VEICHI

Manual

AC310 Series Frequency Inverter

Catalog

Chapter 1 General 1
1.1 Safety Precaution 1
1.2 Pre-use 1
1.3 Technical Specifications 3
Chapter 2 Installation 5
Chapter 3 Panel Layout and Operation Instructions 13
Chapter 4 Parameter List 15
4.1 Terms and Marks 15
4.2 Parameter List 15
4.3 F00: Environmental Parameters 16
F00.0x: Environment Settings 16
F00.1x~F00.3x: Common Parameters 17
4.4 F01: Basic Settings 17
F01.0x: Basic Commands 17
F01.1x: Frequency Commands 18
F01.2x~F01.3x: Acceleration/Deceleration Time 19
F01.4x: PWM 20
4.5 F02: Motor 1 Parameters 20
F02.0x: Basic Motor Parameters and Auto-Tuning 20
F02.1x: AM Advanced Parameters 21
F02.2x: PM Advanced Parameters 21
F02.3x~F02.4x: Encoder Parameters 22
F02.5x~F02.6x: Motor Application Parameters 23
4.6 F03: Vector Control 23
F03.0x: ASR (Automatic Speed Regulator) 23
F03.1x: ACR and Torque Limit 24
F03.2x: Torque Optimization 25
F03.3x: Magnetic Flux Optimization 25
F03.4x~F03.5x: Torque Control 26
F03.6x: PM High-Frequency Injection 27
F03.7x: Position Compensation 28

F03.8x: Expansion Control 28
4.7 F04: V/F Control 28
F04.0x: V/F Control 28
F04.1x: Customized V/F Curve 29
F04.2x: V/F Conversion 30
F04.3x: V/F ECO Control 30
4.8 F05: Input Terminal 31
F05.0x: Digital Input Terminal 31
F05.1x:DI Terminal Detection Delay 32
F05.2x: DI Terminal Characteristics 32
F05.3x: PUL Terminal 33
F05.4x: AI Type 33
F05.5x: AI Linear Parameters 34
F05.6x: AI Curve 1 34
F05.7x: AI Curve 2 35
F05.8x: AI as DI Terminal 35
4.9 F06: Output Terminal 36
F06.0x: AO(Analog Output) 36
F06.1x: AO Expansion 37
F06.2x~F06.3x: DO and RO 37
F06.4x: Frequency Detection 38
F06.5x: Monitor Comparator Output 1 38
F06.6x~F06.7x: Virtual I/O Terminal 39
F06.7x: Monitor Comparator 2 Output 40
4.10 F07: Operation Control 41
F07.0x: Connection 41
F07.1x: Stop Control 41
F07.2x: DC Brake and Speed Tracking 42
F07.3x: Jogging 42
F07.4x: Holding and Jump Frequency during Start/Stop 43
4.11 F08: Auxiliary Control 43
F08.0x: Counting and Timing 43
F08.3x : Swing Frequency 44
4.12 F09: Auxiliary Control 2 45

F09.0x: Maintenance 45
4.13 F10: Protection Parameters 45
F10.0x: Current Protection 45
F10.1x: Voltage Protection 46
F10.2x: Auxiliary Protection 47
F10.3x: Load Protection 48
F10.4x: Stall Protection 49
F10.5x: Fault Recovery Protection and Motor Overload 50
4.14 F11: Panel Parameters 51
F11.0x: Key Operation 51
F11.1x: Cyclic Monitoring of Status Interface 52
F11.2x: Monitoring Parameters 53
F11.3x: Special Functions of Panel 53
4.15 F12: Communication Parameters 54
F12.0x: Modbus slave parameters 55
F12.1x: Modbus Master Parameters 56
F12.2x: Modbus Special Functions 56
F12.3x: PROFIBUS-DP 57
F12.4x: CANopen 57
F12.5x~F12.6x: Expansion Communication of EX_A and EX_B 58
4.16 F13: PID Control 59
F13.00~F13.06: PID Setting and Feedback 59
F13.07~F13.24: PID Regulation 59
F13.25~F13.28: PID Feedback Disconnection 60
F13.29~F13.33: PID Sleep 61
4.17 F14: Multi-seg Speed and Simple PLC 61
F14.00~F14.14: Multi-seg Speed Frequency 61
F14.15: PLC Operation Mode 62
F14.16~F14.30 : PLC Runtime 62
F14.31~F14.45 : PLC Operation Direction and Time 64
4.18 F15: Reserved 64
4.19 F16: Tension Control 64
F16.01~F16.02: Tension Mode 64
F16.03~F16.09: Tension Setting 65

F16.12~F16.16: Friction Compensation....65
F16.30~F16.32: Material Fracture Detection....66
F16.36~F16.38: Pre-drive....66
F16.42~F16.43: Stop Braking....66
F16.44~F16.55: Roll Diameter....66
F16.56~F16.63: Roll Diameter Calculation by Linear Speed....67
F16.68~ F16.70: Thickness-based Roll Diameter Calculation....68
F16.75~F16.82: Tension PID....68
4.20 F25: AI and AO Correction....69
4.21 C0x: Monitoring Parameters....69
C00: Basic Monitoring....69
C01: Fault Monitoring....69
C02: App Monitoring....70
C03 group: maintenance and tension monitoring....70
4.22 Terminal I/O Function Selection....71
4.23 Fault and Warning Code List....72
Chapter Five Regular Inspection and Maintenance....74
5.1. Inspection....74
5.2 Maintenance....75
5.3 Product Warranty....75
Appendix I: Modbus Communication Protocol....76
Appendix II: Terminal Wiring Methods....79
Appendix III: External Panel Dimensions and Models....80
Version Change Log....81

Chapter 1 General

1.1 Safety Precaution

To ensure safe and proper use of this product, please fully understand the safety precautions outlined in this manual before using.

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	**DANGER**: Incorrect operation may result in death or major safety incidents.
Caution	**CAUTION**: Incorrect operation may result in minor injuries.

Operator

This product must be installed operated and maintained by trained professionals. "Trained professionals" means that the personnel working on this product must be trained with specialized skills and knowledge about installation, wiring, operation and maintenance of the equipment, so they can respond correctly to various emergencies that may arise during use.

Safety Guide

The safety rules and warning signs presented for safety are taken to prevent personal injuries and damages to the products and the associated systems. Please read this manual carefully before use and strictly follow the safety guidelines and warning signs in this manual.

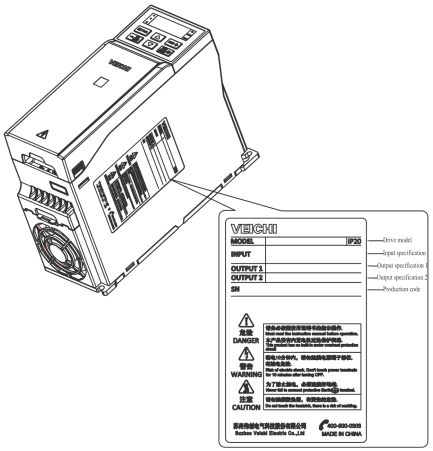
- Correct transportation, storage, installation, as well as careful operation and maintenance, for the safe operation of the AC drive is essential. During transportation and storage, it is crucial to protect the AC drive from shocks and vibrations. Additionally, it should be stored in a dry environment free of corrosive gases and conductive dust below 60°C.
- This product is equipped with hazardous voltage to control potentially dangerous motion mechanisms. Failure to observe the regulations or this manual may lead to damages to the products and associated systems, or even personal injuries and death.
- Do not perform wiring work while the power is on, as there is a risk of death by electric shock. 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 5 minutes.
- The power cables, motor cables, and control cables must all be tightly connected, and the grounding terminal must be grounded with resistance lower than 10Ω.
- The static electricity of human body may cause significant harm to internal sensitive devices. So it is crucial for professionals to adhere to the measures and methods outlined in the Electrostatic Discharge Prevention (ESD) guidelines before commencing work on the AC drives.
- Due to the pulse waveform output voltage of the AC drive, it is essential to remove the installed power factor improvement capacitors, lightning protection varistors or other devices on the output side of the AC drive, or move the devices to the input side.
- Do not add switching devices such as circuit breakers and contactors to the output side of the AC drive. (If it is necessary to connect switching devices to the output side, please ensure that the output current of the AC drive is zero when the switch is on or off.)
- Failure of the control device could lead to production halt and significant accidents. Therefore, please apply the necessary external protection measures or backup devices.
- This product is intended for the manufacturer's specified purposes. Unauthorized applications in such as emergency, rescue, marine, medical, aviation, or facility-related settings are seriously prohibited.
- Maintenance of this product can only be carried out by VEICHI or by professionals authorized and licensed by VEICHI. Unauthorized modification or accessories may result in product failure. Any defective devices during maintenance must be replaced timely.

1.2 Pre-use

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 is damaged

during shipping, please contact us or the shipping company immediately. If everything is fine, please double-check that the model number of the received drive is the same as the order sheet.

Drive Model and Description



AC310 - T 3 - 011 G/015P - B

Code	Product series
AC310	

Code	Voltage type
T	Three - phase
S	Single-phase

Code	Voltage level
2	220V
3	380V
6	660V

Code	Load level
G	Heavy duty
P	Light duty

Code	Accessory type
B	Brake unit

Code	Motor power(kW)
7R5	7.5
011	11
018	18.5
132	132

Drive rated output current

Power(kW) \ Input Voltage(V) / Output Current(A)	220	380	660
0.75	4	3	-
1.5	7	4	-
2.2	10	6	-
4	16	10	-
5.5	20	13	-
7.5	30	17	-
11	42	25	-
15	55	32	-
18.5	70	38	-
22	80	45	28
30	110	60	35
37	130	75	45
45	160	90	52
55	200	110	63
75	260	150	86
90	320	180	98
110	380	210	121
132	420	250	150
160	550	310	175
185	600	340	198
200	660	380	218
220	720	415	235
250	-	470	270
280	-	510	330

315	-	600	345
355	-	670	380
400	-	750	430
450	-	810	466
500	-	860	540
560	-	990	600
630	-	1200	690
710	-	1340	760
800	-	1500	860
900	-	1620	932
1000	-	1720	1080
1120	-	1980	1200

1.3 Technical Specifications

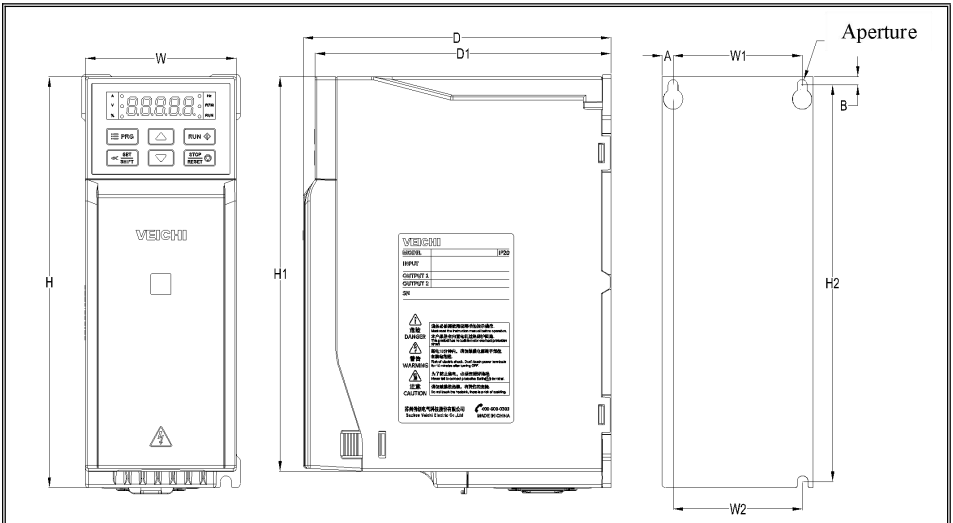
Item		Specification
Power Input	Voltage and frequency	S2: Single-phase 200V~240V 50Hz/60Hz; T2: Three-phase 200V~240V 50Hz/60Hz; T3: Three-phase 380V~480V 50Hz/60Hz; T6: Three-phase 660V~690V 50Hz/60Hz.
	Allowable fluctuation	T/S2: -10%~10%; T3: -15%~10%; T6: -10%~10% Voltage imbalance rate: <3%; Frequency: ±5%; Distortion rate with reference to IEC61800-2
	Switching impulse current	<rated current
Output	Output voltage	Output under rated conditions: Three-phase, 0V~input voltage, tolerance<5%
	Output frequency range	0Hz~599Hz
	Output frequency accuracy	±0.5% of the max. frequency
	Overload capacity	G: 150% of rated current for 89s, 180% of rated current for 10s, and 200% of rated current for 3s P: 120% of rated current for 35s, 140% of rated current for 7s, and 150% of rated current for 3s
Main Control Performance	Motor type	Three-phase asynchronous motors, permanent magnet synchronous motors (sine wave), and synchronous reluctance motors
	Control mode	V/F control, SVC, FVC, and voltage-frequency conversion control
	Modulation	PWM
	Carrier frequency	1.0kHz~16.0kHz
	Speed control range	SVC: Rated load 1:200 FVC: Rated load 1:200
	Speed stabilizing accuracy	SVC: ± 0.5% (Three-phase AM), ±0.1% (PM) FVC: ±0.02%
	Starting torque	SVC: 150% of the motor rated torque at 0.25Hz FVC: 200% of the motor 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 resolution	Digit setting: 0.01Hz; analog setting: Max. frequency × ±0.05 %
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: 0.0%~100.0%; manual torque boost: 0.0%~30.0%
	V/F curve	4 patterns: Linear torque curve, self-defined V/F curve, torque drop curves (1.1~2.0 power), and square V/F curve
	ACC/DEC curve	2 patterns: Linear and S-curve acceleration/deceleration 4 sets of acceleration/deceleration time, unit: 0.01s, 650.00s max

	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 regulation	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 save energy.	
	Auto current limit	Auto current limit works during operation to prevent frequent tripping due to over-current fault.	
	Instantaneous power-cut mode	Uninterrupted operation is realized through bus voltage control in case of instantaneous power loss	
	Standard function	PID control, speed tracking and restart after power down, jump frequency, upper/lower frequency limit control, programmed operation, multi-segment speed, RS485, analog output, frequency pulse output, parameter access level setting, common parameter setting, monitoring comparator output, counting and timing, and swing frequency	
	Frequency source	Digital setting via the panel, panel potentiometer, analog voltage/current terminal AI1 and AI2, communication, terminal combination, and frequency source combination	
	Feedback input source	Set via AI1 and AI2, communication, and PUL terminal	
	Command source	Set via operation panel, external terminals and communication	
	Input command signal	Start, stop, forward and reverse, jog, multi-segment speed, free stop, reset, acceleration/deceleration time, frequency setting method selection, and external fault alarms.	
	Output signal	1 × relay output, 1 × open collector output, and 1 × analog output can be selected to 0V~10V, 0mA~20mA or 4mA~20mA, or frequency pulse output	
Protection		Over-voltage, under-voltage, current limit, over-current, overload, electronic thermal relay, over-heat, over-voltage stall, data protection, overspeed protection and input/output phase loss protection	
Panel Display	LED display	Built-in panel: Single-line 5-bit digital tube	To monitor the status of 1 AC drive
		External panel: Single/dual line 5-bit digital tube	Dual-line to monitor the status of 2 AC drives
	Parameter copy	The function code information of the AC drive can be uploaded and downloaded to realize fast parameter copying	
	Status monitoring	All parameters of the monitoring parameter group include output frequency, given frequency, output current, input voltage, output voltage, motor speed, PID feedback, PID setting, module temperature, given torque, output torque, etc.	
	Fault warning	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. No condensation, icing, rain, snow, hail, etc., solar radiation below 700W/m², air pressure 70kPa~106kPa	
	Temperature, humidity	-10°C~+50°C, derate above 40°C, 60°C max. (no-load) 5%RH~95%RH (non-condensing)	
	Vibration	5.9m/s²(0.6G) at 9Hz~200Hz	
	Storage temperature	-30°C~+60°C	
	Installation method	Wall-mounting	
	Protection	IP20	
	Pollution class	Level 2	
	Cooling method	Forced air-cooling	

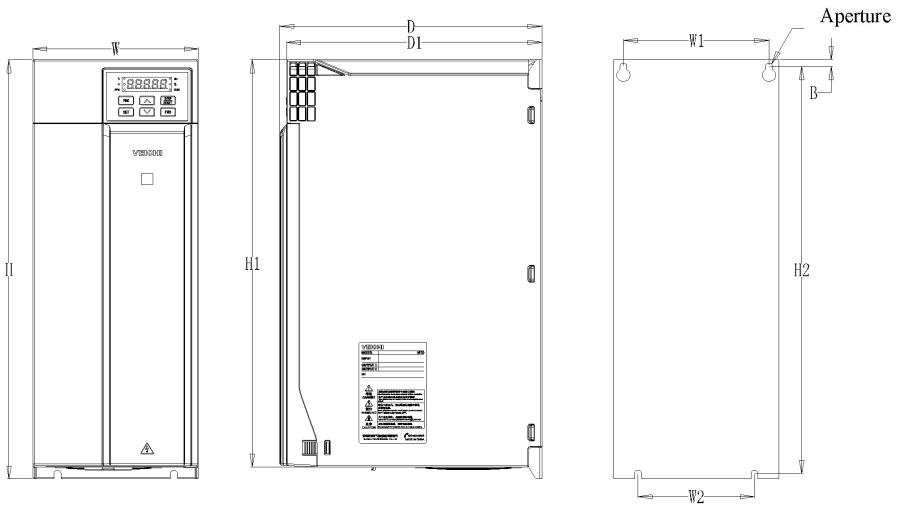
Chapter 2 Installation

To ensure personal safety, maximized product performance and reliable operation of the drive, please use the products in strict accordance with the environmental, wiring and ventilation requirements described in this chapter.

External dimensions of the AC drive(plastic)

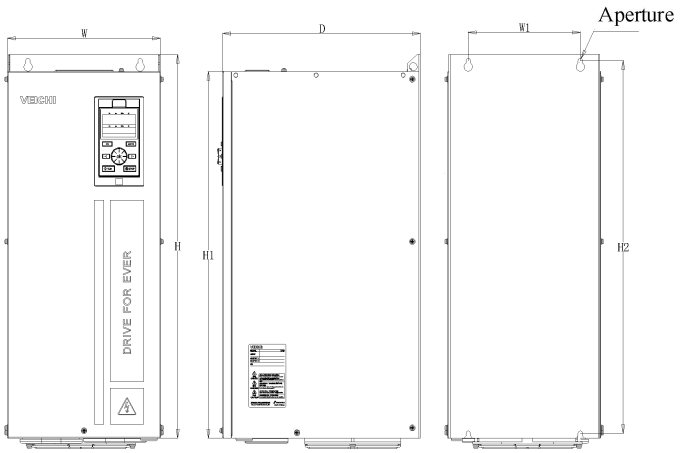


Drive Model	Outer Dimension(mm)					Installation Dimension(mm)					Aperture
	W	H	H1	D	D1	W1	W2	H2	A	B	
AC310-T/ S2-R75G-B AC310-T/ S2-1R5G-B	76	200	192	155	149	65	65	193	5.5	4	3-M4
AC310-T/ S2-2R2G-B AC310-T/ S2-004G-B	100	242	231	155	149	84	86.5	231.5	8	5.5	3-M4
AC310-T3-R75G/ 1R5P-B AC310-T3-1R5G/ 2R2P-B AC310-T3-2R2G-B	76	200	192	155	149	65	65	193	5.5	4	3-M4
AC310-T3-004G/ 5R5P-B AC310-T3-5R5G/ 7R5P-B	100	242	231	155	149	84	86.5	231.5	8	5.5	3-M4
AC310-T3-7R5G/ 011P-B AC310-T3-011G/ 015P-B AC310-T/ 2-5R5G-B	116	320	307.5	175	169	98	100	307.5	9	6	3-M5



Drive Model	Outer Dimension(mm)					Installation Dimension(mm)				Aperture
	W	H	H1	D	D1	W1	W2	H2	B	
AC310-T/ S2-7R5G-B	142	383	372	225	219	125	100	372	6	4-M5
AC310-T/ S2-011G-B										
AC310-T/ S2-015G	172	430	-	225	219	150	150	416.5	7.5	4-M5
AC310-T2-018G										
AC310-T2-022G										
AC310-T3-015G/ 018P-B	142	383	372	225	219	125	100	372	6	4-M5
AC310-T3-018G/ 022P-B										
AC310-T3-022G/ 030P-B										
AC310-T3-030G/ 037P	172	430	-	225	219	150	150	416.5	7.5	4-M5
AC310-T3-037G/ 045P										

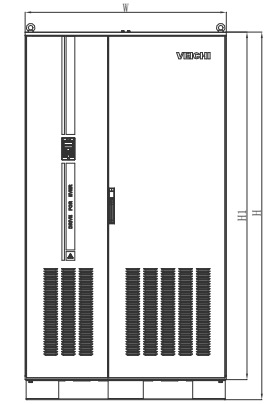
External dimensions of the AC drive(steel)

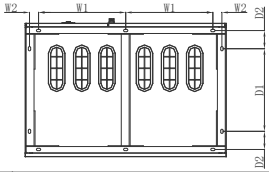


Drive Model	Outer Dimension				Hole Position		Aperture
	W	H	H1	D	W1	H2	
AC310-T2-030G	240	560	520	310	176	544	4-M6
AC310-T2-037G							
AC310-T2-045G							
AC310-T2-055G	270	638	580	350	195	615	4-M8
AC310-T3-045G/ 055P	240	560	520	310	176	544	4-M6
AC310-T3-055G/ 075P							
AC310-T3-075G/ 090P							
AC310-T6-022G/ 030P							
AC310-T6-030G/ 037P							
AC310-T6-037G/ 045P							
AC310-T6-045G/ 055P							
AC310-T6-055G/ 075P							
AC310-T6-075G/ 090P							
AC310-T3-090G/ 110P	270	638	580	350	195	615	4-M8
AC310-T3-110G/ 132P							
AC310-T6-090G/ 110P							
AC310-T6-110G/ 132P							
AC310-T3-132G/ 160P-L	350	738	680	405	220	715	4-M8
AC310-T3-160G/ 185P-L							
AC310-T6-132G/ 160P-L							
AC310-T6-160G/ 185P-L							

AC310-T3-185G/200P-L	360	940	850	480	200	910	4-M16
AC310-T3-200G/220P-L							
AC310-T3-220G/250P-L							
AC310-T6-185G/200P-L							
AC310-T6-200G/220P-L							
AC310-T6-220G/250P-L							
AC310-T3-250G/280P-L	370	1140	1050	545	200	1110	4-M16
AC310-T3-280G/315P-L							
AC310-T6-250G/280P-L							
AC310-T6-280G/315P-L							
AC310-T3-315G/355P-L	400	1250	1140	545	240	1213	4-M16
AC310-T3-355G/400P-L							
AC310-T3-400G/450P-L							
AC310-T6-315G/355P-L							
AC310-T6-355G/400P-L							
AC310-T6-400G/450P-L							
AC310-T3-450G/500P-L	460	1400	1293	545	300	1363	4-M16
AC310-T3-500G/560P-L							
AC310-T3-560G/630P-L							
AC310-T6-450G/500P-L							
AC310-T6-500G/560P-L							
AC310-T6-560G/630P-L							

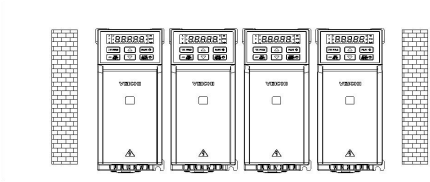
External dimensions of the AC drive (cabinet)



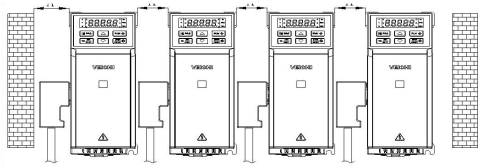


Drive Model	Outer Dimension (mm)				Hole Position (mm)				Aperture
	W	H	H1	D	W1	W2	D1	D2	
AC310-T3-630G/ 710P-LD	1200	2200	2080	800	520	54	494	108.5	φ14
AC310-T3-710G/ 800P-LD									
AC310-T3-800G/ 900P-LD									
AC310-T3-900G/ 1000P-LD									
AC310-T3-1000G/ 1120P-LD									
AC310-T3-1120G-LD									
AC310-T6-630G/ 710P-LD									
AC310-T6-710G/ 800P-LD									
AC310-T6-800G/ 900P-LD									
AC310-T6-900G/ 1000P-LD									
AC310-T6-1000G/ 1120P-LD									
AC310-T6-1120G-LD									

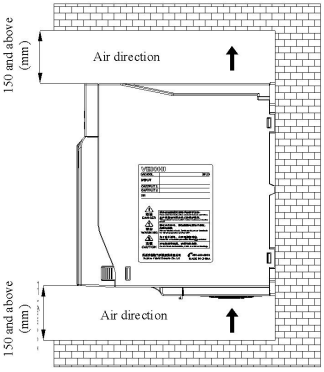
Installation space requirements



a.Unlimited left and right space
(no communication expansion board)

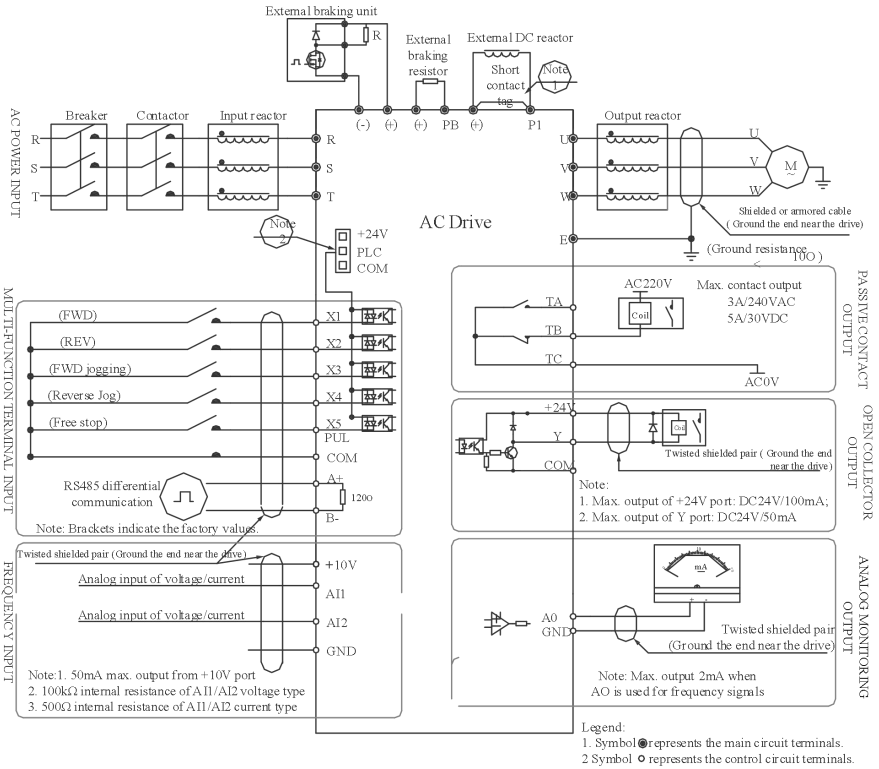


b.Parallel installation space A ⩾50mm (with communication expansion board) .



Top/Bottom space

Standard wiring



Note:

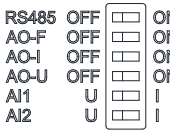
1. Models T3-22kW and below have built-in braking units, which need to be connected with braking resistors as required; For models without built-in brake units, external brake unit can be installed as required.

2. Terminals (X1~X5/PUL) can support NPN or PNP transistor signals as inputs, and the bias voltage can be selected from the internal power supply of AC drive (+24V terminal) or external power supply (PLC terminal).

● Auxiliary terminal output capacity

Terminal	Definition	Max. output
+10V	10V auxiliary power output, forming a circuit with GND	50mA
AO	Analog monitoring output, forming a circuit with GND	Max. output of 2mA for voltage signals
+24V	24V auxiliary power output, forming a circuit with COM	100mA
Y	Open collector output, action object can be set in the software	DC24V/50mA
TA/TB/TC	Passive contact output, action object can be set in the software	3A/240VAC 5A/30VDC

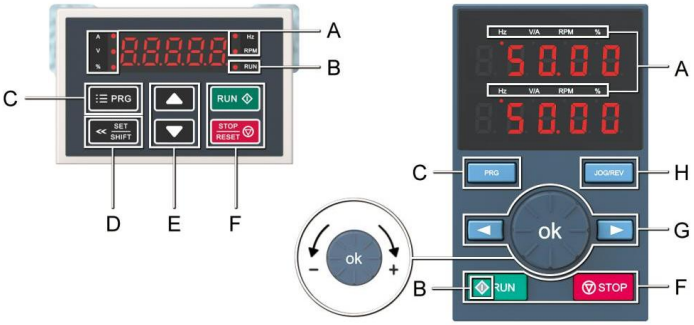
● Switch function legend and description

Tag	Position	Description
	485 terminating resistance	RS485 dialed to ON, and then communication circuit is connected to a 120Ω terminating resistor
	AO-Frequency	0.0kHz~100.0kHz frequency output from AO interface AO-F dialed to ON, and voltage needs to be increased by adding external appliances (typically connected to a 5.1kΩ resistor)
	AO-Current	AO-I to ON to output current of 0mA~20mA or 4mA~20mA
	AO-Voltage	AO-U to ON to output voltage of 0V~10V
	AI1-Current/Voltage	AI1 dialed to I: To input current of 0mA~20mA; AI1 dialed to U: To input voltage of 0V~10V
	AI2-Current/Voltage	AI2 dialed to I: To input current of 0mA~20mA; AI2 dialed to U: To input voltage of 0V~10V

Chapter 3 Panel Layout and Operation Instructions

● Panel name

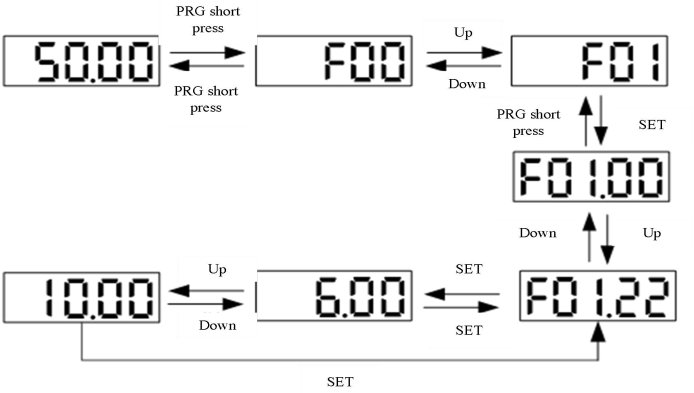
Integrated panel(models 37kW and below) Dual-line panel(models 37kW and above)



Mark	Single-line panel	Dual-line panel	Function
A	Unit indicator		Hz: Frequency; A: Current; V: Voltage; V/A: voltage or current; RPM: Speed; %: Percentage
B	Status indicator		ON: Forward; Flash: Reverse; OFF: Stop
C	Program PRG	Program PRG	Enter the function menu under standby or operation status; Press it to exit during parameter modification; Long press it (1 second) under standby or operation to enter the status interface
D	Set/Shift SET SHIFT	-	Set: Press the key to confirm the modification. Shift: Long press the key (1 second) to shift among the operation bit, and to shift circularly by holding on it.
E	UP, DOWN	-	UP key increases the value, and DOWN key decreases the value
F	RUN RUN	RUN RUN	When Run/Stop is controlled by the panel, press this key to make the AC drive operate in forward direction. The status indicator is on for forward operation and flashing for reverse operation.
	Stop/Reset STOP RESET	Stop, Reset STOP	When the commands are given from the panel, press this key to stop the AC drive; Define other command giving methods to be valid or not by parameter F11.03 [Panel STOP]; Press this key to reset AC drive in fault.
G	-	ok	Potentiometer: Rotate clockwise to increase the value, and counterclockwise to decrease it.
			Confirm: After modification, press it to confirm.
		Left, Right	Shift the bit to the left and right.
H	-	Function keys	The functions of the key are selected via parameter F11.02 [Panel Function Key].

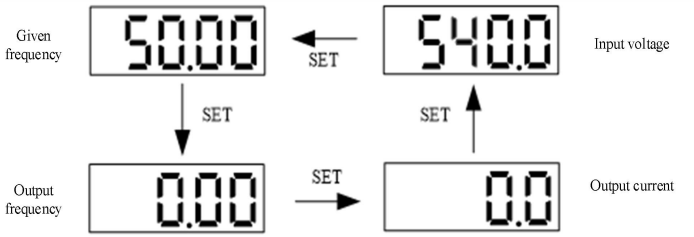
● Set the basic parameters

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



Note: To modify the tens-, hundreds- and thousands-bit of a parameter, press Shift for quick positioning.

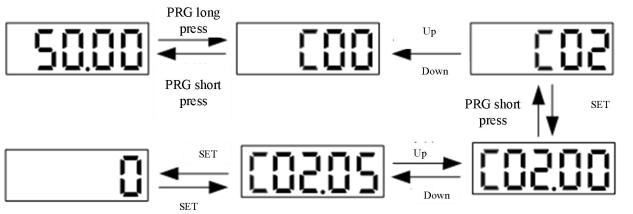
● Check the monitoring status



Note: Press Left to cycle through the first row of monitoring parameters and Right to cycle through the second row when it is an external panel.

● Check the monitoring parameters

Take the C02.05 [PLC Operation Stage] as an example.



Chapter 4 Parameter List

This section only provides a brief list of functions. Please refer to the AC310 Technical Manual or consult our company for detailed information.

4.1 Terms and Marks

◆Marks and terms of control modes

Mark	Content
V/F	Valid parameters under V/F control for asynchronous motors(AM)
SVC	Valid parameters under open-loop vector control for asynchronous motors(AM)
FVC	Valid parameters under closed-loop vector control for asynchronous motors(AM)
PMVF	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 marks mean that the parameter is invalid under certain control modes.

◆Marks and terms of control modes

Mark	Content
RUN	Parameters that can be modified during operation
STOP	Parameters that cannot be modified during operation
READ	The parameter can only be read, not modified (the LED displays five "-" during modification)

4.2 Parameter List

◆Code types for this product

Code	Name	Code	Name
F00.0x	Environment settings	F07.0x	Start control
F00.1x	Common parameters	F07.1x	Stop control
F01.0x	Basic commands	F07.2x	DC brake and speed tracking
F01.1x	Frequency commands	F07.3x	Jog
F01.2x	ACC./DEC. time	F07.4x	Start/Stop frequency holding and jump
F01.4x	PWM control	F08.0x	Counting and timing
F02.0x	Basic motor parameters and auto-tuning	F08.3x	Swing Frequency
F02.1x	Advanced parameters for AM	F09.0x	Maintenance function
F02.2x	Advanced parameters for PM	F10.0x	Current protection
F02.3x- F02.4x	Encoder parameters	F10.1x	Voltage protection
F02.5x	Motor application parameters	F10.2x	Subsidiary protection
F03.0x	Velocity loop	F10.3x	Load protection
F03.1x	Current loop and torque limit	F10.4x	Stall protection
F03.2x	Torque optimization	F10.5x	Fault recovery and motor overload protection
F03.3x	Flux optimization	F11.0x	Key operation
F03.4x- F03.5x	Torque control	F11.1x	Cyclic monitoring of status interface
F03.6x	PM high-frequency injection	F11.2x	Monitoring parameters
F03.7x	Position compensation	F11.3x	Special panel functions
F03.8x	Expansions	F12.0x	Modbus slave parameters
F04.0x	V/F control	F12.1x	Modbus master parameters
F04.1x	Customized V/F curves	F12.2x	Special Modbus functions
F04.2x	V/F separation	F12.3x	PROFIBUS-DP parameters
F04.3x	V/F ECO control	F12.4x	CANopen parameters
F05.0x	Digit input terminal	F12.5x~F12.6x	EX_A, EX_B expansion communication
F05.1x	X1-X5 detection delay	F13.00~F13.06	PID setting and feedback
F05.2x	Digit input terminal mode	F13.07~F13.24	PID setting

F05.3x	PUL terminal	F13.25~F13.28	PID feedback disconnection
F05.4x	AI type processing	F13.29~F13.33	Sleep
F05.5x	AI linear processing	F14.00~F14.14	Multi-segment speed frequency
F05.6x	AI Curve 1 processing	F14.15	PLC mode
F05.7x	AI Curve 2 processing	F14.16~F14.30	PLC runtime
F05.8x	AI as DI terminal	F14.31~F14.45	PLC direction and ACC/DEC time
F06.0x	Analog output	F16.0x	Tension control
F06.1x	AO expansion	C00.xx	Basic monitoring
F06.2x~F06.3x	Digital and relay output	C01.xx	Fault monitoring
F06.4x	Frequency detection	C02.xx	App monitoring
F06.5x	Monitoring comparator	C03.xx	Maintenance and tension monitoring
F06.6x~F06.7x	Virtual I/O terminals	-	-

4.3 F00: Environmental Parameters

F00.0x: Environment Settings

Code (Address)	Name	Content	Default (Range)	Property
F00.00 (0x0000)	Parameter Access Level	V/F SVC FVC PMVF PMSVC PMFVC Set the parameter access level according to access restriction. 0: Standard parameters (Fxx.yyy, Cxx.yyy); 1: Common parameters (F00.00, Pxx.yyy); 2: Monitoring parameters (F00.00, Cxx.yyy); 3: Modified parameters (F00.00, Hxx.yy)	0 (0~3)	RUN
F00.01 (0x0001)	Purpose	V/F SVC FVC PMVF PMSVC PMFVC AC drives can be set for the specific purpose. 0: General; 1: Fan, pump	0 (0~1)	STOP
F00.03 (0x0003)	Initialization	V/F SVC FVC PMVF PMSVC PMFVC Set the initialization mode for the drive. 0: Initialization OFF; 11: Set parameters according to actual needs (motor parameters excl.); 22: All parameters initialized; 33: Clear fault records	0 (0~33)	STOP
F00.04 (0x0004)	Panel Parameter Copy	V/F SVC FVC PMVF PMSVC PMFVC 0: None; 11: Upload parameters to the panel; 22: Download parameters to the drive	0 (0~30)	STOP
F00.05 (0x0005)	Reserved	-	Reserved	Reserved
F00.06 (0x0006)	Reserved	-	Reserved	Reserved
F00.07 (0x0007)	Free Parameter 1	V/F SVC FVC PMVF PMSVC PMFVC Set the machine codes or purpose codes when multiple	0 (0~65535)	RUN
F00.08 (0x0008)	Free Parameter 2	V/F SVC FVC PMVF PMSVC PMFVC Set the machine codes or purpose codes when multiple	0 (0~65535)	RUN

F00.1x~F00.3x: Common Parameters

Code (Address)	Name	Content	Default (Range)	Property
F00.10~F00.39 (0x000A~0x0027)	Common Parameter Address	V/F SVC FVC PMVF PMSVC PMFVC Ones-and tens-bit: Set 00 ~ 99 to yy in Fxx.yy. Hundreds- and thousands-bit: Set 00 ~ 31 to xx in Fxx.yy.	Up to F00.01 (0000~2999)	RUN

4.4 F01: Basic Settings

F01.0x: Basic Commands

Code (Address)	Name	Content	Default (Range)	Property
F01.00 (0x0100)	Motor 1 Control Mode	V/F SVC FVC PMVF PMSVC PMFVC Se the control mode for Motor 1. AM control modes: 0: AM-V/F: V/F control; 1: AM-SVC: Open loop vector control, current closed loop control; 2: AM-FVC: Close-loop vector control PM control modes: 10: PM-V/F: V/F control; 11: PM-SVC: Open-loop vector control; 12: PM-FVC: Close-loop vector control POWER: 20: V/F-SPLIT: Voltage-frequency conversion **Note**: The V/F separation function only supports for T3 motors(7.5kW and above), and T2 motors(5.5kW and above).	0 (0~20)	STOP
F01.01 (0x0101)	Command Source	V/F SVC FVC PMVF PMSVC PMFVC Select the method to send run/stop commands and the direction of operation to the drive. 0: Panel (external panel first); 1: Terminal; 2: RS485; 3: Optional boards	0 (0~3)	RUN
F01.02 (0x0102)	Frequency Source A	V/F SVC FVC PMVF PMSVC PMFVC Set the frequency giving source A. 0: Via panel keys; 1: Via panel potentiometer; 2: Via analog current/voltage AI1; 3: Via analog current/voltage AI2; 4: Reserved 5: Via PUL terminal; 6: Via RS485; 7: Via UP/DW terminal; 8: Via PID control; 9: Via PLC; 10: Via optional boards; 11: Via multi-segment speed; 12: Via special RS485 setting	0 (0~12)	RUN
F01.03 (0x0103)	Frequency Source A Gain	V/F SVC FVC PMVF 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 PMVF PMSVC PMFVC Set frequency giving source B, the same as F01.02.	2 (0~11)	RUN
F01.05 (0x0105)	Frequency Source B Gain	V/F SVC FVC PMVF 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 PMVF PMSVC PMFVC Set the reference for frequency giving source B by this parameter. 0: Max. output frequency as reference 1: Frequency set by source A as reference	0 (0~1)	RUN

F01.07 (0x0107)	Frequency Source Combination	V/F SVC FVC PMVF PMSVC PMFVC Select the combination method of source A and source B of the drive. 0: Source A; 1: Source B; 2: Source A + Source B; 3: Source A - Source B; 4: Max (A, B); 5: Min (A, B)	0 (0~5)	RUN
F01.08 (0x0108)	Frequency/Command Source Binding	V/F SVC FVC PMVF PMSVC PMFVC Bind the frequency source to each command source when this parameter is valid. Ones-bit: Bind panel commands; Tens-bit: Bind terminal commands; Hundreds-bit: Bind communication commands; Thousands-bit: Bind optional board commands 0: None 1: Via panel keys; 2: Via panel potentiometer; 3: Via analog current/voltage AI1; 4: Via analog current/voltage AI2; 5: Reserved; 6: Via PUL terminal; 7: Via RS5485; 8: Via UP/DW terminal; 9: Via PID control; A: Via PLC; B: Via optional boards; C: Via multi-segment speed; D: Reserved	0000 (0000~DDDD)	RUN
F01.09 (0x0109)	Panel Giving Frequency	V/F SVC FVC PMVF PMSVC PMFVC Set and modify the frequency via the panel.	50.00Hz (0.00Hz~Upper limit frequency)	RUN

F01.1x: Frequency Commands

Code (Address)	Name	Content	Default (Range)	Property
F01.10 (0x010A)	Max. Frequency	V/F SVC FVC PMVF PMSVC PMFVC Set the maximum frequency for the drive.	50.00Hz (1.00Hz~500.00Hz)	STOP
F01.11 (0x010B)	Upper Limit Frequency Source	V/F SVC FVC PMVF PMSVC PMFVC Set the upper limit frequency source. 0: Via panel keys; 1: Via potentiometer; 2: Via analog current/voltage AI1; 3: Via analog current/voltage AI2; 4: Reserved; 5: Via PUL terminal; 6: Via RS485; 7: Via optional boards;	0 (0~7)	RUN
F01.12 (0x010C)	Panel Giving Upper Limit Frequency	V/F SVC FVC PMVF PMSVC PMFVC The upper limit frequency is given from the panel when F01.11 is set to 0.	50.00Hz (Lower limit~Max. frequency)	RUN
F01.13 (0x010D)	Lower Limit Frequency	V/F SVC FVC PMVF PMSVC PMFVC Set the lower limit frequency.	0.00Hz (0.00Hz~Upper limit frequency)	RUN
F01.14 (0x010E)	Frequency Command Resolution	V/F SVC FVC PMVF PMSVC PMFVC Set the frequency command resolution 0: 0.01Hz 1: 0.1Hz 2: 0.1rpm 3: 1rpm 4: 10rpm	0 (0~4)	STOP

F01.2x~F01.3x: Acceleration/Deceleration Time

Code (Address)	Name	Content	Default (Range)	Property
F01.20 (0x0114)	ACC/DEC Time Reference	V/F SVC FVC PMVF PMSVC PMFVC Set the reference frequency to calculate the acceleration/deceleration time. 0: Max. frequency;1: Fixed frequency at 50Hz; 2: Set frequency	0 (0~2)	STOP
F01.21 (0x0115)	ACC/DEC Time Unit	V/F SVC FVC PMVF PMSVC PMFVC Set the unit for the acceleration and deceleration time. 0: 1s; 1: 0.1s; 2: 0.01s	2 (0~2)	STOP
F01.22 (0x0116)	ACC Time 1	V/F SVC FVC PMVF PMSVC PMFVC Set the time required to accelerate the output frequency from 0.00Hz to the reference frequency. 1s~65000s(F01.21=0); 0.1s~6500.0s(F01.21=1); 0.01s~650.00s(F01.21=2)	Up to model (0.01s~ 650.00s)	RUN
F01.23 (0x0117)	DEC Time 1	V/F SVC FVC PMVF PMSVC PMFVC Set the time required to decelerate the output frequency from the reference frequency to 0.00Hz.	Up to model (0.01s~ 650.00s)	RUN
F01.24 (0x0118)	ACC Time 2	V/F SVC FVC PMVF PMSVC PMFVC Set the time required to accelerate the output frequency from 0.00Hz to the reference frequency.	Up to model (0.01s~ 650.00s)	RUN
F01.25 (0x0119)	DEC Time 2	V/F SVC FVC PMVF PMSVC PMFVC Set the time required to decelerate the output frequency from the reference frequency to 0.00Hz.	Up to model (0.01s~ 650.00s)	RUN
F01.26 (0x011A)	ACC Time 3	V/F SVC FVC PMVF PMSVC PMFVC Set the time required to accelerate the output frequency from 0.00Hz to the reference frequency.	Up to model (0.01s~ 650.00s)	RUN
F01.27 (0x011B)	DEC Time 3	V/F SVC FVC PMVF PMSVC PMFVC Set the time required to decelerate the output frequency from the reference frequency to 0.00Hz.	Up to model (0.01s~ 650.00s)	RUN
F01.28 (0x011C)	ACC Time 4	V/F SVC FVC PMVF PMSVC PMFVC Set the time required to accelerate the output frequency from 0.00Hz to the reference frequency.	Up to model (0.01s~ 650.00s)	RUN
F01.29 (0x011D)	DEC Time 4	V/F SVC FVC PMVF PMSVC PMFVC Set the time required to decelerate the output frequency from the reference frequency to 0.00Hz.	Up to model (0.01s~ 650.00s)	RUN
F01.30 (0x011E)	S-Curve ACC/DEC	V/F SVC FVC PMVF PMSVC PMFVC Set S-curve acceleration/deceleration valid or not. 0: Invalid; 1: Valid; 2: Smoother S-curve	1 (0~2)	STOP
F01.31 (0x011F)	ACC S-Curve Start Time	V/F SVC FVC PMVF PMSVC PMFVC Set the S-curve acceleration start time.	0.20s (0.00s~10.00s)	STOP
F01.32 (0x0120)	ACC S-Curve End Time	V/F SVC FVC PMVF PMSVC PMFVC Set the S-curve acceleration stop time.	0.20s (0.00s~10.00s)	STOP
F01.33 (0x0121)	DEC S-Curve Start Time	V/F SVC FVC PMVF PMSVC PMFVC Set the S-curve deceleration start time.	0.20s (0.00s~10.00s)	STOP
F01.34 (0x0122)	DEC S-Curve End Time	V/F SVC FVC PMVF PMSVC PMFVC Set the S-curve deceleration stop time.	0.20s (0.00s~10.00s)	STOP
F01.35 (0x0123)	Switching Frequency of Acceleration Time 1/2	V/F SVC FVC PMVF PMSVC PMFVC Set the switching frequency of ACC. time 1 and ACC. time 2.	0.00Hz (0.00Hz~Max. frequency)	RUN

F01.4x: PWM

Code (Address)	Name	Content	Default (Range)	Property
F01.40 (0x0128)	Carrier Frequency	V/F SVC FVC PMVF PMSVC PMFVC Set the switch frequency of IGBT drive	Up to model (1.0kHz~16.0kHz)	RUN
F01.41 (0x0129)	PWM Control Mode	V/F SVC FVC PMVF 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 0: Invalid 1: Valid in V/F control mode 2: Valid in vector control Thousands-bit: PWM mode 0: Three-phase only; 1: Automatic switch between two-phase and three-phase	1111 (0000~1211)	RUN
F01.43 (0x012B)	Deadband Compensation Gain	V/F SVC FVC PMVF PMSVC PMFVC Set the deadband compensation gain.	306 (0~512)	RUN
F01.46 (0x012E)	Random PWM Depth	V/F SVC FVC PMVF PMSVC PMFVC The higher the set point, the greater the carrier fluctuation when random PWM is enabled.	0 (0~20)	RUN

4.5 F02: Motor 1 Parameters

F02.0x: Basic Motor Parameters and Auto-Tuning

Code (Address)	Name	Content	Default (Range)	Property
F02.00 (0x0200)	Type	V/F SVC FVC PMVF 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 PMVF PMSVC PMFVC Set the motor pole number.	4 (2~98)	STOP
F02.02 (0x0202)	Rated Power	V/F SVC FVC PMVF 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 PMVF 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 PMVF PMSVC PMFVC Set the rated speed of the motor.	Up to model (0rpm~ 65000rpm)	STOP
F02.05 (0x0205)	Rated Voltage	V/F SVC FVC PMVF PMSVC PMFVC Set the rated voltage of the motor.	Up to model (0V~2000V)	STOP
F02.06 (0x0206)	Rated Current	V/F SVC FVC PMVF PMSVC PMFVC Set the rated current of the motor.	Up to model (0.1A~ 3000.0A)	STOP
F02.07 (0x0207)	Auto-Tuning	V/F SVC FVC PMVF PMSVC PMFVC After the 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; 4~20: Reserved	0 (0~20)	STOP

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)

F02.1x: AM Advanced Parameters

Code (Address)	Name	Content	Default (Range)	Property
F02.10 (0x020A)	No-Load Current	V/F SVC FVC PMVF PMSVC PMFVC Set the no-load current of the asynchronous motor.	Up to model (0.1A~3000.0A)	STOP
F02.11 (0x020B)	Stator Resistance	V/F SVC FVC PMVF PMSVC PMFVC Set the stator resistance of the asynchronous motor.	Up to model (0.01mΩ~60000mΩ)	STOP
F02.12 (0x020C)	Rotor Resistance	V/F SVC FVC PMVF PMSVC PMFVC Set the rotor resistance of the asynchronous motor.	Up to model (0.01mΩ~60000mΩ)	STOP
F02.13 (0x020D)	Stator Leakage Inductance	V/F SVC FVC PMVF PMSVC PMFVC Set the stator leakage inductance of the asynchronous motor.	Up to model (0.001mH~6553.5mH)	STOP
F02.14 (0x020E)	Stator Inductance	V/F SVC FVC PMVF PMSVC PMFVC Set the stator inductance of the asynchronous motor.	Up to model (0.01mH~65535mH)	STOP
F02.15 (0x020F)	Per-Unit Stator Resistance	V/F SVC FVC PMVF PMSVC PMFVC Set the per-unit value of the stator resistance for the asynchronous motor.	Up to model (0.01%~ 50.00%)	READ
F02.16 (0x0210)	Per-Unit Rotor Resistance	V/F SVC FVC PMVF PMSVC PMFVC Set the per-unit value of the rotor resistance for the asynchronous motor.	Up to model (0.01%~ 50.00%)	READ
F02.17 (0x0211)	Per-Unit Stator Leakage Inductance	V/F SVC FVC PMVF PMSVC PMFVC Set the per-unit value of the stator leakage inductance for the asynchronous motor.	Up to model (0.01%~ 50.00%)	READ
F02.18 (0x0212)	Per-Unit Stator Inductance	V/F SVC FVC PMVF PMSVC PMFVC Set the per-unit value of the stator inductance.	Up to model (0.1%~999.0%)	READ
F02.19 (0x0213)	F02.11~F02.14 Decimal Point	V/F SVC FVC PMVF PMSVC PMFVC Set the decimal point of the four parameters from F02.11 to F02.14.	0x0000 (0x0000~0x2222)	STOP

F02.2x: PM Advanced Parameters

Code (Address)	Name	Content	Default (Range)	Property
F02.20 (0x0214)	Per-unit Stator Resistance	V/F SVC FVC PMVF PMSVC PMFVC Set the per-unit value of stator resistance for the permanent magnet synchronous motor.	Up to model (0.01mΩ~60000mΩ)	STOP
F02.21 (0x0215)	Per-unit D-Axis Inductance	V/F SVC FVC PMVF PMSVC PMFVC Set the per-unit value of d-axis inductance for the permanent magnet synchronous motor.	Up to model (0.001mH~6553.5mH)	STOP
F02.22 (0x0216)	Per-unit Q-Axis Inductance	V/F SVC FVC PMVF PMSVC PMFVC Set the per-unit value q-axis inductance for the permanent magnet synchronous motor.	Up to model (0.001mH~6553.5mH)	STOP
F02.23 (0x0217)	Back Emf	V/F SVC FVC PMVF PMSVC PMFVC Set the back emf of the permanent magnet synchronous motor. It can only be identified under rotary auto-tuning.	Up to model (0V~1500V)	STOP
F02.24 (0x0218)	Encoder Installation Angle	V/F SVC FVC PMVF PMSVC PMFVC Set the encoder installation angle of the permanent magnet synchronous motor.	Up to model (0.0°~360.0°)	RUN

F02.25 (0x0219)	Per-unit Stator Resistance	V/F SVC FVC PMVF PMSVC PMFVC Set the per-unit value of stator resistance for the permanent magnet synchronous motor.	Up to model (Monitored values)	READ
F02.26 (0x021A)	Per-unit D-Axis Inductance	V/F SVC FVC PMVF PMSVC PMFVC Set the per-unit value of d-axis inductance for the permanent magnet synchronous motor.	Up to model (Monitored values)	READ
F02.27 (0x021B)	Per-unit Q-Axis Inductance	V/F SVC FVC PMVF PMSVC PMFVC Set the per-unit value of q-axis inductance for the permanent magnet synchronous motor.	Up to model (Monitored values)	READ
F02.28 (0x021C)	Pulse Width Factor	V/F SVC FVC PMVF PMSVC PMFVC Set the pulse width coefficient of the permanent magnet synchronous motor.	Up to model (00.00~99.99)	STOP
F02.29 (0x021D)	F02.20~F02.22 Decimal Point	V/F SVC FVC PMVF PMSVC PMFVC Set the decimal point of the three parameters from F02.20to F02.22.	0x0000 (0x0000~0x2222)	STOP

F02.3x~F02.4x: Encoder Parameters

Code (Address)	Name	Content	Default (Range)	Property
F02.30 (0x021E)	Encoder Type	V/F SVC FVC PMVF PMSVC PMFVC 0: Common ABZ encoder(to expansion port EX_B) 1: Resolver(to expansion port EX_B)	0 (0~1)	STOP
F02.31 (0x021F)	Encoder Direction	V/F SVC FVC PMVF PMSVC PMFVC 0: Same direction 1: Opposite direction	0 (0~1)	STOP
F02.32 (0x0220)	Z-pulse Detection from ABZ Encoder	V/F SVC FVC PMVF PMSVC PMFVC 0: OFF; 1: ON(forward detection); 2: ON(reverse detection)	1 (0~2)	STOP
F02.33 (0x0221)	ABZ Encoder Line No.	V/F SVC FVC PMVF PMSVC PMFVC Set the line number of the ABZ encoder.	1024 (1~10000)	STOP
F02.34 (0x0222)	Resolver Pole No.	V/F SVC FVC PMVF PMSVC PMFVC Set the pole number of the rotary transformer.	2 (2~128)	STOP
F02.35 (0x0223)	Transmission Ratio Numerator	V/F SVC FVC PMVF PMSVC PMFVC Set the transmission ratio numerator of the encoder.	1 (1~32767)	RUN
F02.36 (0x0224)	Transmission Ratio Denominator	V/F SVC FVC PMVF PMSVC PMFVC Set the transmission ratio denominator of the encoder.	1 (1~32767)	RUN
F02.37 (0x0225)	Speed Detection Filter Time	V/F SVC FVC PMVF PMSVC PMFVC Set the speed detection filter time of the encoder.	1.0ms (0.0ms~100.0ms)	RUN
F02.38 (0x0226)	Disconnection Detection Time	V/F SVC FVC PMVF PMSVC PMFVC Set the disconnection detection time of the encoder.	0.050s (0.010s~60.000s)	RUN
F02.47 (0x022F)	Z-Pulse Tolerance	V/F SVC FVC PMVF PMSVC PMFVC Set the Z pulse allowable tolerance.	0 (0~65535)	RUN
F02.48 (0x0230)	Z-pulse Tuning Current	V/F SVC FVC PMVF PMSVC PMFVC Set the value of Z-pulse tuning current.	0 (0~65535)	RUN
F02.49 (0x0231)	Debug Register	V/F SVC FVC PMVF PMSVC PMFVC Ones-bit: Monitor PG under SVC 0: Invalid; 1: Valid	0x0000 (0x0000~0xFFFF)	RUN

F02.5x~F02.6x: Motor Application Parameters

Code (Address)	Name	Content	Default (Range)	Property
F02.50 (0x0232)	Stator Resistance Auto-tuning	V/F SVC FVC PMVF PMSVC PMFVC 0: Invalid; 1: Tune only without update; >1: Tune and update	0 (0~3)	STOP
F02.51 (0x0233)	Stator Resistance Tuning Factor 1	V/F SVC FVC PMVF PMSVC PMFVC Stator Resistance Tuning Factor 1	0 (0~1000)	RUN
F02.52 (0x0234)	Stator Resistance Tuning Factor 2	V/F SVC FVC PMVF PMSVC PMFVC Set the stator resistance tuning factor 2	0 (-20.00%~20.00%)	RUN
F02.53 (0x0235)	Set the stator resistance tuning factor 3	V/F SVC FVC PMVF PMSVC PMFVC Set the stator resistance tuning factor 3	0 (0~65535)	RUN
F02.60 (0x023C)	PM Pole Search	V/F SVC FVC PMVF PMSVC PMFVC Ones-bit: SVC 0: OFF; 1: ON; 2: ON, but only at the first startup Tens-bit: FVC 0: OFF; 1: ON; 2: ON, but only at the first startup Hundreds-bit: V/F 0: OFF; 1: ON; 2: ON, but only at the first startup	0010 (0000~3223)	STOP
F02.61 (0x023D)	Pole Search Current	V/F SVC FVC PMVF PMSVC PMFVC Set the value of pole search current.	0.0% (0.0%~6553.5%)	STOP

4.6 F03: Vector Control

F03.0x: ASR (Automatic Speed Regulator)

Code (Address)	Name	Content	Default (Range)	Property
F03.00 (0x0300)	Rigidity Class	V/F SVC FVC PMVF PMSVC PMFVC Set the rigidity class of the speed loop. The higher the class, the better the speed rigidity.	32 (0~128)	RUN
F03.01 (0x0301)	Rigidity Mode	V/F SVC FVC PMVF PMSVC PMFVC Set the rigidity mode of the speed loop.	0x0000 (0x0000~0xFFFF)	RUN
F03.02 (0x0302)	HF Proportional Gain	V/F SVC FVC PMVF PMSVC PMFVC Set the proportional gain for high-frequency operation of the speed loop.	10.00 (0.01~100.00)	RUN
F03.03 (0x0303)	HF Integral Time	V/F SVC FVC PMVF PMSVC PMFVC Set the integral time for high-frequency operation of the speed loop.	0.100s (0.000s~6.000s)	RUN
F03.04 (0x0304)	HF Filter Time	V/F SVC FVC PMVF PMSVC PMFVC Set the filter time for high-speed operation of the speed loop.	0.0ms (0.0ms~100.0ms)	RUN
F03.05 (0x0305)	HF Switching Frequency	V/F SVC FVC PMVF PMSVC PMFVC Set the switching frequency for high-frequency operation of the speed loop.	0.00Hz (0.00Hz~ Max. frequency)	RUN
F03.06 (0x0306)	LF Proportional Gain	V/F SVC FVC PMVF PMSVC PMFVC Set the proportional gain for low-frequency operation of the speed loop.	10.00 (0.01~100.00)	RUN
F03.07 (0x0307)	LF Integral Time	V/F SVC FVC PMVF PMSVC PMFVC Set the integral time for low-speed operation of the speed loop.	0.100s (0.000s~6.000s)	RUN

F03.08 (0x0308)	LF Filter Time	V/F SVC FVC PMVF PMSVC PMFVC Set the filter time for low-frequency operation of the speed loop.	0.0ms (0.0ms~100.0ms)	RUN
F03.09 (0x0309)	LF Switching Frequency	V/F SVC FVC PMVF PMSVC PMFVC Set the switching frequency for low-frequency operation of the speed loop.	0.00Hz (0.00Hz~ F03.05)	RUN

F03.1x: ACR and Torque Limit

Code (Address)	Name	Content	Default (Range)	Property
F03.10 (0x030A)	D-Axis Proportional Gain	V/F SVC FVC PMVF PMSVC PMFVC Set the d-axis proportional gain for the current loop.	1.000 (0.001~4.000)	RUN
F03.11 (0x030B) RUN	D-Axis Integral Gain	V/F SVC FVC PMVF PMSVC PMFVC Set the d-axis proportional gain of the current loop.	1.000 (0.001~4.000)	RUN
F03.12 (0x030C)	Q-Axis Proportional Gain	V/F SVC FVC PMVF PMSVC PMFVC Set the current loop q-axis proportional gain	1.000 (0.001~4.000)	RUN
F03.13 (0x030D)	Q-Axis Integral Gain	V/F SVC FVC PMVF PMSVC PMFVC Set the q-axis integral gain of the current loop.	1.000 (0.001~4.000)	RUN
F03.15 (0x030F)	Motoring Torque Limit	V/F SVC FVC PMVF PMSVC PMFVC Set the torque limit during normal motor driving.	250.0% (0.0%~400.0%)	RUN
F03.16 (0x0310)	Generating Torque Limit	V/F SVC FVC PMVF PMSVC PMFVC Set the torque limit during power generation.	250.0% (0.0%~400.0%)	RUN
F03.17 (0x0311)	LS Regenerative Torque Limit	V/F SVC FVC PMVF PMSVC PMFVC Set the regenerative torque limit at low speed.	0.0% (0.0%~400.0%)	RUN
F03.18 (0x0312)	LS Frequency Limit by Torque	V/F SVC FVC PMVF PMSVC PMFVC Set the operation frequency limited by torque at low speed.	6.00Hz (0.00Hz~30.00Hz)	RUN
F03.19 (0x0313)	Torque Limit	V/F SVC FVC PMVF PMSVC PMFVC Ones-bit: Torque limit source during motoring 0: Via panel keys; 1: Via panel potentiometer(on optional external single-row panels); 2: Via AI1; 3: Via AI2; 4: Reserved; 5: Via PUL terminal; 6: Via RS485(0x3014); 7: Via optional boards Tens-bit: Torque limit source during generating 0: Via panel keys; 1: Via panel potentiometer(on optional external single-row panels); 2: Via AI1; 3: Via AI2; 4: Reserved; 5: Via PUL terminal; 6: Via RS485(0x3015); 7: Via optional boards Hundreds-bit: C00.06 display 0: Display the torque limit under motor mode 1: Display the torque limit under power generation mode Thousands-bit: Reserved	0x0000 (0x0000~0x0177)	RUN

F03.2x: Torque Optimization

Code (Address)	Name	Content	Default (Range)	Property
F03.20 (0x0314)	PM LF Injection Current	V/F SVC FVC PMVF PMSVC PMFVC When the SVC mode of the PM is on, the larger the injection current, the larger the torque output.	20.0% (0.0%~50.0%)	RUN
F03.21 (0x0315)	PM HF Injection Current	V/F SVC FVC PMVF PMSVC PMFVC When the SVC mode of the PM is on, the larger the injection current, the larger the torque output.	10.0% (0.0%~50.0%)	RUN
F03.22 (0x0316)	PM Injection Current Frequency	V/F SVC FVC PMVF PMSVC PMFVC The set value 100.0% corresponds to F01.10 [Max. Frequency]	10.0% (0.0%~100.0%)	RUN
F03.23 (0x0317)	Vector Slip Compensation	V/F SVC FVC PMVF PMSVC PMFVC Set the slip compensation under AM vector control.	100.0% (0.0%~250.0%)	RUN
F03.24 (0x0318)	Initial value of starting torque	V/F SVC FVC PMVF PMSVC PMFVC Set the initial value of the starting torque	0.0% (0.0%~250.0%)	RUN

F03.3x: Magnetic Flux Optimization

Code (Address)	Name	Content	Default (Range)	Property
F03.30 (0x031E)	Field-Weakening Feed-Forward Coefficient	V/F SVC FVC PMVF PMSVC PMFVC Set the feedforward coefficient under field weakening control.	10.0% (0.0%~500.0%)	RUN
F03.31 (0x031F)	Field-Weakening Gain	V/F SVC FVC PMVF PMSVC PMFVC Set the field-weakening control gain.	10.0% (0.0%~500.0%)	RUN
F03.32 (0x0320)	Field-Weakening Current Upper Limit	V/F SVC FVC PMVF PMSVC PMFVC Set the field-weakening current upper limit.	60.0% (0.0%~250.0%)	RUN
F03.33 (0x0321)	Field-Weakening Voltage Coefficient	V/F SVC FVC PMVF PMSVC PMFVC Set the field-weakening voltage coefficient.	97.0% (0.0%~120.0%)	RUN
F03.34 (0x0322)	Axis Output Power Limit	V/F SVC FVC PMVF PMSVC PMFVC Set the axis output power limit.	250.0% (0.0%~400.0%)	RUN
F03.35 (0x0323)	Overexcitation Brake Gain	V/F SVC FVC PMVF PMSVC PMFVC Set the over-excitation brake gain.	100.0% (0.0%~500.0%)	RUN
F03.36 (0x0324)	Overexcitation Brake Limit	V/F SVC FVC PMVF PMSVC PMFVC Set the over-excitation brake limit.	100.0% (0.0%~250.0%)	RUN
F03.37 (0x0325)	ECO Mode	V/F SVC FVC PMVF PMSVC PMFVC 0: OFF; 1: ON	0 (0~1)	RUN
F03.38 (0x0326)	Excitation Lower Limit in ECO Mode	V/F SVC FVC PMVF PMSVC PMFVC Set the lower limit of excitation during auto energy-saving operation.	50.0% (0.0%~80.0%)	RUN
F03.39 (0x0327)	Filter Coefficient in ECO Mode	V/F SVC FVC PMVF PMSVC PMFVC Set the filter coefficient during auto energy-saving operation.	0.010s (0.000s~6.000s)	RUN

F03.4x~F03.5x: Torque Control

Code (Address)	Name	Content	Default (Range)	Property
F03.40 (0x0328)	Torque Control	V/F SVC FVC PMVF PMSVC PMFVC 0: Torque limit under speed control; 1: speed limit under torque control	0 (0~1)	RUN
F03.41 (0x0329)	Torque Command	V/F SVC FVC PMVF PMSVC PMFVC Ones-bit: Source A; Tens-bit: Source B 0: Via panel keys; 1: Via panel potentiometer(on optional external single-row panels); 2: Via analog current/voltage AI1; 3: Via analog current/voltage AI2; 4: Reserved; 5: Via PUL terminal; 6: Via RS485; 7: Via optional boards; 8: Reserved; 9: Via tension calculation; Hundreds-bit: Command source 0: Source A; 1: Source B; 2: Source A + Source B; 3: Source A - Source B; 4: Min(A, B) 5: Max(A, B);	0000 (0000~0599)	RUN
F03.42 (0x032A)	Panel Giving Torque	V/F SVC FVC PMVF PMSVC PMFVC Set to give the torque command via panel keys.	0.0% (0.0%~100.0%)	RUN
F03.43 (0x032B)	Torque Input Lower Limit	V/F SVC FVC PMVF PMSVC PMFVC Set the torque input lower limit.	0.00% (0.00%~100.00%)	RUN
F03.44 (0x032C)	Torque Lower Limit Percentage	V/F SVC FVC PMVF PMSVC PMFVC Set the corresponding percentage to the torque lower limit.	0.00% (-250.00%~ 300.00%)	RUN
F03.45 (0x032D)	Torque Input Upper Limit	V/F SVC FVC PMVF PMSVC PMFVC Set the torque input upper limit.	100.00% (0.00%~100.00%)	RUN
F03.46 (0x032E)	Torque Upper Limit Percentage	V/F SVC FVC PMVF PMSVC PMFVC Set the corresponding percentage to the torque upper limit	100.00% (-250.00%~ 300.00%)	RUN
F03.47 (0x032F)	Torque Filter Time	V/F SVC FVC PMVF PMSVC PMFVC Set the operation frequency limited by torque at low speed.	0.100s (0.000s~6.000s)	RUN
F03.49 (0x0331)	Torque ACC Time	V/F SVC FVC PMVF PMSVC PMFVC Set the acceleration time when the given torque increases, with a reference of 100%. This parameter is only valid during torque control, and invalid during stop.	0.00s (0.00s~ 650.00s)	RUN
F03.50 (0x0332)	Torque DEC Time	V/F SVC FVC PMVF PMSVC PMFVC Set the deceleration time when the given torque decreases, with a reference of 100%. This parameter is only valid during torque control, and invalid during stop.	0.00s (0.00s~ 650.00s)	RUN

F03.52 (0x0334)	Torque Upper Limit under Torque Control	V/F SVC FVC PMVF PMSVC PMFVC Set the output torque upper limit in torque control.	150.0% (0.0%~300.0%)	RUN
F03.53 (0x0335)	Torque Lower Limit under Torque Control	V/F SVC FVC PMVF PMSVC PMFVC Set the output torque lower limit in torque control.	0.0% (0.0%~300.0%)	RUN
F03.54 (0x0336)	FWD Speed Limit under Torque Control	V/F SVC FVC PMVF PMSVC PMFVC 0: F03.56; 1: Panel potentiometer (optional with external single-row panels) × F03.56 2: AI1× F03.56 3: AI2× F03.56 4: Reserved; 5: PUL × F03.56 6: RS485 × F03.56 7: Optional board × F03.56 8: Reserved;	0 (0~8)	RUN
F03.55 (0x0337)	REV Speed Limit under Torque Control	V/F SVC FVC PMVF PMSVC PMFVC 0: F03.57 1: Panel potentiometer (optional with external single-row panels) × F03.57 2: AI1× F03.57 3: AI2× F03.57 4: Reserved; 5: PUL × F03.57 6: RS485 × F03.57 7: Optional board × F03.57 8: Reserved	0 (0~8)	RUN
F03.56 (0x0338)	Max. FWD Speed Limit under Torque Control	V/F SVC FVC PMVF PMSVC PMFVC Set the max. forward running speed limit under torque control	100.0% (0.0%~100.0%)	RUN
F03.57 (0x0339)	Max. REV Speed Limit under Torque Control	V/F SVC FVC PMVF PMSVC PMFVC Set the max. reverse running speed limit under torque control	100.0% (0.0%~100.0%)	RUN
F03.58 (0x033A)	Torque Gain Switching Frequency	V/F SVC FVC PMVF PMSVC PMFVC Set the given torque gain switching frequency	1.00Hz (0.00Hz~ Max. frequency)	RUN
F03.59 (0x033B)	Torque Gain	V/F SVC FVC PMVF PMSVC PMFVC Set the given torque gain	100.0% (0.0%~500.0%)	RUN

F03.6x: PM High-Frequency Injection

Code (Address)	Name	Content	Default (Range)	Property
F03.60 (0x033C)	HF Injection	V/F SVC FVC PMVF PMSVC PMFVC PMSVC 0: Disable;1~5: Enable, the greater the value, the higher the injection frequency	0 (0~5)	STOP
F03.61 (0x033D)	HF Injection Voltage	V/F SVC FVC PMVF PMSVC PMFVC It means the injection voltage amplitude relative to rated voltage. This is the result of auto-tuning, so there's no need to modify it	10.0% (0.0%~100.0%)	RUN
F03.62 (0x033E)	HF Injection Cut-off Frequency	V/F SVC FVC PMVF PMSVC PMFVC It means the high-frequency injection range relative to motor rated frequency. It is valid when the motor speed is lower than this value	10.0% (0.0%~20.0%)	RUN

F03.7x: Position Compensation

Code (Address)	Name	Content	Default (Range)	Property
F03.70 (0x0346)	Position Compensation	V/F SVC FVC PMVF PMSVC PMFVC Set the position compensation under speed control to realize zero servo or raise system rigidity	50.0 (0.0~100.0)	RUN
F03.71 (0x0347)	Position Compensation Gain	V/F SVC FVC PMVF PMSVC PMFVC Set the position compensation gain.	0.0 (0.0~100.0)	RUN
F03.72 (0x0348)	Position Compensation Limit	V/F SVC FVC PMVF PMSVC PMFVC Set the position compensation limit	0.0% (0.0%~100.0%)	STOP
F03.73 (0x0349)	Compensation Range	V/F SVC FVC PMVF PMSVC PMFVC Set the position compensation range	10.0% (0.0%~100.0%)	STOP

F03.8x: Expansion Control

Code (Address)	Name	Content	Default (Range)	Property
F03.80 (0x0350)	PM MTPA Gain	V/F SVC FVC PMVF PMSVC PMFVC Set the MTPA gain of the permanent magnet synchronous motor.	100.0% (0.0%~400.0%)	RUN
F03.81 (0x0351)	PM MTPA Filter Time	V/F SVC FVC PMVF PMSVC PMFVC Set the MTPA filter time of the permanent magnet synchronous motor.	1.0ms (0.0ms~100.0ms)	RUN

4.7 F04: V/F Control

F04.0x: V/F Control

Code (Address)	Name	Content	Default (Range)	Property
F04.00 (0x0400)	V/F Curve	V/F SVC FVC PMVF 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: Customized V/F curve;	0 (0~11)	STOP
F04.01 (0x0401)	Torque boost	V/F SVC FVC PMVF PMSVC PMFVC 0.0%: Auto torque boost; 0.1%~30.0%: Manual torque boost	Up to model (0.0%~30.0%)	RUN
F04.02 (0x0402)	Torque Boost Cut-off Frequency	V/F SVC FVC PMVF PMSVC PMFVC Set the range of the torque boost function. The torque boost function 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 PMVF PMSVC PMFVC Set the slip compensation gain.	0.0% (0.0%~200.0%)	RUN
F04.04 (0x0404)	Slip Compensation Range	V/F SVC FVC PMVF 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 PMVF PMSVC PMFVC Enter the parameters on the motor's nameplate correctly for auto-tuning for best performance.	0.200s (0.000s~6.000s)	RUN
F04.06 (0x0406)	Vibration Suppression Gain	V/F SVC FVC PMVF PMSVC PMFVC Adjust this value to suppress low frequency resonance. But an excessive value will cause instability.	100.0% (0.0%~900.0%)	RUN

F04.07 (0x0407)	Vibration Suppression Filter Time	V/F SVC FVC PMVF PMSVC PMFVC Set the oscillation suppression filter time.	1.0s (0.0s~100.0s)	RUN
F04.08 (0x0408)	Output Voltage Percentage	V/F SVC FVC PMVF PMSVC PMFVC Set the output voltage percentage.	100.0% (25.0%~120.0%)	STOP

F04.1x: Customized V/F Curve

Code (Address)	Name	Content	Default (Range)	Property
F04.10 (0x040A)	Self-defined Voltage 1	V/F SVC FVC PMVF PMSVC PMFVC Set the self-defined voltage 1.	3.0% (0.0%~100.0%)	STOP
F04.11 (0x040B)	Self-defined Frequency 1	V/F SVC FVC PMVF PMSVC PMFVC Set the self-defined Frequency 1.	1.00Hz (0.00Hz~ Max. frequency)	STOP
F04.12 (0x040C)	Self-defined Voltage 2	V/F SVC FVC PMVF PMSVC PMFVC Set the self-defined Voltage 2.	28.0% (0.0%~100.0%)	STOP
F04.13 (0x040D)	Self-defined Frequency 2	V/F SVC FVC PMVF PMSVC PMFVC Set the self-defined Frequency 2.	10.00Hz (0.00Hz~ Max. frequency)	STOP
F04.14 (0x040E)	Self-defined Voltage 3	V/F SVC FVC PMVF PMSVC PMFVC Set the self-defined Voltage 3.	55.0% (0.0%~100.0%)	STOP
F04.15 (0x040F)	Self-defined Frequency 3	V/F SVC FVC PMVF PMSVC PMFVC Set the self-defined Frequency 3.	25.00Hz (0.00Hz~ Max. frequency)	STOP
F04.16 (0x0410)	Self-defined Voltage 4	V/F SVC FVC PMVF PMSVC PMFVC Set the self-defined Voltage 4.	78.0% (0.0%~100.0%)	STOP
F04.17 (0x0411)	Self-defined Frequency 4	V/F SVC FVC PMVF PMSVC PMFVC Set the self-defined Frequency 4.	37.50Hz (0.00Hz~ Max. frequency)	STOP
F04.18 (0x0412)	Self-defined Voltage 5	V/F SVC FVC PMVF PMSVC PMFVC Set the self-defined Voltage 5.	100.0% (0.0%~100.0%)	STOP
F04.19 (0x0413)	Self-defined Frequency 5	V/F SVC FVC PMVF PMSVC PMFVC Set the self-defined Frequency 5.	50.00Hz (0.00Hz~ Max. frequency)	STOP

F04.2x: V/F Seperation

Code (Address)	Name	Content	Default (Range)	Property
F04.20 (0x0414)	Voltage	V/F SVC FVC PMVF PMSVC PMFVC Ones-bit: Source A Tens-bit: Source B 0: Via voltage percentage; 1: Via panel potentiometer (on the external single-row panel) 2: Via AI1; 3: Via AI2; 4: Reserved; 5: Via PUL terminal; 6: Via PID; 7: Via RS485; 8: Via optional boards; 9: Via voltage setting; Hundreds-bit: Combination method 0: Source A; 1: Source B; 2: A+B; 3: A-B 4: MIN(A, B); 5: MAX(A, B)	0x0000 (0x0000~0x0599)	RUN
F04.21 (0x0415)	Voltage Percentage	V/F SVC FVC PMVF PMSVC PMFVC Set the output voltage percentage under V/F separation control. 100.0% of it corresponds to the motor rated voltage.	0.00% (0.00%~110.00%)	RUN
F04.22 (0x0416)	Voltage Acceleration Time	V/F SVC FVC PMVF PMSVC PMFVC Set the voltage acceleration time under V/F separation control.	10.00s (0.00s~100.00s)	RUN
F04.23 (0x0417)	Voltage Deceleration Time	V/F SVC FVC PMVF PMSVC PMFVC Set the voltage deceleration time under V/F separation control.	10.00s (0.00s~100.00s)	RUN
F04.24 (0x0418)	Stop Mode	V/F SVC FVC PMVF PMSVC PMFVC Set the stop mode under V/F separation control. 0: ACC./DEC. of output voltage and that of output frequency do not affect each other; 1: Output frequency drops after the output voltage drops to 0V.	0 (0~1)	RUN
F04.25 (0x0419)	Voltage Value	V/F SVC FVC PMVF PMSVC PMFVC Set the voltage value under V/F separation control.	0.00V (0.00V~600.00V)	RUN

F04.3x: V/F ECO Control

Code (Address)	Name	Content	Default (Range)	Property
F04.30 (0x041E)	Auto ECO Mode	V/F SVC FVC PMVF PMSVC PMFVC 0: OFF; 1: ON	0 (0~1)	STOP
F04.31 (0x041F)	Frequency Lower Limit	V/F SVC FVC PMVF PMSVC PMFVC Set the lower limit of the auto ECO mode.	15.0Hz (0.0Hz~50.0Hz)	STOP
F04.32 (0x0420)	Voltage Lower Limit	V/F SVC FVC PMVF PMSVC PMFVC Set the lower limit of the auto ECO mode.	50.0% (20.0%~100.0%)	STOP
F04.33 (0x0421)	Voltage Regulation Rate	V/F SVC FVC PMVF PMSVC PMFVC Set the voltage regulation rate of the auto ECO mode.	0.010V/ms (0.010V/ms~ 0.200V/ms)	RUN

F04.34 (0x0422)	Voltage Increase Rate	V/F SVC FVC PMVF PMSVC PMFVC Set the energy-saving step-down voltage recovery rate	0.200V/ms (0.010V/ms~ 0.200V/ms)	RUN
F04.35 (0x0423)	Over-excitation Coefficient	V/F SVC FVC PMVF PMSVC PMFVC Valid when F10.11 tens-bit is not set to zero. The output voltage increases with increasing bus voltage at the same output.	64 (0~200)	RUN

4.8 F05: Input Terminal

F05.0x: Digital Input Terminal

Code (Address)	Name	Content	Default (Range)	Property
F05.00 (0x0500)	X1 Function	V/F SVC FVC PMVF PMSVC PMFVC See the functions of terminal X.	1 (0~95)	STOP
F05.01 (0x0501)	X2 Function	V/F SVC FVC PMVF PMSVC PMFVC See the functions of terminal X.	2 (0~95)	STOP
F05.02 (0x0502)	X3 Function	V/F SVC FVC PMVF PMSVC PMFVC See the functions of terminal X.	4 (0~95)	STOP
F05.03 (0x0503)	X4 Function	V/F SVC FVC PMVF PMSVC PMFVC See the functions of terminal X.	5 (0~95)	STOP
F05.04 (0x0504)	X5 Function	V/F SVC FVC PMVF PMSVC PMFVC See the functions of terminal X.	6 (0~95)	STOP
F05.05 (0x0505)	X6 Function	V/F SVC FVC PMVF PMSVC PMFVC See the functions of terminal X.	0 (0~95)	STOP
F05.06 (0x0506)	X7 Function	V/F SVC FVC PMVF PMSVC PMFVC See the functions of terminal X.	0 (0~95)	STOP
F05.07 (0x0507)	X8 Function	V/F SVC FVC PMVF PMSVC PMFVC See the functions of terminal X.	0 (0~95)	STOP
F05.08 (0x0508)	X9 Function	V/F SVC FVC PMVF PMSVC PMFVC See the functions of terminal X.	0 (0~95)	STOP
F05.09 (0x0509)	X10 Function	V/F SVC FVC PMVF PMSVC PMFVC See the functions of terminal X.	0 (0~95)	STOP

F05.1x: DI Terminal Detection Delay

Code (Address)	Name	Content	Default (Range)	Property
F05.10 (0x050A)	X1 ON Detection Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the delay time when X1 terminal is switched on.	0.010s (0.000s~6.000s)	RUN
F05.11 (0x050B)	X1 OFF Detection Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the delay time when X1 terminal is switched off.	0.010s (0.000s~6.000s)	RUN
F05.12 (0x050C)	X2 ON Detection Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the delay time when X2 terminal is switched on.	0.010s (0.000s~6.000s)	RUN
F05.13 (0x050D)	X2 OFF Detection Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the delay time when X2 terminal is switched off.	0.010s (0.000s~6.000s)	RUN
F05.14 (0x050E)	X3 ON Detection Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the delay time when X3 terminal is switched on.	0.010s (0.000s~6.000s)	RUN
F05.15 (0x050F)	X3 OFF Detection Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the delay time when X3 terminal is switched off.	0.010s (0.000s~6.000s)	RUN
F05.16 (0x0510)	X4 ON Detection Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the delay time when X4 terminal is switched on.	0.010s (0.000s~6.000s)	RUN
F05.17 (0x0511)	X4 OFF Detection Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the delay time when X4 terminal is switched off.	0.010s (0.000s~6.000s)	RUN
F05.18 (0x0512)	X5 ON Detection Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the delay time when X5 terminal is switched on.	0.010s (0.000s~6.000s)	RUN
F05.19 (0x0513)	X5 OFF Detection Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the delay time when X5 terminal is switched off.	0.010s (0.000s~6.000s)	RUN

F05.2x: DI Terminal Characteristics

Code (Address)	Name	Content	Default (Range)	Property
F05.20 (0x0514)	Terminal Control Pattern	V/F SVC FVC PMVF PMSVC PMFVC 0: Two-line 1; 1: Two-line 2; 2: Three-line 1; 3: Three-line 2 **Note**: See Appendix II for terminal wiring.	0 (0~3)	STOP
F05.22 (0x0516)	X1~X4 Characteristics	V/F SVC FVC PMVF PMSVC PMFVC 0: ON; 1: OFF Ones-bit: X1; Tens-bit: X2; Hundreds-bit: X3; Thousands-bit: X4	0000 (0000~1111)	RUN
F05.23 (0x0517)	X5~X8 Characteristics	V/F SVC FVC PMVF PMSVC PMFVC 0: ON; 1: OFF Ones-bit: X5; Tens-bit: X6; Hundreds-bit: X7; Thousands-bit: X8	0000 (0000~1111)	RUN
F05.24 (0x0518)	X9~X10 Characteristics	V/F SVC FVC PMVF PMSVC PMFVC 0: ON; 1: OFF Ones-bit: X9;Tens-bit: X10	0000 (0000~1111)	RUN

F05.25 (0x0519)	UP/DW Frequeny Protection	V/F SVC FVC PMVF PMSVC PMFVC 0: Power loss data protection ON; 1: Power loss data protection OFF; 2: Modifiable during operation, cleared after shutdown	0 (0~2)	STOP
F05.26 (0x051A)	UP/DW Frequency Regulation Rate	V/F SVC FVC PMVF PMSVC PMFVC Set the frequency increase/decrease rate on the UP/DW terminal.	0.50Hz/s (0.01Hz/s~50.00Hz/s)	RUN
F05.27 (0x051B)	Terminal Controlled Emergency Stop DEC. Time	V/F SVC FVC PMVF PMSVC PMFVC Set the deceleration time once emergency stop command is given via the terminals.	1.00s (0.01s~650.00s)	RUN

F05.3x: PUL Terminal

Code (Address)	Name	Content	Default (Range)	Property
F05.30 (0x051E)	PUL Signal	V/F SVC FVC PMVF PMSVC PMFVC 0: X5(up to 5.00kHz) 1: Expansion X10(Max. 100.00kHz) 2: X5(Max. 100.00kHz)	0 (0~2)	STOP
F05.31 (0x051F)	PUL Min. Frequency	V/F SVC FVC PMVF 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~500.00kHz)	RUN
F05.32 (0x0520)	PUL Min. Frequency Percentage	V/F SVC FVC PMVF PMSVC PMFVC Set the percentage of the min. input frequency of the PUL terminal.	0.00% (0.00%~100.00%)	RUN
F05.33 (0x0521)	PUL Max. Frequency	V/F SVC FVC PMVF PMSVC PMFVC Set the max frequency accepted by the PUL. If the frequency given is above this value, drive will still process by this setting.	50.00kHz (0.00kHz~500.00kHz)	RUN
F05.34 (0x0522)	PUL Max. Frequency Percentage	V/F SVC FVC PMVF PMSVC PMFVC Set the percentage of the min. input frequency of the PUL terminal.	100.00% (0.00%~100.00%)	RUN
F05.35 (0x0523)	Filter Time	V/F SVC FVC PMVF PMSVC PMFVC Set the size of the filter applied to the pulse signal to remove interference to the PUL terminal.	0.100s (0.000s~9.000s)	RUN
F05.36 (0x0524)	PUL Cut-off Frequency	V/F SVC FVC PMVF PMSVC PMFVC Frequencies below this parameter are no longer recognized by the drive. Process as 0Hz	0.010kHz (0.000kHz~1.000kHz)	RUN

F05.4x: AI Type

Code (Address)	Name	Content	Default (Range)	Property
F05.41 (0x0529)	AI1 Signal Type	V/F SVC FVC PMVF PMSVC PMFVC 0: Voltage 0.00V~10.00V; 1: Current 0.00mA~20.00mA	0 (0~1)	RUN
F05.42 (0x052A)	AI2 Signal Type	V/F SVC FVC PMVF PMSVC PMFVC 0: Voltage 0.00V~10.00V; 1: Current 0.00mA~20.00mA	0 (0~1)	RUN

F05.43 (0x052B)	AI Curve	V/F SVC FVC PMVF PMSVC PMFVC Ones-bit: AI1 Tens-bit: AI2 0: Straight line(default) 1: Curve 1 2: Curve 2	0000 (0000~0022)	RUN

F05.5x: AI Linear Parameters

Code (Address)	Name	Content	Default (Range)	Property
F05.50 (0x0532)	AI1 Lower Limit	V/F SVC FVC PMVF PMSVC PMFVC Define the signal received at the AI1 terminal. The voltage signal below this value is processed as the lower limit.	0.0% (-100.0%~100.0%)	RUN
F05.51 (0x0533)	AI1 Lower Limit Percentage	V/F SVC FVC PMVF PMSVC PMFVC Set the percentage of the AI1 lower limit.	0.00% (-100.00%~100.00%)	RUN
F05.52 (0x0534)	AI1 Upper Limit	V/F SVC FVC PMVF PMSVC PMFVC Define the signal received at the AI1 terminal. The voltage signal higher than this value is processed as the upper limit.	100.0% (-100.0%~100.0%)	RUN
F05.53 (0x0535)	AI1 Upper Limit Percentage	V/F SVC FVC PMVF PMSVC PMFVC Set the percentage of the AI1 upper limit.	100.00% (-100.00%~100.00%)	RUN
F05.54 (0x0536)	AI1 Filter Time	V/F SVC FVC PMVF PMSVC PMFVC Defines the size of the filtering applied to the AI1 signal for removing interference.	0.100s (0.000s~6.000s)	RUN
F05.55 (0x0537)	AI2 Lower Limit	V/F SVC FVC PMVF PMSVC PMFVC Define the signal received at the AI2 terminal. The voltage signal below this value is processed as the lower limit.	0.0% (-100.0%~100.0%)	RUN
F05.56 (0x0538)	AI2 Lower Limit Percentage	V/F SVC FVC PMVF PMSVC PMFVC Set the percentage of the AI2 lower limit.	0.00% (-100.00%~100.00%)	RUN
F05.57 (0x0539)	AI2 Upper Limit	V/F SVC FVC PMVF PMSVC PMFVC Define the signal received at the AI2 terminal. The voltage signal higher than this value is processed as the upper limit.	100.0% (-100.0%~100.0%)	RUN
F05.58 (0x053A)	AI2 Upper Limit Percentage	V/F SVC FVC PMVF PMSVC PMFVC Set the percentage of the upper limit value of AI2 corresponding to the set value.	100.00% (-100.00%~100.00%)	RUN
F05.59 (0x053B)	AI2 Filter Time	V/F SVC FVC PMVF PMSVC PMFVC Defines the size of the filtering applied to the AI2 signal for removing interference.	0.100s (0.000s~6.000s)	RUN

F05.6x: AI Curve 1

Code (Address)	Name	Content	Default (Range)	Property
F05.60 (0x053C)	Curve 1 Lower Limit	V/F SVC FVC PMVF PMSVC PMFVC Set the lower limit for Curve 1.	0.0% (0.0%~100.0%)	RUN
F05.61 (0x053D)	Curve 1 Lower Limit Percentage	V/F SVC FVC PMVF PMSVC PMFVC Set the percentage of Curve 1 lower limit.	0.00% (-100.00%~100.00%)	RUN

F05.62 (0x053E)	Curve 1 Inflection Point1	V/F SVC FVC PMVF PMSVC PMFVC Set input voltage of Curve 1 inflection point 1.	30.0% (0.0%~100.0%)	RUN
F05.63 (0x053F)	Curve 1 Inflection Point 1 Percentage	V/F SVC FVC PMVF PMSVC PMFVC Set the percentage of Curve 1 lower limit.	30.00% (-100.00%~100.00%)	RUN
F05.64 (0x0540)	Curve 1 inflection point2	V/F SVC FVC PMVF PMSVC PMFVC Set Curve 1 inflection point2 input voltage	60.0% (0.0%~100.0%)	RUN
F05.65 (0x0541)	Curve 1 Inflection Point2 Percentage	V/F SVC FVC PMVF PMSVC PMFVC Set the percentage of Curve 1 lower limit.	60.00% (-100.00%~100.00%)	RUN
F05.66 (0x0542)	Curve 1 Upper Limit	V/F SVC FVC PMVF PMSVC PMFVC Set the upper limit for Curve 1.	100.0% (0.0%~100.0%)	RUN
F05.67 (0x0543)	Curve 1 Upper Limit Percentage	V/F SVC FVC PMVF PMSVC PMFVC Set the percentage of Curve 1 lower limit.	100.00% (-100.00%~100.00%)	RUN

F05.7x: AI Curve 2

Code (Address)	Name	Content	Default (Range)	Property
F05.70 (0x0546)	Curve 2 Lower Limit	V/F SVC FVC PMVF PMSVC PMFVC Set the lower limit for Curve 2.	0.0% (0.0%~100.0%)	RUN
F05.71 (0x0547)	Curve 2 Lower Limit Percentage	V/F SVC FVC PMVF PMSVC PMFVC Set the percentage of Curve 1 lower limit.	0.00% (-100.00%~100.00%)	RUN
F05.72 (0x0548)	Curve 2 Inflection Point 1	V/F SVC FVC PMVF PMSVC PMFVC Set the Curve 2 inflection point 1 input voltage.	30.0% (0.0%~100.0%)	RUN
F05.73 (0x0549)	Curve 2 Inflection Point1 Percentage	V/F SVC FVC PMVF PMSVC PMFVC Set the percentage of Curve 1 lower limit.	30.00% (-100.00%~100.00%)	RUN
F05.74 (0x054A)	Curve 2 Inflection Point 2	V/F SVC FVC PMVF PMSVC PMFVC Set the Curve 2 inflection point 2 input voltage.	60.0% (0.0%~100.0%)	RUN
F05.75 (0x054B)	Curve 2 Inflection Point2 Percentage	V/F SVC FVC PMVF PMSVC PMFVC Set the percentage of Curve 1 lower limit.	60.00% (-100.00%~100.00%)	RUN
F05.76 (0x054C)	Curve 2 Upper Limit	V/F SVC FVC PMVF PMSVC PMFVC Set the upper limit for Curve 2.	100.00% (0.00%~100.00%)	RUN
F05.77 (0x054D)	Curve 2 Upper Limit Percentage	V/F SVC FVC PMVF PMSVC PMFVC Set the percentage of Curve 1 lower limit.	100.00% (-100.00%~100.00%)	RUN

F05.8x: AI as DI Terminal

Code (Address)	Name	Content	Default (Range)	Property
F05.80 (0x0550)	AI as DI Terminal Characteristic	V/F SVC FVC PMVF PMSVC PMFVC 0: Valid at low level; 1: Valid at high level Ones-bit: AI1; Tens-bit: AI2	0000 (0000~1111)	RUN
F05.81 (0x0551)	AI1 Function	V/F SVC FVC PMVF PMSVC PMFVC See X terminal functions.	0 (0~95)	STOP
F05.82 (0x0552)	AI High Level	V/F SVC FVC PMVF PMSVC PMFVC Any value beyond this setting is considered as high level.	70.00% (0.00%~100.00%)	RUN
F05.83 (0x0553)	AI Low Level	V/F SVC FVC PMVF PMSVC PMFVC Any value below this setting is considered as low level.	30.00% (0.00%~100.00%)	RUN
F05.84 (0x0554)	AI2 Function	V/F SVC FVC PMVF PMSVC PMFVC See X terminal functions.	0 (0~95)	STOP

F05.85 (0x0555)	AI2 High Level	V/F SVC FVC PMVF PMSVC PMFVC Any value beyond this setting is considered as high level.	70.00% (0.00%~100.00%)	RUN
F05.86 (0x0556)	AI2 Low Level	V/F SVC FVC PMVF PMSVC PMFVC Any value below this setting is considered as low level.	30.00% (0.00%~100.00%)	RUN

4.9 F06: Output Terminal

F06.0x: AO (Analog Output)

Code (Address)	Name	Content	Default (Range)	Property
F06.00(0x0600)	AO Mode	V/F SVC FVC PMVF PMSVC PMFVC 0: 0V~10V; 1: 4.00mA~20.00mA; 2: 0.00mA~20.00mA; 3: FM output	0 (0~3)	RUN
F06.01 (0x0601)	AO Content	V/F SVC FVC PMVF PMSVC PMFVC 0: Given frequency; 1: Output frequency; 2: Output current; 3: Input voltage; 4: Output voltage; 5: Mechanical speed; 6: Given torque; 7: Output torque; 8: PID setting; 9: PID feedback; 10: Output power; 11: Bus voltage; 12: AI1 input; 13: AI2 input; 14: Reserved; 15: PUL input; 16: Module temperature 1; 17: Module temperature 2; 18: RS485 setting; 19: vY1 function	0 (0~19)	RUN
F06.02(0x0602)	AO Gain	V/F SVC FVC PMVF PMSVC PMFVC Set to adjust the analog output from the terminals.	100.0% (0.0%~300.0%)	RUN
F06.03 (0x0603)	AO Bias	V/F SVC FVC PMVF PMSVC PMFVC Set AO bias to adjust the zero point of the terminal output.	0.0% (-10.0%~10.0%)	RUN
F06.04(0x0604)	AO Filter	V/F SVC FVC PMVF PMSVC PMFVC Set the size of the filter applied to the analog signal to remove interference.	0.010s (0.000s~6.000s)	RUN
F06.05(0x0605)	AO as FM Lower Limit	V/F SVC FVC PMVF PMSVC PMFVC Set AO as the lower limit of FM signal output.	0.20kHz (0.00kHz~100.00kHz)	RUN
F06.06(0x0606)	AO as FM Upper Limit	V/F SVC FVC PMVF PMSVC PMFVC Set AO as the upper limit of frequency modulation.	50.00kHz (0.00kHz~100.00kHz)	RUN

F06.1x: AO Expansion

Code (Address)	Name	Content	Default (Range)	Property
F06.10(0x060A)	AO Expansion Mode	V/F SVC FVC PMVF PMSVC PMFVC 0: 0V~10V; 1: 4.00mA~20.00mA; 2: 0.00mA~20.00mA; 3: FM output	0 (0~3)	RUN
F06.11 (0x060B)	AO Expansion Content	V/F SVC FVC PMVF PMSVC PMFVC Select what to output from the AO expansion board.	1 (0~19)	RUN
F06.12 (0x060C)	AO Expansion Gain	V/F SVC FVC PMVF PMSVC PMFVC Set to adjust the analog output from the terminals.	100.0% (0.0%~300.0%)	RUN
F06.13 (0x060D)	Expansion AO Bias	V/F SVC FVC PMVF PMSVC PMFVC Set the bias to adjust the zero point of the terminal output.	0.0% (-10.0%~10.0%)	RUN
F06.14(0x060E)	AO Expansion Filter	V/F SVC FVC PMVF PMSVC PMFVC Set the size of the filter applied to the analog signal to remove interference.	0.010s (0.000s~6.000s)	RUN

F06.2x~F06.3x: DO and RO

Code (Address)	Name	Content	Default (Range)	Property
F06.20 (0x0614)	Polarity	V/F SVC FVC PMVF PMSVC PMFVC Ones-bit: Y terminal Tens-bit: Relay terminal Hundreds-bit: Y expansion terminal Thousands-bit: Relay expansion terminal 0: Positive 1: Negative	0000 (0000~1111)	RUN
F06.21 (0x0615)	Y Terminal Function	V/F SVC FVC PMVF PMSVC PMFVC See the functions of terminal Y.	1 (0~63)	RUN
F06.22 (0x0616)	Relay Terminal Function	V/F SVC FVC PMVF PMSVC PMFVC See the functions of terminal Y.	4 (0~63)	RUN
F06.23 (0x0617)	Y Expansion Function	V/F SVC FVC PMVF PMSVC PMFVC Set the function of expanded Y terminal.	0 (0~63)	RUN
F06.24 (0x0618)	Relay Expansion Function	V/F SVC FVC PMVF PMSVC PMFVC Set the function of relay expansion 2.	0 (0~63)	RUN
F06.25 (0x0619)	Y Terminal ON Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the delay time when Y terminal is switched on.	0.010s (0.000s~60.000s)	RUN
F06.26 (0x061A)	Relay Terminal ON Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the delay time when the relay terminal is switched on.	0.010s (0.000s~60.000s)	RUN
F06.27 (0x061B)	Y Expansion ON Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the delay time when Y expansion terminal is switched on.	0.010s (0.000s~60.000s)	RUN
F06.28 (0x061C)	Relay Expansion ON Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the delay time when relay expansion terminal is switched on.	0.010s (0.000s~60.000s)	RUN
F06.29 (0x061D)	Y Terminal OFF Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the delay time when Y terminal is switched off.	0.010s (0.000s~60.000s)	RUN
F06.30 (0x061E)	Relay Terminal OFF Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the delay time when relay terminal is switched off.	0.010s (0.000s~60.000s)	RUN

F06.31 (0x061F)	Y Expansion OFF Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the delay time when Y expansion terminal is switched off.	0.010s (0.000s~60.000s)	RUN
F06.32 (0x0620)	Relay Expansion OFF Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the delay time when relay expansion terminal is switched off.	0.010s (0.000s~60.000s)	RUN

F06.4x: Frequency Detection

Code (Address)	Name	Content	Default (Range)	Property
F06.40 (0x0628)	Frequency Detection 1	V/F SVC FVC PMVF PMSVC PMFVC Set the frequency detection value 1.	2.00Hz (0.00Hz~ Max. frequency)	RUN
F06.41 (0x0629)	Frequency Detection Range 1	V/F SVC FVC PMVF PMSVC PMFVC Set the frequency detection range 1.	1.00Hz (0.00Hz~ Max. frequency)	RUN
F06.42 (0x062A)	Frequency Detection 2	V/F SVC FVC PMVF PMSVC PMFVC Set the frequency detection value 2.	2.00Hz (0.00Hz~ Max. frequency)	RUN
F06.43 (0x062B)	Frequency Detection Range 2	V/F SVC FVC PMVF PMSVC PMFVC Set the frequency detection range 2.	1.00Hz (0.00Hz~ Max. frequency)	RUN
F06.44 (0x062C)	Frequency Arrival Detection Range	V/F SVC FVC PMVF PMSVC PMFVC Set the detection range of the given frequency to check if the setting is reached.	2.00Hz (0.00Hz~ Max. frequency)	RUN

F06.5x: Monitor Comparator Output 1

Code (Address)	Name	Content	Default (Range)	Property
F06.50 (0x0632)	Comparator 1 Item	V/F SVC FVC PMVF PMSVC PMFVC Ones- and tens-bit: Set monitor parameter 00~63 to yy in Cxx.yy. Hundreds and thousands-bit: Set monitor parameter 00~07 to xx in Cxx.yy.	0001 (0000~0763)	RUN
F06.51 (0x0633)	Comparator 1 Upper Limit	V/F SVC FVC PMVF PMSVC PMFVC Set the comparator 1 upper limit.	(up to F06.50)	RUN
F06.52 (0x0634)	Comparator 1 Lower Limit	V/F SVC FVC PMVF PMSVC PMFVC Set the comparator 1 lower limit.	(up to F06.50)	RUN
F06.53 (0x0635)	Comparator 1 Bias	V/F SVC FVC PMVF PMSVC PMFVC Set the comparator 1 bias value.	(up to F06.50)	RUN
F06.54 (0x0636)	Comparator 1 Mode	V/F SVC FVC PMVF PMSVC PMFVC 0: Continue operation(DO terminal only); 1: Report alarm and free stop; 2: Report warning and continue operation 3: Force stop	0 (0~3)	RUN
F06.55 (0x0637)	Comparator 2 Item	V/F SVC FVC PMVF PMSVC PMFVC Ones- and tens-bit: Set monitor parameter 00~63 to yy in Cxx.yy. Hundreds and thousands-bit: Set monitor parameter 00~07 to xx in Cxx.yy.	0002 (0000~0763)	RUN
F06.56 (0x0638)	Comparator 2 Upper Limit	V/F SVC FVC PMVF PMSVC PMFVC Set the comparator 2 upper limit.	(up to F06.55)	RUN

F06.57 (0x0639)	Comparator 2 Lower Limit	V/F SVC FVC PMVF PMSVC PMFVC Set the comparator 2 lower limit.	(up to F06.55)	RUN
F06.58 (0x063A)	Comparator 2 Bias	V/F SVC FVC PMVF PMSVC PMFVC Set the comparator 2 bias value.	(up to F06.55)	RUN
F06.59 (0x063B)	Comparator 2 Mode	V/F SVC FVC PMVF PMSVC PMFVC 0: Continue operation(DO terminal only); 1: Report alarm and free stop; 2: Report warning and continue operation 3: Force stop	0 (0~3)	RUN

F06.6x~F06.7x: Virtual I/O Terminal

Code (Address)	Name	Content	Default (Range)	Property
F06.60 (0x063C)	vX1 Function	V/F SVC FVC PMVF PMSVC PMFVC See the functions of terminal X.	0 (0~95)	RUN
F06.61 (0x063D)	vX2 Function	V/F SVC FVC PMVF PMSVC PMFVC See the functions of terminal X.	0 (0~95)	RUN
F06.62 (0x063E)	vX3 Function	V/F SVC FVC PMVF PMSVC PMFVC See the functions of terminal X.	0 (0~95)	RUN
F06.63 (0x063F)	vX4 Function	V/F SVC FVC PMVF PMSVC PMFVC See the functions of terminal X.	0 (0~95)	RUN
F06.64 (0x0640)	vX Status Source	V/F SVC FVC PMVF PMSVC PMFVC 0: By internal connection with vYn terminal 1: By physical connection with Xn terminal 2: By function code setting Ones-bit: vX1; Tens-bit: vX2 Hundreds-bit: vX3; Thousands-bit: vX4	0000 (0000~2222)	RUN
F06.65 (0x0641)	vX Setting from Function Code	V/F SVC FVC PMVF PMSVC PMFVC 0: Invalid; 1: Valid Ones-bit: vX1; Tens-bit: vX2 Hundreds-bit: vX3; Thousands-bit: vX4	0000 (0000~1111)	RUN
F06.66 (0x0642)	vY1 Function	V/F SVC FVC PMVF PMSVC PMFVC See Y terminal functions.	0 (0~63)	RUN
F06.67 (0x0643)	vY2 output selection	V/F SVC FVC PMVF PMSVC PMFVC See Y terminal functions.	0 (0~63)	RUN
F06.68 (0x0644)	vY3 Function	V/F SVC FVC PMVF PMSVC PMFVC See Y terminal functions.	0 (0~63)	RUN
F06.69 (0x0645)	vY4 Function	V/F SVC FVC PMVF PMSVC PMFVC See Y terminal functions.	0 (0~63)	RUN
F06.70 (0x0646)	vY1 ON Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the delay time when vY1 terminal is switched on.	0.010s (0.000s~60.000s)	RUN
F06.71 (0x0647)	vY2 ON Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the delay time when vY2 terminal is switched on.	0.010s (0.000s~60.000s)	RUN
F06.72 (0x0648)	vY3 ON Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the delay time when vY3 terminal is switched on.	0.010s (0.000s~60.000s)	RUN
F06.73 (0x0649)	vY4 ON Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the delay time when vY4 terminal is switched on.	0.010s (0.000s~60.000s)	RUN

F06.74 (0x064A)	vY1 OFF Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the delay time when vY1 is switched off.	0.010s (0.000s~60.000s)	RUN
F06.75 (0x064B)	vY2 OFF Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the delay time when vY2 is switched off.	0.010s (0.000s~60.000s)	RUN
F06.76 (0x064C)	vY3 OFF Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the delay time when vY3 is switched off.	0.010s (0.000s~60.000s)	RUN
F06.77 (0x064D)	vY4 OFF Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the delay time when vY4 is switched off.	0.010s (0.000s~60.000s)	RUN

F06.7x: Monitor Comparator 2 Output

Code (Address)	Name	Content	Default (Range)	Property
F06.80 (0x0650)	Comparator 3 Item	V/F SVC FVC PMVF PMSVC PMFVC Ones- and tens-bit: Set monitor parameter 00~63 to yy in Cxx.yy. Hundreds and thousands-bit: Set monitor parameter 00~07 to xx in Cxx.yy.	0003 (0000~0763)	RUN
F06.81 (0x0651)	Comparator 3 Upper Limit	V/F SVC FVC PMVF PMSVC PMFVC Set the comparator 3 upper limit.	(up to F06.80)	RUN
F06.82 (0x0652)	Comparator 3 Lower Limit	V/F SVC FVC PMVF PMSVC PMFVC Set the comparator 3 lower limit.	(up to F06.80)	RUN
F06.83 (0x0653)	Comparator 3 Bias	V/F SVC FVC PMVF PMSVC PMFVC Set the comparator 3 bias value.	(up to F06.80)	RUN
F06.84 (0x0654)	Comparator 3 Mode	V/F SVC FVC PMVF PMSVC PMFVC 0: Continue operation (DO terminal only); 1: Report alarm and free stop; 2: Report warning and continue operation 3: Force stop	0 (0~3)	RUN
F06.85 (0x0655)	Comparator 4 Item	V/F SVC FVC PMVF PMSVC PMFVC Ones- and tens-bit: Set monitor parameter 00~63 to yy in Cxx.yy. Hundreds and thousands-bit: Set monitor parameter 00~07 to xx in Cxx.yy.	0004 (0000~0763)	RUN
F06.86 (0x0656)	Comparator 4 Upper Limit	V/F SVC FVC PMVF PMSVC PMFVC Set the comparator 4 upper limit.	(up to F06.85)	RUN
F06.87 (0x0657)	Comparator 4 Lower Limit	V/F SVC FVC PMVF PMSVC PMFVC Set the comparator 4 lower limit.	(up to F06.85)	RUN
F06.88 (0x0658)	Comparator 4 Bias	V/F SVC FVC PMVF PMSVC PMFVC Set the comparator 4 bias value.	(up to F06.85)	RUN
F06.89 (0x0659)	Comparator 4 Mode	V/F SVC FVC PMVF PMSVC PMFVC 0: Continue operation (DO terminal only); 1: Report alarm and free stop; 2: Report warning and continue operation 3: Force stop	0 (0~3)	RUN
F06.90 (0x065A)	Comparator ON Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the delay time when comparator 1-4 is turned on for output.	0.010 (0.000s~ 60.000s)	RUN
F06.91 (0x065B)	Comparator OFF Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the delay time when comparator 1-4 is turned off for output.	0.010 (0.000s~ 60.000s)	RUN

4.10 F07: Operation Control

F07.0x: Connection

Code (Address)	Name	Content	Default (Range)	Property
F07.00 (0x0700)	Starting Mode	V/F SVC FVC PMVF PMSVC PMFVC 0: Start at starting frequency 1: Start from DC braking and then at starting frequency 2: Start from speed tracking and direction identification	0 (0~2)	STOP
F07.01 (0x0701)	Pre-excitation Start Time	V/F SVC FVC PMVF PMSVC PMFVC Only SVC on asynchronous motors supports pre-excitation.	0.00s (0.00s~60.00s)	STOP
F07.02 (0x0702)	Starting Frequency	V/F SVC FVC PMVF PMSVC PMFVC Drive will not start but stay in standby when the given frequency is lower than this value.	0.00Hz (0.00Hz~Upper limit frequency set in digits)	STOP
F07.03 (0x0703)	Terminal Protection	V/F SVC FVC PMVF 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 **Note**: The terminal protection is enabled by default when free stop, emergency stop or forced stop command are valid, report A. runx warning when protection is triggered.	0111 (0000~1111)	STOP
F07.05 (0x0705)	Operation Direction	V/F SVC FVC PMVF PMSVC PMFVC Ones-bit: 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: Invalid; 1: Valid **Note**: This value will not be reset during initialization, and the ones-bit value will not be changed after parameter download.	0000 (0000~1121)	STOP
F07.06 (0x0706)	Power-down Restart Mode	V/F SVC FVC PMVF PMSVC PMFVC 0: Invalid; 1: Start from speed tracking; 2: Start as startup mode setting.	0 (0~2)	STOP
F07.07 (0x0707)	Power-Down Restart Interval	V/F SVC FVC PMVF PMSVC PMFVC Set the waiting interval to restart after power cut.	0.50s (0.00s~60.00s)	STOP

F07.1x: Stop Control

Code (Address)	Name	Content	Default (Range)	Property
F07.10 (0x070A)	Stop Mode	V/F SVC FVC PMVF PMSVC PMFVC 0: Deceleration stop; 1: Free stop	0 (0~1)	RUN
F07.11 (0x070B)	Stop Detection Frequency	V/F SVC FVC PMVF 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 set in digits)	RUN
F07.12 (0x070C)	Pause-Restart Interval	V/F SVC FVC PMVF PMSVC PMFVC Set waiting time to restart after operation pause.	0.00s (0.00s~60.00s)	STOP

F07.15 (0x070F)	Operation below Lower Limit Frequency	V/F SVC FVC PMVF PMSVC PMFVC 0: Run at frequency command; 1: Free stop and pause; 2: Run at lower limit frequency; 3: Run at zero-speed	2 (0~3)	RUN
F07.16 (0x0710)	Zero-Speed Torque Holding Factor	V/F SVC FVC PMVF PMSVC PMFVC Set the torque holding factor during zero-speed operation, 100.0% of the rated drive current.	60.0% (0.0%~150.0%)	RUN
F07.17 (0x0711)	Zero-speed Torque Holding Time	V/F SVC FVC PMVF PMSVC PMFVC Set the holding time during zero-speed operation.	0.0s (0.0s~6000.0s)	RUN
F07.18 (0x0712)	FED/REV Dead Time	V/F SVC FVC PMVF PMSVC PMFVC Set the zero-frequency holding time during FWD/REV switching.	0.0s (0.0s~120.0s)	STOP

F07.2x: DC Brake and Speed Tracking

Code (Address)	Name	Content	Default (Range)	Property
F07.20 (0x0714)	DC Braking Current during Start	V/F SVC FVC PMVF PMSVC PMFVC The reference is the rated current of the motor, and it's limited by the rated drive current.	60.0% (0.0%~150.0%)	STOP
F07.21 (0x0715)	DC Braking Time during Start	V/F SVC FVC PMVF PMSVC PMFVC Set the DC braking duration during start.	0.0s (0.0s~60.0s)	STOP
F07.22 (0x0716)	DC Braking Frequency during Shutdown	V/F SVC FVC PMVF PMSVC PMFVC Set the DC braking working frequency to stop.	1.00Hz (0.00Hz~50.00Hz)	STOP
F07.23 (0x0717)	DC Braking Current during Shutdown	V/F SVC FVC PMVF PMSVC PMFVC The reference is the rated current of the motor, and it's limited by the rated drive current.	60.0% (0.0%~150.0%)	STOP
F07.24 (0x0718)	DC Braking Duration during Shutdown	V/F SVC FVC PMVF PMSVC PMFVC Set the duration of DC braking during stop.	0.0s (0.0s~60.0s)	STOP
F07.25 (0x0719)	Speed Tracking	V/F SVC FVC PMVF PMSVC PMFVC Ones-bit: Search mode 0: Search from max. frequency; 1: Search from stop frequency Tens-bit: Search backwards 0: OFF; 1: ON Hundreds-bit: Search source 0: Software; 1: Hardware	0000 (0000~1111)	STOP
F07.26 (0x071A)	Speed Tracking Time	V/F SVC FVC PMVF PMSVC PMFVC Set the speed tracking time.	0.50s (0.00s~60.00s)	STOP
F07.27 (0x071B)	Speed Tracking Stop Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the speed tracking stop delay.	1.00s (0.00s~60.00s)	STOP
F07.28 (0x071C)	Speed Tracking Current	V/F SVC FVC PMVF PMSVC PMFVC Set the speed tracking current.	120.0% (0.0%~400.0%)	STOP

F07.3x: Jogging

Code (Address)	Name	Content	Default (Range)	Property
F07.30 (0x071E)	Jogging Frequency	V/F SVC FVC PMVF PMSVC PMFVC Set the jogging frequency.	5.00Hz (0.00Hz~ Max. frequency)	RUN
F07.31 (0x071F)	Jogging ACC Time	V/F SVC FVC PMVF PMSVC PMFVC Set the jogging acceleration time.	10.00s (0.00s~650.00s)	RUN

F07.32 (0x0720)	Jogging DEC Time	V/F SVC FVC PMVF PMSVC PMFVC Set the jogging deceleration time.	10.00s (0.00s~650.00s)	RUN
F07.33 (0x0721)	S-curve Jogging	V/F SVC FVC PMVF PMSVC PMFVC Set the S-curve for jogging. 0: Invalid; 1: Valid	1 (0~1)	RUN
F07.34 (0x0722)	Jogging Stop Mode	V/F SVC FVC PMVF PMSVC PMFVC Set the stop mode for jogging. 0: By F7.10 setting; 1: Deceleration stop only	0 (0~1)	STOP

F07.4x: Holding and Jump Frequency during Start/Stop

Code (Address)	Name	Content	Default (Range)	Property
F07.40 (0x0728)	Start Holding Frequency	V/F SVC FVC PMVF PMSVC PMFVC It is higher than the starting frequency and lower than the upper limit frequency set in digits.	0.50Hz (0.00Hz~Upper limit frequency from panel)	STOP
F07.41 (0x0729)	Start Frequency Holding Time	V/F SVC FVC PMVF 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
F07.42 (0x072A)	Stop Holding Frequency	V/F SVC FVC PMVF PMSVC PMFVC Set the holding frequency during stop.	0.50Hz (0.00Hz~Upper limit frequency from panel)	STOP
F07.43 (0x072B)	Stop Frequency Holding Time	V/F SVC FVC PMVF PMSVC PMFVC Set the frequency holding time during stop.	0.00s (0.00s~60.00s)	STOP
F07.44 (0x072C)	Jump Frequency 1	V/F SVC FVC PMVF PMSVC PMFVC Set the jump frequency 1.	0.00Hz (0.00Hz~ Max. frequency)	RUN
F07.45 (0x072D)	Jump Frequency 1 Range	V/F SVC FVC PMVF PMSVC PMFVC Set the range for jump frequency 1.	0.00Hz (0.00Hz~ Max. frequency)	RUN
F07.46 (0x072E)	Jump Frequency 2	V/F SVC FVC PMVF PMSVC PMFVC Set the jump frequency 2.	0.00Hz (0.00Hz~ Max. frequency)	RUN
F07.47 (0x072F)	Jump Frequency 2 Range	V/F SVC FVC PMVF PMSVC PMFVC Set the range for jump frequency 2.	0.00Hz (0.00Hz~ Max. frequency)	RUN

4.11 F08: Auxiliary Control

F08.0x: Counting and Timing

Code (Address)	Name	Content	Default (Range)	Property
F08.00 (0x0800)	Counter Source	V/F SVC FVC PMVF PMSVC PMFVC 0: X terminal; 1: PUL terminal; 2~5: Reserved	0 (0~5)	RUN
F08.01 (0x0801)	Counter Frequency Division	V/F SVC FVC PMVF PMSVC PMFVC Set the frequency division for the counting circuit.	0 (0~6000)	RUN
F08.02 (0x0802)	Max Counting	V/F SVC FVC PMVF PMSVC PMFVC Set the max. value for the counting circuit.	1000 (0~65000)	RUN

F08.03 (0x0803)	Counter Setting	V/F SVC FVC PMVF PMSVC PMFVC Set the value for the counting circuit.	500 (0~65000)	RUN
F08.04 (0x0804)	Pulse No. Per Meter	V/F SVC FVC PMVF PMSVC PMFVC Set the counting value per meter.	10.0 (0.1~6553.5)	RUN
F08.05 (0x0805)	Length Setting	V/F SVC FVC PMVF PMSVC PMFVC Increase one unit of length to output, while reset when one terminal length is reached.	1000m (0m~65535m)	STOP
F08.06 (0x0806)	Actual Length	V/F SVC FVC PMVF PMSVC PMFVC Set the actual length,and it will not be saved in case of power cut.	0m (0m~65535m)	STOP
F08.07 (0x0807)	Timer Unit	V/F SVC FVC PMVF PMSVC PMFVC Set the time unit on the timing circuit. 0: Second(s); 1: Minute(min); 2: Hour(h)	0 (0~2)	STOP
F08.08 (0x0808)	Timer Setting	V/F SVC FVC PMVF PMSVC PMFVC Set the value for timing.	0 (0~65000)	STOP

F08.3x: Swing Frequency

Code (Address)	Name	Content	Default (Range)	Property
F08.30 (0x081E)	Swing Frequency	V/F SVC FVC PMVF PMSVC PMFVC 0: Invalid; 1: Valid	0 (0~1)	STOP
F08.31 (0x081F)	Swing Frequency Range	V/F SVC FVC PMVF PMSVC PMFVC Ones-bit: Start method 0: Auto; 1:Manual via terminal Tens-bit: Swing frequency range 0: Center frequency-based; 1: Max. frequency-based Hundreds-bit: Preset frequency 0: OFF; 1: ON	0000 (0000~0111)	STOP
F08.32 (0x0820)	Swing Frequency Preset	V/F SVC FVC PMVF PMSVC PMFVC Set the preset swing frequency.	0.00Hz (0.00Hz~ Max. frequency)	STOP
F08.33 (0x0821)	Preset Swing Frequency Interval	V/F SVC FVC PMVF PMSVC PMFVC Set the preset swing frequency waiting time.	0.0s (0.0s~3600.0s)	STOP
F08.34 (0x0822)	Swing Frequency Range	V/F SVC FVC PMVF PMSVC PMFVC Set the swing frequency range value.	10.0% (0.0%~50.0%)	STOP
F08.35 (0x0823)	Kick Frequency	V/F SVC FVC PMVF PMSVC PMFVC Set the kick frequency.	10.0% (0.0%~50.0%)	STOP
F08.36 (0x0824)	Triangular Wave Rise Time	V/F SVC FVC PMVF PMSVC PMFVC Set the triangular wave rise time.	5.00s (0.00s~650.00s)	STOP
F08.37 (0x0825)	Triangular Wave Drop Time	V/F SVC FVC PMVF PMSVC PMFVC Set the triangular wave drop time.	5.00s (0.00s~650.00s)	STOP
F08.41 (0x0829)	Monitoring 1 Ratio	V/F SVC FVC PMVF PMSVC PMFVC Thousands-bit: Decimal digit setting Hundreds-bit: C0x setting Tens-, ones-bit: Set yy in C0x.yy	2000 (0000~3763)	RUN
F08.42 (0x082A)	Monitoring 1 Proportional Coefficient	V/F SVC FVC PMVF PMSVC PMFVC Set the proportion coefficient for monitoring value 1, the calculated monitoring value is C02.23	1.00 (0.00~600.00)	RUN
F08.43 (0x082B)	Monitoring 2 Ratio	V/F SVC FVC PMVF PMSVC PMFVC Thousands-bit: Decimal digit setting Hundreds-bit: C0x setting Tens-, ones-bit: Set yy in C0x.yy	2001 (0000~3763)	RUN

F08.44 (0x082C)	Monitoring 2 Proportional Coefficient	V/F SVC FVC PMVF PMSVC PMFVC Set the proportional coefficient for monitoring value 2, and the calculated monitoring value is C02.24.	1.00 (0.00~600.00)	RUN

4.12 F09: Auxiliary Control 2

F09.0x: Maintenance

Code (Address)	Name	Content	Default (Range)	Property
F09.02 (0x0902)	Maintenance Warning	V/F SVC FVC PMVF PMSVC PMFVC Ones-bit: Cooling fan; 0: Invalid; 1: Valid Tens-bit: Main relay; 0: Invalid; 1: Valid; Hundreds-bit: Reserved; Thousands-bit: Reserved	0x0000 (0x0000~0x1111)	RUN
F09.03 (0x0903)	Fan Maintenance	V/F SVC FVC PMVF PMSVC PMFVC Set it to 0 when replacing with a new fan in hour.	0 (0~65535)	STOP
F09.04 (0x0904)	Main Relay Maintenance	V/F SVC FVC PMVF PMSVC PMFVC When replacing the main relay, set it to 0.0%.	0.0% (0.0%~150.0%)	STOP

4.13 F10: Protection Parameters

F10.0x: Current Protection

Code (Address)	Name	Content	Default (Range)	Property
F10.00 (0x0A00)	OC Suppression	V/F SVC FVC PMVF PMSVC PMFVC Auto limit the output current below the set overcurrent suppression point to prevent overcurrent faults triggered by excessive current. 0: Always ON; 1: ON during ACC/DEC and OFF at constant speed	0 (0~1)	RUN
F10.01 (0x0A01)	OC Suppression Point	V/F SVC FVC PMVF PMSVC PMFVC Set load current limit level, 100% of the drive rated current	160.0% (0.0%~300.0%)	RUN
F10.02 (0x0A02)	OC Suppression Gain	V/F SVC FVC PMVF PMSVC PMFVC Set the response effect of overcurrent suppression	100.0% (0.0%~500.0%)	RUN
F10.03 (0x0A03)	Current Protection 1	V/F SVC FVC PMVF 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: SC protection interference suppression 0: Normal;1: Level 1; 2: Level 2 Thousand bits: SC, OC, OU, fault reset delay 0: OFF;1: ON	0001 (0000~f221)	STOP
F10.04 (0x0A04)	Current Protection 2	V/F SVC FVC PMVF PMSVC PMFVC Ones-bit: Three-phase current sum protection 0: OFF; 1: ON Tens-bit: Three-phase current imbalance detection, report E. oLF4. 0: OFF; 1: ON	0001 (0000~0011)	STOP

F10.05 (0x0A05)	Current Imbalance Threshold	V/F SVC FVC PMVF PMSVC PMFVC The ratio of the largest to the smallest phase of the three-phase current. This is used to judge current imbalance faults by comparing it with the set value.	160% (0%~500%)	STOP
F10.06 (0x0A06)	Current Imbalance Filter Coefficient	V/F SVC FVC PMVF PMSVC PMFVC Increase this parameter under high current fluctuation.	2.0s (0.0s~60.0s)	STOP

F10.1x: Voltage Protection

Code (Address)	Name	Content	Default (Range)	Property
F10.10 (0x0A0A)	Operation Pause Delay	V/F SVC FVC PMVF PMSVC PMFVC When the set value is zero, trigger the UV fault as usual. While if the set value is non-zero, trigger the UV warning, the output will be suppressed, and the system will pause. If the UV still exists after the delay, report fault, and if the voltage recovers during delay, operation is immediately resumed.	0.0s (0.0s~10.0s)	STOP
F10.11 (0x0A0B)	Bus OV Suppression	V/F SVC FVC PMVF PMSVC PMFVC If the bus voltage is higher than the overvoltage suppression point, acceleration and deceleration will be slowed down or stopped to prevent overvoltage faults. Ones-bit: OV suppression 0: OFF;1: ON Tens-bit: Overexcitation 0: OFF; 1: ON during deceleration; 2: ON during operation	0011 (0000~0021)	STOP
F10.12 (0x0A0C)	Bus OV Suppression Point	V/F SVC FVC PMVF PMSVC PMFVC Set the bus voltage value to trigger the overvoltage suppression function.	T3: 750V S2: 370V (0V~OV point) T3 OV point: 820V S2 OV point: 400V	STOP
F10.13 (0x0A0D)	Bus OV Suppression Gain	V/F SVC FVC PMVF PMSVC PMFVC Set the response effect of overvoltage suppression.	100.0% (0.0%~500.0%)	RUN
F10.14 (0x0A0E)	Dynamic Braking	V/F SVC FVC PMVF PMSVC PMFVC Set the dynamic braking ON or OFF. 0: OFF; 1: ON, with overvoltage suppression off 2: ON, with overvoltage suppression on.	2 (0~2)	RUN
F10.15 (0x0A0F)	Dynamic Braking Voltage	V/F SVC FVC PMVF PMSVC PMFVC Set the dynamic brake voltage to start when the bus voltage is higher than this value.	T3: 740V S2: 360V (0V~OV point) T3 OV point: 820V S2 OV point: 400V	RUN
F10.16 (0x0A10)	Bus UV Suppression	V/F SVC FVC PMVF PMSVC PMFVC Auto adjust the operation frequency when the bus voltage is lower than the under-voltage suppression point to prevent under-voltage faults. 0: OFF; 1: ON	0 (0~1)	STOP
F10.17 (0x0A11)	Bus UV Suppression Point	V/F SVC FVC PMVF PMSVC PMFVC Set the bus voltage value to trigger the undervoltage suppression function.	T3: 430V S2: 240V (0V~OV point) T3 OV point: 820V S2 OV point: 400V	STOP
F10.18 (0x0A12)	Bus UV Suppression Gain	V/F SVC FVC PMVF PMSVC PMFVC Set the response effect of undervoltage suppression.	100.0% (0.0%~500.0%)	RUN

F10.19 (0x0A13)	Bus UV Protection Point	V/F SVC FVC PMVF PMSVC PMFVC Set the lower limit voltage of the busbar voltage allowed, report undervoltage fault when below this value.	T3: 320V S2: 190V (0V~OV point) T3 OV point: 820V S2 OV point: 400V	STOP

F10.2x: Auxiliary Protection

Code (Address)	Name	Content	Default (Range)	Property
F10.20 (0x0A14)	I/O Phase Loss Protection	V/F SVC FVC PMVF 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 Hundreds-bit: Reserved Thousands-bit: Reserved	0021 (000~1121)	STOP
F10.21 (0x0A15)	Input Phase Loss Threshold	V/F SVC FVC PMVF 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 Short Circuit Protection	V/F SVC FVC PMVF PMSVC PMFVC Set the drive output and fan to ground short circuit protection on/off. Ones-bit: Output to ground short circuit protection 0: OFF; 1: 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	0111 (0000~0112)	STOP
F10.23 (0x0A17)	Fan ON/OFF	V/F SVC FVC PMVF PMSVC PMFVC Set the drive fan operation mode. 0: Fan runs after the drive is powered up; 1: Fan runs according to temperature, and runs with the drive. 2: Fan runs for the set time of F10.24 and stops. It relates to temperature.	1 (0~2)	RUN
F10.24 (0x0A18)	Fan Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the time from operation command release to fan stopping.	30.00s (0.00s~600.00s)	STOP
F10.25 (0x0A19)	Drive OT Warning oH1	V/F SVC FVC PMVF PMSVC PMFVC Set the value for overheat detection, report warning when it is above this value.	80.0°C (0.0°C~100.0°C)	RUN
F10.26 (0x0A1A)	Motor OT and Module Temperature Sensor	V/F SVC FVC PMVF PMSVC PMFVC Set the function related to motor over-temperature protection with the IO expansion board. Ones-bit: Motor temperature sensor type 0: PT1000 1: KTY84	0061 (0000~0091)	RUN

		IO expansion board dip switches to KTY, and F10.26 is valid. IO expansion board dip switches to PT100, and PT100 sensor is valid. Tens-bit: Motor temperature detection duration 0: 2s;1: Fault identification off; 2: 5s; 3: 30s; 4: 60s; 5: 120s; 6: 300s(5 min)-default 7: 600s 8: 1200s; 9: 1800s(30 min) **Note**: When the output current is lower than 1/2 of the rated current of the motor, the time is twice the set value. Hundreds-bit: Internal module temperature sensor disconnection detection 0: ON, this function is not related to the expansion board; 1: OFF. Thousands-bit: Motor temperature disconnection mode 0: Detection OFF; 1: Report alarm and free stop; 2: Report warning and continue operation		
F10.27 (0x0A1B)	Motor OT Alarm (Expansion)	V/F SVC FVC PMVF PMSVC PMFVC Set the value for over-temperature, report fault when it is above this value.	110.0℃ (0.0℃~200.0℃)	RUN
F10.28 (0x0A1C)	Motor OT Warning (Expansion)	V/F SVC FVC PMVF PMSVC PMFVC Set the value for over-temperature, report warning when it is above this value.	90.0℃ (0.0℃~F10.27)	RUN

F10.3x: Load Protection

Code (Address)	Name	Content	Default (Range)	Property
F10.31 (0x0A1F)	Load Warning Threshold	V/F SVC FVC PMVF PMSVC PMFVC Set the load warning threshold under vector control. Ones-bit: Load warning reference 0: Output torque; 1: Output current	0000 (0000~0001)	STOP
F10.32 (0x0A20)	Load Detection/Warning Mode	V/F SVC FVC PMVF PMSVC PMFVC Set the drive load detection mode and the warning 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: Load detection 1 warning mode 0: Continue the operation, report A. LD1; 1: Free stop, report E. LD1 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: Load detection 2 warning mode 0: Continue the operation, report A. LD1; 1: Free stop, report E. LD1	0000 (0000~1414)	STOP

F10.33 (0x0A21)	Load Warning 1	V/F SVC FVC PMVF PMSVC PMFVC Set the load warning value 1 for detection. For V/F control, it is 100% of the rated motor current. For vector control, it is 100% of the motor rated output torque.	130.0% (0.0%~200.0%)	STOP
F10.34 (0x0A22)	Load Warning 1 Duration	V/F SVC FVC PMVF PMSVC PMFVC Set the detection duration of load warning 1, if the load is higher than the load warning level for the set time here, report load warning 1.	5.0s (0.0s~60.0s)	STOP
F10.35 (0x0A23)	Load Warning 2	V/F SVC FVC PMVF PMSVC PMFVC Set the load warning value 2 for detection. For V/F control, it is 100% of the rated motor current. For vector control, it is 100% of the motor rated output torque.	30.0% (0.0%~200.0%)	STOP
F10.36 (0x0A24)	Load Warning 2 Duration	V/F SVC FVC PMVF PMSVC PMFVC Set the detection duration of load warning 2, if the load is higher than the load warning threshold for the set time here, report load warning 2.	5.0s (0.0s~60.0s)	STOP

F10.4x: Stall Protection

Code (Address)	Name	Content	Default (Range)	Property
F10.40 (0x0A28)	Speed Deviation Protection	V/F SVC FVC PMVF PMSVC PMFVC Set the detection mode and warning mode of excessive deviation between the motor's given speed and the feedback speed. Ones-bit: Detection mode 0: Detection OFF; 1: Detect only at constant speed; 2: ON; Tens-bit: Warning mode 0: Free stop and report fault; 1: Report alarm and continue operation	0000 (0000~0012)	STOP
F10.41 (0x0A29)	Speed Deviation Threshold	V/F SVC FVC PMVF PMSVC PMFVC Set the detection value for excessive speed deviation, 100% of F01.10 [Max. Frequency].	10.0% (0.0%~60.0%)	STOP
F10.42 (0x0A2A)	Speed Deviation Duration	V/F SVC FVC PMVF PMSVC PMFVC Set the time for excessive speed deviation detection. If the deviation between the given speed and the feedback speed is greater than F10.41 for this time, report excessive speed deviation warning.	2.0s (0.0s~60.0s)	STOP
F10.43 (0x0A2B)	Overspeed Protection	V/F SVC FVC PMVF PMSVC PMFVC Set the detection mode selection and warning mode of overspeed. Ones-bit: Detection mode 0: Detection OFF; 1: Detect only at constant speed; 2: ON; Tens-bit: Warning mode 0: Free stop and report fault; 1: Report alarm and continue operation	0002 (0000~0012)	STOP

F10.44 (0x0A2C)	Overspeed Threshold	V/F SVC FVC PMVF PMSVC PMFVC Set the value of the overspeed warning for detection, 100% of F01.10 [Max. Frequency].	110.0% (0.0%~150.0%)	STOP
F10.45 (0x0A2D)	Overspeed Duration	V/F SVC FVC PMVF PMSVC PMFVC Set the duration of overspeed detection, if the feedback speed is higher than F10.44 and lasts for the set time here, report warning.	0.100s (0.000s~2.000s)	STOP

F10.5x: Fault Recovery Protection and Motor Overload

Code (Address)	Name	Content	Default (Range)	Property
F10.50 (0x0A32)	Auto-Recovery No.	V/F SVC FVC PMVF PMSVC PMFVC Set the number of times allowed to perform fault auto-recovery. **Note**: 0 indicates that the fault auto-recovery function is disabled; otherwise, it is enabled.	0 (0~10)	STOP
F10.51 (0x0A33)	Fault Auto-recovery Interval	V/F SVC FVC PMVF PMSVC PMFVC Set the waiting time after a fault occurs until reset.	1.0s (0.0s~100.0s)	STOP
F10.52 (0x0A34)	Recovered No.	V/F SVC FVC PMVF PMSVC PMFVC Indicate the times of already performed auto fault recovery, read-only.	0	READ
F10.53 (0x0A35)	OV Auto-recovery No.	V/F SVC FVC PMVF PMSVC PMFVC Ones-bit: Reserved; Tens-bit: Overvoltage auto-recovery times 0: OFF; 1~F: ON	0000 (0000~00F0)	STOP
F10.54 (0x0A36)	Operation Pause No.	V/F SVC FVC PMVF PMSVC PMFVC Record the times when operation set on F10.10 is paused, it is a read-only parameter, and will be cleared by re-power-up.	0 (0~10)	READ
F10.55 (0x0A37)	Motor OL Model	V/F SVC FVC PMVF PMSVC PMFVC 0: Common motor 1: Variable frequency motor(50Hz); 2: Variable frequency motor(60Hz); 3: Motor without cooling fan	0 (0~3)	RUN
F10.56 (0x0A38)	Motor Insulation Class	V/F SVC FVC PMVF PMSVC PMFVC 0: Insulation class A; 1: Insulation class E 2: Insulation class B; 3: Insulation class F 4: Insulation class H; 5: Special class S	3 (0~5)	STOP
F10.57 (0x0A39)	Motor Work Pattern	V/F SVC FVC PMVF PMSVC PMFVC 0-1: S1 pattern(continuous operation); 2: S2 pattern; 3-9: S3-S9	0 (0~9)	STOP
F10.58 (0x0A3A)	Motor OL Threshold	V/F SVC FVC PMVF 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
F10.59 (0x0A3B)	Motor OL Current Coefficient	V/F SVC FVC PMVF PMSVC PMFVC Motor overload current = actual current * motor overload current coefficient	100.0% (0.0%~250.0%)	STOP

4.14 F11: Panel Parameters

F11.0x: Key Operation

Code (Address)	Name	Content	Default (Range)	Property
F11.00 (0x0B00)	Key Lock	V/F SVC FVC PMVF PMSVC PMFVC 0: No lock; 1: Lock parameter modified via panel; 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 PMVF PMSVC PMFVC Set the key lock password.	0 (0~65535)	RUN
F11.02 (0x0B02)	Multi-Function Key	V/F SVC FVC PMVF PMSVC PMFVC 0: Invalid; 1: REV; 2: FWD jogging; 3: REV jogging; 4: Switch command source between the panel and terminal; 5: Switch command source between the panel and communication; 6: Switch command source between terminal and communication; 7: Switch command source among panel, terminal and communication cyclically	0 (0~7)	STOP
F11.03 (0x0B03)	STOP Key	V/F SVC FVC PMVF PMSVC PMFVC 0: Non-panel control invalid; 1: Non-panel stop works according to the stop mode; 2: Non-panel stop works according to the free stop mode	0 (0~2)	STOP
F11.04 (0x0B04)	UP/DW(Knob) of Status Interface	V/F SVC FVC PMVF PMSVC PMFVC Ones-bit: UP/DW key for modification 0: Invalid; 1: Valid to modify F01.09[Panel Giving Frequency]; 2: Valid to modify F13.01[Panel Giving PID]; 3: Valid to modify the function code via panel UP/DW key Tens-bit: Power loss protection of data 0: OFF; 1: ON Hundreds-bit: Modification condition 0: Modifiable during operation and stop; 1: Modifiable during operation, kept during stop; 2: Modifiable during operation, cleared after shutdown	0011 (0000~0213)	STOP
F11.05 (0x0B05)	UP/DW Key for Parameter Code Quick Change	V/F SVC FVC PMVF PMSVC PMFVC Ones- and tens-bit: Set 00~99 to yy in Fxx.yy Hundreds- and thousands-bit: set 00~15 to xx in Fxx.yy	0109 (0000~2999)	RUN

F11.06 (0x0B06)	Command Key	V/F SVC FVC PMVF PMSVC PMFVC Ones-bits: Internal/external command keys (RUN, STOP and RESET) 0: External first, when external keys are valid, internal are invalid; 1: Internal first, when internal keys are valid, external are invalid; 2: When both internal and external are valid, STOP/RESET are prior; and when both forward and reverse are valid, they are used as stop. Tens-bit: Reserved Hundreds-bit: Reserved Thousands-bit: Reserved	0000 (0000~2122)	STOP

F11.1x: Cyclic Monitoring of Status Interface

Code (Address)	Name	Content	Default (Range)	Property
F11.10 (0x0B0A)	Left/Right Key on Status Interface	V/F SVC FVC PMVF PMSVC PMFVC Ones-bit: Left shift key to adjust the first row of monitoring 0: Invalid; 1: Valid Tens-bit: Right shift key to adjust the second row of monitoring 0: Invalid; 1: Valid When the Left/Right shift key are invalid, the monitor display value is shown as parameter 1 after re-powering up.	0011 (0000~0011)	STOP
F11.11 (0x0B0B)	1st Row Parameter 1 for Cyclic Display	V/F SVC FVC PMVF PMSVC PMFVC Ones- and tens-bit: Set monitor parameter 00~63 to yy in Cxx.yy. Hundreds and thousands-bit: Set monitor parameter 00~07 to xx in Cxx.yy.	0000 (0000~0763)	RUN
F11.12 (0x0B0C)	1st Row Parameter 2 for Cyclic Display	V/F SVC FVC PMVF PMSVC PMFVC Same	0001 (0000~0763)	RUN
F11.13 (0x0B0D)	1st Row Parameter 3 for Cyclic Display	V/F SVC FVC PMVF PMSVC PMFVC Same	0002 (0000~0763)	RUN
F11.14 (0x0B0E)	1st Row Parameter 4 for Cyclic Display	V/F SVC FVC PMVF PMSVC PMFVC Same	0011 (0000~0763)	RUN
F11.15 (0x0B0F)	2nd Row Parameter 1 for Cyclic Display	V/F SVC FVC PMVF PMSVC PMFVC Same	0002 (0000~0763)	RUN
F11.16 (0x0B10)	2nd Row Parameter 2 for Cyclic Display	V/F SVC FVC PMVF PMSVC PMFVC Same	0004 (0000~0763)	RUN
F11.17 (0x0B11)	2nd Row Parameter 3 for Cyclic Display	V/F SVC FVC PMVF PMSVC PMFVC Same	0010 (0000~0763)	RUN
F11.18 (0x0B12)	2nd Row Parameter 4 for Cyclic Display	V/F SVC FVC PMVF PMSVC PMFVC Same	0012 (0000~0763)	RUN

F11.2x: Monitoring Parameters

Code (Address)	Name	Content	Default (Range)	Property
F11.20 (0x0B14)	Panel Display Item	V/F SVC FVC PMVF PMSVC PMFVC Ones-bit: Output frequency display 0: Target frequency; 1: Operating frequency >=2: Target frequency, filter depth becomes larger with this value 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 Factor	V/F SVC FVC PMVF PMSVC PMFVC Adjust the display of C00.05 speed.	100.0% (0.0%~500.0%)	RUN
F11.22 (0x0B16)	Power Display Factor	V/F SVC FVC PMVF PMSVC PMFVC Adjust the display of C00.10 power.	100.0% (0.0%~500.0%)	RUN
F11.23 (0x0B17)	Monitoring Parameter Group Display	V/F SVC FVC PMVF PMSVC PMFVC Ones-bit: Reserved Tens-bit: C05 display 0: Auto switching with control modes; 1: V/F mode related parameters; 2: V/C mode related parameters Hundreds-bit: C00.40~C00.63 display 0: OFF; 1: ON Thousands-bit: Communication fault code switching 0: OFF; 1: ON, fault code is the same as AC300 during 485 communication. 2: ON, fault code is the same as AC70 during 485 communication.	0x0000 (0x0000~0xFFFF)	RUN
F11.24 (0x0B18)	Monitoring Parameter Filter	V/F SVC FVC PMVF PMSVC PMFVC Ones-bit: Output current display with filtering 0~F: The larger the value, the deeper the filtering	0x0002 (0x0000~0x000F)	RUN
F11.25 (0x0B19)	Motor Auto-Tuning Display	V/F SVC FVC PMVF PMSVC PMFVC Set the auto-tuning process of the motor on the display. 0: OFF; 1: ON	0 (0~1)	STOP
F11.27 (0x0B1B)	Fault Auto-Recovery Display	V/F SVC FVC PMVF PMSVC PMFVC Ones-bit: Fault display during auto-recovery 0: OFF; 1: ON	0x0001 (0x0000~0x0001)	RUN

F11.3x: Special Functions of Panel

Code (Address)	Name	Content	Default (Range)	Property
F11.31 (0x0B1F) RUN	Potentiometer Giving Voltage Lower Limit	V/F SVC FVC PMVF PMSVC PMFVC Set the lower limit voltage via the panel potentiometer (valid on the optional external single-row panel).	0.50V (0.00V~3.00V)	RUN

F11.32 (0x0B20) RUN	Potentiometer Giving Voltage Lower Limit Percentage	V/F SVC FVC PMVF PMSVC PMFVC Set the corresponding value of the lower limit set from the panel potentiometer (valid on the optional external single-row panel).	0.00% (0.00%~100.00%)	RUN
F11.33 (0x0B21) RUN	Potentiometer Giving Upper Voltage Limit	V/F SVC FVC PMVF PMSVC PMFVC Set the upper limit voltage via the panel potentiometer(valid on the optional external single-row panel).	2.80V (0.00V~3.00V)	RUN
F11.34 (0x0B22) RUN	Potentiometer Giving Upper Voltage Limit Percentage	V/F SVC FVC PMVF PMSVC PMFVC Set the corresponding percentage of the upper limit set via the panel potentiometer (valid on the optional external single-row panel).	100.00% (0.00%~ 100.00%)	RUN
F11.35 (0x0B23) STOP	Panel Potentiometer	V/F SVC FVC PMVF PMSVC PMFVC Set the panel potentiometer source. 0: Reserved; 1: Potentiometer of the external panel	1 (0~1)	STOP

4.15 F12: Communication Parameters

Code (Address)	Name	Content	Default (Range)	Property
F12.00 (0x0C00)	Master/Slave	V/F SVC FVC PMVF PMSVC PMFVC 0: Slave; 1: Master	0 (0~1)	STOP
F12.01 (0x0C01)	Modbus Address	V/F SVC FVC PMVF PMSVC PMFVC Set different values for different slaves.	1 (1~247)	STOP
F12.02 (0x0C02)	Baud Rate	V/F SVC FVC PMVF PMSVC PMFVC 0: 1200bps; 1: 2400bps; 2: 4800bps; 3: 9600bps; 4: 9200bps; 5: 38400bps; 6: 57600bps	3 (0~6)	STOP
F12.03 (0x0C03)	Modbus Data Format	V/F SVC FVC PMVF 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 Mode	V/F SVC FVC PMVF PMSVC PMFVC 0: Response to write operation; 1: No response to write operation	0 (0~1)	RUN
F12.05 (0x0C05)	Modbus Response Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the Modbus communication response delay	0ms (0ms~5000ms)	RUN
F12.06 (0x0C06)	Modbus Failure Timeout	V/F SVC FVC PMVF PMSVC PMFVC Set the Modbus communication failure timeout	1.0s (0.1s~100.0s)	RUN
F12.07 (0x0C07)	Communication Disconnection	V/F SVC FVC PMVF PMSVC PMFVC 0: Timeout detection off; 1: Report fault and free stop; 2: Report warning and continue operation; 3: Force stop	0 (0~3)	RUN
F12.08 (0x0C08)	Data Bias(0x3000)	V/F SVC FVC PMVF PMSVC PMFVC Set the bias to correct communication data to 0x3000.	0.00 (-100.00~100.00)	RUN

F12.09 (0x0C09)	Data Gain(0x3000)	V/F SVC FVC PMVF PMSVC PMFVC Set to perform linear correction on communication data to 0x3000.	100.0% (0.0%~500.0%)	RUN

F12.0x: Modbus slave parameters

Code (Address)	Name	Content	Default (Range)	Property
F12.00 (0x0C00)	Master/Slave	V/F SVC FVC PMVF PMSVC PMFVC 0: Slave; 1: Master	0 (0~1)	STOP
F12.01 (0x0C01)	Modbus Address	V/F SVC FVC PMVF PMSVC PMFVC Set different values for different slaves.	1 (1~247)	STOP
F12.02 (0x0C02)	Baud Rate	V/F SVC FVC PMVF PMSVC PMFVC 0: 1200bps; 1: 2400bps; 2: 4800bps; 3: 9600bps; 4: 9200bps; 5: 38400bps; 6: 57600bps	3 (0~6)	STOP
F12.03 (0x0C03)	Modbus Data Format	V/F SVC FVC PMVF 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 Mode	V/F SVC FVC PMVF PMSVC PMFVC 0: Response to write operation; 1: No response to write operation	0 (0~1)	RUN
F12.05 (0x0C05)	Modbus Response Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the interval between the completion of receiving data and replying to the master with answer data.	0ms (0ms~5000ms)	RUN
F12.06 (0x0C06)	Modbus Failure Timeout	V/F SVC FVC PMVF PMSVC PMFVC The time between two communications to detect a communication disconnection.	1.0s (0.1s~100.0s)	RUN
F12.07 (0x0C07)	Communication Disconnection	V/F SVC FVC PMVF PMSVC PMFVC 0: Timeout detection off; 1: Report fault and free stop; 2: Report warning and continue operation; 3: Force stop	0 (0~3)	RUN
F12.08 (0x0C08)	Data Bias(0x3000)	V/F SVC FVC PMVF PMSVC PMFVC Set the bias value for the communication giving frequency(100.00 corresponds to 100.00Hz).	0.00 (-100.00~100.00)	RUN
F12.09 (0x0C09)	Data Gain(0x3000)	V/F SVC FVC PMVF PMSVC PMFVC Set the gain for the communication giving frequency. Given frequency = actual communication giving value x gain + bias.	100.0% (0.0%~500.0%)	RUN

F12.1x: Modbus Master Parameters

Code (Address)	Name	Content	Default (Range)	Property
F12.10 (0x0C0A)	Master Sending Parameter Cycle	V/F SVC FVC PMVF PMSVC PMFVC Ones, tens, hundreds, and thousands all can be selected with: 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	0x0031 (0x0000~0xCCCC)	RUN
F12.11 (0x0C0B)	User-Defined Frequency Address	V/F SVC FVC PMVF PMSVC PMFVC Customize an address to give the frequency.	0x0000 (0x0000~0xFFFF)	RUN
F12.12 (0x0C0C)	User-Defined Command Address	V/F SVC FVC PMVF PMSVC PMFVC Customize an address to give the command.	0x0000 (0x0000~0xFFFF)	RUN
F12.13 (0x0C0D)	FWD Command Value	V/F SVC FVC PMVF PMSVC PMFVC Set command value for forward running.	0x0001 (0x0000~0xFFFF)	RUN
F12.14 (0x0C0E)	REV Command Value	V/F SVC FVC PMVF PMSVC PMFVC Set command value for reverse running.	0x0002 (0x0000~0xFFFF)	RUN
F12.15 (0x0C0F)	Stop Command Value	V/F SVC FVC PMVF PMSVC PMFVC Set the command value for stop.	0x0005 (0x0000~0xFFFF)	RUN
F12.16 (0x0C10)	Reset Command Value	V/F SVC FVC PMVF PMSVC PMFVC Set the command value for reset.	0x0007 (0x0000~0xFFFF)	RUN
F12.19 (0x0C13)	Master Sending Item	V/F SVC FVC PMVF PMSVC PMFVC Master Sending Item 0: Send operation command; 1: Send operation status	0 (0~1)	RUN

F12.2x: Modbus Special Functions

Code (Address)	Name	Content	Default (Range)	Property
F12.20 (0x0C14)	RJ45 Communication Mode	V/F SVC FVC PMVF PMSVC PMFVC 0: Dual-line panel communication; 1: Modbus slave (set related parameters via F12.2x); 2: Modbus master (set sending parameters via F12.1x); 3: VEICHI-customized **Note**: T3-45kW and above models only support two-line panel communication.	0 (0~3)	STOP
F12.21 (0x0C15)	RJ45 Communication Address	V/F SVC FVC PMVF PMSVC PMFVC Set the slave addresses when RJ45 port is for Modbus communication.	1 (1~247)	STOP
F12.22 (0x0C16)	RJ45 Baud Rate	V/F SVC FVC PMVF PMSVC PMFVC Set the baud rate when RJ45 port is for Modbus communication. 0: 1200bps; 1: 2400bps; 2: 4800bps; 3: 9600bps; 4: 19200bps;5: 38400bps	3 (0~5)	STOP

F12.23 (0x0C17)	RJ45 Data Format	V/F SVC FVC PMVF PMSVC PMFVC Set the data format when RJ45 port is for Modbus communication. 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
F12.24 (0x0C18)	RJ45 Response Mode	V/F SVC FVC PMVF PMSVC PMFVC Set the transmission response when RJ45 port is for Modbus communication. 0: Response to write operation; 1: No response to write operation	0 (0~1)	RUN
F12.25 (0x0C19)	RJ45 Response Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the communication response delay when RJ45 port is for Modbus communication.	0ms (0ms~5000ms)	RUN
F12.26 (0x0C1A)	RJ45 Timeout	V/F SVC FVC PMVF PMSVC PMFVC Set the timeout value when RJ45 port is for Modbus communication.	1.0s (0.1s~100.0s)	RUN
F12.27 (0x0C1B)	RJ45 Disconnection	V/F SVC FVC PMVF PMSVC PMFVC Set the mode when RJ45 interface for Modbus communication is disconnected. 0: Timeout detection off; 1: Report fault and free stop; 2: Report warning and continue operation; 3: Force stop	0 (0~3)	RUN

F12.3x: PROFIBUS-DP

Code (Address)	Name	Content	Default (Range)	Property
F12.30 (0x0C1E)	DP Address	V/F SVC FVC PMVF PMSVC PMFVC Set the communication addresses.	1 (1~247)	RUN
F12.32 (0x0C20)	DP Master-Slave Failure Mode	V/F SVC FVC PMVF PMSVC PMFVC DP master-slave communication fault selection 0: Timeout detection off; 1: Report alarm and free stop; 2: Report warning and continue operation	0 (0~2)	STOP

Note: Expansion boards are not allowed to be plugged or unplugged with power-on.

F12.4x: CANopen

Code (Address)	Name	Content	Default (Range)	Property
F12.40 (0x0C28)	CANopen Mode	V/F SVC FVC PMVF PMSVC PMFVC 0: Slave; 1: VEICHI-customized master	1 (0~1)	RUN
F12.41 (0x0C29)	Communication Address	V/F SVC FVC PMVF PMSVC PMFVC Set the address of the slave.	1 (1~65535)	RUN
F12.42 (0x0C2A)	Baud Rate	V/F SVC FVC PMVF PMSVC PMFVC 0: 20kbps; 1: 50kbps; 2: 100kbps; 3: 125kbps; 4: 250kbps; 5: 500kbps; 6: 1Mbps	3 (0~6)	RUN

F12.43 (0x0C2B)	Master-Slave Failure Mode	V/F SVC FVC PMVF PMSVC PMFVC CAN master-slave communication fault selection 0: Timeout detection off; 1: Report alarm and free stop; 2: Report warning and continue the operation.	0 (0~2)	RUN

Note: Expansion boards are not allowed to be plugged or unplugged with power-on.

F12.5x~F12.6x: Expansion Communication of EX_A and EX_B

Code (Address)	Name	Content	Default (Range)	Property
F12.50 (0x0C32)	Expansion Communication Disconnection	V/F SVC FVC PMVF PMSVC PMFVC Ones-bit: EX_A port disconnection mode 0: Detection off; 1: Report alarm and continue operation; 2: Report warning and continue operation Tens-bit: EX_B port disconnection mode 0: Detection off; 1: Report alarm and continue operation; 2: Report warning and continue operation	0000 (0000~0022)	RUN
F12.51 (0x0C33)	EX_A Parameter Update	V/F SVC FVC PMVF PMSVC PMFVC 0: No update; 1: Initial values updated on power-up; 2: EX_A parameters restored to initial values	0 (0~2)	RUN
F12.52 (0x0C34)	EX_B Parameter Update	V/F SVC FVC PMVF PMSVC PMFVC 0: No update; 1: Initial values updated on power up; 2: EX_B parameters restored initial values	0 (0~2)	RUN
F12.53 (0x0C35)	EX_A Monitor Frame Address Group 1	V/F SVC FVC PMVF PMSVC PMFVC Ones-bit and tens-bit: Address lower 8 bits within 00~63 Hundreds-bit and thousands-bit: Address higher 8 bits within 00~07	0001 (0000~0763)	RUN
F12.54 (0x0C36)	EX_A Monitor Frame Address Group 2	V/F SVC FVC PMVF PMSVC PMFVC Same	0002 (0000~0763)	RUN
F12.55 (0x0C37)	EX_A Monitor Frame Address Group 3	V/F SVC FVC PMVF PMSVC PMFVC Same	0007 (0000~0763)	RUN
F12.56 (0x0C38)	EX_A Monitor Frame Address Group 4	V/F SVC FVC PMVF PMSVC PMFVC Same	0011 (0000~0763)	RUN
F12.57 (0x0C39)	EX_B Monitor Frame Address Group 1	V/F SVC FVC PMVF PMSVC PMFVC Same	0001 (0000~0763)	RUN
F12.58 (0x0C3A)	EX_B Monitor Frame Address Group 2	V/F SVC FVC PMVF PMSVC PMFVC Same	0002 (0000~0763)	RUN
F12.59 (0x0C3B)	EX_B Monitor Frame Address Group 3	V/F SVC FVC PMVF PMSVC PMFVC Same	0007 (0000~0763)	RUN
F12.60 (0x0C3C)	EX_B Monitor Frame Address Group 4	V/F SVC FVC PMVF PMSVC PMFVC Same	0011 (0000~0763)	RUN

Note: Expansion boards are not allowed to be plugged or unplugged with power-on.

4.16 F13: PID Control

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

Code (Address)	Name	Content	Default (Range)	Property
F13.00 (0x0D00)	PID Controller Signal Source	V/F SVC FVC PMVF PMSVC PMFVC 0: Via panel; 1: Via panel potentiometer 2: Via analog current/voltage AI1; 3: Via analog current/voltage AI2; 4: Reserved; 5: Via PUL terminal; 6: Via RS485; 7: Via optional boards; 8: Via terminals; 9: Via active current given via communication	0 (0~9)	RUN
F13.01 (0x0D01)	Panel Giving PID Setting/Feedback	V/F SVC FVC PMVF PMSVC PMFVC This parameter is valid when F13.00 or F13.03 is set to [PID Setting] and [PID Feedback] via the panel.	50.0% (0.0%~100.0%)	RUN
F13.02 (0x0D02)	PID Change Duration	V/F SVC FVC PMVF PMSVC PMFVC Set the time required when PID increases from 0.0% to 100.0%.	1.00s (0.00s~60.00s)	RUN
F13.03 (0x0D03)	PID Feedback Source	V/F SVC FVC PMVF PMSVC PMFVC 0: Via panel; 1: Via panel potentiometer; 2: Via AI1; 3: Via AI2; 4: Reserved; 5: Via PUL terminal; 6: Via RS485; 7: Via optional boards; 8: Via terminals; 9: Via local active current	2 (0~9)	RUN
F13.04 (0x0D04)	Feedback Low-Pass Filter Time	V/F SVC FVC PMVF PMSVC PMFVC The longer the filter time, the greater the anti-interference effect, but the response becomes slower.	0.010s (0.000s~6.000s)	RUN
F13.05 (0x0D05)	Feedback Signal Gain	V/F SVC FVC PMVF PMSVC PMFVC Set for linear proportional regulation of the feedback input signal.	1.00 (0.00~10.00)	RUN
F13.06 (0x0D06)	Feedback Signal Range	V/F SVC FVC PMVF PMSVC PMFVC The PID feedback signal range is dimensionless units which are used to regulate PID feedback and display.	100.0 (0.0~100.0)	RUN

F13.07~F13.24: PID Regulation

Code (Address)	Name	Content	Default (Range)	Property
F13.07 (0x0D07)	PID Control	V/F SVC FVC PMVF PMSVC PMFVC Ones-bit: Feedback characteristics 0: Positive; 1: Negative Thousands-bit: Differential regulation 0: Differentiate the deviation;1: Differentiate the feedback	0100 (0000~1111)	RUN
F13.08 (0x0D08)	PID Preset Output	V/F SVC FVC PMVF PMSVC PMFVC When PID operation is initiated, output as the pre-settings.	100.0% (0.0%~100.0%)	RUN
F13.09 (0x0D09)	PID Preset Output Duration	V/F SVC FVC PMVF PMSVC PMFVC Set the time for the PID preset output, and performs as the normal PID setting after it is finished.	0.0s (0.0s~6500.0s)	RUN

F13.10 (0x0D0A)	PID Deviation Limit	V/F SVC FVC PMVF PMSVC PMFVC Set the maximum deviation of PID feedback from PID setting.	0.0% (0.0%~100.0%)	RUN
F13.11 (0x0D0B)	Proportional Gain P1	V/F SVC FVC PMVF PMSVC PMFVC Set the proportional gain of PID parameter group 1.	0.100 (0.000~4.000)	RUN
F13.12 (0x0D0C)	Integral Time I1	V/F SVC FVC PMVF PMSVC PMFVC Set the integral time of PID parameter group 1.	1.0s (0.0s~600.0s)	RUN
F13.13 (0x0D0D)	Differential Time D1	V/F SVC FVC PMVF PMSVC PMFVC Set differential time of PID parameter group 1.	0.000s (0.000s~6.000s)	RUN
F13.14 (0x0D0E)	Proportional Gain P2	V/F SVC FVC PMVF PMSVC PMFVC Set the proportional gain of PID parameter group 2.	0.100 (0.000~4.000)	RUN
F13.15 (0x0D0F)	Integral Time I2	V/F SVC FVC PMVF PMSVC PMFVC Set the integral time of PID parameter group 2.	1.0s (0.0s~600.0s)	RUN
F13.16 (0x0D10)	Differential Time D2	V/F SVC FVC PMVF PMSVC PMFVC Set differential time of PID parameter group 2.	0.000s (0.000s~6.000s)	RUN
F13.17 (0x0D11)	PID Switching	V/F SVC FVC PMVF PMSVC PMFVC 0: OFF; 1: Switch via DI terminals; 2: Switch according to deviation	0 (0~2)	RUN
F13.18 (0x0D12)	Switching Deviation Lower Limit	V/F SVC FVC PMVF 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)	Switching Deviation Upper Limit	V/F SVC FVC PMVF 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 Range	V/F SVC FVC PMVF PMSVC PMFVC Set the differential range.	5.0% (0.0%~100.0%)	RUN
F13.22 (0x0D16)	PID Output Upper Limit	V/F SVC FVC PMVF PMSVC PMFVC Set PID output upper limit.	100.0% (0.0%~100.0%)	RUN
F13.23 (0x0D17)	PID Output Lower Limit	V/F SVC FVC PMVF PMSVC PMFVC Set PID output lower limit.	0.0% (-100.0%~F13.22)	RUN
F13.24 (0x0D18)	PID Output Filter Time	V/F SVC FVC PMVF PMSVC PMFVC Set PID output filter time.	0.000s (0.000s~6.000s)	RUN

F13.25~F13.28: PID Feedback Disconnection

Code (Address)	Name	Content	Default (Range)	Property
F13.25 (0x0D19)	Disconnection Mode	V/F SVC FVC PMVF PMSVC PMFVC 0: Continue PID operation without reporting fault; 1: Stop and report fault; 2: Continue PID operation, and report alarm; 3: Run at current frequency, and report alarm	0 (0~3)	STOP
F13.26 (0x0D1A)	Disconnection Detection Duration	V/F SVC FVC PMVF PMSVC PMFVC Set the PID feedback disconnection detection duration.	1.0s (0.0s~120.0s)	RUN
F13.27 (0x0D1B)	Disconnection Alarm Upper Limit	V/F SVC FVC PMVF PMSVC PMFVC 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)	Disconnection Alarm Lower Limit	V/F SVC FVC PMVF PMSVC PMFVC If the feedback signal exceeds this value and continues for F13.26, the sensor is considered disconnected.	0.0% (0.0%~100.0%)	RUN

F13.29~F13.33: PID Sleep

Code (Address)	Name	Content	Default (Range)	Property
F13.29 (0x0D1D)	Sleep	V/F SVC FVC PMVF PMSVC PMFVC Set sleep function on or off; 0: OFF; 1: ON	0 (0~1)	RUN
F13.30 (0x0D1E)	Sleep Frequency	V/F SVC FVC PMVF PMSVC PMFVC When the sleep function is valid, the PID output frequency is lower than [F13.30] and continues for F13.31 [Sleep Delay], then sleep function works.	10.00Hz (0.00Hz~ Max. frequency)	RUN
F13.31 (0x0D1F)	Sleep Delay	V/F SVC FVC PMVF PMSVC PMFVC When the sleep function is valid, the PID output frequency is lower than [F13.30] and continues for F13.31 [Sleep Delay], then sleep function works.	60.0s (0.0s~3600.0s)	RUN
F13.32 (0x0D20)	Wakeup Deviation	V/F SVC FVC PMVF PMSVC PMFVC When PID feedback is smaller/greater than(positive characteristic/negative characteristic) PID setting minus/plus(positive characteristic/negative characteristic) F13.32 [Wake-up Deviation] and continues for F13.33 [Wake-up Delay], the drive exits from sleep status and start the normal operation.	5.0% (0.0%~50.0%)	RUN
F13.33 (0x0D21)	Wakeup Delay	V/F SVC FVC PMVF PMSVC PMFVC When PID feedback is smaller/greater than (positive characteristic/negative characteristic) PID setting minus/plus (positive characteristic/negative characteristic) F13.32 [Wake-up Deviation] and continues for F13.33 [Wake-up Delay], the drive exits from sleep status and start the normal operation.	1.0s (0.0s~60.0s)	RUN

4.17 F14: Multi-seg Speed and Simple PLC

F14.00~F14.14: Multi-seg Speed Frequency

Code (Address)	Name	Content	Default (Range)	Property
F14.00 (0x0E00)	PLC Multi-speed 1	V/F SVC FVC PMVF PMSVC PMFVC Set multi-seg speed 1 with PLC.	10.00Hz (0.00Hz~ Max. frequency)	RUN
F14.01 (0x0E01)	PLC Multi-speed 2	V/F SVC FVC PMVF PMSVC PMFVC Set multi-seg speed 2 with PLC.	20.00Hz (0.00Hz~ Max. frequency)	RUN
F14.02 (0x0E02)	PLC Multi-speed 3	V/F SVC FVC PMVF PMSVC PMFVC Set multi-seg speed 3 with PLC.	30.00Hz (0.00Hz~ Max. frequency)	RUN
F14.03 (0x0E03)	PLC Multi-speed 4	V/F SVC FVC PMVF PMSVC PMFVC Set multi-seg speed 4 with PLC.	40.00Hz (0.00Hz~ Max. frequency)	RUN
F14.04 (0x0E04)	PLC Multi-speed 5	V/F SVC FVC PMVF PMSVC PMFVC Set multi-seg speed 5 with PLC.	50.00Hz (0.00Hz~ Max. frequency)	RUN
F14.05 (0x0E05)	PLC Multi-speed 6	V/F SVC FVC PMVF PMSVC PMFVC Set multi-seg speed 6 with PLC.	40.00Hz (0.00Hz~ Max. frequency)	RUN

F14.06 (0x0E06)	PLC Multi-speed 7	V/F SVC FVC PMVF PMSVC PMFVC Set multi-seg speed 7 with PLC.	30.00Hz (0.00Hz~ Max. frequency)	RUN
F14.07 (0x0E07)	PLC Multi-speed 8	V/F SVC FVC PMVF PMSVC PMFVC Set multi-seg speed 8 with PLC.	20.00Hz (0.00Hz~ Max. frequency)	RUN
F14.08 (0x0E08)	PLC Multi-speed 9	V/F SVC FVC PMVF PMSVC PMFVC Set multi-seg speed 9 with PLC.	10.00Hz (0.00Hz~ Max. frequency)	RUN
F14.09 (0x0E09)	PLC Multi-speed 10	V/F SVC FVC PMVF PMSVC PMFVC Set multi-seg speed 10 with PLC.	20.00Hz (0.00Hz~ Max. frequency)	RUN
F14.10 (0x0E0A)	PLC Multi-speed 11	V/F SVC FVC PMVF PMSVC PMFVC Set multi-seg speed 11 with PLC.	30.00Hz (0.00Hz~ Max. frequency)	RUN
F14.11 (0x0E0B)	PLC Multi-speed 12	V/F SVC FVC PMVF PMSVC PMFVC Set multi-seg speed 12 with PLC.	40.00Hz (0.00Hz~ Max. frequency)	RUN
F14.12 (0x0E0C)	PLC Multi-speed 13	V/F SVC FVC PMVF PMSVC PMFVC Set multi-seg speed 13 with PLC.	50.00Hz (0.00Hz~ Max. frequency)	RUN
F14.13 (0x0E0D)	PLC Multi-speed 14	V/F SVC FVC PMVF PMSVC PMFVC Set multi-seg speed 14 with PLC.	40.00Hz (0.00Hz~ Max. frequency)	RUN
F14.14 (0x0E0E)	PLC Multi-speed 15	V/F SVC FVC PMVF PMSVC PMFVC Set multi-seg speed 15 with PLC.	30.00Hz (0.00Hz~ Max. frequency)	RUN

F14.15: PLC Operation Mode

Code (Address)	Name	Content	Default (Range)	Property
F14.15 (0x0E0F)	PLC mode	V/F SVC FVC PMVF PMSVC PMFVC Ones-bit: Cycle mode 0: Stop after single cycle; 1: Run in continuous cycles; 2: Keep the final value after single cycle Tens-bit: Timing unit 0: Second(s); 1: Minute(min); 2: Hour(h) Tens-bit: Power loss protection 0: OFF; 1: ON Hundreds-bit: Start mode 0: Restart from the first segment; 1: Restart from the segment of shutdown; 2: Continue operation for the remaining of the shutdown segment	0000 (0000~2122)	RUN

F14.16~F14.30 : PLC Runtime

Code (Address)	Name	Content	Default (Range)	Property
F14.16 (0x0E10)	Segment 1 Runtime	V/F SVC FVC PMVF PMSVC PMFVC Set the segment 1 runtime by PLC.	10.0 (s/m/h) (0.0 (s/m/h)~ 6500.0(s/m/h))	RUN

F14.17 (0x0E11)	Segment 2 Runtime	V/F SVC FVC PMVF PMSVC PMFVC Set the segment 2 runtime by PLC.	10.0(s/m/h)(0.0(s/m/h)~6500.0(s/m/h))	RUN
F14.18 (0x0E12)	Segment 3 Runtime	V/F SVC FVC PMVF PMSVC PMFVC Set the segment 3 runtime by PLC.	10.0(s/m/h)(0.0(s/m/h)~6500.0(s/m/h))	RUN
F14.19 (0x0E13)	Segment 4 Runtime	V/F SVC FVC PMVF PMSVC PMFVC Set the segment 4 runtime by PLC.	10.0 (s/m/h) (0.0 (s/m/h)~6500.0(s/m/h))	RUN
F14.20 (0x0E14)	Segment 5 Runtime	V/F SVC FVC PMVF PMSVC PMFVC Set the segment 5 runtime by PLC.	10.0 (s/m/h) (0.0 (s/m/h)~6500.0(s/m/h))	RUN
F14.21 (0x0E15)	Segment 6 Runtime	V/F SVC FVC PMVF PMSVC PMFVC Set the segment 6 runtime by PLC.	10.0(s/m/h)(0.0(s/m/h)~6500.0(s/m/h))	RUN
F14.22 (0x0E16)	Segment 7 Runtime	V/F SVC FVC PMVF PMSVC PMFVC Set the segment 7 runtime by PLC.	10.0(s/m/h)(0.0(s/m/h)~6500.0(s/m/h))	RUN
F14.23 (0x0E17)	Segment 8 Runtime	V/F SVC FVC PMVF PMSVC PMFVC Set the segment 8 runtime by PLC.	10.0(s/m/h)(0.0(s/m/h)~6500.0(s/m/h))	RUN
F14.24 (0x0E18)	Segment 9 Runtime	V/F SVC FVC PMVF PMSVC PMFVC Set the segment 9 runtime by PLC.	10.0(s/m/h)(0.0(s/m/h)~6500.0(s/m/h))	RUN
F14.25 (0x0E19)	Segment 10 Runtime	V/F SVC FVC PMVF PMSVC PMFVC Set the segment 10 runtime by PLC.	10.0(s/m/h)(0.0(s/m/h)~6500.0(s/m/h))	RUN
F14.26 (0x0E1A)	Segment 11 Runtime	V/F SVC FVC PMVF PMSVC PMFVC Set the segment 11 runtime by PLC.	10.0(s/m/h)(0.0(s/m/h)~6500.0(s/m/h))	RUN
F14.27 (0x0E1B)	Segment 12 Runtime	V/F SVC FVC PMVF PMSVC PMFVC Set the segment 12 runtime by PLC.	10.0(s/m/h)(0.0(s/m/h)~6500.0(s/m/h))	RUN
F14.28 (0x0E1C)	Segment 13 Runtime	V/F SVC FVC PMVF PMSVC PMFVC Set the segment 13 runtime by PLC.	10.0(s/m/h)(0.0(s/m/h)~6500.0(s/m/h))	RUN
F14.29 (0x0E1D)	Segment 14 Runtime	V/F SVC FVC PMVF PMSVC PMFVC Set the segment 14 runtime by PLC.	10.0(s/m/h) (0.0 (s/m/h)~6500.0(s/m/h))	RUN
F14.30 (0x0E1E)	Segment 15 Runtime	V/F SVC FVC PMVF PMSVC PMFVC Set the segment 15 runtime by PLC.	10.0(s/m/h)(0.0(s/m/h)~6500.0(s/m/h))	RUN

F14.31~F14.45 : PLC Operation Direction and Time

Code (Address)	Name	Content	Default (Range)	Property
F14.31 (0x0E1F)	Segment 1 Direction and ACC/DEC Time	V/F SVC FVC PMVF PMSVC PMFVC Ones-bit: Direction of the current segment (compared with operation command) 0: Same direction 1: Reverse direction Tens-bit: ACC./DEC. time 0: Time 1; 1: Time 2; 2: Time 3; 3: Time 4;	0000 (0000~0031)	RUN
F14.32 (0x0E20)	Segment 2 Direction and ACC/DEC Time	V/F SVC FVC PMVF PMSVC PMFVC Setting is the same as F14.31.	0000 (0000~0031)	RUN
F14.33 (0x0E21)	Segment 3 Direction and ACC/DEC Time	V/F SVC FVC PMVF PMSVC PMFVC Setting is the same as F14.31.	0000 (0000~0031)	RUN
F14.34 (0x0E22)	Segment 4 Direction and ACC/DEC Time	V/F SVC FVC PMVF PMSVC PMFVC Setting is the same as F14.31.	0000 (0000~0031)	RUN
F14.35 (0x0E23)	Segment 5 Direction and ACC/DEC Time	V/F SVC FVC PMVF PMSVC PMFVC Setting is the same as F14.31.	0000 (0000~0031)	RUN
F14.36 (0x0E24)	Segment 6 Direction and ACC/DEC Time	V/F SVC FVC PMVF PMSVC PMFVC Setting is the same as F14.31.	0000 (0000~0031)	RUN
F14.37 (0x0E25)	Segment 7 Direction and ACC/DEC Time	V/F SVC FVC PMVF PMSVC PMFVC Setting is the same as F14.31.	0000 (0000~0031)	RUN
F14.38 (0x0E26)	Segment 8 Direction and ACC/DEC Time	V/F SVC FVC PMVF PMSVC PMFVC Setting is the same as F14.31.	0000 (0000~0031)	RUN
F14.39 (0x0E27)	Segment 9 Direction and ACC/DEC Time	V/F SVC FVC PMVF PMSVC PMFVC Setting is the same as F14.31.	0000 (0000~0031)	RUN
F14.40 (0x0E28)	Segment 10 Direction and ACC/DEC Time	V/F SVC FVC PMVF PMSVC PMFVC Setting is the same as F14.31.	0000 (0000~0031)	RUN
F14.41 (0x0E29)	Segment 11 Direction and ACC/DEC Time	V/F SVC FVC PMVF PMSVC PMFVC Setting is the same as F14.31.	0000 (0000~0031)	RUN
F14.42 (0x0E2A)	Segment 12 Direction and ACC/DEC Time	V/F SVC FVC PMVF PMSVC PMFVC Setting is the same as F14.31.	0000 (0000~0031)	RUN
F14.43 (0x0E2B)	Segment 13 Direction and ACC/DEC Time	V/F SVC FVC PMVF PMSVC PMFVC Setting is the same as F14.31.	0000 (0000~0031)	RUN
F14.44 (0x02C)	Segment 14 Direction and ACC/DEC Time	V/F SVC FVC PMVF PMSVC PMFVC Setting is the same as F14.31.	0000 (0000~0031)	RUN
F14.45 (0x0E2D)	Segment 15 Direction and ACC/DEC Time	V/F SVC FVC PMVF PMSVC PMFVC Setting is the same as F14.31.	0000 (0000~0031)	RUN

4.18 F15: Reserved

4.19 F16: Tension Control

F16.01~F16.02: Tension Mode

Code (Address)	Name	Content	Default (Range)	Property
F16.01 (0x5001)	Winding Mode	V/F SVC FVC PMVF PMSVC PMFVC 0: Winding; 1: Unwinding; 2: Terminal selection	0 (0~2)	RUN
F16.02 (0x5002)	Mechanical Transmission Ratio	V/F SVC FVC PMVF PMSVC PMFVC Set the transmission ratio between the motor and the reel.	1.00 (0.01~300.00)	RUN

F16.03~F16.09: Tension Setting

Code (Address)	Name	Content	Default (Range)	Property
F16.03 (0x5003)	Tension Source	V/F SVC FVC PMVF PMSVC PMFVC Ones-bit: Source A Tens-bit: Source B 0: Via the panel keys; 1: Via panel potentiometer (on optional external single-row panels) 2: Via AI1; 3: Via AI2; 4: Reserved; 5: Via PUL terminal; 6: Via RS485 (0x300B) Hundreds-bit: Decimal place 0: 0.1 unit 1: 1 unit 2: 10 unit	0x0000 (0x0000~0x0266)	STOP
F16.04 (0x5004)	Panel Giving Tension	V/F SVC FVC PMVF PMSVC PMFVC Set and modify tension via the panel. Motor power above 37kW has no decimal points.	0N (0N~ Max. tension)	STOP
F16.05 (0x5005)	Max. tension	V/F SVC FVC PMVF PMSVC PMFVC Set the maximum tension limit for all channels. Motor power above 37kW has no decimal points.	1000N (0N~ 6000N)	STOP
F16.06 (0x5006)	Taper tension factor	V/F SVC FVC PMVF PMSVC PMFVC Set the taper tension factor.	0.0% (0.0%~100.0%)	STOP
F16.07 (0x5007)	Taper Compensation	V/F SVC FVC PMVF PMSVC PMFVC Set the taper compensation correction factor.	0mm (0mm~10000mm)	STOP
F16.08 (0x5008)	Zero-speed Threshold	V/F SVC FVC PMVF PMSVC PMFVC Set zero-speed threshold value.	1.00Hz (0.00Hz~50.00Hz)	RUN
F16.09 (0x5009)	Zero-speed Tension Gain	V/F SVC FVC PMVF PMSVC PMFVC Set the tension gain in zero speed mode.	100.0% (0.0%~500.0%)	RUN

F16.12~F16.16: Friction Compensation

Code (Address)	Name	Content	Default (Range)	Property
F16.12 (0x500C)	Static Friction Compensation Factor	V/F SVC FVC PMVF PMSVC PMFVC Set the static friction compensation factor.	0.0% (0.0%~50.0%)	RUN
F16.13 (0x500D)	Static Friction Compensation Delay	V/F SVC FVC PMVF PMSVC PMFVC Set the static friction compensation delay time.	2.0s (0.0s~60.0s)	RUN
F16.14 (0x500E)	Static Friction Compensation Cut-off Frequency	V/F SVC FVC PMVF PMSVC PMFVC Set the static friction compensation cut-off frequency.	2.00Hz (0.00Hz~ Max. frequency)	RUN
F16.15 (0x500F)	Sliding Friction Compensation Factor	V/F SVC FVC PMVF PMSVC PMFVC Set the sliding friction compensation factor.	0.0% (0.0%~50.0%)	RUN
F16.16 (0x5010)	Sliding Friction Compensation Cut-off Factor	V/F SVC FVC PMVF PMSVC PMFVC Set the sliding friction compensation cut-off factor	0.0% (0.0%~50.0%)	RUN

F16.30~F16.32: Material Fracture Detection

Code (Address)	Name	Content	Default (Range)	Property
F16.30 (0x501E)	Material Fracture Detection	V/F SVC FVC PMVF PMSVC PMFVC Ones-bit: Detection signal input source 0: Detection OFF; 1: Via keyboard potentiometer 2: Via AI1; 3: Via AI2; 4: Reserved; 5: Via PUL terminal; Tens-bit: Material fracture mode 0: Report warning and continue the operation; 1: Report fault and stop	0x0000 (0x0000~0x0015)	RUN
F16.31 (0x501F)	Material Fracture Threshold	V/F SVC FVC PMVF PMSVC PMFVC Set material fracture threshold value for detection.	100.0% (0.0%~100.0%)	RUN
F16.32 (0x5020)	Material Fracture Detection Delay	V/F SVC FVC PMVF PMSVC PMFVC Set material fracture detection delay.	2.0s (0.1s~60.0s)	RUN

F16.36~F16.38: Pre-drive

Code (Address)	Name	Content	Default (Range)	Property
F16.36 (0x5024)	Pre-drive	V/F SVC FVC PMVF PMSVC PMFVC 0: OFF; 1: Manual trigger; 2: Automatic trigger	0 (0~2)	STOP
F16.37 (0x5025)	Pre-drive Frequency Gain	V/F SVC FVC PMVF PMSVC PMFVC Set pre-drive frequency gain.	105.0% (0.0%~200.0%)	STOP
F16.38 (0x5026)	Pre-drive Torque Gain	V/F SVC FVC PMVF PMSVC PMFVC Set pre-drive frequency gain.	105.0% (0.0%~200.0%)	STOP

F16.42~F16.43: Stop Braking

Code (Address)	Name	Content	Default (Range)	Property
F16.42 (0x502A)	Stop Braking Frequency	V/F SVC FVC PMVF PMSVC PMFVC Set the stop braking frequency.	2.00Hz (0.01Hz~ Max. frequency)	RUN
F16.43 (0x502B)	Stop Braking Time	V/F SVC FVC PMVF PMSVC PMFVC Set the stop braking time.	0.0s (0.0s~600.0s)	RUN

F16.44~F16.55: Roll Diameter

Code (Address)	Name	Content	Default (Range)	Property
F16.44 (0x502C)	Diameter Calculation Method	V/F SVC FVC PMVF PMSVC PMFVC 0: Initial roll diameter without calculation; 1: Calculated by linear velocity; 2: Calculated by thickness; 3: Reserved; 4: Set via AI1; 5: Set via AI2; 6: Reserved 7: Set via PUL; 8: Set via RS485(0x300C)	0 (0~8)	STOP
F16.45 (0x502D)	Max. Roll Diameter	V/F SVC FVC PMVF PMSVC PMFVC Set the max. roll diameter.	500mm (1mm~10000mm)	STOP

F16.46 (0x502E)	Roll Diameter	V/F SVC FVC PMVF PMSVC PMFVC Set the roll diameter value.	100mm (1mm~ Max. roll diameter)	STOP
F16.47 (0x502F)	Initial Roll Diameter Source	V/F SVC FVC PMVF PMSVC PMFVC 0: Via terminals F16.48~F16.50 1: Reserved; 2: Via AI1; 3: Via AI2; 4: Reserved; 5: Via PUL terminal;	0 (0~5)	STOP
F16.48 (0x5030)	Initial Roll Diameter 1	V/F SVC FVC PMVF PMSVC PMFVC Set initial roll diameter 1.	100mm (1mm~ Max. roll diameter)	RUN
F16.49 (0x5031)	Initial Roll Diameter 2	V/F SVC FVC PMVF PMSVC PMFVC Set initial roll diameter 2.	100mm (1mm~ Max. roll diameter)	RUN
F16.50 (0x5032)	Initial Roll Diameter 3	V/F SVC FVC PMVF PMSVC PMFVC Set initial roll diameter 3.	100mm (1mm~ Max. roll diameter)	RUN
F16.51 (0x5033)	Roll Diameter Reset	V/F SVC FVC PMVF PMSVC PMFVC 0: Manual; 1: Auto	0 (0~1)	RUN
F16.54 (0x5036)	Roll Diameter Change Rate Limit	V/F SVC FVC PMVF PMSVC PMFVC Set the roll diameter change rate limit.	10.00mm/s (0.00mm/~200.00mm/)	RUN
F16.55 (0x5037)	Roll Diameter Change Direction	V/F SVC FVC PMVF PMSVC PMFVC Set the roll diameter change direction limit.	0 (0~1)	RUN

F16.56~F16.63: Roll Diameter Calculation by Linear Speed

Code (Address)	Name	Content	Default (Range)	Property
F16.56 (0x5038)	Linear Velocity Input Source	V/F SVC FVC PMVF PMSVC PMFVC 0: Via terminals F16.60/F16.61; 1: Via panel keys; 2: Via panel potentiometer(on optional external single-row panels); 3: Via AI1; 4: Via AI2; 5: Reserved; 6: Via PUL terminal; 7: Via RS485(0x300D)	0 (0~7)	RUN
F16.57 (0x5039)	Max. Linear Speed	V/F SVC FVC PMVF PMSVC PMFVC Set the maximum linear speed limit value for all channels.	1000.0m/min (0.0m/min~6500.0m/min)	RUN
F16.58 (0x503A)	Panel Giving Linear Speed	V/F SVC FVC PMVF PMSVC PMFVC Set and modify linear speed via the panel keys.	20.0 (0.0~ Max. linear speed)	RUN
F16.59 (0x503B)	Min. Linear Speed for Roll Diameter Calculation	V/F SVC FVC PMVF PMSVC PMFVC Set the min. linear speed for roll diameter calculation.	2.0m/min (0.0m/min~Max. linear speed)	RUN
F16.60 (0x503C)	Linear Speed 1	V/F SVC FVC PMVF PMSVC PMFVC Set linear speed 1 value.	20.0m/min (0.0m/min~Max. linear speed)	RUN

F16.61 (0x503D)	Linear Speed 2	V/F SVC FVC PMVF PMSVC PMFVC Set linear speed 2 value.	20.0m/min (0.0m/min~Max. linear speed)	RUN
F16.63 (0x503F)	Min. Frequency for Roll Diameter Calculation	V/F SVC FVC PMVF PMSVC PMFVC Set the min. frequency for roll diameter calculation.	1.00Hz (0.00Hz~10.00Hz)	RUN

F16.68~ F16.70: Thickness-based Roll Diameter Calculation

Code (Address)	Name	Content	Default (Range)	Property
F16.68 (0x5044)	Pulse Per Revolution of Winding Roller	V/F SVC FVC PMVF PMSVC PMFVC Set the number of pulses received by the winding roller for one revolution when calculating the roll diameter by thickness.	1 (1~65000)	RUN
F16.69 (0x5045)	Lap Per Layer	V/F SVC FVC PMVF PMSVC PMFVC Set the number of revolutions required for a full layer of the winding.	1 (1~10000)	RUN
F16.70 (0x5046)	Panel Giving Thickness	V/F SVC FVC PMVF PMSVC PMFVC Set the material thickness via panel keys.	0.01mm (0.01mm~100.00mm)	RUN

F16.75~F16.82: Tension PID

Code (Address)	Name	Content	Default (Range)	Property
F16.75 (0x504B)	Tension PID	V/F SVC FVC PMVF PMSVC PMFVC 0: OFF; 1: ON	0 (0~1)	STOP
F16.76 (0x504C)	Tension PID output reference source	V/F SVC FVC PMVF PMSVC PMFVC 0: Given tension as reference source; 1: Max. tension as reference source	0 (0~1)	STOP
F16.77 (0x504D)	Max.Tension PID Percentage	V/F SVC FVC PMVF PMSVC PMFVC Set the percentage of max. tension PID output.	10.0% (0.0%~50.0%)	RUN
F16.78 (0x504E)	Tension PID Feedback Source	V/F SVC FVC PMVF PMSVC PMFVC 0: Via panel keys; 1: Via panel potentiometer(on optional external single-row panels); 2: Via AI1; 3: Via AI2; 4: Reserved; 5: Via PUL terminal; 6: Via RS485(0x300E)	2 (0~6)	RUN
F16.79 (0x504F)	Panel Giving Tension PID Feedback	V/F SVC FVC PMVF PMSVC PMFVC Set and modify tension PID feedback with the panel.	50.0% (0.0%~100.0%)	RUN
F16.80 (0x5050)	Tension PID Feedback Gain	V/F SVC FVC PMVF PMSVC PMFVC Set gain for all feedback signals.	1.00 (0.00~10.00)	RUN
F16.81 (0x5051)	Proportional gain P1	V/F SVC FVC PMVF PMSVC PMFVC Set tension PID proportional gain.	0.500 (0.000~8.000)	RUN
F16.82 (0x5052)	Integral time T	V/F SVC FVC PMVF PMSVC PMFVC Set the tension PID integral time	0.5s (0.0s~600.0s)	RUN

4.20 F25: AI and AO Correction

This group of function codes and descriptions are described in detail in the corresponding technical manuals.

4.21 C0x: Monitoring Parameters

C00: Basic Monitoring

Code(Address)	Name	Code(Address)	Name
C00.00(0x2100)	Given Frequency	C00.20(0x2114)	Analog Output
C00.01 (0x2101)	Output Frequency	C00.21(0x2115)	AO Expansion
C00.02(0x2102)	Output Current	C00.22(0x2116)	Counter Record
C00.03(0x2103)	Input Voltage	C00.23(0x2117)	Current Runtime
C00.04(0x2104)	Output Voltage	C00.24(0x2118)	Cumulative Runtime
C00.05(0x2105)	Mechanical Speed	C00.25(0x2119)	Rated Drive Power
C00.06(0x2106)	Given Torque	C00.26(0x211A)	Drive Rated Voltage
C00.07(0x2107)	Output Torque	C00.27(0x211B)	Drive Rated Current
C00.08(0x2108)	PID Setting	C00.28(0x211C)	Software Version
C00.09(0x2109)	PID Feedback	C00.29(0x211D)	PG Feedback Frequency
C00.10(0x210A)	Output Power	C00.30(0x211E)	Timer Duration
C00.11(0x210B)	Bus Voltage	C00.31(0x211F)	PID output value
C00.12(0x210C)	Module Temperature 1	C00.32(0x2120)	Software Sub-Version
C00.13(0x210D)	Module Temperature 2	C00.33(0x2121)	Encoder Feedback Angle
C00.14(0x210E)	Input Terminal X Status (Note)	C00.34(0x2122)	Accumulated Z-Pulse Error
C00.15(0x210F)	Output Terminal Y Status (Note)	C00.35(0x2123)	Z-Pulse Count
C00.16 (0x2110)	AI1	C00.36(0x2124)	Fault Code
C00.17(0x2111)	AI2	C00.37(0x2125)	Cumulative Power Consumption (Low)
C00.18(0x2112)	Panel Potentiometer Input	C00.38(0x2126)	Cumulative Power Consumption (High)
C00.19(0x2113)	PUL Input	C00.39(0x2127)	Power Factor Angle

Note: For example, C00.14 is displayed as , when terminals X1 and X2 are ON, and C00.15 is displayed as , when terminal Y and relay are ON.

C01: Fault Monitoring

Code(Address)	Name	Code(Address)	Name
C01.00(0x2200)	Fault Type	C01.12(0x220C)	Previous 1 Fault Operation Frequency
C01.01(0x2201)	Fault Diagnosis	C01.13(0x220D)	Previous 1 Fault Output Voltage
C01.02(0x2202)	Fault Operation Frequency	C01.14(0x220E)	Previous 1 Fault Output Current
C01.03(0x2203)	Fault Output Voltage	C01.15(0x220F)	Previous 1 Fault Bus Voltage
C01.04(0x2204)	Fault Output Current	C01.16(0x2210)	Previous 1 Fault Module Temperature
C01.05(0x2205)	Fault Bus Voltage	C01.17(0x2211)	Previous 1 Fault Drive Status
C01.06(0x2206)	Fault Module Temperature	C01.18(0x2212)	Previous 1 Fault Input Terminal Status
C01.07(0x2207)	Fault Drive Status	C01.19(0x2213)	Previous 1 Fault Output Terminal Status
C01.08(0x2208)	Fault Input Terminal X Status	C01.20(0x2214)	Previous 2 Fault Type
C01.09(0x2209)	Fault Output Terminal Status	C01.21(0x2215)	Previous 2 Fault Diagnosis
C01.10(0x220A)	Previous 1 Fault Type	C01.22(0x2216)	Previous 3 Fault Type
C01.11(0x220B)	Previous 1 Fault Diagnosis	C01.23(0x2217)	Previous 3 Fault Diagnosis

Note: Drive fault status bit meaning:

Ones-bit: operation direction, 0: Forward; 1: Reverse

Tens-bit: Operation status, 0: Stop; 1: Constant speed; 2: Accelerate; 3: Decelerate

Hundreds-bit: OV/OC, 0: Normal; 1: OV; 2: OC; 3: OV and OC

Thousands-bit: Reserved

C02: App Monitoring

Code(Address)	Name	Code(Address)	Name
C02.00(0x2300)	PID Setting	C02.19(0x2313)	CBC No.
C02.01(0x2301)	PID Feedback	C02.20(0x2314)~ C02.22(0x2316)	Reserved
C02.02(0x2302)	PID Output	C02.23(0x2317)	Proportional Monitor Display 1
C02.03(0x2303)	PID Control Status	C02.24(0x2318)	Proportional Monitor Display 2
C02.05(0x2305)	PLC Operation Stage	C02.25(0x2319)	IO Expansion AI1
C02.06(0x2306)	PLC Segment Frequency	C02.26(0x231A)	IO Expansion Analog 2
C02.07(0x2307)	PLC Segment Runtime	C02.27(0x231B)	IO Expansion Analog 3
C02.08(0x2308)	FWD/REV Command	C02.28(0x231C)	IO Expansion Input Terminal Status
C02.09(0x2309)	Jogging Command	C02.29(0x231D)	IO Expansion for Motor Temperature Detection
C02.10(0x230A)	Voltage/Current before AI1 Correction	C02.30(0x231E)	IO Expansion PUL Count Low
C02.11(0x230B)	Voltage/Current before AI2 Correction	C02.31(0x231F)	IO Expansion PUL Count High
C02.12(0x230C)	Voltage/Current before AO Correction	C02.32(0x2320)~ C02.47(0x232F)	Power Loss Protection 1~16
C02.13(0x230D)	Voltage/Current before AO Expansion Correction	C02.48(0x2330)~ C02.49(0x2331)	Reserved
C02.14(0x230E)	Reserved	C02.50(0x2332)~ C02.59(0x233B)	Cache Gegister 0~9
C02.15(0x230F)	Drive Overload Timing Factor	C02.60(0x233C)	Expansion A Version
C02.16(0x2310)	Motor Overload Timing Factor	C02.61(0x233D)	Expansion B Version
C02.17(0x2311)~ C02.18(0x2312)	Reserved	C02.62(0x233E)	External Panel Version

C03: Maintenance and Tension Monitoring

Code(Address)	Name	Code(Address)	Name
C03.00(0x2400)	Current Runtime	C03.22(0x2416)	Current Linear Speed
C03.01(0x2401)	Cumulative Runtime(hour)	C03.23(0x2417)	Current Roll Diameter
C03.02(0x2402)	Cumulative Runtime(hour)	C03.24(0x2418)	Tenison Source Torque
C03.03(0x2403)	Cumulative Runtime(minute)	C03.25(0x2419)	Tension PID Setting
C03.04(0x2404)	Fan Runtime	C03.26(0x241A)	Tension PID Feedback
C03.05(0x2405)	Fan Maintenance	C03.27(0x241B)	Tension PID Output
C03.06(0x2406)	Reserved	C03.28(0x241C)	Static Friction Compensation
C03.07(0x2407)	Main Relay Maintenance	C03.29(0x241D)	Dynamic Friction Compensation
C03.08(0x2408)	Reserved	C03.30(0x241E)	Total Friction Compensation
C03.09(0x2409)	Special 485 Monitoring Value	C03.31(0x241F)~ C03.39(0x2427)	Reserved (for Tension)
C03.10(0x240A)~ C03.19(0x2413)	Reserved	C03.50(0x2432)	Machine Code 1
C03.20(0x2414)	Final Tension	C03.51(0x2433)	Machine Code 2

C03.21(0x2415)	Initial Roll Diameter	C03.52(0x2434)	Machine Code 3

4.22 Terminal I/O Function

X	Description	X	Description	X	Description
0	None;	24	PID setting switching 1	48	Command source to panel
1	FWD	25	PID setting switching 2	49	Command channel to terminal
2	REV	26	PID setting switching 3	50	Command source to communication
3	Three-line operation(Xi)	27	PID feedback switching 1	51	Command source expansion board
4	FWD jogging	28	PID feedback switching 2	52	Operation disable
5	REV jogging	29	PID feedback switching 3	53	Forward operation off
6	Free stop	30	PLC pause	54	Reverse operation off
7	Emergency stop	31	PLC reboot	55	Reserved
8	Fault reset	32	ACC/DEC time terminal 1	56	Reserved
9	External fault input	33	ACC/DEC time terminal 2	57	Reserved
10	Frequency increase(UP)	34	ACC/DEC pause	58	Reserved
11	Frequency decrease(DW)	35	Swing frequency trigger	59	Reserved
12	Frequency reset(UP/DW reset)	36	Swing frequency pause	60	Speed/torque control switching
13	Source A to source B	37	Swing frequency reset	61	Reserved
14	Combined frequency source to source A	38	Panel keys and display self-test	62	Jogging frequency limit as torque mode frequency upper limit
15	Combined frequency source to source B	39	X5 or X10 (Expansion) frequency detection	63~87	Reserved
16	Multi-seg speed terminal 1	40	Timer trigger terminal	88	Roll diameter reset
17	Multi-seg speed terminal 2	41	Timer reset terminal	89	Initial roll diameter terminal 1
18	Multi-seg speed terminal 3	42	Counter clock input terminal	90	Initial roll diameter terminal 2
19	Multi-seg speed terminal 4	43	Counter reset terminal	91	Liner speed terminal
20	PID control canceled	44	DC brake command	92	Tension given channel switching
21	PID control paused	45	Pre-excitation command terminal	93	Reserved
22	PID characteristic switching	46	Reserved	94	Winding/Unwinding switching
23	PID parameter switching	47	Reserved	95	Pre-drive terminal
Y	**Description**	**Y**	**Description**	**Y**	**Description**
0	No output	15	Program cycle completion	30	0x3018 controlled output
1	Drive in operation	16	Programmed segment completion	31	Drive overheat
2	Drive in reverse operation	17	PID feedback above upper limit	32	Reserved
3	Drive in forward operation	18	PID feedback below lower limit	33	Reserved
4	Fault tripping alarm 1(report during fault auto-recovery)	19	PID feedback sensor disconnection	34	Reserved
5	Fault tripping alarm 2 (no report during fault auto-recovery)	20	Reserved	35	Reserved
6	Stop due to external faults	21	Timer setting arrival	36	Reserved
7	Drive undervoltage	22	Counter maximum arrival	37	Comparator 1
8	AC drive ready	23	Counter setting arrival	38	Comparator 2
9	Output frequency detection 1(FDT1)	24	Dynamic braking now	39	Reserved
10	Output frequency detection 2(FDT2)	25	Reserved	40~47	Expansion for industry applications

11	Given frequency arrival	26	Emergency stopping now	48	Comparator 3
12	Zero-speed operating now	27	Load warning 1	49	Comparator 4
13	Upper limit frequency arrival	28	Load warning 2	50~63	Optional boards
14	Lower limit frequency arrival	29	Drive in warning	-	-

4.23 Fault and Warning Code List

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

Display (Dec.)	Name	Type	Display (Dec.)	Name	Type
E. SC1 (1)	System failure during acceleration	Error	E. LD2 (80)	Load protection 2	Fault
E. SC2 (2)	System failure during deceleration	Fault	E. CPu (81)	CPU timeout	Fault
E. SC3 (3)	System failure during constant speed	Fault	E. LoC (85)	Locked chip	Fault
E. SC4 (4)	System failure during stop	Fault	E. EEP (86)	Parameter storage failure	Fault
E. oC1 (5)	OC during acceleration	Fault	E. PG (87)	PLL error	Fault
E. oC2 (6)	OC during deceleration	Fault	E. buS1 (91)	Expansion A disconnected	Fault
E. oC3 (7)	OC during constant speed	Fault	E. buS2 (92)	Expansion B disconnected	Fault
E. ou1 (9)	OV during acceleration	Fault	E. buS3 (93)	CAN Expansion error	Fault
E. ou2 (10)	OV during deceleration	Fault	E. buS4 (94)	Others Expansion error	Fault
E. ou3 (11)	OV during constant speed	Fault	E. buS5 (95)	Others Expansion error	Fault
E. Lu (13)	UV during operation	Fault	E. buS6 (96)	Others Expansion disconnected	Fault
E. oL1 (14)	Motor OL	Fault	E. CP1 (97)	Monitor comparator output 1 error	Fault
E. oL2 (15)	Drive OL 1	Fault	E. CP2 (98)	Monitor comparator output 2 error	Fault
E. oL3 (16)	AC drive overload 2, CBC keeps occuring	Fault	E. DAT (99)	Parameter setting error	Fault
E. oL4 (17)	Drive OL 3	Fault	E. FA1 (110)	Reserved for expansion 1	Fault
E. iLF (18)	Input phase loss	Fault	E. FA2 (111)	Reserved for expansion 2	Fault
E. oLF (19)	Three-phase output phase loss	Fault	E. FA3 (112)	Reserved for expansion 3	Fault
E. oLF1 (20)	U-phase output phase loss	Fault	E.FA4 (113)	Reserved for expansion 4	Fault
E. oLF2 (21)	V-phase output phase loss	Fault	E.FA5 (114)	Reserved for expansion 5	Fault
E. oLF3 (22)	W-phase output phase loss	Fault	E.FA6 (115)	Reserved for expansion 6	Fault
E. oH1 (30)	Rectifier module OT	Fault	E.FA7 (116)	Reserved for expansion 7	Fault
E. oH2 (31)	IGBT module OT	Fault	E.FA8 (117)	Reserved for expansion 8	Fault
E. oH3 (32)	Motor overtemperature	Fault	E. FrA (118)	Material fracture	Fault
E. EF (33)	External fault	Fault	The following are the warning codes		
E. CE(34)	Modbus communication error	Fault			
E. HAL1 (35)	Large U-phase zero drift	Fault	A. Lu1(128)	UV during stop	Warning
E. HAL2 (36)	Large V-phase zero drift	Fault	A. ou (129)	OV during stop	Warning
E. HAL (37)	Non-0 current sum of three phases	Fault	A. iLF (130)	Input phase loss	Warning
E. HAL3 (38)	Large W-phase zero drift	Fault	A. PiD (131)	PID feedback disconnection	Warning
E. SGxx (40)	Short circuit to ground	Fault	A. EEP (132)	Parameter save error	Warning
E. FSG (41)	Fan short circuit	Fault	A. DEF (133)	Excessive speed deviation	Warning
E. PiD (42)	PID feedback disconnection	Fault	A. SPD (134)	Overspeed	Warning
A. CoP (43)	Parameter copy error	Warning	A. GPS1(135)	GPS lockout	Warning
E. PG1 (44)	PG parameter setting error	Fault	A. GPS2(136)	GPS disconnection	Warning
E. PG2(44)	Encoder Z-pulse error	Fault	A. CE (137)	Modbus communication disconnection	Warning
E. PG3（44）	Resolver check error	Fault	A. LD1(138)	Load protection 1	Warning

E. PG4 (44)	Resolver disconnection	Fault	A. LD2(139)	Load protection 2	Warning
E. PG5 (44)	ABZ encoder disconnection	Fault	A. buS(140)	Expansion disconnection	Warning
E. PG6 (44)	Spindle encoder disconnection	Fault	A. oH1(141)	Module OT	Warning
E. PG7 (44)	Spindle encoder Z-pulse deviation	Fault	A. oH3(142)	Motor OT	Warning
E. PG8 (44)	Encoder Z-pulse logic error	Fault	A. run1(143)	Operation command conflict	Warning
E. PG9 (44)	Spindle encoder Z-pulse logic error	Fault	A. run2(148)	Jogging terminal startup protection	Warning
E. PG10 (44)	Encoder Z-pulse disconnection	Fault	A. run3(149)	Terminal startup protection	Warning
E. PG11 (44)	Spindle encoder Z-pulse disconnection	Fault	A. PA2(144)	External panel disconnection	Warning
E. PG12 (44)	Encoder feedback error	Fault	A. CoP (145)	Parameter copy error	Warning
E. PG13 (44)	Encoder hardware disconnection	Fault	A. CP1 (146)	Monitor comparator output 1 error	Warning
E. bru (50)	Braking unit error	Fault	A. CP2 (147)	Monitor comparator output 2 error	Warning
E. TExx (52)	Motor parameter auto-tuning error	Fault	A. FA1(150)	Reserved for expansion 1	Warning
E. iAE1 (71)	Motor angle tuning fault 1	Fault	A. FA2(151)	Reserved for expansion 2	Warning
E. iAE2 (72)	Motor angle tuning fault 2	Fault	A. FA3(152)	Reserved for expansion 3	Warning
E. iAE3 (73)	Motor angle tuning fault 3	Fault	A. FA4(153)	Reserved for expansion 4	Warning
E. PST1 (74)	PM step loss 1	Fault	A. FA5 (154)	Reserved for expansion 5	Warning
E. PST2 (75)	PM step loss 2	Fault	A. FA6 (155)	Reserved for expansion 6	Warning
E. PST3 (76)	PM step loss 3	Fault	A. FrA (157)	Material fracture	Warning
E. DEF (77)	Excessive speed deviation	Fault	A. OH4(158)	Motor temperature sersor disconnection	Warning
E. SPD (78)	Overspeed	Fault	A.161(161)	Fan span	Warning
E. LD1 (79)	Load protection 1	Fault	A.163(163)	Main relay span	Warning

Chapter 5 Regular Inspection and Maintenance

5.1. Inspection

The drives consist of semiconductor devices, passive electronic devices, and motion devices, all of which have a service life, and even under normal operating conditions, some of the devices may change in characteristics or fail if their service life is exceeded. To prevent malfunction, preventive inspections and maintenance such as daily inspections, periodic inspections, and device replacement must be performed. It is recommended that inspections be performed every 3 to 4 months after the machine is installed.

Daily inspection: To avoid damage to the drive and shortening of its service life, check the following items on a daily basis.

Item	Content	Solutions
Power	Check that the supply voltage meets the requirements and that there is	Follow the instructions on the nameplate.
Surroundings	Check whether the installation environment meets the requirements.	Confirm the source and handle it properly.
Cooling system	Check whether there is abnormal heating and discoloration of the drive and motor, and the working condition of the cooling fan.	Confirm whether there is overload, tighten the screws, whether the heat sink is dirty, and whether the fan is blocked.
Motor	Check whether the motor has abnormal vibration or sound.	Tighten mechanical and electrical connections and
Load	Check 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 whether there was an overload condition, and whether the selection of AC drive is correct.

● Periodic inspection: In general, it is appropriate to conduct periodic inspections every 3 to 4 months, however, please determine the actual inspection period for each machine based on its usage and working environment.

Item	Content	Solutions
Overall	Insulation resistance check; environment check	Tighten and replace defective parts; clean and
Electrical connections	● Check if the wires and connections are free of discoloration, broken insulation, cracks and signs of deterioration; ● Check if the connection terminals are not worn, damaged, or loose; ● Check grounding	● Replace the damaged wires; ● Tighten the loose terminals and replace the damaged ones; ● Measure the grounding resistance and tighten the corresponding grounding terminals
Mechanical connections	● Check if there are abnormal vibration and noise, and loose fixing	● Tighten, lubricate, and replace defective parts
Semiconductor devices	● Check for dirt and dust ● Check for visible changes in appearance	● Clean the operating environment ● Replace damaged parts
Electrolytic capacitor	● Check for fluid leakage, discoloration, cracks, and exposed, expanded, ruptured, or leaked	● Replace damaged parts
Peripherals	● Check appearance and insulation of peripheral equipment	● Clean the environment and replace damaged
Printed circuit board	● Check for odor, discoloration, and severe rust, and whether connectors are correct	● 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 cooling fin ● Check that the air inlet and exhaust ports are not clogged or contaminated with foreign matter	● Clean the operating environment ● Replace damaged parts
Panel	● Check the cooling fan for damage and blockage	● Replace 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 5 minutes.

5.2 Maintenance

All equipment and components have a service life, proper maintenance can prolong the life, but it does not fix the damage of the equipment and devices, please replace the devices according to the requirements.

Name	Life	Name	Life	Name	Life
Fan	2 ~ 3 years	Electrolytic capacitor	4 ~ 5 years	Printed circuit board	8 ~ 10 years

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.

5.3 Product Warranty

1. If the product malfunctions during the warranty period, please refer to the warranty terms for coverage in the warranty card.

2. Primary troubleshooting will be carried out by your company, but the service can be provided by VEICHI or service network for a fee at your request. If the cause of malfunction is found to be on VEICHI, the service will be free of charge according to mutual negotiation.

3. Liability exemption: Inconvenience caused to your company or your customers due to the failure of VEICHI products and the damage caused to the non-VEICHI products, regardless of whether they are within the warranty period, do not belong to the scope of VEICHI warranty.

Appendix I: Modbus Communication Protocol

● **Communication frame structure**

The communication data format is as follows:

Composition of bytes:Start bit, 8 data bits, parity bit and stop bit.

Start bit	Bit1	Bit2	Bit3	Bit4	Bit5	Bit6	Bit7	Bit8	Parity	Stop bit

The information of a frame must be transmitted in one continuous data stream, and if it is longer than 1.5 bytes of interval before the end of transmission of the entire frame, the receiving device will clear this incomplete information and incorrectly assume that the subsequent byte is the address field of the next new frame. Similarly, if the start of a new frame is shorter than 3.5 bytes interval from the previous frame, the receiving device will consider it to be the sequent part of the previous frame. The final CRC parity will be incorrect due to the misalignment of the frame, resulting in a communication error.

Standard structure of an RTU frame:

Frame header	Transmission time for 3.5 bytes
Slave address	Communication address: 0~247 in decimal (0 is the broadcast address)
Command code	03H: Read slave parameters 06H: Write slave parameters 08H: Circuit self-detection
Data area	Parameter address, number of parameters, parameter value, etc.
CRC CHK low	Check value: 16-bit CRC value
CRC CHK high	
End of the frame	Transmission time for 3.5 bytes

● **Command code and communication data description**

Take the read parameter command code as an example.

For example, if there is an AC drive with a slave address of 01H and a memory starting address of 2100H(C00.00 Monitoring Parameters), read three consecutive words, the frame is described as follows:

RTU master command		RTU slave response (normal)	
Slave address	01H	Slave address	01H
Command code	03H	Command code	03H
Starting address high	21H	Byte count low	06H
Starting address low	00H	Data address 2100H high	13H
Data count high	00H	Data address 2100H low	88H
Data count low	03H	Data address 2101H high	00H
CRC CHK low	0FH	Data address 2101H low	00H
CRC CHK high	F7H	Data address 2102H high	00H
-	-	Data address 2102H low	00H
-	-	CRC CHK low	C3H
-	-	CRC CHK high	C9H
-	-	RTU slave response(abnormal):	
-	-	Slave address	01H

-	-	Command code	83H
-	-	Wrong code	04H
-	-	CRC CHK low	40H
-	-	CRC CHK high	F3H

● Communication control parameter group address description

Description	Address	Description			R/W
Communication giving Frequency	0X3000 or 0x2000	0~50000 corresponds to 0.00Hz~500.00Hz			W/R
Communication command	0X3000 or 0x2001	0x0000: None 0x0001: FWD 0x0002: REV 0x0003: FWD jogging 0x0004: REV jogging		0x0005: Deceleration stop 0x0006: Free stop 0x0007: Fault reset 0x0008: Operation disable 0x0009: Operation enable	W/R
Drive status	0x3002 or 0x2002	Bit0	0: Stop;	1: Operation	R
		Bit1	0: Non-accelerating;	1: Accelerating	
		Bit2	0: Non-decelerating;	1: Decelerating	
		Bit3	0: Forward;	1: Reverse	
		Bit4	0: No fault;	1: Drive fault	
		Bit5	0: GPRS unlocked;	1: GPRS locked	
		Bit6	0: No warning;	1: Drive in warning	
Drive fault code	0x3003 or 0x2003	Current fault code (see fault code table)			R
Communication giving upper limit frequency	0x3004 or 0x2004	0~32000 corresponds to 0.00Hz~320.00Hz			W/R
Communication giving torque	0x3005 or 0x2005	0~1000 corresponds to 0.0%~100.0%			W/R
FWD upper frequency limit under torque control	0x3006 or 0x2006	0~1000 corresponds to 0.0%~100.0%			W/R
REV upper frequency limit under torque control	0x3007 or 0x2007	0~1000 corresponds to 0.0%~100.0%			W/R
PID setting via communication	0x3008 or 0x2008	0~1000 corresponds to 0.0%~100.0%			W/R
PID feedback via communication	0x3009 or 0x2009	0~1000 corresponds to 0.0%~100.0%			W/R
Fault/Warning code reading	0x3010 or 0x2010	0~127 are fault codes, 128 and above are warning codes			R
Output terminal status	0x3018 or 0x2018	Drive output terminals externally occupied Bit0—Y Bit1—A1—TB1—TC1 Bit2—Y1 expansion (required IO expansion) Bit3—Relay expansion (required IO expansion)			W
AO	0x3019 or 0x2019	0~10000 corresponds to output 0V~10V, 0mA~20mA			W

Note: For other function code addresses, please see the "Address" column in the function code list.

When the write command(06H) is used to write the F00~F15 parameter group, if its high half byte of the address field is 0, it will be written into the RAM of drive only, and will not be stored during power down; if it is 1, then it will be written into EEPROM, that is to say, it will be stored during power down.

Take F00.xx as an example: 0x00xx (write RAM) , 0x10xx (store in EEPROM); F01.xx: 0x01xx (write RAM), 0x11xx (store in EEPROM), and so are the other parameters. When reading the parameters in Group F00~F15, the high half byte of the address can be 0, such as the read parameter F03.xx: 0x03xx.

When the write command(06H) is used to write the F16~F29 parameter group, if its high half byte of the address field is 5, it will be written

into the RAM of drive only, and will not be stored during power down; if it is D, it will be written into EEPROM, that is to say, it will be stored during power down.

Take parameter F16.xx for example: 0x50xx(write to RAM) 0xD0xx(store in EEPROM); F17.xx: 0x51xx(write RAM) 0xD1xx(store in EEPROM), and so are the other parameters. When reading the parameters in Group F16~F29, the high half byte of the address can be 5, such as the read parameter F18.xx: 0x52xx.

● Meaning of error codes of the abnormal response messages from slave

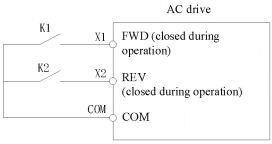
Code	Description	Code	Description	Code	Description
1	Command code error	3	CRC parity error	4	Illegal address
5	Illegal data	6	Parameters not for modification during operation	8	Drive busy (saving to EEPROM)
9	Parameter value beyond range	10	Reserved parameters not for modification	11	Error in reading parameter bytes

Appendix II: Terminal Wiring Methods

0: Two-wire Control 1

Operation and direction are set at the same time. Two-wire mode is most commonly used in this mode. The factory default is that the X1(FWD operation) and X2(REV operation) terminal control the motor to run forward and reverse. This is shown in the figure below:

K1	K2	Command
0	0	STOP
1	0	FWD
1	1	REV
0	1	STOP

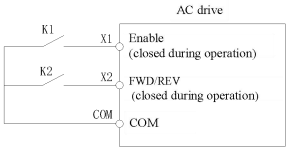


0: Two-wire control 1

1: Two-wire Control 2

Running 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). This is shown in the figure below:

K1	K2	Command
0	0	STOP
1	0	FWD
1	1	REV
0	1	STOP

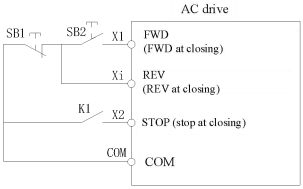


1: Two-wire control 2

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.

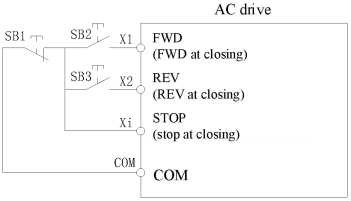
K1	Direction
0	FWD
1	REV



2: 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.



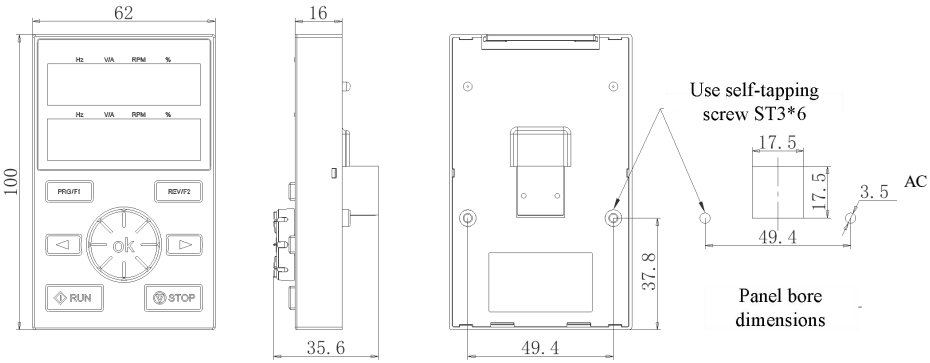
3: Three-wire control 2

Note: SB1: Stop; SB2: FWD operation; SB3: REV operation; "Xi" is a multifunction input terminal set to "3" [3-line control (Xi)].

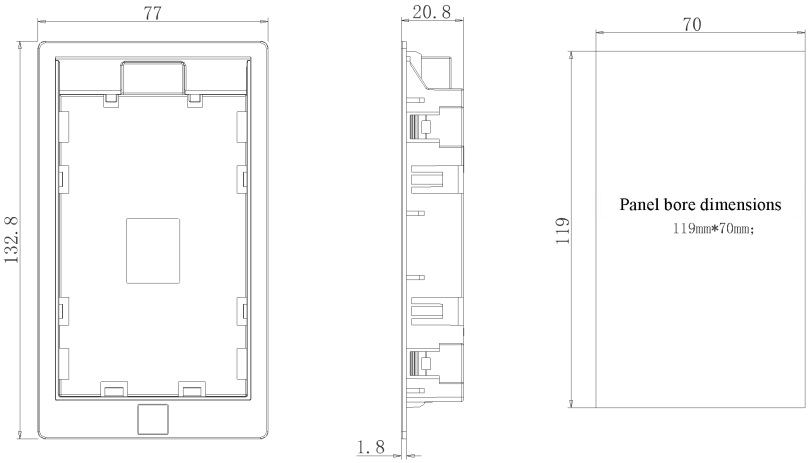
Appendix III: External Panel Dimensions and Models

● **External dual-row panel and opening dimensions**

Model: KBD300-25(**Note**: LCD and LED panel external dimensions and opening dimensions are fully compatible (unit in the drawing: mm)).

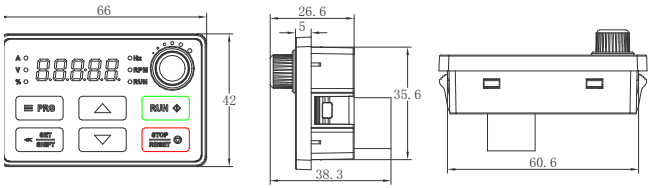


AC310 external dual-row panel dimensions



AC310 external dual-row panel pocket and opening dimensions

● **External single-row panel and opening dimensions**



Model: KBD10-15(**Note**: Mounting plate opening size: 61mmx36mm (unit in the drawing: mm).

AC310 series external single-row panel dimensions

Version Change Log

Date	Version	Content
2019.03	V1.0	First version issued
2021.12	V1.1	Replaced AC300 model with AC310
2024.03	V1.2	1. Optimized the font size of the manual 2. Modified speed control range 3. Modified speed stabilizing accuracy 4. Modified starting torque 5. Changed fonts and optimized language 6. Added F08: Auxiliary Control 2 Parameter 7. Added the related parameters of F15, F16 and F25 8. Added Appendix III: External Panel Dimensions and Models 9. Added the power of T3 model, T2 and T6 models 10.Added instructions for DC reactor and braking unit 11.Added the related parameter description of F06 12.Added the related parameters of C02 and C03 13.Added purpose of F00.01 14.Added F00.05 [User Password] and F00.06 [Panel Language] 15.Modified max. frequency range 16.Added F01.14 [Frequency Command Resolution] 17.Added F01.46 [Random PWM Depth] 18.Added the related parameters of F02.47, F02.48 and F02.49 19.Added F02.61 [Pole Search Current] 20.Added F03.19 [Torque Limit] 21.Added F03.58 [Torque Gain] and F03.59 [Gain Switching Frequency] 22.Added F04.2X V/F separation parameters 23.Added F06.05 and F06.06[AO as FM Upper/Lower Limit] 24.Added F06.23 and F06.24 Expansion output functions 25.Added F10.05 and F10.06 current imbalance related parameters 26.Added motor overheat related parameters of expansions on F10.26, F10.27 and F10.28 27.Added the related parameters of F10.55~F10.59 28.Added the related parameter description of panel potentiometer of F11.3X 29.Added F12.19 [Master Sending Command] 30.Added F12.2X of Modbus special functions 31.Added F12.32 [DP Master-Slave Failure Mode] 32.Added F12.43 [CAN Master-Slave Failure Mode] 33.Added Y terminal 41-47 for industry application expansion and 48-63 for optional board expansion 34.Added AC310-T2 model, 0.75 kW-4.00kW 35.Added model and size of AC310-T6 36.Added frequency command resolution 10rpm 37.Added AO expansion: High-speed FM output 38.Added thousands-bit description on Current Protection 1 39.Added the relationship between current and the settings of Motor OT and Module Temperature Sensor

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: V1.3

Suzhou Veichi Electric Co.,Ltd.all rights reserved,subject to change without notice.