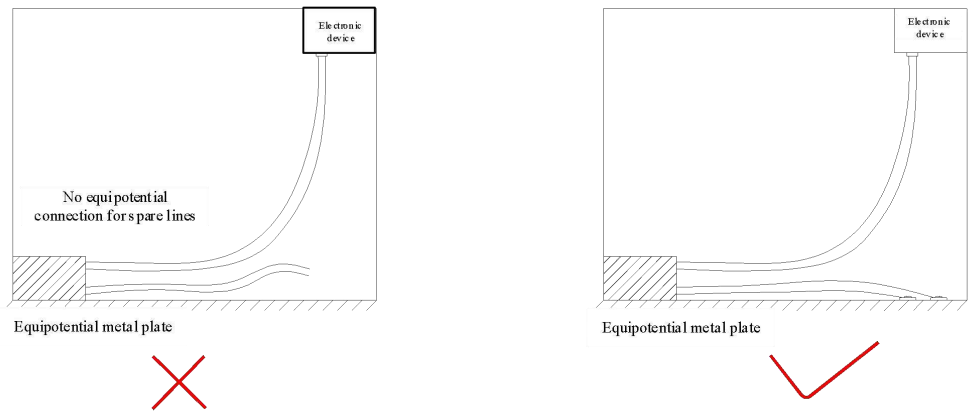


Figure 11-4 Handling of Unused Cores in the Multicore Cable

5. For low-level sensor signals and relay signals with shared lines, please ensure the two wires are laid as close as possible to avoid excessive loop area is formed; use twisted-pair cables for analog signals and keep digital signal cables in close proximity.

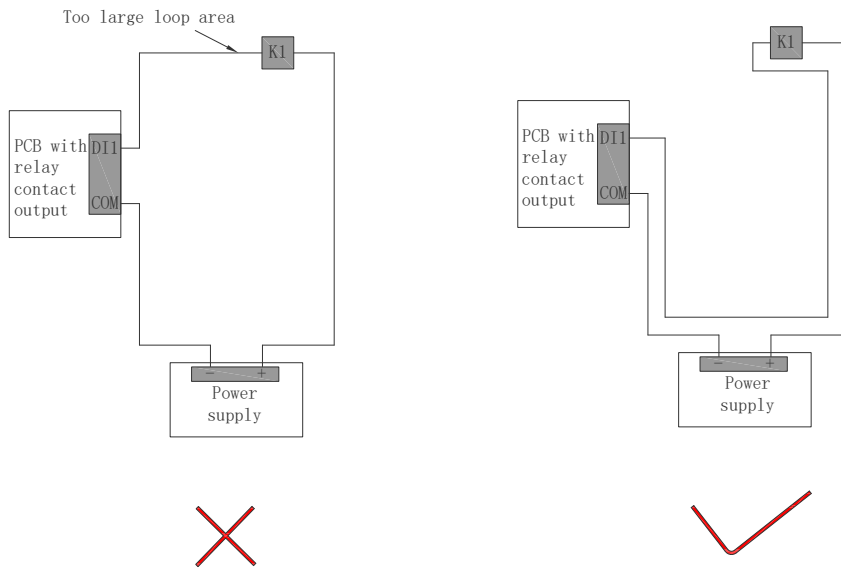


Figure 11-5 Routing for Preventing Excessive Loop Area

6. When laying multiple types of cables:

Route the cables along metal structures with equipotential bonding.
 Separate different types of cables as much as possible to significantly improve internal EMC performance.
 And if metal (galvanized iron or stainless steel) trays are used, install metal partitions within the same tray to further enhance effectiveness.

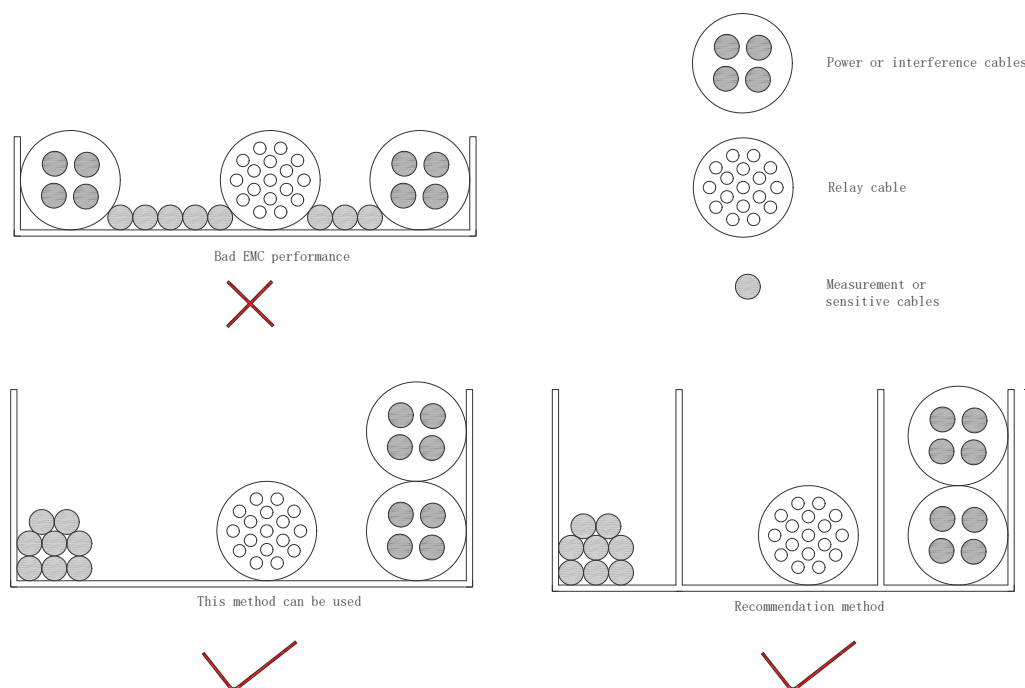


Figure 11-6 Routing for Multiple Types of Cables

11.1.7 Leakage Current Suppression

AC drives output high-speed pulse voltages, generating high-frequency leakage currents. Each drive can produce >100mA leakage; therefore, residual current circuit breakers (RCCBs) should have a rated trip current $\geq 100\text{mA}$. AC drives may produce DC leakage current in the protective conductor; use Type B (delayed) RCCBs.

For multiple drives, each drive must have its own RCCB.

Factors affecting leakage current:

1. Drive capacity
2. Carrier frequency
3. Type and length of motor cable
4. EMI filter

Measures if leakage trips RCCB:

1. Increase the RCCB rated trip current.
2. Use Type B RCCB with delayed and high-frequency suppression.
3. Reduce the carrier frequency.
4. Shorten output motor cables.
5. Install leakage suppression devices.
6. Recommended brands: CHINT, Schneider, etc.

11.1.8 Recommendations for Common EMC Issues

AC drives are strong interference sources. Improper wiring or grounding may still cause EMC problems. When interference with other devices occurs, the following corrective actions may be applied.

Table 11-1 Common EMC Issues and Corrective Measures

Interference Type	Corrective Measures
RCCB tripping	● Reduce carrier frequency ● Shorten motor cable length ● Add ferrite cores on input power cables (exclude PE) ● If tripping occurs at power-on: disconnect large input-to-ground capacitors (disconnect grounding of external/internal filters or Y-capacitors) ● If tripping occurs during run/enable: add leakage-suppression measures at the input (current filter, safety capacitor + ferrite, ferrite cores)

Drive operation causes interference	● Connect motor frame to drive PE terminal ● Connect drive PE to mains PE ● Add ferrite cores on input power cables ● Add capacitors or ferrite cores on affected signal ports ● Add additional bonding conductors between equipment
Communication interference	● Connect motor frame to drive PE terminal ● Connect drive PE to mains PE ● Add ferrite cores on input power cables ● Add termination resistors at communication line ends ● Add communication common ground for differential pairs ● Use shielded communication cables; connect shield to communication ground ● For multi-node networks, use daisy-chain wiring; spur length <30cm
I/O interference	● Increase capacitor filtering for low-speed DI ● Increase capacitor filtering for AI

11.2 UL



UL/cUL Mark

The UL/cUL mark indicates that the product has been tested and evaluated by UL and complies with applicable safety standards in the United States and Canada. Components used inside the product must also be UL-certified.

This AC600 series has been tested according to UL508C and confirmed to meet UL requirements. To ensure that machines and systems using this drive comply with UL standards, the following conditions must be satisfied:

- Installation place
Install the drive in an environment with Pollution Degree 2 (UL definition) or lower.
- Ambient temperature
- Maximum Ambient Temperature - 40°C at 100% load, 50°C at 75% load, increase 1°C by 2.5% load decrease.
- Wiring example
For wiring diagrams compliant with the Low Voltage Directive, refer to [“4.7.3 Standard Wiring.”](#)
- Main circuit wiring
Use UL-approved crimp terminals on main circuit terminals, crimped with the tool recommended by the terminal manufacturer. Use insulated crimp terminals or terminals with insulating sleeves.
Use UL-rated copper conductors with insulation rated for a continuous temperature of 75°C.
Select cable size and tightening torque according to [“4.7.4 Recommended Main Circuit Cable Specifications \(CE/UL\)”](#).
- Input-side (primary) fuses
To prevent accidents due to short circuit, make sure to connect a fuse on the input side. Use UL-approved semiconductor-protection fuses. Select the correct fuse rating according to [“4.7.4 Recommended Main Circuit Components Specification”](#) and the drive’s maximum input rating.
For drive input and output current ratings, refer to “3.1 Model Specifications.”

Note

1. Do not immediately power on or operate the machine if a fuse blows or a circuit breaker trips. Check whether the cable wiring and the selection of peripheral machines are correct and find out the cause of the problem. If the causes can’t be identified, please contact our company and do not switch on the power supply or operate the machine without authorization.
2. Fuses must be installed on all input lines of the drive. If one fuse blows, replace all fuses.

- Short-circuit withstand capability

When the recommended fuses listed in the table are used, the AC600 series may be installed in power systems with a short-circuit current of up to 100,000A at 480V or below (400V class).

Chapter 12 FBD Visual Programming

12.1 Overview

This Chapter mainly introduces the function of the lower computer free programming module in the FBD visual programming project, aiming at facilitating the users to understand the internal logic, setting sequence, fault finding and other precautions at any time in the actual application. There are currently 10 free modules, each with 3 inputs, 1 output and 1 module status. The inputs, outputs and statuses of all free modules are displayed through the U07 connector and in the visual programming module of the host computer.

Module Status

The status values of all free modules are centrally displayed in the connector parameter U07.80. The bit0~bit9 of this parameter display the status values of 10 free modules respectively, and multiple module statuses can be displayed at the same time. In addition to the general display of the parameter list connector, the module status can also be indicated in the visual programming module by the module color.

For example, when the parameter U07.80 of the parameter list connector is 51 and the binary number is 0011 0011, i.e., the parameter bit0, bit1, bit4 and bit5 are all 1, it means that the status of module 1, module 2, module 5 and module 6 is 1, which means that the above 4 modules have an internal arithmetic error. At this time, the color of the above 4 modules in the visual programming of the host computer changes to red.

The meaning of the module status is 1 or the color turns red:

1. Illegal module input: The input type is not bit operation during logic operation, i.e., the input value is non-0 or non-1; or the fault code and fault sub-code over-limit.
2. Module setting error: Setting error in logic operation, limit function, logic delay, level-to-pulse function, slope processing, reset reset, switch function.
3. Data overflow: If a data overflow occurs inside the module during multiplication, the variables inside the module are all int32 bits.
4. Non-0 divisor: If the divisor (module inputs 2 and 3) is 0 during division, the module's internal variables are all int32 bits.
5. Radicand <0: The radicand is lower than 0 during square root calculation.

12.2 Free Module Application

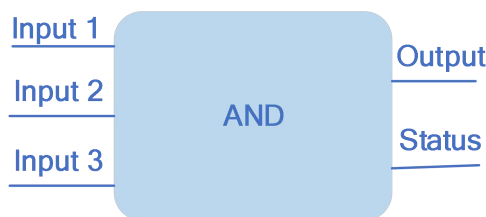
12.2.1 Logic Operation

Logic operations include application functions such as AND, NOT, XOR, XNOR, etc., to illustrate the logic of the module's application functions, input/output constraints, and module status indication.

Logical AND

(1) Function

Perform an AND logic on the 3 inputs; if both input conditions are true (or non-0 values), the result is true (or non-0 values), and if one or both of the two input conditions are false (or zero values), the result is false (or zero values).



Output= Input 1 && Input 2 && Input 3

(2) Module

Module Interface	Type	Comment
Input 1	0/1	Bit operation
Input 2	0/1	Bit operation
Input 3	0/1	Bit operation
Output	0/1	
State	0/1	1(illegal input, setting error)

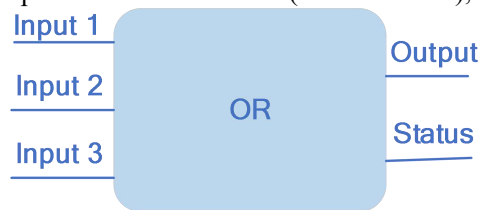
- When all 3 inputs of the module are valid, the module operates normally, when 1 input of the module is invalid, the remaining 2 inputs operate normally, when 2 inputs of the module are invalid, the module status is 1 and the output is 0. At this time, the module is set up incorrectly, and the host computer visual programming module turns red to indicate the module arithmetic abnormalities.
- When the input type of 3 inputs of the module is not bit operation, and the input value is non-0 and non-1,

the module status is 1 and the output is 0. At this time, the input of the module is illegal, and the host computer visual programming module will turn red to indicate the module arithmetic abnormalities.

Logical OR

(1) Function

Perform a NOT logic on the 3 inputs; one condition at least is true (or non-0 values), the result is true (or non-0 values), and if both of the two input conditions are false (or zero values), the result is false (or zero values).



Output= Input 1 || Input 2 || Input 3

(2) Module

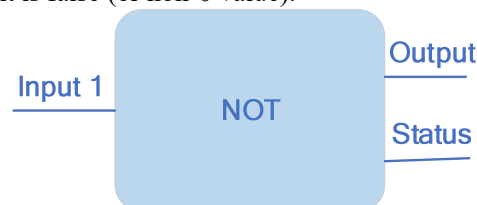
Module Interface	Type	Comment
Input 1	0/1	Bit operation
Input 2	0/1	Bit operation
Input 3	0/1	Bit operation
Output	0/1	-
State	0/1	1(illegal input, setting error)

- When all 3 inputs of the module are valid, the module operates normally, when 1 input of the module is invalid, the remaining 2 inputs operate normally, when 2 inputs of the module are invalid, the module status is 1 and the output is 0. At this time, the module is set up incorrectly, and the host computer visual programming module turns red to indicate the module arithmetic abnormalities.
- When the input type of 3 inputs of the module is not bit operation, and the input value is non-0 and non-1, the module status is 1 and the output is 0. At this time, the input of the module is illegal, and the host computer visual programming module will turn red to indicate the module arithmetic abnormalities.

Logic NOT

(1) Function

Conduct a NOT logic on the input; if the input is true (or a non-0 value), the result is false (or zero). If the input is false (or zero), the result is false (or non-0 value).



The result = ! Input 1

(2) Module

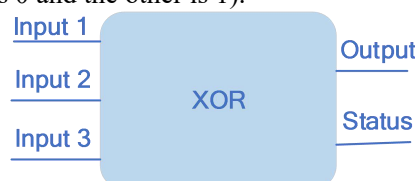
Module Interface	Type	Comment
Input 1	0\ non-0	Bit operation
Output	0/1	-
State	0/1	-

- The actual application type of the module input is bool, i.e. true or false. However, the variable is of type int32 for the internal operation of the module, so users need to differentiate it from the inverse operation when using it.

Logical XOR

(1) Function

Conduct XOR on the 3 inputs, and the result is 0 if the two inputs are the same(both 0 or both 1), and the result is 1 if the two inputs are different (one is 0 and the other is 1).



Output= Input 1 ^ Input 2 ^ Input 3

(2) Module

Module Interface	Type	Comment
Input 1	0/1	Bit operation
Input 2	0/1	Bit operation
Input 3	0/1	Bit operation
Output	0/1	-
State	0/1	1(illegal input, setting error)

- When all 3 inputs of the module are valid, the module operates normally, when 1 input of the module is invalid, the remaining 2 inputs operate normally, when 2 inputs of the module are invalid, the module status is 1 and the output is 0. At this time, the module is set up incorrectly, and the host computer visual programming module turns red to indicate that the module operates abnormally.
- When the input type of 3 inputs of the module is not bit operation, and the input value is non-0 and non-1, the module status is 1 and the output is 0. At this time, the input of the module is illegal, and the host computer visual programming module will turn red to indicate the module arithmetic abnormalities.

Logic XNOR

(1) Function

Perform XNOR on the 3 inputs; the output is true (or 1) if and only if the two inputs are the same; if the two inputs are different, the output is false (or 0).



$$\text{Output} = (\text{Input 1} * \text{Input 2} * \text{Input 3}) + (!\text{Input 1} * !\text{Input 2} * !\text{Input 3})$$

(2) Module

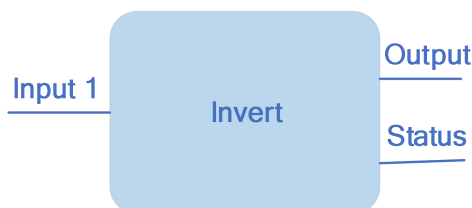
Module Interface	Type	Comment
Input 1	0/1	Bit operation
Input 2	0/1	Bit operation
Input 3	0/1	Bit operation
Output	0/1	-
State	0/1	1(illegal input, setting error)

- When all 3 inputs of the module are valid, the module operates normally, when 1 input of the module is invalid, the remaining 2 inputs operate normally, when 2 inputs of the module are invalid, the module status is 1 and the output is 0. At this time, the module is set up incorrectly, and the host computer visual programming module turns red to indicate that the module operates abnormally.
- When the input type of 3 inputs of the module is not bit operation, and the input value is non-0 and non-1, the module status is 1 and the result is 0; At this time, the input of the module is illegal, and the host computer visual programming module will turn red to indicate the module arithmetic abnormalities.

Logic Invert

(1) Function

Negate the input 1.



$$\text{Output} = \sim \text{Input 1}$$

(2) Module

Module Interface	Type	Comment
Input 1	0/1	Bit operation
Output	0/1	-
State	0/1	1(illegal input)

- The module input type must be a bitwise operation. This function performs a negate operation on one of the binary bits of the current variable. Note the distinction from logical AND and NOT.
- When the input type of the module is not bit operation, and the input value is non-0 and non-1, the module status is 1 and the result is 0. At this time, the input of the module is illegal, and the host computer visual programming module will turn red to indicate the module arithmetic abnormalities.

12.2.2 Arithmetic Operation

Arithmetic operations including addition, subtraction, multiplication, division, proportionality, absolute value, and others to illustrate the logic of the module's application functions, input and output limitations, and module status indications.

Absolute

(1) Function

Absolute value calculation makes the result to be positive and has the same amplitude as the input.



Output = | Input 1 |

(2) Module

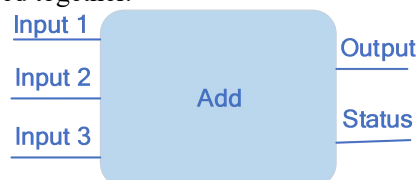
Module Interface	Type	Comment
Input 1	Uint16	Input type is constant/address number
Output	Uint32	-
State	-	-

- The data types of module inputs and outputs are all unsigned variables, but since the variables are int32-bit for internal module arithmetic, negative arithmetic can be performed when the module input type is an address number.
- When the module input is higher than or equal to 0, the module output is equal to the input, and when the module input is lower than 0, the module output is equal to the opposite of the input.

Additive Operations

(1) Function

Get the sum of the three inputs added together.



Output = Input 1 + Input 2 + Input 3

(2) Module

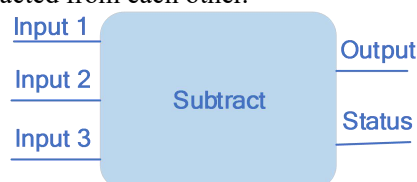
Module Interface	Type	Comment
Input 1	Uint16	Input type is constant/address number
Input 2	Uint16	Input type is constant/address number
Input 3	Uint16	Input type is constant/address number
Output	Uint32	-
State	-	-

- The data types of module inputs and outputs are all unsigned variables, but since the variables are int32-bit for internal module arithmetic, negative arithmetic can be performed when the module input type is an address number.

Subtractive Operations

(1) Function

Get the difference of 3 inputs subtracted from each other.



Output = Input 1 - Input 2 - Input 3

(2) Module

Module Interface	Type	Comment

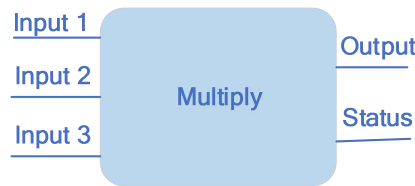
Input 1	Uint16	Subtracted number and input type are constant/address numbers
Input 2	Uint16	Subtracted number and input type are constant/address numbers
Input 3	Uint16	Subtracted number and input type are constant/address numbers
Output	Uint32	-
State	-	-

- The data types of module inputs and outputs are all unsigned variables, but since the variables are int32-bit for internal module arithmetic, negative arithmetic can be performed when the module input type is an address number.
- Since the connector parameter type is Uint32 on the host computer, when a negative value is calculated within the module, both the parameter list connector monitor value and the visual programming module display values are Uint32 bit data. For example, 4294967246 represents an actual value of -50.

Multiplicative Operations

(1) Function

Get the multiplication of the 3 inputs.



Output= Input 1 * Input 2 * Input 3

(2) Module

Module Interface	Type	Comment
Input 1	Uint16	Input type is constant/address number
Input 2	Uint16	Input type is constant/address number
Input 3	Uint16	Input type is constant/address number
Output	Uint32	-
State	0/1	1 (Data Overflow)

- The data types of module inputs and outputs are all unsigned variables, but since the variables are int32-bit for internal module arithmetic, negative arithmetic can be performed when the module input type is an address number.
- Since the connector parameter type is Uint32 on the host computer, when a negative value is calculated within the module, both the parameter list connector monitor value and the visual programming module display values are Uint32 bit data. For example, 4294967246 represents an actual value of -50.
- Module function for the multiplication operation, if the module internal calculation result is greater than the upper limit of Uint32, then the module state is 1, the output is 0, at this time, the upper computer visual programming module turns red to indicate that the module arithmetic abnormalities.

Division Operations

(1) Function

Get the quotient of the division of 3 inputs.



Output= Input 1 / Input 2 / Input 3, the

(2) Module

Module Interface	Type	Comment
Input 1	Uint16	Dividend and input type are constant/address numbers
Input 2	Uint16	Divisor and input type are constant/address numbers
Input 3	Uint16	Divisor and input type are constant/address numbers
Output	Uint32	-
State	0/1	1 (divisor is 0)

- The data types of module inputs and outputs are all unsigned variables, but since the variables are int32-bit

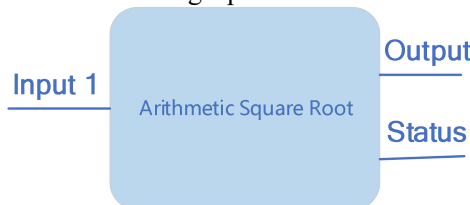
for internal module arithmetic, negative arithmetic can be performed when the module input type is an address number.

- Since the connector parameter type is Uint32 on the host computer, when a negative value is calculated within the module, both the parameter list connector monitor value and the visual programming module display values are Uint32 bit data. For example, 4294967246 represents an actual value of -50;
- Module function for the multiplication operation, if the module internal calculation result is greater than the upper limit of Uint32, then the module state is 1, the output is 0, at this time, the upper computer visual programming module turns red to indicate that the module arithmetic abnormalities.

Arithmetic Square Roots

(1) Function

Get the arithmetic square root of the number being squared.



Output = $\sqrt{IN1}$, and the square number being squared cannot be less than 0.

(2) Module

Module Interface	Type	Comment
Input 1	Uint16	Dividend and input type are constant/address numbers
Output	Uint32	-
State	0/1	1 (Radicand less than 0)

- The data types of module inputs and outputs are all unsigned variables, but since the variables are int32-bit for internal module arithmetic, negative arithmetic can be performed when the module input type is an address number.
- Module function for the multiplication operation, if the module internal calculation result is greater than the upper limit of Uint32, then the module state is 1, the output is 0, at this time, the upper computer visual programming module turns red to indicate the module arithmetic abnormalities.

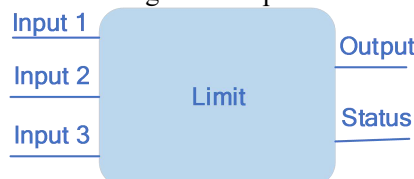
12.2.3 Signal Processing

Signal processing includes limiting, filtering, and logic delay to illustrate the logic of the functions, input and output limitations, and module status alarms.

Limit Processing

(1) Function

The signal to be processed is limited, when the signal to be processed > upper limit, the output = upper limit value; when the signal to be processed < lower limit, the output = lower limit value; when lower limit ≤ signal to be processed ≤ upper limit, the output = value of the signal to be processed.



Input 1: Signal to be processed; Input 2: Upper limit; Input 3: Lower limit.

(2) Module

Module Interface	Type	Comment
Input 1	Uint16	Signal to be processed and input type are constant/address numbers
Input 2	Uint16	Upper limit and input type are constant/address numbers
Input 3	Uint16	Lower limit and input type are constant/address numbers
Output	Uint32	-
State	0/1	1 (Setting error)

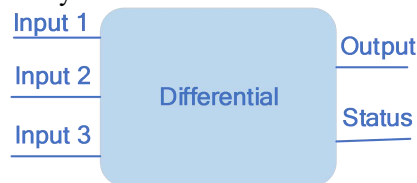
- When the module function is limit calculation, if the upper limit value is lower than the lower limit value, the module status is 1 and the output is 0. At this time, the host computer visual programming module turns red to indicate the module arithmetic abnormalities.
- When input 1 of the limit module is invalid, the output of the module is always 0; when inputs 2 and 3 are

invalid at the same time, the output of the module is always 0; when input 1 of the module is valid, and any one of input 2 and 3 of the module is valid, the module can operate normally.

Differential Processing

(1) Function

The signal to be processed is differentiated, and its output is the current signal value minus the last cycle of the signal multiplied by the gain factor, and the cycle is the differentiation interval in units of 10ms.



Output = (Signal to be processed - Previous signal) * Gain factor

Input 1: Signal to be processed; Input 2: Gain factor; Input 3: Differential time interval/10ms.

(2) Module

Module Interface	Type	Comment
Input 1	Uint16	Signal to be processed and input type are constant/address numbers
Input 2	Uint16	Gain factor and input type are constant/address numbers
Input 3	Uint16	Differential interval/10ms and input type are constant/address numbers
Output	Uint32	-
State	-	-

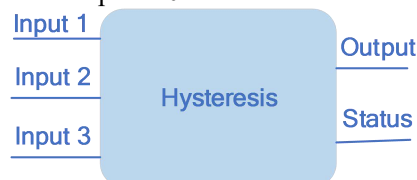
- When both input 3 and input 1 of the hysteresis function module are valid, the module can operate normally, otherwise the module does not operate, the output is always 0, and the module state is 0.

Hysteresis

(1) Function

The signal to be processed is compared with hysteresis values. When the signal to be processed is rising, if it is lower than threshold + hysteresis, the module output is 0; If it is higher than threshold + hysteresis, the module output is 1.

When the signal to be processed is falling, if it is higher than threshold - hysteresis, the module output is 1; If it is lower than threshold - hysteresis, the module output is 0.

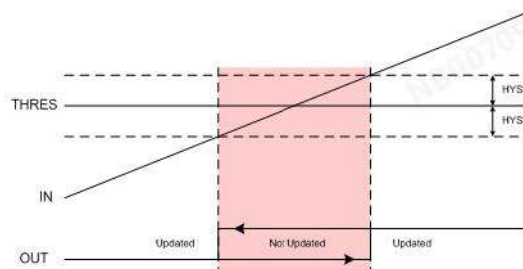


Input 1: Signal to be processed; Input 2: Threshold, Input; 3: Hysteresis

(2) Module

Module Interface	Type	Comment
Input 1	Uint16	Signal to be processed and input type are constant/address numbers
Input 2	Uint16	Threshold and input type are constant/address numbers
Input 3	Uint16	Hysteresis and input type are constant/address numbers
Output	Uint32	-
State	-	-

- When both input 1 and input 2 of the hysteresis function module are valid, the module can operate normally, otherwise the module does not operate, the output is always 0, and the module state is 0.



Maximum

(1) Function

Take the maximum value of input 1, input 2 and input 3.



(2) Module

Module Interface	Type	Comment
Input 1	Uint16	Input type is constant/address number
Input 2	Uint16	Input type is constant/address number
Input 3	Uint16	Input type is constant/address number
Output	Uint32	-
State	-	-

- When all 3 inputs to the module are valid, the module takes the maximum of the 3 inputs; when 2 inputs to the module are valid, the module takes the larger one of the 2 inputs; when only one input to the module is valid, the output of the module is equal to the input.

Minimum

(1) Function

Take the minimum value of input 1, input 2 and input 3.



(2) Module

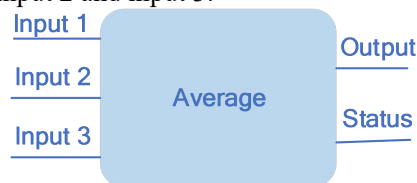
Module Interface	Type	Comment
Input 1	Uint16	Input type is constant/address number
Input 2	Uint16	Input type is constant/address number
Input 3	Uint16	Input type is constant/address number
Output	Uint32	-
State	-	-

- When all 3 inputs to the module are valid, the module takes the lowest value of the 3 inputs; when 2 inputs to the module are valid, the module takes the smaller one of the 2 inputs; when only one input to the module is valid, the output of the module is equal to the input.

Average

(1) Function

Take the average value of input 1, input 2 and input 3.



Output = (Input 1 + Input 2 + Input 3) / X, X is the number of valid inputs to the module.

(2) Module

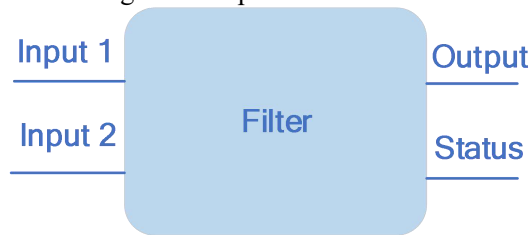
Module Interface	Type	Comment
Input 1	Uint16	Input type is constant/address number
Input 2	Uint16	Input type is constant/address number
Input 3	Uint16	Input type is constant/address number
Output	Uint32	-
State	-	-

- When all 3 inputs to the module are valid, the module takes the average value of the 3 inputs; when 2 inputs to the module are valid, the module takes the average value of the 2 inputs; when only one input to the module is valid, the output of the module is equal to the input.

Filter

(1) Function

Conduct 1-order low-pass filter on the signal to be processed.

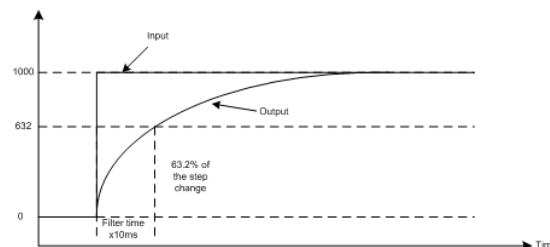


Input 1: Signal to be processed; Input 2: Filter time (10ms)

(2) Module

Module Interface	Type	Comment
Input 1	Uint16	Signal to be processed and input type are constant/address numbers
Input 2	Uint16	Filter and input type are constant/address numbers
Output	Uint32	-
State	-	-

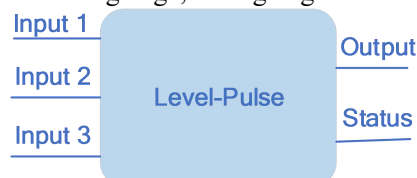
- When both input 2 of the module are valid, the filter function is normal, otherwise the module output is always 0.



Level-Pulse Conversion

(1) Function

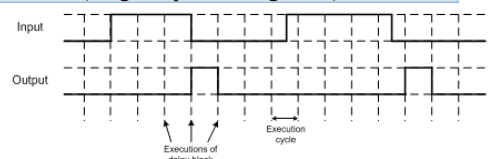
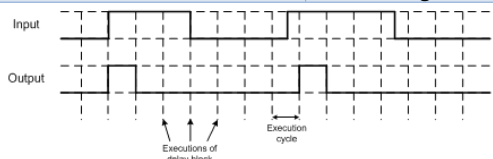
Input 1: Level signal to be processed to converted into a pulse signal with a pulse period of input 2. Trigger modes are selected on the input 3, which are rising edge, falling edge and bidirectional triggering.



1: Level signal to be processed; Input 2: Pulses cycle/10ms; Input 3: Trigger modes; 0 means rising edge, 1 means falling edge, and 2 means bidirectional triggering.

(2) Module

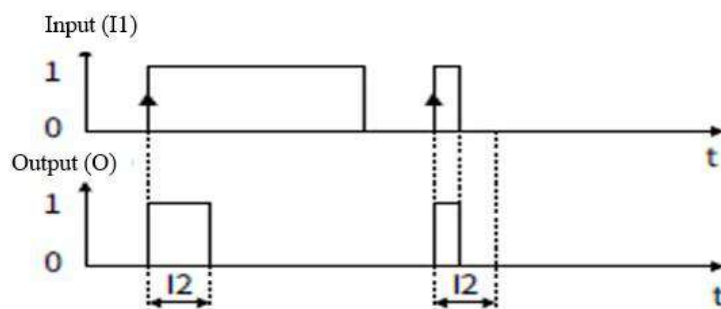
Module Interface	Type	Comment
Input 1	Uint16	Level signal to be processed and input type are constant/address numbers
Input 2	Uint16	Pulse cycle and input type are constant/address numbers
Input 3	Uint16	Trigger method and input type are constant/address numbers
Output	Uint32	-
State	0/1/negative	1 (illegal input, setting error)



- When both input 3 of the module are valid, the filter function is normal, otherwise the module output is always 0.
- When module input 3 is 0, the low level turns to high level to trigger the rising edge; When module input 3

is 1, the high level turns to low level to trigger the falling edge; when module input 3 is 2, the level signal changes to trigger the pulse signal;

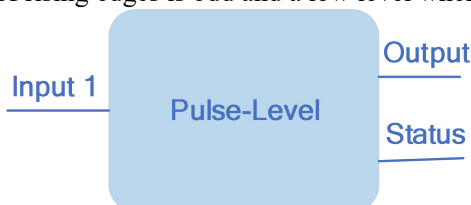
- When the value of Input 1 is neither 0 nor 1, or when Inputs 1, 2, or 3 are less than 0, the module status becomes 1 and the output becomes 0. At this time, the module input is illegal, and the host computer visual programming module turns red to indicate the module abnormalities.
- When the value of module input 3 is greater than or equal to 3, the module status is 1 and the output is 0. At this time, the module input is incorrect, and the host computer visual programming module turns red to indicate the module abnormalities.
- When the signal level duration is shorter than the pulse period, the pulse waveform changes in real time according to the signal level.



Pulse-Level Conversion

(1) Function

Convert input 1, the pulse signal to be processed to the level signal. Count the rising edge of the pulse signal and output a high level when the number of rising edges is odd and a low level when the number of rising edges is even.

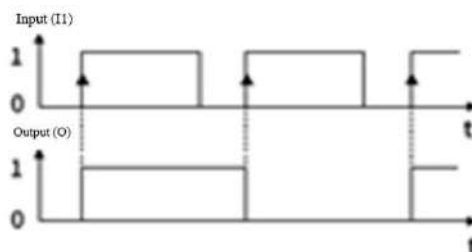


Input 1: The pulse signal to be processed

(2) Module

Module Interface	Type	Comment
Input 1	Uint16	Pulse signal to be processed and input type are constant/address numbers
Output	Uint32	-
Status	-	-

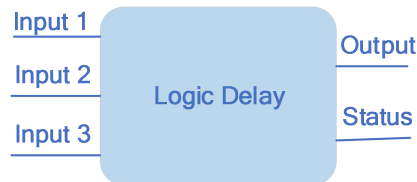
- When both input the module are valid, the filter function is normal, otherwise the module output is always 0.
- When the value of module input 1 is less than 0, the module status is 1 and the output is 0. At this time, the module input is illegal, and the host computer visual programming module turns red to indicate the module abnormalities.



Logic Delay

(1) Function

Conduct delay on the input 1, the pulse signal to be processed. Logic delay includes 3 modes, ON delay, OFF delay and bidirectional delay. The module automatically filters out the pulse signals that are shorter than the delay time.

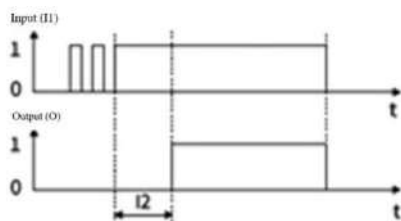


Input 1: Logic signal to be processed; Input 2: Delay time; Input 3: Mode selection, 0 for ON delay, 1 for OFF delay, and 2 for bidirectional delay.

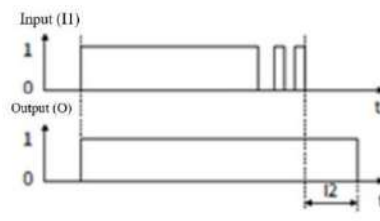
(2) Module

Module Interface	Type	Comment
Input 1	Uint16	Logic signal to be processed and input type are constant/address numbers
Input 2	Uint16	Delay time and input type are constant/address numbers
Input 3	Uint16	Mode and input type are constant/address numbers
Output	Uint32	-
State	0/1	1(illegal input, setting error)

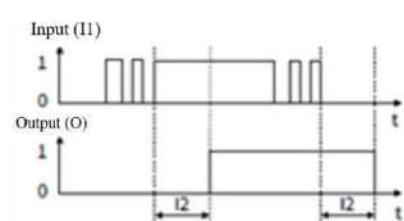
- When both Input 1 and 2 are valid, the filter function is normal, otherwise the module output is always 0.
- When the value of Input 1 is neither 0 nor 1, or when Inputs 1, 2, or 3 are less than 0, the module status becomes 1 and the output becomes 0. At this time, the module input is illegal, and the host computer visual programming module turns red to indicate the module abnormalities.
- When the value of module input 3 is greater than or equal to 3, the module status is 1 and the output is 0. At this time, the module input is incorrect, and the host computer visual programming module turns red to indicate the module abnormalities.
- Upon the delay time end, if it is set to 0 at once, then it will enter the OFF delay processing; when the ON delay time has not yet reached but it is set to 0, this case is not taken as a valid processing.



ON Delay



OFF Delay

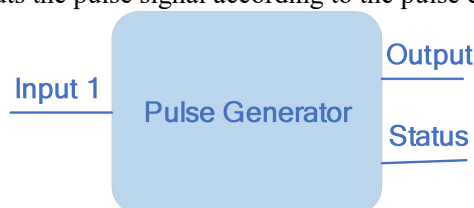


Bidirectional Delay

Pulse Generator

(1) Function

When the pulse generator cycle value is 0, the module continuously outputs low level signal, and when the pulse cycle value is not 0, the module outputs the pulse signal according to the pulse cycle.

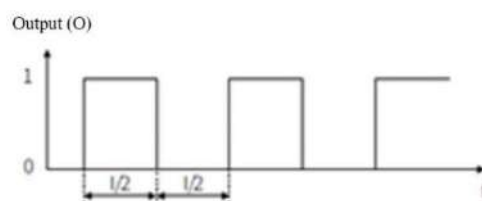


Input 1: Pulse cycle

(2) Module

Module Interface	Type	Comment
Input 1	Uint16	Pulse cycle and input type are constant/address numbers
Output	Uint32	-
State	-	-

- When input1 is valid, the filter function is normal, otherwise the module output is always 0.



Ramp Processing

(1) Function

Conduct slope on the signal to be processed. When Input 3 = 0, Output = Output + sign(Input 1 - Output)* Input 2; When Input 3 = 1, Output = Input 1.



Input 1: Signal to be processed; Input 2: Ramp rate/10ms; Input 3: Module enable (0 = enable, 1 = disable).

(2) Module

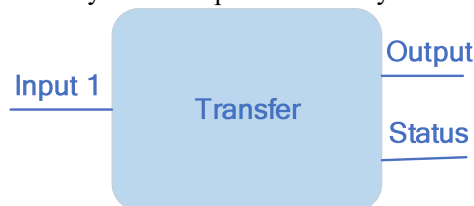
Module Interface	Type	Comment
Input 1	Uint16	Signal to be processed and input type are constant/address numbers
Input 2	Uint16	Ramp rate and input type are constant/address numbers
Input 3	Uint16	Module enable and input type are constant/address numbers
Output	Uint32	-
State	0/1	1 (Setting error)

- When all 3 inputs of the module are valid, the module operates normally, otherwise the output of the module is always 0.
- When the value of module input 3 is greater than or equal to 3, the module status is 1 and the output is 0. At this time, the module input setting is incorrect, and the host computer visual programming module turns red to indicate the module abnormalities.

Transfer

(1) Function

Transit the signal to be processed directly to the output without any internal processing.



Input 1: Signal to be processed

(2) Module

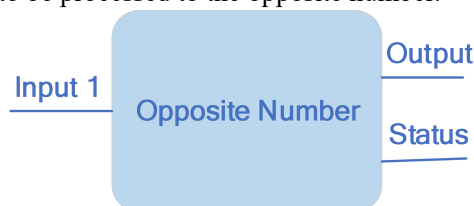
Module Interface	Type	Comment
Input 1	Uint16	Signal to be processed and input type are constant/address numbers
Output	Uint32	-
State	-	-

- When input1 is valid, the filter function is normal, otherwise the module output is always 0.

Opposite Number

(1) Function

Output by converting the signal to be processed to the opposite number.



Output = -Input 1.

Input 1: Signal to be processed

(2) Module

Module Interface	Type	Comment
Input 1	Uint16	Signal to be processed and input type are constant/address numbers
Output	Uint32	-

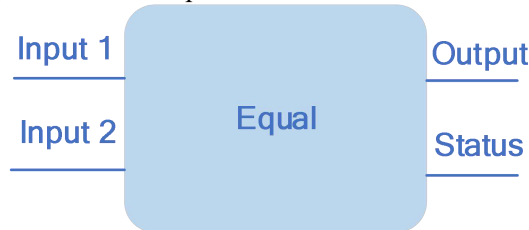
State	-	-

- When input1 is valid, the filter function is normal, otherwise the module output is always 0.

Equals (EQ)

(1) Function

Conducts equal comparison between the signals to be processed 1 and 2. The module outputs a high level when the signal 1 is equal to the signal 2, otherwise it outputs a low level.



When Input 1 = Input 2, output = 1;

When Input 1 ≠ Input 2, output = 0.

Input 1: Signal to be processed; Input 2: Signal 2 to be processed.

(2) Module

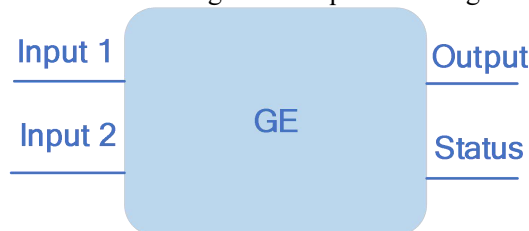
Module Interface	Type	Comment
Input 1	Uint16	Signal 1 to be processed and input type are constant/address numbers
Input 2	Uint16	Signal 2 to be processed and input type are constant/address numbers
Output	Uint32	-
State	-	-

- When both Input 1 and 2 are valid, the module is normal, otherwise the module output is always 0.

Greater Than or Equal To (GE)

(1) Function

Conduct comparison between the signals to be processed 1 and 2 to see if signal 1 is greater than or equal to signal 2. The module outputs a high level when the signal 1 is equal to the signal 2, otherwise it outputs a low level.



When Input 1 = Input 2, output = 1;

When Input 1 < Input 2, output = 0;

Input 1: Signal to be processed; Input 2: Signal 2 to be processed.

(2) Module

Module Interface	Type	Comment
Input 1	Uint16	Signal 1 to be processed and input type are constant/address numbers
Input 2	Uint16	Signal 2 to be processed and input type are constant/address numbers
Output	Uint32	-
State	-	-

- When both Input 1 and 2 are valid, the module is normal, otherwise the module output is always 0.

Greater Than (GT)

(1) Function

Conduct comparison between the signals to be processed 1 and 2 to see if signal 1 is greater than signal 2. The module outputs a high level when the signal 1 is greater than the signal 2, otherwise it outputs a low level.



When Input 1 > Input 2, output = 1;

When Input 1 ≤ Input 2, output = 0;

Input 1: Signal to be processed; Input 2: Signal 2 to be processed.

(2) Module

Module Interface	Type	Comment
Input 1	Uint16	Signal 1 to be processed and input type are constant/address numbers
Input 2	Uint16	Signal 2 to be processed and input type are constant/address numbers
Output	Uint32	-
State	-	-

- When both Input 1 and 2 are valid, the module is normal, otherwise the module output is always 0.

Less Than or Equal To (LE)

(1) Function

Conduct comparison between the signals to be processed 1 and 2 to see if signal 1 is less than or equal to signal 2. The module outputs a high level when the signal 1 is less than or equal to the signal 2, otherwise it outputs a low level.



When Input 1 ≤ Input 2, output = 1;

When Input 1 > 2, output = 0;

Input 1: Signal to be processed; Input 2: Signal 2 to be processed.

(2) Module

Module Interface	Type	Comment
Input 1	Uint16	Signal 1 to be processed and input type are constant/address numbers
Input 2	Uint16	Signal 2 to be processed and input type are constant/address numbers
Output	Uint32	-
State	-	-

- When both Input 1 and 2 are valid, the module is normal, otherwise the module output is always 0.

Less Than (LT)

(1) Function

Conduct comparison between the signals to be processed 1 and 2 to see if signal 1 is less than signal 2. The module outputs a high level when the signal 1 is less than the signal 2, otherwise it outputs a low level.



When Input 1 < Input 2, output = 1;

When Input 1 ≥ 2, output = 0;

Input 1: Signal to be processed; Input 2: Signal 2 to be processed.

(2) Module

Module Interface	Type	Comment

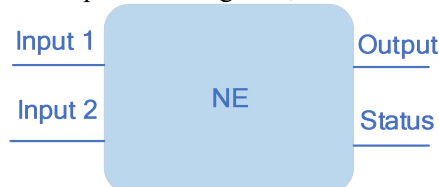
Input 1	Uint16	Signal 1 to be processed and input type are constant/address numbers
Input 2	Uint16	Signal 2 to be processed and input type are constant/address numbers
Output	Uint32	-
State	-	-

- When both Input 1 and 2 are valid, the module is normal, otherwise the module output is always 0.

Not Equal (NE)

(1) Function

Conduct comparison between the signals to be processed 1 and 2 to see if they are not equal. The module outputs a high level when the signal 1 is not equal to the signal 2, otherwise it outputs a low level.



When Input 1 $\neq$ Input 2, output = 1;

When Input 1 = Input 2, output = 0;

Input 1: Signal to be processed; Input 2: Signal 2 to be processed.

(2) Module

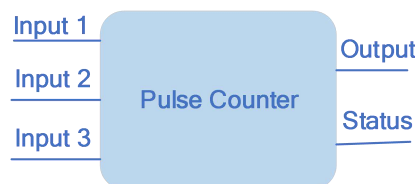
Module Interface	Type	Comment
Input 1	Uint16	Signal 1 to be processed and input type are constant/address numbers
Input 2	Uint16	Signal 2 to be processed and input type are constant/address numbers
Output	Uint32	-
State	-	-

- When both Input 1 and 2 are valid, the module is normal, otherwise the module output is always 0.

Pulse Counter

(1) Function

Count the pulse of Input 1 and Input 2. The counter registers 1 for each rising edge of the input 1 pulse signal, and decreases by 1 for each rising edge of the input 2 pulse signal and the counter is set to 0 when the input 3 reset flag is set to 1.



Input 1: CU (counter up); Input 2: CD (counter down); Input 3: RESET

(2) Module

Module Interface	Type	Comment
Input 1	Uint16	CU and input type are constant/address numbers
Input 2	Uint16	CD and input type are constant/address numbers
Input 3	Uint16	RESET and input type are constant/address numbers
Output	Uint32	-
State	0/1	1 (Data overflow, illegal input)

- When all 3 inputs of the module are valid, the module operates normally, otherwise the output of the module is always 0.
- When the value of module input 1 is non-0 and non-1, the module status is 1 and the output is 0. At this time, the input is illegal, and the host computer visual programming module turns red to indicate the module abnormalities.
- When the module is continuously counting CU or CD, and the output is greater than 2147483646 or less than -2147483646, the module state is 1. At this time, the module will have a data overflow, and the host computer visual programming module turns red to indicate the module abnormalities (theoretically).

RS or SR

(1) Function

Conduct the logic processing for input 1 (SET) and input 2 (RESET) signals. When the function is 0, it is RS, i.e. input 2 (RESET) has higher priority; when the function is 1, it is SR, i.e. input 1 (SET) has higher priority.



Input 1: SET; Input 2: RESET; Input 3: Function selection, 0 is RS, 1 is SR.

(2) Module

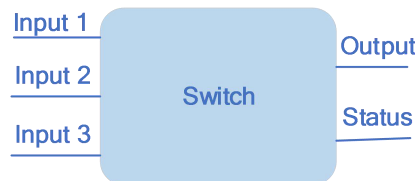
Module Interface	Type	Comment
Input 1	Uint16	SET and input type are constant/address numbers
Input 2	Uint16	RESET and input type are constant/address numbers
Input 3	Uint16	Function selection and input type are constant/address numbers
Output	Uint32	-
State	0/1	1(Setting error, illegal input)

- When all 3 inputs of the module are valid, the module operates normally, otherwise the output of the module is always 0.
- When the value of module input 1 is non-0 and non-1, the module status is 1 and the output is 0. At this time, the module input is illegal, and the host computer visual programming module turns red to indicate the module abnormalities.
- When the value of module input 3 is greater than or equal to 3, the module status is 1 and the output is 0. At this time, the module input setting is incorrect, and the host computer visual programming module turns red to indicate the module abnormalities.

12.2.4 Switching Signal (SEL)

(1) Function

Conduct logic processing on the switching signals. When input 3 = 0, output = Signal to be processed; Input 3=1, output = Signal 2 to be processed.



Input 1: Signal to be processed; Input 2: Signal 2 to be processed. 3: Function selection. 0 means Input 1 and 1 means Input 2.

(2) Module

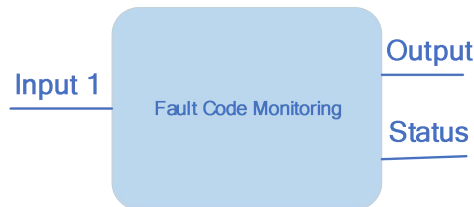
Module Interface	Type	Comment
Input 1	Uint16	Signal 1 to be processed and input type are constant/address numbers
Input 2	Uint16	Signal 1 to be processed and input type are constant/address numbers
Input 3	Uint16	Function selection and input type are constant/address numbers
Output	Uint32	-
State	0/1	1(Setting error)

- When all 3 inputs of the module are valid, the module operates normally, otherwise the output of the module is always 0.
- When the value of module input 3 is greater than or equal to 3, the module status is 1 and the output is 0. At this time, the module input setting is incorrect, and the host computer visual programming module turns red to indicate the module abnormalities.

Fault Code Monitoring

(1) Function

Monitor Input 1: Fault status of the fault code. The output is 1 if the drive has a current fault, otherwise the output is 0.



Input 1: Fault code.

(2) Module

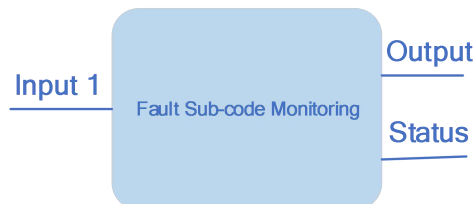
Module Interface	Type	Comment
Input 1	Uint16	Fault code and input type are constant/address numbers
Output	Uint32	-
State	0/1	1(illegal input)

- When Input 1 is valid, the function is normal, otherwise the module output is always 0.
- When the module input value exceeds the fault code value range, that is, the fault code is not in the range of 1~128, the module status is 1 and the output is 0. At this time, the module input is set incorrectly, and the host computer visual programming module turns red to indicate the module abnormalities.

Fault Subcode Monitoring

(1) Function

Monitor Input 1: Fault status of the fault subcode. The output is 1 if the drive has a current fault, otherwise the output is 0.



Input 1: Fault code.

(2) Module

Module Interface	Type	Comment
Input 1	Uint16	Fault subcode and input type are constant/address numbers
Output	Uint32	-
State	0/1	1(illegal input)

- When Input 1 is valid, the function is normal, otherwise the module output is always 0.
- When the module input value exceeds the fault code value range, that is, the fault code is not in the range of 1~12899, the module status is 1 and the output is 0. At this time, the module input is set incorrectly, and the host computer visual programming module turns red to indicate the module abnormalities.

Write Function Codes

(1) Function

Write input 1 (value) to input 2 (address).



Input 1: Value to be written; Input 2: Address to be written in (decimal)

(2) Module

Module Interface	Type	Comment
Input 1	Uint16	Value to be written and input type are constant numbers
Input 2	Uint16	Address to be written in and input type are constant numbers
Output	Uint32	-
State	0/1	1 (illegal address, illegal data, etc., see note below)

- When both Input 1 and 2 are valid, the module is normal, otherwise the module output is always 0.
- When Input 1 and Input 2 are negative, the module output is 0 and the module status is 1. At this time, the HMI/visual programming interface highlights the module in red to indicate an operation error.
- When the value is written successfully, the output of the module is 0 and the status is 0. When the value is not written, the status of the module is 1 and the output is 1~13. At this time, the visual programming

module of the host computer turns red to indicate the module abnormalities.

- The meanings of the output values are as follows:

Output = 0: Writing is completed

- 1: Reserved
- 2: Transmission error
- 3: CRC parity error
- 4: Illegal address
- 5: Invalid data
- 6: Not for modification during operation
- 7: System locked
- 8: Saving to EEPROM
- 9: Parameter over range
- 10: Reserved
- 11: Reserved
- 12: Monitoring parameter read-only
- 13: Parameter protection

Chapter 13 Parameter and Function Code Description

13.1 Terms and Marks

◆ Marks and terms of control modes

Mark	Description
V/F	Valid parameters under V/F control for asynchronous motors
SVC	Valid parameters under open-loop vector control for asynchronous motors (AM)
FVC	Valid parameters under closed-loop vector control for asynchronous motors (AM)
PMV/F	Valid parameters under V/F control for permanent magnet synchronous motors (PM)
PMSVC	Valid parameters under open-loop vector control for permanent magnet synchronous motors (PM)
PMFVC	Valid parameters under closed-loop vector control for permanent magnet synchronous motors (PM)

Note

The unshaded control mode icon indicates that the parameter is invalid for that control mode.

◆ indicates the adjustable attributes of the parameters

Adjustable Attributes	Note
STOP	This parameter can't be modified when the drive is operating.
RUN	This parameter can be modified when the drive is operating.
READ	This parameter is read-only.

13.2 Parameter Group

Funcode		Name
F00 Environment	F00.0x	Environment Settings
	F00.1x~2x	System Settings
F01 Basic Command Parameter	F01.0x	Basic Commands
	F01.1x	Frequency
	F01.2x~F01.3x	ACC/DEC Time
	F01.4x~F01.5x	PWM Control
	F01.6x~F01.7x	Deadtime Compensation
F02 Motor 1 Parameters	F02.0x	Basic Motor Parameters and Auto-tuning
	F02.1x	AM Parameters
	F02.2x- F02.5x	PM Parameters
	F02.6x~F02.7x	Tuning Extension
F03: Vector Control	F03.0x	ASR Control
	F03.1x	ACR and Torque Limit
	F03.2x	Torque Optimization
	F03.3x	Flux Optimization
	F03.4x	PM HF Injection
	F03.5x~F03.9x	VC Extension
F04 V/F Control	F04.0x	V/F Control
	F04.1x	User-defined V/F Curves
	F04.2x	VF-SPLIT Control

	F04.3x	V/F ECO Function
	F04.4x	V/F PM Anti-oscillation
	F04.5x	V/F PM Flux Control
	F04.6x- F04.8x	V/F PM Current Control
F05 DI Terminal	F05.0x	Terminal Function
	F05.1x~F05.2x	Terminal Operation Mode
	F05.3x	PUL Terminal
	F05.4x~F05.5x	Virtual Input Terminal
F06 DO Terminal	F06.0x	Terminal Operation Control
	F06.1x	Terminal Operation Mode
	F06.3x~F06.4x	Virtual I/O Terminals
F07 AI Terminal	F07.0x	AI Type
	F07.1x	Line Setting
	F07.2x	Curve 1
	F07.3x	Curve 2
	F07.4x	AI as X Terminal
	F07.5x	AI Disconnection
F08 AO Terminal	F08.0x	AO1
	F08.1x	AO2
F09 Operation Control	F09.0x	Start Control
	F09.1x	Stop and Operation Control
	F09.2x	DC Braking
	F09.3x	Jog
	F09.4x	Hold and Jump Frequency during Start/Stop
	F09.5x	Fly Track
F10 Protection Parameters	F10.0x	Current Protection
	F10.1x	Voltage Protection
	F10.2x	Auxiliary Protection
	F10.3x	Load Protection
	F10.4x	Stall Protection
	F10.5x	Motor Overload
	F10.6x~F10.9x	Error Handling
F11 Keypad Parameters	F11.0x	Key Operation
	F11.1x	Cyclic Monitoring of Status Interface
	F11.2x	Monitoring Parameters
	F11.3x	Keypad Communication Parameters

F12 Communication Parameters	F12.0x	Modbus Slave
	F12.1x	Modbus Master
	F12.2x	Reserved
	F12.3x	Continuous Read/Write for Discontinuous Addresses
F13 PID Parameters	F13.00~F13.06	PID Setting and Feedback
	F13.07~F13.24	PID Setting
	F13.25~F13.28	PID Feedback Disconnection
	F13.29~F13.33	Sleep
F14 Simulated PLC for Multi-frequency	F14.00~F14.14	Multi-frequency Setting
	F14.15	PLC Operation Mode
	F14.16~F14.30	PLC Runtime
	F14.31~F14.45	PLC Direction and ACC/DEC Time
F15 Torque Control	F15.0x	Torque Setting
	F15.1x~F15.2x	Torque Control
F16 Auxiliary Function 1	F16.0x	Counting and Timing
	F16.1x	Wobble Frequency
	F16.4x	Frequency Detection
	F16.5x~F16.6x	Comparator
F25 Factory Calibration	F25.00~F25.11	AI1 Correction
	F25.12~F25.23	AI2 Correction
	F25.24~F25.35	AO1 Correction
	F25.36~F25.47	AO2 Correction
A00 Default Parameters	A00.00~A00.40	User-Defined Address
A01 Brake Control	A01.0x	Brake Logic
	A01.1x	Brake Engage Delay
	A01.2x	Multi-function
	A01.3x	Brake Protection
	A01.5x	Brake Debugging
	A01.6x	Translation Mechanism Brake
d00 Motor Parameters	d00.0x	Motor Control
d01 Motor 2 Parameters	d01.0x	Basic Motor Parameters and Auto-tuning
	d01.1x	AM Parameters
	d01.2x~d01.5x	PM Parameters
	d01.6x~d01.7x	Tuning Extension
d02 Motor 2 Vector Control	d02.0x	ASR Control
	d02.1x	ACR and Torque Limit

	d02.2x	Torque Optimization
	d02.3x	Flux Optimization
	d02.4x	PM HF Injection
	d02.5x~d02.9x	VC Extension
d03 Motor 2 V/F Control	d03.0x	V/F Control
	d03.1x	User-defined V/F Curves
	d03.2x	VF-SPLIT Control
	d03.3x	V/F ECO Function
	d03.4x	V/F PM Anti-oscillation
	d03.5x	V/F PM Flux Control
	d03.6x~d03.8x	V/F PM Current Control
d04 Motor 3 Parameters	d04.0x	Basic Motor Parameters and Auto-tuning
	d04.1x	AM Parameters
	d04.2x~d04.5x	PM Parameters
	d04.6x~d04.7x	Tuning Extension
d05 Motor 3 Vector Control	d05.0x	ASR Control
	d05.1x	ACR and Torque Limit
	d05.2x	Torque Optimization
	d05.3x	Flux Optimization
	d05.4x	PM HF Injection
	d05.5x~d05.9x	VC Extension
d06 Motor 3 V/F Control	d06.0x	V/F Control
	d06.1x	User-defined V/F Curves
	d06.2x	VF-SPLIT Control
	d06.3x	V/F ECO Control
	d06.4x	V/F PM Anti-oscillation
	d06.5x	V/F PM Flux Control
	d06.6x- d06.8x	V/F PM Current Control
d07 Motor 4 Parameters	d07.0x	Basic Motor Parameters and Auto-tuning
	d07.1x	AM Parameters
	d07.2x~d07.5x	PM Parameters
	d07.6x~d07.7x	Tuning Extension
d08 Motor 4 Vector Control	d08.0x	ASR Control
	d08.1x	ACR and Torque Limit
	d08.2x	Torque Optimization
	d08.3x	Flux Optimization

	d08.4x	PM HF Injection
	d08.5x~d08.9x	VC Extension
d09 Motor 4 V/F Control	d09.0x	V/F Control
	d09.1x	User-defined V/F Curves
	d09.2x	VF-SPLIT Control
	d09.3x	V/F ECO Function
	d09.4x	V/F PM Anti-oscillation
	d09.5x	V/F PM Flux Control
	d09.6x- d09.8x	V/F PM Current Control
E00 IO Extension Input	E00.0x	Extension Parameters
	E00.1x- E00.3x	Extension DI Terminal
	E00.4x- E00.5x	Extension AI Terminal
	E00.5x- E00.7x	Extension PT Terminal
E01 IO Extension Output	E00.0x– E00.1x	Extension DO Terminal
	E01.3x	Extension AO3
E02 Encoder 1 Extension Parameters	E02.0x	Encoder 1 Environment Setting
	E02.1x	ABZ Parameters
	E02.2x	Resolver Encoder 1
	E02.3x	Sine/Cosine Encoder 1
E03 Encoder 2 Extension Parameters	E03.0x	Encoder 2 Environment Setting
	E03.1x	ABZ Parameters
	E03.2x	Resolver Encoder 2
	E03.3x	Sine/Cosine Encoder 2
E04 Extension 1 Common Parameters	E04.0x– E04.6x	Extension 1 Common Parameters
E05 Extension 2 Common Parameters	E05.0x– E05.6x	Extension 2 Common Parameters
E06 CAN/DP/Extension 485 Parameters	E06.0x	DP Parameters
	E06.1x	CAN Parameters
	E06.2x	CAN Power Balance Parameters
	E06.3x- E06.6x	CANopen PDO Configuration
	E06.7x	Extension 485 Parameters
E07 Ethernet Extension	E07.0x- E07.7x	Ethercat Extension Parameters
E08 PLC Extension	E08.0x	Reserved
E10 Black Box Extension Parameters	E10.0x- E10.1x	Black Box Parameters
L00 Free Function Block	L00.0x	Free Module 1
	L00.1x	Free Module 2
	L00.2x	Free Module 3

	L00.3x	Free Module 4
	L00.4x	Free Module 5
	L00.5x	Free Module 6
	L00.6x	Free Module 7
	L00.7x	Free Module 8
	L00.8x	Free Module 9
	L00.9x	Free Module 10
L01 Bit-Word Function Block Input	L01.00~L01.47	Bit-Word Function Block Input 1
	L01.48~L01.95	Bit-Word Function Block Input 2
Connector Parameters	U00.xx	Digital Status
	U01.xx	Function Status
	U03.xx	Frequency/Voltage/Current Typical
	U04.xx	Internal Parameter Word 1
	U05.xx	Internal Parameter Word 2
	U06.xx	Communication Connector
	U07.xx	Free Function Block
	U08.xx	Bit-Word Function Block Input Monitoring
Monitoring Parameters	C00.xx	Basic Monitoring
	C01.xx	Error Record 1
	C02.xx	Error Record 2
	C03.xx	Operation Monitoring
	C04.xx	System Monitoring
	C05.xx	Factory Monitoring
	C11.xx	IO Communication Monitoring
	C12.xx	Bus Communication Monitoring

13.3 F00: Environment

F00.0x: Environment Setting

Code (Address)	Name	Description	Default (Range)	Property
F00.00 (0x0000)	Parameter Access Level	V/F SVC FVC PMV/F PMSVC PMFVC Set the parameter access level according to access restriction. 0: Basic parameters 1001: Professional parameters 1002: Overhaul parameters	0 (0~1002)	STOP
F00.01 (0x0001)	Load Type	V/F SVC FVC PMV/F PMSVC PMFVC Set the AC drives for the specific purpose. 0: Heavy duty 1: Light duty	0 (0~1)	STOP

F00.02 (0x0002)	Parameter Protection	V/F SVC FVC PMV/F PMSVC PMFVC 0x0000: OFF 0x1001: Rewriting prohibited except for F01.09 and this code 0x1002: Rewriting prohibited except for this code	0x0000 (0x0000~0x1002)	STOP
F00.03 (0x0003)	Initialization	V/F SVC FVC PMV/F PMSVC PMFVC Set the initialization mode for the drive. 0: OFF 1100: Partial parameter initialized 2200: Used parameters initialized (excluding error records) 3300: Clear error records 4401: Clear current runtime 4402: Clear current power-up time 4403: Clear recount total runtime 4404: Clear recount total power-up time 4405: Clear recount total power consumption	0x0000 (0x0000~0xFFFF)	STOP
F00.04 (0x0004)	Keypad Parameter Copy	V/F SVC FVC PMV/F PMSVC PMFVC 0: None 1100: Upload parameters to the keypad 2200: Download parameters to drive 3300: Motor parameters copy	0x0000 (0x0000~0xFFFF)	STOP
F00.06 (0x0006)	LCD Keypad Language	V/F SVC FVC PMV/F PMSVC PMFVC 0: Chinese 1: English 2: Russian	0 (0~2)	RUN
F00.07 (0x0007)	Free Parameter 1	V/F SVC FVC PMV/F PMSVC PMFVC Used as the machine code or application mode code when multiple drives are used.	0 (0~65535)	RUN
F00.08 (0x0008)	Free Parameter 2	V/F SVC FVC PMV/F PMSVC PMFVC Used as the machine code or application mode code when multiple drives are used.	0 (0~65535)	RUN

F00.1x: System Settings

Code (Address)	Name	Description	Default (Range)	Property
F00.10 (0x000A)	Application Marco	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Macro mode 0: General 1: Brake Tens-bit: Default parameter customization 0: OFF 1: ON Hundreds-bit: Connector enable 0: OFF 1: ON	0x0000 (0x0000~0x0115)	RUN
F00.11 (0x000B)	Multi-motor Switching	V/F SVC FVC PMV/F PMSVC PMFVC Set the multi-motor parameter switching flag. 0: OFF 1: ON	0 (0~1)	RUN
F00.13 (0x000D)	Extension Parameter Display 1	V/F SVC FVC PMV/F PMSVC PMFVC Enable the extension parameter 1 display Ones-bit: E00, E01, E10 Black Box I/O Parameters Tens-bit: E08 PLC Extension Parameters Hundreds-bit: E02 Encoder 1 Parameters Thousands-bit: E03 Encoder 1 Parameters	0x0000 (0x0000~0x1111)	RUN

F00.14 (0x000E)	Extension Parameter Display 2	V/F SVC FVC PMV/F PMSVC PMFVC Enable the extension parameter 2 display Ones-bit: E06 CAN/DP Parameters Tens-bit: E07 Ethernet Parameters Hundreds-bit: Reserved Thousands-bit: Reserved	0x0000 (0x0000~ 0x1111)	RUN

F00.2x: System Time

This function code group must be used with the black-box card. Use F00.20~F00.25 to set the current year, month, day, hour, minute, and second in sequence. After completing the settings, set F00.26 to 1 to confirm. You can then check C11.15~C11.20 monitoring parameters to verify whether the system time was successfully set.

Code (Address)	Name	Description	Default (Range)	Property
F00.20 (0x0014)	Time-Year	V/F SVC FVC PMV/F PMSVC PMFVC Set the system year	0 (0~99)	RUN
F00.21 (0x0015)	Time-Month	V/F SVC FVC PMV/F PMSVC PMFVC Set the system month	0 (0~12)	RUN
F00.22 (0x0016)	Time-Day	V/F SVC FVC PMV/F PMSVC PMFVC Set the system day	0 (0~31)	RUN
F00.23 (0x0017)	Time-Hour	V/F SVC FVC PMV/F PMSVC PMFVC Set the system day	0 (0~24)	RUN
F00.24 (0x0018)	Time-Minute	V/F SVC FVC PMV/F PMSVC PMFVC Set the system minute	0 (0~59)	RUN
F00.25 (0x0019)	Time-Second	V/F SVC FVC PMV/F PMSVC PMFVC Set the system second	0 (0~59)	RUN
F00.26 (0x001A)	Time Confirmation	V/F SVC FVC PMV/F PMSVC PMFVC Confirm the system time setting	0 (0~1)	RUN

F00.30: Connector Frequency Source

Code (Address)	Name	Description	Default (Range)	Property
F00.30 (0x001E)	Connector Frequency Source	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency source for connector.	0x0000 (0x0000) ~0x1111)	RUN

13.4 F01: Basic Command Parameters

F01.0x: Basic Commands

Code (Address)	Name	Description	Default (Range)	Property
F01.00 (0x0100)	Motor 1 Control Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor control mode. 0: AM-V/F – Asynchronous motor V/F control 1: AM-SVC – Asynchronous motor open-loop vector control 2: AM-FVC – Asynchronous motor closed-loop vector control 10: PM-V/F – Synchronous motor V/F control 11: PM-SVC – Synchronous motor open-loop vector control 12: PM-FVC – Synchronous motor closed-loop vector control 20: Coil voltage-frequency / current-frequency decoupled control	0 (0~20)	STOP

F01.01 (0x0101)	Run Command Source	V/F SVC FVC PMV/F PMSVC PMFVC Select the method to send run/stop commands and the direction of operation to the drive. 0: Keypad 1: Terminal 2: RS485 3: Extension (0x31 group) Others: Connector	0 (0~65535)	RUN
F01.02 (0x0102)	Frequency Source A	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency giving source. 0: Keypad 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL 6: RS485 7: Extension (0x31 group) 8: PID 9: PLC 10: Up/Dn terminal 11: Multi-frequency setting 12: Communication percentage 13: User-defined Others: Connector (detailed in Chapter 7)	0 (0~65535)	RUN
F01.03 (0x0103)	Frequency Source A Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the gain of frequency giving source A.	100.0% (0.0%~ 500.0%)	STOP
F01.04 (0x0104)	Frequency Source B	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency giving source. The same as [F01.02]	2 (0~13)	STOP
F01.05 (0x0105)	Frequency Source B Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the gain of frequency giving source B.	100.0% (0.0%~ 500.0%)	STOP
F01.06 (0x0106)	Source B Reference	V/F SVC FVC PMV/F PMSVC PMFVC Set the reference for frequency giving source B. 0: Max. output frequency 1: Source A	0 (0~1)	RUN
F01.07 (0x0107)	Frequency Source Combination	V/F SVC FVC PMV/F PMSVC PMFVC Set the combination method of source A and source B of the drive. 0: Source A 1: Source B 2: Source A+B 3: Source A-B 4: Max. (A, B) 5: Min. (A or B)	0 (0~5)	RUN

F01.08 (0x0108)	Frequency/Command Source Binding	V/F SVC FVC PMV/F PMSVC PMFVC Bind each command source to frequency sources when this parameter is valid. Ones-bit: Keypad commands Tens-bit: Terminal commands Hundreds-bit: Communication commands Thousands-bit: Optional card commands 0: No binding 1: Keypad 2: Reserved 3: AI1 4: AI2 5: Reserved 6: PUL 7: RS485 8: Extension (0x31 group) 9: PID 10: PLC 11: Up/Dn terminal 12: Multi-frequency setting	0x0000 (0x0000~0xDDDD)	RUN
F01.09 (0x0109)	Frequency Setting	V/F SVC FVC PMV/F PMSVC PMFVC Set and modify the frequency via keypad.	50.00Hz (0.00Hz~Upper limit frequency)	RUN
F01.10 (0x010A)	Max. Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the maximum frequency for the drive.	50.00Hz (Upper limit frequency~599.00Hz)	STOP

F01.1x: FrequencyRange

Code (Address)	Name	Description	Default (Range)	Property
F01.11 (0x010B)	Upper Limit Frequency Source	V/F SVC FVC PMV/F PMSVC PMFVC Select the upper limit frequency source. 0: Keypad 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL 6: RS485 7: Extension (0x31 group) 8: Reserved 9: Reserved 10: Reserved Others: Connector (detailed in Chapter 7)	0 (0~65535)	RUN
F01.12 (0x010C)	Upper Limit Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the upper limit frequency via keypad when F01.11 is set to 0.	50.00Hz (Lower limit frequency~Max. frequency)	RUN
F01.13 (0x010D)	Lower Limit Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower limit to the given frequency.	0.00Hz (0.00Hz~Upper limit frequency)	RUN

F01.14 (0x010E)	Frequency Command Resolution	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency command resolution. 0: 0.01Hz 1: 0.1Hz 2: 0.1r/min 3: 1r/min	0 (0~3)	STOP

F01.2x~F01.3x: ACC/DEC Time

Code (Address)	Name	Description	Default (Range)	Property
F01.20 (0x0114)	Reference Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the reference frequency to calculate the acceleration and deceleration time. 0: Max. frequency 1: 50Hz 2: Set frequency	0 (0~2)	STOP
F01.21 (0x0115)	ACC/DEC Time Unit	V/F SVC FVC PMV/F PMSVC PMFVC Set the decimal point of the parameters from F01.22 to F01.29. 0: 1s (0 decimal point) 1: 0.1s (1 decimal point) 2: 0.01s (2 decimal point)	2 (0~2)	STOP
F01.22 (0x0116)	ACC Time 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the time required for the output frequency to accelerate from 0.00Hz to the reference frequency. 0.01s~650.00s (F01.21=2) 0.1s~6500.0s (F01.21=1) 1s~65000s (F01.21=0)	6.00s (0.01s~ 650.00s)	RUN
F01.23 (0x0117)	DEC Time 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the time required for the output frequency to decelerate from the reference frequency to 0.00Hz. 0.01s~650.00s (F01.21=2) 0.1s~6500.0s (F01.21=1) 1s~65000s (F01.21=0)	6.00s (0.01s~ 650.00s)	RUN
F01.24 (0x0118)	ACC Time 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the time required for the output frequency to accelerate from 0.00Hz to the reference frequency.	10.00s (0.01s~ 650.00s)	RUN
F01.25 (0x0119)	DEC Time 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the time required for the output frequency to decelerate from the reference frequency to 0.00Hz.	10.00s (0.01s~ 650.00s)	RUN
F01.26 (0x011A)	ACC Time 3	V/F SVC FVC PMV/F PMSVC PMFVC Set the time required for the output frequency to accelerate from 0.00Hz to the reference frequency.	10.00s (0.01s~ 650.00s)	RUN
F01.27 (0x011B)	DEC Time 3	V/F SVC FVC PMV/F PMSVC PMFVC Set the time required for the output frequency to decelerate from the reference frequency to 0.00Hz.	10.00s (0.01s~ 650.00s)	RUN
F01.28 (0x011C)	ACC Time 4	V/F SVC FVC PMV/F PMSVC PMFVC Set the time required for the output frequency to accelerate from 0.00Hz to the reference frequency.	10.00s (0.01s~ 650.00s)	RUN
F01.29 (0x011D)	DEC Time 4	V/F SVC FVC PMV/F PMSVC PMFVC Set the time required for the output frequency to decelerate from the reference frequency to 0.00Hz.	10.00s (0.01s~ 650.00s)	RUN
F01.30 (0x011E)	S-Curve ACC/DEC	V/F SVC FVC PMV/F PMSVC PMFVC Set the S-curve acceleration/deceleration. 0: OFF 1: ON 2: Smoother S-curve	1 (0~2)	STOP

F01.31 (0x011F)	ACC S-Curve Start Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the start time of s-curve acceleration.	0.20s (0.00s~ 10.00s)	RUN
F01.32 (0x0120)	ACC S-Curve End Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the end time of s-curve acceleration.	0.20s (0.00s~ 10.00s)	RUN
F01.33 (0x0121)	DEC S-Curve Start Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the start time of s-curve deceleration.	0.20s (0.00s~ 10.00s)	RUN
F01.34 (0x0122)	DEC S-Curve End Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the end time of s-curve deceleration.	0.20s (0.00s~ 10.00s)	RUN
F01.35 (0x0123)	ACC Time 1/2 Shift Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the shift frequency between acceleration time 1 and 2.	0.00Hz (0.00Hz~Max . frequency)	RUN

F01.4x: PWM Control

Code (Address)	Name	Description	Default (Range)	Property
F01.40 (0x0128)	Carrier Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the shift frequency of the drive's IGBT module.	5.5kHz (1.0kHz~ 16.0kHz)	RUN
F01.41 (0x0129)	PWM Mode	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Carrier-temperature relationship 0: Irrelevant 1: Relevant Tens-bit: Carrier-output frequency relationship 0: Irrelevant 1: Relevant Hundreds-bit: Random PWM enable 0: OFF 1: ON under V/F control 2: Reserved 3: ON under vector control Thousands-bit: PWM mode 0: Three-phase only 1: Automatic switching between two-/three-phase	0x0111 (0x0000~ 0x1341)	RUN
F01.42 (0x012A)	PWM Mode 1	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Overmodulation 0: OFF 1: ON Tens-bit: Double-sampling double-update 0: ON 1: OFF Hundreds-bit: Deadtime compensation 0: OFF 1: ON 2: ON together with advance angle compensation (valid under vector control)	0x9101 (0x0000~ 0xF111)	RUN
F01.43 (0x012B)	Deadtime Compensation Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the deadtime compensation gain.	306 (0~512)	RUN
F01.44 (0x012C)	PWM Charge Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the PWM charge time.	15ms (0ms~ 65535ms)	STOP
F01.45 (0x012D)	PWM Charge Time Protection	V/F SVC FVC PMV/F PMSVC PMFVC Set the PWM charge time protection.	30ms (0ms~ 60000ms)	STOP

F01.46 (0x012E)	Random PWM	V/F SVC FVC PMV/F PMSVC PMFVC The larger this setting, the greater the carrier fluctuation will be when random PWM is valid.	0 (0~20)	RUN
F01.47 (0x012F)	PWM Max. Carrier Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the PWM maximum carrier frequency.	0.0 (0.0~16.0)	READ
F01.48 (0x0130)	Discontinuous PWM OFF Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the discontinuous PWM OFF frequency.	0.0 (0.0~100.0)	RUN
F01.49 (0x0131)	PWM Sampling Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the PWM sampling delay time.	6.0 (0~10.0)	RUN
F01.50 (0x0132)	Deadtime Linear Compensation	V/F SVC FVC PMV/F PMSVC PMFVC Enable the deadtime linear compensation.	0 (0~60000)	RUN
F01.51 (0x0133)	PWM IGBT Voltage Drop	V/F SVC FVC PMV/F PMSVC PMFVC Set the PWM IGBT voltage drop.	0 (0~60000)	RUN
F01.52 (0x0134)	PWM IGBT Voltage Drop 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the PWM IGBT voltage drop 2.	0 (0~60000)	RUN
F01.53 (0x0135)	PWM Deadtime Voltage Drop	V/F SVC FVC PMV/F PMSVC PMFVC Set the PWM deadtime voltage drop.	0 (0~60000)	RUN
F01.57 (0x0139)	Bus Resonance Suppression	V/F SVC FVC PMV/F PMSVC PMFVC Enables the DC bus resonance suppression function. 0: OFF 1~60000: Smaller values provide stronger suppression	0 (0~60000)	RUN
F01.58 (0x013A)	Non-Linear Compensation	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Non-linear compensation 0: OFF 1: ON Tens-bit: Advance angle compensation 0: OFF 1: ON	0x0000 (0x0000~0x0011)	RUN
F01.60 (0x013C)	Deadtime Compensation Gain 0	V/F SVC FVC PMV/F PMSVC PMFVC Set the deadtime compensation gain 0.	220 (0~512)	RUN
F01.61 (0x013D)	Deadtime Compensation Gain 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the deadtime compensation gain 1.	260 (0~512)	RUN
F01.62 (0x013E)	Deadtime Compensation Gain 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the deadtime compensation gain 2.	295 (0~512)	RUN
F01.63 (0x013F)	Deadtime Compensation Gain 3	V/F SVC FVC PMV/F PMSVC PMFVC Set the deadtime compensation gain 3.	315 (0~512)	RUN
F01.64 (0x0140)	Deadtime Compensation Gain 4	V/F SVC FVC PMV/F PMSVC PMFVC Set the deadtime compensation gain 4.	324 (0~512)	RUN
F01.65 (0x0141)	Deadtime Compensation Gain 5	V/F SVC FVC PMV/F PMSVC PMFVC Set the deadtime compensation gain 5.	328 (0~512)	RUN
F01.66 (0x0142)	Deadtime Compensation Gain 6	V/F SVC FVC PMV/F PMSVC PMFVC Set the deadtime compensation gain 6.	334 (0~512)	RUN
F01.67 (0x0143)	Deadtime Compensation Gain 7	V/F SVC FVC PMV/F PMSVC PMFVC Set the deadtime compensation gain 7.	340 (0~512)	RUN

F01.68 (0x0144)	Deadtime Compensation Gain 8	V/F SVC FVC PMV/F PMSVC PMFVC Set the deadtime compensation gain 8.	345 (0~512)	RUN
F01.69 (0x0145)	Deadtime Compensation Gain 9	V/F SVC FVC PMV/F PMSVC PMFVC Set the deadtime compensation gain 9.	350 (0~512)	RUN
F01.70 (0x0146)	Deadtime Compensating Current 0	V/F SVC FVC PMV/F PMSVC PMFVC Set the deadtime compensating current 0.	2.0% (0.0%~150.0%)	RUN
F01.71 (0x0147)	Deadtime Compensating Current 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the deadtime compensating current 1.	2.0% (0.0%~150.0%)	RUN
F01.72 (0x0148)	Deadtime Compensating Current 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the deadtime compensating current 2.	4.0% (0.0%~150.0%)	RUN
F01.73 (0x0149)	Deadtime Compensating Current 3	V/F SVC FVC PMV/F PMSVC PMFVC Set the deadtime compensating current 3.	7.0% (0.0%~150.0%)	RUN
F01.74 (0x014A)	Deadtime Compensating Current 4	V/F SVC FVC PMV/F PMSVC PMFVC Set the deadtime compensating current 4.	12.0% (0.0%~150.0%)	RUN
F01.75 (0x014B)	Deadtime Compensating Current 5	V/F SVC FVC PMV/F PMSVC PMFVC Set the deadtime compensating current 5.	17.0% (0.0%~150.0%)	RUN
F01.76 (0x014C)	Deadtime Compensating Current 6	V/F SVC FVC PMV/F PMSVC PMFVC Set the deadtime compensating current 6.	25.0% (0.0%~150.0%)	RUN
F01.77 (0x014D)	Deadtime Compensating Current 7	V/F SVC FVC PMV/F PMSVC PMFVC Set the deadtime compensating current 7.	33.0% (0.0%~150.0%)	RUN
F01.78 (0x014E)	Deadtime Compensating Current 8	V/F SVC FVC PMV/F PMSVC PMFVC Set the deadtime compensating current 8.	50.0% (0.0%~150.0%)	RUN
F01.79 (0x014F)	Deadtime Compensating Current 9	V/F SVC FVC PMV/F PMSVC PMFVC Set the deadtime compensating current 9.	100.0% (0.0%~150.0%)	RUN

13.5 F02: Motor 1 Parameters

F02.0x: Basic Parameters and Auto-tuning

Code (Address)	Name	Description	Default (Range)	Property
F02.00 (0x0200)	Motor Type	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor type. 0: Asynchronous motor (AM) 1: Permanent magnet synchronous motor (PM)	0 (0~1)	READ
F02.01 (0x0201)	Pole No.	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor pole number.	4 (2~98)	STOP
F02.02 (0x0202)	Rated Power	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated power of the motor.	Up to model (0.1kW~1000.0kW)	STOP
F02.03 (0x0203)	Rated Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated frequency of the motor.	Up to model (0.01Hz~Max . frequency)	STOP
F02.04 (0x0204)	Rated Speed	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated speed of the motor.	Up to model (0rpm~65000rpm)	STOP

F02.05 (0x0205)	Rated Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated voltage of the motor.	Up to model (0V~2000V)	STOP
F02.06 (0x0206)	Rated Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated current of the motor.	Up to model (0.1A~3000.0A)	STOP
F02.07 (0x0207)	Motor Auto-tuning	V/F SVC FVC PMV/F PMSVC PMFVC After the parameter auto-tuning is finished, [F02.07] will be set to "0" automatically. 0: None 1: Dynamic auto-tuning 2: Static auto-tuning 3: Stator resistance auto-tuning 6: Dynamic auto-tuning 2 7: Inertia auto-tuning 9: PM inductance saturation coefficient auto-tuning 10: Non-linear auto-tuning	0 (0~10)	STOP

Note

When F02.00 [Motor Type] is a synchronous motor, F02.04 [Rated Speed] is calculated from F02.01 [Pole No.] and F02.03 [Rated Frequency], please set the corresponding parameters correctly. The calculation formula is: F02.04 [Rated Speed] = $60 * \text{F02.03 [Rated Frequency]} / (\text{F02.01 [Pole No.]} / 2)$.

F02.1x: AM Parameters

Code (Address)	Name	Description	Default (Range)	Property
F02.10 (0x020A)	AM No-load Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the no-load current for asynchronous motors.	Up to model (0.1A~3000.0A)	STOP
F02.11 (0x020B)	AM Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator resistance for asynchronous motors.	Up to model (1mΩ~65535mΩ)	STOP
F02.12 (0x020C)	AM Rotor Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the rotor resistance for asynchronous motors.	Up to model (1mΩ~65535mΩ)	STOP
F02.13 (0x020D)	AM Stator Leakage Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator leakage inductance for asynchronous motors.	Up to model (1mH~6553.5mH)	STOP
F02.14 (0x020E)	AM Stator Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator inductance for asynchronous motors.	Up to model (1mH~65535mH)	STOP
F02.15 (0x020F)	Per-unit Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the stator resistance.	Up to model (0.01%~655.35%)	READ
F02.16 (0x0210)	Per-unit Rotor Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the rotor resistance.	Up to model (0.01%~655.35%)	READ
F02.17 (0x0211)	Per-unit Stator Leakage Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the stator leakage inductance.	Up to model (0.01%~655.35%)	READ
F02.18 (0x0212)	Per-unit Stator Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the stator inductance.	Up to model (0.1%~6553.5%)	READ
F02.19 (0x0213)	Parameter Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the parameter range.	0x0000 (0x0000~0xFFFF)	STOP

F02.2x: PM Parameters

Code (Address)	Name	Description	Default (Range)	Property
F02.20 (0x0214)	PM Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator resistance for permanent magnet synchronous motors.	Up to model (1mΩ~ 65535mΩ)	STOP
F02.21 (0x0215) STOP	D-Axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance for permanent magnet synchronous motors.	Up to model (1mH~ 65535mH)	STOP
F02.22 (0x0216) STOP	Q-Axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance for permanent magnet synchronous motors.	Up to model (1mH~ 65535mH)	STOP
F02.23 (0x0217) STOP	Back Emf	V/F SVC FVC PMV/F PMSVC PMFVC Set the back emf for permanent magnet synchronous motors. Only recognized in dynamic auto-tuning.	Up to model (1V~1500V)	STOP
F02.24 (0x0218)	Encoder Installation Angle	V/F SVC FVC PMV/F PMSVC PMFVC Set the encoder installation angle for permanent magnet synchronous motors.	Up to model (0.0°~ 360.0°)	RUN
F02.25 (0x0219)	Per-unit Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of stator resistance for permanent magnet synchronous motors.	Up to model (0.01%~ 655.35%)	READ
F02.26 (0x021A)	Per-unit D-Axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of D-axis inductance for permanent magnet synchronous motors.	Up to model (0.01%~ 655.35%)	READ
F02.27 (0x021B)	Per-unit Q-Axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of Q-axis inductance for permanent magnet synchronous motors.	Up to model (0.01%~ 655.35%)	READ
F02.28 (0x021C)	Pulse Width Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the pulse width coefficient for permanent magnet synchronous motors.	Up to model (0.01~ 655.35)	STOP
F02.29 (0x021D)	Actual Value Unit	V/F SVC FVC PMV/F PMSVC PMFVC Select the unit for actual value.	Up to model (0x0000~ 0x3322)	STOP
F02.30 (0x021E)	Frequency Decimal Bit	V/F SVC FVC PMV/F PMSVC PMFVC Set the decimal bit display of motor frequency.	0 (0~3)	STOP

F02.4x~F02.5x: PM D/Q-Axis Inductance Saturation Coefficient

Code (Address)	Name	Description	Default (Range)	Property
F02.40 (0x0228)	D-Axis Inductance Saturation Coefficient 0	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 0 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
F02.41 (0x0229)	D-Axis Inductance Saturation Coefficient 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 1 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
F02.42 (0x022A)	D-Axis Inductance Saturation Coefficient 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 2 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
F02.43 (0x022B)	D-Axis Inductance Saturation Coefficient 3	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 3 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN

F02.44 (0x022C)	D-Axis Inductance Saturation Coefficient 4	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 4 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
F02.45 (0x022D)	D-Axis Inductance Saturation Coefficient 5	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 5 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
F02.46 (0x022E)	D-Axis Inductance Saturation Coefficient 6	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 6 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
F02.47 (0x022F)	D-Axis Inductance Saturation Coefficient 7	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 7 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
F02.48 (0x0230)	D-Axis Inductance Saturation Coefficient 8	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 8 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
F02.49 (0x0231)	D-Axis Inductance Saturation Coefficient 9	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 9 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
F02.50 (0x0232)	Q-Axis Inductance Saturation Coefficient 0	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 0 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
F02.51 (0x0233)	Q-Axis Inductance Saturation Coefficient 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 1 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
F02.52 (0x0234)	Q-Axis Inductance Saturation Coefficient 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 2 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
F02.53 (0x0235)	Q-Axis Inductance Saturation Coefficient 3	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 3 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
F02.54 (0x0236)	Q-Axis Inductance Saturation Coefficient 4	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 4 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
F02.55 (0x0237)	Q-Axis Inductance Saturation Coefficient 5	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 5 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
F02.56 (0x0238)	Q-Axis Inductance Saturation Coefficient 6	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 6 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
F02.57 (0x0239)	Q-Axis Inductance Saturation Coefficient 7	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 7 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN

F02.58 (0x023A)	Q-Axis Inductance Saturation Coefficient 8	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 8 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
F02.59 (0x023B)	Q-Axis Inductance Saturation Coefficient 9	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 9 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN

F02.6x~ F02.7x: Motor Tuning Extension

Code (Address)	Name	Description	Default (Range)	Property
F02.60 (0x023C)	Online Tuning	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Tuning mode 0: OFF 1: Tuning only without updating > 1: Tuning and updating Thousands-bit: Stator resistance linear auto-tuning 0: OFF 1: ON	0x0000 (0x0000~0xFFFF)	STOP
F02.61 (0x023D)	Auto-tuning Flag	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator resistance tuning coefficient 1.	0x0000 (0x0000~0xFFFF)	RUN
F02.67 (0x0243)	V-phase Current Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the V-phase current gain.	1024 (1024~2048)	RUN
F02.68 (0x0244)	W-phase Current Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the W-phase current gain.	1024 (1024~2048)	RUN
F02.69 (0x0245)	Electric Angle Compensation	V/F SVC FVC PMV/F PMSVC PMFVC Set the electric angle compensation.	90.0 (90.0~6553.5)	RUN
F02.70 (0x0246)	Deadtime Compensation Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the dead-time compensation gain.	0 (0~65535)	RUN
F02.71 (0x0247)	Actual Deadtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the actual deadtime.	0.00 (0~655.35)	RUN
F02.72 (0x0248)	PM Pole Search	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: SVC Tens-bit: FVC 0: OFF 1: ON 2: ON during the first power-up	0x0010 (0000~F223)	STOP
F02.73 (0x0249)	Pole Search Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the pole search current value.	0.0 (0.0~6553.5)	STOP
F02.74 (0x024A)	Pole Search Current Feedback	V/F SVC FVC PMV/F PMSVC PMFVC Set the pole search current feedback value.	0.0 (0.0~6553.5)	STOP
F02.75 (0x024B)	PM Inductance Tuning Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the inductance tuning frequency for permanent magnet synchronous motors.	300.00Hz (0.00Hz~600.00Hz)	STOP
F02.77 (0x024D)	LC Filter Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the LC filter inductance.	0.000mH (0.000mH~65.000mH)	STOP

F02.78 (0x024E)	LC Filter Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the LC filter resistance.	0.0mΩ (0.0mΩ~ 6500.0mΩ)	STOP

13.6 F03: Vector Control

F03.0x: ASRControl

Code (Address)	Name	Description	Default (Range)	Property
F03.00 (0x0300)	Rigidity Class	V/F SVC FVC PMV/F PMSVC PMFVC Set the rigidity level. The higher the level, the better the speed rigidity.	32 (0~128)	RUN
F03.01 (0x0301)	Rigidity Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR rigidity mode.	0x0000 (0x0000~ 0xFFFF)	RUN
F03.02 (0x0302)	ASR Proportional Gain 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR proportional gain at high speed.	10.00 (0.01~100.00)	RUN
F03.03 (0x0303)	ASR Integral Time 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR integral time at high speed.	0.100s (0.000s~ 6.000s)	RUN
F03.04 (0x0304)	ASR Filter Time 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR filter time at high speed.	0.0ms (0.0ms~ 100.0ms)	RUN
F03.05 (0x0305)	ASR Shift Frequency 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR shift frequency at high speed.	0.00Hz (0.00Hz~ Max. frequency)	RUN
F03.06 (0x0306)	ASR Proportional Gain 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR proportional gain at low speed.	10.00 (0.01~100.00)	RUN
F03.07 (0x0307)	ASR Integral Time 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR integral time at low speed.	0.100s (0.000s~ 6.000s)	RUN
F03.08 (0x0308)	ASR Filter Time 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR filter time at low speed.	0.0ms (0.0ms~ 100.0ms)	RUN
F03.09 (0x0309)	ASR Shift Frequency 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR shift frequency at low speed.	0.00Hz (0.00Hz~ F03.05)	RUN

F03.1x: ACR and Torque Limit

Code (Address)	Name	Description	Default (Range)	Property
F03.10 (0x030A)	ACR D-Axis Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the current loop D-axis proportional gain.	1.000 (0.001~4.000)	RUN
F03.11 (0x030B) RUN	ACR D-Axis Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the current loop D-axis integral gain.	1.000 (0.001~4.000)	RUN
F03.12 (0x030C) RUN	ACR Q-Axis Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the current loop Q-axis proportional gain.	1.000 (0.001~4.000)	RUN
F03.13 (0x030D) RUN	ACR Q-Axis Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the current loop Q-axis integral gain.	1.000 (0.001~4.000)	RUN

F03.14 (0x030E) RUN	ACR Optimization	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Voltage feedforward control 0: OFF 1: ON Tens-bit: Current prediction control 0: OFF 1: ON Hundreds-bit: Current loop gain 0: OFF 1: ON	0x0000 (0x0000~ 0x0111)	RUN
F03.15 (0x030F) RUN	Motoring Torque Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque limit when motor is running with load.	250.0% (0.0%~ 400.0%)	RUN
F03.16 (0x0600) RUN	Generating Torque Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque limit in power generation mode.	250.0% (0.0%~ 400.0%)	RUN
F03.17 (0x0311) RUN	Motoring Torque Limit Source	V/F SVC FVC PMV/F PMSVC PMFVC Set the regenerative torque limit at low speed. 0: Keypad 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL 6: RS485 communication (0x3014) 7: Extension (0x31 group)	0 (0~7)	RUN
F03.18 (0x0312) RUN	Regenerating Torque Limit Source	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency range limited by torque when at low speed. 0: Keypad 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL 6: RS485 communication (0x3015) 7: Extension (0x31 group)	0 (0~7)	RUN
F03.19 (0x0313) RUN	Torque Limit View	V/F SVC FVC PMV/F PMSVC PMFVC View the given torque limits. 0: C00.06 displays the torque limit value during motoring 1: C00.06 displays the torque limit value during generating	0 (0~1)	RUN

F03.2x: Torque Optimization

Code (Address)	Name	Description	Default (Range)	Property
F03.20 (0x0314)	PM LF Pull-in Current	V/F SVC FVC PMV/F PMSVC PMFVC When the SVC mode of the PM is on, the larger the pull-in current, the larger the torque output.	20.0% (0.0%~ 50.0%)	RUN
F03.21 (0x0315) RUN	PM HF Pull-in Current	V/F SVC FVC PMV/F PMSVC PMFVC When the SVC mode of the PM is on, the larger the pull-in current, the larger the torque output.	10.0% (0.0%~ 50.0%)	RUN
F03.22 (0x0316) RUN	PM Pull-in Current Frequency	V/F SVC FVC PMV/F PMSVC PMFVC The set value 100.0% corresponds to F01.10 [Max. Frequency].	10.0% (0.0%~ 100.0%)	RUN
F03.23 (0x0317) RUN	AM Slip Compensation	V/F SVC FVC PMV/F PMSVC PMFVC Set the slip compensation for asynchronous motors.	100.0% (0.0%~ 250.0%)	RUN

F03.24 (0x0318) RUN	Initial Starting Torque	V/F SVC FVC PMV/F PMSVC PMFVC Set the initial starting torque.	0.0% (0.0%~250.0%)	RUN
F03.25 (0x0319) RUN	Flux Control Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control gain.	0.0 (0.0~1000.0)	RUN
F03.26 (0x031A) RUN	Flux Control Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control integral gain.	0.0 (0.0~1000.0)	RUN
F03.27 (0x031B) RUN	Flux Given Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux given gain.	0.0 (0.0~200.0)	RUN
F03.28 (0x031C) RUN	Torque Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque range.	0x0000 (0x0000~0xFFFF)	RUN
F03.29 (0x031D) RUN	Flux Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux range.	0.0% (0.0%~150.0%)	RUN

F03.3x: Flux Optimization

Code (Address)	Name	Description	Default (Range)	Property
F03.30 (0x031E) RUN	Field-weakening Feed-forward Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the feed-forward coefficient under field weakening control.	10.0% (0.0%~500.0%)	RUN
F03.31 (0x031F) RUN	Field-weakening Control Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the control gain under field weakening control.	10.0% (0.0%~500.0%)	RUN
F03.32 (0x0320) RUN	Field-weakening Current Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the current upper limit under field weakening control.	60.0% (0.0%~250.0%)	RUN
F03.33 (0x0321) RUN	Field-weakening Voltage Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage coefficient under field weakening control.	97.0% (0.0%~120.0%)	RUN
F03.34 (0x0322) RUN	Output Power Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor output power range.	250.0% (0.0%~400.0%)	RUN
F03.35 (0x0323) RUN	Over-excitation Brake Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the over-excitation brake gain.	100.0% (0.0%~500.0%)	RUN
F03.36 (0x0324) RUN	Over-excitation Brake Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the over-excitation brake range.	100.0% (0.0%~250.0%)	RUN
F03.37 (0x0325) RUN	ECO Mode	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: ON	0 (0~1)	RUN
F03.38 (0x0326) RUN	ECO Excitation Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the excitation lower limit of energy-saving running.	50.0% (0.0%~80.0%)	RUN
F03.39 (0x0327) RUN	ECO Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the filter time of energy-saving running.	0.010s (0.000s~6.000s)	RUN

F03.4x:PM HF Injection

Code (Address)	Name	Description	Default (Range)	Property
F03.40 (0x0328)	HF Injection Mode	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: HF injection 0: OFF NOT 0: ON Thousands-bit: Random HF injection (effective only when ones-bit≠0): 0: Random-carrier HF injection 1: Fixed-carrier HF injection	0x0000 (0x0000~0x1005)	STOP
F03.41 (0x0329)	HF Injection Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the injection voltage range (relative to rated voltage). It is the result of auto-tuning, so there's no need to modify it.	10.0% (0.0%~100.0%)	RUN
F03.42 (0x032A)	HF Injection OFF Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency injection range (relative to motor rated frequency). It is valid when the motor speed is lower than this value.	0.0% (0.0%~100.0%)	RUN
F03.43 (0x032B)	Estimated HF Injection Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the estimated gain for high-frequency injection speed.	500 (0~65535)	RUN
F03.44 (0x032C)	Estimated HF Injection Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the estimated integral gain for high-frequency injection speed.	100 (0~65535)	RUN
F03.45 (0x032D)	HF Injection Debugging	V/F SVC FVC PMV/F PMSVC PMFVC Debug the high-frequency injection.	0 (0~65535)	RUN
F03.46 (0x032E)	HF Injection Carrier	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency injection carrier.	0 (0~10)	RUN

F03.5x-03.8x:Extension Control

Code (Address)	Name	Description	Default (Range)	Property
F03.50 (0x0332)	Max. ACR Bandwidth	V/F SVC FVC PMV/F PMSVC PMFVC Set the position compensation under speed control to realize zero servo or raise system rigidity.	50.0 (0.0~100.0)	STOP
F03.51 (0x0333)	Min. Current Error	V/F SVC FVC PMV/F PMSVC PMFVC It is used for debugging.	0.0 (0.0~102.4)	RUN
F03.52 (0x0334)	IF Control Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the current under IF control, where 100% equals the motor's rated current.	60.0% (0.0%~400.0%)	RUN
F03.53 (0x0335)	IF Control Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency under IF control.	0.0% (0.0%~100.0%)	RUN
F03.55 (0x0337)	SPLL Fly Track Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the proportional gain for SPLL fly track.	1.00 (0~655.35)	RUN
F03.56 (0x0338)	SPLL Fly Track Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the integral gain for SPLL fly track.	5.00 (0.00~655.35)	RUN
F03.57 (0x0339)	Fly Track Excitation Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the excitation time for fly track.	2 (0~65535)	RUN
F03.58 (0x033A)	Fly Track Excitation Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the excitation frequency for fly track.	0 (0~65535)	RUN

F03.59 (0x033B)	Fly Track Excitation Time 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the excitation time 2 for fly track.	200 (0~65535)	RUN
F03.60 (0x033C)	PM MTPA Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the MTPA gain for permanent magnet synchronous motors.	100.0 (0.0~400.0)	RUN
F03.61 (0x033D)	PM MTPA Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the MTPA filter time for permanent magnet synchronous motors.	1.0 (0.0~100.0)	RUN
F03.62 (0x033E)	PM Saliency Rate Regulation Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the saliency rate regulation gain for permanent magnet synchronous motors.	500% (0%~ 65535%)	RUN
F03.63 (0x033E)	PM Step Loss Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the step loss detection time for permanent magnet synchronous motors.	0 (0.000~ 65.535)	RUN
F03.64 (0x0340)	PM Step Loss Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the step loss detection coefficient for permanent magnet synchronous motors.	0 (0.0~ 6553.5)	RUN
F03.65 (0x0341)	Regenerative Torque Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the regenerative torque limit at low speed.	0.0% (0.0%~ 400.0%)	RUN
F03.66 (0x0342)	Regenerative Torque Limit Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency range limited by torque when at low speed.	6.00% (0.00%~ 30.00%)	RUN
F03.70 (0x0346)	Estimated SVC Gain 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the estimated open loop gain 1.	1.000 (0.000~ 8.000)	RUN
F03.71 (0x0347)	Estimated SVC Gain 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the estimated open loop gain 2.	1.000 (0.000~ 8.000)	RUN
F03.72 (0x0348)	Generating Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the generating gain.	30.0% (0.0%~ 6553.5%)	RUN
F03.73 (0x0349)	SPLL Gain 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the SPLL gain 1.	3.000 (0.000~ 65.535)	RUN
F03.74 (0x034A)	SPLL Gain 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the SPLL gain 2.	1.000 (0.000~ 65.535)	RUN
F03.75 (0x034B)	Angle Error	V/F SVC FVC PMV/F PMSVC PMFVC Set the angle error limit.	10.0 (0.0~100.0)	RUN
F03.76 (0x034C)	Angle Hysteresis Error	V/F SVC FVC PMV/F PMSVC PMFVC Set the angle hysteresis error limit.	10.0 (0.0~100.0)	RUN
F03.77 (0x034D)	Direct Flux Vector Optimization	V/F SVC FVC PMV/F PMSVC PMFVC Optimize the direct flux vector mode.	0 (0~65535)	RUN
F03.78 (0x034E)	Min. Direct Flux Vector Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the min. frequency for direct flux vector mode.	1.0% (0.0%~ 6000.0%)	RUN
F03.79 (0x034F)	Min. Flux FVC Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the min. frequency for flux closed loop mode.	10.0% (0.0%~ 6000.0%)	RUN

F03.80 (0x0350)	Estimated Direct Flux Vector Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the estimated gain under direct flux vector mode.	1000 (0~65535)	RUN
F03.81 (0x0351)	AFO Gain 1	V/F SVC FVC PMV/F PMSVC PMFVC Adjust the AFO1 control gain.	1.000 (0.000~65.535)	RUN
F03.82 (0x0352)	AFO Gain 2	V/F SVC FVC PMV/F PMSVC PMFVC Adjust the AFO2 control gain.	1.000 (0.000~65.535)	RUN
F03.83 (0x0353)	AFO Gain 3	V/F SVC FVC PMV/F PMSVC PMFVC Adjust the AFO3 control gain.	1.000 (0.000~65.535)	RUN
F03.84 (0x0354)	AFO Gain 4	V/F SVC FVC PMV/F PMSVC PMFVC Adjust the AFO4 control gain.	1.000 (0.000~65.535)	RUN

13.7 F04: V/F Control

F04.0x: V/F Control

Code (Address)	Name	Description	Default (Range)	Property
F04.00 (0x0400)	V/F Curve	V/F SVC FVC PMV/F PMSVC PMFVC Select the type of V/F curve according to different load characteristics. 0: Linear V/F curve 1~9: 1.1-1.9 power V/F curves respectively 10: Square V/F curve 11: Custom V/F curve	0 (0~11)	STOP
F04.01 (0x0401)	Torque Boost	V/F SVC FVC PMV/F PMSVC PMFVC 0.0%: Automatic torque boost 0.1%~30.0%: Manual torque boost	Up to model (0.0%~30.0%)	RUN
F04.02 (0x0402)	Torque Boost OFF Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the range of the torque boost. The torque boost will be cut off when the output frequency exceeds this value.	100.0% (0.0%~100.0%)	RUN
F04.03 (0x0403)	Slip Compensation Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the slip compensation gain.	0.0% (0.0%~200.0%)	RUN
F04.04 (0x0404)	Slip Compensation Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the slip compensation range.	100.0% (0.0%~300.0%)	RUN
F04.05 (0x0405)	Slip Compensation Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Enter the parameters on the motor's nameplate correctly to implement parameter tuning for best effect.	0.200s (0.000s~6.000s)	RUN
F04.06 (0x0406)	Anti-oscillation Gain	V/F SVC FVC PMV/F PMSVC PMFVC Adjust this value to suppress low-frequency resonance, but it should not be too large or it will cause instability.	100.0% (0.0%~900.0%)	RUN
F04.07 (0x0407)	Anti-oscillation Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the anti-oscillation filter time.	1.0s (0.0s~100.0s)	RUN
F04.08 (0x0408)	Output Voltage Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the output voltage percentage, 100% of it corresponds to the motor rated voltage.	100.0% (25.0%~120.0%)	STOP

F04.09 (0x0409)	Min. Overcurrent Suppression Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the overcurrent suppression lower limit frequency.	0.00 (0.00~ 50.00)	RUN

F04.1x: User-defined V/F Curves

Code (Address)	Name	Description	Default (Range)	Property
F04.10 (0x040A)	User-Defined Voltage V1	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage V1.	3.0% (0.0%~ 100.0%)	STOP
F04.11 (0x040B)	User-Defined Frequency F1	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency F1.	1.00Hz (0.00Hz~ P01.10)	STOP
F04.12 (0x040C)	User-Defined Voltage V2	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage V2.	28.0% (0.0%~ 100.0%)	STOP
F04.13 (0x040D)	User-Defined Frequency F2	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency F2.	10.00Hz (0.00Hz~ P01.10)	STOP
F04.14 (0x040E)	User-Defined Voltage V3	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage V3.	55.0% (0.0%~ 100.0%)	STOP
F04.15 (0x040F)	User-Defined Frequency F3	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency F3.	25.00Hz (0.00Hz~ P01.10)	STOP
F04.16 (0x0410)	User-Defined Voltage V4	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage V4.	78.0% (0.0%~ 100.0%)	STOP
F04.17 (0x0411)	User-Defined Frequency F4	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency F4.	37.50Hz (0.00Hz~ P01.10)	STOP
F04.18 (0x0412)	User-Defined Voltage V5	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage V5.	100.0% (0.0%~ 100.0%)	STOP
F04.19 (0x0413)	User-Defined Frequency F5	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency F5.	50.00Hz (0.00Hz~ P01.10)	STOP

F04.2x: Coil Voltage-Frequency/Current-Frequency Decoupled Control

Code (Address)	Name	Description	Default (Range)	Property
F04.20 (0x0414)	Coil Voltage/Curr ent Source A	V/F SVC FVC PMV/F PMSVC PMFVC 0: Percentage setting 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL terminal 6: RS485 7: Extension (0x31 group) 8: PID 9: Numeric setting Others: Connector	0 (0~65535)	RUN

F04.21 (0x0415)	Coil Voltage/Curr ent Source B	V/F SVC FVC PMV/F PMSVC PMFVC 0: Percentage setting 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL terminal 6: RS485 7: Extension (0x31 group) 8: PID 9: Numeric setting Others: Connector	0 (0~65535)	RUN
F04.22 (0x0416)	Coil Voltage/Curr ent Source Combination	V/F SVC FVC PMV/F PMSVC PMFVC 0: Source A 1: Source B 2: Source A+Source B 3: Source A-Source B 4: Max. (A, B) 5: Min. (A or B)	0 (0~5)	RUN
F04.23 (0x0417)	Coil Output Voltage/Curr ent Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the output percentage for voltage/current under V/F-SPLIT mode. 100.0% of the motor rated voltage/rated current.	0.00% (0.00%~ 110.00%)	RUN
F04.24 (0x0418)	Coil Output Voltage/Curr ent ACC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage/current acceleration time under V/F-SPLIT mode.	10.00s (0.00s~ 100.00s)	RUN
F04.25 (0x0419)	Coil Output Voltage/Curr ent DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage/current deceleration time under V/F-SPLIT mode.	10.00s (0.00s~ 100.00s)	RUN
F04.26 (0x041A)	Coil Stop Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the stop mode under V/F-SPLIT control. 0: ACC./DEC. of output voltage/current and that of output frequency do not affect each other 1: Output frequency drops after the output voltage/current drops to 0V	0 (0~1)	RUN
F04.27 (0x041B)	Coil Output Voltage/Curr ent Numeric Setting	V/F SVC FVC PMV/F PMSVC PMFVC Define the coil output voltage/current numeric settings.	0.00V (0.00V~ 600.00V)	RUN
F04.29 (0x041D)	Coil Control Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the coil control mode. 0: V/F voltage–frequency decoupling 1: I/F current–frequency decoupling	0 (0~1)	RUN

F04.3x: V/F ECO Control

Code (Address)	Name	Description	Default (Range)	Property
F04.30 (0x041E)	V/F ECO Function	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: ON	0 (0~1)	STOP
F04.31 (0x041F)	V/F ECO Min. Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower frequency limit of the ECO mode.	15.0Hz (0.0Hz~ 50.0Hz)	STOP
F04.32 (0x0420)	V/F ECO Min. Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower voltage limit of the ECO mode.	50.0% (20.0%~ 100.0%)	STOP

F04.33 (0x0421)	V/F ECO Voltage DEC Rate	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage deceleration rate under the V/F ECO mode.	0.010V/ms (0.000V/ms~ 0.2000V/ms)	RUN
F04.34 (0x0422)	V/F ECO Voltage ACC Rate	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage acceleration rate under the V/F ECO mode.	0.200V/ms (0.000V/ms~ 2.000V/ms)	RUN
F04.35 (0x0423)	Overexcitation Gain	V/F SVC FVC PMV/F PMSVC PMFVC It is valid when tens-bit of F10.11 is not zero; at the same output frequency, the output voltage increases with increasing bus voltage.	64 (0~200)	RUN

F04.4x: V/F PM Anti-oscillation

Code (Address)	Name	Description	Default (Range)	Property
F04.40 (0x0428)	Damper Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the damper proportional gain.	5.0% (0.0%~ 400.0%)	RUN
F04.41 (0x0429)	Damper Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the damper filter time.	0.0s (0.0s~100.0s)	RUN
F04.42 (0x042A)	Damper Output Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the damper output range.	5.0% (0.0%~ 100.0%)	RUN
F04.43 (0x042B)	Active Current Filter Bandwidth	V/F SVC FVC PMV/F PMSVC PMFVC Set the active current filter bandwidth.	5.000Hz (0.000Hz~ 65.535Hz)	RUN
F04.44 (0x042C)	Damper Weakening Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the damper proportional gain weakening coefficient.	20.0% (0.0%~ 100.0%)	RUN
F04.45 (0x042D)	Damper Weakening Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the damper proportional gain weakening frequency.	20.0% (0.0%~ 100.0%)	RUN
F04.46 (0x042E)	Anti-oscillation Start Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the anti-oscillation start frequency.	3.0% (0.0%~ 200.0%)	RUN

F04.5x: V/F PM Flux Control

Code (Address)	Name	Description	Default (Range)	Property
F04.50 (0x0432)	Flux Control	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control.	30.0% (0%~ 500.0%)	RUN
F04.51 (0x0433)	Flux Control Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control proportional gain.	1000 (0~9999)	RUN
F04.52 (0x0434)	Flux Control Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control integral gain.	1000 (0~9999)	RUN
F04.53 (0x0435)	Controller Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux controller frequency.	5.0% (0%~ 100.0%)	RUN
F04.54 (0x0436)	Controller Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux controller time.	7.0s (0s~100.0s)	RUN
F04.56 (0x0438)	PM Convexity Adjustment	V/F SVC FVC PMV/F PMSVC PMFVC Set the convexity adjustment coefficient for permanent magnet synchronous motors.	100.0% (0%~400.0%)	RUN
F04.57 (0x0439)	MTPA Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the MTPA gain.	100.0% (0%~ 400.0%)	RUN

F04.58 (0x043A)	MTPA Bandwidth	V/F SVC FVC PMV/F PMSVC PMFVC Set the MTPA bandwidth.	1.000Hz (0Hz~ 50.000Hz)	RUN
F04.59 (0x043B)	PM VF ECO Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the VF energy-saving mode for permanent magnet synchronous motors. 0: MTPA (default, recommended) 1: Manual pull-in 2: Flux-control MTPA	0 (0~2)	RUN

F04.6x: V/F PM Current Control

Code (Address)	Name	Description	Default (Range)	Property
F04.60 (0x043C)	D-Axis Current Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis current gain.	0.500 (0~10.000)	RUN
F04.61 (0x043D)	Q-Axis Current Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis current gain.	0.500 (0~10.000)	RUN
F04.62 (0x043E)	D-Axis Feedforward Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis feedforward gain.	0 (0~10.000)	RUN
F04.63 (0x043F)	Q-Axis Feedforward Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis feedforward gain.	1.000 (0~10.000)	RUN
F04.64 (0x0440)	D-Axis Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis control proportional gain.	50.0% (0%~ 200.0%)	RUN
F04.65 (0x0441)	D-Axis Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis control integral gain.	80.0% (0%~ 1000.0%)	RUN
F04.66 (0x0442)	D-Axis LF Current Proportional Gain Boost	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis low-frequency current proportional gain boost.	0% (0%~ 100.0%)	RUN
F04.67 (0x0443)	Q-Axis Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis control proportional gain.	100.0% (0%~ 6553.5%)	RUN
F04.68 (0x0444)	Q-Axis Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis control integral gain.	100.0% (0%~ 6553.5%)	RUN
F04.69 (0x0445)	D-Axis Weakening Integral	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis integral weakening coefficient.	1000 (0~1024)	RUN
F04.70 (0x0446)	D-Axis Proportional Gain Shift Start Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the start frequency for D-axis proportional gain shifting.	80.0% (0%~ 6553.5%)	STOP
F04.71 (F04.47)	D-Axis Proportional Gain Shift OFF Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the OFF frequency for D-axis proportional gain shifting.	120.0% (0%~ 6553.5%)	RUN
F04.72 (0x0448)	HF D-Axis Current Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency D-axis current control proportional gain.	100.0% (0%~ 200.0%)	RUN

F04.73 (0x0449)	D-Axis Current Filter Bandwidth	V/F SVC FVC PMV/F PMSVC PMFVC Set the bandwidth of the D-axis current low-pass filter.	11.000Hz (0Hz~ 65.535Hz)	RUN
F04.74 (0x044A)	Q-Axis Current Filter Bandwidth	V/F SVC FVC PMV/F PMSVC PMFVC Set the bandwidth of the Q-axis current low-pass filter.	11.000Hz (0Hz~ 65.535Hz)	RUN
F04.75 (0x044B)	D-Axis Filter Bandwidth	V/F SVC FVC PMV/F PMSVC PMFVC Set the given D-axis filter bandwidth.	1.000Hz (0Hz~ 65.535Hz)	RUN
F04.76 (0x044C)	Light-load Current I_q Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the light-load current I_q threshold.	20.0% (0%~50.0%)	RUN
F04.77 (0x044D)	Current I_d Weakening Amplitude	V/F SVC FVC PMV/F PMSVC PMFVC Set the current I_d weakening amplitude.	50.0% (0%~ 100.0%)	RUN
F04.78 (0x044E)	Efficient Current I_d Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the efficient current I_d value.	0% (0%~50.0%)	RUN
F04.79 (0x044F)	Shift Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the shift frequency.	10.0% (0%~50.0%)	RUN
F04.80 (0x0450)	Shift Frequency Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the shift frequency range.	0% (0%~50.0%)	RUN
F04.81 (0x0451)	PM Voltage Vector Algorithm Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the control mode for the synchronous motor voltage vector algorithm.	0x1021 (0x0000~ 0x1121)	RUN
F04.82 (0x0452)	LF Pull-in Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the low-frequency pull-in current.	100.0% (0%~ 200.0%)	RUN
F04.83 (0x0453)	LF Pull-in Current Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency for low-frequency pull-in current.	10.0% (0%~ 100.0%)	RUN
F04.84 (0x0454)	HF Pull-in Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency pull-in current.	10.0% (0%~ 200.0%)	RUN
F04.85 (0x0455)	HF Pull-in Current Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency for high-frequency pull-in current.	15.0% (0%~ 100.0%)	RUN

13.8 F05: DI Terminal

F05.0x:Terminal Function

Code (Address)	Name	Description	Default (Range)	Property
F05.00 (0x0500)	X1 Function	V/F SVC FVC PMV/F PMSVC PMFVC See the function of terminal X.	1 (0~95)	STOP
F05.01 (0x0501)	X2 Function	V/F SVC FVC PMV/F PMSVC PMFVC See the function of terminal X.	2 (0~95)	STOP
F05.02 (0x0502)	X3 Function	V/F SVC FVC PMV/F PMSVC PMFVC See the function of terminal X.	4 (0~95)	STOP
F05.03 (0x0503)	X4 Function	V/F SVC FVC PMV/F PMSVC PMFVC See the function of terminal X.	8 (0~95)	STOP
F05.04 (0x0504)	X5 Function	V/F SVC FVC PMV/F PMSVC PMFVC See the function of terminal X.	6 (0~95)	STOP
F05.05 (0x0505)	X6 Function	V/F SVC FVC PMV/F PMSVC PMFVC See the function of terminal X.	7 (0~95)	STOP

F05.08 (0x0508)	X1~X4 Terminal Characteristics	V/F SVC FVC PMV/F PMSVC PMFVC 0: ON when closed 1: ON when open Ones-bit: X1 terminal Tens-bit: X2 terminal Hundreds-bit: X3 terminal Thousands-bit: X4 terminal	0x0000 (0x0000~ 0x1111)	RUN
F05.09 (0x0509)	X5~X6 Terminal Characteristics	V/F SVC FVC PMV/F PMSVC PMFVC 0: ON when closed 1: ON when open Ones-bit: X5 terminal Tens-bit: X6 terminal	0x0000 (0x0000~ 0x0011)	RUN

Refer to the table below to set the function of F05.0x [X1~X10 Terminals Function].

Setting	Function	Setting	Function
0	None	32	ACC/DEC Time 1
1	FWD Operation	33	ACC/DEC Time 2
2	REV Operation	34	ACC/DEC Pause
3	Three-wire Operation (Xi)	35	Wobble Frequency Input
4	FWD Jog	36	Wobble Frequency Pause
5	REV Jog	37	Wobble Frequency Reset
6	Free Stop	38	Keypad Keys and Display Self-test
7	Emergency Stop	39	PUL Frequency Measurement, X6 Terminal
8	Error Reset	40	Timer Trigger
9	External Error Input	41	Timer Reset
10	Frequency Increase (UP)	42	Counter Clock Input
11	Frequency Decrease (DW)	43	Counter Reset
12	Frequency UP/DW Reset	44	DC Brake Command
13	Reserved	45	Pre-excitation Command
14	Combined Frequency Source to Source A	46	Reserved
15	Combined Frequency Source to Source B	47	Reserved
16	Multi-frequency Terminal 1	48	Command Source to Keypad
17	Multi-frequency Terminal 2	49	Command Source to Terminal
18	Multi-frequency Terminal 3	50	Command Source to Communication
19	Multi-frequency Terminal 4	51	Command Source to Extension
20	PID Control Cancel	52	Operation Disable
21	PID Control Pause	53	FWD Disable
22	PID Characteristic Shift	54	REV Disable
23	PID Parameter Shift	55	Motor Terminal bit0
24	PID Setting Shift 1	56	Motor Terminal bit1
25	PID Setting Shift 2	57	Motor Terminal bit2
26	PID Setting Shift 3	58	Backup Frequency
27	PID Feedback Shift 1	59	Torque Source B Shift
28	PID Feedback Shift 2	60	Speed/Torque Control Shift
29	PID Feedback Shift 3	61	Position Control Shift
30	PLC Pause	62	Jog Limit Torque Frequency
31	PLC Restart	-	-

F05.1x~F05.2x:Terminal Operation Mode

Code (Address)	Name	Description	Default (Range)	Property
F05.10 (0x050A)	X1 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X1 from OFF to ON.	0.010s (0.000s~ 60.000s)	RUN
F05.11 (0x050B)	X1 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X1 from ON to OFF.	0.010s (0.000s~ 60.000s)	RUN
F05.12 (0x050C)	X2 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X2 from OFF to ON.	0.010s (0.000s~ 60.000s)	RUN
F05.13 (0x050D)	X2 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X2 from ON to OFF.	0.010s (0.000s~ 60.000s)	RUN
F05.14 (0x050E)	X3 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X3 from OFF to ON.	0.010s (0.000s~ 60.000s)	RUN
F05.15 (0x050F)	X3 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X3 from ON to OFF.	0.010s (0.000s~ 60.000s)	RUN
F05.16 (0x0510)	X4 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X4 from OFF to ON.	0.010s (0.000s~ 60.000s)	RUN
F05.17 (0x0511)	X4 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X4 from ON to OFF.	0.010s (0.000s~ 60.000s)	RUN
F05.18 (0x0512)	X5 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X5 from OFF to ON.	0.010s (0.000s~ 60.000s)	RUN
F05.19 (0x0513)	X5 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X5 from ON to OFF.	0.010s (0.000s~ 60.000s)	RUN
F05.20 (0x0514)	X6 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X6 from OFF to ON.	0.010s (0.000s~ 60.000s)	RUN
F05.21 (0x0515)	X6 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X6 from ON to OFF.	0.010s (0.000s~ 60.000s)	RUN
F05.26 (0x051A)	Terminal Control Mode	V/F SVC FVC PMV/F PMSVC PMFVC 0: Two-line 1 1: Two-line 2 2: Three-line 1 3: Three-line 2	0 (0~3)	STOP
F05.27 (0x051B)	Terminal UP/DW	V/F SVC FVC PMV/F PMSVC PMFVC 0: Power-down save ON 1: Power-down save OFF 2: Adjustable during operation, clear after stop	0 (0~2)	STOP
F05.28 (0x051C)	UP/DW Frequency ACC/DEC Rate	V/F SVC FVC PMV/F PMSVC PMFVC Set the terminal UP/DW controlled frequency increase/decrease rate.	0.50Hz/s (0.01Hz/s~ 50.00Hz/s)	RUN
F05.29 (0x051D)	E-stop DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the deceleration time for terminal controlled emergency stop.	1.00s (0.01s~ 650.00s)	RUN

F05.3x:PUL Terminal

Code (Address)	Name	Description	Default (Range)	Property
F05.31 (0x051F)	Min. PUL Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the min. frequency that can be accepted by the PUL terminal. If the frequency given is below this value, drive will still process by this setting.	0.000kHz (0.000kHz~100.00kHz)	RUN
F05.32 (0x0520)	Min. PUL Frequency Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the min. input frequency of the PUL terminal.	0.00% (0.00%~100.00%)	RUN
F05.33 (0x0521)	Max. PUL Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the max. frequency that can be accepted by the PUL terminal. If the frequency given is above this value, drive will still process by this setting.	5.00kHz (0.00kHz~100.00kHz)	RUN
F05.34 (0x0522)	Max. PUL Frequency Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the max. input frequency of the PUL terminal.	100.00% (0.00%~100.00%)	RUN
F05.35 (0x0523)	PUL Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Define the size of the filter applied to the pulse signal to remove interfering signals.	0.100s (0.000s~9.000s)	RUN
F05.36 (0x0524)	PUL OFF Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Frequencies below this parameter are no longer recognized by the drive, processed as 0Hz.	0.01kHz (0.00kHz~1.00kHz)	RUN

F05.4x: vX Terminal

Code (Address)	Name	Description	Default (Range)	Property
F05.40 (0x0528)	vX1 Function	V/F SVC FVC PMV/F PMSVC PMFVC See the functions of terminal X.	0 (0~95)	STOP
F05.41 (0x0529)	vX2 Function	V/F SVC FVC PMV/F PMSVC PMFVC See the functions of terminal X.	0 (0~95)	STOP
F05.42 (0x052A)	vX3 Function	V/F SVC FVC PMV/F PMSVC PMFVC See the functions of terminal X.	0 (0~95)	STOP
F05.43 (0x052B)	vX4 Function	V/F SVC FVC PMV/F PMSVC PMFVC See the functions of terminal X.	0 (0~95)	STOP
F05.44 (0x052C)	vX5 Function	V/F SVC FVC PMV/F PMSVC PMFVC See the functions of terminal X.	0 (0~95)	STOP
F05.45 (0x052D)	vX6 Function	V/F SVC FVC PMV/F PMSVC PMFVC See the functions of terminal X.	0 (0~95)	STOP
F05.48 (0x0530)	vX1~vX4 ON Source	V/F SVC FVC PMV/F PMSVC PMFVC 0: Internal connection with vYn terminal 1: Connection with Xn terminal 2: Funcode Ones-bit: vX1 Tens-bit: vX2 Hundreds-bit: vX3 Thousands-bit: vX4	0x0000 (0x0000~0x2222)	RUN
F05.49 (0x0531)	vX5~vX6 ON Source	V/F SVC FVC PMV/F PMSVC PMFVC 0: Internal connection with vYn terminal 1: Connection with Xn terminal 2: Funcode Ones-bit: vX5 Tens-bit: vX6	0x0000 (0x0000~0x0022)	RUN

F05.50 (0x0532)	vX1~vX4 ON from Funcode	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: ON Ones-bit: vX1 Tens-bit: vX2 Hundreds-bit: vX3 Thousands-bit: vX4	0x0000 (0x0000~ 0x1111)	RUN
F05.51 (0x0533)	vX5~vX6 ON from Funcode	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: ON Ones-bit: vX5 Tens-bit: vX6	0x0000 (0x0000~ 0x0011)	RUN

13.9 F06: DO Terminal

F06.0x:Terminal Operation

Code (Address)	Name	Description	Default (Range)	Property
F06.00 (0x0600)	Terminal Y	V/F SVC FVC PMV/F PMSVC PMFVC See the functions of terminal Y.	1 (0~63)	RUN
F06.01 (0x0601)	RO1	V/F SVC FVC PMV/F PMSVC PMFVC See the functions of terminal Y.	4 (0~63)	RUN
F06.02 (0x0602)	RO2	V/F SVC FVC PMV/F PMSVC PMFVC See the functions of terminal Y.	0 (0~63)	RUN
F06.04 (0x0604)	Output Terminal Polarity	V/F SVC FVC PMV/F PMSVC PMFVC 0: Positive 1: Negative Ones-bit: Y terminal Tens-bit: RO 1 Hundreds-bit: RO2	0x0000 (0x0000~ 0x1111)	RUN

Refer to the table below to set the function of F06.0x [Multi-function Y Terminal].

Setting	Function	Description
0	None	It means that the terminal is invalid, and it is recommended to set it to "0" if the terminal is unused to prevent the occurrence of malfunction.
1	Drive in operation	Send valid signals during drive operation.
2	Drive in FWD operation	Send valid signals during forward operation.
3	Drive in REV operation	Send valid signals during reverse operation.
4	Fault trip alarm 1	Send valid signals even during fault reset.
5	Fault trip alarm 2	Send no valid signals during fault reset.
6	Stop due to external faults	When an external error signal is input to the multifunction input terminal, valid signals are output when the drive reports external error E. EF.
7	Drive low voltage	Send valid signals during drive undervoltage.
8	Drive ready	When this signal is valid, it indicates that the drive has no fault, the bus voltage is normal, and the operation disable terminal such as emergency stop of the drive is invalid. The AC drive can be operated at the start command.
9	Output frequency detection level 1 (FDT1)	When the output frequency of the drive exceeds the set value of F16.40 [Frequency Level 1], valid signals are output; when the output frequency of the drive is lower than the frequency detection level, an invalid signal is output after passing through the lag frequency set by F16.41 [Frequency Range 1]. See F16.40 [Frequency Level 1] and F16.41 [Frequency Range 1] for details.
10	Output frequency detection level 2 (FDT2)	When the output frequency of the drive exceeds the set value of F16.42 [Frequency Level 2], valid signals are output; when the output frequency of the drive is lower than the frequency detection

		level, an invalid signal is output after passing through the lag frequency set by F16.43 [Frequency Range 2]. See F16.42 [Frequency Level 2] and F16.43 [Frequency Range 2] for details.
11	Target frequency arrival	When the output frequency of AC drive approaches or reaches a certain range of given frequency (the range is determined by [F16.44]), valid signals are output, otherwise invalid signals are output. See F16.44 [Frequency Arrival] for details.
12	Zero-frequency operation	Output valid signals when the drive is running and the output is 0.00Hz.
13	Upper limit frequency arrival	Output valid signals when the drive is running at upper limit frequency.
14	Lower limit frequency arrival	Output valid signals when the drive is running at lower limit frequency.
15	Program cycle completion	A 500ms valid signal is output when PLC program cycle ends.
16	Program stage completion	A 500ms valid signal is output when PLC program stage ends.
17	PID feedback above upper limit	When the PID feedback reaches the value set in F13.27 [Feedback Disconnection Upper Limit] after the time set in F13.26 [Feedback Disconnection Time], a valid signal is output.
18	PID feedback below lower limit	When the PID feedback reaches the value set in F13.28 [Feedback Disconnection Lower Limit] after the time set in F13.26 [Feedback Disconnection Time], a valid signal is output.
19	PID feedback sensor break	When a PID feedback sensor is break, a valid signal is output. For details, refer to parameters F13.26 [Feedback Disconnection Time], F13.27 [Feedback Disconnection Upper Limit], and F13.28 [Feedback Disconnection Lower Limit].
20	Meter length arrival	The length is calculated via a pulse counter, and when the actual length reaches the value set in F16.05 [Set Length], this DO terminal outputs a valid signal. For details, refer to parameters F16.04 [Pulse No. Per Meter], F08.05 [Set Length], and F16.06 [Actual Length].
21	Timer setting arrival	When the internal timer of the drive reaches the set time, this terminal outputs a valid pulse signal with a width of 1s. For details, refer to parameters F16.07 [Timer Unit] and F16.08 [Timer Setting].
22	Counter maximum arrival	When the counter reaches its maximum value, the terminal outputs a valid signal with a width equal to the external clock period and the counter is reset. For details, refer to parameter F16.02 [Max. Counting].
23	Counter setting arrival	When the counter reaches the set value, the terminal outputs a valid signal, and it will continue to record until the maximum value, and then the counter will be cleared, and the signal is withdrawn. For details, refer to parameter F16.03 [Counter Setting].
24	Dynamic braking	Valid signals are output when the dynamic brake conditions are met. See parameter F10.14 [Dynamic Brake Enable] for details.
25	PG feedback error	Valid signals are output when any input signal of the PG card is disconnected.
26	Emergency stopping	Valid signals are output when the drive is in the emergency stop status.
27	Overload warning	When AC drive is in operation under V/F control, the motor output current is used as reference for load alarms, while under the vector control mode, motor output torque is used as the reference for load alarms. Compare reference value with the alarm threshold to decide whether to output valid signals. Refer to parameters F10.32 [Load Warning Mode], F10.33 [Load Warning Level 1], F10.34 [Load Warning Time 1], F10.35 [Load Warning Level 2], and F10.36 [Load Warning Time 2].

28	Underload warning	When AC drive is in operation under V/F control, the motor output current is used as reference for load alarms, while under the vector control mode, motor output torque is used as the reference for load alarms. Compare reference value with the alarm threshold to decide whether to output valid signals. Refer to parameters F10.32 [Load Warning Mode], F10.33 [Load Warning Level 1], F10.34 [Load Warning Time 1], F10.35 [Load Warning Level 2], and F10.36 [Load Warning Time 2].
29	Alarm output	When the drive triggers an alarm, a valid signal is output. The signal returns to normal when the alarm clears. No output occurs during errors.
30	0x3018 controlled output	Set through RS485 communication (0x3018), BIT0 bit corresponds to Y output, BIT1 corresponds to relay 1 output, and BIT2 bit corresponds to relay 2 output.
31	Drive overheat	When the drive temperature reaches F10.25 [Drive Overheat oH1 Warning Detection], valid signals are output.
32	Motor overheat alarm	Output valid signals when a motor overheat alarm occurs.
33	Drive overload	Output valid signals when the drive is overloaded ($C00.23 > 0\%$).
34	Motor Overload	Output valid signals when the motor is overloaded ($C00.24 > 0\%$).
35	Brake active	Output valid signals when the brake function is enabled and engaged.
36	Brake failure protection	Output valid signals during brake-failure protection.
37	Comparator 1	Valid signals are output when the monitored value set in F16.50 [Comparator 1 Item] is within the range of F16.51 [Comparator 1 Upper Limit] and F16.52 [Comparator 1 Lower Limit].
38	Comparator 2	Valid signals are output when the monitored value set in F16.55 [Comparator 2 Item] is within the range of F16.56 [Comparator 2 Upper Limit] and F16.57 [Comparator 2 Lower Limit].
39	Comparator 3	Valid signals are output when the monitored value set in F16.60 [Comparator 3 Item] is within the range of F16.61 [Comparator 3 Upper Limit] and F16.62 [Comparator 3 Lower Limit].
40	Comparator 4	Valid signals are output when the monitored value set in F16.65 [Comparator 4 Item] is within the range of F16.66 [Comparator 4 Upper Limit] and F16.67 [Comparator 4 Lower Limit].
41	Motor 1 enable	Factory default is Motor 1 enabled. When F00.11 [Motor Parameters] is enabled, the active motor parameter group can be selected via d00.00. After selection, an active signal can be output through the terminal function.
42	Motor 2 enable	
43	Motor 3 enable	
44	Motor 4 enable	
45	PID output saturation	Output valid signals when the PID output is saturated.
46	PID negative characteristic	Output valid signals when PID negative action occurs.
47	Accelerating	Output valid signals during acceleration.
48	Decelerating	Output valid signals during deceleration.
49	Constant-frequency operating	Output valid signals during constant-speed operation.
50	FWD disable	Output valid signals when forward rotation is disabled.
51	REV disable	Output valid signals when reverse rotation is disabled.
52	DC braking	Output valid signals during DC braking.
53	External error terminal active	Output valid signals when an external fault signal is received.
54	Torque control active	Output valid signals when torque control is enabled.
55	Position control active	Output valid signals when position control is enabled.
56	Jogging	Output valid signals during jog operation.
57	Undervoltage suppression	Output valid signals during undervoltage suppression.
58	Overvoltage suppression	Output valid signals during overvoltage suppression.
59	Overcurrent suppression	Output valid signals during overcurrent suppression.

60	Speed limiting (No trip)	Output valid signals when the drive enters speed-limit mode per F10.8x~F10.9x.
61	Current limiting (No trip)	Output valid signals when the drive enters current-limit mode per F10.8x~F10.9x.
62	Power limiting (No trip)	Output valid signals when the drive enters power-limit mode per F10.8x~F10.9x.
B connector	Connector output	Output valid signals via the connector terminal; see Free Programming function.

Function of Terminal 30: Selecting the multi-function output for Modbus RS485 communication control, by writing values to BIT0-BIT1 in communication address 0x3018, to control the corresponding output terminal of the controller. The specific correspondence is as follows:

Address	Name
0x3018	Bit0: Corresponds to output terminal Y.
	Bit1: Corresponds to relay output 1 (TA1–TB1–TC1).
	Bit3: Corresponds to relay output 2 (TA2–TB2–TC2).

F06.1x:Terminal Delay

Code (Address)	Name	Description	Default (Range)	Property
F06.10 (0x060A)	Y ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal Y output from OFF to ON.	0.010s (0.000s~60.000s)	RUN
F06.11 (0x060B)	Y OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal Y output from ON to OFF.	0.010s (0.000s~60.000s)	RUN
F06.12 (0x060C)	RO 1 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for RO1 from OFF to ON.	0.010s (0.000s~60.000s)	RUN
F06.13 (0x060D)	RO 1 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for RO1 from ON to OFF.	0.010s (0.000s~60.000s)	RUN
F06.14 (0x060E)	RO 2 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for RO2 from OFF to ON.	0.010s (0.000s~60.000s)	RUN
F06.15 (0x060F)	RO 2 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for RO2 from ON to OFF.	0.010s (0.000s~60.000s)	RUN

F06.3x~F06.5x: vY Terminal

Code (Address)	Name	Description	Default (Range)	Property
F06.30 (0x061E)	vY1 Function	V/F SVC FVC PMV/F PMSVC PMFVC See the functions of terminal Y.	0 (0~63)	RUN
F06.31 (0x061F)	vY2 Function	V/F SVC FVC PMV/F PMSVC PMFVC See the functions of terminal Y.	0 (0~63)	RUN
F06.32 (0x0620)	vY3 Function	V/F SVC FVC PMV/F PMSVC PMFVC See the functions of terminal Y.	0 (0~63)	RUN
F06.33 (0x0621)	vY4 Function	V/F SVC FVC PMV/F PMSVC PMFVC See the functions of terminal Y.	0 (0~63)	RUN
F06.34 (0x0622)	vY5 Function	V/F SVC FVC PMV/F PMSVC PMFVC See the functions of terminal Y.	0 (0~63)	RUN
F06.35 (0x0623)	vY6 Function	V/F SVC FVC PMV/F PMSVC PMFVC See the functions of terminal Y.	0 (0~63)	RUN

F06.38 (0x0626)	vY1 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal vY1 from OFF to ON.	0.010s (0.000s~ 60.000s)	RUN
F06.39 (0x0627)	vY1 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal vY1 from ON to OFF.	0.010s (0.000s~ 60.000s)	RUN
F06.40 (0x0628)	vY2 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal vY2 from OFF to ON.	0.010s (0.000s~ 60.000s)	RUN
F06.41 (0x0629)	vY2 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal vY2 from ON to OFF.	0.010s (0.000s~ 60.000s)	RUN
F06.42 (0x062A)	vY3 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal vY3 from OFF to ON.	0.010s (0.000s~ 60.000s)	RUN
F06.43 (0x062B)	vY3 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal vY3 from ON to OFF.	0.010s (0.000s~ 60.000s)	RUN
F06.44 (0x062C)	vY4 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal vY4 from OFF to ON.	0.010s (0.000s~ 60.000s)	RUN
F06.45 (0x062D)	vY4 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal vY4 from ON to OFF.	0.010s (0.000s~ 60.000s)	RUN
F06.46 (0x062E)	vY5 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal vY5 from OFF to ON.	0.010s (0.000s~ 60.000s)	RUN
F06.47 (0x062F)	vY5 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal vY5 from ON to OFF.	0.010s (0.000s~ 60.000s)	RUN
F06.48 (0x0630)	vY6 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal vY6 from OFF to ON.	0.010s (0.000s~ 60.000s)	RUN
F06.49 (0x0631)	vY6 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal vY6 from ON to OFF.	0.010s (0.000s~ 60.000s)	RUN

13.10 F07: AI Terminal

F07.0x: Type

Code (Address)	Name	Description	Default (Range)	Property
F07.00 (0x0700)	AI1 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: Voltage 0.00V~10.00V 1: Current 0.00mA~20.00mA	0 (0~1)	RUN
F07.01 (0x0701)	AI2 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: Voltage -10.00V~10.00V 1: Current -20.00mA~20.00mA	0 (0~1)	RUN

F07.03 (0x0703)	AI Curve	V/F SVC FVC PMV/F PMSVC PMFVC 0: Line 1 (default) 1: Line 2 2: Curve 1 3: Curve 2 Ones-bit: AI1 Tens-bit: AI2 (Select voltage/current input via jumpers) Hundreds-bit: Reserved Thousands-bit: Reserved	0x0010 (0x0000~0x0033)	STOP

F07.1x: Line Setting

Code (Address)	Name	Description	Default (Range)	Property
F07.10 (0x070A)	Line 1 Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Define the signal received by the terminal. If the voltage signal is below this value, drive will process by this setting.	0.0% (-100.0%~100.0%)	RUN
F07.11 (0x070B)	Line 1 Lower Limit Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the line 1 lower limit.	0.00% (-100.00%~100.00%)	RUN
F07.12 (0x070C)	Line 1 Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Define the signal received by the terminal. If the voltage signal is above this value, drive will process by this setting.	100.0% (-100.0%~100.0%)	RUN
F07.13 (0x070D)	Line 1 Upper Limit Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the line 1 upper limit.	100.00% (-100.00%~100.00%)	RUN
F07.14 (0x070E)	Line 1 Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Define the size of the filter applied to the analog signal to remove interfering signals.	0.010s (0.000s~6.000s)	STOP
F07.15 (0x070F)	Line 2 Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Define the signal received by the terminal. If the voltage signal is below this value, drive will process by this setting.	0.0% (-100.0%~100.0%)	RUN
F07.16 (0x0710)	Line 2 Lower Limit Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the line 2 lower limit.	0.00% (-100.00%~100.00%)	RUN
F07.17 (0x0711)	Line 2 Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Define the signal received by the terminal. If the voltage signal is above this value, drive will process by this setting.	100.0% (-100.0%~100.0%)	RUN
F07.18 (0x0712)	Line 2 Upper Limit Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the line 2 upper limit.	100.00% (-100.00%~100.00%)	RUN
F07.19 (0x0713)	Line 2 Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Define the size of the filter applied to the analog signal to remove interfering signals.	0.010s (0.000s~6.000s)	RUN

F07.2x: Curve 1 Setting

Code (Address)	Name	Description	Default (Range)	Property
F07.20 (0x0714)	Curve 1 Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower limit for curve 1.	0.0% (-100.0%~100.0%)	RUN

F07.21 (0x0715)	Lower Limit Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the curve 1 lower limit.	0.00% (-100.00%~ 100.00%)	RUN
F07.22 (0x0716)	Inflection Point 1 Input Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the curve 1 inflection point 1 input voltage.	30.0% (-100.0%~ 100.0%)	RUN
F07.23 (0x0717)	Inflection Point 1 Voltage Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the curve 1 inflection point 1 input voltage.	30.00% (-100.00%~ 100.00%)	RUN
F07.24 (0x0718)	Inflection Point 2 Input Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the curve 1 inflection point 2 input voltage.	60.0% (-100.0%~ 100.0%)	RUN
F07.25 (0x0719)	Inflection Point 2 Voltage Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the curve 1 inflection point 2 input voltage.	60.00% (-100.00%~ 100.00%)	RUN
F07.26 (0x071A)	Curve 1 Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the upper limit for curve 1.	100.0% (-100.0%~ 100.0%)	RUN
F07.27 (0x071B)	Upper Limit Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the curve 1 upper limit.	100.00% (-100.00%~ 100.00%)	RUN

F07.3x: Curve 2 Setting

Code (Address)	Name	Description	Default (Range)	Property
F07.30 (0x071E)	Curve 2 Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower limit for curve 2.	0.0% (-100.0%~ 100.0%)	RUN
F07.31 (0x071F)	Lower Limit Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the curve 2 lower limit.	0.00% (-100.00%~ 100.00%)	RUN
F07.32 (0x0720)	Inflection Point 1 Input Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the curve 2 inflection point 1 input voltage.	30.0% (-100.0%~ 100.0%)	RUN
F07.33 (0x0721)	Inflection Point 1 Voltage Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the curve 2 inflection point 1 input voltage.	30.00% (-100.00%~ 100.00%)	RUN
F07.34 (0x0722)	Inflection Point 2 Input Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the curve 2 inflection point 2 input voltage.	60.0% (-100.0%~ 100.0%)	RUN
F07.35 (0x0723)	Inflection Point 2 Voltage Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the curve 2 inflection point 2 input voltage.	60.00% (-100.00%~ 100.00%)	RUN
F07.36 (0x0724)	Curve 2 Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the upper limit for curve 2.	100.0% (-100.0%~ 100.0%)	RUN
F07.37 (0x0725)	Upper Limit Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the curve 2 upper limit.	100.00% (-100.00%~ 100.00%)	RUN

F07.4x: AI as X Terminal

Code (Address)	Name	Description	Default (Range)	Property
F07.40 (0x0728)	AI as DI Logic	V/F SVC FVC PMV/F PMSVC PMFVC 0: Valid at low level 1: Valid at high level Ones-bit: AI1 Tens-bit: AI2 Hundreds-bit: Reserved Thousands-bit: Reserved	0x0000 (0x0000~0x0011)	STOP
F07.41 (0x0729)	AI1 Function (as X Terminal)	V/F SVC FVC PMV/F PMSVC PMFVC See the functions of terminal X.	0 (0~95)	STOP
F07.42 (0x072A)	AI1 High Level	V/F SVC FVC PMV/F PMSVC PMFVC Any value beyond this setting is considered as high level.	70.00% (0.00%~100.00%)	RUN
F07.43 (0x072B)	AI1 Low Level	V/F SVC FVC PMV/F PMSVC PMFVC Any value below this setting is considered as low level.	30.00% (0.00%~100.00%)	RUN
F07.44 (0x072C)	AI2 Function (as X Terminal)	V/F SVC FVC PMV/F PMSVC PMFVC See the functions of terminal X.	0 (0~95)	STOP
F07.45 (0x072D)	AI2 High Level	V/F SVC FVC PMV/F PMSVC PMFVC Any value beyond this setting is considered as high level.	70.00% (0.00%~100.00%)	RUN
F07.46 (0x072E)	AI2 Low Level	V/F SVC FVC PMV/F PMSVC PMFVC Any value below this setting is considered as low level.	30.00% (0.00%~100.00%)	RUN

F07.5x: AI Disconnection

Code (Address)	Name	Description	Default (Range)	Property
F07.50 (0x0732)	AI Disconnection Mode	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: AI1 0: OFF 1: Report alarm and free stop 2: Report alarm and continue operation Tens-bit: AI2 0: OFF 1: Report alarm and free stop 2: Report alarm and continue operation	0x0000 (0x0000~0x0022)	RUN
F07.51 (0x0733)	AI1 Disconnection Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the upper limit for AI1 disconnection detection.	100.0% (0.0%~100.0%)	STOP
F07.52 (0x0734)	AI1 Disconnection Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower limit for AI1 disconnection detection.	0.0% (0.0%~100.0%)	RUN
F07.53 (0x0735)	AI2 Disconnection Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the upper limit for AI2 disconnection detection.	100.0% (0.0%~100.0%)	RUN
F07.54 (0x0736)	AI2 Disconnection Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower limit for AI2 disconnection detection.	0.0% (0.0%~100.0%)	STOP
F07.55 (0x0737)	AI1 Detection Bias	V/F SVC FVC PMV/F PMSVC PMFVC Set the detection bias for AI1.	0.0% (0.0%~100.0%)	RUN

F07.56 (0x0738)	AI2 Detection Bias	V/F SVC FVC PMV/F PMSVC PMFVC Set the detection bias for AI2.	0.0% (0.0%~100.0%)	RUN
F07.57 (0x0739)	AI1 Disconnection Detection Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for AI1 disconnection detection.	0.1s (0.0s~60.0s)	RUN
F07.58 (0x073A)	AI2 Disconnection Detection Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for AI2 disconnection detection.	0.1s (0.0s~60.0s)	RUN

13.11 F08: AO Terminal

F08.0x: AO1

Code (Address)	Name	Description	Default (Range)	Property
F08.00 (0x0800)	AO1 Mode	V/F SVC FVC PMV/F PMSVC PMFVC 0: 0V~10V 1: 4.00mA~ 20.00mA 2: 0.00mA~20.00mA 3: FM pulse 4: Reserved	0 (0~4)	RUN
F08.01 (0x0801)	AO1 Content	V/F SVC FVC PMV/F PMSVC PMFVC 0: Target frequency 1: Output frequency 2: Output current 3: Input voltage 4: Output voltage 5: Mechanical speed 6: Target torque 7: Output torque 8: PID setting 9: PID feedback 10: Output power 11: Bus voltage 12: AI1 13: AI2 14: Reserved 15: PUL terminal input 16: Module temperature 1 17: Module temperature 2 18: RS485 19: vY1, 0 means OFF while 1 means ON Others: Connector	0 (0~65535)	RUN
F08.02 (0x0802)	AO1 Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the AO1 gain value.	100.0% (0.0%~300.0%)	RUN
F08.03 (0x0803)	AO1 Bias	V/F SVC FVC PMV/F PMSVC PMFVC Set the AO1 bias. Used to adjust the zero point of the terminal output.	0.0% (-10.0%~10.0%)	RUN
F08.04 (0x0804)	AO1 Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Define the size of the filter applied to the analog signal to remove interfering signals.	0.010s (0.000s~6.000s)	RUN
F08.05 (0x0805)	AO1 as FM Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set AO1 as the lower limit of the FM frequency.	0.20kHz (0.00kHz~100.00kHz)	RUN

F08.06 (0x0806)	AO1 as FM Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set AO1 as the upper limit of the FM frequency.	50.00kHz (0.00kHz~ 100.00kHz)	RUN

F08.1x: AO2

Code (Address)	Name	Description	Default (Range)	Property
F08.10 (0x080A)	AO2 Mode	V/F SVC FVC PMV/F PMSVC PMFVC 0: 0V~10V 1: 4.00mA~20.00mA 2: 0.00mA~20.00mA 3: FM pulse 4: Reserved	0 (0~4)	RUN
F08.11 (0x080B)	AO2 Content	V/F SVC FVC PMV/F PMSVC PMFVC 0: Target frequency 1: Output frequency 2: Output current 3: Input voltage 4: Output voltage 5: Mechanical speed 6: Target torque 7: Output torque 8: PID setting 9: PID feedback 10: Output power 11: Bus voltage 12: AI1 13: AI2 14: Reserved 15: PUL terminal input 16: Module temperature 1 17: Module temperature 2 18: RS485 19: vY1, 0 means OFF while 1 means ON Others: Connector	0 (0~65535)	RUN
F08.12 (0x080C)	AO2 Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the AO2 gain value.	100.0% (0.0%~ 300.0%)	RUN
F08.13 (0x080D)	AO2 Bias	V/F SVC FVC PMV/F PMSVC PMFVC Set the AO2 bias. Used to adjust the zero point of the terminal output.	0.0% (-10.0%~ 10.0%)	RUN
F08.14 (0x080E)	AO2 Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Define the size of the filter applied to the analog signal to remove interfering signals.	0.010s (0.000s~ 6.000s)	RUN
F08.15 (0x080F)	AO2 as FM Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set AO2 as the lower limit of the FM frequency.	0.20kHz (0.00kHz~ 100.00kHz)	RUN
F08.16 (0x0810)	AO2 as FM Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set AO2 as the upper limit of the FM frequency.	50.00kHz (0.00kHz~ 100.00kHz)	RUN

13.12 F09: Operation Control

F09.0x: Start Control

Code (Address)	Name	Description	Default (Range)	Property
F09.00 (0x0900)	Start Mode	V/F SVC FVC PMV/F PMSVC PMFVC 0: Start at starting frequency 1: Start from DC braking and then at starting frequency 2: Start from fly track and direction identification	0 (0~2)	STOP
F09.01 (0x0901)	Start Pre-Excitation Time	V/F SVC FVC PMV/F PMSVC PMFVC Only the asynchronous motor in vector control supports pre-excitation, which is not supported in other cases. When it is set to 0, pre-excitation is started as motor parameter. When it is not set to 0, pre-excitation is started at the set time.	0.00s (0.00s~ 60.00s)	STOP
F09.02 (0x0902)	Start Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Stay in standby status instead of starting when the given frequency is lower than this value.	0.00Hz (0.00Hz~Upper limit frequency)	STOP
F09.03 (0x0903)	Start Protection	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: ON Ones-bit: ON when terminals under abnormal exit Tens-bit: ON when jogging terminals under abnormal exit Hundreds-bit: ON when command source switched to terminals Thousands-bit: Reserved Note: The terminal starting protection is enabled by default when the free stop, emergency stop or forced stop command are valid.	0x0111 (0x0000~ 0x0111)	STOP
F09.05 (0x0905)	Motor Direction	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Reverse operation direction 0: Keep the direction 1: Invert the direction Tens-bit: Direction disable 0: FWD/REV allowed 1: Only FWD allowed 2: Only REV allowed Hundreds-bit: Frequency controlled direction 0: OFF 1: ON Thousands-bit: Reserved Note: This value will not be reset during initialization; and the ones-bit value will not be changed after parameter download	0x0000 (0x0000~ 0x0121)	STOP
F09.06 (0x0906)	Power-off Restart	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: ON	0 (0~2)	STOP
F09.07 (0x0907)	Power-off Restart Waiting Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the power-off restart waiting time.	0.50s (0.00s~ 60.00s)	STOP

F09.1x: Stop Control

Code (Address)	Name	Description	Default (Range)	Property
F09.10 (0x09A)	Stop Mode	V/F SVC FVC PMV/F PMSVC PMFVC 0: Deceleration stop 1: Free stop (All the stop commands are processed as free stop.) 2: Full-range DC brake 3: Free stop mode with delay	0 (0~3)	RUN
F09.11 (0x09B)	Stop Frequency	V/F SVC FVC PMV/F PMSVC PMFVC In deceleration stop mode, the drive will stop if the output frequency is lower than this value.	0.50Hz (0.00Hz~Upper limit frequency)	RUN
F09.12 (0x09C)	Stop-Restart Time Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the pause-restart time limit.	0.000s (0.000s~60.000s)	STOP
F09.15 (0x09F)	Under-Lower Limit Frequency Mode	V/F SVC FVC PMV/F PMSVC PMFVC 0: Run at frequency command 1: Free stop and pause, then start by F9.00 setting 2: Run at lower limit frequency 3: Run at zero frequency 4: Free stop and pause, then start from fly track 5: Pause and end fly track when given frequency below the lower limit frequency.	2 (0~5)	RUN
F09.16 (0x0910)	Zero Frequency Torque Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque current during zero-frequency operation, 100.0% of the rated motor current, and the upper limit of the zero-frequency current is the rated current of the drive.	60.0% (0.0%~150.0%)	RUN
F09.17 (0x0911)	Zero Frequency Torque Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the zero-frequency torque holding time.	0.0s (0.0s~6000.0s)	RUN
F09.18 (0x0912)	FWD/REV Deadtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the zero frequency holding time during FWD/REV shifting.	0.0s (0.0s~120.0s)	STOP

F09.2x: DC Braking

Code (Address)	Name	Description	Default (Range)	Property
F09.20 (0x0914)	Start DB Current	V/F SVC FVC PMV/F PMSVC PMFVC 100.0% of the rated motor current, the upper limit of the braking current is the rated current of the drive.	60.0% (0.0%~150.0%)	STOP
F09.21 (0x0915)	Start DB Hold Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the braking time before startup.	0.0s (0.0s~60.0s)	STOP
F09.22 (0x0916)	Stop DB Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the DC braking starting frequency.	1.00Hz (0.00Hz~50.00Hz)	STOP
F09.23 (0x0917)	DB Current	V/F SVC FVC PMV/F PMSVC PMFVC 100.0% of the rated motor current, the upper limit of the braking current is the rated current of the drive.	60.0% (0.0%~150.0%)	STOP
F09.24 (0x0918)	Stop DB Hold Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the DC braking time during stop.	0.0s (0.0s~60.0s)	STOP
F09.29 (0x091D)	PM SC Braking Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the short-circuit braking time for permanent magnet synchronous motors.	0.00s (0.00s~60.00s)	STOP

F09.3x: Jogging

Code (Address)	Name	Description	Default (Range)	Property
F09.30 (0x091E)	Jog Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the jogging frequency.	5.00Hz (0.00Hz~Max . frequency)	RUN
F09.31 (0x091F) RUN	Jog ACC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the jogging acceleration time.	10.00s (0.01s~650.00s)	RUN
F09.32 (0x0920) RUN	Jog DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the jogging deceleration time.	10.00s (0.01s~650.00s)	RUN
F09.33 (0x0921) RUN	Jog S-curve	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: ON	1 (0~1)	RUN
F09.34 (0x0922) RUN	Jog Stop Mode	V/F SVC FVC PMV/F PMSVC PMFVC 0: Same as the mode in F9.10 1: Deceleration stop only	0 (0~1)	RUN

F09.4x: Start/Stop Hold Frequency and Jump Frequency

Code (Address)	Name	Description	Default (Range)	Property
F09.40 (0x0728)	Start Hold Frequency	V/F SVC FVC PMV/F PMSVC PMFVC It is higher than the starting frequency and lower than the upper limit frequency set from the keypad.	0.50Hz (0.00Hz~Upper limit frequency)	STOP
F09.41 (0x0729)	Start Hold Frequency Time	V/F SVC FVC PMV/F PMSVC PMFVC The set value should be greater than the starting frequency, and if it is insufficient, start at starting frequency.	0.00s (0.00s~60.00s)	STOP
F09.42 (0x072A)	Stop Hold Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the holding frequency at stop.	0.50Hz (0.00Hz~Upper limit frequency)	STOP
F09.43 (0x072B)	Stop Hold Frequency Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the holding frequency during stop.	0.00s (0.00s~60.00s)	STOP
F09.44 (0x072C)	Jump Frequency 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the jump frequency 1.	0.00Hz (0.00Hz~P01.10)	RUN
F09.45 (0x072D)	Jump Frequency Range 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the jump frequency range.	0.00Hz (0.00Hz~P01.10)	RUN
F09.46 (0x072E)	Jump Frequency 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the jump frequency 2.	0.00Hz (0.00Hz~P01.10)	RUN
F09.47 (0x072F)	Jump Frequency Range 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the jump frequency range.	0.00Hz (0.00Hz~P01.10)	RUN

F09.5x: Fly Track

Code (Address)	Name	Description	Default (Range)	Property
F09.50 (0x0932)	Fly Track	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Search mode 0: Search from max. frequency 1: Search from stop frequency Tens-bit: Reverse search 0: OFF 1: ON Hundreds-bit: Reserved Thousands-bit: Reserved	0x0000 (0x0000~ 0x1111)	STOP
F09.51 (0x0933)	Fly Track Speed	V/F SVC FVC PMV/F PMSVC PMFVC Set the fly track speed.	0.50s (0.00s~ 60.00s)	STOP
F09.52 (0x0934)	Fly Track Stop Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the fly track stop delay.	1.00s (0.00s~ 60.00s)	STOP
F09.53 (0x0935)	Fly Track Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the fly track current.	120.0% (0.0%~ 400.0%)	STOP

13.13 F10: Protection Parameters

F10.0x: Current Protection

Code (Address)	Name	Description	Default (Range)	Property
F10.00 (0x0A00)	Anti-OC	V/F SVC FVC PMV/F PMSVC PMFVC Set the auto limit below the set overcurrent suppression point to prevent faults triggered by excessive current. 0: ON 1: ON during acceleration and deceleration and OFF during constant speed	0 (0~1)	RUN
F10.01 (0x0A01)	Anti-OC Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the load current limit level, 100% of the drive rated current.	160.0% (0.0%~ 300.0%)	RUN
F10.02 (0x0A02)	Anti-OC Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the response effect of anti-overcurrent function.	100.0% (0.0%~ 500.0%)	RUN
F10.03 (0x0A03)	Current Protection 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the current-related protection on/off. Ones-bit: CBC 0: OFF 1: ON Tens-bit: OC protection interference suppression 0: Normal 1: Level 1 2: Level 2 Hundreds-bit: Anti-interference for SC protection 0: Normal 1: Level 1 2: Level 2 Thousands-bit: SC, OC, OU, fault reset delay 0: OFF 1: ON	0x1001 (0x0000~ 0x1221)	STOP

F10.04 (0x0A04)	Current Protection 2	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Three-phase current sum protection 0: OFF 1: ON Tens-bit: Three-phase current imbalance protection 0: OFF 1: ON	0x0001 (0x0000~0x0011)	STOP
F10.05 (0x0A05)	Current Imbalance Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Compare the ratio of the largest to the smallest phase of the three-phase current with the set value here to see if it is current imbalance.	160% (0%~500%)	STOP
F10.06 (0x0A06)	Current Imbalance Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Increase this parameter under high current fluctuation.	2.0s (0.0s~60.0s)	STOP
F10.07 (0x0A07)	OS, SC Reset Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for OS, SC reset.	10.000s (0.000s~60.000s)	RUN
F10.08 (0x0A08)	Single-phase Overload Protection	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: ON	0 (0~1)	STOP

F10.1x: Voltage Protection

Code (Address)	Name	Description	Default (Range)	Property
F10.11 (0x0A0B)	Anti-OU	V/F SVC FVC PMV/F PMSVC PMFVC If the bus voltage is higher than the anti-overvoltage limit, acceleration and deceleration will be slowed down or canceled to prevent overvoltage faults. Ones-bit: Anti-OU 0: OFF 1: ON Tens-bit: Over-excitation 0: OFF 1: ON during deceleration 2: ON during operation	0x0011 (0x0000~0x0021)	STOP
F10.12 (0x0A0C)	Anti-OU Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the bus voltage value to trigger the anti-overvoltage function.	740V (0V~Overvolt age point) T3: 780V	STOP
F10.13 (0x0A0D)	Anti-OU Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the response effect of anti-overvoltage function.	100.0% (0.0%~500.0%)	RUN
F10.14 (0x0A0E)	Dynamic Brake	V/F SVC FVC PMV/F PMSVC PMFVC Set the dynamic brake on/off. 0: OFF 1: ON, with anti-overvoltage function off 2: ON, with anti-overvoltage function on	2 (0~2)	RUN
F10.15 (0x0A0F)	Dynamic Brake Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the dynamic brake voltage to work when the bus voltage is higher than this value.	735V (0V~Overvolt age point) T3: 780V	RUN
F10.16 (0x0A10)	Anti-LU	V/F SVC FVC PMV/F PMSVC PMFVC Auto-adjust the operation frequency when the bus voltage is lower than the anti-undervoltage point to prevent undervoltage fault. 0: OFF 1: ON	0 (0~1)	STOP

F10.17 (0x0A11)	Anti-LU Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the bus voltage value to trigger the anti-undervoltage function.	430V (0V~Overvoltage point) T3: 780V	STOP
F10.18 (0x0A12)	Anti-LU Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the response effect of anti-undervoltage function.	100.0% (0.0%~500.0%)	STOP
F10.19 (0x0A13)	Undervoltage Protection Level	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower limit voltage of the busbar voltage allowed, report undervoltage fault when below this value.	350V (0V~Overvoltage point) T3: 780V	STOP

F10.2x: Auxiliary Protection

Code (Address)	Name	Description	Default (Range)	Property
F10.20 (0x0A14)	I/O Phase Loss Protection	V/F SVC FVC PMV/F PMSVC PMFVC Set the I/O phase loss protection function on or off. Ones-bit: Output phase loss protection 0: OFF 1: ON Tens-bit: Input phase loss protection 0: OFF 1: ON Hundreds-bit: Reserved Thousands-bit: Reserved	0x0011 (0x0000~0x0011)	STOP
F10.21 (0x0A15)	Input Phase Loss Level	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage detection percentage for the input phase loss detection, 100% of the rated bus voltage.	10.0% (0.0%~30.0%)	STOP
F10.22 (0x0A16)	Ground SC Protection	V/F SVC FVC PMV/F PMSVC PMFVC Set the drive output and cooling fan to ground short circuit protection on/off. Ones-bit: Ground SC detection 0: OFF 1: Detect after power on 2: Detect before operation Tens-bit: Fan SC detection after power on 0: OFF 1: ON	0x0011 (0x0000~0x0012)	STOP
F10.23 (0x0A17)	Fan Mode	Set the drive cooling fan operation mode. 0: ON after power on 1: ON/OFF according to command 2: ON/OFF according to temperature	1 (0~2)	RUN
F10.24 (0x0A18)	Fan OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time from running command releasing to cooling fan stopping.	30.00s (0.00s~600.00s)	STOP
F10.25 (0x0A19)	Drive oH1 Warning Level	V/F SVC FVC PMV/F PMSVC PMFVC Set the value for overheating, report an alarm when it is above this value.	80.0°C (0.0°C~100.0°C)	RUN

F10.3x: Load Protection

Code (Address)	Name	Description	Default (Range)	Property
F10.31 (0x0A1F)	Load Type	V/F SVC FVC PMV/F PMSVC PMFVC Set the load type. 0: Torque 1: Current	0 (0~1)	STOP
F10.32 (0x0A20)	Load Alarm Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the drive load detection mode and the alarm mode at this time. Ones-bit: Load detection mode 1 0: Detection OFF 1: Detect overload 2: Detect overload only at constant speed 3: Detect underload 4: Detect underload at constant speed only Tens-bit: Reserved Hundreds-bit: Load detection mode 2 0: Detection OFF 1: Detect overload 2: Detect overload only at constant speed 3: Detect underload 4: Detect underload at constant speed only Thousands-bit: Reserved	0x0000 (0x0000~ 0x1414)	STOP
F10.33 (0x0A21)	Load Alarm Level 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the threshold for load alarm 1. For V/F control, 100% of the rated motor current. For vector control, 100% of the motor rated output torque.	130.0% (0.0%~ 200.0%)	STOP
F10.34 (0x0A22)	Load Alarm Time 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the detection duration of load alarm 1. If the load is higher than the load alarm threshold for the set time here, report load alarm 1.	5.0s (0.0s~60.0s)	STOP
F10.35 (0x0A23)	Load Alarm Level 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the threshold for load alarm 2. For V/F control, 100% of the rated motor current. For vector control, 100% of the motor rated output torque.	30.0% (0.0%~ 200.0%)	STOP
F10.36 (0x0A24)	Load Alarm Time 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the detection duration of load alarm 2. If the load is higher than the load alarm threshold for the set time here, report load alarm 2.	5.0s (0.0s~60.0s)	STOP
F10.37 (0x0A25)	Motor Detection Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor detection mode. 0: OFF 1: Report error when output phase loss is detected 2: Report alarm	0 (0~2)	STOP
F10.38 (0x0A26)	Motor Detection Interval	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor detection interval time.	1.0s (0.0s~60.0s)	STOP
F10.39 (0x0A27)	Motor Detection Current Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the threshold value for motor detection current.	15.0% (0.0%~ 100.0%)	STOP

F10.4x: Overspeed Protection

Code (Address)	Name	Description	Default (Range)	Property
F10.40 (0x0A28)	Excessive Speed Deviation Protection	V/F SVC FVC PMV/F PMSVC PMFVC Set the detection and alarm modes when the deviation between the motor's given speed and the feedback speed is too large. Ones-bit: Detection mode 0: OFF 1: Detect only at constant speed 2: ON	0x0000 (0x0000~0x0002)	STOP
F10.41 (0x0A29)	Excessive Speed Deviation Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the detection threshold for excessive speed deviation, 100% of F01.10 [Max. Frequency].	10.0% (0.0%~60.0%)	STOP
F10.42 (0x0A2A)	Excessive Speed Deviation Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the duration for detecting excessive speed deviation. If the deviation between the given speed and the feedback speed is greater than F10.41 and continues for this time, an excessive speed deviation alarm is reported.	2.0s (0.0s~60.0s)	STOP
F10.43 (0x0A2B)	Overspeed Protection	V/F SVC FVC PMV/F PMSVC PMFVC Set the detection and alarm modes for motor overspeed. Ones-bit: Detection mode 0: OFF 1: Detect only at constant speed 2: ON	0x0002 (0x0000~0x0002)	STOP
F10.44 (0x0A2C)	Overspeed Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the threshold of the overspeed detection, 100% of F01.10 [Max. Frequency].	110.0% (0.0%~150.0%)	STOP
F10.45 (0x0A2D)	Overspeed Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the duration of overspeed detection. If the feedback speed is higher than F10.44 and continues for this time, report the overspeed alarm.	0.100s (0.000s~2.000s)	STOP
F10.46 (0x0A2E)	STOEN E-Stop Reset	Set the STOEN emergency stop auto reset function on/off. 0: OFF 1: ON	0 (0~1)	STOP

F10.5x: Motor Overload

Code (Address)	Name	Description	Default (Range)	Property
F10.50 (0x0A32)	Motor Overload Model	V/F SVC FVC PMV/F PMSVC PMFVC 0: Common motor 1: Variable frequency motor (50Hz) 2: Variable frequency motor (60Hz) 3: Motor without fans	0 (0~3)	RUN
F10.51 (0x0A33)	Insulation Grade	V/F SVC FVC PMV/F PMSVC PMFVC 0: Grade A 1: Grade E 2: Grade B 3: Grade F 4: Grade H 5: Special grade S	3 (0~5)	STOP

F10.52 (0x0A34)	Work Mode	V/F SVC FVC PMV/F PMSVC PMFVC 0~1: S1 pattern (continuous operation) 2: S2 pattern 3~9: S3~S9 patterns	0 (0~9)	STOP
F10.53 (0x0A35)	Motor OL Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor overload threshold. Record the overload quantity when actual current is greater than the value here.	105.0% (0.0%~130.0%)	STOP
F10.54 (0x0A36)	Motor OL Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Motor overload current=actual current * motor overload coefficient.	100.0% (0.0%~250.0%)	STOP

F10.6x~F10.9x: Error Handling

Code (Address)	Name	Description	Default (Range)	Property
F10.60 (0x0A3C)	Stop Fault Reset	V/F SVC FVC PMV/F PMSVC PMFVC Set the stop fault reset function. 0: OFF 1: ON	0 (0~1)	STOP
F10.61 (0x0A3D)	Auto Reset No.	V/F SVC FVC PMV/F PMSVC PMFVC Set the number of times allowed to perform error auto reset. Note: 0 indicates that the error reset function is disabled; otherwise, it is enabled.	0 (0~10)	STOP
F10.62 (0x0A3E)	Error Reset Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the waiting time after an error occurs until reset.	1.0s (0.1s~100.0s)	STOP
F10.63 (0x0A3F)	Performed Error Reset No.	V/F SVC FVC PMV/F PMSVC PMFVC Indicate the times of already performed auto error reset, read-only.	0	READ
F10.64 (0x0A40)	Auto Error Reset Limit	V/F SVC FVC PMV/F PMSVC PMFVC No reset allowed if OC/SC/OL/OH errors occur 3 times within 5 minutes.	0 (0~1)	STOP
F10.65 (0x0A41)	Stop Fault Reset Interval	V/F SVC FVC PMV/F PMSVC PMFVC Set the interval time for stop fault reset.	0.1s (0.1s~100.0s)	STOP
F10.66 (0x0A42)	Auto Error Reset Attribution 1	V/F SVC FVC PMV/F PMSVC PMFVC Auto reset for errors 0~15 1: ON 2: OFF	0xFFFF (0x0000~0xFFFF)	RUN
F10.67 (0x0A43)	Auto Error Reset Attribution 2	V/F SVC FVC PMV/F PMSVC PMFVC Auto reset for errors 16~31 1: ON 2: OFF	0xFFFF (0x0000~0xFFFF)	RUN
F10.68 (0x0A44)	Auto Error Reset Attribution 3	V/F SVC FVC PMV/F PMSVC PMFVC Auto reset for errors 32~37 1: ON 2: OFF	0xFFFF (0x0000~0xFFFF)	RUN
F10.69 (0x0A45)	Auto Error Reset Attribution 4	V/F SVC FVC PMV/F PMSVC PMFVC Auto reset for errors 38~53 1: ON 2: OFF	0xFFFF (0x0000~0xFFFF)	RUN
F10.70 (0x0A46)	Auto Error Reset Attribution 5	V/F SVC FVC PMV/F PMSVC PMFVC Auto reset for errors 54~69 1: ON 2: OFF	0xFFFF (0x0000~0xFFFF)	RUN

F10.71 (0x0A47)	Auto Error Reset Attribution 6	V/F SVC FVC PMV/F PMSVC PMFVC Auto reset for errors 70~85 1: ON 2: OFF	0xFFFF (0x0000~ 0xFFFF)	RUN
F10.72 (0x0A48)	Auto Error Reset Attribution 7	V/F SVC FVC PMV/F PMSVC PMFVC Auto reset for errors 86~101 1: ON 2: OFF	0xFFFF (0x0000~ 0xFFFF)	RUN
F10.73 (0x0A49)	Auto Error Reset Attribution 8	V/F SVC FVC PMV/F PMSVC PMFVC Auto reset for errors 102~107 1: ON 2: OFF	0xFFFF (0x0000~ 0xFFFF)	RUN
F10.74 (0x0A4A)	Error Record Attribution 1	V/F SVC FVC PMV/F PMSVC PMFVC Record errors 0~15. 1: ON 0: OFF	0xFFFF (0x0000~ 0xFFFF)	RUN
F10.75 (0x0A4B) RUN	Error Record Attribution 2	V/F SVC FVC PMV/F PMSVC PMFVC Record errors 16~31. 1: ON 0: OFF	0xFFFF (0x0000~ 0xFFFF)	RUN
F10.76 (0x0A4C)	Error Record Attribution 3	V/F SVC FVC PMV/F PMSVC PMFVC Record errors 32~37. 1: ON 0: OFF	0xFFFF (0x0000~ 0xFFFF)	RUN
F10.77 (0x0A4D)	Error Record Attribution 4	V/F SVC FVC PMV/F PMSVC PMFVC Record errors 38~53. 1: ON 0: OFF	0xFFFF (0x0000~ 0xFFFF)	RUN
F10.78 (0x0A4E)	Error Record Attribution 5	V/F SVC FVC PMV/F PMSVC PMFVC Record errors 54~69. 1: ON 0: OFF	0xFFFF (0x0000~ 0xFFFF)	RUN
F10.79 (0x0A4F)	Error Record Attribution 6	V/F SVC FVC PMV/F PMSVC PMFVC Record errors 70~85. 1: ON 0: OFF	0xFFFF (0x0000~ 0xFFFF)	RUN
F10.80 (0x0A50)	Error Record Attribution 7	V/F SVC FVC PMV/F PMSVC PMFVC Record errors 86~101. 1: ON 0: OFF	0xFFFF (0x0000~ 0xFFFF)	RUN
F10.81 (0x0A51)	Error Record Attribution 8	V/F SVC FVC PMV/F PMSVC PMFVC Record errors 102~107. 1: ON 0: OFF	0xFFFF (0x0000~ 0xFFFF)	RUN
F10.82 (0x0A52)	Error Level 1	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Motor overload Tens-bit: Input phase loss Hundreds-bit: Three-phase output phase loss Thousands-bit: U-phase output loss 0: Coasting stop 1: F09.10 2: Operation at limited frequency 3: Operation at limited current 4: Operation at limited power	0x0000 (0x0000~ 0x4444)	RUN

F10.83 (0x0A53)	Error Level 2	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: V-phase output loss Tens-bit: W-phase output loss Hundreds-bit: Motor overheat Thousands-bit: External error 0: Coasting stop 1: F09.10 2: Operation at limited frequency 3: Operation at limited current 4: Operation at limited power	0x0000 (0x0000~ 0x4444)	RUN
F10.84 (0x0A54)	Error Level 3	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Communication break Tens-bit: PID break Hundreds-bit: Parameter copy error Thousands-bit: PG parameter error 0: Coasting stop 1: F09.10 2: Operation at limited frequency 3: Operation at limited current 4: Operation at limited power 5: Report alarm 6: Ignore	0x0566 (0x0000~ 0x6566)	RUN
F10.85 (0x0A55)	Error Level 4	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Excessive speed deviation Tens-bit: Overspeed protection Hundreds-bit: Load protection 1 Thousands-bit: Load protection 2 0: Coasting stop 1: F09.10 2: Operation at limited frequency 3: Operation at limited current 4: Operation at limited power 5: Report alarm 6: Ignore	0x6600 (0x0000~ 0x6644)	RUN
F10.86 (0x0A56)	Error Level 5	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Comparator error 1 Tens-bit: Comparator error 2 Hundreds-bit: Comparator error 3 Thousands-bit: Comparator error 4 0: Coasting stop 1: F09.10 2: Operation at limited frequency 3: Operation at limited current 4: Operation at limited power 5: Report alarm 6: Ignore	0x6666 (0x0000~ 0x6666)	RUN
F10.87 (0x0A57)	Error Level 6	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Overheat error 1 Tens-bit: Overheat error 2 Hundreds-bit: Temp sensor 1 break Thousands-bit: Temp sensor 2 break 0: Coasting stop 1: F09.10 2: Operation at limited frequency 3: Operation at limited current 4: Operation at limited power 5: Report alarm 6: Ignore	0x0000 (0x0000~ 0x6600)	RUN

F10.89 (0x0A59)	Extension Disconnection Mode	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Extension 1 communication lost Tens-bit: Extension 2 communication lost Hundreds-bit: Extension 3 communication lost Thousands-bit: Reserved 0: Coasting stop 1: F09.10 2: Operation at limited frequency 3: Operation at limited current 4: Operation at limited power 5: Report alarm 6: Ignore	0x6666 (0x0000~ 0x6666)	RUN
F10.90 (0x0A5A)	Bus Communication Break Mode	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Extension 2 bus communication with PLC lost Tens-bit: Extension 3 bus communication with PLC lost Hundreds-bit: Extension 2 bus external non-OP operation Thousands-bit: Extension 3 bus external non-OP operation 0: Coasting stop 1: F09.10 2: Operation at limited frequency 3: Operation at limited current 4: Operation at limited power 5: Report alarm 6: Ignore	0x0066 (0x0000~ 0x6666)	RUN
F10.95 (0x0A5F)	Error Limited-Frequency Operation Mode	V/F SVC FVC PMV/F PMSVC PMFVC 0: Operation at current frequency 1: Operation at set frequency 2: Operation at upper limit frequency 3: Operation at lower limit frequency 4: Operation at error frequency	0 (0~4)	RUN
F10.96 (0x0A60)	Error Frequency Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency used for error limited-frequency operation.	30.00Hz (0.00Hz~ 50.00Hz)	RUN
F10.97 (0x0A61)	Error Current Limit Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the current limit range used during error handling.	80.0% (30.0%~ 190.0%)	RUN

13.14 F11: Keypad Operation

F11.0x: Key Operation

Code (Address)	Name	Description	Default (Range)	Property
F11.00 (0x0B00)	Key Lock	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Lock parameters modified via keypad 2: Lock functional parameters and non-start/stop key 3: Lock all the functional parameters and keys	0 (0~3)	RUN
F11.01 (0x0B01)	Key Lock Password	V/F SVC FVC PMV/F PMSVC PMFVC Use with key lock. Please remember the password after setting; otherwise, it will not be operated if locked.	0 (0~65535)	RUN

F11.02 (0x0B02)	Multi-function Key	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: REV 2: FWD jogging 3: REV jogging 4: Switch command source between keypad and terminal 5: Switch command source between keypad and communication 6: Switch command source between terminal and communication 7: Switch command source among keypad, terminal and communication cyclically	0 (0~7)	STOP
F11.03 (0x0B03)	STOP Key	V/F SVC FVC PMV/F PMSVC PMFVC 0: Non-keypad control invalid 1: Non-keypad stop works according to F07.10 2: Non-keypad stop works according to the free stop mode	0 (0~2)	STOP
F11.04 (0x0B04)	UP/DW (Knob) Key Function	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: UP/DW key for modification 0: OFF 1: ON to modify F01.09 [Frequency Setting] 2: ON to modify F13.01 [PID Setting/Feedback] 3: ON to modify function code of F11.05. Tens-bit: Power-down save 0: OFF 1: ON Hundreds-bit: Modification condition 0: Modifiable during operation and stop 1: Modifiable during operation, kept during stop 2: Adjustable during operation, clear after stop Thousands-bit: Reserved	0x0011 (0x0000~0x0213)	STOP
F11.05 (0x0B05)	UP/DW Key for Funcode Modification	V/F SVC FVC PMV/F PMSVC PMFVC Ones- and tens-bit: Set 00~99 to yy in parameter Fxx.yy Hundreds- and thousands-bit: Set 00~29 to xx in parameter Fxx.yy Valid when the ones-bit of F11.04 is 3; for example, when F11.05=xyyy, the UP/DW key on the keypad can quickly modify the setting value of [Fxx.yy].	0x0109 (0x0000~0x1599)	RUN

F11.1x: Status Interface Cyclic Monitoring

Code (Address)	Name	Description	Default (Range)	Property
F11.10 (0x0B0A)	L/R Shift Key	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Left shift key to adjust the first row of monitoring 0: OFF 1: ON Tens-bit: Right shift key to adjust the second row of monitoring 0: OFF 1: ON When the left/right shift key is OFF, the monitor displays parameter 1 after re-powering up.	0x0011 (0x0000~0x0011)	STOP

F11.11 (0x0B0B)	Parameter 1 for 1st Row Cyclic Display	V/F SVC FVC PMV/F PMSVC PMFVC Ones- and tens-bit: Set 00~63 to yy in monitor parameter Cxx.yy. Hundreds- and thousands-bit: Set 00~07 to xx in monitor parameter Cxx.yy.	0x0000 (0x0000~ 0x1599)	RUN
F11.12 (0x0B0C)	Parameter 2 for 1st Row Cyclic Display	V/F SVC FVC PMV/F PMSVC PMFVC Ones- and tens-bit: Set 00~63 to yy in monitor parameter Cxx.yy. Hundreds- and thousands-bit: Set 00~07 to xx in monitor parameter Cxx.yy.	0x0001 (0x0000~ 0x1599)	RUN
F11.13 (0x0B0D)	Parameter 3 for 1st Row Cyclic Display	V/F SVC FVC PMV/F PMSVC PMFVC Ones- and tens-bit: Set 00~63 to yy in monitor parameter Cxx.yy. Hundreds- and thousands-bit: Set 00~07 to xx in monitor parameter Cxx.yy.	0x0002 (0x0000~ 0x1599)	RUN
F11.14 (0x0B0E)	Parameter 4 for 1st Row Cyclic Display	V/F SVC FVC PMV/F PMSVC PMFVC Ones- and tens-bit: Set 00~63 to yy in monitor parameter Cxx.yy. Hundreds- and thousands-bit: Set 00~07 to xx in monitor parameter Cxx.yy.	0x0011 (0x0000~ 0x1599)	RUN
F11.15 (0x0B0F)	Parameter 1 for 2nd Row Cyclic Display	V/F SVC FVC PMV/F PMSVC PMFVC Ones- and tens-bit: Set 00~63 to yy in monitor parameter Cxx.yy. Hundreds- and thousands-bit: Set 00~07 to xx in monitor parameter Cxx.yy.	0x0002 (0x0000~ 0x1599)	RUN
F11.16 (0x0B10)	Parameter 2 for 2nd Row Cyclic Display	V/F SVC FVC PMV/F PMSVC PMFVC Ones- and tens-bit: Set 00~63 to yy in monitor parameter Cxx.yy. Hundreds- and thousands-bit: Set 00~07 to xx in monitor parameter Cxx.yy.	0x0004 (0x0000~ 0x1599)	RUN
F11.17 (0x0B11)	Parameter 3 for 2nd Row Cyclic Display	V/F SVC FVC PMV/F PMSVC PMFVC Ones- and tens-bit: Set 00~63 to yy in monitor parameter Cxx.yy. Hundreds- and thousands-bit: Set 00~07 to xx in monitor parameter Cxx.yy.	0x0010 (0x0000~ 0x1599)	RUN
F11.18 (0x0B12)	Parameter 4 for 2nd Row Cyclic Display	V/F SVC FVC PMV/F PMSVC PMFVC Ones- and tens-bit: Set 00~63 to yy in monitor parameter Cxx.yy. Hundreds- and thousands-bit: Set 00~07 to xx in monitor parameter Cxx.yy.	0x0012 (0x0000~ 0x1599)	RUN
F11.19 (0x0B13)	Keypad Small Number Display	V/F SVC FVC PMV/F PMSVC PMFVC 0: Keypad address 1: Control board RJ45 address 2: Control board A+B- address 3: CAN card node address 4: DP card node address	0 (0~65535)	RUN

F11.2x: Monitoring Parameters

Code (Address)	Name	Description	Default (Range)	Property
F11.20 (0x0B14)	Keypad Display Item	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Output frequency display 0: Target frequency 1: Operating frequency 2~F: The larger the value, the deeper the filtering Tens-bit: Reserved Hundreds-bit: Power dimension 0: In percentage(%) 1: In kilowatt(kW) Thousands-bit: Reserved	0x0002 (0x0000~0x111F)	RUN
F11.21 (0x0B15)	Speed Display Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Adjust the display of C00.05 [Mechanical Speed].	100.0% (0.0%~500.0%)	RUN
F11.22 (0x0B16)	Power Display Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Adjust the display of C00.10 [Output Power].	100.0% (0.0%~500.0%)	RUN
F11.24 (0x0B18)	Monitoring Parameter Filter Display	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Output current display with filtering 0~F: The larger the value, the deeper the filtering Tens-bit: Reserved Hundreds-bit: Reserved Thousands-bit: Reserved	0x0002 (0x0000~0x000F)	RUN
F11.25 (0x0B19)	Motor Auto-tuning Display	V/F SVC FVC PMV/F PMSVC PMFVC 0: ON 1: OFF	0 (0~1)	STOP
F11.27 (0x0B1B)	Error Auto-Reset Display	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Display the error during error reset 0: OFF 1: ON	0x0001 (0x0000~0x0001)	RUN

F11.3x: Monitoring Parameters

Code (Address)	Name	Description	Default (Range)	Property
F11.30 (0x0B1E)	Keypad Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the keypad communication address.	1 (0~9)	STOP
F11.31 (0x0B1F)	Baud Rate	V/F SVC FVC PMV/F PMSVC PMFVC 0: 1200bps 1: 2400bps 2: 4800bps 3: 9600bps 4: 19200bps 5: 38400bps 6: 57600bps 7: 115200bps	7 (0~7)	RUN
F11.32 (0x0B20)	Keypad Multifunction Save	V/F SVC FVC PMV/F PMSVC PMFVC Set whether the keypad multifunction key settings are saved after power-off. 0: Not saved 1: Saved	0 (0~1)	STOP

13.15 F12: Communication Parameters

F12.0x: Modbus Slave

Code (Address)	Name	Description	Default (Range)	Property
F12.00 (0x0C00)	RS485 Master/Slave	V/F SVC FVC PMV/F PMSVC PMFVC 0: Slave 1: Master	0 (0~1)	STOP
F12.01 (0x0C01)	Modbus Address	V/F SVC FVC PMV/F PMSVC PMFVC Set different values for different slaves.	1 (1~247)	STOP
F12.02 (0x0C02)	Baud Rate	V/F SVC FVC PMV/F PMSVC PMFVC 0: 1200 bps 1: 2400 bps 2: 4800 bps 3: 9600 bps 4: 19200bps 5: 38400bps 6: 57600 bps 7: 115200 bps	3 (0~7)	STOP
F12.03 (0x0C03)	Modbus Data Format	V/F SVC FVC PMV/F PMSVC PMFVC 0: (N, 8, 1) no parity, data bit: 8, stop bit: 1 1: (E, 8, 1) even parity, data bit: 8, stop bit: 1 2: (O, 8, 1) odd parity, data bit: 8, stop bit: 1 3: (N, 8, 2) no parity, data bit: 8, stop bit: 2 4: (E, 8, 2) even parity, data bit: 8, stop bit: 2 5: (O, 8, 2) odd parity, data bit: 8, stop bit: 2	0 (0~5)	STOP
F12.04 (0x0C04)	Modbus Response	V/F SVC FVC PMV/F PMSVC PMFVC 0: Write operation valid 1: Write operation invalid	0 (0~1)	RUN
F12.05 (0x0C05)	Response Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the Modbus communication response delay.	0ms (0ms~ 5000ms)	RUN
F12.06 (0x0C06)	Communicati on Timeout	V/F SVC FVC PMV/F PMSVC PMFVC Set the Modbus communication error time.	1.0s (0.1s~ 100.0s)	RUN
F12.07 (0x0C07)	Communicati on Disconnection	V/F SVC FVC PMV/F PMSVC PMFVC 0: Detection off 1: Detect overload	0 (0~1)	RUN
F12.08 (0x0C08)	Data Bias (0x3000)	V/F SVC FVC PMV/F PMSVC PMFVC Set the bias to correct communication data on 0x3000.	0.00 (-100.00~ 100.00)	RUN
F12.09 (0x0C09)	Data Gain (0x3000)	V/F SVC FVC PMV/F PMSVC PMFVC Perform linear correction on address 0x3000 communication data.	100.0% (0.0%~ 500.0%)	RUN

F12.1x: Modbus Master

Code (Address)	Name	Description	Default (Range)	Property
F12.10 (0x0C0A)	Master Cycle Parameters	V/F SVC FVC PMV/F PMSVC PMFVC Ones-, tens-, hundreds-, and thousands-bit: 0: Invalid 1: Operation command 2: Target frequency 3: Output frequency 4: Upper limit frequency 5: Target torque 6: Output torque 7: Reserved 8: Reserved 9: PID setting A: PID feedback B: Reserved C: Active current component	0x0031 (0x0000~0xCCCC)	RUN
F12.11 (0x0C0B)	User-defined Frequency Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the address to give frequency, compatible with the upper computer (PLC) command.	0x0000 (0x0000~0xFFFF)	RUN
F12.12 (0x0C0C) RUN	User-defined Command Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the address to give command, compatible with the upper computer (PLC) command.	0x0000 (0x0000~0xFFFF)	RUN
F12.13 (0x0C0D)	FWD Command Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the address for forward running command value.	0x0001 (0x0000~0x00FF)	RUN
F12.14 (0x0C0E)	REV Command Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the address for reverse running command value.	0x0002 (0x0000~0x00FF)	RUN
F12.15 (0x0C0F)	Stop Command Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the address for stop command value.	0x0005 (0x0000~0x00FF)	RUN
F12.16 (0x0C10)	Reset Command Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the address for reset command value.	0x0007 (0x0000~0x00FF)	RUN
F12.19 (0x0C13)	Master Command	V/F SVC FVC PMV/F PMSVC PMFVC Set the master command. 0: Running command 1: Running status	0 (0~1)	RUN

F12.3x:Continuous Read/Write for Discontinuous Addresses

Code (Address)	Name	Description	Default (Range)	Property
F12.30 (0x0C1E)	IP Address 1	V/F SVC FVC PMV/F PMSVC PMFVC Users fill in the parameter address as needed.	0xFFFF (0x0000~0xFFFF)	RUN
F12.31 (0x0C1F)	IP Address 2	V/F SVC FVC PMV/F PMSVC PMFVC Users fill in the parameter address as needed.	0x0000 (0x0000~0xFFFF)	RUN
F12.32 (0x0C20)	IP Address 3	V/F SVC FVC PMV/F PMSVC PMFVC Users fill in the parameter address as needed.	0x0000 (0x0000~0xFFFF)	RUN
F12.33 (0x0C21)	IP Address 4	V/F SVC FVC PMV/F PMSVC PMFVC Users fill in the parameter address as needed.	0x0000 (0x0000~0xFFFF)	RUN

F12.34 (0x0C22)	IP Address 5	V/F SVC FVC PMV/F PMSVC PMFVC Users fill in the parameter address as needed.	0x0000 (0x0000~ 0xFFFF)	RUN
F12.35 (0x0C23)	IP Address 6	V/F SVC FVC PMV/F PMSVC PMFVC Users fill in the parameter address as needed.	0x0000 (0x0000~ 0xFFFF)	RUN
F12.36 (0x0C24)	IP Address 7	V/F SVC FVC PMV/F PMSVC PMFVC Users fill in the parameter address as needed.	0x0000 (0x0000~ 0xFFFF)	RUN
F12.37 (0x0C25)	IP Address 8	V/F SVC FVC PMV/F PMSVC PMFVC Users fill in the parameter address as needed.	0x0000 (0x0000~ 0xFFFF)	RUN
F12.38 (0x0C26)	IP Address 9	V/F SVC FVC PMV/F PMSVC PMFVC Users fill in the parameter address as needed.	0x0000 (0x0000~ 0xFFFF)	RUN
F12.39 (0x0C27)	IP Address 10	V/F SVC FVC PMV/F PMSVC PMFVC Users fill in the parameter address as needed.	0x0000 (0x0000~ 0xFFFF)	RUN

13.16 F13: PID Control

F13.00~F13.06: PID Setting and Feedback

Code (Address)	Name	Description	Default (Range)	Property
F13.00 (0x0D00)	PID Setting Source	V/F SVC FVC PMV/F PMSVC PMFVC 0: Keypad 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL 6: RS485 7: Extension (0x31 group) 8~9: Reserved 10~11: Reserved 12~13: Reserved 14: Terminals 15: Active current given via communication 16: AI1+AI2 17: AI1-AI2 18: MAX [AI1, AI2] 19: MIN [AI1, AI2] Others: Connector	0 (0~65535)	RUN
F13.01 (0x0D01)	PID Setting/Feed back	V/F SVC FVC PMV/F PMSVC PMFVC Set the PID setting/feedback via keypad.	50.0% (0.0%~ 100.0%)	RUN
F13.02 (0x0D02)	PID Setting Change Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the PID setting change time for 0% to 100% increase or 100% to 0% decrease.	1.00s (0.00s~ 60.00s)	RUN

F13.03 (0x0D03)	PID Feedback Source	V/F SVC FVC PMV/F PMSVC PMFVC 0: Keypad 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL 6: RS485 7: Extension (0x31 group) 8~9: Reserved 10~11: Reserved 12~13: Reserved 14: Terminals 15: Active current given via communication 16: AI1+AI2 17: AI1-AI2 18: MAX [AI1, AI2] 19: MIN [AI1, AI2] Others: Connector (detailed in Chapter 7)	2 (0~65535)	RUN
F13.04 (0x0D04)	Feedback Signal Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the feedback signal low-pass filter time.	0.010s (0.000s~ 6.000s)	RUN
F13.05 (0x0D05)	Feedback Signal Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the feedback signal gain.	1.00 (0.00~10.00)	RUN
F13.06 (0x0D06)	Feedback Signal Width	V/F SVC FVC PMV/F PMSVC PMFVC Set the feedback signal range.	100.0 (0.0~100.0)	RUN

F13.07~F13.24: PID Control

Code (Address)	Name	Description	Default (Range)	Property
F13.07 (0x0D07)	PID Characteristic	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Feedback characteristics 0: Positive 1: Negative Tens-bit: Reserved Hundreds-bit: Reserved Thousands-bit: Differential regulation 0: Differentiate the deviation 1: Differentiate the feedback	0x0100 (0x0000~ 0x1111)	RUN
F13.08 (0x0D08)	PID Preset Output	V/F SVC FVC PMV/F PMSVC PMFVC Set the PID preset output, 100% of the max. frequency output.	100.0% (0.0%~ 100.0%)	RUN
F13.09 (0x0D09)	PID Preset Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Upon PID activation, the output adheres to the preset value for a specified duration before shifting to closed-loop control.	0.0s (0.0s~ 6500.0s)	RUN
F13.10 (0x0D0A)	PID Deviation Limit	V/F SVC FVC PMV/F PMSVC PMFVC The max. allowable deviation of PID feedback from the PID setting; when feedback is within this range, PID control halts, maintaining constant output. This feature aids in balancing system output precision and stability.	0.0% (0.0%~ 100.0%)	RUN
F13.11 (0x0D0B) RUN	Proportional Gain P1	V/F SVC FVC PMV/F PMSVC PMFVC Set the strength of the PID controller; higher gain increases strength but may cause oscillation.	0.100 (0.000~ 4.000)	RUN
F13.12 (0x0D0C)	Integral Time I1	V/F SVC FVC PMV/F PMSVC PMFVC Set the strength of the integral action; shorter times increase strength. An integral time of 0 disables PID control.	1.0s (0.0s~ 600.0s)	RUN

F13.13 (0x0D0D)	Differential Time D1	V/F SVC FVC PMV/F PMSVC PMFVC Set the response to the rate of change in deviation or feedback, adjusting based on trends to suppress feedback changes.	0.000s (0.000s~6.000s)	RUN
F13.14 (0x0D0E)	Proportional Gain P2	V/F SVC FVC PMV/F PMSVC PMFVC Set the strength of the PID controller; higher gain increases strength but may cause oscillation.	0.100 (0.000~4.000)	RUN
F13.15 (0x0D0F)	Integral Time I2	V/F SVC FVC PMV/F PMSVC PMFVC Set the strength of the integral action; shorter times increase strength. An integral time of 0 disables PID control.	1.0s (0.0s~600.0s)	RUN
F13.16 (0x0D10)	Differential Time D2	V/F SVC FVC PMV/F PMSVC PMFVC Set the response to the rate of change in deviation or feedback, adjusting based on trends to suppress feedback changes.	0.000s (0.000s~6.000s)	RUN
F13.17 (0x0D11)	PID Shift Condition	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Shift via DI terminals 2: Shift according to deviation 3: Shift according to frequency	0 (0~3)	RUN
F13.18 (0x0D12)	Shift Deviation Low	V/F SVC FVC PMV/F PMSVC PMFVC Gain 1 parameter is used when the PID deviation is lower than this value.	20.0% (0.0%~100.0%)	RUN
F13.19 (0x0D13)	Shift Deviation High	V/F SVC FVC PMV/F PMSVC PMFVC Gain 2 parameter is used when the PID deviation is greater than this value.	80.0% (0.0%~100.0%)	RUN
F13.21 (0x0D15)	Differentiation Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the range of the PID differential output. The PID differential control is sensitive and can cause system oscillation, so it's typically limited to a small range.	5.0% (0.0%~100.0%)	RUN
F13.22 (0x0D16)	PID Output Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the max. value of PID output.	100.0% (0.0%~100.0%)	RUN
F13.23 (0x0D17)	PID Output Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the min. value of PID output.	0.0% (-100.0%~F13.22)	RUN
F13.24 (0x0D18)	PID Output Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC The PID output filter smooths the control signal, preventing abrupt changes that could degrade the closed-loop system's performance.	0.000s (0.000s~6.000s)	RUN

F13.25~F13.28: PID Feedback Disconnection

Code (Address)	Name	Description	Default (Range)	Property
F13.25 (0x0D19)	Feedback Disconnection Mode	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Detection ON	0 (0~1)	RUN
F13.26 (0x0D1A)	Feedback Disconnection Error Time	V/F SVC FVC PMV/F PMSVC PMFVC In drive operation, if the feedback signal exceeds the upper or lower disconnection alarm thresholds and continues for the specified delay, the sensor is considered disconnected.	1.0s (0.0s~120.0s)	RUN
F13.27 (0x0D1B)	Feedback Disconnection Error Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the upper limit for PID sensor disconnection detection. If the feedback signal exceeds this value and continues for F13.26, the sensor is considered disconnected.	100.0% (0.0%~100.0%)	RUN

F13.28 (0x0D1C)	Feedback Disconnection Error Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower limit for PID sensor disconnection detection. If the feedback signal is below this value and continues for F13.26, the sensor is considered disconnected.	0.0% (0.0%~ 100.0%)	RUN

F13.29~F13.38: Sleep

Code (Address)	Name	Description	Default (Range)	Property
F13.29 (0x0D1D)	Sleep	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: ON	0 (0~1)	RUN
F13.30 (0x0D1E)	Sleep Frequency	V/F SVC FVC PMV/F PMSVC PMFVC When the sleep function is valid, if the PID output frequency drops below the sleep frequency, the system initiates sleep judgment.	10.00Hz (0.00Hz~ P01.10)	RUN
F13.31 (0x0D1F)	Sleep Delay	V/F SVC FVC PMV/F PMSVC PMFVC Upon sleep judgment, the system enters sleep mode after a delay (i.e., reducing speed to zero frequency and blocking output).	60.0s (0.0s~ 3600.0s)	RUN
F13.32 (0x0D20)	Wakeup Deviation	V/F SVC FVC PMV/F PMSVC PMFVC When PID feedback is positive: If the PID setting minus the wake deviation is continuously greater than the PID feedback, the system exits sleep mode and enters normal operation after the wake delay. When PID feedback is negative: If the PID setting plus the wake deviation is continuously greater than the PID feedback, the system exits sleep mode and enters normal operation after the wake delay.	5.0% (0.0%~ 50.0%)	RUN
F13.33 (0x0D21)	Wakeup Delay	V/F SVC FVC PMV/F PMSVC PMFVC Once wake conditions are met, the system exits sleep mode and enters normal operation after the wake delay.	1.0s (0.0s~60.0s)	RUN
F13.34 (0x0D22)	PID Disable	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: ON	0 (0~1)	RUN
F13.35 (0x0D23)	Wakeup Mode	V/F SVC FVC PMV/F PMSVC PMFVC 0: Deviation wake 1: Frequency wake 2: Deviation or frequency wake	0 (0~2)	RUN
F13.36 (0x0D24)	Wakeup Frequency	V/F SVC FVC PMV/F PMSVC PMFVC When the frequency wake is valid, if the PID output frequency exceeds the wake frequency, the system enters wake judgment.	20.00Hz (0.00Hz~ P01.10)	RUN
F13.37 (0x0D25)	Shift Frequency Low	V/F SVC FVC PMV/F PMSVC PMFVC When F13.17=3, signifying frequency-based PID shift, the PID parameters are set to Group 1 if the output frequency falls below the low frequency threshold.	0.00Hz (0.00Hz~ P01.10)	RUN
F13.38 (0x0D26)	Shift Frequency High	V/F SVC FVC PMV/F PMSVC PMFVC When F13.17=3, signifying frequency-based PID shift, the PID parameters are set to Group 2 if the output frequency exceeds the high frequency threshold.	0.00Hz (0.00Hz~ P01.10)	RUN

13.17 F14: Simulated PLC for Multi-frequency

F14.00~F14.14: Multi-frequency Control Parameters

Code (Address)	Name	Description	Default (Range)	Property
F14.00 (0x0E00)	PLC Multi-frequency 1	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 1st segment speed in PLC program and multi-frequency control.	10.00Hz (0.00Hz~ P01.10)	RUN
F14.01 (0x0E01)	PLC Multi-frequency 2	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 2nd segment speed in PLC program and multi-frequency control.	20.00Hz (0.00Hz~ P01.10)	RUN
F14.02 (0x0E02)	PLC Multi-frequency 3	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 3rd segment speed in PLC program and multi-frequency control.	30.00Hz (0.00Hz~ P01.10)	RUN
F14.03 (0x0E03)	PLC Multi-frequency 4	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 4th segment speed in PLC program and multi-frequency control.	40.00Hz (0.00Hz~Ma x. frequency)	RUN
F14.04 (0x0E04)	PLC Multi-frequency 5	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 5th segment speed in PLC program and multi-frequency control.	50.00Hz (0.00Hz~Ma x. frequency)	RUN
F14.05 (0x0E05)	PLC Multi-frequency 6	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 6th segment speed in PLC program and multi-frequency control.	40.00Hz (0.00Hz~ P01.10)	RUN
F14.06 (0x0E06)	PLC Multi-frequency 7	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 7th segment speed in PLC program and multi-frequency control.	30.00Hz (0.00Hz~ P01.10)	RUN
F14.07 (0x0E07)	PLC Multi-frequency 8	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 8th segment speed in PLC program and multi-frequency control.	20.00Hz (0.00Hz~ P01.10)	RUN
F14.08 (0x0E08)	PLC Multi-frequency 9	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 9th segment speed in PLC program and multi-frequency control.	10.00Hz (0.00Hz~ P01.10)	RUN
F14.09 (0x0E09)	PLC Multi-frequency 10	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 10th segment speed in PLC program and multi-frequency control.	20.00Hz (0.00Hz~ P01.10)	RUN
F14.10 (0x0E0A)	PLC Multi-frequency 11	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 11th segment speed in PLC program and multi-frequency control.	30.00Hz (0.00Hz~ P01.10)	RUN
F14.11 (0x0E0B)	PLC Multi-frequency 12	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 12th segment speed in PLC program and multi-frequency control.	40.00Hz (0.00Hz~ P01.10)	RUN
F14.12 (0x0E0C)	PLC Multi-frequency 13	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 13th segment speed in PLC program and multi-frequency control.	50.00Hz (0.00Hz~ P01.10)	RUN

F14.13 (0x0E0D)	PLC Multi-frequency 14	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 14th segment speed in PLC program and multi-frequency control.	40.00Hz (0.00Hz~ P01.10)	RUN
F14.14 (0x0E0E)	PLC Multi-frequency 15	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 15th segment speed in PLC program and multi-frequency control.	30.00Hz (0.00Hz~ P01.10)	RUN

F14.15: PLC Operation Mode

Code (Address)	Name	Description	Default (Range)	Property
F14.15 (0x0E0F)	PLC Operation Mode	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Cycle mode 0: Stop after single cycle 1: Cycle continuously 2: Hold final value after single cycle Tens-bit: Timing unit 0: Second (s) 1: Minute (min) 2: Hour (h) Hundreds-bit: Power-down save 0: OFF 1: ON Thousands-bit: Start mode 0: Restart from the first stage 1: Restart from the stage upon stop last time 2: Continue operation for the remaining of the stop stage	0x0000 (0x0000~ 0x2122)	RUN

F14.16~F14.30: PLC Runtime

Code (Address)	Name	Description	Default (Range)	Property
F14.16 (0x0E10)	Multi-frequency 1 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 1st segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h)~ 6500.0(s/m/h))	RUN
F14.17 (0x0E11)	Multi-frequency 2 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 2nd segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h)~ 6500.0(s/m/h))	RUN
F14.18 (0x0E12)	Multi-frequency 3 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 3rd segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h)~ 6500.0(s/m/h))	RUN
F14.19 (0x0E13)	Multi-frequency 4 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 4th segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h)~ 6500.0(s/m/h))	RUN
F14.20 (0x0E14)	Multi-frequency 5 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 5th segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h)~ 6500.0(s/m/h))	RUN
F14.21 (0x0E15)	Multi-frequency 6 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 6th segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h)~ 6500.0(s/m/h))	RUN
F14.22 (0x0E16)	Multi-frequency 7 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 7th segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h)~ 6500.0(s/m/h))	RUN

F14.23 (0x0E17)	Multi-frequency 8 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 8th segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h)~ 6500.0(s/m/h))	RUN
F14.24 (0x0E18)	Multi-frequency 9 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 9th segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h)~ 6500.0(s/m/h))	RUN
F14.25 (0x0E19)	Multi-frequency 10 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 10th segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h)~ 6500.0(s/m/h))	RUN
F14.26 (0x0E1A)	Multi-frequency 11 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 11th segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h)~ 6500.0(s/m/h))	RUN
F14.27 (0x0E1B)	Multi-frequency 12 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 12th segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h)~ 6500.0(s/m/h))	RUN
F14.28 (0x0E1C)	Multi-frequency 13 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 13th segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h)~ 6500.0(s/m/h))	RUN
F14.29 (0x0E1D)	Multi-frequency 14 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 14th segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h)~ 6500.0(s/m/h))	RUN
F14.30 (0x0E1E)	Multi-frequency 15 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 15th segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h)~ 6500.0(s/m/h))	RUN

F14.31~F14.45: Multi-frequency Direction and ACC/DEC Time

Code (Address)	Name	Description	Default (Range)	Property
F14.31 (0x0E1F)	Multi-frequency 1 Direction and ACC/DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Direction of the current stage (compared with operation command) 0: Same 1: Opposite Tens-bit: ACC/DEC time of the current stage 0: Time 1 1: Time 2 2: Time 3 3: Time 4 Hundreds-bit: Reserved Thousands-bit: Reserved	0x0000 (0x0000~ 0x0031)	RUN
F14.32 (0x0E20)	Multi-frequency 2 Direction and ACC/DEC Time	The same as F14.31.	0x0000 (0x0000~ 0x0031)	RUN
F14.33 (0x0E21)	Multi-frequency 3 Direction and ACC/DEC Time	The same as F14.31.	0x0000 (0x0000~ 0x0031)	RUN
F14.34 (0x0E22)	Multi-frequency 4 Direction and ACC/DEC Time	The same as F14.31.	0x0000 (0x0000~ 0x0031)	RUN
F14.35 (0x0E23)	Multi-frequency 5 Direction and ACC/DEC Time	The same as F14.31.	0x0000 (0x0000~ 0x0031)	RUN
F14.36 (0x0E24)	Multi-frequency 6 Direction and ACC/DEC Time	The same as F14.31.	0x0000 (0x0000~ 0x0031)	RUN
F14.37 (0x0E25)	Multi-frequency 7 Direction and ACC/DEC Time	The same as F14.31.	0x0000 (0x0000~ 0x0031)	RUN

F14.38 (0x0E26)	Multi-frequency 8 Direction and ACC/DEC Time	The same as F14.31.	0x0000 (0x0000~ 0x0031)	RUN
F14.39 (0x0E27)	Multi-frequency 9 Direction and ACC/DEC Time	The same as F14.31.	0x0000 (0x0000~ 0x0031)	RUN
F14.40 (0x0E28)	Multi-frequency 10 Direction and ACC/DEC Time	The same as F14.31.	0x0000 (0x0000~ 0x0031)	RUN
F14.41 (0x0E29)	Multi-frequency 11 Direction and ACC/DEC Time	The same as F14.31.	0x0000 (0x0000~ 0x0031)	RUN
F14.42 (0x0E2A)	Multi-frequency 12 Direction and ACC/DEC Time	The same as F14.31.	0x0000 (0x0000~ 0x0031)	RUN
F14.43 (0x0E2B)	Multi-frequency 13 Direction and ACC/DEC Time	The same as F14.31.	0x0000 (0x0000~ 0x0031)	RUN
F14.44 (0x02C)	Multi-frequency 14 Direction and ACC/DEC Time	The same as F14.31.	0x0000 (0x0000~ 0x0031)	RUN
F14.45 (0x0E2D)	Multi-frequency 15 Direction and ACC/DEC Time	The same as F14.31.	0x0000 (0x0000~ 0x0031)	RUN

13.18 F15: Torque Control

F15.0x: Torque Setting

Code (Address)	Name	Description	Default (Range)	Property
F15.00 (0x0F00)	Torque Mode	V/F SVC FVC PMV/F PMSVC PMFVC 0: Torque limit under speed control 1: Speed limit under motor 1 torque control 2: Speed limit under motor 2 torque control 3: Speed limit under motor 3 torque control 4: Speed limit under motor 4 torque control	0 (0~4)	RUN
F15.01 (0x0F01)	Torque Reference Source A	V/F SVC FVC PMV/F PMSVC PMFVC 0: Keypad 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL 6: RS485 7: Extension (0x31 group) Others: Connector	0 (0~65535)	RUN

F15.02 (0x0F02)	Torque Reference Source B	V/F SVC FVC PMV/F PMSVC PMFVC 0: Keypad 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL 6: RS485 7: Extension (0x31 group) Others: Connector	0 (0~65535)	RUN
F15.03 (0x0F03)	Torque Source Combination	V/F SVC FVC PMV/F PMSVC PMFVC 0: Source A 1: Source B 2: Source A+Source B 3: Source A-Source B 4: MIN (A, B) 5: MAX (A, B)	0 (0~15)	RUN
F15.04 (0x0F04)	Torque Setting	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque command via keypad.	0.0% (0.0%~100.0%)	RUN
F15.05 (0x0F05)	Torque Input Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque input lower limit.	0.00% (0.00%~100.00%)	RUN
F15.06 (0x0F06)	Torque Input Lower Limit Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque lower limit percentage.	0.00% (-250.00%~300.00%)	RUN
F15.07 (0x0F07)	Torque Input Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque input upper limit.	100.00% (0.00%~100.00%)	RUN
F15.08 (0x0F08)	Torque Input Upper Limit Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque upper limit percentage.	100.00% (-250.00%~300.00%)	RUN
F15.09 (0x0F09)	Torque Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency range limited by torque when at low speed.	0.100s (0.000s~6.000s)	RUN

F15.1x~F15.2x: Torque Control

Code (Address)	Name	Description	Default (Range)	Property
F15.10 (0x0F0A)	Max. Torque	V/F SVC FVC PMV/F PMSVC PMFVC Set the maximum given torque.	150.0% (0.0%~250.0%)	RUN
F15.11 (0x0F0B)	Min. Torque	V/F SVC FVC PMV/F PMSVC PMFVC Set the minimum given torque.	0.0% (0.0%~250.0%)	RUN
F15.12 (0x0F0C)	FWD Speed Limit	V/F SVC FVC PMV/F PMSVC PMFVC 0: F15.14 1: Reserved 2: AI1× F15.14 3: AI2× F15.14 4: Reserved 5: PUL× F15.14 6: RS485× F15.14 7: Extension× F15.14 Others: Connector	0 (0~15)	RUN

F15.13 (0x0F0D)	REV Speed Limit	V/F SVC FVC PMV/F PMSVC PMFVC 0: F15.14 1: Reserved 2: AI1× F15.14 3: AI2× F15.14 4: Reserved 5: PUL× F15.14 6: RS485× F15.14 7: Extension× F15.14 Others: Connector	0 (0~15)	RUN
F15.14 (0x0F0E)	Max. FWD Speed Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque controlled maximum forward speed.	100.0% (0.0%~100.0%)	RUN
F15.15 (0x0F0F)	Max. REV Speed Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque controlled maximum reverse speed.	100.0% (0.0%~100.0%)	RUN
F15.16 (0x0F10)	Torque ACC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque acceleration time.	0.00 (0.00~650.00)	RUN
F15.17 (0x0F11)	Torque DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque deceleration time.	0.00 (0.00~650.00)	RUN
F15.20 (0x0F14)	Torque Gain Shift Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the given torque gain shift frequency.	2.00Hz (0.00Hz~P01.10)	RUN
F15.21 (0x0F15)	Torque Shift Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the given torque shift gain.	100.0% (0.0%~500.0%)	RUN

13.19 F16: Auxiliary Function 1

F16.0x:Counting and Timing

Code (Address)	Name	Description	Default (Range)	Property
F16.00 (0x1000)	Counter Source	V/F SVC FVC PMV/F PMSVC PMFVC 0: Common X terminal 1: PUL terminal 2: PG card	0 (0~5)	RUN
F16.01 (0x1001)	Counter Division	V/F SVC FVC PMV/F PMSVC PMFVC Set the counting division for input.	0 (0~6000)	RUN
F16.02 (0x1002)	Max. Counting	V/F SVC FVC PMV/F PMSVC PMFVC Set the max. value for the counting circuit.	1000 (0~65000)	RUN
F16.03 (0x1003)	Counter Target	V/F SVC FVC PMV/F PMSVC PMFVC Set the value for the counting circuit.	500 (0~65000)	RUN
F16.04 (0x1004)	Pulse/m	V/F SVC FVC PMV/F PMSVC PMFVC Set the counting value per meter.	10.0 (0.1~6553.5)	RUN
F16.05 (0x1005)	Set Length	V/F SVC FVC PMV/F PMSVC PMFVC Set the target length. One output is generated when the set length is reached; a terminal input resets the length.	1000m (0m~65535m)	RUN
F16.06 (0x1006)	Actual Length	V/F SVC FVC PMV/F PMSVC PMFVC This is not saved during power down by default, but can be changed on setting.	0m (0m~65535m)	RUN
F16.07 (0x1007)	Timer Unit	V/F SVC FVC PMV/F PMSVC PMFVC 0: Second (s) 1: Minute (min) 2: Hour (h)	0 (0~2)	RUN

F16.08 (0x1008)	Timer Target	V/F SVC FVC PMV/F PMSVC PMFVC Set the value for timing.	0 (0~65000)	RUN

F16.1x: Wobble Frequency

Code (Address)	Name	Description	Default (Range)	Property
F16.10 (0x100A)	Wobble Frequency	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: ON	0 (0~1)	STOP
F16.11 (0x100B)	Wobble Frequency Control	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Start method 0: Auto 1: Manual via terminal Tens-bit: Wobble frequency range 0: Center frequency-based 1: Max. frequency-based Hundreds-bit: Preset frequency enable 0: OFF 1: ON	0x0000 (0x0000~ 0x0111)	STOP
F16.12 (0x100C)	Preset Wobble Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the preset wobble frequency.	0.00Hz (0.00Hz~ P01.10)	STOP
F16.13 (0x100D)	Preset Wobble Frequency Wait Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the preset wobble frequency waiting time.	0.0s (0.0s~ 3600.0s)	STOP
F16.14 (0x100E)	Wobble Frequency Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the wobble frequency range.	10.0% (0.0%~ 50.0%)	STOP
F16.15 (0x100F)	Wobble Frequency Jump Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the wobble frequency jump range.	10.0Hz (0.0Hz~ 50.0Hz)	STOP
F16.16 (0x1010)	Triangle Wave Rise Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the rise time of the triangle waveform.	5.00s (0.01s~ 650.00s)	STOP
F16.17 (0x1011)	Triangle Wave Fall Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the fall time of the triangle waveform.	5.00s (0.01s~ 650.00s)	STOP

F16.4x: Frequency Detection

Code (Address)	Name	Description	Default (Range)	Property
F16.40 (0x1028)	Frequency Level 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency detection level 1.	2.00Hz (0.00Hz~Max . frequency)	RUN
F16.41 (0x1029)	Frequency Range 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency detection range 1.	1.00Hz (0.00Hz~Max . frequency)	RUN
F16.42 (0x102A)	Frequency Level 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency detection level 2.	2.00Hz (0.00Hz~Max . frequency)	RUN
F16.43 (0x102B)	Frequency Range 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency detection range 2.	1.00Hz (0.00Hz~Max . frequency)	RUN
F16.44 (0x102C)	Frequency Arrival	V/F SVC FVC PMV/F PMSVC PMFVC Set the detection arrival value of the given frequency.	2.00Hz (0.00Hz~ 50.00Hz)	RUN

F16.5x~F16.6x: Comparator

Code (Address)	Name	Description	Default (Range)	Property
F16.50 (0x1032)	Comparator 1 Item	V/F SVC FVC PMV/F PMSVC PMFVC Ones- and tens-bit: Set 00~99 to yy in monitor parameter Cxx.yy. Hundreds- and thousands-bit: Set 00~15 to xx in monitor parameter Cxx.yy.	0x0001 (0x0000~ 0x1599)	RUN
F16.51 (0x1033)	Comparator 1 Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 1 upper limit.	3000 (0~65535)	RUN
F16.52 (0x1034)	Comparator 1 Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 1 lower limit.	0 (0~65535)	RUN
F16.53 (0x1035)	Comparator 1 Bias	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 1 bias value.	0 (0~10000)	RUN
F16.55 (0x1037)	Comparator 2 Item	V/F SVC FVC PMV/F PMSVC PMFVC Ones- and tens-bit: Set 00~99 to yy in monitor parameter Cxx.yy. Hundreds- and thousands-bit: Set 00~15 to xx in monitor parameter Cxx.yy.	0x0002 (0x0000~ 0x1599)	RUN
F16.56 (0x1038)	Comparator 2 Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 2 upper limit.	30 (0~65535)	RUN
F16.57 (0x1039)	Comparator 2 Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 2 lower limit.	0 (0~65535)	RUN
F16.58 (0x103A)	Comparator 2 Bias	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 2 bias value.	0 (0~65535)	RUN
F16.60 (0x103C)	Comparator 3 Item	V/F SVC FVC PMV/F PMSVC PMFVC Ones- and tens-bit: Set 00~99 to yy in monitor parameter Cxx.yy. Hundreds- and thousands-bit: Set 00~15 to xx in monitor parameter Cxx.yy.	0x0001 (0x0000~ 0x1599)	RUN
F16.61 (0x103D)	Comparator 3 Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 3 upper limit.	3000 (0~65535)	RUN
F16.62 (0x103E)	Comparator 3 Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 3 lower limit.	0 (0~65535)	RUN
F16.63 (0x103F)	Comparator 3 Bias	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 3 bias value.	0 (0~10000)	RUN
F16.65 (0x1041)	Comparator 4 Item	V/F SVC FVC PMV/F PMSVC PMFVC Ones- and tens-bit: Set 00~99 to yy in monitor parameter Cxx.yy. Hundreds- and thousands-bit: Set 00~15 to xx in monitor parameter Cxx.yy.	0x0002 (0x0000~ 0x1599)	RUN
F16.66 (0x1042)	Comparator 4 Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 4 upper limit.	30 (0~65535)	RUN
F16.67 (0x1043)	Comparator 4 Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 4 lower limit.	0 (0~65535)	RUN
F16.68 (0x1044)	Comparator 4 Bias	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 4 bias value.	0 (0~65535)	RUN

13.20 F25: Factory Calibration

F25.00~F25.11: AI1 Correction

Set F07.00 for voltage or current input. Set F07.00 to "0" for voltage input and to "1" for current input.

Code (Address)	Name	Description	Default (Range)	Property
F25.00 (0x1900)	AI1 Measured Voltage 1	V/F SVC FVC PMV/F PMSVC PMFVC 1 st correction voltage, enter the measured value into this parameter.	0.516V (0.000V~3.000V)	RUN
F25.01 (0x1901)	AI1 Monitored Voltage 1	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 1 st correction voltage, enter the C05.60 value into this parameter.	0.500V (0.000V~3.000V)	RUN
F25.02 (0x1902)	AI1 Measured Voltage 2	V/F SVC FVC PMV/F PMSVC PMFVC 2 nd correction voltage, enter the measured value into this parameter.	5.165V (0.000V~7.000V)	RUN
F25.03 (0x1903)	AI1 Monitored Voltage 2	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 2 nd correction voltage, enter the C05.60 value into this parameter.	5.000V (0.000V~7.000V)	RUN
F25.04 (0x1904)	AI1 Measured Voltage 3	V/F SVC FVC PMV/F PMSVC PMFVC 3 rd correction voltage, enter the measured value into this parameter.	9.813V (0.000V~11.000V)	RUN
F25.05 (0x1905)	AI1 Monitored Voltage 3	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 3 rd correction voltage, enter the C05.60 value into this parameter.	9.500V (0.000V~11.000V)	RUN
F25.06 (0x1906)	AI1 Measured Current 1	V/F SVC FVC PMV/F PMSVC PMFVC 1 st correction current, enter the measured value into this parameter.	1.000mA (0.000mA~6.000mA)	RUN
F25.07 (0x1907)	AI1 Monitored Current 1	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 1 st correction current, enter the C05.60 value into this parameter.	1.015mA (0.000mA~6.000mA)	RUN
F25.08 (0x1908)	AI1 Measured Current 2	V/F SVC FVC PMV/F PMSVC PMFVC 2 nd correction current, enter the measured value into this parameter.	10.000mA (0.000mA~14.000mA)	RUN
F25.09 (0x1909)	AI1 Monitored Current 2	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 2 nd correction current, enter the C05.60 value into this parameter.	9.641mA (0.000mA~14.000mA)	RUN
F25.10 (0x190A)	AI1 Measured Current 3	V/F SVC FVC PMV/F PMSVC PMFVC 3 rd correction current, enter the measured value into this parameter.	19.000mA (0.000mA~21.000mA)	RUN
F25.11 (0x190B)	AI1 Monitored Current 3	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 3 rd correction current, enter the C05.60 value into this parameter.	18.271mA (0.000mA~21.000mA)	RUN

F25.12~F25.23: AI2 Correction

Set F07.00 for voltage or current input. Set F07.00 to "0" for voltage input and to "1" for current input.

Code (Address)	Name	Description	Default (Range)	Property
F25.12 (0x190C)	AI2 Measured Voltage 1	V/F SVC FVC PMV/F PMSVC PMFVC 1 st correction voltage, enter the measured value into this parameter.	0.000V (0.000V~3.000V)	RUN
F25.13 (0x190D)	AI2 Monitored Voltage 1	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 1 st correction voltage, enter the C05.61 value into this parameter.	1.409V (0.000V~3.000V)	RUN
F25.14 (0x190E)	AI2 Measured Voltage 2	V/F SVC FVC PMV/F PMSVC PMFVC 2 nd correction voltage, enter the measured value into this parameter.	5.000V (0.000V~7.000V)	RUN
F25.15 (0x190F)	AI2 Monitored Voltage 2	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 2 nd correction voltage, enter the C05.61 value into this parameter.	5.604V (0.000V~7.000V)	RUN

F25.16 (0x1910)	AI2 Measured Voltage 3	V/F SVC FVC PMV/F PMSVC PMFVC 3 rd correction voltage, enter the measured value into this parameter.	10.000V (0.000V~ 11.000V)	RUN
F25.17 (0x1911)	AI2 Monitored Voltage 3	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 3 rd correction voltage, enter the C05.61 value into this parameter.	9.816V (0.000V~ 11.000V)	RUN
F25.18 (0x1912)	AI2 Measured Current 1	V/F SVC FVC PMV/F PMSVC PMFVC 1 st correction current, enter the measured value into this parameter.	0.000mA (0.000mA~ 6.000mA)	RUN
F25.19 (0x1913)	AI2 Monitored Current 1	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 1 st correction current, enter the C05.61 value into this parameter.	2.818mA (0.000mA~ 6.000mA)	RUN
F25.20 (0x1914)	AI2 Measured Current 2	V/F SVC FVC PMV/F PMSVC PMFVC 2 nd correction current, enter the measured value into this parameter.	10.000mA (0.000mA~ 14.000mA)	RUN
F25.21 (0x1915)	AI2 Monitored Current 2	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 2 nd correction current, enter the C05.61 value into this parameter.	11.208mA (0.000mA~ 14.000mA)	RUN
F25.22 (0x1916)	AI2 Measured Current 3	V/F SVC FVC PMV/F PMSVC PMFVC 3 rd correction current, enter the measured value into this parameter.	20.000mA (0.000mA~ 21.000mA)	RUN
F25.23 (0x1917)	AI2 Monitored Current 3	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 3 rd correction current, enter the C05.61 value into this parameter.	19.633mA (0.000mA~ 21.000mA)	RUN

F25.24~F25.35: AO1 Correction

Set F08.00 for voltage or current input. Set F08.00 to "0" for voltage input and to "1" for current input.

Code (Address)	Name	Description	Default (Range)	Property
F25.24 (0x1918)	AO1 Set Voltage 1	V/F SVC FVC PMV/F PMSVC PMFVC 1 st correction voltage, enter the measured value into this parameter.	0.495V (0.000V~ 3.000V)	RUN
F25.25 (0x1919)	AO1 Measured Voltage 1	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 1 st correction voltage, enter the C05.62 value into this parameter.	0.500V (0.000V~ 3.000V)	RUN
F25.26 (0x191A)	AO1 Set Voltage 2	V/F SVC FVC PMV/F PMSVC PMFVC 2 nd correction voltage, enter the measured value into this parameter.	4.958V (0.000V~ 7.000V)	RUN
F25.27 (0x191B)	AO1 Measured Voltage 2	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 2 nd correction voltage, enter the C05.62 value into this parameter.	5.000V (0.000V~ 7.000V)	RUN
F25.28 (0x191C)	AO1 Set Voltage 3	V/F SVC FVC PMV/F PMSVC PMFVC 3 rd correction voltage, enter the measured value into this parameter.	9.421V (0.000V~ 11.000V)	RUN
F25.29 (0x191D)	AO1 Measured Voltage 3	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 3 rd correction voltage, enter the C05.62 value into this parameter.	9.500V (0.000V~ 11.000V)	RUN
F25.30 (0x191E)	AO1 Set Current 1	V/F SVC FVC PMV/F PMSVC PMFVC 1 st correction current, enter the measured value into this parameter.	0.511mA (0.000mA~ 6.000mA)	RUN
F25.31 (0x191F)	AO1 Measured Current 1	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 1 st correction current, enter the C05.62 value into this parameter.	0.500mA (0.000mA~ 6.000mA)	RUN
F25.32 (0x1920)	AO1 Set Current 2	V/F SVC FVC PMV/F PMSVC PMFVC 2 nd correction current, enter the measured value into this parameter.	5.011mA (0.000mA~ 14.000mA)	RUN

F25.33 (0x1921)	AO1 Measured Current 2	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 2 nd correction current, enter the C05.62 value into this parameter.	5.000mA (0.000mA~ 14.000mA)	RUN
F25.34 (0x1922)	AO1 Set Current 3	V/F SVC FVC PMV/F PMSVC PMFVC 3 rd correction current, enter the measured value into this parameter.	9.512mA (0.000mA~ 21.000mA)	RUN
F25.35 (0x1923)	AO1 Measured Current 3	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 3 rd correction current, enter the C05.62 value into this parameter.	9.500mA (0.000mA~ 21.000mA)	RUN

F25.36~F25.47: AO2 Correction

Set F08.00 for voltage or current input. Set F08.00 to "0" for voltage input and to "1" for current input.

Code (Address)	Name	Description	Default (Range)	Property
F25.36 (0x1924)	AO2 Set Voltage 1	V/F SVC FVC PMV/F PMSVC PMFVC 1 st correction voltage, enter the measured value into this parameter.	0.495V (0.000V~ 3.000V)	RUN
F25.37 (0x1925)	AO2 Measured Voltage 1	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 1 st correction voltage, enter the C05.63 value into this parameter.	0.500V (0.000V~ 3.000V)	RUN
F25.38 (0x1926)	AO2 Set Voltage 2	V/F SVC FVC PMV/F PMSVC PMFVC 2 nd correction voltage, enter the measured value into this parameter.	4.958V (0.000V~ 7.000V)	RUN
F25.39 (0x1927)	AO2 Measured Voltage 2	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 2 nd correction voltage, enter the C05.63 value into this parameter.	5.000V (0.000V~ 7.000V)	RUN
F25.40 (0x1928)	AO2 Set Voltage 3	V/F SVC FVC PMV/F PMSVC PMFVC 3 rd correction voltage, enter the measured value into this parameter.	9.421V (0.000V~ 11.000V)	RUN
F25.41 (0x1929)	AO2 Measured Voltage 3	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 3 rd correction voltage, enter the C05.63 value into this parameter.	9.500V (0.000V~ 11.000V)	RUN
F25.42 (0x192A)	AO2 Set Current 1	V/F SVC FVC PMV/F PMSVC PMFVC 1 st correction current, enter the measured value into this parameter.	0.511mA (0.000mA~ 6.000mA)	RUN
F25.43 (0x192B)	AO2 Measured Current 1	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 1 st correction current, enter the C05.63 value into this parameter.	0.500mA (0.000mA~ 6.000mA)	RUN
F25.44 (0x192C)	AO2 Set Current 2	V/F SVC FVC PMV/F PMSVC PMFVC 2 nd correction current, enter the measured value into this parameter.	5.011mA (0.000mA~ 14.000mA)	RUN
F25.45 (0x192D)	AO2 Measured Current 2	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 2 nd correction current, enter the C05.63 value into this parameter.	5.000mA (0.000mA~ 14.000mA)	RUN
F25.46 (0x192E)	AO2 Set Current 3	V/F SVC FVC PMV/F PMSVC PMFVC 3 rd correction current, enter the measured value into this parameter.	9.512mA (0.000mA~ 21.000mA)	RUN
F25.47 (0x192F)	AO2 Measured Current 3	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 3 rd correction current, enter the C05.63 value into this parameter.	9.500mA (0.000mA~ 21.000mA)	RUN

13.21 A00: Default Parameters

Code (Address)	Name	Description	Default (Range)	Property
A00.00 (0x4000)	Default Parameter Customization	V/F SVC FVC PMV/F PMSVC PMFVC Set the custom default parameter functions.	0 (0~1)	STOP

A00.01 (0x4001)	Funcode 1	V/F SVC FVC PMV/F PMSVC PMFVC Select the target function code (xx.yy); e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)	RUN
A00.02 (0x4002)	Default 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the default value for the selected function code.	0 (0~65535)	RUN
A00.03 (0x4003)	Funcode 2	V/F SVC FVC PMV/F PMSVC PMFVC Select the target function code (xx.yy); e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)	RUN
A00.04 (0x4004)	Default 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the default value for the selected function code.	0 (0~65535)	RUN
A00.05 (0x4005)	Funcode 3	V/F SVC FVC PMV/F PMSVC PMFVC Select the target function code (xx.yy); e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)	RUN
A00.06 (0x4006)	Default 3	V/F SVC FVC PMV/F PMSVC PMFVC Set the default value for the selected function code.	0 (0~65535)	RUN
A00.07 (0x4007)	Funcode 4	V/F SVC FVC PMV/F PMSVC PMFVC Select the target function code (xx.yy); e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)	RUN
A00.08 (0x4008)	Default 4	V/F SVC FVC PMV/F PMSVC PMFVC Set the default value for the selected function code.	0 (0~65535)	STOP
A00.09 (0x4009)	Funcode 5	V/F SVC FVC PMV/F PMSVC PMFVC Select the target function code (xx.yy); e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)	RUN
A00.10 (0x400A)	Default 5	V/F SVC FVC PMV/F PMSVC PMFVC Set the default value for the selected function code.	0 (0~65535)	STOP
A00.11 (0x400B)	Funcode 6	V/F SVC FVC PMV/F PMSVC PMFVC Select the target function code (xx.yy); e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)	STOP
A00.12 (0x400C)	Default 6	V/F SVC FVC PMV/F PMSVC PMFVC Set the default value for the selected function code.	0 (0~65535)	STOP
A00.13 (0x400D)	Funcode 7	V/F SVC FVC PMV/F PMSVC PMFVC Select the target function code (xx.yy); e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)	STOP
A00.14 (0x400E)	Default 7	V/F SVC FVC PMV/F PMSVC PMFVC Set the default value for the selected function code.	0 (0~65535)	STOP
A00.15 (0x400F)	Funcode 8	V/F SVC FVC PMV/F PMSVC PMFVC Select the target function code (xx.yy); e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)	STOP
A00.16 (0x4010)	Default 8	V/F SVC FVC PMV/F PMSVC PMFVC Set the default value for the selected function code.	0 (0~65535)	STOP
A00.17 (0x4011)	Funcode 9	V/F SVC FVC PMV/F PMSVC PMFVC Select the target function code (xx.yy); e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)	STOP
A00.18 (0x4012)	Default 9	V/F SVC FVC PMV/F PMSVC PMFVC Set the default value for the selected function code.	0 (0~65535)	STOP
A00.19 (0x4013)	Funcode 10	V/F SVC FVC PMV/F PMSVC PMFVC Select the target function code (xx.yy); e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)	STOP
A00.20 (0x4014)	Default 10	V/F SVC FVC PMV/F PMSVC PMFVC Set the default value for the selected function code.	0 (0~65535)	RUN

A00.21 (0x4015)	Funcode 11	V/F SVC FVC PMV/F PMSVC PMFVC Select the target function code (xx.yy); e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)	RUN
A00.22 (0x4016)	Default 11	V/F SVC FVC PMV/F PMSVC PMFVC Set the default value for the selected function code.	0 (0~65535)	RUN
A00.23 (0x4017)	Funcode 12	V/F SVC FVC PMV/F PMSVC PMFVC Select the target function code (xx.yy); e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)	RUN
A00.24 (0x4018)	Default 12	V/F SVC FVC PMV/F PMSVC PMFVC Set the default value for the selected function code.	0 (0~65535)	RUN
A00.25 (0x4019)	Funcode 13	V/F SVC FVC PMV/F PMSVC PMFVC Select the target function code (xx.yy); e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)	RUN
A00.26 (0x401A)	Default 13	V/F SVC FVC PMV/F PMSVC PMFVC Set the default value for the selected function code.	0 (0~65535)	RUN
A00.27 (0x401B)	Funcode 14	V/F SVC FVC PMV/F PMSVC PMFVC Select the target function code (xx.yy); e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)	RUN
A00.28 (0x401C)	Default 14	V/F SVC FVC PMV/F PMSVC PMFVC Set the default value for the selected function code.	0 (0~65535)	RUN
A00.29 (0x401D)	Funcode 15	V/F SVC FVC PMV/F PMSVC PMFVC Select the target function code (xx.yy); e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)	RUN
A00.30 (0x401E)	Default 15	V/F SVC FVC PMV/F PMSVC PMFVC Set the default value for the selected function code.	0 (0~65535)	STOP
A00.31 (0x401F)	Funcode 16	V/F SVC FVC PMV/F PMSVC PMFVC Select the target function code (xx.yy); e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)	STOP
A00.32 (0x4020)	Default 16	V/F SVC FVC PMV/F PMSVC PMFVC Set the default value for the selected function code.	0 (0~65535)	STOP
A00.33 (0x4021)	Funcode 17	V/F SVC FVC PMV/F PMSVC PMFVC Select the target function code (xx.yy); e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)	RUN
A00.34 (0x4022)	Default 17	V/F SVC FVC PMV/F PMSVC PMFVC Set the default value for the selected function code.	0 (0~65535)	RUN
A00.35 (0x4023)	Funcode 18	V/F SVC FVC PMV/F PMSVC PMFVC Select the target function code (xx.yy); e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)	STOP
A00.36 (0x4024)	Default 18	V/F SVC FVC PMV/F PMSVC PMFVC Set the default value for the selected function code.	0 (0~65535)	STOP
A00.37 (0x4025)	Funcode 19	V/F SVC FVC PMV/F PMSVC PMFVC Select the target function code (xx.yy); e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)	STOP
A00.38 (0x4026)	Default 19	V/F SVC FVC PMV/F PMSVC PMFVC Set the default value for the selected function code.	0 (0~65535)	RUN
A00.39 (0x4027)	Funcode 20	V/F SVC FVC PMV/F PMSVC PMFVC Select the target function code (xx.yy); e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)	RUN
A00.40 (0x4028)	Funcode 20	V/F SVC FVC PMV/F PMSVC PMFVC Set the default value for the selected function code.	0 (0~65535)	RUN

13.22 A01: Brake Control

A01.0x: Brake Logic

Code (Address)	Name	Description	Default (Range)	Property
A01.00 (0x4100)	Brake Control	V/F SVC FVC PMV/F PMSVC PMFVC Set the brake control mode. 0: OFF 1: Control mode 1 2: Control mode 2 (recommended for translation mechanisms)	0 (0~2)	STOP
A01.01 (0x4101)	General Brake Control	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Brake-release method 0: Frequency reached 1: Frequency and current reached at the same time Tens-bit: Release direction (downward only) 0: Release torque same as running direction 1: Release torque opposite to running direction Hundreds-bit: Brake direction (downward only) 0: Brake torque same as running direction 1: Brake torque opposite to running direction Thousands-bit: Zero-frequency jump after downward lifting 0: OFF 1: ON	0x0001 (0x0000~ 0x1112)	RUN
A01.02 (0x4102)	Reverse control of the operation command	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Reverse control of the operation command 0: OFF 1: ON Tens-bit: Zero-frequency jump 0: OFF 1: ON (requires ones-bit=1)	0x0010 (0x0000~ 0x1111)	RUN
A01.03 (0x4103)	Run Command Interval Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay between run commands.	0.30s (0.00s~ 1.00s)	RUN
A01.04 (0x4104)	Brake Release Current Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the current coefficient for brake release.	20.0% (0.0%~ 100.0%)	RUN
A01.05 (0x4105)	Zero-Frequen cy Jump Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency used for zero-crossing jump.	1.00Hz (0.00Hz~ 10.00Hz))	RUN
A01.06 (0x4106)	Forward Brake Release Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the forward-direction brake-release frequency.	2.00Hz (0.00Hz~ 10.00Hz))	RUN
A01.07 (0x4107)	Forward Braking Apply Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the forward-direction brake-engage frequency.	2.00Hz (0.00Hz~ 10.00Hz))	RUN
A01.08 (0x4108)	Reverse Brake Release Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the reverse-direction brake-release frequency.	2.00Hz (0.00Hz~ 10.00Hz))	STOP
A01.09 (0x4109)	Reverse Brake Apply Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the reverse-direction brake-engage frequency.	2.00Hz (0.00Hz~ 10.00Hz))	RUN

A01.1x: Brake Control Delay

Code (Address)	Name	Description	Default (Range)	Property
A01.10 (0x410A)	Pre-Delay of Forward Brake Release	V/F SVC FVC PMV/F PMSVC PMFVC Set the pre-delay before forward brake release.	0.20s (0.00s~1.00s)	STOP
A01.11 (0x410B)	Post-Delay of Forward Brake Release	V/F SVC FVC PMV/F PMSVC PMFVC Set the post-delay after forward brake release.	0.20s (0.00s~1.00s)	STOP
A01.12 (0x410C)	Pre-Delay of Forward Brake Apply	V/F SVC FVC PMV/F PMSVC PMFVC Set the pre-delay before forward brake engagement.	0.20s (0.00s~1.00s)	STOP
A01.13 (0x410D)	Post-Delay of Forward Brake Apply	V/F SVC FVC PMV/F PMSVC PMFVC Set the post-delay after forward brake engagement.	0.20s (0.00s~1.00s)	STOP
A01.14 (0x410E)	Pre-Delay of Reverse Brake Release	V/F SVC FVC PMV/F PMSVC PMFVC Set the pre-delay before reverse brake release.	0.20s (0.00s~1.00s)	STOP
A01.15 (0x410F)	Post-Delay of Reverse Brake Release	V/F SVC FVC PMV/F PMSVC PMFVC Set the post-delay after reverse brake release.	0.20s (0.00s~1.00s)	STOP
A01.16 (0x4110)	Pre-Delay of Reverse Brake Apply	V/F SVC FVC PMV/F PMSVC PMFVC Set the pre-delay before reverse brake engagement.	0.20s (0.00s~1.00s)	STOP
A01.17 (0x4111)	Post-Delay of Reverse Brake Applying	V/F SVC FVC PMV/F PMSVC PMFVC Set the post-delay after reverse brake engagement.	0.20s (0.00s~1.00s)	STOP

A01.2x: Multi-function

Code (Address)	Name	Description	Default (Range)	Property
A01.20 (0x4114)	Hoisting Multi-Function Settings	V/F SVC FVC PMV/F PMSVC PMFVC Tens-bit: Open-loop brake handling 0: When the target frequency is lower than the brake applying frequency, it is limited to the brake applying frequency and alarm A.172 1: When the target frequency is lower than the brake applying frequency, it is forced to apply brake Thousands-bit: Brake feedback 0: Not used 1: Release feedback only 2: Brake apply feedback only 3: Enable brake release feedback and brake apply feedback at the same time	0x0000 (0x0000~0x3111)	RUN
A01.21 (0x4115)	Brake Feedback Detection Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the detection delay for brake feedback.	0.30s (0.00s~5.000s)	RUN
A01.22 (0x4116)	Control Function Debug	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: DC braking timer on stop 0: OFF 1: ON Tens-bit: DC braking completion flag valid after brake-failure protection 0: OFF 1: ON Hundreds-bit: Pre-excitation and startup completion flags valid after brake-failure protection 0: OFF 1: ON	0x0111 (0x0000~0x1111)	RUN
A01.23 (0x4117)	Zero-Cross Jump ACC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the acceleration time for zero-cross frequency jump.	0.00s (0.00s~600.00s)	RUN
A01.24 (0x4118)	Zero-Cross Jump DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the deceleration time for zero-cross frequency jump.	0.00s (0.00s~600.00s)	RUN
A01.25 (0x4119)	Brake Mode during E-Stop	V/F SVC FVC PMV/F PMSVC PMFVC Set the brake control mode during emergency stop. 0: Use brake frequency 1: Direct brake engagement	0 (0~1)	RUN
A01.26 (0x411A)	Stop Command Lock Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the lock frequency for the stop command.	3.00Hz (0.00Hz~50.00Hz)	RUN

A01.3x: Brake Protection

Code (Address)	Name	Description	Default (Range)	Property
A01.30 (0x411E)	Abnormal Current Output Protection	V/F SVC FVC PMV/F PMSVC PMFVC Set the abnormal current output protection on/off. 0: OFF 1: ON	1 (0~1)	STOP

A01.31 (0x411F)	Abnormal Current Detection Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the detection threshold for abnormal output current.	5% (0%~50%)	STOP
A01.32 (0x4120)	Abnormal Current Detection Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the detection time for abnormal output current.	0.300s (0.000s~ 1.000s)	STOP
A01.34 (0x4122)	Brake Failure Protection	V/F SVC FVC PMV/F PMSVC PMFVC Set brake failure protection on/off. 0: OFF 1: ON	0 (0~1)	RUN
A01.35 (0x4123)	Brake Failure Protection Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the threshold for brake failure protection.	1.00Hz (0.00Hz~ 5.00Hz)	STOP
A01.36 (0x4124)	Brake Failure Protection Hold Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the hold time for brake failure protection.	60.0s (0.0s~ 3000.0s)	STOP
A01.37 (0x4125)	Brake Failure Protection Start Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the start filter time for brake failure protection.	0.100s (0.000s~ 2.000s)	STOP
A01.38 (0x4126)	Brake Failure Protection Upward Frequency Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the upward frequency limit for brake failure protection.	0.00Hz (0.00Hz~ 100.00Hz)	RUN
A01.39 (0x4127)	Brake Failure Protection Downward Frequency Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the downward frequency limit for brake failure protection.	50.00Hz (0.00Hz~ 100.00Hz)	RUN

A01.5x: Brake Debug

Code (Address)	Name	Description	Default (Range)	Property
A01.50 (0x4132)	Control Debug Parameter	V/F SVC FVC PMV/F PMSVC PMFVC Select the control debug parameter settings.	0xFFF9 (0x0000~ 0xFFFF)	STOP

A01.6x: Translation Mechanism Brake

Code (Address)	Name	Description	Default (Range)	Property
A01.60 (0x413C)	Translation Brake Control	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Low-frequency brake mode 0: Engage brake when command and output frequency < brake frequency; do not release 1: After low-frequency brake, release brake when command and output frequency > brake frequency Tens-bit: Stop command lock mode 0: Do not lock stop command 1: Lock mode 1 2: Lock mode 2	0x0010 (0x0000~ ~0x00FF)	STOP
A01.61 (0x413D)	Translation Brake Release Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for translation brake release.	0.60s (0.00s~ 2.00s)	STOP

A01.62 (0x413E)	Translation Brake Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the brake frequency for the translation mechanism.	0.50Hz (0.00Hz~ 10.00Hz)	STOP

13.23 d00: Motor Parameters

d00.0x: Motor Control

Code (Address)	Name	Description	Default (Range)	Property
d00.00 (0x6000)	Current Motor Parameter	V/F SVC FVC PMV/F PMSVC PMFVC 1: Motor group 1 2: Motor group 2 3: Motor group 3 4: Motor group 4	1 (1~4)	STOP
d00.01 (0x6001)	ACC/DEC Time Link	V/F SVC FVC PMV/F PMSVC PMFVC Set the acceleration/deceleration time link.	0 (0~1)	STOP
d00.02 (0x6002)	Motor 2 Control Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor control mode. 0: AM-V/F – Asynchronous motor V/F control 1: AM-SVC – Asynchronous motor open-loop vector control 2: AM-FVC – Asynchronous motor closed-loop vector control 10: PM-V/F – Synchronous motor V/F control 11: PM-SVC – Synchronous motor open-loop vector control 12: PM-FVC – Synchronous motor closed-loop vector control 20: Coil voltage-frequency / current-frequency decoupled control	0 (0~20)	STOP
d00.03 (0x6003)	Motor 3 Control Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor control mode. 0: AM-V/F – Asynchronous motor V/F control 1: AM-SVC – Asynchronous motor open-loop vector control 2: AM-FVC – Asynchronous motor closed-loop vector control 10: PM-V/F – Synchronous motor V/F control 11: PM-SVC – Synchronous motor open-loop vector control 12: PM-FVC – Synchronous motor closed-loop vector control 20: Coil voltage-frequency / current-frequency decoupled control	0 (0~20)	STOP
d00.04 (0x6004)	Motor 4 Control Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor control mode. 0: AM-V/F – Asynchronous motor V/F control 1: AM-SVC – Asynchronous motor open-loop vector control 2: AM-FVC – Asynchronous motor closed-loop vector control 10: PM-V/F – Synchronous motor V/F control 11: PM-SVC – Synchronous motor open-loop vector control 12: PM-FVC – Synchronous motor closed-loop vector control 20: Coil voltage-frequency / current-frequency decoupled control	0 (0~20)	STOP

d00.05 (0x6005)	Motor 1 Frequency Backup	V/F SVC FVC PMV/F PMSVC PMFVC Set the backup frequency for motor 1.	50.00Hz (0.00Hz~Upper limit frequency)	RUN
d00.06 (0x6006)	Motor 2 Frequency Backup	V/F SVC FVC PMV/F PMSVC PMFVC Set the backup frequency for motor 2.	50.00Hz (0.00Hz~Upper limit frequency)	RUN
d00.07 (0x6007)	Motor 3 Frequency Backup	V/F SVC FVC PMV/F PMSVC PMFVC Set the backup frequency for motor 3.	50.00Hz (0.00Hz~Upper limit frequency)	RUN
d00.08 (0x6008)	Motor 4 Frequency Backup	V/F SVC FVC PMV/F PMSVC PMFVC Set the backup frequency for motor 4.	50.00Hz (0.00Hz~Upper limit frequency)	RUN

13.24 d01: Motor 2 Parameters

d01.0x: Basic Parameters and Auto-tuning

Code (Address)	Name	Description	Default (Range)	Property
d01.00 (0x6100)	Motor Type	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor type. 0: Asynchronous motor (AM) 1: Permanent magnet synchronous motor (PM)	0 (0~1)	READ
d01.01 (0x6101)	Pole No.	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor pole number.	4 (2~98)	STOP
d01.02 (0x6102)	Rated Power	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated power of the motor.	Up to model (0.1kW~ 1000.0kW)	STOP
d01.03 (0x6103)	Rated Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated frequency of the motor.	Up to model (0.01Hz~Max. frequency)	STOP
d01.04 (0x6104)	Rated Speed	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated speed of the motor.	Up to model (0rpm~ 65000rpm)	STOP
d01.05 (0x6105)	Rated Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated voltage of the motor.	Up to model (0V~2000V)	STOP
d01.06 (0x6106)	Rated Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated current of the motor.	Up to model (0.1A~ 3000.0A)	STOP
d01.07 (0x6107)	Motor Auto-tuning	V/F SVC FVC PMV/F PMSVC PMFVC After the parameter auto-tuning is finished, [F02.07] will be set to "0" automatically. 0: None 1: Dynamic auto-tuning 2: Static auto-tuning 3: Stator resistance auto-tuning 9: PM inductance saturation coefficient auto-tuning 10: Non-linear auto-tuning	0 (0~10)	STOP
d01.08 (0x6108)	Auto-tuning Flag	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor auto-tuning flag.	0x0000 (0x0000~ 0xFFFF)	READ
d01.09 (0x6109)	Motor ID	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor ID.	0x0000 (0x0000~ 0xFFFF)	STOP

d01.1x: AM Parameters

Code (Address)	Name	Description	Default (Range)	Property
d01.10 (0x610A)	AM No-load Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the no-load current for asynchronous motors.	Up to model (0.1A~3000.0A)	STOP
d01.11 (0x610B)	AM Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator resistance for asynchronous motors.	Up to model (1mΩ~65535mΩ)	STOP
d01.12 (0x610C)	AM Rotor Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the rotor resistance for asynchronous motors.	Up to model (1mΩ~65535mΩ)	STOP
d01.13 (0x610D)	AM Stator Leakage Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator leakage inductance for asynchronous motors.	Up to model (1mH~6553.5mH)	STOP
d01.14 (0x610E)	AM Stator Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator inductance for asynchronous motors.	Up to model (1mH~65535mH)	STOP
d01.15 (0x610F)	Per-unit Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the stator resistance.	Up to model (0.01%~655.35%)	READ
d01.16 (0x6110)	Per-unit Rotor Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the rotor resistance.	Up to model (0.01%~655.35%)	READ
d01.17 (0x6111)	Per-unit Stator Leakage Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the stator leakage inductance.	Up to model (0.01%~655.35%)	READ
d01.18 (0x6112)	Per-unit Stator Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the stator inductance.	Up to model (0.1%~6553.5%)	READ
d01.19 (0x6113)	Parameter Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the parameter range.	0x0000 (0x0000~0xFFFF)	STOP

d01.2x: PM Parameters

Code (Address)	Name	Description	Default (Range)	Property
d01.20 (0x6114)	Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator resistance for permanent magnet synchronous motors.	Up to model (1mΩ~65535mΩ)	STOP
d01.21 (0x6115)	D-axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance for permanent magnet synchronous motors.	Up to model (1mH~65535mH)	STOP
d01.22 (0x6116)	Q-axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance for permanent magnet synchronous motors.	Up to model (1mH~65535mH)	STOP
d01.23 (0x6117)	Back Emf	V/F SVC FVC PMV/F PMSVC PMFVC Set the back emf for permanent magnet synchronous motors. Only recognized in dynamic auto-tuning.	Up to model (1V~1500V)	STOP
d01.24 (0x6118)	Encoder Installation Angle	V/F SVC FVC PMV/F PMSVC PMFVC Set the encoder installation angle for permanent magnet synchronous motors.	Up to model (0.0°~360.0°)	RUN
d01.25 (0x6119)	Per-unit Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit stator resistance for permanent magnet synchronous motors.	Up to model (0.01%~655.35%)	READ

d01.26 (0x611A)	Per-unit D-Axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit D-axis inductance for permanent magnet synchronous motors.	Up to model (0.01%~ 655.35%)	READ
d01.27 (0x611B)	Per-unit Q-Axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit Q-axis inductance for permanent magnet synchronous motors.	Up to model (0.01%~ 655.35%)	READ
d01.28 (0x611C)	Pulse Width Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the pulse width coefficient for permanent magnet synchronous motors.	Up to model (0.01~ 655.35)	STOP
d01.29 (0x611D)	Actual Value Unit	V/F SVC FVC PMV/F PMSVC PMFVC Select the unit for actual value.	Up to model (0x0000~ 0x3322)	STOP
d01.30 (0x611E)	Frequency Decimal Bit	V/F SVC FVC PMV/F PMSVC PMFVC Display the decimal bit of motor frequency.	0 (0~3)	STOP

d01.4x~d01.5x: PM D/Q-Axis Inductance Saturation Coefficient

Code (Address)	Name	Description	Default (Range)	Property
d01.40 (0x6128)	D-Axis Inductance Saturation Coefficient 0	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 0 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
d01.41 (0x6129)	D-Axis Inductance Saturation Coefficient 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 1 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
d01.42 (0x612A)	D-Axis Inductance Saturation Coefficient 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 2 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
d01.43 (0x612B)	D-Axis Inductance Saturation Coefficient 3	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 3 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
d01.44 (0x612C)	D-Axis Inductance Saturation Coefficient 4	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 4 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
d01.45 (0x612D)	D-Axis Inductance Saturation Coefficient 5	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 5 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
d01.46 (0x612E)	D-Axis Inductance Saturation Coefficient 6	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 6 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
d01.47 (0x612F)	D-Axis Inductance Saturation Coefficient 7	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 7 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
d01.48 (0x6130)	D-Axis Inductance Saturation Coefficient 8	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 8 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
d01.49 (0x6131)	D-Axis Inductance Saturation Coefficient 9	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 9 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN

d01.50 (0x6132)	Q-Axis Inductance Saturation Coefficient 0	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 0 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
d01.51 (0x6133)	Q-Axis Inductance Saturation Coefficient 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 1 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
d01.52 (0x6134)	Q-Axis Inductance Saturation Coefficient 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 2 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
d01.53 (0x6135)	Q-Axis Inductance Saturation Coefficient 3	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 3 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
d01.54 (0x6136)	Q-Axis Inductance Saturation Coefficient 4	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 4 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
d01.55 (0x6137)	Q-Axis Inductance Saturation Coefficient 5	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 5 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
d01.56 (0x6138)	Q-Axis Inductance Saturation Coefficient 6	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 6 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
d01.57 (0x6139)	Q-Axis Inductance Saturation Coefficient 7	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 7 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
d01.58 (0x613A)	Q-Axis Inductance Saturation Coefficient 8	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 8 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
d01.59 (0x613B)	Q-Axis Inductance Saturation Coefficient 9	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 9 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN

d01.6x~d01.7x: Tuning Extension

Code (Address)	Name	Description	Default (Range)	Property
d01.60 (0x613C)	Online Tuning	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Tuning mode 0: OFF 1: Tune only without update >1: Tune and update Thousands-bit: Stator resistance linear auto-tuning 0: OFF 1: ON	0x0000 (0x0000~0xFFFF)	STOP
d01.61 (0x613D)	Auto-tuning Flag	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator resistance tuning coefficient 1.	0x0000 (0x0000~0xFFFF)	RUN
d01.67 (0x6143)	V-phase Current Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the V-phase current gain.	1024 (1024~2048)	RUN

d01.68 (0x6144)	W-phase Current Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the W-phase current gain.	1024 (1024~2048)	RUN
d01.69 (0x6145)	Electric Angle Compensati on	V/F SVC FVC PMV/F PMSVC PMFVC Set the electric angle compensation.	0.0 (0.0~6553.5)	RUN
d01.70 (0x6146)	Deadtime Compensati on Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the dead-time compensation gain.	0 (0~65535)	RUN
d01.71 (0x6147)	Actual Deadtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the actual deadtime.	0.00 (0~655.35)	RUN
d01.72 (0x6148)	PM Pole Search	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: SVC Tens-bit: FVC 0: OFF 1: ON 2: ON during the first power-up	0x0010 (0x0000~ 0xF223)	STOP
d01.73 (0x6149)	Pole Search Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the pole search current value.	0.0 (0.0~6553.5)	STOP
d01.74 (0x614A)	Pole Search Current Feedback	V/F SVC FVC PMV/F PMSVC PMFVC Set the pole search current feedback value.	0.0 (0.0~6553.5)	STOP
d01.75 (0x614B)	PM Inductance Tuning Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the inductance tuning frequency for permanent magnet synchronous motors.	300.00Hz (0.00Hz~ 600.00Hz)	STOP
d01.76 (0x614C)	PM Inductance Tuning Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the inductance tuning current for permanent magnet synchronous motors.	0.0 (0.0~180.0)	STOP
d01.77 (0x614D)	LC Filter Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the LC filter inductance.	0.000 (0.000~ 65.000)	STOP
d01.78 (0x614E)	LC Filter Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the LC filter resistance.	0.0 (0.0~6500.0)	STOP

13.25 d02: Motor 2 Vector Control

d02.0x: ASR Control

Code (Address)	Name	Description	Default (Range)	Property
d02.00 (0x6200)	Rigidity Class	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR rigidity level. The higher the level, the better the speed rigidity.	32 (0~128)	RUN
d02.01 (0x6201)	Rigidity Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR rigidity mode.	0x0000 (0x0000~ 0xFFFF)	RUN
d02.02 (0x6202)	ASR H-speed Proportional Gain 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR proportional gain at high speed.	10.00 (0.01~100.00)	RUN
d02.03 (0x6203)	ASR H-speed Integral Time 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR integral time at high speed.	0.100s (0.000s~ 6.000s)	RUN

d02.04 (0x6204)	ASR Filter Time 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR filter time at high speed.	0.0ms (0.0ms~ 100.0ms)	RUN
d02.05 (0x6205)	ASR Shift Frequency 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR shift frequency at high speed.	0.00Hz (0.00Hz~Max. frequency)	RUN
d02.06 (0x6206)	ASR L-speed Proportional Gain 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR proportional gain at low speed.	10.00 (0.01~100.00)	RUN
d02.07 (0x6207)	ASR L-speed Integral Time 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR integral time at low speed.	0.100s (0.000s~ 6.000s)	RUN
d02.08 (0x6208)	ASR Filter Time 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR filter time at low speed.	0.0ms (0.0ms~ 100.0ms)	RUN
d02.09 (0x6209)	ASR Shift Frequency 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR shift frequency at low speed.	0.00Hz (0.00Hz~ d02.05)	RUN

d02.1x: ACR and Torque Limit

Code (Address)	Name	Description	Default (Range)	Property
d02.10 (0x620A)	ACR D-Axis Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the current loop D-axis proportional gain.	1.000 (0.001~4.000)	RUN
d02.11 (0x620B)	ACR D-Axis Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the current loop D-axis integral gain.	1.000 (0.001~4.000)	RUN
d02.12 (0x620C)	Q-Axis Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the current loop Q-axis proportional gain.	1.000 (0.001~4.000)	RUN
d02.13 (0x620D)	Q-Axis Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the current loop Q-axis integral gain.	1.000 (0.001~4.000)	RUN
d02.14 (0x620E)	ACR Optimization	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Voltage feedforward control 0: OFF 1: ON Tens-bit: Current prediction control 0: OFF 1: ON Hundreds-bit: Current loop gain 0: OFF 1: ON	0x0000 (0x0000~ 0x0111)	RUN
d02.15 (0x620F)	Motoring Torque Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque limit when motor is running with load.	250.0% (0.0%~ 400.0%)	RUN
d02.16 (0x6210)	Generating Torque Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque limit in power generation mode.	250.0% (0.0%~ 400.0%)	RUN

d02.17 (0x6211)	Motoring Torque Limit Source	V/F SVC FVC PMV/F PMSVC PMFVC Set the regenerative torque limit at low speed. 0: Keypad 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL 6: RS485 communication (0x3014) 7: Extension (0x31 group)	0 (0~7)	RUN
d02.18 (0x6212)	Regenerating Torque Limit Source	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency range limited by torque when at low speed. 0: Keypad 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL terminal 6: RS485 communication (0x3015) 7: Extension (0x31 group)	0 (0~7)	RUN
d02.19 (0x6213)	Torque Limit View	V/F SVC FVC PMV/F PMSVC PMFVC View the given torque limits. 0: C00.06 displays the torque limit value during motoring 1: C00.06 displays the torque limit value during generating	0 (0~1)	RUN

d02.2x: Torque Optimization

Code (Address)	Name	Description	Default (Range)	Property
d02.20 (0x6214)	PM LF Pull-in Current	V/F SVC FVC PMV/F PMSVC PMFVC When the SVC mode of the PM is on, the larger the pull-in current, the larger the torque output.	20.0% (0.0%~50.0%)	RUN
d02.21 (0x6215)	PM HF Pull-in Current	V/F SVC FVC PMV/F PMSVC PMFVC When the SVC mode of the PM is on, the larger the pull-in current, the larger the torque output.	10.0% (0.0%~50.0%)	RUN
d02.22 (0x6216)	PM Pull-in Current Frequency	V/F SVC FVC PMV/F PMSVC PMFVC The set value 100.0% corresponds to F01.10 [Max. Frequency].	10.0% (0.0%~100.0%)	RUN
d02.23 (0x6217)	AM Slip Compensation	V/F SVC FVC PMV/F PMSVC PMFVC Set the slip compensation for asynchronous motors.	100.0% (0.0%~250.0%)	RUN
d02.24 (0x6218)	Initial Starting Torque	V/F SVC FVC PMV/F PMSVC PMFVC Set the initial starting torque.	0.0% (0.0%~250.0%)	RUN
d02.25 (0x6219)	Flux Control Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control gain.	0.0 (0.0~1000.0)	RUN
d02.26 (0x621A)	Flux Control Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control integral gain.	0.0 (0.0~1000.0)	RUN
d02.27 (0x621B)	Flux Given Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux given gain.	0.0 (0.0~200.0)	RUN
d02.28 (0x621C)	Torque Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque range.	0x0000 (0x0000~ 0xFFFF)	RUN
d02.29 (0x621D)	Flux Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux range.	0.0% (0.0%~150.0%)	RUN

d02.3x: Flux Optimization

Code (Address)	Name	Description	Default (Range)	Property
d02.30 (0x621E)	Field-weakening Feed-forward Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the feed-forward coefficient under field weakening control.	10.0% (0.0%~500.0%)	RUN
d02.31 (0x621F)	Field-weakening Control Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the control gain under field weakening control.	10.0% (0.0%~500.0%)	RUN
d02.32 (0x6220)	Field-weakening Current Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the current upper limit under field weakening control.	60.0% (0.0%~250.0%)	RUN
d02.33 (0x6221)	Field-weakening Voltage Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage coefficient under field weakening control.	97.0% (0.0%~120.0%)	RUN
d02.34 (0x6222)	Output Power Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor output power range.	250.0% (0.0%~400.0%)	RUN
d02.35 (0x6223)	Over-excitation Brake Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the over-excitation brake gain.	100.0% (0.0%~500.0%)	RUN
d02.36 (0x6224)	Over-excitation Brake Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the over-excitation brake range.	100.0% (0.0%~250.0%)	RUN
d02.37 (0x6225)	ECO Mode	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: ON	0 (0~1)	RUN
d02.38 (0x6226)	Min. ECO Excitation	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower limit of energy-saving excitation.	50.0% (0.0%~80.0%)	RUN
d02.39 (0x6227)	ECO Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the filter time under the energy-saving mode.	0.010s (0.000s~ 6.000s)	RUN

d02.4x: PM HF Injection

Code (Address)	Name	Description	Default (Range)	Property
d02.40 (0x6228)	HF Injection Mode	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: HF injection 0: OFF NOT 0: ON Thousands-bit: Random HF injection (effective only when ones-bit≠0): 0: Random-carrier HF injection 1: Fixed-carrier HF injection	0x0000 (0x0000~ 0x1005)	STOP
d02.41 (0x6229)	HF Injection Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the injection voltage range (relative to rated voltage). It is the result of auto-tuning, so there's no need to modify it.	10.0% (0.0%~100.0%)	RUN
d02.42 (0x623A)	HF Injection OFF Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency injection range (relative to motor rated frequency). It is valid when the motor speed is lower than this value.	0.0% (0.0%~100.0%)	RUN
d02.43 (0x622B)	Estimated HF Injection Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the estimated gain for high-frequency injection speed.	500 (0~65535)	RUN
d02.44 (0x622C)	Estimated HF Injection Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the estimated integral gain for high-frequency injection speed.	100 (0~65535)	RUN
d02.45 (0x622D)	HF Injection Debugging	V/F SVC FVC PMV/F PMSVC PMFVC Debug the high-frequency injection.	0 (0~65535)	RUN

d02.46 (0x622E)	HF Injection Carrier	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency injection carrier.	0 (0~10)	RUN

d02.5x-d02.6x: Vector Control Extension

Code (Address)	Name	Description	Default (Range)	Property
d02.50 (0x6232)	Max. ACR Bandwidth	V/F SVC FVC PMV/F PMSVC PMFVC Set the position compensation under speed control to realize zero servo or raise system rigidity.	50.0 (0.0~100.0)	STOP
d02.51 (0x6233)	Min. Current Error	V/F SVC FVC PMV/F PMSVC PMFVC Parameters for debugging.	0.0 (0.0~102.4)	RUN
d02.52 (0x6234)	IF Control Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the current under IF control, where 100% equals the motor's rated current.	60.0% (0.0%~400.0%)	RUN
d02.53 (0x6235)	IF Control Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency under IF control.	0.0% (0.0%~100.0%)	RUN
d02.60 (0x623C)	PM MTPA Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the MTPA gain for permanent magnet synchronous motors.	100.0 (0.0~400.0)	RUN
d02.61 (0x623D)	PM MTPA Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the MTPA filter time for permanent magnet synchronous motors.	1.0 (0.0~100.0)	RUN
d02.65 (0x6241)	Regenerative Torque Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the regenerative torque limit at low speed.	0.0% (0.0%~400.0%)	RUN
d02.66 (0x6242)	Regenerative Torque Limit Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency range limited by torque when at low speed.	6.00% (0.00%~ 30.00%)	RUN
d02.70 (0x6246)	Estimated SVC Gain 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the estimated open loop gain 1.	1.000 (0.000~8.000)	RUN
d02.71 (0x6247)	Estimated SVC Gain 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the estimated open loop gain 2.	1.000 (0.000~8.000)	RUN
d02.72 (0x6248)	Generating Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the generating gain.	30.0% (0.0%~ 6553.5%)	RUN
d02.73 (0x6249)	SPLL Gain 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the SPLL gain 1.	3.000 (0.000~65.535)	RUN
d02.74 (0x624A)	SPLL Gain 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the SPLL gain 2.	1.000 (0.000~65.535)	RUN
d02.75 (0x624B)	Angle Error	V/F SVC FVC PMV/F PMSVC PMFVC Set the angle error limit.	10.0 (0.0~100.0)	RUN
d02.76 (0x624C)	Angle Hysteresis Error	V/F SVC FVC PMV/F PMSVC PMFVC Set the angle hysteresis error limit.	10.0 (0.0~100.0)	RUN
d02.77 (0x624D)	Direct Flux Vector Optimization	V/F SVC FVC PMV/F PMSVC PMFVC Optimize the direct flux vector mode.	0x0000 (0x0000~ 0xFFFF)	RUN
d02.78 (0x624E)	Min. Direct Flux Vector Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the min. frequency for direct flux vector mode.	1.0% (0.0%~ 6000.0%)	RUN
d02.79 (0x624F)	Min. Flux FVC Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the min. frequency for flux closed loop mode.	10.0% (0.0%~ 6000.0%)	RUN
d02.80 (0x6250)	Estimated Direct Flux Vector Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the estimated gain under direct flux vector mode.	1000 (0~65535)	RUN

d02.81 (0x6251)	AFO Gain 1	V/F SVC FVC PMV/F PMSVC PMFVC Adjust the AFO1 control gain.	1.000 (0.000~ 65.535)	RUN
d02.82 (0x6252)	AFO Gain 2	V/F SVC FVC PMV/F PMSVC PMFVC Adjust the AFO2 control gain.	1.000 (0.000~ 65.535)	RUN
d02.83 (0x6253)	AFO Gain 3	V/F SVC FVC PMV/F PMSVC PMFVC Adjust the AFO3 control gain.	1.000 (0.000~ 65.535)	RUN
d02.84 (0x6254)	AFO Gain 4	V/F SVC FVC PMV/F PMSVC PMFVC Adjust the AFO4 control gain.	1.000 (0.000~ 65.535)	RUN

13.26 d03: Motor 2 V/F Control

d03.0x: V/F Control

Code (Address)	Name	Description	Default (Range)	Property
d03.00 (0x6300)	V/F Curve	V/F SVC FVC PMV/F PMSVC PMFVC Select the type of V/F curve according to different load characteristics. 0: Linear V/F curve 1~9: 1.1-1.9 power V/F curves respectively 10: Square V/F curve 11: Custom V/F curve	0 (0~11)	STOP
d03.01 (0x6301)	Torque Boost	V/F SVC FVC PMV/F PMSVC PMFVC 0.0%: Automatic torque boost 0.1%~30.0%: Manual torque boost	Up to model (0.0%~30.0%)	RUN
d03.02 (0x6302)	Torque Boost OFF Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the range of the torque boost. The torque boost will be cut off when the output frequency exceeds this value.	100.0% (0.0%~100.0%)	RUN
d03.03 (0x6303)	Slip Compensation Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the slip compensation gain.	0.0% (0.0%~200.0%)	RUN
d03.04 (0x6304)	Slip Compensation Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the slip compensation range.	100.0% (0.0%~300.0%)	RUN
d03.05 (0x6305)	Slip Compensation Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Enter the parameters on the motor's nameplate correctly to implement parameter tuning for best effect.	0.200s (0.000s~ 6.000s)	RUN
d03.06 (0x6306)	Anti-oscillation Gain	V/F SVC FVC PMV/F PMSVC PMFVC Adjust this value to suppress low-frequency resonance, but it should not be too large or it will cause instability.	100.0% (0.0%~ 900.0%)	RUN
d03.07 (0x6307)	Anti-oscillation Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the anti-oscillation filter time.	1.0s (0.0s~100.0s)	RUN
d03.08 (0x6308)	Output Voltage Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the output voltage percentage, 100% of it corresponds to the motor rated voltage.	100.0% (25.0%~ 120.0%)	STOP
d03.09 (0x6309)	Min. Anti-OC Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the overcurrent suppression lower limit frequency.	0.00 (0.00~50.00)	RUN

d03.1x: User-defined V/F Curves

Code (Address)	Name	Description	Default (Range)	Property
d03.10 (0x630A)	User-Defined Voltage V1	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage V1.	3.0% (0.0%~100.0%)	STOP
d03.11 (0x630B)	User-Defined Frequency F1	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency F1.	1.00Hz (0.00Hz~Max. frequency)	STOP
d03.12 (0x630C)	User-Defined Voltage V2	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage V2.	28.0% (0.0%~100.0%)	STOP
d03.13 (0x630D)	User-Defined Frequency F2	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency F2.	10.00Hz (0.00Hz~Max. frequency)	STOP
d03.14 (0x630E)	User-Defined Voltage V3	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage V3.	55.0% (0.0%~100.0%)	STOP
d03.15 (0x630F)	User-Defined Frequency F3	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency F3.	25.00Hz (0.00Hz~Max. frequency)	STOP
d03.16 (0x6600)	User-Defined Voltage V4	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage V4.	78.0% (0.0%~ 100.0%)	STOP
d03.17 (0x6311)	User-Defined Frequency F4	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency F4.	37.50Hz (0.00Hz~Max. frequency)	STOP
d03.18 (0x6312)	User-Defined Voltage V5	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage V5.	100.0% (0.0%~ 100.0%)	STOP
d03.19 (0x6313)	User-Defined Frequency F5	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency F5.	50.00Hz (0.00Hz~Max. frequency)	STOP

d03.2x: Coil Voltage-Frequency/Current-Frequency Decoupled Control

Code (Address)	Name	Description	Default (Range)	Property
d03.20 (0x6314)	Coil Voltage/Current Source A	V/F SVC FVC PMV/F PMSVC PMFVC 0: Percentage setting 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL terminal 6: RS485 7: Extension (0x31 group) 8: PID 9: Numeric setting Others: Connector	0 (0~65535)	RUN
d03.21 (0x6315)	Coil Voltage/Current Source B	V/F SVC FVC PMV/F PMSVC PMFVC 0: Percentage setting 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL terminal 6: RS485 7: Extension (0x31 group) 8: PID 9: Numeric setting Others: Connector	0 (0~65535)	RUN

d03.22 (0x6316)	Coil Voltage/Current Source Combination	V/F SVC FVC PMV/F PMSVC PMFVC 0: Source A 1: Source B 2: Source A+B 3: Source A-B 4: Max. (A, B) 5: Min. (A or B)	0 (0~5)	RUN
d03.23 (0x6317)	Coil Output Voltage/Current Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the output percentage for voltage/current under V/F-SPLIT mode. 100.0% of the motor rated voltage/rated current.	0.00% (0.00%~110.00%)	RUN
d03.24 (0x6318)	Coil Output Voltage/Current ACC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage/current acceleration time under V/F-SPLIT mode.	10.00s (0.00s~100.00s)	RUN
d03.25 (0x6319)	Coil Output Voltage/Current DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage/current deceleration time under V/F-SPLIT mode.	10.00s (0.00s~100.00s)	RUN
d03.26 (0x631A)	Coil Stop Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the stop mode under V/F-SPLIT control. 0: ACC./DEC. of output voltage/current and that of output frequency do not affect each other 1: Output frequency drops after the output voltage/current drops to 0V	0 (0~1)	RUN
d03.27 (0x631B)	Coil Output Voltage/Current Numeric Setting	V/F SVC FVC PMV/F PMSVC PMFVC Define the coil output voltage/current numeric settings.	0.00V (0.00V~600.00V)	RUN
d03.28 (0x631C)	Coil Control Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the coil control mode. 0: V/F-SPLIT mode 1: IF current/frequency decoupling	0 (0~1)	RUN

d03.3x: V/F ECO Control

Code (Address)	Name	Description	Default (Range)	Property
d03.30 (0x631E)	V/F ECO Function	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: ON	0 (0~1)	STOP
d03.31 (0x631F)	V/F ECO Min. Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower frequency limit of the ECO mode.	15.0Hz (0.0Hz~50.0Hz)	STOP
d03.32 (0x6320)	V/F ECO Min. Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower voltage limit of the ECO mode.	50.0% (20.0%~100.0%)	STOP
d03.33 (0x6321)	V/F ECO Voltage DEC Rate	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage deceleration rate under the V/F ECO mode.	0.010V/ms (0.000V/ms~0.2000V/ms)	RUN
d03.34 (0x6322)	V/F ECO Voltage ACC Rate	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage acceleration rate under the V/F ECO mode.	0.200V/ms (0.000V/ms~2.000V/ms)	RUN
d03.35 (0x6323)	Over-excitation Gain	V/F SVC FVC PMV/F PMSVC PMFVC It is valid when tens-bit of F10.11 is not zero; at the same output frequency, the output voltage increases with increasing bus voltage.	64 (0~200)	RUN

d03.4x: V/F PM Anti-oscillation

Code (Address)	Name	Description	Default (Range)	Property
d03.40 (0x6328)	Damper Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the damper proportional gain.	5.0% (0%~400.0%)	RUN
d03.41 (0x6329)	Damper Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the damper filter time.	0s (0s~100.0s)	RUN
d03.42 (0x632A)	Damper Output Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the damper output range.	5.0% (0%~100.0%)	RUN
d03.43 (0x632B)	Active Current Filter Bandwidth	V/F SVC FVC PMV/F PMSVC PMFVC Set the active current filter bandwidth.	5.000Hz (0Hz~65535Hz)	RUN
d03.44 (0x632C)	Damper Weakening Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the damper proportional gain weakening coefficient.	20.0% (0%~100.0%)	RUN
d03.45 (0x632D)	Damper Weakening Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the damper proportional gain weakening frequency.	20.0% (0%~100.0%)	RUN
d03.46 (0x632E)	Anti-oscillation Start Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the anti-oscillation start frequency.	3.0% (0.0%~200.0%)	RUN

d03.5x: V/F PM Flux Control

Code (Address)	Name	Description	Default (Range)	Property
d03.50 (0x6332)	Flux Control	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control.	30.0% (0%~500.0%)	RUN
d03.51 (0x6333)	Flux Control Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control proportional gain.	1000 (0~9999)	RUN
d03.52 (0x6334)	Flux Control Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control integral gain.	1000 (0~9999)	RUN
d03.53 (0x6335)	Flux Controller Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux controller frequency.	5.0% (0%~100.0%)	RUN
d03.54 (0x6336)	Flux Controller Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux controller time.	7.0s (0s~100.0s)	RUN
d03.56 (0x6338)	PM Convexity Adjustment	V/F SVC FVC PMV/F PMSVC PMFVC Set the convexity adjustment coefficient for permanent magnet synchronous motors.	100.0% (0%~400.0%)	RUN
d03.57 (0x6339)	MTPA Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the MTPA gain.	100.0% (0%~400.0%)	RUN
d03.58 (0x633A)	MTPA Bandwidth	V/F SVC FVC PMV/F PMSVC PMFVC Set the MTPA bandwidth.	1.000Hz (0.000Hz~50.000Hz)	RUN
d03.59 (0x633B)	PM VF ECO Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the VF energy-saving mode for permanent magnet synchronous motors. 0: MTPA (default, recommended) 1: Manual pull-in 2: Flux-control MTPA	0 (0~2)	RUN

d03.6x: V/F PM Current Control

Code (Address)	Name	Description	Default (Range)	Property
d03.60 (0x633C)	D-Axis Current Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis current gain.	0.500 (0~10.000)	RUN
d03.61 (0x633D)	Q-Axis Current Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis current gain.	0.500 (0~10.000)	RUN
d03.62 (0x633E)	D-Axis Feedforward Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis feedforward gain.	0 (0~10.000)	RUN
d03.63 (0x633F)	Q-Axis Feedforward Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis feedforward gain.	1.000 (0~10.000)	RUN
d03.64 (0x6340)	D-Axis Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis control proportional gain.	50.0% (0%~200.0%)	RUN
d03.65 (0x6341)	D-Axis Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis control integral gain.	80.0% (0.0%~ 1000.0%)	RUN
d03.66 (0x6342)	D-Axis LF Current Proportional Gain Boost	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis low-frequency current proportional gain boost.	0.0% (0.0%~ 100.0%)	RUN
d03.67 (0x6343)	Q-Axis Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis control proportional gain.	100.0% (0.0%~ 6553.5%)	RUN
d03.68 (0x6344)	Q-Axis Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis control integral gain.	100.0% (0.0%~ 6553.5%)	RUN
d03.69 (0x6345)	D-Axis Weakening Integral	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis integral weakening coefficient.	1000 (0~1024)	RUN
d03.70 (0x6346)	D-Axis Proportional Gain Shift Start Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the start frequency for D-axis proportional gain shifting.	80.0% (0.0%~ 6553.5%)	STOP
d03.71 (0x6347)	D-Axis Proportional Gain Shift OFF Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the off frequency for D-axis proportional gain shifting.	120.0% (0.0%~ 6553.5%)	RUN
d03.72 (0x6348)	HF D-Axis Current Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency D-axis current control proportional gain.	100.0% (0.0%~ 200.0%)	RUN
d03.73 (0x6349)	D-Axis Current Filter Bandwidth	V/F SVC FVC PMV/F PMSVC PMFVC Set the bandwidth of the D-axis current low-pass filter.	11.000Hz (0Hz~ 65.535Hz)	RUN
d03.74 (0x634A)	Q-Axis Current Filter Bandwidth	V/F SVC FVC PMV/F PMSVC PMFVC Set the bandwidth of the Q-axis current low-pass filter.	11.000Hz (0.000Hz~ 65.535Hz)	RUN
d03.75 (0x634B)	D-Axis Filter Bandwidth	V/F SVC FVC PMV/F PMSVC PMFVC Set the given D-axis filter bandwidth.	1.000Hz (0.000Hz~ 65.535Hz)	RUN

d03.76 (0x634C)	Light-load Current I_q Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the light-load current I_q threshold.	20.0% (0.0%~50.0%)	RUN
d03.77 (0x634D)	Current I_d Weakening Amplitude	V/F SVC FVC PMV/F PMSVC PMFVC Set the current I_d weakening amplitude.	50.0% (0.0%~ 100.0%)	RUN
d03.78 (0x634E)	Efficient Current I_d Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the efficient current I_d value.	0.0% (0.0%~50.0%)	RUN
d03.79 (0x634F)	Shift Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the shift frequency.	10.0% (0.0%~50.0%)	RUN
d03.80 (0x6350)	Shift Frequency Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the shift frequency range.	0% (0%~50.0%)	RUN
d03.81 (0x6351)	PM Voltage Vector Algorithm Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the control mode for the synchronous motor voltage vector algorithm.	0x1021 (0x0000~ 0x1121)	RUN
d03.82 (0x6352)	LF Pull-in Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the low-frequency pull-in current.	100.0% (0.0%~ 200.0%)	RUN
d03.83 (0x6353)	LF Pull-in Current Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency for low-frequency pull-in current.	10.0% (0.0%~ 100.0%)	RUN
d03.84 (0x6354)	HF Pull-in Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency pull-in current.	10.0% (0%~ 200.0%)	RUN
d03.85 (0x6355)	HF Pull-in Current Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency for high-frequency pull-in current.	15.0% (0%~ 100.0%)	RUN

13.27 d04: Motor 3 Parameters

d04.0x: Basic Parameters and Auto-tuning

Code (Address)	Name	Description	Default (Range)	Property
d04.00 (0x6400)	Motor Type	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor type. 0: Asynchronous motor (AM) 1: Permanent magnet synchronous motor (PM)	0 (0~1)	READ
d04.01 (0x6401)	Pole No.	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor pole number.	4 (2~98)	STOP
d04.02 (0x6402)	Rated Power	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated power of the motor.	Up to model (0.1kW~ 1000.0kW)	STOP
d04.03 (0x6403)	Rated Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated frequency of the motor.	Up to model (0.01Hz~Max. frequency)	STOP
d04.04 (0x6404)	Rated Speed	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated speed of the motor.	Up to model (0rpm~ 6500rpm)	STOP
d04.05 (0x6405)	Rated Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated voltage of the motor.	Up to model (0V~2000V)	STOP

d04.06 (0x6406)	Rated Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated current of the motor.	Up to model (0.1A~ 3000.0A)	STOP
d04.07 (0x6407)	Motor Auto-tuning	V/F SVC FVC PMV/F PMSVC PMFVC After the parameter auto-tuning is finished, [F02.07] will be set to "0" automatically. 0: OFF 1: Dynamic auto-tuning 2: Static auto-tuning 3: Stator resistance auto-tuning 9: PM inductance saturation coefficient auto-tuning 10: Non-linear auto-tuning	0 (0~10)	STOP
d04.08 (0x6408)	Auto-tuning Flag	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor auto-tuning flag.	0x0000 (0x0000~ 0xFFFF)	READ
d04.09 (0x6409)	Motor ID	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor ID.	0x0000 (0x0000~ 0xFFFF)	STOP

d04.1x: AM Parameters

Code (Address)	Name	Description	Default (Range)	Property
d04.10 (0x640A)	AM No-load Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the no-load current for asynchronous motors.	Up to model (0.1A~ 3000.0A)	STOP
d04.11 (0x640B)	AM Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator resistance for asynchronous motors.	Up to model (1mΩ~ 65535mΩ)	STOP
d04.12 (0x640C)	AM Rotor Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the rotor resistance for asynchronous motors.	Up to model (1mΩ~ 65535mΩ)	STOP
d04.13 (0x640D)	AM Stator Leakage Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator leakage inductance for asynchronous motors.	Up to model (1mH~ 6553.5mH)	STOP
d04.14 (0x640E)	AM Stator Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator inductance for asynchronous motors.	Up to model (1mH~ 65535mH)	STOP
d04.15 (0x640F)	Per-unit Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the stator resistance.	Up to model (0.01%~ 655.35%)	READ
d04.16 (0x6410)	Per-unit Rotor Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the rotor resistance.	Up to model (0.01%~ 655.35%)	READ
d04.17 (0x6411)	Per-unit Stator Leakage Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the stator leakage inductance.	Up to model (0.01%~ 655.35%)	READ
d04.18 (0x6412)	Per-unit Stator Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the stator inductance.	Up to model (0.1%~ 6553.5%)	READ
d04.19 (0x6413)	Parameter Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the parameter range.	0x0000 (0x0000~ 0xFFFF)	STOP

d04.2x: PM Parameters

Code (Address)	Name	Description	Default (Range)	Property
d04.20 (0x6414)	PM Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator resistance for synchronous motors.	Up to model (1mΩ~ 65535mΩ)	STOP
d04.21 (0x6415)	PM D-axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance for synchronous motors.	Up to model (1mH~ 65535mH)	STOP
d04.22 (0x6416)	PM Q-axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance for synchronous motors.	Up to model (1mH~ 65535mH)	STOP
d04.23 (0x6417)	PM Back Emf	V/F SVC FVC PMV/F PMSVC PMFVC Set the back emf for synchronous motors. Only recognized in dynamic auto-tuning.	Up to model (1~1500V)	STOP
d04.24 (0x6418)	Encoder Installation Angle	V/F SVC FVC PMV/F PMSVC PMFVC Set the encoder installation angle for permanent magnetic synchronous motors.	Up to model (0.0°~360.0°)	RUN
d04.25 (0x6419)	Per-Unit Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit stator resistance for permanent magnetic synchronous motors.	Up to model (0.01%~ 655.35%)	READ
d04.26 (0x641A)	Per-Unit D-Axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit d-axis inductance for permanent magnetic synchronous motors.	Up to model (0.01%~ 655.35%)	READ
d04.27 (0x641B)	Per-Unit Q-Axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit q-axis inductance for permanent magnetic synchronous motors.	Up to model (0.01%~ 655.35%)	READ
d04.28 (0x641C)	Pulse Width Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the pulse width coefficient for permanent magnet synchronous motors.	Up to model (0.01~ 655.35)	STOP
d04.29 (0x641D)	Actual Value Unit	V/F SVC FVC PMV/F PMSVC PMFVC Select the unit for actual value.	Up to model (0x0000~ 0x3322)	STOP
d04.30 (0x641E)	Frequency Decimal Bit	V/F SVC FVC PMV/F PMSVC PMFVC Display the decimal bit of motor frequency.	0 (0~3)	STOP

d04.4x~d04.5x:PM D/Q-Axis Inductance Saturation Coefficient

Code (Address)	Name	Description	Default (Range)	Property
d04.40 (0x6428)	PM D-Axis Inductance Saturation Coefficient 0	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 0 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
d04.41 (0x6429)	PM D-Axis Inductance Saturation Coefficient 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 1 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
d04.42 (0x642A)	PM D-Axis Inductance Saturation Coefficient 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 2 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN

d04.43 (0x642B)	PM D-Axis Inductance Saturation Coefficient 3	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 3 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
d04.44 (0x642C)	PM D-Axis Inductance Saturation Coefficient 4	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 4 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
d04.45 (0x642D)	PM D-Axis Inductance Saturation Coefficient 5	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 5 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
d04.46 (0x642E)	PM D-Axis Inductance Saturation Coefficient 6	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 6 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
d04.47 (0x642F)	PM D-Axis Inductance Saturation Coefficient 7	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 7 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
d04.48 (0x6430)	PM D-Axis Inductance Saturation Coefficient 8	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 8 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
d04.49 (0x6431)	PM D-Axis Inductance Saturation Coefficient 9	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 9 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
d04.50 (0x6432)	PM Q-Axis Inductance Saturation Coefficient 0	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 0 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
d04.51 (0x6433)	PM Q-Axis Inductance Saturation Coefficient 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 1 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
d04.52 (0x6434)	PM Q-Axis Inductance Saturation Coefficient 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 2 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
d04.53 (0x6435)	PM Q-Axis Inductance Saturation Coefficient 3	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 3 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
d04.54 (0x6436)	PM Q-Axis Inductance Saturation Coefficient 4	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 4 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN

d04.55 (0x6437)	PM Q-Axis Inductance Saturation Coefficient 5	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 5 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
d04.56 (0x6438)	PM Q-Axis Inductance Saturation Coefficient 6	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 6 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
d04.57 (0x6439)	PM Q-Axis Inductance Saturation Coefficient 7	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 7 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
d04.58 (0x643A)	PM Q-Axis Inductance Saturation Coefficient 8	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 8 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
d04.59 (0x643B)	PM Q-Axis Inductance Saturation Coefficient 9	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 9 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN

d04.6x~d04.7x: Tuning Extension

Code (Address)	Name	Description	Default (Range)	Property
d04.60 (0x643C)	Online Tuning	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Tuning mode 0: OFF 1: Tuning only without updating > 1: Tuning and updating Thousands-bit: Stator resistance linear auto-tuning 0: OFF 1: ON	0x0000 (0x0000~0xFFFF)	STOP
d04.61 (0x643D)	Auto-tuning Flag	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator resistance tuning coefficient 1.	0x0000 (0x0000~0xFFFF)	RUN
d04.67 (0x6443)	V-phase Current Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the V-phase current gain.	1024 (1024~2048)	RUN
d04.68 (0x6444)	W-phase Current Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the W-phase current gain.	1024 (1024~2048)	RUN
d04.69 (0x6445)	Electric Angle Compensation	V/F SVC FVC PMV/F PMSVC PMFVC Set the electric angle compensation.	0.0 (0.0~6553.5)	RUN
d04.70 (0x6446)	Deadtime Compensation Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the dead-time compensation gain.	0 (0~65535)	RUN
d04.71 (0x6447)	Actual Deadtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the actual deadtime.	0.00 (0~655.35)	RUN
d04.72 (0x6448)	PM Pole Search	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: SVC Tens-bit: FVC 0: OFF 1: ON 2: ON during the first power-up	0x0010 (0x0000~0xF223)	STOP

d04.73 (0x6449)	Pole Search Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the pole search current value.	0.0 (0.0~6553.5)	STOP
d04.74 (0x644A)	Pole Search Current Feedback	V/F SVC FVC PMV/F PMSVC PMFVC Set the pole search current feedback value.	0.0 (0.0~6553.5)	STOP
d04.75 (0x644B)	PM Inductance Tuning Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the inductance tuning frequency for permanent magnet synchronous motors.	300.00Hz (0.00Hz~600.00Hz)	STOP
d04.76 (0x644C)	PM Inductance Tuning Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the inductance tuning current for permanent magnet synchronous motors.	0.0 (0.0~180.0)	STOP
d04.77 (0x644D)	LC Filter Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the LC filter inductance.	0.000 (0.000~65.000)	STOP
d04.78 (0x644E)	LC Filter Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the LC filter resistance.	0.0 (0.0~6500.0)	STOP

13.28 d05: Motor 3 Vector Control

d05.0x: ASR Control

Code (Address)	Name	Description	Default (Range)	Property
d05.00 (0x6500)	Rigidity Class	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR rigidity level. The higher the level, the better the speed rigidity.	32 (0~128)	RUN
d05.01 (0x6501)	Rigidity Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR rigidity mode.	0x0000 (0x0000~0xFFFF)	RUN
d05.02 (0x6502)	ASR H-speed Proportional Gain 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR proportional gain at high speed.	10.00 (0.01~100.00)	RUN
d05.03 (0x6503)	ASR H-speed Integral Time 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR integral time at high speed.	0.100s (0.000s~6.000s)	RUN
d05.04 (0x6504)	ASR Filter Time 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR filter time at high speed.	0.0ms (0.0ms~100.0ms)	RUN
d05.05 (0x6505)	ASR Shift Frequency 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR shift frequency at high speed.	0.00Hz (0.00Hz~Max. frequency)	RUN
d05.06 (0x6506)	ASR L-speed Proportional Gain 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR proportional gain at low speed.	10.00 (0.01~100.00)	RUN
d05.07 (0x6507)	ASR L-speed Integral Time 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR integral time at low speed.	0.100s (0.000s~6.000s)	RUN
d05.08 (0x6508)	ASR Filter Time 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR filter time at low speed.	0.0ms (0.0ms~100.0ms)	RUN
d05.09 (0x6509)	ASR Shift Frequency 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR shift frequency at low speed.	0.00Hz (0.00Hz~d05.05)	RUN

d05.1x: ACR and Torque Limit

Code (Address)	Name	Description	Default (Range)	Property
d05.10 (0x650A)	ACR D-Axis Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the current loop D-axis proportional gain.	1.000 (0.001~4.000)	RUN
d05.11 (0x650B)	ACR D-Axis Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the current loop D-axis integral gain.	1.000 (0.001~4.000)	RUN
d05.12 (0x650C)	Q-Axis Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the current loop Q-axis proportional gain.	1.000 (0.001~4.000)	RUN
d05.13 (0x650D)	Q-Axis Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the current loop Q-axis integral gain.	1.000 (0.001~4.000)	RUN
d05.14 (0x650E)	ACR Optimization	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Voltage feedforward control 0: OFF 1: ON Tens-bit: Current prediction control 0: OFF 1: ON Hundreds-bit: Current loop gain 0: OFF 1: ON	0x0000 (0x0000~ 0x0111)	RUN
d05.15 (0x650F)	Motoring Torque Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque limit when motor is running with load.	250.0% (0.0%~400.0%)	RUN
d05.16 (0x6510)	Generating Torque Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque limit in power generation mode.	250.0% (0.0%~400.0%)	RUN
d05.17 (0x6511)	Motoring Torque Limit Source	V/F SVC FVC PMV/F PMSVC PMFVC Set the regenerative torque limit at low speed. 0: Keypad 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL 6: RS485 communication (0x3014) 7: Extension (0x31 group)	0 (0~7)	RUN
d05.18 (0x6512)	Regenerating Torque Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency range limited by torque when at low speed. 0: Keypad 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL 6: RS485 communication (0x3015) 7: Extension (0x31 group)	0 (0~7)	RUN
d05.19 (0x6513)	Torque Limit View	V/F SVC FVC PMV/F PMSVC PMFVC View the given torque limits. 0: C00.06 displays the torque limit value during motoring 1: C00.06 displays the torque limit value during generating	0 (0~1)	RUN

d05.2x: Torque Optimization

Code (Address)	Name	Description	Default (Range)	Property
d05.20 (0x6514)	PM LF Pull-in Current	V/F SVC FVC PMV/F PMSVC PMFVC When the SVC mode of the PM is on, the larger the pull-in current, the larger the torque output.	20.0% (0.0%~50.0%)	RUN
d05.21 (0x6515)	PM HF Pull-in Current	V/F SVC FVC PMV/F PMSVC PMFVC When the SVC mode of the PM is on, the larger the pull-in current, the larger the torque output.	10.0% (0.0%~50.0%)	RUN
d05.22 (0x6516)	PM Pull-in Current Frequency	V/F SVC FVC PMV/F PMSVC PMFVC The set value 100.0% corresponds to F01.10 [Max. Frequency].	10.0% (0.0%~100.0%)	RUN
d05.23 (0x6517)	AM Slip Compensation	V/F SVC FVC PMV/F PMSVC PMFVC Set the slip compensation for asynchronous motors.	100.0% (0.0%~250.0%)	RUN
d05.24 (0x6518)	Initial Starting Torque	V/F SVC FVC PMV/F PMSVC PMFVC Set the initial starting torque.	0.0% (0.0%~250.0%)	RUN
d05.25 (0x6519)	Flux Control Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control gain.	0.0 (0.0~1000.0)	RUN
d05.26 (0x651A)	Flux Control Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control integral gain.	0.0 (0.0~1000.0)	RUN
d05.27 (0x651B)	Flux Given Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux given gain.	0.0 (0.0~200.0)	RUN
d05.28 (0x651C)	Torque Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque range.	0x0000 (0x0000~0xFFFF)	RUN
d05.29 (0x651D)	Flux Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux range.	0.0% (0.0%~150.0%)	RUN

d05.3x: Flux Optimization

Code (Address)	Name	Description	Default (Range)	Property
d05.30 (0x651E)	Field-weakening Feed-forward Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the feed-forward coefficient under field weakening control.	10.0% (0.0%~500.0%)	RUN
d05.31 (0x651F)	Field-weakening Control Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the control gain under field weakening control.	10.0% (0.0%~500.0%)	RUN
d05.32 (0x6520)	Field-weakening Current Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the current upper limit under field weakening control.	60.0% (0.0%~250.0%)	RUN
d05.33 (0x6521)	Field-weakening Voltage Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage coefficient under field weakening control.	97.0% (0.0%~120.0%)	RUN
d05.34 (0x6522)	Output Power Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor output power range.	250.0% (0.0%~400.0%)	RUN
d05.35 (0x6523)	Over-excitation Brake Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the over-excitation brake gain.	100.0% (0.0%~500.0%)	RUN
d05.36 (0x6524)	Over-excitation Brake Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the over-excitation brake range.	100.0% (0.0%~250.0%)	RUN

d05.37 (0x6525)	ECO Mode	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: ON	0 (0~1)	RUN
d05.38 (0x6526)	Min. ECO Excitation	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower limit of energy-saving excitation.	50.0% (0.0%~ 80.0%)	RUN
d05.39 (0x6527)	ECO Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the filter time under the energy-saving mode.	0.010s (0.000s~ 6.000s)	RUN

d05.4x: PM HF Injection

Code (Address)	Name	Description	Default (Range)	Property
d05.40 (0x6528)	HF Injection Mode	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: HF injection 0: OFF NOT 0: ON Thousands-bit: Random HF injection (effective only when ones-bit≠0): 0: Random-carrier HF injection 1: Fixed-carrier HF injection	0x0000 (0x0000~ 0x1005)	STOP
d05.41 (0x6529)	HF Injection Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the injection voltage range (relative to rated voltage). It is the result of auto-tuning, so there's no need to modify it.	10.0% (0.0%~ 100.0%)	RUN
d05.42 (0x653A)	HF Injection OFF Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency injection range (relative to motor rated frequency). It is valid when the motor speed is lower than this value.	0.0% (0.0%~ 100.0%)	RUN
d05.43 (0x652B)	Estimated HF Injection Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the estimated gain for high-frequency injection speed.	500 (0~65535)	RUN
d05.44 (0x652C)	Estimated HF Injection Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the estimated integral gain for high-frequency injection speed.	100 (0~65535)	RUN
d05.45 (0x652D)	HF Injection Debugging	V/F SVC FVC PMV/F PMSVC PMFVC Debug the high-frequency injection.	0 (0~65535)	RUN
d05.46 (0x652E)	HF Injection Carrier	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency injection carrier.	0 (0~10)	RUN

d05.5x~d05.6x: VC Extension Control

Code (Address)	Name	Description	Default (Range)	Property
d05.50 (0x6532)	Max. ACR Bandwidth	V/F SVC FVC PMV/F PMSVC PMFVC Set the position compensation under speed control to realize zero servo or raise system rigidity.	50.0 (0.0~100.0)	STOP
d05.51 (0x6533)	Min. Current Error	V/F SVC FVC PMV/F PMSVC PMFVC It is used for debugging.	0.0 (0.0~102.4)	RUN
d05.52 (0x6534)	IF Control Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the current under IF control, where 100% equals the motor's rated current.	60.0% (0.0%~ 400.0%)	RUN
d05.53 (0x6535)	IF Control Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency under IF control.	0.0% (0.0%~ 100.0%)	RUN
d05.60 (0x653C)	PM MTPA Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the MTPA gain for permanent magnet synchronous motors.	100.0 (0.0~400.0)	RUN

d05.61 (0x653D)	PM MTPA Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the MTPA filter time for permanent magnet synchronous motors.	1.0 (0.0~100.0)	RUN
d05.65 (0x6541)	Regenerative Torque Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the regenerative torque limit at low speed.	0.0% (0.0%~ 400.0%)	RUN
d05.66 (0x6542)	Regenerative Torque Limit Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency range limited by torque when at low speed.	6.00% (0.00%~ 30.00%)	RUN
d05.70 (0x6546)	Estimated SVC Gain 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the estimated open loop gain 1.	1.000 (0.000~8.000)	RUN
d05.71 (0x6547)	Estimated SVC Gain 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the estimated open loop gain 2.	1.000 (0.000~8.000)	RUN
d05.72 (0x6548)	Generating Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the generating gain.	30.0% (0.0%~ 6553.5%)	RUN
d05.73 (0x6549)	SPLL Gain 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the SPLL gain 1.	3.000 (0.000~65.535)	RUN
d05.74 (0x654A)	SPLL Gain 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the SPLL gain 2.	1.000 (0.000~65.535)	RUN
d05.75 (0x654B)	Angle Error	V/F SVC FVC PMV/F PMSVC PMFVC Set the angle error limit.	10.0 (0.0~100.0)	RUN
d05.76 (0x654C)	Angle Hysteresis Error	V/F SVC FVC PMV/F PMSVC PMFVC Set the angle hysteresis error limit.	10.0 (0.0~100.0)	RUN
d05.77 (0x654D)	Direct Flux Vector Optimization	V/F SVC FVC PMV/F PMSVC PMFVC Optimize the direct flux vector mode.	0x0000 (0x0000~ 0xFFFF)	RUN
d05.78 (0x654E)	Min. Direct Flux Vector Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the min. frequency for direct flux vector mode.	1.0% (0.0%~ 6000.0%)	RUN
d05.79 (0x654F)	Min. Flux FVC Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the min. frequency for flux closed loop mode.	10.0% (0.0%~ 6000.0%)	RUN
d05.80 (0x6550)	Estimated Direct Flux Vector Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the estimated gain under direct flux vector mode.	1000 (0~ 65535)	RUN
d05.81 (0x6551)	AFO Gain 1	V/F SVC FVC PMV/F PMSVC PMFVC Adjust the AFO1 control gain.	1.000 (0.000~65.535)	RUN
d05.82 (0x6552)	AFO Gain 2	V/F SVC FVC PMV/F PMSVC PMFVC Adjust the AFO2 control gain.	1.000 (0.000~65.535)	RUN
d05.83 (0x6553)	AFO Gain 3	V/F SVC FVC PMV/F PMSVC PMFVC Adjust the AFO3 control gain.	1.000 (0.000~65.535)	RUN
d05.84 (0x6554)	AFO Gain 4	V/F SVC FVC PMV/F PMSVC PMFVC Adjust the AFO4 control gain.	1.000 (0.000~65.535)	RUN

13.29 d06: Motor 3 V/F Control

d06.0x: V/F Control

Code (Address)	Name	Description	Default (Range)	Property
d06.00 (0x6600)	V/F Curve	V/F SVC FVC PMV/F PMSVC PMFVC Set the type of V/F curve according to different load characteristics. 0: Linear V/F curve 1~9: 1.1-1.9 power V/F curves respectively 10: Square V/F curve 11: Custom V/F curve	0 (0~11)	STOP

d06.01 (0x6601)	Torque Boost	V/F SVC FVC PMV/F PMSVC PMFVC 0.0%: Automatic torque boost 0.1%~30.0%: Manual torque boost	Up to model (0.0%~30.0%)	RUN
d06.02 (0x6602)	Torque Boost OFF Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the range of the torque boost. The torque boost will be cut off when the output frequency exceeds this value.	100.0% (0.0%~100.0%)	RUN
d06.03 (0x6603)	Slip Compensation Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the slip compensation gain.	0.0% (0.0%~200.0%)	RUN
d06.04 (0x6604)	Slip Compensation Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the slip compensation range.	100.0% (0.0%~300.0%)	RUN
d06.05 (0x6605)	Slip Compensation Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Enter the parameters on the motor's nameplate correctly to implement parameter tuning for best effect.	0.200s (0.000s~ 6.000s)	RUN
d06.06 (0x6606)	Anti-oscillation Gain	V/F SVC FVC PMV/F PMSVC PMFVC Adjust this value to suppress low-frequency resonance, but it should not be too large or it will cause instability.	100.0% (0.0%~ 900.0%)	RUN
d06.07 (0x6607)	Anti-oscillation Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the anti-oscillation filter time.	1.0s (0.0s~100.0s)	RUN
d06.08 (0x6608)	Output Voltage Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the output voltage percentage, 100% of it corresponds to the motor rated voltage.	100.0% (25.0%~ 120.0%)	STOP
d06.09 (0x6609)	Min. Anti-OC Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the overcurrent suppression lower limit frequency.	0.00 (0.00~50.00)	RUN

d06.1x: User-defined V/F Curves

Code (Address)	Name	Description	Default (Range)	Property
d06.10 (0x660A)	User-Defined Voltage V1	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage V1.	3.0% (0.0%~ 100.0%)	STOP
d06.11 (0x660B)	User-Defined Frequency F1	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency F1.	1.00Hz (0.00Hz~Max. frequency)	STOP
d06.12 (0x660C)	User-Defined Voltage V2	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage V2.	28.0% (0.0%~100.0%)	STOP
d06.13 (0x660D)	User-Defined Frequency F2	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency F2.	10.00Hz (0.00Hz~Max. frequency)	STOP
d06.14 (0x660E)	User-Defined Voltage V3	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage V3.	55.0% (0.0%~ 100.0%)	STOP
d06.15 (0x660F)	User-Defined Frequency F3	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency F3.	25.00Hz (0.00Hz~ P01.10)	STOP
d06.16 (0x6610)	User-Defined Voltage V4	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage V4.	78.0% (0.0%~ 100.0%)	STOP

d06.17 (0x6611)	User-Defined Frequency F4	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency F4.	37.50Hz (0.00Hz~Max. frequency)	STOP
d06.18 (0x6612)	User-Defined Voltage V5	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage V5.	100.0% (0.0%~ 100.0%)	STOP
d06.19 (0x6613)	User-Defined Frequency F5	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency F5.	50.00Hz (0.00Hz~Max. frequency)	STOP

d06.2x: Coil Voltage-Frequency/Current-Frequency Decoupled Control

Code (Address)	Name	Description	Default (Range)	Property
d06.20 (0x6614)	Coil Voltage/Current Source A	V/F SVC FVC PMV/F PMSVC PMFVC 0: Percentage setting 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL 6: RS485 7: Extension (0x31 group) 8: PID 9: Numeric setting Others: Connector	0 (0~65535)	RUN
d06.21 (0x6615)	Coil Voltage/Current Source B	V/F SVC FVC PMV/F PMSVC PMFVC 0: Percentage setting 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL 6: RS485 7: Extension (0x31 group) 8: PID 9: Numeric setting Others: Connector	0 (0~65535)	RUN
d06.22 (0x6616)	Coil Voltage/Current Source Combination	V/F SVC FVC PMV/F PMSVC PMFVC 0: Source A 1: Source B 2: Source A+Source B 3: Source A-Source B 4: Max. (A, B) 5: Min. (A or B)	0 (0~5)	RUN
d06.23 (0x6617)	Coil Output Voltage/Current Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the output percentage for voltage/current under V/F-SPLIT mode. 100.0% of the motor rated voltage/rated current.	0.00% (0.00%~ 110.00%)	RUN
d06.24 (0x6618)	Coil Output Voltage/Current ACC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage/current acceleration time under V/F-SPLIT mode.	10.00s (0.00s~ 100.00s)	RUN
d06.25 (0x6619)	Coil Output Voltage/Current DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage/current deceleration time under V/F-SPLIT mode.	10.00s (0.00s~ 100.00s)	RUN
d06.26 (0x661A)	Coil Stop Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the stop mode under V/F-SPLIT control. 0: ACC./DEC. of output voltage/current and that of output frequency do not affect each other 1: Output frequency drops after the output voltage/current drops to 0V	0 (0~1)	RUN

d06.27 (0x661B)	Coil Output Voltage/Current Numeric Setting	V/F SVC FVC PMV/F PMSVC PMFVC Define the coil output voltage/current numeric settings.	0.00V (0.00V~ 600.00V)	RUN
d06.28 (0x661C)	Coil Control Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the coil control mode. 0: V/F-SPLIT mode 1: IF current/frequency decoupling	0 (0~1)	RUN

d06.3x: V/F ECO Control

Code (Address)	Name	Description	Default (Range)	Property
d06.30 (0x661E)	V/F ECO Function	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: ON	0 (0~1)	STOP
d06.31 (0x661F)	V/F ECO Min. Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower frequency limit of the ECO mode.	15.0Hz (0.0Hz~ 50.0Hz)	STOP
d06.32 (0x6620)	V/F ECO Min. Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower voltage limit of the ECO mode.	50.0% (20.0%~ 100.0%)	STOP
d06.33 (0x6621)	V/F ECO Voltage DEC Rate	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage deceleration rate under the V/F ECO mode.	0.010V/ms (0.000V/ms~ 0.2000V/ms)	RUN
d06.34 (0x6622)	ACC Rate	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage acceleration rate in the ECO mode.	0.200V/ms (0.000V/ms~ 2.000V/ms)	RUN
d06.35 (0x6623)	Over-excitation Gain	V/F SVC FVC PMV/F PMSVC PMFVC It is valid when tens-bit of F10.11 is not zero; at the same output frequency, the output voltage increases with increasing bus voltage.	64 (0~200)	RUN

d06.4x: V/F PM Anti-oscillation

Code (Address)	Name	Description	Default (Range)	Property
d06.40 (0x6628)	Damper Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the damper proportional gain.	5.0% (0%~400.0%)	RUN
d06.41 (0x6629)	Damper Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the damper filter time.	0s (0s~100.0s)	RUN
d06.42 (0x662A)	Damper Output Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the damper output range.	5.0% (0%~100.0%)	RUN
d06.43 (0x662B)	Active Current Filter Bandwidth	V/F SVC FVC PMV/F PMSVC PMFVC Set the active current filter bandwidth.	5.000Hz (0Hz~ 65535Hz)	RUN
d06.44 (0x662C)	Damper Weakening Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the damper proportional gain weakening coefficient.	20.0% (0%~100.0%)	RUN
d06.45 (0x662D)	Damper Weakening Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the damper proportional gain weakening frequency.	20.0% (0%~100.0%)	RUN
d06.46 (0x662E)	Anti-oscillation Start Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the anti-oscillation start frequency.	3.0% (0.0%~ 200.0%)	RUN

d06.5x: V/F PM Flux Control

Code (Address)	Name	Description	Default (Range)	Property
d06.50 (0x6632)	Flux Control	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control.	30.0% (0%~500.0%)	RUN
d06.51 (0x6633)	Flux Control Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control proportional gain.	1000 (0~9999)	RUN
d06.52 (0x6634)	Flux Control Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control integral gain.	1000 (0~9999)	RUN
d06.53 (0x6635)	Flux Controller Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux controller frequency.	5.0% (0%~100.0%)	RUN
d06.54 (0x6636)	Flux Controller Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux controller time.	7.0s (0s~100.0s)	RUN

d06.6x: V/F PM Current Control

Code (Address)	Name	Description	Default (Range)	Property
d06.60 (0x663C)	D-Axis Current Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis current gain.	0.500 (0~10.000)	RUN
d06.61 (0x663D)	Q-Axis Current Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis current gain.	0.500 (0~10.000)	RUN
d06.62 (0x663E)	D-Axis Feedforward Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis feedforward gain.	0 (0~10.000)	RUN
d06.63 (0x663F)	Q-Axis Feedforward Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis feedforward gain.	1.000 (0~10.000)	RUN
d06.64 (0x6640)	D-Axis Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis control proportional gain.	50.0% (0%~200.0%)	RUN
d06.65 (0x6641)	D-Axis Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis control integral gain.	80.0% (0%~1000.0%)	RUN
d06.66 (0x6642)	D-Axis LF Current Proportional Gain Boost	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis low-frequency current proportional gain boost.	0% (0%~100.0%)	RUN
d06.67 (0x6643)	Q-Axis Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis control proportional gain.	100.0% (0%~6553.5%)	RUN
d06.68 (0x6644)	Q-Axis Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis control integral gain.	100.0% (0%~6553.5%)	RUN
d06.69 (0x6645)	D-Axis Weakening Integral	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis integral weakening coefficient.	1000 (0~1024)	RUN
d06.70 (0x6646)	D-Axis Proportional Gain Shift Start Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the start frequency for D-axis proportional gain shifting.	80.0% (0%~6553.5%)	
d06.71 (0x6647)	D-Axis Proportional Gain Shift OFF Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the OFF frequency for D-axis proportional gain shifting.	120.0% (0%~6553.5%)	RUN

d06.72 (0x6648)	HF D-Axis Current Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency D-axis current control proportional gain.	100.0% (0%~200.0%)	RUN
d06.73 (0x6649)	D-Axis Current Filter Bandwidth	V/F SVC FVC PMV/F PMSVC PMFVC Set the bandwidth of the D-axis current low-pass filter.	11.000Hz (0Hz~65.535Hz)	RUN
d06.74 (0x664A)	Q-Axis Current Filter Bandwidth	V/F SVC FVC PMV/F PMSVC PMFVC Set the bandwidth of the Q-axis current low-pass filter.	11.000Hz (0Hz~65.535Hz)	RUN
d06.75 (0x664B)	D-Axis Filter Bandwidth	V/F SVC FVC PMV/F PMSVC PMFVC Set the given D-axis filter bandwidth.	1.000Hz (0Hz~65.535Hz)	RUN
d06.76 (0x664C)	Light-load Current I_q Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the light-load current I_q threshold.	20.0% (0%~50.0%)	RUN
d06.77 (0x664D)	Current I_d Weakening Amplitude	V/F SVC FVC PMV/F PMSVC PMFVC Set the current I_d weakening amplitude.	50.0% (0%~100.0%)	RUN
d06.78 (0x664E)	Efficient Current I_d Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the efficient current I_d value.	0% (0%~50.0%)	RUN
d06.79 (0x664F)	Shift Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the shift frequency.	10.0% (0%~50.0%)	RUN
d06.80 (0x6650)	Shift Frequency Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the shift frequency range.	0% (0%~50.0%)	RUN
d06.81 (0x6651)	Control Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the control mode for the PM voltage vector algorithm.	0x1021 (0x0000~0x1121)	RUN
d06.82 (0x6652)	LF Pull-in Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the low-frequency pull-in current.	100.0% (0%~200.0%)	RUN
d06.83 (0x6653)	LF Pull-in Current Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency for low-frequency pull-in current.	10.0% (0%~100.0%)	RUN
d06.84 (0x6654)	HF Pull-in Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency pull-in current.	10.0% (0%~200.0%)	RUN
d06.85 (0x6655)	HF Pull-in Current Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency for high-frequency pull-in current.	15.0% (0%~100.0%)	RUN

13.30 d07: Motor 4 Parameters

d07.0x: Basic Parameters and Auto-tuning

Code (Address)	Name	Description	Default (Range)	Property
d07.00 (0x6700)	Motor Type	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor type. 0: Asynchronous motor (AM) 1: Permanent magnet synchronous motor (PM)	0 (0~1)	READ
d07.01 (0x6701)	Pole No.	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor pole number.	4 (2~98)	STOP
d07.02 (0x6702)	Rated Power	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated power of the motor.	Up to model (0.1kW~1000.0kW)	STOP
d07.03 (0x6703)	Rated Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated frequency of the motor.	Up to model (0.01Hz~Max. frequency)	STOP

d07.04 (0x6704)	Rated Speed	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated speed of the motor.	Up to model (0rpm~ 65000rpm)	STOP
d07.05 (0x6705)	Rated Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated voltage of the motor.	Up to model (0V~2000V)	STOP
d07.06 (0x6706)	Rated Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated current of the motor.	Up to model (0.1A~ 3000.0A)	STOP
d07.07 (0x6707)	Motor Auto-tuning	V/F SVC FVC PMV/F PMSVC PMFVC After the parameter auto-tuning is finished, [F02.07] will be set to "0" automatically. 0: None 1: Dynamic auto-tuning 2: Static auto-tuning 3: Stator resistance auto-tuning 9: PM inductance saturation coefficient auto-tuning 10: Non-linear auto-tuning	0 (0~10)	STOP
d07.08 (0x6708)	Auto-tuning Flag	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor auto-tuning flag.	0x0000 (0x0000~ 0xFFFF)	READ
d07.09 (0x6709)	Motor ID	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor ID.	0x0000 (0x0000~ 0xFFFF)	STOP

d07.1x: AM Parameters

Code (Address)	Name	Description	Default (Range)	Property
d07.10 (0x670A)	AM No-load Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the no-load current for asynchronous motors.	Up to model (0.1A~ 3000.0A)	STOP
d07.11 (0x670B)	AM Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator resistance for asynchronous motors.	Up to model (1mΩ~ 65535mΩ)	STOP
d07.12 (0x670C)	AM Rotor Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the rotor resistance for asynchronous motors.	Up to model (1mΩ~ 65535mΩ)	STOP
d07.13 (0x670D)	AM Stator Leakage Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator leakage inductance for asynchronous motors.	Up to model (1mH~ 6553.5mH)	STOP
d07.14 (0x670E)	AM Stator Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator inductance for asynchronous motors.	Up to model (1mH~ 65535mH)	STOP
d07.15 (0x670F)	Per-unit Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the stator resistance.	Up to model (0.01%~ 655.35%)	READ
d07.16 (0x6710)	Per-unit Rotor Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the rotor resistance.	Up to model (0.01%~ 655.35%)	READ
d07.17 (0x6711)	Per-unit Stator Leakage Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the stator leakage inductance.	Up to model (0.01%~ 655.35%)	READ
d07.18 (0x6712)	Per-unit Stator Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the stator inductance.	Up to model (0.1%~ 6553.5%)	READ
d07.19 (0x6713)	Parameter Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the parameter range.	0x0000 (0x0000~ 0xFFFF)	STOP

d07.2x: PM Parameters

Code (Address)	Name	Description	Default (Range)	Property
d07.20 (0x6714)	Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator resistance for permanent magnet synchronous motors.	Up to model (1mΩ~65535mΩ)	STOP
d07.21 (0x6715)	D-axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance for permanent magnet synchronous motors.	Up to model (1mH~65535mH)	STOP
d07.22 (0x6716)	Q-axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance for permanent magnet synchronous motors.	Up to model (1mH~65535mH)	STOP
d07.23 (0x6717)	Back Emf	V/F SVC FVC PMV/F PMSVC PMFVC Set the back emf for permanent magnet synchronous motors. Only recognized in dynamic auto-tuning.	Up to model (1~1500V)	STOP
d07.24 (0x6718)	Encoder Installation Angle	V/F SVC FVC PMV/F PMSVC PMFVC Set the encoder installation angle for permanent magnet synchronous motors.	Up to model (0.0°~360.0°)	RUN
d07.25 (0x6719)	Per-unit Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of stator resistance for permanent magnet synchronous motors.	Up to model (0.01%~655.35%)	READ
d07.26 (0x671A)	Per-unit D-Axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of D-axis inductance for permanent magnet synchronous motors.	Up to model (0.01%~655.35%)	READ
d07.27 (0x671B)	Per-unit Q-Axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of Q-axis inductance for permanent magnet synchronous motors.	Up to model (0.01%~655.35%)	READ
d07.28 (0x671C)	Pulse Width Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the pulse width coefficient for permanent magnet synchronous motors.	Up to model (0.01~655.35)	STOP
d07.29 (0x671D)	Actual Value Unit	V/F SVC FVC PMV/F PMSVC PMFVC Select the unit for actual value.	Up to model (0x0000~0x3322)	STOP
d07.30 (0x671E)	Frequency Decimal Bit	V/F SVC FVC PMV/F PMSVC PMFVC Display the decimal bit of motor frequency.	0 (0~3)	STOP

d07.4x~d07.5x:PM D/Q-Axis Inductance Saturation Coefficient

Code (Address)	Name	Description	Default (Range)	Property
d07.40 (0x6728)	PM D-Axis Inductance Saturation Coefficient 0	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 0 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
d07.41 (0x6729)	PM D-Axis Inductance Saturation Coefficient 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 1 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
d07.42 (0x672A)	PM D-Axis Inductance Saturation Coefficient 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 2 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
d07.43 (0x672B)	PM D-Axis Inductance Saturation Coefficient 3	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 3 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN

d07.44 (0x672C)	PM D-Axis Inductance Saturation Coefficient 4	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 4 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
d07.45 (0x672D)	PM D-Axis Inductance Saturation Coefficient 5	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 5 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
d07.46 (0x672E)	PM D-Axis Inductance Saturation Coefficient 6	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 6 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
d07.47 (0x672F)	PM D-Axis Inductance Saturation Coefficient 7	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 7 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
d07.48 (0x6730)	PM D-Axis Inductance Saturation Coefficient 8	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 8 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
d07.49 (0x6731)	PM D-Axis Inductance Saturation Coefficient 9	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance saturation coefficient 9 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
d07.50 (0x6732)	PM Q-Axis Inductance Saturation Coefficient 0	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 0 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
d07.51 (0x6733)	PM Q-Axis Inductance Saturation Coefficient 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 1 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
d07.52 (0x6734)	PM Q-Axis Inductance Saturation Coefficient 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 2 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
d07.53 (0x6735)	PM Q-Axis Inductance Saturation Coefficient 3	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 3 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
d07.54 (0x6736)	PM Q-Axis Inductance Saturation Coefficient 4	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 4 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
d07.55 (0x6737)	PM Q-Axis Inductance Saturation Coefficient 5	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 5 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
d07.56 (0x6738)	PM Q-Axis Inductance Saturation Coefficient 6	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 6 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN
d07.57 (0x6739)	PM Q-Axis Inductance Saturation Coefficient 7	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 7 for permanent magnet synchronous motors.	100.0% (0.1%~ 2000.0%)	RUN

d07.58 (0x673A)	PM Q-Axis Inductance Saturation Coefficient 8	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 8 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN
d07.59 (0x673B)	PM Q-Axis Inductance Saturation Coefficient 9	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance saturation coefficient 9 for permanent magnet synchronous motors.	100.0% (0.1%~2000.0%)	RUN

d07.6x~d07.7x: Tuning Extension

Code (Address)	Name	Description	Default (Range)	Property
d07.60 (0x673C)	Online Tuning	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Tuning mode 0: OFF 1: Tune only without update >1: Tune and update Thousands-bit: Stator resistance linear auto-tuning 0: OFF 1: ON	0x0000 (0x0000~0xFFFF)	STOP
d07.61 (0x673D)	Auto-tuning Flag	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator resistance tuning coefficient 1.	0x0000 (0x0000~0xFFFF)	RUN
d07.67 (0x6743)	V-phase Current Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the V-phase current gain.	1024 (1024~2048)	RUN
d07.68 (0x6744)	W-phase Current Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the W-phase current gain.	1024 (1024~2048)	RUN
d07.69 (0x6745)	Electric Angle Compensation	V/F SVC FVC PMV/F PMSVC PMFVC Set the electric angle compensation.	0.0 (0.0~6553.5)	RUN
d07.70 (0x6746)	Deadtime Compensation Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the dead-time compensation gain.	0 (0~65535)	RUN
d07.71 (0x6747)	Actual Deadtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the actual deadtime.	0.00 (0~655.35)	RUN
d07.72 (0x6748)	PM Pole Search	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: SVC Tens-bit: FVC 0: OFF 1: ON 2: ON during the first power-up	0x0010 (0x0000~0xF223)	STOP
d07.73 (0x6749)	Pole Search Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the pole search current value.	0.0 (0.0~6553.5)	STOP
d07.74 (0x674A)	Pole Search Current Feedback	V/F SVC FVC PMV/F PMSVC PMFVC Set the pole search current feedback value.	0.0 (0.0~6553.5)	STOP
d07.75 (0x674B)	PM Inductance Tuning Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the inductance tuning frequency for permanent magnet synchronous motors.	300.00Hz (0.00Hz~600.00Hz)	STOP
d07.76 (0x674C)	PM Inductance Tuning Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the inductance tuning current for permanent magnet synchronous motors.	0.0 (0.0~180.0)	STOP

d07.77 (0x674D)	LC Filter Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the LC filter inductance.	0.000 (0.000~65.000)	STOP
d07.78 (0x674E)	LC Filter Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the LC filter resistance.	0.0 (0.0~6500.0)	STOP

13.31 d08: Motor 4 Vector Control

d08.0x: ASR Control

Code (Address)	Name	Description	Default (Range)	Property
d08.00 (0x6800)	Rigidity Class	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR rigidity level. The higher the level, the better the speed rigidity.	32 (0~128)	RUN
d08.01 (0x6801)	Rigidity Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR rigidity mode.	0x0000 (0x0000~0xFFFF)	RUN
d08.02 (0x6802)	ASR H-speed Proportional Gain 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR proportional gain at high speed.	10.00 (0.01~100.00)	RUN
d08.03 (0x6803)	ASR H-speed Integral Time 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR integral time at high speed.	0.100s (0.000s~6.000s)	RUN
d08.04 (0x6804)	ASR Filter Time 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR filter time at high speed.	0.0ms (0.0ms~100.0ms)	RUN
d08.05 (0x6805)	ASR Shift Frequency 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR shift frequency at high speed.	0.00Hz (0.00Hz~Max. frequency)	RUN
d08.06 (0x6806)	ASR L-speed Proportional Gain 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR proportional gain at low speed.	10.00 (0.01~100.00)	RUN
d08.07 (0x6807)	ASR L-speed Integral Time 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR integral time at low speed.	0.100s (0.000s~6.000s)	RUN
d08.08 (0x6808)	ASR Filter Time 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR filter time at low speed.	0.0ms (0.0ms~100.0ms)	RUN
d08.09 (0x6809)	ASR Shift Frequency 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR shift frequency at low speed.	0.00Hz (0.00Hz~d08.05)	RUN

d08.1x: ACR and Torque Limit

Code (Address)	Name	Description	Default (Range)	Property
d08.10 (0x680A)	ACR D-Axis Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the current loop D-axis proportional gain.	1.000 (0.001~4.000)	RUN
d08.11 (0x680B)	ACR D-Axis Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the current loop D-axis integral gain.	1.000 (0.001~4.000)	RUN

d08.12 (0x680C)	Q-Axis Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the current loop Q-axis proportional gain.	1.000 (0.001~4.000)	RUN
d08.13 (0x680D)	Q-Axis Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the current loop Q-axis integral gain.	1.000 (0.001~4.000)	RUN
d08.14 (0x680E)	ACR Optimization	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Voltage feed forward control 0: OFF 1: ON Tens-bit: Current prediction control 0: OFF 1: ON Hundreds-bit: Current loop gain 0: OFF 1: ON	0x0000 (0x0000~ 0x0111)	RUN
d08.15 (0x680F)	Motoring Torque Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque limit when motor is running with load.	250.0% (0.0%~ 400.0%)	RUN
d08.16 (0x6810)	Generating Torque Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque limit in power generation mode.	250.0% (0.0%~ 400.0%)	RUN
d08.17 (0x6811)	Motoring Torque Limit Source	V/F SVC FVC PMV/F PMSVC PMFVC Set the regenerative torque limit at low speed. 0: Keypad 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL terminal 6: RS485 communication (0x3014) 7: Reserved (0x31 group)	0 (0~7)	RUN
d08.18 (0x6812)	Regenerating Torque Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency range limited by torque when at low speed. 0: Keypad 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL terminal 6: RS485 communication (0x3015) 7: Reserved (0x31 group)	0 (0~7)	RUN
d08.19 (0x6813)	Torque Limit View	V/F SVC FVC PMV/F PMSVC PMFVC View the given torque limits. 0: C00.06 displays the torque limit value during motoring 1: C00.06 displays the torque limit value during generating	0 (0~1)	RUN

d08.2x: Torque Optimization

Code (Address)	Name	Description	Default (Range)	Property
d08.20 (0x6814)	PM LF Pull-in Current	V/F SVC FVC PMV/F PMSVC PMFVC When the SVC mode of the PM is on, the larger the pull-in current, the larger the torque output.	20.0% (0.0%~50.0%)	RUN
d08.21 (0x6815)	PM HF Pull-in Current	V/F SVC FVC PMV/F PMSVC PMFVC When the SVC mode of the PM is on, the larger the pull-in current, the larger the torque output.	10.0% (0.0%~50.0%)	RUN

d08.22 (0x6816)	PM Pull-in Current Frequency	V/F SVC FVC PMV/F PMSVC PMFVC The set value 100.0% corresponds to F01.10 [Max. Frequency].	10.0% (0.0%~100.0%)	RUN
d08.23 (0x6817)	AM Slip Compensation	V/F SVC FVC PMV/F PMSVC PMFVC Set the slip compensation for asynchronous motors.	100.0% (0.0%~250.0%)	RUN
d08.24 (0x6818)	Initial Starting Torque	V/F SVC FVC PMV/F PMSVC PMFVC Set the initial starting torque.	0.0% (0.0%~250.0%)	RUN
d08.25 (0x6819)	Flux Control Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control gain.	0.0 (0.0~1000.0)	RUN
d08.26 (0x681A)	Flux Control Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control integral gain.	0.0 (0.0~1000.0)	RUN
d08.27 (0x681B)	Flux Given Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux given gain.	0.0 (0.0~200.0)	RUN
d08.28 (0x681C)	Torque Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque range.	0x0000 (0x0000~ 0xFFFF)	RUN
d08.29 (0x681D)	Flux Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux range.	0.0% (0.0%~150.0%)	RUN

d08.3x: Flux Optimization

Code (Address)	Name	Description	Default (Range)	Property
d08.30 (0x681E)	Field-weakening Feed-forward Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the feed-forward coefficient under field weakening control.	10.0% (0.0%~ 500.0%)	RUN
d08.31 (0x681F)	Field-weakening Control Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the control gain under field weakening control.	10.0% (0.0%~ 500.0%)	RUN
d08.32 (0x6820)	Field-weakening Current Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the current upper limit under field weakening control.	60.0% (0.0%~ 250.0%)	RUN
d08.33 (0x6821)	Field-weakening Voltage Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage coefficient under field weakening control.	97.0% (0.0%~ 120.0%)	RUN
d08.34 (0x6822)	Output Power Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor output power range.	250.0% (0.0%~ 400.0%)	RUN
d08.35 (0x6823)	Over-excitation Brake Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the over-excitation gain.	100.0% (0.0%~ 500.0%)	RUN
d08.36 (0x6824)	Over-excitation Brake Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the over-excitation range.	100.0% (0.0%~ 250.0%)	RUN
d08.37 (0x6825)	ECO Mode	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: ON	0 (0~1)	RUN
d08.38 (0x6826)	Min. ECO Excitation	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower limit of excitation under the energy-saving mode.	50.0% (0.0%~80.0%)	RUN
d08.39 (0x6827)	ECO Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the filter time under the energy-saving mode.	0.010s (0.000s~ 6.000s)	RUN

d08.4x: PM HF Injection

Code (Address)	Name	Description	Default (Range)	Property
d08.40 (0x6828)	HF Injection Mode	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: HF injection 0: OFF NOT 0: ON Thousands-bit: Random HF injection (effective only when ones-bit≠0): 0: Random-carrier HF injection 1: Fixed-carrier HF injection	0x0000 (0x0000~0x1005)	STOP
d08.41 (0x6829)	HF Injection Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the injection voltage range (relative to rated voltage). It is the result of auto-tuning, so there's no need to modify it.	10.0% (0.0%~100.0%)	RUN
d08.42 (0x683A)	HF Injection OFF Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency injection range (relative to motor rated frequency). It is valid when the motor speed is lower than this value.	0.0% (0.0%~100.0%)	RUN
d08.43 (0x682B)	Estimated HF Injection Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the estimated gain for high-frequency injection speed.	500 (0~65535)	RUN
d08.44 (0x682C)	Estimated HF Injection Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the estimated integral gain for high-frequency injection speed.	100 (0~65535)	RUN
d08.45 (0x682D)	HF Injection Debugging	V/F SVC FVC PMV/F PMSVC PMFVC Debug the high-frequency injection.	0 (0~65535)	RUN
d08.46 (0x682E)	HF Injection Carrier	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency injection carrier.	0 (0~10)	RUN

d08.5x~03.6x: VC Extension Control

Code (Address)	Name	Description	Default (Range)	Property
d08.50 (0x6832)	Max. ACR Bandwidth	V/F SVC FVC PMV/F PMSVC PMFVC Set the position compensation under speed control to realize zero servo or raise system rigidity.	50.0 (0.0~100.0)	STOP
d08.51 (0x6833)	Min. Current Error	V/F SVC FVC PMV/F PMSVC PMFVC It is used for debugging.	0.0 (0.0~102.4)	RUN
d08.52 (0x6834)	IF Control Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the current under IF control, where 100% equals the motor's rated current.	60.0% (0.0%~400.0%)	RUN
d08.53 (0x6835)	IF Control Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency under IF control.	0.0% (0.0%~100.0%)	RUN
d08.60 (0x683C)	PM MTPA Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the MTPA gain for permanent magnet synchronous motors.	100.0 (0.0~400.0)	RUN
d08.61 (0x683D)	PM MTPA Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the MTPA filter time for permanent magnet synchronous motors.	1.0 (0.0~100.0)	RUN
d08.65 (0x6841)	Regenerative Torque Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the regenerative torque limit at low speed.	0.0% (0.0%~400.0%)	RUN
d08.66 (0x6842)	Regenerative Torque Limit Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency range limited by torque when at low speed.	6.00% (0.00%~30.00%)	RUN

d08.70 (0x6846)	Estimated SVC Gain 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the estimated open loop gain 1.	1.000 (0.000~8.000)	RUN
d08.71 (0x6847)	Estimated SVC Gain 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the estimated open loop gain 2.	1.000 (0.000~8.000)	RUN
d08.72 (0x6848)	Generating Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the generating gain.	30.0% (0.0%~ 6553.5%)	RUN
d08.73 (0x6849)	SPLL Gain 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the SPLL gain 1.	3.000 (0.000~65.535)	RUN
d08.74 (0x684A)	SPLL Gain 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the SPLL gain 2.	1.000 (0.000~65.535)	RUN
d08.75 (0x684B)	Angle Error	V/F SVC FVC PMV/F PMSVC PMFVC Set the angle error limit.	10.0 (0.0~100.0)	RUN
d08.76 (0x684C)	Angle Hysteresis Error	V/F SVC FVC PMV/F PMSVC PMFVC Set the angle hysteresis error limit.	10.0 (0.0~100.0)	RUN
d08.77 (0x684D)	Direct Flux Vector Optimization	V/F SVC FVC PMV/F PMSVC PMFVC Optimize the direct flux vector mode.	0x0000 (0x0000~ 0xFFFF)	RUN
d08.78 (0x684E)	Min. Direct Flux Vector Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the min. frequency for direct flux vector mode.	1.0% (0.0%~ 6000.0%)	RUN
d08.79 (0x684F)	Min. Flux FVC Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the min. frequency for flux closed loop mode.	10.0% (0.0%~ 6000.0%)	RUN
d08.80 (0x6850)	Estimated Direct Flux Vector Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the estimated gain under direct flux vector mode.	1000 (0~ 65535)	RUN
d08.81 (0x6851)	AFO Gain 1	V/F SVC FVC PMV/F PMSVC PMFVC Adjust the AFO1 control gain.	1.000 (0.000~65.535)	RUN
d08.82 (0x6852)	AFO Gain 2	V/F SVC FVC PMV/F PMSVC PMFVC Adjust the AFO2 control gain.	1.000 (0.000~65.535)	RUN
d08.83 (0x6853)	AFO Gain 3	V/F SVC FVC PMV/F PMSVC PMFVC Adjust the AFO3 control gain.	1.000 (0.000~65.535)	RUN
d08.84 (0x6854)	AFO Gain 4	V/F SVC FVC PMV/F PMSVC PMFVC Adjust the AFO4 control gain.	1.000 (0.000~65.535)	RUN

13.32 d09: Motor 4 V/F Control

d09.0x: V/F Control

Code (Address)	Name	Description	Default (Range)	Property
d09.00 (0x6900)	V/F Curve	V/F SVC FVC PMV/F PMSVC PMFVC Set the type of V/F curve according to different load characteristics. 0: Linear V/F curve 1~9: 1.1-1.9 power V/F curves respectively 10: Square V/F curve 11: Customized V/F curve	0 (0~11)	STOP
d09.01 (0x6901)	Torque Boost	V/F SVC FVC PMV/F PMSVC PMFVC 0.0%: Automatic torque boost 0.1%~30.0%: Manual torque boost	Up to model (0.0%~ 30.0%)	RUN
d09.02 (0x6902)	Torque Boost OFF Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the range of the torque boost. The torque boost will be cut off when the output frequency exceeds this value.	100.0% (0.0%~ 100.0%)	RUN

d09.03 (0x6903)	Slip Compensation Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the slip compensation gain.	0.0% (0.0%~200.0%)	RUN
d09.04 (0x6904)	Slip Compensation Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the slip compensation range.	100.0% (0.0%~300.0%)	RUN
d09.05 (0x6905)	Slip Compensation Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Enter the parameters on the motor's nameplate correctly to implement parameter tuning for best effect.	0.200s (0.000s~6.000s)	RUN
d09.06 (0x6906)	Anti-oscillation Gain	V/F SVC FVC PMV/F PMSVC PMFVC Adjust this value to suppress low-frequency resonance, but it should not be too large or it will cause instability.	100.0% (0.0%~900.0%)	RUN
d09.07 (0x6907)	Anti-oscillation Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the anti-oscillation filter time.	1.0s (0.0s~100.0s)	RUN
d09.08 (0x6908)	Output Voltage Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the output voltage percentage, 100% of it corresponds to the motor rated voltage.	100.0% (25.0%~120.0%)	STOP
d09.09 (0x6909)	Min. Anti-OC Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the overcurrent suppression lower limit frequency.	0.00 (0.00~50.00)	RUN

d09.1x: User-defined V/F Curves

Code (Address)	Name	Description	Default (Range)	Property
d09.10 (0x690A)	User-Defined Voltage V1	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage V1.	3.0% (0.0%~100.0%)	STOP
d09.11 (0x690B)	User-Defined Frequency F1	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency F1.	1.00Hz (0.00Hz~Max. frequency)	STOP
d09.12 (0x690C)	User-Defined Voltage V2	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage V2.	28.0% (0.0%~100.0%)	STOP
d09.13 (0x690D)	User-Defined Frequency F2	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency F2.	10.00Hz (0.00Hz~Max. frequency)	STOP
d09.14 (0x690E)	User-Defined Voltage V3	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage V3.	55.0% (0.0%~100.0%)	STOP
d09.15 (0x690F)	User-Defined Frequency F3	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency F3.	25.00Hz (0.00Hz~Max. frequency)	STOP
d09.16 (0x6910)	User-Defined Voltage V4	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage V4.	78.0% (0.0%~100.0%)	STOP
d09.17 (0x6911)	User-Defined Frequency F4	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency F4.	37.50Hz (0.00Hz~Max. frequency)	STOP
d09.18 (0x6912)	User-Defined Voltage V5	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage V5.	100.0% (0.0%~100.0%)	STOP
d09.19 (0x6913)	User-Defined Frequency F5	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency F5.	50.00Hz (0.00Hz~Max. frequency)	STOP

d09.2x: Coil Voltage-Frequency/Current-Frequency Decoupled Control

Code (Address)	Name	Description	Default (Range)	Property
d09.20 (0x6914)	Coil Voltage/Current Source A	V/F SVC FVC PMV/F PMSVC PMFVC 0: Percentage setting 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL 6: RS485 7: Extension (0x31 group) 8: PID 9: Numeric setting Others: Connector	0 (0~65535)	RUN
d09.21 (0x6915)	Coil Voltage/Current Source B	V/F SVC FVC PMV/F PMSVC PMFVC 0: Percentage setting 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL 6: RS485 7: Extension (0x31 group) 8: PID 9: Numeric setting Others: Connector	0 (0~65535)	RUN
d09.22 (0x6916)	Coil Voltage/Current Source Combination	V/F SVC FVC PMV/F PMSVC PMFVC 0: Source A 1: Source B 2: Source A+Source B 3: Source A-Source B 4: Max. (A, B) 5: Min. (A or B)	0 (0~5)	RUN
d09.23 (0x6917)	Coil Output Voltage/Current Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the output percentage for voltage/current under V/F-SPLIT mode. 100.0% of the motor rated voltage/rated current.	0.00% (0.00%~110.00%)	RUN
d09.24 (0x6918)	Coil Output Voltage/Current ACC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage/current acceleration time under V/F-SPLIT mode.	10.00s (0.00s~100.00s)	RUN
d09.25 (0x6919)	Coil Output Voltage/Current DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage/current deceleration time under V/F-SPLIT mode.	10.00s (0.00s~100.00s)	RUN
d09.26 (0x691A)	Coil Stop Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the stop mode under V/F-SPLIT control. 0: ACC./DEC. of output voltage/current and that of output frequency do not affect each other 1: Output frequency drops after the output voltage/current drops to 0V	0 (0~1)	RUN
d09.27 (0x691B)	Coil Output Voltage/Current Numeric Setting	V/F SVC FVC PMV/F PMSVC PMFVC Define the coil output voltage/current numeric settings.	0.00V (0.00V~600.00V)	RUN
d09.28 (0x691C)	Coil Control Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the coil control mode. 0: V/F-SPLIT mode 1: IF current/frequency decoupling	0 (0~1)	RUN

d09.3x: V/F ECO Control

Code (Address)	Name	Description	Default (Range)	Property
d09.30 (0x691E)	V/F ECO Function	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: ON	0 (0~1)	STOP
d09.31 (0x691F)	V/F ECO Min. Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower frequency limit of the ECO mode.	15.0Hz (0.0Hz~50.0Hz)	STOP
d09.32 (0x6920)	V/F ECO Min. Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower voltage limit of the ECO mode.	50.0% (20.0%~100.0%)	STOP
d09.33 (0x6921)	V/F ECO Voltage DEC Rate	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage deceleration rate under the V/F ECO mode.	0.010V/ms (0.000V/ms~0.2000V/ms)	RUN
d09.34 (0x6922)	V/F ECO Voltage ACC Rate	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage acceleration rate in the ECO mode.	0.200V/ms (0.000V/ms~2.000V/ms)	RUN
d09.35 (0x6923)	Over-excitation Gain	V/F SVC FVC PMV/F PMSVC PMFVC It is valid when tens-bit of F10.11 is not zero; at the same output frequency, the output voltage increases with increasing bus voltage.	64 (0~200)	RUN

d09.4x: V/F PM Anti-oscillation

Code (Address)	Name	Description	Default (Range)	Property
d09.40 (0x6928)	Damper Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the damper proportional gain.	5.0% (0%~400.0%)	RUN
d09.41 (0x6929)	Damper Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the damper filter time.	0s (0s~100.0s)	RUN
d09.42 (0x692A)	Damper Output Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the damper output range.	5.0% (0%~100.0%)	RUN
d09.43 (0x692B)	Active Current Filter Bandwidth	V/F SVC FVC PMV/F PMSVC PMFVC Set the active current filter bandwidth.	5.000Hz (0Hz~65535Hz)	RUN
d09.44 (0x692C)	Damper Weakening Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the damper proportional gain weakening coefficient.	20.0% (0%~100.0%)	RUN
d09.45 (0x692D)	Damper Weakening Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the damper proportional gain weakening frequency.	20.0% (0%~100.0%)	RUN
d09.46 (0x692E)	Anti-oscillation Start Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the anti-oscillation start frequency.	3.0% (0.0%~200.0%)	RUN

d09.5x: V/F PM Flux Control

Code (Address)	Name	Description	Default (Range)	Property
d09.50 (0x6932)	Flux Control	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control.	30.0% (0%~500.0%)	RUN
d09.51 (0x6933)	Flux Control Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control proportional gain.	1000 (0~9999)	RUN
d09.52 (0x6934)	Flux Control Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control integral gain.	1000 (0~9999)	RUN

d09.53 (0x6935)	Flux Controller Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux controller frequency.	5.0% (0%~100.0%)	RUN
d09.54 (0x6936)	Flux Controller Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux controller time.	7.0s (0s~100.0s)	RUN

d09.6x: V/F PM Current Control

Code (Address)	Name	Description	Default (Range)	Property
d09.60 (0x693C)	D-Axis Current Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis current gain.	0.500 (0~10.000)	RUN
d09.61 (0x693D)	Q-Axis Current Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis current gain.	0.500 (0~10.000)	RUN
d09.62 (0x693E)	D-Axis Feedforward Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis feedforward gain.	0 (0~10.000)	RUN
d09.63 (0x693F)	Q-Axis Feedforward Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis feedforward gain.	1.000 (0~10.000)	RUN
d09.64 (0x6940)	D-Axis Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis control proportional gain.	50.0% (0%~200.0%)	RUN
d09.65 (0x6941)	D-Axis Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis control integral gain.	80.0% (0%~1000.0%)	RUN
d09.66 (0x6942)	D-Axis LF Current Proportional Gain Boost	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis low-frequency current proportional gain boost.	0% (0%~100.0%)	RUN
d09.67 (0x6943)	Q-Axis Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis control proportional gain.	100.0% (0%~6553.5%)	RUN
d09.68 (0x6944)	Q-Axis Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis control integral gain.	100.0% (0%~6553.5%)	RUN
d09.69 (0x6945)	D-Axis Weakening Integral	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis integral weakening coefficient.	1000 (0~1024)	RUN
d09.70 (0x6946)	D-Axis Proportional Gain Shift Start Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the start frequency for D-axis proportional gain shifting.	80.0% (0%~6553.5%)	STOP
d09.71 (0x6947)	D-Axis Proportional Gain Shift OFF Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the OFF frequency for D-axis proportional gain shifting.	120.0% (0%~6553.5%)	RUN
d09.72 (0x6948)	HF D-Axis Current Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency D-axis current control proportional gain.	100.0% (0%~200.0%)	RUN

d09.73 (0x6949)	D-Axis Current Filter Bandwidth	V/F SVC FVC PMV/F PMSVC PMFVC Set the bandwidth of the D-axis current low-pass filter.	11.000Hz (0Hz~65.535Hz)	RUN
d09.74 (0x694A)	Q-Axis Current Filter Bandwidth	V/F SVC FVC PMV/F PMSVC PMFVC Set the bandwidth of the Q-axis current low-pass filter.	11.000Hz (0Hz~65.535Hz)	RUN
d09.75 (0x694B)	D-Axis Filter Bandwidth	V/F SVC FVC PMV/F PMSVC PMFVC Set the given D-axis filter bandwidth.	1.000Hz (0Hz~65.535Hz)	RUN
d09.76 (0x694C)	Light-load Current I_q Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the light-load current I_q threshold.	20.0% (0%~50.0%)	RUN
d09.77 (0x694D)	Current I_d Weakening Amplitude	V/F SVC FVC PMV/F PMSVC PMFVC Set the current I_d weakening amplitude.	50.0% (0%~100.0%)	RUN
d09.78 (0x694E)	Efficient Current I_d Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the efficient current I_d value.	0% (0%~50.0%)	RUN
d09.79 (0x694F)	Shift Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the shift frequency.	10.0% (0%~50.0%)	RUN
d09.80 (0x6950)	Shift Frequency Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the shift frequency range.	0% (0%~50.0%)	RUN
d09.81 (0x6951)	Control Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the control mode for the PM voltage vector algorithm.	0x1021 (0x0000~0x1121)	RUN
d09.82 (0x6952)	LF Pull-in Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the low-frequency pull-in current.	100.0% (0%~200.0%)	RUN
d09.83 (0x6953)	LF Pull-in Current Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency for low-frequency pull-in current.	10.0% (0%~100.0%)	RUN
d09.84 (0x6954)	HF Pull-in Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency pull-in current.	10.0% (0%~200.0%)	RUN
d09.85 (0x6955)	HF Pull-in Current Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency for high-frequency pull-in current.	15.0% (0%~100.0%)	RUN

13.33 E00: IO Extension Input

E00.0x: Extension Parameters

Code (Address)	Name	Description	Default (Range)	Property
E00.00 (0x7000)	Extension IO1 Source	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Slot 1 2: Slot 2 3: Slot 3	1 (0~3)	STOP
E00.01 (0x7001)	Extension IO2 Source	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Slot 1 2: Slot 2 3: Slot 3	0 (0~3)	STOP
E00.02 (0x7002)	Extension IO3 Source	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Slot 1 2: Slot 2 3: Slot 3	0 (0~3)	STOP

E00.1x~3x: Extension DI Terminal

Code (Address)	Name	Description	Default (Range)	Property
E00.10 (0x700A)	Extension X7 Function	V/F SVC FVC PMV/F PMSVC PMFVC See the function of terminal X.	0 (0~95)	STOP
E00.11 (0x700B)	Extension X8 Function	V/F SVC FVC PMV/F PMSVC PMFVC See the function of terminal X.	0 (0~95)	STOP
E00.12 (0x700C)	Extension X9 Function	V/F SVC FVC PMV/F PMSVC PMFVC See the function of terminal X.	0 (0~95)	STOP
E00.13 (0x700D)	Extension X10 Function	V/F SVC FVC PMV/F PMSVC PMFVC See the function of terminal X.	0 (0~95)	STOP
E00.18 (0x7012)	X7~X10 Terminal Characteristics	V/F SVC FVC PMV/F PMSVC PMFVC 0: Valid when closed 1: Valid when open Ones-bit: X7 terminal Tens-bit: X8 terminal Hundreds-bit: X9 terminal Thousands-bit: X10 terminal	0x0000 (0x0000~0x1111)	RUN
E00.20 (0x7014)	X7 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X7 from OFF to ON.	0.010s (0.000s~60.000s)	RUN
E00.21 (0x7015)	X7 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X7 from ON to OFF.	0.010s (0.000s~60.000s)	RUN
E00.22 (0x7016)	X8 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X8 from OFF to ON.	0.010s (0.000s~60.000s)	RUN
E00.23 (0x7017)	X8 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X8 from ON to OFF.	0.010s (0.000s~60.000s)	RUN
E00.24 (0x7018)	X9 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X9 from OFF to ON.	0.010s (0.000s~60.000s)	RUN
E00.25 (0x7019)	X9 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X9 from ON to OFF.	0.010s (0.000s~60.000s)	RUN
E00.26 (0x701A)	X10 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X10 from OFF to ON.	0.010s (0.000s~60.000s)	RUN
E00.27 (0x701B)	X10 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X10 from ON to OFF.	0.010s (0.000s~60.000s)	RUN

E00.4x~5x: Extension AI Terminal

Code (Address)	Name	Description	Default (Range)	Property
E00.40 (0x7028)	AI3 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: Voltage 0.00V~10.00V 1: Current 0.00mA~20.00mA	0 (0~1)	RUN
E00.41 (0x7029)	AI Curve	V/F SVC FVC PMV/F PMSVC PMFVC 0: Line 1 (default) 1: Line 2 2: Curve 1 3: Curve 2	0x0000 (0x0000~0x0003)	STOP

E00.42 (0x702A)	Line 1 Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Define the signal received by the terminal. If the voltage signal is below this value, drive will process by this setting.	0.0% (-100.0%~100.0%)	RUN
E00.43 (0x702B)	Line 1 Lower Limit Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the line 1 lower limit.	0.00% (-100.00%~100.00%)	RUN
E00.44 (0x702C)	Line 1 Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Define the signal received by the terminal. If the voltage signal is above this value, drive will process by this setting.	100.0% (-100.0%~100.0%)	RUN
E00.45 (0x702D)	Line 1 Upper Limit Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the line 1 upper limit.	100.00% (-100.00%~100.00%)	RUN
E00.46 (0x702E)	Line 1 Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Define the size of the filter applied to the analog signal to remove interfering signals.	0.100s (0.000s~6.000s)	STOP
E00.47 (0x702F)	Line 2 Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Define the signal received by the terminal. If the voltage signal is below this value, drive will process by this setting.	0.0% (-100.0%~100.0%)	RUN
E00.48 (0x7030)	Line 2 Lower Limit Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the line 2 lower limit.	0.00% (-100.00%~100.00%)	RUN
E00.49 (0x7031)	Line 2 Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Define the signal received by the terminal. If the voltage signal is above this value, drive will process by this setting.	100.0% (-100.0%~100.0%)	RUN
E00.50 (0x7032)	Line 2 Upper Limit Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the line 2 upper limit.	100.00% (-100.00%~100.00%)	RUN
E00.51 (0x7033)	Line 2 Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Define the size of the filter applied to the analog signal to remove interfering signals.	0.100s (0.000s~6.000s)	RUN

E00.5x~7x: Extension PT Terminal

Code (Address)	Name	Description	Default (Range)	Property
E00.55 (0x7037)	PT Terminal Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: Disabled 1: PT100 2: PT1000 3: KTY84 Ones-bit: PT1 type Tens-bit: PT2 type Hundreds-bit: PT3 type	0x0201 (0x0000~0x0311)	RUN
E00.56 (0x7038)	Temp. Alarm Mode	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Report alarm and free stop 2: Report alarm and continue operation Ones-bit: Temp.1 mode Tens-bit: Temp.2 mode Hundreds-bit: Temp.3 mode	0x0000 (0x0000~0x2222)	RUN
E00.57 (0x7039)	Temp.1 Source	V/F SVC FVC PMV/F PMSVC PMFVC 0: Disabled 1: PT1 2: PT2 3: PT3	1 (0~3)	RUN

E00.58 (0x703A)	Overheat Error 1 Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the overheat error threshold for temperature 1.	120.0 (0.0~200.0)	RUN
E00.59 (0x703B)	Overheat Error 1 Hysteresis	V/F SVC FVC PMV/F PMSVC PMFVC Set the overheat error hysteresis for temperature 1.	5.0 (0.0~20.0)	RUN
E00.60 (0x703C)	Overheat Alarm 1 Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the overheat alarm threshold for temperature 1.	90.0 (90.0~150.0)	RUN
E00.61 (0x703D)	Overheat Alarm 1 Hysteresis	V/F SVC FVC PMV/F PMSVC PMFVC Set the overheat alarm hysteresis for temperature 1.	5.0 (0.0~20.0)	RUN
E00.62 (0x703E)	Temp.2 Source	V/F SVC FVC PMV/F PMSVC PMFVC 0: Disabled 1: PT1 2: PT2 3: PT3	2 (0~3)	RUN
E00.63 (0x703F)	Overheat Error 2 Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the overheat error threshold for temperature 2.	120.0 (0.0~200.0)	RUN
E00.64 (0x7040)	Overheat Error 2 Hysteresis	V/F SVC FVC PMV/F PMSVC PMFVC Set the overheat error hysteresis for temperature 2.	5.0 (0.0~20.0)	RUN
E00.65 (0x7041)	Overheat Alarm 2 Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the overheat alarm threshold for temperature 2.	90.0 (90.0~150.0)	RUN
E00.66 (0x7042)	Overheat Alarm 2 Hysteresis	V/F SVC FVC PMV/F PMSVC PMFVC Set the overheat alarm hysteresis for temperature 2.	5.0 (0.0~20.0)	RUN
E00.67 (0x7043)	Temp.3 Source	V/F SVC FVC PMV/F PMSVC PMFVC 0: Disabled 1: PT1 2: PT2 3: PT3	3 (0~3)	RUN
E00.68 (0x7044)	Overheat Error 3 Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the overheat error threshold for temperature 3.	120.0 (0.0~200.0)	RUN
E00.69 (0x7045)	Overheat Error 3 Hysteresis	V/F SVC FVC PMV/F PMSVC PMFVC Set the overheat error hysteresis for temperature 3.	5.0 (0.0~20.0)	RUN
E00.70 (0x7046)	Overheat Alarm 3 Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the overheat alarm threshold for temperature 3.	90.0 (90.0~150.0)	RUN
E00.71 (0x7047)	Overheat Alarm 3 Hysteresis	V/F SVC FVC PMV/F PMSVC PMFVC Set the overheat alarm hysteresis for temperature 3.	5.0 (0.0~20.0)	RUN

13.34 E01: IO Extension Output

E01.0x~1x: Extension DO Terminal

Code (Address)	Name	Description	Default (Range)	Property
E01.00 (0x7100)	Extension Y2 Terminal	V/F SVC FVC PMV/F PMSVC PMFVC See the functions of terminal Y.	1 (0~63)	RUN
E01.01 (0x7101)	Relay 1 Terminal R3	V/F SVC FVC PMV/F PMSVC PMFVC See the functions of terminal Y.	4 (0~63)	RUN
E01.08 (0x7108)	Polarity	V/F SVC FVC PMV/F PMSVC PMFVC 0: Positive 1: Negative Ones-bit: Extension terminal Y Tens-bit: Extension RO1	0x0000 (0x0000~ 0x1111)	RUN
E01.10 (0x710A)	Y2 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal Y output from OFF to ON.	0.010s (0.000s~ 60.000s)	RUN

E01.11 (0x710B)	Y2 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal Y output from ON to OFF.	0.010s (0.000s~60.000s)	RUN
E01.12 (0x710C)	R3 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for R3 from OFF to ON.	0.010s (0.000s~60.000s)	RUN
E01.13 (0x710D)	R3 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for R3 from ON to OFF.	0.010s (0.000s~60.000s)	RUN

E01.3x: Extension AO3

Code (Address)	Name	Description	Default (Range)	Property
E01.30 (0x711E)	AO3 Mode	V/F SVC FVC PMV/F PMSVC PMFVC 0: 0V~10V 1: 4.00mA~20.00mA 2: 0.00mA~20.00mA 3: FM pulse 4: Reserved	0 (0~4)	RUN
E01.31 (0x711F)	AO3 Content	V/F SVC FVC PMV/F PMSVC PMFVC 0: Target frequency 1: Output frequency 2: Output current 3: Input voltage 4: Output voltage 5: Mechanical speed 6: Target torque 7: Output torque 8: PID setting 9: PID feedback 10: Output power 11: Bus voltage 12: AI1 13: AI2 14: Reserved 15: PUL terminal input 16: Module temperature 1 17: Module temperature 2 18: RS485 19: vY1, 0 means OFF while 1 means ON Others: K connector	0 (0~65535)	RUN
E01.32 (0x7120)	AO3 Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the gain value of the analog output.	100.0% (0.0%~300.0%)	RUN
E01.33 (0x7121)	AO3 Bias	V/F SVC FVC PMV/F PMSVC PMFVC Set the AO bias. Used to adjust the zero point of the terminal output.	0.0% (-10.0%~10.0%)	RUN
E01.34 (0x7122)	AO3 Filter	V/F SVC FVC PMV/F PMSVC PMFVC Define the size of the filter applied to the analog signal to remove interfering signals.	0.010s (0.000s~6.000s)	RUN
E01.35 (0x7123)	AO3 as FM Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set AO as the lower limit of the FM frequency.	0.20kHz (0.00kHz~100.00kHz)	RUN
E01.36 (0x7124)	AO3 as FM Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set AO as the upper limit of the FM frequency.	50.00kHz (0.00kHz~100.00kHz)	RUN

13.35 E02: Encoder 1 Extension Parameters

E02.0x: Encoder 1 Environment

Code (Address)	Name	Description	Default (Range)	Property
E02.00 (0x7200)	Encoder Motor	V/F SVC FVC PMV/F PMSVC PMFVC 0: Invalid 1: Motor 1 2: Motor 2 3: Motor 3 4: Motor 4	0 (0~4)	RUN
E02.01 (0x7201)	Encoder Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: ABZ 1: Resolver 2: Sine/Cosine encoder 3: Reserved	0 (0~3)	RUN
E02.02 (0x7202)	Encoder Debug Register	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Monitor PG under SVC 0: OFF 1: ON Tens-bit: PG configuration 0: Filter ON 1: Filter OFF 3: Total Z-pulse error 4: Pulse clear function	0x0000 (0x0000~ 0xFFFF)	RUN
E02.03 (0x7203)	Encoder Break Check	V/F SVC FVC PMV/F PMSVC PMFVC Detect for encoder break.	0 (0~1)	RUN
E02.04 (0x7204)	Encoder Break Check Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the time for encoder break check.	0.050s (0.000s~ 6.000s)	RUN
E02.05 (0x7205)	Encoder Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the encoder filter time.	1.0 (0.0~100.0)	RUN

E02.1x: ABZ Parameters

Code (Address)	Name	Description	Default (Range)	Property
E02.10 (0x720A)	ABZ Encoder Direction	V/F SVC FVC PMV/F PMSVC PMFVC 0: Same direction 1: Opposite direction	0 (0~1)	STOP
E02.11 (0x720B)	ABZ Encoder Z Pulse Detection	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: FWD detection 2: REV detection	1 (0~2)	STOP
E02.12 (0x720C)	ABZ Encoder Line No.	V/F SVC FVC PMV/F PMSVC PMFVC Set the number of lines for ABZ encoder.	1024 (0~16384)	RUN
E02.13 (0x720D)	Transmission Ratio Numerator	V/F SVC FVC PMV/F PMSVC PMFVC Set the encoder ratio numerator.	1 (1~32767)	RUN
E02.14 (0x720E)	Transmission Ratio Denominator	V/F SVC FVC PMV/F PMSVC PMFVC Set the encoder ratio denominator.	1 (1~32767)	RUN
E02.15 (0x720F)	Z-pulse Disconnection Alarm	V/F SVC FVC PMV/F PMSVC PMFVC Set the alarm for Z pulse disconnection.	4 (0~65535)	RUN
E02.16 (0x7210)	Z-Pulse Tolerance	V/F SVC FVC PMV/F PMSVC PMFVC Set the Z pulse allowable tolerance.	0.0% (0.0%~ 102.4%)	RUN

E02.17 (0x7211)	Z-pulse Tuning Circuit	V/F SVC FVC PMV/F PMSVC PMFVC Set the Z-pulse tuning circuit.	300 (0~8000)	RUN
E02.18 (0x7212)	Bandwidth Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the encoder bandwidth limit.	0 (0~65535)	RUN
E02.19 (0x7213)	Max. Z Pulse Angle Error	V/F SVC FVC PMV/F PMSVC PMFVC Set the maximum allowable Z pulse angle error.	0.0° (0.0°~ 180.0°)	RUN

E02.2x: Resolver Encoder 1

Code (Address)	Name	Description	Default (Range)	Property
E02.20 (0x7214)	Pole No.	V/F SVC FVC PMV/F PMSVC PMFVC Set the pole number of resolver encoder.	2 (2~128)	STOP
E02.21 (0x7215)	Hardware Check	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: ON	1 (0~1)	STOP
E02.22 (0x7216)	Hardware Check No.	V/F SVC FVC PMV/F PMSVC PMFVC Set the hardware check number of resolver encoder.	20 (0~1000)	RUN

E02.3x: Sine/Cosine Encoder 1

Code (Address)	Name	Description	Default (Range)	Property
E02.30 (0x721E)	Sine-cosine Encoder Type	V/F SVC FVC PMV/F PMSVC PMFVC 0:ABZ 1:Endat 2:SSI	0 (0~2)	STOP
E02.31 (0x721F)	Sine-cosine Encoder Line No.	V/F SVC FVC PMV/F PMSVC PMFVC Set the line number of the sine/cosine encoder.	2048 (50~16834)	STOP

13.36 E03: Encoder 2 Extension Parameters

E03.0x: Encoder 2 Environment

Code (Address)	Name	Description	Default (Range)	Property
E03.00 (0x7300)	Encoder Motor	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Motor 1 2: Motor 2 3: Motor 3 4: Motor 4	0 (0~4)	RUN
E03.01 (0x7301)	Encoder Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: ABZ 1: Resolver 2: Sine/Cosine encoder 3: Reserved	0 (0~3)	RUN
E03.02 (0x7302)	Encoder Debug Register	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Monitor PG under SVC 0: OFF 1: ON Tens-bit: PG configuration 0: Filter ON 1: Filter OFF 3: Total Z-pulse error 4: Pulse clear function	0x0000 (0x0000~ 0xFFFF)	RUN

E03.03 (0x7303)	Encoder Break Check	V/F SVC FVC PMV/F PMSVC PMFVC Detect for encoder break.	0 (0~1)	RUN
E03.04 (0x7304)	Encoder Break Check Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the time for encoder break check.	0.050s (0.000s~6.000s)	RUN
E03.05 (0x7305)	Encoder Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the encoder filter time.	1.0 (0.0~100.0)	RUN

E03.1x: ABZ Parameters

Code (Address)	Name	Description	Default (Range)	Property
E03.10 (0x730A)	ABZ Encoder Direction	V/F SVC FVC PMV/F PMSVC PMFVC 0: Same direction 1: Opposite direction	0 (0~1)	STOP
E03.11 (0x730B)	ABZ Encoder Z Pulse Detection	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: FWD detection 2: REV detection	1 (0~2)	STOP
E03.12 (0x730C)	ABZ Encoder Line No.	V/F SVC FVC PMV/F PMSVC PMFVC Set the number of lines for ABZ encoder.	1024 (0~16384)	RUN
E03.13 (0x730D)	Transmission Ratio Numerator	V/F SVC FVC PMV/F PMSVC PMFVC Set the encoder ratio numerator.	1 (1~32767)	RUN
E03.14 (0x730E)	Transmission Ratio Denominator	V/F SVC FVC PMV/F PMSVC PMFVC Set the encoder ratio denominator.	1 (1~32767)	RUN
E03.15 (0x730F)	Z-pulse Disconnection Alarm	V/F SVC FVC PMV/F PMSVC PMFVC Set the alarm for Z pulse disconnection.	4 (0~65535)	RUN
E03.16 (0x7600)	Z-Pulse Tolerance	V/F SVC FVC PMV/F PMSVC PMFVC Set the Z pulse allowable tolerance.	0.0% (0.0%~102.4%)	RUN
E03.17 (0x7311)	Z-pulse Tuning Circuit	V/F SVC FVC PMV/F PMSVC PMFVC Set the Z-pulse tuning circuit.	300 (0~8000)	RUN
E03.18 (0x7312)	Bandwidth Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the encoder bandwidth limit.	0 (0~65535)	RUN

E03.2x: Resolver Encoder 2

Code (Address)	Name	Description	Default (Range)	Property
E03.20 (0x7314)	Pole No.	V/F SVC FVC PMV/F PMSVC PMFVC Set the pole number of resolver encoder.	2 (2~128)	STOP
E03.21 (0x7315)	Hardware Check	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: ON	1 (0~1)	RUN
E03.22 (0x7316)	Hardware Check No.	V/F SVC FVC PMV/F PMSVC PMFVC Set the hardware check number of resolver encoder.	20 (0~1000)	RUN

E03.3x: Sine/Cosine Encoder 2

Code (Address)	Name	Description	Default (Range)	Property
E03.30 (0x731E)	Type	V/F SVC FVC PMV/F PMSVC PMFVC 0:ABZ 1:Endat 2:SSI	0 (0~2)	STOP

E03.31 (0x731F)	Sine-cosine Encoder Line No.	V/F SVC FVC PMV/F PMSVC PMFVC Set the line number of the sine/cosine encoder.	2048 (50~ 16834)	STOP

13.37 E04: Bus EX1 Common Parameters

Code (Address)	Name	Description	Default (Range)	Property
E04.00 (0x7400)	Ex1 Slot Enable	V/F SVC FVC PMV/F PMSVC PMFVC Set the Ex1 slot function on/off. 0: OFF 1: ON	1 (0~1)	STOP
E04.01 (0x7401)	Ex1 Communication Baud Rate	V/F SVC FVC PMV/F PMSVC PMFVC 8: 1Mbps 9: 2Mbps 10: 4Mbps	8 (8~10)	STOP
E04.02 (0x7402)	Ex1 Bus Disconnection Detection Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for Ex1 bus disconnection detection.	0 (0~65535)	STOP
E04.03 (0x7403)	Ex1 Disconnection Error Auto Reset	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: ON	0 (0~1)	STOP
E04.04 (0x7404)	Ex1 Bus Disconnection Error Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the limit for triggering Ex1 bus disconnection error.	0 (0~65535)	STOP
E04.05 (0x7405)	Ex1uart Heartbeat Interval	V/F SVC FVC PMV/F PMSVC PMFVC Set the interval for Ex1uart heartbeat.	100 (0~65535)	STOP
E04.06 (0x7406)	Ex1uart Disconnection Error Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the limit for triggering Ex1uart disconnection error.	0 (0~65535)	STOP
E04.07 (0x7407)	Ex1 Bus Non-OP Stop Mode	0: Coasting stop 1: Deceleration stop 2: No stop	0 (0~2)	STOP
E04.09 (0x7409)	EEPROM Data Write	V/F SVC FVC PMV/F PMSVC PMFVC 0: ON 1: OFF	0 (0~1)	STOP
E04.10 (0x740A)	Ex1 Diagnostic Info Upload (Bus)	V/F SVC FVC PMV/F PMSVC PMFVC 0: ON 1: OFF	0 (0~1)	STOP
E04.11 (0x740B)	Ex1 Diagnostic Info Upload (Bus)	V/F SVC FVC PMV/F PMSVC PMFVC 0: Big endian mode 1: Little endian mode	0 (0~1)	STOP
E04.12 (0x740C)	Ex1 Data Endian Conversion	V/F SVC FVC PMV/F PMSVC PMFVC 0: Big endian mode 1: Little endian mode	0 (0~1)	STOP
E04.13 (0x740D)	RPDO Mapping Entry Number	V/F SVC FVC PMV/F PMSVC PMFVC Set the number of mapped application objects in RPDO	0 (0~65535)	STOP
E04.14 (0x740E)	TPDO Mapping Entry Number	V/F SVC FVC PMV/F PMSVC PMFVC Set the number of mapped application objects in TPDO	0 (0~65535)	STOP
E04.20 (0x7414)	Ex1 TPDO Address 1 (U04.00 Status Word)	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 1 for Ex1 process data output.	41984 (41984~ 41984)	READ

E04.21 (0x7415)	Ex1 TPDO Address 2 (C00.01 Output Frequency)	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 2 for Ex1 process data output.	1 (1~1)	READ
E04.22 (0x7416)	Ex1 TPDO Address 3	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 3 for Ex1 process data output.	0 (0~65535)	STOP
E04.23 (0x7417)	Ex1 TPDO Address 4	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 4 for Ex1 process data output.	0 (0~65535)	STOP
E04.24 (0x7418)	Ex1 TPDO Address 5	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 5 for Ex1 process data output.	0 (0~65535)	STOP
E04.25 (0x7419)	Ex1 TPDO Address 6	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 6 for Ex1 process data output.	0 (0~65535)	STOP
E04.26 (0x741A)	Ex1 TPDO Address 7	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 7 for Ex1 process data output.	0 (0~65535)	STOP
E04.27 (0x741B)	Ex1 TPDO Address 8	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 8 for Ex1 process data output.	0 (0~65535)	STOP
E04.28 (0x741C)	Ex1 TPDO Address 9	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 9 for Ex1 process data output.	0 (0~65535)	STOP
E04.29 (0x741D)	Ex1 TPDO Address 10	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 10 for Ex1 process data output.	0 (0~65535)	STOP
E04.30 (0x741E)	Ex1 TPDO Address 11	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 11 for Ex1 process data output.	0 (0~65535)	STOP
E04.31 (0x741F)	Ex1 TPDO Address 12	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 12 for Ex1 process data output.	0 (0~65535)	STOP
E04.32 (0x7420)	Ex1 TPDO Address 13	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 13 for Ex1 process data output.	0 (0~65535)	STOP
E04.33 (0x7421)	Ex1 TPDO Address 14	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 14 for Ex1 process data output.	0 (0~65535)	STOP
E04.34 (0x7422)	Ex1 TPDO Address 15	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 15 for Ex1 process data output.	0 (0~65535)	STOP
E04.35 (0x7423)	Ex1 TPDO Address 16	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 16 for Ex1 process data output.	0 (0~65535)	STOP
E04.36 (0x7424)	Ex1 TPDO 1 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data output 1.	0 (0~65535)	STOP
E04.37 (0x7425)	Ex1 TPDO 2 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data output 2.	0 (0~65535)	STOP
E04.38 (0x7426)	Ex1 TPDO 3 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data output 3.	0 (0~65535)	STOP
E04.39 (0x7427)	Ex1 TPDO 4 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data output 4.	0 (0~65535)	STOP
E04.40 (0x7428)	Ex1 TPDO 5 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data output 5.	0 (0~65535)	STOP
E04.41 (0x7429)	Ex1 TPDO 6 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data output 6.	0 (0~65535)	STOP
E04.42 (0x742A)	Ex1 TPDO 7 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data output 7.	0 (0~65535)	STOP
E04.43 (0x742B)	Ex1 TPDO 8 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data output 8.	0 (0~65535)	STOP
E04.44 (0x742C)	Ex1 TPDO 9 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data output 9.	0 (0~65535)	STOP
E04.45 (0x742D)	Ex1 TPDO 10 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data output 10.	0 (0~65535)	STOP
E04.46 (0x742E)	Ex1 TPDO 11 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data output 11.	0 (0~65535)	STOP
E04.47 (0x742F)	Ex1 TPDO 12 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data output 12.	0 (0~65535)	STOP

E04.48 (0x7430)	Ex1 TPDO 13 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data output 13.	0 (0~65535)	STOP
E04.49 (0x7431)	Ex1 TPDO 14 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data output 14.	0 (0~65535)	STOP
E04.50 (0x7432)	Ex1 TPDO 15 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data output 15.	0 (0~65535)	STOP
E04.51 (0x7433)	Ex1 TPDO 16 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data output 16.	0 (0~65535)	STOP
E04.52 (0x7434)	Ex1 RPDO 1 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data input 1.	0 (0~65535)	STOP
E04.53 (0x7435)	Ex1 RPDO 2 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data input 2.	0 (0~65535)	STOP
E04.54 (0x7436)	Ex1 RPDO 3 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data input 3.	0 (0~65535)	STOP
E04.55 (0x7437)	Ex1 RPDO 4 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data input 4.	0 (0~65535)	STOP
E04.56 (0x7438)	Ex1 RPDO 5 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data input 5.	0 (0~65535)	STOP
E04.57 (0x7439)	Ex1 RPDO 6 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data input 6.	0 (0~65535)	STOP
E04.58 (0x743A)	Ex1 RPDO 7 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data input 7.	0 (0~65535)	STOP
E04.59 (0x743B)	Ex1 RPDO 8 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data input 8.	0 (0~65535)	STOP
E04.60 (0x743C)	Ex1 RPDO 9 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data input 9.	0 (0~65535)	STOP
E04.61 (0x743D)	Ex1 RPDO 10 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data input 10.	0 (0~65535)	STOP
E04.62 (0x743E)	Ex1 RPDO 11 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data input 11.	0 (0~65535)	STOP
E04.63 (0x743F)	Ex1 RPDO 12 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data input 12.	0 (0~65535)	STOP
E04.64 (0x7440)	Ex1 RPDO 13 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data input 13.	0 (0~65535)	STOP
E04.65 (0x7441)	Ex1 RPDO 14 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data input 14.	0 (0~65535)	STOP
E04.66 (0x7442)	Ex1 RPDO 15 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data input 15.	0 (0~65535)	STOP
E04.67 (0x7443)	Ex1 RPDO 16 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex1 process data input 16.	0 (0~65535)	STOP

13.38 E05: Bus EX2 Common Parameters

Code (Address)	Name	Description	Default (Range)	Property
E05.00 (0x7500)	Ex2 Slot Enable	V/F SVC FVC PMV/F PMSVC PMFVC Set the Ex2 slot function on/off. 0: OFF 1: ON	1 (0~1)	STOP
E05.01 (0x7501)	Ex2 Communication Baud Rate	V/F SVC FVC PMV/F PMSVC PMFVC 8: 1Mbps 9: 2Mbps 10: 4Mbps	8 (8~10)	STOP
E05.02 (0x7502)	Ex2 Bus Disconnection Detection Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for Ex2 bus disconnection detection.	0 (0~65535)	STOP

E05.03 (0x7503)	Ex2 Disconnection Error Auto Reset	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: ON	0 (0~1)	STOP
E05.04 (0x7504)	Ex2 Bus Disconnection Error Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the limit for triggering Ex2 bus disconnection error.	0 (0~65535)	STOP
E05.05 (0x7505)	Ex2uart Heartbeat Interval	V/F SVC FVC PMV/F PMSVC PMFVC Set the interval for Ex2uart heartbeat.	100 (0~65535)	STOP
E05.06 (0x7506)	Ex2uart Disconnection Error Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the limit for triggering Ex2uart disconnection error.	0 (0~65535)	STOP
E05.07 (0x7507)	Ex2 Bus Non-OP Stop Mode	0: Coasting stop 1: Deceleration stop 2: No stop	0 (0~2)	STOP
E05.09 (0x7509)	EEPROM Data Write	V/F SVC FVC PMV/F PMSVC PMFVC 0: ON 1: OFF	0 (0~1)	STOP
E05.10 (0x750A)	Ex2 Diagnostic Info Upload (Bus)	V/F SVC FVC PMV/F PMSVC PMFVC 0: ON 1: OFF	0 (0~1)	STOP
E05.11 (0x750B)	Ex2 Diagnostic Info Upload (Bus)	V/F SVC FVC PMV/F PMSVC PMFVC 0: Big endian mode 1: Little endian mode	0 (0~1)	STOP
E05.12 (0x750C)	Ex2 Data Endian Conversion	V/F SVC FVC PMV/F PMSVC PMFVC 0: Big endian mode 1: Little endian mode	0 (0~1)	STOP
E05.13 (0x750D)	RPDO Mapping Entry Number	V/F SVC FVC PMV/F PMSVC PMFVC Set the number of mapped application objects in RPDO	0 (0~65535)	STOP
E05.14 (0x750E)	TPDO Mapping Entry Number	V/F SVC FVC PMV/F PMSVC PMFVC Set the number of mapped application objects in TPDO	0 (0~65535)	STOP
E05.20 (0x7514)	Ex2 PDO Address 1 (U04.00 Status Word)	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 1 for Ex2 process data output.	41984 (41984~ 41984)	READ
E05.21 (0x7515)	Ex2 PDO Address 2 (C00.01 Output Frequency)	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 2 for Ex2 process data output.	1 (1~1)	READ
E05.22 (0x7516)	Ex2 PDO Address 3	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 3 for Ex2 process data output.	0 (0~65535)	RUN
E05.23 (0x7517)	Ex2 PDO Address 4	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 4 for Ex2 process data output.	0 (0~65535)	RUN
E05.24 (0x7518)	Ex2 PDO Address 5	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 5 for Ex2 process data output.	0 (0~65535)	RUN
E05.25 (0x7519)	Ex2 PDO Address 6	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 6 for Ex2 process data output.	0 (0~65535)	RUN
E05.26 (0x751A)	Ex2 PDO Address 7	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 7 for Ex2 process data output.	0 (0~65535)	RUN
E05.27 (0x751B)	Ex2 PDO Address 8	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 8 for Ex2 process data output.	0 (0~65535)	RUN

E05.28 (0x751C)	Ex2 PDO Address 9	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 9 for Ex2 process data output.	0 (0~65535)	RUN
E05.29 (0x751D)	Ex2 PDO Address 10	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 10 for Ex2 process data output.	0 (0~65535)	RUN
E05.30 (0x751E)	Ex2 PDO Address 11	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 11 for Ex2 process data output.	0 (0~65535)	RUN
E05.31 (0x751F)	Ex2 PDO Address 12	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 12 for Ex2 process data output.	0 (0~65535)	RUN
E05.32 (0x7520)	Ex2 PDO Address 13	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 13 for Ex2 process data output.	0 (0~65535)	RUN
E05.33 (0x7521)	Ex2 PDO Address 14	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 14 for Ex2 process data output.	0 (0~65535)	RUN
E05.34 (0x7522)	Ex2 PDO Address 15	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 15 for Ex2 process data output.	0 (0~65535)	RUN
E05.35 (0x7523)	Ex2 PDO Address 16	V/F SVC FVC PMV/F PMSVC PMFVC Set the address 16 for Ex2 process data output.	0 (0~65535)	RUN
E05.36 (0x7524)	Ex2 PDO 1 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data output 1.	0 (0~65535)	STOP
E05.37 (0x7525)	Ex2 PDO 2 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data output 2.	0 (0~65535)	STOP
E05.38 (0x7526)	Ex2 PDO 3 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data output 3.	0 (0~65535)	STOP
E05.39 (0x7527)	Ex2 PDO 4 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data output 4.	0 (0~65535)	STOP
E05.40 (0x7528)	Ex2 PDO 5 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data output 5.	0 (0~65535)	STOP
E05.41 (0x7529)	Ex2 PDO 6 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data output 6.	0 (0~65535)	STOP
E05.42 (0x752A)	Ex2 PDO 7 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data output 7.	0 (0~65535)	STOP
E05.43 (0x752B)	Ex2 PDO 8 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data output 8.	0 (0~65535)	STOP
E05.44 (0x752C)	Ex2 PDO 9 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data output 9.	0 (0~65535)	STOP
E05.45 (0x752D)	Ex2 PDO 10 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data output 10.	0 (0~65535)	STOP
E05.46 (0x752E)	Ex2 PDO 11 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data output 11.	0 (0~65535)	STOP
E05.47 (0x752F)	Ex2 PDO 12 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data output 12.	0 (0~65535)	STOP
E05.48 (0x7530)	Ex2 PDO 13 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data output 13.	0 (0~65535)	STOP
E05.49 (0x7531)	Ex2 PDO 14 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data output 14.	0 (0~65535)	STOP
E05.50 (0x7532)	Ex2 PDO 15 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data output 15.	0 (0~65535)	STOP
E05.51 (0x7533)	Ex2 PDO 16 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data output 16.	0 (0~65535)	STOP
E05.52 (0x7534)	Ex2 RPDO 1 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data input 1.	0 (0~65535)	STOP
E05.53 (0x7535)	Ex2 RPDO 2 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data input 2.	0 (0~65535)	STOP
E05.54 (0x7536)	Ex2 RPDO 3 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data input 3.	0 (0~65535)	STOP
E05.55 (0x7537)	Ex2 RPDO 4 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data input 4.	0 (0~65535)	STOP

E05.56 (0x7538)	Ex2 RPDO 5 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data input 5.	0 (0~65535)	STOP
E05.57 (0x7539)	Ex2 RPDO 6 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data input 6.	0 (0~65535)	STOP
E05.58 (0x753A)	Ex2 RPDO 7 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data input 7.	0 (0~65535)	STOP
E05.59 (0x753B)	Ex2 RPDO 8 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data input 8.	0 (0~65535)	STOP
E05.60 (0x753C)	Ex2 RPDO 9 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data input 9.	0 (0~65535)	STOP
E05.61 (0x753D)	Ex2 RPDO 10 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data input 10.	0 (0~65535)	STOP
E05.62 (0x753E)	Ex2 RPDO 11 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data input 11.	0 (0~65535)	STOP
E05.63 (0x753F)	Ex2 RPDO 12 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data input 12.	0 (0~65535)	STOP
E05.64 (0x7540)	Ex2 RPDO 13 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data input 13.	0 (0~65535)	STOP
E05.65 (0x7541)	Ex2 RPDO 14 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data input 14.	0 (0~65535)	STOP
E05.66 (0x7542)	Ex2 RPDO 15 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data input 15.	0 (0~65535)	STOP
E05.67 (0x7543)	Ex2 RPDO 16 Base Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the base address for Ex2 process data input 16.	0 (0~65535)	STOP

13.39 E06: CAN/DP Parameters

Code (Address)	Name	Description	Default (Range)	Property
E06.00 (0x7600)	DP Node Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the DP node address.	1 (1~247)	STOP
E06.10 (0x760A)	CAN Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the CAN mode.	0 (0~4)	STOP
E06.11 (0x760B)	CAN Node Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the CAN node address.	1 (1~127)	STOP
E06.12 (0x760C)	Baud Rate	V/F SVC FVC PMV/F PMSVC PMFVC Set the CAN communication baud rate. 0: 20kbps 1: 50kbps 2: 100kbps 3: 125kbps 4: 250kbps 5: 500kbps 6: 1Mbps	0 (0~6)	STOP
E06.13 (0x760D)	Auto Power-on Operation	V/F SVC FVC PMV/F PMSVC PMFVC Set the auto operation at power-on. 0: OFF 1: ON	0 (0~1)	STOP
E06.14 (0x760E)	CANopen Communication Timeout	V/F SVC FVC PMV/F PMSVC PMFVC Define CANopen communication timeout.	0 (0~65535)	STOP
E06.15 (0x760F)	CANopen Configuration	V/F SVC FVC PMV/F PMSVC PMFVC Set the CANopen configuration mode.	0 (1~65535)	STOP
E06.20 (0x7614)	Power Balance Master/Slave Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the power balance master/slave mode. 0: Mode 0 1: Mode 1	0 (0~1)	STOP

E06.21 (0x7615)	Power Balance Mode	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Enable master to receive data from slave 0: OFF 1: ON Tens-bit: Master command transmission mode 0: Send status 1: Send command	0x0000 (0x0000~ 0x1111)	RUN
E06.22 (0x7616)	Power Balance Slave ID	V/F SVC FVC PMV/F PMSVC PMFVC Set the slave ID for power balance.	1 (1~10)	RUN
E06.23 (0x7617)	Master Sending Content for Power Balance	V/F SVC FVC PMV/F PMSVC PMFVC Ones-, tens-, hundreds-, and thousands-bit: 0: OFF 1: Operation command 2: Target frequency 3: Output frequency 4: Upper limit frequency 5: Target torque 6: Output torque 7: Torque mode-FWD speed control 8: Torque mode-REV speed control 9: Master PID setting A: Master PID feedback B: Master output power limit C: Master active current output Others: Connector	0x0031 (0x0000~ 0xFFFF)	RUN
E06.24 (0x7618)	Slave Sending Content for Power Balance	V/F SVC FVC PMV/F PMSVC PMFVC Ones-, tens-, hundreds-, and thousands-bit: 0: OFF 1: Operation command 2: Target frequency 3: Output frequency 4: Upper limit frequency 5: Target torque 6: Output torque 7: Torque mode-FWD speed control 8: Torque mode-REV speed control 9: Slave PID setting A: Slave PID feedback B: Slave output power limit C: Slave active current output Others: Connector	0x0031 (0x0000~ 0xFFFF)	RUN
E06.25 (0x7619)	Power Balance Error Action Mode	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Local action after CAN disconnection Tens-bit: Master action after slave CAN disconnection Hundreds-bit: Master action when slave fault occurs Thousands-bit: Load protection 2 0: Coasting stop 1: F09.10 2: Operation at limited frequency 3: Operation at limited current 4: Operation at limited power 5: Report alarm 6: Ignore	0x6666 (0x0000~ 0x6666)	RUN
E06.30 (0x761E)	RPDO1 CAN_ID	V/F SVC FVC PMV/F PMSVC PMFVC Set the RPDO1 message frame ID.	0x0200 (0x0000~ 0xFFFF)	STOP
E06.31 (0x761F)	RPDO1 Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the RPDO1 message transmission mode.	225 (0~255)	STOP

E06.32 (0x7620)	RPDO1 Mapping Entry Number	V/F SVC FVC PMV/F PMSVC PMFVC Set the number of mapped application objects in RPDO1.	0 (0~4)	STOP
E06.33 (0x7621)	RPDO1 Receive Interval	V/F SVC FVC PMV/F PMSVC PMFVC Set the RPDO1 message receive interval.	50 (1~65535)	STOP
E06.34 (0x7622)	RPDO2 CAN_ID	V/F SVC FVC PMV/F PMSVC PMFVC Set the RPDO2 message frame ID.	0x0300 (0x0000~ 0xFFFF)	STOP
E06.35 (0x7623)	RPDO2 Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the RPDO2 message transmission mode.	255 (0~255)	STOP
E06.36 (0x7624)	RPDO2 Mapping Entry Number	V/F SVC FVC PMV/F PMSVC PMFVC Set the number of mapped application objects in RPDO2.	0 (0~255)	STOP
E06.37 (0x7625)	RPDO2 Receive Interval (ms)	V/F SVC FVC PMV/F PMSVC PMFVC Set the RPDO2 message receive interval.	50 (1~65535)	STOP
E06.38 (0x7626)	RPDO3 CAN_ID	V/F SVC FVC PMV/F PMSVC PMFVC Set the RPDO3 message frame ID.	0x0400 (0x0000~ 0xFFFF)	STOP
E06.39 (0x7627)	RPDO3 Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the RPDO3 message transmission mode.	255 (0~255)	STOP
E06.40 (0x7628)	RPDO3 Mapping Entry Number	V/F SVC FVC PMV/F PMSVC PMFVC Set the number of mapped application objects in RPDO3.	0 (0~4)	STOP
E06.41 (0x7629)	RPDO3 Receive Interval (ms)	V/F SVC FVC PMV/F PMSVC PMFVC Set the RPDO3 message receive interval.	50 (1~65535)	STOP
E06.42 (0x762A)	RPDO4 CAN_ID	V/F SVC FVC PMV/F PMSVC PMFVC Set the RPDO4 message frame ID.	0x0500 (0x0000~ 0xFFFF)	STOP
E06.43 (0x762B)	RPDO4 Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the RPDO4 message transmission mode.	255 (0~255)	STOP
E06.44 (0x762C)	RPDO4 Mapping Entry Number	V/F SVC FVC PMV/F PMSVC PMFVC Set the number of mapped application objects in RPDO4.	0 (0~4)	STOP
E06.45 (0x762D)	RPDO4 Receive Interval (ms)	V/F SVC FVC PMV/F PMSVC PMFVC Set the RPDO4 message receive interval.	50 (1~65535)	STOP
E06.46 (0x762E)	TPDO1 CAN_ID	V/F SVC FVC PMV/F PMSVC PMFVC Set the TPDO1 message frame ID.	0x0384 (0x0000~ 0xFFFF)	STOP
E06.47 (0x762F)	TPDO1 Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the TPDO1 message transmission mode.	255 (0~255)	STOP
E06.48 (0x7630)	TPDO1 Mapping Entry Number	V/F SVC FVC PMV/F PMSVC PMFVC Set the number of mapped application objects in TPDO1.	0 (0~4)	STOP
E06.49 (0x7631)	TPDO1 Receive Interval (ms)	V/F SVC FVC PMV/F PMSVC PMFVC Set the TPDO1 message receive interval.	50 (1~65535)	STOP
E06.50 (0x7632)	TPDO2 CAN_ID	V/F SVC FVC PMV/F PMSVC PMFVC Set the TPDO2 message frame ID.	0x0640 (0x0000~ 0xFFFF)	STOP
E06.51 (0x7633)	TPDO2 Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the TPDO2 message transmission mode.	255 (0~255)	STOP
E06.52 (0x7634)	TPDO2 Mapping Entry Number	V/F SVC FVC PMV/F PMSVC PMFVC Set the number of mapped application objects in TPDO2.	0 (0~4)	STOP
E06.53 (0x7635)	TPDO2 Receive Interval (ms)	V/F SVC FVC PMV/F PMSVC PMFVC Set the TPDO2 message receive interval.	50 (1~65535)	STOP

E06.54 (0x7636)	TPDO3 CAN_ID	V/F SVC FVC PMV/F PMSVC PMFVC Set the TPDO3 message frame ID.	0x0896 (0x0000~ 0xFFFF)	STOP
E06.55 (0x7637)	TPDO3 Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the TPDO3 message transmission mode.	255 (0~255)	STOP
E06.56 (0x7638)	TPDO3 Mapping Entry Number	V/F SVC FVC PMV/F PMSVC PMFVC Set the number of mapped application objects in TPDO3.	0 (0~4)	STOP
E06.57 (0x7639)	TPDO3 Receive Interval (ms)	V/F SVC FVC PMV/F PMSVC PMFVC Set the TPDO3 message receive interval.	50 (1~65535)	STOP
E06.58 (0x763A)	TPDO4 CAN_ID	V/F SVC FVC PMV/F PMSVC PMFVC Set the TPDO4 message frame ID.	0x1152 (0x0000~ 0xFFFF)	STOP
E06.59 (0x763B)	TPDO4 Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the TPDO4 message transmission mode.	255 (0~255)	STOP
E06.60 (0x763C)	TPDO4 Mapping Entry Number	V/F SVC FVC PMV/F PMSVC PMFVC Set the number of mapped application objects in TPDO3.	0 (0~4)	STOP
E06.61 (0x763D)	TPDO4 Receive Interval (ms)	V/F SVC FVC PMV/F PMSVC PMFVC Set the TPDO4 message receive interval.	50 (1~65535)	STOP
E06.70 (0x7646)	Extension RS485 Master/Slave Communication	V/F SVC FVC PMV/F PMSVC PMFVC 0: Slave 1: Master	0 (0~1)	STOP
E06.71 (0x7647)	Extension RS485 Modbus Communication Address	V/F SVC FVC PMV/F PMSVC PMFVC Set different values for different slaves.	1 (1~247)	STOP
E06.72 (0x7648)	Extension RS485 Baud Rate	V/F SVC FVC PMV/F PMSVC PMFVC 0: 1200bps 1: 2400bps 2: 4800bps 3: 9600bps 4: 19200bps 5: 38400bps 6: 57600 bps 7: 115200 bps	3 (0~7)	STOP
E06.73 (0x7649)	Extension RS485 Modbus Data Format	V/F SVC FVC PMV/F PMSVC PMFVC 0: (N, 8, 1) no parity, data bit: 8, stop bit: 1 1: (E, 8, 1) even parity, data bit: 8, stop bit: 1 2: (O, 8, 1) odd parity, data bit: 8, stop bit: 1 3: (N, 8, 2) no parity, data bit: 8, stop bit: 2 4: (E, 8, 2) even parity, data bit: 8, stop bit: 2 5: (O, 8, 2) odd parity, data bit: 8, stop bit: 2	0 (0~5)	STOP
E06.74 (0x764A)	Extension RS485 Modbus Response	V/F SVC FVC PMV/F PMSVC PMFVC 0: Write operation valid 1: Write operation invalid	0 (0~1)	RUN
E06.75 (0x764B)	Extension RS485 Response Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the Modbus communication response delay.	0ms (0ms~ 5000ms)	RUN
E06.76 (0x764C)	Extension RS485 Communication Timeout	V/F SVC FVC PMV/F PMSVC PMFVC Set the Modbus communication error time.	1.0s (0.1s~ 100.0s)	RUN
E06.77 (0x764D)	Extension RS485 Disconnection Detection	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Detection ON	0 (0~1)	RUN

13.40 E07: Ethernet Extension Parameters

Code (Address)	Name	Description	Default (Range)	Property
E07.00 (0x7700)	Module Online Status	V/F SVC FVC PMV/F PMSVC PMFVC Set the module online status.	0 (0~65535)	RUN
E07.01 (0x7701)	EtherCAT Slave Station Name	V/F SVC FVC PMV/F PMSVC PMFVC Set the EtherCAT slave station name.	0 (0~65535)	RUN
E07.02 (0x7702)	EtherCAT Slave Station Alias	V/F SVC FVC PMV/F PMSVC PMFVC Set the EtherCAT slave station alias.	0 (0~65535)	RUN
E07.05 (0x7705)	Station Alias	V/F SVC FVC PMV/F PMSVC PMFVC Enable the station alias configuration.	0 (0~65535)	RUN
E07.08 (0x7708)	EtherCAT Sync Loss Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the maximum allowed EtherCAT sync losses.	0 (0~65535)	RUN
E07.09 (0x7709)	Port Receive Error Count	V/F SVC FVC PMV/F PMSVC PMFVC Record the port receive error count.	0 (0~65535)	RUN
E07.10 (0x770A)	Port Invalid Frame Count	V/F SVC FVC PMV/F PMSVC PMFVC Record the port invalid frame count.	0 (0~65535)	RUN
E07.11 (0x770B)	Port Forwarding Error Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the maximum allowed port forwarding errors.	0 (0~65535)	RUN
E07.12 (0x770C)	PDI&PU Error Count	V/F SVC FVC PMV/F PMSVC PMFVC Count errors within the PDI&processing unit.	0 (0~65535)	RUN
E07.13 (0x770D)	Port Link Loss Count	V/F SVC FVC PMV/F PMSVC PMFVC Count the port link loss number.	0 (0~65535)	RUN
E07.14 (0x770E)	Sync Signal Loss Count	V/F SVC FVC PMV/F PMSVC PMFVC Count the sync signal loss number.	0 (0~65535)	RUN
E07.15 (0x770F)	Application Level Error Code	V/F SVC FVC PMV/F PMSVC PMFVC Set the application level error code.	0 (0~65535)	RUN
E07.16 (0x7710)	Status Pole & Port Link Status	V/F SVC FVC PMV/F PMSVC PMFVC Display the status of the status pole and port link.	0 (0~65535)	RUN
E07.24 (0x7718)	ModbusTCP DHCP Enable	V/F SVC FVC PMV/F PMSVC PMFVC Set the ModbusTCP DHCP function on/off. 0: OFF 1: ON	0 (0~1)	RUN
E07.25 (0x7719)	IP Address a	V/F SVC FVC PMV/F PMSVC PMFVC Set the IP address a.	192 (0~255)	RUN
E07.26 (0x771A)	IP Address b	V/F SVC FVC PMV/F PMSVC PMFVC Set the IP address b.	168 (0~255)	RUN
E07.27 (0x771B)	IP Address c	V/F SVC FVC PMV/F PMSVC PMFVC Set the IP address c.	1 (0~255)	RUN
E07.28 (0x771C)	IP Address d	V/F SVC FVC PMV/F PMSVC PMFVC Set the IP address d.	20 (0~255)	RUN
E07.29 (0x771D)	Subnet Mask a	V/F SVC FVC PMV/F PMSVC PMFVC Set the subnet mask a.	255 (0~255)	RUN
E07.30 (0x771E)	Subnet Mask b	V/F SVC FVC PMV/F PMSVC PMFVC Set the subnet mask b.	255 (0~255)	RUN

E07.31 (0x771F)	Subnet Mask c	V/F SVC FVC PMV/F PMSVC PMFVC Set the subnet mask c.	255 (0~255)	RUN
E07.32 (0x7720)	Subnet Mask d	V/F SVC FVC PMV/F PMSVC PMFVC Set the subnet mask d.	0 (0~255)	RUN
E07.33 (0x7721)	Gateway a	V/F SVC FVC PMV/F PMSVC PMFVC Set the gateway a.	192 (0~255)	RUN
E07.4 (0x7722)	Gateway b	V/F SVC FVC PMV/F PMSVC PMFVC Set the gateway b.	168 (0~255)	RUN
E07.35 (0x7723)	Gateway c	V/F SVC FVC PMV/F PMSVC PMFVC Set the gateway c.	1 (0~255)	RUN
E07.36 (0x7724)	Gateway d	V/F SVC FVC PMV/F PMSVC PMFVC Set the gateway d.	1 (0~255)	RUN
E07.37 (0x7725)	MAC Address a-b	V/F SVC FVC PMV/F PMSVC PMFVC Set the MAC address a-b.	0x0002 (0x0000~ 0xFFFF)	RUN
E07.38 (0x7726)	MAC Address c-d	V/F SVC FVC PMV/F PMSVC PMFVC Set the MAC address c-d.	0x0002 (0x0000~ 0xFFFF)	RUN
E07.39 (0x7727)	MAC Address e-f	V/F SVC FVC PMV/F PMSVC PMFVC Set the MAC address e-f.	0x0002 (0x0000~ 0xFFFF)	RUN
E07.40 (0x7728)	Client Access Timeout	V/F SVC FVC PMV/F PMSVC PMFVC Define the client access timeout.	100 (0~65535)	RUN
E07.39 (0x7727)	Client 2 Access Timeout	V/F SVC FVC PMV/F PMSVC PMFVC Define the client 2 access timeout.	0 (0~65535)	RUN
E07.40 (0x7728)	Client 3 Access Timeout	V/F SVC FVC PMV/F PMSVC PMFVC Define the client 3 access timeout.	0 (0~65535)	RUN
E07.41 (0x7729)	Client 4 Access Timeout	V/F SVC FVC PMV/F PMSVC PMFVC Define the client 4 access timeout.	0 (0~65535)	RUN
E07.48 (0x7730)	EtherNet/IPD HCP Enable	V/F SVC FVC PMV/F PMSVC PMFVC Enable the EtherNet/IPDHCP.	0 (0~1)	RUN
E07.49 (0x7731)	IP Address a	V/F SVC FVC PMV/F PMSVC PMFVC Set the IP address a.	0 (0~65535)	RUN
E07.50 (0x7732)	IP Address b	V/F SVC FVC PMV/F PMSVC PMFVC Set the IP address b.	0 (0~65535)	RUN
E07.51 (0x7733)	IP Address c	V/F SVC FVC PMV/F PMSVC PMFVC Set the IP address c.	0 (0~65535)	RUN
E07.52 (0x7734)	IP Address d	V/F SVC FVC PMV/F PMSVC PMFVC Set the IP address d.	0 (0~65535)	RUN
E07.53 (0x7735)	Subnet Mask a	V/F SVC FVC PMV/F PMSVC PMFVC Set the subnet mask a.	0 (0~65535)	RUN
E07.54 (0x7736)	Subnet Mask b	V/F SVC FVC PMV/F PMSVC PMFVC Set the subnet mask b.	0 (0~65535)	RUN
E07.55 (0x7737)	Subnet Mask c	V/F SVC FVC PMV/F PMSVC PMFVC Set the subnet mask c.	0 (0~65535)	RUN
E07.56 (0x7738)	Subnet Mask d	V/F SVC FVC PMV/F PMSVC PMFVC Set the subnet mask d.	0 (0~65535)	RUN
E07.57 (0x7739)	Gateway a	V/F SVC FVC PMV/F PMSVC PMFVC Set the gateway a.	0 (0~65535)	RUN
E07.58 (0x773A)	Gateway b	V/F SVC FVC PMV/F PMSVC PMFVC Set the gateway b.	0 (0~65535)	RUN

E07.59 (0x773B)	Gateway c	V/F SVC FVC PMV/F PMSVC PMFVC Set the gateway c.	0 (0~65535)	RUN
E07.60 (0x773C)	Gateway d	V/F SVC FVC PMV/F PMSVC PMFVC Set the gateway d.	0 (0~65535)	RUN
E07.61 (0x773D)	MAC Address a-b	V/F SVC FVC PMV/F PMSVC PMFVC Set the MAC address a-b.	0x0002 (0x0000~ 0xFFFF)	RUN
E07.62 (0x773E)	MAC Address c-d	V/F SVC FVC PMV/F PMSVC PMFVC Set the MAC address c-d.	0x0000 (0x0000~ 0xFFFF)	RUN
E07.63 (0x773F)	MAC Address e-f	V/F SVC FVC PMV/F PMSVC PMFVC Set the MAC address e-f.	0x0002 (0x0000~ 0xFFFF)	RUN
E07.64 (0x7740)	Master Access Timeout	V/F SVC FVC PMV/F PMSVC PMFVC Define the master access timeout.	0 (0~65535)	RUN
E07.72 (0x773F)	PN Extension MAC0	V/F SVC FVC PMV/F PMSVC PMFVC Monitor the PN extension MAC0.	0x0000 (0x0000~ 0xFFFF)	RUN
E07.72 (0x773F)	PN Extension MAC1	V/F SVC FVC PMV/F PMSVC PMFVC Monitor the PN extension MAC1.	0x0000 (0x0000~ 0xFFFF)	RUN
E07.72 (0x773F)	PN Extension MAC2	V/F SVC FVC PMV/F PMSVC PMFVC Monitor the PN extension MAC2.	0x0000 (0x0000~ 0xFFFF)	RUN

13.41 E08: PLC Extension Parameters

Code (Address)	Name	Description	Default (Range)	Property
E08.00 (0x7800)	Reserved	V/F SVC FVC PMV/F PMSVC PMFVC Reserved	0 (0~65535)	RUN

13.42 E10: Black Box

Code (Address)	Name	Description	Default (Range)	Property
E10.00 (0x7A00)	Black Box Enable	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: ON	0 (0~1)	RUN
E10.01 (0x7A01)	Black Box File No.	V/F SVC FVC PMV/F PMSVC PMFVC Set the number of black box files.	1 (0~65535)	READ
E10.02 (0x7A02)	Black Box Status	V/F SVC FVC PMV/F PMSVC PMFVC 0: Initialization not completed 1: Initialization in progress 2: Initialization completed	0 (0~2)	READ
E10.03 (0x7A03)	Receive Timeout Detection	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: ON	0 (0~1)	RUN
E10.04 (0x7A04)	Receive Timeout Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the receive timeout threshold.	10.00s (0.00s~ 100.00s)	RUN
E10.06 (0x7A06)	ADC Data Custom Channel 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the ADC data custom channel 1.	0x0433 (0x0000~ 0x4F99)	RUN
E10.07 (0x7A07)	ADC Data Custom Channel 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the ADC data custom channel 2.	0x0441 (0x0001~ 0x4F99)	RUN

E10.08 (0x7A08)	ADC Data Custom Channel 3	V/F SVC FVC PMV/F PMSVC PMFVC Set the ADC data custom channel 3.	0x0452 (0x0002~0x4F99)	RUN
E10.09 (0x7A09)	ADC Data Custom Channel 4	V/F SVC FVC PMV/F PMSVC PMFVC Set the ADC data custom channel 4.	0x0468 (0x0003~0x4F99)	RUN
E10.10 (0x7A0A)	ADC Data Custom Channel 5	V/F SVC FVC PMV/F PMSVC PMFVC Set the ADC data custom channel 5.	0x0469 (0x0004~0x4F99)	RUN

13.43 L00: Free Function Block

L00.0x: Module 1

Code (Address)	Name	Description	Default (Range)	Property
L00.00 (0x8000)	Module 1 Function	V/F SVC FVC PMV/F PMSVC PMFVC Refer to the details in Free Module Function.	0 (0~100)	RUN
L00.01 (0x8001)	Input 1 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constants 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.02 (0x8002)	Input 1 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L00.03 (0x8003)	Input 1 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L00.04 (0x8004)	Input 2 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constants 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.05 (0x8005)	Input 2 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L00.06 (0x8006)	Input 2 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L00.07 (0x8007)	Input 3 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.08 (0x8008)	Input 3 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L00.09 (0x8009)	Input 3 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN

L00.1x: Module 2

Code (Address)	Name	Description	Default (Range)	Property
L00.10 (0x800A)	Module 2 Function	V/F SVC FVC PMV/F PMSVC PMFVC Refer to the details in Free Module Function.	0 (0~38)	RUN

L00.11 (0x800B)	Input 1 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.12 (0x800C)	Input 1 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L00.13 (0x800D)	Input 1 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L00.14 (0x800E)	Input 2 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.15 (0x800F)	Input 2 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L00.16 (0x8010)	Input 2 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L00.17 (0x8011)	Input 3 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.18 (0x8012)	Input 3 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L00.19 (0x8013)	Input 3 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN

L00.2x: Module 3

Code (Address)	Name	Description	Default (Range)	Property
L00.20 (0x8014)	Module 3 Function	V/F SVC FVC PMV/F PMSVC PMFVC Refer to the details in Free Module Function.	0 (0~100)	RUN
L00.21 (0x8015)	Input 1 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.22 (0x8016)	Input 1 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L00.23 (0x8017)	Input 1 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L00.24 (0x8018)	Input 2 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.25 (0x8019)	Input 2 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN

L00.26 (0x801A)	Input 2 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L00.27 (0x801B)	Input 3 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.28 (0x801C)	Input 3 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L00.29 (0x801D)	Input 3 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN

L00.3x: Module 4

Code (Address)	Name	Description	Default (Range)	Property
L00.30 (0x801E)	Module 4 Function	V/F SVC FVC PMV/F PMSVC PMFVC Refer to the details in Free Module Function.	0 (0~100)	RUN
L00.31 (0x801F)	Input 1 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.32 (0x8020)	Input 1 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L00.33 (0x8021)	Input 1 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L00.34 (0x8022)	Input 2 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.35 (0x8023)	Input 2 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L00.36 (0x8024)	Input 2 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L00.37 (0x8025)	Input 3 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.38 (0x8026)	Input 3 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L00.39 (0x8027)	Input 3 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN

L00.4x: Module 5

Code (Address)	Name	Description	Default (Range)	Property
L00.40 (0x8028)	Module 5 Function	V/F SVC FVC PMV/F PMSVC PMFVC Refer to the details in Free Module Function.	0 (0~100)	RUN
L00.41 (0x8029)	Input 1 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.42 (0x802A)	Input 1 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L00.43 (0x802B)	Input 1 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L00.44 (0x802C)	Input 2 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.45 (0x802D)	Input 2 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L00.46 (0x802E)	Input 2 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L00.47 (0x802F)	Input 3 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.48 (0x8030)	Input 3 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L00.49 (0x8031)	Input 3 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN

L00.5x: Module 6

Code (Address)	Name	Description	Default (Range)	Property
L00.50 (0x8032)	Module 6 Function	V/F SVC FVC PMV/F PMSVC PMFVC Refer to the details in Free Module Function.	0 (0~100)	RUN
L00.51 (0x8033)	Input 1 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.52 (0x8034)	Input 1 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L00.53 (0x8035)	Input 1 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN

L00.54 (0x8036)	Input 2 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.55 (0x8037)	Input 2 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L00.56 (0x8038)	Input 2 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L00.57 (0x8039)	Input 3 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.58 (0x803A)	Input 3 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L00.59 (0x803B)	Input 3 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN

L00.6x: Module 7

Code (Address)	Name	Description	Default (Range)	Property
L00.60 (0x803C)	Module 7 Function	V/F SVC FVC PMV/F PMSVC PMFVC Refer to the details in Free Module Function.	0 (0~100)	RUN
L00.61 (0x803D)	Input 1 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: Invalid 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.62 (0x803E)	Input 1 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L00.63 (0x803F)	Input 1 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L00.64 (0x8040)	Input 2 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: Invalid 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.65 (0x8041)	Input 2 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L00.66 (0x8042)	Input 2 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L00.67 (0x8043)	Input 3 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: Invalid 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.68 (0x8044)	Input 3 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN

L00.69 (0x8045)	Input 3 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN

L00.7x: Module 8

Code (Address)	Name	Description	Default (Range)	Property
L00.70 (0x8046)	Module 8 Function	V/F SVC FVC PMV/F PMSVC PMFVC Refer to the details in Free Module Function.	0 (0~100)	RUN
L00.71 (0x8047)	Input 1 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: Invalid 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.72 (0x8048)	Input 1 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L00.73 (0x8049)	Input 1 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L00.74 (0x804A)	Input 2 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: Invalid 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.75 (0x804B)	Input 2 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L00.76 (0x804C)	Input 2 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L00.77 (0x804D)	Input 3 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: Invalid 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.78 (0x804E)	Input 3 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L00.79 (0x804F)	Input 3 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN

L00.8x: Module 9

Code (Address)	Name	Description	Default (Range)	Property
L00.80 (0x8050)	Module 9 Function	V/F SVC FVC PMV/F PMSVC PMFVC Refer to the details in Free Module Function.	0 (0~100)	RUN
L00.81 (0x8051)	Input 1 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: Invalid 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.82 (0x8052)	Input 1 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN

L00.83 (0x8053)	Input 1 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L00.84 (0x8054)	Input 2 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: Invalid 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.85 (0x8055)	Input 2 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L00.86 (0x8056)	Input 2 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L00.87 (0x8057)	Input 3 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: Invalid 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.88 (0x8058)	Input 3 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L00.89 (0x8059)	Input 3 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN

L00.9x: Module 10

Code (Address)	Name	Description	Default (Range)	Property
L00.90 (0x805A)	Module 10 Function	V/F SVC FVC PMV/F PMSVC PMFVC Refer to the details in Free Module Function.	0 (0~100)	RUN
L00.91 (0x805B)	Input 1 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: Invalid 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.92 (0x805C)	Input 1 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L00.93 (0x805D)	Input 1 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L00.94 (0x805E)	Input 2 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: Invalid 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.95 (0x805F)	Input 2 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L00.96 (0x8060)	Input 2 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN

L00.97 (0x8061)	Input 3 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: Invalid 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L00.98 (0x8062)	Input 3 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L00.99 (0x8063)	Input 3 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN

13.44 L01: Bit-Word Function Block Input

L01.00~L01.47: Bit-Word Function Block Input 1

Code (Address)	Name	Description	Default (Range)	Property
L01.00 (0x8100)	Input 1 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constants 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.01 (0x8101)	Input 1 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.02 (0x8102)	Input 1 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L01.03 (0x8103)	Input 2 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.04 (0x8104)	Input 2 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.05 (0x8105)	Input 2 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L01.06 (0x8106)	Input 3 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.07 (0x8107)	Input 3 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.08 (0x8108)	Input 3 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L01.09 (0x8109)	Input 4 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.10 (0x810A)	Input 4 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN

L01.11 (0x810B)	Input 4 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L01.12 (0x810C)	Input 5 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.13 (0x810D)	Input 5 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.14 (0x810E)	Input 5 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L01.15 (0x810F)	Input 6 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.16 (0x8110)	Input 6 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.17 (0x8111)	Input 6 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L01.18 (0x8112)	Input 7 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: Invalid 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.19 (0x8113)	Input 7 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.20 (0x8114)	Input 7 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L01.21 (0x8115)	Input 8 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: Invalid 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.22 (0x8116)	Input 8 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.23 (0x8117)	Input 8 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L01.24 (0x8118)	Input 9 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.25 (0x8119)	Input 9 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.26 (0x811A)	Input 9 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN

L01.27 (0x811B)	Input 10 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.28 (0x811C)	Input 10 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.29 (0x811D)	Input 10 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L01.30 (0x811E)	Input 11 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.31 (0x811F)	Input 11 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.32 (0x8120)	Input 11 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L01.33 (0x8121)	Input 12 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.34 (0x822)	Input 12 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.35 (0x8123)	Input 12 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L01.36 (0x8124)	Input 13 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.37 (0x8125)	Input 13 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.38 (0x8126)	Input 13 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L01.39 (0x8127)	Input 14 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.40 (0x8128)	Input 14 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.41 (0x8129)	Input 14 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN

L01.42 (0x812A)	Input 15 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.43 (0x812B)	Input 15 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.44 (0x812C)	Input 15 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L01.45 (0x812D)	Input 16 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.46 (0x812E)	Input 16 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.47 (0x812F)	Input 16 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN

L01.48~L01.95: Bit-Word Function Block Input 2

Code (Address)	Name	Description	Default (Range)	Property
L01.48 (0x8130)	Input 1 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.49 (0x8131)	Input 1 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.50 (0x8132)	Input 1 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L01.51 (0x8133)	Input 2 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.52 (0x8134)	Input 2 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.53 (0x8135)	Input 2 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L01.54 (0x8136)	Input 3 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.55 (0x8137)	Input 3 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN

L01.56 (0x8138)	Input 3 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L01.57 (0x8139)	Input 4 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.58 (0x813A)	Input 4 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.59 (0x813B)	Input 4 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L01.60 (0x813C)	Input 5 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.61 (0x813D)	Input 5 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.62 (0x813E)	Input 5 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L01.63 (0x813F)	Input 6 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.64 (0x8140)	Input 6 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.65 (0x8141)	Input 6 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L01.66 (0x8142)	Input 7 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.67 (0x8143)	Input 7 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.68 (0x8144)	Input 7 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L01.69 (0x8145)	Input 8 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.70 (0x8146)	Input 8 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.71 (0x8147)	Input 8 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN

L01.72 (0x8148)	Input 9 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.73 (0x8149)	Input 9 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.74 (0x814A)	Input 9 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L01.75 (0x814B)	Input 10 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.76 (0x814C)	Input 10 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.77 (0x814D)	Input 10 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L01.78 (0x814E)	Input 11 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.79 (0x814F)	Input 11 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.80 (0x8150)	Input 11 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L01.81 (0x8151)	Input 12 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.82 (0x8152)	Input 12 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.83 (0x8153)	Input 12 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L01.84 (0x8154)	Input 13 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.85 (0x8155)	Input 13 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.86 (0x8156)	Input 13 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN

L01.87 (0x8157)	Input 14 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.88 (0x8158)	Input 14 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.89 (0x8159)	Input 14 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L01.90 (0x815A)	Input 15 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.91 (0x815B)	Input 15 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.92 (0x815C)	Input 15 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN
L01.93 (0x815D)	Input 16 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)	RUN
L01.94 (0x815E)	Input 16 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)	RUN
L01.95 (0x815F)	Input 16 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)	RUN

13.45 U0x: Connector

U00.xx: Bit Connector 1 (Digital Status)

Code (Address)	Name	Min. Unit	Content
U00.00 (0xA000)	Logic 0	-	Constant 0
U00.01 (0xA001)	Logic 1	-	Constant 1
U00.02 (0xA002)	X1 Physical Status	-	X1 original status before processing
U00.03 (0xA003)	X1 Final Status	-	X1 status after delay processing
U00.04 (0xA004)	X1 Final Status Inversion	-	Inverted X1 status after delay processing
U00.05 (0xA005)	X2 Physical Status	-	X2 original status before processing
U00.06 (0xA006)	X2 Final Status	-	X2 status after delay processing
U00.07 (0xA007)	X2 Final Status Inversion	-	Inverted X2 status after delay processing
U00.08 (0xA008)	X3 Physical Status	-	X3 original status before processing

U00.09 (0xA009)	X3 Final Status	-	X3 status after delay processing
U00.10 (0xA00A)	X3 Final Status Inversion	-	Inverted X3 status after delay processing
U00.11 (0xA00B)	X4 Physical Status	-	X4 original status before processing
U00.12 (0xA00C)	X4 Final Status	-	X4 status after delay processing
U00.13 (0xA00D)	X4 Final Status Inversion	-	Inverted X4 status after delay processing
U00.14 (0xA00E)	X5 Physical Status	-	X5 original status before processing
U00.15 (0xA00F)	X5 Final Status	-	X5 status after delay processing
U00.16 (0xA010)	X5 Final Status Inversion	-	Inverted X5 status after delay processing
U00.17 (0xA011)	X6 Physical Status	-	X6 original status before processing
U00.18 (0xA012)	X6 Final Status	-	X6 status after delay processing
U00.19 (0xA013)	X6 Final Status Inversion	-	Inverted X6 status after delay processing
U00.32 (0xA020)	vX1 Original Status	-	vX1 original status before processing
U00.33 (0xA021)	vX1 Final Status	-	vX1 status after delay processing
U00.34 (0xA022)	vX1 Final Status Inversion	-	Inverted vX1 status after delay processing
U00.35 (0xA023)	vX2 Original Status	-	vX2 original status before processing
U00.36 (0xA024)	vX2 Final Status	-	vX2 status after delay processing
U00.37 (0xA025)	vX2 Final Status Inversion	-	Inverted vX2 status after delay processing
U00.38 (0xA026)	vX3 Original Status	-	vX3 original status before processing
U00.39 (0xA027)	vX3 Final Status	-	vX3 status after delay processing
U00.40 (0xA028)	vX3 Final Status Inversion	-	Inverted vX3 status after delay processing
U00.41 (0xA029)	vX4 Original Status	-	vX4 original status before processing
U00.42 (0xA02A)	vX4 Final Status	-	vX4 status after delay processing
U00.43 (0xA02B)	vX4 Final Status Inversion	-	Inverted vX4 status after delay processing
U00.44 (0xA02C)	vX5 Original Status	-	vX5 original status before processing
U00.45 (0xA02D)	vX5 Final Status	-	vX5 status after delay processing
U00.46 (0xA02E)	vX5 Final Status Inversion	-	Inverted vX5 status after delay processing
U00.47 (0xA02F)	vX6 Original Status	-	vX6 original status before processing
U00.48 (0xA030)	vX6 Final Status	-	vX6 status after delay processing

U00.49 (0xA031)	vX6 Final Status Inversion	-	Inverted vX6 status after delay processing
U00.56 (0xA038)	Y1 Output Status	-	Monitor the output state of Y1
U00.57 (0xA039)	Y1 Output Status Inversion	-	Monitor the inverted output state of Y1
U00.58 (0xA03A)	Y2 Output Status	-	Monitor the output state of Y2
U00.59 (0xA03B)	Y2 Output Status Inversion	-	Monitor the inverted output state of Y2
U00.60 (0xA03C)	Y3 Output Status	-	Monitor the output state of Y3
U00.61 (0xA03D)	Y3 Output Status Inversion	-	Monitor the inverted output state of Y3
U00.62 (0xA03E)	vY1 Output Status	-	Monitor the output state of vY1
U00.63 (0xA03F)	vY1 Output Status Inversion	-	Monitor the inverted output state of vY1
U00.64 (0xA040)	vY2 Output Status	-	Monitor the output state of vY2
U00.65 (0xA041)	vY2 Output Status Inversion	-	Monitor the inverted output state of vY2
U00.66 (0xA042)	vY3 Output Status	-	Monitor the output state of vY3
U00.67 (0xA043)	vY3 Output Status Inversion	-	Monitor the inverted output state of vY3
U00.68 (0xA044)	vY4 Output Status	-	Monitor the output state of vY4
U00.69 (0xA045)	vY4 Output Status Inversion	-	Monitor the inverted output state of vY4
U00.70 (0xA046)	vY5 Output Status	-	Monitor the output state of vY5
U00.71 (0xA047)	vY5 Output Status Inversion	-	Monitor the inverted output state of vY5
U00.72 (0xA048)	vY6 Output Status	-	Monitor the output state of vY6
U00.73 (0xA049)	vY6 Output Status Inversion	-	Monitor the inverted output state of vY6
U00.82 (0xA052)	XY1 I/O Indicator	-	Monitor the XY1 input/output indicator
U00.83 (0xA053)	XY2 I/O Indicator	-	Monitor the XY2 input/output indicator
U00.84 (0xA054)	XY3 I/O Indicator	-	Monitor the XY3 input/output indicator
U00.85 (0xA055)	XY1 Original Status	-	Monitor the XY1 original status
U00.86 (0xA056)	XY1 Final/Output Status	-	Monitor the XY1 final/output status
U00.87 (0xA057)	XY1 Final/Output Status Inversion	-	Monitor the inverted XY1 final/output status
U00.88 (0xA058)	XY2 Original Status	-	Monitor the XY2 original status
U00.89 (0xA059)	XY2 Final/Output Status	-	Monitor the XY2 final/output status
U00.90 (0xA05A)	XY2 Final/Output Status Inversion	-	Monitor the inverted XY2 final/output status

U00.91 (0xA05B)	XY3 Original Status	-	Monitor the XY3 original status
U00.92 (0xA05C)	XY3 Final/Output Status	-	Monitor the XY3 final/output status
U00.93 (0xA05D)	XY3 Final/Output Status Inversion	-	Monitor the inverted XY3 final/output status

U01.xx: Bit Connector 2 (Function Status Indicator)

Code (Address)	Name	Min. Unit	Content
U01.00 (0xA100)	None	1	No output
U01.01 (0xA101)	Drive in Operation	1	1: Drive in operation
U01.02 (0xA102)	Drive in FWD Operation	1	1: Drive in forward operation
U01.03 (0xA103)	Drive in REV Operation	1	1: Drive in reverse operation
U01.04 (0xA104)	Error Trip Alarm 1 (Alarm during auto reset)	1	1: Drive error active (including auto-reset period)
U01.05 (0xA105)	Error Trip Alarm 2 (No alarm during auto reset)	1	1: Drive error active (excluding auto-reset period)
U01.06 (0xA106)	External Error Stop	1	1: External error E.EF detected via multifunction input
U01.07 (0xA107)	Drive Low Voltage	1	1: Drive in undervoltage state
U01.08 (0xA108)	Drive Ready	1	1: The drive has no fault, the bus voltage is normal, and the operation disable terminal such as emergency stop of the drive is invalid. The AC drive can run immediately after receiving a start command.
U01.09 (0xA109)	Output Frequency Detection Level 1 (FDT1)	1	1: Output frequency exceeds the value set in F16.40 [Frequency Detection Threshold 1]. 0: Output frequency falls below F16.40, and after passing the hysteresis set in F16.41 [Frequency Range 1], the signal turns OFF.
U01.10 (0xA10A)	Output Frequency Detection Level 2	1	1: Output frequency exceeds the value set in F16.42 [Frequency Detection Threshold 2]. 0: Output frequency falls below F16.42, and after passing the hysteresis set in F16.43 [Frequency Range 2], the signal turns OFF.
U01.11 (0xA10B)	Target Frequency Arrival	1	1: The drive output frequency is within the specified range of the target frequency (range set by F16.44 [Frequency Completion Range]).
U01.12 (0xA10C)	Zero-Frequency Operation	1	1: The drive is running and the output frequency is 0.00Hz.
U01.13 (0xA10D)	Upper Limit Frequency Arrival	1	1: The drive is operating at the upper frequency limit.
U01.14 (0xA10E)	Lower Limit Frequency Arrival	1	1: The drive is operating at the lower frequency limit.
U01.15 (0xA10F)	PLC Cycle Completed	1	1: A 500ms valid signal is output when a PLC program cycle has finished
U01.16 (0xA110)	PLC Step Completed	1	1: A 500ms valid signal is output when a PLC program step has finished

U01.17 (0xA111)	PID Feedback Above Upper Limit	1	1: The PID feedback value reaches F13.27 [Feedback Disconnection Upper Limit] and remains out of range beyond the detection time set by F13.26 [Feedback Disconnection Time].
U01.18 (0xA112)	PID Feedback Below Lower Limit	1	1: The PID feedback value reaches F13.28 [Feedback Disconnection Lower Limit] and remains out of range beyond the detection time set by F13.26.
U01.19 (0xA113)	PID Feedback Sensor Disconnection	1	1: PID feedback sensor fault (open circuit).
U01.20 (0xA114)	Meter Length Arrival	1	1: The actual length calculated by the pulse counter reaches F16.05 [Set Length].
U01.21 (0xA115)	Timing Arrival	1	1: The internal timer reaches its set time. For details, refer to parameters F16.07 [Timer Unit] and F16.08 [Timer Setting].
U01.22 (0xA116)	Counter Maximum Arrival	1	1: The counter reaches the maximum value, outputs an active signal for one external clock cycle, then resets. For details, refer to parameter F16.02 [Max. Counting].
U01.23 (0xA117)	Counter Setting Arrival	1	1: Set to 1 when the counter reaches the set value; reset to 0 when counting continues past the maximum value and the counter resets. For details, refer to parameter F16.03 [Counter Setting].
U01.24 (0xA118)	Dynamic Braking	1	1: Dynamic braking is active. For details, refer to parameter F10.14 [Dynamic Brake Enable].
U01.25 (0xA119)	PG Feedback Disconnection	1	1: Any PG card input signal is lost (open circuit).
U01.26 (0xA11A)	Emergency Stop Active	1	1: The drive is in emergency stop state.
U01.27 (0xA11B)	Overload Output (Report error and alarm)	1	1: When AC drive is in operation under V/F control, the motor output current is used as reference for load alarms, while under the vector control mode, motor output torque is used as the reference for load alarms. Compare reference value with the alarm threshold to decide whether to output valid signals. Refer to parameters F10.32 [Load Warning Mode], F10.33 [Load Warning Level 1], F10.34 [Load Warning Time 1], F10.35 [Load Warning Level 2], and F10.36 [Load Warning Time 2].
U01.28 (0xA11C)	Underload Output (Report error and alarm)	1	1: When AC drive is in operation under V/F control, the motor output current is used as reference for load alarms, while under the vector control mode, motor output torque is used as the reference for load alarms. Compare reference value with the alarm threshold to decide whether to output valid signals. Refer to parameters F10.32 [Load Warning Mode], F10.33 [Load Warning Level 1], F10.34 [Load Warning Time 1], F10.35 [Load Warning Level 2], and F10.36 [Load Warning Time 2].
U01.29 (0xA11D)	Drive Alarm Active	1	1: Any drive alarm (A-series alarm) has occurred.

U01.30 (0xA11E)	0x3018 Control Output	1	Set through RS485 communication (0x3018), BIT0 bit corresponds to Y output, BIT1 corresponds to relay 1 output, and BIT2 bit corresponds to relay 2 output.
U01.31 (0xA11F)	Drive Overheat	1	1: Drive temperature reaches F10.25 [Drive oH1 Warning Level].
U01.32 (0xA120)	Motor Overheat Alarm	1	1: Motor overheat alarm is active.
U01.33 (0xA121)	Drive Overload	1	1: Drive overload detected. Occurs when C00.23 > 0%.
U01.34 (0xA122)	Motor Overload	1	1: Motor overload detected. Occurs when C00.24 > 0%.
U01.35 (0xA123)	Brake Active	1	1: Mechanical brake is active (when brake function is enabled).
U01.36 (0xA124)	Brake Failure Protection Active	1	1: Brake failure protection is active.
U01.37 (0xA125)	Comparator 1	1	1: The monitored value selected by F16.50 [Comparator 1 Item] is within the range defined by F16.51 [Comparator 1 Upper Limit] and F16.52 [Comparator 1 Lower Limit].
U01.38 (0xA126)	Comparator 2	1	1: The monitored value selected by F16.55 [Comparator 2 Item] is within the range defined by F16.56 [Comparator 2 Upper Limit] and F16.57 [Comparator 2 Lower Limit].
U01.39 (0xA127)	Comparator 3	1	1: The monitored value selected by F16.60 [Comparator 3 Item] is within the range defined by F16.61 [Comparator 3 Upper Limit] and F16.62 [Comparator 3 Lower Limit].
U01.40 (0xA128)	Comparator 4	1	1: The monitored value selected by F16.65 [Comparator 4 Item] is within the range defined by F16.66 [Comparator 4 Upper Limit] and F16.67 [Comparator 4 Lower Limit].
U01.41 (0xA129)	Motor 1 Enable	1	1: Motor 1 is enabled.
U01.42 (0xA12A)	Motor 2 Enable	1	1: Motor 2 is enabled.
U01.43 (0xA12B)	Motor 3 Enable	1	1: Motor 3 is enabled.
U01.44 (0xA12C)	Motor 4 Enable	1	1: Motor 4 is enabled.
U01.45 (0xA12D)	PID Output Saturation	1	1: PID output is saturated.
U01.46 (0xA12E)	PID Negative Characteristic	1	1: PID negative characteristic is active.
U01.47 (0xA12F)	Accelerating	1	1: The drive is accelerating.
U01.48 (0xA130)	Constant-Frequency Operating	1	1: The drive is running at constant speed.
U01.49 (0xA131)	Decelerating	1	1: The drive is decelerating.
U01.50 (0xA132)	FWD Disable	1	1: Forward rotation is prohibited.
U01.51 (0xA133)	REV Disable	1	1: Reverse rotation is prohibited.
U01.52 (0xA134)	DC Brake Active	1	1: The drive is performing DC braking.

U01.54 (0xA136)	Torque Control Active	1	1: Torque control is enabled.
U01.55 (0xA137)	Position Control Active	1	1: Position control is enabled.
U01.56 (0xA138)	Jogging First	1	1: The drive is in jog operation mode.
U01.57 (0xA139)	Undervoltage Suppression Active	1	1: Undervoltage suppression is active.
U01.58 (0xA13A)	Overvoltage Suppression Active	1	1: Overvoltage suppression is active.
U01.59 (0xA13B)	Overcurrent Suppression Active	1	1: Overcurrent suppression is active.
U01.60 (0xA13C)	Speed Limit (No stop on fault)	1	1: The drive has entered speed-limiting mode (when F10.8x~F10.9x fault attributes are set to speed-limit operation).
U01.61 (0xA13D)	Current Limit (No stop on fault)	1	1: The drive has entered current-limiting mode (when F10.8x~F10.9x fault attributes are set to current-limit operation).
U01.62 (0xA13E)	Power Limit (No stop on fault)	1	1: The drive has entered power-limiting mode (when F10.8x~F10.9x fault attributes are set to power-limit operation).

U03.xx: Word Connector 1 (Typical Frequency/Voltage)

Typical frequency/voltage/current values

Code (Address)	Name	Min. Unit	Content
U03.00 (0xA300)	Frequency Reference (System Frequency Fb)	1	System frequency / speed reference value
U03.01 (0xA301)	Max. Frequency	0.01Hz	F1.10
U03.02 (0xA302)	Rated Frequency	0.1%	Percentage of frequency reference
U03.03 (0xA303)	Target Frequency	0.1%	Percentage of frequency reference
U03.04 (0xA304)	Shaft Frequency	0.1%	Percentage of frequency reference
U03.05 (0xA305)	Output Frequency	0.1%	Percentage of frequency reference
U03.06 (0xA306)	Target Speed	1rpm	Commanded speed
U03.07 (0xA307)	Mechanical Speed	1rpm	Mechanical speed of motor
U03.08 (0xA308)	Control Speed	1rpm	Output speed
U03.11 (0xA30B)	Oscillation Suppression Compensation Frequency	1	Per-unit value based on frequency reference
U03.12 (0xA30C)	Overvoltage/Low-voltage Suppression Compensation Frequency	1	Per-unit value based on frequency reference
U03.14 (0xA30E)	Overcurrent Suppression Compensation Frequency	1	Per-unit value based on frequency reference
U03.16 (0xA600)	Speed-Frequency Coefficient	1	Determined by F1.14. 0.01Hz/0.1Hz: 0 1Rpm: Np 10Rpm: 10Np
U03.17 (0xA311)	Target Frequency During Start-Stop	1	Commanded frequency; unit depends on F1.14

U03.19 (0xA313)	Source A Output	1	Commanded frequency from source A
U03.20 (0xA314)	Source B Output	1	Commanded frequency from source B
U03.21 (0xA315)	Frequency Source Combination	1	Combined source of commanded frequency
U03.30 (0xA31E)	Voltage Reference (Motor Rated Line Voltage V_n)	0.1V	Motor rated voltage
U03.31 (0xA31F)	Bus Voltage Feedback, 1ms Average	0.1V	1ms average of bus voltage sampling
U03.32 (0xA320)	Min. Bus Voltage	0.1V	Minimum sampled bus voltage
U03.33 (0xA321)	Bus Overvoltage Suppression Point	0.1V	Overvoltage suppression threshold
U03.34 (0xA322)	Bus Undervoltage Suppression Point	0.1V	Undervoltage suppression threshold
U03.35 (0xA323)	Dynamic Brake Voltage Point	0.1V	Voltage at which dynamic braking starts
U03.37 (0xA325)	Input Voltage	0.1%	Percentage of motor rated voltage
U03.38 (0xA326)	Bus Monitoring Voltage	0.1%	Percentage of motor rated voltage
U03.39 (0xA327)	Bus Voltage Feedback, 1ms Average	0.1%	Percentage of motor rated voltage
U03.40 (0xA328)	Min. Bus Voltage	0.1%	Percentage of motor rated voltage
U03.41 (0xA329)	Bus Overvoltage Suppression Point	0.1%	Percentage of motor rated voltage
U03.42 (0xA32A)	Bus Undervoltage Suppression Point	0.1%	Percentage of motor rated voltage
U03.43 (0xA32B)	Output Voltage Range	0.1%	Percentage of motor rated voltage
U03.44 (0xA32C)	Dynamic Brake Voltage Point	0.1%	Percentage of motor rated voltage
U03.47 (0xA32F)	α -Axis Voltage in Stationary Coordinate System	0.1%	Percentage of motor rated voltage
U03.48 (0xA330)	β -Axis Voltage in Stationary Coordinate System	0.1%	Percentage of motor rated voltage
U03.49 (0xA331)	Stator Voltage d-Axis Component	0.1%	Percentage of motor rated voltage
U03.50 (0xA332)	Stator Voltage q-Axis Component	0.1%	Percentage of motor rated voltage
U03.51 (0xA333)	Output Voltage Filter Value	0.1%	Percentage of motor rated voltage
U03.52 (0xA334)	V/F-SPLIT Output Voltage	0.1%	Percentage of motor rated voltage
U03.53 (0xA335)	d-Axis ACR Output	1	Per-unit value of motor rated voltage
U03.54 (0xA336)	q-Axis ACR Output	1	Per-unit value of motor rated voltage
U03.60 (0xA33C)	Current Reference (Motor Rated Current I_b)	0.1A	Motor rated current
U03.61 (0xA33D)	Output Current Monitoring	0.1%	Percentage of motor rated current

U03.62 (0xA33E)	Braking Current	0.1%	Percentage of motor rated current
U03.63 (0xA33F)	Fault Current	0.1A	Percentage of motor rated current
U03.64 (0xA340)	U-Phase Current Sampling	1	Zero drift and offset corrected
U03.65 (0xA341)	V-Phase Current Sampling	1	Zero drift and offset corrected
U03.66 (0xA342)	W-Phase Current Sampling	0.1	Zero drift and offset corrected
U03.67 (0xA343)	U-Phase Current RMS	0.1%	Percentage of motor rated current
U03.68 (0xA344)	V-Phase Current RMS	0.1%	Percentage of motor rated current
U03.69 (0xA345)	W-Phase Current RMS	0.1%	Percentage of motor rated current
U03.70 (0xA346)	α Current	0.1%	Percentage of motor rated current
U03.71 (0xA347)	β Current	0.1%	Percentage of motor rated current
U03.72 (0xA348)	D-Axis Current Feedback	0.1%	Percentage of motor rated current
U03.73 (0xA349)	Q-Axis Current Feedback	0.1%	Percentage of motor rated current
U03.74 (0xA34A)	Output Current Upper Limit	0.1%	Percentage of motor rated current
U03.75 (0xA34B)	Output Current	1	Per-unit value of motor rated current
U03.76 (0xA34C)	CBC Limit Current	1	Per-unit value of motor rated current
U03.77 (0xA34D)	ASR Output Current	1	Per-unit value of motor rated current
U03.78 (0xA34E)	Excitation Current	1	Per-unit value of motor rated current
U03.79 (0xA34F)	Excitation Current Feedback	1	Per-unit value of motor rated current

U04.xx: Word Connector 2 (Internal Parameter Word 1)

Code (Address)	Name	Min. Unit	Content
U04.00 (0xA400)	Drive Status Word	-	-
U04.01 (0xA401)	Current ACC Time	1	The current given acceleration time.
U04.02 (0xA402)	Current DEC Time	1	The current given deceleration time.
U04.05 (0xA405)	X1~X4 Terminal Info	-	The status of the terminal X is indicated by 1 (ON) and 0 (OFF). For example, when both terminals X1 and X2 are ON, C00.14 displays $\begin{array}{cccccccc} & 1 & 1 & & & & & \end{array}$.
U04.06 (0xA406)	X5~X8 Terminal Info	-	The status of the terminal X is indicated by 1 (ON) and 0 (OFF). For example, when both terminals X1 and X2 are ON, C00.14 displays $\begin{array}{cccccccc} & 1 & 1 & & & & & \end{array}$.
U04.07 (0xA407)	X8~X12 Terminal Info	-	-

U04.08 (0xA408)	AI1 Value	1	Indicates the AI1 value.
U04.09 (0xA409)	AI2 Value	1	Indicates the AI2 value.
U04.10 (0xA40A)	AO1 Value	1	Indicates the AO1 value.
U04.11 (0xA40B)	AO2 Value	1	Indicates the AO2 value.
U04.12 (0xA40C)	Fault 1	1	Indicates the current fault subcode.
U04.13 (0xA40D)	Fault 2	1	Indicates the previous one fault subcode.
U04.14 (0xA40E)	Fault 3	1	Indicates the previous two fault subcode.

U05.xx: Word Connector 3 (Internal Parameter Word 2)

Code (Address)	Name	Min. Unit	Content
U05.00 (0xA500)	0x3000 Control Word	-	Read the data of address 0x3000
U05.01 (0xA501)	0x3001 Control Word	-	Read the data of address 0x3001
U05.02 (0xA502)	0x3002 Control Word	-	Read the data of address 0x3002
U05.03 (0xA503)	0x3003 Control Word	-	Read the data of address 0x3003
U05.04 (0xA504)	0x3004 Control Word	-	Read the data of address 0x3004
U05.05 (0xA505)	0x3005 Control Word	-	Read the data of address 0x3005
U05.06 (0xA506)	0x3006 Control Word	-	Read the data of address 0x3006
U05.07 (0xA507)	0x3007 Control Word	-	Read the data of address 0x3007
U05.08 (0xA508)	0x3008 Control Word	-	Read the data of address 0x3008
U05.09 (0xA509)	0x3009 Control Word	-	Read the data of address 0x3009
U05.10 (0xA50A)	0x300A Control Word	-	Read the data of address 0x300A
U05.11 (0xA50B)	0x300B Control Word	-	Read the data of address 0x300B
U05.12 (0xA50C)	0x300C Control Word	-	Read the data of address 0x300C
U05.13 (0xA50D)	0x300D Control Word	-	Read the data of address 0x300D
U05.14 (0xA50E)	0x300E Control Word	-	Read the data of address 0x300E
U05.15 (0xA50F)	0x300F Control Word	-	Read the data of address 0x300F
U05.16 (0xA510)	0x3010 Control Word	-	Read the data of address 0x3010
U05.17 (0xA511)	0x3011 Control Word	-	Read the data of address 0x3011
U05.18 (0xA512)	0x3012 Control Word	-	Read the data of address 0x3012

U05.19 (0xA513)	0x3013 Control Word	-	Read the data of address 0x3013
U05.20 (0xA514)	0x3014 Control Word	-	Read the data of address 0x3014
U05.21 (0xA515)	0x3015 Control Word	-	Read the data of address 0x3015
U05.22 (0xA516)	0x3016 Control Word	-	Read the data of address 0x3016
U05.23 (0xA517)	0x3017 Control Word	-	Read the data of address 0x3017
U05.24 (0xA518)	0x3018 Control Word	-	Read the data of address 0x3018
U05.25 (0xA519)	0x3019 Control Word	-	Read the data of address 0x3019
U05.26 (0xA51A)	0x301A Control Word	-	Read the data of address 0x301A
U05.27 (0xA51B)	0x301B Control Word	-	Read the data of address 0x301B
U05.28 (0xA51C)	0x301C Control Word	-	Read the data of address 0x301C
U05.29 (0xA51D)	0x301D Control Word	-	Read the data of address 0x301D
U05.30 (0xA51E)	0x301E Control Word	-	Read the data of address 0x301E
U05.31 (0xA51F)	0x301F Control Word	-	Read the data of address 0x301F
U05.32 (0xA520)	0x6000 Control Word	-	Read the data of address 0x6000
U05.33 (0xA521)	0x6001 Control Word	-	Read the data of address 0x6001
U05.34 (0xA522)	0x6002 Control Word	-	Read the data of address 0x6002
U05.35 (0xA523)	0x6003 Control Word	-	Read the data of address 0x6003
U05.36 (0xA524)	0x6004 Control Word	-	Read the data of address 0x6004
U05.37 (0xA525)	0x6005 Control Word	-	Read the data of address 0x6005
U05.38 (0xA526)	0x6006 Control Word	-	Read the data of address 0x6006
U05.39 (0xA527)	0x6007 Control Word	-	Read the data of address 0x6007
U05.40 (0xA528)	0x6008 Control Word	-	Read the data of address 0x6008
U05.41 (0xA529)	0x6009 Control Word	-	Read the data of address 0x6009
U05.42 (0xA52A)	0x600A Control Word	-	Read the data of address 0x600A
U05.43 (0xA52B)	0x600B Control Word	-	Read the data of address 0x600B
U05.44 (0xA52C)	0x600C Control Word	-	Read the data of address 0x600C
U05.45 (0xA52D)	0x600D Control Word	-	Read the data of address 0x600D
U05.46 (0xA52E)	0x600E Control Word	-	Read the data of address 0x600E

U05.47 (0xA52F)	0x600F Control Word	-	Read the data of address 0x600F
U05.48 (0xA530)	0x3110 Control Word	-	Read the data of address 0x3110
U05.49 (0xA531)	0x3111 Control Word	-	Read the data of address 0x3111
U05.50 (0xA532)	0x3112 Control Word	-	Read the data of address 0x3112
U05.51 (0xA533)	0x3113 Control Word	-	Read the data of address 0x3113
U05.52 (0xA534)	0x3114 Control Word	-	Read the data of address 0x3114
U05.53 (0xA535)	0x3115 Control Word	-	Read the data of address 0x3115
U05.54 (0xA536)	0x3116 Control Word	-	Read the data of address 0x3116
U05.55 (0xA537)	0x3117 Control Word	-	Read the data of address 0x3117
U05.56 (0xA538)	0x3118 Control Word	-	Read the data of address 0x3118
U05.57 (0xA539)	0x3119 Control Word	-	Read the data of address 0x3119
U05.58 (0xA53A)	0x311A Control Word	-	Read the data of address 0x311A
U05.59 (0xA53B)	0x311B Control Word	-	Read the data of address 0x311B
U05.60 (0xA53C)	0x311C Control Word	-	Read the data of address 0x311C
U05.61 (0xA53D)	0x311D Control Word	-	Read the data of address 0x311D
U05.62 (0xA53E)	0x311E Control Word	-	Read the data of address 0x311E
U05.63 (0xA53F)	0x311F Control Word	-	Read the data of address 0x311F
U05.64 (0xA540)	0x3200 Control Word	-	Read the data of address 0x3200
U05.65 (0xA541)	0x3201 Control Word	-	Read the data of address 0x3201
U05.66 (0xA542)	0x3202 Control Word	-	Read the data of address 0x3202
U05.67 (0xA543)	0x3203 Control Word	-	Read the data of address 0x3203
U05.68 (0xA544)	0x3204 Control Word	-	Read the data of address 0x3204
U05.69 (0xA545)	0x3205 Control Word	-	Read the data of address 0x3205
U05.70 (0xA546)	0x3206 Control Word	-	Read the data of address 0x3206
U05.71 (0xA547)	0x3207 Control Word	-	Read the data of address 0x3207
U05.72 (0xA548)	0x3208 Control Word	-	Read the data of address 0x3208
U05.73 (0xA549)	0x3209 Control Word	-	Read the data of address 0x3209

U06.xx: Communication Connector

Code (Address)	Name	Min. Unit	Content
U06.00 (0xA600)	Ex1 PDO Data 1 (base converted)	-	Monitor the Ex1 process output data 1 (base converted)
U06.01 (0xA601)	Ex1 PDO Data 2 (base converted)	-	Monitor the Ex1 process output data 2 (base converted)
U06.02 (0xA602)	Ex1 PDO Data 3 (base converted)	-	Monitor the Ex1 process output data 3 (base converted)
U06.03 (0xA603)	Ex1 PDO Data 4 (base converted)	-	Monitor the Ex1 process output data 4 (base converted)
U06.04 (0xA604)	Ex1 PDO Data 5 (base converted)	-	Monitor the Ex1 process output data 5 (base converted)
U06.05 (0xA605)	Ex1 PDO Data 6 (base converted)	-	Monitor the Ex1 process output data 6 (base converted)
U06.06 (0xA606)	Ex1 PDO Data 7 (base converted)	-	Monitor the Ex1 process output data 7 (base converted)
U06.07 (0xA607)	Ex1 PDO Data 8 (base converted)	-	Monitor the Ex1 process output data 8 (base converted)
U06.08 (0xA608)	Ex1 PDO Data 9 (base converted)	-	Monitor the Ex1 process output data 9 (base converted)
U06.09 (0xA609)	Ex1 PDO Data 10 (base converted)	-	Monitor the Ex1 process output data 10 (base converted)
U06.10 (0xA60A)	Ex1 PDO Data 11 (base converted)	-	Monitor the Ex1 process output data 11 (base converted)
U06.11 (0xA60B)	Ex1 PDO Data 12 (base converted)	-	Monitor the Ex1 process output data 12 (base converted)
U06.12 (0xA60C)	Ex1 PDO Data 13 (base converted)	-	Monitor the Ex1 process output data 13 (base converted)
U06.13 (0xA60D)	Ex1 PDO Data 14 (base converted)	-	Monitor the Ex1 process output data 14 (base converted)
U06.14 (0xA60E)	Ex1 PDO Data 15 (base converted)	-	Monitor the Ex1 process output data 15 (base converted)
U06.15 (0xA60F)	Ex1 PDO Data 16 (base converted)	-	Monitor the Ex1 process output data 16 (base converted)
U06.16 (0xA610)	Ex1 RPDO Data 1 (base converted)	-	Monitor the Ex1 process input data 1 (base converted)
U06.17 (0xA611)	Ex1 RPDO Data 2 (base converted)	-	Monitor the Ex1 process input data 2 (base converted)
U06.18 (0xA612)	Ex1 RPDO Data 3 (base converted)	-	Monitor the Ex1 process input data 3 (base converted)
U06.19 (0xA613)	Ex1 RPDO Data 4 (base converted)	-	Monitor the Ex1 process input data 4 (base converted)
U06.20 (0xA614)	Ex1 RPDO Data 5 (base converted)	-	Monitor the Ex1 process input data 5 (base converted)
U06.21 (0xA615)	Ex1 RPDO Data 6 (base converted)	-	Monitor the Ex1 process input data 6 (base converted)
U06.22 (0xA616)	Ex1 RPDO Data 7 (base converted)	-	Monitor the Ex1 process input data 7 (base converted)
U06.23 (0xA617)	Ex1 RPDO Data 8 (base converted)	-	Monitor the Ex1 process input data 8 (base converted)
U06.24 (0xA618)	Ex1 RPDO Data 9 (base converted)	-	Monitor the Ex1 process input data 9 (base converted)
U06.25 (0xA619)	Ex1 RPDO Data 10 (base converted)	-	Monitor the Ex1 process input data 10 (base converted)

U06.26 (0xA61A)	Ex1 RPDO Data 11 (base converted)	-	Monitor the Ex1 process input data 11 (base converted)
U06.27 (0xA61B)	Ex1 RPDO Data 12 (base converted)	-	Monitor the Ex1 process input data 12 (base converted)
U06.28 (0xA61C)	Ex1 RPDO Data 13 (base converted)	-	Monitor the Ex1 process input data 13 (base converted)
U06.29 (0xA61D)	Ex1 RPDO Data 14 (base converted)	-	Monitor the Ex1 process input data 14 (base converted)
U06.30 (0xA61E)	Ex1 RPDO Data 15 (base converted)	-	Monitor the Ex1 process input data 15 (base converted)
U06.31 (0xA61F)	Ex1 RPDO Data 16 (base converted)	-	Monitor the Ex1 process input data 16 (base converted)
U06.32 (0xA620)	Extension 1 Control Word 1	-	The extension 1 control word 1
U06.33 (0xA621)	Extension 1 Control Word 2	-	The extension 1 control word 2
U06.34 (0xA622)	Extension 1 Control Word 3	-	The extension 1 control word 3
U06.35 (0xA623)	Extension 1 Control Word 4	-	The extension 1 control word 4
U06.36 (0xA624)	Extension 1 Control Word 5	-	The extension 1 control word 5
U06.37 (0xA625)	Extension 1 Control Word 6	-	The extension 1 control word 6
U06.38 (0xA626)	Extension 1 Control Word 7	-	The extension 1 control word 7
U06.39 (0xA627)	Extension 1 Control Word 8	-	The extension 1 control word 8
U06.40 (0xA628)	Extension 1 Control Word 9	-	The extension 1 control word 9
U06.41 (0xA629)	Extension 1 Control Word 10	-	The extension 1 control word 10
U06.42 (0xA62A)	Ex2 PDO Data 1 (base converted)	-	Monitor the Ex2 process output data 1 (base converted)
U06.43 (0xA62B)	Ex2 PDO Data 2 (base converted)	-	Monitor the Ex2 process output data 2 (base converted)
U06.44 (0xA62C)	Ex2 PDO Data 3 (base converted)	-	Monitor the Ex2 process output data 3 (base converted)
U06.45 (0xA62D)	Ex2 PDO Data 4 (base converted)	-	Monitor the Ex2 process output data 4 (base converted)
U06.46 (0xA62E)	Ex2 PDO Data 5 (base converted)	-	Monitor the Ex2 process output data 5 (base converted)
U06.47 (0xA62F)	Ex2 PDO Data 6 (base converted)	-	Monitor the Ex2 process output data 6 (base converted)
U06.48 (0xA630)	Ex2 PDO Data 7 (base converted)	-	Monitor the Ex2 process output data 7 (base converted)
U06.49 (0xA631)	Ex2 PDO Data 8 (base converted)	-	Monitor the Ex2 process output data 8 (base converted)
U06.50 (0xA632)	Ex2 PDO Data 9 (base converted)	-	Monitor the Ex2 process output data 9 (base converted)
U06.51 (0xA633)	Ex2 PDO Data 10 (base converted)	-	Monitor the Ex2 process output data 10 (base converted)
U06.52 (0xA634)	Ex2 PDO Data 11 (base converted)	-	Monitor the Ex2 process output data 11 (base converted)
U06.53 (0xA535)	Ex2 PDO Data 12 (base converted)	-	Monitor the Ex2 process output data 12 (base converted)

U06.54 (0xA636)	Ex2 PDO Data 13 (base converted)	-	Monitor the Ex2 process output data 13 (base converted)
U06.55 (0xA637)	Ex2 PDO Data 14 (base converted)	-	Monitor the Ex2 process output data 14 (base converted)
U06.56 (0xA638)	Ex2 PDO Data 15 (base converted)	-	Monitor the Ex2 process output data 15 (base converted)
U06.57 (0xA639)	Ex2 PDO Data 16 (base converted)	-	Monitor the Ex2 process output data 16 (base converted)
U06.58 (0xA53A)	Ex2 RPDO Data 1 (base converted)	-	Monitor the Ex2 process input data 1 (base converted)
U06.59 (0xA63B)	Ex2 RPDO Data 2 (base converted)	-	Monitor the Ex2 process input data 2 (base converted)
U06.60 (0xA63C)	Ex2 RPDO Data 3 (base converted)	-	Monitor the Ex2 process input data 3 (base converted)
U06.61 (0xA63D)	Ex2 RPDO Data 4 (base converted)	-	Monitor the Ex2 process input data 4 (base converted)
U06.62 (0xA63E)	Ex2 RPDO Data 5 (base converted)	-	Monitor the Ex2 process input data 5 (base converted)
U06.63 (0xA63F)	Ex2 RPDO Data 6 (base converted)	-	Monitor the Ex2 process input data 6 (base converted)
U06.64 (0xA640)	Ex2 RPDO Data 7 (base converted)	-	Monitor the Ex2 process input data 7 (base converted)
U06.65 (0xA641)	Ex2 RPDO Data 8 (base converted)	-	Monitor the Ex2 process input data 8 (base converted)
U06.66 (0xA642)	Ex2 RPDO Data 9 (base converted)	-	Monitor the Ex2 process input data 9 (base converted)
U06.67 (0xA643)	Ex2 RPDO Data 10 (base converted)	-	Monitor the Ex2 process input data 10 (base converted)
U06.68 (0xA644)	Ex2 RPDO Data 11 (base converted)	-	Monitor the Ex2 process input data 11 (base converted)
U06.69 (0xA645)	Ex2 RPDO Data 12 (base converted)	-	Monitor the Ex2 process input data 12 (base converted)
U06.70 (0xA646)	Ex2 RPDO Data 13 (base converted)	-	Monitor the Ex2 process input data 13 (base converted)
U06.71 (0xA647)	Ex2 RPDO Data 14 (base converted)	-	Monitor the Ex2 process input data 14 (base converted)
U06.72 (0xA648)	Ex2 RPDO Data 15 (base converted)	-	Monitor the Ex2 process input data 15 (base converted)
U06.73 (0xA649)	Ex2 RPDO Data 16 (base converted)	-	Monitor the Ex2 process input data 16 (base converted)
U06.74 (0xA64A)	Extension 2 Control Word 1	-	The extension 2 control word 1
U06.75 (0xA64B)	Extension 2 Control Word 2	-	The extension 2 control word 2
U06.76 (0xA64C)	Extension 2 Control Word 3	-	The extension 2 control word 3
U06.77 (0xA64D)	Extension 2 Control Word 4	-	The extension 2 control word 4
U06.78 (0xA64E)	Extension 2 Control Word 5	-	The extension 2 control word 5
U06.79 (0xA64F)	Extension 2 Control Word 6	-	The extension 2 control word 6
U0680 (0xA650)	Extension 2 Control Word 7	-	The extension 2 control word 7
U06.81 (0xA651)	Extension 2 Control Word 8	-	The extension 2 control word 8

U06.82 (0xA652)	Extension 2 Control Word 9	-	The extension 2 control word 9
U06.83 (0xA653)	Extension 2 Control Word 10	-	The extension 2 control word 10

U07.xx: Dual Word Connector

Code (Address)	Name	Min. Unit	Content
U07.00 (0xA700)	Module 1: Monitoring Input 1	1	Monitor the input 1 of free module 1
U07.02 (0xA702)	Module 1: Monitoring Input 2	1	Monitor the input 2 of free module 1
U07.04 (0xA704)	Module 1: Monitoring Input 3	1	Monitor the input 3 of free module 1
U07.06 (0xA706)	Module 2: Monitoring Input 1	1	Monitor the input 1 of free module 2
U07.08 (0xA708)	Module 2: Monitoring Input 2	1	Monitor the input 2 of free module 2
U07.10 (0xA70A)	Module 2: Monitoring Input 3	1	Monitor the input 3 of free module 2
U07.12 (0xA70C)	Module 3: Monitoring Input 1	1	Monitor the input 1 of free module 3
U07.14 (0xA70E)	Module 3: Monitoring Input 2	1	Monitor the input 2 of free module 3
U07.16 (0xA710)	Module 3: Monitoring Input 3	1	Monitor the input 3 of free module 3
U07.18 (0xA712)	Module 4: Monitoring Input 1	1	Monitor the input 1 of free module 4
U07.20 (0xA714)	Module 4: Monitoring Input 2	1	Monitor the input 2 of free module 4
U07.22 (0xA716)	Module 4: Monitoring Input 3	1	Monitor the input 3 of free module 4
U07.24 (0xA718)	Module 5: Monitoring Input 1	1	Monitor the input 1 of free module 5
U07.26 (0xA71A)	Module 5: Monitoring Input 2	1	Monitor the input 2 of free module 5
U07.28 (0xA71C)	Module 5: Monitoring Input 3	1	Monitor the input 3 of free module 5
U07.30 (0xA71E)	Module 6: Monitoring Input 1	1	Monitor the input 1 of free module 6
U07.32 (0xA720)	Module 6: Monitoring Input 2	1	Monitor the input 2 of free module 6
U07.34 (0xA722)	Module 6: Monitoring Input 3	1	Monitor the input 3 of free module 6
U07.36 (0xA724)	Module 7: Monitoring Input 1	1	Monitor the input 1 of free module 7
U07.38 (0xA726)	Module 7: Monitoring Input 2	1	Monitor the input 2 of free module 7
U07.40 (0xA728)	Module 7: Monitoring Input 3	1	Monitor the input 3 of free module 7
U07.42 (0xA72A)	Module 8: Monitoring Input 1	1	Monitor the input 1 of free module 8
U07.44 (0xA72C)	Module 8: Monitoring Input 2	1	Monitor the input 2 of free module 8
U07.46 (0xA72E)	Module 8: Monitoring Input 3	1	Monitor the input 3 of free module 8

U07.48 (0xA730)	Module 9: Monitoring Input 1	1	Monitor the input 1 of free module 9
U07.50 (0xA732)	Module 9: Monitoring Input 2	1	Monitor the input 2 of free module 9
U07.52 (0xA734)	Module 9: Monitoring Input 3	1	Monitor the input 3 of free module 9
U07.54 (0xA736)	Module 10: Monitoring Input 1	1	Monitor the input 1 of free module 10
U07.56 (0xA738)	Module 10: Monitoring Input 2	1	Monitor the input 2 of free module 10
U07.58 (0xA73A)	Module 10: Monitoring Input 3	1	Monitor the input 3 of free module 10
U07.60 (0xA73C)	Module 1: Monitoring Output	1	Monitor the output 1 of free module
U07.62 (0xA73E)	Module 2: Monitoring Output	1	Monitor the output 2 of free module
U07.64 (0xA740)	Module 3: Monitoring Output	1	Monitor the output 3 of free module
U07.66 (0xA742)	Module 4: Monitoring Output	1	Monitor the output 4 of free module
U07.68 (0xA744)	Module 5: Monitoring Output	1	Monitor the output 5 of free module
U07.70 (0xA746)	Module 6: Monitoring Output	1	Monitor the output 6 of free module
U07.72 (0xA748)	Module 7: Monitoring Output	1	Monitor the output 7 of free module
U07.74 (0xA74A)	Module 8: Monitoring Output	1	Monitor the output 8 of free module
U07.76 (0xA74C)	Module 9: Monitoring Output	1	Monitor the output 9 of free module
U07.78 (0xA74E)	Module 10: Monitoring Output	1	Monitor the output 10 of free module
U07.80 (0xA74F)	Module Status	1	Monitor the module status

U08.xx: Bit-Word Function Block Input Monitoring

Code (Address)	Name	Min. Unit	Content
U08.00 (0xA800)	Bit-Word Function Block 1 Input 1 Monitoring Value	1	Monitor the input 1 of bit-word function block 1.
U08.02 (0xA802)	Bit-Word Function Block 1 Input 2 Monitoring Value	1	Monitor the input 2 of bit-word function block 1.
U08.04 (0xA804)	Bit-Word Function Block 1 Input 3 Monitoring Value	1	Monitor the input 3 of bit-word function block 1.
U08.06 (0xA806)	Bit-Word Function Block 1 Input 4 Monitoring Value	1	Monitor the input 4 of bit-word function block 1.
U08.08 (0xA808)	Bit-Word Function Block 1 Input 5 Monitoring Value	1	Monitor the input 5 of bit-word function block 1.
U08.10 (0xA80A)	Bit-Word Function Block 1 Input 6 Monitoring Value	1	Monitor the input 6 of bit-word function block 1.
U08.12 (0xA80C)	Bit-Word Function Block 1 Input 7 Monitoring Value	1	Monitor the input 7 of bit-word function block 1.
U08.14 (0xA80E)	Bit-Word Function Block 1 Input 8 Monitoring Value	1	Monitor the input 8 of bit-word function block 1.

U08.16 (0xA810)	Bit-Word Function Block 1 Input 9 Monitoring Value	1	Monitor the input 9 of bit-word function block 1.
U08.18 (0xA812)	Bit-Word Function Block 1 Input 10 Monitoring Value	1	Monitor the input 10 of bit-word function block 1.
U08.20 (0xA814)	Bit-Word Function Block 1 Input 11 Monitoring Value	1	Monitor the input 11 of bit-word function block 1.
U08.22 (0xA816)	Bit-Word Function Block 1 Input 12 Monitoring Value	1	Monitor the input 12 of bit-word function block 1.
U08.24 (0xA818)	Bit-Word Function Block 1 Input 13 Monitoring Value	1	Monitor the input 13 of bit-word function block 1.
U08.26 (0xA81A)	Bit-Word Function Block 1 Input 14 Monitoring Value	1	Monitor the input 14 of bit-word function block 1.
U08.28 (0xA81C)	Bit-Word Function Block 1 Input 15 Monitoring Value	1	Monitor the input 15 of bit-word function block 1.
U08.30 (0xA81E)	Bit-Word Function Block 1 Input 16 Monitoring Value	1	Monitor the input 16 of bit-word function block 1.
U08.32 (0xA820)	Bit-Word Function Block 2 Input 1 Monitoring Value	1	Monitor the input 1 of bit-word function block 2.
U08.34 (0xA822)	Bit-Word Function Block 2 Input 2 Monitoring Value	1	Monitor the input 2 of bit-word function block 2.
U08.36 (0xA824)	Bit-Word Function Block 2 Input 3 Monitoring Value	1	Monitor the input 3 of bit-word function block 2.
U08.38 (0xA826)	Bit-Word Function Block 2 Input 4 Monitoring Value	1	Monitor the input 4 of bit-word function block 2.
U08.40 (0xA828)	Bit-Word Function Block 2 Input 5 Monitoring Value	1	Monitor the input 5 of bit-word function block 2.
U08.42 (0xA82A)	Bit-Word Function Block 2 Input 6 Monitoring Value	1	Monitor the input 6 of bit-word function block 2.
U08.44 (0xA82C)	Bit-Word Function Block 2 Input 7 Monitoring Value	1	Monitor the input 7 of bit-word function block 2.
U08.46 (0xA82E)	Bit-Word Function Block 2 Input 8 Monitoring Value	1	Monitor the input 8 of bit-word function block 2.
U08.48 (0xA830)	Bit-Word Function Block 2 Input 9 Monitoring Value	1	Monitor the input 9 of bit-word function block 2.
U08.50 (0xA832)	Bit-Word Function Block 2 Input 10 Monitoring Value	1	Monitor the input 10 of bit-word function block 2.
U08.52 (0xA834)	Bit-Word Function Block 2 Input 11 Monitoring Value	1	Monitor the input 11 of bit-word function block 2.
U08.54 (0xA836)	Bit-Word Function Block 2 Input 12 Monitoring Value	1	Monitor the input 12 of bit-word function block 2.
U08.56 (0xA838)	Bit-Word Function Block 2 Input 13 Monitoring Value	1	Monitor the input 13 of bit-word function block 2.
U08.58 (0xA83A)	Bit-Word Function Block 2 Input 14 Monitoring Value	1	Monitor the input 14 of bit-word function block 2.
U08.60 (0xA83C)	Bit-Word Function Block 2 Input 15 Monitoring Value	1	Monitor the input 15 of bit-word function block 2.
U08.62 (0xA83E)	Bit-Word Function Block 2 Input 16 Monitoring Value	1	Monitor the input 16 of bit-word function block 2.

13.46 C0x: Monitoring Parameters

C00.xx: Basic Monitoring

Code (Address)	Name	Min. Precision	Content
C00.00 (0x2100)	Target Frequency	0.01Hz/0.1Hz	Display the absolute value of the target frequency.

C00.01 (0x2101)	Output Frequency	0.01Hz/ 0.1Hz	Display the drive output frequency.
C00.02 (0x2102)	Output Current	0.1A	Display the drive output current.
C00.03 (0x2103)	Input Voltage	0.1V	Display the drive input voltage.
C00.04 (0x2104)	Output Voltage	0.1V	Display the drive output voltage.
C00.05 (0x2105)	Mechanical Speed	1rpm	Display the motor mechanical speed.
C00.06 (0x2106)	Target Torque	0.1%	Display drive given torque. And it is valid under vector control.
C00.07 (0x2107)	Output Torque	0.1%	Display drive output torque.
C00.08 (0x2108)	PID Setting	0.1%	Display the PID setting. Valid when the frequency source is set to PID.
C00.09 (0x2109)	PID Feedback	0.1%	Display the PID feedback. Valid when the frequency source is set to PID.
C00.10 (0x210A)	Output Power	0.1%/0.1kW	Display drive current output power.
C00.11 (0x210B)	Bus Voltage	0.1V	Display current bus voltage.
C00.12 (0x210C)	Module Temp. 1	0.1°C	Display the drive internal temperature 1.
C00.13 (0x210D)	Module Temp. 2	0.1°C	Display the drive internal temperature 2.
C00.14 (0x210E)	Terminal X Status	-	The status of the terminal X is indicated by 1 (ON) and 0 (OFF). For example, when both terminals X1 and X2 are ON, C00.14 displays  .
C00.15 (0x210F)	Terminal Y Status	-	The status of the terminal Y is displayed by 1 (ON) and 0 (OFF). For example, when Y terminal and relay are ON, C00.15 displays  .
C00.16 (0x2110)	AI1 Value	0.001V/0.001mA	Set the F07.00 for voltage and current input. Set F07.00 to "0" for voltage input and to "1" for current input.
C00.17 (0x2111)	AI2 Value	0.001V/0.001mA	Set the F07.01 for voltage and current input. Set F07.01 to "0" for voltage input and to "1" for current input.
C00.19 (0x2113)	PUL Input	0.001kHz/ 0.01kHz	Decimal places are determined by F05.30; When F05.30 is 0, it has 3 decimal places, otherwise it has 2.
C00.20 (0x2114)	AO1	0.01V/0.01mA/ 0.01kHz	Set F06.00 to 0V~10V, 0mA~20mA or pulse output.
C00.21 (0x2115)	AO2	0.01V/0.01mA/ 0.01kHz	Set F06.00 to 0V~10V, 0mA~20mA or pulse output.
C00.22 (0x2116)	Counter Record	1	-
C00.23 (0x2117)	Drive Overload Percentage	0.1%	Increases during drive overload; when it reaches 100.0%, a drive overload error is triggered.
C00.24 (0x2118)	Motor Overload Percentage	0.1%	Increases during motor overload; when it reaches 100.0%, a motor overload error is triggered.
C00.25 (0x2119)	Drive Power	0.1kW	It indicates the drive rated power.

C00.26 (0x211A)	Rated Voltage	1V	It indicates the drive rated voltage.
C00.27 (0x211B)	Rated Current	0.1A	It indicates the drive rated current.
C00.28 (0x211C)	Software Version	0.01	It indicates the rated drive software version.
C00.29 (0x211D)	Encoder Speed Feedback	0.01Hz	Convert the signal detected by PG encoder to frequency values.
C00.30 (0x211E)	Timer	1s/min/h	The unit is determined by F16.07.
C00.32 (0x2120)	Software Sub-version	0.01	It indicates the software sub-version.
C00.36 (0x2124)	Error Code	1	Display the number corresponds to the fault code, and "0" means no fault.
C00.39 (0x2127)	Power Factor Angle	0.1	-
C00.40 (0x2128)	Current Error Count	1	Display the drive current error count.
C00.41 (0x2129)	Current Error 1 Info	1	Display the diagnostic information of drive current error 1.
C00.42 (0x212A)	Current Error 2 Info	1	Display the diagnostic information of drive current error 2.
C00.43 (0x212B)	Current Error 3 Info	1	Display the diagnostic information of drive current error 3.
C00.44 (0x212C)	Current Alarm 1 Info	1	Display the diagnostic information of drive current alarm 1.
C00.45 (0x212D)	Current Alarm 2 Info	1	Display the diagnostic information of drive current alarm 2.
C00.46 (0x212E)	Current Alarm 3 Info	1	Display the diagnostic information of drive current alarm 3.
C00.50 (0x2132)	Recount Total Runtime (h)	1h	Record the drive runtime in hour.
C00.51 (0x2133)	Recount Total Runtime (min)	0.01min	Record the drive runtime in minute.
C00.52 (0x2134)	Recount Total Power-ON (h)	1h	Record the drive power-on time in hour.
C00.53 (0x2135)	Recount Total Power-ON (min)	0.01min	Record the drive power-on time in minute.
C00.54 (0x2136)	Recount Total Power Consumption (Low)	-	Record the low level of drive power consumption.
C00.55 (0x2137)	Recount Total Power Consumption (High)	-	Record the high level of drive power consumption.

C01.xx: ErrorRecord 1

Code (Address)	Name	Min. Precision	Content
C01.00 (0x2200)	Current Error Code	-	Display the current error in code.

C01.01 (0x2201)	Current Error Info	1	Display the error in code and sub-code, and check the corresponding solutions in the error diagnosis section.
C01.02 (0x2202)	Current Error Output Frequency	0.01Hz/ 0.1Hz	Display output frequency during error.
C01.03 (0x2203)	Current Error Output Voltage	0.1V	Display the output voltage during error.
C01.04 (0x2204)	Current Error Output Current	0.1A	Display the output current during error.
C01.05 (0x2205)	Current Error Bus Voltage	0.1V	Display the bus voltage during error.
C01.06 (0x2206)	Current Error Module Temp.1	0.1°C	Display the temperature 1 of the drive inner module during error.
C01.07 (0x2207)	Current Error Module Temp.2	0.1°C	Display the temperature 2 of the drive inner module during error.
C01.08 (0x2208)	Current Error Drive Status 1	0x0000	bit0: 0: Stop 1: Operation bit1: 1: Accelerating bit2: 1: Decelerating bit3: 0: FWD 1: REV bit4: 0: No error 1: Drive in error bit6: 0: No alarm 1: Drive in alarm bit7: 0: Run not ready 1: Run ready bit13: 1: FWD/REV disable bit14: 1: FWD/REV switching
C01.09 (0x2209)	Current Error Drive Status 2	0x0000	bit0: Pre-run delay 0: Not completed 1: Completed bit1: PWM configuration 0: Not completed 1: Completed bit2: AM DC braking 0: OFF 1: ON bit3: AM DC braking completed 0: Not completed 1: Completed bit4: Pre-excitation 0: OFF 1: ON bit5: Pre-excitation completed 0: Not completed 1: Completed bit6: AM fly track 0: OFF 1: ON bit7: AM fly track completed 0: Not completed 1: Completed bit8: PM short-circuit braking 0: OFF 1: ON bit9: PM short-circuit braking completed 0: Not completed 1: Completed bit10: PM DC braking 0: OFF 1: ON bit11: PM DC braking completed 0: Not completed 1: Completed bit12: PM Pre-excitation 0: OFF 1: ON bit13: PM Pre-excitation completed 0: Not completed 1: Completed bit14: PM fly track 0: OFF 1: ON bit15: PM fly track completed 0: Not completed 1: Completed

C01.10 (0x220A)	Current Error Input Terminal Status	Bit	The status of the terminal X is displayed by 1 (ON) and 0 (OFF). For example, when both terminals X1 and X2 are ON, C01.10 displays  .
C01.11 (0x220B)	Current Error Output Terminal Status	Bit	The status of the terminal Y is displayed by 1 (ON) and 0 (OFF). For example, when Y terminal and relay are ON, C01.11 displays  .
C01.12 (0x220C)	Current Error Command Record	0x0000	bit0–bit2: Self-test command 0: No self-test 1: Output-to-ground short 2: Phase-to-phase short 3: Fan-to-ground short bit3: Run/Stop command 0: Stop 1: Run bit4: Direction command 0: Forward 1: Reverse bit6: Overcurrent suppression 0: OFF 1: ON bit7: ACC/DEC pause command 1: External terminal acceleration pause active bit8: Auto-tuning status 1: Static auto-tuning bit9: Auto-tuning status 1: Dynamic auto-tuning
C01.13 (0x220D)	Current Error State Flow	0x0000	Ones-bit: Main state 0: Undervoltage state 1: Power-on ready 2: Fault 3: Power-on ready – Standby 4: Power-on ready – System running 5: System running – Waiting 6: System running – Pause 7: System running – Normal operation Tens-bit: Start-up stage 0: Invalid 1: Auto-tuning start 2: V/F-SPLIT start 3: DC braking – Asynchronous motor 4: Fly track – Asynchronous motor 5: Pre-excitation – Asynchronous motor 6: Short-circuit braking – Synchronous motor 7: Fly track – Synchronous motor 8: Pre-excitation – Synchronous motor 9: DC braking – Synchronous motor Hundreds-bit: Stop stage 0: Invalid 1: Deceleration stop 2: DC braking Thousands-bit: Drive stage 0: Undervoltage 1: Fault 2: Standby 3: PWM blocked 4: Normal run 5: DC braking 6: Pre-excitation 7: Fly track 8: Short-circuit braking 9: Auto-tuning 10: Pole search 11: Bootstrap control 12: Ground-short detection

C01.14 (0x220E)	Current Error Total Power-ON (h)	1h	Display the current error total power-on time of the drive in hours.
C01.15 (0x220F)	Current Error Total Power-ON (m)	0.01min	Display the current error total power-on time of the drive in minutes.
C01.16 (0x2210)	Previous 1 Error Type	-	Display the current error in code.
C01.17 (0x2211)	Previous 1 Error Info	1	Display the error in code and sub-code, and check the corresponding solutions in the error diagnosis section.
C01.18 (0x2212)	Previous 1 Error Output Frequency	0.01Hz/ 0.1Hz	Display output frequency during error.
C01.19 (0x2213)	Previous 1 Error Output Voltage	0.1V	Display the output voltage during error.
C01.20 (0x2214)	Previous 1 Error Output Current	0.1A	Display the output current during error.
C01.21 (0x2215)	Previous 1 Error Bus Voltage	0.1V	Display the bus voltage during error.
C01.22 (0x2216)	Previous 1 Error Module Temp.1	0.1°C	Display the temperature 1 of the drive inner module during error.
C01.23 (0x2217)	Previous 1 Error Module Temp.2	0.1°C	Display the temperature 2 of the drive inner module during error.
C01.24 (0x2218)	Previous 1 Drive Error Status	0x0000	bit0: 0: Stop 1: Operation bit1: 1: Accelerating bit2: 1: Decelerating bit3: 0: FWD 1: REV bit4: 0: No error 1: Drive in error bit6: 0: No alarm 1: Drive in alarm bit7: 0: Run not ready 1: Run ready bit13: 1: FWD/REV disable bit14: 1: FWD/REV switching

C01.25 (0x2219)	Previous 1 Fault Drive Status	0x0000	bit0: Pre-run delay 0: Not completed 1: Completed bit1: PWM configuration 0: Not completed 1: Completed bit2: AM DC braking 0: OFF 1: ON bit3: AM DC braking completed 0: Not completed 1: Completed bit4: Pre-excitation 0: OFF 1: ON bit5: Pre-excitation completed 0: Not completed 1: Completed bit6: AM fly track 0: OFF 1: ON bit7: AM fly track completed 0: Not completed 1: Completed bit8: PM short-circuit braking 0: OFF 1: ON bit9: PM short-circuit braking completed 0: Not completed 1: Completed bit10: PM DC braking 0: OFF 1: ON bit11: PM DC braking completed 0: Not completed 1: Completed bit12: PM Pre-excitation 0: OFF 1: ON bit13: PM Pre-excitation completed 0: Not completed 1: Completed bit14: PM fly track 0: OFF 1: ON bit15: PM fly track completed 0: Not completed 1: Completed
C01.26 (0x221A)	Previous 1 Error X Terminal Status	Bit	The status of the terminal X is displayed by 1 (ON) and 0 (OFF). For example, when both terminals X1 and X2 are ON, C01.10 displays  .
C01.27 (0x221B)	Previous 1 Error Y Terminal Status	Bit	The status of the terminal Y is displayed by 1 (ON) and 0 (OFF). For example, when Y terminal and relay are ON, C01.11 displays  .
C01.28 (0x221C)	Previous 1 Error Command Record	0x0000	bit0–bit2: Self-test command 0: No self-test 1: Output-to-ground short 2: Phase-to-phase short 3: Fan-to-ground short bit3: Run/Stop command 0: Stop 1: Run bit4: Direction command 0: Forward 1: Reverse bit6: Overcurrent suppression 0: OFF 1: ON bit7: ACC/DEC pause command 1: External terminal acceleration pause active bit8: Auto-tuning status 1: Static auto-tuning bit9: Auto-tuning status 1: Dynamic auto-tuning

C01.29 (0x221D)	Previous 1 Error State Flow	0x0000	Ones-bit: Main state 0: Undervoltage state 1: Power-on ready 2: Fault 3: Power-on ready – Standby 4: Power-on ready – System running 5: System running – Waiting 6: System running – Pause 7: System running – Normal operation Tens-bit: Start-up stage 0: Invalid 1: Auto-tuning start 2: V/F-SPLIT start 3: DC braking – Asynchronous motor 4: Fly track – Asynchronous motor 5: Pre-excitation – Asynchronous motor 6: Short-circuit braking – Synchronous motor 7: Fly track – Synchronous motor 8: Pre-excitation – Synchronous motor 9: DC braking – Synchronous motor Hundreds-bit: Stop stage 0: Invalid 1: Deceleration stop 2: DC braking Thousands-bit: Drive stage 0: Undervoltage 1: Fault 2: Standby 3: PWM blocked 4: Normal run 5: DC braking 6: Pre-excitation 7: Fly track 8: Short-circuit braking 9: Auto-tuning 10: Pole search 11: Bootstrap control 12: Ground-short detection
C01.30 (0x221E)	Previous 1 Error Total Power-ON (h)	-	Display the previous 1 error total power-on time of the drive in hours.
C01.31 (0x221F)	Previous 1 Error Total Power-ON (min)	-	Display the previous 1 error total power-on time of the drive in minutes.
C01.32 (0x2220)	Previous 2 Error Code	-	Display the current error in code.
C01.33 (0x2221)	Previous 2 Error Info	1	Display the error in code and sub-code, and check the corresponding solutions in the error diagnosis section.
C01.34 (0x2222)	Previous 2 Error Output Frequency	0.01Hz/ 0.1Hz	Display output frequency during error.
C01.35 (0x2223)	Previous 2 Error Output Voltage	0.1V	Display the output voltage during error.
C01.36 (0x2224)	Previous 2 Error Output Current	0.1A	Display the output current during error.
C01.37 (0x2225)	Previous 2 Error Bus Voltage	0.1V	Display the bus voltage during error.
C01.38 (0x2226)	Previous 2 Error Module Temp.1	0.1°C	Display the temperature 1 of the drive inner module during error.
C01.39 (0x2227)	Previous 2 Error Module Temp.2	0.1°C	Display the temperature 2 of the drive inner module during error.

C01.40 (0x2228)	Previous 2 Error Drive Status 1	0x0000	bit0: 0: Stop 1: Operation bit1: 1: Accelerating bit2: 1: Decelerating bit3: 0: FWD 1: REV bit4: 0: No error 1: Drive in error bit6: 0: No alarm 1: Drive in alarm bit7: 0: Run not ready 1: Run ready bit13: 1: FWD/REV disable bit14: 1: FWD/REV switching
C01.41 (0x2229)	Previous 2 Error Drive Status 2	0x0000	bit0: Pre-run delay 0: Not completed 1: Completed bit1: PWM configuration 0: Not completed 1: Completed bit2: AM DC braking 0: OFF 1: ON bit3: AM DC braking completed 0: Not completed 1: Completed bit4: Pre-excitation 0: OFF 1: ON bit5: Pre-excitation completed 0: Not completed 1: Completed bit6: AM fly track 0: OFF 1: ON bit7: AM fly track completed 0: Not completed 1: Completed bit8: PM short-circuit braking 0: OFF 1: ON bit9: PM short-circuit braking completed 0: Not completed 1: Completed bit10: PM DC braking 0: OFF 1: ON bit11: PM DC braking completed 0: Not completed 1: Completed bit12: PM Pre-excitation 0: OFF 1: ON bit13: PM Pre-excitation completed 0: Not completed 1: Completed bit14: PM fly track 0: OFF 1: ON bit15: PM fly track completed 0: Not completed 1: Completed
C01.42 (0x222A)	Previous 2 Error X Terminal Status	Bit	The status of the terminal X is displayed by 1 (ON) and 0 (OFF). For example, when both terminals X1 and X2 are ON, C01.10 displays $\begin{matrix} 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \end{matrix}$.
C01.43 (0x222B)	Previous 2 Error Y Terminal Status	Bit	The status of the terminal Y is displayed by 1 (ON) and 0 (OFF). For example, when Y terminal and relay are ON, C01.11 displays $\begin{matrix} 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \end{matrix}$.

C01.44 (0x222C)	Previous 2 Error Command Record	0x0000	bit0–bit2: Self-test command 0: No self-test 1: Output-to-ground short 2: Phase-to-phase short 3: Fan-to-ground short bit3: Run/Stop command 0: Stop 1: Run bit4: Direction command 0: Forward 1: Reverse bit6: Overcurrent suppression 0: OFF 1: ON bit7: ACC/DEC pause command 1: External terminal acceleration pause active bit8: Auto-tuning status 1: Static auto-tuning bit9: Auto-tuning status 1: Dynamic auto-tuning
C01.45 (0x222D)	Previous 2 Error State Flow	0x0000	Ones-bit: Main state 0: Undervoltage state 1: Power-on ready 2: Error 3: Power-on ready – Standby 4: Power-on ready – System running 5: System running – Waiting 6: System running – Pause 7: System running – Normal operation Tens-bit: Start-up stage 0: Invalid 1: Auto-tuning start 2: V/F-SPLIT start 3: DC braking – Asynchronous motor 4: Fly track – Asynchronous motor 5: Pre-excitation – Asynchronous motor 6: Short-circuit braking – Synchronous motor 7: Fly track – Synchronous motor 8: Pre-excitation – Synchronous motor 9: DC braking – Synchronous motor Hundreds-bit: Stop stage 0: Invalid 1: Deceleration stop 2: DC braking Thousands-bit: Drive stage 0: Undervoltage 1: Fault 2: Standby 3: PWM blocked 4: Normal run 5: DC braking 6: Pre-excitation 7: Fly track 8: Short-circuit braking 9: Auto-tuning 10: Pole search 11: Bootstrap control 12: Ground-short detection
C01.46 (0x222E)	Previous 2 Error Total Power-ON (h)	-	Display the previous 2 error total power-on time of the drive in hours.

C01.47 (0x222F)	Previous 2 Error Total Power-ON (min)	-	Display the previous 2 error total power-on time of the drive in minutes.
C01.48 (0x2230)	Previous 3 Error Code	-	Display the current error in code.
C01.49 (0x2231)	Previous 3 Error Info	1	Display the error in code and sub-code, and check the corresponding solutions in the error diagnosis section.
C01.50 (0x2232)	Previous 3 Error Output Frequency	0.01Hz/ 0.1Hz	Display output frequency during error.
C01.51 (0x2233)	Previous 3 Error Output Voltage	0.1V	Display the output voltage during error.
C01.52 (0x2234)	Previous 3 Error Output Current	0.1A	Display the output current during error.
C01.53 (0x2235)	Previous 3 Error Bus Voltage	0.1V	Display the bus voltage during error.
C01.54 (0x2236)	Previous 3 Error Module Temp.1	0.1°C	Display the temperature 1 of the drive inner module during error.
C01.55 (0x2237)	Previous 3 Error Module Temp.2	0.1°C	Display the temperature 2 of the drive inner module during error.
C01.56 (0x2238)	Previous 3 Error Drive Status 1	0x0000	bit0: 0: Stop 1: Operation bit1: 1: Accelerating bit2: 1: Decelerating bit3: 0: FWD 1: REV bit4: 0: No error 1: Drive in error bit6: 0: No alarm 1: Drive in alarm bit7: 0: Run not ready 1: Run ready bit13: 1: FWD/REV disable bit14: 1: FWD/REV switching

C01.57 (0x2239)	Previous 3 Error Drive Status 2	0x0000	bit0: Pre-run delay 0: Not completed 1: Completed bit1: PWM configuration 0: Not completed 1: Completed bit2: AM DC braking 0: OFF 1: ON bit3: AM DC braking completed 0: Not completed 1: Completed bit4: Pre-excitation 0: OFF 1: ON bit5: Pre-excitation completed 0: Not completed 1: Completed bit6: AM fly track 0: OFF 1: ON bit7: AM fly track completed 0: Not completed 1: Completed bit8: PM short-circuit braking 0: OFF 1: ON bit9: PM short-circuit braking completed 0: Not completed 1: Completed bit10: PM DC braking 0: OFF 1: ON bit11: PM DC braking completed 0: Not completed 1: Completed bit12: PM Pre-excitation 0: OFF 1: ON bit13: PM Pre-excitation completed 0: Not completed 1: Completed bit14: PM fly track 0: OFF 1: ON bit15: PM fly track completed 0: Not completed 1: Completed
C01.58 (0x223A)	Previous 3 Error X Terminal Status	Bit	The status of the terminal X is displayed by 1 (ON) and 0 (OFF). For example, when both terminals X1 and X2 are ON, C01.10 displays  .
C01.59 (0x223B)	Previous 3 Error Y Terminal Status	Bit	The status of the terminal Y is displayed by 1 (ON) and 0 (OFF). For example, when Y terminal and relay are ON, C01.11 displays  .

C01.60 (0x223C)	Previous 3 Error Command Record	0x0000	bit0–bit2: Self-test command 0: No self-test 1: Output-to-ground short 2: Phase-to-phase short 3: Fan-to-ground short bit3: Run/Stop command 0: Stop 1: Run bit4: Direction command 0: Forward 1: Reverse bit6: Overcurrent suppression 0: OFF 1: ON bit7: ACC/DEC pause command 1: External terminal acceleration pause active bit8: Auto-tuning status 1: Static auto-tuning bit9: Auto-tuning status 1: Dynamic auto-tuning
C01.61 (0x223D)	Previous 3 Error State Flow	0x0000	Ones-bit: Main state 0: Undervoltage state 1: Power-on ready 2: Error 3: Power-on ready – Standby 4: Power-on ready – System running 5: System running – Waiting 6: System running – Pause 7: System running – Normal operation Tens-bit: Start-up stage 0: Invalid 1: Auto-tuning start 2: V/F-SPLIT start 3: DC braking – Asynchronous motor 4: Fly track – Asynchronous motor 5: Pre-excitation – Asynchronous motor 6: Short-circuit braking – Synchronous motor 7: Fly track – Synchronous motor 8: Pre-excitation – Synchronous motor 9: DC braking – Synchronous motor Hundreds-bit: Stop stage 0: Invalid 1: Deceleration stop 2: DC braking Thousands-bit: Drive stage 0: Undervoltage 1: Fault 2: Standby 3: PWM blocked 4: Normal run 5: DC braking 6: Pre-excitation 7: Fly track 8: Short-circuit braking 9: Auto-tuning 10: Pole search 11: Bootstrap control 12: Ground-short detection
C01.62 (0x223E)	Previous 3 Error Total Power-ON (h)	-	Display the previous 3 error total power-on time of the drive in hours.

C01.63 (0x223F)	Previous 3 Error Total Power-ON (min)	-	Display the previous 3 error total power-on time of the drive in minutes.
C01.64 (0x2240)	Previous 4 Error Code	-	Display the current error in code.
C01.65 (0x2241)	Previous 4 Error Info	1	Display the error in code and sub-code, and check the corresponding solutions in the error diagnosis section.
C01.66 (0x2242)	Previous 4 Error Output Frequency	0.01Hz/ 0.1Hz	Display output frequency during error.
C01.67 (0x2243)	Previous 4 Error Output Voltage	0.1V	Display the output voltage during error.
C01.68 (0x2244)	Previous 4 Error Output Current	0.1A	Display the output current during error.
C01.69 (0x2245)	Previous 4 Error Bus Voltage	0.1V	Display the bus voltage during error.
C01.70 (0x2246)	Previous 4 Error Module Temp.1	0.1°C	Display the temperature 1 of the drive inner module during error.
C01.71 (0x2247)	Previous 4 Error Module Temp.2	0.1°C	Display the temperature 2 of the drive inner module during error.
C01.72 (0x2248)	Previous 4 Error Drive Status 1	0x0000	bit0: 0: Stop 1: Operation bit1: 1: Accelerating bit2: 1: Decelerating bit3: 0: FWD 1: REV bit4: 0: No error 1: Drive in error bit6: 0: No alarm 1: Drive in alarm bit7: 0: Run not ready 1: Run ready bit13: 1: FWD/REV disable bit14: 1: FWD/REV switching

C01.73 (0x2249)	Previous 4 Error Drive Status 2	0x0000	bit0: Pre-run delay 0: Not completed 1: Completed bit1: PWM configuration 0: Not completed 1: Completed bit2: AM DC braking 0: OFF 1: ON bit3: AM DC braking completed 0: Not completed 1: Completed bit4: Pre-excitation 0: OFF 1: ON bit5: Pre-excitation completed 0: Not completed 1: Completed bit6: AM fly track 0: OFF 1: ON bit7: AM fly track completed 0: Not completed 1: Completed bit8: PM short-circuit braking 0: OFF 1: ON bit9: PM short-circuit braking completed 0: Not completed 1: Completed bit10: PM DC braking 0: OFF 1: ON bit11: PM DC braking completed 0: Not completed 1: Completed bit12: PM Pre-excitation 0: OFF 1: ON bit13: PM Pre-excitation completed 0: Not completed 1: Completed bit14: PM fly track 0: OFF 1: ON bit15: PM fly track completed 0: Not completed 1: Completed
C01.74 (0x224A)	Previous 4 Error X Terminal Status	Bit	The status of the terminal X is displayed by 1 (ON) and 0 (OFF). For example, when both terminals X1 and X2 are ON, C01.10 displays  .
C01.75 (0x224B)	Previous 4 Error Y Terminal Status	Bit	The status of the terminal Y is displayed by 1 (ON) and 0 (OFF). For example, when Y terminal and relay are ON, C01.11 displays  .

C01.76 (0x224C)	Previous 4 Error Command Record	0x0000	bit0–bit2: Self-test command 0: No self-test 1: Output-to-ground short 2: Phase-to-phase short 3: Fan-to-ground short bit3: Run/Stop command 0: Stop 1: Run bit4: Direction command 0: Forward 1: Reverse bit6: Overcurrent suppression 0: OFF 1: ON bit7: ACC/DEC pause command 1: External terminal acceleration pause active bit8: Auto-tuning status 1: Static auto-tuning bit9: Auto-tuning status 1: Dynamic auto-tuning
C01.77 (0x224D)	Previous 4 Error State Flow	0x0000	Ones-bit: Main state 0: Undervoltage state 1: Power-on ready 2: Error 3: Power-on ready – Standby 4: Power-on ready – System running 5: System running – Waiting 6: System running – Pause 7: System running – Normal operation Tens-bit: Start-up stage 0: Invalid 1: Auto-tuning start 2: V/F-SPLIT start 3: DC braking – Asynchronous motor 4: Fly track – Asynchronous motor 5: Pre-excitation – Asynchronous motor 6: Short-circuit braking – Synchronous motor 7: Fly track – Synchronous motor 8: Pre-excitation – Synchronous motor 9: DC braking – Synchronous motor Hundreds-bit: Stop stage 0: Invalid 1: Deceleration stop 2: DC braking Thousands-bit: Drive stage 0: Undervoltage 1: Fault 2: Standby 3: PWM blocked 4: Normal run 5: DC braking 6: Pre-excitation 7: Fly track 8: Short-circuit braking 9: Auto-tuning 10: Pole search 11: Bootstrap control 12: Ground-short detection
C01.78 (0x224E)	Previous 4 Error Total Power-ON (h)	-	Display the previous 4 error total power-on time of the drive in hours.

C01.79 (0x224F)	Previous 4 Error Total Power-ON (min)	-	Display the previous 4 error total power-on time of the drive in minutes.
C01.80 (0x2250)	Previous 5 Error Code	-	Display the current error in code.
C01.81 (0x2251)	Previous 5 Error Info	1	Display the error in code and sub-code, and check the corresponding solutions in the error diagnosis section.
C01.82 (0x2252)	Previous 5 Error Output Frequency	0.01Hz/ 0.1Hz	Display output frequency during error.
C01.83 (0x2253)	Previous 5 Error Output Voltage	0.1V	Display the output voltage during error.
C01.84 (0x2254)	Previous 5 Error Output Current	0.1A	Display the output current during error.
C01.85 (0x2255)	Previous 5 Error Bus Voltage	0.1V	Display the bus voltage during error.
C01.86 (0x2256)	Previous 5 Error Module Temp.1	0.1°C	Display the temperature 1 of the drive inner module during error.
C01.87 (0x2257)	Previous 5 Error Module Temp.2	0.1°C	Display the temperature 2 of the drive inner module during error.
C01.88 (0x2258)	Previous 5 Error Drive Status 1	0x0000	bit0: 0: Stop 1: Operation bit1: 1: Accelerating bit2: 1: Decelerating bit3: 0: FWD 1: REV bit4: 0: No error 1: Drive in error bit6: 0: No alarm 1: Drive in alarm bit7: 0: Run not ready 1: Run ready bit13: 1: FWD/REV disable bit14: 1: FWD/REV switching

C01.89 (0x2259)	Previous 5 Error Drive Status 2	0x0000	bit0: Pre-run delay 0: Not completed 1: Completed bit1: PWM configuration 0: Not completed 1: Completed bit2: AM DC braking 0: OFF 1: ON bit3: AM DC braking completed 0: Not completed 1: Completed bit4: Pre-excitation 0: OFF 1: ON bit5: Pre-excitation completed 0: Not completed 1: Completed bit6: AM fly track 0: OFF 1: ON bit7: AM fly track completed 0: Not completed 1: Completed bit8: PM short-circuit braking 0: OFF 1: ON bit9: PM short-circuit braking completed 0: Not completed 1: Completed bit10: PM DC braking 0: OFF 1: ON bit11: PM DC braking completed 0: Not completed 1: Completed bit12: PM Pre-excitation 0: OFF 1: ON bit13: PM Pre-excitation completed 0: Not completed 1: Completed bit14: PM fly track 0: OFF 1: ON bit15: PM fly track completed 0: Not completed 1: Completed
C01.90 (0x225A)	Previous 5 Error X Terminal Status	Bit	The status of the terminal X is displayed by 1 (ON) and 0 (OFF). For example, when both terminals X1 and X2 are ON, C01.10 displays  .
C01.91 (0x225B)	Previous 5 Error Y Terminal Status	Bit	The status of the terminal Y is displayed by 1 (ON) and 0 (OFF). For example, when Y terminal and relay are ON, C01.11 displays  .

C01.92 (0x225C)	Previous 5 Error Command Record	0x0000	bit0–bit2: Self-test command 0: No self-test 1: Output-to-ground short 2: Phase-to-phase short 3: Fan-to-ground short bit3: Run/Stop command 0: Stop 1: Run bit4: Direction command 0: Forward 1: Reverse bit6: Overcurrent suppression 0: OFF 1: ON bit7: ACC/DEC pause command 1: External terminal acceleration pause active bit8: Auto-tuning status 1: Static auto-tuning bit9: Auto-tuning status 1: Dynamic auto-tuning
C01.93 (0x225D)	Previous 5 Error State Flow	0x0000	Ones-bit: Main state 0: Undervoltage state 1: Power-on ready 2: Fault 3: Power-on ready – Standby 4: Power-on ready – System running 5: System running – Waiting 6: System running – Pause 7: System running – Normal operation Tens-bit: Start-up stage 0: Invalid 1: Auto-tuning start 2: V/F-SPLIT start 3: DC braking – Asynchronous motor 4: Fly track – Asynchronous motor 5: Pre-excitation – Asynchronous motor 6: Short-circuit braking – Synchronous motor 7: Fly track – Synchronous motor 8: Pre-excitation – Synchronous motor 9: DC braking – Synchronous motor Hundreds-bit: Stop stage 0: Invalid 1: Deceleration stop 2: DC braking Thousands-bit: Drive stage 0: Undervoltage 1: Fault 2: Standby 3: PWM blocked 4: Normal run 5: DC braking 6: Pre-excitation 7: Fly track 8: Short-circuit braking 9: Auto-tuning 10: Pole search 11: Bootstrap control 12: Ground-short detection
C01.94 (0x225E)	Previous 5 Error Total Power-ON (h)	-	Display the previous 5 error total power-on time of the drive in hours.

C01.95 (0x225F)	Previous 5 Error Total Power-ON (min)	-	Display the previous 5 error total power-on time of the drive in minutes.

C02.xx:Error Record 2

Code (Address)	Name	Min. Precision	Content
C02.00 (0x2300)	Previous 6 Error Code	-	Display the current error in code.
C02.01 (0x2301)	Previous 6 Error Info	1	Display the error in code and sub-code, and check the corresponding solutions in the error diagnosis section.
C02.02 (0x2302)	Previous 6 Error Output Frequency	0.01Hz/ 0.1Hz	Display output frequency during error.
C02.03 (0x2303)	Previous 6 Error Output Voltage	0.1V	Display the output voltage during error.
C02.04 (0x2304)	Previous 6 Error Output Current	0.1A	Display the output current during error.
C02.05 (0x2305)	Previous 6 Error Bus Voltage	0.1V	Display the bus voltage during error.
C02.06 (0x2306)	Previous 6 Error Module Temp.1	0.1°C	Display the temperature 1 of the drive inner module during error.
C02.07 (0x2307)	Previous 6 Error Module Temp.2	0.1°C	Display the temperature 2 of the drive inner module during error.
C02.08 (0x2308)	Previous 6 Error Drive Status 1	0x0000	bit0: 0: Stop 1: Operation bit1: 1: Accelerating bit2: 1: Decelerating bit3: 0: FWD 1: REV bit4: 0: No error 1: Drive in error bit6: 0: No alarm 1: Drive in alarm bit7: 0: Run not ready 1: Run ready bit13: 1: FWD/REV disable bit14: 1: FWD/REV switching

C02.09 (0x2309)	Previous 6 Error Drive Status 2	0x0000	bit0: Pre-run delay 0: Not completed 1: Completed bit1: PWM configuration 0: Not completed 1: Completed bit2: AM DC braking 0: OFF 1: ON bit3: AM DC braking completed 0: Not completed 1: Completed bit4: Pre-excitation 0: OFF 1: ON bit5: Pre-excitation completed 0: Not completed 1: Completed bit6: AM fly track 0: OFF 1: ON bit7: AM fly track completed 0: Not completed 1: Completed bit8: PM short-circuit braking 0: OFF 1: ON bit9: PM short-circuit braking completed 0: Not completed 1: Completed bit10: PM DC braking 0: OFF 1: ON bit11: PM DC braking completed 0: Not completed 1: Completed bit12: PM Pre-excitation 0: OFF 1: ON bit13: PM Pre-excitation completed 0: Not completed 1: Completed bit14: PM fly track 0: OFF 1: ON bit15: PM fly track completed 0: Not completed 1: Completed
C02.10 (0x230A)	Previous 6 Error X Terminal Status	Bit	The status of the terminal X is displayed by 1 (ON) and 0 (OFF). For example, when both terminals X1 and X2 are ON, C01.10 displays  .
C02.11 (0x230B)	Previous 6 Error Y Terminal Status	Bit	The status of the terminal Y is displayed by 1 (ON) and 0 (OFF). For example, when Y terminal and relay are ON, C01.11 displays  .

C02.12 (0x230C)	Previous 6 Error Command Record	0x0000	bit0–bit2: Self-test command 0: No self-test 1: Output-to-ground short 2: Phase-to-phase short 3: Fan-to-ground short bit3: Run/Stop command 0: Stop 1: Run bit4: Direction command 0: Forward 1: Reverse bit6: Overcurrent suppression 0: OFF 1: ON bit7: ACC/DEC pause command 1: External terminal acceleration pause active bit8: Auto-tuning status 1: Static auto-tuning bit9: Auto-tuning status 1: Dynamic auto-tuning
C02.13 (0x230D)	Previous 6 Error State Flow	0x0000	Ones-bit: Main state 0: Undervoltage state 1: Power-on ready 2: Fault 3: Power-on ready – Standby 4: Power-on ready – System running 5: System running – Waiting 6: System running – Pause 7: System running – Normal operation Tens-bit: Start-up stage 0: Invalid 1: Auto-tuning start 2: V/F-SPLIT start 3: DC braking – Asynchronous motor 4: Fly track – Asynchronous motor 5: Pre-excitation – Asynchronous motor 6: Short-circuit braking – Synchronous motor 7: Fly track – Synchronous motor 8: Pre-excitation – Synchronous motor 9: DC braking – Synchronous motor Hundreds-bit: Stop stage 0: Invalid 1: Deceleration stop 2: DC braking Thousands-bit: Drive stage 0: Undervoltage 1: Fault 2: Standby 3: PWM blocked 4: Normal run 5: DC braking 6: Pre-excitation 7: Fly track 8: Short-circuit braking 9: Auto-tuning 10: Pole search 11: Bootstrap control 12: Ground-short detection
C02.14 (0x230E)	Previous 6 Error Total Power-ON (h)	-	Display the previous 6 error total power-on time of the drive in hours.

C02.15 (0x230F)	Previous 6 Error Total Power-ON (min)	-	Display the previous 6 error total power-on time of the drive in minutes.
C02.16 (0x2600)	Previous 7 Error Type	-	Display the current error in code.
C02.17 (0x2311)	Previous 7 Error Info	1	Display the error in code and sub-code, and check the corresponding solutions in the error diagnosis section.
C02.18 (0x2312)	Previous 7 Error Output Frequency	0.01Hz/ 0.1Hz	Display output frequency during error.
C02.19 (0x2313)	Previous 7 Error Output Voltage	0.1V	Display the output voltage during error.
C02.20 (0x2314)	Previous 7 Error Output Current	0.1A	Display the output current during error.
C02.21 (0x2315)	Previous 7 Error Bus Voltage	0.1V	Display the bus voltage during error.
C02.22 (0x2316)	Previous 7 Error Module Temp.1	0.1°C	Display the temperature 1 of the drive inner module during error.
C02.23 (0x2317)	Previous 7 Error Module Temp.2	0.1°C	Display the temperature 2 of the drive inner module during error.
C02.24 (0x2318)	Previous 7 Drive Error Status	0x0000	bit0: 0: Stop 1: Operation bit1: 1: Accelerating bit2: 1: Decelerating bit3: 0: FWD 1: REV bit4: 0: No error 1: Drive in error bit6: 0: No alarm 1: Drive in alarm bit7: 0: Run not ready 1: Run ready bit13: 1: FWD/REV disable bit14: 1: FWD/REV switching

C02.25 (0x2319)	Previous 7 Fault Drive Status	0x0000	bit0: Pre-run delay 0: Not completed 1: Completed bit1: PWM configuration 0: Not completed 1: Completed bit2: AM DC braking 0: OFF 1: ON bit3: AM DC braking completed 0: Not completed 1: Completed bit4: Pre-excitation 0: OFF 1: ON bit5: Pre-excitation completed 0: Not completed 1: Completed bit6: AM fly track 0: OFF 1: ON bit7: AM fly track completed 0: Not completed 1: Completed bit8: PM short-circuit braking 0: OFF 1: ON bit9: PM short-circuit braking completed 0: Not completed 1: Completed bit10: PM DC braking 0: OFF 1: ON bit11: PM DC braking completed 0: Not completed 1: Completed bit12: PM Pre-excitation 0: OFF 1: ON bit13: PM Pre-excitation completed 0: Not completed 1: Completed bit14: PM fly track 0: OFF 1: ON bit15: PM fly track completed 0: Not completed 1: Completed
C02.26 (0x231A)	Previous 7 Error X Terminal Status	Bit	The status of the terminal X is displayed by 1 (ON) and 0 (OFF). For example, when both terminals X1 and X2 are ON, C01.10 displays  .
C02.27 (0x231B)	Previous 7 Error Y Terminal Status	Bit	The status of the terminal Y is displayed by 1 (ON) and 0 (OFF). For example, when Y terminal and relay are ON, C01.11 displays  .

C02.28 (0x231C)	Previous 7 Error Command Record	0x0000	bit0–bit2: Self-test command 0: No self-test 1: Output-to-ground short 2: Phase-to-phase short 3: Fan-to-ground short bit3: Run/Stop command 0: Stop 1: Run bit4: Direction command 0: Forward 1: Reverse bit6: Overcurrent suppression 0: OFF 1: ON bit7: ACC/DEC pause command 1: External terminal acceleration pause active bit8: Auto-tuning status 1: Static auto-tuning bit9: Auto-tuning status 1: Dynamic auto-tuning
C02.29 (0x231D)	Previous 7 Error State Flow	0x0000	Ones-bit: Main state 0: Undervoltage state 1: Power-on ready 2: Error 3: Power-on ready – Standby 4: Power-on ready – System running 5: System running – Waiting 6: System running – Pause 7: System running – Normal operation Tens-bit: Start-up stage 0: Invalid 1: Auto-tuning start 2: V/F-SPLIT start 3: DC braking – Asynchronous motor 4: Fly track – Asynchronous motor 5: Pre-excitation – Asynchronous motor 6: Short-circuit braking – Synchronous motor 7: Fly track – Synchronous motor 8: Pre-excitation – Synchronous motor 9: DC braking – Synchronous motor Hundreds-bit: Stop stage 0: Invalid 1: Deceleration stop 2: DC braking Thousands-bit: Drive stage 0: Undervoltage 1: Fault 2: Standby 3: PWM blocked 4: Normal run 5: DC braking 6: Pre-excitation 7: Fly track 8: Short-circuit braking 9: Auto-tuning 10: Pole search 11: Bootstrap control 12: Ground-short detection
C02.30 (0x231E)	Previous 7 Error Total Power-ON (h)	-	Display the previous 7 error total power-on time of the drive in hours.

C02.31 (0x231F)	Previous 7 Error Total Power-ON (min)	-	Display the previous 7 error total power-on time of the drive in minutes.
C02.32 (0x2320)	Previous 8 Error Code	-	Display the current error in code.
C02.33 (0x2321)	Previous 8 Error Info	1	Display the error in code and sub-code, and check the corresponding solutions in the error diagnosis section.
C02.34 (0x2322)	Previous 8 Error Output Frequency	0.01Hz/ 0.1Hz	Display output frequency during error.
C02.35 (0x2323)	Previous 8 Error Output Voltage	0.1V	Display the output voltage during error.
C02.36 (0x2324)	Previous 8 Error Output Current	0.1A	Display the output current during error.
C02.37 (0x2325)	Previous 8 Error Bus Voltage	0.1V	Display the bus voltage during error.
C02.38 (0x2326)	Previous 8 Error Module Temp.1	0.1°C	Display the temperature 1 of the drive inner module during error.
C02.39 (0x2327)	Previous 8 Error Module Temp.2	0.1°C	Display the temperature 2 of the drive inner module during error.
C02.40 (0x2328)	Previous 8 Error Drive Status 1	0x0000	bit0: 0: Stop 1: Operation bit1: 1: Accelerating bit2: 1: Decelerating bit3: 0: FWD 1: REV bit4: 0: No error 1: Drive in error bit6: 0: No alarm 1: Drive in alarm bit7: 0: Run not ready 1: Run ready bit13: 1: FWD/REV disable bit14: 1: FWD/REV switching

C02.41 (0x2329)	Previous 8 Error Drive Status 2	0x0000	bit0: Pre-run delay 0: Not completed 1: Completed bit1: PWM configuration 0: Not completed 1: Completed bit2: AM DC braking 0: OFF 1: ON bit3: AM DC braking completed 0: Not completed 1: Completed bit4: Pre-excitation 0: OFF 1: ON bit5: Pre-excitation completed 0: Not completed 1: Completed bit6: AM fly track 0: OFF 1: ON bit7: AM fly track completed 0: Not completed 1: Completed bit8: PM short-circuit braking 0: OFF 1: ON bit9: PM short-circuit braking completed 0: Not completed 1: Completed bit10: PM DC braking 0: OFF 1: ON bit11: PM DC braking completed 0: Not completed 1: Completed bit12: PM Pre-excitation 0: OFF 1: ON bit13: PM Pre-excitation completed 0: Not completed 1: Completed bit14: PM fly track 0: OFF 1: ON bit15: PM fly track completed 0: Not completed 1: Completed
C02.42 (0x232A)	Previous 8 Error X Terminal Status	Bit	The status of the terminal X is displayed by 1 (ON) and 0 (OFF). For example, when both terminals X1 and X2 are ON, C01.10 displays  .
C02.43 (0x232B)	Previous 8 Error Y Terminal Status	Bit	The status of the terminal Y is displayed by 1 (ON) and 0 (OFF). For example, when Y terminal and relay are ON, C01.11 displays  .

C02.44 (0x232C)	Previous 8 Error Command Record	0x0000	bit0–bit2: Self-test command 0: No self-test 1: Output-to-ground short 2: Phase-to-phase short 3: Fan-to-ground short bit3: Run/Stop command 0: Stop 1: Run bit4: Direction command 0: Forward 1: Reverse bit6: Overcurrent suppression 0: OFF 1: ON bit7: ACC/DEC pause command 1: External terminal acceleration pause active bit8: Auto-tuning status 1: Static auto-tuning bit9: Auto-tuning status 1: Dynamic auto-tuning
C02.45 (0x232D)	Previous 8 Error State Flow	0x0000	Ones-bit: Main state 0: Undervoltage state 1: Power-on ready 2: Fault 3: Power-on ready – Standby 4: Power-on ready – System running 5: System running – Waiting 6: System running – Pause 7: System running – Normal operation Tens-bit: Start-up stage 0: Invalid 1: Auto-tuning start 2: V/F-SPLIT start 3: DC braking – Asynchronous motor 4: Fly track – Asynchronous motor 5: Pre-excitation – Asynchronous motor 6: Short-circuit braking – Synchronous motor 7: Fly track – Synchronous motor 8: Pre-excitation – Synchronous motor 9: DC braking – Synchronous motor Hundreds-bit: Stop stage 0: Invalid 1: Deceleration stop 2: DC braking Thousands-bit: Drive stage 0: Undervoltage 1: Fault 2: Standby 3: PWM blocked 4: Normal run 5: DC braking 6: Pre-excitation 7: Fly track 8: Short-circuit braking 9: Auto-tuning 10: Pole search 11: Bootstrap control 12: Ground-short detection
C02.46 (0x232E)	Previous 8 Error Total Power-ON (h)	-	Display the previous 8 error total power-on time of the drive in hours.

C02.47 (0x232F)	Previous 8 Error Total Power-ON (min)	-	Display the previous 8 error total power-on time of the drive in minutes.
C02.48 (0x2330)	Previous 9 Error Code	-	Display the current error in code.
C02.49 (0x2331)	Previous 9 Error Info	1	Display the error in code and sub-code, and check the corresponding solutions in the error diagnosis section.
C02.50 (0x2332)	Previous 9 Error Output Frequency	0.01Hz/ 0.1Hz	Display output frequency during error.
C02.51 (0x2333)	Previous 9 Error Output Voltage	0.1V	Display the output voltage during error.
C02.52 (0x2334)	Previous 9 Error Output Current	0.1A	Display the output current during error.
C02.53 (0x2335)	Previous 9 Error Bus Voltage	0.1V	Display the bus voltage during error.
C02.54 (0x2336)	Previous 9 Error Module Temp.1	0.1°C	Display the temperature 1 of the drive inner module during error.
C02.55 (0x2337)	Previous 9 Error Module Temp.2	0.1°C	Display the temperature 2 of the drive inner module during error.
C02.56 (0x2338)	Previous 9 Error Drive Status 1	0x0000	bit0: 0: Stop 1: Operation bit1: 1: Accelerating bit2: 1: Decelerating bit3: 0: FWD 1: REV bit4: 0: No error 1: Drive in error bit6: 0: No alarm 1: Drive in alarm bit7: 0: Run not ready 1: Run ready bit13: 1: FWD/REV disable bit14: 1: FWD/REV switching

C02.57 (0x2339)	Previous 9 Error Drive Status 2	0x0000	bit0: Pre-run delay 0: Not completed 1: Completed bit1: PWM configuration 0: Not completed 1: Completed bit2: AM DC braking 0: OFF 1: ON bit3: AM DC braking completed 0: Not completed 1: Completed bit4: Pre-excitation 0: OFF 1: ON bit5: Pre-excitation completed 0: Not completed 1: Completed bit6: AM fly track 0: OFF 1: ON bit7: AM fly track completed 0: Not completed 1: Completed bit8: PM short-circuit braking 0: Invalid; 1: Valid bit9: PM short-circuit braking completed 0: Not completed 1: Completed bit10: PM DC braking 0: OFF 1: ON bit11: PM DC braking completed 0: Not completed 1: Completed bit12: PM Pre-excitation 0: OFF 1: ON bit13: PM Pre-excitation completed 0: Not completed 1: Completed bit14: PM fly track 0: OFF 1: ON bit15: PM fly track completed 0: Not completed 1: Completed
C02.58 (0x233A)	Previous 9 Error X Terminal Status	Bit	The status of the terminal X is displayed by 1 (ON) and 0 (OFF). For example, when both terminals X1 and X2 are ON, C01.10 displays  .
C02.59 (0x233B)	Previous 9 Error Y Terminal Status	Bit	The status of the terminal Y is displayed by 1 (ON) and 0 (OFF). For example, when Y terminal and relay are ON, C01.11 displays  .

C02.60 (0x233C)	Previous 9 Error Command Record	0x0000	bit0–bit2: Self-test command 0: No self-test 1: Output-to-ground short 2: Phase-to-phase short 3: Fan-to-ground short bit3: Run/Stop command 0: Stop 1: Run bit4: Direction command 0: Forward 1: Reverse bit6: Overcurrent suppression 0: OFF 1: ON bit7: ACC/DEC pause command 1: External terminal acceleration pause active bit8: Auto-tuning status 1: Static auto-tuning bit9: Auto-tuning status 1: Dynamic auto-tuning
C02.61 (0x233D)	Previous 9 Error State Flow	0x0000	Ones-bit: Main state 0: Undervoltage state 1: Power-on ready 2: Fault 3: Power-on ready – Standby 4: Power-on ready – System running 5: System running – Waiting 6: System running – Pause 7: System running – Normal operation Tens-bit: Start-up stage 0: Invalid 1: Auto-tuning start 2: V/F-SPLIT start 3: DC braking – Asynchronous motor 4: Fly track – Asynchronous motor 5: Pre-excitation – Asynchronous motor 6: Short-circuit braking – Synchronous motor 7: Fly track – Synchronous motor 8: Pre-excitation – Synchronous motor 9: DC braking – Synchronous motor Hundreds-bit: Stop stage 0: Invalid 1: Deceleration stop 2: DC braking Thousands-bit: Drive stage 0: Undervoltage 1: Fault 2: Standby 3: PWM blocked 4: Normal run 5: DC braking 6: Pre-excitation 7: Fly track 8: Short-circuit braking 9: Auto-tuning 10: Pole search 11: Bootstrap control 12: Ground-short detection
C02.62 (0x233E)	Previous 9 Error Total Power-ON (h)	-	Display the previous 9 error total power-on time of the drive in hours.

C02.63 (0x233F)	Previous 9 Error Total Power-ON (min)	-	Display the previous 9 error total power-on time of the drive in minutes.
C02.64 (0x2340)	Previous 10 Error Code	-	Display the current error in code.
C02.65 (0x2341)	Previous 10 Error Info	1	Display the error in code and sub-code, and check the corresponding solutions in the error diagnosis section.
C02.66 (0x2342)	Previous 10 Error Output Frequency	0.01Hz/ 0.1Hz	Display output frequency during error.
C02.67 (0x2343)	Previous 10 Error Output Voltage	0.1V	Display the output voltage during error.
C02.68 (0x2344)	Previous 10 Error Output Current	0.1A	Display the output current during error.
C02.69 (0x2345)	Previous 10 Error Bus Voltage	0.1V	Display the bus voltage during error.
C02.70 (0x2346)	Previous 10 Error Module Temp.1	0.1°C	Display the temperature 1 of the drive inner module during error.
C02.71 (0x2347)	Previous 10 Error Module Temp.2	0.1°C	Display the temperature 2 of the drive inner module during error.
C02.72 (0x2348)	Previous 10 Error Drive Status 1	0x0000	bit0: 0: Stop 1: Operation bit1: 1: Accelerating bit2: 1: Decelerating bit3: 0: FWD 1: REV bit4: 0: No error 1: Drive in error bit6: 0: No alarm 1: Drive in alarm bit7: 0: Run not ready 1: Run ready bit13: 1: FWD/REV disable bit14: 1: FWD/REV switching

C02.73 (0x2349)	Previous 10 Error Drive Status 2	0x0000	bit0: Pre-run delay 0: Not completed 1: Completed bit1: PWM configuration 0: Not completed 1: Completed bit2: AM DC braking 0: OFF 1: ON bit3: AM DC braking completed 0: Not completed 1: Completed bit4: Pre-excitation 0: OFF 1: ON bit5: Pre-excitation completed 0: Not completed 1: Completed bit6: AM fly track 0: OFF 1: ON bit7: AM fly track completed 0: Not completed 1: Completed bit8: PM short-circuit braking 0: OFF 1: ON bit9: PM short-circuit braking completed 0: Not completed 1: Completed bit10: PM DC braking 0: OFF 1: ON bit11: PM DC braking completed 0: Not completed 1: Completed bit12: PM Pre-excitation 0: OFF 1: ON bit13: PM Pre-excitation completed 0: Not completed 1: Completed bit14: PM fly track 0: OFF 1: ON bit15: PM fly track completed 0: Not completed 1: Completed
C02.74 (0x234A)	Previous 10 Error X Terminal Status	Bit	The status of the terminal X is displayed by 1 (ON) and 0 (OFF). For example, when both terminals X1 and X2 are ON, C01.10 displays  .
C02.75 (0x234B)	Previous 10 Error Y Terminal Status	Bit	The status of the terminal Y is displayed by 1 (ON) and 0 (OFF). For example, when Y terminal and relay are ON, C01.11 displays  .

C02.76 (0x234C)	Previous 10 Error Command Record	0x0000	bit0–bit2: Self-test command 0: No self-test 1: Output-to-ground short 2: Phase-to-phase short 3: Fan-to-ground short bit3: Run/Stop command 0: Stop 1: Run bit4: Direction command 0: Forward 1: Reverse bit6: Overcurrent suppression 0: OFF 1: ON bit7: ACC/DEC pause command 1: External terminal acceleration pause active bit8: Auto-tuning status 1: Static auto-tuning bit9: Auto-tuning status 1: Dynamic auto-tuning
C02.77 (0x234D)	Previous 10 Error State Flow	0x0000	Ones-bit: Main state 0: Undervoltage state 1: Power-on ready 2: Fault 3: Power-on ready – Standby 4: Power-on ready – System running 5: System running – Waiting 6: System running – Pause 7: System running – Normal operation Tens-bit: Start-up stage 0: Invalid 1: Auto-tuning start 2: V/F-SPLIT start 3: DC braking – Asynchronous motor 4: Fly track – Asynchronous motor 5: Pre-excitation – Asynchronous motor 6: Short-circuit braking – Synchronous motor 7: Fly track – Synchronous motor 8: Pre-excitation – Synchronous motor 9: DC braking – Synchronous motor Hundreds-bit: Stop stage 0: Invalid 1: Deceleration stop 2: DC braking Thousands-bit: Drive stage 0: Undervoltage 1: Fault 2: Standby 3: PWM blocked 4: Normal run 5: DC braking 6: Pre-excitation 7: Fly track 8: Short-circuit braking 9: Auto-tuning 10: Pole search 11: Bootstrap control 12: Ground-short detection
C02.78 (0x234E)	Previous 10 Error Total Power-ON (h)	-	Display the previous 10 error total power-on time of the drive in hours.

C02.79 (0x234F)	Previous 10 Error Total Power-ON (min)	-	Display the previous 10 error total power-on time of the drive in minutes.
C02.80 (0x2350)	Previous 11 Error Code	-	Display the current error in code.
C02.81 (0x2351)	Previous 11 Error Info	1	Display the error in code and sub-code, and check the corresponding solutions in the error diagnosis section.
C02.82 (0x2352)	Previous 11 Error Output Frequency	0.01Hz/ 0.1Hz	Display output frequency during error.
C02.83 (0x2353)	Previous 11 Error Output Voltage	0.1V	Display the output voltage during error.
C02.84 (0x2354)	Previous 11 Error Output Current	0.1A	Display the output current during error.
C02.85 (0x2355)	Previous 11 Error Bus Voltage	0.1V	Display the bus voltage during error.
C02.86 (0x2356)	Previous 11 Error Module Temp.1	0.1°C	Display the temperature 1 of the drive inner module during error.
C02.87 (0x2357)	Previous 11 Error Module Temp.2	0.1°C	Display the temperature 2 of the drive inner module during error.
C02.88 (0x2358)	Previous 11 Error Drive Status 1	0x0000	bit0: 0: Stop 1: Operation bit1: 1: Accelerating bit2: 1: Decelerating bit3: 0: FWD 1: REV bit4: 0: No error 1: Drive in error bit6: 0: No alarm 1: Drive in alarm bit7: 0: Run not ready 1: Run ready bit13: 1: FWD/REV disable bit14: 1: FWD/REV switching

C02.89 (0x2359)	Previous 11 Error Drive Status 2	0x0000	bit0: Pre-run delay 0: Not completed 1: Completed bit1: PWM configuration 0: Not completed 1: Completed bit2: AM DC braking 0: OFF 1: ON bit3: AM DC braking completed 0: Not completed 1: Completed bit4: Pre-excitation 0: OFF 1: ON bit5: Pre-excitation completed 0: Not completed 1: Completed bit6: AM fly track 0: OFF 1: ON bit7: AM fly track completed 0: Not completed 1: Completed bit8: PM short-circuit braking 0: OFF 1: ON bit9: PM short-circuit braking completed 0: Not completed 1: Completed bit10: PM DC braking 0: OFF 1: ON bit11: PM DC braking completed 0: Not completed 1: Completed bit12: PM Pre-excitation 0: OFF 1: ON bit13: PM Pre-excitation completed 0: Not completed 1: Completed bit14: PM fly track 0: OFF 1: ON bit15: PM fly track completed 0: Not completed 1: Completed
C02.90 (0x235A)	Previous 11 Error X Terminal Status	Bit	The status of the terminal X is displayed by 1 (ON) and 0 (OFF). For example, when both terminals X1 and X2 are ON, C01.10 displays  .
C02.91 (0x235B)	Previous 11 Error Y Terminal Status	Bit	The status of the terminal Y is displayed by 1 (ON) and 0 (OFF). For example, when Y terminal and relay are ON, C01.11 displays  .

C02.92 (0x235C)	Previous 11 Error Command Record	0x0000	bit0–bit2: Self-test command 0: No self-test 1: Output-to-ground short 2: Phase-to-phase short 3: Fan-to-ground short bit3: Run/Stop command 0: Stop 1: Run bit4: Direction command 0: Forward 1: Reverse bit6: Overcurrent suppression 0: OFF 1: ON bit7: ACC/DEC pause command 1: External terminal acceleration pause active bit8: Auto-tuning status 1: Static auto-tuning bit9: Auto-tuning status 1: Dynamic auto-tuning
C02.93 (0x235D)	Previous 11 Error State Flow	0x0000	Ones-bit: Main state 0: Undervoltage state 1: Power-on ready 2: Fault 3: Power-on ready – Standby 4: Power-on ready – System running 5: System running – Waiting 6: System running – Pause 7: System running – Normal operation Tens-bit: Start-up stage 0: Invalid 1: Auto-tuning start 2: V/F-SPLIT start 3: DC braking – Asynchronous motor 4: Fly track – Asynchronous motor 5: Pre-excitation – Asynchronous motor 6: Short-circuit braking – Synchronous motor 7: Fly track – Synchronous motor 8: Pre-excitation – Synchronous motor 9: DC braking – Synchronous motor Hundreds-bit: Stop stage 0: Invalid 1: Deceleration stop 2: DC braking Thousands-bit: Drive stage 0: Undervoltage 1: Fault 2: Standby 3: PWM blocked 4: Normal run 5: DC braking 6: Pre-excitation 7: Fly track 8: Short-circuit braking 9: Auto-tuning 10: Pole search 11: Bootstrap control 12: Ground-short detection
C02.94 (0x235E)	Previous 11 Error Total Power-ON (h)	-	Display the previous 11 error total power-on time of the drive in hours.

C02.95 (0x235F)	Previous 11 Error Total Power-ON (min)	-	Display the previous 11 error total power-on time of the drive in minutes.

C03.xx:Operation Monitoring

Code (Address)	Name	Min. Precision	Content
C03.00 (0x2400)	PID Control Status	-	Display the PID control status of drive.
C03.01 (0x2401)	PID Deviation	0.1%	Display the PID deviation of drive.
C03.02 (0x2402)	PID Output	0.1%	Display the PID output value of drive.
C03.03 (0x2403)	PID Proportional Output	0.1%	Display the PID proportional output.
C03.04 (0x2404)	PID Integral Output	0.1%	Display the PID integral output.
C03.05 (0x2405)	PLC Operation Phase	1	Display the current PLC operation phase.
C03.06 (0x2406)	PLC Phase Frequency	0.01Hz	Display the current PLC output frequency.
C03.07 (0x2407)	PLC Phase Runtime	1s	Display the current PLC runtime.
C03.08 (0x2408)	Current Power-ON	1h	Record the current power-on time of drive.
C03.09 (0x2409)	Current Runtime	0.1h	Record the current runtime of drive.
C03.10 (0x240A)	Total Runtime (h)	1h	Record the total drive runtime in hour.
C03.11 (0x240B)	Total Power-ON (h)	1h	Record the total drive power-on time in hour.
C03.12 (0x240C)	Total Power-ON (min)	0.01h	Record the total drive power-on time in minute.
C03.13 (0x240D)	Total Power Consumption (Low)	-	Record the low level of total drive power consumption.
C03.14 (0x240E)	Total Power Consumption (High)	-	Record the high level of drive power consumption.
C03.20 (0x2414)	Source A Frequency	0.01Hz	Display the frequency of source A.
C03.21 (0x2415)	Source B Frequency	0.01Hz	Display the frequency of source B.
C03.22 (0x2416)	Upper Limit Frequency	0.01Hz	Display the upper limit frequency of drive.
C03.23 (0x2417)	CBC Overload Percentage	0.1%	Display the drive overload percentage.
C03.24 (0x2418)	CBC Count	-	-
C03.25 (0x2419)	Encoder Feedback Angle	-	-
C03.26 (0x241A)	Total Z-Pulse Error	-	-
C03.27 (0x241B)	Z-Pulse No.	-	-
C03.28 (0x241C)	AB-Pulse Count	-	-
C03.29 (0x241D)	Drive Command	-	Display the status of drive command.

C03.30 (0x241E)	Terminal Command	-	Display the status of terminal X command.
C03.31 (0x241F)	Source Command	-	Obtain the command from command source.
C03.32 (0x2420)	U Phase Overload Percentage	0.1%	Display the drive V phase overload percentage.
C03.33 (0x2421)	Local Active Current	-	Display the local active current.
C03.34 (0x2422)	Active Current from Communication	-	Display the active current received by drive.
C03.35 (0x2423)	Overload LF Derating Coefficient	0.1%	Display the overload low-frequency derating coefficient of the drive.
C03.36 (0x2424)	Overload Carrier Derating Coefficient	0.1%	Display the overload carrier derating coefficient of the drive.
C03.37 (0x2425)	Overload Protection Current	0.1%	Display the overload protection current of the drive.
C03.38 (0x2426)	Overload Protection Time	0.1s	Display the drive overload protection time.
C03.39 (0x2427)	Total Overload	0.1%	Display the total overload of the drive.
C03.40 (0x2428)	V/F-SPLIT Voltage A	0.01%	Display the V/F-SPLIT voltage A of the drive.
C03.41 (0x2429)	V/F-SPLIT Voltage B	0.01%	Display the V/F-SPLIT voltage B of the drive.
C03.42 (0x243A)	V/F-SPLIT Output Voltage	-	Display the V/F-SPLIT output voltage of the drive.
C03.43 (0x243B)	Current ACC Time	0.01s	Display the current acceleration time of the drive.
C03.44 (0x243C)	Current DEC Time	0.01s	Display the current deceleration time of the drive.
C03.45 (0x242D)	U-Phase Current RMS	0.1A	Display the U-phase current root mean square of the drive.
C03.46 (0x242E)	V-Phase Current RMS	0.1A	Display the V-phase current root mean square of the drive.
C03.47 (0x242F)	W-Phase Current RMS	0.1A	Display the W-phase current root mean square of the drive.
C03.48 (0x2430)	V Phase Overload Percentage	0.1%	Display the drive V phase overload percentage.
C03.49 (0x2431)	W Phase Overload Percentage	0.1%	Display the drive W phase overload percentage.
C03.85 (0x2455)	Fire Mode Monitoring	1	-
C03.86 (0x2456)	AI Combined Pressure Feedback	-	-
C03.87 (0x2457)	AI1 Pressure Feedback	-	-
C03.88 (0x2458)	AI2 Pressure Feedback	-	-

C04.xx: System Monitoring

Code (Address)	Name	Min. Precision	Content
C04.00 (0x2500)	Current Model	-	Display the current drive model.
C04.01 (0x2501)	E-label 1	-	Main category + product series

C04.02 (0x2502)	E-label 2	-	Product model + sub-model
C04.03 (0x2503)	E-label 3	-	Chip type
C04.04 (0x2504)	Software Version	-	-
C04.05 (0x2505)	Software Sub-version	-	-
C04.06 (0x2506)	E-label 6	-	Chip model
C04.11 (0x250B)	Drive Version	-	Drive module version
C04.12 (0x250C)	Drive Sub-version	-	Drive module sub-version
C04.13 (0x250D)	Funcode Version	-	Funcode version No.
C04.14 (0x250E)	Keypad Version	-	External keypad version No.
C04.23 (0x2517)	Production Year	-	-
C04.24 (0x2518)	Production Date	-	-
C04.26 (0x251A)	Current Motor	-	Current active motors
C04.27 (0x251B)	Current Key Value	-	-
C04.28 (0x251C)	Key Function	-	Function of F11 keys
C04.31 (0x251F)	Current Drive Algorithm	-	Current active control mode for F01.00 type
C04.32 (0x2520)	Current Drive Stage	-	Internal parameter
C04.33 (0x2521)	Current EEPROM Status	-	Read/Write indicator for current EEPROM
C04.34 (0x2522)	Current State Flow	-	Drive state flow of undervoltage, stop, and operation
C04.35 (0x2523)	Current State Record	-	Collection of drive operation status
C04.40 (0x2528)	Max. Carrier	0.1kHz	Maximum carrier frequency of the drive
C04.41 (0x2529)	Current Carrier	0.1kHz	Current carrier frequency of the drive
C04.42 (0x252A)	Deadtime	0.1us	-
C04.50 (0x2532)	Function Key Status	-	Status of multi-function keys on the keypad
C04.54 (0x2536)	Extension Slot 1 Identification Status	-	0x00: PG card 0x01: Bus card 0x10: I/O card 0x11: No card installed
C04.55 (0x2537)	Extension Slot 1 Monitoring	-	-
C04.56 (0x2538)	Extension Slot 1 Main Software Version	-	Major version of the software in extension slot 1.
C04.57 (0x2539)	Extension Slot 1 Sub Software Version	-	Minor version of the software in extension slot 1.

C04.58 (0x253A)	Extension Slot 2 Identification Status	-	0x00: PG card 0x01: Bus card 0x10: I/O card 0x11: No card installed
C04.60 (0x253C)	Extension Slot 2 Main Software Version	-	Major version of the software in extension slot 2.
C04.61 (0x253D)	Extension Slot 2 Sub Software Version	-	Minor version of the software in extension slot 2.
C04.62 (0x253E)	Extension Slot 3 Identification Status	-	0x00: PG card 0x01: Bus card 0x10: I/O card 0x11: No card installed
C04.64 (0x2540)	Extension Slot 3 Main Software Version	-	Major version of the software in extension slot 3.
C04.65 (0x2541)	Extension Slot 3 Sub Software Version	-	Minor version of the software in extension slot 3.
C04.66 (0x2542)	Internal Bus Heartbeat 1	-	Internal bus heartbeat 1
C04.67 (0x2543)	Internal Bus Heartbeat 2	-	Internal bus heartbeat 2
C04.68 (0x2544)	Extension Slot 1 SPI Main Software Version	-	Major version of SPI software in extension slot 1.
C04.69 (0x2545)	Extension Slot 2 SPI Main Software Version	-	Major version of SPI software in extension slot 2.
C04.70 (0x2546)	Extension Slot 3 SPI Main Software Version	-	Major version of SPI software in extension slot 3.
C04.71 (0x2547)	Extension Slot 1 SPI Heartbeat	-	SPI heartbeat of extension slot 1.
C04.72 (0x2548)	Extension Slot 2 SPI Heartbeat	-	SPI heartbeat of extension slot 2.
C04.73 (0x2549)	Extension Slot 3 SPI Heartbeat	-	SPI heartbeat of extension slot 3.
C04.74 (0x254A)	STO Card Identification Status	-	STO card identification status: 0: No STO card 1: STO card installed
C04.77 (0x254D)	External 24V Power Flag	-	Individual external 24V power supply flag 0: 24V not separately connected 1: 24V separately connected

C05.xx: Factory Monitoring

Code (Address)	Name	Min. Precision	Content
C05.50 (0x2632)	X IO Physical Status	-	I/O physical status of input terminal X
C05.51 (0x2633)	Y IO Physical Status	-	I/O physical status of output terminal Y
C05.52 (0x2634)	vX Status	-	Virtual terminal vX status
C05.53 (0x2635)	vY Status	-	Virtual terminal vY status
C05.54 (0x2636)	Module Temp. 1 Sample Value	-	Sample value of module temperature 1.
C05.55 (0x2637)	Module Temp. 2 Sample Value	-	Sample value of module temperature 2.
C05.56 (0x2638)	AI1 Sampling	-	Sample value of AI1.
C05.57 (0x2639)	AI2 Sampling	-	Sample value of AI2.

C05.58 (0x263A)	AO1 Final Output	-	Final output value of AO1.
C05.59 (0x263B)	AO2 Final Output	-	Final output value of AO2.
C05.60 (0x263C)	AI1 Pre-Calibration Voltage/Current	-	Voltage/Current before AI1 correction
C05.61 (0x263D)	AI2 Pre-Calibration Voltage/Current	-	Voltage/Current before AI2 correction
C05.62 (0x263E)	AO1 Pre-Calibration Voltage/Current	-	Voltage/Current before AO1 correction
C05.63 (0x263F)	AO2 Pre-Calibration Voltage/Current	-	Voltage/Current before AO2 correction
C05.67 (0x2643)	Fan PWM Duty Ratio	-	PWM duty ratio for fan speed control.
C05.70 (0x2646)	U-Phase Current Sampling Zero Drift	-	Zero-drift value of U-phase current sampling.
C05.71 (0x2647)	V-Phase Current Sampling Zero Drift	-	Zero-drift value of V-phase current sampling.
C05.72 (0x2648)	W-Phase Current Sampling Zero Drift	-	Zero-drift value of W-phase current sampling.
C05.73 (0x2649)	U-Phase Current Sampling	-	Sample value of U-phase current.
C05.74 (0x264A)	V-Phase Current Sampling	-	Sample value of V-phase current.
C05.75 (0x264B)	W-Phase Current Sampling	-	Sample value of W-phase current.
C05.76 (0x264C)	Bus Voltage Sampling	-	Sample value of DC bus voltage.
C05.77 (0x264D)	AI1 Percentage	-	Percentage value of AI1.
C05.78 (0x264E)	AI2 Percentage	-	Percentage value of AI2.
C05.82 (0x2652)	PG Feedback Frequency (Pre-Filter)	-	PG feedback frequency before filtering.
C05.83 (0x2653)	DC Bus Voltage (Pre-Filter)	-	DC bus voltage before filtering.

C11.xx: IO Communication Monitoring

Code (Address)	Name	Min. Precision	Content
C11.00 (0x2C00)	X Terminal Status	-	Status of X terminals.
C11.01 (0x2C01)	Y Terminal Status	-	Status of Y terminals.
C11.02 (0x2C02)	AI3 Voltage	0.001V	Input voltage of AI3.
C11.03 (0x2C03)	AI3 ADC Value	0.001	ADC value of AI3.
C11.04 (0x2C04)	AO3 Value	0.001V	Output value of AO3.
C11.06 (0x2C06)	PT1 Temp.	0.1°C	PT1 temperature value.
C11.07 (0x2C07)	PT2 Temp.	0.1°C	PT2 temperature value.
C11.08 (0x2C08)	PT3 Temp.	0.1°C	PT3 temperature value.

C11.09 (0x2C09)	Temp. 1 Value	0.1°C	Temperature 1 reading.
C11.10 (0x2C0A)	Temp. 2 Value	0.1°C	Temperature 2 reading.
C11.11 (0x2C0B)	Temp. 3 Value	0.1°C	Temperature 3 reading.
C11.12 (0x2C0C)	PT1 ADC Value	0.001	ADC value of PT1.
C11.13 (0x2C0D)	PT2 ADC Value	0.001	ADC value of PT2.
C11.14 (0x2C0E)	PT3 ADC Value	0.001	ADC value of PT3.
C11.15 (0x2C0F)	RTC Year	1	IO card time - year
C11.16 (0x2C10)	RTC Month	1	IO card time - month
C11.17 (0x2C11)	RTC Day	1	IO card time - day
C11.18 (0x2C12)	RTC Hour	1	IO card time - hour
C11.19 (0x2C13)	RTC Minute	1	IO card time - minute
C11.20 (0x2C14)	RTC Second	1	IO card time - second

C12.xx: Bus Communication Monitoring

Code (Address)	Name	Min. Precision	Content
C12.00 (0x2D00)	Ex1 Process Input Data 1 (Original)	1	Monitor the raw process data input 1 for Ex1.
C12.01 (0x2D01)	Ex1 Process Input Data 2 (Original)	1	Monitor the raw process data input 2 for Ex1.
C12.02 (0x2D02)	Ex1 Process Input Data 3 (Original)	1	Monitor the raw process data input 3 for Ex1.
C12.03 (0x2D03)	Ex1 Process Input Data 4 (Original)	1	Monitor the raw process data input 4 for Ex1.
C12.04 (0x2D04)	Ex1 Process Input Data 5 (Original)	1	Monitor the raw process data input 5 for Ex1.
C12.05 (0x2D05)	Ex1 Process Input Data 6 (Original)	1	Monitor the raw process data input 6 for Ex1.
C12.06 (0x2D06)	Ex1 Process Input Data 7 (Original)	1	Monitor the raw process data input 7 for Ex1.
C12.07 (0x2D07)	Ex1 Process Input Data 8 (Original)	1	Monitor the raw process data input 8 for Ex1.
C12.08 (0x2D0A)	Ex1 Process Input Data 9 (Original)	1	Monitor the raw process data input 9 for Ex1.
C12.109 (0x2D09)	Ex1 Process Input Data 10 (Original)	1	Monitor the raw process data input 10 for Ex1.
C12.10 (0x2D0A)	Ex1 Process Input Data 11 (Original)	1	Monitor the raw process data input 11 for Ex1.
C12.11 (0x2D0B)	Ex1 Process Input Data 12 (Original)	1	Monitor the raw process data input 12 for Ex1.
C12.12 (0x2D0C)	Ex1 Process Input Data 13 (Original)	1	Monitor the raw process data input 13 for Ex1.
C12.13 (0x2D0D)	Ex1 Process Input Data 14 (Original)	1	Monitor the raw process data input 14 for Ex1.

C12.14 (0x2D0E)	Ex1 Process Input Data 15 (Original)	1	Monitor the raw process data input 15 for Ex1.
C12.15 (0x2D0F)	Ex1 Process Input Data 16 (Original)	1	Monitor the raw process data input 16 for Ex1.
C12.16 (0x2D10)	Ex2 Process Input Data 1 (Original)	1	Monitor the raw process data input 1 for Ex2.
C12.17 (0x2D11)	Ex2 Process Input Data 2 (Original)	1	Monitor the raw process data input 2 for Ex2.
C12.18 (0x2D12)	Ex2 Process Input Data 3 (Original)	1	Monitor the raw process data input 3 for Ex2.
C12.19 (0x2D13)	Ex2 Process Input Data 4 (Original)	1	Monitor the raw process data input 4 for Ex2.
C12.20 (0x2D14)	Ex2 Process Input Data 5 (Original)	1	Monitor the raw process data input 5 for Ex2.
C12.21 (0x2D15)	Ex2 Process Input Data 6 (Original)	1	Monitor the raw process data input 6 for Ex2.
C12.22 (0x2D16)	Ex2 Process Input Data 7 (Original)	1	Monitor the raw process data input 7 for Ex2.
C12.23 (0x2D17)	Ex2 Process Input Data 8 (Original)	1	Monitor the raw process data input 8 for Ex2.
C12.24 (0x2D18)	Ex2 Process Input Data 9 (Original)	1	Monitor the raw process data input 9 for Ex2.
C12.25 (0x2D19)	Ex2 Process Input Data 10 (Original)	1	Monitor the raw process data input 10 for Ex2.
C12.26 (0x2D1A)	Ex2 Process Input Data 11 (Original)	1	Monitor the raw process data input 11 for Ex2.
C12.27 (0x2D1B)	Ex2 Process Input Data 12 (Original)	1	Monitor the raw process data input 12 for Ex2.
C12.28 (0x2D1C)	Ex2 Process Input Data 13 (Original)	1	Monitor the raw process data input 13 for Ex2.
C12.29 (0x2D1D)	Ex2 Process Input Data 14 (Original)	1	Monitor the raw process data input 14 for Ex2.
C12.30 (0x2D1E)	Ex2 Process Input Data 15 (Original)	1	Monitor the raw process data input 15 for Ex2.
C12.31 (0x2D1F)	Ex2 Process Input Data 16 (Original)	1	Monitor the raw process data input 16 for Ex2.

13.47 Terminal I/O Functions

Terminal X	Description	Terminal X	Description	Terminal X	Description
0	None	24	PID setting shift 1 bit0	48	Command source to keypad
1	FWD operation	25	PID setting shift 2 bit1	49	Command source to terminal
2	REV operation	26	PID setting shift 3 bit2	50	Command source to communication
3	Three-wire operation (Xi)	27	PID feedback shift 1 bit0	51	Command source to extension
4	FWD jog	28	PID feedback shift 2 bit1	52	Run disable
5	REV jog	29	PID feedback shift 3 bit2	53	FWD operation inhibit
6	Free stop	30	PLC pause	54	REV operation inhibit
7	Emergency stop	31	PLC restart	55	Motor selection bit0

8	Fault reset	32	Acceleration/deceleration time 1 bit0	56	Motor selection bit1
9	External error input	33	Acceleration/deceleration time 2 bit1	57	Motor selection bit2
10	Frequency increase (UP)	34	ACC/DEC pause	58	Backup frequency
11	Frequency decrease (DW)	35	Wobble frequency input	59	Torque source B shift
12	Frequency reset (UP/DW reset)	36	Wobble frequency pause	60	Speed/Torque control shift
13	Reserved	37	Wobble frequency reset	61	Reserved
14	Combined frequency source to source A	38	Keypad keys and display self-test	62	Jog frequency as torque mode frequency upper limit
15	Combined frequency source to source B	39	PUL frequency measurement, specific terminal	63~87	Reserved
16	Multi-frequency terminal 1 bit0	40	Timer trigger	88	Reserved
17	Multi-frequency terminal 2 bit1	41	Timer reset	89	Reserved
18	Multi-frequency terminal 3 bit2	42	Counter signal input terminal	90	Reserved
19	Multi-frequency terminal 4 bit3	43	Counter reset	91	Reserved
20	PID control cancel	44	DC brake command	92	Reserved
21	PID control pause	45	Pre-excitation command	93	Reserved
22	PID characteristic shift	46	Reserved	94	Reserved
23	PID parameter shift	47	Reserved	95	Reserved
Terminal Y	Description	Terminal Y	Description	Terminal Y	Description
0	No output	22	Counter maximum arrival	44	Motor 4 enable
1	Drive in operation	23	Counter setting arrival	45	PID output saturation
2	Drive in forward operation	24	Dynamic brake	46	PID negative characteristic
3	Drive in reverse operation	25	PG feedback break	47	Accelerating
4	Error trip alarm 1 (report during auto reset)	26	Emergency stop	48	Decelerating
5	Error trip alarm 2 (No report during auto reset)	27	Load alarm 1 (Report error and alarm)	49	Constant-frequency operating
6	Stop due to external faults	28	Load alarm 2 (Report error and alarm)	50	FWD operation inhibit

7	Drive low voltage	29	Drive in alarm	51	REV operation inhibit
8	Drive ready for operation	30	0x3018 control output	52	DC braking
9	Output frequency detection threshold 1 (FDT1)	31	Drive overheat	53	External error terminal active
10	Output frequency detection threshold 2 (FDT2)	32	Motor overheat alarm	54	Torque control active
11	Target frequency completion	33	Drive overload	55	Position control active
12	Zero-frequency operation	34	Motor overload	56	Jogging
13	Upper limit frequency arrival	35	Reserved	57	Undervoltage suppression active
14	Lower limit frequency arrival	36	Reserved	58	Overvoltage suppression active
15	Program cycle completed	37	Comparator 1	59	Overcurrent suppression active
16	Program segment completion	38	Comparator 2	60	Speed limit (No stop on fault)
17	PID feedback above upper limit	39	Comparator 3	61	Current limit (No stop on fault)
18	PID feedback below lower limit	40	Comparator 4	62	Power limit (No stop on fault)
19	PID feedback disconnection	41	Motor 1 enable	63	Reserved
20	Meter length arrival	42	Motor 2 enable	Others	B connector
21	Timing arrival	43	Motor 3 enable		
AO Mode	Description	AO Mode	Description	AO Mode	Description
0	Target frequency	7	Output torque	14	Reserved
1	Output frequency	8	PID setting	15	PUL input
2	Output current	9	PID feedback	16	Module temp. 1
3	Input voltage	10	Output power	17	Module temp. 2
4	Output voltage	11	Bus voltage	18	RS485 communication setting
5	Mechanical speed	12	AI1 value	19	Virtual terminal vY1
6	Target torque	13	AI2 value	20	K connector

13.48 Free Module Functions

Free Module	Description	Free Module	Description	Free Module	Description
0	None	14	Compare (Inputs 1&2: signals; Input 3: hysteresis)	28	Greater than or equal
1	AND	15	Limiter (Input 1: signal; Input 2: upper limit; Input 3: lower limit)	29	Greater than

2	OR	16	Max.	30	Less than or equal
3	NOT (single input only)	17	Min.	31	Less than
4	XOR	18	Avg.	32	Not equal
5	XNOR	19	Filter (Input 1: signal; Input 2: filter time, per 10ms)	33	Pulse counter (Input 1: CU; Input 2: CD; Input 3: reset)
6	INV	20	Level to pulse (Input 1: signal; Input 2: pulse period, per	34	Set/Reset (Input 1: set; Input 2: reset; Input 3: mode: 0=reset priority,
7	Absolute	21	Pulse to level (Input 1: signal; Input 2: valid level)	35	Selector Switch (Inputs 1&2: signals; Input 3: select: 0=Input 1, 1=Input
8	Add	22	Logic delay (Input 1: signal; Input 2: delay time, per 10ms)	36	Fault code monitoring
9	Subtract	23	Pulse generator (Input 1: pulse period, per 10ms)	37	Fault subcode monitoring
10	Multiply	24	Ramp (Input 1: signal; Input 2: ramp rate, per 10ms; Input 3: enable)	38	Function code write (Input 1: value; Input 2: function code address)
11	Divide (Input 1: dividend; Inputs 2&3: divisors)	25	Transfer	39	Word-to-Bit
12	Arithmetic square root (Input 1: radicand)	26	Opposite number	100	Bit-to-Word
13	Differentiation (Input 1: signal; Input 2: gain; Input 3: time interval, per 10ms)	27	Equality	-	-

Chapter 14 Parameter Details

14.1 Safety Precautions



Please pay attention to all information in this manual regarding safety.
Failure to observe the warnings may result in death or serious injuries. VEICHI will not be held liable for injuries and equipment damage caused by your company or your customers' failure to comply with the contents of this manual.

14.2 F00: Environment

F00 [Environment] is used to set the operating environment parameters of the AC drive.

14.2.1 F00.0x: Environment Setting

F00.0x is used to set the operating environment and operation conditions of the AC drive, such as parameter access levels and purposes.

✧ F00.00: Parameter Access Level

Code (Address) Property	Name	Description	Default (Range)
F00.00 (0x0000) STOP	Parameter Access Level	V/F SVC FVC PMV/F PMSVC PMFVC Set the parameter access level according to access restriction.	0 (0~1002)

0: Standard

Access to parameter group Fxx and monitoring parameters Cxx.

1001: Expert

Access to all parameters except reserved parameters.

1002: Service

Access to all parameters.

Note:

When F11.00 [Key Lock] and F11.01 [Key Lock Password] are valid, corresponding parameters can't be changed via keypad.

✧ F00.01: Purpose

Code (Address) Property	Name	Description	Default (Range)
F00.01 (0x0001) STOP	Purpose	V/F SVC FVC PMV/F PMSVC PMFVC Set the AC drives for the specific purpose.	0 (0~1)

The AC drive application mode shall match the hardware design.

0: Heavy-duty mode (G-type)

For applications requiring short-term overload capability, select Heavy-duty mode to increase the short-time maximum output current of the power module. Typical applications allow operation at 1.5× rated current for up to 90s, or 1.8× rated current for up to 10s.

1: Light-duty mode (P-type)

For applications with long-term stable loads, select Light-duty mode to fully utilize the output capability of the power module. Operation is allowed at 1.2× rated current for up to 35s, or 1.5× rated current for up to 3s.

✧ F00.02: Parameter Protection

Code (Address) Property	Name	Description	Default (Range)
F00.02 (0x0002) STOP	Parameter Protection	V/F SVC FVC PMV/F PMSVC PMFVC Set the parameter protection function based on access restrictions.	0x0000 (0x0000~0x1002)

The write-protection function effectively prevents unauthorized modification or accidental changes to critical parameters by operators, thereby avoiding potential system failures or safety incidents.

0x0000: OFF

No parameter protection.

0x1001: Expert

Writing is prohibited except for F01.09 and this parameter.

0x1002: Maintenance

Writing is prohibited except for this parameter.

✧ **F00.03: Initialization**

Code (Address) Property	Name	Description	Default (Range)
F00.03 (0x0003) STOP	Initialization	V/F SVC FVC PMV/F PMSVC PMFVC Set the initialization mode for the drive.	0x0000 (0x0000~0xFFFF)

Note: After initialization, the value of F00.03 automatically resets to 0.

0x0000: No initialization**0x1100: Partial initialization**

Restore parameters except error record, F02.01~F02.06 [Motor Basic Parameters], F02.10~F02.29 [Advanced Motor Parameters] and parameters that cannot be initialized.

0x2200: Initialization mode 2

Restore parameters except error record and those cannot be initialized.

0x3300: Clear error records

Clears all historical fault information recorded in monitoring parameter groups C01 and C02.

The following parameters are not initialized even if F00.003 = 11 or 22.

Code	Name
F00.01	Purpose
F09.05	Operation Direction
F11.05	Up/Down Key for Funcode Modification
F11.11~F11.18	Parameters on Cyclic Display
F12.11~F12.16	RS485 User-defined Addresses

✧ **F00.04: Keypad Parameter Copy**

Code (Address) Property	Name	Description	Default (Range)
F00.04 (0x0004) STOP	Keypad Parameter Copy	V/F SVC FVC PMV/F PMSVC PMFVC Save the drive parameters to the keypad and then copy them to other AC drives.	0x0000 (0x0000~0xFFFF)

0: OFF**0x1100: Upload parameters to the keypad**

Read the set parameters from the AC drive and save it to the keypad.

0x2200: Download parameters to drive

Copy the set parameters saved in the keypad to other AC drives.

Display	Name
CoPy	Upload parameters to keypad.
LoAd	Download parameters to the drive.

If a fault is detected, the fault will be displayed on the keypad during parameter copy.

Code	Name	Cause	Solution
A.CoP	Parameter Copy Error	Communication error during parameter copy	Please check or replace the keypad cable.

✧ **F00.06: LCD Keypad Language**

Code (Address) Property	Name	Description	Default (Range)
F00.04 (0x0004) STOP	LCD Keypad Language	V/F SVC FVC PMV/F PMSVC PMFVC Set the display language of the LCD keypad.	0 (0~2)

0: Chinese**1: English**

2: Russian✧ **F00.07~F00.08: Free Parameters**

Code (Address) Property	Name	Description	Default (Range)
F00.07 (0x0007) RUN	Free Parameter 1	V/F SVC FVC PMV/F PMSVC PMFVC Any input can be used as marks.	0 (0~65535)
F00.08 (0x0008) RUN	Free Parameter 2	V/F SVC FVC PMV/F PMSVC PMFVC Any input can be used as marks.	0 (0~65535)

Note: Free parameters will not affect drive operation.

For example:

- Identifying machine numbers when using multiple units.
- Assigning mode numbers for different applications on multiple machines.
- Recording purchase date, inspection date, etc.

14.2.2 F00.1x: System Setting✧ **F00.10: Application Macro/Connector**

Code (Address) Property	Name	Description	Default (Range)
F00.10 (0x010A) RUN	Application Macro/Connect or	V/F SVC FVC PMV/F PMSVC PMFVC Select application macros, custom parameter default values, and connector functions.	0x0000 (0x0000~0x0115)

Ones-bit: Macro mode

0: General (default)

1: Brake

Enable brake function; used with A01 [Brake Control] parameters.

Tens-bit: Default parameter customization

0: OFF

1: ON

Open the custom parameter default value function; used with A00 [Factory Default Change] parameters.

Hundreds-bit: Connector enable

0: OFF

1: ON

Activate connector function; used with L00 [Free Function Block] parameters.

✧ **F00.11: Multi-motor Switching**

Code (Address) Property	Name	Description	Default (Range)
F00.11 (0x000B) RUN	Multi-motor Switching	V/F SVC FVC PMV/F PMSVC PMFVC Enable or disable multi-motor parameter switching.	0 (0~1)

0: OFF

1: ON

Enable multi-motor parameter switching; used with d00 [Motor Parameters].

✧ **F00.13: Extension Parameter Display**

Code (Address) Property	Name	Description	Default (Range)
F00.13 (0x010D) RUN	Extension Parameter Display	V/F SVC FVC PMV/F PMSVC PMFVC Enable the keypad display of parameters for IO cards, PLC cards, PG1, and PG2 encoder cards.	0x0000 (0x0000~0x1111)

By default, the keypad does not display extension card parameters if no card is installed. When a card is inserted, the corresponding parameter group is automatically displayed. To show extension card parameters without a card, enable this function.

Ones-bit: I/O extension

0: OFF

1: ON

Display E00 [IO Extension X Terminal Parameters], E01 [IO Extension Y Terminal Parameters], E10 [Black Box Extension Parameters], and C11 [IO Communication Monitoring].

Tens-bit: PLC extension

0: OFF

1: ON

Display E08 [PLC Extension Parameters].

Hundreds-bit: PG1 encoder

0: OFF

1: ON

Display E02 [Encoder 1 Extension Parameters].

Thousands-bit: PG2 encoder

0: OFF

1: ON

Display E03 [Encoder 2 Extension Parameters].

◇ **F00.14: Extension Parameter Display**

Code (Address) Property	Name	Description	Default (Range)
F00.14 (0x010E) RUN	Extension Parameter Display	V/F SVC FVC PMV/F PMSVC PMFVC Enables the keypad display of parameters for CAN/DP and Ethernet communication cards.	0x0000 (0x0000~0x1111)

By default, the keypad does not display extension card parameters if no card is installed. When a card is inserted, the corresponding parameter group is automatically displayed. To show extension card parameters without a card, enable this function.

Ones-bit: CAN/DP card

0: OFF

1: ON

Display E04 [Bus EX1 Common Parameters], E06 [CAN/DP Parameters], and C12 [Bus Communication Monitoring].

Tens-bit: Ethernet card

0: OFF

1: ON

Display E04 [Bus EX1 Common Parameters], E07 [Ethernet Extension Parameters], and C12 [Bus Communication Monitoring].

14.2.3 F00.2x: System Time

This function code group must be used with the black-box card. Use F00.20~F00.25 to set the current year, month, day, hour, minute, and second in sequence. After completing the settings, set F00.26 to 1 to confirm. You can then check C11.15~C11.20 monitoring parameters to verify whether the system time was successfully set.

◇ **F00.20: Time-Year**

Code (Address) Property	Name	Description	Default (Range)
F00.20 (0x0014) RUN	Time-Year	V/F SVC FVC PMV/F PMSVC PMFVC Set the current year for the system time.	0 (0~99)

Note: Only the last two digits of the year need to be set. For example, for the year 2025, set the value to 25.

◇ **F00.21: Time-Month**

Code (Address) Property	Name	Description	Default (Range)
F00.21 (0x0015) RUN	Time-Month	V/F SVC FVC PMV/F PMSVC PMFVC Set the current month for the system time.	0 (0~12)

✧ **F00.22: Time-Day**

Code (Address) Property	Name	Description	Default (Range)
F00.22 (0x0016) RUN	Time-Day	V/F SVC FVC PMV/F PMSVC PMFVC Set the current day for the system time.	0 (0~31)

✧ **F00.23: Time-Hour**

Code (Address) Property	Name	Description	Default (Range)
F00.23 (0x0017) RUN	Time-Hour	V/F SVC FVC PMV/F PMSVC PMFVC Set the current hour for the system time.	0 (0~24)

✧ **F00.24: Time-Minute**

Code (Address) Property	Name	Description	Default (Range)
F00.24 (0x0018) RUN	Time-Minute	V/F SVC FVC PMV/F PMSVC PMFVC Set the current minute for the system time.	0 (0~59)

✧ **F00.25: Time-Second**

Code (Address) Property	Name	Description	Default (Range)
F00.25 (0x0019) RUN	Time-Second	V/F SVC FVC PMV/F PMSVC PMFVC Set the current second for the system time.	0 (0~59)

✧ **F00.26: Time Confirmation**

Code (Address) Property	Name	Description	Default (Range)
F00.26 (0x001A) RUN	Time Confirmation	V/F SVC FVC PMV/F PMSVC PMFVC After completing the settings for F00.20~F00.25, use this parameter to confirm the system time settings. The success of the setting can be verified through monitoring parameters C11.15~C11.20.	0 (0~1)

14.2.4 F00.3x: Connector Frequency Source

✧ **F00.31: Connector Frequency Source**

Code (Address) Property	Name	Description	Default (Range)
F00.31 (0x001F) RUN	Connector Frequency Source	V/F SVC FVC PMV/F PMSVC PMFVC When the connector is used as the source for frequency or maximum frequency reference, this parameter sets the connector reference source.	0 (0~1)

0: Keypad**1: Percentage reference**

When set to 1, the percentage is based on the maximum frequency (F1.10).

14.3 F01: Basic Settings

14.3.1 F01.0x: Basic Commands

F01.0x parameters are used to set control modes, command sources and frequency sources.

Control Mode

◇ F01.00: Control Mode

Code (Address) Property	Name	Description	Default (Range)
F01.00 (0x0100) STOP	Control Mode	V/F SVC FVC PMV/F PMSVC PMFVC Select the control mode according to the type and purpose of the motors.	0 (0~20)

Select the control mode according to the type and purpose of the motors.

0: AM V/F Control (V/F)

This control mode suits all variable speed control applications that do not require fast response and precise speed control, or scenarios where one AC drive works for multiple motors. It is also used when the motor parameters are not clear or auto-tuning cannot be performed.

1: AM SVC Control (SVC)

This control mode is used for applications that require precise speed control and fast speed and torque response so that it can output high torque at low speeds.

2: AM FVC Control (FVC)

This mode is used where high-precision speed control or torque control is required and even at zero speed. Feedback signal from motor speed is needed.

10: PM V/F Control (PMV/ F)

This control mode suits all variable speed control applications that do not require fast response and precise speed control.

11: PM SVC Control (PMSVC)

This control mode is used for applications that require precise speed control and torque limit.

12: PM FVC Control (PMFVC)

This control method is used for constant torque applications that require high precision control when using PM motors, and for speed change control that requires high-performance torque control and fast torque response. Feedback signal from motor speed is needed.

20: Coil voltage-frequency / current-frequency decoupled control

This control mode is used for applications where the output voltage and frequency are controlled separately.

Note:

- In order to obtain the best control, please input the correct motor parameters and perform motor auto-tuning. F02.0x are basic motor parameters.
- In SVC and FVC control mode, the AC drive can only drive only one motor. The drive's power rating should not differ significantly from the motor's rating: it may be up to two levels higher or one level lower than the motor. Exceeding this range may degrade control performance or prevent the drive system from operating properly.

Run Command Source

◇ F01.01: Run Command Source

Code (Address) Property	Name	Description	Default (Range)
F01.01 (0x0101) RUN	Run Command Source	V/F SVC FVC PMV/F PMSVC PMFVC Select the input method to the command.	0 (0~65535)

0: Keypad

Start/stop of the AC drive is controlled by the keypad.

Through F11.02=1, 2, 3 [Keypad Multi-Function Key = Reverse, FWD jogging, REV jogging] to set the functions of that key to control the reverse, FWD jogging, REV jogging of the AC drive.

1: Terminal

Start/stop of the drive through the terminals on the control board. Set the input mode of commands by parameter setting. Please set F05.20 [Terminal-Controlled Operation Mode] = 0~3, 2-wire 1/2 or 3-wire 1/2.

2: RS485 communication

Enter the operation command with RS485 communication.

3: Extension

Enter the operation command by the extension communication card plugged into the drive or input to the drive.

Please refer to the manual attached to the extension cards for the installation method and related settings.

K connector: Connector reference input

The connector can be used to input the run command. For usage, please refer to the "Free Programming Application" section for details.

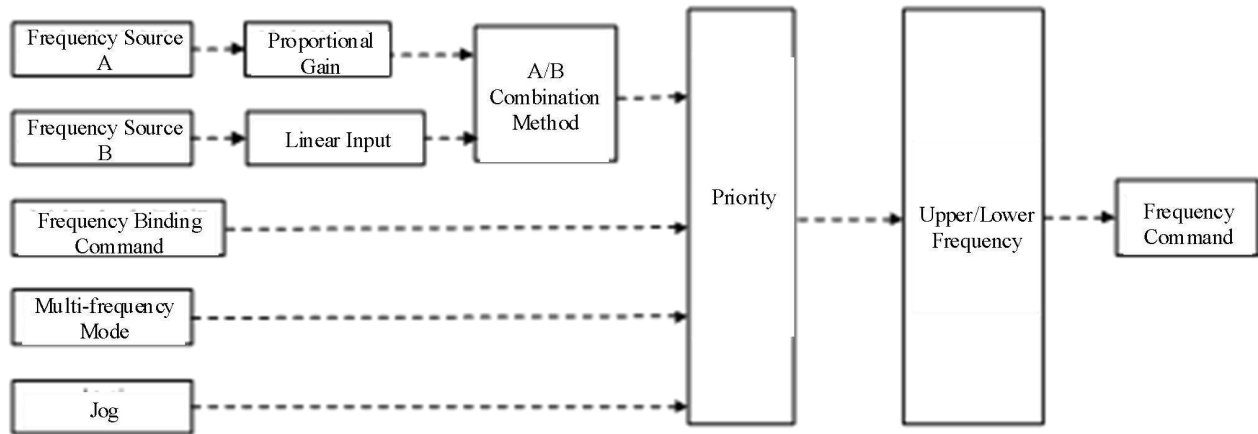
Table 11-1 Command Input Mode

Command Input Mode		Priority	Note
Jog	Keypad	2	Valid when the operation command source is the keypad.
	RS485 communication	2	Valid when operation command source is RS485 communication.
	Extension	2	Valid when the operation command source is the extension card.
	Terminal	3	Valid for all sources.
Run Command Source		1	Set via F01.01.

Note: The higher the value, the higher the priority.

Frequency Source

The input method, selection and priority of frequency command are explained here.



Frequency Command Giving
Table 11-2 Command Input Selection

Command Input Mode		Priority	Note
Source Mode	Source A	1	Input via source A, related parameters are F01.02 and F01.03.
	Source B	1	Input via source B, related parameters are F01.04, F01.05, F01.06.
	Combined Source A/B	1	Give frequency via F01.07 to the combination of source A and B.
Frequency binding		2	Set the binding frequency of the command source via F01.08.
Multi-frequency mode		3	Set the multifunction terminal to multi-frequency to set the frequency.
Jogging mode		4	When the jogging command is valid, set the jogging frequency through F09.30.

Note:

1. The higher the value, the higher the priority.
2. The multi-frequency mode priority is listed in the above table only when multi-frequency is not selected as the command source.
3. When multi-frequency is selected as the command source, its priority is the same as other modes.

Frequency Reference Modes

Frequency Source	Description
Keypad	F01.09 setting as the given frequency.
Keypad potentiometer	This method can only be achieved when there is an external single-row keypad, and the linearized value of potentiometer 0% ~100% corresponds to 0Hz~maximum frequency.
AI1	AI1 linearized values are 0%~100% of 0Hz~maximum frequency.
AI2	AI2 linearized values are 0%~100% of 0Hz~maximum frequency.
PUL	PUL linearized values are 0%~100% of 0Hz~maximum frequency.

RS485 communication	Write values to 0x3000 via RS485 communication to get the frequency.
Terminal UP/DW key	Set the UP/DOWN terminal control mode and acceleration/deceleration rate via F05.27 and F05.28.
PID	The PID control output value of the F13 group are 0%~100% of 0Hz~maximum frequency.
PLC	F14 settings are as the given frequency.
Extension	Get the frequency value through the extension card communication.
Multi-frequency	Set the multifunction terminals to multi-frequency and set the frequency to the specific segment.

Note:

1. See the extension card manual for the detailed communication address of frequency.
2. Reference value of frequency source B, by setting F01.06 [Frequency Source B Reference] to 0 or 1, maximum frequency or source A.
3. F01.10 as max. frequency.

Multi-frequency:

The drive supports multi-frequency operation, and multiple commands can be preset as demands. Multi-frequency function in the drive requires multiple preset frequency commands in F14.00~F14.14, and input an external multi-functional signal to select frequency. ON/OFF of the contact input can be used to select the desired frequency command to change the motor speed in gear. Up to 17 gear speeds can be switched by means of a frequency command for 16 gears and 1 jogging frequency command (JOG command).

Multi-frequency commands are combined as shown in the following table.

Table 11-6 Combination of Multi-frequency Command and Multi-function Input Terminal

Related Parameters	Multi-frequen cy Terminal 1 F05.0x=16	Multi-frequen cy Terminal 2 F05.0x=17	Multi-frequen cy Terminal 3 F05.0x=18	Multi-frequen cy Terminal 4 F05.0x=19	Jog Terminal F05.0x= 4/ 5
F01.09 Frequency Setting	OFF	OFF	OFF	OFF	OFF
F14.00 PLC Multi-frequency 1	ON	OFF	OFF	OFF	OFF
F14.01 PLC Multi-frequency 2	OFF	ON	OFF	OFF	OFF
F14.02 PLC Multi-frequency 3	ON	ON	OFF	OFF	OFF
F14.03 PLC Multi-frequency 4	OFF	OFF	ON	OFF	OFF
F14.04 PLC Multi-frequency 5	ON	OFF	ON	OFF	OFF
F14.05 PLC Multi-frequency 6	OFF	ON	ON	OFF	OFF
F14.06 PLC Multi-frequency 7	ON	ON	ON	OFF	OFF
F14.07 PLC Multi-frequency 8	OFF	OFF	OFF	ON	OFF
F14.08 PLC Multi-frequency 9	ON	OFF	OFF	ON	OFF
F14.09 PLC Multi-frequency 10	OFF	ON	OFF	ON	OFF
F14.10 PLC Multi-frequency 11	ON	ON	OFF	ON	OFF
F14.11 PLC Multi-frequency 12	OFF	OFF	ON	ON	OFF
F14.12 PLC Multi-frequency 13	ON	OFF	ON	ON	OFF
F14.13 PLC Multi-frequency 14	OFF	ON	ON	ON	OFF
F14.14 PLC Multi-frequency 15	ON	ON	ON	ON	OFF
F09.30 Jog Frequency	-	-	-	-	ON

✧ **F01.02~F01.03: Frequency Source A**

Code (Address) Property	Name	Description	Default (Range)
F01.02 (0x0102) RUN	Frequency Source A	V/F SVC FVC PMV/F PMSVC PMFVC Select the frequency input method.	0 (0~11)
F01.03 (0x0103) STOP	Frequency Source A Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the proportional gain for source A input value.	100.0% (0.0%~500.0%)

Source A output mode:

- 0: Keypad
- 1: Keypad potentiometer (on optional external single-row keypad)
- 2: AI1
- 3: AI2
- 4: Reserved
- 5: PUL
- 6: RS485
- 7: UP/DW terminal
- 8: PID
- 9: PLC
- 10: Extension
- 11: Multi-frequency setting
- K connector: Connector reference input

When the connector is used as the command frequency source, refer to the Free Programming Application section for connector usage instructions.

✧ **F01.04~F01.06: Frequency Source B**

Code (Address) Property	Name	Description	Default (Range)
F01.04 (0x0102) RUN	Frequency Source B	V/F SVC FVC PMV/F PMSVC PMFVC Select the frequency input method.	2 (0~11)
F01.05 (0x0103) STOP	Frequency Source B Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the proportional gain for source B input value.	100.0% (0.0%~500.0%)
F01.06 (0x0106) RUN	Frequency Source B Reference	V/F SVC FVC PMV/F PMSVC PMFVC Corresponds to 100% of the input value after linearization of the source B.	0 (0~1)

Source B output mode:

- 0: Keypad
- 1: Keypad potentiometer (on optional external single-row keypad)
- 2: AI1
- 3: AI2
- 4: Reserved
- 5: PUL
- 6: RS485
- 7: UP/DW terminal
- 8: PID
- 9: PLC
- 10: Extension
- 11: Multi-frequency setting
- K connector: Connector reference input

When the connector is used as the command frequency source, refer to the 12 FBD Visual Programming for connector usage instructions.

Frequency source B reference:

- 0: F01.10 [Max. Frequency] as reference source
- 1: Source A

◇ F01.07: Frequency Source Combination

Code (Address) Property	Name	Description	Default (Range)
F01.07 (0x0107) RUN	Frequency Source Combination	V/F SVC FVC PMV/F PMSVC PMFVC Set the combination method of Source A/B.	0 (0~5)

- 0: Source A
- 1: Source B
- 2: Sum of A and B (A+B)
- 3: Difference of A and B (A-B)
- 4: MAX (A ,B)
- 5: MIN(A, B)

Note:

- The frequency from combined source is limited by the upper limit and the lower limit.
- If F09.05 tens-bit = 1 [Operation Direction = only FWD] or F09.05 hundreds-bit = 0 [Frequency Controlled Command Direction = Invalid], 0.00Hz is taken as the given frequency when the combined calculation result is negative.

◇ F01.08: Frequency Binding Command

Code (Address) Property	Name	Description	Default (Range)
F01.08 (0x0108) RUN	Frequency/Co mmand Source Binding	V/F SVC FVC PMV/F PMSVC PMFVC Bind the frequency source to different operation commands.	0x0000 (0x0000~0xDDDD)

Note: The set value is expressed in hexadecimal system, which is one, ten, hundred and thousand bits, and each bit represents a different meaning.

- 0: None
- 1: Keypad
- 2: Keypad potentiometer (on optional external single-row keypad)
- 3: AI1
- 4: AI2
- 5: Reserved
- 6: PUL
- 7: RS485
- 8: UP/DW terminal
- 9: PID
- A: PLC
- B: Extension
- C: Multi-frequency
- D: Reserved

Ones-bit: Keypad commands

Tens-bit: Terminal commands

Hundreds-bit: Communication commands

Thousands-bit: Optional card commands

Example of binding operation command to give frequency: By switching between remote/local mode, remote control modes like communication and frequency, while local control modes like terminal and keypad. Simply switch the command setting method through the terminals, and then bind the frequency to different channels.

◇ F01.09: Frequency

Code (Address) Property	Name	Description	Default (Range)
F01.09 (0x0109) RUN	Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency via keypad.	50.00Hz (0.00Hz~F01.12)

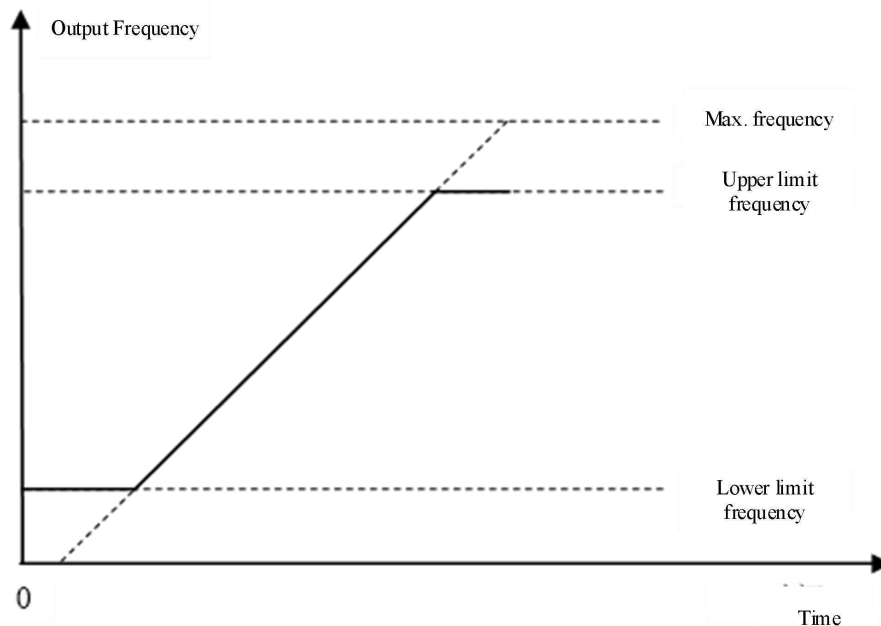
Note:

This parameter is valid when F01.02=0 [Frequency Source A = Keypad] or F01.04=0 [Frequency Source B = Keypad].

14.3.2 F01.1x: Frequency Upper and Lower Limit

F01.1x is used to set the upper and lower limits of the frequency command to limit the motor speed. For example, it can be used when high-speed operation is not desired due to mechanical strength, or when low-speed operation is not desired due to lubrication of gears, bearings, etc.

The upper limit value of frequency is set by F01.11 [Upper Limit Frequency Method], and the lower limit value is set by F01.13 [Lower Limit Frequency Method].



The Relationship between Max. Frequency, Upper Limit Frequency and Lower Limit Frequency

◇ F01.10: Max. Frequency

Code (Address) Property	Name	Description	Default (Range)
F01.10 (0x010A) STOP	Max. Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the max. frequency.	50.00Hz (Upper limit frequency~500.00Hz)

The maximum frequency is used as reference 100.0% of the frequency of analog input, pulse input (PUL) and PID control output conversion.

And the max. frequency is also used as the acceleration and deceleration time reference frequency (F01.20 = 0 [ACC/DEC Time Reference Frequency = Max. Frequency]).

◇ F01.11~F01.12: Upper Limit Frequency

Code (Address) Property	Name	Description	Default (Range)
F01.11 (0x010B) RUN	Upper Limit Frequency Source	V/F SVC FVC PMV/F PMSVC PMFVC Select the upper limit frequency setting method.	0 (0~7)
F01.12 (0x010C) RUN	Upper Limit Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the upper limit frequency via keypad.	50.00Hz (Lower limit frequency~max. frequency)

The upper limit frequency places an upper limit on the frequency calculated for the frequency sources. If the calculated frequency is greater than this value, this value is taken as the given frequency.

0: Keypad

1: Keypad potentiometer (on optional external single-row keypad)

2: AI1

3: AI2

4: Reserved

5: PUL

6: RS485

7: Extension

K connector: Connector reference input

When the connector is used as the upper limit frequency source, refer to the Free Programming Application section for connector usage instructions.

◇ F01.13: Lower Limit Frequency

Code (Address) Property	Name	Description	Default (Range)
F01.13 (0x010D) RUN	Lower Limit Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower limit frequency.	0.00Hz (0.00Hz~Upper limit frequency)

The lower limit frequency places an lower limit on the frequency calculated for the frequency sources. If the calculated frequency is lower than this value, this value is taken as the given frequency.

Note:

Jog frequency is not limited by the lower limit.

◇ F01.14: Frequency Command Resolution

Code (Address) Property	Name	Description	Default (Range)
F01.14 (0x010E) STOP	Frequency Command Resolution	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency command resolution.	0 (0~3)

Resolution:

0: 0.01Hz

1: 0.1Hz

2: 0.1rpm

3: 1rpm

Note:

Switching the frequency command resolution also changes the resolution of all related frequency function codes.

14.3.3 F01.2x~F01.3x: ACC/DEC Time

ACC/DEC Time 1~4

4 sets of acceleration and deceleration time can be set here. By performing an ON/OFF operation on the multifunction input terminal of acceleration and deceleration time 1 and 2, the acceleration and deceleration time can be switched even during operation.

Set the time required for the output frequency to accelerate from 0Hz to the reference frequency. Set the time required for the output frequency to decelerate from the reference frequency to 0Hz.

F01.22 [ACC Time 1] and F01.23 [DEC Time 1] are valid by default.

Select the acceleration/deceleration time reference frequency via F01.20 [ACC/DEC Time Reference Frequency].

F01.20	Note
0	Max. frequency as reference
1	50.00Hz as reference
2	Target frequency as reference

Set the acceleration/deceleration time range via F01.21 [ACC/DEC Time Unit].

Funcode	Range		
	F01.21=0	F01.21=1	F01.21=2
F01.22 [ACC Time 1]	0s~65000s	0.0s~6500.0s	0.00s~650.00s
F01.23 [DEC Time 1]			
F01.24 [ACC Time 2]			
F01.25 [DEC Time 2]			
F01.26 [ACC Time 3]			
F01.27 [DEC Time 3]			
F01.28 [ACC Time 4]			
F01.29 [DEC Time 4]			

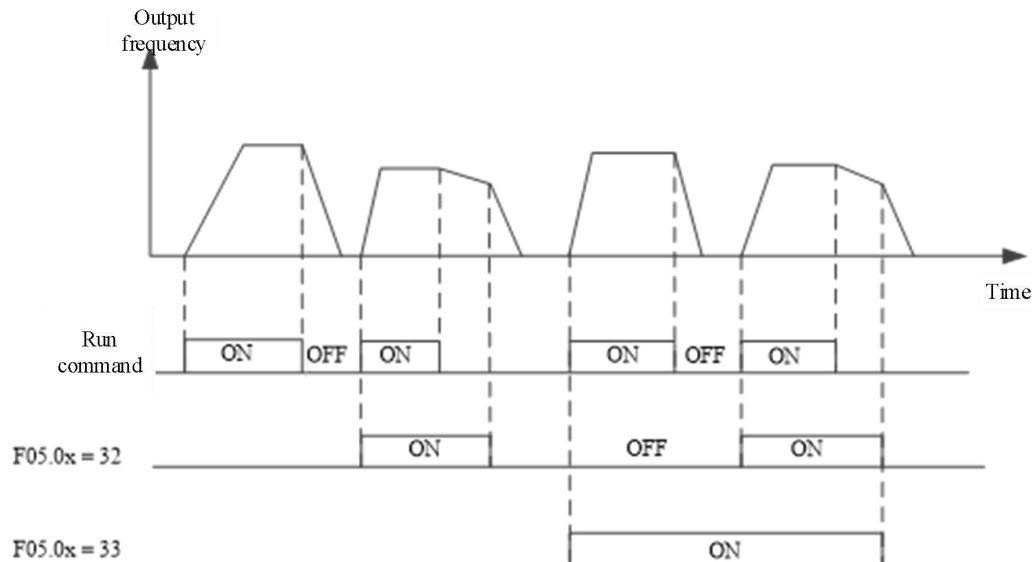
Switch acceleration and deceleration time by multi-functional input terminal command

The combinations of acceleration and deceleration time switching are shown in the table below.

Table 11-3 Terminal Switching Acceleration and Deceleration Time

F05.0x=32 ACC/DEC Time 1	F05.0x=33 ACC/DEC Time 2	ACC/DEC Time	
		ACC Time	DEC Time
OFF	OFF	F01.22 [ACC Time 1]	F01.23 [DEC Time 1]
ON	OFF	F01.24 [ACC Time 2]	F01.25 [DEC Time 2]
OFF	ON	F01.26 [ACC Time 3]	F01.27 [DEC Time 3]
ON	ON	F01.28 [ACC Time 4]	F01.29 [DEC Time 4]

Here is an example after changing the acceleration/deceleration in the following figure. In this example F07.10 = 0 [Stop Mode= Deceleration Stop].



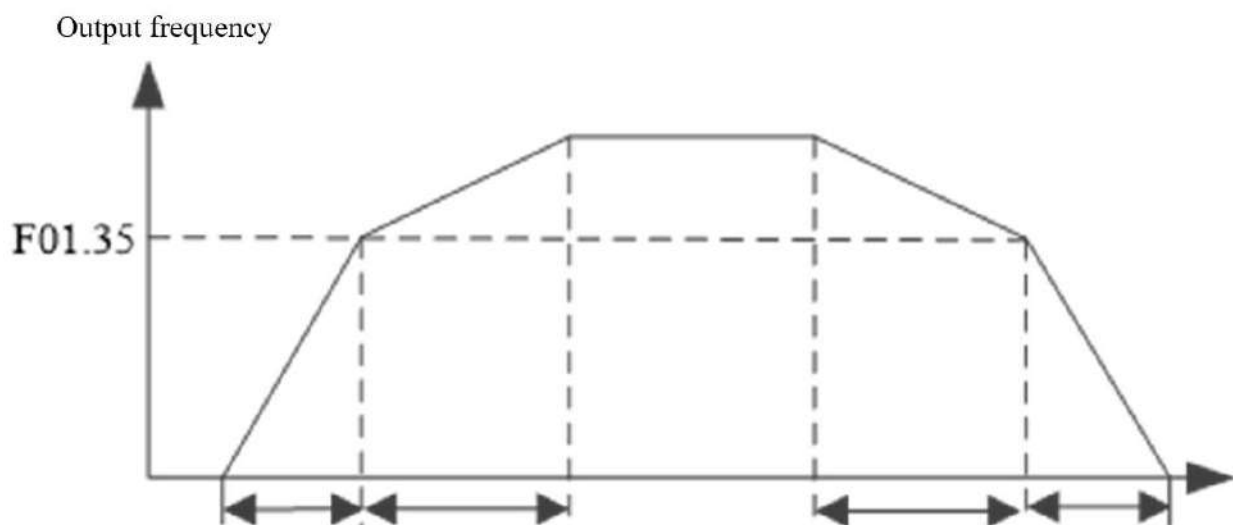
ACC/DEC Time Sequence

Switch acceleration/deceleration time by output frequency

The acceleration and deceleration time of the drive can be automatically switched by setting the output frequency. After the output frequency reaches F01.35 [ACC/DEC Switching Frequency], the acceleration and deceleration time of drive will be automatically switched. F01.35 = 0.00Hz means this function is off.

Note:

The acceleration and deceleration time set on the multi-function input takes precedence over the automatic acceleration and deceleration time switching of F01.35. For example, when the multi-function input terminal of acceleration and deceleration time 1 [F05.0x = 32] is ON, the AC drive only uses acceleration/deceleration time 2, and the automatic switching function F01.35 is invalid.



Note: When the output frequency is lower than or equal to F01.35, acceleration/deceleration time 1 is valid; when the output frequency is greater than F01.35, acceleration/deceleration time 2 is valid.

◇ F01.20: ACC/DEC Time Reference Frequency

Code (Address) Property	Name	Description	Default (Range)
F01.20 (0x0114) STOP	Reference Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the acceleration/ deceleration time reference frequency.	0 (0~3)

0: Max. frequency as acceleration/ deceleration time reference

1: Fixed frequency 50.00Hz as acceleration/ deceleration time reference

2: Set frequency as acceleration/ deceleration time reference. If the set frequency changes frequently, the motor acceleration is variable, and care should be taken when applying it.

◇ F01.21: ACC/DEC Time Range

Code (Address) Property	Name	Description	Default (Range)
F01.21 (0x0115) STOP	ACC/DEC Time Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the decimal point of the parameters F01.22~F01.29 [ACC/DEC Time 1~4].	2 (0~2)

Note: The default value is 2, which means two decimal places.

0: No decimal point

1: 1 decimal place

2: 2 decimal place

◇ F01.22: ACC Time 1

Code (Address) Property	Name	Description	Default (Range)
F01.22 (0x0116) RUN	ACC Time 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the acceleration time 1	Up to power (F01.21)

◇ F01.23: DEC Time 1

Code (Address) Property	Name	Description	Default (Range)
F01.23 (0x0117) RUN	DEC Time 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the deceleration time 1	Up to power (F01.21)

The relationship between the default value of ACC/DEC time and the power level of AC drive is as follows.

Drive Power	ACC/DEC Time 1~4 Default
<22kW	6.00s
<45kW	12.00s
<=55kW	18.00s
<=75kW	24.00s
<=90kW	30.00s
<=132kW	36.00s
<=160kW	42.00s
<185kW	48.00s
<220kW	54.00s
Others	60.00s

◇ F01.24~F01.25: ACC/DEC Time 2

Code (Address) Property	Name	Description	Default (Range)
F01.24 (0x0118) RUN	ACC Time 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the acceleration time 2	Up to power (F01.21)

F01.25 (0x0119) RUN	DEC Time 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the deceleration time 2	Up to power (F01.21)

✧ **F01.26~F01.27: ACC/DEC Time 3**

Code (Address) Property	Name	Description	Default (Range)
F01.26 (0x011A) RUN	ACC Time 3	V/F SVC FVC PMV/F PMSVC PMFVC Set the acceleration time 3	Up to power (F01.21)
F01.27 (0x011B) RUN	DEC Time 3	V/F SVC FVC PMV/F PMSVC PMFVC Set the deceleration time 3	Up to power (F01.21)

✧ **F01.28~F01.29: ACC/DEC Time 4**

Code (Address) Property	Name	Description	Default (Range)
F01.28 (0x011C) RUN	ACC Time 4	V/F SVC FVC PMV/F PMSVC PMFVC Set the acceleration time 4	Up to power (F01.21)
F01.29 (0x011D) RUN	DEC Time 4	V/F SVC FVC PMV/F PMSVC PMFVC Set the deceleration time 4	Up to power (F01.21)

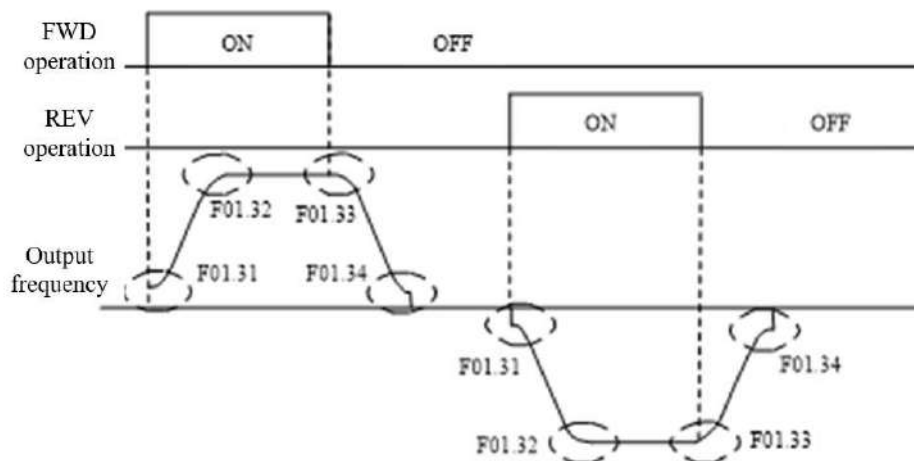
S-curve

The S-curve characteristic function enables the smooth starting and stopping of machines and reduces the impact on the load.

Please set the S curve characteristic time at the beginning and end of acceleration/deceleration as required.

This function is turned on by F01.30=1 [S-Curve= ON] When the system needs high flexibility in like elevator and lifting, set F01.30=2 [S-Curve = Flexible S-Curve].

The S-curve characteristics during forward and reverse operation switching are shown below:



S-Curve Characteristics

Note:

After setting the S-curve, the acceleration/deceleration time will be extended as shown below.

ACC time = selected acceleration time + ([F01.31]+[F01.32])/2

DEC time = selected deceleration time + ([F01.33]+[F01.34])/2

✧ **F01.30: S-Curve**

Code (Address) Property	Name	Description	Default (Range)
F01.30 (0x011E) STOP	S-curve	V/F SVC FVC PMV/F PMSVC PMFVC Select whether the S curve function is on or off.	1 (0~2)

Note: The jogging S curve is set by F07.33 [Jog S-Curve].

- 0: OFF
 1: ON
 2: Smoother S-curve

◇ **F01.31: ACC S-Curve Start Time**

Code (Address) Property	Name	Description	Default (Range)
F01.31 (0x011F) STOP	ACC S-Curve Start Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the S-curve acceleration start point.	0.20s (0.01s~10.00s)

◇ **F01.32: ACC S-Curve End Time**

Code (Address) Property	Name	Description	Default (Range)
F01.32 (0x0120) STOP	ACC S-Curve End Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the S-curve acceleration end point.	0.20s (0.01s~10.00s)

◇ **F01.33: DEC S-Curve Start Time**

Code (Address) Property	Name	Description	Default (Range)
F01.33 (0x0121) STOP	DEC S-Curve Start Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the S-curve deceleration start point.	0.20s (0.01s~10.00s)

◇ **F01.34: DEC S-Curve End Time**

Code (Address) Property	Name	Description	Default (Range)
F01.34 (0x0122) STOP	DEC S-Curve End Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the S-curve deceleration end point.	0.20s (0.01s~10.00s)

ACC/DEC Time Shift Frequency

◇ **F01.35: ACC/DEC Time Shift Frequency**

Code (Address) Property	Name	Description	Default (Range)
F01.35 (0x0123) RUN	ACC/DEC Time Shift Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the acceleration/deceleration time shift frequency.	0.00Hz (0.00Hz~F01.10)

When the output frequency reaches F01.35 [ACC/DEC Shift Frequency], the drive automatically switches the acceleration/deceleration time from ACC/DEC Time 1 to ACC/DEC Time 2.

Note:

F01.35 = 0.00Hz means acceleration/deceleration time switching with frequency function is invalid.

14.3.4 F01.4x: PWM Control

◇ **F01.40: Carrier Frequency**

Code (Address) Property	Name	Description	Default (Range)
F01.40 (0x0128) RUN	Carrier Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Used to set the switching frequency of the drive's IGBT (carrier frequency).	Up to power (1.0kHz~16.0kHz)

Set this parameter to adjust electromagnetic noise and reduce leakage current.

The relationship between the default value of carrier frequency and the power level of AC drive is as follows.

Drive Power	Carrier Frequency Default (G-type)	Carrier Frequency Default (P-type)
<=11kW	5.5kHz	2.0kHz

<=37kW	4.0kHz	2.0kHz
<=75kW	3.0kHz	2.0kHz
Others	2.0kHz	2.0kHz

Note:

- The carrier wave defaults to 2.0kHz during DC braking.
- The carrier wave defaults to 2.0kHz during auto-tuning.

✧ **F01.41: PWM Control Mode**

Code (Address) Property	Name	Description	Default (Range)
F01.41 (0x0129) RUN	PWM Mode	V/F SVC FVC PMV/F PMSVC PMFVC PWM control is optimized by this parameter setting.	0x0111 (0x0000~0x1211)

Ones-bit: Carrier-temperature relationship

0: Irrelevant

1: Relevant

When the AC drive overheats, it will automatically reduce the carrier frequency to reduce the switching loss of the power devices and prevent frequent alarms for overheating faults of the AC drive.

Tens-bit: Carrier-output frequency relationship

0: Irrelevant

1: Relevant

When the association between carrier and output frequency is valid, AC drive can automatically adjust the carrier frequency according to the output frequency to improve the low-frequency performance of AC drive and the reduct noise of high frequency.

Note:

Setting it to 0 means the carrier frequency is independent of the output frequency at the default level. If the carrier frequency is set higher than the default, low-frequency performance will still be limited.

Hundreds-bit: Random PWM enable

0: OFF

1: ON under V/F control

2: Reserved

3: ON under vector control

Thousands-bit: PWM modulation mode

0: Three-phase only

1: Automatic shift between two-phase and three-phase

✧ **F01.43: Deadtime Compensation Gain**

Code (Address) Property	Name	Description	Default (Range)
F01.43 (0x012B) RUN	Deadtime Compensation Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the deadtime compensation gain.	306 (0~512)

Note:

- When set to 0, deadtime compensation is invalid; increasing this value increases the deadtime compensation voltage.
- This value is automatically updated after auto-tuning.

✧ **F01.46: Random PWM Depth**

Code (Address) Property	Name	Description	Default (Range)
F01.46 (0x012E) RUN	Random PWM Depth	V/F SVC FVC PMV/F PMSVC PMFVC The larger this setting, the greater the carrier fluctuation will be when random PWM is valid.	0 (0~20)

Note:

When set to 0, random PWM depth is invalid.

14.4 F02: Motor 1 Parameters

Set the motor 1 and motor application parameters.

14.4.1 F02.0x: Basic Motor Parameters and Auto-tuning

◇ F02.00: Motor Type

Code (Address) Property	Name	Description	Default (Range)
F02.00 (0x0200) READ	Motor Type	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor type. This parameter is read-only.	0 (0~1)

0: Asynchronous motor (AM)

1: Permanent magnet synchronous motor (PM)

Note:

This parameter is read-only, F02.00 is updated automatically after F01.00 [Control Mode] is set.

◇ F02.01: Motor Pole No.

Code (Address) Property	Name	Description	Default (Range)
F02.01 (0x0201) STOP	Motor Pole No.	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor pole number.	4 (2~98)

◇ F02.02: Motor Rated Power

Code (Address) Property	Name	Description	Default (Range)
F02.02 (0x0202) STOP	Motor Rated Power	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated power of the motor.	Up to model (0.1kW~1000.0kW)

Note: Default value is the drive's rated power and will adjust accordingly.

◇ F02.03: Motor Rated Frequency

Code (Address) Property	Name	Description	Default (Range)
F02.03 (0x0203) STOP	Motor Rated Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated frequency of the motor.	50.00Hz (0.01Hz~F01.10)

◇ F02.04: Rated Motor Speed

Code (Address) Property	Name	Description	Default (Range)
F02.04 (0x0204) STOP	Rated Motor Speed	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated speed of the motor.	Up to model (0rpm~65000rpm)

Note:

When F02.00 [Type] is set to a synchronous motor, F2.04 [Rated Speed] is calculated from F2.01 [Pole No.] and F2.03 [Rated Frequency]. Please set the corresponding parameters correctly. The calculation formula is: F2.04 [Rated Speed] = 60 * F2.03 [Rated Frequency] / (F2.01 [Pole No.] / 2).

◇ F02.05: Motor Rated Voltage

Code (Address) Property	Name	Description	Default (Range)
F02.05 (0x0205) STOP	Motor Rated Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated voltage of the motor.	Up to model (0V~2000V)

✧ **F02.06: Motor Rated Current**

Code (Address) Property	Name	Description	Default (Range)
F02.06 (0x0206) STOP	Motor Rated Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated current of the motor.	Up to model (0.1A~3000.0A)

✧ **F02.07: Motor Parameter Auto-tuning**

Code (Address) Property	Name	Description	Default (Range)
F02.07 (0x0207) STOP	Auto-tuning	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor parameter auto-tuning.	0 (0~20)

Note: After parameter auto-tuning completes, [F02.07] will be automatically set to “0”.

- 0: OFF
- 1: Dynamic auto-tuning
- 2: Static auto-tuning
- 3: Stator resistance auto-tuning
- 6: Dynamic auto-tuning only
- 9: PM inductance saturation coefficient auto-tuning
- 10: Non-linear auto-tuning
- 4~20: Reserved

✧ **F02.08: Auto-tuning Flag**

Code (Address) Property	Name	Description	Default (Range)
F02.08 (0x0208) RO	Auto-tuning Flag	V/F SVC FVC PMV/F PMSVC PMFVC Read-only parameter, indicating the auto-tuning status.	0 (0~0xFFFF)

Note: This parameter is updated after auto-tuning is completed.

- Ones-bit:
 - bit0: Stator resistance tuning completed
 - bit1: Rotor resistance and leakage inductance tuning completed
 - bit2: Control current and rotor inductance tuning completed (dynamic tuning)
 - bit3: Rotor inductance, rotor resistance, and no-load current tuning completed (static tuning)
- Tens-bit:
 - bit0: Ld and Lq tuning completed
 - bit1: Back-EMF static tuning completed
 - bit2: Back-EMF dynamic tuning completed
 - bit3: Inductance saturation coefficient tuning completed
- Hundreds-bit:
 - bit0: PG direction tuning completed
 - bit1: PG initial angle tuning completed
 - bit2: Z-pulse direction tuning completed
- Thousands-bit:
 - bit0: Pulse width coefficient tuning completed
 - bit1: Dead-time compensation tuning completed
 - bit3: Current gain tuning completed

14.4.2 F02.1x: AM Advanced Parameters

✧ **F02.10: AM No-Load Current**

Code (Address) Property	Name	Description	Default (Range)
F02.10 (0x020A) STOP	AM No-load Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the no-load current for asynchronous motors.	Up to model (0.1A~3000.0A)

✧ **F02.11: AM Stator Resistance**

Code (Address) Property	Name	Description	Default (Range)
F02.11 (0x020B) STOP	AM Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator resistance for asynchronous motors.	Up to model (0.01mΩ~60000mΩ)

Note: The decimal point is set by F02.19 ones-bit.

✧ **F02.12: AM Rotor Resistance**

Code (Address) Property	Name	Description	Default (Range)
F02.12 (0x020C) STOP	AM Rotor Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the rotor resistance for asynchronous motors.	Up to model (0.01mΩ~60000mΩ)

Note: The decimal point is set by F02.19 tens-bit.

✧ **F02.13: AM Stator Leakage Inductance**

Code (Address) Property	Name	Description	Default (Range)
F02.13 (0x020D) STOP	AM Stator Leakage Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator leakage inductance for asynchronous motors.	Up to model (0.001mH~6553.5mH)

Note: The decimal point is set by F02.19 hundreds-bit.

✧ **F02.14: AM Stator Inductance**

Code (Address) Property	Name	Description	Default (Range)
F02.14 (0x020E) STOP	AM Stator Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator inductance for asynchronous motors.	Up to model (0.01mH~65535mH)

Note: The decimal point is set by F02.19 thousands-bit.

✧ **F02.15: Per-Unit Stator Resistance**

Code (Address) Property	Name	Description	Default (Range)
F02.15 (0x020F) READ	Per-unit Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the stator resistance. This parameter is read-only.	Conversion of actual values (0.01%~50.00%)

✧ **F02.16: Per-Unit Rotor Resistance**

Code (Address) Property	Name	Description	Default (Range)
F02.16 (0x0210) READ	Per-unit Rotor Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the rotor resistance. This parameter is read-only.	Conversion of actual values (0.01%~50.00%)

✧ **F02.17: Per-Unit Stator Leakage Inductance**

Code (Address) Property	Name	Description	Default (Range)
F02.17 (0x0211) READ	Per-unit Stator Leakage Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the stator leakage inductance. This parameter is read-only.	Conversion of actual values (0.01%~50.00%)

◇ **F02.18: Per-Unit Stator Inductance**

Code (Address) Property	Name	Description	Default (Range)
F02.18 (0x0212) READ	Per-unit Stator Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the stator inductance. This parameter is read-only.	Conversion of actual values (0.1%~999.0%)

◇ **F02.19: F02.11~F02.14 Decimal Point**

Code (Address) Property	Name	Description	Default (Range)
F02.19 (0x0213) READ	F02.11~F02.14 Decimal Point	V/F SVC FVC PMV/F PMSVC PMFVC Set the decimal point of the four parameters from F02.11 to F02.14. This parameter is read-only.	0x0000 (0x0000~0x2222)

Note: The default value changes with the motor power level, and won't be restored by factory reset.

0: No decimal place

1: 1 decimal place

2: 2 decimal places

3: 3 decimal places

Ones-bit: F02.11 decimal place

Tens-bit: F02.12 decimal place

Hundreds-bit: F02.13 decimal place

Thousands-bit: F02.14 decimal place

14.4.3 F02.2x: PM Advanced Parameters

◇ **F02.20: PM Stator Resistance**

Code (Address) Property	Name	Description	Default (Range)
F02.20 (0x0214) STOP	PM Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator resistance for synchronous motors.	Up to model (0.01mΩ~60000mΩ)

Note: The decimal point is set by F02.29 ones-bit.

◇ **F02.21: PM D-Axis Inductance**

Code (Address) Property	Name	Description	Default (Range)
F02.21 (0x0215) STOP	PM D-Axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance for synchronous motors.	Up to model (0.001mH~6553.5mH)

Note: The decimal point is set by F02.29 tens-bit.

◇ **F02.22: PM Q-Axis Inductance**

Code (Address) Property	Name	Description	Default (Range)
F02.22 (0x0216) STOP	PM Q-Axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance for synchronous motors.	Up to model (0.001mH~6553.5mH)

Note: The decimal point is set by F02.29 hundreds-bit.

◇ **F02.23: PM Back Emf**

Code (Address) Property	Name	Description	Default (Range)
F02.23 (0x0217) STOP	Back Emf	V/F SVC FVC PMV/F PMSVC PMFVC Set the back emf for synchronous motors.	Up to model (0V~1500V)

◇ **F02.24: PM Encoder Angle**

Code (Address) Property	Name	Description	Default (Range)
F02.24 (0x0218) RUN	PM Encoder Angle	V/F SVC FVC PMV/F PMSVC PMFVC Set the encoder installation angle for synchronous motors.	Up to model (0.0°~360.0°)

◇ **F02.25: PM Per-Unit Stator Resistance**

Code (Address) Property	Name	Description	Default (Range)
F02.25 (0x0219) READ	Per-Unit Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit stator resistance for synchronous motors. This parameter is read-only.	Conversion of actual values (Monitored values)

◇ **F02.26: PM Per-Unit D-Axis Inductance**

Code (Address) Property	Name	Description	Default (Range)
F02.26 (0x021A) READ	PM Per-Unit D-Axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit d-axis inductance for permanent magnetic synchronous motors. This parameter is read-only.	Conversion of actual values (Monitored values)

◇ **F02.27: PM Per-Unit Q-Axis Inductance**

Code (Address) Property	Name	Description	Default (Range)
F02.27 (0x021B) READ	PM Per-Unit Q-Axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit q-axis inductance for permanent magnetic synchronous motors. This parameter is read-only.	Conversion of actual values (Monitored values)

◇ **F02.28: PM Pulse Width Coefficient**

Code (Address) Property	Name	Description	Default (Range)
F02.28 (0x021C) STOP	Pulse Width Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the pulse width coefficient for permanent magnetic synchronous motors.	Up to model (0.00~99.99)

◇ **F02.29: F02.20~F02.23 Decimal Point**

Code (Address) Property	Name	Description	Default (Range)
F02.29 (0x021D) READ	F02.20~F02.22 Decimal Point	V/F SVC FVC PMV/F PMSVC PMFVC Set the decimal point of the three parameters from F02.20 to F02.22. This parameter is read-only.	0x0000 (0x0000~0x2222)

Note: The default value changes with the motor power level, and won't be restored by factory reset.

0: No decimal place

1: 1 decimal place

2: 2 decimal places

3: 3 decimal places

Ones-bit: F02.20 decimal point

Tens-bit: F02.21 decimal point

Hundreds-bit: F02.22 decimal place

Thousands-bit: Reserved

◇ F02.30: Frequency Decimal Bit

Code (Address) Property	Name	Description	Default (Range)
F02.30 (0x021E) RO	Frequency Decimal Bit	V/F SVC FVC PMV/F PMSVC PMFVC Set the decimal bit display of F2.03.	0 (0~3)

◇ F02.6x~F02.7x: Tuning Extension

F02.60: Online Tuning

Code (Address) Property	Name	Description	Default (Range)
F02.60 (0x023C) RUN	Online Tuning	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator resistance auto-tuning mode.	0 (0~0xFFFF)

Note: The stator resistance auto-tuning function can be valid only after the motor auto-tuning is completed. Enable online stator resistance learning when the thousands-bit is non-zero.

PM Pole Search

In the PM control mode, the initial position of the motor rotor can be obtained at startup by the pole search function.

In closed-loop vector mode, the motor startup initial position is required to be obtained via this function when the initial position of the motor encoder has not been tuned.

In open-loop vector mode, obtaining the motor initial position ensures a high output at startup and that the motor does not run in reverse.

For synchronous closed-loop applications with ABZ encoder, the motor pole position is unknown until the Z-pulse is detected, so it is recommended to enable the pole search function, which ensures a smooth start-up process without reverse rotation.

◇ F02.72: PM Pole Search

Code (Address) Property	Name	Description	Default (Range)
F02.72 (0x0248) STOP	PM Pole Search	V/F SVC FVC PMV/F PMSVC PMFVC Set the pole search function for permanent magnet synchronous motors.	0x0010 (0x0000~0x3223)

Note:

➤ Ones-bit: FVC

- 0: OFF
- 1: ON
- 2: ON during the first power-up

➤ Tens-bit: SVC

- 0: OFF
- 1: ON
- 2: ON during the first power-up

◇ F02.73: Pole Search Current

Code (Address) Property	Name	Description	Default (Range)
F02.73 (0x0249) STOP	Pole Search Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the value of pole search current.	0.0% (0.0%~6553.5%)

◇ F02.76: Resistance and Non-linear Tuning

Code (Address) Property	Name	Description	Default (Range)
F02.76 (0x024C) STOP	Resistance and Nonlinear Identification Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the resistance value and non-linear identification current value.	100.0% (0.0%~150.0%)

◇ **F02.77: LC Filter Inductance**

Code (Address) Property	Name	Description	Default (Range)
F02.77 (0x024D) STOP	LC Filter Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the LC filter inductance.	100.0% (0.0%~150.0%)

Note: Valid only for models with an output LC filter.

◇ **F02.78: LC Filter Capacitor**

Code (Address) Property	Name	Description	Default (Range)
F02.78 (0x024E) STOP	LC Filter Capacitor	V/F SVC FVC PMV/F PMSVC PMFVC Set the LC filter capacitor.	100.0% (0.0%~150.0%)

Note: Valid only for models with an output LC filter.

14.5 F03: Vector Control

14.5.1 F03.0x: ASR

The ASR (Automatic Speed Regulator) adjusts torque commands to make motor speed and speed command to be consistent.

■ Before ASR parameter adjustment

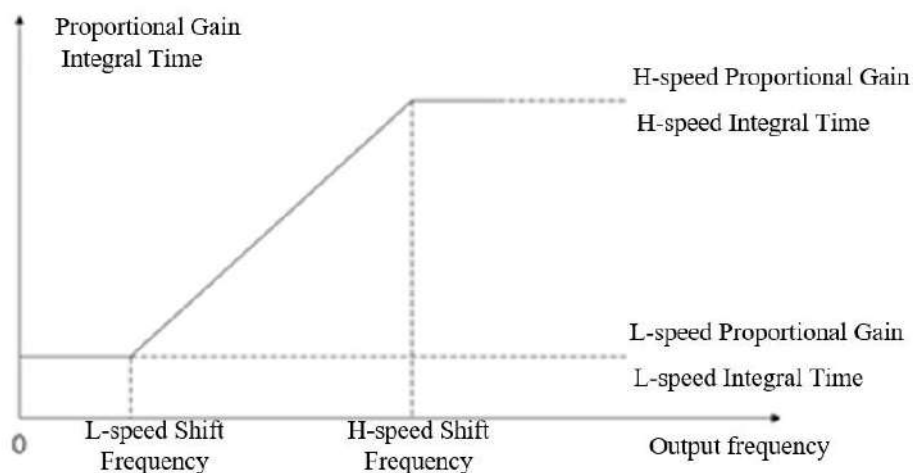
- Before adjusting the parameters of ASR, please implement auto-tuning and set all motor parameters correctly.
- Please adjust ASR parameters when the motor is connected to the load.
- When adjusting ASR, monitor C00.01 (F11.20 ones-bit to 1 to select the actual output frequency) and C00.05 [Mechanical Speed], and use analog output signals.

■ Adjustment steps under SVC, FVC, PMSVC and PMFVC

ASR parameter adjustment steps are as follows.

1. Run the motor at zero speed or low speed, and increase F03.06 [L-speed Proportional Gain] without causing any vibration.
2. Run the motor at zero speed or low speed, and lower F03.07 [L-speed Integral Time] without causing any vibration.
3. Run the motor at the set maximum speed and make sure that no vibration will occur.
4. In case of vibration, lower F03.06 and raise F03.07 until vibration no longer occurs.
5. The ASR proportional gain and integral time can be switched according to the output frequency. When the speed stability cannot be ensured on the low speed side, please roughly set about 80% of the frequency when the actual vibration occurs; when the speed stability cannot be ensured on the high speed side, please roughly set about 120% of the frequency when the actual vibration occurs.

H-speed Shift Frequency > L-speed Shift Frequency



ASR Proportional Gain and Integral Time

◇ **F03.00: ASR Rigidity Level**

Code (Address) Property	Name	Description	Default (Range)
F03.00 (0x0300) RUN	Rigidity Level	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR speed rigidity level.	32 (0~128)

Note:

The higher the rigidity level, the better the speed rigidity.

◇ **F03.01: ASR Rigidity Mode**

Code (Address) Property	Name	Description	Default (Range)
F03.01 (0x0301) RUN	Rigidity Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR speed rigidity mode.	0x0000 (0x0000~0xFFFF)

◇ **F03.02: ASR H-speed Proportional Gain**

Code (Address) Property	Name	Description	Default (Range)
F03.02 (0x0302) RUN	H-speed Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR proportional gain at high speed.	10.00 (0.01~100.00)

Higher gain means enhanced responsiveness, so the larger the load, the higher the gain. However, if the gain is too large, the motor will vibrate.

◇ **F03.03: ASR H-speed Integral Time**

Code (Address) Property	Name	Description	Default (Range)
F03.03 (0x0303) RUN	H-speed Integral Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR integral time at high speed.	0.100s (0.000s~6.000s)

If the integral time is too long, the responsiveness will be reduced and the ability to resist external forces will also be weakened. But if the integral time is too short, vibration will occur.

◇ **F03.04: ASR H-speed Filter Time**

Code (Address) Property	Name	Description	Default (Range)
F03.04 (0x0304) RUN	H-speed Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR filter time at high speed.	0.0ms (0.0ms~100.0ms)

Increase the set value by 0.1 when the rigidity of machinery is low and vibration occurs easily.

◇ **F03.05: ASR H-speed Shift Frequency**

Code (Address) Property	Name	Description	Default (Range)
F03.05 (0x0305) RUN	H-speed Shift Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR shift frequency at high speed.	0.00Hz (0.00Hz~F01.10)

Note: Determine ASR control parameter together with F03.09.

◇ **F03.06: ASR L-speed Proportional Gain**

Code (Address) Property	Name	Description	Default (Range)
F03.06 (0x0306) RUN	L-speed Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR proportional gain at low speed.	10.00 (0.01~100.00)

Higher gain means enhanced responsiveness, so the larger the load, the higher the gain. However, if the gain is

too large, the motor will vibrate.

✧ **F03.07: ASR L-speed Integral Time**

Code (Address) Property	Name	Description	Default (Range)
F03.07 (0x0307) RUN	L-speed Integral Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR integral time at low speed.	0.100s (0.001s~6.000s)

If the integral time is too long, the responsiveness will be reduced and the ability to resist external forces will also be weakened. But if the integral time is too short, vibration will occur.

✧ **F03.08: ASR L-speed Filter Time**

Code (Address) Property	Name	Description	Default (Range)
F03.08 (0x0308) RUN	L-speed Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR filter time at low speed.	0.0ms (0.0ms~100.0ms)

Increase the set value by 0.1 when the rigidity of machinery is low and vibration occurs easily.

✧ **F03.09: ASR L-speed Shift Frequency**

Code (Address) Property	Name	Description	Default (Range)
F03.09 (0x0309) RUN	L-speed Shift Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR shift frequency at low speed.	0.00Hz (0.00Hz~F03.05)

When speed stability cannot be ensured on the low-speed side or high-speed side, the ASR proportional gain and integral time can be switched according to the output frequency.

The shifting of ASR parameters based on output frequency.

Output Frequency	ASR Parameters		
	Proportional Gain	Integral Time	Filter Time
Output Frequency ≥ F03.05	F03.02	F03.03	F03.04
F03.09 < Output Frequency < F03.05	Linear variation	Linear variation	Linear variation
Output Frequency ≤ F03.09	F03.06	F03.07	F03.08

14.5.2 F03.1x: ACR and Torque Limit

Set the PI parameters of the current loop for AM and PM vector controls. In vector control, if the speed and current oscillations and instability occur, the gains can be accordingly reduced to stabilize the speed and current; on the other hand, increase the gains to improve the dynamic response of the motor.

✧ **F03.10: ACR D-Axis Proportional Gain**

Code (Address) Property	Name	Description	Default (Range)
F03.10 (0x030A) RUN	D-Axis Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the d-axis proportional gain under the automatic current regulator.	1.000 (0.001~4.000)

✧ **F03.11: ACR D-Axis Integral Gain**

Code (Address) Property	Name	Description	Default (Range)
F03.11 (0x030B) RUN	D-Axis Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the d-axis integral gain under the automatic current regulator.	1.000 (0.001~4.000)

✧ **F03.12: ACR Q-Axis Proportional Gain**

Code (Address) Property	Name	Description	Default (Range)
F03.12 (0x030C) RUN	Q-Axis Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the q-axis proportional gain under the automatic current regulator.	1.000 (0.001~4.000)

✧ **F03.13: ACR Q-Axis Integral Gain**

Code (Address) Property	Name	Description	Default (Range)
F03.13 (0x030D) RUN	Q-Axis Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the q-axis integral gain under the automatic current regulator.	1.000 (0.001~4.000)

✧ **F03.14: ACR Optimization**

Code (Address) Property	Name	Description	Default (Range)
F03.14 (0x030E) RUN	ACR Optimization	V/F SVC FVC PMV/F PMSVC PMFVC Enable the current loop optimization.	Up to model (0~0)

Note:

0: OFF

1: ON

- Ones-bit: Voltage feedforward enable
- Tens-bit: Current prediction control
- Hundreds-bit: Current loop gain

✧ **F03.15: Torque Limit under Motoring**

Code (Address) Property	Name	Description	Default (Range)
F03.15 (0x030F) RUN	Motoring Torque Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque limit when motor is running with load.	250.0% (0.0%~400.0%)

Note: 100.0% of the motor rated frequency.✧ **F03.16: Torque Limit under Generating**

Code (Address) Property	Name	Description	Default (Range)
F03.16 (0x0310) RUN	Generating Torque Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque limit in power generation mode.	250.0% (0.0%~400.0%)

Note: 100.0% of the motor rated frequency.

The motor torque output is also limited by F10.01 [Anti-OC Limit] and F03.34 [Output Power Limit].

✧ **F03.17: Motoring Torque Limit Source**

Code (Address) Property	Name	Description	Default (Range)
F03.17 (0x0311) RUN	Motoring Torque Limit Source	V/F SVC FVC PMV/F PMSVC PMFVC Select the source for the motoring torque limit.	250.0% (0.0%~400.0%)

Note:

- 0: Keypad
- 1: Reserved
- 2: AI1
- 3: AI2
- 4: Reserved
- 5: PUL terminal
- 6: RS485 (0x3014)

7: Extension

◇ **F03.18: Regenerating Torque Limit Source**

Code (Address) Property	Name	Description	Default (Range)
F03.18 (0x0312) RUN	Regenerating Torque Limit Source	V/F SVC FVC PMV/F PMSVC PMFVC Select the source for the generating (regenerative) torque limit.	250.0% (0.0%~400.0%)

Note:

- 0: Keypad
- 1: Reserved
- 2: AI1
- 3: AI2
- 4: Reserved
- 5: PUL terminal
- 6: RS485 (0x3014)
- 7: Extension

◇ **F03.19: Torque Limit**

Code (Address) Property	Name	Description	Default (Range)
F03.19 (0x0313) RUN	Torque Limit View	V/F SVC FVC PMV/F PMSVC PMFVC Select the torque limit value displayed for monitoring.	0 (0~1)

Note:

- 0: C00.06 displays the torque limit value during motoring
- 1: C00.06 displays the torque limit value during generating

14.5.3 F03.2x: Torque Optimization

PM Pull-in Current

The pull-in current is mainly used to enhance the load capacity of the motor at low frequencies. Parameter F03.22 [Pull-in Current Frequency] defines the low/high frequency threshold. For heavy low-frequency loads, increase the pull-in current appropriately. Excessive values, however, reduce motor efficiency – adjust based on actual load conditions.

◇ **F03.20: PM LF Pull-In Current**

Code (Address) Property	Name	Description	Default (Range)
F03.20 (0x0314) RUN	PM LF Pull-in Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the low-frequency pull-in current for permanent magnet synchronous motors.	20.0% (0.0%~50.0%)

Note: 100.0% of the motor rated current.

◇ **F03.21: PM HF Pull-In Current**

Code (Address) Property	Name	Description	Default (Range)
F03.21 (0x0315) RUN	PM HF Pull-in Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency pull-in current for permanent magnet synchronous motors.	10.0% (0.0%~50.0%)

Note: 100.0% of the motor rated current.

◇ **F03.22: PM Pull-In Current Frequency**

Code (Address) Property	Name	Description	Default (Range)
F03.22 (0x0316) RUN	PM Pull-In Current Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the pull-in current frequency for permanent magnet synchronous motors.	10.0% (0.0%~100.0%)

Note: The set value 100.0% corresponds to F01.10 [Max. Frequency].

Slip Compensation

For AM vector control, the slip compensation coefficient is used to adjust the motor accuracy under open loop. The value should be increased when the motor speed with load is lower than the set value, vice versa. Recommended for this parameter: 60%~160.0%.

For closed-loop, the slip compensation coefficient is used to adjust the linearity of the motor output torque and output current. For a motor with a rated load, decrease the value when the motor current is higher than the nameplate rated value, and increase when lower. Recommended for this parameter: 80%~120%.

◇ F03.23: Slip Compensation

Code (Address) Property	Name	Description	Default (Range)
F03.23 (0x0317) RUN	Slip Compensation	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor slip compensation.	100.0% (0.0%~250.0%)

◇ F03.24: Initial Starting Torque

Code (Address) Property	Name	Description	Default (Range)
F03.24 (0x0318) RUN	Initial Starting Torque	V/F SVC FVC PMV/F PMSVC PMFVC Set the initial starting torque.	0.0% (0.0%~250.0%)

14.5.4 F03.25~F03.3x: Flux Optimization

◇ F03.25: Flux Control Gain

Code (Address) Property	Name	Description	Default (Range)
F03.25 (0x0319) RUN	Flux Control Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control gain.	0 (0~1000.0)

Note:

Effective for asynchronous motors only. A non-zero value enables asynchronous motor flux control.

◇ F03.26: Flux Control Integral Gain

Code (Address) Property	Name	Description	Default (Range)
F03.26 (0x031A) RUN	Flux Control Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control integral gain.	0 (0~1000.0)

Note:

Effective for asynchronous motors only. A non-zero value enables asynchronous motor flux control.

◇ F03.27: Flux Given Gain

Code (Address) Property	Name	Description	Default (Range)
F03.27 (0x031B) RUN	Flux Given Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux given gain.	0 (0~2000)

◇ F03.29: Flux Range

Code (Address) Property	Name	Description	Default (Range)
F03.29 (0x031D) RUN	Flux Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux range.	0 (0.0% ~150.0%)

Note:

Effective for synchronous motors only. Used to limit the field-weakening depth.

Field-weakening control

For vector control of asynchronous or synchronous motors, flux-weakening control is required if the motor speed exceeds rated speed or if bus voltage is low while the motor is near rated speed, to maintain speed tracking.

F03.32 sets the maximum flux-weakening current. Excessive current can cause irreversible demagnetization, while keeping it within the motor's rated current usually prevents this issue.

F03.30 to F03.31 are used to set the flux-weakening control parameters. If instability occurs during flux-weakening, these parameters can be adjusted for tuning.

✧ F03.30: Field-weakening Feed-forward Coefficient

Code (Address) Property	Name	Description	Default (Range)
F03.30 (0x031E) RUN	Field-weakening Feed-forward Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the feed-forward coefficient under field weakening control.	10.0% (0.0%~500.0%)

✧ F03.31: Field-weakening Control Gain

Code (Address) Property	Name	Description	Default (Range)
F03.31 (0x031F) RUN	Field-weakening Control Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the control gain under field weakening control.	10.0% (0.0%~500.0%)

✧ F03.32: Field-weakening Current Limit

Code (Address) Property	Name	Description	Default (Range)
F03.32 (0x0320) RUN	Field-weakening Current Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the current upper limit under field weakening control.	60.0% (0.0%~250.0%)

Note: 100.0% of the motor rated current.

✧ F03.33: Field-weakening Voltage Coefficient

Code (Address) Property	Name	Description	Default (Range)
F03.33 (0x0321) RUN	Field-weakening Voltage Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage coefficient under field weakening control.	97.0% (0.0%~120.0%)

✧ F03.34: Output Power Limit

Code (Address) Property	Name	Description	Default (Range)
F03.34 (0x0322) RUN	Output Power Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the axis output power limit.	250.0% (0.0%~400.0%)

Note: 100.0% of the motor rated voltage.

Over-excitation Brake

Vector control of asynchronous motors is effective. Over-excitation enables faster deceleration without overvoltage alarms. Higher over-excitation gain speeds up the response, and a larger braking current limit (compared to rated excitation) improves braking effect. However, excessive current limiting can raise motor temperature during deceleration. This value can be increased only if the motor has good heat dissipation.

◇ **F03.35: Over-excitation Brake Gain**

Code (Address) Property	Name	Description	Default (Range)
F03.35 (0x0323) RUN	Over-excitation Brake Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the over-excitation brake gain.	100.0% (0.0%~500.0%)

◇ **F03.36: Over-excitation Brake Range**

Code (Address) Property	Name	Description	Default (Range)
F03.36 (0x0324) RUN	Over-excitation Brake Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the over-excitation brake range.	100.0% (0.0%~250.0%)

ECO Mode

In energy-saving mode, vector control of asynchronous motors reduces output current automatically based on torque analysis, lowering heating losses and achieving energy savings.

◇ **F03.37: ECO Mode**

Code (Address) Property	Name	Description	Default (Range)
F03.37 (0x0325) RUN	ECO Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the ECO mode function on/off.	0 (0~1)

0: OFF

1: ON

Note:

Effective only when F03.25≠0.

◇ **F03.38: Min ECO Excitation**

Code (Address) Property	Name	Description	Default (Range)
F03.38 (0x0326) RUN	Min ECO Excitation	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower limit of energy-saving excitation.	50.0% (0.0%~80.0%)

Note: 100.0% of the motor rated excitation.

◇ **F03.39: ECO Filter Time**

Code (Address) Property	Name	Description	Default (Range)
F03.39 (0x0327) RUN	ECO Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the filter time of energy-saving running.	0.010s (0.000s~6.000s)

14.5.5 F03.4x: PM HF Injection

The high-frequency injection function can only be used at low speed (the default is 10% of the motor rated frequency), and its main function is to improve the torque output capability.

◇ **F03.40: HF Injection Mode**

Code (Address) Property	Name	Description	Default (Range)
F03.40 (0x0328) STOP	HF Injection Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency injection mode.	0 (0x0000~0x1005)

Ones-bit:

PM open-loop control valid: please select 0 with SPM and 0~5 with IPM.

0: OFF

1~5: ON, the greater the value, the higher the injection frequency.

Note: When the motor has less convex polarity (i.e., when the F02.22/F02.21 ratio is lower than 1.5), the effect of the high-frequency injection on the output torque of the motor will be weakened.

Thousands-bit: Effective when ones-bit≠0.

0: Random carrier injection

1: Fixed carrier injection

✧ **F03.41: HF Injection Voltage**

Code (Address) Property	Name	Description	Default (Range)
F03.41 (0x0329) RUN	HF Injection Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency injection voltage.	10.0% (0.0%~100.0%)

Note: 100% of the motor rated voltage. Need no modification after auto-tuning.

✧ **F03.42: HF Injection OFF Frequency**

Code (Address) Property	Name	Description	Default (Range)
F03.42 (0x032A) RUN	HF Injection OFF Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency injection off frequency.	10.0% (0.0%~20.0%)

Set the high-frequency injection range (relative to motor rated frequency). It is valid when the motor speed is lower than this value.

✧ **F03.46: HF Injection Carrier**

Code (Address) Property	Name	Description	Default (Range)
F03.62 (0x033E) RUN	HF Injection Carrier	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency injection carrier frequency.	0.0kHz (0.0kHz~1.0kHz)

14.5.6 F03.5x~F03.9x: VC Extension Control

IF Control

✧ **F03.52: IF Control Current**

Code (Address) Property	Name	Description	Default (Range)
F03.52 (0x0334) RUN	IF Control Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the IF control current.	60.0% (0.0%~400.0%)

Set the current under IF control, where 100% equals the motor's rated current.

✧ **F03.53: IF Control Frequency**

Code (Address) Property	Name	Description	Default (Range)
F03.53 (0x0335) RUN	IF Control Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the IF control off frequency.	0.0% (0~100.0%)

100% corresponds to the motor rated frequency. IF control is enabled when the operating frequency is lower than this value.

Fly Track

Before the AC drive starts, the motor rotor may be freely rotating. Starting under this condition may cause overcurrent, overload, or overvoltage faults, and in severe cases may damage the power devices. The fly track function detects the actual motor speed and phase, enabling smooth, shock-free startup of a rotating motor.

✧ **F03.55: SPLL Fly Track Proportional Gain**

Code (Address) Property	Name	Description	Default (Range)
F03.55 (0x0337) RUN	SPLL Fly Track Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the proportional gain for SPLL fly track.	1.00 (0~655.35)

✧ **F03.56: SPLL Fly Track Proportional Gain**

Code (Address) Property	Name	Description	Default (Range)
F03.56 (0x0338) RUN	SPLL Fly Track Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the proportional gain for SPLL fly track.	5.00 (0~655.35)

✧ **F03.58: Fly Track Excitation Frequency**

Code (Address) Property	Name	Description	Default (Range)
F03.58 (0x033A) RUN	Fly Track Excitation Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the excitation frequency for software speed tracking.	0 (0~65535)

When set to a non-zero value, this parameter is used to adjust the frequency during the excitation stage.

✧ **F03.59: Fly Track Excitation Time**

Code (Address) Property	Name	Description	Default (Range)
F03.59 (0x033B) RUN	Fly Track Excitation Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the excitation time for fly track.	200 (0~65535)

Used to set the excitation time when no residual magnetism is present.

MTPA Function

MTPA function is to optimize the PM excitation to maximize the motor output/motor current. When there is a big difference between the inductance of D and Q axes of the PM motor, [F03.80] can be used to reduce the motor current with the same loads; [F03.81] can be used to improve the stability of the motor operation. This function is only valid for the PM closed-loop vector mode.

✧ **F03.60: PM MTPA Gain**

Code (Address) Property	Name	Description	Default (Range)
F03.60 (0x033D) RUN	PM MTPA Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the MTPA gain for permanent magnet synchronous motors.	100.0% (0.0%~400.0%)

✧ **F03.61: PM MTPA Filter Time**

Code (Address) Property	Name	Description	Default (Range)
F03.61 (0x033E) RUN	PM MTPA Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the MTPA filter time for permanent magnet synchronous motors.	1.0ms (0.0ms~100.0ms)

Direct Flux Vector

✧ F03.77: Direct Flux Vector Mode

Code (Address) Property	Name	Description	Default (Range)
F03.77 (0x034D) STOP	Direct Flux Vector Mode	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Direct Flux Vector 0: OFF 3: ON	0x0000 (0x0000~ 0xFFFF)

14.6 F04: V/F Control

14.6.1 F04.0x: V/F Control

V/F Curve

✧ F04.00: V/F Curve

Code (Address) Property	Name	Description	Default (Range)
F04.00 (0x0400) STOP	V/F Curve	V/F SVC FVC PMV/F PMSVC PMFVC Set the V/F curve.	0 (0~11)

0: Linear V/F curve

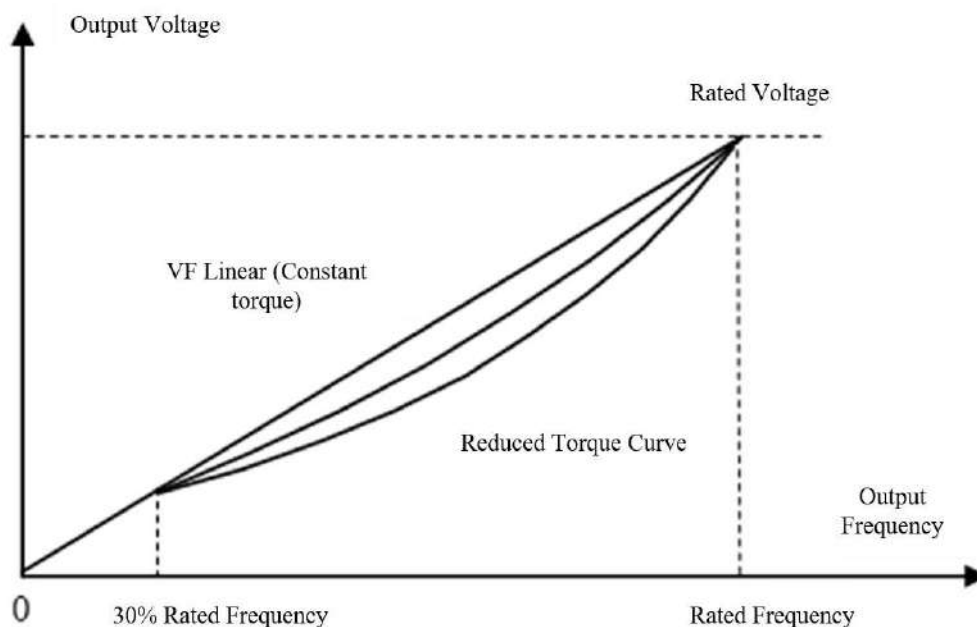
1~9: 1.1-1.9 power V/F curves respectively

10: Square V/F curve

11: Custom V/F curve

Note:

- 1. F04.00 [V/F Curve] = 11 (User-defined V/F curve), set by F04.10 to F04.19.
- Linear and torque reduction curve is as follows. Torque reduction V/F curve is valid above 0.3 times rated frequency of motor.



V/F Linear vs. Reduced Torque Curve Schematic

Torque Boost

◇ F04.01: Torque Boost

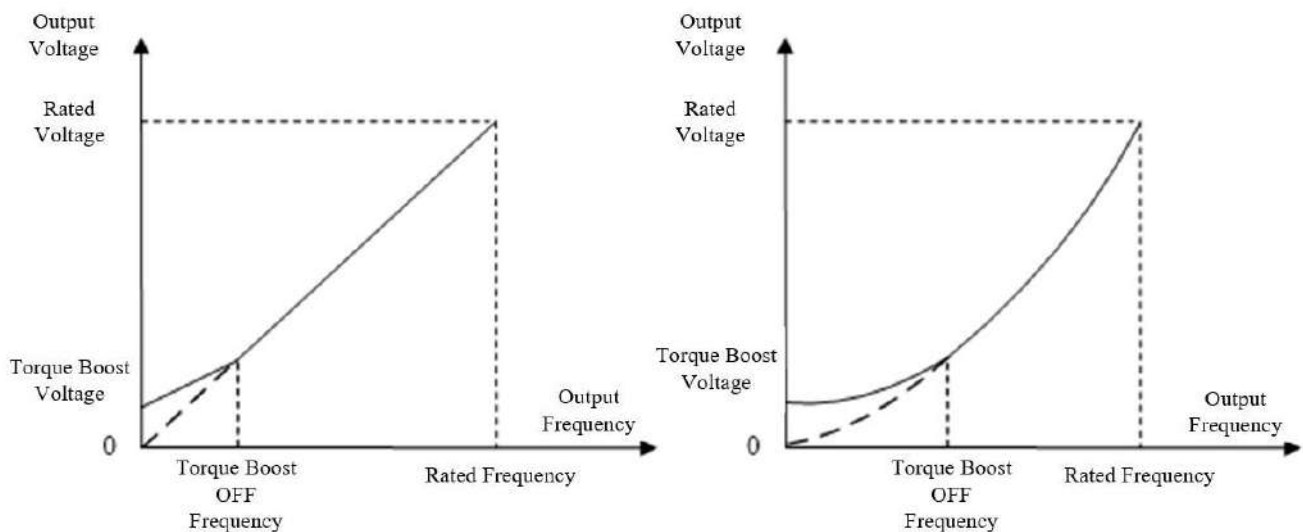
Code (Address) Property	Name	Description	Default (Range)
F04.01 (0x0401) RUN	Torque Boost	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque boost.	Up to model (0.0%~30.0%)

0.0: Automatic torque boost to compensate for loss on stator resistance.

Others: Fixed torque boost

Note:

- When F04.01 [Torque Boost] = 0.0 (automatic torque boost), the accurate stator resistance value can be obtained by F02.07=3 auto-tuning, which can keep the motor output in the best state.
- Fixed torque boost with V/F linear curve is as follows.



Fixed Torque Boost Schematic

◇ F04.02: Torque Boost OFF Frequency

Code (Address) Property	Name	Description	Default (Range)
F04.02 (0x0402) RUN	Torque Boost OFF Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque boost off frequency.	100.0% (0.0%~100.0%)

Note: 100% of the motor rated frequency.

Slip Compensation

This function enables the output frequency of the drive to automatically change with the motor load within the set range to dynamically compensate the motor slip frequency, so as to keep the motor at a constant speed, thus reducing the effect of load variation on the motor speed.

◇ F04.03: Slip Compensation Gain

Code (Address) Property	Name	Description	Default (Range)
F04.03 (0x0403) RUN	Slip Compensation Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the slip compensation gain.	0.0% (0.0%~200.0%)

◇ **F04.04: Slip Compensation Range**

Code (Address) Property	Name	Description	Default (Range)
F04.04 (0x0404) RUN	Slip Compensation Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the slip compensation range.	100.0% (0.0%~300.0%)

Note: 100% of the rated slip frequency.

◇ **F04.05: Slip Compensation Filter Time**

Code (Address) Property	Name	Description	Default (Range)
F04.05 (0x0405) RUN	Slip Compensation Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the slip compensation filter time.	0.200s (0.000s~6.000s)

Anti-oscillation

In the medium and high power motor applications, it is easy to cause motor current instability and motor speed oscillation, which is a kind of low frequency resonance produced by the joint action of electricity and machinery, and the oscillation of low-power motors is generally not obvious. By adjusting F04.06 and F04.07, low-frequency resonance can be suppressed, and the anti-oscillation gain value can be gradually increased on the premise of stability.

◇ **F04.06: Anti-oscillation Gain**

Code (Address) Property	Name	Description	Default (Range)
F04.06 (0x0406) RUN	Anti-oscillation Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the anti-oscillation gain.	100.0% (0.0%~900.0%)

◇ **F04.07: Anti-oscillation Filter Time**

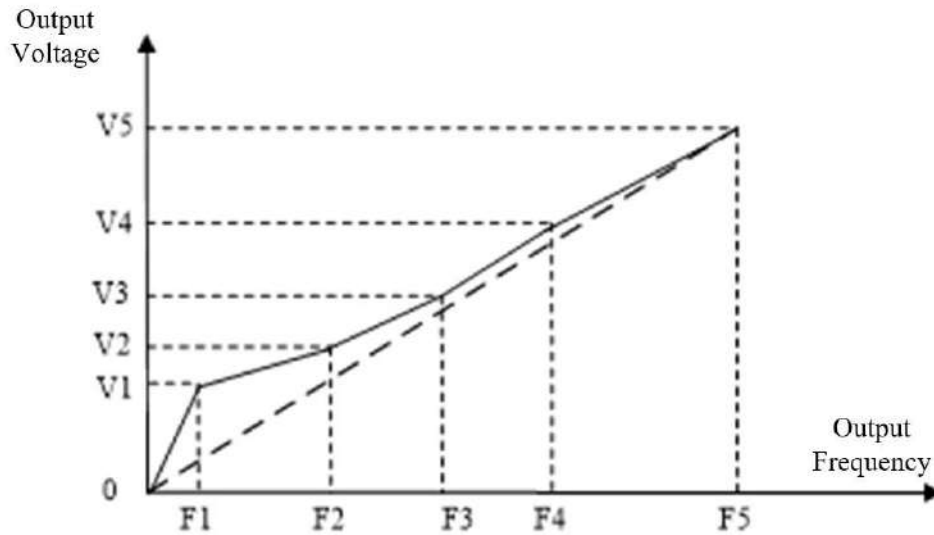
Code (Address) Property	Name	Description	Default (Range)
F04.07 (0x0407) RUN	Anti-oscillation Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the anti-oscillation filter time.	1.0s (0.0s~100.0s)

V/F output voltage ratio◇ **F04.08: Output Voltage Percentage**

Code (Address) Property	Name	Description	Default (Range)
F04.08 (0x0408) STOP	Output Voltage Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the output voltage percentage, 100% of it corresponds to the motor rated voltage.	100.0% (25.0%~120.0%)

14.6.2 F04.1x: User-defined V/F Curves

This product provides 5 sets of voltage-frequency ratios to meet the needs of various motors.



Customized Curve Schematic

✧ F04.10: User-Defined Voltage 1

Code (Address) Property	Name	Description	Default (Range)
F04.10 (0x040A) STOP	User-Defined Voltage 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage 1. 100.0% corresponds to the motor rated voltage.	3.0% (0.0%~100.0%)

✧ F04.11: User-Defined Frequency 1

Code (Address) Property	Name	Description	Default (Range)
F04.11 (0x040B) STOP	User-Defined Frequency 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency 1.	1.00Hz (0.00Hz~F01.10)

✧ F04.12: User-Defined Voltage 2

Code (Address) Property	Name	Description	Default (Range)
F04.12 (0x040C) STOP	User-Defined Voltage 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage 2. 100.0% corresponds to the motor rated voltage.	28.0% (0.0%~100.0%)

✧ F04.13: User-Defined Frequency 2

Code (Address) Property	Name	Description	Default (Range)
F04.13 (0x040D) STOP	User-Defined Frequency 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency 2.	10.00Hz (0.00Hz~F01.10)

✧ F04.14: User-Defined Voltage 3

Code (Address) Property	Name	Description	Default (Range)
F04.14 (0x040E) STOP	User-Defined Voltage 3	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage 3. 100.0% corresponds to the motor rated voltage.	55.0% (0.0%~100.0%)

◇ **F04.15: User-Defined Frequency 3**

Code (Address) Property	Name	Description	Default (Range)
F04.15 (0x040F) STOP	User-Defined Frequency 3	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency 3.	25.00Hz (0.00Hz~F01.10)

◇ **F04.16: User-Defined Voltage 4**

Code (Address) Property	Name	Description	Default (Range)
F04.16 (0x0410) STOP	User-Defined Voltage 4	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage 4. 100.0% corresponds to the motor rated voltage.	78.0% (0.0%~100.0%)

◇ **F04.17: User-Defined Frequency 4**

Code (Address) Property	Name	Description	Default (Range)
F04.17 (0x0411) STOP	User-Defined Frequency 4	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency 4.	37.50Hz (0.00Hz~F01.10)

◇ **F04.18: User-Defined Voltage 5**

Code (Address) Property	Name	Description	Default (Range)
F04.18 (0x0412) STOP	User-Defined Voltage 5	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage 5. 100.0% corresponds to the motor rated voltage.	100.0% (0.0%~100.0%)

◇ **F04.19: User-Defined Frequency 5**

Code (Address) Property	Name	Description	Default (Range)
F04.19 (0x0413) STOP	User-Defined Frequency 5	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency 5.	50.00Hz (0.00Hz~F01.10)

14.6.3 F04.2x: Voltage-Frequency/Current-Frequency Decoupled Control

This group enables independent control of output voltage and output frequency, or output current and output frequency.

After the run command activates, the output voltage and frequency change based on their set acceleration and deceleration times.

After the stop command activates, the output voltage and frequency change based on their set acceleration and deceleration times, with the stop mode selected via F04.26.

Related Parameters

	Source	ACC/DEC Time	Comment
Frequency	F01.02	F01.22, F01.23	
Voltage	F04.21	F04.22, F04.23	

Note:

- When the V/F-Split function is active, the output voltage decreases during overcurrent suppression.
- When the stop command is active and the output frequency falls below the stop detection frequency set in F09.11, the drive switches to a stop state.

✧ **F04.20: Coil Voltage/Current Source A**

Code (Address) Property	Name	Description	Default (Range)
F04.20 (0x0414) RUN	Coil Voltage/Current Source A	V/F SVC FVC PMV/F PMSVC PMFVC 0: Voltage/current percentage 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL 6: RS485 7: Extension (0x31 group) 8: PID target 9: Voltage/current value	0 (0~65535)

✧ **F04.21: Coil Voltage/Current Source B**

Code (Address) Property	Name	Description	Default (Range)
F04.21 (0x0415) RUN	Coil Voltage/Current Source B	V/F SVC FVC PMV/F PMSVC PMFVC 0: Voltage/current percentage 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL 6: RS485 7: Extension (0x31 group) 8: PID target 9: Voltage/current value	0 (0~65535)

✧ **F04.22: Coil Voltage/Current Source Combination**

Code (Address) Property	Name	Description	Default (Range)
F04.22 (0x0416) RUN	Coil Voltage/Current Source Combination	V/F SVC FVC PMV/F PMSVC PMFVC 0: Source A 1: Source B 2: Source A+Source B 3: Source A-Source B 4: Max. (A, B) 5: Min. (A or B)	0 (0~5)

✧ **F04.23: V/F-Split Output Voltage**

Code (Address) Property	Name	Description	Default (Range)
F04.23 (0x0417) RUN	Coil Voltage/Current	V/F SVC FVC PMV/F PMSVC PMFVC Define the coil output voltage/current.	0.00% (0.00%~110.00%)

Note: V/F-SPLIT output is blocked when the output voltage is set to 0%. 100% of it corresponds to the motor rated voltage. Output is blocked when the output current is set to 0%. 100% of it corresponds to the motor rated current.

✧ **F04.24~F04.25: Coil Voltage/Current ACC/DEC Time**

Code (Address) Property	Name	Description	Default (Range)
F04.24 (0x0418) RUN	Coil Voltage/Current ACC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the coil voltage/current acceleration time.	10.00s (0.00s~100.00s)

F04.25 (0x0419) RUN	Coil Voltage/Current DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the coil voltage/current deceleration time.	10.00s (0.00s~100.00s)

◇ **F04.26: Coil Stop Mode**

Code (Address) Property	Name	Description	Default (Range)
F04.26 (0x041A) RUN	Coil Stop Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the coil control stop mode. 0: ACC./DEC. of output voltage/ current and that of output frequency do not affect each other 1: Output frequency decreases only after the output voltage drops to 0V or the output current drops to F04.28.	0 (0~1)

◇ **F04.27: Coil Voltage/Current Value Setting**

Code (Address) Property	Name	Description	Default (Range)
F04.27 (0x041B) RUN	Coil Voltage/Current Value Setting	V/F SVC FVC PMV/F PMSVC PMFVC Set the coil output voltage/current value.	0.00V/A (0.00V/A~600.00V/ A)

◇ **F04.28: Frequency Drop Current Threshold**

Code (Address) Property	Name	Description	Default (Range)
F04.28 (0x041C) RUN	Frequency Drop Current Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the current percentage at which the frequency starts to decrease.	0.00 (0.00%~110.00%)

When F04.26=1, the output current decreases first. Once it falls below F04.28, the output frequency begins to decrease. 100% of it corresponds to the motor rated current.

◇ **F04.29: Coil Control Mode**

Code (Address) Property	Name	Description	Default (Range)
F04.29 (0x041D) RUN	Coil Control Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the coil control mode. 0: V/F-SPLIT mode 1: I/F-SPLIT mode	0.00 (0.00%~110.00%)

14.6.4 F04.3x: V/F ECO Mode

The drive automatically adjusts the output voltage to improve motor efficiency and achieve energy savings after entering constant speed in light-load conditions.

◇ **F04.30: V/F ECO Function**

Code (Address) Property	Name	Description	Default (Range)
F04.30 (0x041E) STOP	V/F ECO Function	V/F SVC FVC PMV/F PMSVC PMFVC Set the V/F ECO function on or off.	0 (0~1)

0: OFF

1: ON

◇ **F04.31: V/F ECO Min. Frequency**

Code (Address) Property	Name	Description	Default (Range)
F04.31 (0x041F) STOP	V/F ECO Min. Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower frequency limit of the ECO mode.	15.00Hz (0.00Hz~50.00Hz)

Note: The automatic ECO mode will stop when the drive's output frequency is below this value.

✧ **F04.32: V/F ECO Min. Voltage**

Code (Address) Property	Name	Description	Default (Range)
F04.32 (0x0420) STOP	V/F ECO Min. Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower voltage limit of the ECO mode.	50.0% (20.0%~100.0%)

Note: 100.0% corresponds to the output voltage at the current output frequency without ECO control.

✧ **F04.33: V/F ECO Voltage DEC Rate**

Code (Address) Property	Name	Description	Default (Range)
F04.33 (0x0421) RUN	V/F ECO Voltage DEC Rate	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage deceleration rate under the V/F ECO mode.	0.010V/ms (0.000V/ms~0.200V/ms)

✧ **F04.34: V/F ECO Voltage ACC Rate**

Code (Address) Property	Name	Description	Default (Range)
F04.34 (0x0422) RUN	V/F ECO Voltage ACC Rate	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage acceleration rate under the V/F ECO mode.	0.200V/ms (0.000V/ms~2.000V/ms)

✧ **F04.35: Over-excitation Gain**

Code (Address) Property	Name	Description	Default (Range)
F04.35 (0x0423) RUN	Overexcitation Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the over-excitation gain.	64 (0~200)

14.7 F05: DI Terminal

14.7.1 F05.0x:Terminal Function

X1~X6 Function

The AC drive comes with 6 kinds of (X1~X6) multi-function input terminals, and 4 kinds of (X7~X10) multi-function terminals that can be extended by IO extension card. The factory functions are shown in the following table:

Note: IO extension card is optional.

Code	Name	Default	Function
F05.00	X1 Function	1	FWD Command (2-wire control)
F05.01	X2 Function	2	REV Command (2-wire control)
F05.02	X3 Function	4	FWD Jog
F05.03	X4 Function	8	Error Reset
F05.04	X5 Function	6	Free Stop
F05.05	X6 Function	7	Emergency Stop

Refer to the table below to set the function of F05.0x [X1~X10 Terminals Function].

Setting	Function	Setting	Function
0	None	32	ACC/DEC Time 1
1	FWD Operation	33	ACC/DEC Time 2
2	REV Operation	34	ACC/DEC Pause
3	Three-wire Operation (Xi)	35	Wobble Frequency Input
4	FWD Jog	36	Wobble Frequency Pause
5	REV Jog	37	Wobble Frequency Reset

6	Free Stop	38	Keypad Keys and Display Self-test
7	Emergency Stop	39	PUL Frequency Measurement, X6 Terminal
8	Error Reset	40	Timer Trigger
9	External Error Input	41	Timer Reset
10	Frequency Increase (UP)	42	Counter Clock Input
11	Frequency Decrease (DW)	43	Counter Reset
12	Frequency UP/DW Reset	44	DC Brake Command
13	Reserved	45	Pre-excitation Command
14	Combined Frequency Source to Source A	46	Reserved
15	Combined Frequency Source to Source B	47	Reserved
16	Multi-frequency Terminal 1	48	Command Source to Keypad
17	Multi-frequency Terminal 2	49	Command Source to Terminal
18	Multi-frequency Terminal 3	50	Command Source to Communication
19	Multi-frequency Terminal 4	51	Command Source to Extension
20	PID Control Cancel	52	Operation Disable
21	PID Control Pause	53	FWD Disable
22	PID Characteristic Shift	54	REV Disable
23	PID Parameter Shift	55	Motor Terminal bit0
24	PID Setting Shift 1	56	Motor Terminal bit1
25	PID Setting Shift 2	57	Motor Terminal bit2
26	PID Setting Shift 3	58	Backup Frequency
27	PID Feedback Shift 1	59	Torque Source B Shift
28	PID Feedback Shift 2	60	Speed/Torque Control Shift
29	PID Feedback Shift 3	61	Position Control Shift
30	PLC Pause	62	Jog Limit Torque Frequency
31	PLC Restart	-	-

◇ **F05.00: X1 Function**

Code (Address) Property	Name	Description	Default (Range)
F05.00 (0x0500) STOP	X1 Function	V/F SVC FVC PMV/F PMSVC PMFVC Set the function assigned to multifunction input terminal X1.	1 (0~95)

◇ **F05.01: X2 function**

Code (Address) Property	Name	Description	Default (Range)
F05.01 (0x0501) STOP	X2 Function	V/F SVC FVC PMV/F PMSVC PMFVC Set the function assigned to multifunction input terminal X2.	2 (0~95)

◇ **F05.02: X3 Function**

Code (Address) Property	Name	Description	Default (Range)
F05.02 (0x0502) STOP	X3 Function	V/F SVC FVC PMV/F PMSVC PMFVC Set the function assigned to multifunction input terminal X3.	4 (0~95)

◇ **F05.03: X4 Function**

Code (Address) Property	Name	Description	Default (Range)
F05.03 (0x0503) STOP	X4 Function	V/F SVC FVC PMV/F PMSVC PMFVC Set the function assigned to multifunction input terminal X4.	8 (0~95)

◇ **F05.04: X5 Function**

Code (Address) Property	Name	Description	Default (Range)
F05.04 (0x0504) STOP	X5 Function	V/F SVC FVC PMV/F PMSVC PMFVC Set the function assigned to multifunction input terminal X5.	6 (0~95)

◇ **F05.05: X6 Function**

Code (Address) Property	Name	Description	Default (Range)
F05.05 (0x0505) STOP	X6 Function	V/F SVC FVC PMV/F PMSVC PMFVC Set the function assigned to multifunction input terminal X6.	7 (0~95)

Multi-function Input Setting

Set the input terminal F05.00~F05.05 functions.

0: None

The terminal is invalid. Please set its value to "0" in case of misoperation when the terminal is not in use.

1: FWD

When the operation command is given by the terminal, if F05.20 [Terminal Control Mode] is set to 0: Two-wire 1, the terminal is valid and the AC drive will run forward. Please check F05.20 [Terminal-Controlled Operation Mode] and F07.03 [Starting Protection] for detailed characteristics.

2: REV

When the operation command is given by the terminal, if F05.20 is set to 0: Two-wire 1, the terminal is valid and the AC drive will run reverse. Please check F05.20 [Terminal-Controlled Operation Mode] and F07.03 [Starting Protection] for detailed characteristics.

3: Three-wire operation (Xi)

When the operation command is given by the terminal, if F05.20 is set to 2 (3): Three-wire 1 (2), it functions as a three-wire control terminal. Please check F05.20 [Terminal-Controlled Operation Mode] for details. And at the same time, starting protection is off, see F07.03 [Starting Protection] for detailed characteristics.

4: FWD jogging

5: REV jogging

Forward and reverse jogging command input port. When the terminal is valid, the AC drive jogs. Terminal jogging command has the highest priority. See F07.3x [Jogging] for details and F07.03 [Starting Protection] for jogging protection characteristics.

6: Free stop

When this terminal is valid, the AC drive immediately blocks the output, at which time the motor is in a free-running status.

When the free stop terminal remains active, the AC drive will not accept any start command and remains stopped.

When keypad, RS485, extension card and terminal are controlled under three-wire control. After the free stop terminal command is lifted, the original command will not be restored, so if you need to start the drive, please re-input the operation command.

7: Emergency stop

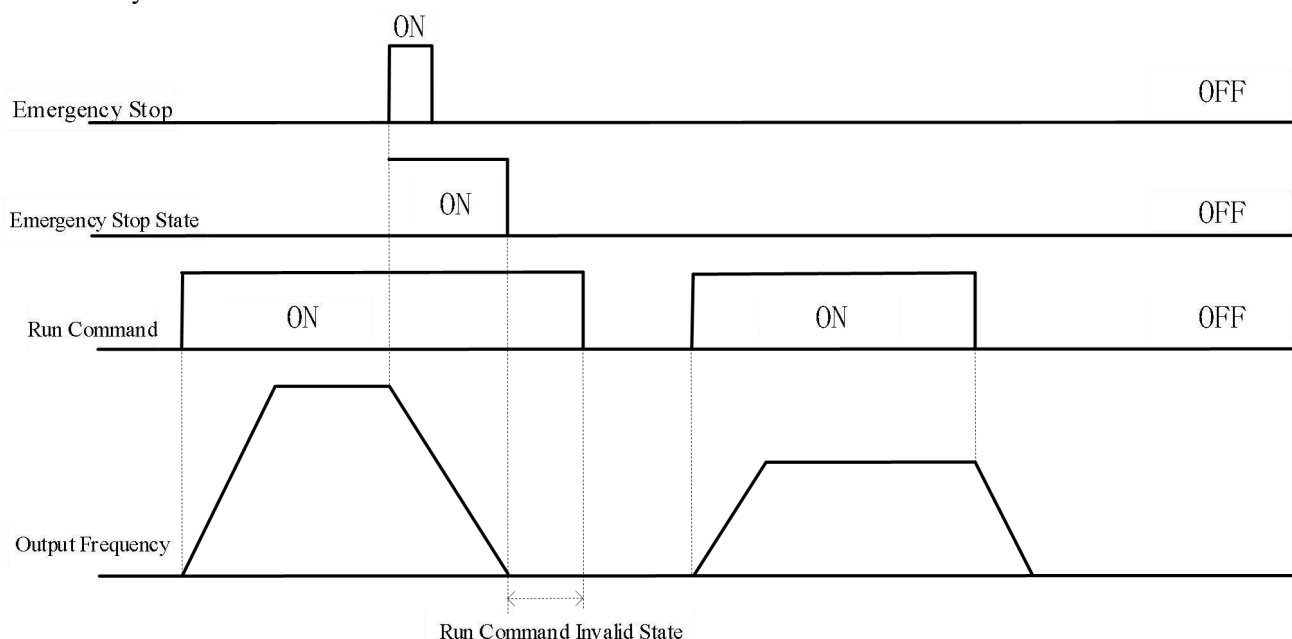
If an emergency stop command is input during operation of the drive, the drive will decelerate to stop by F05.27 [Terminal Controlled E-Stop DEC Time].

After the emergency stop command is input, the drive cannot be restarted until it stops completely. If F07.10 [Stop Mode] is set to free stop, the drive will perform so.

When the emergency stop terminal remains valid, the AC drive will not accept any start command and remains stopped. See F07.03 [Starting Protection] for details on parameter description for restoring the initial operation command upon cancellation of the emergency stop terminal command in two-wire control mode.

When keypad, communication, extension card and terminal are controlled under 3-wire mode, the original operation command will not be restored after the emergency stop terminal command is canceled. Please re-enter the operation

command if you need to start the AC drive.



Emergency Stop Diagram

Note: Sudden deceleration may cause overvoltage fault of drive. When overvoltage fault occurs, the output of drive will be cut off and the motor will run freely, which will lead to uncontrollable motor operation. Therefore, when using the emergency stop function, please set the appropriate deceleration time in F05.27 [Terminal Controlled E-Stop DEC Time], or use it in conjunction with the dynamic braking function.

8: Fault reset

When a fault alarm occurs in the drive, the fault can be reset via this terminal. Whether the original operation command is restored after a fault reset during two-wire control, see parameter F07.03 [Starting Protection] setting.

9: External fault input

This terminal allows for the input of external device fault signals, enabling the AC drive to conveniently monitor and protect against device malfunctions. When the AC drive receives an external fault input signal, the output is blocked immediately, the motor freely stops and the error code E. EF is displayed.

10: Frequency increase (UP)

11: Frequency decrease (DW)

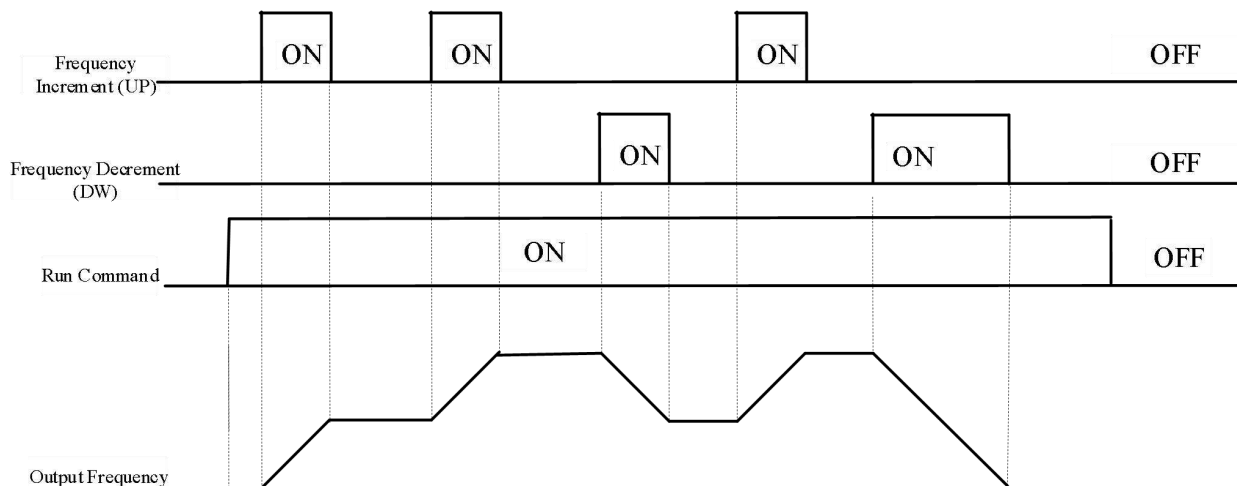
Frequency adjustments, both increase (UP) and decrease (DW), are achieved through the control terminal. Terminal UP/DW control is valid only when F01.02 [Frequency Source A] is set to "7".

The way of memorizing and reset the given frequency adjusted by UP/DW terminal can be set by F05.25 [Terminal UP/DW], see F05.25 for details.

The acceleration/deceleration rate for terminal UP/DW control to run the given frequency is set by F05.26 [Frequency ACC/DEC Rate]. See F05.26 for details.

12: Frequency increase/decrease reset (UP/DW reset)

The UP/DW adjusted frequency can be reset via the "frequency UP/DW reset" terminal at any time.



Increasing/Decreasing Frequency via Terminals

14: Frequency source combination to Source A

15: Frequency source combination to Source B

Switch the combination of frequency sources via the terminals.

16: Multi-frequency terminal 1**17: Multi-frequency terminal 2****18: Multi-frequency terminal 3****19: Multi-frequency terminal 4**

Input port for multi-frequency commands, there are 15 segments of speed realized by code combinations; multi-frequency commands have priority next to jogging commands.

20: PID control cancel

When this terminal is active, the PID function is disabled and its output and internal state are reset to zero. Once the terminal becomes inactive, the PID function resumes operation.

21: PID control pause

When this terminal is active, the PID function is paused and its output and internal state maintain their current values. Once the terminal becomes inactive, the PID function continues operation based on the current values.

22: PID characteristic switch

When this terminal is active, the PID feedback characteristic set by the ones-bit of F13.07 [PID Control] will change. Once the terminal becomes inactive, the PID output characteristic reverts to the F13.07 setting.

23: PID parameter switch

This terminal is only valid when F13.17 [PID Shift Source] is set to "1". When this function is inactive, the PID proportional, integral, and derivative parameters are set by F13.11~F13.13 (P1, I1, D1). When active, they are set by F13.14~F13.16 (P2, I2, D2).

24: PID setting shift 1**25: PID setting shift 2****26: PID setting shift 3**

When F13.00 [PID Setting Source]=8 (Terminals), the PID controller setting signal source is shifted by terminals. For details, refer to the parameter description of F13.00.

27: PID feedback shift 1**28: PID feedback shift 2****29: PID feedback shift 3**

When F13.03 [PID Feedback Source]=8 (Terminals), the PID controller feedback signal source is shifted by terminals. For details, refer to the parameter description of F13.03.

30: PLC pause

When F01.02 [Frequency Source A]=9 (PLC setting), this signal pauses the program during operation, and the drive runs at the current frequency. When the signal disappears, the program resumes from the paused state. For detailed parameters of PLC, refer to the detailed description of the F14 [Simulated PLC for Multi-frequency].

31: PLC restart

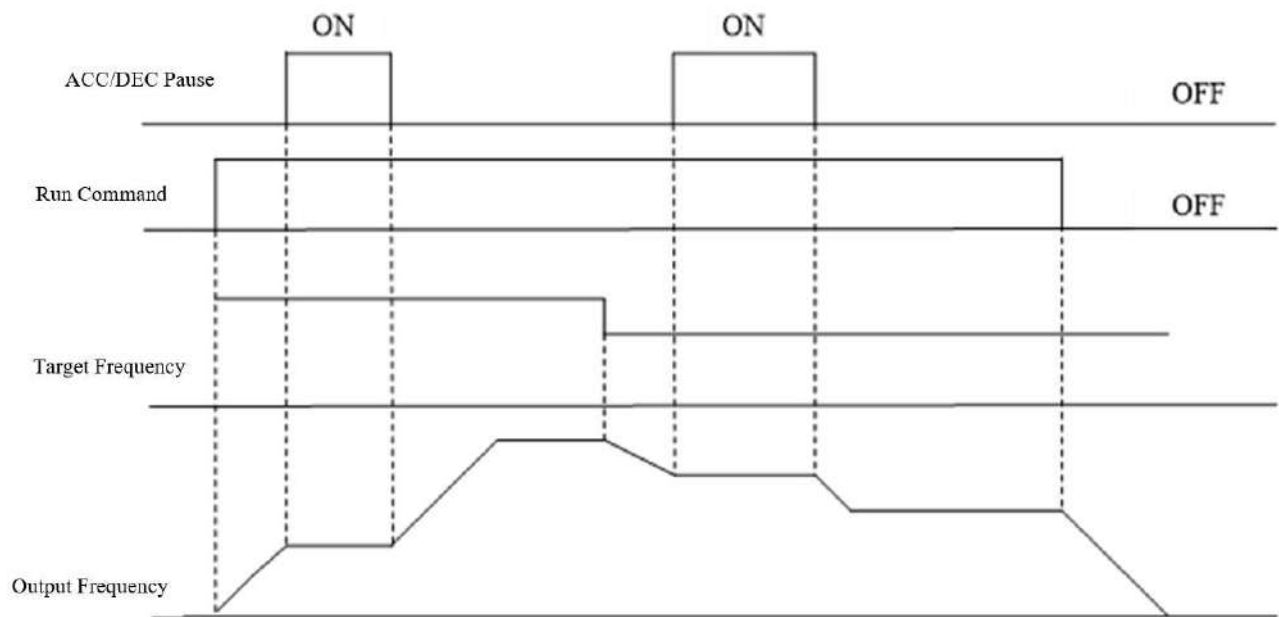
When F01.02 [Frequency Source A]=9 (PLC setting), in the stop state and during program operation, this signal can restart the program run from the first stage. For detailed parameters of PLC, refer to the detailed description of the F14 [Simulated PLC for Multi-frequency].

32: ACC/DEC time terminal 1**33: ACC/DEC time terminal 2**

Input port for acceleration/deceleration time commands, there are 4 acceleration/deceleration sets realized by code combinations. If no parameter is set and the terminal is inactive, the default is the valid ACC/DEC time 1. See F01.24~F01.29 [ACC/DEC Time 2/3/4] for details.

34: ACC/DEC pause

When this terminal is valid during the AC drive operating status, the AC drive stops acceleration/deceleration and keeps the current speed unchanged.



Acceleration and Deceleration Pause Diagram

35: Wobble frequency input

When under wobble frequency control, if set to manual input, when the terminal is valid, the wobble frequency function is valid, and the AC drive starts wobble frequency operation. See parameter F08.3x [Wobble Frequency] for details.

36: Wobble frequency pause

In wobble frequency control, when the terminal is valid, the AC drive keeps the current output frequency unchanged. After the terminal command is canceled, the wobble frequency operation is resumed. See parameter F08.3x [Wobble Frequency] for details.

37: Wobble frequency reset

During wobble frequency control, when the terminal generates a valid rising edge (OFF to ON), the drive first returns to wobble frequency operation and then re-enters wobble frequency operation. See parameter F08.3x [Wobble Frequency] for details.

38: Keypad self-test

When this input port is active, the keypad enters the self-test interface.

39: Frequency measurement

The X5 terminal on the control board or the X10 terminal on the extension card is changed to a high-speed pulse port, serving as the PUL input port.

40: Timer trigger

This terminal starts the timer and triggers the timing function when it is active. For details, see F08.07 [Timer Time Unit] and F08.08 [Timer Setting].

41: Timer reset

When the terminal is active, it resets the timer's timing record. For details, see F08.07 [Timer Time Unit] and F08.08 [Timer Setting].

42: Counter clock input

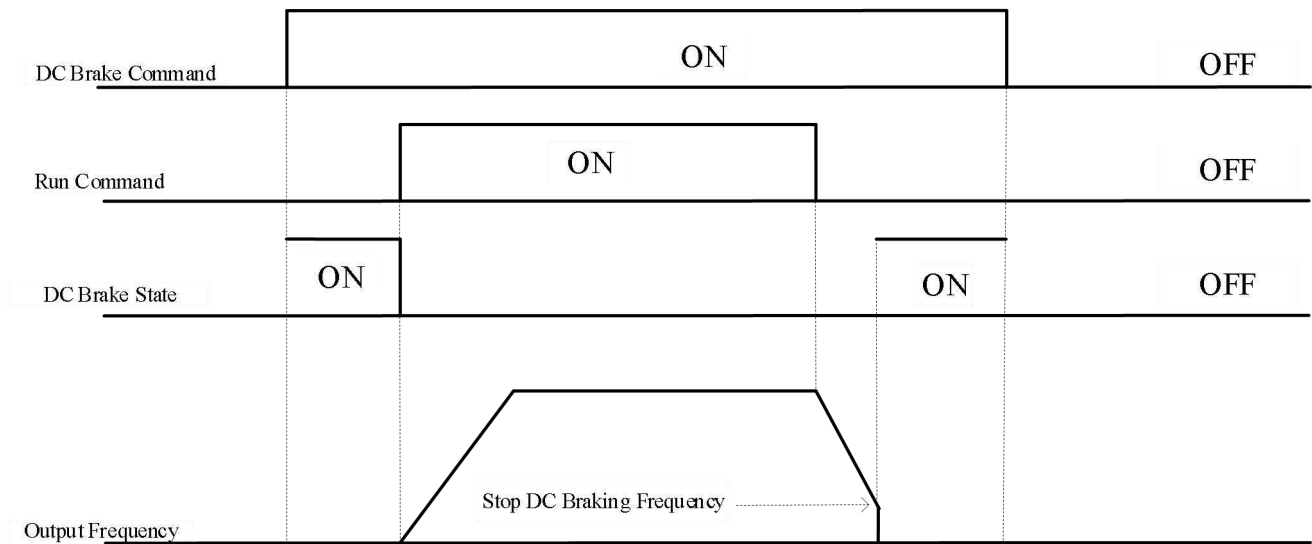
It is the clock input terminal for the counter function. For details, see F08.02 [Max. Counting] and F08.03 [Counter Setting].

43: Counter reset

When the terminal is active, it resets the counter's count record. For details, see F08.02 [Max. Counting] and F08.03 [Counter Setting].

44: DC brake command

DC braking function of the AC drive can be started during stop. For the current during DC braking, see F07.23 [DB Current]. If a running or jogging command is input, the DC braking will be canceled. If DC braking is enabled during stopping, the pre-start DC braking current is used for braking; if enabled during operation, the motor is braked by the stop DC braking current upon stopping.



DC Braking Command Diagram

45: Pre-excitation command

This function is only valid in AM vector control, and it can work when AC drive is in stop status. If a running or jogging command is entered, the pre-excitation will be canceled.

46~47: Reserved**48: Command source to keypad****49: Command source to terminal****50: Command source to communication****51: Command source to extension card**

4 kinds of commands can be switched and the priority from high to low is keypad, terminal, communication and extension card.

Note: When both command sources are valid at the same time, keypad is default.

52: Operation disable

When the operation disable is valid, the operation command in the stop state is invalid, and AC drive will free stop under operation.

53: Forward operation disable

When the forward disable is valid, the forward operation command is invalid in the stop state, and AC drive will free stop under forward operation.

54: Reverse operation disable

When the reverse disable is valid, the reversal operation command is invalid in the stop state, and AC drive will free stop under reverse operation.

55: Motor selection bit0**56: Motor selection bit1****57: Motor selection bit2**

Motor selection input terminals. Combine bits to select 1 of 4 motors. Effective when F00.11 [Multi-motor Switching] is ON. Defaults to Motor 1 if parameters or terminals are not set.

58: Backup frequency

When active, Motors 1~4 use backup reference frequencies set by d00.05~d00.08.

59: Torque source B shift

When this terminal is active, the torque setting source switches to source B and is no longer controlled by the hundreds-bit of F03.41.

60: Speed/torque control shift

This function is only valid under vector control, and the motor is switched from speed control to torque control when the terminal is valid.

61: Position control shift**62: Jog frequency as torque mode frequency upper limit**

When this terminal is valid, the forward/reverse speed limit of torque control is determined by F07.30 [Jog Frequency], and has nothing to do with F03.54 ~ F04.57.

◇ F05.08: X1~X4 Terminal Characteristics

Code (Address) Property	Name	Description	Default (Range)
F05.08 (0x0508) RUN	X1~X4 Terminal Characteristics	V/F SVC FVC PMV/F PMSVC PMFVC Select whether X1~X4 are valid in closed or open status.	0x0000 (0x0000~0x1111)

Note: The drive defaults to valid when closed. If it is selected to open to be valid, pay attention to the closed-loop signal after it is powered up. If the terminal is opened, it will also output closed-loop signal for some time.

Ones-bit: X1 terminal

0: Valid when closed

1: Valid when open

Tens-bit: X2 terminal

0: Valid when closed

1: Valid when open

Hundreds-bit: X3 terminal

0: Valid when closed

1: Valid when open

Ones-bit: X4 terminal

0: Valid when closed

1: Valid when open

◇ F05.09: X5~X8 Terminal Characteristics

Code (Address) Property	Name	Description	Default (Range)
F05.09 (0x0509) RUN	X5~X8 Terminal Characteristics	V/F SVC FVC PMV/F PMSVC PMFVC Select whether X5~X8 are valid in closed or open status.	0x0000 (0x0000~0x1111)

Note: The drive defaults to valid when closed. If it is selected to open to be valid, pay attention to the closed-loop signal after it is powered up. If the terminal is opened, it will also output closed-loop signal for some time.

Ones-bit: X5 terminal

0: Valid when closed

1: Valid when open

Tens-bit: X6 terminal

0: Valid when closed

1: Valid when open

Hundreds-bit: X7 terminal

0: Valid when closed

1: Valid when open

Ones-bit: X8 terminal

0: Valid when closed

1: Valid when open

14.7.2 F05.1x: Terminal Operation Mode

◇ F05.10~F05.11: X1 ON/OFF Delay

Code (Address) Property	Name	Description	Default (Range)
F05.10 (0x050A) RUN	X1 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X1 from OFF to ON.	0.010s (0.000s~6.000s)
F05.11 (0x050B) RUN	X1 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X1 from ON to OFF.	0.010s (0.000s~6.000s)

Note:

- Increasing the ON/OFF delay of X1-X6 enhances the signal filtering effect of the corresponding input terminals.
- The monitor record of output terminal X1 is its value after F05.10 [X1 ON Delay] and F05.11 [X1 OFF Delay].
- The fault record of output terminal X1 is its value after F05.10 [X1 ON Delay] and F05.11 [X1 OFF Delay].

Delay].

- F05.12 [X2 ON Delay] ~ F05.21 [X6 OFF Delay] are the same as F05.10 [X1 ON Delay] and F05.11 [X1 OFF Delay].

◇ **F05.12~F05.13: X2 ON/OFF Delay**

Code (Address) Property	Name	Description	Default (Range)
F05.12 (0x050C) RUN	X2 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X2 from OFF to ON.	0.010s (0.000s~6.000s)
F05.13 (0x050D) RUN	X2 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X2 from ON to OFF.	0.010s (0.000s~6.000s)

◇ **F05.14~F05.15: X3 ON/OFF Delay**

Code (Address) Property	Name	Description	Default (Range)
F05.14 (0x050E) RUN	X3 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X3 from OFF to ON.	0.010s (0.000s~6.000s)
F05.15 (0x050F) RUN	X3 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X3 from ON to OFF.	0.010s (0.000s~6.000s)

◇ **F05.16~F05.17: X4 ON/OFF Delay**

Code (Address) Property	Name	Description	Default (Range)
F05.16 (0x0510) RUN	X4 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X4 from OFF to ON.	0.010s (0.000s~6.000s)
F05.17 (0x0511) RUN	X4 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X4 from ON to OFF.	0.010s (0.000s~6.000s)

◇ **F05.18~F05.19: X5 ON/OFF Delay**

Code (Address) Property	Name	Description	Default (Range)
F05.18 (0x0512) RUN	X5 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X5 from OFF to ON.	0.010s (0.000s~6.000s)
F05.19 (0x0513) RUN	X5 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X5 from ON to OFF.	0.010s (0.000s~6.000s)

◇ **F05.20~F05.21: X6 ON/OFF Delay**

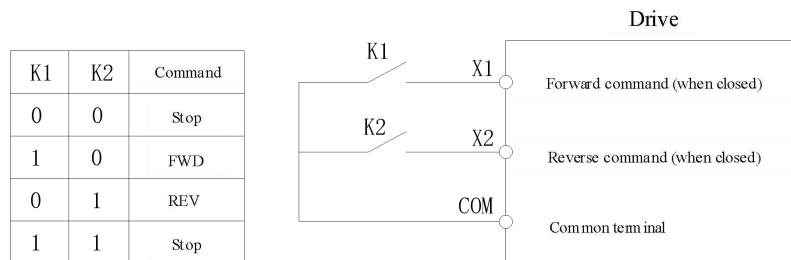
Code (Address) Property	Name	Description	Default (Range)
F05.20 (0x0514) RUN	X6 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X6 from OFF to ON.	0.010s (0.000s~6.000s)
F05.21 (0x0515) RUN	X6 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X6 from ON to OFF.	0.010s (0.000s~6.000s)

◇ F05.26: Terminal-Controlled Operation Mode

Code (Address) Property	Name	Description	Default (Range)
F05.26 (0x051A) STOP	Terminal-Contr olled Operation Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the terminal-controlled operation mode.	0 (0~3)

0: Two-wire control 1

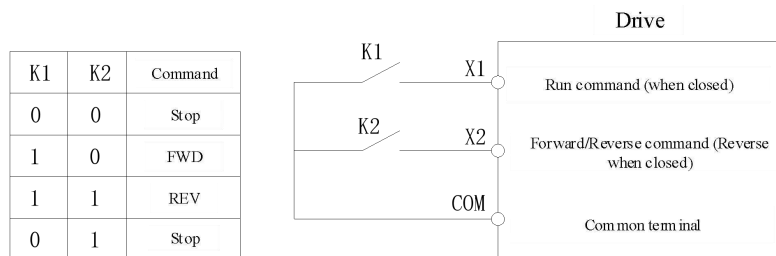
Run and direction are set at the same time. This is the most commonly used two-wire control mode. The factory default is that the X1 (FWD operation) and X2 (REV operation) terminal control the motor to run forward and reverse.



0: Diagram of Two-wire Control 1

1: Two-wire control 2

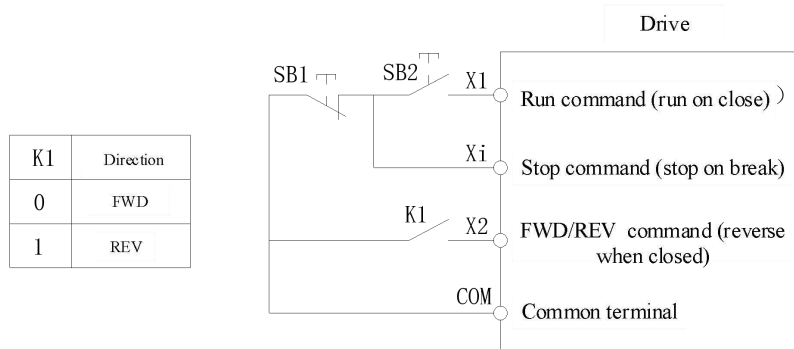
Run and direction commands are separated. X1 (FWD operation) in this mode is used to enable motor operation. The direction is defined by the status of the X2 terminal (REV operation).



1: Diagram of Two-wire Control 2

2: Three-wire control 1

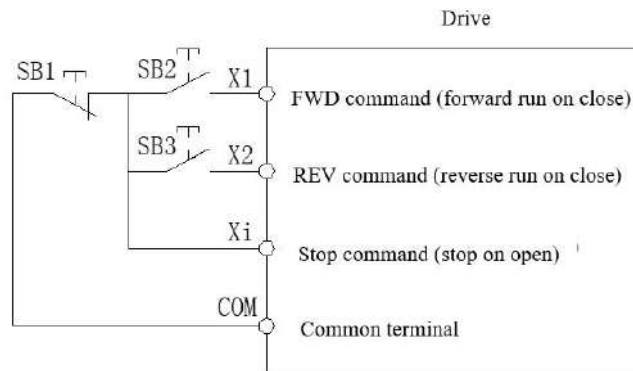
The three-wire control terminal (Xi) of this mode is for stop and the operation command is generated by X1 (FWD operation) and the direction is controlled by X2 (REV operation). Input via the terminal(Xi) in the three-wire control mode is valid.



2: Diagram of Three-wire Control 1

3: Three-wire control 2

The three-line control terminal (Xi) of this mode is for stop and the operation command is generated by X1 (FWD operation) or X2 (REV operation), and the two controls the direction simultaneously.



3: Diagram of Three-wire Control 2

SB1: Stop; SB2: FWD operation; SB3: REV operation; "Xi" is a multifunction input terminal set to "3" [3-wire control (Xi)].

Note:

When the set frequency is lower than the start frequency, the AC drive does not start, and stay in standby while the operation indicator is on.

✧ **F05.27: Terminal UP/DW**

Code (Address) Property	Name	Description	Default (Range)
F05.27 (0x051B) STOP	Terminal UP/DW	V/F SVC FVC PMV/F PMSVC PMFVC Set the mode of increasing or decreasing frequency by terminals.	0 (0~2)

Note: This parameter is only valid when the multifunction input function is selected to 10 (Frequency increase) or 11 (Frequency decrease).

0: Power-down save

When increase or decrease frequency via terminals, the frequency record shall be kept after the machine is powered down or stopped. During power-on operation, increase or decrease from the last operation frequency for the AC drive.

1: No save after power down while save after stop

When increase or decrease frequency via terminals, the frequency records are kept after the drive is stopped. And users increase or decrease from the last operation frequency for the AC drive. No records are kept after power down, and the operation starts from 0.00Hz.

2: Save during running while reset after stop

When increase or decrease frequency via terminals, the frequency records are not be kept after the drive is stopped or powered down. And users increase or decrease from 0Hz.

✧ **F05.28: Terminal UP/DW for Frequency ACC/DEC Rate**

Code (Address) Property	Name	Description	Default (Range)
F05.28 (0x051C) RUN	Terminal UP/DW for Frequency ACC/DEC Rate	V/F SVC FVC PMV/F PMSVC PMFVC Set the terminal UP/DW controlled frequency increase/decrease rate.	0.50Hz/s (0.01Hz/s~50.00Hz/s)

✧ **F05.29: Terminal Controlled E-Stop DEC Time**

Code (Address) Property	Name	Description	Default (Range)
F05.29 (0x051D) RUN	Terminal Controlled E-Stop DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the terminal emergency stop deceleration time.	1.00s (0.01s~650.00s)

Note: This parameter is valid when the multifunctional input terminal is selected to 7 (Emergency stop) and the stop mode is deceleration stop.

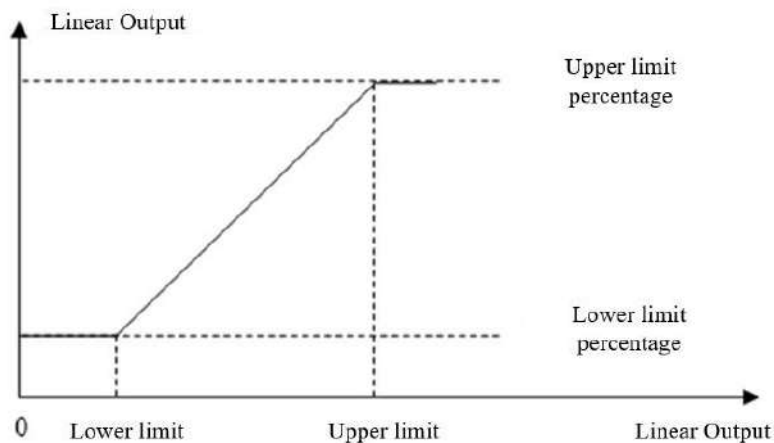
When the multi-function input terminal is set to 7 (Emergency stop) and the stop mode is coasting stop, the emergency stop terminal is valid, and the drive coasts to stop.

14.7.3 F05.3x: PUL Terminal

◇ F05.31~F05.34: PUL Curve

Code (Address) Property	Name	Description	Default (Range)
F05.31 (0x051F) RUN	Min. PUL Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the min. frequency that can be accepted by the PUL terminal. If the frequency given is below this value, drive will still process by this setting.	0.000kHz (0.000kHz~50.000kHz, F05.30=0) (0.00kHz~100.00kHz, F05.30=1, 2)
F05.32 (0x0520) RUN	Min. Frequency Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the PUL minimum input frequency.	0.00% (0.00%~100.00%)
F05.33 (0x0521) RUN	Max. PUL Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the max. frequency that can be accepted by the PUL terminal. If the frequency given is above this value, drive will still process by this setting.	5.000kHz (0.00kHz~50.000kHz, F05.30=0) (0.00kHz~100.00kHz, F05.30=1, 2)
F05.34 (0x0522) RUN	Max. Frequency Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the PUL maximum input frequency.	100.00% (0.00%~100.00%)

The curve of PUL input frequency is shown in the figure below:



PUL Input Frequency Curve

Note:

- The decimal places of F05.31 and F05.33 parameters are determined by the set value of F05.30.
- After linear processing, the PUL output value ranges from F05.32 to F05.34. If F01.02 = 5 [Frequency Source A = PUL Setting], 100.00% corresponds to the maximum frequency, 0.00% corresponds to 0.00Hz, and values between 0.00% and 100.00% are processed linearly.

PUL input functions:

Code	Name	Setting
F01.02	Frequency Source A	5: PUL
F01.03	Frequency Source B	5: PUL
F01.08	Frequency Binding Command	6: PUL
F01.11	Upper Limit Frequency Source	5: PUL
F15.01	Torque Reference Source A	5: PUL
F15.02	Torque Reference Source B	5: PUL
F15.12	Torque-Controlled FWD Speed Limit	5: PUL
F15.13	Torque-Controlled REV Speed Limit	5: PUL
F13.00	PID Setting Source	5: PUL
F13.03	PID Feedback Source	5: PUL

◇ F05.35: PUL Filter Time

Code (Address) Property	Name	Description	Default (Range)
F05.35 (0x0523) RUN	PUL Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the filter time for pulse signal.	0.100s (0.000s~9.000s)

Note:

The longer the filter time, the greater the anti-interference effect, but the response becomes slower.

◇ F05.36: PUL OFF Frequency

Code (Address) Property	Name	Description	Default (Range)
F05.36 (0x0524) RUN	PUL OFF Frequency	V/F SVC FVC PMV/F PMSVC PMFVC The minimum recognizable pulse frequency at the PUL port. Pulse frequencies below this parameter are no longer recognized by the drive, processed as 0Hz.	0.010kHz (0.000kHz~1.000kHz)

Note:

- The lower the value, the lower the pulse frequency the PUL port can receive. However, when the pulse frequency at the PUL port disappears, it takes longer for the drive to detect 0Hz input.
- The PUL input signal first undergoes off frequency judgment, then PUL linear processing, and finally filtering.

14.7.4 F05.4x: vX Terminal

The virtual I/O function can achieve the following:

- The output result of the multi-function output terminal can be input to the multi-function input terminal without external wiring.
- The output result of the multi-function analog output terminal can be input to the multi-function analog input terminal without external wiring.

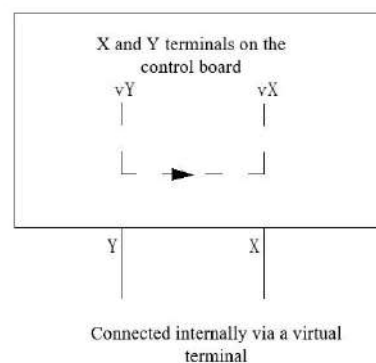
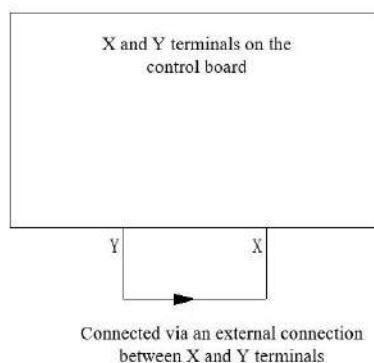
⚠ WARNING

Regarding safety measures for restarting machinery: Before trial operation of the AC drive, please confirm the setting value of the virtual I/O function parameters. Failure to confirm may cause unexpected operation of the AC drive, which may lead to personal accidents.

The virtual input/output function is based on the virtual wiring of the input/output terminals inside the AC drive. Therefore, even if there is no physical wiring on the input/output terminals, the operation may be different from the factory settings.

Note:

- For details on the setting value of the virtual digital input, please refer to the "Set Value of Multi-function Contact Input" in F05.00~F05.05.
- For details on the setting value of the virtual digital output, please refer to the "Set Value of Multi-function Output" in F06.00~F06.02.
- vY1~vY4 delay settings are the same as Y terminal and relay terminal, see F06.10~F06.15 for details.
- Virtual terminal implementation utilizes the combination of vXi and vYi, enabling Y-terminal output signals to function as X-terminal inputs through internal virtualization. This preserves physical X/Y terminals for alternative applications.

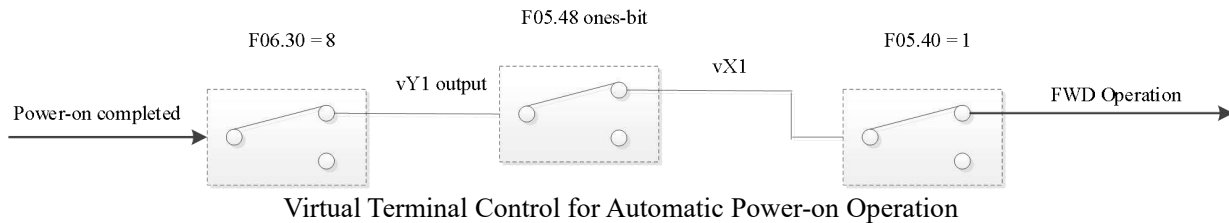


The following example illustrates the application of virtual vX and vY:

Example 1: In some cases, it is required that the drive runs immediately after power-on initialization. Under

normal use, an X terminal would be used as an input. However, by using a virtual terminal, this physical X terminal can be saved. The method is as follows:

1. Set F01.01 = 1: Terminal control for run command;
2. Set F05.20 = 0: Two-wire control 1;
3. Set F05.40 = 1: Terminal input for forward operation;
4. Set F05.48 = 0000: Valid state of vX1 is determined by vY1;
5. Set F06.30 = 8: Outputs when drive is ready.



◇ F05.40~F06.47: Virtual DI

Code (Address) Property	Name	Description	Default (Range)
F05.40 (0x0528) STOP	vX1 Function	V/F SVC FVC PMV/F PMSVC PMFVC See F05.0x DI Terminal Functions.	0 (0~95)
F05.41 (0x0529) STOP	Vx2 Function	V/F SVC FVC PMV/F PMSVC PMFVC See F05.0x DI Terminal Functions.	0 (0~95)
F05.42 (0x052A) STOP	vX3 Function	V/F SVC FVC PMV/F PMSVC PMFVC See F05.0x DI Terminal Functions.	0 (0~95)
F05.43 (0x052B) STOP	vX4 Function	V/F SVC FVC PMV/F PMSVC PMFVC See F05.0x DI Terminal Functions.	0 (0~95)
F05.44 (0x052C) STOP	Vx5 Function	V/F SVC FVC PMV/F PMSVC PMFVC See F05.0x DI Terminal Functions.	0 (0~95)
F05.45 (0x052D) STOP	Vx6 Function	V/F SVC FVC PMV/F PMSVC PMFVC See F05.0x DI Terminal Functions.	0 (0~95)

Note:

For details on the setting value of the virtual digital input, please refer to the F05.0x DI Terminal Functions.

◇ F05.48: vX1~vX4 ON Source

Code (Address) Property	Name	Description	Default (Range)
F05.48 (0x0530) RUN	vX1~vX4 ON Source	V/F SVC FVC PMV/F PMSVC PMFVC Set the source of the valid state for the vX1~vX4 terminal.	0x0000 (0x0000~0x2222)

The input status of the vX1~vX4 terminals can be set in three ways, selected via [F05.48];

When the status of vX1~vX4 is internally connected to vY1~vY4, whether vX1~vX4 are in a valid state depends on whether vY1~vY4 outputs are valid or not. Moreover, vX1~vY1; vY2~vY3; vY4~vY4 have a one-to-one correspondence.

When the status of vX1~vX4 is connected to the physical terminals X1~X4, whether vX1~vX4 are in a valid state depends on whether X1~X4 inputs are valid or not.

When the status of vX1~vX4 is set by the function code, whether vX1~vX4 are in a valid state can be set via the function code [F05.50] for each corresponding input terminal.

Ones-bit: vX1

- 0: Internal connection to vY1
- 1: Physical connection to X1
- 2: Function code setting valid or not

Tens-bit: vX2

- 0: Internal connection to vY2
- 1: Physical connection to X2

2: Function code setting valid or not

Hundreds-bit: vX3

0: Internal connection to vY3

1: Physical connection to X3

2: Function code setting valid or not

Thousands-bit: vX4

0: Internal connection to vY4

1: Physical connection to X4

2: Function code setting valid or not

✧ F05.49: vX5~vX8 ON Source

Code (Address) Property	Name	Description	Default (Range)
F05.49 (0x0531) RUN	vX5~vX8 ON Source	V/F SVC FVC PMV/F PMSVC PMFVC Set the source of the valid state for the vX5~vX8 terminal.	0x0000 (0x0000~0x0022)

The input status of the vX5~vX6 terminals can be set in three ways, selected via [F05.49];

When the status of vX5~vX6 is internally connected to vY5~vY6, whether vX5~vX6 are in a valid state depends on whether vY5~vY6 outputs are valid or not. Moreover, vX5~vY5 and vX6~vY6 have a one-to-one correspondence.

When the status of vX5~vX6 is connected to the physical terminals X5~X6, whether vX5~vX6 are in a valid state depends on whether X5~X6 inputs are valid or not.

When the status of vX5~vX6 is set by the function code, whether vX5~vX6 are in a valid state can be set via the function code [F05.49] for each corresponding input terminal.

Ones-bit: vX5

0: Internal connection to vY5

1: Physical connection to X5

2: Function code setting valid or not

Tens-bit: vX6

0: Internal connection to vY6

1: Physical connection to X6

2: Function code setting valid or not

✧ F05.50: vX1~vX4 ON from Funcode

Code (Address) Property	Name	Description	Default (Range)
F05.50 (0x0532) RUN	vX1~vX4 ON from Funcode	V/F SVC FVC PMV/F PMSVC PMFVC Set the valid state of the vX1~vX4 terminal via function code.	0x0000 (0x0000~0x1111)

Ones-bit: vX1

0: Invalid

1: Valid

Tens-bit: vX2

0: Invalid

1: Valid

Hundreds-bit: vX3

0: Invalid

1: Valid

Thousands-bit: vX4

0: Invalid

1: Valid

✧ F06.51: vX5~vX6 ON from Funcode

Code (Address) Property	Name	Description	Default (Range)
F06.51 (0x0533) RUN	vX5~vX6 ON from Funcode	V/F SVC FVC PMV/F PMSVC PMFVC Set the valid state of the vX5~vX6 terminal via function code.	0x0000 (0x0000~0x0011)

Ones-bit: vX5

0: Invalid

1: Valid

Tens-bit: vX6

0: Invalid

1: Valid

14.8 F06: DO Terminal

14.8.1 F06.0x:Multi-function Y Terminal

The AC drive includes 1×digital output and 2×relay output, and one more digital output and relay output can be extended by extension cards.

Code	Name	Default	Function
F06.00	Output Terminal Y	1	Drive in operation
F06.01	Relay 1 Output (TA1-TB1-TC1)	4	Drive in fault
F06.02	Relay 1 Output (TA2-TB2-TC2)	0	No output

Refer to the table below to set the function of F06.0x [Multi-function Y Terminal].

Setting	Function	Description
0	No output	It means that the terminal is invalid, and it is recommended to set it to "0" if the terminal is unused to prevent the occurrence of malfunction.
1	Drive in operation	Send valid signals during drive operation.
2	Drive in forward operation	Send valid signals during forward operation.
3	Drive in reverse operation	Send valid signals during reverse operation.
4	Fault trip alarm 1	Send valid signals even during fault reset.
5	Fault trip alarm 2	Send no valid signals during fault reset.
6	Stop due to external faults	When an external error signal is input to the multifunction input terminal, valid signals are output when the drive reports external error E. EF.
7	Drive low voltage	Send valid signals during drive undervoltage.
8	Drive ready for operation	When this signal is valid, it indicates that the drive has no fault, the bus voltage is normal, and the operation disable terminal such as emergency stop of the drive is invalid. The AC drive can be operated at the start command.
9	Output frequency detection threshold 1 (FDT1)	When the output frequency of the drive exceeds the set value of F16.40 [Frequency Level 1], valid signals are output; when the output frequency of the drive is lower than the frequency detection level, an invalid signal is output after passing through the lag frequency set by F16.41 [Frequency Range 1]. See F16.40 [Frequency Level 1] and F16.41 [Frequency Range 1] for details.
10	Output frequency detection threshold 2 (FDT2)	When the output frequency of the drive exceeds the set value of F16.42 [Frequency Level 2], valid signals are output; when the output frequency of the drive is lower than the frequency detection level, an invalid signal is output after passing through the lag frequency set by F16.43 [Frequency Range 2]. See F16.42 [Frequency Level 2] and F16.43 [Frequency Range 2] for details.
11	Target frequency completion	When the output frequency of AC drive approaches or reaches a certain range of given frequency (the range is determined by [F16.44]), valid signals are output, otherwise invalid signals are output. See F16.44 [Frequency Arrival] for details.
12	Zero-frequency operation	Output valid signals when the drive is running and the output is 0.00Hz.
13	Upper limit frequency arrival	Output valid signals when the drive is running at upper limit frequency.
14	Lower limit frequency arrival	Output valid signals when the drive is running at lower limit frequency.
15	Program cycle completed	A 500ms valid signal is output when PLC program cycle ends.
16	Program segment completion	A 500ms valid signal is output when PLC program stage ends.

17	PID feedback above upper limit	When the PID feedback reaches the value set in F13.27 [Feedback Disconnection Upper Limit] after the time set in F13.26 [Feedback Disconnection Time], a valid signal is output.
18	PID feedback below lower limit	When the PID feedback reaches the value set in F13.28 [Feedback Disconnection Lower Limit] after the time set in F13.26 [Feedback Disconnection Time], a valid signal is output.
19	PID feedback disconnection	When a PID feedback sensor is break, a valid signal is output. For details, refer to parameters F13.26 [Feedback Disconnection Time], F13.27 [Feedback Disconnection Upper Limit], and F13.28 [Feedback Disconnection Lower Limit].
20	Meter length arrival	The length is calculated via a pulse counter, and when the actual length reaches the value set in F16.05 [Set Length], this DO terminal outputs a valid signal. For details, refer to parameters F16.04 [Pulse No. Per Meter], F08.05 [Set Length], and F16.06 [Actual Length].
21	Timer setting arrival	When the internal timer of the drive reaches the set time, this terminal outputs a valid pulse signal with a width of 1s. For details, refer to parameters F16.07 [Timer Unit] and F16.08 [Timer Setting].
22	Counter maximum arrival	When the counter reaches its maximum value, the terminal outputs a valid signal with a width equal to the external clock period and the counter is reset. For details, refer to parameter F16.02 [Max. Counting].
23	Counter setting arrival	When the counter reaches the set value, the terminal outputs a valid signal, and it will continue to record until the maximum value, and then the counter will be cleared, and the signal is withdrawn. For details, refer to parameter F16.03 [Counter Setting].
24	Dynamic brake	Valid signals are output when the dynamic brake conditions are met. See parameter F10.14 [Dynamic Brake Enable] for details.
25	PG feedback error	Valid signals are output when any input signal of the PG card is disconnected.
26	Emergency stop	Valid signals are output when the drive is in the emergency stop status.
27	Overload warning	When AC drive is in operation under V/F control, the motor output current is used as reference for load alarms, while under the vector control mode, motor output torque is used as the reference for load alarms. Compare reference value with the alarm threshold to decide whether to output valid signals. Refer to parameters F10.32 [Load Warning Mode], F10.33 [Load Warning Level 1], F10.34 [Load Warning Time 1], F10.35 [Load Warning Level 2], and F10.36 [Load Warning Time 2].
28	Underload warning	During AC drive operation, the motor output current serves as the load warning reference in V/F control mode, while the motor output torque serves as the reference in vector control mode. The load warning reference is compared with the load warning detection value to determine whether to output valid signals. Refer to parameters F10.32 [Load Warning Mode], F10.33 [Load Warning Level 1], F10.34 [Load Warning Time 1], F10.35 [Load Warning Level 2], and F10.36 [Load Warning Time 2].
29	Alarm output	When the drive triggers an alarm, a valid signal is output. The signal returns to normal when the alarm clears. No output occurs during errors.
30	0x3018 controlled output	Set through RS485 communication (0x3018), BIT0 bit corresponds to Y output, BIT1 corresponds to relay 1 output, and BIT2 bit corresponds to relay 2 output.
31	Drive overheat	When the drive temperature reaches F10.25 [Drive Overheat oH1 Warning Detection], valid signals are output.
32	Motor overheat alarm	Output valid signals when a motor overheat alarm occurs.
33	Drive overload	Output valid signals when the drive is overloaded (C00.23 > 0%).

34	Motor overload	Output valid signals when the motor is overloaded (C00.24 > 0%).
35	Brake active	Output valid signals when the brake function is enabled and engaged.
36	Brake failure protection	Output valid signals during brake-failure protection.
37	Comparator 1	Valid signals are output when the monitored value set in F16.50 [Comparator 1 Item] is within the range of F16.51 [Comparator 1 Upper Limit] and F16.52 [Comparator 1 Lower Limit].
38	Comparator 2	Valid signals are output when the monitored value set in F16.55 [Comparator 2 Item] is within the range of F16.56 [Comparator 2 Upper Limit] and F16.57 [Comparator 2 Lower Limit].
39	Comparator 3	Valid signals are output when the monitored value set in F16.60 [Comparator 3 Item] is within the range of F16.61 [Comparator 3 Upper Limit] and F16.62 [Comparator 3 Lower Limit].
40	Comparator 4	Valid signals are output when the monitored value set in F16.65 [Comparator 4 Item] is within the range of F16.66 [Comparator 4 Upper Limit] and F16.67 [Comparator 4 Lower Limit].
41	Motor 1 enable	Factory default is Motor 1 enabled. When F00.11 [Motor Parameters] is enabled, the active motor parameter group can be selected via d00.00. After selection, an active signal can be output through the terminal function.
42	Motor 2 enable	
43	Motor 3 enable	
44	Motor 4 enable	
45	PID output saturation	Output valid signals when the PID output is saturated.
46	PID negative characteristic	Output valid signals when PID negative action occurs.
47	Accelerating	Output valid signals during acceleration.
48	Decelerating	Output valid signals during deceleration.
49	Constant-frequency operating	Output valid signals during constant-speed operation.
50	FWD operation inhibit	Output valid signals when forward rotation is disabled.
51	REV operation inhibit	Output valid signals when reverse rotation is disabled.
52	DC braking	Output valid signals during DC braking.
53	External error terminal active	Output valid signals when an external fault signal is received.
54	Torque control active	Output valid signals when torque control is enabled.
55	Position control active	Output valid signals when position control is enabled.
56	Jogging	Output valid signals during jog operation.
57	Undervoltage suppression	Output valid signals during undervoltage suppression.
58	Overvoltage suppression	Output valid signals during overvoltage suppression.
59	Overcurrent suppression	Output valid signals during overcurrent suppression.
60	Speed limiting (No trip)	Output valid signals when the drive enters speed-limit mode per F10.8x~F10.9x.
61	Current limiting (No trip)	Output valid signals when the drive enters current-limit mode per F10.8x~F10.9x.
62	Power limiting (No trip)	Output valid signals when the drive enters power-limit mode per F10.8x~F10.9x.
B connector	Connector output	Output valid signals via the connector terminal; see Free Programming function.

Function of Terminal 30: Selecting the multi-function output for Modbus RS485 communication control, by writing values to BIT0-BIT1 in communication address 0x3018, to control the corresponding output terminal of the controller. The specific correspondence is as follows:

Address	Name
0x3018	BIT0: Terminal Y
	Bit1: Corresponds to relay output 1 (TA1–TB1–TC1).
	Bit3: Corresponds to relay output 2 (TA2–TB2–TC2).

◇ **F06.04: Output Terminal Polarity**

Code (Address) Property	Name	Description	Default (Range)
F06.04 (0x0604) RUN	Output Terminal Polarity	V/F SVC FVC PMV/F PMSVC PMFVC Set the polarity of output terminal.	0x0000 (0x0000~0x1111)

Ones-bit: Y terminal

0: Positive, Y output terminal at low level when valid, normally open.

0: Negative, no output from Y terminal when valid, normally closed.

Tens-bit: RO1

0: Positive, TA1-TC1 is normally open and TB1-TC1 is normally closed

1: Negative, TA1-TC1 is normally closed and TB1-TC1 is normally open

Hundreds-bit: RO2

0: Positive, TA2-TC2 is normally open and TB2-TC2 is normally closed

1: Negative, TA2-TC2 is normally closed and TB2-TC2 is normally open

◇ **F06.1x: Terminal Y Operation Mode**

Code (Address) Property	Name	Description	Default (Range)
F06.10 (0x060A) RUN	Y Terminal ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for Y terminal from OFF to ON.	0.010s (0.000s~60.000s)
F06.11 (0x060B) RUN	Y Terminal OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for Y terminal from ON to OFF.	0.010s (0.000s~60.000s)
F06.12 (0x060C) RUN	Relay 1 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for relay 1 output terminal from OFF to ON.	0.010s (0.000s~60.000s)
F06.13 (0x060D) RUN	Relay 1 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for relay 1 output terminal from ON to OFF.	0.010s (0.000s~60.000s)
F06.14 (0x060E) RUN	Relay 2 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for relay 2 output terminal from OFF to ON.	0.010s (0.000s~60.000s)
F06.15 (0x060F) RUN	Relay 2 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for relay 2 output terminal from ON to OFF.	0.010s (0.000s~60.000s)

14.8.2 F06.3x~F06.5x: vY Terminal

See F05.4x [vX Terminal] for reference.

◇ **F06.30~F06.37: Virtual DO**

Code (Address) Property	Name	Description	Default (Range)
F06.30 (0x061E) RUN	vY1 Function	V/F SVC FVC PMV/F PMSVC PMFVC For details, please refer to the F06.0x [Multi-function Y Terminal].	0 (0~65535)
F06.31 (0x061F) RUN	vY2 Function	V/F SVC FVC PMV/F PMSVC PMFVC For details, please refer to the F06.0x [Multi-function Y Terminal].	0 (0~65535)
F06.32 (0x0620) RUN	vY3 Function	V/F SVC FVC PMV/F PMSVC PMFVC For details, please refer to the F06.0x [Multi-function Y Terminal].	0 (0~65535)

F06.33 (0x0621) RUN	vY4 Function	V/F SVC FVC PMV/F PMSVC PMFVC For details, please refer to the F06.0x [Multi-function Y Terminal].	0 (0~65535)
F06.34 (0x0622) RUN	vY5 Function	V/F SVC FVC PMV/F PMSVC PMFVC For details, please refer to the F06.0x [Multi-function Y Terminal].	0 (0~65535)
F06.35 (0x0623) RUN	vY6 Function	V/F SVC FVC PMV/F PMSVC PMFVC For details, please refer to the F06.0x [Multi-function Y Terminal].	0 (0~65535)

Note:

For details on the setting value of the virtual digital output, please refer to the please refer to the F06.0x [Multi-function Y Terminal].

◇ **F06.38~F06.53: Virtual DO**

Code (Address) Property	Name	Description	Default (Range)
F06.38 (0x0626) RUN	vY1 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for vY1 terminal from OFF to ON.	0.010s (0.000s~60.000s)
F06.39 (0x0627) RUN	vY1 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for vY1 terminal from ON to OFF.	0.010s (0.000s~60.000s)
F06.40 (0x0628) RUN	vY2 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for vY2 terminal from OFF to ON.	0.010s (0.000s~60.000s)
F06.41 (0x0629) RUN	vY2 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for vY2 terminal from ON to OFF.	0.010s (0.000s~60.000s)
F06.42 (0x062A) RUN	vY3 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for vY3 terminal from OFF to ON.	0.010s (0.000s~60.000s)
F06.43 (0x062B) RUN	vY3 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for vY3 terminal from ON to OFF.	0.010s (0.000s~60.000s)
F06.44 (0x062C) RUN	vY4 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for vY4 terminal from OFF to ON.	0.010s (0.000s~60.000s)
F06.45 (0x062D) RUN	vY4 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for vY4 terminal from ON to OFF.	0.010s (0.000s~60.000s)
F06.46 (0x062E) RUN	vY5 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for vY5 terminal from OFF to ON.	0.010s (0.000s~60.000s)
F06.47 (0x062F) RUN	vY5 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for vY5 terminal from ON to OFF.	0.010s (0.000s~60.000s)
F06.48 (0x0630) RUN	vY6 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for vY6 terminal from OFF to ON.	0.010s (0.000s~60.000s)
F06.49 (0x0631) RUN	vY6 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for vY6 terminal from ON to OFF.	0.010s (0.000s~60.000s)

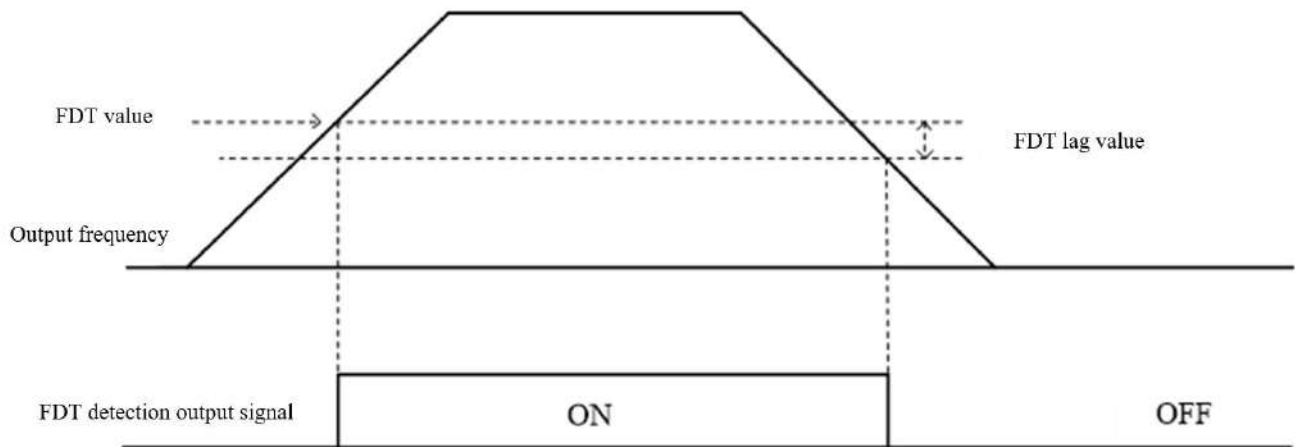
Note:

For details on the virtual digital output delay, please refer to the "set value of multi-function output" in F06.2x.

14.8.3 F06.4x: Frequency Detection

It is used for signals when frequency completion and frequency arrival are output to multifunctional terminals. The AC drive contains two groups of frequency detection and judgment parameters.

The output frequency detection is shown below:



Output Frequency Detection

✧ F06.40: Frequency Detection 1

Code (Address) Property	Name	Description	Default (Range)
F06.40 (0x0628) RUN	Frequency Detection 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency detection value 1.	2.00Hz (0.00Hz~F01.10)

Note:

Compare the detection value to target frequency.

✧ F06.41: Frequency Range 1

Code (Address) Property	Name	Description	Default (Range)
F06.41 (0x0629) RUN	Frequency Range 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency detection range 1.	1.00Hz (0.00Hz~F01.10)

✧ F06.42: Frequency Detection 2

Code (Address) Property	Name	Description	Default (Range)
F06.42 (0x062A) RUN	Frequency Detection 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency detection value 2.	2.00Hz (0.00Hz~F01.10)

Note:

Compare the detection value to target frequency.

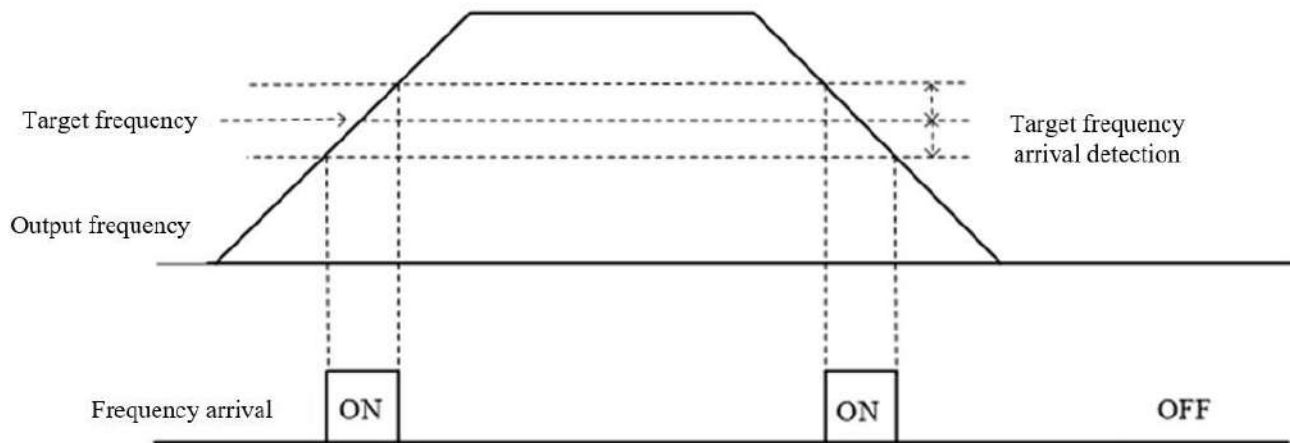
✧ F06.43: Frequency Range 2

Code (Address) Property	Name	Description	Default (Range)
F06.43 (0x062B) RUN	Frequency Range 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency detection range 2.	1.00Hz (0.00Hz~F01.10)

✧ F06.44: Frequency Arrival

Code (Address) Property	Name	Description	Default (Range)
F06.44 (0x062C) RUN	Frequency Arrival	V/F SVC FVC PMV/F PMSVC PMFVC Set the detection arrival value of the given frequency.	2.00Hz (0.00Hz~F01.10)

Frequency arrival output is shown in the following diagram:



Given Frequency Arrival Detection

Note:

Compare the detection value to target frequency.

14.8.4 F06.5x: Monitor Comparator

This group of parameters is used to set any monitored parameter for comparator judgment, and select multi-function output terminals, alarms, or warnings based on the judgment results. It meets the comparison output requirements for various monitoring variables.

Comparator: Set the upper and lower limits of the monitored parameter. The drive enables the digital output terminal when the parameter is within the [lower limit, upper limit] closed interval and determines whether to report an error or stop according to F06.54 [CP1 Mode].

◇ **F06.50~F06.54: Comparator 1 (CP1)**

Code (Address) Property	Name	Description	Default (Range)
F06.50 (0x0632) RUN	Comparator 1 Item	V/F SVC FVC PMV/F PMSVC PMFVC Select the monitored items for comparator 1. Ones- and tens-bit: Set the yy in the monitor parameter Cxx.yy Hundreds- and thousands-bit: Set the xx in the monitor parameter Cxx.yy	0x0001 (0x0000~0x0763)
F06.51 (0x0633) RUN	Comparator 1 Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 1 upper limit. Units and decimal places are determined by F06.50.	(Up to F06.50)
F06.52 (0x0634) RUN	Comparator 1 Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 1 lower limit. Units and decimal places are determined by F06.50.	(Up to F06.50)
F06.53 (0x0635) RUN	Comparator 1 Bias	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 1 bias value. Units and decimal places are determined by F06.50.	(Up to F06.50)
F06.54 (0x0636) RUN	Comparator 1 Mode	V/F SVC FVC PMV/F PMSVC PMFVC Select the action for comparator 1: 0: Continue operation (DO terminal only) 1: Report error and free stop, E. CP1 2: Report alarm and continue operation, A. CP1 3: Force stop	0 (0~3)

Note:

When comparator 1 mode = 3: Forced stop, the drive internally issues a stop command and stops according to the set stop method.

◇ F06.55~F06.59: Comparator 2 (CP2)

Code (Address) Property	Name	Description	Default (Range)
F06.55 (0x0637) RUN	Comparator 2 Item	V/F SVC FVC PMV/F PMSVC PMFVC Select the monitored items for comparator 2. Ones- and tens-bit: Set the yy in the monitor parameter Cxx.yy Hundreds- and thousands-bit: Set the xx in the monitor parameter Cxx.yy	0x0002 (0x0000~0x0763)
F06.56 (0x0638) RUN	Comparator 2 Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 2 upper limit. Units and decimal places are determined by F06.55.	(Up to F06.55)
F06.57 (0x0639) RUN	Comparator 2 Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 2 lower limit. Units and decimal places are determined by F06.55.	(Up to F06.55)
F06.58 (0x063A) RUN	Comparator 2 Bias	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 2 bias value. Units and decimal places are determined by F06.55.	(Up to F06.55)
F06.59 (0x063B) RUN	Comparator 2 Mode	V/F SVC FVC PMV/F PMSVC PMFVC Select the action for comparator 2: 0: Continue operation (DO terminal only) 1: Report error and free stop, E. CP2 2: Report alarm and continue operation, A. CP2 3: Force stop	0 (0~3)

Note:

When comparator 2 mode = 3: Forced stop, the drive internally issues a stop command and stops according to the set stop method.

14.9 F07: AI Terminal

14.9.1 F07.0x: AI Type

There are two analog AI inputs with AI1 voltage input range of 0.00V~10.00V and current input range of 0.00mA~20.00mA, and AI2 voltage input range of -10.00V~10.00V and current input range of 0.00mA~20.00mA. Select input source by the dial switch on the control board, and the factory defaults to voltage input.

◇ F07.00: AI1 Type

Code (Address) Property	Name	Description	Default (Range)
F07.00 (0x0700) RUN	AI1 Type	V/F SVC FVC PMV/F PMSVC PMFVC Set the AI1 signal type.	0 (0~1)

0: Voltage 0.00V~10.00V

1: Current 0.00mA~20.00mA

◇ F07.01: AI2 Type

Code (Address) Property	Name	Description	Default (Range)
F07.01 (0x0701) RUN	AI2 Type	V/F SVC FVC PMV/F PMSVC PMFVC Set the AI2 signal type.	0 (0~1)

0: Voltage -10.00V~10.00V

1: Current 0.00mA~20.00mA

◇ **F07.03: AI Curve**

Code (Address) Property	Name	Description	Default (Range)
F07.03 (0x0703) RUN	AI Curve	V/F SVC FVC PMV/F PMSVC PMFVC Set the AI curve.	0x0000 (0x0000~0x0033)

Ones-bit: AI1 curve

- 0: Straight line 1 (straight line between two points; defaulted)
- 1: Straight line 2 (straight line between two points)
- 2: Curve 1 (fold between several points)
- 3: Curve 2 (fold between several points)

Tens-bit: AI2 curve

- 0: Straight line 1 (straight line between two points; defaulted)
- 1: Straight line 2 (straight line between two points)
- 2: Curve 1 (fold between several points)
- 3: Curve 2 (fold between several points)

14.9.2 F07.1x: Line Setting

AI1 Line 1 processing: After the input signal is sampled, it is filtered according to F07.14 [Line 1 Filter Time]. The signal is then processed as either linear or curve-based according to F07.03 [AI Curve]. Linear processing is the default. AI2 is the same as the AI1.

◇ **F07.10~F07.19: Line 1 Setting**

Code (Address) Property	Name	Description	Default (Range)
F07.10 (0x070A) RUN	Line 1 Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the line 1 lower limit of sampling per unit value of AI, and take this as the lower limit when per unit value is lower than this value.	0.0% (0.0%~100.0%)
F07.11 (0x070B) RUN	Line 1 Lower Limit Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the lower limit value of line 1.	0.00% (-100.00%~100.00%)
F07.12 (0x070C) RUN	Line 1 Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the line 1 upper limit of sampling per unit value of AI, and take this as the upper limit when per unit value is higher than this value.	100.0% (0.0%~100.0%)
F07.13 (0x070D) RUN	Line 1 Upper Limit Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the upper limit value of line 1.	100.00% (-100.00%~100.00%)
F07.14 (0x070E) RUN	Line 1 Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the AI line 1 filter time. The AI input signal is filtered and then linearized.	0.100s (0.000s~6.000s)
F07.15 (0x070F) RUN	Line 2 Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the line 2 lower limit of sampling per unit value of AI, and take this as the lower limit when per unit value is lower than this value.	0.0% (0.0%~100.0%)
F07.16 (0x0710) RUN	Line 2 Lower Limit Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the lower limit value of line 2.	0.00% (-100.00%~100.00%)
F07.17 (0x0711) RUN	Line 2 Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the line 2 upper limit of sampling per unit value of AI, and take this as the upper limit when per unit value is higher than this value.	100.0% (0.0%~100.0%)
F07.18 (0x0712) RUN	Line 2 Upper Limit Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the upper limit value of line 2.	100.00% (-100.00%~100.00%)

F07.19 (0x0713) RUN	Line 2 Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the AI line 2 filter time. The AI input signal is filtered and then linearized.	0.100s (0.000s~6.000s)

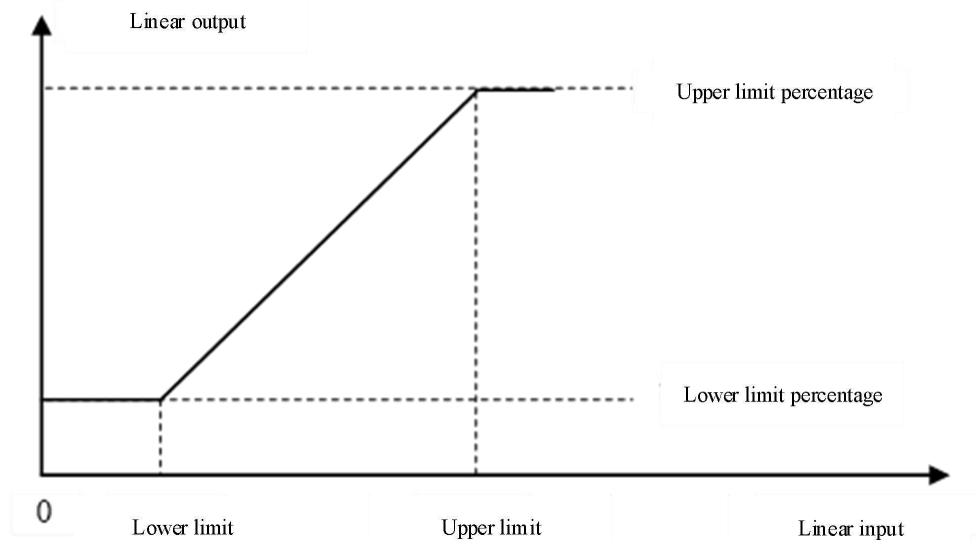
Note:

The application value of AI1 is the corresponding value after curve processing.

Example: Taking AI1 – Line 1 as an example, the usage instructions are as follows:

AI1 Signal	Per-unit Sampling
0V~10V	0.0%~100.0%
0mA~20mA	0.0%~100.0%

AI1 linear processing is shown below:



AI Linear Processing
AI1 Application

Code	Name	Setting
F01.03	Frequency Source A	2: AI1
F01.05	Frequency Source B	2: AI1
F01.08	Frequency Binding Command	3: AI1
F01.11	Upper Limit Frequency Source	2: AI1
F15.01	Torque Command	2: AI1
F15.12	Torque-Controlled FWD Speed Limit	2: AI1
F15.13	Torque-Controlled REV Speed Limit	2: AI1
F13.00	PID Setting Source	2: AI1
F13.02	PID Feedback Source	2: AI1

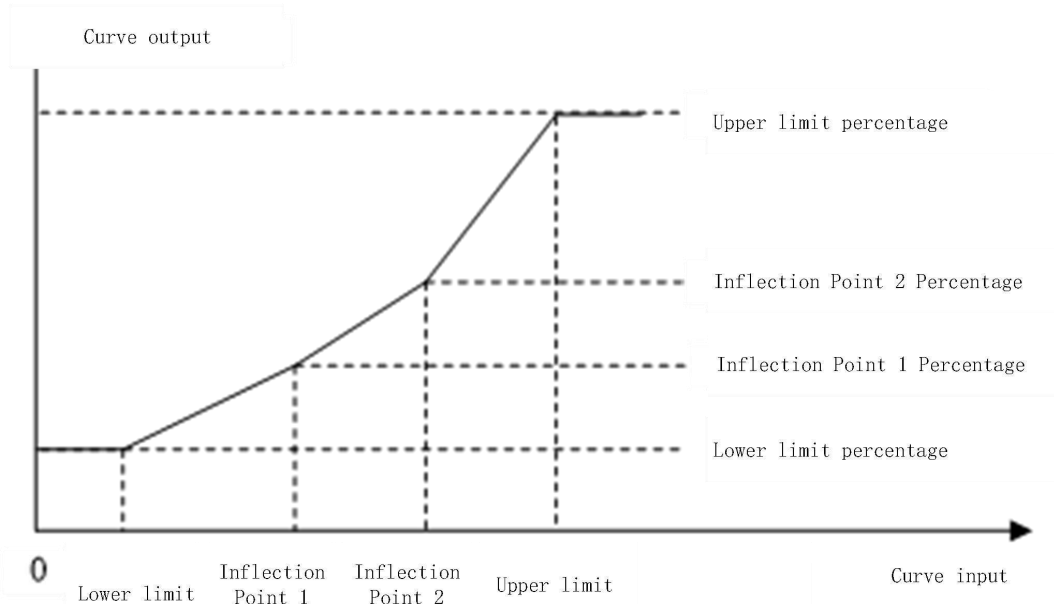
14.9.3 F07.2x: AI Curve 1

Curve 1 F07.20, F07.22, F07.24, F07.26 must be incremented gradually.

Curve 2 F07.30, F07.32, F07.34, F07.36 must be incremented gradually.

AI1 and AI2 cannot be selected to Curve 1 or Curve 2 at the same time.

Curve 1 and Curve 2 can be set with two inflection points and divided into three linear sections, each with a distinct slope for enhanced adaptability, as illustrated below:



✧ F07.20~F07.27: AI Curve 1

Code (Address) Property	Name	Description	Default (Range)
F07.20 (0x0714) RUN	Curve 1 Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC When the AI value is lower than this value, take this value as lower limit.	0.0% (0.0%~100.0%)
F07.21 (0x0715) RUN	Curve 1 Lower Limit Percentage	Set the percentage of the curve 1 lower limit.	0.00% (-100.00%~100.00%)
F07.22 (0x0716) RUN	Curve 1 Inflection Point 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the inflection point 1 of curve 1.	30.0% (0.0%~100.0%)
F07.23 (0x0717) RUN	Inflection Point 1 Percentage	Set the percentage of curve 1 inflection point 1.	30.00% (-100.00%~100.00%)
F07.24 (0x0718) RUN	Curve 1 Inflection Point 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the inflection point 2 of curve 1.	60.0% (0.0%~100.0%)
F07.25 (0x0719) RUN	Inflection Point 2 Percentage	Set the percentage of curve 1 inflection point 2.	60.00% (-100.00%~100.00%)
F07.26 (0x071A) RUN	Curve 1 Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC When the AI value is higher than this value, take this value as upper limit.	100.0% (0.0%~100.0%)
F07.27 (0x071B) RUN	Curve 1 Upper Limit Percentage	Set the percentage of the curve 1 upper limit.	100.00% (-100.00%~100.00%)

14.9.4 F07.3x: AI Curve 2

✧ F07.30~F07.37: AI Curve 2

Code (Address) Property	Name	Description	Default (Range)
F07.30 (0x071E) RUN	Curve 2 Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC When the AI value is lower than this value, take this value as lower limit.	0.0% (0.0%~100.0%)

F07.31 (0x071F) RUN	Curve 2 Lower Limit Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the curve 2 lower limit.	0.00% (-100.00%~100.00%)
F07.32 (0x0720) RUN	Curve 2 Inflection Point 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the inflection point 1 of curve 2.	30.0% (0.0%~100.0%)
F07.33 (0x0721) RUN	Inflection Point 1 Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of curve 2 inflection point 1.	30.00% (-100.00%~100.00%)
F07.34 (0x0722) RUN	Curve 2 Inflection Point 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the inflection point 2 of curve 2.	60.0% (0.0%~100.0%)
F07.35 (0x0723) RUN	Inflection Point 2 Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of curve 2 inflection point 2.	60.00% (-100.00%~100.00%)
F07.36 (0x0724) RUN	Curve 2 Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC When the AI value is higher than this value, take this value as upper limit.	100.0% (0.0%~100.0%)
F07.37 (0x0725) RUN	Curve 2 Upper Limit Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the curve 2 upper limit.	100.00% (-100.00%~100.00%)

14.9.5 F07.4x: AI as DI Terminal

Two analog input AI1, AI2 check the input voltage and tell if it is high or low level, and then use the high and low level to analogize DI terminals. Functions are the same like X1~X6.

✧ F07.40: AI as DI Logic

Code (Address) Property	Name	Description	Default (Range)
F07.40 (0x0728) RUN	AI as DI Logic	V/F SVC FVC PMV/F PMSVC PMFVC Set the characteristics of AI as DI terminal.	0x0000 (0x0000~0x0011)

Ones-bit: AI1

0: Valid at low level

1: Valid at high level

Tens-bit: AI2

0: Valid at low level

1: Valid at high level

✧ F07.41: AI1 as DI Function

Code (Address) Property	Name	Description	Default (Range)
F07.41 (0x0729) STOP	AI1 as DI Function	V/F SVC FVC PMV/F PMSVC PMFVC Set the functions of AI1 as DI terminal.	0 (0~95)

Note:

The function of AI1 as a DI terminal is the same as the function of X1~X10.

✧ F07.42~F07.43: AI1 High/Low Level

Code (Add.) Property	Name	Description	Default (Range)
F07.42 (0x072A) RUN	AI1 High Level	V/F SVC FVC PMV/F PMSVC PMFVC If AI1 per-unit sampling value is greater than this setting, it is high level.	70.00% (0.00%~100.00%)
F07.43 (0x072B) RUN	AI1 Low Level	V/F SVC FVC PMV/F PMSVC PMFVC If AI1 per-unit sampling value is lower than this setting, it is low level.	30.00% (0.00%~100.00%)

Note:

- F07.42 needs to be greater than F07.43 to effectively distinguish between high and low levels.
- The input value of AI1 is between F07.42 and F07.43, and hysteresis judgment is carried out according to the previous state to distinguish high and low levels.

◇ F07.44: AI2 as DI Function

Code (Add.) Property	Name	Description	Default (Range)
F07.44 (0x072C) STOP	AI2 as DI Function	V/F SVC FVC PMV/F PMSVC PMFVC Set the functions of AI2 as DI terminal.	0 (0~95)

Note:

The function of AI2 as a DI terminal is the same as the function of X1~X6.

◇ F07.45~F07.46: AI2 High/Low Level

Code (Add.) Property	Name	Description	Default (Range)
F07.45 (0x072D) RUN	AI2 High Level	V/F SVC FVC PMV/F PMSVC PMFVC If AI2 per-unit sampling value is greater than this setting, it is high level.	70.00% (0.00%~100.00%)
F07.46 (0x072E) RUN	AI2 Low Level	V/F SVC FVC PMV/F PMSVC PMFVC If AI2 per-unit sampling value is lower than this setting, it is low level.	30.00% (0.00%~100.00%)

Note:

- F07.45 needs to be greater than F07.46 to effectively distinguish between high and low levels.
- The input value of AI2 is between F07.45 and F07.46, and hysteresis judgment is carried out according to the previous state to distinguish high and low levels.

14.10 F08: AO Terminal

F08 parameter group is used to set the analog monitoring of the AC drive such as monitoring items, gain and bias, and output signal level.

14.10.1 F08.0x: AO (Analog Output)

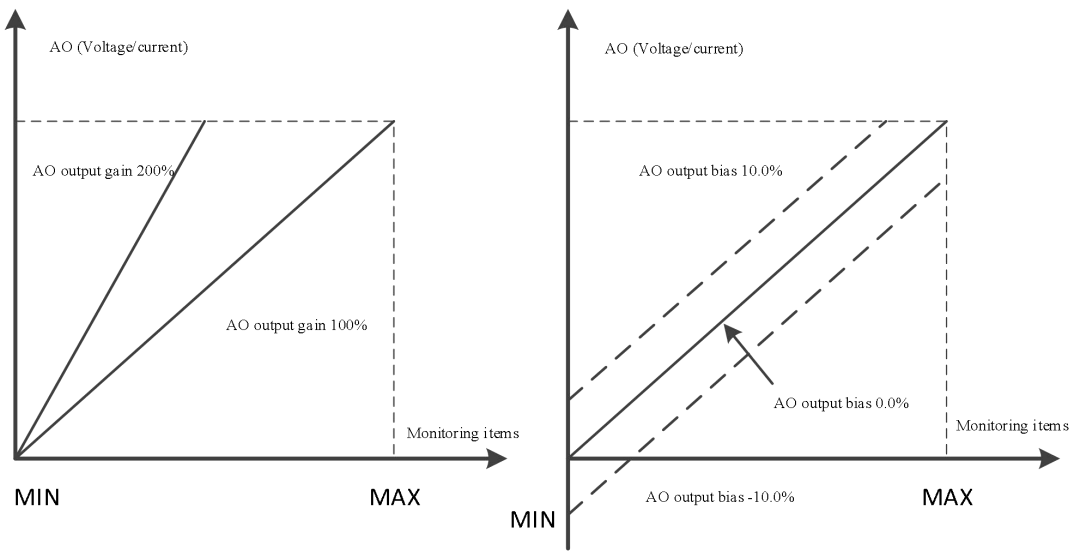
F08.0x is used to set the analog monitoring of the AC drive such as monitoring items, gain and bias, and output signal level.

It contains 1 channel of AO to output voltage, current or frequency through the dial-code switch.

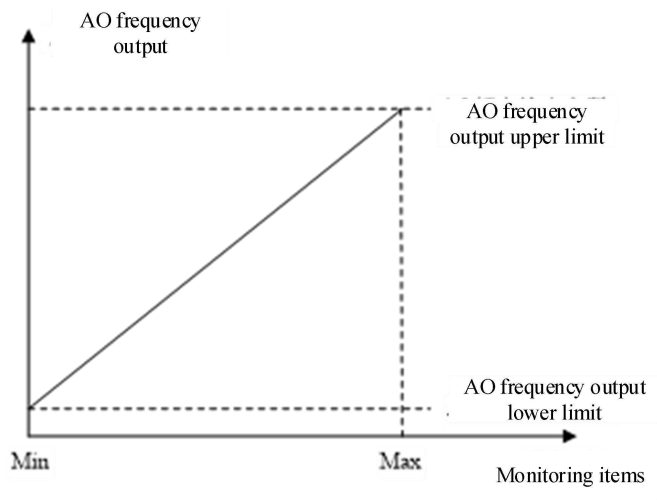
Calibration of instruments connected to multi-functional analog output terminals can be done via F08.02, F08.03, F08.04, F08.05 and F08.06.

Funcode	Name	Range	Default
F08.00	AO Mode	0: 0V~10V 1: 4.00mA~20.00mA 2: 0.00mA~20.00mA 3: FM pulse output 4: Fixed frequency ratio output	0
F08.01	AO Content	0~65535	0
F08.02	AO Gain	0.0%~300.0%	100.0%
F08.03	AO Bias	-10.0%~10.0%	0.0%
F08.04	AO Filter	0.000s~6.000s	0.010s
F08.05	AO as FM Lower Limit	0.00kHz~100.00kHz	0.20kHz
F08.06	AO as FM Upper Limit	0.00kHz~100.00kHz	50.00kHz

The efficacy of gain and bias is shown below.



AO with Gain and Bias



AO Pulse Frequency

◇ F08.00: AO Mode

Code (Address) Property	Name	Description	Default (Range)
F08.00 (0x0800) RUN	AO Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the analog output signal mode.	0 (0~4)

- 0: 0V~10V
1: 4.00mA~20.00mA
2: 0.00mA~20.00mA
3: FM pulse output
4: Fixed frequency ratio output

Note:

Set the dial switch on the control panel to the appropriate position to select different modes on F08.00.

AO Mode	Dial Switch
0: 0V~10V	AO1-U to ON.
1: 4.00mA~20.00mA	AO1-I to ON.
2: 0.00mA~20.00mA	AO1-I to ON.
3: FM pulse output	AO1-F to ON.
4: Fixed frequency ratio output	AO1-F to ON.

✧ **F08.01: AO Content**

Code (Address) Property	Name	Description	Default (Range)
F08.01 (0x0801) RUN	AO Content	V/F SVC FVC PMV/F PMSVC PMFVC Set the analog output content.	0 (0~65535)

Setting and monitoring values:

Setting	Name	0.00% Corresponding Value	100.00% Corresponding Value
0	Target Frequency	0.00Hz	Max. Frequency
1	Output Frequency	0.00Hz	Max. Frequency
2	Output current	0.00A	2 times the rated current of the motor.
3	Input Voltage	0.0V	2 times the rated voltage of the drive.
4	Output Voltage	0.0V	Motor rated voltage.
5	Mechanical Speed	0rpm	Speed corresponding to the max. frequency.
6	Target Torque	0.00% of torque	200% of torque
7	Output Torque	0.00% of torque	200% of torque
8	PID Setting	0.00% of PID setting	100% of the PID setting
9	PID Feedback	0.00% of PID feedback	100% of PID feedback
10	Output Power	0kW	2 times the rated output of the motor.
11	Bus Voltage	0V	2 times the rated DC voltage of the drive.
12	AI1 Value	AI1 lower limit	AI1 upper limit
13	AI2 Value	AI2 lower limit	AI2 upper limit
14	Reserved		
15	PUL input	PUL lower limit	PUL upper limit
16	Module Temp. 1	0°C	100°C
17	Module Temp. 2	0°C	100°C
18	RS485 Setting	0	1000
19	vY1	Output OFF	Output ON
Connector	Connector Reference Input	0	1000

Note: The rated DC voltage is the rated voltage of the AC drive*1.414.✧ **F08.02: AO Gain**

Code (Address) Property	Name	Description	Default (Range)
F08.02 (0x0802) RUN	AO Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the gain of the analog output.	100.0% (0.0%~300.0%)

✧ **F08.03: AO Bias**

Code (Address) Property	Name	Description	Default (Range)
F08.03 (0x0803) RUN	AO Bias	V/F SVC FVC PMV/F PMSVC PMFVC Set the analog output signal bias.	0.0% (-10.0%~10.0%)

◇ **F08.04: AO Filter**

Code (Address) Property	Name	Description	Default (Range)
F08.04 (0x0804) RUN	AO Filter	V/F SVC FVC PMV/F PMSVC PMFVC Set the filtering time for the analog output signal.	0.010s (0.000s~6.000s)

◇ **F08.05: AO as FM Lower Limit**

Code (Address) Property	Name	Description	Default (Range)
F08.05 (0x0805) RUN	AO as FM Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the AO value as the FM lower limit.	0.20kHz (0.00kHz~100.00kHz)

◇ **F08.06: AO as FM Upper Limit**

Code (Address) Property	Name	Description	Default (Range)
F08.06 (0x0806) RUN	AO as FM Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the AO value as the FM upper limit.	50.00kHz (0.00kHz~100.00kHz)

14.10.2 F08.1x: AO2

Use with extension cards.

◇ **F08.10: AO2 Mode**

Code (Address) Property	Name	Description	Default (Range)
F08.10 (0x080A) RUN	AO2 Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the analog output signal mode.	0 (0~2)

0: 0V~10V

1: 4.00mA~20.00mA

2: 0.00mA~20.00mA

3: FM pulse output

4: Fixed frequency ratio output

Note:

Set the dial switch on the control panel to the appropriate position to select different modes on F08.00.

AO Mode	Dial Switch
0: 0V~10V	AO2-U to ON.
1: 4.00mA~20.00mA	AO2-I to ON.
2: 0.00mA~20.00mA	AO2-I to ON.
3: FM pulse output	AO2-F to ON.
4: Fixed frequency ratio output	AO2-F to ON.

◇ **F08.11: AO2 Content**

Code (Address) Property	Name	Description	Default (Range)
F08.11 (0x080B) RUN	AO2 Content	V/F SVC FVC PMV/F PMSVC PMFVC Set the analog output content. The same as F08.01.	1 (0~19)

◇ **F08.12: AO2 Gain**

Code (Address) Property	Name	Description	Default (Range)
F08.12 (0x080C) RUN	AO2 Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the gain of the analog output.	100.0% (0.0%~300.0%)

◇ **F08.13: AO2 Bias**

Code (Address) Property	Name	Description	Default (Range)
F08.13 (0x080D) RUN	AO2 Bias	V/F SVC FVC PMV/F PMSVC PMFVC Set the analog output signal bias.	0.0% (-10.0%~10.0%)

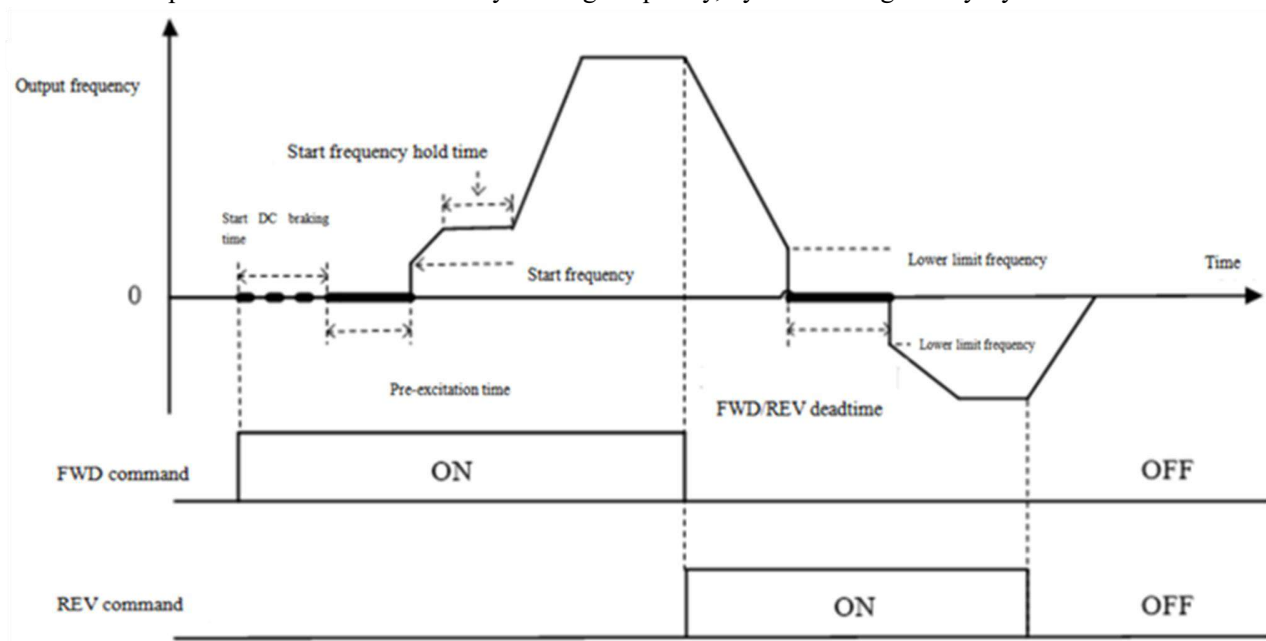
◇ **F08.14: AO2 Filter Time**

Code (Address) Property	Name	Description	Default (Range)
F08.14 (0x080E) RUN	AO2 Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the filtering time for the analog output signal.	0.010s (0.000s~6.000s)

14.11 F09: Operation Control

14.11.1 F09.0x: Start Control

AC drive provides three start modes: by starting frequency, by DC braking and by fly track.



Forward Start and Forward/Reverse Operation Switching

◇ **F09.00: Start Mode**

Code (Address) Property	Name	Description	Default (Range)
F09.00 (0x0900) STOP	Start Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the start mode for AC drive.	0 (0~2)

0: Start at starting frequency

In this mode, the output frequency varies for acceleration time directly from F09.02 [Start Frequency] when a start command is received.

1: By DC braking and the starting frequency before start

In this mode, operate as F09.20 [DC Braking Current] and F09.21 [DC Braking Time] and then start as starting frequency when a start command is received. This is suitable for the occasion that required a zero motor speed or low speed so the motor is sent with brake before starting.

2: By fly track and direction identification before start

Detect the speed and direction of the motor, and then start according to the detected speed. It is suitable for quick start-up of large inertia load after stop.

Note:

When the given frequency is lower than F09.02 [Start Frequency] at startup, the drive does not start and stay in standby mode while the operation indicator lights up.

◇ F09.01: Pre-excitation Time

Code (Address) Property	Name	Description	Default (Range)
F09.01 (0x0901) STOP	Pre-excitation Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the pre-excitation time to establish magnetic field before the motor starts.	0.00s (0.00s~60.00s)

It can effectively improve the starting performance of the motor and reduce the starting current and time.

Note:

- It is set to 0.00s by default, and the actual start time of pre-excitation is automatically calculated according to the motor parameters.
- When it is not set to 0.00s, pre-excitation is started as the set time.

◇ F09.02: Start Frequency

Code (Address) Property	Name	Description	Default (Range)
F09.02 (0x0902) STOP	Start Frequency	V/F SVC FVC PMV/F PMSVC PMFVC When the drive starts, the set value is taken as the initial output frequency.	0.50Hz (0.00Hz~F01.12)

Please set the appropriate starting frequency to ensure the motor output torque during starting. If the setting is too large, overcurrent suppression will occur during startup, and even overcurrent fault will be reported.

Note:

- When the set frequency is lower than the start frequency, the AC drive does not start, and stay in standby while the operation indicator is on.
- When the control mode changes, the default value of F09.02 [Start Frequency] is changed, as shown in the following table.

Funcode	Control Mode	F09.02 Start Frequency Default
F01.00	0: AM V/F control (V/ F)	0.50Hz
	1: AM open-loop vector control (SVC)	0.50Hz
	2: AM closed-loop vector control (FVC)	0.00Hz
	10: PM V/F control (PMV/ F)	0.50Hz
	11: PM open-loop vector control (PMSVC)	0.50Hz
	12: PM closed-loop vector control (PMFVC)	0.00Hz

◇ F09.03: Start Protection

Code (Address) Property	Name	Description	Default (Range)
F09.03 (0x0903) STOP	Start Protection	V/F SVC FVC PMV/F PMSVC PMFVC Select whether the given command is valid at startup.	0x0111 (0x0000~0x1111)

There are three states of the AC drive: fault state, undervoltage state and standby state while the former two are considered as abnormal state.

Ones-bit: ON when terminals under abnormal exit

- 0: OFF
- 1: ON

This function is only valid under terminal control.

Tens-bit: ON when jogging terminals under abnormal exit

- 0: OFF
- 1: ON

Hundreds-bit: ON when command source switched to terminals

0: OFF

1: ON

Thousands-bit: Reserved**Note:**

- The terminal start protection is enabled by default when the free stop, emergency stop or forced stop command are valid.
- After the terminal starting protection is valid, it is necessary to eliminate the terminal operation command and give it again before it becomes valid.
- After starting protection is valid, the drive does not run if there are running commands input, but display A.run3 alarm.

✧ **F09.05: Operation Direction**

Code (Add.) Property	Name	Description	Default (Range)
F09.05 (0x0905) STOP	Operation Direction	V/F SVC FVC PMV/F PMSVC PMFVC Select the motor operation direction.	0x0000 (0x0000~0x1121)

Ones-bit: Reverse operation direction

0: Keep direction. The actual motor direction is the same as the command, no need to adjust.

1: Invert direction. The actual motor direction is opposite to the command. Invert the current motor direction.

Tens-bit: Direction disable

It is used to control the motor operation direction.

0: Forward and reserve commands both allowed. The AC drive accepts forward and reverse operation commands to control motor operation.

1: Only forward command allowed. The AC drive only accepts forward operation command to control the motor, and the AC drive will not operate if it is given a reverse operation command.

2: Only reverse command allowed. The AC drive only accepts reverse operation command to control the motor, and the AC drive will not operate if it is given a forward operation command.

Hundreds-bit: Frequency-based direction control

It is used to determine whether negative frequency is allowed to change the current direction.

0: OFF. The AC drive will output 0.00Hz frequency when the calculation result is negative.

1: ON. The AC drive changes the current running direction and outputs the corresponding frequency if the calculation result is negative.

Note:

- This parameter does not change after F00.03 [Initialization].
- Set F00.04 [Download Parameters to Drive] to download parameters to the AC drive, ones-bit value won't be changed.
- When there are many drives in a system that need to be set with the same functional parameters and this can be realized by copying the parameters. It is recommended not to correct the direction of the motor by inverting the direction of operation, but to adjust the three-phase output to reverse two-phase.

✧ **F09.06~F09.07: Power-down Restart**

Code (Address) Property	Name	Description	Default (Range)
F09.06 (0x0906) STOP	Power-down Restart Mode	V/F SVC FVC PMV/F PMSVC PMFVC Select the mode for restart after power down.	0 (0~2)
F09.07 (0x0907) STOP	Power-down Restart Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the waiting time for restart after power down.	0.50s (0.00s~60.00s)

Power-down restart mode:

0: Invalid, AC drive won't restart only at operation command after it's powered on again.

1: Start by fly track.

If the AC drive is running before the power supply is cut off. After the power supply is restored, the drive will automatically track the speed after F09.07 [Power-down Restart Waiting Time].

2: Start as starting mode setting

Power-down restart waiting time:

Set principles for power-down restart waiting time so that other equipment related to AC drives can prepare for restart with reference.

Note:

During power-down restart waiting time, the drive will not accept the operation command, but if the stop command is input during this period, restart status is released.

14.11.2 F09.1x: Stop and Zero-frequency Control

◇ F09.10: Stop Mode

Code (Address) Property	Name	Description	Default (Range)
F09.10 (0x090A) RUN	Stop Mode	V/F SVC FVC PMV/F PMSVC PMFVC Select the stop mode when the operation command is released or the stop command is input.	0 (0~1)

Note: Stop command includes the running command off and stop command on.

0: Deceleration stop

The motor decelerates and stops according to effective deceleration time when a stop command is input.

The factory setting for the deceleration time is F01.21 [DEC Time 1]. The actual deceleration time varies depending on mechanical losses, inertia and other load conditions.

When the output frequency in deceleration reaches or is lower than F09.22 [Stop DC Braking Frequency], the AC drive triggers DC braking for stop determination.

1: Coasting stop

- When a stop command is input, the output of the drive is cut off immediately and the motor stops freely
- according to the deceleration rate formed by load conditions such as mechanical losses and inertia.
- In free stop mode, all the stop commands are processed as free stops.

Note:

When the drive is off, it does not respond to the run command in F09.12 [Stop-Restart Time Limit].

◇ F09.11: Stop Frequency

Code (Address) Property	Name	Description	Default (Range)
F09.11 (0x090B) RUN	Stop Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency to end deceleration from operation under the stop command. If the output frequency is lower than this set value, the output is blocked to enter the stop state.	0.50Hz (0.00Hz~F01.12)

When a stop command is received in the deceleration stop mode, if the stop DC braking function is valid, this function will be triggered if the output frequency is lower than F09.22 [DC Braking Start Frequency]. If the DC braking function is not valid, output is blocked to stop if the output frequency is lower than the set value.

Note: When F09.10 [Stop Mode] = 1 (Free stop), no detection will be performed on stop frequency and no DC braking will be carried out.

◇ F09.12: Pause-Restart Time Limit

Code (Address) Property	Name	Description	Default (Range)
F09.12 (0x090C) STOP	Pause-Restart Time Limit	V/F SVC FVC PMV/F PMSVC PMFVC The minimum interval time for the drive to switch from the running state to the stop state and then accept the running command.	0.000s (0.000s~60.000s)

This function is used in situations where frequent switching of start-up and stop commands is not allowed.

Note: When the drive stops, it does not respond to the operation command in during pause-restart time limit.

◇ F09.15: Under-Lower Limit Frequency Mode

Code (Address) Property	Name	Description	Default (Range)
F09.15 (0x090F) RUN	Under-Lower Limit Frequency Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the action when the output frequency is lower than the lower limit during operation.	2 (0~3)

0: Run at frequency command

Run normally.

1: Free stop and pause, then start by F7.00 setting

When given frequency and output frequency are lower than or equal to the lower limit, output is blocked and the

motor enters a pause state, allowing the motor to stop freely.

After entering the pause state, when the given frequency exceeds the lower limit, it exits the pause state and starts by F7.00 setting.

2: Run at lower limit frequency

When given frequency and output frequency are lower than or equal to the lower limit, it operates at the lower limit.

3: Run at zero frequency

When given frequency and output frequency are lower than or equal to the lower limit, the AC drive decelerates to zero frequency and can be controlled under zero-speed control in closed-loop vector and zero-speed torque control in open-loop vector or V/F mode.

After entering the zero-speed state, when the given frequency is greater than the lower limit, it exits the zero-speed state and enters the normal start control.

4: Free stop and pause, then start from fly track

When given frequency and output frequency are lower than or equal to the lower limit, output is blocked and the motor enters a pause state, allowing the motor to stop freely.

After entering the pause state, when the given frequency exceeds the lower limit, it exits the pause state and starts by fly track.

Note:

- This function is valid when there is a run command and the output frequency is lower than the lower limit frequency, such as zero-crossing in forward or reverse operation. It is invalid during the deceleration process when stopping.
- When F09.10 [Stop Mode] = 1 (Free stop), this judgment is not performed when the stop command is valid.

◇ F09.16~F09.17: Zero-Frequency Torque Holding

Code (Address) Property	Name	Description	Default (Range)
F09.16 (0x0910) RUN	Zero-Frequency Torque Holding Current	V/F SVC FVC PMV/F PMSVC PMFVC 100.0% of the rated motor current, the upper limit of the zero-frequency current is the rated current of the drive.	60.0% (0.0%~150.0%)
F09.17 (0x0911) RUN	Zero-Frequency Torque Holding Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the zero-frequency torque holding time. 6000.0s means zero frequency torque is not limited by time.	0.0s (0.0s~6000.0s)

Zero-frequency torque holding current:

100.0% of the rated motor current, the upper limit of the zero-frequency current is the rated current of the drive.

When the output frequency decelerates to F09.02 [Start Frequency], it enters zero-speed torque control state.

The zero-frequency torque holding current value will affect the magnetic field strength of the fixed motor shaft. Larger current values will increase the heat generated by the motor. Please set the minimum current value required to fix the motor shaft.

Zero-frequency torque holding time:

Set the zero-frequency torque holding time. When the output frequency is lower than the F09.02 [Start Frequency], timing starts.

Conditions for zero-frequency torque:

Condition	Name
Control Mode	Vector or V/F control
Operating Status	Normal operation state instead of stop or deceleration.
Output Frequency Threshold	When the output frequency decelerates to F09.02 [Start Frequency], it enters zero-speed torque control state.

◇ F09.18: FWD/REV Deadtime

Code (Address) Property	Name	Description	Default (Range)
F09.18 (0x0912) STOP	FWD/REV Deadtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the zero-speed holding time during FWD/REV switching.	0.0s (0.0s~120.0s)

When the forward and reverse command is switched, timer starts from zero frequency to deadtime. Timing is cleared after exiting the forward and reverse deadtime.

Exit forward/reverse deadtime:

Exit Mode	Post-Exit Control
FWD/REV deadtime up	Enter normal control

Reverse command	Enter normal control
Stop command	Enter stop control

During forward/reverse deadtime:

Control Mode	Method
Open-loop vector, V/F	Zero-frequency torque is valid to enter zero-speed torque control
Open-loop vector, V/F	Zero-frequency torque is invalid, and the output frequency and voltage are all zero
Close-loop vector	Zero speed control.

Note:

- This function can be used for preparation stage since it needs to wait for a certain period of time at zero speed.
- Positive and reverse deadtime does not conflict with zero-speed torque holding function, and timing starts at zero frequency.

14.11.3 F09.2x: DC Brake and Fly Track

◇ F09.20~F09.21: Start DC Braking

Code (Address) Property	Name	Description	Default (Range)
F09.20 (0x0914) STOP	Start DC Braking Current	V/F SVC FVC PMV/F PMSVC PMFVC 100.0% of the rated motor current, the upper limit of the braking current is the rated current of the drive.	60.0% (0.0%~150.0%)
F09.21 (0x0915) STOP	Start DC Braking Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the duration of start DC braking	0.0s (0.0s~60.0s)

Note: This function is valid when F09.00 [Start Mode] = 1 (DC braking and start at starting frequency).

When the operation command is valid, the drive enters the DC braking; if the pre-excitation function is valid, it will enter the pre-excitation state after the DC braking is completed.

Start DC braking current:

100.0% of the rated motor current, the upper limit of the DC braking current is the rated current of the drive.

DC braking current will affect the magnetic field strength of the fixed motor shaft. Larger current values will increase the heat generated by the motor. Please set the minimum current value required to fix the motor shaft.

Start DC braking time:

Note: When starting a motor that is running freely, please enable DC brake to stop the motor before starting it, or enable fly track to start the motor.

◇ F09.22~F09.24: Stop DC Braking

Code (Address) Property	Name	Description	Default (Range)
F09.22 (0x0916) STOP	Stop DB Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the threshold for entering the stopping DC brake.	1.00Hz (0.00Hz~50.00Hz)
F09.23 (0x0917) STOP	Stop DC Braking Current	V/F SVC FVC PMV/F PMSVC PMFVC 100.0% of the rated motor current, the upper limit of the braking current is the rated current of the drive.	60.0% (0.0%~150.0%)
F09.24 (0x0918) STOP	Stop DC Braking Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the duration of DC braking during stop.	0.0s (0.0s~60.0s)

Note: Stop DC braking is only valid when F09.10 [Stop Mode] = 0 (Deceleration stop).

When there is a stop command and the output frequency is lower than F09.22 [Stop DB Frequency], AC drive enters the stopping DC braking state.

AC drive enters the stop state after the stopping DC braking is finished.

When the operation command is received during the stopping DC braking state, the stop DC braking state is exited and the normal start control is resumed.

Stop DC Braking Current

100.0% of the rated motor current, the upper limit of the stopping DC braking current is the rated current of the drive.

DC braking current will affect the magnetic field strength of the fixed motor shaft. Larger current values will

increase the heat generated by the motor. Please set the minimum current value required to fix the motor shaft.

Stop DC braking time:

Enter the stopping DC braking state and timer starts; Exit the stopping DC braking state, clear the timer, and enter the re-timing next time.

F09.25~F09.28: Fly Track

Code (Address) Property	Name	Description	Default (Range)
F09.25 (0x0919) STOP	Fly Track	V/F SVC FVC PMV/F PMSVC PMFVC Set the fly track mode.	0x0000 (0x0000~0x1111)
F09.26 (0x091A) STOP	Fly Track Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the fly track time.	0.5s (0.0s~60.0s)
F09.27 (0x091B) STOP	Fly Track Stop Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the fly track stop delay time.	1.00s (0.00s~60.00s)
F09.28 (0x091C) STOP	Fly Track Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the fly track current upper limit.	120.0% (0.0%~400.0%)

Fly track mode:

Ones-bit: Search mode

0: Search from max. frequency

1: Search from stop frequency

Tens-bit: Reverse search

0: OFF

1: ON

Hundreds-bit: Search source

0: Software

1: Hardware

Thousands-bit: Reserved

Note:

- This function is valid when F09.00 [Start Mode] = 2 (Start by fly track).
- After reverse search is turned on, the motor may search in reverse. Please do not turn on this function when reverse operation is not allowed.

Fly track time:

In the process of fly track start-up, the shorter the time it takes to accelerate from the output voltage to the normal voltage at the current speed, the faster the tracking, but the greater the impulse current produced in the tracking process. When the time is zero, the tracking speed is automatically controlled by the AC drive.

Fly track stop delay:

After the drive cuts off the output, it needs a certain delay to re-output voltage to start the motor, so as to minimize the impulse current during starting. When the time is zero, the delay is automatically controlled by the AC drive.

Note:

- The fly track stop delay is mainly for demagnetization. Since the residual magnetism of synchronous motors does not change over time, this function is invalid for synchronous motors.
- Closed-loop vector control is not affected by residual magnetism, so the fly track delay in closed-loop control is also invalid.

14.11.4 F09.3x: Jog

◇ F09.30: Jog Frequency

Code (Address) Property	Name	Description	Default (Range)
F09.30 (0x091E) RUN	Jog Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the given frequency of jogging.	5.00Hz (0.00Hz~F01.10)

Note:

- Jog command has higher priority, and when it is valid in the operation process, drive enters jog directly.
- The set upper limit value is limited by F01.10 [Max. Frequency].

◇ **F09.31~F09.32: Jog ACC/DEC Time**

Code (Address) Property	Name	Description	Default (Range)
F09.31 (0x091F) RUN	Jog ACC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the time required for the jogging output frequency to accelerate from 0 to F01.20	10.00s (0.01s~650.00s)
F09.32 (0x0920) RUN	Jog DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the time required for the jogging output frequency to decelerate from F01.20 to 0.	10.00s (0.01s~650.00s)

Note:

F01.20 [ACC/DEC Time Reference Frequency]= 0, 1, 2 (Maximum frequency, 50.00Hz, Set frequency).

◇ **F09.33: Jog S-curve**

Code (Address) Property	Name	Description	Default (Range)
F09.33 (0x0921) RUN	Jog S-curve	V/F SVC FVC PMV/F PMSVC PMFVC Set the jogging s-curve on/off.	1 (0~1)

0: OFF

1: ON

Note: The time of jogging S-curve is the same as non-jogging S-curve, which is F01.31~F01.34.

◇ **F09.34: Jog Stop Mode**

Code (Address) Property	Name	Description	Default (Range)
F09.34 (0x0922) RUN	Jog Stop Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the jog stop mode.	0 (0~1)

0: Same as F09.10

F09.10=0 [Stop Mode]: Deceleration stop

F09.10=1 [Stop Mode]: Free stop

1: Deceleration stop only

The stop mode is not affected by F09.10 setting, deceleration stop only.

Note:

- When jog stop mode is set to deceleration only, it does not enter the stop DC braking, nor does it enter the stopping holding frequency judgment.
- When jogging, the function of holding frequency is invalid.
- Jog frequency is not limited by the lower limit.

14.11.5 F09.4x: Hold and Jump Frequency during Start/Stop

◇ **F09.40~F09.43: Start/Stop Holding Frequency**

Start/stop frequency holding function, that is, the function of temporarily holding at the set output frequency during starting or stopping.

It is used to prevent the motor from stalling under heavy load. Moreover, this function can avoid impact at the beginning of ACC/DEC caused by mechanical backlash.

When accelerating, the AC drive automatically runs at low speeds according to the set frequency and time to reduce the influence of gear clearance, and then it continues to accelerate. It has the same effect during deceleration.

When this function is applied to handling machines, the hold frequency can be used to delay the opening and closing of the electromagnetic brake of the machines or motors.

Code (Address) Property	Name	Description	Default (Range)
F09.40 (0x0928) STOP	Start Hold Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the output frequency temporarily maintained when the motor stops.	0.50Hz (0.00Hz~F01.12)
F09.41 (0x0929) STOP	Start Hold Frequency Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the time of output frequency temporarily maintained when the motor stops.	0.00s (0.00s~60.00s)

When the output frequency reaches the frequency set in F09.40, the drive keeps this frequency for the time set in F09.41 before continuing acceleration.

Note: When jogging, the function of holding frequency is invalid.

Code (Address) Property	Name	Description	Default (Range)
F09.42 (0x092A) STOP	Stop Hold Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the output frequency temporarily maintained when the motor stops.	0.50Hz (0.00Hz~F01.12)
F09.43 (0x092B) STOP	Stop Hold Frequency Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the time of output frequency temporarily maintained when the motor stops.	0.00s (0.00s~60.00s)

When the output frequency reaches the frequency set in F09.42, the drive keeps this frequency for the time set in F09.43 before decelerating further.

Note: When jogging stop is set to deceleration only, it does not enter the stopping DC braking, nor does it enter the stopping holding frequency judgment.

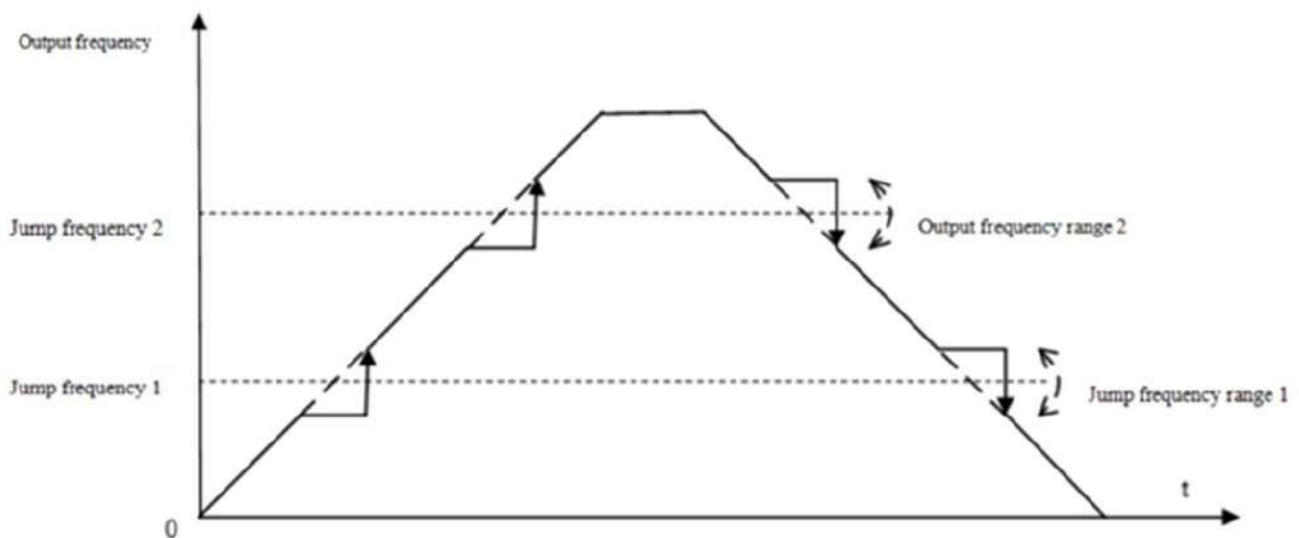
◇ F09.44~F09.47: Jump Frequency

Jump frequency is the function of setting specific frequency band to dead band. When a machine running at a constant speed changes to a variable speed, resonance may occur. To avoid resonance caused by the intrinsic vibration frequency of a mechanical system in operation, specific frequency bands need to be skipped.

Up to 2 frequency bands can be skipped. Adjust F09.44 [Jump Frequency 1] and F09.46 [Jump Frequency 2] for center value and F09.45 [Jump Frequency Range 1] and F09.47 [Jump Frequency Range 2] for range.

When the input frequency command is the same as or close to the jump frequency band, the frequency command will be automatically changed.

Accelerate or decelerate the motor smoothly until the frequency command exceeds the range of jump frequency band. At this time, the ACC/DEC rate is determined according to the set ACC/DEC time. When the frequency command gets out of the range of jump frequency band, it will switch to constant speed operation.



Function of Jump Frequency

Code (Address) Property	Name	Description	Default (Range)
F09.44 (0x092C) RUN	Jump Frequency 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the center value of a specific jump frequency band.	0.00Hz (0.00Hz~F01.10)
F09.45 (0x092D) RUN	Jump Frequency Range 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the range of a specific jump frequency band.	0.00Hz (0.00Hz~F01.10)

Note: When F09.44 [Jump Frequency 1] is set to 0.00Hz, jump frequency 1 is invalid.

Code (Address) Property	Name	Description	Default (Range)
F09.46 (0x092E) RUN	Jump Frequency 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the center value of a specific jump frequency band.	0.00Hz (0.00Hz~F01.10)
F09.47 (0x092F) RUN	Jump Frequency Range 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the range of a specific jump frequency band.	0.00Hz (0.00Hz~F01.10)

Note: When F09.46 [Jump Frequency 2] is set to 0.00Hz, jump frequency 2 is invalid.

14.11.6 F09.5x: Fly Track

Code (Address)	Name	Description	Default (Range)
F09.50 (0x0932) STOP	Fly Track	V/F SVC FVC PMV/F PMSVC PMFVC Set the fly track mode.	0x0000 (0x0000~ 0x1111)
F09.51 (0x0933) STOP	Fly Track Speed	V/F SVC FVC PMV/F PMSVC PMFVC Set the fly track speed.	0.50s (0.00s~ 60.00s)
F09.52 (0x0934) STOP	Fly Track Stop Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the fly track stop delay.	1.00s (0.00s~ 60.00s)
F09.53 (0x0935) STOP	Fly Track Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the fly track current.	120.0% (0.0%~ 400.0%)

Fly track mode:

Ones-bit: Search mode

0: Search from max. frequency

1: Search from stop frequency

Tens-bit: Reverse search

0: OFF

1: ON

Hundreds-bit: Search source

0: Software

1: Hardware

Thousands-bit: Reserved

Note:

This function is valid when F09.00 [Start Mode] = 2 (Start by fly track).

After reverse search is turned on, the motor may search in reverse. Please do not turn on this function when reverse operation is not allowed.

Fly track time:

In the process of fly track start-up, the shorter the time it takes to accelerate from the output voltage to the normal voltage at the current speed, the faster the tracking, but the greater the impulse current produced in the tracking process. When the time is zero, the tracking speed is automatically controlled by the AC drive.

Fly track stop delay:

After the drive cuts off the output, it needs a certain delay to re-output voltage to start the motor, so as to minimize the impulse current during starting. When the time is zero, the delay is automatically controlled by the AC drive.

Note:

The fly track stop delay is mainly for demagnetization. Since the residual magnetism of synchronous motors does not change over time, this function is invalid for synchronous motors.

Closed-loop vector control is not affected by residual magnetism, so the fly track delay in closed-loop control is also invalid.

14.12 F10: Protection Parameters

14.12.1 F10.0x: Current Protection

Code (Address) Property	Name	Description	Default (Range)
F10.00 (0x0A00) RUN	Anti-OC	V/F SVC FVC PMV/F PMSVC PMFVC Set the auto limit below the anti overcurrent point to prevent faults triggered by large current. 0: ON 1: ON during acceleration and deceleration and OFF during constant speed	0 (0~1)

0: ON

During acceleration, deceleration, and constant speed, if the output current reaches the overcurrent suppression point, the drive reduces the current through software control (by suspending acceleration, deceleration, lowering or raising the output frequency, etc.), and the drive operates normally when the current drops below the overcurrent suppression point.

1: ON during acceleration and deceleration and OFF during constant speed

The overcurrent suppression function is valid when the drive is accelerating or decelerating, but it is invalid when it is running at a constant speed.

Note: This function code is only valid for V/F control mode, and the overcurrent suppression function is always valid for vector control.

Under constant speed operation, overcurrent fault may be reported when the load changes too much.

Code (Address) Property	Name	Description	Default (Range)
F10.01 (0x0A01) RUN	Anti-OC Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the current threshold for the anti-overcurrent protection, 100% of the drive rated current.	160.0% (0.0%~300.0%)

Set the load current limit in overcurrent suppression function, 100% of the drive rated current. If the output current ratio is greater than this value, overcurrent suppression function will be triggered.

Code (Address) Property	Name	Description	Default (Range)
F10.02 (0x0A02) RUN	Anti-OC Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the response of overcurrent suppression. The higher the setting value, the faster the response.	100.0% (0.0%~500.0%)

Response speed of the overcurrent suppression can be adjusted.

Code (Address) Property	Name	Description	Default (Range)
F10.03 (0x0A03) STOP	Current Protection 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the current-related protection on/off. Ones-bit: CBC 0: OFF 1: ON Tens-bit: OC protection interference suppression 0: OFF 1: Level 1 2: Level 2 Hundreds-bit: Anti-interference for SC protection 0: OFF 1: Level 1 2: Level 2 Thousands-bit: Reserved	0001 (0x0000~0xf221)

Set the current-related protection on/off.

Ones-bit: CBC

Through hardware protection, CBC function can limit current rise to some extent to avoid overcurrent fault.

0: OFF

1: ON

Tens-bit: Anti-interference for OC protection

When this function is valid, the software judges the E.oC [Overcurrent Fault] and eliminates the interference signal, and only responds to the real over-current signal. After the Level 2 interference suppression is turned on, all the edge signal will be filtered.

0: OFF

1: Level 1

2: Level 2

Note: This function may delay the alarm time, so please use it with caution.

Hundreds-bit: Anti-interference for SC protection

When this function is valid, the software judges the E.oC [System Fault] and eliminates the interference signal, and only responds to the real system fault signal. After the Level 2 interference suppression is turned on, all the edge signal will be filtered.

0: OFF

1: Level 1

2: Level 2

Note: This function may delay the alarm time, so please use it with caution.

Thousands-bit: SC, OC, OU, fault reset delay

0: OFF

1: ON

When this function is valid, in the event of OU, OC, and SC faults, reset can only be performed after a 10s delay.

✧ **F10.04-F10.06: Current Imbalance Protection**

Code (Address) Property	Name	Description	Default (Range)
F10.04 (0x0A04) STOP	Current Protection 2	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Three-phase current sum detection, if it is not 0, report fault E. HAL. 0: OFF 1: ON Tens-bit: Three-phase current imbalance detection, report E. oLF4. 0: OFF 1: ON	0001 (0x0000~0x0011)
F10.05 (0x0A05) STOP	Current Imbalance Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Compare the ratio of the largest to the smallest phase of the three-phase current with the set value here to judge current imbalance. Exceeding this threshold after F10.06 [Filter Time] triggers fault report.	160% (0%~500%)

F10.06 (0x0A06) STOP	Current Imbalance Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Increase this parameter under high current fluctuation.	2.0 (0.0~60.0)

Code (Address) Property	Name	Description	Default (Range)
F10.07 (0x0A07) STOP	OC/SC Reset Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the reset delay time for OC and SC faults. When an OC or SC fault occurs, the AC drive can be reset only after this time has elapsed.	10.000s (10.000s~60.000s)

Code (Address) Property	Name	Description	Default (Range)
F10.08 (0x0A08) STOP	Single-phase Overload	V/F SVC FVC PMV/F PMSVC PMFVC When enabled, the current of each phase is evaluated independently for overload counting.	T3: 750V S2: 370V (0V~OU limit) T3 OU point: 820V S2 OU point: 400V

Note: The phase overload percentage monitoring parameter is C03.32.

When the overload count of any single phase reaches 100.0%, error E.OL4 (single-phase overload) is triggered.

14.12.2 F10.1x: Voltage Protection

Code (Address) Property	Name	Description	Default (Range)
F10.11 (0x0A0B) STOP	Anti-OU	V/F SVC FVC PMV/F PMSVC PMFVC If the bus voltage is higher than the anti-overvoltage limit, acceleration and deceleration will be slowed down or canceled to prevent overvoltage faults. Ones-bit: Anti-OU 0: OFF 1: ON Tens-bit: Over-excitation 0: OFF 1: ON during deceleration 2: ON during operation	0x0011 (0x0000~0x0021)

Ones-bit: Anti-OU

0: OFF

If the output frequency is not adjusted when the bus voltage is greater than the the anti-overvoltage threshold, it may trigger E. ou, the overvoltage fault.

1: ON

The voltage protection is valid under all operating conditions, and this setting is especially valid for eccentric loads.

Note: The overvoltage suppression function is valid for any control method. When the regenerative load suddenly becomes large, even if the overvoltage suppression function is turned on, it may report E. ou [Overvoltage].

Tens-bit: Over-excitation

0: OFF

No increase in excitation current during deceleration, overexcitation function is invalid.

1: ON during deceleration

Over-excitation deceleration puts the motor in an over-excitation state by increasing the excitation current during deceleration, which produces a larger braking torque and makes the motor decelerate rapidly, so it is faster than the usual deceleration and stop speed.

2: ON during operation

Precautions when using overexcitation deceleration:

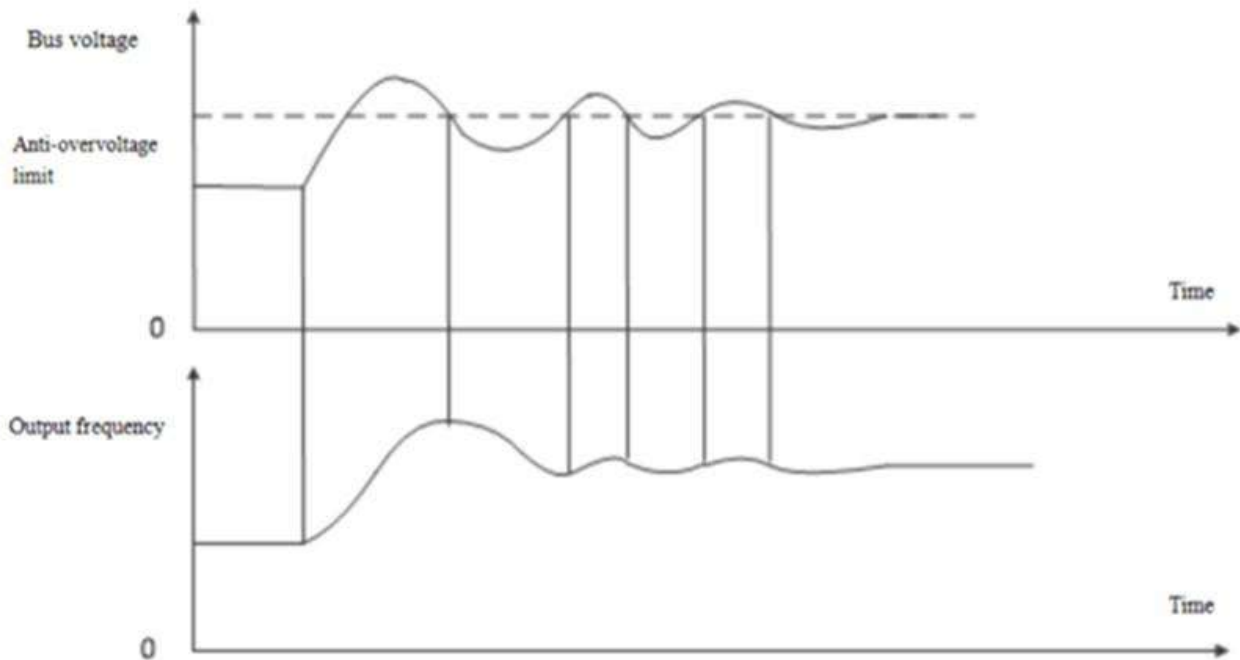
Do not use excitation deceleration function for the following cases. It is recommended to connect brake resistor.

- Frequent rapid deceleration
- Continuously regenerative loads
- Low inertia machines
- Machines where torque ripples are not allowed

Code (Address) Property	Name	Description	Default (Range)
F10.12 (0x0A0C) STOP	Anti-OU Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the bus voltage value to trigger the anti-overvoltage function.	T3: 750V S2: 370V (0V~OU limit) T3 OU point: 820V S2 OU point: 400V

Note: The factory value of this parameter is determined by the AC drive model.

In AC drive operation, if the bus voltage reaches or exceeds the F10.12 [Anti-OU Limit], the AC drive will automatically adjust the operation frequency to suppress the bus voltage, so as to ensure that the AC drive does not trigger E. ou [Over-voltage Fault]. The anti-OU function is shown in the figure below:



Anti-OU Function

Code (Address) Property	Name	Description	Default (Range)
F10.13 (0x0A0D) RUN	Anti-OU Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the response effect of anti-overvoltage function.	100.0% (0.0%~500.0%)

Adjust F10.13 [Anti-OU Gain] to adjust the effect of the overvoltage suppression function. 0 means this function is turned off.

Code (Address) Property	Name	Description	Default (Range)
F10.14 (0x0A0E) RUN	Dynamic Brake	V/F SVC FVC PMV/F PMSVC PMFVC Set the dynamic brake on/off. 0: OFF 1: ON, with anti-overvoltage function off 2: ON, with anti-overvoltage function on	2 (0~2)

Set the dynamic brake on or off.

0: OFF

The AC drive does not control the motor with dynamic braking regardless of the bus voltage.

1: ON, with overvoltage suppression off

When the bus voltage exceeds the dynamic braking working voltage, AC drive carries out dynamic braking on the motor, and over-voltage suppression function is off at this time.

2: Dynamic braking and overvoltage suppression are both on

When the bus voltage exceeds the dynamic braking action voltage, AC drive carries out dynamic braking control on the motor, and over-voltage suppression function is on at the same time.

Note: This parameter to set overvoltage suppression function on/off is prior to F10.11 [Anti-OU].

Code (Address) Property	Name	Description	Default (Range)
F10.15 (0x0A0F) RUN	Dynamic Brake Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the dynamic brake voltage to work when the bus voltage is higher than this value.	T3: 740V S2: 360V (0V~OU limit) T3 OU point: 820V S2 OU point: 400V

When the AC drive DC bus voltage rises and exceeds F10.15 [Dynamic Brake Voltage], the AC drive dynamic braking begins to work. For models without built-in braking resistor, please install another braking resistor to use this function.

Tip: When using the dynamic braking function, please turn off the over-voltage suppression function and set F10.11 to 0; otherwise, it may suppress the rise of bus voltage and the dynamic braking action point will not be reached.

Code (Address) Property	Name	Description	Default (Range)
F10.16 (0x0A10) STOP	Anti-LU	V/F SVC FVC PMV/F PMSVC PMFVC Auto-adjust the operation frequency when the bus voltage is lower than the anti-undervoltage point to prevent undervoltage fault. 0: OFF 1: ON	0 (0~1)

Note: This function is valid for all motor control modes.

When the bus voltage reaches or falls below F10.17 [Anti-LU Limit] during AC drive operation, the AC drive will automatically adjust the operating frequency to suppress the bus voltage reduction, thus ensuring that the AC drive does not trigger E. Lu2 [Undervoltage] due to low bus voltage.

0: OFF

1: ON

Code (Address) Property	Name	Description	Default (Range)
F10.17 (0x0A11) STOP	Anti-LU Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the bus voltage value to trigger the anti-undervoltage function.	T3: 430V S2: 240V (0V~OU limit) T3 OU point: 820V S2 OU point: 400V

Note: The factory value of this parameter is determined by the AC drive model.

When the bus voltage reaches or falls below F10.17 [Anti-LU Limit] during AC drive operation, the AC drive will automatically adjust the operating frequency to suppress the bus voltage reduction, thus ensuring that the AC drive does not trigger E. Lu2 [Undervoltage] due to low bus voltage.

Code (Address) Property	Name	Description	Default (Range)
F10.18 (0x0A12) RUN	Anti-LU Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the response effect of anti-undervoltage function.	100.0% (0.0%~500.0%)

Adjust F10.18 [Anti-LU Gain] to adjust the effect of the undervoltage suppression. 0 means this function is turned off.

Code (Address) Property	Name	Description	Default (Range)
F10.19 (0x0A13) STOP	LU Protection Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower limit voltage of the bus voltage allowed, report undervoltage fault when below this value.	T3: 320V S2: 190V (0V~OU limit) T3 OU point: 820V S2 OU point: 400V

This parameter specifies the allowable lower limit of bus voltage when AC drive is working normally. For some occasions where the power grid is low, the undervoltage protection level can be appropriately lowered to ensure normal operation.

Note: The output torque of the motor will drop when the grid voltage is too low. For constant power loads and constant torque loads, excessively low grid voltage will increase the AC drive I/O current, which will reduce the reliability of the AC drive operation.

14.12.3 F10.2x: Auxiliary Protection

Code (Address) Property	Name	Description	Default (Range)
F10.20 (0x0A14) STOP	I/O Phase Loss Protection	V/F SVC FVC PMV/F PMSVC PMFVC Set the I/O phase loss protection function on or off. Ones-bit: Output phase loss protection 0: OFF 1: ON Tens-bit: Input phase loss protection 0: OFF 1: ON, report A.iLF when input phase loss is detected, continue operation 2: ON, report E.iLF when input phase loss is detected, free stop	0x0021 (0x0000~0x1121)

Set the I/O phase loss protection function on or off.

Ones-bit: Output phase loss protection

0: OFF, output phase loss protection function is invalid. DC braking and vector pre-excitation can not be exited due to phase loss.

1: ON, report E.iLF when input phase loss is detected, motor freely stops.

Tens-bit: Input phase loss protection

0: OFF, output phase loss protection function is invalid.

1: ON, report A.iLF when input phase loss is detected, continue operation.

2: ON, report E.iLF when input phase loss is detected, motor freely stops.

Code (Address) Property	Name	Description	Default (Range)
F10.21 (0x0A15) STOP	Input Phase Loss Level	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage detection percentage for the input phase loss detection, 100% of the rated bus voltage.	10.0% (0.0%~30.0%)

Set the voltage detection percentage for the input phase loss detection, 100% of the rated bus voltage.

Note: Increase this value when the grid voltage fluctuation is large, so as to prevent false alarm of phase loss.

Code (Address) Property	Name	Description	Default (Range)
F10.22 (0x0A16) STOP	Short Ground Protection	V/F SVC FVC PMV/F PMSVC PMFVC Set the drive output and cooling fan to ground short circuit protection on/off. Ones-bit: Output to ground short circuit protection 0: OFF 1: Detect at power on 2: Detect before operation Tens-bit: Fan to ground short circuit protection 0: OFF 1: ON Hundreds-bit: 24V power supply short circuit protection 0: OFF 1: ON	0x0111 (0x0000~0x0112)

Set the drive output and cooling fan to ground short circuit protection on/off.

Ones-bit: Output to ground short circuit protection

0: OFF.

1: Detect at power-on, and report E.SG [Output Short Circuit to Ground] when fault is detected.

2: Detect before operation.

Tens-bit: Fan to ground short circuit protection

0: OFF.

1: ON. When fan short circuit is detected, report E. FSG [Fan Short Circuit to Ground].

Hundreds-bit: 24V power supply short circuit protection

0: OFF

1: ON. When power short circuit is detected, report E PoS [24V Power Short Circuit].

Note:

- When the short circuit to ground detection is started before operation, synchronous motors cannot be started during rotation.
- During the rotation of synchronous motor, power-on will falsely trigger short circuit to ground fault.
- The 24V power supply short-circuit protection function is only valid for the T3 model (45kW-115kW).

Code (Address) Property	Name	Description	Default (Range)
F10.23 (0x0A17) RUN	Fan Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the drive cooling fan operation mode. 0: ON after the drive is powered up 1: ON with the drive, temperature-related 2: ON for the set time on F10.24 and OFF, temperature-related	1 (0~2)

Set the drive fan operation mode.

0: Fan runs after the drive is powered up. The fan runs when the AC drive is powered up, regardless of the module temperature.

1: Temperature relevant. Fan runs during drive operation. Whether the fan runs during stop is related to the module temperature. It runs when the temperature exceeds 50 °C, otherwise it stops after a delay of 30 seconds. Fan runs with 1s delay when AC drive is running.

2: Temperature relevant. Fan stops after the drive stops. Whether the fan runs or not during AC drive operation is related to the module temperature. It runs immediately when the temperature exceeds 50 °C, otherwise the fan stops after a delay of 30 seconds. Fan stops with 30s delay when AC drive stops.

Note: This feature can effectively extend the service life of the cooling fan.

Code (Address) Property	Name	Description	Default (Range)
F10.24 (0x0A18) STOP	Fan OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time from running command releasing to cooling fan stopping.	30.00s (0.00s~60.00s)

Set the time from running command releasing to cooling fan stopping. After the drive stops running, the fan stops running only after this time.

Code (Address) Property	Name	Description	Default (Range)
F10.25 (0x0A19) RUN	Drive oH1 Warning Level	V/F SVC FVC PMV/F PMSVC PMFVC Set the value for overheat detection, report alarm when it is above this value.	80.0°C (0.0°C~100.0°C)

Set the temperature value for the drive's overheat warning. When C00.12 radiator temperature is greater than this value, report A.OH1 [Overheat].

14.12.4 F10.3x: Load Protection

Load protection detection:

Set the drive load detection mode and the alarm mode via load alarm threshold and load alarm time.

Code (Address) Property	Name	Description	Default (Range)
F10.32 (0x0A20) STOP	Load Alarm Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the drive load detection mode and the alarm mode at this time. Ones-bit: Load detection mode 1 0: OFF 1: Detect overload 2: Detect overload at constant speed only 3: Detect underload 4: Detect underload at constant speed only Tens-bit: Load detection 1 alarm mode 0: Continue to run, report A. LD1 1: Free stop, report E. LD1 Hundreds-bit: Load detection mode 2 0: OFF 1: Detect overload 2: Detect overload at constant speed only 3: Detect underload 4: Detect underload at constant speed only Thousands-bit: Load detection 2 alarm mode 0: Continue to run, report A. LD2 1: Free stop, report E. LD2	0x0000 (0x0000~0x1414)
F10.33 (0x0A21) STOP	Load Alarm Threshold 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the threshold for load alarm 1. For V/F control, 100% of the rated motor current. For vector control, 100% of the motor rated output torque.	130.0% (0.0%~200.0%)
F10.34 (0x0A22) STOP	Load Alarm Time 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the duration of load detection 1, if the load is higher than the load alarm for the set time, report load alarm 2.	5.0s (0.0s~60.0s)

Set the load alarm 1-related parameters.

In V/F control mode, the motor output current is used as reference value, 100.0% of rated motor current; in vector control mode, the motor output torque is used as reference value, 100.0% of the rated motor output torque.

Load alarm reference value 1 is compared with F10.33 [Load Alarm Threshold] during F10.34 [Load Alarm Time] and corresponding actions are set as F10.32 [Load Alarm Mode].

When the function of Y terminal is selected as 27 (Overload alarm) or 28 (Underload alarm), the AC drive outputs alarm signals through Y terminal.

Code (Address) Property	Name	Description	Default (Range)
F10.35 (0x0A23) STOP	Load Alarm Threshold 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the threshold for load alarm 2. For V/F control, it is 100% of the rated motor current. For vector control, 100% of the motor rated output torque.	30.0% (0.0%~200.0%)

F10.36 (0x0A24) STOP	Load Alarm Time 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the duration of load detection 2, if the load is higher than the load alarm for the set time, report load alarm 2.	5.0s (0.0s~60.0s)

Set the load alarm 2-related parameters.

In V/F control mode, the motor output current is used as reference value, 100.0% of rated motor current; in vector control mode, the motor output torque is used as reference value, 100.0% of the rated motor output torque.

Load alarm reference value 2 is compared with F10.35 [Load Alarm Threshold] during F10.36 [Load Alarm Time] and corresponding actions are set as F10.32 [Load Alarm Mode].

When the function of Y terminal is selected as 27 (Overload alarm) or 28 (Underload alarm), the AC drive outputs alarm signals through Y terminal.

14.12.5 F10.4x: Overspeed Protection

Code (Address) Property	Name	Description	Default (Range)
F10.40 (0x0A28) STOP	Excessive Speed Deviation Protection	V/F SVC FVC PMV/F PMSVC PMFVC Set the alarm value when the deviation between the motor's given speed and the feedback speed is too large. Set the detection and alarm modes. Ones-bit: Detection mode 0: OFF 1: Detect only at constant speed 2: ON Tens-bit: Alarm mode 0: Free stop and report error 1: Report alarm and continue operation	0x0000 (0x0000~0x0012)

Set the detection and alarm modes when the deviation between the motor's given speed and feedback speed is too large, together with F10.41 [Excessive Speed Deviation Threshold] and F10.42 [Excessive Speed Deviation Time].

Ones-bit: Detection mode

0: OFF, no detection of excessive speed deviation

1: ON, but only detect at constant speed, and only turn on the protection function of excessive speed deviation when running at constant speed

2: ON, and turn on the protection function of excessive speed deviation when accelerating, decelerating and at constant speed control

Tens-bit: Alarm mode

0: Free stop and report E. DEF

1: Continue operation and report A. DEF

Note:

Speed deviation protection is only effective for vector control, not for VF control.

Code (Address) Property	Name	Description	Default (Range)
F10.41 (0x0A29) STOP	Excessive Speed Deviation Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the detection threshold for excessive speed deviation, 100% of F01.10 [Max. Frequency].	10.0% (0.0%~60.0%)
F10.42 (0x0A2A) STOP	Excessive Speed Deviation Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the duration for detecting excessive speed deviation. If the deviation between the given speed and the feedback speed is greater than F10.41 and continues for this time, an excessive speed deviation alarm is reported.	2.0s (0.0s~60.0s)

Note: The speed deviation detection threshold is 100% of the F01.10 [Max. Frequency].

When the percentage of the deviation of speed feedback and speed setting and F01.10 [Max. Frequency] is greater than F10.41 [Excessive Speed Deviation Threshold] within F10.42 [Excessive Speed Deviation Time], the drive considers that the deviation is excessive and makes a corresponding action in accordance with F10.40 [Excessive Speed Deviation Protection] setting.

Code (Address) Property	Name	Description	Default (Range)
F10.43 (0x0A2B) STOP	Overspeed Protection	V/F SVC FVC PMV/F PMSVC PMFVC Set the detection and alarm modes for motor overspeed. Ones-bit: Detection mode 0: OFF 1: Detect only at constant speed 2: ON Tens-bit: Alarm mode 0: Free stop and report error 1: Report alarm and continue operation	0x0002 (0x0000~0x0012)

Set the detection and alarm modes when the motor feedback speed is abnormally large, and is used in conjunction with F10.44 [Overspeed Detection Threshold] and F10.45 [Overspeed Detection Time].

Ones-bit: Detection mode

0: OFF, no detection

1: ON, but only detect at constant speed, and only turn on the overspeed protection function when running at constant speed

2: ON during acceleration, deceleration and constant speed control

Tens-bit: Alarm mode

0: Free stop and report E. SPD

1: Continue operation and report A. SPD

Code (Address) Property	Name	Description	Default (Range)
F10.44 (0x0A2C) STOP	Overspeed Detection Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the threshold of the overspeed detection, 100% of F01.10 [Max. Frequency].	110.0% (0.0%~150.0%)
F10.45 (0x0A2D) STOP	Overspeed Detection Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the duration of overspeed detection. If the feedback speed is higher than F10.44 and continues for this time, report the overspeed alarm.	0.100s (0.000s~2.000s)

Note: The overspeed detection threshold is 100% of the F01.10 [Max. Frequency].

When the percentage of speed feedback and F01.10 [Max. Frequency] is greater F10.45 [Overspeed Detection Threshold] F10.44 [Overspeed Detection Time], the drive considers it stall and makes a corresponding action in accordance with F10.43 [Overspeed Protection] setting.

Code (Address) Property	Name	Description	Default (Range)
F10.46 (0x0A2E) STOP	STO Auto Error Reset	V/F SVC FVC PMV/F PMSVC PMFVC Set the STO error auto reset function on/off. 0: OFF 1: ON	110.0% (0.0%~150.0%)

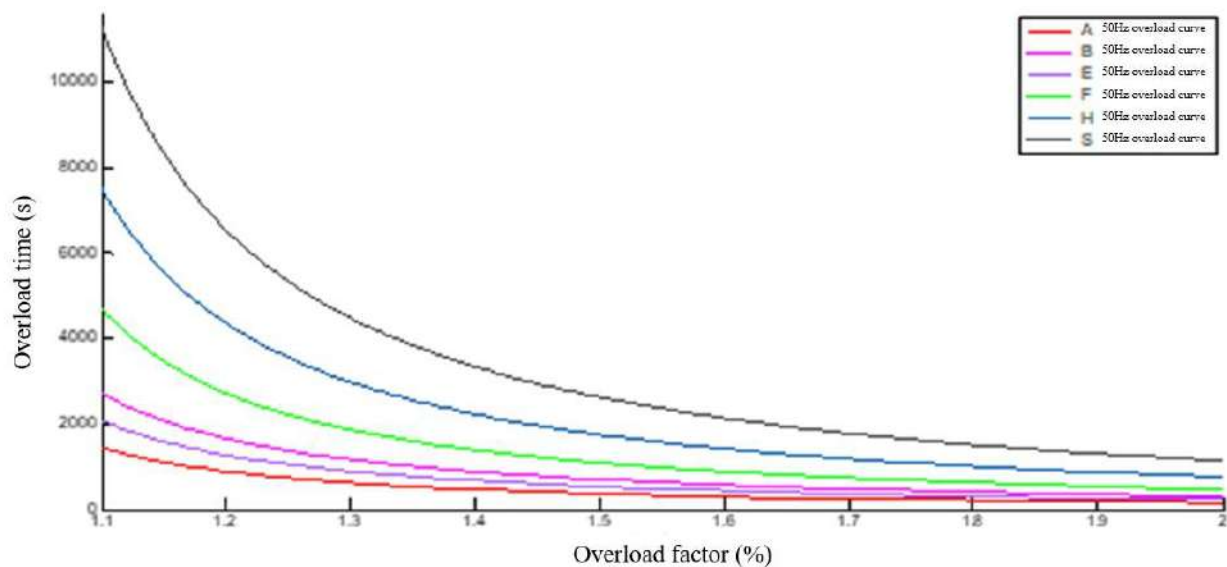
Note: This function is only effective for E.STOEN (STO emergency stop). Other STO faults cannot be automatically reset.

14.12.6 F10.5x: Motor Overload

F10.50~F10.54: Motor Overload Protection

Code (Address) Property	Name	Description	Default (Range)
F10.50 (0x0A32) RUN	Motor Overload Model	V/F SVC FVC PMV/F PMSVC PMFVC 0: Common motor 1: Variable frequency motor (50Hz) 2: Variable frequency motor (60Hz) 3: Motor without fans	0 (0~3)
F10.51 (0x0A33) STOP	Insulation Grade	V/F SVC FVC PMV/F PMSVC PMFVC 0: Grade A 1: Grade E 2: Grade B 3: Grade F 4: Grade H 5: Special grade S	3 (0~5)
F10.52 (0x0A34) STOP	Work Mode	V/F SVC FVC PMV/F PMSVC PMFVC 0~1: S1 pattern (continuous operation) 2: S2 pattern 3~9: S3~S9 patterns	0 (0~9)
F10.53 (0x0A35) STOP	Motor OL Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor overload threshold. Record the overload quantity when actual current is greater than the value here.	105.0% (0.0%~130.0%)
F10.54 (0x0A36) STOP	Motor OL Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Motor overload current=actual current * motor overload coefficient.	100.0% (0.0%~250.0%)

Motor overload operation for a long time will cause serious heat. Heat and heat dissipation coefficients together determine the motor temperature rise. Curve of motor overload protection and motor current shows inverse time relationship, which are related to motor operation frequency. Overload protection curve at F10.54 = 100.0% is as follows.

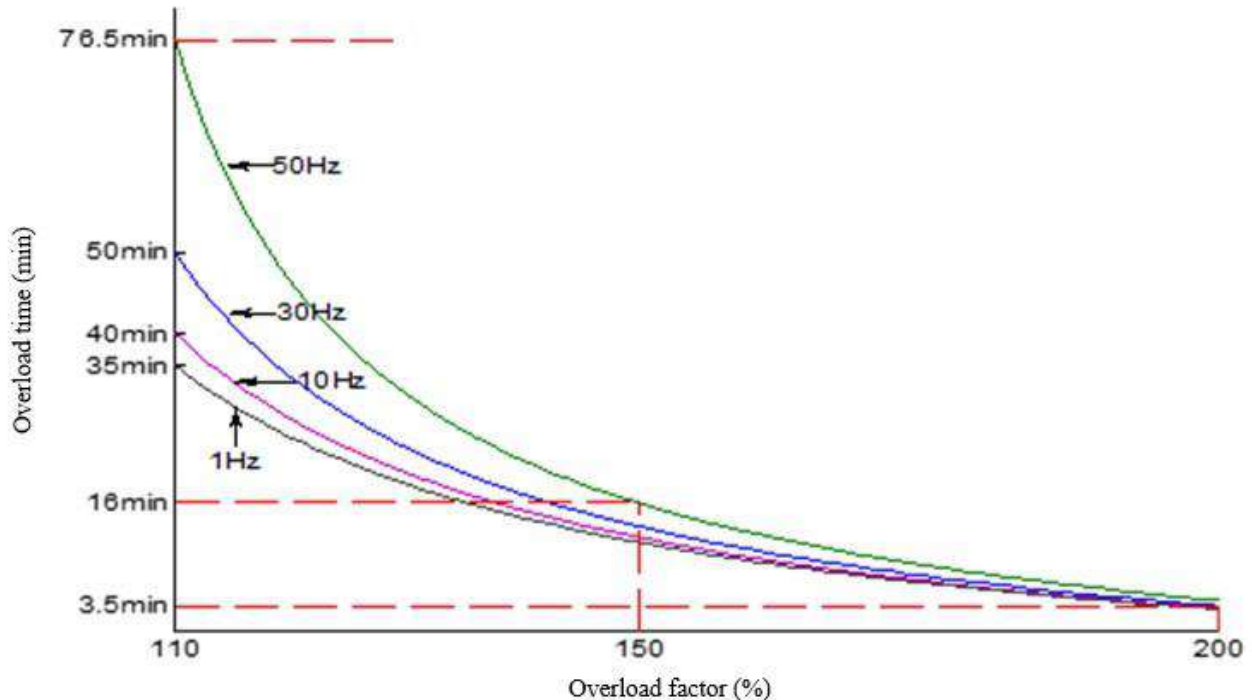


Comparison of Overload Curves at 50Hz

Overload Schedule of Key Points at 50Hz

Overload Protection Time (min)		(Motor overload current/ rated current)× 100%		
		110%	150%	200%
Insulation grade	F	75	16	3.5

Overload protection curves at different frequencies when F class is defaulted:



Note: Users need to set the industrial control according to the actual motors, and correctly set F10.50~F10.54 to effectively protect the motors.

When an AC drive with multiple motors runs in parallel, the thermal relay protection function of the AC drive will be invalid. In order to effectively protect the motors, please install a thermal protection relay at the inlet end of each motor.

14.12.7 F10.6x~F10.9x: Error Handling

F10.61~F10.73: Auto Error Reset

The fault auto-reset function is used when the drive detects a temporary fault, but doesn't want the machines to stop running, so it automatically resets the temporary fault. When the number of times of fault auto-reset exceeds the set value within the set time, the drive detects the fault and stops. At this time, it is necessary to eliminate the cause of the fault and then manually reset the fault.

⚠ DANGER

Do not use the fault auto-reset function on lifters when its load or failure can not be automatically reset, or personal injuries may be caused.

✧ F10.61: Auto Reset No.

Code (Address) Property	Name	Description	Default (Range)
F10.61 (0x0A3D) STOP	Auto Reset No.	V/F SVC FVC PMV/F PMSVC PMFVC Set the number of times allowed to perform error auto reset. Note: 0 indicates that the auto reset function is disabled; otherwise, it is enabled.	0 (0~10)

Note: 0 indicates that the fault auto-reset function is disabled.

Fault auto-reset is not performed when a fault occurs during stopping and decelerating while this function is on.

When the fault auto-reset function is turned on, the undervoltage fault in operation will jump straight into A. Lu1 and enter the stop state.

During the fault auto-reset period, if the fault can't be auto removed, the AC drive will enter a fault state without

auto-reset.

✧ **F10.62: Error Reset Delay**

Code (Address) Property	Name	Description	Default (Range)
F10.62 (0x0A3E) STOP	Error Reset Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the waiting time after an error occurs until reset.	0.1s (0.1s~100.0s)

Set the waiting time after an error occurs in the drive until each reset, during which the keypad displays the error code, but the operation indicator is still on.

✧ **F10.63: Performed Error Reset No.**

Code (Address) Property	Name	Description	Default (Range)
F10.63 (0x0A3F) READ	Performed Error Reset No.	V/F SVC FVC PMV/F PMSVC PMFVC Indicate the times of already performed auto error reset, read-only.	0

Indicate the times of already performed auto error reset, which is convenient for users to confirm the function state, read-only.

Note: This value will be increased by 1 for every auto-reset, and when it equals to F10.50 [Fault Auto-Reset Limit], it will trigger an auto-reset fault again once the fault is detected again, and no more auto-reset will be performed.

During the error auto-reset period, if the fault can't be auto removed and cause drive stop, this value will be cleared to 0.

If there is no error trigger within 10 minutes after the auto reset, the value be cleared to 0.

✧ **F10.64: Auto Error Reset Limit**

Code (Address) Property	Name	Description	Default (Range)
F10.64 (0x0A40) READ	Auto Error Reset Limit	V/F SVC FVC PMV/F PMSVC PMFVC No reset allowed if OC/SC/OL/OH errors occur 3 times within 5 minutes. 0: OFF 1: ON	0 (0~1)

✧ **F010.66~F10.73: Auto Error Reset Attribution**

Code (Address) Property	Name	Description	Default (Range)
F10.66 (0x0A42)	Auto Error Reset Attribution 1	V/F SVC FVC PMV/F PMSVC PMFVC Auto reset for errors 0~15 1: ON 2: OFF	0xFFFF (0x0000~0xFFFF)
F10.67 (0x0A43)	Auto Error Reset Attribution 2	V/F SVC FVC PMV/F PMSVC PMFVC Auto reset for errors 16~31 1: ON 2: OFF	0xFFFF (0x0000~0xFFFF)
F10.68 (0x0A44)	Auto Error Reset Attribution 3	V/F SVC FVC PMV/F PMSVC PMFVC Auto reset for errors 32~37 1: ON 2: OFF	0xFFFF (0x0000~0xFFFF)
F10.69 (0x0A45)	Auto Error Reset Attribution 4	V/F SVC FVC PMV/F PMSVC PMFVC Auto reset for errors 38~53 1: ON 2: OFF	0xFFFF (0x0000~0xFFFF)
F10.70 (0x0A46)	Auto Error Reset Attribution 5	V/F SVC FVC PMV/F PMSVC PMFVC Auto reset for errors 54~69 1: ON 2: OFF	0xFFFF (0x0000~0xFFFF)

F10.71 (0x0A47)	Auto Error Reset Attribution 6	V/F SVC FVC PMV/F PMSVC PMFVC Auto reset for errors 70~85 1: ON 2: OFF	0xFFFF (0x0000~ 0xFFFF)
F10.72 (0x0A48)	Auto Error Reset Attribution 7	V/F SVC FVC PMV/F PMSVC PMFVC Auto reset for errors 86~101 1: ON 2: OFF	0xFFFF (0x0000~ 0xFFFF)
F10.73 (0x0A49)	Auto Error Reset Attribution 8	V/F SVC FVC PMV/F PMSVC PMFVC Auto reset for errors 102~107 1: ON 2: OFF	0xFFFF (0x0000~ 0xFFFF)

Use parameters F10.66~F10.73 to configure whether each of the 128 faults supports auto-reset.

Taking F10.66 (0x0000~0xFFFF) as an example:

The ones-bit represents whether fault codes 0~3 can reset automatically; The tens-bit represents whether fault codes 4~7 can reset automatically; The hundreds-bit represents whether fault codes 8~11 can reset automatically; The thousands-bit represents whether fault codes 12~15 can reset automatically.

Examples:

0x0001: Only fault code 0 can reset automatically.

0x0007: Only fault codes 0/1/2 can reset automatically.

F10.66		Comment	F10.66		Comment
Ones-bit	0	Faults 0~3 cannot reset automatically.	Tens-bit	0	Faults 4~7 cannot reset automatically.
	1	Only fault 0 can reset automatically (no fault corresponds to code 0).		1	Only fault 4: E.SC4 can reset automatically.
	2	Only fault 1: E.SC1 can reset automatically.		2	Only fault 5: E.oC1 can reset automatically.
	4	Only fault 2: E.SC2 can reset automatically.		4	Only fault 6: E.oC2 can reset automatically.
	8	Only fault 3: E.SC3 can reset automatically.		8	Only fault 7: E.oC3 can reset automatically.
	F	Faults 0~3 can all reset automatically.		F	Faults 4~7 can all reset automatically.
F10.66		Comment	F10.66		Comment
Hundreds-bit	0	Faults 8~11 cannot reset automatically.	Thousands-bit	0	Faults 12~15 cannot reset automatically.
	1	Only fault 8 can reset automatically.		1	Only fault 12: E.E12 can reset automatically.
	2	Only fault 9: E.oU1 can reset automatically.		2	Only fault 13: E.LU can reset automatically.
	4	Only fault 10: E.oU2 can reset automatically.		4	Only fault 14: E.oL1 can reset automatically.
	8	Only fault 11: E.oU3 can reset automatically.		8	Only fault 15: E.oL2 can reset automatically.
	F	Faults 8~11 can all reset automatically.		F	Faults 12~15 can all reset automatically.

✧ F10.74~F10.81: Error Record Attribution

Code (Address) Property	Name	Description	Default (Range)
F10.74 (0x0A4A)	Error Record Attribution 1	V/F SVC FVC PMV/F PMSVC PMFVC Record errors 0~15. 1: ON 0: OFF	0xFFFF (0x0000~ 0xFFFF)
F10.75 (0x0A4B) RUN	Error Record Attribution 2	V/F SVC FVC PMV/F PMSVC PMFVC Record errors 16~31. 1: ON 0: OFF	0xFFFF (0x0000~ 0xFFFF)

F10.76 (0x0A4C)	Error Record Attribution 3	V/F SVC FVC PMV/F PMSVC PMFVC Record errors 32~37. 1: ON 0: OFF	0xFFFF (0x0000~0xFFFF)
F10.77 (0x0A4D)	Error Record Attribution 4	V/F SVC FVC PMV/F PMSVC PMFVC Record errors 38~53. 1: ON 0: OFF	0xFFFF (0x0000~0xFFFF)
F10.78 (0x0A4E)	Error Record Attribution 5	V/F SVC FVC PMV/F PMSVC PMFVC Record errors 54~69. 1: ON 0: OFF	0xFFFF (0x0000~0xFFFF)
F10.79 (0x0A4F)	Error Record Attribution 6	V/F SVC FVC PMV/F PMSVC PMFVC Record errors 70~85. 1: ON 0: OFF	0xFFFF (0x0000~0xFFFF)
F10.80 (0x0A50)	Error Record Attribution 7	V/F SVC FVC PMV/F PMSVC PMFVC Record errors 86~101. 1: ON 0: OFF	0xFFFF (0x0000~0xFFFF)
F10.81 (0x0A51)	Error Record Attribution 8	V/F SVC FVC PMV/F PMSVC PMFVC Record errors 102~107. 1: ON 0: OFF	0xFFFF (0x0000~0xFFFF)

Use parameters F10.74~F10.81 to configure whether fault records are stored for each of the 128 faults.

Taking F10.74 (0x0000~0xFFFF) as an example: The ones-bit indicates whether fault information for fault codes 0~3 is recorded; The tens-bit indicates whether fault information for fault codes 4~7 is recorded; The hundreds-bit indicates whether fault information for fault codes 8~11 is recorded; The thousands-bit indicates whether fault information for fault codes 12~15 is recorded.

Examples:

0x0001: Only the fault record for fault code 0 is stored.

0x0007: Fault records for fault codes 0/1/2 are stored.

F10.74		Comment	F10.74		Comment
Ones-bit	0	Faults 3 is not recorded.	Tens-bit	0	Faults 4~7 are not recorded.
	1	Only fault 0 is recorded (no fault currently corresponds to code 0).		1	Only fault 4: E.SC4 is recorded.
	2	Only fault 1: E.SC1 is recorded.		2	Only fault 5: E.oC1 is recorded.
	4	Only fault 2: E.SC2 is recorded.		4	Only fault 6: E.oC2 is recorded.
	8	Only fault 3: E.SC3 is recorded.		8	Only fault 7: E.oC3 is recorded.
	F	Faults 0~3 are all recorded.		F	Faults 4~7 are all recorded.
F10.74		Comment	F10.74		Comment
Hundreds-bit	0	Faults 8~11 are not recorded.	Thousands-bit	0	Faults 12~15 are not recorded.
	1	Only fault 8 is recorded.		1	Only fault 12: E.E12 is recorded.
	2	Only fault 9: E.oU1 is recorded.		2	Only fault 13: E.LU is recorded.
	4	Only fault 10: E.oU2 is recorded.		4	Only fault 14: E.oL1 is recorded.
	8	Only fault 11: E.oU3 is recorded.		8	Only fault 15: E.oL2 is recorded.
	F	Faults 8~11 are all recorded.		F	Faults 12~15 are all recorded.

✧ F10.82~F10.90: Error Level

Code (Address) Property	Name	Description	Default (Range)
F10.82 (0x0A52)	Error Level 1	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Motor overload Tens-bit: Input phase loss Hundreds-bit: Three-phase output phase loss Thousands-bit: U-phase output loss 0: Coasting stop 1: F09.10 2: Operation at limited frequency 3: Operation at limited current 4: Operation at limited power	0x0000 (0x0000~ 0x4444)
F10.83 (0x0A53)	Error Level 2	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: V-phase output loss Tens-bit: W-phase output loss Hundreds-bit: Motor overheat Thousands-bit: External error 0: Coasting stop 1: F09.10 2: Operation at limited frequency 3: Operation at limited current 4: Operation at limited power	0x0000 (0x0000~ 0x4444)
F10.84 (0x0A54)	Error Level 3	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Communication break Tens-bit: PID break Hundreds-bit: Parameter copy error Thousands-bit: PG parameter error 0: Coasting stop 1: F09.10 2: Operation at limited frequency 3: Operation at limited current 4: Operation at limited power 5: Report alarm 6: Ignore	0x0566 (0x0000~ 0x6566)
F10.85 (0x0A55)	Error Level 4	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Excessive speed deviation Tens-bit: Overspeed protection Hundreds-bit: Load protection 1 Thousands-bit: Load protection 2 0: Coasting stop 1: F09.10 2: Operation at limited frequency 3: Operation at limited current 4: Operation at limited power 5: Report alarm 6: Ignore	0x6600 (0x0000~ 0x6644)
F10.86 (0x0A56)	Error Level 5	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Comparator error 1 Tens-bit: Comparator error 2 Hundreds-bit: Comparator error 3 Thousands-bit: Comparator error 4 0: Coasting stop 1: F09.10 2: Operation at limited frequency 3: Operation at limited current 4: Operation at limited power 5: Report alarm 6: Ignore	0x6666 (0x0000~ 0x6666)

F10.87 (0x0A57)	Error Level 6	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Overheat error 1 Tens-bit: Overheat error 2 Hundreds-bit: Temp sensor 1 break Thousands-bit: Temp sensor 2 break 0: Coasting stop 1: F09.10 2: Operation at limited frequency 3: Operation at limited current 4: Operation at limited power 5: Report alarm 6: Ignore	0x0000 (0x0000~ 0x6600)
F10.89 (0x0A59)	Extension Disconnection Mode	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Extension 1 communication lost Tens-bit: Extension 2 communication lost Hundreds-bit: Extension 3 communication lost Thousands-bit: Reserved 0: Coasting stop 1: F09.10 2: Operation at limited frequency 3: Operation at limited current 4: Operation at limited power 5: Report alarm 6: Ignore	0x6666 (0x0000~ 0x6666)
F10.90 (0x0A5A)	Bus Communication Break Mode	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Extension 2 bus communication with PLC lost Tens-bit: Extension 3 bus communication with PLC lost Hundreds-bit: Extension 2 bus external non-OP operation Thousands-bit: Extension 3 bus external non-OP operation 0: Coasting stop 1: F09.10 2: Operation at limited frequency 3: Operation at limited current 4: Operation at limited power 5: Report alarm 6: Ignore	0x0066 (0x0000~ 0x6666)

Use F10.82~F10.90 to configure the action associated with each fault.

0: Coasting stop – A fault is reported and the drive stops freely.

1: F09.10 – A fault is reported and the drive stops according to the stop mode set by F9.10.

2: Operation at limited frequency – An alarm is reported and operation continues with output frequency limited (see F10.95 and F10.96).

3: Operation at limited current – An alarm is reported and operation continues with output current limited (see F10.97).

4: Operation at limited power – An alarm is reported and operation continues with output power limited.

5: Report alarm – An alarm is reported and operation continues.

6: Ignore – The fault is ignored; no action is taken.

✧ **F10.95~F10.96: Error Level**

Code (Address) Property	Name	Description	Default (Range)
F10.95 (0x0A5F)	Error Limited-Frequency Operation Mode	V/F SVC FVC PMV/F PMSVC PMFVC 0: Operation at current frequency 1: Operation at set frequency 2: Operation at upper limit frequency 3: Operation at lower limit frequency (F10.96 setting) 4: Operation at error frequency	0 (0~4)
F10.96 (0x0A60)	Error Frequency Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the value of frequency limit.	30.00Hz (0.00Hz~ 50.00Hz)

When the fault mode is set to frequency-limited operation, after the fault is reported, the limit mode is set by F10.95, and the frequency limit value is set by F10.96.

✧ **F10.95~F10.96: Error Level**

Code (Address) Property	Name	Description	Default (Range)
F10.97 (0x0A5C)	Error Current Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the value of current limit.	80.0% (30.0%~ 190.0%)

When the fault mode is set to current-limited operation, after the fault is reported, the current limit value is set by F10.97.

14.13 F11: Keypad Parameters

14.13.1 F11.0x: Key Operation

✧ **F11.00: Key Lock**

Code (Address) Property	Name	Description	Default (Range)
F11.00 (0x0B00) RUN	Parameter and Key Lock	V/F SVC FVC PMV/F PMSVC PMFVC	0 (0~3)

0: OFF

Parameters and keys are not locked.

1: Functional parameters locked

Lock the settings of function parameters and disable parameter modification (Those designated by the keypad can still be modified with the UP/DW key). Parameter modification interface is not accessible from the keypad, users can select the keypad monitoring items via the shift key. All key functions on the keypad are unlocked.

2: Parameters and keys locked

Lock the settings of function parameters. Parameter modification interface is not accessible from the keypad, users can't select the keypad monitoring items via the shift key. Modification of parameters is disabled. All keys on the keypad except RUN/ STOP/ RUN/STOP are locked.

3: Parameters and keys locked

Lock the settings of function parameters and disable parameter modification. All keys on the keypad except PRG are locked at the same time.

Note:

- Unlock method for dual-line keypad: Press the menu key “PRG” and "Code" will be displayed on the first row, and then enter the user password (F11.01-user) through the UP/DW key and press “SET”.
- Unlock method for single-line keypad: Press the menu key “PRG” and "Code" will be displayed on the first row, then press the "SET" key, the digitron displays the blinking cursor, and then enter the user password (F11.01-user password) through the UP/DW key and press the "SET".
- The user password is to protect the AC drive parameters from being changed arbitrarily. Please keep the password safe after setting it in case of any subsequent inconvenience when modification of the parameters is required.
- After unlocking, if the drive enters the monitoring interface, it will exit from unlocking and users need to enter the password again to enter the parameter interface.

✧ **F11.00: Key Lock Password**

Code (Address) Property	Name	Description	Default (Range)
F11.01 (0x0B01) RUN	Key Lock Password	V/F SVC FVC PMV/F PMSVC PMFVC Set the key lock password.	0 (0~65535)

✧ **F11.02: Multi-function Key**

Code (Address) Property	Name	Description	Default (Range)
F11.02 (0x0B02) STOP	Multi-function Key	V/F SVC FVC PMV/F PMSVC PMFVC	0 (0~7)

- 0: OFF
- 1: REV operation
- 2: FWD jogging
- 3: REV jogging
- 4: Command source shift between keypad and terminal
- 5: Command source shift between keypad and communication
- 6: Command source shift between terminal and communication
- 7: Command source shift among keypad, terminal and communication cyclically

✧ **F11.03: STOP Key Mode**

Code (Address) Property	Name	Description	Default (Range)
F11.03 (0x0B03) STOP	STOP Key Mode	V/F SVC FVC PMV/F PMSVC PMFVC	0 (0~2)

- 0: Non-keypad stop off

STOP (on the keypad) can not be used to stop operation when the operation signal is not controlled by the keypad.

- 1: Stop by stop mode setting

STOP (on the keypad) can be used to stop the machine when the operation signal is not controlled by the keypad, and the AC drive will stop according to F07.10 [Stop Mode].

It can be used as a stop key as F07.10 [Stop Mode].

- 2: Stop as free stop

STOP (on the keypad) can not be used as a stop key when the operation signal is not controlled by the keypad, and the AC drive will perform free stop.

It can be used as a stop key as free stop.

Note:

- If [F11.03] is set to 1 or 2, AC drive will be in the stop locked status after pressing the stop key under terminal control or RS485 control. Please send a stop command via the selected operation command source so that the AC drive can run again after the lock status is lifted.

✧ **F11.04: Up/Down (Knob) Key**

Code (Address) Property	Name	Description	Default (Range)
F11.04 (0x0B04) STOP	UP/DW (Knob) Key Function	V/F SVC FVC PMV/F PMSVC PMFVC	0x0011 (0x0000~0x0213)

Ones-bit: UP/DW key for modification

- 0: OFF
- 1: ON, UP/DW key provides a quick way to modify [F01.09]
- 2: ON, UP/DW key provides a quick way to modify [FB.01]
- 3: ON, UP/DW key provides a quick way to modify [Fxx.yy] corresponding to F11.05.

Tens-bit: Power-down save

- 0: OFF
- 1: ON

After quick modification of the parameters via the keypad UP/DW key and press “OK”, confirm whether the AC drive save the modified values to the corresponding parameters in case of power outage.

Hundreds-bit: Modification condition

- 0: Modifiable in operation and shutdown
- 1: Modifiable during operation, keep after shutdown
- 2: Modifiable during operation, clear after shutdown

Thousands-bit: Reserved**Note:**

Tens-bit setting determines whether the changed data is stored in EEPROM

✧ F11.05: UP/DW Key for Modification

Code (Address) Property	Name	Description	Default (Range)
F11.05 (0x0B05) RUN	UP/DW Key for Funcode Modification	V/F SVC FVC PMV/F PMSVC PMFVC	0x0109 (0x0000~0x1599)

Valid to modify the function parameters via keypad UP/DW key:

LED Ones- and tens-bit: Set 00~99 to yy in function parameter Fxx.yy

LED Hundreds- and thousands-bit: Set 00~29 to xx in function parameter Fxx.yy

Note:

Valid when the ones-bit of F11.04 is 3; for example, when F11.05= 0140, the UP/DW key on the keypad can quickly modify the setting value of [F01.40].

14.13.2 F11.1x: Status Interface Cyclic Monitoring

✧ F11.10: L/R Shift Key

Code (Address) Property	Name	Description	Default (Range)
F11.10 (0x0B0A) STOP	L/R Shift Key	V/F SVC FVC PMV/F PMSVC PMFVC	0x0011 (0x0000~0x0011)

Ones-bit: Left shift key to adjust the first row of monitoring

0: OFF

1: ON

Tens-bit: Right shift key to adjust the second row of monitoring

0: OFF

1: ON

Note:

- The current cycle parameter is displayed when it is invalid, and the cycle parameter 1 is displayed after power-on again
- When the left/right shift key function is invalid, press the left/right shift key, and the monitoring will not be switched; Set the left/right shift key function to be valid, and the monitoring items will be changed immediately.

✧ F11.11: Cyclic Display of Parameter 1 on 1st Row

Code (Address) Property	Name	Description	Default (Range)
F11.11 (0x0B0B) RUN	Cyclic Display of Parameter 1 on 1st Row	V/F SVC FVC PMV/F PMSVC PMFVC It is used to set the content of parameters displayed on single-line keypad and dual-line keypad.	0x0000 (0x0000~0x1599)

✧ F11.12: Cyclic Display of Parameter 2 on 1st Row

Code (Address) Property	Name	Description	Default (Range)
F11.12 (0x0B0C) RUN	Cyclic Display of Parameter 2 on 1st Row	V/F SVC FVC PMV/F PMSVC PMFVC It is used to set the content of parameters displayed on single-line keypad and dual-line keypad.	0x0001 (0x0000~0x1599)

✧ F11.13: Cyclic Display of Parameter 3 on 1st Row

Code (Add.) Property	Name	Description	Default (Range)
F11.13 (0x0B0D) RUN	Cyclic Display of Parameter 3 on 1st Row	V/F SVC FVC PMV/F PMSVC PMFVC It is used to set the content of parameters displayed on single-line keypad and dual-line keypad.	0x0002 (0x0000~0x1599)

◇ **F11.14: Cyclic Display of Parameter 4 on 1st Row**

Code (Address) Property	Name	Description	Default (Range)
F11.14 (0x0B0E) RUN	Cyclic Display of Parameter 4 on 1st Row	V/F SVC FVC PMV/F PMSVC PMFVC It is used to set the content of parameters displayed on single-line keypad and dual-line keypad.	0x0011 (0x0000~0x1599)

◇ **F11.15: Cyclic Display of Parameter 1 on 2nd Row**

Code (Address) Property	Name	Description	Default (Range)
F11.15 (0x0B0F) RUN	Cyclic Display of Parameter 1 on 2nd Row	V/F SVC FVC PMV/F PMSVC PMFVC It is used to set the content of parameters displayed on the dual-line keypad.	0x0002 (0x0000~0x1599)

◇ **F11.16: Cyclic Display of Parameter 2 on 2nd Row**

Code (Address) Property	Name	Description	Default (Range)
F11.16 (0x0B10) RUN	Cyclic Display of Parameter 2 on 2nd Row	V/F SVC FVC PMV/F PMSVC PMFVC It is used to set the content of parameters displayed on the dual-line keypad.	0x0004 (0x0000~0x1599)

◇ **F11.17: Cyclic Display of Parameter 3 on 2nd Row**

Code (Address) Property	Name	Description	Default (Range)
F11.17 (0x0B11) RUN	Cyclic Display of Parameter 3 on 2nd Row	V/F SVC FVC PMV/F PMSVC PMFVC It is used to set the content of parameters displayed on the dual-line keypad.	0x0010 (0x0000~0x1599)

◇ **F11.18: Cyclic Display of Parameter 4 on 2nd Row**

Code (Address) Property	Name	Description	Default (Range)
F11.18 (0x0B12) RUN	Cyclic Display of Parameter 4 on 2nd Row	V/F SVC FVC PMV/F PMSVC PMFVC It is used to set the content of parameters displayed on the dual-line keypad.	0x0012 (0x0000~0x1599)

Keypad display parameters: It is used to set the content of parameters displayed on single-line keypad and double-line keypad.

Ones- and tens-bit: Set 00~63 to yy in monitor parameter Cxx.yy.

Hundreds and thousands-bit: Set 00~07 to xx in monitor parameter Cxx.yy

Note:

- Parameters F11.15~F11.18 are valid only for dual-line keypads, which pass "▶" key to switch the parameters 1~4 displayed in the second row of the keypad in sequence.
- Long press "SET" key on single-line keypad (dual-line keypad "◀" Key) to switch the parameters 1~4 displayed in the second row of the keypad in sequence. There is no memory function for displayed content after power failure, "Displayed parameter 1" is default after power on again.

14.13.3 F11.2x: Monitoring Parameters

◇ **F11.20: Keypad Display Item**

Code (Address) Property	Name	Description	Default (Range)
F11.20 (0x0B14) RUN	Keypad Display Item	V/F SVC FVC PMV/F PMSVC PMFVC	0x0002 (0x0000~0x111F)

Ones-bit: Output frequency display

0: Target frequency. Display the current target frequency of the controlled motor.

1: Operating frequency. Display the output frequency of AC drive after calculation.

2~F: Operating frequency filtering. The larger the value, the deeper the filtering.

Tens-bit: Reserved

0: OFF

1: Active power with stator resistance loss removed

Hundreds-bit: Power dimension

0: Percentage (%). Output power is displayed in percentage, 100.0% is the rated power of the drive.

1: Kilowatt (kW). Actual value of the output power is displayed.

Thousands-bit: Reserved✧ **F11.21: Speed Display Coefficient**

Code (Address) Property	Name	Description	Default (Range)
F11.21 (0x0B15) RUN	Speed Display Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the displayed coefficient of the keypad monitoring item "mechanical speed", 100.0% corresponds to the motor's rated speed.	100.0% (0.0%~500.0%)

Note:

C00.05 mechanical speed value should be corrected.

✧ **F11.22: Power Display Coefficient**

Code (Address) Property	Name	Description	Default (Range)
F11.22 (0x0B16) RUN	Power Display Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the displayed coefficient of the keypad monitoring item "output power".	100.0% (0.0%~500.0%)

Note:

C00.10 output power value should be corrected.

✧ **F11.24: Monitoring Parameter Filter**

Code (Address) Property	Name	Description	Default (Range)
F11.24 (0x0B18) RUN	Monitoring Parameter Filter	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Output current display with filtering 0~F: The larger the value, the deeper the filtering Tens-bit: Reserved Hundreds-bit: Reserved Thousands-bit: Reserved	0002 (0x0000~0x000F)

✧ **F11.25: Motor Auto-tuning Display**

Code (Address) Property	Name	Description	Default (Range)
F11.25 (0x0B19) STOP	Motor Auto-tuning Display	V/F SVC FVC PMV/F PMSVC PMFVC 0: ON 1: OFF	0 (0~1)

✧ **F11.27: Error Auto-Reset Display**

Code (Address) Property	Name	Description	Default (Range)
F11.27 (0x0B1B) RUN	Error Auto-Reset Display	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Display the error during error reset 0: OFF 1: ON	0x0001 (0x0000~0x0001)

0: Not Displayed. During the error auto-reset interval, the keypad does not display the error code at this time, but the operation indicator light remains on.

1: Displayed. During the error auto-reset interval, the keypad displays the error code at this time, but the operation indicator light remains on.

14.13.4 F11.3x: Special Keypad Functions

◇ F11.30: Keypad Address

Code (Address) Property	Name	Description	Default (Range)
F11.30 (0x0B1E) RUN	Keypad Address	V/F SVC FVC PMV/F PMSVC PMFVC	1 (0~9)

◇ F11.31: Baud Rate

Code (Address) Property	Name	Description	Default (Range)
F11.31 (0x0B1F) RUN	Baud Rate	V/F SVC FVC PMV/F PMSVC PMFVC Set the baud rate for Modbus communication.	7 (0~7)

0: 1200bps
1: 2400bps
2: 4800bps
3: 9600bps
4: 19200bps
5: 38400bps
6: 57600bps
7: 115200bps

◇ F11.32: Keypad Multifunction Save

Code (Address) Property	Name	Description	Default (Range)
F11.33 (0x0B21) RUN	Keypad Multifunction Save	V/F SVC FVC PMV/F PMSVC PMFVC Set whether the keypad multifunction key settings are saved after power-off.	0 (0~1)

0: Not saved

1: Saved

14.14 F12: Communication Parameters

Modbus	Interface	Master	Slave	Comment
1	Terminal A+, B-	F12.10~ F12.19	F12.01~ F12.09	

F12.00 ~ F12.39 are used to set the AC drive with Modbus communication. Modbus protocol can be used for serial communication with PLC.

14.14.1 F12.0x: Modbus Slave Parameters

◇ F12.00: Master/Slave

Code (Address) Property	Name	Description	Default (Range)
F12.00 (0x0C00) STOP	Master/Slave	V/F SVC FVC PMV/F PMSVC PMFVC Set the drive as the Modbus communication master or slave.	0 (0~1)

0: Slave. When the drive is used as a slave, the communication address is set by parameter [F12.01]. Then the drive receives command from the master on the communication network. Set whether to reply data to writing on [F12.04].

1: Master. The drive works as a host and sends data from to the communication network by broadcasting commands, and all the slaves receive commands from the master.

✧ **F12.01: Modbus Address**

Code (Address) Property	Name	Description	Default (Range)
F12.01 (0x0C01) STOP	Modbus Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the slave addresses for AC drive communication.	1 (1~247)

Note: If it is set to 0, the drive does not respond to Modbus communication.

When the upper computer (master) communicates with the drive through Modbus, it is necessary to set the slave station address for it. Please set a value other than F12.01=0.

The set slave address should not conflict with other slave equipment.

✧ **F12.02: Communication Baud Rate**

Code (Address) Property	Name	Description	Default (Range)
F12.02 (0x0C02) STOP	Baud Rate	V/F SVC FVC PMV/F PMSVC PMFVC Set the baud rate for Modbus communication.	3 (0~7)

0: 1200bps

1: 2400bps

2: 4800bps

3: 9600bps

4: 19200bps

5: 38400bps

6: 57600bps

7: 115200bps

✧ **F12.03: Modbus Data Format**

Code (Address) Property	Name	Description	Default (Range)
F12.03 (0x0C03) STOP	Modbus Data Format	V/F SVC FVC PMV/F PMSVC PMFVC Select the communication check used by Modbus communication.	0 (0~5)

Note: If the data formats are different, communication may fail.

0: (N, 8, 1) no parity, data bit: 8, stop bit: 1

1: (E, 8, 1) even parity, data bit: 8, stop bit: 1

2: (O, 8, 1) odd parity, data bit: 8, stop bit: 1

3: (N, 8, 2) no parity, data bit: 8, stop bit: 2

4: (E, 8, 2) even parity, data bit: 8, stop bit: 2

5: (O, 8, 2) odd parity, data bit: 8, stop bit: 2

✧ **F12.04: Modbus Response**

Code (Address) Property	Name	Description	Default (Range)
F12.04 (0x0C04) RUN	Modbus Response	V/F SVC FVC PMV/F PMSVC PMFVC Select the communication check used by Modbus communication.	0 (0~1)

This parameter determines if the AC drive responds to write operation commands from the host computer. If the master needs the AC drive to reply information, the AC drive will occupy the communication bus by time. And when under communication control, the master needs to reserve enough time for information reply to the AC drive. If the master doesn't need the AC drive to reply information to the commands, set it to no response to write operations to enhance the communication bus's efficiency. This parameter is only valid for write operations, and has no effect on read operations.

0: Respond to write operation.

1: No response to write operation.

◇ F12.05: Modbus Response Delay

Code (Address) Property	Name	Description	Default (Range)
F12.05 (0x0C05) RUN	Modbus Response Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the Modbus master/slave communication response delay.	0ms (0ms~5000ms)

This parameter defines the interval time between the end of data reception and the end of response data sending to the master when the AC drive is used as a slave. If the set response delay time is shorter than the system processing time, the response delay time follows the system processing time. If the response delay time is longer than the system processing time, the system processes the data and waits for a delay until the response delay time arrives before sending the data to the host computer.

If AC drive is the master, this parameter means the transmission interval of sending messages from the master, and the minimum internal limit is 3.5 bytes.

◇ F12.06: Modbus Communication Timeout

Code (Address) Property	Name	Description	Default (Range)
F12.06 (0x0C06) RUN	Communication Timeout	V/F SVC FVC PMV/F PMSVC PMFVC Set the Modbus communication error time.	1.0s (0.1s~100.0s)

If the interval between one communication and the next exceeds the communication timeout value, a communication disconnection fault is considered to have occurred and the fault disconnection action mode is determined by F12.07.

◇ F12.07: Communication Disconnection Mode

Code (Address) Property	Name	Description	Default (Range)
F12.07 (0x0C07) RUN	Communication Disconnection Mode	V/F SVC FVC PMV/F PMSVC PMFVC Select the motor stop mode when E. CE [Modbus Communication Error] is detected.	0 (0~3)

Communications disconnection mode:

- 0: Detection OFF
- 1: Report error and free stop
- 2: Report alarm and continue operation
- 3: Force stop

Note:

Forced stop command means that the motor is forced to stop according to deceleration mode, and no longer responds to the operation command before entering the stop status.

◇ F12.08: Received Data Bias (0x3000)

Code (Address) Property	Name	Description	Default (Range)
F12.08 (0x0C08) RUN	Data Bias (0x3000)	V/F SVC FVC PMV/F PMSVC PMFVC Set the zero bias value of 0x3000, and take it as zero when the final bias result is negative.	0.00 (-100.00~100.00)

◇ F12.09: Received Data Gain (0x3000)

Code (Address) Property	Name	Description	Default (Range)
F12.09 (0x0C09) RUN	Data Gain (0x3000)	V/F SVC FVC PMV/F PMSVC PMFVC Set the gain to 0x3000.	100.0% (0.0%~500.0%)

14.14.2 F12.1x: Modbus Master Parameters

◇ F12.10: Master Cycle Parameters

Code (Address) Property	Name	Description	Default (Range)
F12.10 (0x0C0A) RUN	Master Cycle Parameters	V/F SVC FVC PMV/F PMSVC PMFVC Set the parameters to be cyclically sent from master.	0x0031 (0x0000~0xCCCC)

Ones-, tens-, hundreds-, and thousands-bit:

- 0: Invalid
- 1: Operation command
- 2: Given frequency
- 3: Output frequency
- 4: Upper limit frequency
- 5: Given torque
- 6: Output torque
- 7: Reserved
- 8: Reserved
- 9: PID setting
- A: PID feedback
- B: Reserved
- C: Active current component

◇ F12.11: User-Defined Frequency Address

Code (Address) Property	Name	Description	Default (Range)
F12.11 (0x0C0B) RUN	User-defined Frequency Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the address to give the frequency.	0x0000 (0x0000~0xFFFF)

Note:

Default to 0 means invalid. Other values indicate that the priority of the address is higher than the function code address.

◇ F12.12: User-defined Command Address

Code (Address) Property	Name	Description	Default (Range)
F12.12 (0x0C0C) RUN	User-defined Command Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the address to give the command.	0x0000 (0x0000~0xFFFF)

Note: Default to 0 means invalid. Other values indicate that the priority of the address is higher than the function code address.

◇ F12.13: FWD Command Value

Code (Address) Property	Name	Description	Default (Range)
F12.13 (0x0C0D) RUN	FWD Command Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the forward running value to customized addresses.	0x0001 (0x0000~0xFFFF)

◇ F12.14: REV Command Value

Code (Address) Property	Name	Description	Default (Range)
F12.14 (0x0C0E) RUN	REV Command Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the reverse running value to customized addresses.	0x0002 (0x0000~0xFFFF)

✧ **F12.15: Stop Command Value**

Code (Address) Property	Name	Description	Default (Range)
F12.15 (0x0C0F) RUN	Stop Command Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the stop control value to customized addresses.	0x0005 (0x0000~0xFFFF)

✧ **F12.16: Reset Command Value**

Code (Address) Property	Name	Description	Default (Range)
F12.16 (0x0C10) RUN	Reset Command Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the reset control value to customized addresses.	0x0007 (0x0000~0xFFFF)

✧ **F12.19: Master Sending Command**

Code (Address) Property	Name	Description	Default (Range)
F12.19 (0x0C13) RUN	Master Sending Command	V/F SVC FVC PMV/F PMSVC PMFVC Set the master command. 0: Operation command 1: Operation status	0 (0~1)

14.14.3 F12.3x: PROFIBUS-DP Communication✧ **F12.30: DP Address**

Code (Address) Property	Name	Description	Default (Range)
F12.30 (0x0C1E) RUN	DP Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the slave address by DP communication.	1 (1~247)

Note: DP cards are not allowed to be plugged or unplugged with power-on.

✧ **F12.32: DP Communication Disconnection**

Code (Address) Property	Name	Description	Default (Range)
F12.32 (0x0C20) STOP	DP Master-Slave Error Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the DP master/slave error mode.	0 (0~2)

0: OFF

1: Report error and free stop

2: Report alarm and continue operation

14.14.4 F12.4x: CAN Communication✧ **F12.40: CAN Mode**

Code (Address) Property	Name	Description	Default (Range)
F12.40 (0x0C28) RUN	CAN Mode	V/F SVC FVC PMV/F PMSVC PMFVC	0 (0~1)

Select the mode of CAN communication.

0: Slave

1: VEICHI-customized slave

2: VEICHI-customized master

Note: CAN cards are not allowed to be plugged or unplugged with power-on.

✧ **F12.41: CAN Slave Address**

Code (Address) Property	Name	Description	Default (Range)
F12.41 (0x0C29)	CAN Slave Address	V/F SVC FVC PMV/F PMSVC PMFVC	1 (1~247)

Note: When setting the address, do not duplicate other nodes and set a value other than 0.

✧ **F12.42: CAN Communication Baud Rate**

Code (Address) Property	Name	Description	Default (Range)
F12.42 (0x0C2A) RUN	CAN Communication Baud Rate	V/F SVC FVC PMV/F PMSVC PMFVC	3 (0~6)

Set the baud rate of CAN communication.

- 0: 20kbps
- 1: 50kbps
- 2: 100kbps
- 3: 125kbps
- 4: 250kbps
- 5: 500kbps
- 6: 1Mbps

✧ **F12.43: CAN Communication Disconnection**

Code (Address) Property	Name	Description	Default (Range)
F12.43 (0x0C2B) RUN	CAN Master-Slave Error Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the CAN master/slave error mode.	0 (0~2)

- 0: OFF
- 1: Report error and free stop
- 2: Report alarm and continue operation

14.14.5 F12.5x: Extension Communication of EX_A and EX_B

✧ **F12.50: Extension Communication Disconnection**

Code (Address) Property	Name	Description	Default (Range)
F12.50 (0x0C32) RUN	Extension Disconnection Mode	V/F SVC FVC PMV/F PMSVC PMFVC	0x0000 (0x0000~0x0022)

Ones-bit: EX_A port disconnection mode

- 0: OFF
- 1: Report error and coast to stop
- 2: Report alarm and continue operation

Tens-bit: EX_B port disconnection mode

- 0: OFF
- 1: Report error and coast to stop
- 2: Report alarm and continue operation

Note: Extension cards are not allowed to be plugged or unplugged with power-on.

✧ **F12.51: EX_A Setting Update**

Code (Address) Property	Name	Description	Default (Range)
F12.51 (0x0C33) STOP	EX_A Setting Update	V/F SVC FVC PMV/F PMSVC PMFVC	0 (0~2)

- 0: OFF
- 1: Initial values updated after power on

2: EX_A parameters restored to initial values

✧ **F12.52: EX_B Setting Update**

Code (Address) Property	Name	Description	Default (Range)
F12.52 (0x0C34) STOP	EX_B Setting Update	V/F SVC FVC PMV/F PMSVC PMFVC	0 (0~2)

0: OFF

1: Initial values updated after power on

2: EX_B parameters restored to initial values

✧ **F12.53: EX_A Monitor Frame Address 1**

Code (Address) Property	Name	Description	Default (Range)
F12.53 (0x0C35) RUN	EX_A Monitor Frame Address 1	V/F SVC FVC PMV/F PMSVC PMFVC	0x0001 (0x0000~0x0763)

✧ **F12.54: EX_A Monitor Frame Address 2**

Code (Address) Property	Name	Description	Default (Range)
F12.54 (0x0C36) RUN	EX_A Monitor Frame Address 2	V/F SVC FVC PMV/F PMSVC PMFVC	0x0002 (0x0000~0x0763)

✧ **F12.55: EX_A Monitor Frame Address 3**

Code (Address) Property	Name	Description	Default (Range)
F12.55 (0x0C37) RUN	EX_A Monitor Frame Address 3	V/F SVC FVC PMV/F PMSVC PMFVC	0x0007 (0x0000~0x0763)

✧ **F12.56: EX_A Monitor Frame Address 4**

Code (Address) Property	Name	Description	Default (Range)
F12.56 (0x0C38) RUN	EX_A Monitor Frame Address 4	V/F SVC FVC PMV/F PMSVC PMFVC	0x0011 (0x0000~0x0763)

Ones- and tens-bit: Lower 8 bits within 00~63

Hundreds-bit and thousands-bit: Higher 8 bits within 00~07

✧ **F12.57: EX_B Monitor Frame Address 1**

Code (Address) Property	Name	Description	Default (Range)
F12.57 (0x0C39) RUN	EX_B Monitor Frame Address 1	V/F SVC FVC PMV/F PMSVC PMFVC	0x0001 (0x0000~0x0763)

✧ **F12.58: EX_B Monitor Frame Address 2**

Code (Address) Property	Name	Description	Default (Range)
F12.58 (0x0C3A) RUN	EX_B Monitor Frame Address 2	V/F SVC FVC PMV/F PMSVC PMFVC	0x0002 (0x0000~0x0763)

◇ **F12.59: EX_B Monitor Frame Address 3**

Code (Address) Property	Name	Description	Default (Range)
F12.59 (0x0C3B) RUN	EX_B Monitor Frame Address 3	V/F SVC FVC PMV/F PMSVC PMFVC	0x0007 (0x0000~0x0763)

◇ **F12.60: EX_B Monitor Frame Address 4**

Code (Address) Property	Name	Description	Default (Range)
F12.60 (0x0C3C) RUN	EX_B Monitor Frame Address 4	V/F SVC FVC PMV/F PMSVC PMFVC	0x0011 (0x0000~0x0763)

Ones- and tens-bit: Lower 8 bits within 00~63

Hundreds- and thousands-bit: Higher 8 bits within 00~07

Note: Extensions are not allowed to be plugged or unplugged with power on.

14.15 F13: PID Control

14.15.1 F13.00~F13.06: PID Setting and Feedback

◇ **F13.00: PID Setting Source**

Code (Address) Property	Name	Description	Default (Range)
F13.00 (0x0D00) RUN	PID Setting Source	V/F SVC FVC PMV/F PMSVC PMFVC Set the PID setting source.	0 (0~9)

Set the input source for the PID setting signal:

0: Keypad. The PID setting value is determined by F13.01.

1: Keypad potentiometer (on optional external single-row keypad).

2: AI1. The PID setting is determined by the voltage/current analog input AI1.

3: AI2. The PID setting is determined by the voltage/current analog input AI2.

4: Reserved.

5: PUL. The PID setting is determined by the terminal PUL.

6: RS485 communication setting. The PID setting is determined by the RS485 communication.

7: Extension cards. The PID setting is determined by the extension card, for details, refer to the extension card manual.

8: Terminal. The PID setting is determined by the combination of multi-function input terminals, which are set by F05.00~F05.09.

9: Active current given via communication.

Terminal Switching

Terminal 3	Terminal 2	Terminal 1	PID Setting Source
OFF	OFF	OFF	Keypad
OFF	OFF	ON	Keypad potentiometer (on optional external single-row keypads)
OFF	ON	OFF	AI1
OFF	ON	ON	AI2
ON	OFF	OFF	Reserved
ON	OFF	ON	PUL
ON	ON	OFF	RS485
ON	ON	ON	Extension

If you have any doubts about the above table, please refer to the multi-frequency timing diagram in the F14 parameter group.

Active current component: It can be sent via the VEICHI CAN host, with the RS485 communication address being 0x3011.

◇ F13.01: PID Setting/Feedback

Code (Address) Property	Name	Description	Default (Range)
F13.01 (0x0D01) RUN	PID Setting/Feedback	V/F SVC FVC PMV/F PMSVC PMFVC Set the PID setting/feedback via keypad.	50.0% (0.0%~100.0%)

This parameter is only valid when F13.00/F13.03 is set to PID setting/feedback; after this parameter is changed, the PID setting/feedback value in the monitoring object will be automatically modified accordingly.

If the ones-bit of parameter F11.04 is set to "2", the value of this parameter can be quickly modified via the keypad UP/DW keys. After the quick modification of this parameter, whether the drive saves the modified value during a power outage is determined by the tens-bit of F11.04.

◇ F13.02: PID Setting Change Time

Code (Address) Property	Name	Description	Default (Range)
F13.02 (0x0D02) RUN	PID Setting Change Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the change time for PID setting.	1.00s (0.00s~60.00s)

PID setting change time:

It refers to the time required for the PID setting percentage to change from 0.0% to 100.0%. When the PID setting changes, the value changes linearly according to the set change time, mitigating the impact of sudden setting changes on the system.

◇ F13.03: PID Feedback Source

Code (Address) Property	Name	Description	Default (Range)
F13.03 (0x0D03) RUN	PID Feedback Source	V/F SVC FVC PMV/F PMSVC PMFVC Set the PID feedback source.	2 (0~9)

Set the input source for the PID feedback signal:

0: Keypad. The PID feedback source is determined by F13.01.

1: Keypad potentiometer (on optional external single-row keypad).

2: AI1. The PID feedback source is determined by the voltage/current analog input AI1.

3: AI2. The PID feedback source is determined by the voltage/current analog input AI2.

4: Reserved.

5: PUL. The PID feedback source is determined by the terminal PUL.

6: RS485. The PID feedback source is determined by the RS485 communication.

7: Extension cards. The feedback source is determined by the extension card, for details, refer to the extension card manual.

8: Terminal. The PID feedback source is determined by the combination of multi-function input terminals, which are set by F05.00~F05.09.

9: Local active current.

Terminal Switching

Terminal 3	Terminal 2	Terminal 1	PID Feedback Source
OFF	OFF	OFF	Keypad
OFF	OFF	ON	Keypad potentiometer (on optional external single-row keypads)
OFF	ON	OFF	AI1
OFF	ON	ON	AI2
ON	OFF	OFF	Reserved
ON	OFF	ON	PUL
ON	ON	OFF	RS485
ON	ON	ON	Extension

If you have any doubts about the above table, please refer to the multi-frequency timing diagram in the F14 parameter group.

Note:

The PID setting and feedback signal source cannot be set to the same channel, otherwise the PID will not function properly.

✧ **F13.04: Feedback Filter Time**

Code (Address) Property	Name	Description	Default (Range)
F13.04 (0x0D04) RUN	Feedback Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the low-pass filter time for the feedback signal.	0.010s (0.000s~6.000s)

Feedback filtering time is used for filtering the feedback signal, which can reduce the impact of interference on the feedback. The longer the filter time, the greater the anti-interference effect, but the response becomes slower.

✧ **F13.05: Feedback Gain**

Code (Address) Property	Name	Description	Default (Range)
F13.05 (0x0D05) RUN	Feedback Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the gain for feedback signal.	1.00 (0.00~10.00)

Feedback gain is used for linear proportional regulation of the feedback input signal.

✧ **F13.06: Feedback Range**

Code (Address) Property	Name	Description	Default (Range)
F13.06 (0x0D06) RUN	Feedback Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the feedback signal range.	100.0 (0.0~100.0)

The PID feedback signal range is dimensionless units which are used to regulate PID feedback and display.

14.15.2 F13.07~F13.24: PID Control

✧ **F13.07: PID Characteristic**

Code (Address) Property	Name	Description	Default (Range)
F13.07 (0x0D07) RUN	PID Characteristic	V/F SVC FVC PMV/F PMSVC PMFVC	0x0100 (0x0000~0x1111)

Ones-bit: Feedback characteristics

0: Positive. It is applicable to situations where the drive output frequency needs to decrease when the PID feedback is greater than the PID setting in order to maintain PID balance, such as constant pressure water supply, gas supply, and tension control of winding.

1: Negative. It is applicable to situations where the drive output frequency needs to increase when the PID feedback is greater than the PID setting in order to maintain PID balance, such as constant temperature control of central air conditioning and tension control of unwinding.

Tens-bit: Reserved**Hundreds-bit: Reserved****Thousands-bit: Differential regulation**

0: Differential for deviation

1: Differentiate the feedback

✧ **F13.08: PID Preset Output**

Code (Address) Property	Name	Description	Default (Range)
F13.08 (0x0D08) RUN	PID Preset Output	V/F SVC FVC PMV/F PMSVC PMFVC Set the PID preset output.	100.0% (0.0%~100.0%)

✧ **F13.09: PID Preset Runtime**

Code (Address) Property	Name	Description	Default (Range)
F13.09 (0x0D09) RUN	PID Preset Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the PID preset output runtime.	0.0s (0.0s~6500.0s)

Upon PID activation, the output adheres to the F13.08 [PID Preset Output] for a specified duration set in [F13.09] before shifting to closed-loop control.

When F01.02=8, 100% of the max. frequency output.

✧ **F13.10: PID Deviation Limit**

Code (Address) Property	Name	Description	Default (Range)
F13.10 (0x0D0A) RUN	PID Deviation Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the PID deviation limit.	0.0% (0.0%~100.0%)

The max. allowable deviation of PID feedback from the PID setting; when feedback is within this range, PID control halts, maintaining constant output. This feature aids in balancing system output precision and stability.

✧ **F13.11: Proportional Gain P1**

Code (Address) Property	Name	Description	Default (Range)
F13.11 (0x0D0B) RUN	Proportional Gain P1	V/F SVC FVC PMV/F PMSVC PMFVC Determine the strength of the PID controller; higher gain increases strength but may cause oscillation.	0.100 (0.000~4.000)

✧ **F13.12: Integral Time I1**

Code (Address) Property	Name	Description	Default (Range)
F13.12 (0x0D0C) RUN	Integral Time I1	V/F SVC FVC PMV/F PMSVC PMFVC Set the strength of the integral action; shorter times increase strength. An integral time of 0 disables PID integral time.	1.0s (0.0s~600.0s)

✧ **F13.13: Differential Gain D1**

Code (Address) Property	Name	Description	Default (Range)
F13.13 (0x0D0D) RUN	Differential Time D1	V/F SVC FVC PMV/F PMSVC PMFVC Determine the intensity of the PID controller's adjustment to the deviation or the rate of change of the feedback signal, by selecting the differential regulation attribute via the thousands-bit of [F13.07]. The longer the differential time, the greater the intensity.	0.000s (0.000s~6.000s)

✧ **F13.14: Proportional Gain P2**

Code (Address) Property	Name	Description	Default (Range)
F13.14 (0x0D0E) RUN	Proportional Gain P2	V/F SVC FVC PMV/F PMSVC PMFVC Determine the strength of the PID controller; higher gain increases strength but may cause oscillation.	0.100 (0.000~4.000)

✧ **F13.15: Integral Time I2**

Code (Address) Property	Name	Description	Default (Range)
F13.15 (0x0D0F) RUN	Integral Time I2	V/F SVC FVC PMV/F PMSVC PMFVC Set the strength of the integral action; shorter times increase strength. An integral time of 0 disables PID integral time.	1.0s (0.0s~600.0s)

✧ **F13.16: Differential Gain D2**

Code (Address) Property	Name	Description	Default (Range)
F13.16 (0x0D10) RUN	Differential Time D2	V/F SVC FVC PMV/F PMSVC PMFVC Determine the intensity of the PID controller's adjustment to the deviation or the rate of change of the feedback signal, by selecting the differential regulation attribute via the thousands-bit of [F13.07]. The longer the differential time, the greater the intensity.	0.000s (0.000s~6.000s)

The PID controller's parameters should be adjusted according to the actual system characteristics. PID parameter group 1 (F13.11~F13.13) and group 2 (F13.14~F13.16) select the condition for shifting via the F13.17.

Proportional gain:

Determine the strength of the PID controller; higher gain increases strength but may cause oscillation.

Integral time:

Set the strength of the integral action; shorter times increase strength. An integral time of 0 disables PID control.

Differential time:

Determine the intensity of the PID controller's adjustment to the deviation or the rate of change of the feedback signal, by selecting the differential regulation attribute via the thousands-bit of [F13.07]. The longer the differential time, the greater the intensity. Differential regulation serves to suppress changes in the feedback signal based on the trend when the feedback signal changes.

✧ **F13.17: PID Shift Source**

Code (Address) Property	Name	Description	Default (Range)
F13.17 (0x0D11) RUN	PID Shift Source	V/F SVC FVC PMV/F PMSVC PMFVC Set the PID shift source.	0 (0~2)

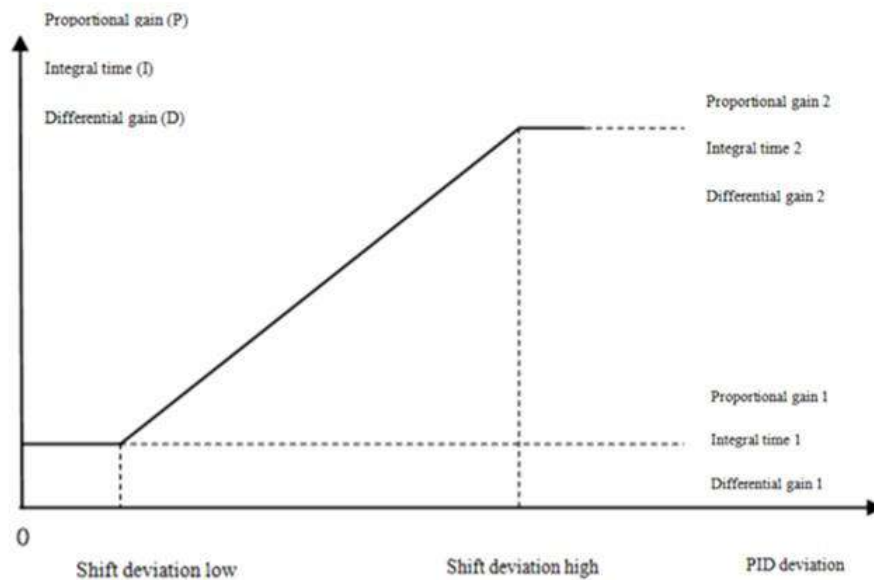
In some applications, one set of PID tuning parameters can't meet the needs of the entire process, so different sets are needed.

PID shift source:

0: No switching, PID parameter group 1.

1: Xi terminal. Set the multi-function terminal to 23 (PID parameter switching). If the terminal is inactive, PID parameter group 1 is selected; if active, PID parameter group 2 is selected.

2: Deviation. If the absolute deviation between the PID setting and feedback is less than F13.18, PID parameter group 1 is selected. If the absolute deviation is greater than F13.19, PID parameter group 2 is selected. If the absolute deviation is between F13.18 and F13.19, the PID parameters are a linear interpolation of the two groups.



PID Parameter Shift based on Deviation

✧ F13.18: Shift Deviation Low

Code (Address) Property	Name	Description	Default (Range)
F13.18 (0x0D12) RUN	Shift Deviation Low	V/F SVC FVC PMV/F PMSVC PMFVC	20.0% (0.0%~100.0%)

✧ F13.19: Shift Deviation High

Code (Address) Property	Name	Description	Default (Range)
F13.19 (0x0D13) RUN	Shift Deviation High	V/F SVC FVC PMV/F PMSVC PMFVC	80.0% (0.0%~100.0%)

✧ F13.20: Reserved

✧ F13.21: Differential Limit

Code (Address) Property	Name	Description	Default (Range)
F13.21 (0x0D15) RUN	Differential Limit	V/F SVC FVC PMV/F PMSVC PMFVC	5.0% (0.0%~100.0%)

Set the range of the PID differential output. Under PID control, the differential function is highly sensitive and can lead to system oscillation, so it is usually limited to a smaller range.

✧ F13.22: PID Max. Output

Code (Address) Property	Name	Description	Default (Range)
F13.22 (0x0D16) RUN	PID Max. Output	V/F SVC FVC PMV/F PMSVC PMFVC Set the maximum PID output.	100.0% (0.0%~100.0%)

✧ **F13.23: PID Min. Output**

Code (Address) Property	Name	Description	Default (Range)
F13.23 (0x0D17) RUN	PID Min. Output	V/F SVC FVC PMV/F PMSVC PMFVC Set the minimum PID output.	0.0% (-100.0%~F13.22)

✧ **F13.24: PID Filter Time**

Code (Address) Property	Name	Description	Default (Range)
F13.24 (0x0D18) RUN	PID Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the PID output filter time.	0.000s (0.000s~6.000s)

The filter smooths sudden changes in the PID control output, but this can impair the closed-loop response performance.

14.15.3 F13.25~F13.28: PID Feedback Disconnection

In drive operation, if the feedback signal exceeds the F13.27 setting value or lower than F13.28 setting value and continues for the specified delay set in F13.26, the sensor is considered disconnected.

✧ **F13.25: Feedback Disconnection Mode**

Code (Address) Property	Name	Description	Default (Range)
F13.25 (0x0D19) RUN	Feedback Disconnection Mode	V/F SVC FVC PMV/F PMSVC PMFVC	0 (0~3)

Feedback disconnection mode:

0: Continue PID operation without reporting error. This function is invalid, and the drive does not perform disconnection detection.

1: Stop and report E. PiD. When the drive detects a sensor disconnection, it immediately blocks the output, and the motor stops freely and alarms E. PiD.

2: Continue PID operation and report A. PiD. When the drive detects a sensor disconnection, it continues PID operation, and the keypad displays the alarm A. PiD.

3: Run at the current frequency and report A. PiD. When the drive detects a sensor disconnection, it keeps the output frequency unchanged as before the fault, while the keypad displays the alarm A. PiD.

✧ **F13.26: Feedback Disconnection Time**

Code (Address) Property	Name	Description	Default (Range)
F13.26 (0x0D1A) RUN	Feedback Disconnection Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the PID feedback disconnection detection time.	1.0s (0.0s~120.0s)

✧ **F13.27: Feedback Disconnection Upper Limit**

Code (Address) Property	Name	Description	Default (Range)
F13.27 (0x0D1B) RUN	Feedback Disconnection Error Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the upper limit for disconnection error.	100.0% (0.0%~100.0%)

◇ F13.28: Feedback Disconnection Lower Limit

Code (Address) Property	Name	Description	Default (Range)
F13.28 (0x0D1C) RUN	Feedback Disconnection Error Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower limit for disconnection error.	0.0% (0.0%~100.0%)

Feedback disconnection upper limit:

Set the upper limit for PID sensor disconnection detection. If the feedback signal exceeds this value and continues for F13.26, the sensor is considered disconnected.

Feedback disconnection lower limit:

Set the lower limit for PID sensor disconnection detection. If the feedback signal is below this value and continues for F13.26, the sensor is considered disconnected.

14.15.4 F13.29~F13.33: Sleep

The PID sleep function can be used in the constant pressure water supply industry to achieve energy saving.

Sleep entry judgment:

When the sleep function is valid, if the PID output frequency is lower than F13.30 [Sleep Frequency] and continues for F13.31 [Sleep Delay], then sleep function works (i.e., decelerate to zero frequency and then block the output).

Note: The prerequisite for entering sleep mode is that when in the positive characteristic, the PID feedback is greater than the PID setting, and when in the negative characteristic, the PID feedback is less than the PID setting.

Sleep wake-up judgment:

When the PID feedback characteristic is positive: If the PID setting minus the F13.32 [Wake Deviation] is continuously greater than the PID feedback, the system exits sleep mode and enters normal operation after the F13.33 [Wake Delay].

When the PID feedback characteristic is negative: If the PID setting plus the F13.32 [Wake Deviation] is continuously greater than the PID feedback, the system exits sleep mode and enters normal operation after the F13.33 [Wake Delay].

◇ F13.29: Sleep

Code (Address) Property	Name	Description	Default (Range)
F13.29 (0x0D1D) RUN	Sleep	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF No sleep detection 1: ON Sleep detection performed	0 (0~1)

◇ F13.30: Sleep Frequency

Code (Address) Property	Name	Description	Default (Range)
F13.30 (0x0D1E) RUN	Sleep Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the PID sleep frequency.	10.00Hz (0.00Hz~F01.10)

◇ F13.31: Sleep Delay

Code (Address) Property	Name	Description	Default (Range)
F13.31 (0x0D1F) RUN	Sleep Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the PID sleep delay time.	60.0s (0.0s~3600.0s)

◇ F13.32: Wakeup Deviation

Code (Address) Property	Name	Description	Default (Range)
F13.32 (0x0D20) RUN	Wakeup Deviation	V/F SVC FVC PMV/F PMSVC PMFVC Set the PID wakeup deviation.	5.0% (0.0%~50.0%)

✧ **F13.33: Wakeup Delay**

Code (Address) Property	Name	Description	Default (Range)
F13.33 (0x0D21) RUN	Wakeup Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the PID wakeup delay time.	1.0s (0.0s~60.0s)

✧ **F13.34: PID Disable**

Code (Address) Property	Name	Description	Default (Range)
F13.34 (0x0D22) RUN	PID Disable	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: ON	1.0s (0.0s~60.0s)

0: PID operates normally; calculation and regulation are active.

1: PID calculation is disabled; the PID output is held at its current value.

✧ **F13.35: Wakeup Mode**

Code (Address) Property	Name	Description	Default (Range)
F13.35 (0x0D23) RUN	Wakeup Mode	V/F SVC FVC PMV/F PMSVC PMFVC 0: Deviation wake 1: Frequency wake 2: Deviation or frequency wake	0 (0~2)

0 – Deviation wake-up

Direct-acting: (PID setting – wake-up deviation) is compared with PID feedback. If it remains greater for the wake-up delay time, the system exits sleep mode and enters normal operation.

Reverse-acting: (PID setting + wake-up deviation) is compared with PID feedback. If it remains greater for the wake-up delay time, the system exits sleep mode and enters normal operation.

1 – Frequency wake-up

Direct-acting: The PID set frequency is compared with the PID wake-up frequency. If it remains greater for the wake-up delay time, the system exits sleep mode and enters normal operation.

Reverse-acting: The PID set frequency is compared with the PID wake-up frequency. If it remains greater for the wake-up delay time, the system exits sleep mode and enters normal operation.

✧ **F13.36: Wakeup Frequency**

Code (Address) Property	Name	Description	Default (Range)
F13.36 (0x0D24) RUN	Wakeup Frequency	V/F SVC FVC PMV/F PMSVC PMFVC When the frequency wake is valid, if the PID output frequency exceeds the wake frequency, the system enters wake judgment.	20.00Hz (0.00Hz~P01.10)

This parameter is used for the PID frequency wake-up function. When this function is enabled, ensure that the wake-up frequency is higher than the sleep frequency F13.30.

F13.17: PID Parameter Shift Condition

0 – No shift

PID parameter group 1 is used.

1 – D1 terminal shift

Set the multifunction terminal function to 23 (PID parameter shift).

When the terminal is inactive, PID parameter group 1 is selected;

when the terminal is active, PID parameter group 2 is selected.

2 – Deviation-based shift

If the absolute deviation between the PID setting and feedback is less than F13.18 [Shift Deviation Low], PID parameter group 1 is selected. If the absolute deviation is greater than F13.19 [Shift Deviation High], PID parameter group 2 is selected. If the absolute deviation is between F13.18 [Shift Deviation Low] and F13.19 [Shift Deviation High], the PID parameters are linearly interpolated between the two groups.

3 – Frequency-based shift

The shift is based on the PID set frequency.

If the PID set frequency is lower than the F13.37 [Shift Frequency Low], PID parameter group 1 is selected. If the

PID set frequency is higher than the F13.19 [Shift Frequency High], PID parameter group 2 is selected. If the PID set frequency is between the F13.37 [Shift Frequency Low] and F13.19 [Shift Frequency High], the PID parameters are linearly interpolated between the two groups.

◇ **F13.37: Shift Frequency Low**

Code (Address) Property	Name	Description	Default (Range)
F13.37 (0x0D25) RUN	Shift Frequency Low	V/F SVC FVC PMV/F PMSVC PMFVC When F13.17=3, signifying frequency-based PID shift, the PID parameters are set to Group 1 if the output frequency falls below the low frequency threshold.	0.00Hz (0.00Hz~P01.10)

Used when F13.17 = 3 (frequency-based PID shift) to set the low frequency threshold.

◇ **F13.38: Shift Frequency High**

Code (Address) Property	Name	Description	Default (Range)
F13.38 (0x0D26) RUN	Shift Frequency High	V/F SVC FVC PMV/F PMSVC PMFVC When F13.17=3, signifying frequency-based PID shift, the PID parameters are set to Group 2 if the output frequency exceeds the high frequency threshold.	0.00Hz (0.00Hz~P01.10)

Used when F13.17 = 3 (frequency-based PID shift) to set the high frequency threshold.

14.16 F14: Simulated PLC for Multi-frequency

14.16.1 F14.00~F14.14: Multi-frequency Setting

This group of parameters is used to set the operating frequency of the 15th segment speed in PLC program and multi-frequency control.

Multi-frequency control has the priority second only to jogging. Users can select 4 multifunction input terminals as multi-speed control terminals. See [F05.00~F05.05] for setting details.

◇ **F14.00: PLC Multi-frequency 1**

Code (Address) Property	Name	Description	Default (Range)
F14.00 (0x0E00) RUN	PLC Multi-frequency 1	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 1st segment speed in PLC program and multi-frequency control.	10.00Hz (0.00Hz~Max. frequency)

◇ **F14.01: PLC Multi-frequency 2**

Code (Address) Property	Name	Description	Default (Range)
F14.01 (0x0E01) RUN	PLC Multi-frequency 2	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 2nd segment speed in PLC program and multi-frequency control.	20.00Hz (0.00Hz~Max. frequency)

◇ **F14.02: PLC Multi-frequency 3**

Code (Address) Property	Name	Description	Default (Range)
F14.02 (0x0E02) RUN	PLC Multi-frequency 3	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 3rd segment speed in PLC program and multi-frequency control.	30.00Hz (0.00Hz~Max. frequency)

✧ **F14.03: PLC Multi-frequency 4**

Code (Address) Property	Name	Description	Default (Range)
F14.03 (0x0E03) RUN	PLC Multi-frequency 4	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 4th segment speed in PLC program and multi-frequency control.	40.00Hz (0.00Hz~Max. frequency)

✧ **F14.04: PLC Multi-frequency 5**

Code (Address) Property	Name	Description	Default (Range)
F14.04 (0x0E04) RUN	PLC Multi-frequency 5	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 5th segment speed in PLC program and multi-frequency control.	50.00Hz (0.00Hz~Max. frequency)

✧ **F14.05: PLC Multi-frequency 6**

Code (Address) Property	Name	Description	Default (Range)
F14.05 (0x0E05) RUN	PLC Multi-frequency 6	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 6th segment speed in PLC program and multi-frequency control.	40.00Hz (0.00Hz~Max. frequency)

✧ **F14.06: PLC Multi-frequency 7**

Code (Address) Property	Name	Description	Default (Range)
F14.06 (0x0E06) RUN	PLC Multi-frequency 7	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 7th segment speed in PLC program and multi-frequency control.	30.00Hz (0.00Hz~Max. frequency)

✧ **F14.07: PLC Multi-frequency 8**

Code (Address) Property	Name	Description	Default (Range)
F14.07 (0x0E07) RUN	PLC Multi-frequency 8	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 8th segment speed in PLC program and multi-frequency control.	20.00Hz (0.00Hz~Max. frequency)

✧ **F14.08: PLC Multi-frequency 9**

Code (Address) Property	Name	Description	Default (Range)
F14.08 (0x0E08) RUN	PLC Multi-frequency 9	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 9th segment speed in PLC program and multi-frequency control.	10.00Hz (0.00Hz~Max. frequency)

✧ **F14.09: PLC Multi-frequency 10**

Code (Address) Property	Name	Description	Default (Range)
F14.09 (0x0E09) RUN	PLC Multi-frequency 10	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 10th segment speed in PLC program and multi-frequency control.	20.00Hz (0.00Hz~Max. frequency)

✧ **F14.10: PLC Multi-frequency 11**

Code (Address) Property	Name	Description	Default (Range)
F14.10 (0x0E0A) RUN	PLC Multi-frequency 11	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 11th segment speed in PLC program and multi-frequency control.	30.00Hz (0.00Hz~Max. frequency)

✧ **F14.10: PLC Multi-frequency 12**

Code (Address) Property	Name	Description	Default (Range)
F14.11 (0x0E0B) RUN	PLC Multi-frequency 12	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 12th segment speed in PLC program and multi-frequency control.	40.00Hz (0.00Hz~Max. frequency)

✧ **F14.12: PLC Multi-frequency 13**

Code (Address) Property	Name	Description	Default (Range)
F14.12 (0x0E0C) RUN	PLC Multi-frequency 13	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 13th segment speed in PLC program and multi-frequency control.	50.00Hz (0.00Hz~Max. frequency)

✧ **F14.13: PLC Multi-frequency 14**

Code (Address) Property	Name	Description	Default (Range)
F14.13 (0x0E0D) RUN	PLC Multi-frequency 14	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 14th segment speed in PLC program and multi-frequency control.	40.00Hz (0.00Hz~Max. frequency)

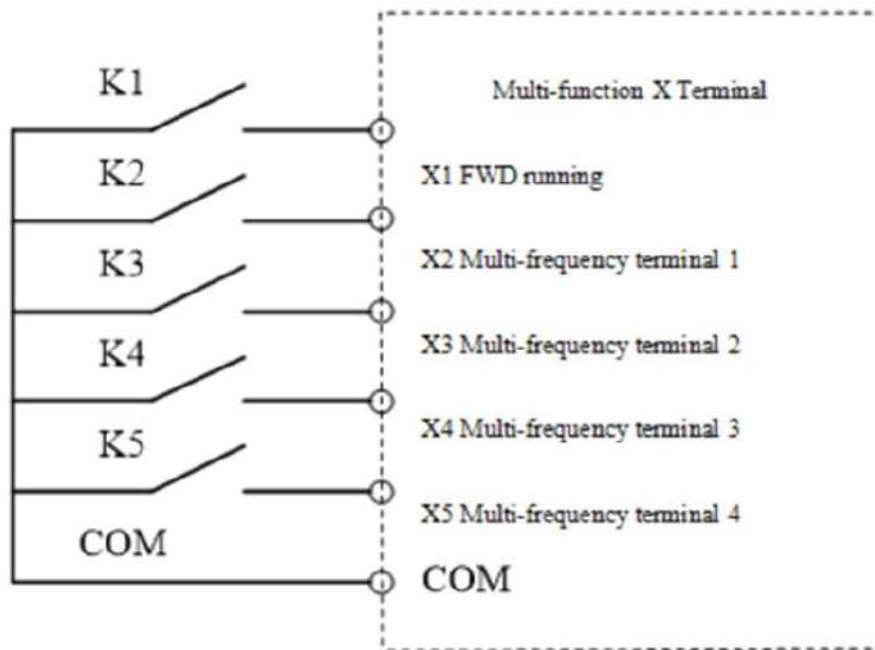
✧ **F14.14: PLC Multi-frequency 15**

Code (Address) Property	Name	Description	Default (Range)
F14.14 (0x0E0E) RUN	PLC Multi-frequency 15	V/F SVC FVC PMV/F PMSVC PMFVC This parameter is used to set the operating frequency of the 15th segment speed in PLC program and multi-frequency control.	30.00Hz (0.00Hz~Max. frequency)

The combination of the (ON/OFF) states of the four multi-frequency control terminals with COM controls the drive speed. Its operation and direction are controlled by the operation signal and direction from [F01.01]. Its acceleration and deceleration time is defaulted to F01.22 [ACC Time] and F01.23 [DEC Time], but can also be selected through the designated terminals among multi-function input terminals F05.00~F05.09.

Multi-frequency Terminal 4	Multi-frequency Terminal 3	Multi-frequency Terminal 2	Multi-frequency Terminal 1	Terminal Speed
OFF	OFF	OFF	ON	1X [F14.00]
OFF	OFF	ON	OFF	2X [F14.01]
OFF	OFF	ON	ON	3X [F14.02]
OFF	ON	OFF	OFF	4X [F14.03]
OFF	ON	OFF	ON	5X [F14.04]
OFF	ON	ON	OFF	6X [F14.05]
OFF	ON	ON	ON	7X [F14.06]
ON	OFF	OFF	OFF	8X [F14.07]
ON	OFF	OFF	ON	9X [F14.08]
ON	OFF	ON	OFF	10X [F14.09]
ON	OFF	ON	ON	11X [F14.10]
ON	ON	OFF	OFF	12X [F14.11]

ON	ON	OFF	ON	13X [F14.12]
ON	ON	ON	OFF	14X [F14.13]
ON	ON	ON	ON	15X [F14.14]



Terminal Wiring

14.16.2 F14.15: PLC Operation Mode

◇ F14.15: PLC Operation Mode

Code (Address) Property	Name	Description	Default (Range)
F14.15 (0x0E0F) RUN	PLC Operation Mode	V/F SVC FVC PMV/F PMSVC PMFVC	0x0000 (0x0000~0x2122)

Ones-bit: Cycle mode. Used to select the PLC operation mode when PLC is giving frequency.

0: Stop after one cycle. After receiving the run command, the drive starts from the 1st segment speed. The time unit is set by the tens-bit of F14.15, the running time is set by F14.16~F14.30, and the running direction and acceleration/ deceleration time are selected by F14.31~F14.45. When the running time is up, it switches to the next speed segment. The running time, direction, and acceleration/ deceleration time for each segment can be set separately. After running the 15th segment speed, the drive outputs a frequency of "0". If the running time for a certain segment is 0, that segment will be skipped during running.

1: Continuous cycle. After the drive finishes running the 15th segment speed, it returns to the 1st segment speed and starts running again, cycling continuously. The time unit is set by the tens-bit of F14.15, the running time is set by F14.16~F14.30, and the running direction and acceleration/ deceleration time are selected by F14.31~F14.45.

2: Hold the final value after one cycle. After the drive finishes one cycle, it does not stop but continues running at the speed of the last segment with a non-zero running time. The time unit is set by the tens-bit of F14.15, the running time is set by F14.16~F14.30, and the running direction and acceleration/ deceleration time are selected by F14.31~F14.45.

Note:

The acceleration/ deceleration time during PLC execution is specified by tens-bit of F14.31~F14.45, which is independent of the multi-frequency terminal of F05.00~F05.05.

Tens-bit: Timing unit. Used to set the time unit for PLC running.

0: Second (s)

1: Minute (m)

2: Hour (h)

Hundreds-bit: power-down save

0: OFF

1: ON

This parameter determines whether the drive stores the current PLC running status (e.g., running stage, remaining time of the stage, acceleration/deceleration, running direction) after a power off when the PLC is running. If power-down save is enabled, the thousands-bit of F14.15 can define the PLC running start mode after the next power-on. To ensure that the drive continues the state before power down after a momentary power failure, set this parameter to "1".

Thousands-bit: Start mode

0: Restart from the first stage

1: Restart from the stage upon stop last time

2: Continue operation for the remaining of the stop stage

This parameter defines the start mode when the PLC restarts after being interrupted due to various reasons (stop, fault, power off, etc.).

If "0" is selected, the drive starts from the first stage.

If "1" is chosen, the drive restarts from the segment it was running at the time of interruption and re - times the running.

If "2" is selected, the drive restarts from the segment it was running at the time of interruption and runs according to the remaining time of that segment at the time of interruption.

Note:

The output frequency during PLC running is limited by the upper and lower limit frequencies. When the set frequency is lower than the lower limit frequency, it runs as F01.13 [Lower Limit Frequency].

14.16.3 F14.16~F14.30: PLC Runtime

Set the running time for each of the 15 speed segments. The time unit is determined by the tens-bit of [F14.15].

◇ F14.16: Multi-frequency 1 Runtime

Code (Address) Property	Name	Description	Default (Range)
F14.16 (0x0E10) RUN	Multi-frequency 1 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 1st segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h) ~ 6500.0 (s/m/h))

◇ F14.17: Multi-frequency 2 Runtime

Code (Address) Property	Name	Description	Default (Range)
F14.17 (0x0E11) RUN	Multi-frequency 2 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 2nd segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h) ~ 6500.0 (s/m/h))

◇ F14.18: Multi-frequency 3 Runtime

Code (Address) Property	Name	Description	Default (Range)
F14.18 (0x0E12) RUN	Multi-frequency 3 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 3rd segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h) ~ 6500.0 (s/m/h))

◇ F14.19: Multi-frequency 4 Runtime

Code (Address) Property	Name	Description	Default (Range)
F14.19 (0x0E13) RUN	Multi-frequency 4 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 4th segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h) ~ 6500.0 (s/m/h))

◇ F14.20: Multi-frequency 5 Runtime

Code (Address) Property	Name	Description	Default (Range)
F14.20 (0x0E14) RUN	Multi-frequency 5 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 5th segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h) ~ 6500.0 (s/m/h))

◇ **F14.21: Multi-frequency 6 Runtime**

Code (Address) Property	Name	Description	Default (Range)
F14.21 (0x0E15) RUN	Multi-frequency 6 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 6th segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h) ~ 6500.0 (s/m/h))

◇ **F14.22: Multi-frequency 7 Runtime**

Code (Address) Property	Name	Description	Default (Range)
F14.22 (0x0E16) RUN	Multi-frequency 7 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 7th segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h) ~ 6500.0 (s/m/h))

◇ **F14.23: Multi-frequency 8 Runtime**

Code (Address) Property	Name	Description	Default (Range)
F14.23 (0x0E17) RUN	Multi-frequency 8 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 8th segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h) ~ 6500.0 (s/m/h))

◇ **F14.24: Multi-frequency 9 Runtime**

Code (Address) Property	Name	Description	Default (Range)
F14.24 (0x0E18) RUN	Multi-frequency 9 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 9th segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h) ~ 6500.0 (s/m/h))

◇ **F14.25: Multi-frequency 10 Runtime**

Code (Address) Property	Name	Description	Default (Range)
F14.25 (0x0E19) RUN	Multi-frequency 10 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 10th segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h) ~ 6500.0 (s/m/h))

◇ **F14.26: Multi-frequency 11 Runtime**

Code (Address) Property	Name	Description	Default (Range)
F14.26 (0x0E1A) RUN	Multi-frequency 11 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 11th segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h) ~ 6500.0 (s/m/h))

◇ **F14.27: Multi-frequency 12 Runtime**

Code (Address) Property	Name	Description	Default (Range)
F14.27 (0x0E1B) RUN	Multi-frequency 12 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 12th segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h) ~ 6500.0 (s/m/h))

◇ **F14.28: Multi-frequency 13 Runtime**

Code (Address) Property	Name	Description	Default (Range)
F14.28 (0x0E1C) RUN	Multi-frequency 13 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 13th segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h) ~ 6500.0 (s/m/h))

✧ **F14.29: Multi-frequency 14 Runtime**

Code (Address) Property	Name	Description	Default (Range)
F14.29 (0x0E1D) RUN	Multi-frequency 14 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 14th segment in PLC program.	10.0s (0.0 (s/m/h) ~ 6500.0 (s/m/h))

✧ **F14.30: Multi-frequency 15 Runtime**

Code (Address) Property	Name	Description	Default (Range)
F14.30 (0x0E1E) RUN	Multi-frequency 15 Runtime	V/F SVC FVC PMV/F PMSVC PMFVC Set the runtime for the 15th segment in PLC program.	10.0 (s/m/h) (0.0 (s/m/h) ~ 6500.0 (s/m/h))

14.16.4 F14.31~14.45: PLC Direction and ACC/DEC Time

Set the running direction of 15 speed segments and their acceleration and deceleration times during PLC execution.

✧ **F14.31: Multi-frequency 1 Direction and ACC/DEC Time**

Code (Address) Property	Name	Description	Default (Range)
F14.31 (0x0E1F) RUN	Multi-frequency 1 Direction and ACC/DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the running direction and acceleration/deceleration times for the 1st segment in PLC program.	0x0000 (0x0000~0x0031)

✧ **F14.32: Multi-frequency 2 Direction and ACC/DEC Time**

Code (Address) Property	Name	Description	Default (Range)
F14.32 (0x0E20) RUN	Multi-frequency 2 Direction and ACC/DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the running direction and acceleration/deceleration times for the 2nd segment in PLC program.	0x0000 (0x0000~0x0031)

✧ **F14.33: Multi-frequency 3 Direction and ACC/DEC Time**

Code (Address) Property	Name	Description	Default (Range)
F14.33 (0x0E21) RUN	Multi-frequency 3 Direction and ACC/DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the running direction and acceleration/deceleration times for the 3rd segment in PLC program.	0x0000 (0x0000~0x0031)

✧ **F14.34: Multi-frequency 4 Direction and ACC/DEC Time**

Code (Address) Property	Name	Description	Default (Range)
F14.34 (0x0E22) RUN	Multi-frequency 4 Direction and ACC/DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the running direction and acceleration/deceleration times for the 4th segment in PLC program.	0x0000 (0x0000~0x0031)

✧ **F14.35: Multi-frequency 5 Direction and ACC/DEC Time**

Code (Address) Property	Name	Description	Default (Range)
F14.35 (0x0E23) RUN	Multi-frequency 5 Direction and ACC/DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the running direction and acceleration/deceleration times for the 5th segment in PLC program.	0x0000 (0x0000~0x0031)

✧ **F14.36:** Multi-frequency 6 Direction and ACC/DEC Time

Code (Address) Property	Name	Description	Default (Range)
F14.36 (0x0E24) RUN	Multi-frequency 6 Direction and ACC/DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the running direction and acceleration/deceleration times for the 6th segment in PLC program.	0x0000 (0x0000~0x0031)

✧ **F14.37:** Multi-frequency 7 Direction and ACC/DEC Time

Code (Address) Property	Name	Description	Default (Range)
F14.37 (0x0E25) RUN	Multi-frequency 7 Direction and ACC/DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the running direction and acceleration/deceleration times for the 7th segment in PLC program.	0x0000 (0x0000~0x0031)

✧ **F14.38:** Multi-frequency 8 Direction and ACC/DEC Time

Code (Address) Property	Name	Description	Default (Range)
F14.38 (0x0E26) RUN	Multi-frequency 8 Direction and ACC/DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the running direction and acceleration/deceleration times for the 8th segment in PLC program.	0x0000 (0x0000~0x0031)

✧ **F14.39:** Multi-frequency 9 Direction and ACC/DEC Time

Code (Address) Property	Name	Description	Default (Range)
F14.39 (0x0E27) RUN	Multi-frequency 9 Direction and ACC/DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the running direction and acceleration/deceleration times for the 9th segment in PLC program.	0x0000 (0x0000~0x0031)

✧ **F14.40:** Multi-frequency 10 Direction and ACC/DEC Time

Code (Address) Property	Name	Description	Default (Range)
F14.40 (0x0E28) RUN	Multi-frequency 10 Direction and ACC/DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the running direction and acceleration/deceleration times for the 10th segment in PLC program.	0x0000 (0x0000~0x0031)

✧ **F14.41:** Multi-frequency 11 Direction and ACC/DEC Time

Code (Address) Property	Name	Description	Default (Range)
F14.41 (0x0E29) RUN	Multi-frequency 11 Direction and ACC/DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the running direction and acceleration/deceleration times for the 11th segment in PLC program.	0x0000 (0x0000~0x0031)

✧ **F14.42:** Multi-frequency 12 Direction and ACC/DEC Time

Code (Address) Property	Name	Description	Default (Range)
F14.42 (0x0E2A) RUN	Multi-frequency 12 Direction and ACC/DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the running direction and acceleration/deceleration times for the 12th segment in PLC program.	0x0000 (0x0000~0x0031)

✧ **F14.43:** Multi-frequency 13 Direction and ACC/DEC Time

Code (Address) Property	Name	Description	Default (Range)
F14.43 (0x0E2B) RUN	Multi-frequency 13 Direction and ACC/DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the running direction and acceleration/deceleration times for the 13th segment in PLC program.	0x0000 (0x0000~0x0031)

◇ **F14.44: Multi-frequency 14 Direction and ACC/DEC Time**

Code (Address) Property	Name	Description	Default (Range)
F14.44 (0x0E2C) RUN	Multi-frequency 14 Direction and ACC/DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the running direction and acceleration/deceleration times for the 14th segment in PLC program.	0x0000 (0x0000~0x0031)

◇ **F14.45: Multi-frequency 15 Direction and ACC/DEC Time**

Code (Address) Property	Name	Description	Default (Range)
F14.45 (0x0E2D) RUN	Multi-frequency 15 Direction and ACC/DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the running direction and acceleration/deceleration times for the 15th segment in PLC program.	0x0000 (0x0000~0x0031)

Ones-bit: Operation direction of the current stage

0: FWD

1: REV

Note: When the running direction is reverse, the tens-bit of F09.05 needs to be set to 0 and the hundreds-bit needs to be set to 1.

Tens-bit: ACC/DEC time of the current stage

0: ACC/DEC time 1

1: ACC/DEC time 2

2: ACC/DEC time 3

3: ACC/DEC time 4

Hundreds-bit: Reserved

Thousands-bit: Reserved

Note: When the tens-bit of F09.05 is set to "1" (forward only), if this segment speed is set to reverse, it will run at 0.00Hz.

When the hundreds-bit of F09.05 is set to "1" (frequency control direction valid), if this segment speed is set to reverse, it will run in reverse.

14.17 F15: Torque Control

14.17.1 F15.0x: Torque Setting

◇ **F15.00: Torque Control**

Code (Address) Property	Name	Description	Default (Range)
F15.00 (0x0F00) RUN	Torque Mode	V/F SVC FVC PMV/F PMSVC PMFVC Select torque control mode. 0: Torque limited by speed control 1: Speed limited by motor 1 torque control 2: Speed limited by motor 2 torque control 3: Speed limited by motor 3 torque control 4: Speed limited by motor 4 torque control	0 (0~4)

◇ **F15.01: Torque Reference Source A**

Code (Address) Property	Name	Description	Default (Range)
F15.01 (0x0F01) RUN	Torque Reference Source A	V/F SVC FVC PMV/F PMSVC PMFVC 0: Keypad 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL 6: RS485 7: Reserved (0x31 group) 9999: K connector	0 (0~65535)

✧ **F15.02: Torque Reference Source B**

Code (Address) Property	Name	Description	Default (Range)
F15.02 (0x0F02) RUN	Torque Reference Source B	V/F SVC FVC PMV/F PMSVC PMFVC 0: Keypad 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL 6: RS485 7: Reserved (0x31 group) 9999: K connector	0 (0~65535)

✧ **F15.03: Torque Source Combination**

Code (Address) Property	Name	Description	Default (Range)
F15.03 (0x0F03) RUN	Torque Source Combination	V/F SVC FVC PMV/F PMSVC PMFVC 0: Source A 1: Source B 2: Source A+Source B 3: Source A-Source B 4: Max. (A, B) 5: Min. (A or B)	0 (0~65535)

✧ **F15.04: Torque Setting**

Code (Address) Property	Name	Description	Default (Range)
F15.04 (0x0F04) RUN	Torque Setting	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque via keypad.	0.0% (0.0%~100.0%)

100% of it corresponds to the motor rated current.

14.17.2 F15.1x: Torque Control

✧ **F15.10: Max. Torque**

Code (Address) Property	Name	Description	Default (Range)
F15.10 (0x0F0A) RUN	Max. Torque	V/F SVC FVC PMV/F PMSVC PMFVC Set the maximum given torque.	150.0% (0.0%~250.0%)

✧ **F15.11: Min. Torque**

Code (Address) Property	Name	Description	Default (Range)
F15.11 (0x0F0B) RUN	Min. Torque	V/F SVC FVC PMV/F PMSVC PMFVC Set the minimum given torque.	0.0% (0.0%~250.0%)

✧ F15.12: Torque-Controlled FWD Speed Limit

Code (Address) Property	Name	Description	Default (Range)
F15.12 (0x0F0C) RUN	Torque-Controlled FWD Speed Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque-controlled FWD speed limit. 0: F15.14 1: Reserved 2: AI1× F15.14 3: AI2× F15.14 4: Reserved 5: PUL×F15.14 6: RS485 ×F15.14 7: Extension×F15.14 9999: K connector	0 (0~65535)

✧ F15.13: Torque-Controlled REV Speed Limit

Code (Address) Property	Name	Description	Default (Range)
F15.13 (0x0F0D) RUN	Torque-Controlled REV Speed Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque-controlled REV speed limit. 0: F15.15 1: Reserved 2: AI1× F15.15 3: AI2× F15.15 4: Reserved 5: PUL×F15.15 6: RS485 ×F15.15 7: Extension×F15.15 9999: K connector	0 (0~65535)

✧ F15.14: Torque-Controlled Max. FWD Speed

Code (Address) Property	Name	Description	Default (Range)
F15.14 (0x0F0E) RUN	Torque-Controlled Max. FWD Speed	V/F SVC FVC PMV/F PMSVC PMFVC Set the max. forward running speed under torque control.	100.0% (0.0%~100.0%)

When the forward running speed percentage exceeds this value, torque control switches to speed control.

✧ F15.15: Torque-Controlled Max. REV Speed

Code (Address) Property	Name	Description	Default (Range)
F15.15 (0x0F0F) RUN	Torque-Controlled Max. REV Speed	V/F SVC FVC PMV/F PMSVC PMFVC Set the max. forward running speed under torque control.	100.0% (0.0%~100.0%)

When the absolute value of the reverse running speed percentage exceeds this value, torque control switches to speed control.

✧ F15.16: Torque ACC Time

Code (Address) Property	Name	Description	Default (Range)
F15.16 (0x0F10) RUN	Torque ACC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque acceleration time.	0.00s (0.00s~650.00s)

◇ **F15.17: Torque DEC Time**

Code (Address) Property	Name	Description	Default (Range)
F15.17 (0x0F11) RUN	Torque DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque deceleration time.	0.00s (0.00s~650.00s)

◇ **F15.20: Torque Gain Shift Frequency**

Code (Address) Property	Name	Description	Default (Range)
F15.20 (0x0F14) RUN	Torque Gain Shift Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the given torque gain shift frequency.	2.00Hz (0.00~F1.10)

When the output frequency is lower than this value, F15.21 takes effect.

◇ **F15.21: Torque Gain Shift Frequency**

Code (Address) Property	Name	Description	Default (Range)
F15.21 (0x0F15) RUN	Torque Shift Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the given torque shift gain.	100.0% (0.0%~500.0%)

14.18 F16: Auxiliary Control 1

14.18.1 F16.0x: Counting and Timing

Counting

Related parameter settings when applying this function:

Funcode	Name	Default	Function
F05.0x	Multifunction X Terminal	42	Counter signal input
F05.0x	Multifunction X Terminal	43	Counter reset
F06.00~F06.02	Multifunction Y Terminal	22	Counter maximum arrival
F06.00~F06.02	Multifunction Y Terminal	23	Counter setting arrival
C00.22	Counter		

◇ **F16.00: Counter Source**

Code (Address) Property	Name	Description	Default (Range)
F16.00 (0x1000) RUN	Counter Source	V/F SVC FVC PMV/F PMSVC PMFVC Set the input source for the drive's internal counter.	0 (0~2)

0: Standard multi-function X terminal Input signal frequency is less than 100Hz.

1: PUL terminal The upper limit of the input signal frequency is determined by F05.33.

2: PG card

Note:

- When selecting different input sources, pay attention to the upper limit of the signal frequency.
- When F16.00=0, the input signal must be connected to the terminal set by F05.0x [Multi-function X Terminal] = 42 (Counter input terminal).

◇ **F16.01: Counter Frequency Division**

Code (Address) Property	Name	Description	Default (Range)
F16.01 (0x1001) RUN	Counter Frequency Division	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency division for the counting circuit.	0 (0~6000)

The monitored parameter C00.22 [Counting Value] is obtained by frequency division of the counting signal.

Note:

- The frequency division function increments the count value by 1 only after receiving a specific number of pulses. When F16.01 [Counter Frequency Division] is set to 0 or 1, frequency division is disabled.
- The values compared with F16.02 [Max. Counting] and F16.03 [Counter Setting] are the count values in C00.22.

◇ **F16.02: Max. Counting**

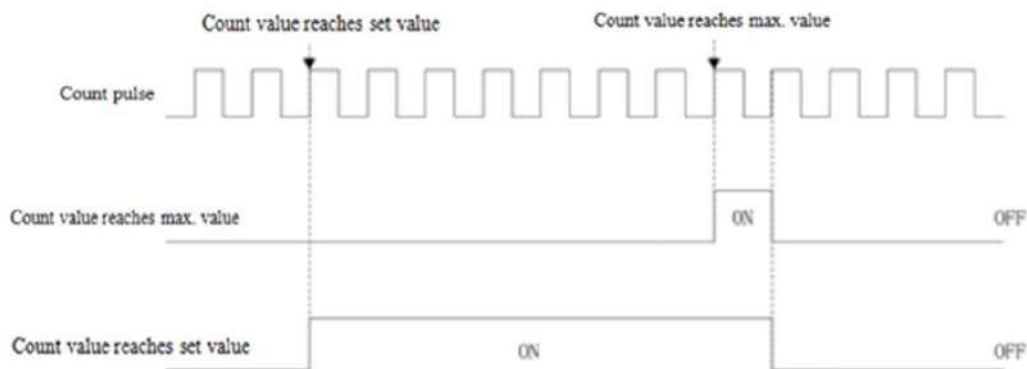
Code (Address) Property	Name	Description	Default (Range)
F16.02 (0x1002) RUN	Max. Counting	V/F SVC FVC PMV/F PMSVC PMFVC Set the max. value for the counting circuit.	1000 (0~65000)

When F06.00~F06.02 [Multi-function Y Terminal] = 22 (Counter maximum arrival), the corresponding output terminal outputs a valid signal when the count value reaches the value set by F16.02, and the count value in C00.22 is cleared to zero. The output signal width equals the clock cycle of the external input terminal's valid signal, i.e., the output terminal stops outputting the valid signal only when the next counting signal is input.

◇ **F16.03: Counter Setting**

Code (Address) Property	Name	Description	Default (Range)
F16.03 (0x1003) RUN	Counter Setting	V/F SVC FVC PMV/F PMSVC PMFVC Set the value for the counting circuit.	500 (0~65000)

When F06.00~F06.02 [Multi-function Y Terminal] = 23 (Counter setting arrival), the corresponding output terminal outputs a valid signal when the count value reaches the target specified by F16.03. The output signal remains active as long as the count value exceeds the threshold set by F16.02. Once the counter is reset, the output terminal stops outputting the valid signal.



Operations related to Counter Max. Value and Set Value

Note:

- The counter set value must be less than or equal to the counter maximum value.
- The count value in C00.22 can be cleared via the terminal set by F05.0x [Multi-function X Terminal] = 43 (Counter clear).

Fixed-length control:

$F16.06 \text{ [Actual Length]} = C00.22 / F16.04.$

When F16.06 [Actual Length] is greater than or equal to F16.05 [Set Length], the output terminal can output valid signals by setting F06.00~F06.02 [Multi-function Y Terminal] = 20 (Meter length arrival) for stop control or to start the next action.

✧ **F16.04: Pulse No. Per Meter**

Code (Address) Property	Name	Description	Default (Range)
F16.04 (0x1004) RUN	Pulse No. Per Meter	V/F SVC FVC PMV/F PMSVC PMFVC Set the pulse number per meter.	10.0 (0.1~6553.5)

✧ **F16.05: Set Length**

Code (Address) Property	Name	Description	Default (Range)
F16.05 (0x1005) STOP	Set Length	V/F SVC FVC PMV/F PMSVC PMFVC Set the length.	1000m (0m~65535m)

Note:

The set value of the length should not exceed the calculated value of F16.02/F16.04.

✧ **F16.06: Actual Length**

Code (Address) Property	Name	Description	Default (Range)
F16.06 (0x1006) READ	Actual Length	V/F SVC FVC PMV/F PMSVC PMFVC Set the actual length. This parameter is read-only.	0m (0m~65535m)

Note: F16.06 [Actual Length] = C00.22 / F16.04.

Timer

The timer starts timing when it receives a valid signal from the external trigger terminal. After the set time is reached, the corresponding output terminal will emit a pulse signal with a width of 1 second.

When the trigger terminal is invalid, the timer retains its current value and resumes timing when the trigger signal becomes valid again.

The timer's reset terminal can clear the timing value at any time.

Related parameter settings when applying this function:

Funcode	Name	Default	Function
F05.0x	Multifunction X Terminal	40	Timer trigger
F05.0x	Multifunction X Terminal	41	Timer reset
F06.00~F06.02	Multifunction Y Terminal	21	Timer arrival
C00.30	Timer Target		

✧ **F16.07: Timer Unit**

Code (Address) Property	Name	Description	Default (Range)
F16.07 (0x1007) STOP	Timer Unit	V/F SVC FVC PMV/F PMSVC PMFVC Set the time unit on the timing circuit.	0 (0~2)

0: Second

1: Minute

2: Hour

✧ **F16.08: Timer Setting**

Code (Address) Property	Name	Description	Default (Range)
F16.08 (0x1008) STOP	Timer Setting	V/F SVC FVC PMV/F PMSVC PMFVC Set the value for timing.	0 (0~65000)

14.18.2 F16.3x: Wobble Frequency

During wobble frequency, the drive cyclically varies the output frequency according to the pre-set acceleration and deceleration times. This function is particularly suitable for systems in industries like textiles, where speed variations are needed based on the changing diameters of the spindle.

✧ F16.10: Wobble Frequency

Code (Address) Property	Name	Description	Default (Range)
F16.10 (0x100A) STOP	Wobble Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the wobble frequency function on or off.	0 (0~1)

0: OFF

1: ON

✧ F16.11: Wobble Frequency Control

Code (Address) Property	Name	Description	Default (Range)
F16.11 (0x100B) STOP	Wobble Frequency Control	V/F SVC FVC PMV/F PMSVC PMFVC Set the control mode for wobble frequency.	0x0000 (0x0000~0x0111)

Ones-bit: Start mode

0: Auto

1: Manual via terminal

Tens-bit: Wobble frequency range

0: Center frequency-based

1: Max. frequency-based

Hundreds-bit: Preset frequency enable

0: OFF

1: ON

Thousands-bit: Reserved

✧ F16.12: Preset Wobble Frequency

Code (Address) Property	Name	Description	Default (Range)
F16.12 (0x100C)	Preset Wobble Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Preset the wobble frequency.	0.00Hz (0.00Hz~F01.10)

✧ F16.13: Wobble Frequency Preset Time

Code (Address) Property	Name	Description	Default (Range)
F16.13 (0x100D) STOP	Wobble Frequency Preset Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the time required for preset wobble frequency.	0.0s (0.0s~3600.0s)

✧ F16.14: Wobble Frequency Range

Code (Address) Property	Name	Description	Default (Range)
F16.14 (0x100E) STOP	Wobble Frequency Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the wobble frequency range.	10.0% (0.0%~50.0%)

✧ F16.15: Wobble Frequency Jump Range

Code (Address) Property	Name	Description	Default (Range)
F16.15 (0x100F) STOP	Wobble Frequency Jump Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the wobble frequency jump range.	10.0% (0.0%~50.0%)

◇ **F16.16: Wobble ACC Time**

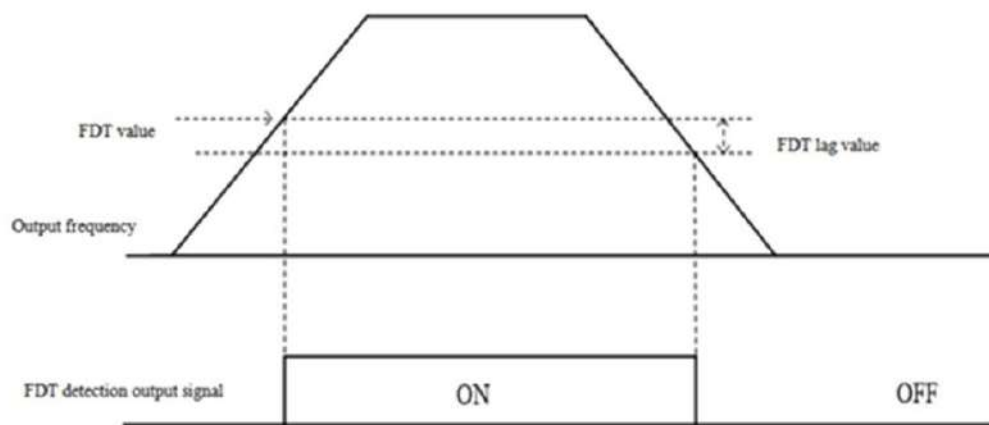
Code (Address) Property	Name	Description	Default (Range)
F16.16 (0x1010) STOP	Wobble ACC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the wobble acceleration time.	5.00s (0.01s~650.00s)

◇ **F16.17: Wobble DEC Time**

Code (Address) Property	Name	Description	Default (Range)
F16.17 (0x1011) STOP	Wobble DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the wobble deceleration time.	5.00s (0.01s~650.00s)

14.18.3 F16.4x: Frequency Detection

It is used for signals when frequency completion and frequency arrival are output to multifunctional terminals.
The AC drive contains two groups of frequency detection and judgment parameters.
The output frequency detection is shown below:



Output Frequency Detection

◇ **F16.40: Frequency Detection 1**

Code (Address) Property	Name	Description	Default (Range)
F16.40 (0x1028) RUN	Frequency Detection 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency detection value 1.	2.00Hz (0.00Hz~F01.10)

Note: Compare the detection value to target frequency.

◇ **F16.41: Frequency Range 1**

Code (Address) Property	Name	Description	Default (Range)
F16.41 (0x1029) RUN	Frequency Range 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency detection range 1.	1.00Hz (0.00Hz~F01.10)

◇ **F16.42: Frequency Detection 2**

Code (Address) Property	Name	Description	Default (Range)
F16.42 (0x102A) RUN	Frequency Detection 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency detection value 2.	2.00Hz (0.00Hz~F01.10)

Note: Compare the detection value to target frequency.

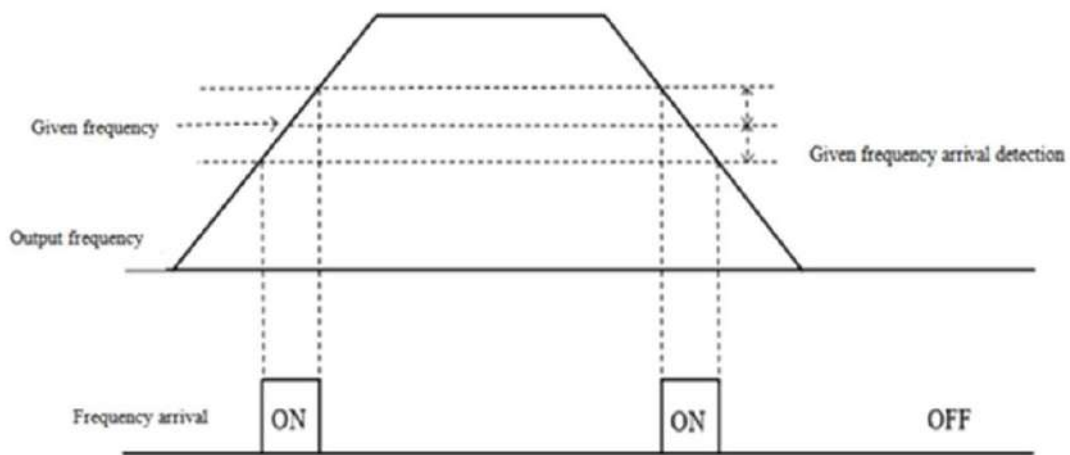
◇ **F16.43: Frequency Range 2**

Code (Address) Property	Name	Description	Default (Range)
F16.43 (0x102B) RUN	Frequency Range 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency detection range 2.	1.00Hz (0.00Hz~F01.10)

◇ **F16.44: Frequency Arrival**

Code (Address) Property	Name	Description	Default (Range)
F16.44 (0x102C) RUN	Frequency Arrival	V/F SVC FVC PMV/F PMSVC PMFVC Set the detection arrival value of the given frequency.	2.00Hz (0.00Hz~F01.10)

Frequency arrival output is shown in the following diagram:



Given Frequency Arrival Detection

Note: Compare the detection value to target frequency.

14.18.4 F16.5x: Monitor Comparator

This group of parameters is used to set any monitored parameter for comparator judgment, and select multi-function output terminals, alarms, or warnings based on the judgment results. It meets the comparison output requirements for various monitoring variables.

Comparator: Set the upper and lower limits of the monitored parameter. The drive enables the digital output terminal when the parameter is within the [lower limit, upper limit] closed interval and determines whether to report an error or stop according to F16.54 [CP1 Mode].

◇ **F16.50~F16.53: Comparator 1 (CP1)**

Code (Address) Property	Name	Description	Default (Range)
F16.50 (0x1032) RUN	Comparator 1 Item	V/F SVC FVC PMV/F PMSVC PMFVC Select the monitored items for comparator 1. Ones- and tens-bit: Set the yy in the monitor parameter Cxx.yy Hundreds- and thousands-bit: Set the xx in the monitor parameter Cxx.yy	0x0001 (0x0000~0x1599)
F16.51 (0x1033) RUN	Comparator 1 Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 1 upper limit. Units and decimal places are determined by F16.50.	(Up to F16.50)
F16.52 (0x1034) RUN	Comparator 1 Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 1 lower limit. Units and decimal places are determined by F16.50.	(Up to F16.50)

F16.53 (0x1035) RUN	Comparator 1 Bias	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 1 bias value. Units and decimal places are determined by F16.50.	(Up to F16.50)

✧ **F16.55~F16.58: Comparator 2 (CP2)**

Code (Address) Property	Name	Description	Default (Range)
F16.55 (0x1037) RUN	Comparator 2 Item	V/F SVC FVC PMV/F PMSVC PMFVC Select the monitored items for comparator 2. Ones- and tens-bit: Set the yy in the monitor parameter Cxx.yy Hundreds- and thousands-bit: Set the xx in the monitor parameter Cxx.yy	0x0002 (0x0000~0x1599)
F16.56 (0x1038) RUN	Comparator 2 Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 2 upper limit. Units and decimal places are determined by F16.55.	(Up to F16.55)
F16.57 (0x1039) RUN	Comparator 2 Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 2 lower limit. Units and decimal places are determined by F16.55.	(Up to F16.55)
F16.58 (0x103A) RUN	Comparator 2 Bias	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 2 bias value. Units and decimal places are determined by F16.55.	(Up to F16.55)

✧ **F16.60~F16.63: Comparator 3 (CP3)**

Code (Address) Property	Name	Description	Default (Range)
F16.60 (0x103C) RUN	Comparator 3 Item	V/F SVC FVC PMV/F PMSVC PMFVC Select the monitored items for comparator 3. Ones- and tens-bit: Set the yy in the monitor parameter Cxx.yy Hundreds- and thousands-bit: Set the xx in the monitor parameter Cxx.yy	0x0001 (0x0000~0x1599)
F16.61 (0x103D) RUN	Comparator 3 Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 3 upper limit. Units and decimal places are determined by F16.60.	(Up to F16.60)
F16.62 (0x103E) RUN	Comparator 3 Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 3 lower limit. Units and decimal places are determined by F16.60.	(Up to F16.60)
F16.63 (0x103F) RUN	Comparator 3 Bias	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 3 bias value. Units and decimal places are determined by F16.60.	(Up to F16.60)

✧ **F16.65~F16.68: Comparator 4 (CP4)**

Code (Address) Property	Name	Description	Default (Range)
F16.65 (0x1041) RUN	Comparator 4 Item	V/F SVC FVC PMV/F PMSVC PMFVC Select the monitored items for comparator 4. Ones- and tens-bit: Set the yy in the monitor parameter Cxx.yy Hundreds- and thousands-bit: Set the xx in the monitor parameter Cxx.yy	0x0002 (0x0000~0x1599)
F16.66 (0x1042) RUN	Comparator 4 Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 4 upper limit. Units and decimal places are determined by F16.65.	(Up to F16.65)
F16.67 (0x1043) RUN	Comparator 4 Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 4 lower limit. Units and decimal places are determined by F16.65.	(Up to F16.65)

F16.68 (0x1044) RUN	Comparator 4 Bias	V/F SVC FVC PMV/F PMSVC PMFVC Set the comparator 4 bias value. Units and decimal places are determined by F16.65.	(Up to F16.65)

14.19 F17: Reserved

14.20 F18: Reserved

14.21 F19: Reserved

14.22 F20: Reserved

14.23 F21: Reserved

14.24 F22: Reserved

14.25 F23: Reserved

14.26 F24: Reserved

14.27 F25: AI/AO Correction

This group of parameters is used to correct analog inputs (AI) and analog outputs (AO), eliminating zero drift and gain issues caused by hardware circuits.

These parameters have been corrected at the factory and remain unchanged when parameters are restored to factory defaults. Generally, no correction is needed at the application site.

Actual measured value: The actual value measured by instruments such as a multimeter.

Monitored value: The value before correction by the drive, which can be viewed through (C05.60, C05.61, C05.62, C05.63).

During correction, set the actual and monitored values of each input or output port to the corresponding parameters, and then the drive performs automatic correction. Usually, three different values are selected.

After correction, the monitored values of input or output are basically consistent with the actual values.

Related parameters:

Port	Type	Before Correction	After Correction	Parameters
AI1	Voltage (F07.00=0)	C05.60	C00.16	F25.00-F25.05
AI1	Current (F07.00=1)	C05.60	C00.16	F25.06-F25.11
AI2	Voltage (F07.01=0)	C05.61	C00.17	F25.12-F25.17
AI2	Current (F07.01=1)	C05.61	C00.17	F25.18-F25.23
AO1	Voltage (F08.00=0)	C05.62	C00.20	F25.24-F25.29
AO1	Current (F08.00= 1, 2)	C05.62	C00.20	F25.30-F25.35
AO2	Voltage (F08.10=0)	C05.63	C00.21	F25.36-F25.41
AO2	Current (F08.10= 1, 2)	C05.63	C00.21	F25.42-F25.47

Note: To select different signal types, manually shift the selection switch. For details, see the "Selector Switch Function Diagram and Description".

14.27.1 F25.00~F25.11: AI1 Correction

Set F07.00 for voltage or current input. Set F7.00 to "0" for voltage input and to "1" for current input.

✧ F25.00~F25.05: AI1 Voltage Correction

Code (Address) Property	Name	Description	Default (Range)
F25.00 (0x1900) RUN	AI1 Measured Voltage 1	V/F SVC FVC PMV/F PMSVC PMFVC 1 st correction voltage, enter the measured value into this parameter.	0.516V (0.000V~ 3.000V)
F25.01 (0x1901) RUN	AI1 Monitored Voltage 1	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 1 st correction voltage, enter the C05.60 value into this parameter.	0.500V (0.000V~ 3.000V)

F25.02 (0x1902) RUN	AI1 Measured Voltage 2	V/F SVC FVC PMV/F PMSVC PMFVC 2 nd correction voltage, enter the measured value into this parameter.	5.165V (0.000V~7.000V)
F25.03 (0x1903) RUN	AI1 Monitored Voltage 2	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 2 nd correction voltage, enter the C05.60 value into this parameter.	5.000V (0.000V~7.000V)
F25.04 (0x1904) RUN	AI1 Measured Voltage 3	V/F SVC FVC PMV/F PMSVC PMFVC 3 rd correction voltage, enter the measured value into this parameter.	9.813V (0.000V~11.000V)
F25.05 (0x1905) RUN	AI1 Monitored Voltage 3	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 3 rd correction voltage, enter the C05.60 value into this parameter.	9.500V (0.000V~11.000V)

◇ **F25.06~F25.11: AI1 Current Correction**

Code (Address) Property	Name	Description	Default (Range)
F25.06 (0x1906) RUN	AI1 Measured Current 1	V/F SVC FVC PMV/F PMSVC PMFVC 1 st correction current, enter the measured value into this parameter.	1.000mA (0.000mA~6.000mA)
F25.07 (0x1907) RUN	AI1 Monitored Current 1	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 1 st correction current, enter the C05.60 value into this parameter.	1.015mA (0.000mA~6.000mA)
F25.08 (0x1908) RUN	AI1 Measured Current 2	V/F SVC FVC PMV/F PMSVC PMFVC 2 nd correction current, enter the measured value into this parameter.	10.000mA (0.000mA~14.000mA)
F25.09 (0x1909) RUN	AI1 Monitored Current 2	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 2 nd correction current, enter the C05.60 value into this parameter.	9.641mA (0.000mA~14.000mA)
F25.10 (0x190A) RUN	AI1 Measured Current 3	V/F SVC FVC PMV/F PMSVC PMFVC 3 rd correction current, enter the measured value into this parameter.	19.000mA (0.000mA~21.000mA)
F25.11 (0x190B) RUN	AI1 Monitored Current 3	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 3 rd correction current, enter the C05.60 value into this parameter.	18.271mA (0.000mA~21.000mA)

14.27.2 F25.12~F25.23: AI2 Correction

Set the F07.01 for voltage or current input. Set F07.01 to "0" for voltage input and to "1" for current input.

◇ **F25.12~F25.17: AI2 Voltage Correction**

Code (Address) Property	Name	Description	Default (Range)
F25.12 (0x190C) RUN	AI2 Measured Voltage 1	V/F SVC FVC PMV/F PMSVC PMFVC 1 st correction voltage, enter the measured value into this parameter.	0.000V (0.000V~3.000V)
F25.13 (0x190D) RUN	AI2 Monitored Voltage 1	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 1 st correction voltage, enter the C05.61 value into this parameter.	1.409V (0.000V~3.000V)
F25.14 (0x190E) RUN	AI2 Measured Voltage 2	V/F SVC FVC PMV/F PMSVC PMFVC 2 nd correction voltage, enter the measured value into this parameter.	5.000V (0.000V~7.000V)
F25.15 (0x190F) RUN	AI2 Monitored Voltage 2	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 2 nd correction voltage, enter the C05.61 value into this parameter.	5.604V (0.000V~7.000V)

F25.16 (0x1910) RUN	AI2 Measured Voltage 3	V/F SVC FVC PMV/F PMSVC PMFVC 3 rd correction voltage, enter the measured value into this parameter.	10.000V (0.000V~11.000V)
F25.17 (0x1911) RUN	AI2 Monitored Voltage 3	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 3 rd correction voltage, enter the C05.61 value into this parameter.	9.816V (0.000V~11.000V)

◇ **F25.18~F25.23: AI2 Current Correction**

Code (Address) Property	Name	Description	Default (Range)
F25.18 (0x1912) RUN	AI2 Measured Current 1	V/F SVC FVC PMV/F PMSVC PMFVC 1 st correction current, enter the measured value into this parameter.	0.000mA (0.000mA~6.000mA)
F25.19 (0x1913) RUN	AI2 Monitored Current 1	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 1 st correction current, enter the C05.61 value into this parameter.	2.818mA (0.000mA~6.000mA)
F25.20 (0x1914) RUN	AI2 Measured Current 2	V/F SVC FVC PMV/F PMSVC PMFVC 2 nd correction current, enter the measured value into this parameter.	10.000mA (0.000mA~14.000mA)
F25.21 (0x1915) RUN	AI2 Monitored Current 2	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 2 nd correction current, enter the C05.61 value into this parameter.	11.208mA (0.000mA~14.000mA)
F25.22 (0x1916) RUN	AI2 Measured Current 3	V/F SVC FVC PMV/F PMSVC PMFVC 3 rd correction current, enter the measured value into this parameter.	20.000mA (0.000mA~21.000mA)
F25.23 (0x1917) RUN	AI2 Monitored Current 3	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 3 rd correction current, enter the C05.61 value into this parameter.	19.633mA (0.000mA~21.000mA)

14.27.3 F25.24~F25.35: AO1 Correction

Set the F8.00 for voltage or current output. Set the F8.00 to "0" for voltage output and to "1 or 2" for current output.

Note: When correcting the AO1 output, set F8.02 to "100.0%" and F08.03 to "0.0", or it will affect the linearity of the correction.

◇ **F25.24~F25.29: AO1 Voltage Correction**

Code (Address) Property	Name	Description	Default (Range)
F25.24 (0x1918) RUN	AO1 Measured Voltage 1	V/F SVC FVC PMV/F PMSVC PMFVC 1 st correction voltage, enter the measured value into this parameter.	0.495V (0.000V~3.000V)
F25.25 (0x1919) RUN	AO1 Monitored Voltage 1	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 1 st correction voltage, enter the C05.62 value into this parameter.	0.500V (0.000V~3.000V)
F25.26 (0x191A) RUN	AO1 Measured Voltage 2	V/F SVC FVC PMV/F PMSVC PMFVC 2 nd correction voltage, enter the measured value into this parameter.	4.958V (0.000V~7.000V)
F25.27 (0x191B) RUN	AO1 Monitored Voltage 2	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 2 nd correction voltage, enter the C05.62 value into this parameter.	5.000V (0.000V~7.000V)
F25.28 (0x191C) RUN	AO1 Measured Voltage 3	V/F SVC FVC PMV/F PMSVC PMFVC 3 rd correction voltage, enter the measured value into this parameter.	9.421V (0.000V~11.000V)
F25.29 (0x191D) RUN	AO1 Monitored Voltage 3	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 3 rd correction voltage, enter the C06.62 value into this parameter.	9.500V (0.000V~11.000V)

✧ **F25.30~F25.35: AO1 Current Correction**

Code (Add.) Property	Name	Description	Default (Range)
F25.30 (0x191E) RUN	AO1 Measured Current 1	V/F SVC FVC PMV/F PMSVC PMFVC 1 st correction current, enter the measured value into this parameter.	0.511mA (0.000mA~6.000mA)
F25.31 (0x191F) RUN	AO1 Monitored Current 1	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 1 st correction current, enter the C05.62 value into this parameter.	0.500mA (0.000mA~6.000mA)
F25.32 (0x1920) RUN	AO1 Measured Current 2	V/F SVC FVC PMV/F PMSVC PMFVC 2 nd correction current, enter the measured value into this parameter.	5.011mA (0.000mA~14.000mA)
F25.33 (0x1921) RUN	AO1 Monitored Current 2	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 2 nd correction current, enter the C05.62 value into this parameter.	5.000mA (0.000mA~14.000mA)
F25.34 (0x1922) RUN	AO1 Measured Current 3	V/F SVC FVC PMV/F PMSVC PMFVC 3 rd correction current, enter the measured value into this parameter.	9.512mA (0.000mA~21.000mA)
F25.35 (0x1923) RUN	AO1 Monitored Current 3	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 3 rd correction current, enter the C05.62 value into this parameter.	9.500mA (0.000mA~21.000mA)

14.27.4 F25.36~F25.47: AO2 Correction

Set the F8.10 for voltage or current output. Set the F8.10 to "0" for voltage output and to "1 or 2" for current output.

Note: When correcting the AO2 output, set F8.12 to "100.0%" and F08.13 to "0.0", or it will affect the linearity of the correction.

✧ **F25.36~F25.41: AO2 Voltage Correction**

Code (Address) Property	Name	Description	Default (Range)
F25.36 (0x1924) RUN	AO2 Measured Voltage 1	V/F SVC FVC PMV/F PMSVC PMFVC 1 st correction voltage, enter the measured value into this parameter.	0.495V (0.000V~3.000V)
F25.37 (0x1925) RUN	AO2 Monitored Voltage 1	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 1 st correction voltage, enter the C05.63 value into this parameter.	0.500V (0.000V~3.000V)
F25.38 (0x1926) RUN	AO2 Measured Voltage 2	V/F SVC FVC PMV/F PMSVC PMFVC 2 nd correction voltage, enter the measured value into this parameter.	4.958V (0.000V~7.000V)
F25.39 (0x1927) RUN	AO2 Monitored Voltage 2	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 2 nd correction voltage, enter the C05.63 value into this parameter.	5.000V (0.000V~7.000V)
F25.40 (0x1928) RUN	AO2 Measured Voltage 3	V/F SVC FVC PMV/F PMSVC PMFVC 3 rd correction voltage, enter the measured value into this parameter.	9.421V (0.000V~11.000V)
F25.41 (0x1929) RUN	AO2 Monitored Voltage 3	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 3 rd correction voltage, enter the C05.63 value into this parameter.	9.500V (0.000V~11.000V)

✧ **F25.42~F25.47: AO2 Current Correction**

Code (Add.) Property	Name	Description	Default (Range)
F25.42 (0x192A) RUN	AO2 Measured Current 1	V/F SVC FVC PMV/F PMSVC PMFVC 1 st correction current, enter the measured value into this parameter.	0.511mA (0.000mA~6.000mA)

F25.43 (0x192B) RUN	AO2 Monitored Current 1	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 1 st correction current, enter the C05.63 value into this parameter.	0.500mA (0.000mA~6.000mA)
F25.44 (0x192C) RUN	AO2 Measured Current 2	V/F SVC FVC PMV/F PMSVC PMFVC 2 nd correction current, enter the measured value into this parameter.	5.011mA (0.000mA~14.000mA)
F25.45 (0x192D) RUN	AO2 Monitored Current 2	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 2 nd correction current, enter the C05.63 value into this parameter.	5.000mA (0.000mA~14.000mA)
F25.46 (0x192E) RUN	AO2 Measured Current 3	V/F SVC FVC PMV/F PMSVC PMFVC 3 rd correction current, enter the measured value into this parameter.	9.512mA (0.000mA~21.000mA)
F25.47 (0x192F) RUN	AO2 Monitored Current 3	V/F SVC FVC PMV/F PMSVC PMFVC Monitoring value of 3 rd correction current, enter the C05.63 value into this parameter.	9.500mA (0.000mA~21.000mA)

14.28 A00: Default Parameters

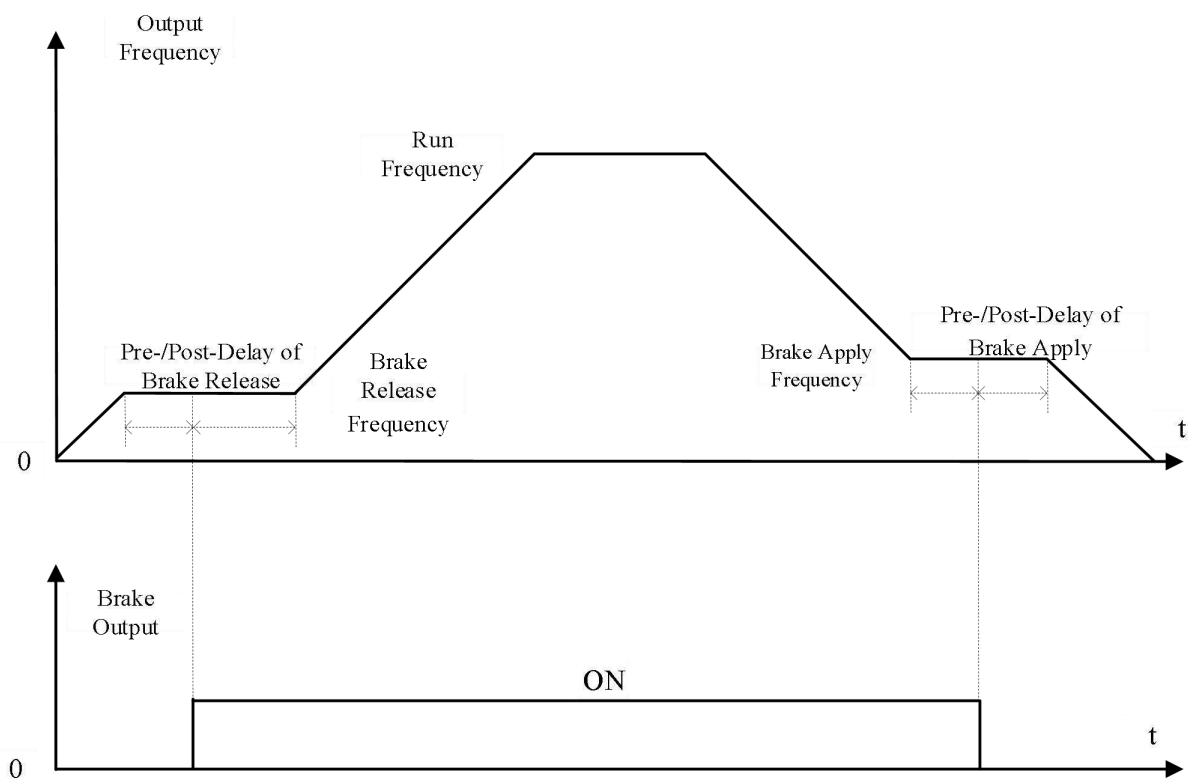
This group provides 20 parameter sets for factory default settings. A00.00 enables the custom default parameter function. When enabled, default parameter values can be user-defined by selecting the xx.yy of the function code. For example, to set F01.09 to a default of 10.00Hz, set A00.01 to 0109 and A00.02 to 10.00.

Code (Address)	Name	Description	Default (Range)
A00.00 (0x4000) STOP	Default Parameter Customization	V/F SVC FVC PMV/F PMSVC PMFVC Set the custom default parameter functions.	0 (0~1)
A00.01 (0x4001) RUN	Funcode 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the xx.yy of the function code; e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)
A00.02 (0x4002) RUN	Default 1	V/F SVC FVC PMV/F PMSVC PMFVC The default value is the selected function code value.	0 (0~65535)
A00.03 (0x4003) RUN	Funcode 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the xx.yy of the function code; e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)
A00.04 (0x4004) RUN	Default 2	V/F SVC FVC PMV/F PMSVC PMFVC The default value is the selected function code value.	0 (0~65535)
A00.05 (0x4005) RUN	Funcode 3	V/F SVC FVC PMV/F PMSVC PMFVC Set the xx.yy of the function code; e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)
A00.06 (0x4006) RUN	Default 3	V/F SVC FVC PMV/F PMSVC PMFVC The default value is the selected function code value.	0 (0~65535)
A00.07 (0x4007) RUN	Funcode 4	V/F SVC FVC PMV/F PMSVC PMFVC Set the xx.yy of the function code; e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)
A00.08 (0x4008) RUN	Default 4	V/F SVC FVC PMV/F PMSVC PMFVC The default value is the selected function code value.	0 (0~65535)
A00.09 (0x4009) RUN	Funcode 5	V/F SVC FVC PMV/F PMSVC PMFVC Set the xx.yy of the function code; e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)
A00.10 (0x400A) RUN	Default 5	V/F SVC FVC PMV/F PMSVC PMFVC The default value is the selected function code value.	0 (0~65535)
A00.11 (0x400B) RUN	Funcode 6	V/F SVC FVC PMV/F PMSVC PMFVC Set the xx.yy of the function code; e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)

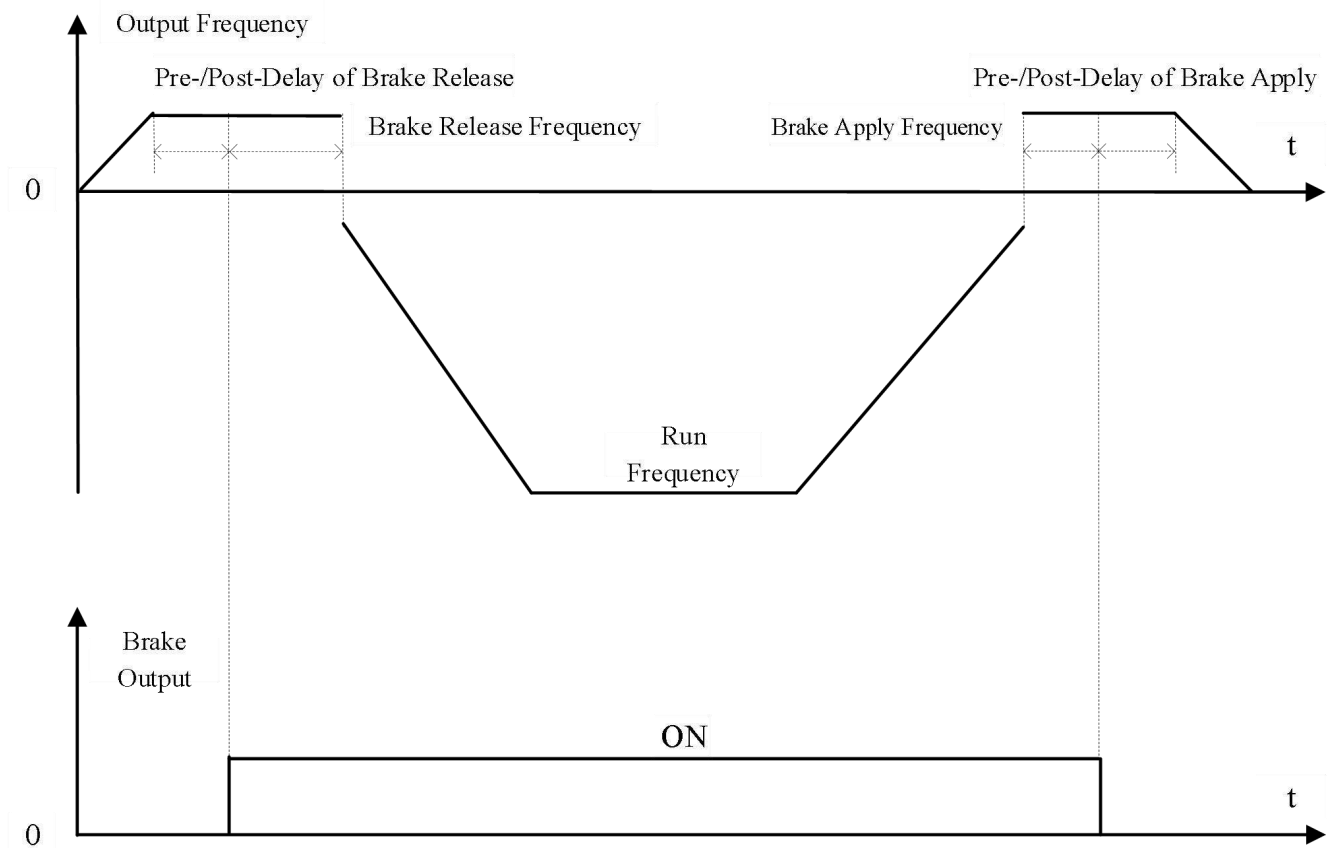
A00.12 (0x400C) RUN	Default 6	V/F SVC FVC PMV/F PMSVC PMFVC The default value is the selected function code value.	0 (0~65535)
A00.13 (0x400D) RUN	Funcode 7	V/F SVC FVC PMV/F PMSVC PMFVC Set the xx.yy of the function code; e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)
A00.14 (0x400E)	Default 7	V/F SVC FVC PMV/F PMSVC PMFVC The default value is the selected function code value.	0 (0~65535)
A00.15 (0x400F) RUN	Funcode 8	V/F SVC FVC PMV/F PMSVC PMFVC Set the xx.yy of the function code; e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)
A00.16 (0x4010) RUN	Default 8	V/F SVC FVC PMV/F PMSVC PMFVC The default value is the selected function code value.	0 (0~65535)
A00.17 (0x4011) RUN	Funcode 9	V/F SVC FVC PMV/F PMSVC PMFVC Set the xx.yy of the function code; e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)
A00.18 (0x4012)	Default 9	V/F SVC FVC PMV/F PMSVC PMFVC The default value is the selected function code value.	0 (0~65535)
A00.19 (0x4013) RUN	Funcode 10	V/F SVC FVC PMV/F PMSVC PMFVC Set the xx.yy of the function code; e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)
A00.20 (0x4014)	Default 10	V/F SVC FVC PMV/F PMSVC PMFVC The default value is the selected function code value.	0 (0~65535)
A00.21 (0x4015) RUN	Funcode 11	V/F SVC FVC PMV/F PMSVC PMFVC Set the xx.yy of the function code; e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)
A00.22 (0x4016) RUN	Default 11	V/F SVC FVC PMV/F PMSVC PMFVC The default value is the selected function code value.	0 (0~65535)
A00.23 (0x4017) RUN	Funcode 12	V/F SVC FVC PMV/F PMSVC PMFVC Set the xx.yy of the function code; e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)
A00.24 (0x4018)	Default 12	V/F SVC FVC PMV/F PMSVC PMFVC The default value is the selected function code value.	0 (0~65535)
A00.25 (0x4019)	Funcode 13	V/F SVC FVC PMV/F PMSVC PMFVC Set the xx.yy of the function code; e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)
A00.26 (0x401A) RUN	Default 13	V/F SVC FVC PMV/F PMSVC PMFVC The default value is the selected function code value.	0 (0~65535)
A00.27 (0x401B) RUN	Funcode 14	V/F SVC FVC PMV/F PMSVC PMFVC Set the xx.yy of the function code; e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)
A00.28 (0x401C) RUN	Default 14	V/F SVC FVC PMV/F PMSVC PMFVC The default value is the selected function code value.	0 (0~65535)
A00.29 (0x401D) RUN	Funcode 15	V/F SVC FVC PMV/F PMSVC PMFVC Set the xx.yy of the function code; e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)
A00.30 (0x401E)	Default 15	V/F SVC FVC PMV/F PMSVC PMFVC The default value is the selected function code value.	0 (0~65535)
A00.31 (0x401F) RUN	Funcode 16	V/F SVC FVC PMV/F PMSVC PMFVC Set the xx.yy of the function code; e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)

A00.32 (0x4020) RUN	Default 16	V/F SVC FVC PMV/F PMSVC PMFVC The default value is the selected function code value.	0 (0~65535)
A00.33 (0x4021) RUN	Funcode 17	V/F SVC FVC PMV/F PMSVC PMFVC Set the xx.yy of the function code; e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)
A00.34 (0x4022) RUN	Default 17	V/F SVC FVC PMV/F PMSVC PMFVC The default value is the selected function code value.	0 (0~65535)
A00.35 (0x4023) RUN	Funcode 18	V/F SVC FVC PMV/F PMSVC PMFVC Set the xx.yy of the function code; e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)
A00.36 (0x4024) RUN	Default 18	V/F SVC FVC PMV/F PMSVC PMFVC The default value is the selected function code value.	0 (0~65535)
A00.37 (0x4025) RUN	Funcode 19	V/F SVC FVC PMV/F PMSVC PMFVC Set the xx.yy of the function code; e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)
A00.38 (0x4026) RUN	Default 19	V/F SVC FVC PMV/F PMSVC PMFVC The default value is the selected function code value.	0 (0~65535)
A00.39 (0x4027) RUN	Funcode 20	V/F SVC FVC PMV/F PMSVC PMFVC Set the xx.yy of the function code; e.g., for F01.09, set it to 0109.	0x0000 (0x0000~0x9999)
A00.40 (0x4028) RUN	Funcode 20	V/F SVC FVC PMV/F PMSVC PMFVC The default value is the selected function code value.	0 (0~65535)

14.29 A01: Brake Control



Upward Brake Holding Logic Diagram



Downward Brake Holding Logic Diagram

14.29.1 A01.0x: Brake Logic

✧ A01.00: Brake Control

Code (Address)	Name	Description	Default (Range)	Property
A01.00 (0x4100)	Brake Control	V/F SVC FVC PMV/F PMSVC PMFVC Set the brake control mode.	0 (0~2)	STOP

0: OFF

1: Control mode 1

2: Control mode 2

Note:

- When set to a non-zero value, the brake control function is enabled.
- Brake control mode 1 is suitable for hoisting applications.
- Brake control mode 2 is suitable for traveling mechanisms requiring a brake. In this mode:
 - (1) Downward lift function and command interval time are disabled.
 - (2) Forward and reverse brake apply delays are set to zero.
 - (3) Forward and reverse brake release delay times are jointly determined by A01.61 [Translation Brake Release Delay] and the [Start DC Braking Time].

✧ A01.01: General Brake Control

Code (Address)	Name	Description	Default (Range)	Property
A01.01 (0x4101)	General Brake Control	V/F SVC FVC PMV/F PMSVC PMFVC	0x0001 (0x0000~0x1112)	RUN

Ones-bit: Brake-release method

0: Frequency completed;

1: Frequency and current completed at the same time

The brake is released when both the set frequency and current are reached. The AC drive output current must reach A01.04 [Brake Release Current Coefficient] to execute the brake release action.

Tens-bit: Release direction (downward only)

0: Release torque same as running direction

1: Release torque opposite to running direction

When releasing the brake in reverse rotation, reverse torque is generated (downward lift). During brake release, the torque direction is opposite to the running direction (forward torque), which prevents load slipping after brake release.

Hundreds-bit: Brake direction (downward only)

0: Brake torque same as running direction

1: Brake torque opposite to running direction

Thousands-bit: Zero-frequency jump after downward lifting

0: OFF

1: ON

This function applies to brake control after the downward lift function is enabled. It can be enabled only when the tens or hundreds-bit of A01.01 [General Brake Control] is set to 1.

When switching from forward to reverse, the frequency jumps from +A01.05 [Zero-Frequency Jump Value] to -A01.05. When switching from reverse to forward, the frequency jumps from -A01.05 to +A01.05.

◇ A01.02: Operation Command Reverse Control

Code (Address)	Name	Description	Default (Range)	Property
A01.02 (0x4102)	Operation Command Reverse Control	V/F SVC FVC PMV/F PMSVC PMFVC	0x0010 (0x0000~0x1111)	RUN

Ones-bit: Reverse control of the operation command

0: OFF. A reverse command is treated as a stop command.

1: ON. No brake apply command is output at zero-crossing.

Tens-bit: Zero-frequency jump

0: OFF

It can be enabled only when the ones-bit is set to 1.

When switching from forward to reverse, the frequency jumps from +A01.05 [Zero-Frequency Jump Value] to -A01.05. When switching from reverse to forward, the frequency jumps from -A01.05 to +A01.05.

◇ A01.03: Run Command Interval Delay

Code (Address)	Name	Description	Default (Range)	Property
A01.03 (0x4103)	Run Command Interval Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay between run commands.	0.30s (0.00s~1.00s)	RUN

Define the minimum interval from stop to the next run command; commands shorter than this setting are ignored.

Note: After a brake release command becomes effective, parameter changes take effect only at the next start.

◇ A01.04: Brake Release Current Coefficient

Code (Address)	Name	Description	Default (Range)	Property
A01.04 (0x4104)	Brake Release Current Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the current coefficient for brake release.	20.0% (0.0%~100.0%)	RUN

During upward or downward start, while holding frequency, the AC drive compares the output current with this parameter to determine whether the brake can be released. If the output current is lower than this value, the brake is not released and fault E.BOC is triggered.

◇ A01.05: Zero-Frequency Jump Value

Code (Address)	Name	Description	Default (Range)	Property
A01.05 (0x4105)	Zero-Frequency Jump Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the frequency used for zero-crossing jump.	1.00Hz (0.00Hz~10.00Hz)	RUN

To avoid operation near zero frequency during forward/reverse switching, when the output frequency is lower than this value, it jumps directly to the opposite-direction running frequency.

Note: This value is generally set lower than the brake release frequency.

◇ A01.06~A01.09: Brake Apply/Release Frequency

Code (Address)	Name	Description	Default (Range)	Property
A01.06 (0x4106)	Forward Brake Release Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the forward-direction brake-release frequency.	2.00Hz (0.00Hz~10.00Hz))	RUN
A01.07 (0x4107)	Forward Braking Applying Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the forward-direction brake-engage frequency.	2.00Hz (0.00Hz~10.00Hz))	RUN
A01.08 (0x4108)	Reverse Brake Release Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the reverse-direction brake-release frequency.	2.00Hz (0.00Hz~10.00Hz))	RUN
A01.09 (0x4109)	Reverse Brake Applying Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the reverse-direction brake-engage frequency.	2.00Hz (0.00Hz~10.00Hz))	RUN

14.29.2 A01.1x: Brake Control Delay

Code (Address)	Name	Description	Default (Range)	Property
A01.10 (0x410A)	Pre-Delay of Forward Brake Release	V/F SVC FVC PMV/F PMSVC PMFVC Set the pre-delay before forward brake release.	0.20s (0.00s~1.00s)	STOP
A01.11 (0x410B)	Post-Delay of Forward Brake Release	V/F SVC FVC PMV/F PMSVC PMFVC Set the post-delay after forward brake release.	0.20s (0.00s~1.00s)	STOP
A01.12 (0x410C)	Pre-Delay of Forward Brake Applying	V/F SVC FVC PMV/F PMSVC PMFVC Set the pre-delay before forward brake engagement.	0.20s (0.00s~1.00s)	STOP
A01.13 (0x410D)	Post-Delay of Forward Brake Applying	V/F SVC FVC PMV/F PMSVC PMFVC Set the post-delay after forward brake engagement.	0.20s (0.00s~1.00s)	STOP
A01.14 (0x410E)	Pre-Delay of Reverse Brake Release	V/F SVC FVC PMV/F PMSVC PMFVC Set the pre-delay before reverse brake release.	0.20s (0.00s~1.00s)	STOP
A01.15 (0x410F)	Post-Delay of Reverse Brake Release	V/F SVC FVC PMV/F PMSVC PMFVC Set the post-delay after reverse brake release.	0.20s (0.00s~1.00s)	STOP
A01.16 (0x4110)	Pre-Delay of Reverse Brake Applying	V/F SVC FVC PMV/F PMSVC PMFVC Set the pre-delay before reverse brake engagement.	0.20s (0.00s~1.00s)	STOP
A01.17 (0x4111)	Post-Delay of Reverse Brake Applying	V/F SVC FVC PMV/F PMSVC PMFVC Set the post-delay after reverse brake engagement.	0.20s (0.00s~1.00s)	STOP

Note: Brake closing frequency holding time = pre-delay + post-delay.

14.29.3 A01.2x: Multi-function

✧ A01.20: Hoisting Multi-Function Settings

Code (Address)	Name	Description	Default (Range)	Property
A01.20 (0x4114)	Hoisting Multi-Function Settings	V/F SVC FVC PMV/F PMSVC PMFVC	0x0000 (0x0000~0x3111)	RUN

Ones-bit: Reserved

Tens-bit: Open-loop brake handling

0: When the target frequency is lower than the brake applying frequency, it is limited to the brake applying frequency and alarm A.LFF.

1: When the target frequency is lower than the brake applying frequency, it is forced to apply brake

Hundreds-bit: Reserved

Thousands-bit: Brake feedback

0: Brake feedback off

1: Brake release feedback only

2: Brake apply feedback only

3: Enable brake release feedback and brake apply feedback at the same time

✧ A01.21: Brake Feedback Detection Delay

Code (Address)	Name	Description	Default (Range)	Property
A01.21 (0x4115)	Brake Feedback Detection Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the detection delay for brake feedback.	0.30s (0.00s~5.000s)	RUN

Note: After brake feedback failure is detected, an error is reported after the delay time: E.BOF (Brake release feedback error) or E.BFF (Brake apply feedback error).

✧ A01.23~A01.24: Zero-Cross Jump ACC/DEC Time

Code (Address)	Name	Description	Default (Range)	Property
A01.23 (0x4117)	Zero-Cross Jump ACC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the acceleration time for zero-cross frequency jump.	0.00s (0.00s~600.00s)	RUN
A01.24 (0x4118)	Zero-Cross Jump DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the deceleration time for zero-cross frequency jump.	0.00s (0.00s~600.00s)	RUN

Note: When set to 0, the frequency jumps instantly at zero-crossing.

✧ A01.25: Brake Mode during E-Stop

Code (Address)	Name	Description	Default (Range)	Property
A01.25 (0x4119)	Brake Mode during E-Stop	V/F SVC FVC PMV/F PMSVC PMFVC Set the brake control mode during emergency stop.	0 (0~1)	RUN

0: Use brake frequency

1: Direct brake engagement

✧ A01.26: Stop Command Lock Frequency

Code (Address)	Name	Description	Default (Range)	Property
A01.26 (0x411A)	Stop Command Lock Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the lock frequency for the stop command.	3.00Hz (0.00Hz~50.00Hz)	RUN

Note: During stopping, when the frequency drops below this value, start commands are ignored.

14.29.4 A01.3x: Brake Protection

◇ A01.30~A01.32: Abnormal Current Output Protection

Code (Address)	Name	Description	Default (Range)	Property
A01.30 (0x411E)	Abnormal Current Output Protection	V/F SVC FVC PMV/F PMSVC PMFVC Set the abnormal current output protection on/off.	1 (0~1)	STOP

0: OFF

1: ON

A01.31 (0x411F)	Abnormal Current Detection Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the detection threshold for abnormal output current.	5% (0%~50%)	STOP
A01.32 (0x4120)	Abnormal Current Detection Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the detection time for abnormal output current.	0.300s (0.000s~ 1.000s)	STOP

Note: The AC drive monitors output current during operation. If the current stays below A01.31 [Abnormal Current Detection Threshold] (100% = rated motor current) longer than A01.32 [Abnormal Current Detection Time], it is judged abnormal and report E.BLC.

◇ A01.30~A01.32: Abnormal Current Output Protection

A01.34 (0x4122)	Brake Failure Protection	V/F SVC FVC PMV/F PMSVC PMFVC Set brake failure protection on/off. 0: OFF 1: ON	0 (0~1)	RUN
A01.35 (0x4123)	Brake Failure Protection Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the threshold for brake failure protection.	1.00Hz (0.00Hz~ 5.00Hz)	STOP
A01.36 (0x4124)	Brake Failure Protection Hold Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the hold time for brake failure protection.	60.0s (0.0s~ 3000.0s)	STOP
A01.37 (0x4125)	Brake Failure Protection Start Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the start filter time for brake failure protection.	0.100s (0.000s~ 2.000s)	STOP
A01.38 (0x4126)	Brake Failure Protection Upward Frequency Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the upward frequency limit for brake failure protection.	0.00Hz (0.00Hz~ 100.00Hz)	RUN
A01.39 (0x4127)	Brake Failure Protection Downward Frequency Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the downward frequency limit for brake failure protection.	50.00Hz (0.00Hz~ 100.00Hz)	RUN

Note:

- This function is effective only in FVC mode.
- Detection is performed when the AC drive is not running, during DC braking, or during pre-excitation. If the drive detects abnormal motor speed exceeding A01.35 [Brake Failure Protection Threshold], after A01.37 [Brake Failure Protection Start Filter Time], it enters the failure protection state. In the failure protection state, the AC drive performs an emergency start, maintains upward zero-speed operation, and continuously applies forward torque.
- The AC drive exits the failure protection state and stops when an external up or down command is given, or after A01.36 [Brake Failure Protection Hold Time] expires.

14.29.5 A01.6x: Translation Mechanism Brake

✧ A01.60: Translation Brake Control

Code (Address)	Name	Description	Default (Range)	Property
A01.60 (0x413C)	Translation Brake Control	V/F SVC FVC PMV/F PMSVC PMFVC	0x0010 (0x0000) ~0x00FF)	STOP

Ones-bit: Low-frequency brake mode

0: Engage brake when command and output frequency < brake frequency; do not release

1: After low-frequency brake, release brake when command and output frequency > brake frequency

Tens-bit: Stop command lock mode

0: OFF

1: Method 1

2: Method 2

✧ A01.61: Translation Brake Release Delay

Code (Address)	Name	Description	Default (Range)	Property
A01.61 (0x413D)	Translation Brake Release Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for translation brake release.	0.60s (0.00s~ 2.00s)	STOP

Brake Release Time Setting Rules:

Control Mode	DC Braking	Condition	Effective Brake Release Time	
VF	Enabled	Brake release delay $\geq$ DC braking time	DC braking time	A01.61 brake release time - DC braking time
		Brake release delay < DC braking time	A01.61 brake release time	
	Disabled		A01.61 brake release time	
VC			A01.61 brake release time	

✧ A01.62: Translation Brake Frequency

Code (Address)	Name	Description	Default (Range)	Property
A01.62 (0x413E)	Translation Brake Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the brake frequency for the translation mechanism.	0.50Hz (0.00Hz~ 10.00Hz)	STOP

If the stop holding time is not zero and the brake apply frequency is lower than the stop holding frequency, the stop holding frequency is used; otherwise, A01.62 is used.

14.30 d00: Motor Parameters

This parameter group is used when one AC drive is alternately applied to two or more motors, enabling quick switching to a standby motor parameter group and reducing commissioning time. Before use, select the active motor parameter group via d00.00. The default is 1 (Motor 1), corresponding to function code groups F2, F3, and F4. Motor 2 corresponds to function code groups d01, d02, d03; Motor 3 corresponds to function code groups d04, d05, d06; and Motor 4 corresponds to function code groups d07, d08, d09. After setting the standby motor parameters, configure the corresponding motor control modes via d00.02~d00.04.

d00.0x: Motor Control

✧ d00.00: Current Motor Parameters

Code (Address) Property	Name	Description	Default (Range)
d00.00 (0x6000) STOP	Current Motor Parameters	V/F SVC FVC PMV/F PMSVC PMFVC 1: Motor Parameter 1 2: Motor Parameter 2 3: Motor Parameter 3 4: Motor Parameter 4	1 (1~4)

✧ **d00.01: ACC/DEC Time Link**

Code (Address) Property	Name	Description	Default (Range)
d00.01 (0x6001) STOP	ACC/DEC Time Link	V/F SVC FVC PMV/F PMSVC PMFVC Set the acceleration/deceleration time link.	0 (0~1)

Enable linked switching of acceleration/deceleration times for multi-motor operation.

0: All four motor parameter sets share F1.22 (acceleration) and F1.23 (deceleration).

1:

Motor 1: F1.22/F1.23; Motor 2: F1.24/F1.25; Motor 3: F1.26/F1.27; Motor 4: F1.28/F1.29

✧ **d00.02~d00.04: Motor Control Mode**

Code (Address) Property	Name	Description	Default (Range)
d00.02 (0x6002) STOP	Motor 2 Control Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor 2 control mode. 0: AM-V/F 1: AM-SVC 2: AM-FVC 10: PM-VF 11: PM-SVC 12: PM-FVC 20: Coil voltage-frequency / current-frequency decoupled control	0 (0~20)
d00.03 (0x6003) STOP	Motor 3 Control Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor 2 control mode. 0: AM-V/F 1: AM-SVC 2: AM-FVC 10: PM-VF 11: PM-SVC 12: PM-FVC 20: Coil voltage-frequency / current-frequency decoupled control	0 (0~20)
d00.04 (0x6004) STOP	Motor 4 Control Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor 4 control mode. 0: AM-V/F 1: AM-SVC 2: AM-FVC 10: PM-VF 11: PM-SVC 12: PM-FVC 20: Coil voltage-frequency / current-frequency decoupled control	0 (0~20)

Select the control mode according to the type and purpose of the motors.

0: AM V/F Control (V/F)

This control mode suits all variable speed control applications that do not require fast response and precise speed control, or scenarios where one AC drive works for multiple motors. It is also used when the motor parameters are not clear or auto-tuning cannot be performed.

1: AM SVC Control (SVC)

This control mode is used for applications that require precise speed control and fast speed and torque response so that it can output high torque at low speeds.

2: AM FVC Control (FVC)

This mode is used where high-precision speed control or torque control is required and even at zero speed. Feedback signal from motor speed is needed.

10: PM V/F Control (PMV/ F)

This control mode suits all variable speed control applications that do not require fast response and precise speed

control.

11: PM SVC Control (PMSVC)

This control mode is used for applications that require precise speed control and torque limit.

12: PM FVC Control (PMFVC)

This control method is used for constant torque applications that require high precision control when using PM motors, and for speed change control that requires high-performance torque control and fast torque response. Feedback signal from motor speed is needed.

20: Coil voltage-frequency / current-frequency decoupled control

This control mode is used for applications where the output voltage/current and frequency are controlled separately.

Note:

- In order to obtain the best control, please input the correct motor parameters and perform motor auto-tuning. F02.0x are basic motor parameters.
- In SVC and FVC control mode, the AC drive can only drive one motor; and there shall not be too large between the level of drive capacity and that of motor capacity. The power of the AC drive can be two levels higher or one level lower than that of the motor, otherwise it may cause degraded control performance or failure of drive system.

◇ d00.05~d00.08: Backup Frequency

Code (Address) Property	Name	Description	Default (Range)
d00.05 (0x6005) RUN	Motor 1 Backup Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the backup frequency for motor 1.	50.00Hz (0.00Hz~Upper limit frequency)
d00.06 (0x6006) RUN	Motor 2 Backup Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the backup frequency for motor 2.	50.00Hz (0.00Hz~Upper limit frequency)
d00.07 (0x6007) RUN	Motor 3 Backup Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the backup frequency for motor 3.	50.00Hz (0.00Hz~Upper limit frequency)
d00.08 (0x6008) RUN	Motor 4 Backup Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the backup frequency for motor 4.	50.00Hz (0.00Hz~Upper limit frequency)

Set the backup frequency as required. To use this function, set F00.11 = 1 to enable multi-motor parameter switching, and ensure that terminal function 58 (Backup frequency) is active. For details on terminal function 58, refer to F05.0x Terminal X Function for details.

14.31 d01: Motor 2 Parameters

Set the motor 2 and motor application parameters.

14.31.1 d01.0x: Basic Parameters and Auto-tuning

◇ d01.00: Motor Type

Code (Address) Property	Name	Description	Default (Range)
d01.00 (0x6100) READ	Type	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor type. This parameter is read-only.	0 (0~1)

0: Asynchronous motor (AM)

1: Permanent magnet synchronous motor (PM)

Note: This parameter is read-only, d01.00 is updated automatically after d00.02 [Motor 2 Control Mode] is set.

◇ d01.01: Motor Pole No.

Code (Address) Property	Name	Description	Default (Range)
d01.01 (0x6101) STOP	Pole No.	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor pole number.	4 (2~98)

✧ **d01.02: Motor Rated Power**

Code (Address) Property	Name	Description	Default (Range)
d01.02 (0x6102) STOP	Rated Power	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated power of the motor.	Up to model (0.1kW~1000.0kW)

Note: Default value is the drive's rated power and will adjust accordingly.

✧ **d02.03: Motor Rated Frequency**

Code (Address) Property	Name	Description	Default (Range)
d01.03 (0x6103) STOP	Rated Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated frequency of the motor.	50.00Hz (0.01Hz~F01.10)

✧ **d01.04: Rated Motor Speed**

Code (Address) Property	Name	Description	Default (Range)
d01.04 (0x6104) STOP	Rated Speed	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated speed of the motor.	Up to model (0rpm~65000rpm)

Note:

When d01.00 [Type] is set to a synchronous motor, d01.04 [Rated Speed] is calculated from d01.01 [Pole No.] and d01.03 [Rated Frequency]. Please set the corresponding parameters correctly. The calculation formula is: d01.04 [Rated Speed] = $60 * d01.03 [Rated Frequency] / (d01.01 [Pole No.] / 2)$.

✧ **d01.05: Motor Rated Voltage**

Code (Address) Property	Name	Description	Default (Range)
d01.05 (0x6105) STOP	Motor Rated Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated voltage of the motor.	Up to model (0V~2000V)

✧ **d01.06: Motor Rated Current**

Code (Address) Property	Name	Description	Default (Range)
d01.06 (0x6106) STOP	Rated Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated current of the motor.	Up to model (0.1A~3000.0A)

✧ **d01.07: Motor Parameter Auto-tuning**

Code (Address) Property	Name	Description	Default (Range)
d01.07 (0x6107) STOP	Auto-tuning	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor parameter auto-tuning.	0 (0~20)

Note: After parameter auto-tuning completes, [d01.07] will be automatically set to "0".

0: OFF

1: Dynamic auto-tuning

2: Static auto-tuning

3: Stator resistance auto-tuning

6: Dynamic auto-tuning only

9: PM inductance saturation coefficient auto-tuning

10: Non-linear auto-tuning

4~20: Reserved

✧ **d01.08: Auto-tuning Flag**

Code (Address) Property	Name	Description	Default (Range)
d01.08 (0x6108) RO	Auto-tuning Flag	V/F SVC FVC PMV/F PMSVC PMFVC Read-only parameter, indicating the auto-tuning status.	0 (0~0xFFFF)

Note: This parameter is updated after auto-tuning is completed.

- Ones-bit:
 - bit0: Stator resistance tuning completed
 - bit1: Rotor resistance and leakage inductance tuning completed
 - bit2: Control current and rotor inductance tuning completed (dynamic tuning)
 - bit3: Rotor inductance, rotor resistance, and no-load current tuning completed (static tuning)
- Tens-bit:
 - bit0: Ld and Lq tuning completed
 - bit1: Back-EMF static tuning completed
 - bit2: Back-EMF dynamic tuning completed
 - bit3: Inductance saturation coefficient tuning completed
- Hundreds-bit:
 - bit0: PG direction tuning completed
 - bit1: PG initial angle tuning completed
 - bit2: Z-pulse direction tuning completed
- Thousands-bit:
 - bit0: Pulse width coefficient tuning completed
 - bit1: Dead-time compensation tuning completed
 - bit3: Current gain tuning completed

14.31.2 d01.1x: AM Advanced Parameters

✧ **d01.10: AM No-Load Current**

Code (Address) Property	Name	Description	Default (Range)
d01.10 (0x610A) STOP	AM No-load Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the no-load current for asynchronous motors.	Up to model (0.1A~3000.0A)

✧ **d01.11: AM Stator Resistance**

Code (Address) Property	Name	Description	Default (Range)
d01.11 (0x610B) STOP	AM Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator resistance for asynchronous motors.	Up to model (0.01mΩ~60000mΩ)

Note: The decimal point is set by d01.19 ones-bit.

✧ **d01.12: AM Rotor Resistance**

Code (Address) Property	Name	Description	Default (Range)
d01.12 (0x610C) STOP	AM Rotor Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the rotor resistance for asynchronous motors.	Up to model (0.01mΩ~60000mΩ)

Note: The decimal point is set by d01.19 tens-bit.

✧ **d01.13: AM Stator Leakage Inductance**

Code (Address) Property	Name	Description	Default (Range)
d01.13 (0x610D) STOP	AM Stator Leakage Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator leakage inductance for asynchronous motors.	Up to model (0.001mH~6553.5mH)

Note: The decimal point is set by d01.19 hundreds-bit.

◇ **d01.14: AM Stator Inductance**

Code (Address) Property	Name	Description	Default (Range)
d01.14 (0x610E) STOP	AM Stator Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator inductance for asynchronous motors.	Up to model (0.01mH~65535mH)

Note: The decimal point is set by d01.19 thousands-bit.

◇ **d01.15: Per-Unit Stator Resistance**

Code (Address) Property	Name	Description	Default (Range)
d01.15 (0x610F) READ	Per-unit Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the stator resistance. This parameter is read-only.	Conversion of actual values (0.01%~50.00%)

◇ **d01.16: Per-Unit Rotor Resistance**

Code (Address) Property	Name	Description	Default (Range)
d01.16 (0x6110) READ	Per-unit Rotor Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the rotor resistance. This parameter is read-only.	Conversion of actual values (0.01%~50.00%)

◇ **d01.17: Per-Unit Stator Leakage Inductance**

Code (Address) Property	Name	Description	Default (Range)
d01.17 (0x6111) READ	Per-unit Stator Leakage Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the stator leakage inductance. This parameter is read-only.	Conversion of actual values (0.01%~50.00%)

◇ **d01.18: Per-Unit Stator Inductance**

Code (Address) Property	Name	Description	Default (Range)
d01.18 (0x6112) READ	Per-unit Stator Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the stator inductance. This parameter is read-only.	Conversion of actual values (0.1%~999.0%)

◇ **d01.19: d01.11~d01.14 Decimal Point**

Code (Address) Property	Name	Description	Default (Range)
d01.19 (0x6113) READ	d01.11~d01.14 Decimal Point	V/F SVC FVC PMV/F PMSVC PMFVC Set the decimal point of the four parameters from d01.11 to d01.14. This parameter is read-only.	0x0000 (0x0000~0x2222)

Note: The default value changes with the motor power level, and won't be restored by factory reset.

0: No decimal place

1: 1 decimal place

2: 2 decimal places

3: 3 decimal places

Ones-bit: d01.11 decimal point

Tens-bit: d01.12 decimal point

Hundreds-bit: d01.13 decimal place

Thousands-bit: d01.14 decimal place

14.31.3 d01.2x: PM Advanced Parameters

✧ d01.20: PM Stator Resistance

Code (Address) Property	Name	Description	Default (Range)
d01.20 (0x6114) STOP	PM Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator resistance for permanent magnetic synchronous motors.	Up to model (0.01mΩ~60000mΩ)

Note: The decimal point is set by d01.29 ones-bit.

✧ d01.21: PM D-Axis Inductance

Code (Address) Property	Name	Description	Default (Range)
d01.21 (0x6115) STOP	PM D-Axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance for permanent magnetic synchronous motors.	Up to model (0.001mH~6553.5mH)

Note: The decimal point is set by d01.29 tens-bit.

✧ d01.22: PM Q-Axis Inductance

Code (Address) Property	Name	Description	Default (Range)
d01.22 (0x6116) STOP	PM Q-Axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance for permanent magnetic synchronous motors.	Up to model (0.001mH~6553.5mH)

Note: The decimal point is set by d01.29 hundreds-bit.

✧ d01.23: PM Back Emf

Code (Address) Property	Name	Description	Default (Range)
d01.23 (0x6117) STOP	Back Emf	V/F SVC FVC PMV/F PMSVC PMFVC Set the back emf for permanent magnetic synchronous motors.	Up to model (0V~1500V)

✧ d01.24: PM Encoder Angle

Code (Address) Property	Name	Description	Default (Range)
d01.24 (0x6118) RUN	PM Encoder Angle	V/F SVC FVC PMV/F PMSVC PMFVC Set the encoder installation angle for permanent magnetic synchronous motors.	Up to model (0.0°~360.0°)

✧ d01.25: PM Per-Unit Stator Resistance

Code (Address) Property	Name	Description	Default (Range)
d01.25 (0x6119) READ	Per-Unit Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit stator resistance for permanent magnetic synchronous motors. This parameter is read-only.	Conversion of actual values (Monitored values)

✧ d01.26: PM Per-Unit D-Axis Inductance

Code (Address) Property	Name	Description	Default (Range)
d01.26 (0x611A) READ	PM Per-Unit D-Axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit d-axis inductance for permanent magnetic synchronous motors. This parameter is read-only.	Conversion of actual values (Monitored values)

✧ **d01.27: PM Per-Unit Q-Axis Inductance**

Code (Address) Property	Name	Description	Default (Range)
d01.27 (0x611B) READ	PM Per-Unit Q-Axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit q-axis inductance for permanent magnetic synchronous motors. This parameter is read-only.	Conversion of actual values (Monitored values)

✧ **d01.28: PM Pulse Width Coefficient**

Code (Address) Property	Name	Description	Default (Range)
d01.28 (0x611C) STOP	Pulse Width Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the pulse width coefficient for permanent magnetic synchronous motors.	Up to model (0.00~99.99)

✧ **d01.29: d01.20~d01.23 Decimal Point**

Code (Address) Property	Name	Description	Default (Range)
d01.29 (0x611D) READ	d01.20~d01.22 Decimal Point	V/F SVC FVC PMV/F PMSVC PMFVC Set the decimal point of the three parameters from d01.20 to d01.22. This parameter is read-only.	0x0000 (0x0000~0x2222)

Note: The default value changes with the motor power level, and won't be restored by factory reset.

0: No decimal place

1: 1 decimal place

2: 2 decimal places

3: 3 decimal places

Ones-bit: d01.20 decimal place

Tens-bit: d01.21 decimal place

Hundreds-bit: d01.22 decimal place

Thousands-bit: Reserved

✧ **d01.30: Frequency Decimal Bit**

Code (Address) Property	Name	Description	Default (Range)
d01.30 (0x611E) RO	Frequency Decimal Bit	V/F SVC FVC PMV/F PMSVC PMFVC Set the decimal bit display of F2.03.	0 (0~3)

✧ **d01.6x~d01.7x: Tuning Extension****d01.60: Online Tuning**

Code (Address) Property	Name	Description	Default (Range)
d01.60 (0x613C) RUN	Online Tuning	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator resistance auto-tuning mode	0 (0~0xFFFF)

Note: The stator resistance auto-tuning function can be valid only after the motor auto-tuning is completed. Enable online stator resistance learning when the thousands-bit is non-zero.

PM Pole Search

In the PM control mode, the initial position of the motor rotor can be obtained at startup by the pole search function.

In closed-loop vector mode, the motor startup initial position is required to be obtained via this function when the initial position of the motor encoder has not been tuned.

In open-loop vector mode, obtaining the motor initial position ensures a high output at startup and that the motor does not run in reverse.

For synchronous closed-loop applications with ABZ encoder, the motor pole position is unknown until the Z-pulse is detected, so it is recommended to enable the pole search function, which ensures a smooth start-up process without reverse rotation.

✧ **d01.72: PM Pole Search**

Code (Address) Property	Name	Description	Default (Range)
d01.72 (0x6148) STOP	PM Pole Search	V/F SVC FVC PMV/F PMSVC PMFVC Set the pole search function for permanent magnet synchronous motors.	0x0010 (0x0000~0x3223)

Note:

➤ **Ones-bit: FVC**

- 0: OFF
- 1: ON
- 2: ON during the first power-up

➤ **Tens-bit: SVC**

- 0: OFF
- 1: ON
- 2: ON during the first power-up

✧ **d01.73: Pole Search Current**

Code (Address) Property	Name	Description	Default (Range)
d01.73 (0x6149) STOP	Pole Search Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the value of pole search current.	0.0% (0.0%~6553.5%)

✧ **d01.76: Resistance and Non-linear Tuning**

Code (Address) Property	Name	Description	Default (Range)
d01.76 (0x614C) STOP	Resistance and Nonlinear Identification Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the resistance value and non-linear identification current value.	100.0% (0.0%~150.0%)

✧ **d01.77: LC Filter Inductance**

Code (Address) Property	Name	Description	Default (Range)
d01.77 (0x614D) STOP	LC Filter Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the LC filter inductance.	100.0% (0.0%~150.0%)

Note: Valid only for models with an output LC filter.

✧ **d01.78: LC Filter Capacitor**

Code (Address) Property	Name	Description	Default (Range)
d01.78 (0x614E) STOP	LC Filter Capacitor	V/F SVC FVC PMV/F PMSVC PMFVC Set the LC filter capacitor.	100.0% (0.0%~150.0%)

Note: Valid only for models with an output LC filter.

14.32 d02: Motor 2 Vector Control

14.32.1 d02.0x: ASR

The ASR (Automatic Speed Regulator) adjusts torque commands to make motor speed and speed command to be consistent.

● Before ASR parameter adjustment

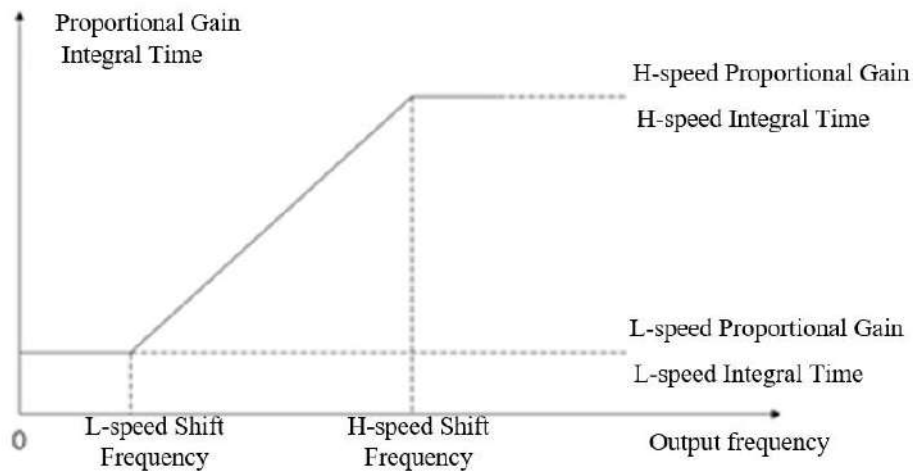
- Before adjusting the parameters of ASR, please implement auto-tuning and set all motor parameters correctly.
- Please adjust ASR parameters when the motor is connected to the load.
- When adjusting ASR, monitor C00.01 (F11.20 ones-bit to 1 to select the actual output frequency) and C00.05 [Mechanical Speed], and use analog output signals.

- Adjustment steps under SVC, FVC, PMSVC and PMFVC

ASR parameter adjustment steps are as follows.

1. Run the motor at zero speed or low speed, and increase d02.06 [L-speed Proportional Gain] without causing any vibration.
2. Run the motor at zero speed or low speed, and lower d02.07 [L-speed Integral Time] without causing any vibration.
3. Run the motor at the set maximum speed and make sure that no vibration will occur.
4. In case of vibration, lower d02.06 and raise d02.07 until vibration no longer occurs.
5. The ASR proportional gain and integral time can be switched according to the output frequency. When the speed stability cannot be ensured on the low speed side, please roughly set about 80% of the frequency when the actual vibration occurs; when the speed stability cannot be ensured on the high speed side, please roughly set about 120% of the frequency when the actual vibration occurs.

H-speed Shift Frequency > L-speed Shift Frequency



ASR Proportional Gain and Integral Time

◇ **d02.00: ASR Rigidity Level**

Code (Address) Property	Name	Description	Default (Range)
d02.00 (0x6200) RUN	Rigidity Level	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR speed rigidity level.	32 (0~128)

Note: The higher the level, the better the speed rigidity.

◇ **d02.01: ASR Rigidity Mode**

Code (Address) Property	Name	Description	Default (Range)
d02.01 (0x6201) RUN	Rigidity Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR speed rigidity mode.	0x0000 (0x0000~0xFFFF)

◇ **d02.02: ASR H-speed Proportional Gain**

Code (Address) Property	Name	Description	Default (Range)
d02.02 (0x6202) RUN	H-speed Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR proportional gain at high speed.	10.00 (0.01~100.00)

Higher gain means enhanced responsiveness, so the larger the load, the higher the gain. However, if the gain is too large, the motor will vibrate.

◇ d02.03: ASR H-speed Integral Time

Code (Address) Property	Name	Description	Default (Range)
d02.03 (0x6203) RUN	H-speed Integral Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR integral time at high speed.	0.100s (0.000s~6.000s)

If the integral time is too long, the responsiveness will be reduced and the ability to resist external forces will also be weakened. But if the integral time is too short, vibration will occur.

◇ d02.04: ASR H-speed Filter Time

Code (Address) Property	Name	Description	Default (Range)
d02.04 (0x6204) RUN	H-speed Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR filter time at high speed.	0.0ms (0.0ms~100.0ms)

Increase the set value by 0.1 when the rigidity of machinery is low and vibration occurs easily.

◇ d02.05: ASR H-speed Shift Frequency

Code (Address) Property	Name	Description	Default (Range)
d02.05 (0x6205) RUN	H-speed Shift Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR shift frequency at high speed.	0.00Hz (0.00Hz~F01.10)

Note: Determine ASR control parameter together with d02.09.

◇ d02.06: ASR L-speed Proportional Gain

Code (Address) Property	Name	Description	Default (Range)
d02.06 (0x6206) RUN	L-speed Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR proportional gain at low speed.	10.00 (0.01~100.00)

Higher gain means enhanced responsiveness, so the larger the load, the higher the gain. However, if the gain is too large, the motor will vibrate.

◇ d02.07: ASR L-speed Integral Time

Code (Address) Property	Name	Description	Default (Range)
d02.07 (0x6207) RUN	L-speed Integral Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR integral time at low speed.	0.100s (0.001s~6.000s)

If the integral time is too long, the responsiveness will be reduced and the ability to resist external forces will also be weakened. But if the integral time is too short, vibration will occur.

◇ d02.08: ASR L-speed Filter Time

Code (Address) Property	Name	Description	Default (Range)
d02.08 (0x6208) RUN	L-speed Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR filter time at low speed.	0.0ms (0.0ms~100.0ms)

Increase the set value by 0.1 when the rigidity of machinery is low and vibration occurs easily.

◇ d02.09: ASR L-speed Shift Frequency

Code (Address) Property	Name	Description	Default (Range)
d02.09 (0x6209) RUN	L-speed Shift Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR shift frequency at low speed.	0.00Hz (0.00Hz~d02.05)

When speed stability cannot be ensured on the low-speed side or high-speed side, the ASR proportional gain and integral time can be switched according to the output frequency.

The shifting of ASR parameters based on output frequency.

Output Frequency	ASR Parameters		
	Proportional Gain	Integral Time	Filter Time
Output Frequency $\geq$ d02.05	d02.02	d02.03	d02.04
d02.09 < Output Frequency < d02.05	Linear variation	Linear variation	Linear variation
Output Frequency $\leq$ d02.09	d02.06	d02.07	d02.08

14.32.2 d02.1x: ACR and Torque Limit

Set the PI parameters of the current loop for AM and PM vector controls. In vector control, if the speed and current oscillations and instability occur, the gains can be accordingly reduced to stabilize the speed and current; on the other hand, increase the gains to improve the dynamic response of the motor.

✧ d02.10: ACR D-Axis Proportional Gain

Code (Address) Property	Name	Description	Default (Range)
d02.10 (0x620A) RUN	D-Axis Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the d-axis proportional gain under the automatic current regulator.	1.000 (0.001~4.000)

✧ d02.11: ACR D-Axis Integral Gain

Code (Address) Property	Name	Description	Default (Range)
d02.11 (0x620B) RUN	D-Axis Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the d-axis integral gain under the automatic current regulator.	1.000 (0.001~4.000)

✧ d02.12: ACR Q-Axis Proportional Gain

Code (Address) Property	Name	Description	Default (Range)
d02.12 (0x620C) RUN	Q-Axis Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the q-axis proportional gain under the automatic current regulator.	1.000 (0.001~4.000)

✧ d02.13: ACR Q-Axis Integral Gain

Code (Address) Property	Name	Description	Default (Range)
d02.13 (0x620D) RUN	Q-Axis Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the q-axis integral gain under the automatic current regulator.	1.000 (0.001~4.000)

✧ d02.14: ACR Optimization

Code (Address) Property	Name	Description	Default (Range)
d02.14 (0x620E) RUN	Optimization	V/F SVC FVC PMV/F PMSVC PMFVC Enable the current loop optimization.	Up to model (0~0)

Note:

- 0: OFF
1: ON
- Ones-bit: Voltage feedforward enable
Tens-bit: Current prediction control
Hundreds-bit: Current loop gain

✧ **d02.15: Torque Limit under Motoring**

Code (Address) Property	Name	Description	Default (Range)
d02.15 (0x620F) RUN	Motoring Torque Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque limit when motor is running with load.	250.0% (0.0%~400.0%)

Note: 100.0% of the motor rated frequency.

✧ **d02.16: Torque Limit under Generating**

Code (Address) Property	Name	Description	Default (Range)
d02.16 (0x6210) RUN	Generating Torque Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque limit in power generation mode.	250.0% (0.0%~400.0%)

Note: 100.0% of the motor rated frequency.

The motor torque output is also limited by F10.01 [Anti-OC Limit] and d02.34 [Output Power Limit].

✧ **d02.17: Motoring Torque Limit Source**

Code (Address) Property	Name	Description	Default (Range)
d02.17 (0x6211) RUN	Motoring Torque Limit Source	V/F SVC FVC PMV/F PMSVC PMFVC Select the source for the motoring torque limit.	250.0% (0.0%~400.0%)

Note:

- 0: Keypad
- 1: Reserved
- 2: AI1
- 3: AI2
- 4: Reserved
- 5: PUL terminal
- 6: RS485 (0x3014)
- 7: Extension

✧ **d02.18: Regenerative Torque Limit Frequency**

Code (Address) Property	Name	Description	Default (Range)
d02.18 (0x6212) RUN	Generating Torque Limit	V/F SVC FVC PMV/F PMSVC PMFVC Select the source for the generating (regenerative) torque limit.	250.0% (0.0%~400.0%)

Note:

- 0: Keypad
- 1: Reserved
- 2: AI1
- 3: AI2
- 4: Reserved
- 5: PUL terminal
- 6: RS485 (0x3014)
- 7: Extension

✧ **d02.19: Torque Limit**

Code (Address) Property	Name	Description	Default (Range)
d02.19 (0x6213) RUN	Torque Limit View	V/F SVC FVC PMV/F PMSVC PMFVC Select the torque limit value displayed for monitoring.	0 (0~1)

Note:

- 0: C00.06 displays the torque limit value during motoring
- 1: C00.06 displays the torque limit value during generating

14.32.3 d02.2x: Torque Optimization

PM Pull-in Current

The pull-in current is mainly used to enhance the load capacity of the motor at low frequencies. Parameter d02.22 [Pull-in Current Frequency] defines the low/high frequency threshold. For heavy low-frequency loads, increase the pull-in current appropriately. Excessive values, however, reduce motor efficiency – adjust based on actual load conditions.

✧ d02.20: PM LF Pull-In Current

Code (Address) Property	Name	Description	Default (Range)
d02.20 (0x6214) RUN	PM LF Pull-in Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the low-frequency pull-in current for permanent magnet synchronous motors.	20.0% (0.0%~50.0%)

Note: 100.0% of the motor rated current.

✧ d02.21: PM HF Pull-In Current

Code (Address) Property	Name	Description	Default (Range)
d02.21 (0x6215) RUN	PM HF Pull-in Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency pull-in current for permanent magnet synchronous motors.	10.0% (0.0%~50.0%)

Note: 100.0% of the motor rated current.

✧ d02.22: PM Pull-In Current Frequency

Code (Address) Property	Name	Description	Default (Range)
d02.22 (0x6216) RUN	PM Pull-in Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the pull-in current frequency for permanent magnet synchronous motors.	10.0% (0.0%~100.0%)

Note: The set value 100.0% corresponds to F01.10 [Max. Frequency].

Slip Compensation

For AM vector control, the slip compensation coefficient is used to adjust the motor accuracy under open loop. The value should be increased when the motor speed with load is lower than the set value, vice versa. Recommended for this parameter: 60%~160.0%.

For closed-loop, the slip compensation coefficient is used to adjust the linearity of the motor output torque and output current. For a motor with a rated load, decrease the value when the motor current is higher than the nameplate rated value, and increase when lower. Recommended for this parameter: 80%~120%.

✧ d02.23: Slip Compensation

Code (Address) Property	Name	Description	Default (Range)
d02.23 (0x6217) RUN	Slip Compensation	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor slip compensation.	100.0% (0.0%~250.0%)

✧ d02.24: Initial Start Torque

Code (Address) Property	Name	Description	Default (Range)
d02.24 (0x6218) RUN	Initial Start Torque	V/F SVC FVC PMV/F PMSVC PMFVC Set the initial starting torque.	0.0% (0.0%~250.0%)

14.32.4 d02.25~d02.3x: Flux Optimization

✧ d02.25: Flux Control Gain

Code (Address) Property	Name	Description	Default (Range)
d02.25 (0x6219) RUN	Flux Control Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control gain.	0 (0~1000.0)

Note: Effective for asynchronous motors only. A non-zero value enables asynchronous motor flux control.

✧ d02.26: Flux Control Integral Gain

Code (Address) Property	Name	Description	Default (Range)
d02.26 (0x621A) RUN	Flux Control Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control integral gain.	0 (0~1000.0)

Note: Effective for asynchronous motors only. A non-zero value enables asynchronous motor flux control.

✧ d02.27: Flux Given Gain

Code (Address) Property	Name	Description	Default (Range)
d02.27 (0x621B) RUN	Flux Control Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control integral gain.	0 (0~2000)

✧ d02.29: Flux Range

Code (Address) Property	Name	Description	Default (Range)
d02.29 (0x621D) RUN	Flux Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux range.	0 (0.0%~150.0%)

Note: Effective for synchronous motors only. Used to limit the field-weakening depth.

Field-weakening Control

For vector control of asynchronous or synchronous motors, flux-weakening control is required if the motor speed exceeds rated speed or if bus voltage is low while the motor is near rated speed, to maintain speed tracking.

d02.32 sets the maximum flux-weakening current. Excessive current can cause irreversible demagnetization, while keeping it within the motor's rated current usually prevents this issue.

d02.30 to d02.31 are used to set the flux-weakening control parameters. If instability occurs during flux-weakening, these parameters can be adjusted for tuning.

✧ d02.30: Field-weakening Feed-forward Coefficient

Code (Address) Property	Name	Description	Default (Range)
d02.30 (0x621E) RUN	Field-weakening Feed-forward Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the feed-forward coefficient under field weakening control.	10.0% (0.0%~500.0%)

✧ d02.31: Field-weakening Control Gain

Code (Address) Property	Name	Description	Default (Range)
d02.31 (0x621F) RUN	Field-weakening Control Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the control gain under field weakening control.	10.0% (0.0%~500.0%)

✧ **d02.32: Field-weakening Current Limit**

Code (Address) Property	Name	Description	Default (Range)
d02.32 (0x6220) RUN	Field-weakening Current Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the current upper limit under field weakening control.	60.0% (0.0%~250.0%)

Note: 100.0% of the motor rated current.

✧ **d02.33: Field-weakening Voltage Coefficient**

Code (Address) Property	Name	Description	Default (Range)
d02.33 (0x6221) RUN	Field-weakening Voltage Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage coefficient under field weakening control.	97.0% (0.0%~120.0%)

✧ **d02.34: Output Power Limit**

Code (Address) Property	Name	Description	Default (Range)
d02.34 (0x6222) RUN	Output Power Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the axis output power limit.	250.0% (0.0%~400.0%)

Note: 100.0% of the motor rated power.

Over-excitation Brake

Vector control of asynchronous motors is effective. Over-excitation enables faster deceleration without overvoltage alarms. Higher over-excitation gain speeds up the response, and a larger braking current limit (compared to rated excitation) improves braking effect. However, excessive current limiting can raise motor temperature during deceleration. This value can be increased only if the motor has good heat dissipation.

✧ **d02.35: Over-excitation Brake Gain**

Code (Address) Property	Name	Description	Default (Range)
d02.35 (0x6223) RUN	Over-excitation Brake Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the over-excitation brake gain.	100.0% (0.0%~500.0%)

✧ **d02.36: Over-excitation Brake Range**

Code (Address) Property	Name	Description	Default (Range)
d02.36 (0x6224) RUN	Over-excitation Brake Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the over-excitation brake range.	100.0% (0.0%~250.0%)

ECO Mode

In energy-saving mode, vector control of asynchronous motors reduces output current automatically based on torque analysis, lowering heating losses and achieving energy savings.

✧ **d02.37: ECO Mode**

Code (Address) Property	Name	Description	Default (Range)
d02.37 (0x6225) RUN	ECO Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the ECO mode function on/off.	0 (0~1)

0: OFF

1: ON

Note: Effective only when F03.25≠0.

✧ **d02.38: Min ECO Excitation**

Code (Address) Property	Name	Description	Default (Range)
d02.38 (0x6226) RUN	Min ECO Excitation	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower limit of energy-saving excitation.	50.0% (0.0%~80.0%)

Note: 100.0% of the motor rated excitation.

✧ **d02.39: ECO Filter Time**

Code (Address) Property	Name	Description	Default (Range)
d02.39 (0x6227) RUN	ECO Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the filter time of energy-saving running.	0.010s (0.000s~6.000s)

14.32.5 d02.4x: PM HF Injection

The high-frequency injection function can only be used at low speed (the default is 10% of the motor rated frequency), and its main function is to improve the torque output capability.

✧ **d02.40: HF Injection Mode**

Code (Address) Property	Name	Description	Default (Range)
d02.40 (0x6228) STOP	HF Injection Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency injection mode.	0 (0x0000~0x1005)

Ones-bit:

PM open-loop control valid: please select 0 with SPM and 0~5 with IPM.

0: OFF

1~5: ON, the greater the value, the higher the injection frequency.

Note: When the motor has less convex polarity (i.e., when the d01.22/d01.21 ratio is lower than 1.5), the effect of the high-frequency injection on the output torque of the motor will be weakened.

Thousands-bit: Effective when ones-bit≠0.

0: Random carrier injection

1: Fixed carrier injection

✧ **d02.41: HF Injection Voltage**

Code (Address) Property	Name	Description	Default (Range)
d02.41 (0x6229) RUN	HF Injection Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency injection voltage.	10.0% (0.0%~100.0%)

Note: 100% of the motor rated voltage. Need no modification after auto-tuning.

✧ **d02.62: HF Injection OFF Frequency**

Code (Address) Property	Name	Description	Default (Range)
d02.42 (0x622A) RUN	HF Injection OFF Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency injection off frequency.	10.0% (0.0%~20.0%)

Set the high-frequency injection range (relative to motor rated frequency). It is valid when the motor speed is lower than this value.

✧ **d02.46: HF Injection Carrier**

Code (Address) Property	Name	Description	Default (Range)
d02.62 (0x623E) RUN	HF Injection Carrier	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency injection carrier frequency.	0.0kHz (0.0kHz~1.0kHz)

14.32.6 d02.5x~d02.9x: VC Extension Control

IF Control

✧ **d02.52: IF Control Current**

Code (Address) Property	Name	Description	Default (Range)
d02.52 (0x6234) RUN	IF Control Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the IF control current.	60.0% (0.0%~400.0%)

Set the current under IF control, where 100% equals the motor's rated current.

✧ **d02.53: IF Control Frequency**

Code (Address) Property	Name	Description	Default (Range)
d02.53 (0x6235) RUN	IF Control Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the IF control off frequency.	0.0% (0~100.0%)

100% corresponds to the motor rated frequency. IF control is enabled when the operating frequency is lower than this value.

Fly Track

Before the AC drive starts, the motor rotor may be freely rotating. Starting under this condition may cause overcurrent, overload, or overvoltage faults, and in severe cases may damage the power devices. The fly track function detects the actual motor speed and phase, enabling smooth, shock-free startup of a rotating motor.

✧ **d02.55: SPL Fly Track Proportional Gain**

Code (Address) Property	Name	Description	Default (Range)
d02.55 (0x6237) RUN	SPLL Fly Track Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the proportional gain for SPLL fly track.	1.00 (0~655.35)

✧ **d02.56: SPL Fly Track Integral Gain**

Code (Address) Property	Name	Description	Default (Range)
d02.56 (0x6238) RUN	SPLL Fly Track Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the integral gain for SPLL fly track.	5.00 (0~655.35)

✧ **d02.58: Fly Track Excitation Frequency**

Code (Address) Property	Name	Description	Default (Range)
d02.58 (0x623A) RUN	Fly Track Excitation Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the excitation frequency for software speed tracking.	0 (0~65535)

When set to a non-zero value, this parameter is used to adjust the frequency during the excitation stage.

✧ **d02.59: Fly Track Excitation Time**

Code (Address) Property	Name	Description	Default (Range)
d02.59 (0x623B) RUN	Fly Track Excitation Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the excitation time for fly track.	200 (0~65535)

Set the excitation time when no residual magnetism is present.

MTPA Function

MTPA function is to optimize the PM excitation to maximize the motor output/motor current. When there is a big difference between the inductance of D and Q axes of the PM motor, [d02.80] can be used to reduce the motor current with the same loads; [d02.81] can be used to improve the stability of the motor operation. This function is only valid for the PM closed-loop vector mode.

✧ **d02.60: PM MTPA Gain**

Code (Address) Property	Name	Description	Default (Range)
d02.60 (0x623D) RUN	PM MTPA Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the MTPA gain for permanent magnet synchronous motors.	100.0% (0.0%~400.0%)

✧ **d02.61: PM MTPA Filter Time**

Code (Address) Property	Name	Description	Default (Range)
d02.61 (0x623E) RUN	PM MTPA Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the MTPA filter time for permanent magnet synchronous motors.	1.0ms (0.0ms~100.0ms)

Direct Flux Vector✧ **d02.77: Direct Flux Vector Mode**

Code (Address) Property	Name	Description	Default (Range)
d02.77 (0x624D) STOP	Direct Flux Vector Mode	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Direct Flux Vector 0: OFF 3: ON	0x0000 (0x0000~ 0xFFFF)

14.33 d03: Motor 2 V/F Control**14.33.1 d03.0x: V/F Control****V/F Curve**✧ **d03.00: V/F Curve**

Code (Address) Property	Name	Description	Default (Range)
d03.00 (0x6300) STOP	V/F Curve	V/F SVC FVC PMV/F PMSVC PMFVC Set the V/F curve.	0 (0~11)

0: Linear V/F curve

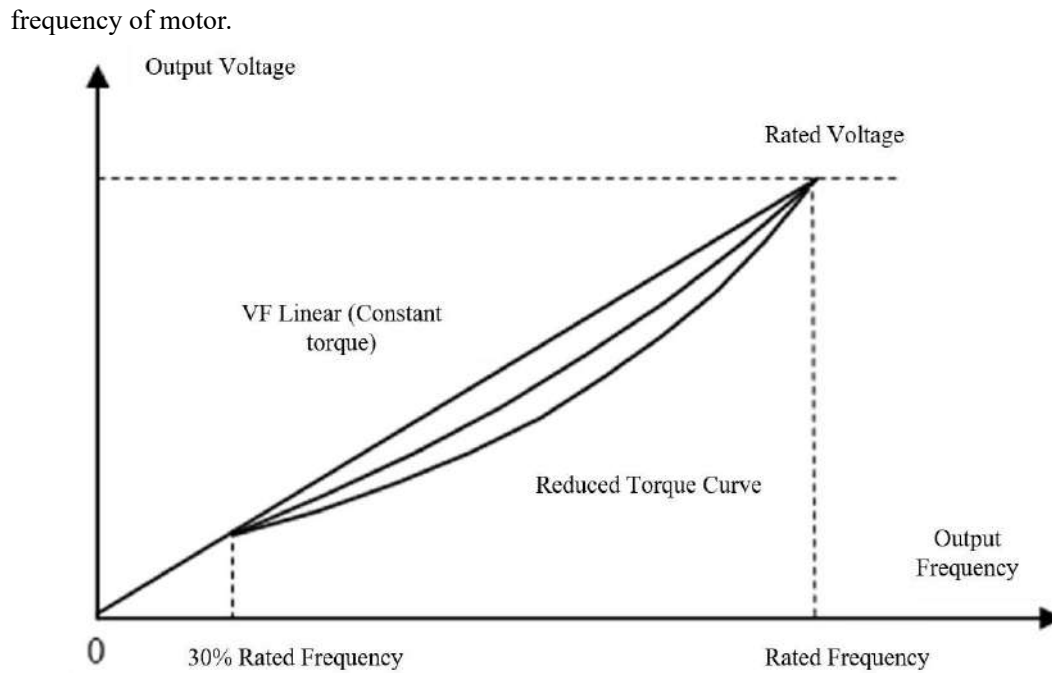
1~9: 1.1-1.9 power V/F curves respectively

10: Square V/F curve

11: Custom V/F curve

Note:

- 1. d03.00 [V/F Curve] = 11 (User-defined V/F curve), set by d03.10 to d03.19.
- Linear and torque reduction curve is as follows. Torque reduction V/F curve is valid above 0.3 times rated



V/F Linear vs. Reduced Torque Curve Schematic

Torque Boost

◇ d03.01: Torque Boost

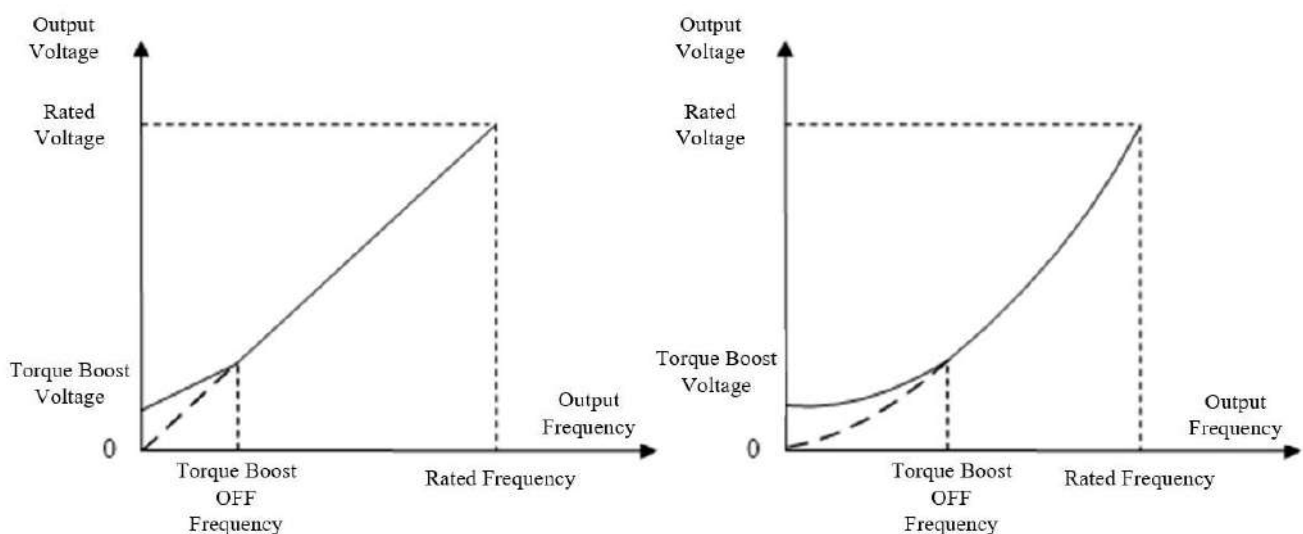
Code (Address) Property	Name	Description	Default (Range)
d03.01 (0x6301) RUN	Torque Boost	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque boost.	Up to model (0.0%~30.0%)

0.0: Automatic torque boost to compensate for loss on stator resistance.

Others: Fixed torque boost

Note:

- When d03.01 [Torque Boost] = 0.0 (automatic torque boost), the accurate stator resistance value can be obtained by F02.07=3 auto-tuning, which can keep the motor output in the best state.
- Fixed torque boost with V/F linear curve is as follows.



Fixed Torque Boost Schematic

◇ **d03.02: Torque Boost OFF Frequency**

Code (Address) Property	Name	Description	Default (Range)
d03.02 (0x6302) RUN	Torque Boost OFF Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque boost off frequency.	100.0% (0.0%~100.0%)

Note: 100% of the motor rated frequency.

Slip Compensation

This function enables the output frequency of the drive to automatically change with the motor load within the set range to dynamically compensate the motor slip frequency, so as to keep the motor at a constant speed, thus reducing the effect of load variation on the motor speed.

◇ **d03.03: Slip Compensation Gain**

Code (Address) Property	Name	Description	Default (Range)
d03.03 (0x6303) RUN	Slip Compensation Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the slip compensation gain.	0.0% (0.0%~200.0%)

◇ **d03.04: Slip Compensation Range**

Code (Address) Property	Name	Description	Default (Range)
d03.04 (0x6304) RUN	Slip Compensation Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the slip compensation range.	100.0% (0.0%~300.0%)

Note: 100% of the rated slip frequency.

◇ **d03.05: Slip Compensation Filter Time**

Code (Address) Property	Name	Description	Default (Range)
d03.05 (0x6305) RUN	Slip Compensation Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the slip compensation filter time.	0.200s (0.000s~6.000s)

Anti-oscillation

In the medium and high power motor applications, it is easy to cause motor current instability and motor speed oscillation, which is a kind of low frequency resonance produced by the joint action of electricity and machinery, and the oscillation of low-power motors is generally not obvious. By adjusting d03.06 and d03.07, low-frequency resonance can be suppressed, and the anti-oscillation gain value can be gradually increased on the premise of stability.

◇ **d03.06: Anti-oscillation Gain**

Code (Address) Property	Name	Description	Default (Range)
d03.06 (0x6306) RUN	Anti-oscillation Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the anti-oscillation gain.	100.0% (0.0%~900.0%)

◇ **d03.07: Anti-oscillation Filter Time**

Code (Address) Property	Name	Description	Default (Range)
d03.07 (0x6307) RUN	Anti-oscillation Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the anti-oscillation filter time.	1.0s (0.0s~100.0s)

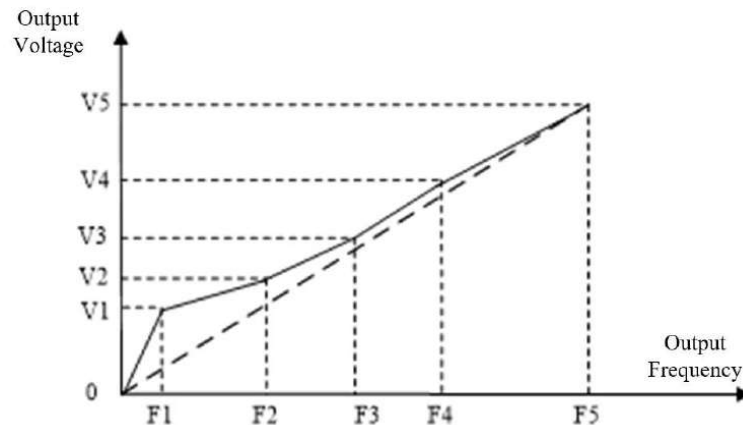
V/F Output Voltage Ratio

✧ d03.08: Output Voltage Percentage

Code (Address) Property	Name	Description	Default (Range)
d03.08 (0x6308) STOP	Output Voltage Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the output voltage percentage, 100% of it corresponds to the motor rated voltage.	100.0% (25.0%~120.0%)

14.33.2 d03.1x: User-defined V/F Curves

This product provides 5 sets of voltage-frequency ratios to meet the needs of various motors.



Customized Curve Schematic

✧ d03.10: User-Defined Voltage 1

Code (Address) Property	Name	Description	Default (Range)
d03.10 (0x630A) STOP	User-Defined Voltage 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage 1. 100.0% corresponds to the motor rated voltage.	3.0% (0.0%~100.0%)

✧ d03.11: User-Defined Frequency 1

Code (Address) Property	Name	Description	Default (Range)
d03.11 (0x630B) STOP	User-Defined Frequency 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency 1.	1.00Hz (0.00Hz~F01.10)

✧ d03.12: User-Defined Voltage 2

Code (Address) Property	Name	Description	Default (Range)
d03.12 (0x630C) STOP	User-Defined Voltage 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage 2. 100.0% corresponds to the motor rated voltage.	28.0% (0.0%~100.0%)

✧ d03.13: User-Defined Frequency 2

Code (Address) Property	Name	Description	Default (Range)
d03.13 (0x630D) STOP	User-Defined Frequency 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency 2.	10.00Hz (0.00Hz~F01.10)

✧ d03.14: User-Defined Voltage 3

Code (Address) Property	Name	Description	Default (Range)
d03.14 (0x630E) STOP	User-Defined Voltage 3	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage 3. 100.0% corresponds to the motor rated voltage.	55.0% (0.0%~100.0%)

✧ d03.15: User-Defined Frequency 3

Code (Address) Property	Name	Description	Default (Range)
d03.15 (0x630F) STOP	User-Defined Frequency 3	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency 3.	25.00Hz (0.00Hz~F01.10)

✧ d03.16: User-Defined Voltage 4

Code (Address) Property	Name	Description	Default (Range)
d03.16 (0x6310) STOP	User-Defined Voltage 4	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage 4. 100.0% corresponds to the motor rated voltage.	78.0% (0.0%~100.0%)

✧ d03.17: User-Defined Frequency 4

Code (Address) Property	Name	Description	Default (Range)
d03.17 (0x6311) STOP	User-Defined Frequency 4	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency 4.	37.50Hz (0.00Hz~F01.10)

✧ d03.18: User-Defined Voltage 5

Code (Address) Property	Name	Description	Default (Range)
d03.18 (0x6312) STOP	User-Defined Voltage 5	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage 5. 100.0% corresponds to the motor rated voltage.	100.0% (0.0%~100.0%)

✧ d03.19: User-Defined Frequency 5

Code (Address) Property	Name	Description	Default (Range)
d03.19 (0x6313) STOP	User-Defined Frequency 5	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency 5.	50.00Hz (0.00Hz~F01.10)

14.33.3 d03.2x: Voltage-Frequency/Current-Frequency Decoupled Control

This group enables independent control of output voltage and output frequency, or output current and output frequency.

After the run command activates, the output voltage and frequency change based on their set acceleration and deceleration times.

After the stop command activates, the output voltage and frequency change based on their set acceleration and deceleration times, with the stop mode selected via d03.26.

Related parameters:

	Source	ACC/DEC Time	Comment
Frequency	F01.02	F01.22, F01.23	
Voltage	d03.21	d03.22, d03.23	

Note:

- When the V/F-Split function is active, the output voltage decreases during overcurrent suppression.
- When the stop command is active and the output frequency falls below the stop detection frequency set in

F09.11, the drive switches to a stop state.

✧ **d03.20: Coil Voltage/Current Source A**

Code (Address) Property	Name	Description	Default (Range)
d03.20 (0x6314) RUN	Coil Voltage/Current Source A	V/F SVC FVC PMV/F PMSVC PMFVC 0: Voltage/current percentage 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL 6: RS485 7: Extension (0x31 group) 8: PID target 9: Voltage/current value	0 (0~65535)

✧ **d03.21: Coil Voltage/Current Source B**

Code (Address) Property	Name	Description	Default (Range)
d03.21 (0x6315) RUN	Coil Voltage/Current Source B	V/F SVC FVC PMV/F PMSVC PMFVC 0: Voltage/current percentage 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL 6: RS485 7: Extension (0x31 group) 8: PID target 9: Voltage/current value	0 (0~65535)

✧ **d03.22: Coil Voltage/Current Source Combination**

Code (Address) Property	Name	Description	Default (Range)
d03.22 (0x6316) RUN	Coil Voltage/Current Source Combination	V/F SVC FVC PMV/F PMSVC PMFVC 0: Source A 1: Source B 2: Source A+Source B 3: Source A-Source B 4: Max. (A, B) 5: Min. (A or B)	0 (0~5)

✧ **d03.23: V/F-Split Output Voltage**

Code (Address) Property	Name	Description	Default (Range)
d03.23 (0x6317) RUN	Coil Voltage/Current	V/F SVC FVC PMV/F PMSVC PMFVC Define the coil output voltage/current.	0.00% (0.00%~110.00%)

Note: V/F-SPLIT output is blocked when the output voltage is set to 0%. 100% of it corresponds to the motor rated voltage. Output is blocked when the output current is set to 0%. 100% of it corresponds to the motor rated current.

✧ **d03.24~d03.25: Coil Voltage/Current ACC/DEC Time**

Code (Address) Property	Name	Description	Default (Range)
d03.24 (0x6318) RUN	Coil Voltage/Current ACC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the coil voltage/current acceleration time.	10.00s (0.00s~100.00s)
d03.25 (0x6319) RUN	Coil Voltage/Current DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the coil voltage/current deceleration time.	10.00s (0.00s~100.00s)

✧ **d03.26: Coil Stop Mode**

Code (Address) Property	Name	Description	Default (Range)
d03.26 (0x631A) RUN	Coil Stop Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the coil control stop mode. 0: ACC/DEC of output voltage/current and that of output frequency do not affect each other 1: Output frequency decreases only after the output voltage drops to 0V or the output current drops to F04.28.	0 (0~1)

✧ **d03.27: Coil Voltage/Current Value Setting**

Code (Address) Property	Name	Description	Default (Range)
d03.27 (0x631B) RUN	Coil Voltage/Current Value Setting	V/F SVC FVC PMV/F PMSVC PMFVC Set the coil output voltage/current value.	0.00V/A (0.00V/A~600.00V/A)

✧ **d03.28: Frequency Drop Current Threshold**

Code (Address) Property	Name	Description	Default (Range)
d03.28 (0x631C) RUN	Frequency Drop Current Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the current percentage at which the frequency starts to decrease.	0.00 (0.00%~110.00%)

When F04.26=1, the output current decreases first. Once it falls below F04.28, the output frequency begins to decrease. 100% of it corresponds to the motor rated current.

✧ **d03.29: Coil Control Mode**

Code (Address) Property	Name	Description	Default (Range)
d03.29 (0x631D) RUN	Coil Control Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the coil control mode. 0: V/F-SPLIT mode 1: I/F-SPLIT mode	0.00 (0.00%~110.00%)

14.33.4 d03.3x: V/F ECO Mode

The drive automatically adjusts the output voltage to improve motor efficiency and achieve energy savings after entering constant speed in light-load conditions.

✧ **d03.30: V/F ECO Function**

Code (Address) Property	Name	Description	Default (Range)
d03.30 (0x631E) STOP	V/F ECO Function	V/F SVC FVC PMV/F PMSVC PMFVC Set the V/F ECO function on or off.	0 (0~1)

0: OFF

1: ON✧ **d03.31: V/F ECO Min. Frequency**

Code (Address) Property	Name	Description	Default (Range)
d03.31 (0x631F) STOP	V/F ECO Min. Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower frequency limit of the ECO mode.	15.00Hz (0.00Hz~50.00Hz)

Note: The automatic ECO mode will stop when the drive's output frequency is below this value.

✧ **d03.32: V/F ECO Min. Voltage**

Code (Address) Property	Name	Description	Default (Range)
d03.32 (0x6320) STOP	V/F ECO Min. Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower voltage limit of the ECO mode.	50.0% (20.0%~100.0%)

Note: 100.0% corresponds to the output voltage at the current output frequency without ECO control.

✧ **d03.33: V/F ECO Voltage DEC Rate**

Code (Address) Property	Name	Description	Default (Range)
d03.33 (0x6321) RUN	V/F ECO Voltage DEC Rate	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage deceleration rate under the V/F ECO mode.	0.010V/ms (0.000V/ms~ 0.200V/ms)

✧ **d03.34: V/F ECO Voltage ACC Rate**

Code (Address) Property	Name	Description	Default (Range)
d03.34 (0x6322) RUN	V/F ECO Voltage ACC Rate	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage acceleration rate under the V/F ECO mode.	0.200V/ms (0.000V/ms~ 2.000V/ms)

✧ **d03.35: Over-excitation Gain**

Code (Address) Property	Name	Description	Default (Range)
d03.35 (0x6323) RUN	Over-excitation Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the over-excitation gain.	64 (0~200)

14.34 d04: Motor 3 Parameters

Set the motor 3 and motor application parameters.

14.34.1 d04.0x: Basic Parameters and Auto-tuning✧ **d04.00: Motor Type**

Code (Address) Property	Name	Description	Default (Range)
d04.00 (0x6400) READ	Type	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor type. This parameter is read-only.	0 (0~1)

0: Asynchronous motor (AM)

1: Permanent magnet synchronous motor (PM)

Note: This parameter is read-only, d04.00 is updated automatically after d00.03 [Motor 3 Control Mode] is set.

✧ **d04.01: Motor Pole No.**

Code (Address) Property	Name	Description	Default (Range)
d04.01 (0x6401) STOP	Pole No.	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor pole number.	4 (2~98)

✧ **d04.02: Motor Rated Power**

Code (Address) Property	Name	Description	Default (Range)
d04.02 (0x6402) STOP	Rated Power	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated power of the motor.	Up to model (0.1kW~1000.0kW)

Note: Default value is the drive's rated power and will adjust accordingly.

✧ **d02.03: Motor Rated Frequency**

Code (Address) Property	Name	Description	Default (Range)
d04.03 (0x6403) STOP	Rated Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated frequency of the motor.	50.00Hz (0.01Hz~F01.10)

✧ **d04.04: Rated Motor Speed**

Code (Address) Property	Name	Description	Default (Range)
d04.04 (0x6404) STOP	Rated Speed	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated speed of the motor.	Up to model (0rpm~65000rpm)

Note:

When d04.00 [Type] is set to a synchronous motor, d04.04 [Rated Speed] is calculated from d04.01 [Pole No.] and d04.03 [Rated Frequency]. Please set the corresponding parameters correctly. The calculation formula is: d04.04 [Rated Speed] = $60 \times \text{d04.03 [Rated Frequency]} / (\text{d04.01 [Pole No.]} / 2)$.

✧ **d04.05: Motor Rated Voltage**

Code (Address) Property	Name	Description	Default (Range)
d04.05 (0x6405) STOP	Motor Rated Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated voltage of the motor.	Up to model (0V~2000V)

✧ **d04.06: Motor Rated Current**

Code (Address) Property	Name	Description	Default (Range)
d04.06 (0x6406) STOP	Rated Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated current of the motor.	Up to model (0.1A~3000.0A)

✧ **d04.07: Motor Parameter Auto-tuning**

Code (Address) Property	Name	Description	Default (Range)
d04.07 (0x6407) STOP	Auto-tuning	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor parameter auto-tuning.	0 (0~20)

Note: After parameter auto-tuning completes, [d04.07] will be automatically set to "0".

0: OFF

1: Dynamic auto-tuning

2: Static auto-tuning

3: Stator resistance auto-tuning
6: Dynamic auto-tuning only
9: PM inductance saturation coefficient auto-tuning
10: Non-linear auto-tuning
4~20: Reserved

✧ **d04.08: Auto-tuning Flag**

Code (Address) Property	Name	Description	Default (Range)
d04.08 (0x6408) RO	Auto-tuning Flag	V/F SVC FVC PMV/F PMSVC PMFVC Read-only parameter, indicating the auto-tuning status.	0 (0~0xFFFF)

Note: This parameter is updated after auto-tuning is completed.

- Ones-bit:
 - bit0: Stator resistance tuning completed
 - bit1: Rotor resistance and leakage inductance tuning completed
 - bit2: Control current and rotor inductance tuning completed (dynamic tuning)
 - bit3: Rotor inductance, rotor resistance, and no-load current tuning completed (static tuning)
- Tens-bit:
 - bit0: Ld and Lq tuning completed
 - bit1: Back-EMF static tuning completed
 - bit2: Back-EMF dynamic tuning completed
 - bit3: Inductance saturation coefficient tuning completed
- Hundreds-bit:
 - bit0: PG direction tuning completed
 - bit1: PG initial angle tuning completed
 - bit2: Z-pulse direction tuning completed
- Thousands-bit:
 - bit0: Pulse width coefficient tuning completed
 - bit1: Dead-time compensation tuning completed
 - bit3: Current gain tuning completed

14.34.2 d04.1x: AM Advanced Parameters

✧ **d04.10: AM No-Load Current**

Code (Address) Property	Name	Description	Default (Range)
d04.10 (0x640A) STOP	AM No-load Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the no-load current for asynchronous motors.	Up to model (0.1A~3000.0A)

✧ **d04.11: AM Stator Resistance**

Code (Address) Property	Name	Description	Default (Range)
d04.11 (0x640B) STOP	AM Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator resistance for asynchronous motors.	Up to model (0.01mΩ~60000mΩ)

Note: The decimal point is set by d04.19 ones-bit.

✧ **d04.12: AM Rotor Resistance**

Code (Address) Property	Name	Description	Default (Range)
d04.12 (0x640C) STOP	AM Rotor Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the rotor resistance for asynchronous motors.	Up to model (0.01mΩ~60000mΩ)

Note: The decimal point is set by d04.19 tens-bit.

◇ **d04.13: AM Stator Leakage Inductance**

Code (Address) Property	Name	Description	Default (Range)
d04.13 (0x640D) STOP	AM Stator Leakage Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator leakage inductance for asynchronous motors.	Up to model (0.001mH~6553.5mH)

Note: The decimal point is set by d04.19 hundreds-bit.

◇ **d04.14: AM Stator Inductance**

Code (Address) Property	Name	Description	Default (Range)
d04.14 (0x640E) STOP	AM Stator Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator inductance for asynchronous motors.	Up to model (0.01mH~65535mH)

Note: The decimal point is set by d04.19 thousands-bit.

◇ **d04.15: Per-Unit Stator Resistance**

Code (Address) Property	Name	Description	Default (Range)
d04.15 (0x640F) READ	Per-unit Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the stator resistance. This parameter is read-only.	Conversion of actual values (0.01%~50.00%)

◇ **d04.16: Per-Unit Rotor Resistance**

Code (Address) Property	Name	Description	Default (Range)
d04.16 (0x6410) READ	Per-unit Rotor Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the rotor resistance. This parameter is read-only.	Conversion of actual values (0.01%~50.00%)

◇ **d04.17: Per-Unit Stator Leakage Inductance**

Code (Address) Property	Name	Description	Default (Range)
d04.17 (0x6411) READ	Per-unit Stator Leakage Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the stator leakage inductance. This parameter is read-only.	Conversion of actual values (0.01%~50.00%)

◇ **d04.18: Per-Unit Stator Inductance**

Code (Address) Property	Name	Description	Default (Range)
d04.18 (0x6412) READ	Per-unit Stator Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the stator inductance. This parameter is read-only.	Conversion of actual values (0.1%~999.0%)

◇ **d04.19: d04.11~d04.14 Decimal Point**

Code (Address) Property	Name	Description	Default (Range)
d04.19 (0x6413) READ	d04.11~d04.14 Decimal Point	V/F SVC FVC PMV/F PMSVC PMFVC Set the decimal point of the four parameters from d04.11 to d04.14. This parameter is read-only.	0x0000 (0x0000~0x2222)

Note: The default value changes with the motor power level, and won't be restored by factory reset.

0: No decimal place

1: 1 decimal place

2: 2 decimal places

3: 3 decimal places

Ones-bit: d04.11 decimal place

Tens-bit: d04.12 decimal place

Hundreds-bit: d04.13 decimal place
Thousands-bit: d04.14 decimal place

14.34.3 d04.2x: PM Advanced Parameters

✧ d04.20: PM Stator Resistance

Code (Address) Property	Name	Description	Default (Range)
d04.20 (0x6414) STOP	PM Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator resistance for permanent magnetic synchronous motors.	Up to model (0.01mΩ~60000mΩ)

Note: The decimal point is set by d04.29 ones-bit.

✧ d04.21: PM D-Axis Inductance

Code (Address) Property	Name	Description	Default (Range)
d04.21 (0x6415) STOP	PM D-Axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance for permanent magnetic synchronous motors.	Up to model (0.001mH~6553.5mH)

Note: The decimal point is set by d04.29 tens-bit.

✧ d04.22: PM Q-Axis Inductance

Code (Address) Property	Name	Description	Default (Range)
d04.22 (0x6416) STOP	PM Q-Axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance for permanent magnetic synchronous motors.	Up to model (0.001mH~6553.5mH)

Note: The decimal point is set by d04.29 hundreds-bit.

✧ d04.23: PM Back Emf

Code (Address) Property	Name	Description	Default (Range)
d04.23 (0x6417) STOP	Back Emf	V/F SVC FVC PMV/F PMSVC PMFVC Set the back emf for permanent magnetic synchronous motors.	Up to model (0V~1500V)

✧ d04.24: PM Encoder Angle

Code (Address) Property	Name	Description	Default (Range)
d04.24 (0x6418) RUN	PM Encoder Angle	V/F SVC FVC PMV/F PMSVC PMFVC Set the encoder installation angle for permanent magnetic synchronous motors.	Up to model (0.0°~360.0°)

✧ d04.25: PM Per-Unit Stator Resistance

Code (Address) Property	Name	Description	Default (Range)
d04.25 (0x6419) READ	Per-Unit Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit stator resistance for permanent magnetic synchronous motors. This parameter is read-only.	Conversion of actual values (Monitored values)

✧ d04.26: PM Per-Unit D-Axis Inductance

Code (Address) Property	Name	Description	Default (Range)
d04.26 (0x641A) READ	PM Per-Unit D-Axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit d-axis inductance for permanent magnetic synchronous motors. This parameter is read-only.	Conversion of actual values (Monitored values)

✧ **d04.27: PM Per-Unit Q-Axis Inductance**

Code (Address) Property	Name	Description	Default (Range)
d04.27 (0x641B) READ	PM Per-Unit Q-Axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit q-axis inductance for permanent magnetic synchronous motors. This parameter is read-only.	Conversion of actual values (Monitored values)

✧ **d04.28: PM Pulse Width Coefficient**

Code (Address) Property	Name	Description	Default (Range)
d04.28 (0x641C) STOP	Pulse Width Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the pulse width coefficient for permanent magnetic synchronous motors.	Up to model (0.00~99.99)

✧ **d04.29: d04.20~d04.23 Decimal Point**

Code (Address) Property	Name	Description	Default (Range)
d04.29 (0x641D) READ	d04.20~d04.22 Decimal Point	V/F SVC FVC PMV/F PMSVC PMFVC Set the decimal point of the three parameters from d04.20 to d04.22. This parameter is read-only.	0x0000 (0x0000~0x2222)

Note: The default value changes with the motor power level, and won't be restored by factory reset.

0: No decimal place

1: 1 decimal place

2: 2 decimal places

3: 3 decimal places

Ones-bit: d04.20 decimal place

Tens-bit: d04.21 decimal place

Hundreds-bit: d04.22 decimal place

Thousands-bit: Reserved

✧ **d04.30: Frequency Decimal Bit**

Code (Address) Property	Name	Description	Default (Range)
d04.30 (0x641E) RO	Frequency Decimal Bit	V/F SVC FVC PMV/F PMSVC PMFVC Set the decimal bit display of F2.03.	0 (0~3)

✧ **d04.6x~d04.7x: Tuning Extension****d04.60: Online Tuning**

Code (Address) Property	Name	Description	Default (Range)
d04.60 (0x643C) RUN	Online Tuning	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator resistance auto-tuning mode	0 (0~0xFFFF)

Note: The stator resistance auto-tuning function can be valid only after the motor auto-tuning is completed. Enable online stator resistance learning when the thousands-bit is non-zero.

PM Pole Search

In the PM control mode, the initial position of the motor rotor can be obtained at startup by the pole search function.

In closed-loop vector mode, the motor startup initial position is required to be obtained via this function when the initial position of the motor encoder has not been tuned.

In open-loop vector mode, obtaining the motor initial position ensures a high output at startup and that the motor does not run in reverse.

For synchronous closed-loop applications with ABZ encoder, the motor pole position is unknown until the Z-pulse is detected, so it is recommended to enable the pole search function, which ensures a smooth start-up process without reverse rotation.

✧ **d04.72: PM Pole Search**

Code (Address) Property	Name	Description	Default (Range)
d04.72 (0x6448) STOP	PM Pole Search	V/F SVC FVC PMV/F PMSVC PMFVC Set the pole search function for permanent magnet synchronous motors.	0x0010 (0x0000~0x3223)

Note:➤ **Ones-bit: FVC**

- 0: OFF
- 1: ON
- 2: ON during the first power-up

➤ **Tens-bit: SVC**

- 0: OFF
- 1: ON
- 2: ON during the first power-up

✧ **d04.73: Pole Search Current**

Code (Address) Property	Name	Description	Default (Range)
d04.73 (0x6449) STOP	Pole Search Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the value of pole search current.	0.0% (0.0%~6553.5%)

✧ **d04.76: Resistance and Non-linear Tuning**

Code (Address) Property	Name	Description	Default (Range)
d04.76 (0x644C) STOP	Resistance and Nonlinear Identification Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the resistance value and non-linear identification current value.	100.0% (0.0%~150.0%)

✧ **d04.77: LC Filter Inductance**

Code (Address) Property	Name	Description	Default (Range)
d04.77 (0x644D) STOP	LC Filter Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the LC filter inductance.	100.0% (0.0%~150.0%)

Note: Valid only for models with an output LC filter.

✧ **d04.78: LC Filter Capacitor**

Code (Address) Property	Name	Description	Default (Range)
d04.78 (0x644E) STOP	LC Filter Capacitor	V/F SVC FVC PMV/F PMSVC PMFVC Set the LC filter capacitor.	100.0% (0.0%~150.0%)

Note: Valid only for models with an output LC filter.

14.35 d05: Motor 3 Vector Control

14.35.1 d05.0x: ASR

The ASR (Automatic Speed Regulator) adjusts torque commands to make motor speed and speed command to be consistent.

■ Before ASR parameter adjustment

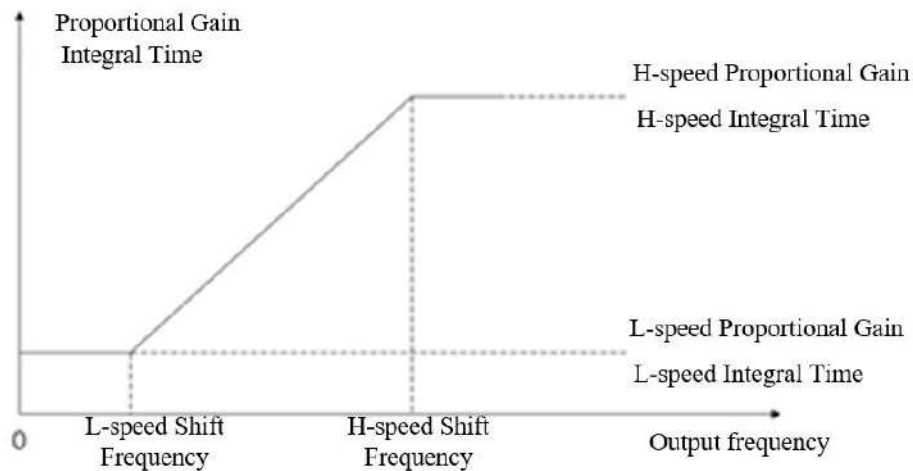
- Before adjusting the parameters of ASR, please implement auto-tuning and set all motor parameters correctly.
- Please adjust ASR parameters when the motor is connected to the load.
- When adjusting ASR, monitor C00.01 (F11.20 ones-bit to 1 to select the actual output frequency) and C00.05 [Mechanical Speed], and use analog output signals.

■ Adjustment steps under SVC, FVC, PMSVC and PMFVC

ASR parameter adjustment steps are as follows.

1. Run the motor at zero speed or low speed, and increase d05.06 [L-speed Proportional Gain] without causing any vibration.
2. Run the motor at zero speed or low speed, and lower d05.07 [L-speed Integral Time] without causing any vibration.
3. Run the motor at the set maximum speed and make sure that no vibration will occur.
4. In case of vibration, lower d05.06 and raise d05.07 until vibration no longer occurs.
5. The ASR proportional gain and integral time can be switched according to the output frequency. When the speed stability cannot be ensured on the low speed side, please roughly set about 80% of the frequency when the actual vibration occurs; when the speed stability cannot be ensured on the high speed side, please roughly set about 120% of the frequency when the actual vibration occurs.

H-speed Shift Frequency > L-speed Shift Frequency



ASR Proportional Gain and Integral Time

◇ d05.00: ASR Rigidity Level

Code (Address) Property	Name	Description	Default (Range)
d05.00 (0x6500) RUN	Rigidity Level	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR speed rigidity level.	32 (0~128)

Note: The higher the level, the better the speed rigidity.

◇ d05.01: ASR Rigidity Mode

Code (Address) Property	Name	Description	Default (Range)
d05.01 (0x6501) RUN	Rigidity Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR speed rigidity mode.	0x0000 (0x0000~0xFFFF)

◇ d05.02: ASR H-speed Proportional Gain

Code (Address) Property	Name	Description	Default (Range)
d05.02 (0x6502) RUN	H-speed Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR proportional gain at high speed.	10.00 (0.01~100.00)

Higher gain means enhanced responsiveness, so the larger the load, the higher the gain. However, if the gain is too large, the motor will vibrate.

◇ d05.03: ASR H-speed Integral Time

Code (Address) Property	Name	Description	Default (Range)
d05.03 (0x6503) RUN	H-speed Integral Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR integral time at high speed.	0.100s (0.000s~6.000s)

If the integral time is too long, the responsiveness will be reduced and the ability to resist external forces will also be weakened. But if the integral time is too short, vibration will occur.

◇ d05.04: ASR H-speed Filter Time

Code (Address) Property	Name	Description	Default (Range)
d05.04 (0x6504) RUN	H-speed Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR filter time at high speed.	0.0ms (0.0ms~100.0ms)

Increase the set value by 0.1 when the rigidity of machinery is low and vibration occurs easily.

◇ d05.05: ASR H-speed Shift Frequency

Code (Address) Property	Name	Description	Default (Range)
d05.05 (0x6505) RUN	H-speed Shift Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR shift frequency at high speed.	0.00Hz (0.00Hz~F01.10)

Note: Determine ASR control parameter together with d05.09.

◇ d05.06: ASR L-speed Proportional Gain

Code (Address) Property	Name	Description	Default (Range)
d05.06 (0x6506) RUN	L-speed Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR proportional gain at low speed.	10.00 (0.01~100.00)

Higher gain means enhanced responsiveness, so the larger the load, the higher the gain. However, if the gain is too large, the motor will vibrate.

◇ d05.07: ASR L-speed Integral Time

Code (Address) Property	Name	Description	Default (Range)
d05.07 (0x6507) RUN	L-speed Integral Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR integral time at low speed.	0.100s (0.001s~6.000s)

If the integral time is too long, the responsiveness will be reduced and the ability to resist external forces will also be weakened. But if the integral time is too short, vibration will occur.

◇ d05.08: ASR L-speed Filter Time

Code (Address) Property	Name	Description	Default (Range)
d05.08 (0x6508) RUN	L-speed Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR filter time at low speed.	0.0ms (0.0ms~100.0ms)

Increase the set value by 0.1 when the rigidity of machinery is low and vibration occurs easily.

◇ d05.09: ASR L-speed Shift Frequency

Code (Address) Property	Name	Description	Default (Range)
d05.09 (0x6509) RUN	L-speed Shift Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR shift frequency at low speed.	0.00Hz (0.00Hz~d05.05)

When speed stability cannot be ensured on the low-speed side or high-speed side, the ASR proportional gain and integral time can be switched according to the output frequency.

The shifting of ASR parameters based on output frequency.

Output Frequency	ASR Parameters		
	Proportional Gain	Integral Time	Filter Time
Output Frequency $\geq$ d05.05	d05.02	d05.03	d05.04
d05.09 < Output Frequency < d05.05	Linear variation	Linear variation	Linear variation
Output Frequency $\leq$ d05.09	d05.06	d05.07	d05.08

14.35.2 d05.1x: ACR and Torque Limit

Set the PI parameters of the current loop for AM and PM vector controls. In vector control, if the speed and current oscillations and instability occur, the gains can be accordingly reduced to stabilize the speed and current; on the other hand, increase the gains to improve the dynamic response of the motor.

✧ d05.10: ACR D-Axis Proportional Gain

Code (Address) Property	Name	Description	Default (Range)
d05.10 (0x650A) RUN	D-Axis Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the d-axis proportional gain under the automatic current regulator.	1.000 (0.001~4.000)

✧ d05.11: ACR D-Axis Integral Gain

Code (Address) Property	Name	Description	Default (Range)
d05.11 (0x650B) RUN	D-Axis Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the d-axis integral gain under the automatic current regulator.	1.000 (0.001~4.000)

✧ d05.12: ACR Q-Axis Proportional Gain

Code (Address) Property	Name	Description	Default (Range)
d05.12 (0x650C) RUN	Q-Axis Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the q-axis proportional gain under the automatic current regulator.	1.000 (0.001~4.000)

✧ d05.13: ACR Q-Axis Integral Gain

Code (Address) Property	Name	Description	Default (Range)
d05.13 (0x650D) RUN	Q-Axis Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the q-axis integral gain under the automatic current regulator.	1.000 (0.001~4.000)

✧ d05.14: ACR Optimization

Code (Address) Property	Name	Description	Default (Range)
d05.14 (0x650E) RUN	ACR Optimization	V/F SVC FVC PMV/F PMSVC PMFVC Enable the current loop optimization.	Up to model (0~0)

Note:

0: OFF

1: ON

Ones-bit: Voltage feedforward enable

Tens-bit: Current prediction control

Hundreds-bit: Current loop gain

✧ **d05.15: Torque Limit under Motoring**

Code (Address) Property	Name	Description	Default (Range)
d05.15 (0x650F) RUN	Motoring Torque Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque limit when motor is running with load.	250.0% (0.0%~400.0%)

Note: 100.0% of the motor rated frequency.

✧ **d05.16: Torque Limit under Generating**

Code (Address) Property	Name	Description	Default (Range)
d05.16 (0x6510) RUN	Generating Torque Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque limit in power generation mode.	250.0% (0.0%~400.0%)

Note: 100.0% of the motor rated frequency.

The motor torque output is also limited by F10.01 [Anti-OC Limit] and d05.34 [Output Power Limit].

✧ **d05.17: Motoring Torque Limit Source**

Code (Address) Property	Name	Description	Default (Range)
d05.17 (0x6511) RUN	Motoring Torque Limit Source	V/F SVC FVC PMV/F PMSVC PMFVC Select the source for the motoring torque limit.	250.0% (0.0%~400.0%)

Note:

- 0: Keypad
- 1: Reserved
- 2: AI1
- 3: AI2
- 4: Reserved
- 5: PUL terminal
- 6: RS485 (0x3014)
- 7: Extension

✧ **d05.18: Regenerative Torque Limit Frequency**

Code (Address) Property	Name	Description	Default (Range)
d05.18 (0x6512) RUN	Generating Torque Limit	V/F SVC FVC PMV/F PMSVC PMFVC Select the source for the generating (regenerative) torque limit.	250.0% (0.0%~400.0%)

Note:

- 0: Keypad
- 1: Reserved
- 2: AI1
- 3: AI2
- 4: Reserved
- 5: PUL terminal
- 6: RS485 (0x3014)
- 7: Extension

✧ **d05.19: Torque Limit**

Code (Address) Property	Name	Description	Default (Range)
d05.19 (0x6513) RUN	Torque Limit View	V/F SVC FVC PMV/F PMSVC PMFVC Select the torque limit value displayed for monitoring.	0 (0~1)

Note:

- 0: C00.06 displays the torque limit value during motoring
- 1: C00.06 displays the torque limit value during generating

14.35.3 d05.2x: Torque Optimization

PM Pull-in Current

The pull-in current is mainly used to enhance the load capacity of the motor at low frequencies. Parameter d05.22 [Pull-in Current Frequency] defines the low/high frequency threshold. For heavy low-frequency loads, increase the pull-in current appropriately. Excessive values, however, reduce motor efficiency – adjust based on actual load conditions.

✧ d05.20: PM LF Pull-In Current

Code (Address) Property	Name	Description	Default (Range)
d05.20 (0x6514) RUN	PM LF Pull-in Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the low-frequency pull-in current for permanent magnet synchronous motors.	20.0% (0.0%~50.0%)

Note: 100.0% of the motor rated current.

✧ d05.21: PM HF Pull-In Current

Code (Address) Property	Name	Description	Default (Range)
d05.21 (0x6515) RUN	PM HF Pull-in Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency pull-in current for permanent magnet synchronous motors.	10.0% (0.0%~50.0%)

Note: 100.0% of the motor rated current.

✧ d05.22: PM Pull-In Current Frequency

Code (Address) Property	Name	Description	Default (Range)
d05.22 (0x6516) RUN	PM Pull-in Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the pull-in current frequency for permanent magnet synchronous motors.	10.0% (0.0%~100.0%)

Note: The set value 100.0% corresponds to F01.10 [Max. Frequency].

Slip Compensation

For AM vector control, the slip compensation coefficient is used to adjust the motor accuracy under open loop. The value should be increased when the motor speed with load is lower than the set value, vice versa. Recommended for this parameter: 60%~160.0%.

For closed-loop, the slip compensation coefficient is used to adjust the linearity of the motor output torque and output current. For a motor with a rated load, decrease the value when the motor current is higher than the nameplate rated value, and increase when lower. Recommended for this parameter: 80%~120%.

✧ d05.23: Slip Compensation

Code (Address) Property	Name	Description	Default (Range)
d05.23 (0x6517) RUN	Slip Compensation	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor slip compensation.	100.0% (0.0%~250.0%)

✧ d05.24: Initial Start Torque

Code (Address) Property	Name	Description	Default (Range)
d05.24 (0x6518) RUN	Initial Start Torque	V/F SVC FVC PMV/F PMSVC PMFVC Set the initial starting torque.	0.0% (0.0%~250.0%)

14.35.4 d05.25~d05.3x: Flux Optimization

✧ d05.25: Flux Control Gain

Code (Address) Property	Name	Description	Default (Range)
d05.25 (0x6519) RUN	Flux Control Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control gain.	0 (0~1000.0)

Note: Effective for asynchronous motors only. A non-zero value enables asynchronous motor flux control.

✧ d05.26: Flux Control Integral Gain

Code (Address) Property	Name	Description	Default (Range)
d05.26 (0x651A) RUN	Flux Control Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control integral gain.	0 (0~1000.0)

Note: Effective for asynchronous motors only. A non-zero value enables asynchronous motor flux control.

✧ d05.27: Flux Given Gain

Code (Address) Property	Name	Description	Default (Range)
d05.27 (0x651B) RUN	Flux Control Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control integral gain.	0 (0~2000)

✧ d05.29: Flux Range

Code (Address) Property	Name	Description	Default (Range)
d05.29 (0x651D) RUN	Flux Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux range.	0 (0.0%~150.0%)

Note: Effective for synchronous motors only. Used to limit the field-weakening depth.

Field-weakening Control

For vector control of asynchronous or synchronous motors, flux-weakening control is required if the motor speed exceeds rated speed or if bus voltage is low while the motor is near rated speed, to maintain speed tracking.

d05.32 sets the maximum flux-weakening current. Excessive current can cause irreversible demagnetization, while keeping it within the motor's rated current usually prevents this issue.

d05.30 to d05.31 are used to set the flux-weakening control parameters. If instability occurs during flux-weakening, these parameters can be adjusted for tuning.

✧ d05.30: Field-weakening Feed-forward Coefficient

Code (Address) Property	Name	Description	Default (Range)
d05.30 (0x651E) RUN	Field-weakening Feed-forward Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the feed-forward coefficient under field weakening control.	10.0% (0.0%~500.0%)

✧ d05.31: Field-weakening Control Gain

Code (Address) Property	Name	Description	Default (Range)
d05.31 (0x651F) RUN	Field-weakening Control Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the control gain under field weakening control.	10.0% (0.0%~500.0%)

✧ **d05.32: Field-weakening Current Limit**

Code (Address) Property	Name	Description	Default (Range)
d05.32 (0x6520) RUN	Field-weakening Current Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the current upper limit under field weakening control.	60.0% (0.0%~250.0%)

Note: 100.0% of the motor rated current.

✧ **d05.33: Field-weakening Voltage Coefficient**

Code (Address) Property	Name	Description	Default (Range)
d05.33 (0x6521) RUN	Field-weakening Voltage Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage coefficient under field weakening control.	97.0% (0.0%~120.0%)

✧ **d05.34: Output Power Limit**

Code (Address) Property	Name	Description	Default (Range)
d05.34 (0x6522) RUN	Output Power Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the axis output power limit.	250.0% (0.0%~400.0%)

Note: 100.0% of the motor rated power.

Over-excitation Brake

Vector control of asynchronous motors is effective. Over-excitation enables faster deceleration without overvoltage alarms. Higher over-excitation gain speeds up the response, and a larger braking current limit (compared to rated excitation) improves braking effect. However, excessive current limiting can raise motor temperature during deceleration. This value can be increased only if the motor has good heat dissipation.

✧ **d05.35: Over-excitation Brake Gain**

Code (Address) Property	Name	Description	Default (Range)
d05.35 (0x6523) RUN	Over-excitation Brake Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the over-excitation brake gain.	100.0% (0.0%~500.0%)

✧ **d05.36: Over-excitation Brake Range**

Code (Address) Property	Name	Description	Default (Range)
d05.36 (0x6524) RUN	Over-excitation Brake Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the over-excitation brake range.	100.0% (0.0%~250.0%)

ECO Mode

In energy-saving mode, vector control of asynchronous motors reduces output current automatically based on torque analysis, lowering heating losses and achieving energy savings.

✧ **d05.37: ECO Mode**

Code (Address) Property	Name	Description	Default (Range)
d05.37 (0x6525) RUN	ECO Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the ECO mode function on/off.	0 (0~1)

0: OFF

1: ON

Note: Effective only when F03.25≠0.

✧ **d05.38: Min ECO Excitation**

Code (Address) Property	Name	Description	Default (Range)
d05.38 (0x6526) RUN	Min ECO Excitation	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower limit of energy-saving excitation.	50.0% (0.0%~80.0%)

Note: 100.0% of the motor rated excitation.

✧ **d05.39: ECO Filter Time**

Code (Address) Property	Name	Description	Default (Range)
d05.39 (0x6527) RUN	ECO Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the filter time of energy-saving running.	0.010s (0.000s~6.000s)

14.35.5 d05.4x: PM HF Injection

The high-frequency injection function can only be used at low speed (the default is 10% of the motor rated frequency), and its main function is to improve the torque output capability.

✧ **d05.40: HF Injection Mode**

Code (Address) Property	Name	Description	Default (Range)
d05.40 (0x6528) STOP	HF Injection Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency injection mode.	0 (0x0000~0x1005)

Ones-bit:

PM open-loop control valid: please select 0 with SPM and 0~5 with IPM.

0: OFF

1~5: ON, the greater the value, the higher the injection frequency.

Note: When the motor has less convex polarity (i.e., when the d01.22/d01.21 ratio is lower than 1.5), the effect of the high-frequency injection on the output torque of the motor will be weakened.

Thousands-bit: Effective when ones-bit≠0.

0: Random carrier injection

1: Fixed carrier injection

✧ **d05.41: HF Injection Voltage**

Code (Address) Property	Name	Description	Default (Range)
d05.41 (0x6529) RUN	HF Injection Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency injection voltage.	10.0% (0.0%~100.0%)

Note: 100% of the motor rated voltage. Need no modification after auto-tuning.

✧ **d05.65: HF Injection OFF Frequency**

Code (Address) Property	Name	Description	Default (Range)
d05.42 (0x652A) RUN	HF Injection OFF Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency injection off frequency.	10.0% (0.0%~20.0%)

Set the high-frequency injection range (relative to motor rated frequency). It is valid when the motor speed is lower than this value.

✧ **d05.46: HF Injection Carrier**

Code (Address) Property	Name	Description	Default (Range)
d05.65 (0x653E) RUN	HF Injection Carrier	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency injection carrier frequency.	0.0kHz (0.0kHz~1.0kHz)

14.35.6 d05.5x~d05.9x: VC Extension Control

IF Control

✧ **d05.52: IF Control Current**

Code (Address) Property	Name	Description	Default (Range)
d05.52 (0x6534) RUN	IF Control Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the IF control current.	60.0% (0.0%~400.0%)

Set the current under IF control, where 100% equals the motor's rated current.

✧ **d05.53: IF Control Frequency**

Code (Address) Property	Name	Description	Default (Range)
d05.53 (0x6535) RUN	IF Control Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the IF control off frequency.	0.0% (0~100.0%)

100% corresponds to the motor rated frequency. IF control is enabled when the operating frequency is lower than this value.

Fly Track

Before the AC drive starts, the motor rotor may be freely rotating. Starting under this condition may cause overcurrent, overload, or overvoltage faults, and in severe cases may damage the power devices. The fly track function detects the actual motor speed and phase, enabling smooth, shock-free startup of a rotating motor.

✧ **d05.55: SPLL Fly Track Proportional Gain**

Code (Address) Property	Name	Description	Default (Range)
d05.55 (0x6537) RUN	SPLL Fly Track Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the proportional gain for SPLL fly track.	1.00 (0~655.35)

✧ **d05.56: SPLL Fly Track Integral Gain**

Code (Address) Property	Name	Description	Default (Range)
d05.56 (0x6538) RUN	SPLL Fly Track Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the integral gain for SPLL fly track.	5.00 (0~655.35)

✧ **d05.58: Fly Track Excitation Frequency**

Code (Address) Property	Name	Description	Default (Range)
d05.58 (0x653A) RUN	Fly Track Excitation Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the excitation frequency for software speed tracking.	0 (0~65535)

When set to a non-zero value, this parameter is used to adjust the frequency during the excitation stage.

✧ **d05.59: Fly Track Excitation Time**

Code (Address) Property	Name	Description	Default (Range)
d05.59 (0x653B) RUN	Fly Track Excitation Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the excitation time for fly track.	200 (0~65535)

Set the excitation time when no residual magnetism is present.

MTPA Function

MTPA function is to optimize the PM excitation to maximize the motor output/motor current. When there is a big difference between the inductance of D and Q axes of the PM motor, [d05.80] can be used to reduce the motor current with the same loads; [d05.81] can be used to improve the stability of the motor operation. This function is only valid for the PM closed-loop vector mode.

✧ **d05.60: PM MTPA Gain**

Code (Address) Property	Name	Description	Default (Range)
d05.60 (0x653D) RUN	PM MTPA Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the MTPA gain for permanent magnet synchronous motors.	100.0% (0.0%~400.0%)

✧ **d05.61: PM MTPA Filter Time**

Code (Address) Property	Name	Description	Default (Range)
d05.61 (0x653E) RUN	PM MTPA Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the MTPA filter time for permanent magnet synchronous motors.	1.0ms (0.0ms~100.0ms)

Direct Flux Vector✧ **d05.77: Direct Flux Vector Mode**

Code (Address) Property	Name	Description	Default (Range)
d05.77 (0x654D) STOP	Direct Flux Vector Mode	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Direct Flux Vector 0: OFF 3: ON	0x0000 (0x0000~ 0xFFFF)

14.36 d06: Motor 3 V/F Control**14.36.1 d06.0x: V/F Control****V/F Curve**✧ **d06.00: V/F Curve**

Code (Address) Property	Name	Description	Default (Range)
d06.00 (0x6600) STOP	V/F Curve	V/F SVC FVC PMV/F PMSVC PMFVC Set the V/F curve.	0 (0~11)

0: Linear V/F curve

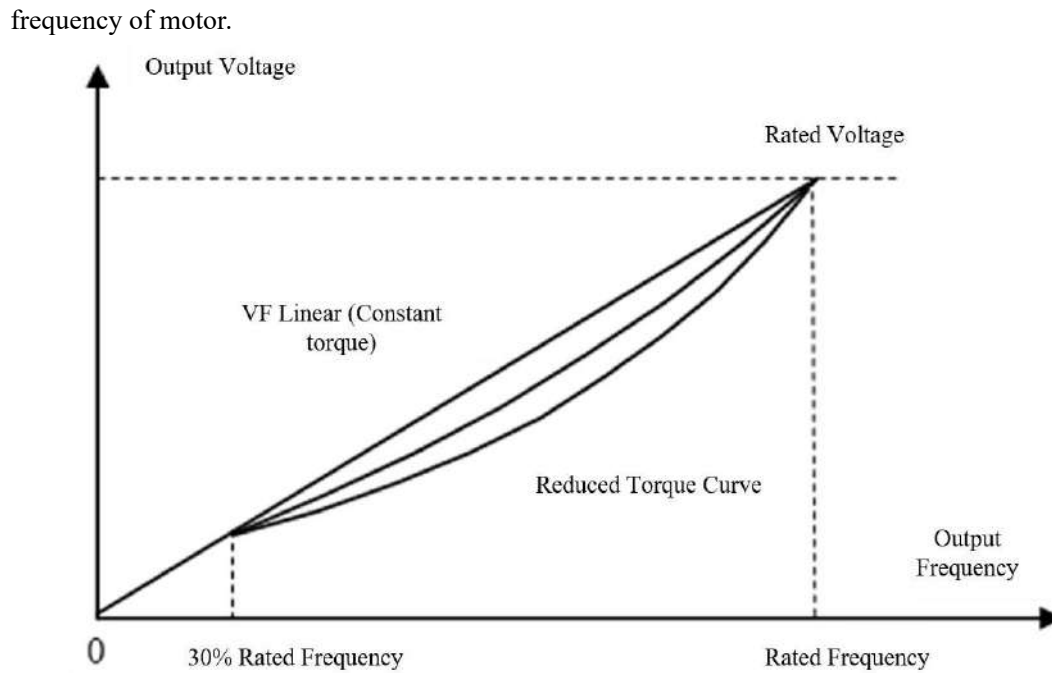
1~9: 1.1-1.9 power V/F curves respectively

10: Square V/F curve

11: Custom V/F curve

Note:

- 1. d06.00 [V/F Curve] = 11 (User-defined V/F curve), set by d06.10 to d06.19.
- Linear and torque reduction curve is as follows. Torque reduction V/F curve is valid above 0.3 times rated



V/F Linear vs. Reduced Torque Curve Schematic

Torque Boost

◇ d06.01: Torque Boost

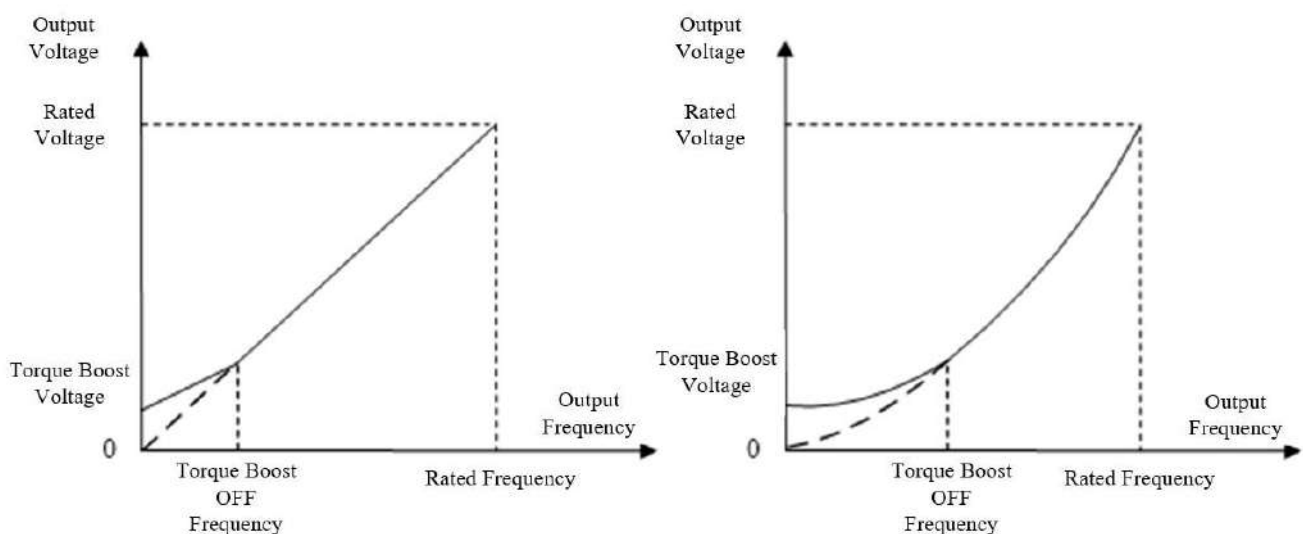
Code (Address) Property	Name	Description	Default (Range)
d06.01 (0x6601) RUN	Torque Boost	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque boost.	Up to model (0.0%~30.0%)

0.0: Automatic torque boost to compensate for loss on stator resistance.

Others: Fixed torque boost

Note:

- When d06.01 [Torque Boost] = 0.0 (automatic torque boost), the accurate stator resistance value can be obtained by F02.07=3 auto-tuning, which can keep the motor output in the best state.
- Fixed torque boost with V/F linear curve is as follows.



Fixed Torque Boost Schematic

◇ **d06.02: Torque Boost OFF Frequency**

Code (Address) Property	Name	Description	Default (Range)
d06.02 (0x6602) RUN	Torque Boost OFF Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque boost off frequency.	100.0% (0.0%~100.0%)

Note: 100% of the motor rated frequency.

Slip Compensation

This function enables the output frequency of the drive to automatically change with the motor load within the set range to dynamically compensate the motor slip frequency, so as to keep the motor at a constant speed, thus reducing the effect of load variation on the motor speed.

◇ **d06.03: Slip Compensation Gain**

Code (Address) Property	Name	Description	Default (Range)
d06.03 (0x6603) RUN	Slip Compensation Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the slip compensation gain.	0.0% (0.0%~200.0%)

◇ **d06.04: Slip Compensation Range**

Code (Address) Property	Name	Description	Default (Range)
d06.04 (0x6604) RUN	Slip Compensation Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the slip compensation range.	100.0% (0.0%~300.0%)

Note: 100% of the rated slip frequency.

◇ **d06.05: Slip Compensation Filter Time**

Code (Address) Property	Name	Description	Default (Range)
d06.05 (0x6605) RUN	Slip Compensation Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the slip compensation filter time.	0.200s (0.000s~6.000s)

Anti-oscillation

In the medium and high power motor applications, it is easy to cause motor current instability and motor speed oscillation, which is a kind of low frequency resonance produced by the joint action of electricity and machinery, and the oscillation of small power motors is generally not obvious. By adjusting d06.06 and d06.07, low-frequency resonance can be suppressed, and the anti-oscillation gain value can be gradually increased on the premise of stability.

◇ **d06.06: Anti-oscillation Gain**

Code (Address) Property	Name	Description	Default (Range)
d06.06 (0x6606) RUN	Anti-oscillation Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the anti-oscillation gain.	100.0% (0.0%~900.0%)

◇ **d06.07: Anti-oscillation Filter Time**

Code (Address) Property	Name	Description	Default (Range)
d06.07 (0x6607) RUN	Anti-oscillation Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the anti-oscillation filter time.	1.0s (0.0s~100.0s)

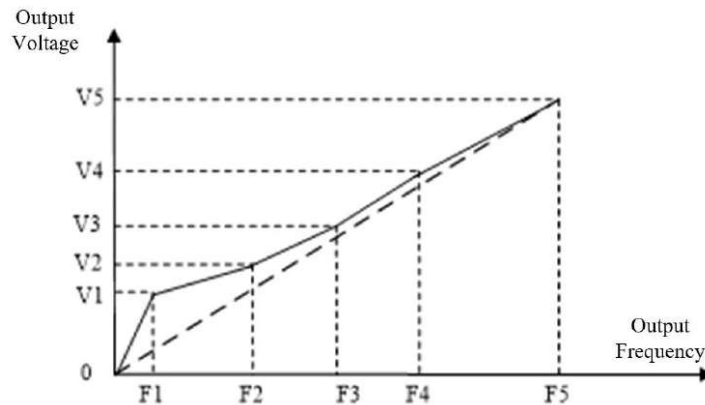
V/F output voltage ratio

✧ d06.08: Output Voltage Percentage

Code (Address) Property	Name	Description	Default (Range)
d06.08 (0x6608) STOP	Output Voltage Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the output voltage percentage, 100% of it corresponds to the motor rated voltage.	100.0% (25.0%~120.0%)

14.36.2 d06.1x: User-defined V/F Curves

This product provides 5 sets of voltage-frequency ratios to meet the needs of various motors.



Customized Curve Schematic

✧ d06.10: User-Defined Voltage 1

Code (Address) Property	Name	Description	Default (Range)
d06.10 (0x660A) STOP	User-Defined Voltage 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage 1. 100.0% corresponds to the motor rated voltage.	3.0% (0.0%~100.0%)

✧ d06.11: User-Defined Frequency 1

Code (Address) Property	Name	Description	Default (Range)
d06.11 (0x660B) STOP	User-Defined Frequency 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency 1.	1.00Hz (0.00Hz~F01.10)

✧ d06.12: User-Defined Voltage 2

Code (Address) Property	Name	Description	Default (Range)
d06.12 (0x660C) STOP	User-Defined Voltage 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage 2. 100.0% corresponds to the motor rated voltage.	28.0% (0.0%~100.0%)

✧ d06.13: User-Defined Frequency 2

Code (Address) Property	Name	Description	Default (Range)
d06.13 (0x660D) STOP	User-Defined Frequency 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency 2.	10.00Hz (0.00Hz~F01.10)

✧ d06.14: User-Defined Voltage 3

Code (Address) Property	Name	Description	Default (Range)
d06.14 (0x660E) STOP	User-Defined Voltage 3	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage 3. 100.0% corresponds to the motor rated voltage.	55.0% (0.0%~100.0%)

✧ d06.15: User-Defined Frequency 3

Code (Address) Property	Name	Description	Default (Range)
d06.15 (0x660F) STOP	User-Defined Frequency 3	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency 3.	25.00Hz (0.00Hz~F01.10)

✧ d06.16: User-Defined Voltage 4

Code (Address) Property	Name	Description	Default (Range)
d06.16 (0x6610) STOP	User-Defined Voltage 4	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage 4. 100.0% corresponds to the motor rated voltage.	78.0% (0.0%~100.0%)

✧ d06.17: User-Defined Frequency 4

Code (Address) Property	Name	Description	Default (Range)
d06.17 (0x6611) STOP	User-Defined Frequency 4	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency 4.	37.50Hz (0.00Hz~F01.10)

✧ d06.18: User-Defined Voltage 5

Code (Address) Property	Name	Description	Default (Range)
d06.18 (0x6612) STOP	User-Defined Voltage 5	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage 5. 100.0% corresponds to the motor rated voltage.	100.0% (0.0%~100.0%)

✧ d06.19: User-Defined Frequency 5

Code (Address) Property	Name	Description	Default (Range)
d06.19 (0x6613) STOP	User-Defined Frequency 5	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency 5.	50.00Hz (0.00Hz~F01.10)

14.36.3 d06.2x: Voltage-Frequency/Current-Frequency Decoupled Control

This group enables independent control of output voltage and output frequency, or output current and output frequency.

After the run command activates, the output voltage and frequency change based on their set acceleration and deceleration times.

After the stop command activates, the output voltage and frequency change based on their set acceleration and deceleration times, with the stop mode selected via d06.26.

Related parameters:

	Source	ACC/DEC Time	Comment
Frequency	F01.02	F01.22, F01.23	
Voltage	d06.21	d06.22, d06.23	

Note:

- When the V/F-Split function is active, the output voltage decreases during overcurrent suppression.
- When the stop command is active and the output frequency falls below the stop detection frequency set in F09.11, the drive switches to a stop state.

✧ **d06.20: Coil Voltage/Current Source A**

Code (Address) Property	Name	Description	Default (Range)
d06.20 (0x6614) RUN	Coil Voltage/Current Source A	V/F SVC FVC PMV/F PMSVC PMFVC 0: Voltage/current percentage 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL 6: RS485 7: Extension (0x31 group) 8: PID target 9: Voltage/current value	0 (0~65535)

✧ **d06.21: Coil Voltage/Current Source B**

Code (Address) Property	Name	Description	Default (Range)
d06.21 (0x6615) RUN	Coil Voltage/Current Source B	V/F SVC FVC PMV/F PMSVC PMFVC 0: Voltage/current percentage 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL 6: RS485 7: Extension (0x31 group) 8: PID target 9: Voltage/current value	0 (0~65535)

✧ **d06.22: Coil Voltage/Current Source Combination**

Code (Address) Property	Name	Description	Default (Range)
d06.22 (0x6616) RUN	Coil Voltage/Current Source Combination	V/F SVC FVC PMV/F PMSVC PMFVC 0: Source A 1: Source B 2: Source A+Source B 3: Source A-Source B 4: Max. (A, B) 5: Min. (A or B)	0 (0~5)

✧ **d06.23: V/F-Split Output Voltage**

Code (Address) Property	Name	Description	Default (Range)
d06.23 (0x6617) RUN	Coil Voltage/Current	V/F SVC FVC PMV/F PMSVC PMFVC Define the coil output voltage/current.	0.00% (0.00%~110.00%)

Note: V/F-SPLIT output is blocked when the output voltage is set to 0%. 100% of it corresponds to the motor rated voltage. Output is blocked when the output current is set to 0%. 100% of it corresponds to the motor rated current.

✧ d06.24~d06.25: Coil Voltage/Current ACC/DEC Time

Code (Address) Property	Name	Description	Default (Range)
d06.24 (0x6618) RUN	Coil Voltage/Current ACC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the coil voltage/current acceleration time.	10.00s (0.00s~100.00s)
d06.25 (0x6619) RUN	Coil Voltage/Current DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the coil voltage/current deceleration time.	10.00s (0.00s~100.00s)

✧ d06.26: Coil Stop Mode

Code (Address) Property	Name	Description	Default (Range)
d06.26 (0x661A) RUN	Coil Stop Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the coil control stop mode. 0: ACC/DEC of output voltage/current and that of output frequency do not affect each other 1: Output frequency decreases only after the output voltage drops to 0V or the output current drops to F04.28.	0 (0~1)

✧ d06.27: Coil Voltage/Current Value Setting

Code (Address) Property	Name	Description	Default (Range)
d06.27 (0x661B) RUN	Coil Voltage/Current Value Setting	V/F SVC FVC PMV/F PMSVC PMFVC Set the coil output voltage/current value.	0.00V/A (0.00V/A~600.00V/A)

✧ d06.28: Frequency Drop Current Threshold

Code (Address) Property	Name	Description	Default (Range)
d06.28 (0x661C) RUN	Frequency Drop Current Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the current percentage at which the frequency starts to decrease.	0.00 (0.00%~110.00%)

When F04.26=1, the output current decreases first. Once it falls below F04.28, the output frequency begins to decrease. 100% of it corresponds to the motor rated current.

✧ d06.29: Coil Control Mode

Code (Address) Property	Name	Description	Default (Range)
d06.29 (0x661D) RUN	Coil Control Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the coil control mode. 0: V/F-SPLIT mode 1: I/F-SPLIT mode	0.00 (0.00%~110.00%)

14.36.4 d06.3x: V/F ECO Mode

The drive automatically adjusts the output voltage to improve motor efficiency and achieve energy savings after entering constant speed in light-load conditions.

✧ d06.30: V/F ECO Function

Code (Address) Property	Name	Description	Default (Range)
d06.30 (0x661E) STOP	V/F ECO Function	V/F SVC FVC PMV/F PMSVC PMFVC Set the V/F ECO function on or off.	0 (0~1)

0: OFF

1: ON✧ **d06.31: V/F ECO Min. Frequency**

Code (Address) Property	Name	Description	Default (Range)
d06.31 (0x661F) STOP	V/F ECO Min. Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower frequency limit of the ECO mode.	15.00Hz (0.00Hz~50.00Hz)

Note: The automatic ECO mode will stop when the drive's output frequency is below this value.

✧ **d06.32: V/F ECO Min. Voltage**

Code (Address) Property	Name	Description	Default (Range)
d06.32 (0x6620) STOP	V/F ECO Min. Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower voltage limit of the ECO mode.	50.0% (20.0%~100.0%)

Note: 100.0% corresponds to the output voltage at the current output frequency without ECO control.

✧ **d06.33: V/F ECO Voltage DEC Rate**

Code (Address) Property	Name	Description	Default (Range)
d06.33 (0x6621) RUN	V/F ECO Voltage DEC Rate	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage deceleration rate under the V/F ECO mode.	0.010V/ms (0.000V/ms~ 0.200V/ms)

✧ **d06.34: V/F ECO Voltage ACC Rate**

Code (Address) Property	Name	Description	Default (Range)
d06.34 (0x6622) RUN	V/F ECO Voltage ACC Rate	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage acceleration rate under the V/F ECO mode.	0.200V/ms (0.000V/ms~ 2.000V/ms)

✧ **d06.35: Over-excitation Gain**

Code (Address) Property	Name	Description	Default (Range)
d06.35 (0x6623) RUN	Over-excitation Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the over-excitation gain.	64 (0~200)

14.37 d07: Motor 4 Parameters

Set the motor 4 and motor application parameters.

14.37.1 d07.0x: Basic Parameters and Auto-tuning

✧ **d07.00: Motor Type**

Code (Address) Property	Name	Description	Default (Range)
d07.00 (0x6700) READ	Type	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor type. This parameter is read-only.	0 (0~1)

0: Asynchronous motor (AM)

1: Permanent magnet synchronous motor (PM)

Note: This parameter is read-only, d07.00 is updated automatically after d00.04 [Motor 4 Control Mode] is set.

✧ **d07.01: Motor Pole No.**

Code (Address) Property	Name	Description	Default (Range)
d07.01 (0x6701) STOP	Pole No.	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor pole number.	4 (2~98)

✧ **d07.02: Motor Rated Power**

Code (Address) Property	Name	Description	Default (Range)
d07.02 (0x6702) STOP	Rated Power	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated power of the motor.	Up to model (0.1kW~1000.0kW)

Note: Default value is the drive's rated power and will adjust accordingly.

✧ **d07.03: Motor Rated Frequency**

Code (Address) Property	Name	Description	Default (Range)
d07.03 (0x6703) STOP	Rated Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated frequency of the motor.	50.00Hz (0.01Hz~F01.10)

✧ **d07.04: Rated Motor Speed**

Code (Address) Property	Name	Description	Default (Range)
d07.04 (0x6704) STOP	Rated Speed	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated speed of the motor.	Up to model (0rpm~65000rpm)

Note:

When d07.00 [Type] is set to a synchronous motor, d07.04 [Rated Speed] is calculated from d07.01 [Pole No.] and d07.03 [Rated Frequency]. Please set the corresponding parameters correctly. The calculation formula is: d07.04 [Rated Speed] = $60 * d07.03 [Rated Frequency] / (d01.01[Pole No.] / 2)$.

✧ **d01.05: Motor Rated Voltage**

Code (Address) Property	Name	Description	Default (Range)
d01.05 (0x6705) STOP	Motor Rated Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated voltage of the motor.	Up to model (0V~2000V)

✧ **d07.06: Motor Rated Current**

Code (Address) Property	Name	Description	Default (Range)
d07.06 (0x6706) STOP	Rated Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the rated current of the motor.	Up to model (0.1A~3000.0A)

✧ **d07.07: Motor Parameter Auto-tuning**

Code (Address) Property	Name	Description	Default (Range)
d07.07 (0x6707) STOP	Auto-tuning	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor parameter auto-tuning.	0 (0~20)

Note: After parameter auto-tuning completes, [d07.07] will be automatically set to "0".

0: OFF

1: Dynamic auto-tuning

2: Static auto-tuning

3: Stator resistance auto-tuning
6: Dynamic auto-tuning only
9: PM inductance saturation coefficient auto-tuning
10: Non-linear auto-tuning
4~20: Reserved

✧ **d07.08: Auto-tuning Flag**

Code (Address) Property	Name	Description	Default (Range)
d07.08 (0x6708) RO	Auto-tuning Flag	V/F SVC FVC PMV/F PMSVC PMFVC Read-only parameter, indicating the auto-tuning status.	0 (0~0xFFFF)

Note: This parameter is updated after auto-tuning is completed.

- Ones-bit:
 - bit0: Stator resistance tuning completed
 - bit1: Rotor resistance and leakage inductance tuning completed
 - bit2: Control current and rotor inductance tuning completed (dynamic tuning)
 - bit3: Rotor inductance, rotor resistance, and no-load current tuning completed (static tuning)
- Tens-bit:
 - bit0: Ld and Lq tuning completed
 - bit1: Back-EMF static tuning completed
 - bit2: Back-EMF dynamic tuning completed
 - bit3: Inductance saturation coefficient tuning completed
- Hundreds-bit:
 - bit0: PG direction tuning completed
 - bit1: PG initial angle tuning completed
 - bit2: Z-pulse direction tuning completed
- Thousands-bit:
 - bit0: Pulse width coefficient tuning completed
 - bit1: Dead-time compensation tuning completed
 - bit3: Current gain tuning completed

14.37.2 d07.1x: AM Advanced Parameters

✧ **d07.10: AM No-Load Current**

Code (Address) Property	Name	Description	Default (Range)
d07.10 (0x670A) STOP	AM No-load Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the no-load current for asynchronous motors.	Up to model (0.1A~3000.0A)

✧ **d07.11: AM Stator Resistance**

Code (Address) Property	Name	Description	Default (Range)
d07.11 (0x670B) STOP	AM Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator resistance for asynchronous motors.	Up to model (0.01mΩ~60000mΩ)

Note: The decimal point is set by d07.19 ones-bit.

✧ **d07.12: AM Rotor Resistance**

Code (Address) Property	Name	Description	Default (Range)
d07.12 (0x670C) STOP	AM Rotor Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the rotor resistance for asynchronous motors.	Up to model (0.01mΩ~60000mΩ)

Note: The decimal point is set by d07.19 tens-bit.

◇ **d07.13: AM Stator Leakage Inductance**

Code (Address) Property	Name	Description	Default (Range)
d07.13 (0x670D) STOP	AM Stator Leakage Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator leakage inductance for asynchronous motors.	Up to model (0.001mH~6553.5mH)

Note: The decimal point is set by d07.19 hundreds-bit.

◇ **d07.14: AM Stator Inductance**

Code (Address) Property	Name	Description	Default (Range)
d07.14 (0x670E) STOP	AM Stator Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator inductance for asynchronous motors.	Up to model (0.01mH~65535mH)

Note: The decimal point is set by d07.19 thousands-bit.

◇ **d07.15: Per-Unit Stator Resistance**

Code (Address) Property	Name	Description	Default (Range)
d07.15 (0x670F) READ	Per-unit Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the stator resistance. This parameter is read-only.	Conversion of actual values (0.01%~50.00%)

d07.16: Per-Unit Rotor Resistance

Code (Address) Property	Name	Description	Default (Range)
d07.16 (0x6710) READ	Per-unit Rotor Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the rotor resistance. This parameter is read-only.	Conversion of actual values (0.01%~50.00%)

◇ **d07.17: Per-Unit Stator Leakage Inductance**

Code (Address) Property	Name	Description	Default (Range)
d07.17 (0x6711) READ	Per-unit Stator Leakage Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the stator leakage inductance. This parameter is read-only, and	Conversion of actual values (0.01%~50.00%)

◇ **d07.18: Per-Unit Stator Inductance**

Code (Address) Property	Name	Description	Default (Range)
d07.18 (0x6712) READ	Per-unit Stator Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit value of the stator inductance. This parameter is read-only.	Conversion of actual values (0.1%~999.0%)

◇ **d07.19: d07.11~d07.14 Decimal Point**

Code (Address) Property	Name	Description	Default (Range)
d07.19 (0x6713) READ	d07.11~d07.14 Decimal Point	V/F SVC FVC PMV/F PMSVC PMFVC Set the decimal point of the four parameters from d07.11 to d07.14. This parameter is read-only.	0x0000 (0x0000~0x2222)

Note: The default value changes with the motor power level, and won't be restored by factory reset.

0: No decimal place

1: 1 decimal place

2: 2 decimal places

3: 3 decimal places

Ones-bit: d07.11 decimal place

Tens-bit: d07.12 decimal place

Hundreds-bit: d07.13 decimal place
Thousands-bit: d07.14 decimal place

14.37.3 d07.2x: PM Advanced Parameters

✧ d07.20: PM Stator Resistance

Code (Address) Property	Name	Description	Default (Range)
d07.20 (0x6714) STOP	PM Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator resistance for permanent magnetic synchronous motors.	Up to model (0.01mΩ~60000mΩ)

Note: The decimal point is set by d07.29 ones-bit.

✧ d07.21: PM D-Axis Inductance

Code (Address) Property	Name	Description	Default (Range)
d07.21 (0x6715) STOP	PM D-Axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the D-axis inductance for permanent magnetic synchronous motors.	Up to model (0.001mH~ 6553.5mH)

Note: The decimal point is set by d07.29 tens-bit.

✧ d07.22: PM Q-Axis Inductance

Code (Address) Property	Name	Description	Default (Range)
d07.22 (0x6716) STOP	PM Q-Axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the Q-axis inductance for permanent magnetic synchronous motors.	Up to model (0.001mH~ 6553.5mH)

Note: The decimal point is set by d07.29 hundreds-bit.

✧ d07.23: PM Back Emf

Code (Address) Property	Name	Description	Default (Range)
d07.23 (0x6717) STOP	Back Emf	V/F SVC FVC PMV/F PMSVC PMFVC Set the back emf for permanent magnetic synchronous motors.	Up to model (0V~1500V)

✧ d07.24: PM Encoder Angle

Code (Address) Property	Name	Description	Default (Range)
d07.24 (0x6718) RUN	PM Encoder Angle	V/F SVC FVC PMV/F PMSVC PMFVC Set the encoder installation angle for permanent magnetic synchronous motors.	Up to model (0.0°~360.0°)

✧ d07.25: PM Per-Unit Stator Resistance

Code (Address) Property	Name	Description	Default (Range)
d07.25 (0x6719) READ	Per-Unit Stator Resistance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit stator resistance for permanent magnetic synchronous motors. This parameter is read-only.	Conversion of actual values (Monitored values)

✧ d07.26: PM Per-Unit D-Axis Inductance

Code (Address) Property	Name	Description	Default (Range)
d07.26 (0x671A) READ	PM Per-Unit D-Axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit d-axis inductance for permanent magnetic synchronous motors. This parameter is read-only.	Conversion of actual values (Monitored values)

◇ **d07.27: PM Per-Unit Q-Axis Inductance**

Code (Address) Property	Name	Description	Default (Range)
d07.27 (0x671B) READ	PM Per-Unit Q-Axis Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the per-unit q-axis inductance for permanent magnetic synchronous motors. This parameter is read-only.	Conversion of actual values (Monitored values)

◇ **d07.28: PM Pulse Width Coefficient**

Code (Address) Property	Name	Description	Default (Range)
d07.28 (0x671C) STOP	Pulse Width Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the pulse width coefficient for permanent magnetic synchronous motors.	Up to model (0.00~99.99)

◇ **d07.29: d07.20~d07.23 Decimal Point**

Code (Address) Property	Name	Description	Default (Range)
d07.29 (0x671D) READ	d07.20~d07.22 Decimal Point	V/F SVC FVC PMV/F PMSVC PMFVC Set the decimal point of the three parameters from d07.20 to d07.22. This parameter is read-only.	0x0000 (0x0000~0x2222)

Note: The default value changes with the motor power level, and won't be restored by factory reset.

0: No decimal place

1: 1 decimal place

2: 2 decimal places

3: 3 decimal places

Ones-bit: d07.20 decimal place

Tens-bit: d07.21 decimal place

Hundreds-bit: d07.22 decimal place

Thousands-bit: Reserved

◇ **d07.30: Frequency Decimal Bit**

Code (Address) Property	Name	Description	Default (Range)
d07.30 (0x671E) RO	Frequency Decimal Bit	V/F SVC FVC PMV/F PMSVC PMFVC Set the decimal bit display of F2.03.	0 (0~3)

14.37.4 d07.6x~d07.7x: Tuning Extension

◇ **d07.60: Online Tuning**

Code (Address) Property	Name	Description	Default (Range)
d07.60 (0x673C) RUN	Online Tuning	V/F SVC FVC PMV/F PMSVC PMFVC Set the stator resistance auto-tuning mode	0x0000 (0x0000~0xFFFF)

Note: The stator resistance auto-tuning function can be valid only after the motor auto-tuning is completed.

Enable online stator resistance learning when the thousands-bit is non-zero.

PM Pole Search

In the PM control mode, the initial position of the motor rotor can be obtained at startup by the pole search function.

In closed-loop vector mode, the motor startup initial position is required to be obtained via this function when the initial position of the motor encoder has not been tuned.

In open-loop vector mode, obtaining the motor initial position ensures a high output at startup and that the motor does not run in reverse.

For synchronous closed-loop applications with ABZ encoder, the motor pole position is unknown until the Z-pulse is detected, so it is recommended to enable the pole search function, which ensures a smooth start-up process

without reverse rotation.

✧ **d07.72: PM Pole Search**

Code (Address) Property	Name	Description	Default (Range)
d07.72 (0x6748) STOP	PM Pole Search	V/F SVC FVC PMV/F PMSVC PMFVC Set the pole search function for permanent magnet synchronous motors.	0x0010 (0x0000~0x3223)

Note:

➤ **Ones-bit: FVC**

0: OFF

1: ON

2: ON during the first power-up

➤ **Tens-bit: SVC**

0: OFF

1: ON

2: ON during the first power-up

✧ **d07.73: Pole Search Current**

Code (Address) Property	Name	Description	Default (Range)
d07.73 (0x6749) STOP	Pole Search Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the value of pole search current.	0.0% (0.0%~6553.5%)

✧ **d07.76: Resistance and Non-linear Tuning**

Code (Address) Property	Name	Description	Default (Range)
d07.76 (0x674C) STOP	Resistance and Nonlinear Identification Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the resistance value and non-linear identification current value.	100.0% (0.0%~150.0%)

✧ **d07.77: LC Filter Inductance**

Code (Address) Property	Name	Description	Default (Range)
d07.77 (0x674D) STOP	LC Filter Inductance	V/F SVC FVC PMV/F PMSVC PMFVC Set the LC filter inductance.	100.0% (0.0%~150.0%)

Note: Valid only for models with an output LC filter.

✧ **d07.78: LC Filter Capacitor**

Code (Address) Property	Name	Description	Default (Range)
d07.78 (0x674E) STOP	LC Filter Capacitor	V/F SVC FVC PMV/F PMSVC PMFVC Set the LC filter capacitor.	100.0% (0.0%~150.0%)

Note: Valid only for models with an output LC filter.

14.38 d08: Vector Control

14.38.1 d08.0x: ASR

The ASR (Automatic Speed Regulator) adjusts torque commands to make motor speed and speed command to be consistent.

● Before ASR parameter adjustment

- Before adjusting the parameters of ASR, please implement auto-tuning and set all motor parameters correctly.
- Please adjust ASR parameters when the motor is connected to the load.
- When adjusting ASR, monitor C00.01 (F11.20 ones-bit to 1 to select the actual output frequency) and

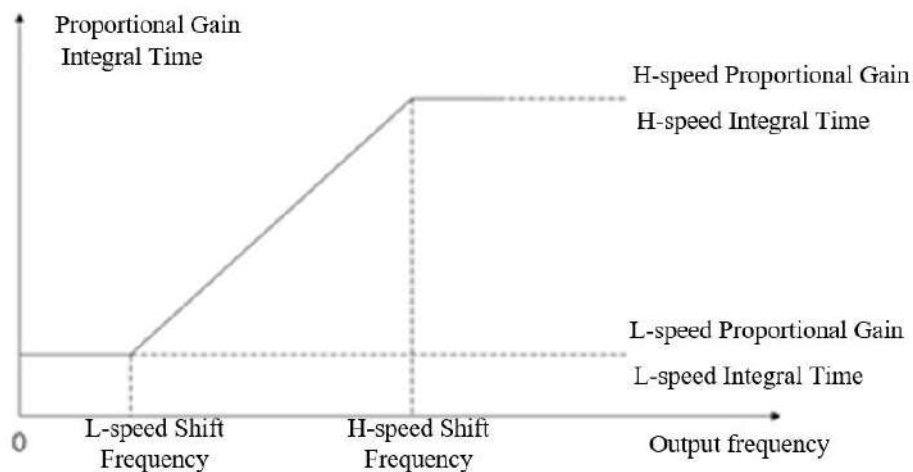
C00.05 [Mechanical Speed], and use analog output signals.

- Adjustment steps under SVC, FVC, PMSVC and PMFVC

ASR parameter adjustment steps are as follows.

1. Run the motor at zero speed or low speed, and increase d08.06 [L-speed Proportional Gain] without causing any vibration.
2. Run the motor at zero speed or low speed, and lower d08.07 [L-speed Integral Time] without causing any vibration.
3. Run the motor at the set maximum speed and make sure that no vibration will occur.
4. In case of vibration, lower d08.06 and raise d08.07 until vibration no longer occurs.
5. The ASR proportional gain and integral time can be switched according to the output frequency. When the speed stability cannot be ensured on the low speed side, please roughly set about 80% of the frequency when the actual vibration occurs; when the speed stability cannot be ensured on the high speed side, please roughly set about 120% of the frequency when the actual vibration occurs.

H-speed Shift Frequency > L-speed Shift Frequency



ASR Proportional Gain and Integral Time

◇ d08.00: ASR Rigidity Level

Code (Address) Property	Name	Description	Default (Range)
d08.00 (0x6800) RUN	Rigidity Level	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR speed rigidity level.	32 (0~128)

Note: The higher the level, the better the speed rigidity.

◇ d08.01: ASR Rigidity Mode

Code (Address) Property	Name	Description	Default (Range)
d08.01 (0x6801) RUN	Rigidity Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR speed rigidity mode.	0x0000 (0x0000~0xFFFF)

◇ d08.02: ASR H-speed Proportional Gain

Code (Address) Property	Name	Description	Default (Range)
d08.02 (0x6802) RUN	H-speed Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR proportional gain at high speed.	10.00 (0.01~100.00)

Higher gain means enhanced responsiveness, so the larger the load, the higher the gain. However, if the gain is too large, the motor will vibrate.

◇ d08.03: ASR H-speed Integral Time

Code (Address) Property	Name	Description	Default (Range)
d08.03 (0x6803) RUN	H-speed Integral Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR integral time at high speed.	0.100s (0.000s~6.000s)

If the integral time is too long, the responsiveness will be reduced and the ability to resist external forces will also be weakened. But if the integral time is too short, vibration will occur.

◇ d08.04: ASR H-speed Filter Time

Code (Address) Property	Name	Description	Default (Range)
d08.04 (0x6804) RUN	H-speed Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR filter time at high speed.	0.0ms (0.0ms~100.0ms)

Increase the set value by 0.1 when the rigidity of machinery is low and vibration occurs easily.

◇ d08.05: ASR H-speed Shift Frequency

Code (Address) Property	Name	Description	Default (Range)
d08.05 (0x6805) RUN	H-speed Shift Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR shift frequency at high speed.	0.00Hz (0.00Hz~F01.10)

Note: Determine ASR control parameter together with d08.09.

◇ d08.06: ASR L-speed Proportional Gain

Code (Address) Property	Name	Description	Default (Range)
d08.06 (0x6806) RUN	L-speed Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR proportional gain at low speed.	10.00 (0.01~100.00)

Higher gain means enhanced responsiveness, so the larger the load, the higher the gain. However, if the gain is too large, the motor will vibrate.

◇ d08.07: ASR L-speed Integral Time

Code (Address) Property	Name	Description	Default (Range)
d08.07 (0x6807) RUN	L-speed Integral Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR integral time at low speed.	0.100s (0.001s~6.000s)

If the integral time is too long, the responsiveness will be reduced and the ability to resist external forces will also be weakened. But if the integral time is too short, vibration will occur.

◇ d08.08: ASR L-speed Filter Time

Code (Address) Property	Name	Description	Default (Range)
d08.08 (0x6808) RUN	L-speed Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR filter time at low speed.	0.0ms (0.0ms~100.0ms)

Increase the set value by 0.1 when the rigidity of machinery is low and vibration occurs easily.

◇ d08.09: ASR L-speed Shift Frequency

Code (Address) Property	Name	Description	Default (Range)
d08.09 (0x6809) RUN	L-speed Shift Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the ASR shift frequency at low speed.	0.00Hz (0.00Hz~d08.05)

When speed stability cannot be ensured on the low-speed side or high-speed side, the ASR proportional gain and integral time can be switched according to the output frequency.

The shifting of ASR parameters based on output frequency.

Output Frequency	ASR Parameters		
	Proportional Gain	Integral Time	Filter Time
Output Frequency $\geq$ d08.05	d08.02	d08.03	d08.04
d08.09 < Output Frequency < d08.05	Linear variation	Linear variation	Linear variation
Output Frequency $\leq$ d08.09	d08.06	d08.07	d08.08

14.38.2 d08.1x: ACR and Torque Limit

Set the PI parameters of the current loop for AM and PM vector controls. In vector control, if the speed and current oscillations and instability occur, the gains can be accordingly reduced to stabilize the speed and current; on the other hand, increase the gains to improve the dynamic response of the motor.

✧ d08.10: ACR D-Axis Proportional Gain

Code (Address) Property	Name	Description	Default (Range)
d08.10 (0x680A) RUN	D-Axis Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the d-axis proportional gain under the automatic current regulator.	1.000 (0.001~4.000)

✧ d08.11: ACR D-Axis Integral Gain

Code (Address) Property	Name	Description	Default (Range)
d08.11 (0x680B) RUN	D-Axis Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the d-axis integral gain under the automatic current regulator.	1.000 (0.001~4.000)

✧ d08.12: ACR Q-Axis Proportional Gain

Code (Address) Property	Name	Description	Default (Range)
d08.12 (0x680C) RUN	Q-Axis Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the q-axis proportional gain under the automatic current regulator.	1.000 (0.001~4.000)

✧ d08.13: ACR Q-Axis Integral Gain

Code (Address) Property	Name	Description	Default (Range)
d08.13 (0x680D) RUN	Q-Axis Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the q-axis integral gain under the automatic current regulator.	1.000 (0.001~4.000)

✧ d08.14: ACR Optimization

Code (Address) Property	Name	Description	Default (Range)
d08.14 (0x680E) RUN	ACR Optimization	V/F SVC FVC PMV/F PMSVC PMFVC Set the current loop optimization configuration.	Up to model (0~0)

Note:

0: OFF

1: ON

Ones-bit: Voltage feedforward enable

Tens-bit: Current prediction control

Hundreds-bit: Current loop gain

✧ d08.15: Torque Limit under Motoring

Code (Address) Property	Name	Description	Default (Range)
d08.15 (0x680F) RUN	Motoring Torque Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque limit when motor is running with load.	250.0% (0.0%~400.0%)

Note: 100.0% of the motor rated frequency.

✧ **d08.16: Torque Limit under Generating**

Code (Address) Property	Name	Description	Default (Range)
d08.16 (0x6810) RUN	Generating Torque Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque limit in power generation mode.	250.0% (0.0%~400.0%)

Note: 100.0% of the motor rated frequency.

The motor torque output is also limited by F10.01 [Anti-OC Limit] and d02.34 [Output Power Limit].

✧ **d02.17: Motoring Torque Limit Source**

Code (Address) Property	Name	Description	Default (Range)
d02.17 (0x6811) RUN	Motoring Torque Limit Source	V/F SVC FVC PMV/F PMSVC PMFVC Select the source for the motoring torque limit.	250.0% (0.0%~400.0%)

Note:

- 0: Keypad
- 1: Reserved
- 2: AI1
- 3: AI2
- 4: Reserved
- 5: PUL terminal
- 6: RS485 (0x3014)
- 7: Extension

✧ **d08.18: Regenerative Torque Limit Frequency**

Code (Address) Property	Name	Description	Default (Range)
d08.18 (0x6812) RUN	Generating Torque Limit	V/F SVC FVC PMV/F PMSVC PMFVC Select the source for the generating (regenerative) torque limit.	250.0% (0.0%~400.0%)

Note:

- 0: Keypad
- 1: Reserved
- 2: AI1
- 3: AI2
- 4: Reserved
- 5: PUL terminal
- 6: RS485 (0x3014)
- 7: Extension

✧ **d08.19: Torque Limit**

Code (Address) Property	Name	Description	Default (Range)
d08.19 (0x6813) RUN	Torque Limit View	V/F SVC FVC PMV/F PMSVC PMFVC Select the torque limit value displayed for monitoring.	0 (0~1)

Note:

- 0: C00.06 displays the torque limit value during motoring
- 1: C00.06 displays the torque limit value during generating

14.38.3 d08.2x: Torque Optimization

PM Pull-in Current

The pull-in current is mainly used to enhance the load capacity of the motor at low frequencies. Parameter d08.22 [Pull-in Current Frequency] defines the low/high frequency threshold. For heavy low-frequency loads, increase the pull-in current appropriately. Excessive values, however, reduce motor efficiency – adjust based on actual load conditions.

✧ d08.20: PM LF Pull-In Current

Code (Address) Property	Name	Description	Default (Range)
d08.20 (0x6814) RUN	PM LF Pull-in Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the low-frequency pull-in current for permanent magnet synchronous motors.	20.0% (0.0%~50.0%)

Note: 100.0% of the motor rated current.

✧ d08.21: PM HF Pull-In Current

Code (Address) Property	Name	Description	Default (Range)
d08.21 (0x6815) RUN	PM HF Pull-in Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency pull-in current for permanent magnet synchronous motors.	10.0% (0.0%~50.0%)

Note: 100.0% of the motor rated current.

✧ d08.22: PM Pull-In Current Frequency

Code (Address) Property	Name	Description	Default (Range)
d08.22 (0x6816) RUN	PM Pull-in Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the pull-in current frequency for permanent magnet synchronous motors.	10.0% (0.0%~100.0%)

Note: The set value 100.0% corresponds to F01.10 [Max. Frequency].

Slip Compensation

For AM vector control, the slip compensation coefficient is used to adjust the motor accuracy under open loop. The value should be increased when the motor speed with load is lower than the set value, vice versa. Recommended for this parameter: 60%~160.0%.

For closed-loop, the slip compensation coefficient is used to adjust the linearity of the motor output torque and output current. For a motor with a rated load, decrease the value when the motor current is higher than the nameplate rated value, and increase when lower. Recommended for this parameter: 80%~120%.

✧ d08.23: Slip Compensation

Code (Address) Property	Name	Description	Default (Range)
d08.23 (0x6817) RUN	Slip Compensation	V/F SVC FVC PMV/F PMSVC PMFVC Set the motor slip compensation.	100.0% (0.0%~250.0%)

✧ d08.24: Initial Start Torque

Code (Address) Property	Name	Description	Default (Range)
d08.24 (0x6818) RUN	Initial Start Torque	V/F SVC FVC PMV/F PMSVC PMFVC Set the initial starting torque.	0.0% (0.0%~250.0%)

14.38.4 d08.25~d08.3x: Flux Optimization

✧ d08.25: Flux Control Gain

Code (Address) Property	Name	Description	Default (Range)
d08.25 (0x6819) RUN	Flux Control Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control gain.	0 (0~1000.0)

Note: Effective for asynchronous motors only. A non-zero value enables asynchronous motor flux control.

✧ d08.26: Flux Control Integral Gain

Code (Address) Property	Name	Description	Default (Range)
d08.26 (0x681A) RUN	Flux Control Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control integral gain.	0 (0~1000.0)

Note: Effective for asynchronous motors only. A non-zero value enables asynchronous motor flux control.

✧ d08.27: Flux Given Gain

Code (Address) Property	Name	Description	Default (Range)
d08.27 (0x681B) RUN	Flux Control Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux control integral gain.	0 (0~2000)

✧ d08.29: Flux Range

Code (Address) Property	Name	Description	Default (Range)
d08.29 (0x681D) RUN	Flux Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the flux range.	0.0% (0.0%~150.0%)

Note: Effective for synchronous motors only. Used to limit the field-weakening depth.

Field-weakening Control

For vector control of asynchronous or synchronous motors, flux-weakening control is required if the motor speed exceeds rated speed or if bus voltage is low while the motor is near rated speed, to maintain speed tracking.

d08.32 sets the maximum flux-weakening current. Excessive current can cause irreversible demagnetization, while keeping it within the motor's rated current usually prevents this issue.

d08.30 to d08.31 are used to set the flux-weakening control parameters. If instability occurs during flux-weakening, these parameters can be adjusted for tuning.

✧ d08.30: Field-weakening Feed-forward Coefficient

Code (Address) Property	Name	Description	Default (Range)
d08.30 (0x681E) RUN	Field-weakening Feed-forward Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the feed-forward coefficient under field weakening control.	10.0% (0.0%~500.0%)

✧ d08.31: Field-weakening Control Gain

Code (Address) Property	Name	Description	Default (Range)
d08.31 (0x681F) RUN	Field-weakening Control Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the control gain under field weakening control.	10.0% (0.0%~500.0%)

✧ **d08.32: Field-weakening Current Limit**

Code (Address) Property	Name	Description	Default (Range)
d08.32 (0x6820) RUN	Field-weakening Current Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the current upper limit under field weakening control.	60.0% (0.0%~250.0%)

Note: 100.0% of the motor rated current.

✧ **d08.33: Field-weakening Voltage Coefficient**

Code (Address) Property	Name	Description	Default (Range)
d08.33 (0x6821) RUN	Field-weakening Voltage Coefficient	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage coefficient under field weakening control.	97.0% (0.0%~120.0%)

✧ **d08.34: Output Power Limit**

Code (Address) Property	Name	Description	Default (Range)
d08.34 (0x6822) RUN	Output Power Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the axis output power limit.	250.0% (0.0%~400.0%)

Note: 100.0% of the motor rated power.

Over-excitation Brake

Vector control of asynchronous motors is effective. Over-excitation enables faster deceleration without overvoltage alarms. Higher over-excitation gain speeds up the response, and a larger braking current limit (compared to rated excitation) improves braking effect. However, excessive current limiting can raise motor temperature during deceleration. This value can be increased only if the motor has good heat dissipation.

✧ **d08.35: Over-excitation Brake Gain**

Code (Address) Property	Name	Description	Default (Range)
d08.35 (0x6823) RUN	Over-excitation Brake Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the over-excitation brake gain.	100.0% (0.0%~500.0%)

✧ **d08.36: Over-excitation Brake Range**

Code (Address) Property	Name	Description	Default (Range)
d08.36 (0x6824) RUN	Over-excitation Brake Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the over-excitation brake range.	100.0% (0.0%~250.0%)

ECO Mode

In energy-saving mode, vector control of asynchronous motors reduces output current automatically based on torque analysis, lowering heating losses and achieving energy savings.

✧ **d08.37: ECO Mode**

Code (Address) Property	Name	Description	Default (Range)
d08.37 (0x6825) RUN	ECO Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the ECO mode function on/off.	0 (0~1)

0: OFF

1: ON

Note: Effective only when F03.25≠0.

✧ **d08.38: Min ECO Excitation**

Code (Address) Property	Name	Description	Default (Range)
d08.38 (0x6826) RUN	Min ECO Excitation	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower limit of energy-saving excitation.	50.0% (0.0%~80.0%)

Note: 100.0% of the motor rated excitation.

✧ **d08.39: ECO Filter Time**

Code (Address) Property	Name	Description	Default (Range)
d08.39 (0x6827) RUN	ECO Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the filter time of energy-saving running.	0.010s (0.000s~6.000s)

14.38.5 d08.4x: PM HF Injection

The high-frequency injection function can only be used at low speed (the default is 10% of the motor rated frequency), and its main function is to improve the torque output capability.

✧ **d08.40: HF Injection Mode**

Code (Address) Property	Name	Description	Default (Range)
d08.40 (0x6828) STOP	HF Injection Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency injection mode.	0x0000 (0x0000~0x1005)

Ones-bit:

PM open-loop control valid: please select 0 with SPM and 0~5 with IPM.

0: OFF

1~5: ON, the greater the value, the higher the injection frequency.

Note: When the motor has less convex polarity (i.e., when the d01.22/d01.21 ratio is lower than 1.5), the effect of the high-frequency injection on the output torque of the motor will be weakened.

Thousands-bit: Effective when ones-bit≠0.

0: Random carrier injection

1: Fixed carrier injection

✧ **d08.41: HF Injection Voltage**

Code (Address) Property	Name	Description	Default (Range)
d08.41 (0x6829) RUN	HF Injection Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency injection voltage.	10.0% (0.0%~100.0%)

Note: 100% of the motor rated voltage. Need no modification after auto-tuning.

✧ **d08.68: HF Injection OFF Frequency**

Code (Address) Property	Name	Description	Default (Range)
d08.42 (0x682A) RUN	HF Injection OFF Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency injection off frequency.	10.0% (0.0%~20.0%)

Set the high-frequency injection range (relative to motor rated frequency). It is valid when the motor speed is lower than this value.

✧ **d08.46: HF Injection Carrier**

Code (Address) Property	Name	Description	Default (Range)
d08.68 (0x683E) RUN	HF Injection Carrier	V/F SVC FVC PMV/F PMSVC PMFVC Set the high-frequency injection carrier frequency.	0.0kHz (0.0kHz~1.0kHz)

14.38.6 d08.5x~d08.9x: VC Extension Control

IF Control

✧ **d08.52: IF Control Current**

Code (Address) Property	Name	Description	Default (Range)
d08.52 (0x6834) RUN	IF Control Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the IF control current.	60.0% (0.0%~400.0%)

Set the current under IF control, where 100% equals the motor's rated current.

✧ **d08.53: IF Control Frequency**

Code (Address) Property	Name	Description	Default (Range)
d08.53 (0x6835) RUN	IF Control Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the IF control off frequency.	0.0% (0.0%~100.0%)

100% corresponds to the motor rated frequency. IF control is enabled when the operating frequency is lower than this value.

Fly Track

Before the AC drive starts, the motor rotor may be freely rotating. Starting under this condition may cause overcurrent, overload, or overvoltage faults, and in severe cases may damage the power devices. The fly track function detects the actual motor speed and phase, enabling smooth, shock-free startup of a rotating motor.

✧ **d08.55: SPLL Fly Track Proportional Gain**

Code (Address) Property	Name	Description	Default (Range)
d08.55 (0x6837) RUN	SPLL Fly Track Proportional Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the proportional gain for SPLL fly track.	1.00 (0.00~655.35)

✧ **d08.56: SPLL Fly Track Integral Gain**

Code (Address) Property	Name	Description	Default (Range)
d08.56 (0x6838) RUN	SPLL Fly Track Integral Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the integral gain for SPLL fly track.	5.00 (0.00~655.35)

✧ **d08.58: Fly Track Excitation Frequency**

Code (Address) Property	Name	Description	Default (Range)
d08.58 (0x683A) RUN	Fly Track Excitation Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the excitation frequency for software speed tracking.	0 (0~65535)

When set to a non-zero value, this parameter is used to adjust the frequency during the excitation stage.

✧ **d08.59: Fly Track Excitation Time**

Code (Address) Property	Name	Description	Default (Range)
d08.59 (0x683B) RUN	Fly Track Excitation Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the excitation time for fly track.	200 (0~65535)

Set the excitation time when no residual magnetism is present.

MTPA Function

MTPA function is to optimize the PM excitation to maximize the motor output/motor current. When there is a big difference between the inductance of D and Q axes of the PM motor, [d08.80] can be used to reduce the motor current with the same loads; [d08.81] can be used to improve the stability of the motor operation. This function is only valid for the PM closed-loop vector mode.

✧ d08.60: PM MTPA Gain

Code (Address) Property	Name	Description	Default (Range)
d08.60 (0x683D) RUN	PM MTPA Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the MTPA gain for permanent magnet synchronous motors.	100.0% (0.0%~400.0%)

✧ d08.61: PM MTPA Filter Time

Code (Address) Property	Name	Description	Default (Range)
d08.61 (0x683E) RUN	PM MTPA Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the MTPA filter time for permanent magnet synchronous motors.	1.0ms (0.0ms~100.0ms)

Direct Flux Vector

✧ d08.77: Direct Flux Vector Mode

Code (Address) Property	Name	Description	Default (Range)
d08.77 (0x684D) STOP	Direct Flux Vector Mode	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Direct Flux Vector 0: OFF 3: ON	0x0000 (0x0000~ 0xFFFF)

14.39 d09: V/F Control

14.39.1 d09.0x: V/F Control

V/F Curve

✧ d09.00: V/F Curve

Code (Address) Property	Name	Description	Default (Range)
d09.00 (0x6900) STOP	V/F Curve	V/F SVC FVC PMV/F PMSVC PMFVC Set the V/F curve.	0 (0~11)

0: Linear V/F curve

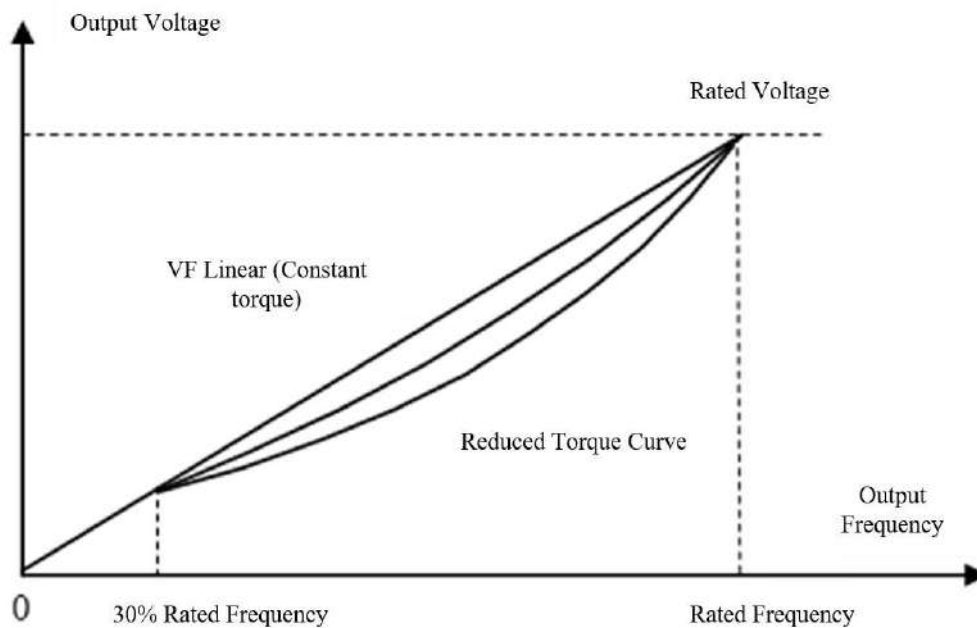
1~9: 1.1-1.9 power V/F curves respectively

10: Square V/F curve

11: Custom V/F curve

Note:

- 1. d09.00 [V/F Curve] = 11 (User-defined V/F curve), set by d09.10 to d09.19.
- Linear and torque reduction curve is as follows. Torque reduction V/F curve is valid above 0.3 times rated frequency of motor.



V/F Linear vs. Reduced Torque Curve Schematic

Torque Boost

◇ d09.01: Torque Boost

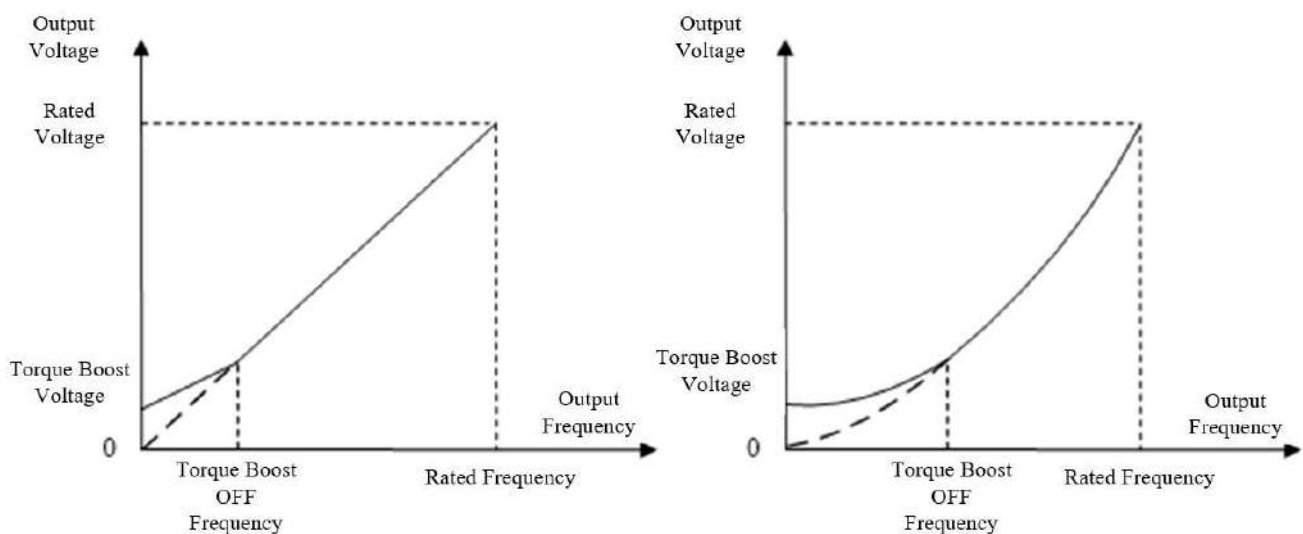
Code (Address) Property	Name	Description	Default (Range)
d09.01 (0x6901) RUN	Torque Boost	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque boost.	Up to model (0.0%~30.0%)

0.0: Automatic torque boost to compensate for loss on stator resistance.

Others: Fixed torque boost

Note:

- When d09.01 [Torque Boost] = 0.0 (automatic torque boost), the accurate stator resistance value can be obtained by F02.07=3 auto-tuning, which can keep the motor output in the best state.
- Fixed torque boost with V/F linear curve is as follows.



Fixed Torque Boost Schematic

✧ **d09.02: Torque Boost OFF Frequency**

Code (Address) Property	Name	Description	Default (Range)
d09.02 (0x6902) RUN	Torque Boost OFF Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the torque boost off frequency.	100.0% (0.0%~100.0%)

Note: 100% of the motor rated frequency.

Slip Compensation

This function enables the output frequency of the drive to automatically change with the motor load within the set range to dynamically compensate the motor slip frequency, so as to keep the motor at a constant speed, thus reducing the effect of load variation on the motor speed.

✧ **d09.03: Slip Compensation Gain**

Code (Address) Property	Name	Description	Default (Range)
d09.03 (0x6903) RUN	Slip Compensation Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the slip compensation gain.	0.0% (0.0%~200.0%)

✧ **d09.04: Slip Compensation Range**

Code (Address) Property	Name	Description	Default (Range)
d09.04 (0x6904) RUN	Slip Compensation Range	V/F SVC FVC PMV/F PMSVC PMFVC Set the slip compensation range.	100.0% (0.0%~300.0%)

Note: 100% of the rated slip frequency.

✧ **d09.05: Slip Compensation Filter Time**

Code (Address) Property	Name	Description	Default (Range)
d09.05 (0x6905) RUN	Slip Compensation Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the slip compensation filter time.	0.200s (0.000s~6.000s)

Anti Oscillation Gain

In medium to high-power motor applications, unstable motor current and speed oscillations may occur due to low-frequency resonance caused by combined electrical and mechanical effects, while small-power motors typically show less noticeable oscillations. By adjusting d09.06 and d09.07, low-frequency resonance can be suppressed, and the anti-oscillation gain value can be gradually increased on the premise of stability.

✧ **d09.06: Anti-oscillation Gain**

Code (Address) Property	Name	Description	Default (Range)
d09.06 (0x6906) RUN	Anti-oscillation Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the anti-oscillation gain.	100.0% (0.0%~900.0%)

✧ **d09.07: Anti Oscillation Filter Time**

Code (Address) Property	Name	Description	Default (Range)
d09.07 (0x6907) RUN	Anti Oscillation Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the anti-oscillation filter time.	1.0s (0.0s~100.0s)

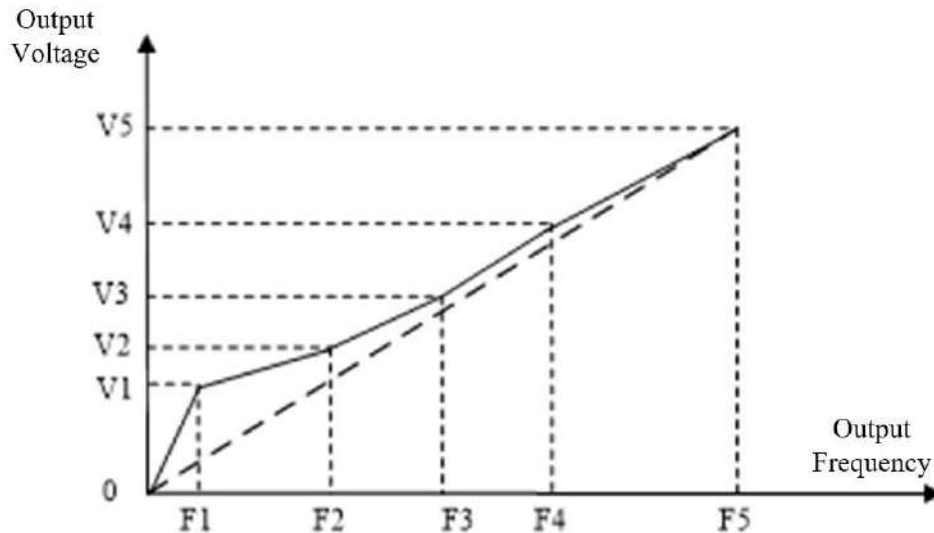
V/F Output Voltage Ratio

✧ d09.08: Output Voltage Percentage

Code (Address) Property	Name	Description	Default (Range)
d09.08 (0x6908) STOP	Output Voltage Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the output voltage percentage, 100% of it corresponds to the motor rated voltage.	100.0% (25.0%~120.0%)

14.39.2 d09.1x: User-defined V/F Curves

This product provides 5 sets of voltage-frequency ratios to meet the needs of various motors.



Customized Curve Schematic

✧ d09.10: User-Defined Voltage 1

Code (Address) Property	Name	Description	Default (Range)
d09.10 (0x690A) STOP	User-Defined Voltage 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage 1. 100.0% corresponds to the motor rated voltage.	3.0% (0.0%~100.0%)

✧ d09.11: User-Defined Frequency 1

Code (Address) Property	Name	Description	Default (Range)
d09.11 (0x690B) STOP	User-Defined Frequency 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency 1.	1.00Hz (0.00Hz~F01.10)

✧ d09.12: User-Defined Voltage 2

Code (Address) Property	Name	Description	Default (Range)
d09.12 (0x690C) STOP	User-Defined Voltage 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage 2. 100.0% corresponds to the motor rated voltage.	28.0% (0.0%~100.0%)

✧ d09.13: User-Defined Frequency 2

Code (Address) Property	Name	Description	Default (Range)
d09.13 (0x690D) STOP	User-Defined Frequency 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency 2.	10.00Hz (0.00Hz~F01.10)

✧ d09.14: User-Defined Voltage 3

Code (Address) Property	Name	Description	Default (Range)
d09.14 (0x690E) STOP	User-Defined Voltage 3	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage 3. 100.0% corresponds to the motor rated voltage.	55.0% (0.0%~100.0%)

✧ d09.15: User-Defined Frequency 3

Code (Address) Property	Name	Description	Default (Range)
d09.15 (0x690F) STOP	User-Defined Frequency 3	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency 3.	25.00Hz (0.00Hz~F01.10)

✧ d09.16: User-Defined Voltage 4

Code (Address) Property	Name	Description	Default (Range)
d09.16 (0x6910) STOP	User-Defined Voltage 4	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage 4. 100.0% corresponds to the motor rated voltage.	78.0% (0.0%~100.0%)

✧ d09.17: User-Defined Frequency 4

Code (Address) Property	Name	Description	Default (Range)
d09.17 (0x6911) STOP	User-Defined Frequency 4	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency 4.	37.50Hz (0.00Hz~F01.10)

✧ d09.18: User-Defined Voltage 5

Code (Address) Property	Name	Description	Default (Range)
d09.18 (0x6912) STOP	User-Defined Voltage 5	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined voltage 5. 100.0% corresponds to the motor rated voltage.	100.0% (0.0%~100.0%)

✧ d09.19: User-Defined Frequency 5

Code (Address) Property	Name	Description	Default (Range)
d09.19 (0x6913) STOP	User-Defined Frequency 5	V/F SVC FVC PMV/F PMSVC PMFVC Set the user-defined frequency 5.	50.00Hz (0.00Hz~F01.10)

14.39.3 d09.2x: Voltage-Frequency/Current-Frequency Decoupled Control

This group enables independent control of output voltage and output frequency, or output current and output frequency.

After the run command activates, the output voltage and frequency change based on their set acceleration and deceleration times.

After the stop command activates, the output voltage and frequency change based on their set acceleration and deceleration times, with the stop mode selected via d09.26.

Related parameters:

	Source	ACC/DEC Time	Comment
Frequency	F01.02	F01.22, F01.23	
Voltage	d09.21	d09.22, d09.23	

Note:

- When the V/F-Split function is active, the output voltage decreases during overcurrent suppression.
- When the stop command is active and the output frequency falls below the stop detection frequency set in F09.11, the drive switches to a stop state.

✧ **d09.20: Coil Voltage/Current Source A**

Code (Address) Property	Name	Description	Default (Range)
d09.20 (0x6914) RUN	Coil Voltage/Current Source A	V/F SVC FVC PMV/F PMSVC PMFVC 0: Voltage/current percentage 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL 6: RS485 7: Extension (0x31 group) 8: PID target 9: Voltage/current value	0 (0~65535)

✧ **d09.21: Coil Voltage/Current Source B**

Code (Address) Property	Name	Description	Default (Range)
d09.21 (0x6915) RUN	Coil Voltage/Current Source B	V/F SVC FVC PMV/F PMSVC PMFVC 0: Voltage/current percentage 1: Reserved 2: AI1 3: AI2 4: Reserved 5: PUL 6: RS485 7: Extension (0x31 group) 8: PID target 9: Voltage/current value	0 (0~65535)

✧ **d09.22: Coil Voltage/Current Source Combination**

Code (Address) Property	Name	Description	Default (Range)
d09.22 (0x6916) RUN	Coil Voltage/Current Source Combination	V/F SVC FVC PMV/F PMSVC PMFVC 0: Source A 1: Source B 2: Source A+Source B 3: Source A-Source B 4: Max. (A, B) 5: Min. (A or B)	0 (0~5)

✧ **d09.23: V/F-Split Output Voltage**

Code (Address) Property	Name	Description	Default (Range)
d09.23 (0x6917) RUN	Coil Voltage/Current	V/F SVC FVC PMV/F PMSVC PMFVC Define the coil output voltage/current.	0.00% (0.00%~110.00%)

Note: V/F-SPLIT output is blocked when the output voltage is set to 0%. 100% of it corresponds to the motor rated voltage. Output is blocked when the output current is set to 0%. 100% of it corresponds to the motor rated current.

✧ **d09.24~d09.25: Coil Voltage/Current ACC/DEC Time**

Code (Address) Property	Name	Description	Default (Range)
d09.24 (0x6918) RUN	Coil Voltage/Current ACC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the coil voltage/current acceleration time.	10.00s (0.00s~100.00s)
d09.25 (0x6919) RUN	Coil Voltage/Current DEC Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the coil voltage/current deceleration time.	10.00s (0.00s~100.00s)

✧ **d09.26: Coil Stop Mode**

Code (Address) Property	Name	Description	Default (Range)
d09.26 (0x691A) RUN	Coil Stop Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the coil control stop mode. 0: ACC/DEC of output voltage/current and that of output frequency do not affect each other 1: Output frequency decreases only after the output voltage drops to 0V or the output current drops to F04.28.	0 (0~1)

✧ **d09.27: Coil Voltage/Current Value Setting**

Code (Address) Property	Name	Description	Default (Range)
d09.27 (0x691B) RUN	Coil Voltage/Current Value Setting	V/F SVC FVC PMV/F PMSVC PMFVC Set the coil output voltage/current value.	0.00V/A (0.00V/A~600.00V/A)

✧ **d09.28: Frequency Drop Current Threshold**

Code (Address) Property	Name	Description	Default (Range)
d09.28 (0x691C) RUN	Frequency Drop Current Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the current percentage at which the frequency starts to decrease.	0.00 (0.00%~110.00%)

When F04.26=1, the output current decreases first. Once it falls below F04.28, the output frequency begins to decrease. 100% of it corresponds to the motor rated current.

✧ **d09.29: Coil Control Mode**

Code (Address) Property	Name	Description	Default (Range)
d09.29 (0x691D) RUN	Coil Control Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the coil control mode. 0: V/F-SPLIT mode 1: I/F-SPLIT mode	0.00 (0.00%~110.00%)

14.39.4 d09.3x: V/F ECO Mode

The drive automatically adjusts the output voltage to improve motor efficiency and achieve energy savings after entering constant speed in light-load conditions.

✧ **d09.30: V/F ECO Function**

Code (Address) Property	Name	Description	Default (Range)
d09.30 (0x691E) STOP	V/F ECO Function	V/F SVC FVC PMV/F PMSVC PMFVC Set the V/F ECO function on or off.	0 (0~1)

0: OFF

1: ON

✧ **d09.31: V/F ECO Min. Frequency**

Code (Address) Property	Name	Description	Default (Range)
d09.31 (0x691F) STOP	V/F ECO Min. Frequency	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower frequency limit of the ECO mode.	15.00Hz (0.00Hz~50.00Hz)

Note: The automatic ECO mode will stop when the drive's output frequency is below this value.

✧ **d09.32: V/F ECO Min. Voltage**

Code (Address) Property	Name	Description	Default (Range)
d09.32 (0x6920) STOP	V/F ECO Min. Voltage	V/F SVC FVC PMV/F PMSVC PMFVC Set the lower voltage limit of the ECO mode.	50.0% (20.0%~100.0%)

Note: 100.0% corresponds to the output voltage at the current output frequency without ECO control.

✧ **d09.33: V/F ECO Voltage DEC Rate**

Code (Address) Property	Name	Description	Default (Range)
d09.33 (0x6921) RUN	V/F ECO Voltage DEC Rate	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage deceleration rate under the V/F ECO mode.	0.010V/ms (0.000V/ms~0.200V/ms)

✧ **d09.34: V/F ECO Voltage ACC Rate**

Code (Address) Property	Name	Description	Default (Range)
d09.34 (0x6922) RUN	V/F ECO Voltage ACC Rate	V/F SVC FVC PMV/F PMSVC PMFVC Set the voltage acceleration rate under the V/F ECO mode.	0.200V/ms (0.000V/ms~2.000V/ms)

✧ **d09.35: Over-excitation Gain**

Code (Address) Property	Name	Description	Default (Range)
d09.35 (0x6923) RUN	Overexcitation Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the over-excitation gain.	64 (0~200)

14.40 E00: IO Extension Input

Note: For detailed E00 group parameters, please refer to the AC600 I/O Black Box Extension Card Manual.

E00.0x: Extension Parameters

Set according to the slot position where the I/O extension card is installed.

✧ E00.00~02: Extension IO Source Selection

Code (Address) Property	Name	Description	Default (Range)
E00.00 (0x7000) STOP	Extension IO1 Source	V/F SVC FVC PMV/F PMSVC PMFVC Set the slot position of I/O extension card 1.	1 (0~3)
E00.01 (0x7001) STOP	Extension IO2 Source	V/F SVC FVC PMV/F PMSVC PMFVC Set the slot position of I/O extension card 2.	0 (0~3)
E00.02 (0x7002) STOP	Extension IO3 Source	V/F SVC FVC PMV/F PMSVC PMFVC Set the slot position of I/O extension card 3.	0 (0~3)

0: None

1: Slot 1

2: Slot 2

3: Slot 3

E00.1x~3x: Extension DI Terminal

✧ E00.10~13: Extension X7~X10 Function

Code (Address) Property	Name	Description	Default (Range)
E00.10 (0x700A) STOP	Extension X7 Function	V/F SVC FVC PMV/F PMSVC PMFVC Set the function of extension terminal X7; see F5.0x Terminal Function for details.	0 (0~95)
E00.11 (0x700B) STOP	Extension X8 Function	V/F SVC FVC PMV/F PMSVC PMFVC Set the function of extension terminal X8; see F5.0x Terminal Function for details.	0 (0~95)
E00.12 (0x700C) STOP	Extension X9 Function	V/F SVC FVC PMV/F PMSVC PMFVC Set the function of extension terminal X9; see F5.0x Terminal Function for details.	0 (0~95)
E00.13 (0x700D) STOP	Extension X10 Function	V/F SVC FVC PMV/F PMSVC PMFVC Set the function of extension terminal X10; see F5.0x Terminal Function for details.	0 (0~95)

✧ E00.18: X7~X10 Terminal Characteristics

Code (Address) Property	Name	Description	Default (Range)
E00.18 (0x7012) RUN	X7~X10 Terminal Characteristics	V/F SVC FVC PMV/F PMSVC PMFVC 0: ON when closed 1: ON when open Ones-bit: X7 terminal Tens-bit: X8 terminal Hundreds-bit: X9 terminal Thousands-bit: X10 terminal	0x0000 (0x0000~0x1111)

Note: The drive defaults to valid when closed. If it is selected to open to be valid, pay attention to the closed-loop signal after it is powered up. If the terminal is opened, it will also output closed-loop signal for some time.

Ones-bit: X1 terminal

0: Valid when closed

1: Valid when open

Tens-bit: X2 terminal

0: Valid when closed

1: Valid when open

Hundreds-bit: X3 terminal

0: Valid when closed

1: Valid when open

Ones-bit: X4 terminal

0: Valid when closed

1: Valid when open

✧ **E00.20~E00.21: X7 ON/OFF Delay**

Code (Address) Property	Name	Description	Default (Range)
E00.20 (0x7014) RUN	X7 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X7 from OFF to ON.	0.010s (0.000s~60.000s)
E00.21 (0x7015) RUN	X7 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X7 from ON to OFF.	0.010s (0.000s~60.000s)

Note:

- Increasing the ON/OFF delay of X7-X10 enhances the signal filtering effect of the corresponding input terminals.
- The monitor record of output terminal X7 is its value after E00.20 [X7 ON Delay] and E00.21 [X7 OFF Delay].
- The fault record of output terminal X1 is its value after E00.20 [X7 ON Delay] and E00.21 [X7 OFF Delay].
- E00.22 [X8 ON Delay]~E00.27 [X10 OFF Delay] are the same as E00.20 [X7 ON Delay] and E00.21 [X7 OFF Delay].

✧ **E00.22~E00.23: X8 ON/OFF Delay**

Code (Address) Property	Name	Description	Default (Range)
E00.22 (0x7016) RUN	X8 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X8 from OFF to ON.	0.010s (0.000s~60.000s)
E00.23 (0x7017) RUN	X8 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X8 from ON to OFF.	0.010s (0.000s~60.000s)

✧ **E00.24~E00.25: X9 ON/OFF Delay**

Code (Address) Property	Name	Description	Default (Range)
E00.24 (0x7018) RUN	X9 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X9 from OFF to ON.	0.010s (0.000s~60.000s)
E00.25 (0x7019) RUN	X9 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X9 from ON to OFF.	0.010s (0.000s~60.000s)

✧ **E00.26~E00.27: X10 ON/OFF Delay**

Code (Address) Property	Name	Description	Default (Range)
E00.26 (0x701A) RUN	X10 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X10 from OFF to ON.	0.010s (0.000s~60.000s)
E00.27 (0x701B) RUN	X10 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal X10 from ON to OFF.	0.010s (0.000s~60.000s)

E00.4x~5x: Extension AI Terminal

There are two analog AI inputs and one extension AI3 input with voltage input range of 0.00V~10.00V and current input range of 0.00mA~20.00mA.

✧ **E00.40: Extension AI3 Type**

Code (Address) Property	Name	Description	Default (Range)
E00.40 (0x7028) RUN	Extension AI3 Type	V/F SVC FVC PMV/F PMSVC PMFVC Set the extension AI3 signal type.	0 (0~1)

0: Voltage 0.00V~10.00V**1: Current 0.00mA~20.00mA**✧ **E00.41: Extension AI3 Curve**

Code (Address) Property	Name	Description	Default (Range)
E00.41 (0x7029) STOP	Extension AI3 Curve	V/F SVC FVC PMV/F PMSVC PMFVC Set the extension AI3 curve.	0x0000 (0x0000~0x0003)

Ones-bit: AI3 curve

0: Straight line 1 (straight line between two points; defaulted)

1: Straight line 2 (straight line between two points)

2: Curve 1 (fold between several points)

3: Curve 2 (fold between several points)

✧ **E00.42~E00.51: Extension Line Setting**

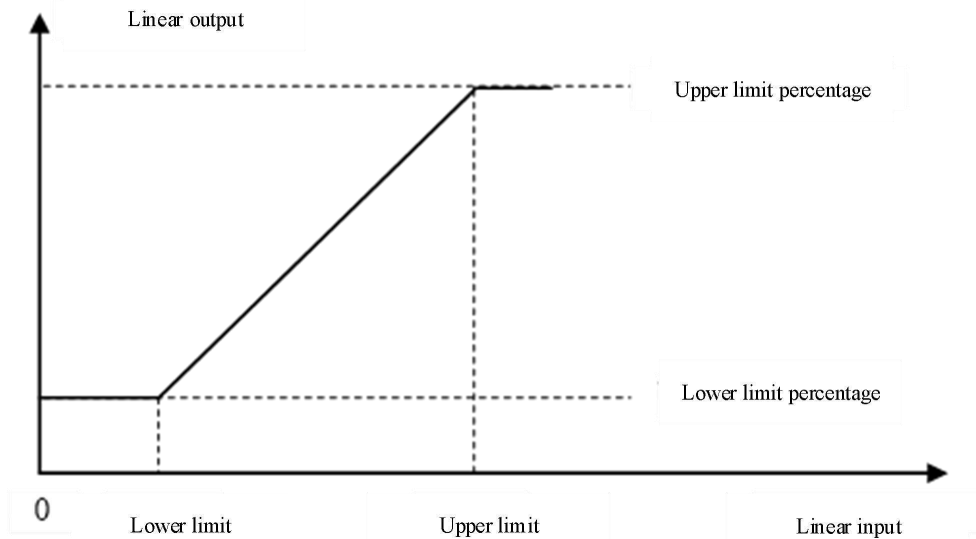
Code (Address) Property	Name	Description	Default (Range)
E00.42 (0x702A) RUN	Line 1 Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Define the signal received by the terminal. If the voltage signal is below this value, drive will process by this setting.	0.0% (-100.0%~100.0%)
E00.43 (0x702B) RUN	Line 1 Lower Limit Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the line 1 lower limit.	0.00% (-100.00%~100.00%)
E00.44 (0x702C) RUN	Line 1 Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Define the signal received by the terminal. If the voltage signal is above this value, drive will process by this setting.	100.0% (-100.0%~100.0%)
E00.45 (0x702D) RUN	Line 1 Upper Limit Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the line 1 upper limit.	100.00% (-100.00%~100.00%)
E00.46 (0x702E) RUN	Line 1 Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Define the size of the filter applied to the analog signal to remove interfering signals.	0.100s (0.000s~6.000s)
E00.47 (0x702F) RUN	Line 2 Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Define the signal received by the terminal. If the voltage signal is below this value, drive will process by this setting.	0.0% (-100.0%~100.0%)
E00.48 (0x7030) RUN	Line 2 Lower Limit Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the line 2 lower limit.	0.00% (-100.00%~100.00%)
E00.49 (0x7031) RUN	Line 2 Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Define the signal received by the terminal. If the voltage signal is above this value, drive will process by this setting.	100.0% (-100.0%~100.0%)
E00.50 (0x7032) RUN	Line 2 Upper Limit Percentage	V/F SVC FVC PMV/F PMSVC PMFVC Set the percentage of the line 2 upper limit.	100.00% (-100.00%~100.00%)
E00.51 (0x7033) RUN	Line 2 Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Define the size of the filter applied to the analog signal to remove interfering signals.	0.100s (0.000s~6.000s)

Note: The application value of AI3 is the corresponding value after curve processing.

Example: Taking AI3 – Line 1 as an example, the usage instructions are as follows:

AI3 Signal	Per-unit Sampling
0V~10V	0.0%~100.0%
0mA~20mA	0.0%~100.0%

AI3 linear processing is shown below:



AI3 Linear Processing

E00.5x~7x: Extension PT Terminal

Code (Address)	Name	Description	Default (Range)
E00.55 (0x7037) RUN	PT Terminal Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: Disabled 1: PT100 2: PT1000 3: KTY84 Ones-bit: PT1 type Tens-bit: PT2 type Hundreds-bit: PT3 type	0x0201 (0x0000~0x0311)
E00.56 (0x7038) RUN	Temp. Alarm Mode	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Report alarm and free stop 2: Report alarm and continue operation Ones-bit: Temp.1 mode Tens-bit: Temp.2 mode Hundreds-bit: Temp.3 mode	0x0000 (0x0000~0x2222)
E00.57 (0x7039) RUN	Temp.1 Source	V/F SVC FVC PMV/F PMSVC PMFVC 0: Disabled 1: PT1 2: PT2 3: PT3	1 (0~3)
E00.58 (0x703A) RUN	Overheat Error 1 Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the overheat error threshold for temperature 1.	120.0 (0.0~200.0)
E00.59 (0x703B) RUN	Overheat Error 1 Hysteresis	V/F SVC FVC PMV/F PMSVC PMFVC Set the overheat error hysteresis for temperature 1.	5.0 (0.0~20.0)
E00.60 (0x703C) RUN	Overheat Alarm 1 Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the overheat alarm threshold for temperature 1.	90.0 (90.0~150.0)

E00.61 (0x703D) RUN	Overheat Alarm 1 Hysteresis	V/F SVC FVC PMV/F PMSVC PMFVC Set the overheat alarm hysteresis for temperature 1.	5.0 (0.0~20.0)
E00.62 (0x703E) RUN	Temp.2 Source	V/F SVC FVC PMV/F PMSVC PMFVC 0: Disabled 1: PT1 2: PT2 3: PT3	2 (0~3)
E00.63 (0x703F) RUN	Overheat Error 2 Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the overheat error threshold for temperature 2.	120.0 (0.0~200.0)
E00.64 (0x7040) RUN	Overheat Error 2 Hysteresis	V/F SVC FVC PMV/F PMSVC PMFVC Set the overheat error hysteresis for temperature 2.	5.0 (0.0~20.0)
E00.65 (0x7041) RUN	Overheat Alarm 2 Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the overheat alarm threshold for temperature 2.	90.0 (90.0~150.0)
E00.66 (0x7042) RUN	Overheat Alarm 2 Hysteresis	V/F SVC FVC PMV/F PMSVC PMFVC Set the overheat alarm hysteresis for temperature 2.	5.0 (0.0~20.0)
E00.67 (0x7043) RUN	Temp.3 Source	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: PT1 terminal 2: PT2 terminal 3: PT3 terminal	3 (0~3)
E00.68 (0x7044) RUN	Overheat Error 3 Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the overheat error threshold for temperature 3.	120.0 (0.0~200.0)
E00.69 (0x7045) RUN	Overheat Error 3 Hysteresis	V/F SVC FVC PMV/F PMSVC PMFVC Set the overheat error hysteresis for temperature 3.	5.0 (0.0~20.0)
E00.70 (0x7046) RUN	Overheat Alarm 3 Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the overheat alarm threshold for temperature 3.	90.0 (90.0~150.0)
E00.71 (0x7047) RUN	Overheat Alarm 3 Hysteresis	V/F SVC FVC PMV/F PMSVC PMFVC Set the overheat alarm hysteresis for temperature 3.	5.0 (0.0~20.0)

14.41 E01: IO Extension Output

Note: For detailed E00 group parameters, please refer to the AC600 I/O Black Box Extension Card Manual.

E01.0x~1x: Extension DO Terminal

The AC drive includes 1×digital output and 2×relay output, and one more digital output and relay output can be extended by extension cards.

Code	Name	Default	Function
E01.00	Extension Y2 Terminal.	1	Drive in operation
E01.01	Extension relay 3 output (TA3-TB3-TC3).	4	Drive in fault

Please refer to the setting of F06.0x [Multi-function Y Terminal].

✧ E01.08: Extension Output Terminal Polarity

Code (Address) Property	Name	Description	Default (Range)
E01.08 (0x7108) RUN	Extension Output Terminal Polarity	V/F SVC FVC PMV/F PMSVC PMFVC 0: Positive 1: Negative Ones-bit: Extension Y2 terminal Tens-bit: Extension RO3 terminal	0x0000 (0x0000~0x1111)

Ones-bit: Y terminal

0: Positive, Y output terminal at low level when valid, normally open.

0: Negative, no output from Y terminal when valid, normally closed.

Tens-bit: RO1

0: Positive, TA3-TC3 is normally open and TB3-TC3 is normally closed

1: Negative, TA3-TC3 is normally closed and TB3-TC3 is normally open

✧ **E01.1x: Extension Terminal Y Operation Mode**

Code (Address) Property	Name	Description	Default (Range)
E01.10 (0x710A) RUN	Extension Y2 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal Y output from OFF to ON.	0.010s (0.000s~60.000s)
E01.11 (0x710B) RUN	Extension Y2 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for terminal Y output from ON to OFF.	0.010s (0.000s~60.000s)
E01.12 (0x710C) RUN	Extension RO3 ON Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for R3 from OFF to ON.	0.010s (0.000s~60.000s)
E01.13 (0x710D) RUN	Extension RO3 OFF Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for R3 from ON to OFF.	0.010s (0.000s~60.000s)

E01.3x: Extension AO3 Terminal

Code (Address) Property	Name	Description	Default (Range)
E01.30 (0x711E) RUN	AO3 Mode	V/F SVC FVC PMV/F PMSVC PMFVC 0: 0V~10V 1: 4.00mA~ 20.00mA 2: 0.00mA~20.00mA 3: FM pulse 4: Fixed frequency	0 (0~4)
E01.31 (0x711F) RUN	AO3 Content	V/F SVC FVC PMV/F PMSVC PMFVC 0: Target frequency 1: Output frequency 2: Output current 3: Input voltage 4: Output voltage 5: Mechanical speed 6: Target torque 7: Output torque 8: PID setting 9: PID feedback 10: Output power 11: Bus voltage 12: AI1 13: AI2 14: Reserved 15: PUL terminal input 16: Module temperature 1 17: Module temperature 2 18: RS485 19: vY1, 0 means OFF while 1 means ON Others: K connector	0 (0~65535)
E01.32 (0x7120) RUN	AO3 Gain	V/F SVC FVC PMV/F PMSVC PMFVC Set the gain value of the analog output.	100.0% (0.0%~300.0%)

E01.33 (0x7121) RUN	AO3 Bias	V/F SVC FVC PMV/F PMSVC PMFVC Set the AO bias. Used to adjust the zero point of the terminal output.	0.0% (-10.0%~10.0%)
E01.34 (0x7122) RUN	AO3 Filter	V/F SVC FVC PMV/F PMSVC PMFVC Define the size of the filter applied to the analog signal to remove interfering signals.	0.010s (0.000s~6.000s)
E01.35 (0x7123) RUN	AO3 as FM Lower Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set AO as the lower limit of the FM frequency.	0.20kHz (0.00kHz~ 100.00kHz)
E01.36 (0x7124) RUN	AO3 as FM Upper Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set AO as the upper limit of the FM frequency.	50.00kHz (0.00kHz~ 100.00kHz)

14.42 E02: Encoder 1 Extension Parameters

14.42.1 E02.0x: Encoder 1 Environment

✧ E02.00: Encoder Motor

Code (Address) Property	Name	Description	Default (Range)
E02.00 (0x7200) STOP	Encoder 1 Motor	V/F SVC FVC PMV/F PMSVC PMFVC Select the motor matched to Encoder 1.	0 (0~4)

Set according to the current motor parameter group.

0: OFF

1: Motor 1

2: Motor 2

3: Motor 3

4: Motor 4

✧ E02.01: Encoder Type

Code (Address) Property	Name	Description	Default (Range)
E02.01 (0x7201) STOP	Encoder 1 Type	V/F SVC FVC PMV/F PMSVC PMFVC Set the encoder 1 type.	0 (0~3)

Set the type of Encoder 1 according to the encoder model.

0: ABZ encoder. It needs to be used together with the PG card of VEICHI.

1: Resolver. It needs to be used together with the PG card of VEICHI.

2: Sine/Cosine encoder. It needs to be used together with the PG card of VEICHI.

3: Reserved

✧ E02.02: Encoder Debug Register

Code (Address) Property	Name	Description	Default (Range)
E02.02 (0x7202) RUN	Encoder Debug Register	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Monitor PG under SVC	0x0000 (0x0000~0xFFFF)

0: OFF

1: ON

✧ E02.03: Encoder Filter Time

Code (Address) Property	Name	Description	Default (Range)
E02.03 (0x7203) RUN	Encoder Disconnection Detection	V/F SVC FVC PMV/F PMSVC PMFVC Enable the encoder disconnection software detection.	0 (0~1)

0: OFF

1: ON✧ **E02.04: Encoder Disconnection Detection Time**

Code (Address) Property	Name	Description	Default (Range)
E02.04 (0x7204) RUN	Encoder Disconnection Detection Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the detection duration for encoder disconnection.	0.050s (0.100s~60.000s)

✧ **E02.05: Encoder Filter Time**

Code (Address) Property	Name	Description	Default (Range)
E02.05 (0x7205) RUN	Encoder Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the filter time when the encoder detects speed.	1.0ms (0.0ms~100.0ms)

Note: When the feedback interference of motor encoder is large, the filtering time of speed detection can be appropriately increased; increase by 1.0ms under stable operation.

14.42.2 E02.1x: ABZ Encoder✧ **E02.10: ABZ Encoder Direction**

Code (Address) Property	Name	Description	Default (Range)
E02.10 (0x720A) STOP	ABZ Encoder Direction	V/F SVC FVC PMV/F PMSVC PMFVC Set the encoder direction.	0 (0~1)

0: Same direction

1: Opposite direction

✧ **E02.11: ABZ Encoder Z-Pulse Detection**

Code (Address) Property	Name	Description	Default (Range)
E02.11 (0x720B) STOP	ABZ Encoder Z-pulse Detection	V/F SVC FVC PMV/F PMSVC PMFVC Set the ABZ encoder Z-pulse detection.	1 (0~2)

0: OFF

1: FWD detection

2: REV detection

✧ **E02.12: ABZ Encoder Line No.**

Code (Address) Property	Name	Description	Default (Range)
E02.12 (0x720C) STOP	ABZ Encoder Line No.	V/F SVC FVC PMV/F PMSVC PMFVC Set the line number of the ABZ encoder.	1024 (1~10000)

✧ **E02.13: Encoder Ratio Numerator**

Code (Address) Property	Name	Description	Default (Range)
E02.13 (0x720D) RUN	Transmission Ratio Numerator	V/F SVC FVC PMV/F PMSVC PMFVC Set the encoder transmission ratio numerator.	1 (1~32767)

✧ **E02.14: Encoder Ratio Denominator**

Code (Address) Property	Name	Description	Default (Range)
E02.14 (0x720E) RUN	Transmission Ratio Denominator	V/F SVC FVC PMV/F PMSVC PMFVC Set the encoder transmission ratio denominator.	1 (1~32767)

Note: When the encoder is installed on the non-motor side, please set the transmission ratio correctly, otherwise the closed-loop vector control cannot be carried out.

✧ **E02.15: Z-pulse Disconnection Alarm**

Code (Address) Property	Name	Description	Default (Range)
E02.15 (0x720F) RUN	Z-pulse Disconnection Alarm	V/F SVC FVC PMV/F PMSVC PMFVC Set the alarm level for Z pulse disconnection.	4 (0~65535)

The system triggers a Z-pulse disconnection alarm if consecutive missing pulses exceed this value.

✧ **E02.16: Z-Pulse Tolerance**

Code (Address) Property	Name	Description	Default (Range)
E02.16 (0x7210) RUN	Z-Pulse Tolerance	V/F SVC FVC PMV/F PMSVC PMFVC Set the allowable deviation of Z-pulse.	0 (0~65535)

✧ **E02.17: Z-Pulse Tuning Current**

Code (Address) Property	Name	Description	Default (Range)
E02.17 (0x7211) RUN	Z-Pulse Tuning Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the value of Z-pulse tuning current.	0 (0~65535)

✧ **E02.18: Bandwidth Limit**

Code (Address) Property	Name	Description	Default (Range)
E02.18 (0x7212) RUN	Bandwidth Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the maximum detectable speed of the encoder.	300 (0~8000)

✧ **E02.19: Max. Z Pulse Angle Error**

Code (Address) Property	Name	Description	Default (Range)
E02.19 (0x7213) RUN	Max. Z Pulse Angle Error	V/F SVC FVC PMV/F PMSVC PMFVC Set the maximum allowable angle error of the Z pulse.	0.0° (0.0°~180.0°)

14.42.3 E02.2x: Resolver

✧ **E02.20: Resolver Pole No.**

Code (Address) Property	Name	Description	Default (Range)
E02.20 (0x7214) STOP	Resolver Pole No.	V/F SVC FVC PMV/F PMSVC PMFVC Set the pole number of the resolver.	2 (2~128)

14.42.4 E02.3x: Sine/Cosine Encoder

◇ E02.30: Sine/cosine Encoder Type

Code (Address) Property	Name	Description	Default (Range)
E02.30 (0x721E) STOP	Sine/cosine Encoder Type	V/F SVC FVC PMV/F PMSVC PMFVC Set the sine/cosine encoder type.	0 (0~2)

0: ABZ

1: Endat

2: SSI

◇ E02.31: Sine-cosine Encoder Line No.

Code (Address) Property	Name	Description	Default (Range)
E02.31 (0x721F) STOP	Sine-cosine Encoder Line No.	V/F SVC FVC PMV/F PMSVC PMFVC Set the line number of the sine-cosine encoder.	2048 (50~16384)

0: OFF

1: ON

14.43 E03: Encoder 2 Extension Parameters

14.43.1 E03.0x: Encoder 1 Environment

◇ E03.00: Encoder Motor

Code (Address) Property	Name	Description	Default (Range)
E03.00 (0x7300) STOP	Encoder 1 Motor	V/F SVC FVC PMV/F PMSVC PMFVC Select the motor matched to Encoder 1.	0 (0~4)

Set according to the current motor parameter group.

0: OFF

1: Motor 1

2: Motor 2

3: Motor 3

4: Motor 4

◇ E03.01: Encoder Type

Code (Address) Property	Name	Description	Default (Range)
E03.01 (0x7301) STOP	Encoder 1 Type	V/F SVC FVC PMV/F PMSVC PMFVC Set the encoder 1 type.	0 (0~3)

Set the type of Encoder 1 according to the encoder model.

0: ABZ encoder. It needs to be used together with the PG card of VEICHI.

1: Resolver. It needs to be used together with the PG card of VEICHI.

2: Sine/Cosine encoder. It needs to be used together with the PG card of VEICHI.

3: Reserved

◇ E03.02: Encoder Debug Register

Code (Address) Property	Name	Description	Default (Range)
E03.02 (0x7302) RUN	Encoder Debug Register	V/F SVC FVC PMV/F PMSVC PMFVC Ones-bit: Monitor PG under SVC	0x0000 (0x0000~0xFFFF)

0: OFF

1: ON

✧ **E03.03: Encoder Filter Time**

Code (Address) Property	Name	Description	Default (Range)
E03.03 (0x7303) RUN	Encoder Disconnection Detection	V/F SVC FVC PMV/F PMSVC PMFVC Enable the encoder disconnection software detection.	0 (0~1)

0: OFF**1: ON**✧ **E03.04: Encoder Disconnection Detection Time**

Code (Address) Property	Name	Description	Default (Range)
E03.04 (0x7304) RUN	Encoder Disconnection Detection Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the detection duration for encoder disconnection.	0.050s (0.100s~60.000s)

✧ **E03.05: Encoder Filter Time**

Code (Address) Property	Name	Description	Default (Range)
E03.05 (0x7305) RUN	Encoder Filter Time	V/F SVC FVC PMV/F PMSVC PMFVC Set the filter time when the encoder detects speed.	1.0ms (0.0ms~100.0ms)

Note: When the feedback interference of motor encoder is large, the filtering time of speed detection can be appropriately increased; increase by 1.0ms under stable operation.

14.43.2 E03.1x: ABZ Encoder✧ **E03.10: ABZ Encoder Direction**

Code (Address) Property	Name	Description	Default (Range)
E03.10 (0x730A) STOP	ABZ Encoder Direction	V/F SVC FVC PMV/F PMSVC PMFVC Set the encoder direction.	0 (0~1)

0: Same direction**1: Opposite direction**✧ **E03.11: ABZ Encoder Z-Pulse Detection**

Code (Address) Property	Name	Description	Default (Range)
E03.11 (0x730B) STOP	ABZ Encoder Z-pulse Detection	V/F SVC FVC PMV/F PMSVC PMFVC Set the ABZ encoder Z-pulse detection.	1 (0~2)

0: OFF**1: FWD detection****2: REV detection**✧ **E03.12: ABZ Encoder Line No.**

Code (Address) Property	Name	Description	Default (Range)
E03.12 (0x730C) STOP	ABZ Encoder Line No.	V/F SVC FVC PMV/F PMSVC PMFVC Set the line number of the ABZ encoder.	1024 (1~10000)

✧ **E03.13: Encoder Ratio Numerator**

Code (Address) Property	Name	Description	Default (Range)
E03.13 (0x730D) RUN	Transmission Ratio Numerator	V/F SVC FVC PMV/F PMSVC PMFVC Set the encoder transmission ratio numerator.	1 (1~32767)

✧ **E03.14: Encoder Ratio Denominator**

Code (Address) Property	Name	Description	Default (Range)
E03.14 (0x730E) RUN	Transmission Ratio Denominator	V/F SVC FVC PMV/F PMSVC PMFVC Set the encoder transmission ratio denominator.	1 (1~32767)

Note: When the encoder is installed on the non-motor side, please set the transmission ratio correctly, otherwise the closed-loop vector control cannot be carried out.

✧ **E03.15: Z-pulse Disconnection Alarm**

Code (Address) Property	Name	Description	Default (Range)
E03.15 (0x730F) RUN	Z-pulse Disconnection Alarm	V/F SVC FVC PMV/F PMSVC PMFVC Set the alarm level for Z pulse disconnection.	4 (0~65535)

The system triggers a Z-pulse disconnection alarm if consecutive missing pulses exceed this value.

✧ **E03.16: Z-Pulse Tolerance**

Code (Address) Property	Name	Description	Default (Range)
E03.16 (0x7310) RUN	Z-Pulse Tolerance	V/F SVC FVC PMV/F PMSVC PMFVC Set the allowable deviation of Z-pulse.	0 (0~65535)

✧ **E03.17: Z-Pulse Tuning Current**

Code (Address) Property	Name	Description	Default (Range)
E03.17 (0x7311) RUN	Z-Pulse Tuning Current	V/F SVC FVC PMV/F PMSVC PMFVC Set the value of Z-pulse tuning current.	0 (0~65535)

✧ **E03.18: Bandwidth Limit**

Code (Address) Property	Name	Description	Default (Range)
E03.18 (0x7312) RUN	Bandwidth Limit	V/F SVC FVC PMV/F PMSVC PMFVC Set the maximum detectable speed of the encoder.	300 (0~8000)

✧ **E03.19: Max. Z Pulse Angle Error**

Code (Address) Property	Name	Description	Default (Range)
E03.19 (0x7313) RUN	Max. Z Pulse Angle Error	V/F SVC FVC PMV/F PMSVC PMFVC Set the maximum allowable angle error of the Z pulse.	0.0° (0.0°~180.0°)

14.43.3 E03.2x: Resolver

✧ E03.20: Resolver Pole No.

Code (Address) Property	Name	Description	Default (Range)
E03.20 (0x7314) STOP	Resolver Pole No.	V/F SVC FVC PMV/F PMSVC PMFVC Set the pole number of the resolver.	2 (2~128)

14.43.4 E03.3x: Sine/Cosine Encoder

✧ E03.30: Sine/cosine Encoder Type

Code (Address) Property	Name	Description	Default (Range)
E03.30 (0x731E) STOP	Sine/cosine Encoder Type	V/F SVC FVC PMV/F PMSVC PMFVC Set the sine/cosine encoder type.	0 (0~2)

0: ABZ

1: Endat

2: SSI

✧ E03.31: Sine/cosine Encoder Line No.

Code (Address) Property	Name	Description	Default (Range)
E03.31 (0x731F) STOP	Sine/cosine Encoder Line No.	V/F SVC FVC PMV/F PMSVC PMFVC Set the line number of the sine-cosine encoder.	2048 (50~16384)

0: OFF

1: ON

14.44 E04: Bus 1 Common Parameters

✧ E04.00: Extension 1 Slot Enable

Code (Address) Property	Name	Description	Default (Range)
E04.00 (0x7400) STOP	Extension 1 Slot Enable	V/F SVC FVC PMV/F PMSVC PMFVC Enable the extension 1 slot.	1 (0~1)

0: OFF

1: ON

✧ E04.01: Communication Baud Rate

Code (Address) Property	Name	Description	Default (Range)
E04.01 (0x7401) STOP	Communication Baud Rate	V/F SVC FVC PMV/F PMSVC PMFVC Set the extension 1 communication baud rate.	8

8: 1Mbps

✧ E04.02: Internal Bus Disconnection Detection Delay

Code (Address) Property	Name	Description	Default (Range)
E04.02 (0x7402) STOP	Internal Bus Disconnection Detection Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for detecting an internal bus disconnection of extension card 1.	0 (0~65535)

This parameter defines the delay from the completion of the last heartbeat data reception on extension 1 to the triggering of a disconnection fault. If set to 0, the disconnection detection time is $2.5 \times$ heartbeat period. If set to a

non-zero value, the fault detection time is $2.5 \times \text{heartbeat period} + \text{this value}$.

✧ **E04.04: External Bus Disconnection Trigger Threshold**

Code (Address) Property	Name	Description	Default (Range)
E04.04 (0x7404) STOP	External Bus Disconnection Trigger Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the upper threshold for triggering an external bus disconnection fault of extension card 1.	0 (0~65535)

If external bus interference causes disconnection detection, this parameter can be used to prevent drive faults due to occasional low-frequency disconnections. The default value is 0.

✧ **E04.05: Internal Bus Heartbeat Interval**

Code (Address) Property	Name	Description	Default (Range)
E04.05 (0x7405) STOP	Internal Bus Heartbeat Interval	V/F SVC FVC PMV/F PMSVC PMFVC Set the heartbeat interval of the internal bus for extension 1.	0 (0~65535ms)

After the internal cyclic communication is established, the device sends heartbeat messages at the specified interval.

✧ **E04.06: Internal Bus Disconnection Trigger Threshold**

Code (Address) Property	Name	Description	Default (Range)
E04.06 (0x7406) STOP	Internal Bus Disconnection Trigger Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the upper threshold for triggering an external bus disconnection fault of extension card 1.	0 (0~65535)

If internal bus interference causes disconnection detection, this parameter can be used to prevent drive faults due to occasional low-frequency disconnections. The default value is 0.

✧ **E04.07: Reserved (changed to F10.90)**

Code (Address) Property	Name	Description	Default (Range)
E04.07 (0x7407) STOP	External Bus Non-OP Stop Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the upper threshold for triggering an external bus disconnection fault of extension card 1.	0 (0~65535)

✧ **E04.09: Data Write to EEPROM**

Code (Address) Property	Name	Description	Default (Range)
E04.09 (0x7409) STOP	Data Write to EEPROM	V/F SVC FVC PMV/F PMSVC PMFVC Select whether to write the cyclic data of extension 1 to EEPROM.	0 (0~1)

0: Do not write to EEPROM

1: Do not write to EEPROM

✧ **E04.10: Fault Info Upload to PLC**

Code (Address) Property	Name	Description	Default (Range)
E04.10 (0x740A) STOP	Fault Info Upload to PLC	V/F SVC FVC PMV/F PMSVC PMFVC Select whether to upload extension card fault diagnostic information to the PLC.	0 (0~1)

0: Not upload

1: Upload

✧ **E04.11: Ex1 TPDO Endian Conversion**

Code (Address) Property	Name	Description	Default (Range)
E04.11 (0x740B) STOP	Ex1 TPDO Endian Conversion	V/F SVC FVC PMV/F PMSVC PMFVC Select extension card 1 output data format.	0 (0~1)

0: Big endian mode**1: Little endian mode**✧ **E04.12: Ex1 RPDO Endian Conversion**

Code (Address) Property	Name	Description	Default (Range)
E04.12 (0x740C) STOP	Ex1 RPDO Endian Conversion	V/F SVC FVC PMV/F PMSVC PMFVC Select extension card 1 input data format.	0 (0~1)

0: Big endian mode**1: Little endian mode**✧ **E04.13: Cyclic Input Mapping Entry Number**

Code (Address) Property	Name	Description	Default (Range)
E04.13 (0x740D) READ	Cyclic Input Mapping Entry Number	V/F SVC FVC PMV/F PMSVC PMFVC Set the number of input mapped application objects in extension 1.	0

Display the current number of mapped input objects for extension 1 cyclic communication.

✧ **E04.14: Cyclic Output Mapping Entry Number**

Code (Address) Property	Name	Description	Default (Range)
E04.14 (0x740E) READ	Cyclic Output Mapping Entry Number	V/F SVC FVC PMV/F PMSVC PMFVC Set the number of output mapped application objects in extension 1.	0

Display the current number of mapped output objects for extension 1 cyclic communication.

✧ **E04.20~E04.35: TPDO Mapping Object Address**

Code (Address) Property	Name	Description	Default (Range)
E04.20 (0x7414) READ	TPDO Mapping Object Address 1	V/F SVC FVC PMV/F PMSVC PMFVC Select the source of the process data output.	0xA400
E04.21 (0x7415) READ	TPDO Mapping Object Address 2	V/F SVC FVC PMV/F PMSVC PMFVC Select the source of the process data output.	0xA305
E04.22 (0x7416) STOP	TPDO Mapping Object Address 3	V/F SVC FVC PMV/F PMSVC PMFVC Select the source of the process data output.	
...	...	...	
E04.35 (0x7423) STOP	TPDO Mapping Object Address 16	V/F SVC FVC PMV/F PMSVC PMFVC Select the source of the process data output.	

Mapping Address 1 is fixed to U0400 (Status Word), and Mapping Address 2 is fixed to U03.05 (Output Frequency).

◇ **E04.36~E04.51:** Ex1 TPDO Base Value

Code (Address) Property	Name	Description	Default (Range)
E04.36 (0x7424) STOP	Ex1 TPDO Base Value 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the base value of process output data 1.	
...	...	...	
E04.51 (0x7433) STOP	Ex1 TPDO Base Value 16	V/F SVC FVC PMV/F PMSVC PMFVC Set the base value of process output data 16.	

These parameters are used to set the base values of the process output data. The actual output value is calculated as: Actual Output = Raw Output Data × (E04.36–E04.51) / 4096

Setting the parameter to 0 is equivalent to 4096.

◇ **E04.52~E04.67:** Ex1 RPDO Base Value 1

Code (Address) Property	Name	Description	Default (Range)
E04.52 (0x7434) STOP	Ex1 RPDO Base Value 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the base value of process input data 1.	
...	...	...	
E04.67 (0x7443) STOP	Ex1 RPDO Base Value 16	V/F SVC FVC PMV/F PMSVC PMFVC Set the base value of process input data 16.	

These parameters are used to set the base values of the process input data. The actual input value is calculated as: Input = Raw Input Data × 4096/(E04.52–E04.67). Setting the parameter to 0 is equivalent to 4096.

14.45 E05: Bus 2 Common Parameters

◇ **E05.00:** Extension 2 Slot Enable

Code (Address) Property	Name	Description	Default (Range)
E05.00 (0x7500) STOP	Extension 2 Slot Enable	V/F SVC FVC PMV/F PMSVC PMFVC Enable the extension 2 slot.	0 (0~1)

0: Not enable

1: Enable

◇ **E05.01:** Communication Baud Rate

Code (Address) Property	Name	Description	Default (Range)
E05.01 (0x7501) STOP	Communication Baud Rate	V/F SVC FVC PMV/F PMSVC PMFVC Set the extension 2 communication baud rate.	8

8: 1M bps

◇ **E05.02:** Internal Bus Disconnection Detection Delay

Code (Address) Property	Name	Description	Default (Range)
E05.02 (0x7502) STOP	Internal Bus Disconnection Detection Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the delay time for detecting an internal bus disconnection of extension card 2.	0 (0~65535)

This parameter defines the delay from the completion of the last heartbeat data reception on extension 2 to the triggering of a disconnection fault. If set to 0, the disconnection detection time is 2.5 × heartbeat period. If set to a non-zero value, the fault detection time is 2.5 × heartbeat period + this value.

◇ **E05.04:** External Bus Disconnection Trigger Threshold

Code (Address) Property	Name	Description	Default (Range)
E05.04 (0x7504) STOP	External Bus Disconnection Trigger Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the upper threshold for triggering an external bus disconnection fault of extension card 2.	0 (0~65535)

If external bus interference causes disconnection detection, this parameter can be used to prevent drive faults due to occasional low-frequency disconnections. The default value is 0.

✧ **E05.05: Internal Bus Heartbeat Interval**

Code (Address) Property	Name	Description	Default (Range)
E05.05 (0x7505) STOP	Internal Bus Heartbeat Interval	V/F SVC FVC PMV/F PMSVC PMFVC Set the heartbeat interval of the internal bus for extension 2.	0 (0~65535ms)

After the internal cyclic communication is established, the device sends heartbeat messages at the specified interval.

✧ **E05.06: Internal Bus Disconnection Trigger Threshold**

Code (Address) Property	Name	Description	Default (Range)
E05.06 (0x7506) STOP	Internal Bus Disconnection Trigger Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the upper threshold for triggering an external bus disconnection fault of extension card 2.	0 (0~65535)

If internal bus interference causes disconnection detection, this parameter can be used to prevent drive faults due to occasional low-frequency disconnections. The default value is 0.

✧ **E05.07: Reserved (changed to F10.90)**

Code (Address) Property	Name	Description	Default (Range)
E05.07 (0x7507) STOP	External Bus Non-OP Stop Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the upper threshold for triggering an external bus disconnection fault of extension card 2.	0 (0~65535)

✧ **E05.09: Data Write to EEPROM**

Code (Address) Property	Name	Description	Default (Range)
E05.09 (0x7509) STOP	Data Write to EEPROM	V/F SVC FVC PMV/F PMSVC PMFVC Select whether to write the cyclic data of extension 2 to EEPROM.	0 (0~1)

0: Do not write to EEPROM

1: Do not write to EEPROM

✧ **E05.10: Fault Info Upload to PLC**

Code (Address) Property	Name	Description	Default (Range)
E05.10 (0x750A) STOP	Fault Info Upload to PLC	V/F SVC FVC PMV/F PMSVC PMFVC Select whether to upload extension card fault diagnostic information to the PLC.	0 (0~1)

0: Not upload

1: Upload

✧ **E05.11: Ex2 TPDO Endian Conversion**

Code (Address) Property	Name	Description	Default (Range)
E05.11 (0x750B) STOP	Ex2 TPDO Endian Conversion	V/F SVC FVC PMV/F PMSVC PMFVC Select extension card 2 output data format.	0 (0~1)

0: Big endian mode**1: Little endian mode**✧ **E05.12: Ex2 RPDO Endian Conversion**

Code (Address) Property	Name	Description	Default (Range)
E05.12 (0x750C) STOP	Ex2 RPDO Endian Conversion	V/F SVC FVC PMV/F PMSVC PMFVC Select extension card 2 input data format.	0 (0~1)

0: Big endian mode**1: Little endian mode**✧ **E05.13: Cyclic Input Mapping Entry Number**

Code (Address) Property	Name	Description	Default (Range)
E05.13 (0x750D) READ	Cyclic Input Mapping Entry Number	V/F SVC FVC PMV/F PMSVC PMFVC Set the number of input mapped application objects in extension 2.	0

Display the current number of mapped input objects for extension 2 cyclic communication.

✧ **E05.14: Fault Info Upload to PLC**

Code (Address) Property	Name	Description	Default (Range)
E05.14 (0x750E) READ	Cyclic Output Mapping Entry Number	V/F SVC FVC PMV/F PMSVC PMFVC Set the number of output mapped application objects in extension 2.	0

Display the current number of mapped output objects for extension 2 cyclic communication.

✧ **E05.20~E05.35: TPDO Mapping Object Address**

Code (Address) Property	Name	Description	Default (Range)
E05.20 (0x7514) READ	TPDO Mapping Object Address 1	V/F SVC FVC PMV/F PMSVC PMFVC Select the source of the process data output.	0xA400
E05.21 (0x7515) READ	TPDO Mapping Object Address 2	V/F SVC FVC PMV/F PMSVC PMFVC Select the source of the process data output.	0xA305
E05.22 (0x7516) STOP	TPDO Mapping Object Address 3	V/F SVC FVC PMV/F PMSVC PMFVC Select the source of the process data output.	
...	...	...	
E05.35 (0x7523) STOP	TPDO Mapping Object Address 16	V/F SVC FVC PMV/F PMSVC PMFVC Select the source of the process data output.	

Mapping Address 1 is fixed to U0400 (Status Word), and Mapping Address 2 is fixed to U03.05 (Output Frequency).

◇ **E05.36~E05.51: Ex2 TPDO Base Value**

Code (Address) Property	Name	Description	Default (Range)
E05.36 (0x7524) STOP	Ex2 TPDO Base Value 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the base value of process output data 1.	
...	...	...	
E05.51 (0x7533) STOP	Ex2 TPDO Base Value 16	V/F SVC FVC PMV/F PMSVC PMFVC Set the base value of process output data 16.	

These parameters are used to set the base values of the process output data. The actual output value is calculated as: Actual Output = Raw Output Data × (E05.36–E05.51) / 4096

Setting the parameter to 0 is equivalent to 4096.

◇ **E05.52~E05.67: Ex2 RPDO Base Value**

Code (Address) Property	Name	Description	Default (Range)
E05.52 (0x7534) STOP	Ex2 RPDO Base Value 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the base value of process input data 1.	
...	...	...	
E05.67 (0x7543) STOP	Ex2 RPDO Base Value 16	V/F SVC FVC PMV/F PMSVC PMFVC Set the base value of process input data 16.	

These parameters are used to set the base values of the process input data. The actual input value is calculated as: Input = Raw Input Data × 4096/(E05.52–E05.67). Setting the parameter to 0 is equivalent to 4096.

14.46 E06: CAN/DP Communication Parameters

14.46.1 E06.00~E06.09: DP Communication Parameters

◇ **E06.00~E06.09: DP Communication Parameters**

Code (Address) Property	Name	Description	Default (Range)
E06.00 (0x7600) STOP	DP Slave Node Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the DP slave node address.	0 0-247
E06.01 (0x7601) STOP	Reserved		
...	...	...	...
E06.09 (0x7609) STOP	Reserved		

14.46.2 E06.10~E06.15: CAN Communication Parameters

◇ **E06.10: CAN Mode**

Code (Address) Property	Name	Description	Default (Range)
E06.10 (0x760A) STOP	CAN Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the CAN communication mode.	0 0-4

0: CANopen standard slave

1: CANopen masterless mode master

2: CANopen masterless mode slave

3: Power balancing (Master)

4: Power balancing (Slave)✧ **E06.11: CAN Slave Address**

Code (Address) Property	Name	Description	Default (Range)
E06.11 (0x760B) STOP	CAN Slave Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the CAN communication address.	0 0-127

Set the CAN slave communication address.

✧ **E06.12: CAN Baud Rate**

Code (Address) Property	Name	Description	Default (Range)
E06.12 (0x760C) STOP	CAN Baud Rate	V/F SVC FVC PMV/F PMSVC PMFVC Set the CAN communication baud rate.	0 0-6

0: 20kbps**1: 50kbps****2: 100kbps****3: 125kbps****4: 250kbps****5: 500kbps****6: 1Mbps**✧ **E06.13: CAN Node Auto Power-on Operation**

Code (Address) Property	Name	Description	Default (Range)
E06.13 (0x760D) STOP	CAN Node Auto Power-on Operation	V/F SVC FVC PMV/F PMSVC PMFVC Set the CAN node auto operation at power-on.	0 0-1

0: OFF**1: ON**✧ **E06.14: CANopen Communication Timeout**

Code (Address) Property	Name	Description	Default (Range)
E06.14 (0x760E) STOP	CANopen Communication Timeout	V/F SVC FVC PMV/F PMSVC PMFVC Define CANopen communication timeout.	0 0ms~65535ms

0: OFF**1: ON**✧ **E06.15: CANopen Mapping Object Configuration**

Code (Address) Property	Name	Description	Default (Range)
E06.15 (0x760F) STOP	CANopen Mapping Object Configuration	V/F SVC FVC PMV/F PMSVC PMFVC Configure the CANopen communication mapping object mode.	0 0-1

0: OFF**1: ON**

14.46.3 E06.7x: Extension RS485 Parameters

✧ E06.70: Extension RS485 Master/Slave

Code (Address) Property	Name	Description	Default (Range)
E06.70 (0x7646) STOP	Extension RS485 Master/Slave	V/F SVC FVC PMV/F PMSVC PMFVC Set the drive as the Modbus communication master or slave.	0 (0~1)

0: Slave. When the drive is used as a slave, the communication address is set by parameter [E06.01]. Then the drive receives command from the master on the communication network. Set whether to reply data to writing on [E06.04].

1: Master. The drive works as a host and sends data from to the communication network by broadcasting commands, and all the slaves receive commands from the master.

✧ E06.71: Modbus Address

Code (Address) Property	Name	Description	Default (Range)
E06.71 (0x7647) STOP	Extension RS485 Modbus Communication Address	V/F SVC FVC PMV/F PMSVC PMFVC Set the slave addresses for AC drive communication.	1 (1~247)

Note: If it is set to 0, the drive does not respond to Modbus communication.

When the upper computer (master) communicates with the drive through Modbus, it is necessary to set the slave station address for it. Please set a value other than E06.01=0.

The set slave address should not conflict with other slave equipment.

✧ E06.72: Communication Baud Rate

Code (Address) Property	Name	Description	Default (Range)
E06.72 (0x748) STOP	Extension RS485 Baud Rate	V/F SVC FVC PMV/F PMSVC PMFVC Set the baud rate for Modbus communication.	3 (0~7)

- 0: 1200bps
- 1: 2400bps
- 2: 4800bps
- 3: 9600bps
- 4: 19200bps
- 5: 38400bps
- 6: 57600bps
- 7: 115200 bps

✧ E06.73: Modbus Data Format

Code (Address) Property	Name	Description	Default (Range)
E06.73 (0x7649) STOP	Extension RS485 Data Format	V/F SVC FVC PMV/F PMSVC PMFVC Select the communication check used by Modbus communication.	0 (0~5)

Note: If the data formats are different, communication may fail.

- 0: (N, 8, 1) no parity, data bit: 8, stop bit: 1
- 1: (E, 8, 1) even parity, data bit: 8, stop bit: 1
- 2: (O, 8, 1) odd parity, data bit:8, stop bit: 1
- 3: (N, 8, 2) no parity, data bit: 8, stop bit: 2
- 4: (E, 8, 2) even parity, data bit: 8, stop bit: 2
- 5: (O, 8, 2) odd parity, data bit:8, stop bit: 2

✧ **E06.74: Modbus Response**

Code (Address) Property	Name	Description	Default (Range)
E06.74 (0x764A) RUN	Extension RS485 Response Mode	V/F SVC FVC PMV/F PMSVC PMFVC Select the communication check used by Modbus communication.	0 (0~1)

This parameter determines if the AC drive responds to write operation commands from the host computer. If the master needs the AC drive to reply information, the AC drive will occupy the communication bus by time. And when under communication control, the master needs to reserve enough time for information reply to the AC drive. If the master doesn't need the AC drive to reply information to the commands, set it to no response to write operations to enhance the communication bus's efficiency. This parameter is only valid for write operations, and has no effect on read operations.

0: Respond to write operation.

1: No response to write operation.

✧ **E06.75: Modbus Response Delay**

Code (Address) Property	Name	Description	Default (Range)
E06.75 (0x764B) RUN	Extension RS485 Response Delay	V/F SVC FVC PMV/F PMSVC PMFVC Set the Modbus master/slave communication response delay.	0ms (0ms~5000ms)

This parameter defines the interval time between the end of data reception and the end of response data sending to the master when the AC drive is used as a slave. If the set response delay time is shorter than the system processing time, the response delay time follows the system processing time. If the response delay time is longer than the system processing time, the system processes the data and waits for a delay until the response delay time arrives before sending the data to the host computer.

If AC drive is the master, this parameter means the transmission interval of sending messages from the master, and the minimum internal limit is 3.5 bytes.

✧ **E06.76: Modbus Communication Timeout**

Code (Address) Property	Name	Description	Default (Range)
E06.76 (0x764C) RUN	Extension RS485 Communication Timeout	V/F SVC FVC PMV/F PMSVC PMFVC Set the Modbus communication error time.	1.0s (0.1s~100.0s)

If the interval between one communication and the next exceeds the communication timeout value, a communication disconnection fault is considered to have occurred and the fault disconnection action mode is determined by E06.07.

✧ **E06.77: Modbus Communication Disconnection**

Code (Address) Property	Name	Description	Default (Range)
FE06.77 (0x764D) RUN	Extension RS485 Disconnection Mode	V/F SVC FVC PMV/F PMSVC PMFVC Select the motor stop method when E.CE1 [Modbus Communication Error] is detected.	0 (0~3)

Communications disconnection mode:

0: Detection OFF

1: Report error and coast to stop

2: Report alarm and continue operation

3: Force stop

Note: Forced stop command means that the motor is forced to stop according to deceleration mode, and no longer responds to the operation command before entering the stop status.

14.47 E07: Ethernet Extension Parameters

This parameter group is used to configure communication parameters for various industrial Ethernet extension cards.

14.47.1 E07.00~E07.23: EtherCAT Communication Parameters

✧ E07.00: Online Status

Code (Address) Property	Name	Description	Default (Range)
E07.00 (0x7700) RUN	Module Online Status	V/F SVC FVC PMV/F PMSVC PMFVC Reserved	0 (0~65535)

✧ E07.01: EtherCAT Slave Station Name

Code (Address) Property	Name	Description	Default (Range)
E07.01 (0x7701) STOP	EtherCAT Slave Station Name	V/F SVC FVC PMV/F PMSVC PMFVC Set the EtherCAT slave station name when E07.05=0.	0 (0~65535)

✧ E07.02: EtherCAT Slave Station Alias

Code (Address) Property	Name	Description	Default (Range)
E07.02 (0x7702) STOP	EtherCAT Slave Station Alias	V/F SVC FVC PMV/F PMSVC PMFVC Set the EtherCAT slave station alias when E07.05=1.	0 (0~255)

✧ E07.05: Station Alias

Code (Address) Property	Name	Description	Default (Range)
E07.05 (0x7705) STOP	Station Alias	V/F SVC FVC PMV/F PMSVC PMFVC Enable the station alias configuration.	0 (0~1)

0: Slave node is configured by the EtherCAT master

1: Slave node is configured by E07.02

✧ E07.08: EtherCAT Sync Loss Limit

Code (Address) Property	Name	Description	Default (Range)
E07.08 (0x7708) RUN	EtherCAT Sync Loss Limit	V/F SVC FVC PMV/F PMSVC PMFVC Reserved	0 (0~65535)

✧ E07.09: Port Receive Error Count

Code (Address) Property	Name	Description	Default (Range)
E07.09 (0x7709) RUN	Port Receive Error Count	V/F SVC FVC PMV/F PMSVC PMFVC Reserved	0 (0~65535)

✧ E07.10: Port Invalid Frame Count

Code (Address) Property	Name	Description	Default (Range)
E07.10 (0x770A) RUN	Port Invalid Frame Count	V/F SVC FVC PMV/F PMSVC PMFVC Reserved	0 (0~65535)

◇ E07.11: Port Forwarding Error Limit

Code (Address) Property	Name	Description	Default (Range)
E07.11 (0x770B) RUN	Port Forwarding Error Limit	V/F SVC FVC PMV/F PMSVC PMFVC Reserved	0 (0~65535)

◇ E07.12: PDI&PU Error Count

Code (Address) Property	Name	Description	Default (Range)
E07.12 (0x770C) RUN	PDI&PU Error Count	V/F SVC FVC PMV/F PMSVC PMFVC Reserved	0 (0~65535)

◇ E07.13: Port Link Loss Count

Code (Address) Property	Name	Description	Default (Range)
E07.13 (0x770D) RUN	Port Link Loss Count	V/F SVC FVC PMV/F PMSVC PMFVC Reserved	0 (0~65535)

◇ E07.14: Sync Signal Loss Count

Code (Address) Property	Name	Description	Default (Range)
E07.14 (0x770E) RUN	Sync Signal Loss Count	V/F SVC FVC PMV/F PMSVC PMFVC Reserved	0 (0~65535)

◇ E07.15: Application Level Error Code

Code (Address) Property	Name	Description	Default (Range)
E07.15 (0x770F) RUN	Application Level Error Code	V/F SVC FVC PMV/F PMSVC PMFVC Reserved	0 (0~65535)

◇ E07.16: State Machine & Port Link Status

Code (Address) Property	Name	Description	Default (Range)
E07.16 (0x7710) RUN	State Machine & Port Link Status	V/F SVC FVC PMV/F PMSVC PMFVC Reserved	0 (0~65535)

14.47.2 E07.24~E07.47: ModbusTCP Communication Parameters

◇ E07.24: ModbusTCP DHCP Enable

Code (Address) Property	Name	Description	Default (Range)
E07.24 (0x7718) STOP	ModbusTCP DHCP Enable	V/F SVC FVC PMV/F PMSVC PMFVC Set the ModbusTCP DHCP function on/off.	0 (0~1)

0: OFF

1: ON

✧ E07.25~E07.28: ModbusTCP IP Address

Code (Address) Property	Name	Description	Default (Range)
E07.25 (0x7719) STOP	IP Address a	V/F SVC FVC PMV/F PMSVC PMFVC Set the IP address a for the Modbus TCP card. The setting takes effect after power cycling.	192 (0~255)
E07.26 (0x771A) STOP	IP Address b	V/F SVC FVC PMV/F PMSVC PMFVC Set the IP address b for the Modbus TCP card. The setting takes effect after power cycling.	168 (0~255)
E07.27 (0x771B) STOP	IP Address c	V/F SVC FVC PMV/F PMSVC PMFVC Set the IP address c for the Modbus TCP card. The setting takes effect after power cycling.	1 (0~255)
E07.28 (0x771C) STOP	IP Address d	V/F SVC FVC PMV/F PMSVC PMFVC Set the IP address d for the Modbus TCP card. The setting takes effect after power cycling.	20 (0~255)

✧ E07.29~E07.32: ModbusTCP Subnet Mask

Code (Address) Property	Name	Description	Default (Range)
E07.29 (0x771D) STOP	Subnet Mask a	V/F SVC FVC PMV/F PMSVC PMFVC Set the subnet mask a for the Modbus TCP card. The setting takes effect after power cycling.	255 (0~255)
E07.30 (0x771E) STOP	Subnet Mask b	V/F SVC FVC PMV/F PMSVC PMFVC Set the subnet mask b for the Modbus TCP card. The setting takes effect after power cycling.	255 (0~255)
E07.31 (0x771F) STOP	Subnet Mask c	V/F SVC FVC PMV/F PMSVC PMFVC Set the subnet mask c for the Modbus TCP card. The setting takes effect after power cycling.	255 (0~255)
E07.32 (0x7720) STOP	Subnet Mask d	V/F SVC FVC PMV/F PMSVC PMFVC Set the subnet mask d for the Modbus TCP card. The setting takes effect after power cycling.	0 (0~255)

✧ E07.33~E07.36: ModbusTCP Gateway

Code (Address) Property	Name	Description	Default (Range)
E07.33 (0x7721) STOP	Gateway a	V/F SVC FVC PMV/F PMSVC PMFVC Set the gateway a for the Modbus TCP card. The setting takes effect after power cycling.	192 (0~255)
E07.34 (0x7722) STOP	Gateway b	V/F SVC FVC PMV/F PMSVC PMFVC Set the gateway b for the Modbus TCP card. The setting takes effect after power cycling.	168 (0~255)
E07.35 (0x7723) STOP	Gateway c	V/F SVC FVC PMV/F PMSVC PMFVC Set the gateway c for the Modbus TCP card. The setting takes effect after power cycling.	1 (0~255)
E07.36 (0x7724) STOP	Gateway d	V/F SVC FVC PMV/F PMSVC PMFVC Set the gateway d for the Modbus TCP card. The setting takes effect after power cycling.	1 (0~255)

✧ E07.37~E07.39: ModbusTCP MAC Address

Code (Address) Property	Name	Description	Default (Range)
E07.37 (0x7725) STOP	MAC Address a-b	V/F SVC FVC PMV/F PMSVC PMFVC Set the MAC address a-b for the Modbus TCP card. The setting takes effect after power cycling.	0x0002 (0x0000~0xFFFF)
E07.38 (0x7726) STOP	MAC Address c-d	V/F SVC FVC PMV/F PMSVC PMFVC Set the MAC address c-d for the Modbus TCP card. The setting takes effect after power cycling.	0x0000 (0x0000~0xFFFF)

E07.39 (0x7727) STOP	MAC Address e-f	V/F SVC FVC PMV/F PMSVC PMFVC Set the MAC address e-f for the Modbus TCP card. The setting takes effect after power cycling.	0x0000 (0x0000~0xFFFF)

◇ **E07.40: ModbusTCP Client Access Timeout**

Code (Address) Property	Name	Description	Default (Range)
E07.40 (0x7728) STOP	Client Access Timeout	V/F SVC FVC PMV/F PMSVC PMFVC Set the client access timeout. The setting takes effect after power cycling.	100 (0~65535)

14.47.3 E07.48~E07.71: EtherNet/IP Communication Parameters

◇ **E07.48: EtherNet/IP DHCP Enable**

Code (Address) Property	Name	Description	Default (Range)
E07.24 (0x7718) STOP	EtherNet/IP DHCP Enable	V/F SVC FVC PMV/F PMSVC PMFVC Enable DHCP for the EtherNet/IP card.	0 (0~1)

0: OFF

1: ON

◇ **E07.49~E07.52: EtherNet/ IP IP Address**

Code (Address) Property	Name	Description	Default (Range)
E07.49 (0x7731) STOP	IP Address a	V/F SVC FVC PMV/F PMSVC PMFVC Set the IP address a for the EtherNet/IP card. The setting takes effect after power cycling.	192 (0~255)
E07.50 (0x7732) STOP	IP Address b	V/F SVC FVC PMV/F PMSVC PMFVC Set the IP address b for the EtherNet/IP card. The setting takes effect after power cycling.	168 (0~255)
E07.51 (0x7733) STOP	IP Address c	V/F SVC FVC PMV/F PMSVC PMFVC Set the IP address c for the EtherNet/IP card. The setting takes effect after power cycling.	1 (0~255)
E07.52 (0x7734) STOP	IP Address d	V/F SVC FVC PMV/F PMSVC PMFVC Set the IP address d for the EtherNet/IP card. The setting takes effect after power cycling.	20 (0~255)

◇ **E07.53~E07.56: EtherNet/IP Subnet Mask**

Code (Address) Property	Name	Description	Default (Range)
E07.53 (0x7735) STOP	Subnet Mask a	V/F SVC FVC PMV/F PMSVC PMFVC Set the subnet mask a for the EtherNet/IP card. The setting takes effect after power cycling.	255 (0~255)
E07.54 (0x7736) STOP	Subnet Mask b	V/F SVC FVC PMV/F PMSVC PMFVC Set the subnet mask b for the EtherNet/IP card. The setting takes effect after power cycling.	255 (0~255)
E07.55 (0x7737) STOP	Subnet Mask c	V/F SVC FVC PMV/F PMSVC PMFVC Set the subnet mask c for the EtherNet/IP card. The setting takes effect after power cycling.	255 (0~255)
E07.56 (0x7738) STOP	Subnet Mask d	V/F SVC FVC PMV/F PMSVC PMFVC Set the subnet mask d for the EtherNet/IP card. The setting takes effect after power cycling.	0 (0~255)

◇ **E07.57~E07.60: EtherNet/IP Gateway**

Code (Address) Property	Name	Description	Default (Range)
E07.57 (0x7739) STOP	Gateway a	V/F SVC FVC PMV/F PMSVC PMFVC Set the gateway a for the EtherNet/IP card. The setting takes effect after power cycling.	192 (0~255)
E07.58 (0x773A) STOP	Gateway b	V/F SVC FVC PMV/F PMSVC PMFVC Set the gateway b for the EtherNet/IP card. The setting takes effect after power cycling.	168 (0~255)
E07.59 (0x773B) STOP	Gateway c	V/F SVC FVC PMV/F PMSVC PMFVC Set the gateway c for the EtherNet/IP card. The setting takes effect after power cycling.	1 (0~255)
E07.60 (0x773C) STOP	Gateway d	V/F SVC FVC PMV/F PMSVC PMFVC Set the gateway d for the EtherNet/IP card. The setting takes effect after power cycling.	1 (0~255)

◇ **E07.61~E07.63: EtherNet/IP MAC Address**

Code (Address) Property	Name	Description	Default (Range)
E07.61 (0x773D) STOP	MAC Address a-b	V/F SVC FVC PMV/F PMSVC PMFVC Set the MAC address a-b for the EtherNet/IP card. The setting takes effect after power cycling.	0x0002 (0x0000~0xFFFF)
E07.62 (0x773E) STOP	MAC Address c-d	V/F SVC FVC PMV/F PMSVC PMFVC Set the MAC address c-d for the EtherNet/IP card. The setting takes effect after power cycling.	0x0000 (0x0000~0xFFFF)
E07.63 (0x773F) STOP	MAC Address e-f	V/F SVC FVC PMV/F PMSVC PMFVC Set the MAC address e-f for the EtherNet/IP card. The setting takes effect after power cycling.	0x0000 (0x0000~0xFFFF)

◇ **E07.64: Master Access Timeout**

Code (Address) Property	Name	Description	Default (Range)
E07.64 (0x7740) STOP	Master Access Timeout	V/F SVC FVC PMV/F PMSVC PMFVC Set the master access timeout. The setting takes effect after power cycling.	100 (0~65535)

14.48 E10: Black Box Parameters

These parameters are used in conjunction with the VEICHI-supplied Black Box card. For detailed operation, refer to the appendix.

14.48.1 E10.00~E10.05: Black Box

◇ **E10.00: Black Box Enable**

Code (Address) Property	Name	Description	Default (Range)
E10.00 (0x7A00) RUN	Black Box Enable	V/F SVC FVC PMV/F PMSVC PMFVC Enable the Black Box function.	0 (0~1)

0: OFF

1: ON

✧ **E10.01: Black Box File No.**

Code (Address) Property	Name	Description	Default (Range)
E10.01 (0x7A01) READ	Black Box File No.	V/F SVC FVC PMV/F PMSVC PMFVC Monitor the number of Black Box files. This parameter is read-only.	0 (0~2)

✧ **E10.02: Black Box Status**

Code (Address) Property	Name	Description	Default (Range)
E10.02 (0x7A02) READ	Black Box Status	V/F SVC FVC PMV/F PMSVC PMFVC Monitor the Black Box function status. This parameter is read-only.	0 (0~2)

0: Initialization not completed

1: Initialization in progress

2: Initialization completed

✧ **E10.03: Receive Timeout Detection**

Code (Address) Property	Name	Description	Default (Range)
E10.03 (0x7A03) STOP	Receive Timeout Detection	V/F SVC FVC PMV/F PMSVC PMFVC Enable receive timeout fault detection.	0 (0~1)

When enabled, this function checks whether communication between the Black Box extension card and the AC drive is normal. If communication is abnormal, an E.EB1 error is generated after the timeout period set by E10.04.

0: OFF

1: ON

✧ **E10.04: Receive Timeout Threshold**

Code (Address) Property	Name	Description	Default (Range)
E07.04 (0x7A04) STOP	Receive Timeout Threshold	V/F SVC FVC PMV/F PMSVC PMFVC Set the receive timeout threshold.	10.00s (0.00s ~100.00s)

✧ **E10.05: Black Box Trigger Mode**

Code (Address) Property	Name	Description	Default (Range)
E10.05 (0x7A05) STOP	Black Box Trigger Mode	V/F SVC FVC PMV/F PMSVC PMFVC Set the trigger mode for Black Box recording.	0 (0~1)

0: Error trigger

Recording is triggered only when a drive error occurs.

1: Error and alarm trigger

Recording is triggered when a drive error or alarm occurs.

14.48.2 E10.06~E10.10: Black Box Custom Channels

Based on the default recording parameters, this group provides 5 custom Black Box recording channels to meet user-specific requirements.

✧ E10.06: Custom Channel 1

Code (Address) Property	Name	Description	Default (Range)
E10.06 (0x7A06) RUN	Custom Channel 1	V/F SVC FVC PMV/F PMSVC PMFVC Set the address for Black Box custom channel 1.	0x0433 (0x0000~0x4F99)
E10.07 (0x7A07) RUN	Custom Channel 2	V/F SVC FVC PMV/F PMSVC PMFVC Set the address for Black Box custom channel 2.	0x0441 (0x0000~0x4F99)
E10.08 (0x7A08) RUN	Custom Channel 3	V/F SVC FVC PMV/F PMSVC PMFVC Set the address for Black Box custom channel 3.	0x0452 (0x0000~0x4F99)
E10.09 (0x7A09) RUN	Custom Channel 4	V/F SVC FVC PMV/F PMSVC PMFVC Set the address for Black Box custom channel 4.	0x0468 (0x0000~0x4F99)
E10.10 (0x7A0A) RUN	Custom Channel 5	V/F SVC FVC PMV/F PMSVC PMFVC Set the address for Black Box custom channel 5.	0x0469 (0x0000~0x4F99)

Select the xx.yy of the monitoring parameters in group C, e.g., for C04.33, set it to 0x0433.

14.49 L00: Free Function Block

L00.0x: Module 1

Code (Address)	Name	Description	Default (Range)
L00.00 (0x8000) RUN	Module 1 Function	V/F SVC FVC PMV/F PMSVC PMFVC Refer to the details in Free Module Function.	0 (0~100)
L00.01 (0x8001) RUN	Input 1 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L00.02 (0x8002) RUN	Input 1 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.03 (0x8003) RUN	Input 1 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L00.04 (0x8004) RUN	Input 2 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L00.05 (0x8005) RUN	Input 2 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.06 (0x8006) RUN	Input 2 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L00.07 (0x8007) RUN	Input 3 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)

L00.08 (0x8008) RUN	Input 3 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.09 (0x8009) RUN	Input 3 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)

L00.1x: Module 2

Code (Address)	Name	Description	Default (Range)
L00.10 (0x800A) RUN	Module 2 Function	V/F SVC FVC PMV/F PMSVC PMFVC Refer to the details in Free Module Function.	0 (0~38)
L00.11 (0x800B) RUN	Input 1 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L00.12 (0x800C) RUN	Input 1 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.13 (0x800D) RUN	Input 1 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L00.14 (0x800E) RUN	Input 2 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L00.15 (0x800F) RUN	Input 2 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.16 (0x8010) RUN	Input 2 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L00.17 (0x8011) RUN	Input 3 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L00.18 (0x8012) RUN	Input 3 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.19 (0x8013) RUN	Input 3 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)

L00.2x: Module 3

Code (Address)	Name	Description	Default (Range)
L00.20 (0x8014) RUN	Module 3 Function	V/F SVC FVC PMV/F PMSVC PMFVC Refer to the details in Free Module Function.	0 (0~100)

L00.21 (0x8015) RUN	Input 1 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L00.22 (0x8016) RUN	Input 1 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.23 (0x8017) RUN	Input 1 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L00.24 (0x8018) RUN	Input 2 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L00.25 (0x8019) RUN	Input 2 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.26 (0x801A) RUN	Input 2 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L00.27 (0x801B) RUN	Input 3 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L00.28 (0x801C) RUN	Input 3 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.29 (0x801D) RUN	Input 3 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)

L00.3x: Module 4

Code (Address)	Name	Description	Default (Range)
L00.30 (0x801E) RUN	Module 4 Function	V/F SVC FVC PMV/F PMSVC PMFVC Refer to the details in Free Module Function.	0 (0~100)
L00.31 (0x801F) RUN	Input 1 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L00.32 (0x8020) RUN	Input 1 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.33 (0x8021) RUN	Input 1 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L00.34 (0x8022) RUN	Input 2 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)

L00.35 (0x8023) RUN	Input 2 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.36 (0x8024) RUN	Input 2 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L00.37 (0x8025) RUN	Input 3 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L00.38 (0x8026) RUN	Input 3 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.39 (0x8027) RUN	Input 3 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)

L00.4x: Module 5

Code (Address)	Name	Description	Default (Range)
L00.40 (0x8028) RUN	Module 5 Function	V/F SVC FVC PMV/F PMSVC PMFVC Refer to the details in Free Module Function.	0 (0~100)
L00.41 (0x8029) RUN	Input 1 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L00.42 (0x802A) RUN	Input 1 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.43 (0x802B) RUN	Input 1 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L00.44 (0x802C) RUN	Input 2 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L00.45 (0x802D) RUN	Input 2 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.46 (0x802E) RUN	Input 2 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L00.47 (0x802F) RUN	Input 3 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L00.48 (0x8030) RUN	Input 3 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.49 (0x8031) RUN	Input 3 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)

L00.5x: Module 6

Code (Address)	Name	Description	Default (Range)
L00.50 (0x8032) RUN	Module 6 Function	V/F SVC FVC PMV/F PMSVC PMFVC Refer to the details in Free Module Function.	0 (0~100)
L00.51 (0x8033) RUN	Input 1 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L00.52 (0x8034) RUN	Input 1 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.53 (0x8035) RUN	Input 1 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L00.54 (0x8036) RUN	Input 2 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L00.55 (0x8037) RUN	Input 2 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.56 (0x8038) RUN	Input 2 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L00.57 (0x8039) RUN	Input 3 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L00.58 (0x803A) RUN	Input 3 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.59 (0x803B) RUN	Input 3 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)

L00.6x: Module 7

Code (Address)	Name	Description	Default (Range)
L00.60 (0x803C) RUN	Module 7 Function	V/F SVC FVC PMV/F PMSVC PMFVC Refer to the details in Free Module Function.	0 (0~100)
L00.61 (0x803D) RUN	Input 1 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L00.62 (0x803E) RUN	Input 1 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.63 (0x803F) RUN	Input 1 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)

L00.64 (0x8040) RUN	Input 2 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L00.65 (0x8041) RUN	Input 2 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.66 (0x8042) RUN	Input 2 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L00.67 (0x8043) RUN	Input 3 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L00.68 (0x8044) RUN	Input 3 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.69 (0x8045) RUN	Input 3 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)

L00.7x: Module 8

Code (Address)	Name	Description	Default (Range)
L00.70 (0x8046) RUN	Module 8 Function	V/F SVC FVC PMV/F PMSVC PMFVC Refer to the details in Free Module Function.	0 (0~100)
L00.71 (0x8047) RUN	Input 1 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L00.72 (0x8048) RUN	Input 1 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.73 (0x8049) RUN	Input 1 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L00.74 (0x804A) RUN	Input 2 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L00.75 (0x804B) RUN	Input 2 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.76 (0x804C) RUN	Input 2 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L00.77 (0x804D) RUN	Input 3 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)

L00.78 (0x804E) RUN	Input 3 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.79 (0x804F) RUN	Input 3 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)

L00.8x: Module 9

Code (Address)	Name	Description	Default (Range)
L00.80 (0x8050) RUN	Module 9 Function	V/F SVC FVC PMV/F PMSVC PMFVC Refer to the details in Free Module Function.	0 (0~100)
L00.81 (0x8051) RUN	Input 1 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L00.82 (0x8052) RUN	Input 1 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.83 (0x8053) RUN	Input 1 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L00.84 (0x8054) RUN	Input 2 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L00.85 (0x8055) RUN	Input 2 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.86 (0x8056) RUN	Input 2 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L00.87 (0x8057) RUN	Input 3 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L00.88 (0x8058) RUN	Input 3 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.89 (0x8059) RUN	Input 3 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)

L00.9x: Module 10

Code (Address)	Name	Description	Default (Range)
L00.90 (0x805A) RUN	Module 10 Function	V/F SVC FVC PMV/F PMSVC PMFVC Refer to the details in Free Module Function.	0 (0~100)
L00.91 (0x805B) RUN	Input 1 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)

L00.92 (0x805C) RUN	Input 1 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.93 (0x805D) RUN	Input 1 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L00.94 (0x805E) RUN	Input 2 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L00.95 (0x805F) RUN	Input 2 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.96 (0x8060) RUN	Input 2 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L00.97 (0x8061) RUN	Input 3 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L00.98 (0x8062) RUN	Input 3 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L00.99 (0x8063) RUN	Input 3 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)

14.50 L01: Bit-Word Function Block Input

L01.00~L01.47: Bit-Word Function Block Input 1

Code (Address)	Name	Description	Default (Range)
L01.00 (0x8100) RUN	Input 1 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.01 (0x8101) RUN	Input 1 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.02 (0x8102) RUN	Input 1 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L01.03 (0x8103) RUN	Input 2 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.04 (0x8104) RUN	Input 2 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.05 (0x8105) RUN	Input 2 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)

L01.06 (0x8106) RUN	Input 3 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.07 (0x8107) RUN	Input 3 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.08 (0x8108) RUN	Input 3 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L01.09 (0x8109) RUN	Input 4 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.10 (0x810A) RUN	Input 4 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.11 (0x810B) RUN	Input 4 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L01.12 (0x810C) RUN	Input 5 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.13 (0x810D) RUN	Input 5 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.14 (0x810E) RUN	Input 5 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L01.15 (0x810F) RUN	Input 6 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.16 (0x8110) RUN	Input 6 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.17 (0x8111) RUN	Input 6 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L01.18 (0x8112) RUN	Input 7 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.19 (0x8113) RUN	Input 7 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.20 (0x8114) RUN	Input 7 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)

L01.21 (0x8115) RUN	Input 8 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.22 (0x8116) RUN	Input 8 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.23 (0x8117) RUN	Input 8 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L01.24 (0x8118) RUN	Input 9 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.25 (0x8119) RUN	Input 9 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.26 (0x811A) RUN	Input 9 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L01.27 (0x811B) RUN	Input 10 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.28 (0x811C) RUN	Input 10 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.29 (0x811D) RUN	Input 10 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L01.30 (0x811E) RUN	Input 11 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.31 (0x811F) RUN	Input 11 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.32 (0x8120) RUN	Input 11 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L01.33 (0x8121) RUN	Input 12 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.34 (0x822) RUN	Input 12 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.35 (0x8123) RUN	Input 12 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)

L01.36 (0x8124) RUN	Input 13 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.37 (0x8125) RUN	Input 13 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.38 (0x8126) RUN	Input 13 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L01.39 (0x8127) RUN	Input 14 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.40 (0x8128) RUN	Input 14 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.41 (0x8129) RUN	Input 14 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L01.42 (0x812A) RUN	Input 15 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.43 (0x812B) RUN	Input 15 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.44 (0x812C) RUN	Input 15 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L01.45 (0x812D) RUN	Input 16 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.46 (0x812E) RUN	Input 16 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.47 (0x812F) RUN	Input 16 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)

L01.48~L01.95: Bit-Word Function Block Input 2

Code (Address)	Name	Description	Default (Range)
L01.48 (0x8130) RUN	Input 1 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.49 (0x8131) RUN	Input 1 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)

L01.50 (0x8132) RUN	Input 1 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L01.51 (0x8133) RUN	Input 2 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.52 (0x8134) RUN	Input 2 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.53 (0x8135) RUN	Input 2 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L01.54 (0x8136) RUN	Input 3 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.55 (0x8137) RUN	Input 3 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.56 (0x8138) RUN	Input 3 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L01.57 (0x8139) RUN	Input 4 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.58 (0x813A) RUN	Input 4 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.59 (0x813B) RUN	Input 4 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L01.60 (0x813C) RUN	Input 5 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.61 (0x813D) RUN	Input 5 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.62 (0x813E) RUN	Input 5 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L01.63 (0x813F) RUN	Input 6 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.64 (0x8140) RUN	Input 6 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.65 (0x8141) RUN	Input 6 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)

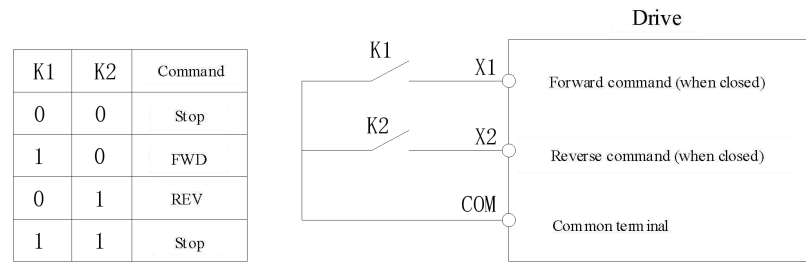
L01.66 (0x8142) RUN	Input 7 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.67 (0x8143) RUN	Input 7 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.68 (0x8144) RUN	Input 7 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L01.69 (0x8145) RUN	Input 8 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.70 (0x8146) RUN	Input 8 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.71 (0x8147) RUN	Input 8 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L01.72 (0x8148) RUN	Input 9 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.73 (0x8149) RUN	Input 9 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.74 (0x814A) RUN	Input 9 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L01.75 (0x814B) RUN	Input 10 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.76 (0x814C) RUN	Input 10 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.77 (0x814D) RUN	Input 10 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L01.78 (0x814E) RUN	Input 11 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.79 (0x814F) RUN	Input 11 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.80 (0x8150) RUN	Input 11 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)

L01.81 (0x8151) RUN	Input 12 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.82 (0x8152) RUN	Input 12 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.83 (0x8153) RUN	Input 12 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L01.84 (0x8154) RUN	Input 13 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.85 (0x8155) RUN	Input 13 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.86 (0x8156) RUN	Input 13 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L01.87 (0x8157) RUN	Input 14 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.88 (0x8158) RUN	Input 14 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.89 (0x8159) RUN	Input 14 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L01.90 (0x815A) RUN	Input 15 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.91 (0x815B) RUN	Input 15 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.92 (0x815C) RUN	Input 15 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)
L01.93 (0x815D) RUN	Input 16 Type	V/F SVC FVC PMV/F PMSVC PMFVC 0: OFF 1: Constant 2: Address No. 3: Bitwise operation of address parameters	0 (0~3)
L01.94 (0x815E) RUN	Input 16 ID/Value	V/F SVC FVC PMV/F PMSVC PMFVC Set the constant value for input.	0 (0~65535)
L01.95 (0x815F) RUN	Input 16 Bit (Bit operation valid)	V/F SVC FVC PMV/F PMSVC PMFVC Bitwise operations are valid for address parameter inputs.	0 (0~99)

Appendix I: Terminal Wiring Methods

0: Two-wire control 1

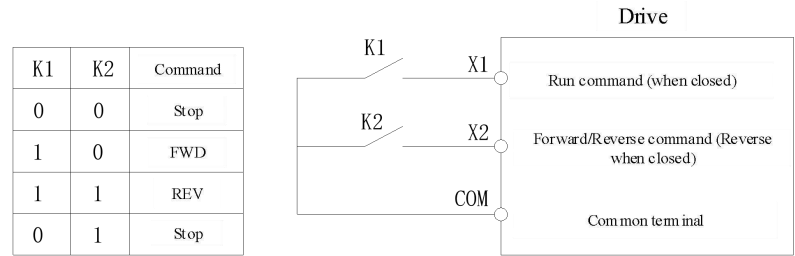
Run and direction are set at the same time. This is the most commonly used two-wire control mode. The factory default is that the X1 (FWD operation) and X2 (REV operation) terminal control the motor to run forward and reverse.



0: Diagram of Two-wire Control 1

1: Two-wire control 2

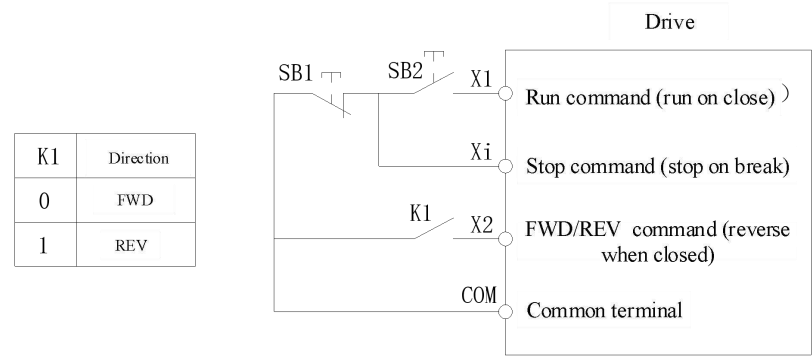
Operation and direction are separated. X1 (FWD operation) in this mode is used to enable motor operation. The direction is defined by the status of the X2 terminal (REV operation).



1: Diagram of Two-wire Control 2

2: Three-wire control 1

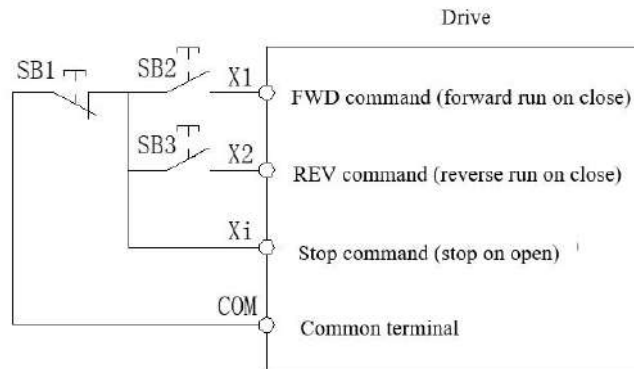
The three-wire control terminal (Xi) of this mode is for stop and the operation command is generated by X1 (FWD operation) and the direction is controlled by X2 (REV operation). Input via the terminal(Xi) in the three-wire control mode is valid.



2: Diagram of Three-wire Control 1

3: Three-wire control 2

The three-wire control terminal (Xi) of this mode is designated for stopping. The operation command is generated by X1 (FWD operation) or X2 (REV operation), with both terminals governing the direction of operation.



3: Diagram of Three-wire Control 2

Note: SB1: Stop; SB2: FWD operation; SB3: REV operation; "Xi" is a multifunction input terminal set to "3" [3-line control(Xi)].

VEICHI

SUZHOU VEICHI ELECTRIC Co.,Ltd.

Address:No.1000 Songjia road,Wuzhong Economic and
Technological Development Zone,Suzhou

Phone:+86-512-6617 1988

Facebook:<https://www.facebook.com/veichiglobal/>

Whatsapp:+86-138 2881 8903

E-mail:overseas@veichi.com Web:<https://www.veichi.com/>



Official Website

Version: V1.1

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