

SD100 Series Low-voltage Servo System



Stock code : 688698

About us

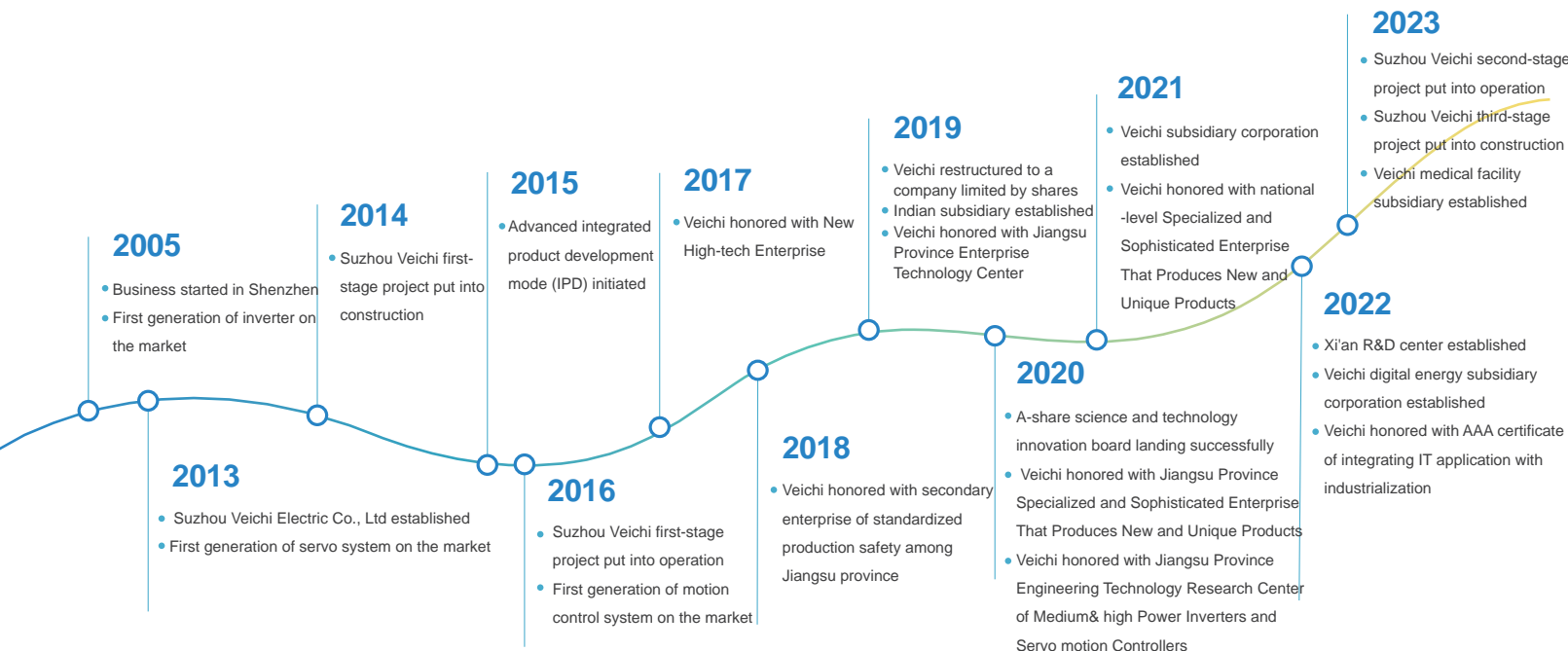


Veichi (stock code: 688698) has always committed to electric drive and industrial control since its foundation. As an all-round company engaged in R & D, manufacturing and sales on high-tech industrial automation products, Veichi has been identified with several honorary titles such as Jiangsu provincial-level Enterprise Technology Center, Jiangsu Private-own Technical Enterprise, Specialized and sophisticated enterprises that produce new and unique products, Jiangsu Engineering Research Center, Jiangsu New and High-tech Enterprise and Suzhou city-level Gazelle Company (High Growth Enterprise) and has obtained the highest level of enterprise credit. Through years of independent research and development, Veichi now has authorized patents totaling 148 by the end of 12, 2022, and among them 36 are for invention. Having established R & D center and manufacturing bases in Suzhou, Shenzhen and Xi'an, added with the wholly-owned subsidiary in India, Veichi now are dealing with customers from several nations and regions and has the full capability to provide safe, competitive and trustworthy products and services to customers from the larger world.

Veichi provides various products including inverters from 0.4kW to 5,600kW, servo systems from 50W to 200kW, motion controllers, PLC and HMI, which are applied in all sorts of fields occasions like lifting, mining, rail traffic, machine tools, compressors, plastic equipment, photo-voltaic pumping, construction, robots/mechanical arms, printing and packaging, chemical fibers for textile use, metallurgy, municipal works, petrol work and chemical engineering.

18 service stations and 182 contracted distributors cover 31 provinces on China mainland and Hong Kong, Macao and Taiwan regions, which guarantees a massive and efficient network for sales and services for our customers.

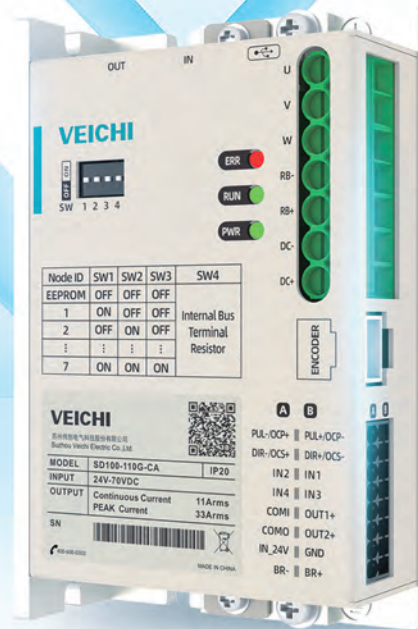
Veichi will continue to abide by the operation philosophy, that is, guided by market demand and driven by technical innovation, enlarge and enhance its core business like inverters, servo systems, control systems and SToTs. And Veichi will always be hard at providing quality products and services for customers and further make contributions to the development of electric drives and industrial controls.



SD100 Series Low Voltage Servo Drive

SD100 series low-voltage servo system adopts international leading algorithm platform, which can support single-axis/dual-axis/multi-axis motor algorithm control, its compact size, rich function, flexible and easy to use, stable and reliable, widely used, with high performance, high precision, high speed and other performance characteristics. It can be widely used in various mobile robots (A M R, AGV), service robots, special robots, logistics warehousing and sorting, medical equipment and other occasions that have certain requirements on voltage and volume.

For special applications, such as low temperature, communication, installation and other special needs, the company can provide customized versions of low-voltage servo, such as, all-in-one products, integrated machine solutions, etc., for the convenience of users.



Input wide voltage:
DC 24-72

Multiple control modes:
Position/Speed/Torque
Position-Speed/Position-Torque
Speed-Torque / Position-Speed-Torque

Internal 24V holding
brake power supply



Dual power supply:
24V control power can be
controlled independently

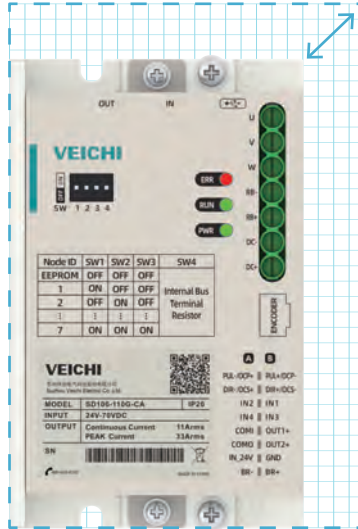
Input pulse type:
Differential input,
open collector

External regenerative braking
resistor can be connected

Product Features

Ultimate Structure

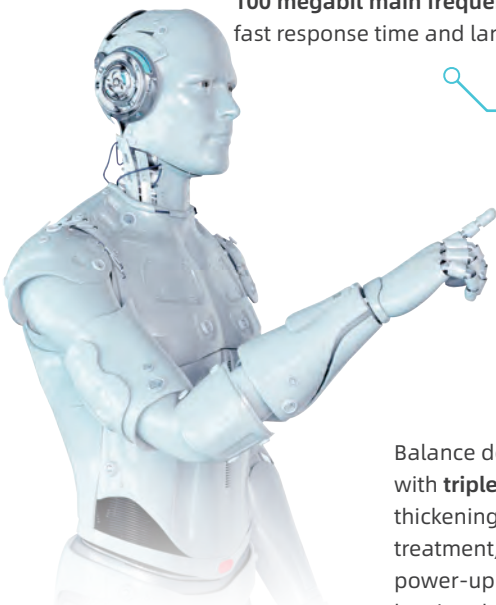
High power density design, compact and exquisite in size,
Reduce the installation area to meet the limited space.



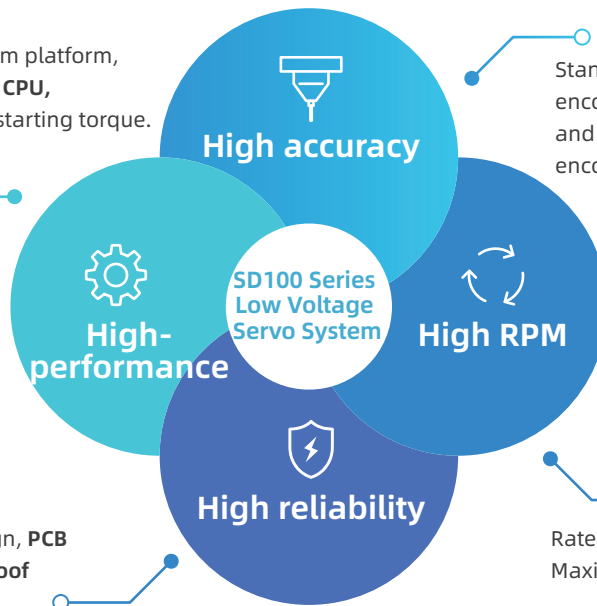
Compared with market products, the volume is reduced by 20%~50%

20%
~
50%

Ultra-High Standard



International leading algorithm platform, **100 megabit main frequency CPU**, fast response time and large starting torque.



Standard **17bit** absolute encoder, optional **23bit** and **24bit** serial communication encoder.

Balance design, **PCB** with **triple-proof** thickening treatment, **24hrs** power-up test before leaving the factory.

Rated speed 3000rpm
Maximum speed 4000+rpm

Unique Design

Dual Axis Drive:

1+1 > 2

Dual axis output
Achieve 1+1>2 benefits

Debugging Interface:

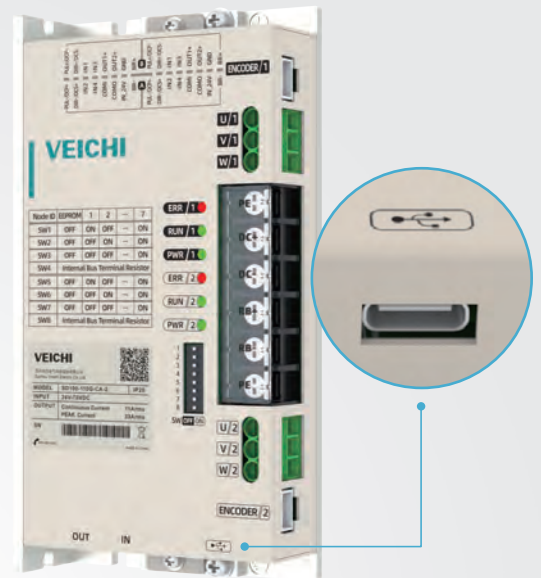
Type-C

Type-C interface
Say goodbye to cumbersome
"special cables"

Efficient Heat Dissipation:

50°C

Unique heat dissipation process
Can be used in 50°C high
temperature environment

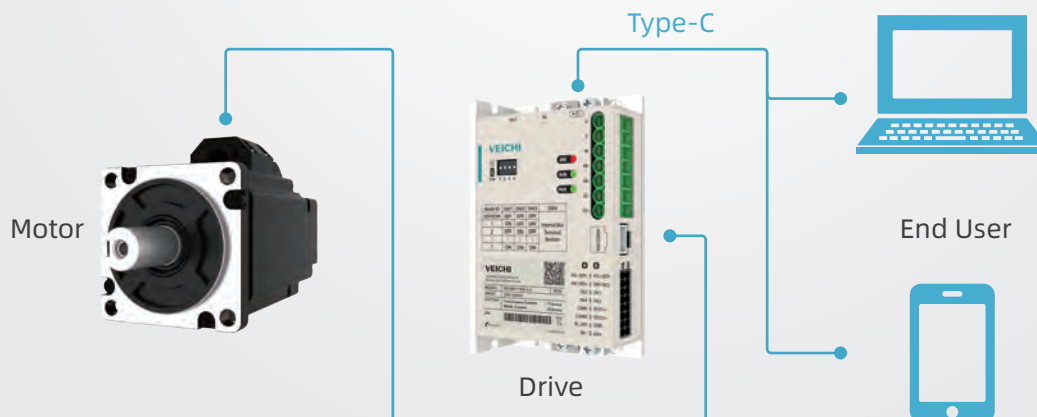


Convenient and Easy to Use

Easy wiring: European-style and quick plug-in terminals are used to reduce wiring time.

Easy to debug: Standard Type-C interface, easy to use upper computer software; optional Bluetooth module, APP wireless debugging.

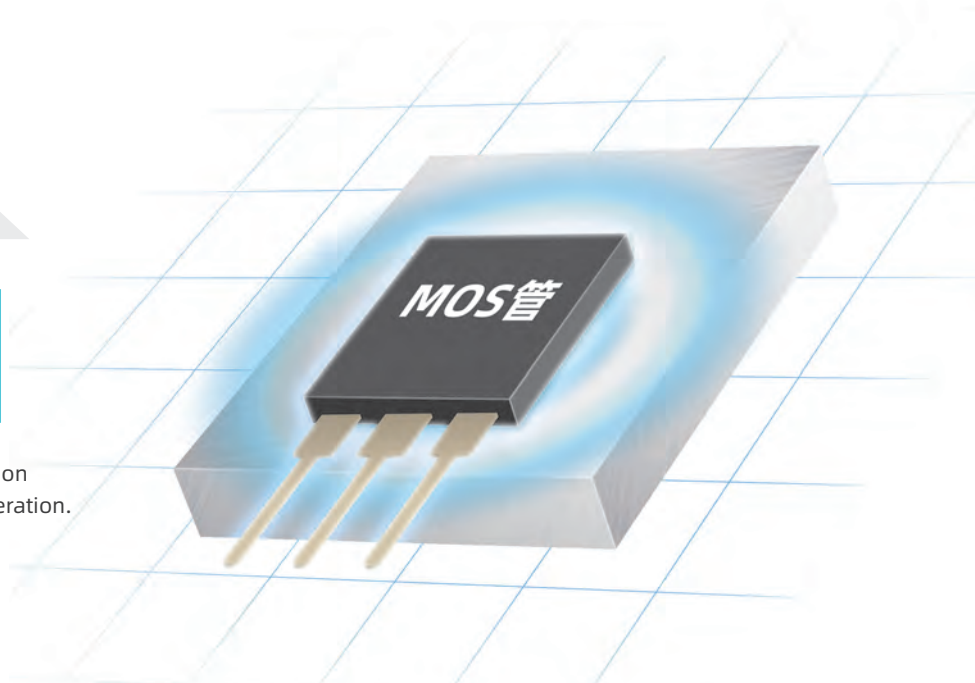
Easy to install: Both front and side can be installed, suitable for different installation scenarios.



Super Overload Capacity

With **3 times** stronger overload power device

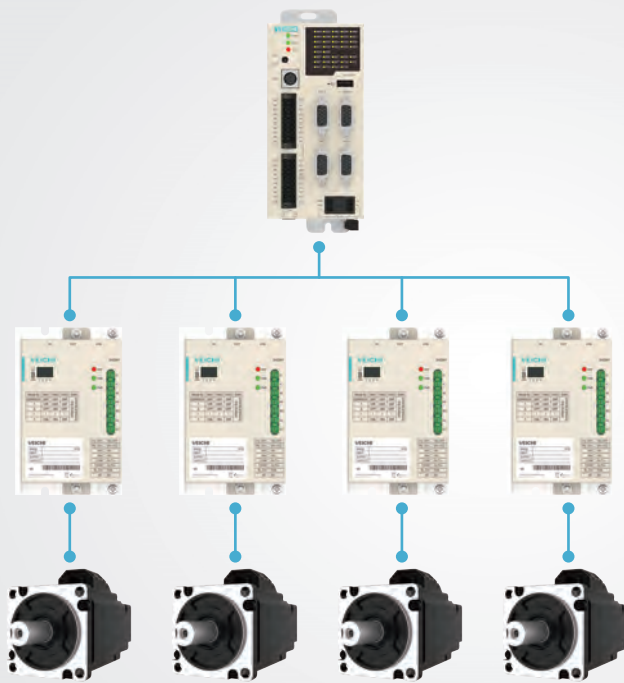
Combined with the unique heat dissipation process, it ensures efficient overload operation.



Certification Design

The products are designed in accordance with **CE**, **UL**, and **ROSH** standards to connect with international markets. Equipped with **STO** safety protection module to make the product more reliable.

Control Layer
Drive Layer
Execution Layer



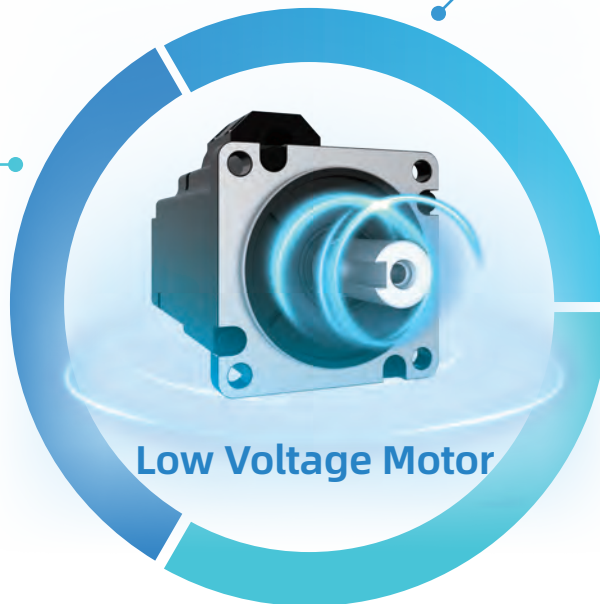
Synchronous Drive

Using the principle of bus interaction and external circuit interaction, the synchronization of start-up and shutdown is double guaranteed.

In the case of a fault, the above mechanism is used to synchronize the braking stop to ensure the safety of the equipment.

High Performance
3 times strong overload
design,

low noise development, new
electromagnetic design, high
output torque.



Low Voltage Motor

Short Frame

At least **10% shorter** in size than
common motors in the market with
the same performance specifications.

Highly Reliability

Low temperature rise design, easy to
deal with high temperature applications.
Equipped with magnetic encoder for
high vibration environment.

**Standard direct line out, no adapter
required.**

Enriched Bus

Support CANopen, EtherCAT, Profinet, Modbus-RTU
and other bus communication protocols to enrich the
user's choice.



Energy Saving Drive

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

Standby " low power consumption " application mode, can
save energy and reduce emissions to improve the battery
life by more than 10%.

Energy efficiency
improved
10%
or more

Energy saving and emission
reduction to improve
10%
or more of the battery range

Drive Model Description

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: 24-70V

L: Low temperature model

Number of output axes
None: Single axis
2: Dual axis

Encoder type
A: Serial encoder

Product Type
P: Pulse type
C: CANopen bus type
E: EtherCAT bus type
With Profinet bus

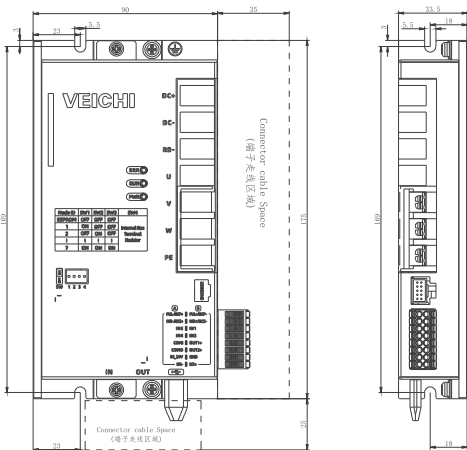
Drive Specification



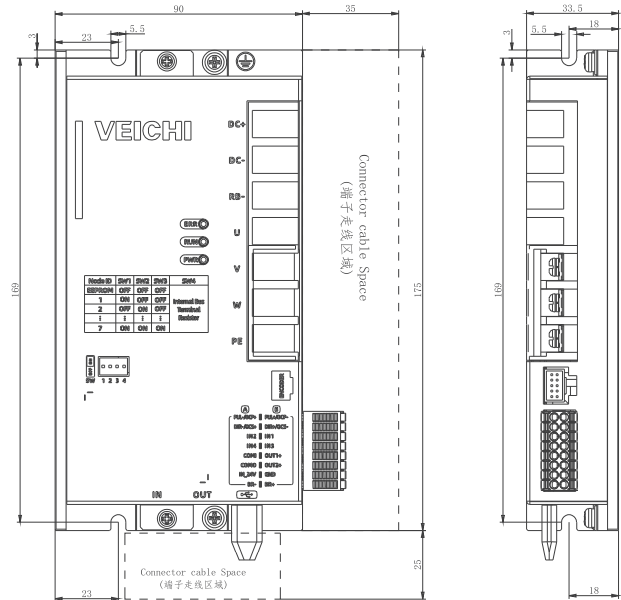
Model No.	Input	Output (RMS)	
	DC voltage (V)	Rated current (A)	Instantaneous current (A)
SD100-110G	DC 24-72V	14	42
SD100-210G	DC 24-72V	21	63
SD100-300G	DC 24-72V	30	90
SD100-400G	DC 24-72V	40	120
SD100-600G	DC 24-72V	60	180
SD100-800G	DC 24-72V	80	240

Drive Appearance and Installation Dimensions

SD100-110G
SD100-210G
Dimension ▾



SD100-300G
SD100-400G
Dimension >

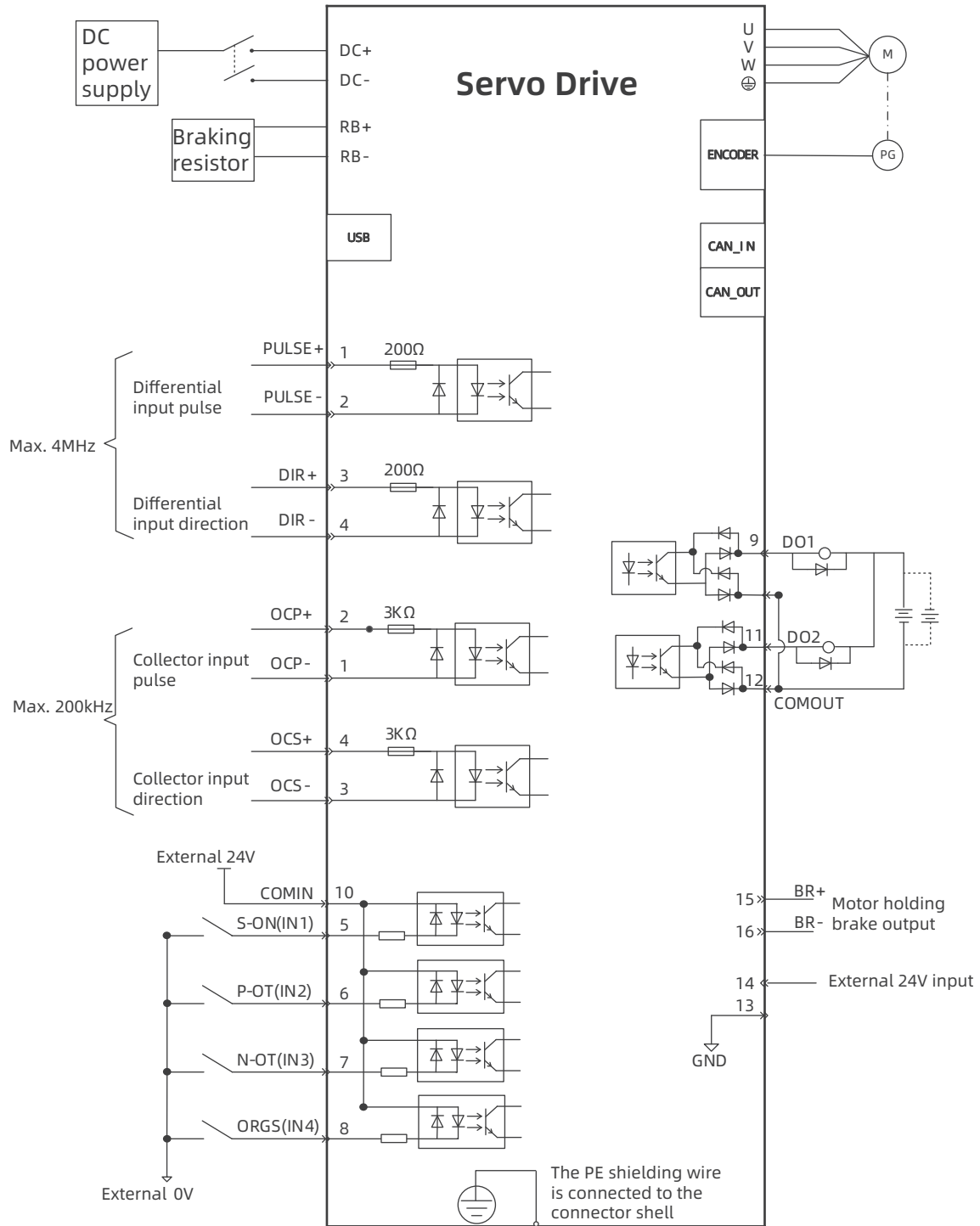


Drive Technical Specification

Item		Specification	
		MOS, PWM control, sine wave current drive mode	
Feedback	When combining rotary servo motor	Absolute encoder: 17-bit absolute encoder	
Environmental condition	Ambient temperature	-5°C~55°C (When 55°C~60°C, the rated value can be reduced for use)	Low temperature model: (Condensation free)
	Storage temperature	-20°C~85°C	Low temperature model: -40°C~-5°C
	Operating humidity	Below 95%RH (no freezing, no condensation)	
	Storage humidity	Below 95%RH (no freezing, no condensation)	
	Vibration resistance	4.9m/s ²	
	Impact resistance	19.6m/s ²	
	Protection level	IP20	
	Cleanliness	No corrosive gas or combustible gas No water, oil, chemical splash Environment with less dust, dirt, salt and metal powder	
	Altitude	Less than 1000m (when 1000m ~ 2000m, it can be reduced to use)	
Other	No electrostatic interference, strong electric field, strong magnetic sound, radiation, etc.		
Applicable standards	IEC61800-2/-3/-5、 IEC61000-2/-3/-4		
Installation type	Side installation/base installation		
Performance	Speed control range	1:5000 (the lower limit of the speed control range is the value under the condition of not stopping at rated torque load)	
	Speed fluctuation rate	Load fluctuation	Below ± 0.01% of rated speed (load fluctuation: 0%~100%)
		Voltage fluctuation	Rated speed 0% (rated voltage ± 10%)
		Temperature fluctuation	Rated speed below ± 0.1% (temperature fluctuation: 25 ± 25 °C)
Torque control accuracy (reproducibility)	±1%		
Control function	Position control function	Electronic gear ratio setting, pulse deviation clearing, command smoothing setting, internal PR mode, positioning proximity, positioning completion output, feed-forward compensation	
	Speed control function (internal)	4-segment internal speed given switching, rotation detection signal output, soft start, zero speed clamp, speed consistent output	
	Torque control function (internal)	4 types of internal digital given switching, single trigger, target torque reaching output	
	Advanced features	Online parameter recognition, low frequency suppression, automatic vibration suppression, disturbance observer, adjustment-free function	
RS485	Modbus protocol		

Item		Specification
Communication function	CAN	Supports CIA-301 V4.02: CANopen application layer and communication protocol DSP-402 V2.0: Drive and motion control sub-protocol
	USB	Upper computer, standard configuration, complying with USB2.0 specification (12Mbps)
Input and output signals	Assignable input signals	<p>Operating voltage range: DC24V ± 20%</p> <p>Input points: 4 points</p> <p>Input mode: common collector input, common emitter input</p> <p>Input signal:</p> <ul style="list-style-type: none"> • Servo ON (/S-ON) • P-action (/P-CON) • Forward drive disable (P-OT), Reverse drive disable (N-OT) • Alarm reset (/ALM-RST) • Forward-side external torque limiting (/P-CL), reverse-side external torque limiting (/N-CL) • Motor rotation direction switching (/SPD-D) signal • Internal set speed switching (/SPD-A, /SPD-B) • Control mode switching (/C-SEL) • Zero position fixing (/ZCLAMP) • Command pulse inhibit (/INHIBIT) • Magnetic pole detection input (/P-DET) signal • Gain switching (/G-SEL) • Command pulse input multiplier switching (/PSEL) <p>Assignable signals and change of positive/negative logic</p>
	Assignable output signals	<p>Operating voltage range: DC5V ~ DC30V</p> <p>Output points: 2 points</p> <p>Output mode: photo-coupler output (isolated)</p> <p>Output signal:</p> <ul style="list-style-type: none"> • Positioning completion (/COIN) • Speed consistent detection (/V-CMP) • Rotation detection (/TGON) • Servo ready (/S-RDY) • Torque limit detection (/CLT) • Speed limit detection (/VLT) • Brake (/BK) • Warning (/WARN) • Positioning Near (/NEAR) • Command pulse input multiplier switching output (/PSELA) • Alarm codes (ALO1, ALO2, ALO3) <p>Assignable signals and change positive/negative logic</p>
Command pulse	Command pulse pattern	Includes three patterns of commands: "pulse + direction", "CW + CCW pulse sequence", and "A and B phase orthogonal pulse"
	Input pattern	Linear drive, open collector
	Max. input frequency	Differential inputs: high speed maximum 4Mpps; Open collector: maximum 200Kpps
Shutdown control		Action during servo alarm, servo OFF, overtravel (OT)
Regeneration treatment		Function built-in
Overtravel (OT) prevention		P-OT, N-OT deceleration stop or free running stop
Protective function		Overcurrent, overvoltage, undervoltage, overload, regeneration fault, encoder disconnection, etc
Auxiliary functions		Intelligent setting, alarm recording, JOG operation, encoder reset, inertia recognition, FFT analysis, etc
Display function		3 LED lights (ERR, RUN, PWR)
Regeneration treatment		External braking resistor

Drive Wiring Diagram



Servo Motor Model Description

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

Product series

V7E

Inertia level

L: Low inertia

Installation flange

06: 60mm

08: 80mm

Voltage level

E: 24V DC

G: 48V DC

I: 72V DC

Rated power

Mark	Power
R40	400W
R75	750W

Outgoing cable method

Vacancy: 200-750W 1m direct outgoing
1000-1500W 1.5m direct outgoing cable
K: 0.5m lead with pair of plugs, connected to drive with extension cable

Mark	Brake type
1	Non-holding brake
2	Holding brake

1 Non-holding brake

2 Holding brake

Encoder type

Q: 17-bit single-turn absolute magnetic encoder

R: 17-bit multiturn absolute encoder

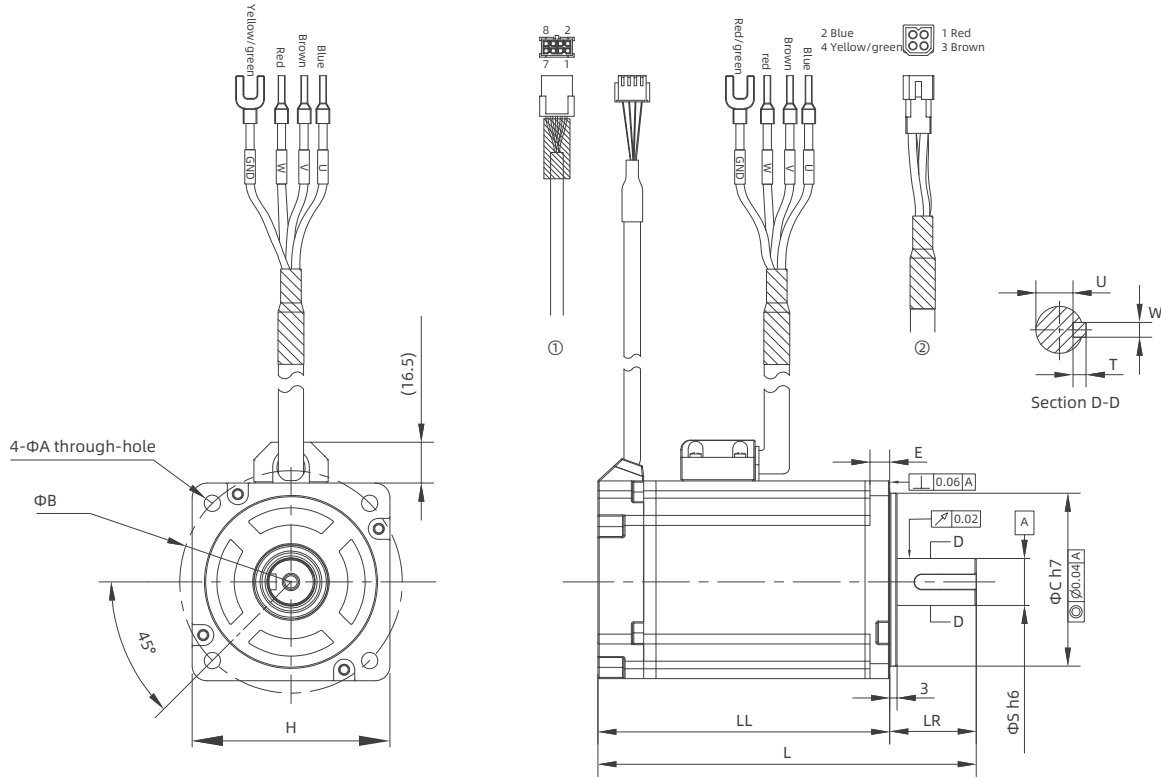
Rated speed (RPM)

30: 3000

Specifications of Motor Mechanical Characteristics

Item	Description
Operating system	Continuous
Vibration level	Below 49m/s ² (5G) when rotating, below 24.5m/s ² (2.5G) when stopping
Insulation resistance	Direct current (DC) 48V, >10MΩ
Operating ambient temperature	0°C ~ 40°C
Operating ambient humidity	20% ~ 80% (no condensation)
Excitation method	Permanent magnet type
Installation method	Flange
Insulation grade	F grade
Insulation voltage	AC1500V 1min (200V level)
Operating temperature	-15°C~40°C
Operating humidity	20 to 90% RH(no condensation)
Protection level	IP67 (except for shaft end)

Servo Motor Installation Dimension



Unit: mm

Motor Model No.	A	B	C	S	E	F	H	L	LL	LR	T	W	U
V7E-L06G-R2030-#1	5.5	70	50	14	6.5	M5 depth 10	60	110.5	80.5	30	5	5	11
V7E-L06G-R2030-#2								141.5	111.5				
V7E-L06□-R4030-#1								129.5	99.5				
V7E-L06□-R4030-#2								160.5	130.5				
V7E-L06□-R6030-#1								148.5	118.5				
V7E-L06□-R6030-#2								179.5	149.5				
V7E-L08□-R7530-#1	6.6	90	70	19	8	M5 depth 10	80	147	112	35	6	6	15.5
V7E-L08□-R7530-#2								179	144				
V7E-L08G-1R030-#1								161	126				
V7E-L08G-1R030-#2								193	158				
V7E-L08G-1R230-#1								172	137				
V7E-L08G-1R230-#2								204	169				
V7E-L08G-1R530-#1								187	152				
V7E-L08G-1R530-#2								219	184				

Notes: the "#" character in the above motor model number represents the encoder type, which can be single-turn absolute (Q) or multi-turn absolute (R), and the corresponding motor dimension is the same.

Motor parameters table

48V

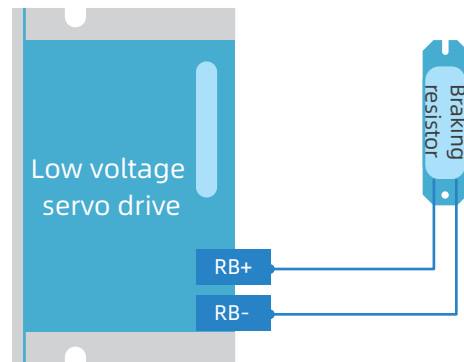
Motor Model No.	Rated power (W)	Rated voltage (V)	Rated speed (rpm)	Max. speed (rpm)	Rated current (A)	Peak current (A)	Rated torque (N.m)	Peak torque (N.m)	Rotor inertia (Kg.m ² ×10 ⁻⁴)	Motor net weight (Kg)	Electromagnetic brake suction current(A)	Electromagnetic brake suction time (ms)	Electromagnetic brake static torque (N.m)	Feedback element	
V7E-L06G-R2030-Q1	200	48	3000	4000	5.3	15.9	0.64	1.92	0.18	1.0				Single-turn 17bit absolute value	
V7E-L06G-R2030-Q2									0.20	1.3	0.42	60	1.5		
V7E-L06G-R4030-Q1	400				10.6	31.8	1.27	3.81	0.34	1.4					
V7E-L06G-R4030-Q2									0.36	1.8	0.42	60	1.5		
V7E-L06G-R6030-Q1	600				15.8	47.4	1.91	5.73	0.51	1.8					
V7E-L06G-R6030-Q2									0.53	2.1	0.42	60	1.5		
V7E-L08G-R7530-Q1	750				19.9	59.7	2.38	7.14	1.02	2.6					
V7E-L08G-R7530-Q2									1.13	3.3	0.44	100	3.8		
V7E-L08G-1R030-Q1	1000				28.3	84.9	3.18	9.54	1.34	3.2					
V7E-L08G-1R030-Q2									1.45	3.9	0.44	100	3.8		
V7E-L08G-1R230-Q1	1200				33.9	101.7	3.82	11.46	1.63	3.8					
V7E-L08G-1R230-Q2									1.74	4.5	0.44	100	3.8		
V7E-L08G-1R530-Q1	1500	39.5	118.5	4.76	14.28	1.94	4.4								
V7E-L08G-1R530-Q2						2.05	5.1	0.44	100	3.8					

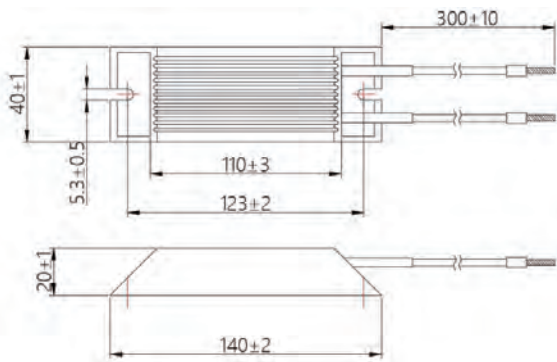
24V

Motor Model No.	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)	Motor net weight (Kg)	Electromagnetic brake suction current(A)	Electromagnetic brake suction time (ms)	Electromagnetic brake static torque (N.m)	Feedback element	
V7E-L06E-R4030-Q1	400	24	3000	4000	21.2	63.6	1.27	3.81	0.34	1.4				Single-turn 17bit absolute value	
V7E-L06E-R4030-Q2									0.36	1.8	0.42	60	1.5		
V7E-L06E-R6030-Q1	600				31.6	94.8	1.91	5.73	0.51	1.8					
V7E-L06E-R6030-Q2									0.53	2.1	0.42	60	1.5		
V7E-L08E-R7530-Q1	750				38	114	2.38	7.14	1.02	2.6					
V7E-L08E-R7530-Q2									1.13	3.3	0.44	100	3.8		

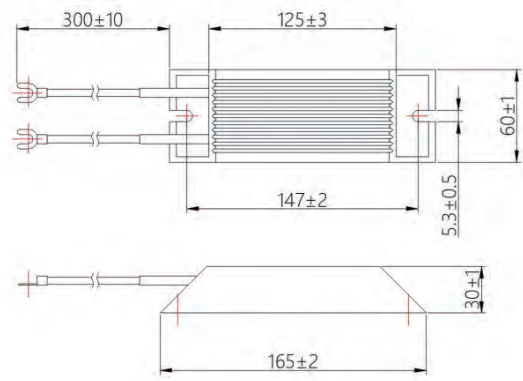
Brake Resistor Selection

The braking resistor resistance value and resistor power mentioned in the table below are approved according to the common inertia load and intermittent braking mode. If you need to use it for large inertia and long time frequent braking, please adjust the braking resistor resistance value and resistor power according to the selected drive specification and rated parameters of the braking unit. When connecting the external regenerative resistor, connect the resistor to the RB+ and RB- terminals, the wiring reference diagram is shown on the right.





Dimension 1



Dimension 2

Motor power (KW)	Installation Dimension	Resistance value (Ω)	Resistance power (W)
200-400W	Dimension 1	10	100
600-750W	Dimension 1	5	100
1000-1500W	Dimension 2	5	200

Service & Support



- 01 Pre-sales**
 technology promotion, site survey, proposal design, energy saving assessment
- 02 During-sales**
 customization, design consultation, installation and commissioning, on-site training
- 03 After-sales**
 regular return visits, regular maintenance, timely repairs, application instruction

VEICHI

Suzhou Veichi Electric Co., Ltd

No.1000 Songjia Road, Guoxiang street, Wuzhong
Economic and Technological Development Zone,

Tel: +86-512-6617 1988 Fax: +86-512-6617 3610

Facebook: <https://www.facebook.com/veichigroup>

WhatsApp: +86-138 2881 8903
<https://www.veichi.org/>



Official Website

Version: 2022 OCT

Any contents in this book are subject to change without notice. Veichi Electric Co., Ltd all rights reserved, reproduction in all its forms is strictly prohibited.