

SD100 Series Low-voltage Servo Drive

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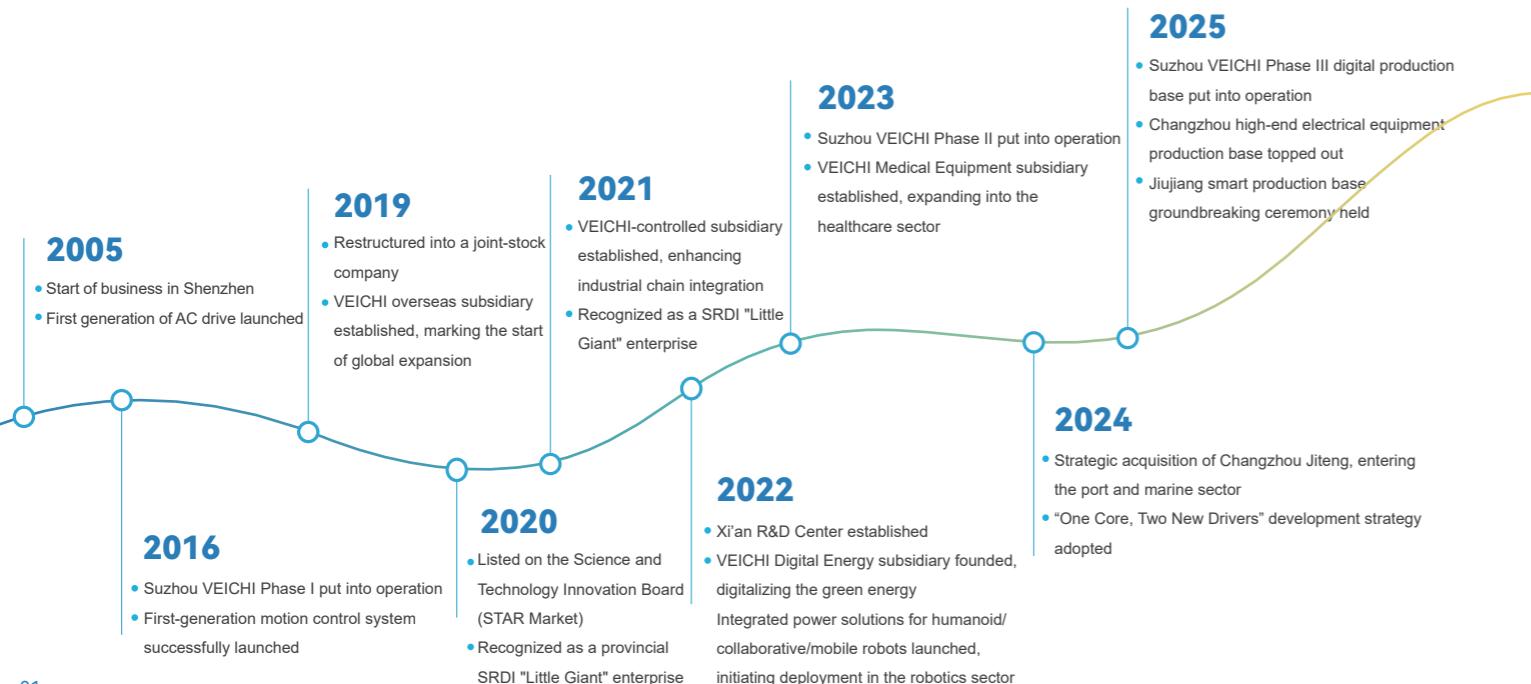
Stock code : 688698

About Us



Veichi Electric (Stock Code: 688698) specializes in electrical transmission and industrial control, operating as an integrated high-tech enterprise in R&D, production, and sales of industrial automation products. With a vision to lead in smart industry and green energy solutions, the company leverages its R&D and manufacturing hubs in Suzhou, additional R&D centers in Shenzhen and Xi'an, and wholly-owned subsidiaries overseas, consistently serving customers worldwide with competitive and reliable solutions.

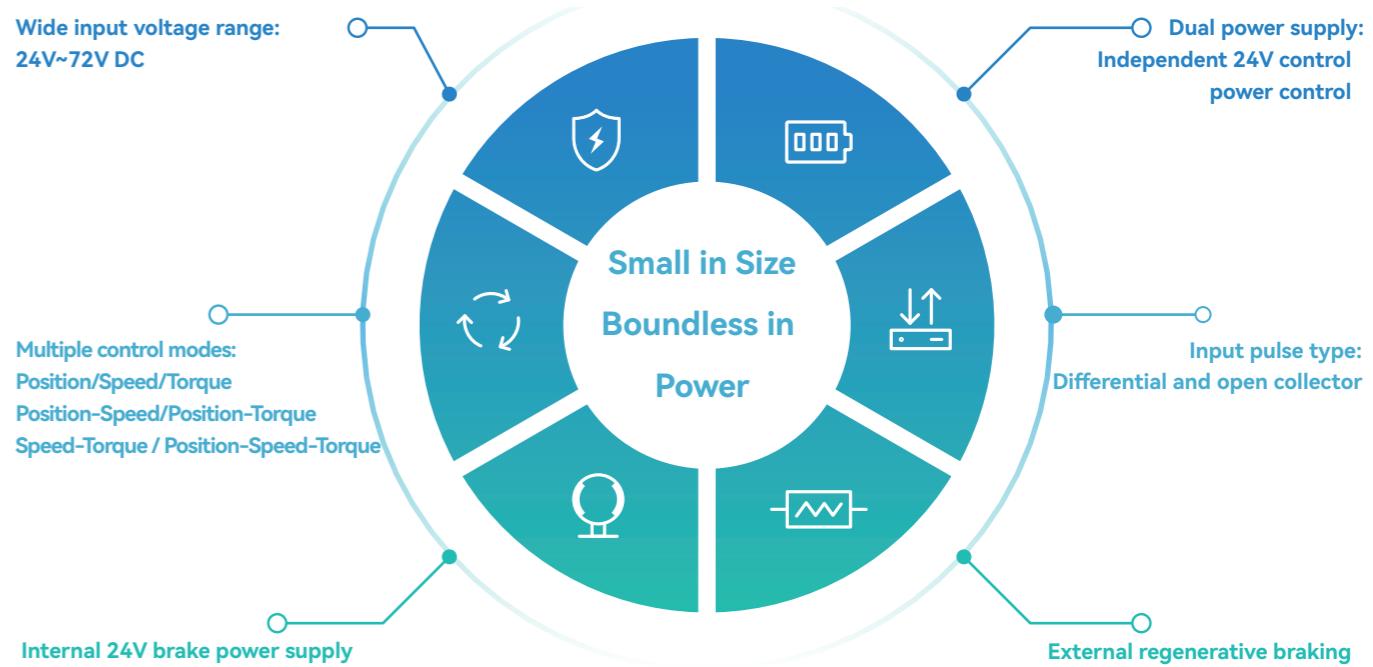
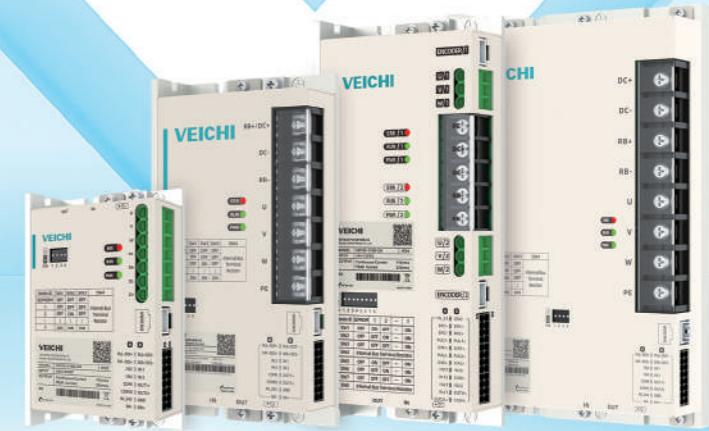
Under the "One Core, Two New Drivers" strategy, Veichi focuses on industrial automation, offering AC drives, servo systems, and control systems widely applied across heavy and light industries, as well as high-end equipment sectors, supporting the digital and intelligent transformation of manufacturing with its tailored solutions. Simultaneously, in two emerging fields, it provides one-stop solutions for humanoid, collaborative, and mobile robots in embodied intelligence, while in green energy, it delves into segments like photovoltaic, energy storage, and hydrogen energy, to "connect every device with green power," fostering a synergistic growth between core operations and new ventures.



SD100 Series Low-voltage Servo Drive

Based on the international leading algorithm platform, SD100 series low-voltage servo system are qualified for single-axis, two-axis and multi-axis motor algorithm control. It features compactness, versatility, flexibility, usability, stability and reliability delivering high performance so they can be widely applied to occasions with certain requirements for voltage and size like mobile robots (AMR, AGV), service robots, specialized robots, logistics, warehousing and sorting, and medical equipment, etc.

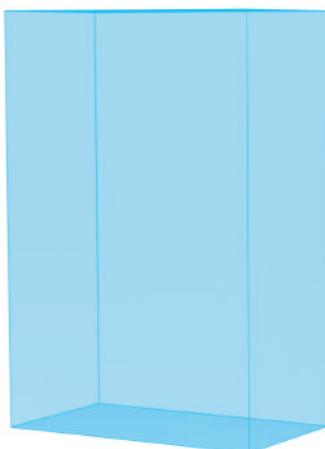
As to occasions with special requirements for, like, low temperature, communication and installation, customized low-voltage servo drive are available such as integrated products and solutions for customers to choose.



Product Features

Delicate Structure

- High power density within compact size
- Reduced installation area for limited space



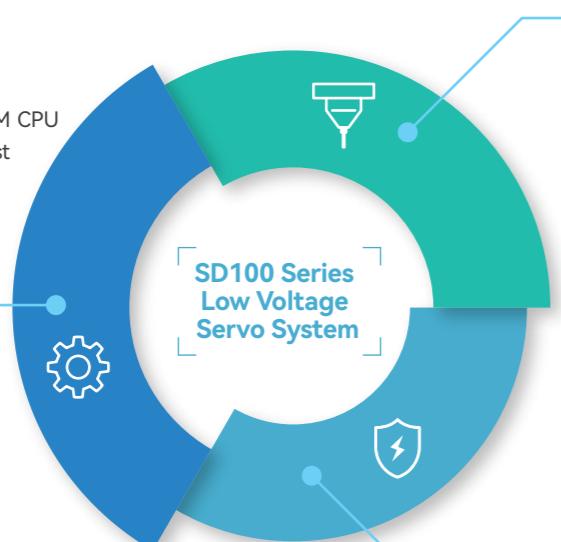
20%~50%
volume reduction to like products



Ultra-High Standard

High Performance

Pioneering algorithms &100M CPU for rapid response and robust starting torque



High Precision

Standard 17-bit encoder and optional 23-bit encoder

High Reliability

STO for extreme temperatures and strong vibration application

Unique Design

Dual-axis

1+1 > 2

Dual-axis control with one chip doubles the performance

Debugging

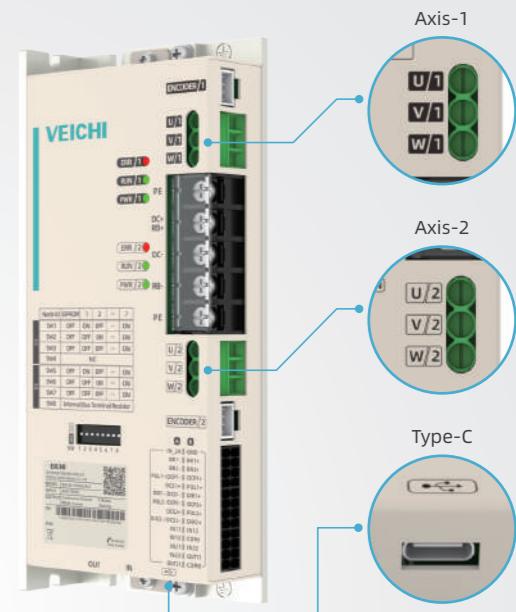
Type-C

Type-C port eliminates the dedicated cables

Dissipation

50°C

Exclusive cooling technology defies 50°C heat with ease

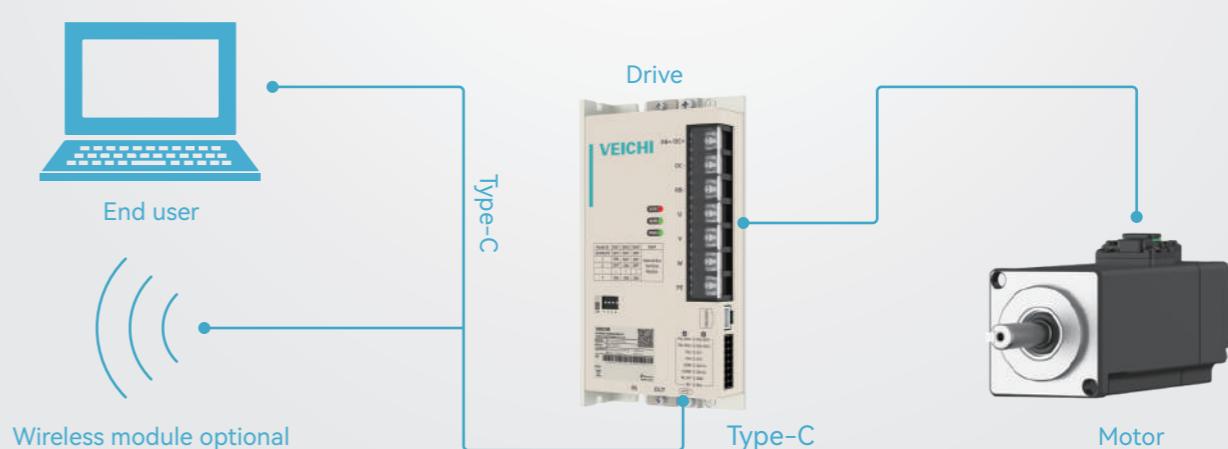


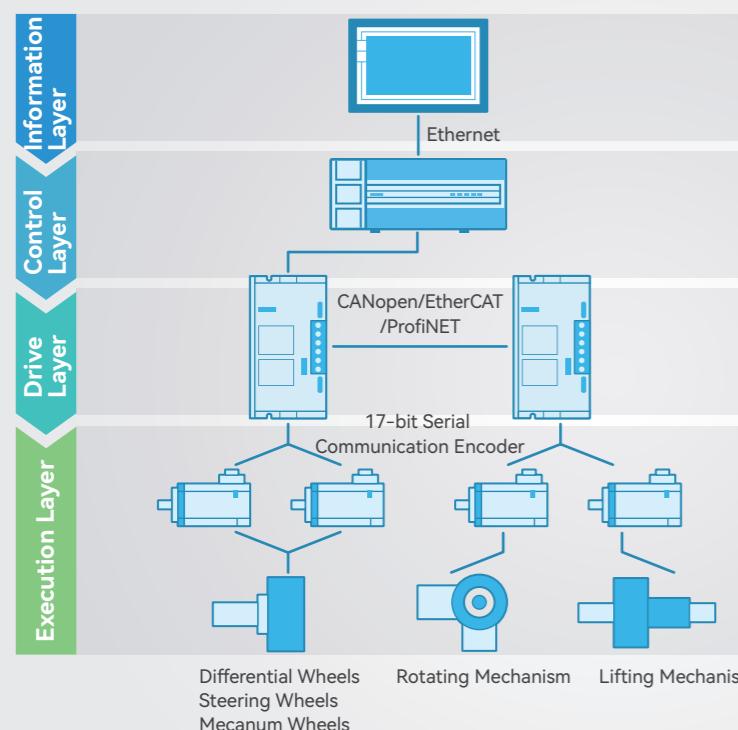
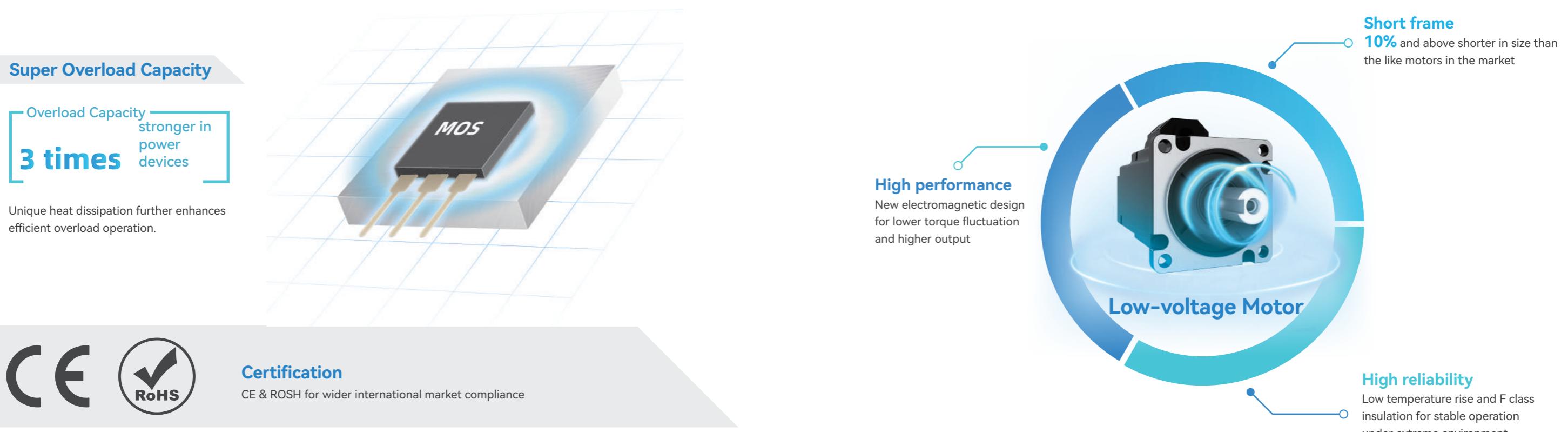
User Friendly

Easy wiring: Quick European-type plug-in terminals are used to reduce wiring time.

Easy debugging: Standard Type-C interfaces are convenient for PC software and Bluetooth module is optional for APP debugging.

Easy mounting: Both front and side installation are allowed thus suitable for different scenarios.





Synchronous Operation

Bus interaction as well as external circuit interaction for synchronous startup/shutdown and synchronous brake/stop to protect the equipment in face of faults

Diverse Buses

CANopen, EtherCAT, Profinet, Modbus-RTU and other bus communication protocols available

EtherCAT®

PROFINET®

Modbus

CANopen

Energy-saving Function

The new generation of energy-saving drive technology reduces motor heat loss and improves energy utilization by more than 10%.

ECO mode in standby saves energy and extends battery life by more than 10%.

Energy efficiency
10%
or more

Battery life
10%
or more

Servo Drive Naming Rules

SD 100 - 210 G - C A - X L

SD: Servo product code
100: Low-voltage servo drive series
Rated Current: 110: 11A
210: 21A
Voltage Level: G: 24V~70V
I: 72V

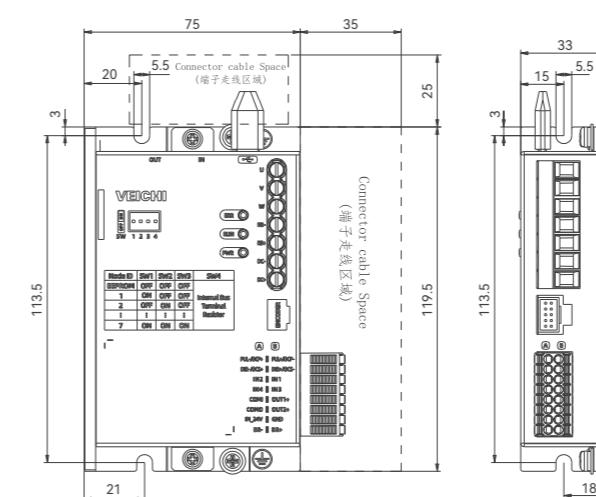
L: Low temperature model

Output Axes:
Blank: Single-axis
2: Dual-axis
A: Analog input

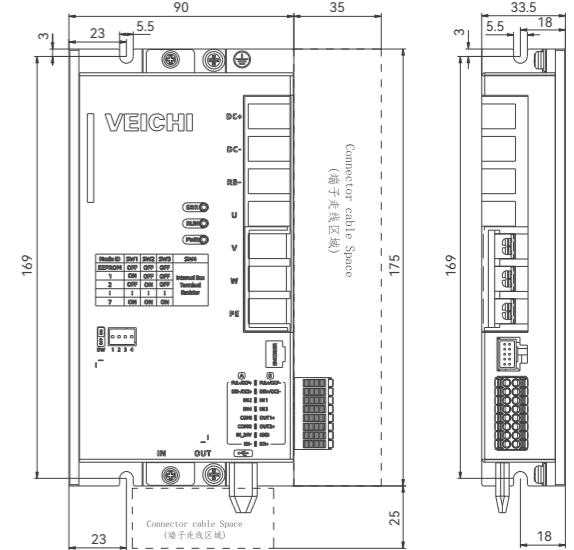
Encoder Type:
A: Serial encoder

Control Method:
P: Pulse
E: EtherCAT
C: CANopen (Profinet for option)

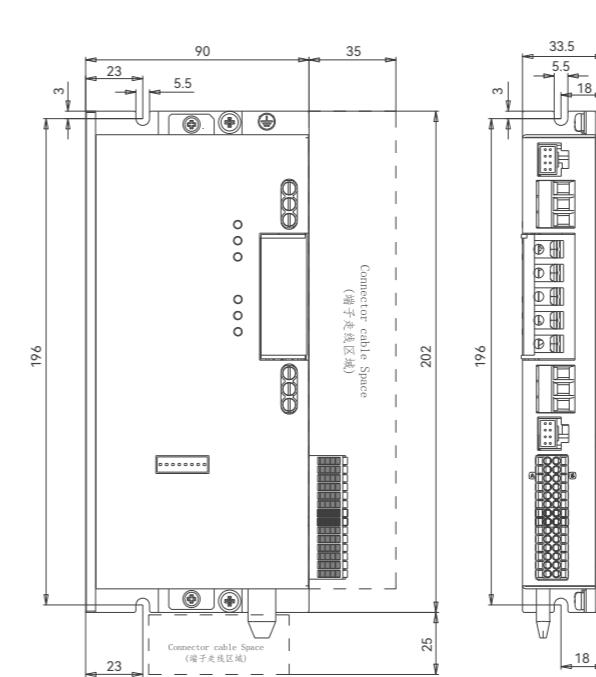
Servo Drive Appearance and Dimensions



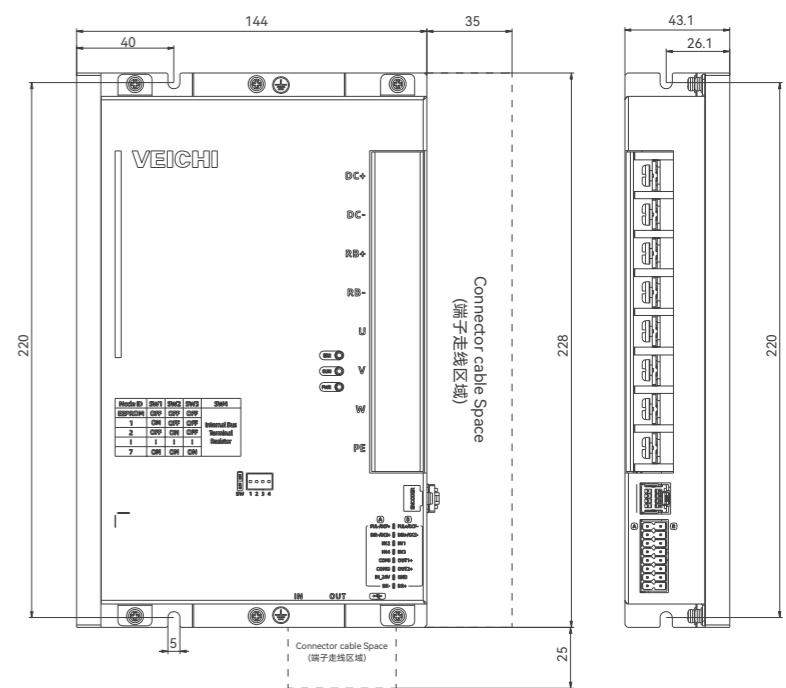
SD100-110G, SD100-210G



SD100-300G, SD100-400G



SD100-110G-2 (dual-axis) , SD100-210G-2 (dual-axis)



SD100-600G, SD100-800G

Servo Drive Specification

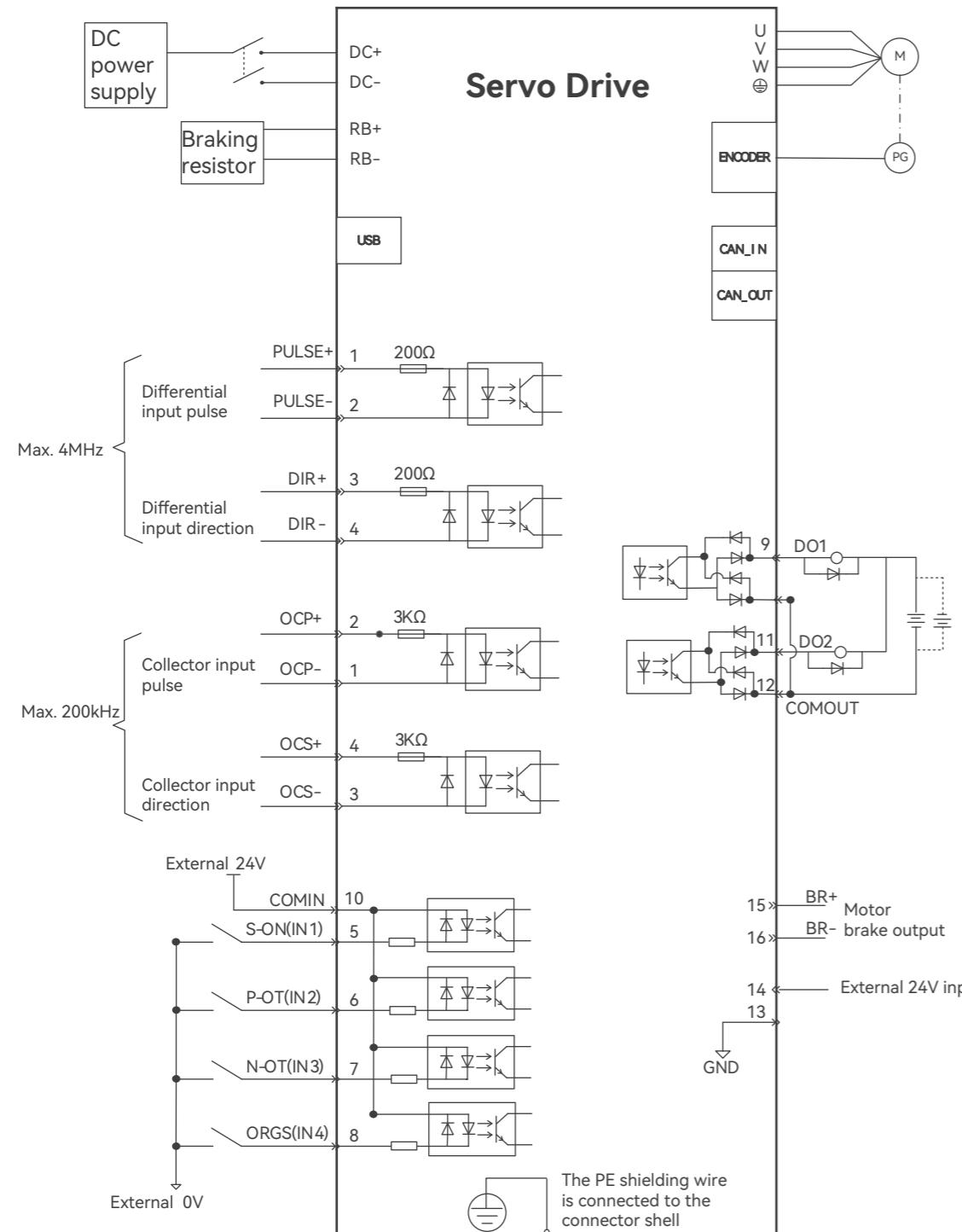
Model	Input		Output (RMS)	
	DC Voltage (V)	Rated Current (A)	Instantaneous Current (A)	
SD100-110G	DC 24-70V	11	42	
SD100-210G	DC 24-70V	21	63	
SD100-300G	DC 24-70V	30	90	
SD100-400G	DC 24-70V	40	120	
SD100-600G	DC 24-70V	60	180	
SD100-800G	DC 24-70V	80	240	

Servo Drive Technical Specification

Item		Specification
Control method		MOS PWM control for sine wave current
Environmental condition	Feedback	With rotary servo motor Serial encoder: 17-bit absolute encoder
	Ambient temperature	Standard: -5°C~55°C (derate between 55°C~60°C); Low-temperature models: -40°C~5°C (no condensation)
	Storage temperature	Standard: -20°C~85°C; Low temperature models: -40°C~5°C
	Operating humidity	< 95%RH (no freezing or condensation)
	Storage humidity	< 95%RH (no freezing or condensation)
	Oscillation	4.9m/s ²
	Impact	19.6m/s ²
	Protection level	IP20
	Operating environment	No corrosive gas or combustible gas No water, oil, or chemical splash Environment with less dust, dirt, salt and metal powder
	Altitude	< 1000m (derate between 1000m~2000m)
Others		No electrostatic interference, strong electric field, strong magnetic sound, radiation, etc.
Standards		IEC61800-2/-3/-5、IEC61000-2/-3/-4
Installation		
Performance	Speed control range	1:5000 (minimum controllable speed under rated torque without stopping)
	Speed fluctuation	< ± 0.01% of rated speed (load fluctuation: 0%~100%)
	Voltage fluctuation rate	< ±0% of rated speed (rated voltage ± 10%)
	Temperature fluctuation	Rated speed below ± 0.1% (temperature fluctuation: 25 ± 25 °C)
	Torque control accuracy (reproducible)	±1%
Control function	Position control	Electronic gear ratio setting, pulse deviation clearing, command smoothing setting, internal PR mode, position near, position coincidence and feed-forward compensation
	Speed control (internal)	4 internal torque switching, rotary detection signal output, soft start, zero clamp, and speed completion signal output
	Torque control (internal)	4 torque parameter switching, single trigger and torque reference arrival signal output
	Advanced features	Online parameter recognition, low frequency suppression, automatic vibration suppression, disturbance observer, and auto-tuning
	RS485	Modbus protocol
Communication function	CANopen	CiA-301 V4.02: CANopen application layer and communication protocol DSP-402 V2.0: drive and motion control sub-protocol
	USB	USB2.0 standard for PC (12Mbps)
Input and output signals	Assignable input signal (Positive/negative logic changeable)	Operating voltage range: DC24V ± 20% Input No.: 4 Input mode: Common collector and common emitter input Input signal: <ul style="list-style-type: none">Servo ON (/S-ON)Manual PI-P control (/P-CON)Positive-overtravel (P-OT), Negative-overtravel(N-OT)Alarm reset (/ALM-RST)Positive external torque limit (/P-CL), Negative external torque limit(/N-CL)Motor direction switching (/SPD-D)Internal speed selection (/SPD-A, /SPD-B)Control mode selection (/C-SEL)Zero clamp (/ZCLAMP)Pulse inhibit (/INHIBIT)Pole detection (P-DET)Gain selection (G-SEL)Pulse multiplier selection (/PSEL)

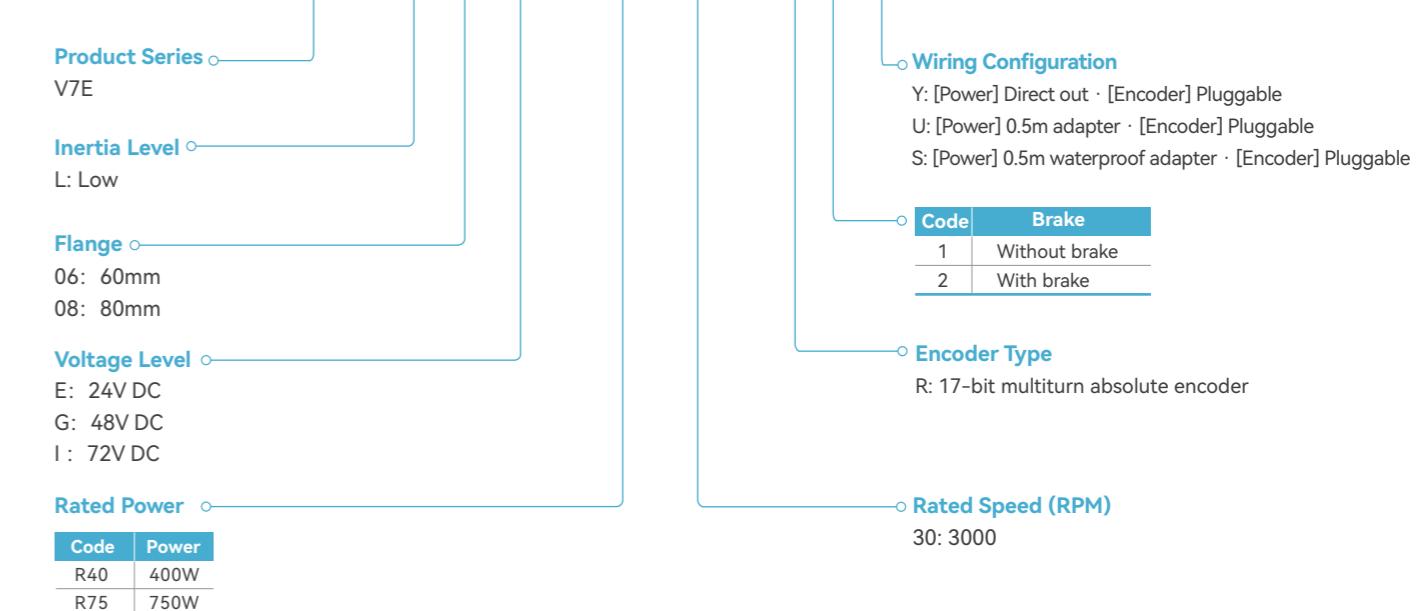
Item	Specification
I/O signal	Assignable output signals (Positive/negative logic changeable) Operating voltage range: 5V~30V DC Output No.: 2 Output mode: Photocoupler (Isolated) Output signal: <ul style="list-style-type: none">Position coincidence (/COIN)Velocity completion(/V-CMP)Rotation detection (/TGON)Servo ready (/S-RDY)Torque limit (/CLT)Velocity limit (/VLT)Brake (/BK)Warning (/WARN)Position near(/NEAR)Pulse input multiplier(/PSEL)Alarm (ALO1, /ALO2, /ALO3)
Pulse input	Pulse pattern Sign + Pulse Train, CW+CCW Pulse Train, 90°-Difference Two-Phase Pulse Input pattern Linear drive, open collector Max. input frequency Differential input: 4Mpps max.; Open collector: 200Kpps max
	Stop method Drive stops under errors, /Servo OF signal and /P-OT & /N-OT Regenerative brake Built-in/external regenerative brake resistor supported Overtravel (OT) prevention P-OT, N-OT, deceleration stop or free stop Protection Overcurrent, overvoltage, undervoltage, overload, regeneration error, encoder disconnection, etc Auxiliary functions Intelligent setting, error history, JOG operation, encoder reset, inertia recognition, FFT analysis, etc Display 3 LED indicators (ERR, RUN, PWR); Nixie tube optional

Drive Wiring Diagram



Servo Motor Naming Rules

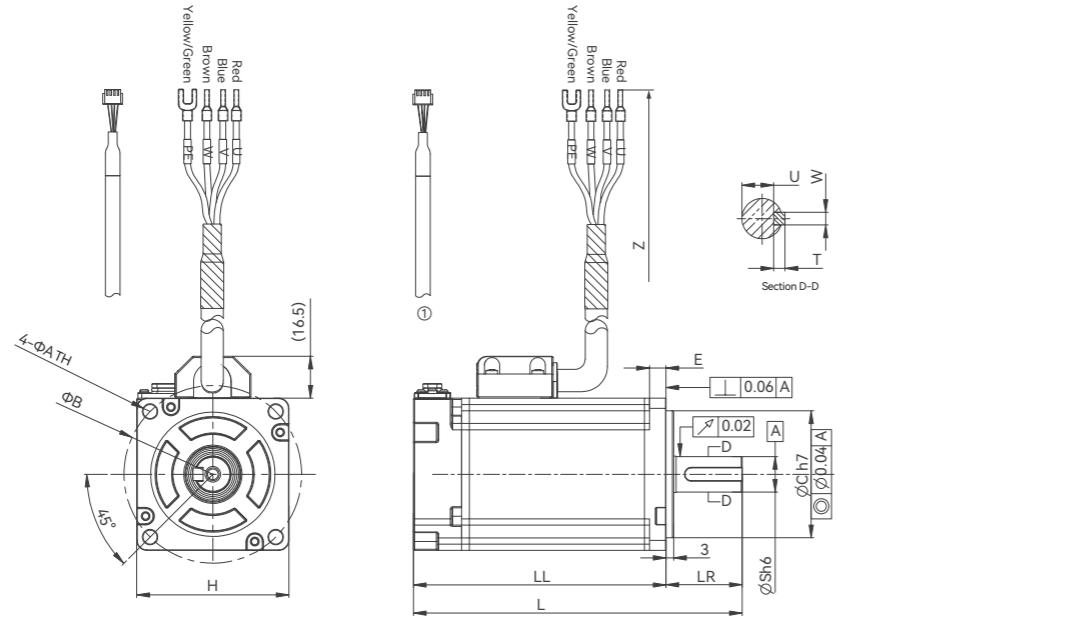
V7E - L 06 G - R40 30 - R 1 K



Servo Motor Mechanical Characteristics

Item	Description
Operating system	Continuous
Oscillation	< 49m/s ² (5G) during operation and < 24.5m/s ² (2.5G) during stop
Insulation resistance	>10MΩ under 48V DC
Operating temperature	Standard: -15°C ~ 40°C; Low-temperature models: -40°C ~ 40°C
Operating humidity	20% ~ 80% (no condensation)
Excitation method	Permanent magnet type
Installation method	Flange
Insulation class	F
Insulation voltage	AC 1500V for 1m (for 200V models)
Storage temperature	-15°C~60°C
Storage humidity	20~80% RH (no condensation)
Protection level	IP67 (axis end excluded)

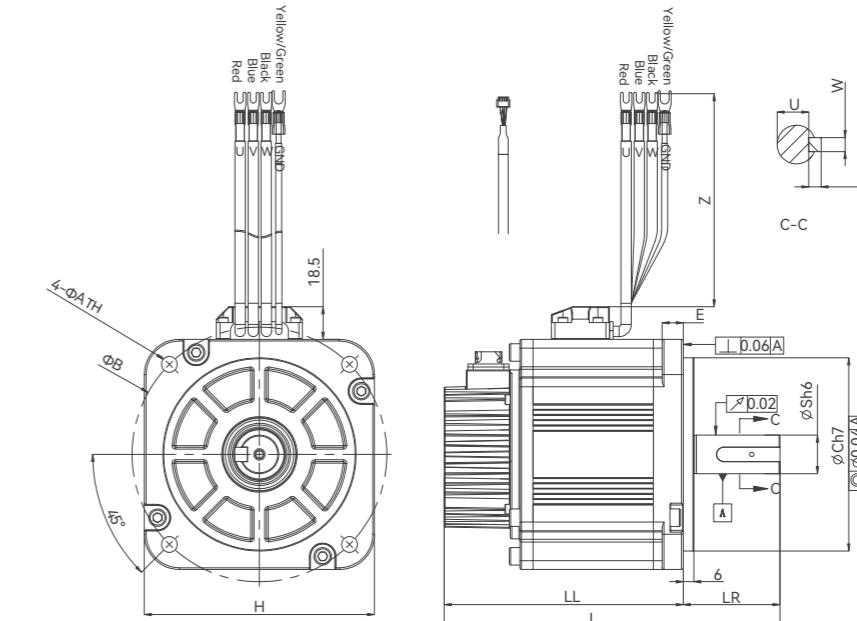
Servo Motor Installation Dimension



Unit: mm

Model	A	B	C	S	E	F	H	L	LL	LR	T	W	U	Z
V7E-L04□-R1030-R1△	4.5	46	30	8	5.5	40		82.5	107.5	30	3	3	6.2	
V7E-L04□-R1030-R2△								108.9	133.9					
V7E-L06□-R2030-R1△	5.5	70	50	14	6.5	60		110.5	80.5	30	5	5	11	1000
V7E-L06□-R2030-R2△								141.5	111.5					
V7E-L06□-R4030-R1△	6.6	90	70	19	8	80		129.5	99.5	35	6	6	15.5	1500
V7E-L06□-R4030-R2△								160.5	130.5					
V7E-L06□-R6030-R1△	6.6	90	70	19	8	80		148.5	118.5	35	6	6	15.5	1500
V7E-L06□-R6030-R2△								179.5	149.5					
V7E-L08□-R7530-R1△	6.6	90	70	19	8	80		147	112	35	6	6	15.5	1500
V7E-L08□-R7530-R2△								179	144					
V7E-L08□-1R030-R1△	6.6	90	70	19	8	80		161	126	35	6	6	15.5	1500
V7E-L08□-1R030-R2△								193	158					
V7E-L08□-1R230-R1△	6.6	90	70	19	8	80		179	144	35	6	6	15.5	1500
V7E-L08□-1R230-R2△								211	176					
V7E-L08□-1R530-R1△	6.6	90	70	19	8	80		179	144	35	6	6	15.5	1500
V7E-L08□-1R530-R2△								211	176					

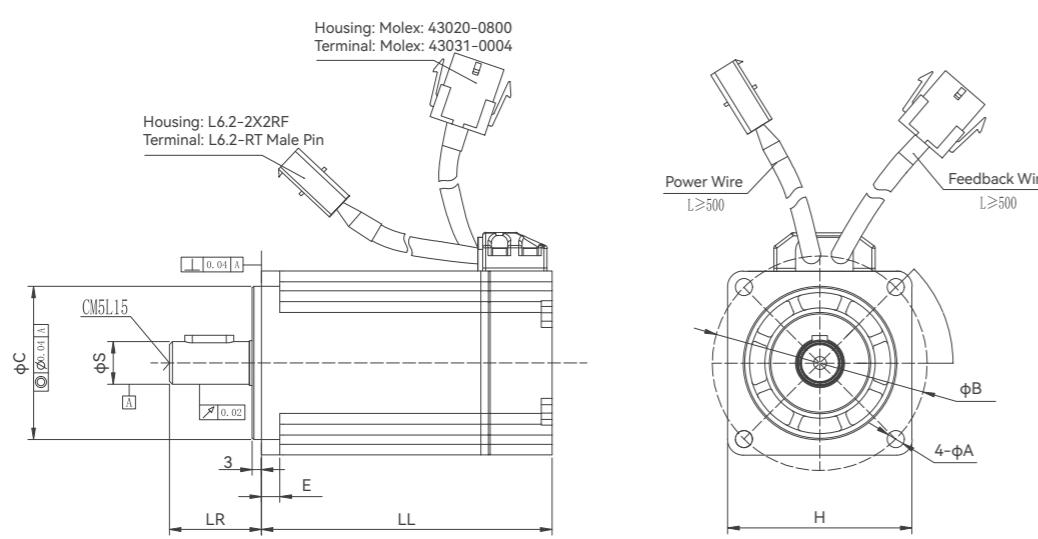
Notes: ① above means the encoder lead style, and the wire length can be 1m, 1.5m, 2.5m, 3.5m, 5.5m;
 □ above means the voltage level, 24V(E) or 48V(G) with the same motor size;
 # above means the encoder type, single-turn absolute (Q) or multi-turn absolute (R) with the same motor size;
 △ above means the power line outlet type U or Y.



Unit: mm

Model	A	B	C	S	E	F	H	L	LL	LR	T	W	U	Z
V7E-M13□-1R530-R1△	9	145	110	22	12	M5↓12	130	191	136	55	7	8	18	1500
V7E-M13□-1R530-R2△								219.2	164.2					
V7E-M13G-2R030-#1△-X	9	145	110	22	12.2	M6*18	130.5	186.5	157.5	55	7	8	18	2000
V7E-M13G-2R030-#2△-X								226.5	197.5					
V7E-M13G-2R520-#1△-X	9	145	110	22	12.2	M6*18	130.5	206.5	177.5	55	7	8	18	2000
V7E-M13G-2R520-#2△-X								226.5	197.5					
V7E-M13G-2R530-#1△-X	9	145	110	22	12.2	M6*18	130.5	206.5	177.5	55	7	8	18	2000
V7E-M13G-2R530-#2△-X								226.5	197.5					
V7E-M13G-3R020-#1△-X	9	145	110	22	12.2	M6*18	130.5	206.5	177.5	55	7	8	18	2000
V7E-M13G-3R020-#2△-X								226.5	197.5					
V7E-M13G-3R030-#1△-X	9	145	110	22	12.2	M6*18	130.5	206.5	177.5	55	7	8	18	2000
V7E-M13G-3R030-#2△-X								206.5	177.5					

Notes: ① above means the encoder lead style, and the wire length can be 1m, 1.5m, 2.5m, 3.5m, 5.5m;
 □ above means the voltage level, 24V(E) or 48V(G) with the same motor size;
 # above means the encoder type, single-turn absolute (Q) or multi-turn absolute (R) with the same motor size;
 △ above means the power line outlet type U or Y.

Shorter model:


Model	A	B	C	S	E	H	LR	LL
V7E-M06G-R2030-#1U-A	5.5	70	50	14	7.5	60	30	52
V7E-M06G-R2030-#2U-A								79
V7E-M06G-R4030-#1U-A								71
V7E-M06G-R4030-#2U-A								98
V7E-M08G-R7530-#1U-A								83.5
V7E-M08G-R7530-#2U-A	6.5	90	70	19	8	80	35	117
V7E-M08G-1R030-#1S-A								95.5
V7E-M08G-1R030-#2S-A								129

Servo Motor Specifications
48V

Model	Rated Power (W)	Rated Voltage (V)	Rated Speed (rpm)	Max. Speed (rpm)	Rated Current (A)	Peak Current (A)	Rated Torque (N.m)	Peak Torque (N.m)	Rotor Inertia (Kg.m ² ×10 ⁻⁴)	Net Weight (Kg)	Brake Activation Current (A)	Brake Activation Time (ms)	Brake Static Torque (N·m)	Encoder Type			
V7E-L06G-R2030-R1△	200	48	3000	4000	5.3	15.9	0.64	1.92	0.18	1.0	△△△△△	△△△△△	△△△△△	Multi-turn 17-bit absolute encoder			
V7E-L06G-R2030-R2△					10.6	31.8	1.27	3.81	0.34	1.4	△△△△△	△△△△△	△△△△△	△△△△△			
V7E-L06G-R4030-R1△					15.8	47.4	1.91	5.73	0.36	1.8	△△△△△	△△△△△	△△△△△	△△△△△			
V7E-L06G-R4030-R2△					19.9	59.7	2.38	7.14	0.51	2.6	△△△△△	△△△△△	△△△△△	△△△△△			
V7E-L06G-R6030-R1△					27.6	82.8	3.18	9.54	1.13	3.3	△△△△△	△△△△△	△△△△△	△△△△△			
V7E-L06G-R6030-R2△					28	84	3.82	11.46	1.45	3.9	△△△△△	△△△△△	△△△△△	△△△△△			
V7E-L08G-R7530-R1△					3400	35	105	4.76	2.0	4.4	△△△△△	△△△△△	△△△△△	△△△△△			
V7E-L08G-R7530-R2△					38.7	116.1	4.8	14.4	2.11	5.1	△△△△△	△△△△△	△△△△△	△△△△△			
V7E-M13G-1R530-R1△					41.93	125.79	41.93	125.79	10.51	7.2	△△△△△	△△△△△	△△△△△	△△△△△			
V7E-M13G-1R530-R2△					49.3	125.79	49.3	125.79	12.65	7.2	0.46	100	16	△△△△△			
V7E-M13G-2R030-#1△-X	2000	48	3000	4000	3000	4000	53.3	106.6	6.4	12.8	10.1	9.6	△△△△△	△△△△△			
V7E-M13G-2R030-#2△-X					2000	2500	61.3	122.6	12	24	17.1	10.4	△△△△△	△△△△△			
V7E-M13G-2R520-#1△-X					3000	4000	66.6	133.2	8	16	17.8	11.1	△△△△△	△△△△△			
V7E-M13G-2R520-#2△-X					3000	4000	79.4	158.8	14.3	28.6	10.1	9.6	△△△△△	△△△△△			
V7E-M13G-2R530-#1△-X					3000	4000	79.5	159	9.55	19.1	10.8	10.3	△△△△△	△△△△△			
V7E-M13G-2R530-#2△-X					3000	4000	79.5	159	9.55	19.1	17.1	11.2	△△△△△	△△△△△			
V7E-M13G-3R020-#1△-X	2000	48	3000	4000	2000	2700	79.4	158.8	14.3	28.6	17.8	11.9	△△△△△	△△△△△			
V7E-M13G-3R020-#2△-X					2000	2700	79.4	158.8	14.3	28.6	17.8	11.9	△△△△△	△△△△△			
V7E-M13G-3R030-#1△-X					3000	4000	79.5	159	9.55	19.1	14.1	10.4	△△△△△	△△△△△			
V7E-M13G-3R030-#2△-X					3000	4000	79.5	159	9.55	19.1	14.8	11.1	△△△△△	△△△△△			
Shorter Model					V7E-M06G-R2030-#1U-A	200	48	3000	3800	6	19	0.64	1.92	0.25	0.65	△△△△△	△△△△△
					V7E-M06G-R2030-#2U-A	200			3700	11	35	1.28	3.84	0.27	1.05	△△△△△	△△△△△
					V7E-M06G-R4030-#1U-A	400			3800	19.5	60	2.39	7.17	0.56	1.2	△△△△△	△△△△△
					V7E-M06G-R4030-#2U-A	400			3800	19.5	60	2.39	7.17	0.58	1.6	△△△△△	△△△△△
					V7E-M08G-R7530-#1U-A	750			3800	28	85	3.18	9.55	1.35	1.95	△△△△△	△△△△△
					V7E-M08G-R7530-#2U-A	750			3800	28	85	3.18	9.55	1.45	2.75	△△△△△	△△△△△
					V7E-M0BG-1R030-#1S-A	1000			3800	28	85	3.18	9.55	1.65	2.45	△△△△△	△△△△△
					V7E-M0BG-1R030-#2S-A	1000			3800	28	85	3.18	9.55	1.75	3.3	△△△△△	△△△△△

Note: # above means 17-bit single-turn absolute encoder (Q) or 17-bit multi-turn absolute encoder (R);

△ above means the motor outlet type U or Y.

24V

Model	Rated Power (W)	Rated Voltage (V)	Rated Speed (rpm)	Max. Speed (rpm)	Rated Current (A)	Peak Current (A)	Rated Torque (N.m)	Peak Torque (N.m)	Rotor Inertia (Kg.m ² ×10 ⁻⁴)	Net Weight (Kg)	Brake Activation Current (A)	Brake Activation Time (ms)	Brake Static Torque (N·m)	Encoder Type
V7E-L06E-R4030-R1△	400	24	3000	4000	21.2	63.6	1.27	3.81	0.34	1.4	△△△△△	△△△△△	△△△△△	Multi-turn 17-bit absolute encoder
V7E-L06E-R4030-R2△					30	90	1.91	5.73	0.36	1.8	△△△△△	△△△△△	△△△△△	△△△△△
V7E-L06E-R6030-R1△					36.7	110.1	2.38	7.14	0.51					

Encoder Cables

VE04-L0XX-WSNF		V7E 60/80 Single-turn encoder cable
VE06-L0XX-WSDF		V7E 60/80 Multi-turn encoder cable
VE04-L0XX-WANF		V7E 130 Single-turn encoder cable
VE06-L0XX-WADF		V7E 130 Multi-turn encoder cable
VE04-L0XX-WMNL		V7E-YK(A) Single-turn encoder cable
VE06-L0XX-WMDL		V7E-YK(A) Multi-turn encoder cable

Note: For flexible cables, change "ForL" to "H" at the end.

Power Cables (With U-adapter)

VM030-LXXX-DTF		V7E 24V/48V 40 flange without brake
VM030-LXXX-DBTF		V7E 24V/48V 40 flange with brake
VM150-LXXX-TTF		V7E 24V/48V 60 flange without brake
VM150-LXXX-TBTF		V7E 24V/48V 60 flange with brake

VM200-LXXX-TTF		V7E 24V/48V 60 flange without brake
VM200-LXXX-TBTF		V7E 24V/48V 60/80 flange with brake
VM250-LXXX-TTF		V7E 24V/48V 60/80 flange without brake
VM250-LXXX-TBTF		V7E 24V/48V 60/80 flange with brake

Note: For flexible cables, change "ForL" to "H" at the end.

Power Cables (With S-adapter)

VM030-LXXX-QTF		V7E 24V/48V 40 flange without brake
VM030-LXXX-QBTF		V7E 24V/48V 40 flange with brake
VM150-LXXX-PTF		V7E 24V/48V 60 flange without brake
VM200-LXXX-YBTH		V7E 24V/48V 60 flange with brake
VM250-LXXX-YTH		V7E 24V/48V 60/80 flange without brake
VM400-LXXX-PTF		V7E 24V/48V 80mm flange without brake

Note: For flexible cables, change "ForL" to "H" at the end.

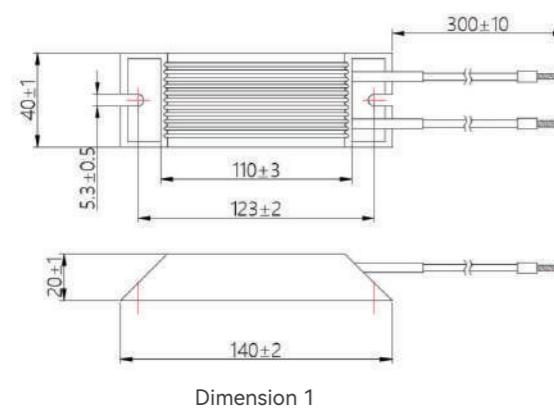
Brake Resistor

The resistance and power values listed in the table are validated for common inertial loads and intermittent braking applications.

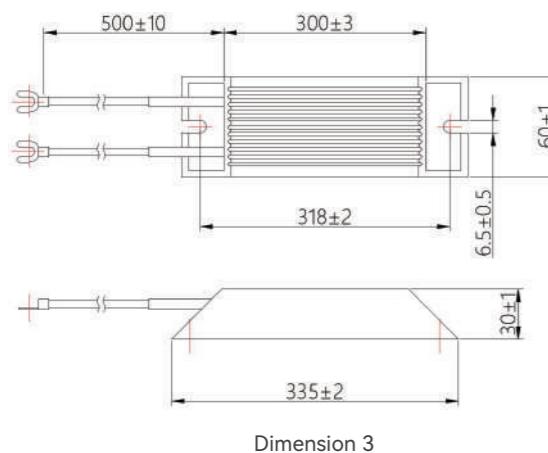
For demanding conditions — such as high-inertia systems or prolonged frequent braking — please recalculate and adjust the braking resistor specifications according to your drive model and braking unit ratings.

Wiring guidance:

Connect the external regenerative resistor between the RB+ and RB- terminals, as shown in the diagram on the right.

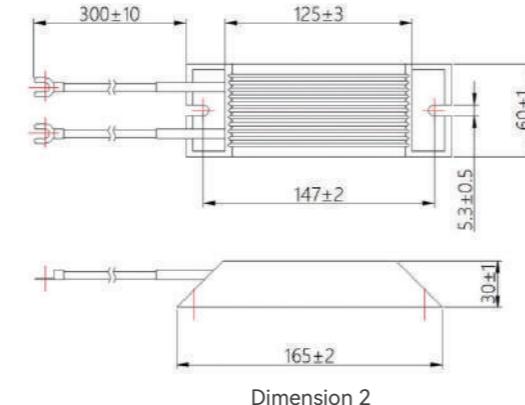
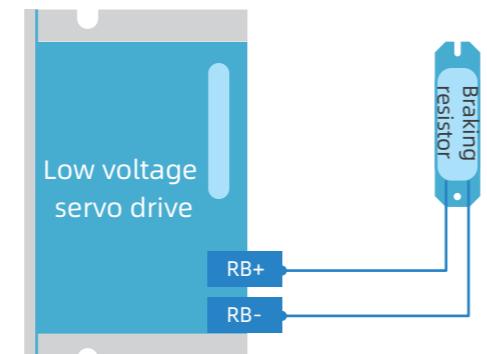


Dimension 1



Dimension 3

Motor Power (kW)	Installation	Resistance (Ω)	Resistor Power (W)
200-400W	Dimension 1	10	100
600-750W	Dimension 1	5	100
1000-1500W	Dimension 2	5	200
2000-3000W	Dimension 3	0.8	700



Profinet to CAN Gateway

Introduction

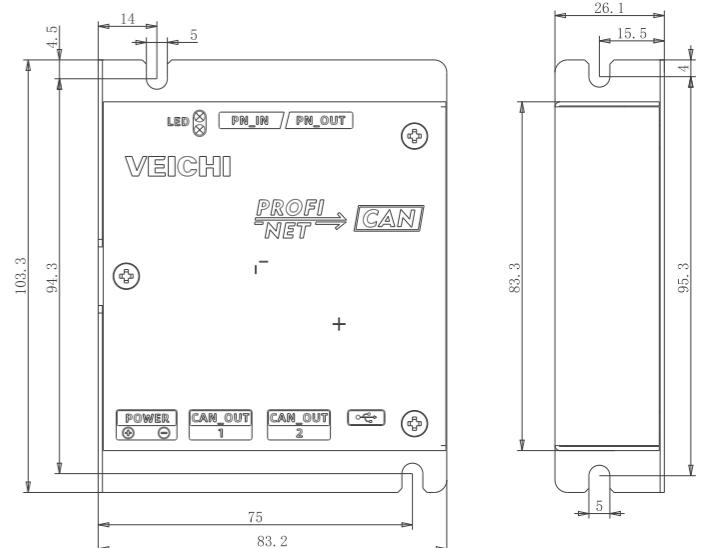
Bridge: Converts Profinet to CANopen
Scale: Up to 16 CAN nodes (rate/distance dependent)
Compatible: All VEICHI CAN products
Communicate: PDO & SDO supported

Dimension

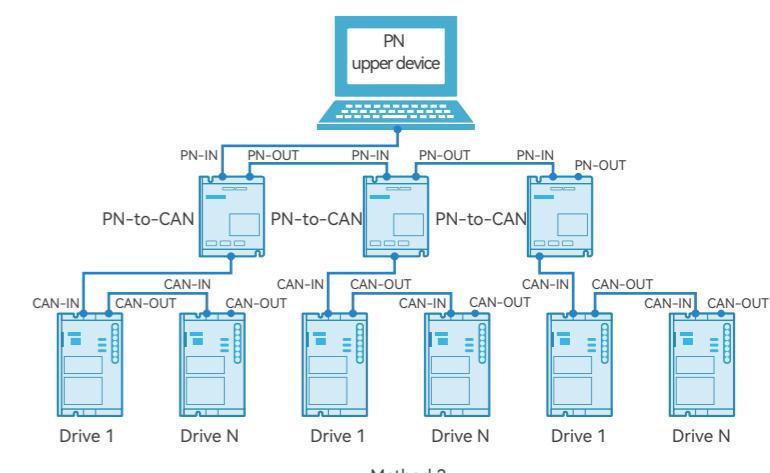
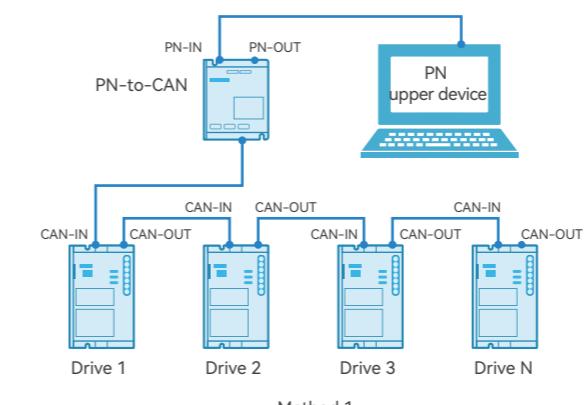


Specifications

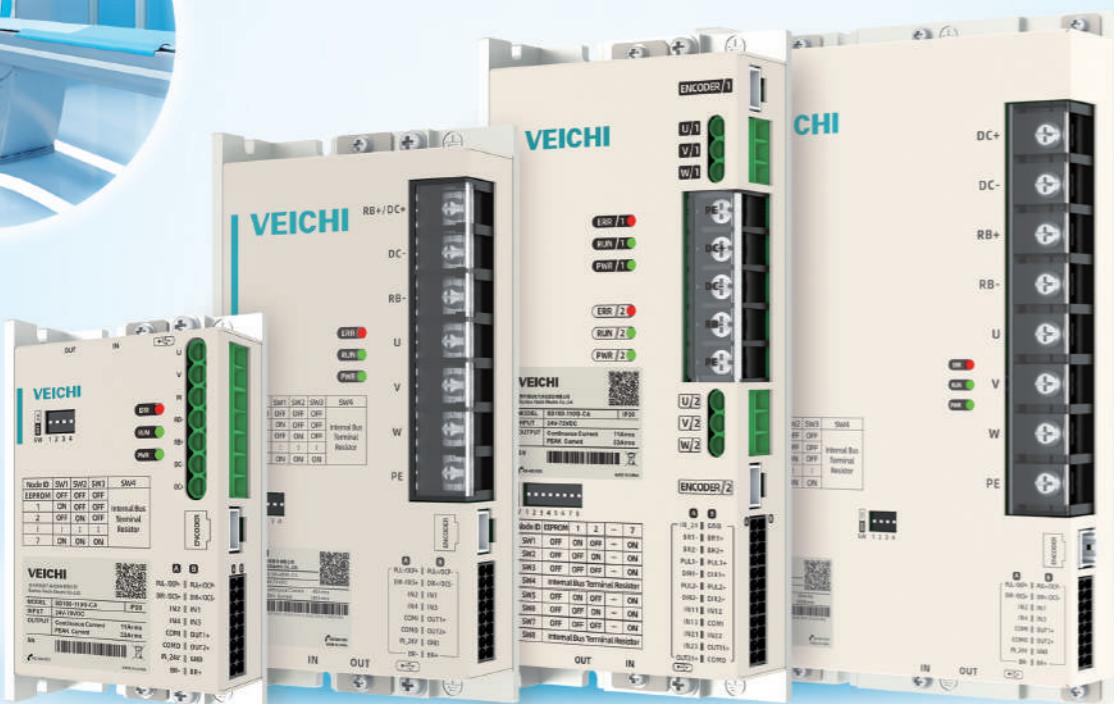
Power: DC24V / DC15V (directly via SD100 Ethernet)
Configuration: Host-software with configurable and flexible mapping
Design: Status LEDs + Type-C upgrade port
Model: SD100-PN-CA



Wiring



Application



SD100 Series
Low-voltage Servo Drive

Logistics sorting lines



R&D and Production

R&D and technology platform

- Consolidating a dynamic force of top-tier professionals and technical experts in domestic industrial control, our R&D team represents 37.16% of our workforce, with 74.62% of our technical staff boasting bachelor's degrees or higher.
- Guided by philosophy of "Innovate with technology and strive for excellence," VEICHI is deeply customer-centric by providing stable and reliable products and technologies designed to the evolving needs of our clients.
- Investing 10% of our revenue into R&D, VEICHI has crafted advanced labs for EMC, safety, reliability, and performance testing to ensure product quality.
- In-depth cooperation with many famous universities and research institutions in China has been established and "Jiangsu Postdoctoral Innovation Practice Base" and "Jiangsu Postgraduate Workstation" are set up successively.

Intelligent automation production

- Digitally driven from inception to production, VEICHI boasts an annual capacity of 914,600 units with streamlined efficiency.
- 5 imported SMT placement lines, 5 automated coating lines, 4 DIP test lines, a robotic arm-equipped automated line, and 12 production lines are equipped with the latest intelligent manufacturing tools.
- All of the product checks are carried out automatically by the management mode of 3 (tri-inspection system)+ 1(proportion-al inspection) during the whole process for standard performance.
- Three major production management system WMS, MES and ERP together ensure that the unique code of each product is traceable in the system to manage product quality.

