

Accumulate to Be Professional;
Keep Going to Be the Leading;
Keep pace with International Brands;
Manufacture High-Quality Products.

VS510&VS512 High-Performance Servo

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Company Profile

Smart Generation Co. for Intelligent Engineering Solutions, focused on the new energy and industrial automation, and devotes to sales and technical service of Frequency Inverter, Servo Drives, DCDC, Integrated Elevator Products and Control System, Solar pump inverter ,etc.

We adhere to the enterprise philosophy of "pioneering, innovation, integrity and pragmatism", further standardize enterprise management in accordance with the modern enterprise system, and take "creating value for customers, employees, enterprises and society" as the business philosophy. We continuously maintain the leading level of our core technology and provide advanced industrial automation control, new energy products and system solutions to quickly and effectively meet the diversified needs of mid and high level customers, create value for customers, build a win-win cooperation and make contributions to the industrial upgrading of industrial equipment manufacturing industry in terms of high efficiency and environmental protection as well as the development of the new energy industry.



Content

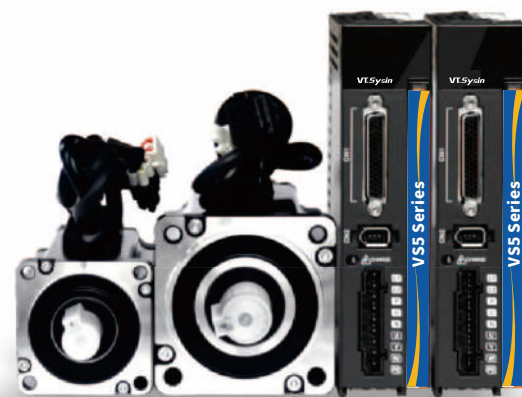
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VS510

Series High Performance Servo Drive

Excellent mechanical performance; Everything is under control!

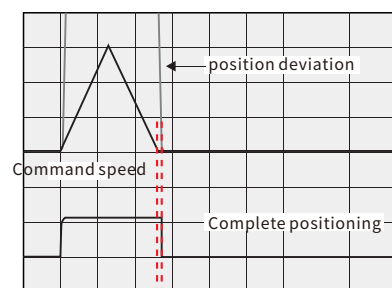
VS510 series servo drives make easy and highly efficient operation a reality. It is also equipped with the new non-adjustment function, which breaks the convention that servo drives cannot operate smoothly without adjustment and realizes immediate use. The new high-level auto-tuning function of the VS510 series servo drives reduces installation time and maximize mechanical performance.



VS510 Series Servo

Performance comparable with imported brands

▶ Excellent drive response characteristics;
Significantly reduce settling time.



settling time 0~8ms

▶ Enhance vibration suppression function

The tracking performance can be improved and the settling time can be shortened by adding and improving vibration suppression function. In addition, it can also decrease the vibration sound in driving and the vibration of the front end of the machine during stopping.

Speed response frequency
2.3kHz

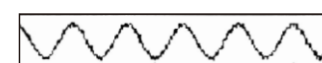


Multi-level filtering wave

Use multi-level filters, which can improve the vibration suppression function, shorten the settling time and increase the corresponding speed. Besides, it can decrease the vibration of the front end in drive stopping and suppress the impress of external disturbance efficiently.



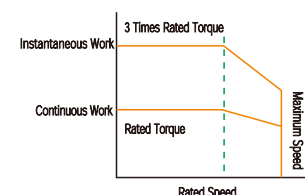
Before wave filtering



Before wave filtering

Three times overload

VS510 servo drive supports threetimes torque overload.

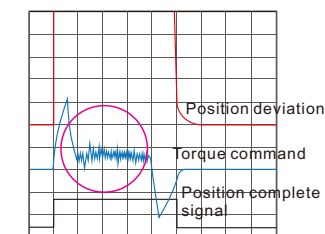


Support multi encoders

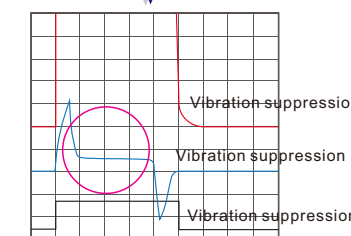
Support 17-bit incremental, 17-bit absolute, magnetic encoders and other encoders

Harmonic Suppression

To address the phenomenon of positioning vibration caused by the elastic connection device between the load and the motor in the servo drive system, allocate the parameters of the notch filter are reasonably and eliminate the vibration component in the given position according to the system information so as to effectively suppress the position vibration.

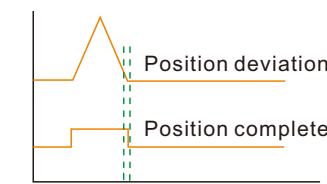


Vibration suppression

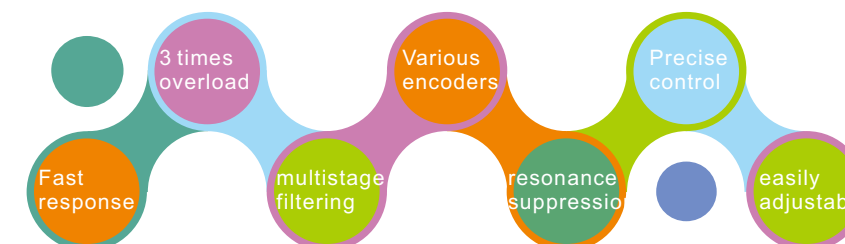


Faster Response

Response frequency 2.3KHZ (0.0008S) using all imported high-performance chip, highly optimized speed loop and current loop control algorithms to improve the servo corresponding control frequency and the industry's highest amplifier response to greatly reduce the response and positioning time.



Adjustment time: 0.0008S



VS512

Series High Performance Servo Drive



Excellent mechanical performance; Everything is under control!

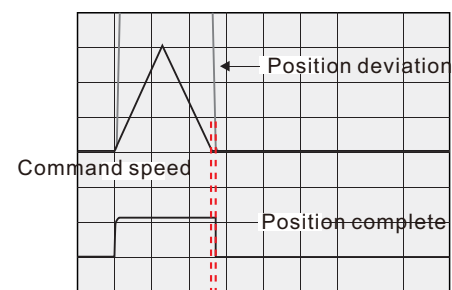
VS512 series servo drives make easy and highly efficient operation a reality.

It is also equipped with the new non-adjustment function, which breaks the convention that servo drives cannot operate smoothly without adjustment and realizes immediate use.

The new high-level auto-tuning function of the VS512 series servo drives reduces installation time and maximize mechanical performance.

Series Servo; Performance compatible with imported brand

- ▶ Excellent drive response characteristics;
Significantly reduce the settling time.



Settling time 0~4ms

- ▶ Enhance vibration suppression function
The tracking performance can be improved and the settling time can be shortened by adding and improving vibration suppression function. In addition, it can also decrease the vibration sound in driving and the vibration of the front end of the machine during stopping.

Speed response
frequency
3.0kHz



Adjust gain and filter

Run

Simple tuning

Immediately use after motor installation

- ▶ New non-adjustment function

Even without servo adjustment, it can be driven without vibration when the load moment of inertia changes not more than 20 times.

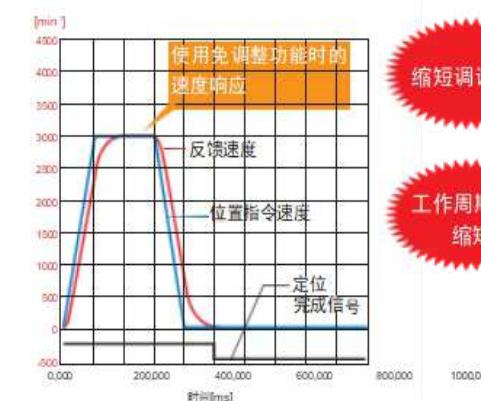
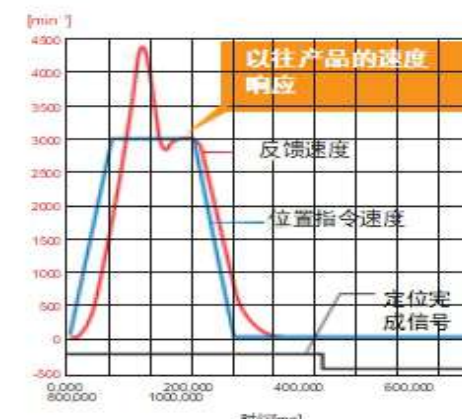
Settling time: 100-150ms

Suppress vibration and shorten settling time as much as possible

- ▶ New advanced auto tuning function

On the foundation of the command filter function and feedback gain adjustment function, a feed-forward gain automatic adjustment function has been added for optimum adjustment. The friction compensation function automatically smooths out friction irregularities during driving.

Settling time: 10ms



缩短调试时间

工作周期时间
缩短

Micro-adjust to enhance the performance

- ▶ New signal parameter tuning function

Can make micro-adjustment and enhance the mechanical performance

Settling time: 10ms

Servo Drive Model Definition

VS

Product sign

512 - 018

①

②

A

③

P

④

- D1 B

⑤

⑥

① Product serial no.

Sign	Specification
500	Economical style
510	Universal style
512	High-performance style

③ Voltage level

Sign	Specification
A	Single-phase
B	Three-phase
D	Three-phase

⑤ Structure style

Sign	Specification
D1	Size D1
D2	Size D2
D3	Size D3
D4	Size D4
D5	Size D5

② Drive capacity

Voltage	Sign	Specification
Three-phase AC 220V	R70	0.7A
	R90	0.9A
	1R6	1.6A
	2R8	2.8A
	5R5	5.5A
	7R6	7.6A
	012	12A
	018	18A
Three-phase AC 380V	020	20A
	3R5	3.5A
	5R4	5.4A
	8R4	8.4A
	012	12A
	017	17A

④ Interface type

Sign	Specification
P	Analog voltage, impulse train command type
E	EtherCAT

⑥ Factory sign

Sign	Specification
X	None
A	Reserved
B	Reserved

Servo motor type definition

VSM - 06

Product sign

①

M - R40

②

③

30

④

B - C

⑤

⑥

0

⑦

0

⑧

B

⑨

① Flange scale

Sign	Specification
04	40mm
06	60mm
08	80mm
11	110mm
13	130mm
18	180mm

④ Motor rated speed

Sign	Feedback element
10	1000rpm
15	1500rpm
30	3000rpm

⑥ Encoder type

Sign	Specification
C	17-bit single-turn absolute magnetic encoder
B	23-bit multiturn absolute optical encoder
E	imported 17-bit single-turn absolute magnetic encoder
A	imported 23-bit multiturn absolute optical encoder

⑧ Encoder type

Sign	Axis connection mode
0	Optical axis no key
1	Bond shaft+threaded hole
2	Round axis+threaded hole
3	Bond axis+no threaded hole

② Inertia scale

Sign	Specification
L	Low inertia
M	Medium inertia
H	High inertia

⑤ Rated voltage

Sign	Rated voltage
B	AC220V
D	AC380V

⑦ Brake and oil seals

Sign	Specification
0	No brake, no oil seals
1	Internal brake, with oil seals
2	No brake, with oil seals
3	With brake, no oil seals

⑨ Brake and oil seals

Sign	Factory sign
X	No
A	Reserved
B	Reserved
H	Reserved

③ Rated power

Sign	Rated power	Sign	Rated power
R40	400W	5R5	5.5kW
R75	750W	7R5	7.5kW
1R5	1.5kW	110	11kW
2R2	2.2kW	150	15kW
3R7	3.7kW	185	18.5kW

Servo Selection List (220V)

VS510 series servo selection list(220V)			
Specification	Rated current	Power	Rated speed/torque/flange
VS510-R70AP-D1B	0.7A	0.05kW	3000-6000rpm / 0.16N·m / 40
VSM-04M-R0530B-B01B	1A	0.05kW	
VS510-R90AP-D1B	0.9A	0.1kW	
VSM-04M-R1030B-B01B	1A	0.1kW	3000-6000rpm / 0.3N·m / 40
VS510-1R6AP-D1B	1.6A	0.2kW	
VSM-06M-R2030B-B01B	1.9A	0.2kW	
VS510-2R8AP-D1B	2.8A	0.4kW	3000-6000rpm / 1.27N·m / 60
VSM-06M-R4030B-B01B	2.3A	0.4kW	
VS510-5R5AP-D2B	5.5A	0.75kW	
VSM-08M-R7530B-B01B	4.2A	0.75kW	3000-6000rpm / 2.4N·m / 80
VS510-7R6AP-D3B	7.6A	1.0kW	
VSM-08M-1R030B-B01B	6.5A	1.0kW	
VS510-7R6AP-D3B	7.6A	1.0kW	1500-3000rpm / 5.4N·m / 130
VSM-13M-R8515B-B01B	6.5A	0.85kW	
VS510 012AP D4B	12A	1.5kW	
VSM-13M-1R315B-B01B	9.5A	1.3kW	1500-3000rpm / 8.4N·m / 130
VS510-018AP-D4B	18A	2.0kW	
VSM-13M-1R815B-B01B	14A	1.8kW	
VS510-018AP-D4B	18A	2.0kW	1500-3000rpm / 11.5N·m / 130
VSM-13M-2R315B-B01B	16A	2.3kW	

VS512 series servo selection list(220V)			
Specification	Rated current	Power	Rated speed/torque/flange
VS512-R70AP-D1B	0.7A	0.05kW	3000-6000rpm / 0.16N·m / 40
VSM-04M-R0530B-B01B	1A	0.05kW	
VS512-R90AP-D1B	0.9A	0.1kW	
VSM-04M-R1030B-B01B	1A	0.1kW	3000-6000rpm / 0.3N·m / 40
VS512-1R6AP-D1B	1.6A	0.2kW	
VSM-06M-R2030B-A01H	1.3A	0.2kW	
VS512-2R8AP-D1B	2.8A	0.4kW	3000-6000rpm / 1.27N·m / 60
VSM-06M-R4030B-A01H	2.3A	0.4kW	
VS512-5R5AP-D2B	5.5A	0.75kW	
VSM-08M-R7530B-A01H	4.5A	0.75kW	3000-6000rpm / 2.4N·m / 80
VS512-7R6AP-D3B	7.6A	1.0kW	
VSM-13M-1R015B-A01H	8A	1.0kW	
VS512-7R6AP-D3B	7.6A	1.0kW	1500-6000rpm / 6.4N·m / 130
VSM-13M-R8515B-A01H	6.5A	0.85kW	
VS512-012AP-D4B	12A	1.5kW	
VSM-13M-1R315B-A01H	9.5A	1.3kW	1500-3000rpm / 8.4N·m / 130
VS512-018AP-D4-B	18A	2.0kW	
VSM-13M-1R815B-A01H	14A	1.8kW	
VS512-020AP-D4B	20A	3.0kW	1500-3000rpm / 14.6N·m / 130
VSM-13M-2R315B-A01H	16A	2.3kW	

Servo Drive Simple Selection list (220V)

Series	510								512								
Power(W)	50	100	200	400	750	1000	1500	2000	50	100	200	400	750	1000	1500	2000	3000
Rated voltage (V)	220																
Rated current (A)	0.7	0.9	1.6	2.8	5.5	7.6	12	18	0.7	0.9	1.6	2.8	5.5	7.6	12	18	20
Pulse input	Support								Support								
Communication mode	EtherCAT is optional; don't support 485 communication																
Brake resistor	External (Customers buy it by themselves)					Internal (No internal resistor below 750W)			External (Customers buy it by themselves)					Internal (No internal resistor below 750W)			
Cabinet	D1				D2	D3	D4		D1				D2	D3	D4		

Cabinet



D1



D2



D3



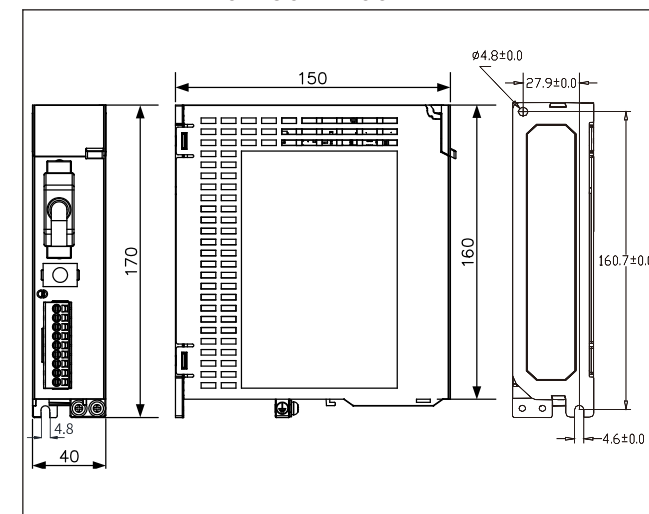
D4

Specification

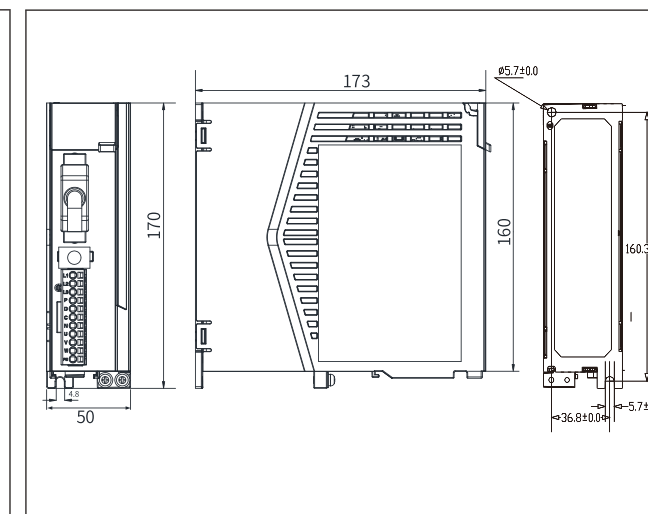
Servo drive		系列			
		VS510		VS512	
Main circuit power supply	Voltage	220V/50Hz		220V/50Hz	
	Input voltage range	AC 220V ±15%		AC 220V ±15%	
	Input frequency range	47Hz~63Hz		47Hz~63Hz	
Control circuit power supply	Power range	50W -750W	1kW -2kW	50W -750W	1kW -3kW
	Volatge	220V/50Hz		220V/50Hz	
	Input voltage range	AC 220V ±15%		AC220V ±15%	
	Input frequency range	47Hz~63Hz		47Hz~63Hz	
Interface Power Supply	Voltage	DC12V~24V			
	Allowable voltage fluctuation	±10%			
	Power capacity	Above 500mA			
Control way		Vector control, SVPWM			
Control mode		Position control, speed control and vector control			
Encoder		Support 17-bit encoder/23-bit domestic singleturn/multiturn encoder.		Support 23-bit Tamagawa multiturn absolute encoder	
Regenerative brake unit		750W and below without internal brake resistor			
DC reactor		No			
Digital	Input	8 channels optoelectronic isolator input			
	Output	4 channels open collector output			
Analog	Input	2 channels, range: DC-10V~+10V			
	Output	1 channel, range: DC 0V~+10V			
Pulse	Input	2 channels, 5V differential input or open collector input			
	Output	4 channels, encoder A/B/Z phase frequency division differential output, 1 channel Z phase open collector output			
Protection function		Overcurrent protection, overvoltage protection, overload protection, overheat protection, encoder fault protection, regenerative fault protection, undervoltage protection, overspeed protection, large position error protection etc.			
Position control	Input pulse frequency	4MHz(line drive input),200kHz (open-curcuit collector input)			
	Command pulse form	Signal+pulse train, CCW+CW,90° phase difference two-phase pulse			
	Position precision	±1 ±1 pulse			
	In-place range setting	±10 ±10 pulse			
	Torque control range	Set by parameter setting or external analog input; DC0~±10V; Max torque:300% rated			
Speed control	Frequency response	2.3kHz		3.0kHz	
	Speed control range	Speed regulation range: 1:5000			
	Analog speed command input	DC0~±10V/ max speed, 12bitA/D			
	Speed fluctuation ratio	±0.03%			
	Torque control range	Set by parameter setting or external analog input; DC0~±10V; Max torque:300% rated			
Torque control	Analog torque command input	DC0~±10V/ max torque, 12bitA/D			
	Torque linearity	±10% below			
	Speed control range	Set by parameter setting or external analog input DC0~±10V(Max speed)			
Maximum allowable inertia		30 times			
Communication		EtherCAT is optiona l ; Don't support 485 comm unication			
Structure		IP level: IP20, ≤750: self cooling; Above 750W : fan cooling			
Environment	Working environment	0~45 °C			
	Storage environment	20~80°C(No freezing)			
	Humidity	Working/Storage: ≤ 90%RH (No condensation)			
	Other environment conditions	Indoor (away from direct sunlight), free of corrosive gases, combustible gases, oil mist, dust etc.			
	Allowable using height	Derate use when the altitude is higher than 1000m.			
	Vibration	≤4.9m/s,10~60Hz (Not allowed to work at the resonance point)			

Outline Dimension (220V)

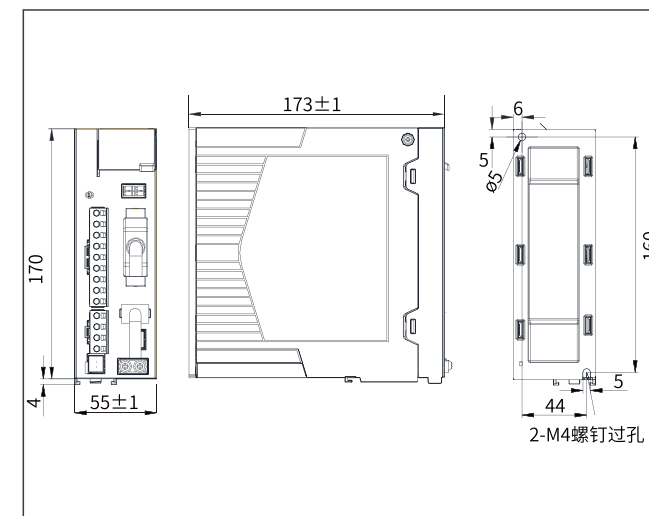
Cabinet:D1 220V:50W-400W



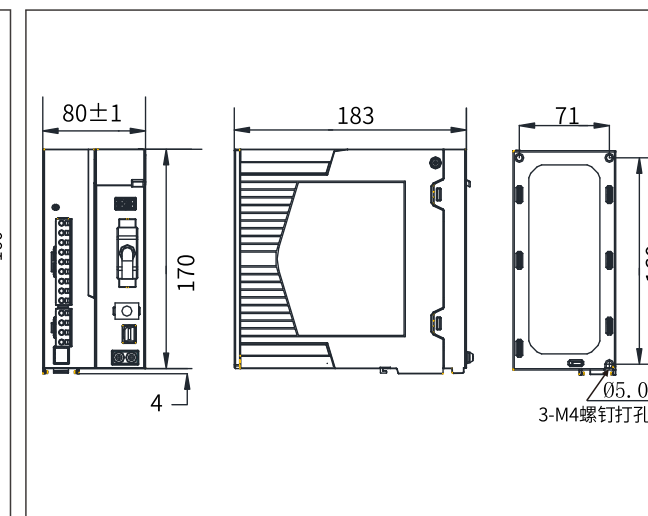
Cabinet:D2 220V:750W



Cabinet:D3 220V:1kW



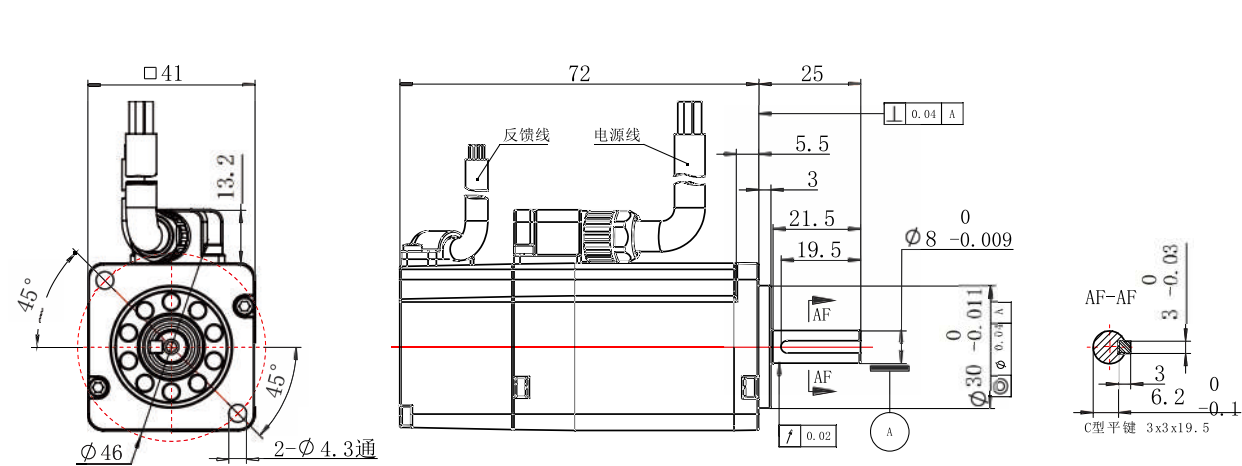
Cabinet:D4 220V:1.5kW-3kW



40 Series Servo Motor (220V)

MOTOR TYPE	VSM-04M-R0530B-B03B
RATED POWER	50W
RATED TORQUE	0.16N·m
RATED SPEED	3000 rpm
MAXIMUM SPEED	6000 rpm
RATED CURRENT	1A
ROTOR INERTIA	0.03 Kg·m ²
MECHANICAL CONSTANT TIME	3A
MAXIMUM TORQUE	0.48N·m

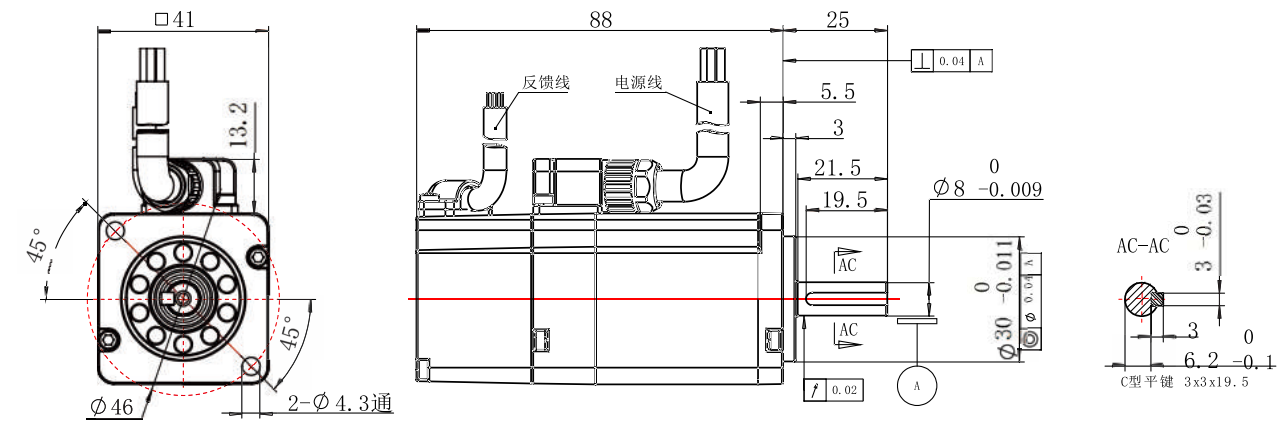
● Installation dimension



40 Series Servo Motor (220V)

MOTOR TYPE	VSM-04M-R1030B-B03B
RATED POWER	100W
RATED TORQUE	0.32N·m
RATED SPEED	3000 rpm
MAXIMUM SPEED	6000 rpm
RATED CURRENT	1A
ROTOR INERTIA	0.058 Kg·m ²
MECHANICAL CONSTANT TIME	3A
MAXIMUM TORQUE	0.96N·m

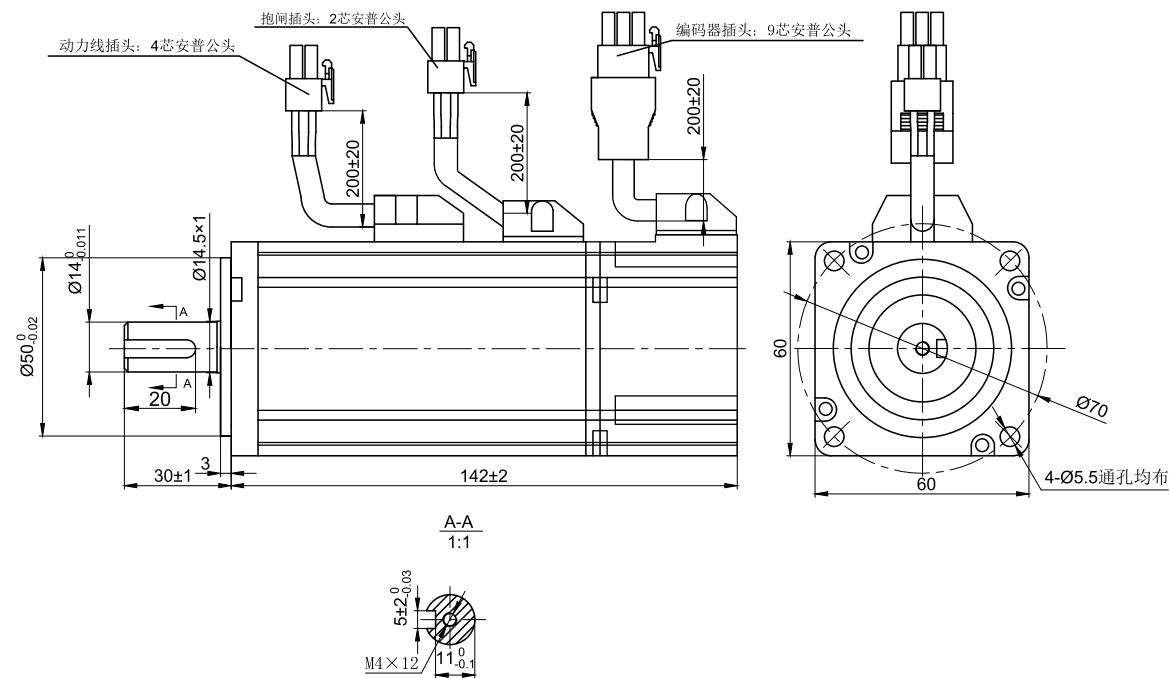
● Installation dimension



60 Series Servo Motor (220V)

MOTOR TYPE	VSM-06M-R4030B-B01B
RATED POWER	0.4kW
RATED TORQUE	1.27 N·m
RATED SPEED	3000 rpm
MAXIMUM SPEED	6000 rpm
RATED CURRENT	2.3A
ROTOR INERTIA	$0.52 \times 10^{-4} \text{ Kg} \cdot \text{m}^2$ ($0.62 \text{ Kg} \cdot \text{m}^2 \times 10^{-4}$)
MECHANICAL CONSTANT TIME	1.79 ms
MAXIMUM TORQUE	3.81 N·m

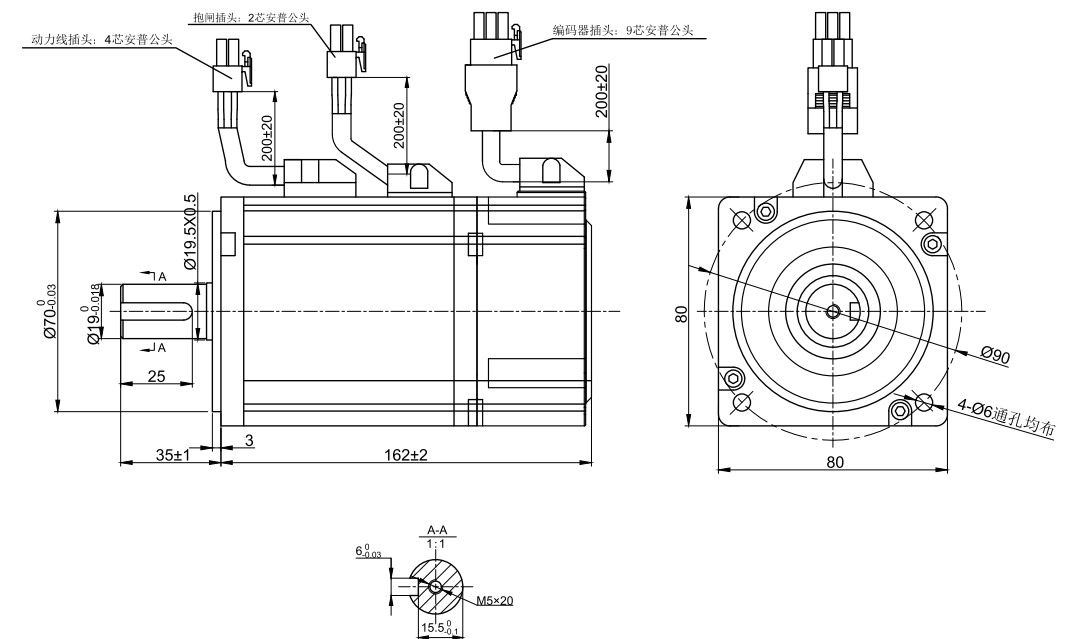
● Installation dimension



80 Series Servo Motor (220V)

MOTOR TYPE	VSM-08M-R7530B-B01B
RATED POWER	0.75kW
RATED TORQUE	2.39 N·m
RATED SPEED	3000 rpm
MAXIMUM SPEED	6000rpm
RATED CURRENT	4.2 A
ROTOR INERTIA	$1.48 \times 10^{-4} \text{ Kg} \cdot \text{m}^2$ ($1.78 \text{ Kg} \cdot \text{m}^2 \times 10^{-4}$)
MECHANICAL CONSTANT TIME	3.89 ms
MAXIMUM TORQUE	7.17 N·m

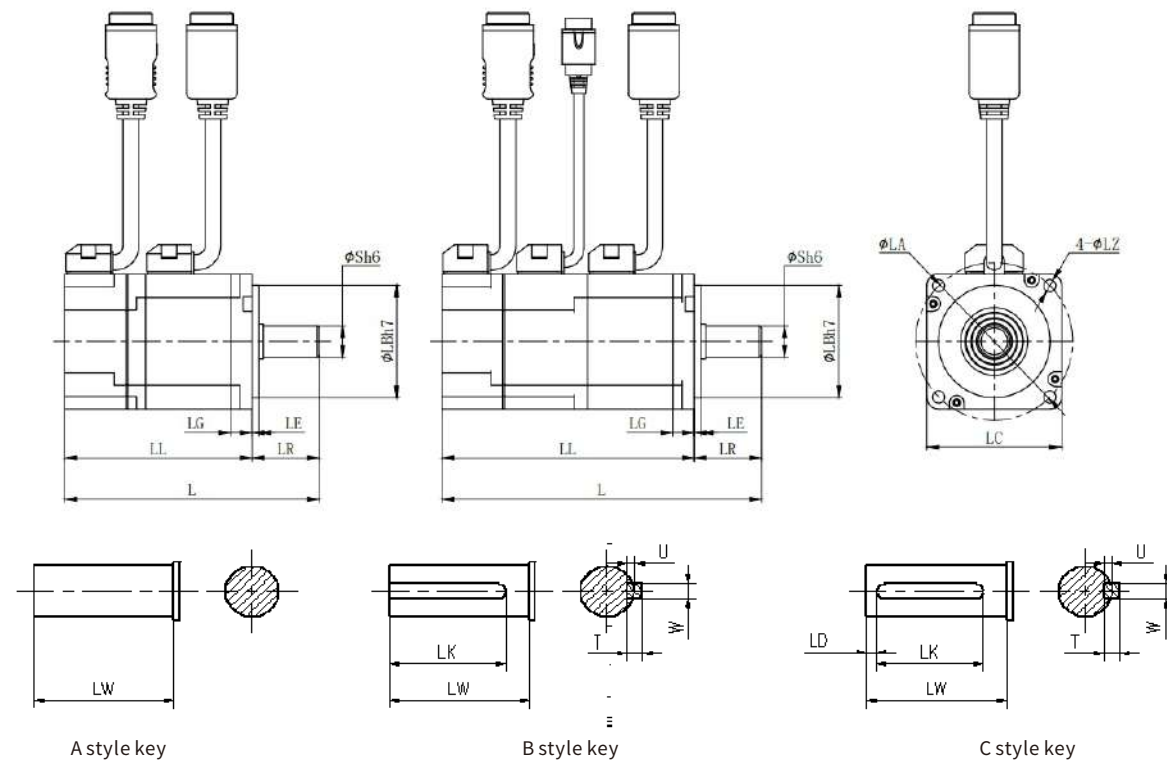
● Installation dimension



60 Series Servo Motor (220V)

MOTOR TYPE	VSM-06M-R2030B-A03H	VSM-06M-R4030B-A03H
RATED POWER	0.2kW	0.4kW
RATED TORQUE	0.64N·m	1.27 N·m
RATED SPEED	3000 rpm	3000 rpm
MAXIMUM SPEED	6000 rpm	6000 rpm
RATED CURRENT	1.3A	2.3A
ROTOR INERTIA	$0.39 \times 10^{-4} \text{ Kg} \cdot \text{m}^2$ ($0.40 \text{ Kg} \cdot \text{m}^2 \times 10^{-4}$)	$0.65 \times 10^{-4} \text{ Kg} \cdot \text{m}^2$ ($0.66 \text{ Kg} \cdot \text{m}^2 \times 10^{-4}$)
MECHANICAL CONSTANT TIME	3.198ms	2.123ms
MAXIMUM TORQUE	2.24N·m	3.9N·m

● Installation dimension

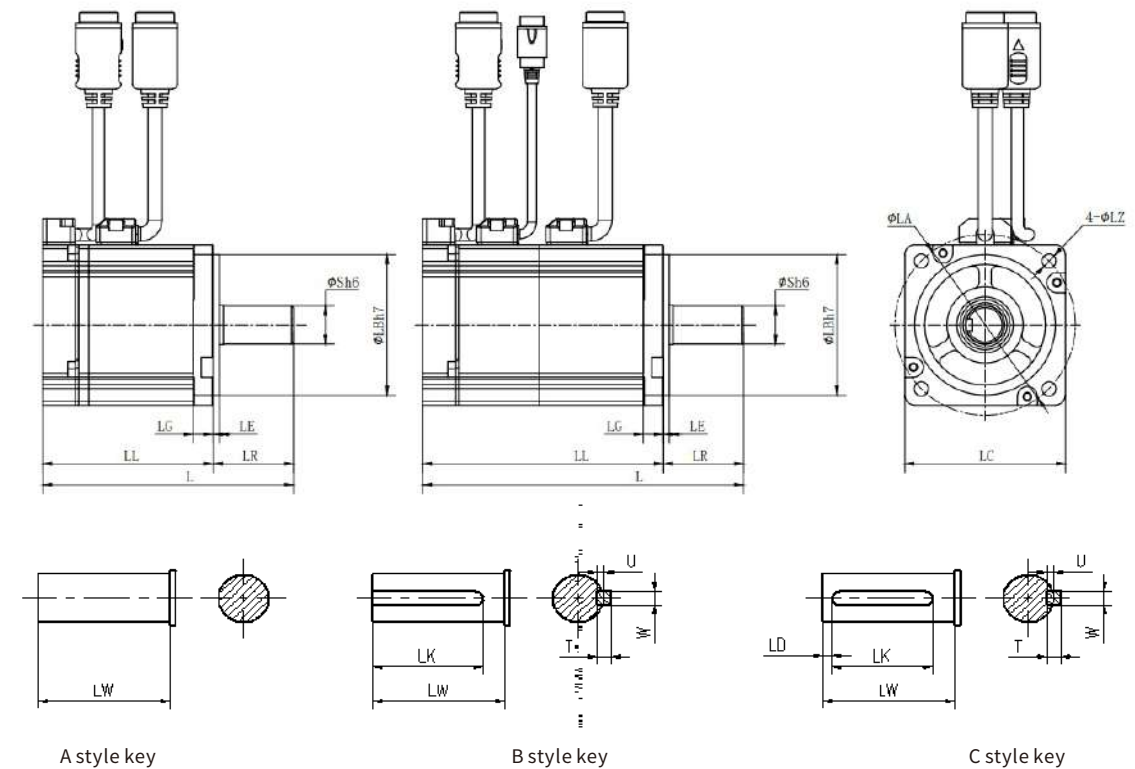


Model	L	LL	LR	LE	LG	LC	LA	LZ	ΦS	LB	T	U	W	LK	LW	LD
VSM-06M-R2030B-A03H	122.5 (151.5)	92.5 (121.5)	30	3	9.5	60	70	5.5	$14^{0}_{-0.03}$	$50^{0}_{-0.04}$	5	3	5	20	25	3
VSM-06M-R4030B-A03H	140.5 (169.5)	110.5 (139.5)	30	3	9.5	60	70	5.5	$14^{0}_{-0.03}$	$50^{0}_{-0.04}$	5	3	5	20	25	3

80 Series Servo Motor (220V)

MOTOR TYPE	VSM-08M-R7530B-A03H
RATED POWER	0.75kW
RATED TORQUE	2.4N·m
RATED SPEED	3000 rpm
MAXIMUM SPEED	6000 rpm
RATED CURRENT	4.5A
ROTOR INERTIA	$0.139 \times 10^{-4} \text{ Kg} \cdot \text{m}^2$ ($0.15 \text{ Kg} \cdot \text{m}^2 \times 10^{-4}$)
MECHANICAL CONSTANT TIME	1.265ms
MAXIMUM TORQUE	7.2 N·m

● Installation dimension

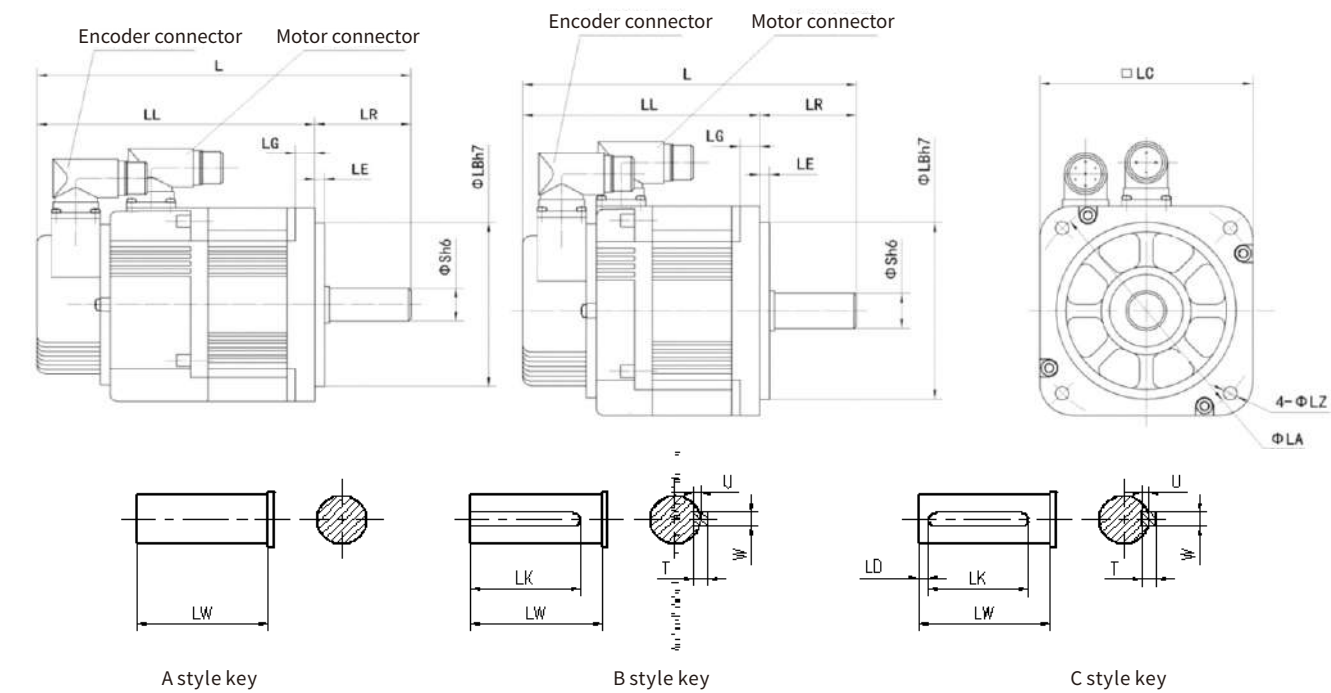


Model	L	LL	LR	LE	LG	LC	LA	LZ	ΦS	LB	T	U	W	LK	LW	LD
VSM-08M-R7530B-A03H	154 (189)	114 (149)	40	3	10	80	90	7	$19^{0}_{-0.013}$	$70^{0}_{-0.03}$	6	3.5	6	25	35	5

130 Series Servo Motor (220V)

MOTOR TYPE	VSM-13M-R8515B-A03H	VSM-13M-1R315B-A03H	VSM-13M-1R815B-A03H	VSM-13M-2R315B-A03H
RATED POWER	0.85 kW	1.3 kW	1.8 kW	2.3 kW
RATED TORQUE	5.4 N·m	8.4 N·m	11.5 N·m	14.6 N·m
RATED SPEED	1500 rpm	1500 rpm	1500 rpm	1500 rpm
MAXIMUM SPEED	3000 rpm	3000 rpm	3000 rpm	3000 rpm
RATED CURRENT	6.5 A	9.5 A	14.0 A	16.0 A
ROTOR INERTIA	1.388 Kg ^m ×10 ⁻³ (1.555 Kg ^m ×10 ⁻³)	2.059 Kg ^m ×10 ⁻³ (2.226 Kg ^m ×10 ⁻³)	3.015 Kg ^m ×10 ⁻³ (3.182 Kg ^m ×10 ⁻³)	4.070 Kg ^m ×10 ⁻³ (4.237 Kg ^m ×10 ⁻³)
MECHANICAL CONSTANT TIME	2.900 ms	2.071 ms	2.415 ms	1.875 ms
MAXIMUM TORQUE	16.2 N·m	25.2 N·m	34.5 N·m	43.8 N·m

● Installation dimension

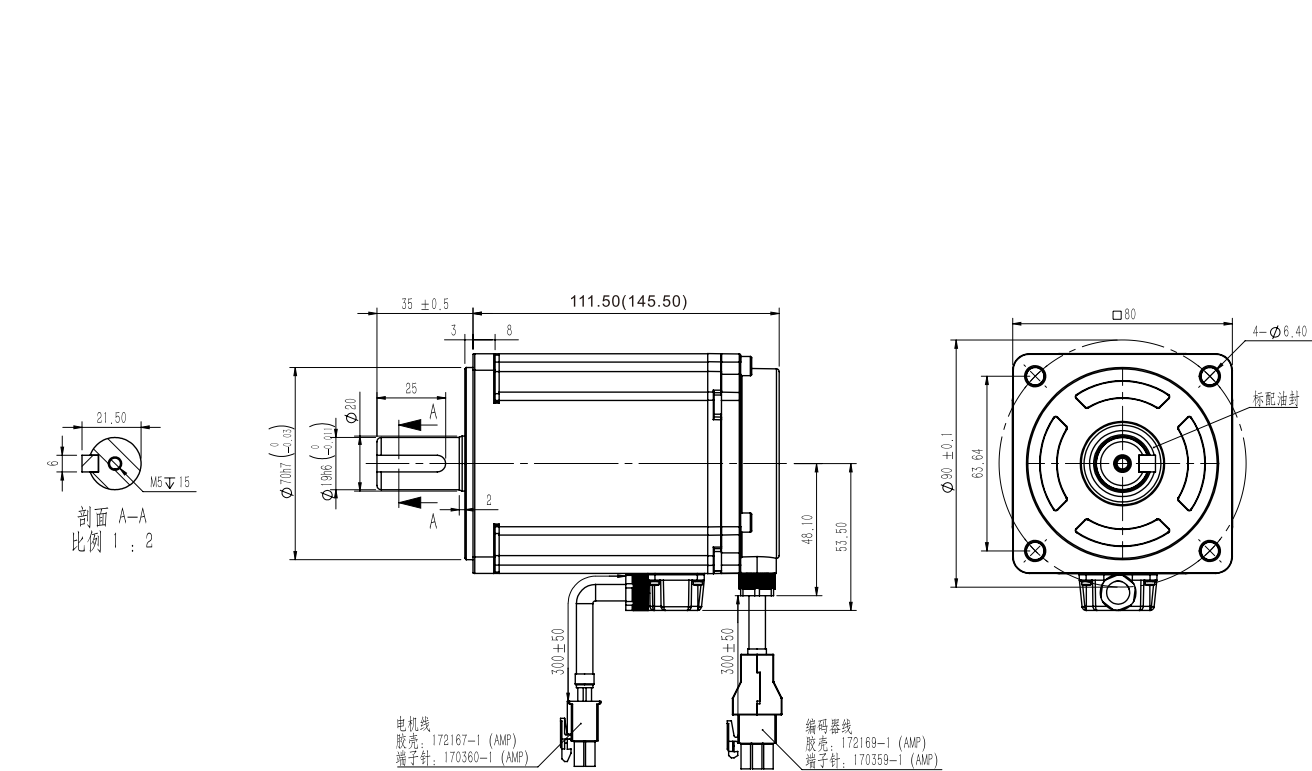


Model	L	LL	LR	LE	LG	LC	LA	LZ	ΦS	LB	T	U	W	LK	LW	LD
VSM-13M-R8515B-A03H	204 (231)	145 (172)	59	6	12	130	145	8.5	22 ⁰ _{-0.013}	110 ⁰ _{-0.04}	6	3.5	6	40	50	5
VSM-13M-1R315B-A03H	224 (251)	165 (192)	59	6	12	130	145	8.5	22 ⁰ _{-0.013}	110 ⁰ _{-0.04}	6	3.5	6	40	50	5
VSM-13M-1R815B-A03H	251 (278)	192 (219)	59	6	12	130	145	8.5	22 ⁰ _{-0.013}	110 ⁰ _{-0.04}	6	3.5	6	40	50	5
VSM-13M-2R315B-A03H	283 (310)	224 (251)	59	6	12	130	145	8.5	22 ⁰ _{-0.013}	110 ⁰ _{-0.04}	6	3.5	6	40	50	5

130 Series Servo Motor (220V)

MOTOR TYPE	VSM-13M-1R030B-B01B
RATED POWER	1.0kW
RATED TORQUE	3.18N·m
RATED SPEED	3000 rpm
MAXIMUM SPEED	6000 rpm
RATED CURRENT	5.8A
ROTOR INERTIA	2.27×10 ⁻⁴ Kg ^m ² (2.27Kg ^m ×10 ⁻⁴)
MECHANICAL CONSTANT TIME	8.9 ms
MAXIMUM TORQUE	9.54 N·m

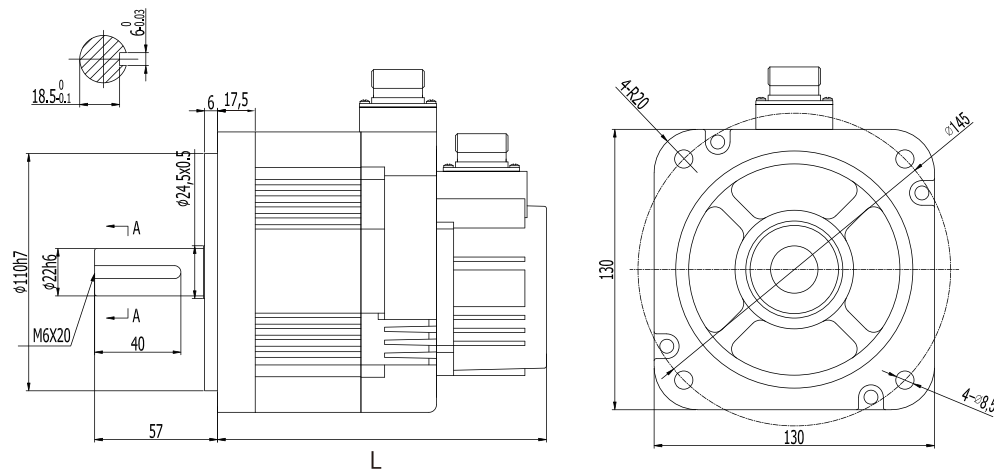
● Installation dimension



130 Series Servo Motor (220V)

MOTOR TYPE	VSM-13M-R8515B-B01B	VSM-13M-1R315B-B01B
RATED POWER	0.85kW	1.3kW
RATED TORQUE	5.4 N·m	8.4 N·m
RATED SPEED	1500 rpm	1500 rpm
MAXIMUM SPEED	3000 rpm	3000 rpm
RATED CURRENT	6.5A	9.5 A
ROTOR INERTIA	$1.388 \times 10^{-3} \text{ Kg} \cdot \text{m}^2$	$2.059 \times 10^{-3} \text{ Kg} \cdot \text{m}^2$
MECHANICAL CONSTANT TIME	4.3 ms	6.1 ms
MAXIMUM TORQUE	16.2 N·m	25.2 N·m

● Installation dimension



Model	Without brake	With brake
	L	L
VSM-13M-R8515D-B01B	149	177
VSM-13M-1R315D-B01B	169	197

Servo Selection List (380V)

VS510 Series Servo Selection List			
Specification	Rated Current	Power	Rated Speed/ Torque/ Flange
VS510-3R5DP-D3B	3.5A	1.0kW	1500-3000rpm / 5.4N·m / 130
VSM-13M-R8515D-B01B	3.6A	0.85kW	
VS510-5R4DP-D4B	5.4A	1.5kW	1500-3000rpm / 8.4N·m / 130
VSM-13M-1R315D-B01B	5.8A	1.3kW	
VS510-8R4DP-D4B	8.4A	2.0kW	1500-3000rpm / 11.5N·m / 130
VSM-13M-1R815D-B01B	7A	1.8kW	
VS510-8R4DP-D4B	8.4A	2.0kW	1500-3000rpm / 14.6N·m / 130
VSM-13M-2R315D-B01B	9A	2.3kW	
VS510-012DP-D5B	12A	3.0kW	1500-3000rpm / 18.5N·m / 180
VSM-18M-2R915D-B01B	11.8A	2.9kW	

VS510 Series Servo Selection List			
Specification	Rated Current	Power	Rated Speed/ Torque/ Flange
VS512-3R5DP-D3B	3.5A	1.0kW	1500-3000rpm / 5.4N·m / 130
VSM-13M-R8515D-A01H	3.6A	0.85kW	
VS512-5R4DP-D4B	5.4A	1.5kW	1500-3000rpm / 8.4N·m / 130
VSM-13M-1R315D-A01H	5.8A	1.3kW	
VS512-8R4DP-D4B	8.4A	2.0kW	1500-3000rpm / 11.5N·m / 130
VSM-13M-1R815D-A01H	7A	1.8kW	
VS512-012DP-D5B	12A	3.0kW	1500-3000rpm / 14.6N·m / 130
VSM-13M-2R315D-A01H	9A	2.3kW	
VS512-012DP-D5B	12A	3.0kW	1500-3000rpm / 18.5N·m / 180
VSM-18M-2R915D-B01B	11.4A	2.9kW	
VS512-017DP-D5B	17A	5.0kW	1500-3000rpm / 28.4N·m / 180
VSM-18M-4R415D-B01B	15.7A	4.4kW	
VS512-017DP-D5B	17A	5.0kW	1500-3000rpm / 35N·m / 180
VSM-18M-5R515D-B01B	20.6A	5.5kW	

Servo Drive Simple Selection List (380V)

Series	510				512					
Power (W)	1000	1500	2000	3000	1000	1500	2000	3000	5000	/
Rated Voltage(V)	380									
Rated Current (A)	3.5	5.4	8.4	12	3.5	5.4	8.4	12	17	/
Pulse input	Support				Support					
Communication	EtherCAT optional, not support 485 communication protocol									
Brake Resistor	Built-in				内置					
Cabinet	D3	D4		D5	D3	D4		D5		

Cabinet



D3



D4



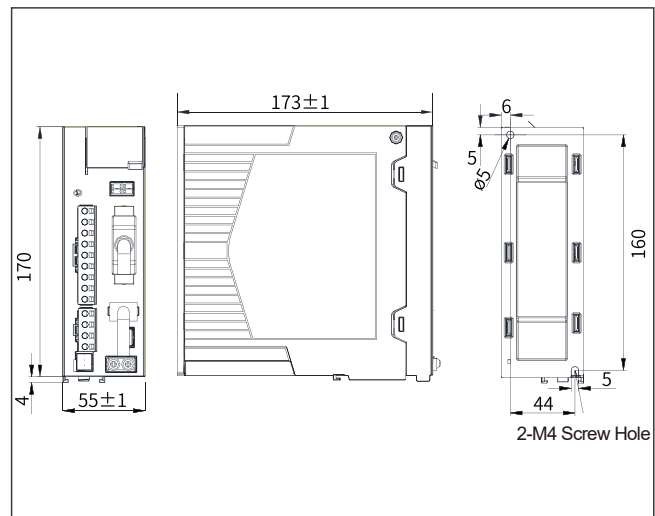
D5

Outline Dimension (220V)

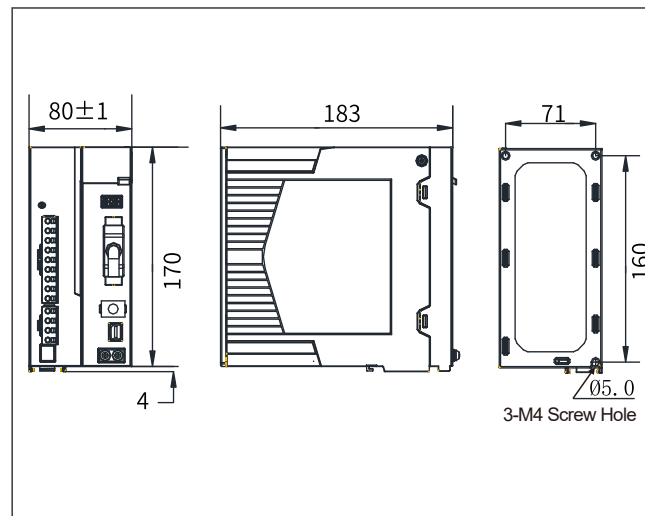
Servo Drive		Series	
		VS510	VS512
Main Circuit Power Supply	Voltage	380V/50Hz	380V/50Hz
	Input voltage range	AC 380V $\pm 15\%$	AC 380V $\pm 15\%$
	Input frequency range	47Hz~63Hz	47Hz~63Hz
Control Circuit Power Supply	Power range	1kW-3kW	1kW-5kW
	Voltage	380V/50Hz	380V/50Hz
	Input voltage range	AC 380V $\pm 15\%$	AC380V $\pm 15\%$
Interface Power Supply	Input frequency range	47Hz~63Hz	47Hz~63Hz
	Voltage	DC12V $\sim$ 24V	
	Allowable voltage fluctuation	$\pm 10\%$	
Control way	Power capacity	Above 500 mA	
	Control mode	Vector control, SVPWM	
	Control mode	Position control, speed control and vector control	
Encoder	Supports 17-bit encoder/23-bit domestic singleturn/multiturn encoder	Support 23-bit Tamagawa multiturn absolute encoder	
Regenerative braking unit	DC resistor	750W and below without internal brake resistor	
Digital	Input	8 channels optoelectronic isolator input	
	Output	4 channels open collector output	
Analog	Input	2 channels, range: DC-10V $\sim$ +10V	
	Output	1 channel, range: DC0V $\sim$ +10V	
Pulse	Input	2 channels, 5V differential input or open-circuit collector input	
	Output	4 channels, encoder A/B/Z phase frequency division differential output, 1 channel Z phase open collector output	
Protection Functions		Overcurrent protection, overvoltage protection, overload protection, overheat protection, encoder fault protection, regenerative fault protection, undervoltage protection, overspeed protection, large position error protection etc.	
Position Control	Input pulse frequency	4MHz(line drive input),200kHz (open-curcuit collector input)	
	Command pulse form	Signal+pulse train, CCW+C W,90° phase difference two-phase pulse	
	Position precision	± 1 pulse	
	In-place range setting	± 10 pulse	
Speed control	Torque control range	Set by parameter setting or external analog input; DC0 $\sim$ ± 10 V; Max torque:300% rated	
	Frequency response	2.3kHz	3.0kHz
	Speed control range	Speed regulation scope: 1:5000	
	Analog speed command input	DC0 $\sim$ ± 10 V/ max speed, 12bitA/D	
Torque control	Speed fluctuation ratio	$\pm 0.03\%$	
	Torque control range	Set by parameter setting or external analog input; DC0 $\sim$ ± 10 V; Max torque:300% rated	
	Analog torque command input	DC0 $\sim$ ± 10 V/ max torque, 12bitA/D	
	Torque linearity	Below $\pm 10\%$	
Maximum allowable inertia		30 times	
Communication		EtherCATOptional,Don't support 485 communication	
Structure		IP level: IP20, ≤ 750 : self cooli ng; Above 750W: fan cooling	
Enviroment	Working environment	0 $\sim 45^{\circ}\text{C}$	
	Storage environment	20 $\sim 80^{\circ}\text{C}$ (No freezing)	
	Humidity	Working/Storage: $\leq 90\%$ RH(No condensation)	
	Other environment conditions	Indoor (away from direct sunlight), free of corrosive gases, combustible gases, oil mist, dust etc.	
	Allowable using height	Derate use when the altitude is higher than 1000m.	
Vibration		$\leq 4.9\text{m/s}$,10~60Hz (Not allowed to work at the resonance point)	

Outline Dimension Drawing (380V)

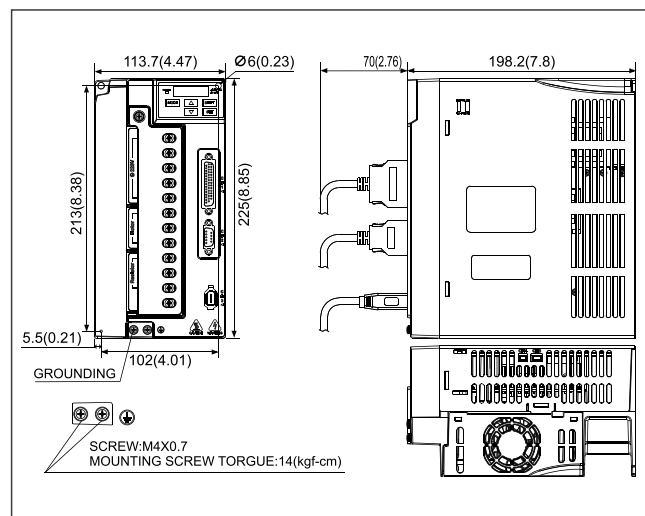
Cabinet:D3 380V:1kW



Cabinet:D4 380V:1.5kW-2kW



Cabinet:D5 380V:3kW-5kW



130 Series Servo Motor (380V)

MOTOR TYPE	VSM-13M-R8515D-A03H	VSM-13M-1R315D-A03H	VSM-13M-1R815D-A03H
RATED POWER	0.85kW	1.3kW	1.8kW
RATED TORQUE	5.4 N·m	8.4 N·m	11.5 N·m
RATED SPEED	1500 rpm	1500 rpm	1500 rpm
MAXIMUM SPEED	3000 rpm	3000 rpm	3000 rpm
RATED CURRENT	3.6 A	5.8 A	7.0 A
ROTOR INERTIA	$1.388 \text{ Kg} \cdot \text{m}^2 \times 10^{-3}$ ($1.555 \text{ Kg} \cdot \text{m}^2 \times 10^{-3}$)	$2.059 \text{ Kg} \cdot \text{m}^2 \times 10^{-3}$ ($2.226 \text{ Kg} \cdot \text{m}^2 \times 10^{-3}$)	$3.015 \text{ Kg} \cdot \text{m}^2 \times 10^{-3}$ ($3.182 \text{ Kg} \cdot \text{m}^2 \times 10^{-3}$)
MECHANICAL CONSTANT TIME	2.63 ms	2.21 ms	2.224 ms
MAXIMUM TORQUE	16.2 N·m	25.2 N·m	34.5 N·m

MOTOR TYPE	VSM-13M-2R315D-A03H	VSM-13M-1R820D-A03H	VSM-13M-2R420D-B03B
RATED POWER	2.3kW	1.8kW	2.4kW
RATED TORQUE	14.6 N·m	8.4 N·m	11.5 N·m
RATED SPEED	1500 rpm	2000 rpm	2000 rpm
MAXIMUM SPEED	3000 rpm	4000 rpm	4000 rpm
RATED CURRENT	9.0 A	7.2 A	11.0 A
ROTOR INERTIA	$4.070 \text{ Kg} \cdot \text{m}^2 \times 10^{-3}$ ($4.237 \text{ Kg} \cdot \text{m}^2 \times 10^{-3}$)	$2.369 \text{ Kg} \cdot \text{m}^2 \times 10^{-3}$ ($2.536 \text{ Kg} \cdot \text{m}^2 \times 10^{-3}$)	$4.070 \text{ Kg} \cdot \text{m}^2 \times 10^{-3}$ ($4.237 \text{ Kg} \cdot \text{m}^2 \times 10^{-3}$)
MECHANICAL CONSTANT TIME	1.54 ms	2.19 ms	1.99 ms
MAXIMUM TORQUE	43.8 N·m	25.2 N·m	34.5 N·m

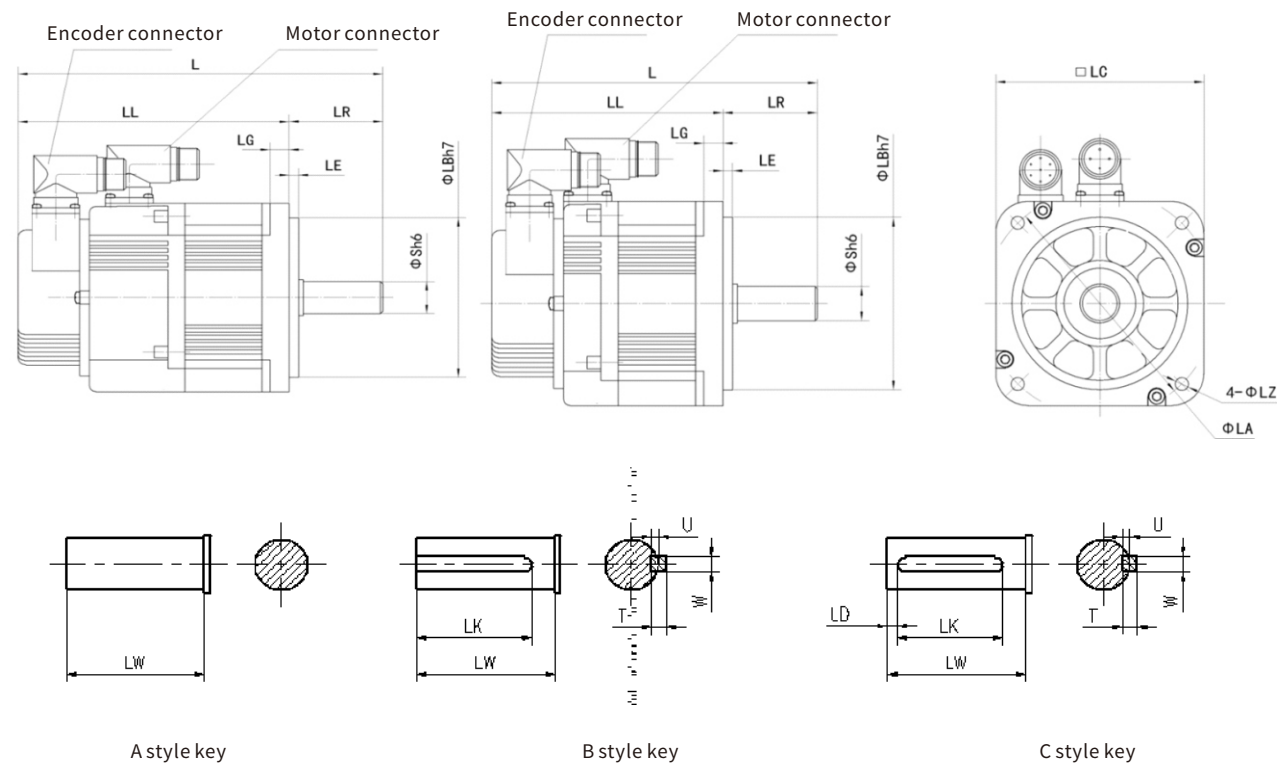
Rotor moment of inertia with power-off brake in brackets.

Max diameter/axial force

$$\begin{aligned} &\downarrow F_r \leq 900\text{N} \\ &\leftrightarrow F_s \leq 300\text{N} \end{aligned}$$

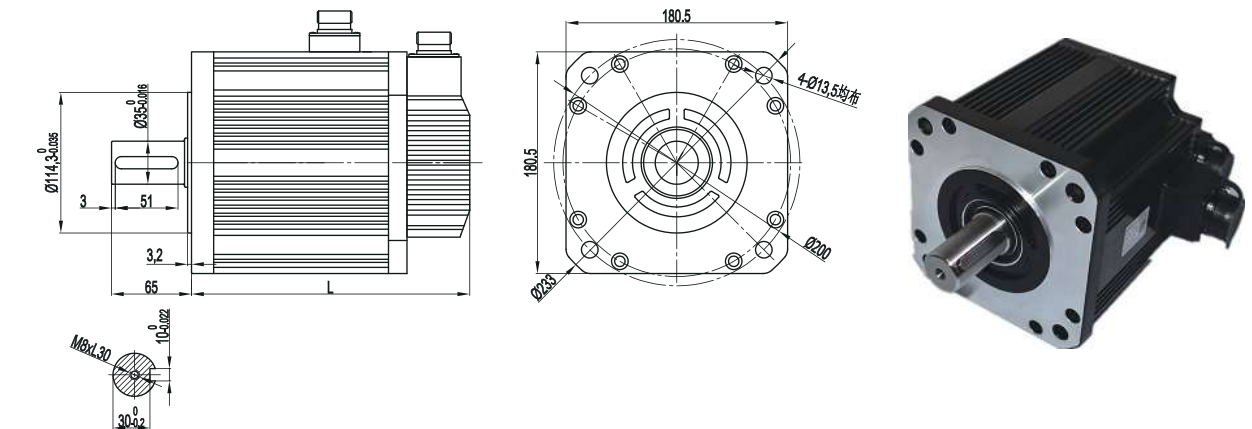
130 Series Servo Motor (380V)

● Installation dimension



Model	L	LL	LR	LE	LG	LC	LA	LZ	ϕS	LB	T	U	W	LK	LW	LD
VSM-13M-R8515D-A03H	204 (231)	145 (172)	59	6	12	130	145	8.5	$22^{+0}_{-0.013}$	$110^{+0}_{-0.04}$	6	3.5	6	40	50	5
VSM-13M-1R315D-A03H	224 (251)	165 (192)	59	6	12	130	145	8.5	$22^{+0}_{-0.013}$	$110^{+0}_{-0.04}$	6	3.5	6	40	50	5
VSM-13M-1R815D-A03H	251 (278)	192 (219)	59	6	12	130	145	8.5	$22^{+0}_{-0.013}$	$110^{+0}_{-0.04}$	6	3.5	6	40	50	5
VSM-13M-2R315D-A03H	283 (310)	224 (251)	59	6	12	130	145	8.5	$22^{+0}_{-0.013}$	$110^{+0}_{-0.04}$	6	3.5	6	40	50	5

180 Series Servo Motor (380V)



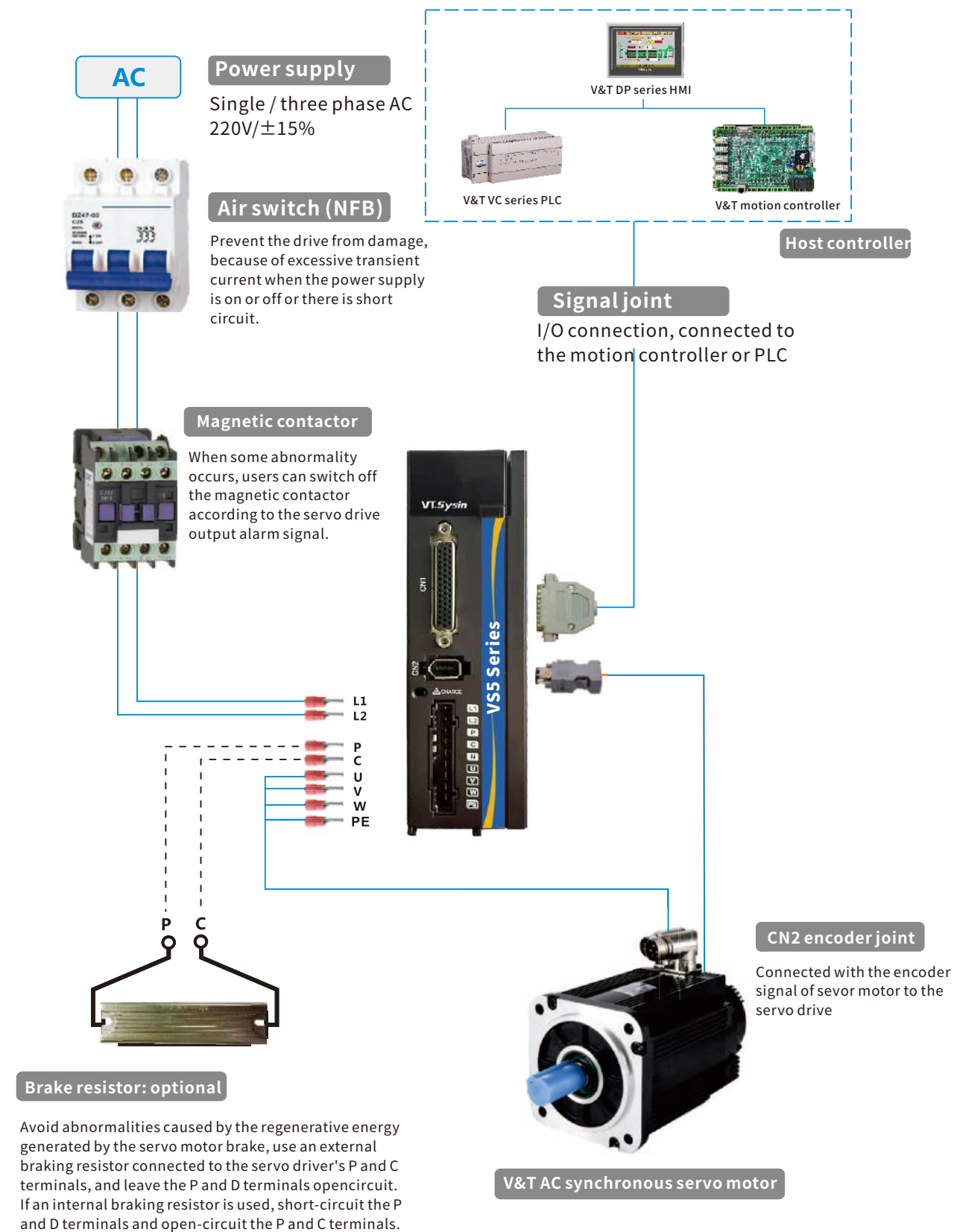
● Installation dimension

Rated torque	19 N·m	27 N·m	35 N·m
Dimension without brake	232	262	292
Dimension with electromagnetic brake	304	334	364
Dimension with permanent magnetic brake	314	344	382

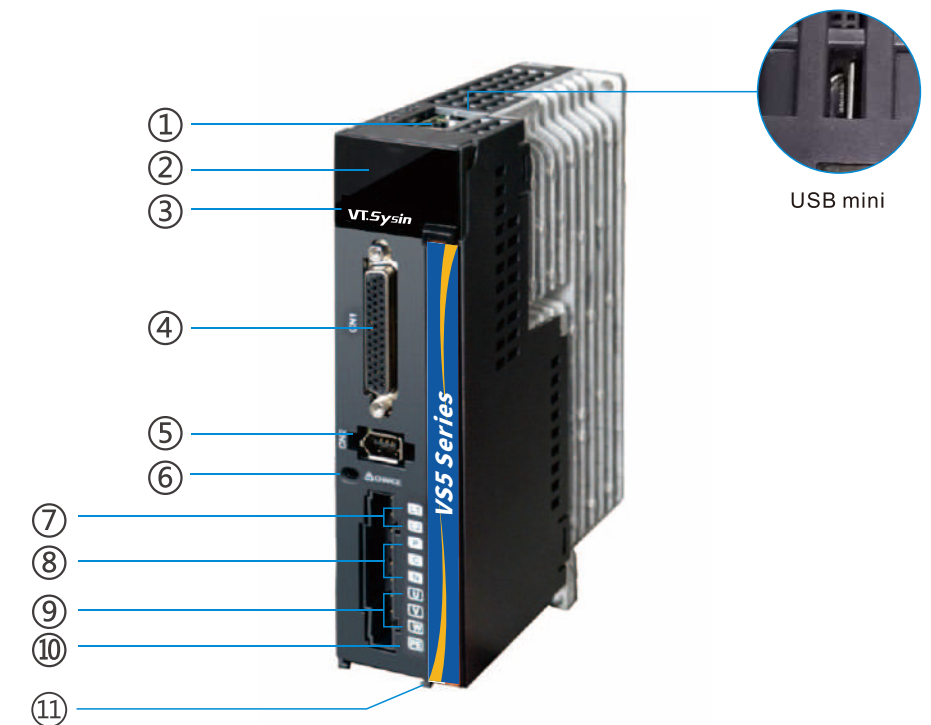
● Installation dimension

Motor Model	VSM-18M-3R015D-B03B	VSM-18M-4R315D-B03B	VSM-18M-5R515D-B03B
Rated power	3.0	4.3	5.5
Rated line voltage	380	380	380
Rated line current	7.5	10	12
Rated speed	1500	1500	1500
Rated torque	19	27	35
Peak torque	47	67	70
Counter emf	170	172	181
Moment coefficient	2.5	2.7	2.9
Rotor moment of inertia	3.8×10^{-3}	6.1×10^{-3}	8.6×10^{-3}
Winding resistance	1.23	0.796	0.62
Winding inductance	7.3	4.83	4
Electrical time constant	5.93	6	6.45
Weight	20.5	25.5	30.5
Motor insulation level	Class F		
IP level	IP65		
Working environment	Environment temperature -20°C~+20°C Environment humidity: relative humidity <90% (no frost concition)		

Peripheral Wiring Diagram

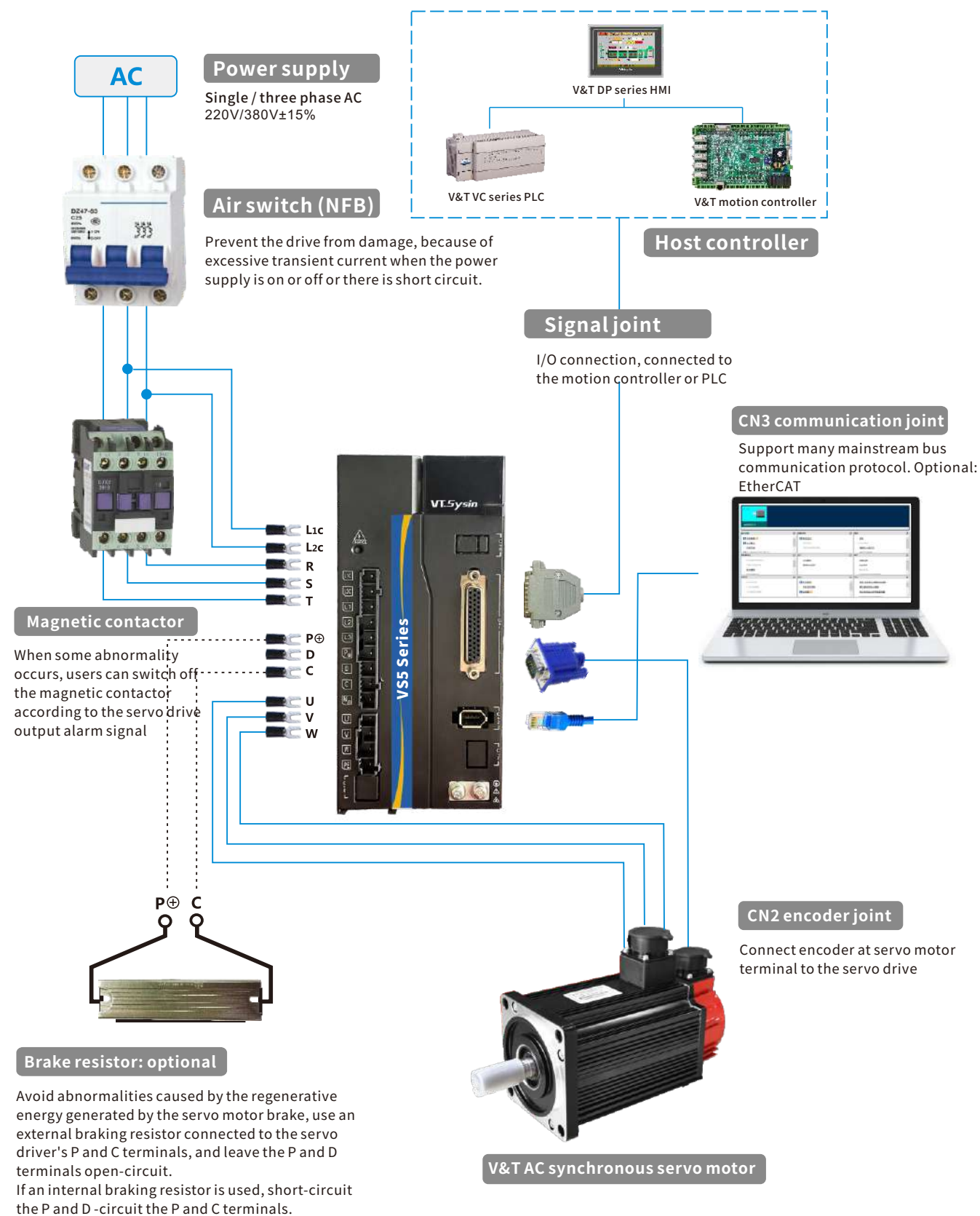


Interface Explanation



No.	Name	Explanation
①	CN3、CN4(Reserved terminal)	No
②	LED display	Five-bit seven-segment LED digital tube display the servo status and parameters
③	Key operation key	Switch parameter mode Increase the setting value Decrease the setting value Shifting key Save changes
④	CN1 (control terminal)	Command input signal and other input and output terminals
⑤	CN2 (encoder connection terminal)	Connected with motor encoder
⑥	CHARGE busbar voltage indicator	Used to indicate that the busbar capacitor is in the state of charge. When the indicator is on, the internal capacitor of the servo is still charged even if the main circuit power is OFF. Therefore, do not touch the power terminals to avoid electric shock.
⑦	L1, L2 (power supply input terminal)	Refer to the rated voltage and power supply
⑧	P, C(connect the resistor terminal externally) P, N(servo busbar terminal)	When there is need to connect brake resistor, connect the resistor between P and C DC busbar terminal
⑨	U, V, W (motor terminal)	Connect to the U, V and W phases of the servo motor
⑩	PE motor GND terminal	Connect to the motor GND terminal
⑪	Battery box installation place	When using the absolute encoder, the battery box can be placed at this place

Peripheral Wiring Diagram

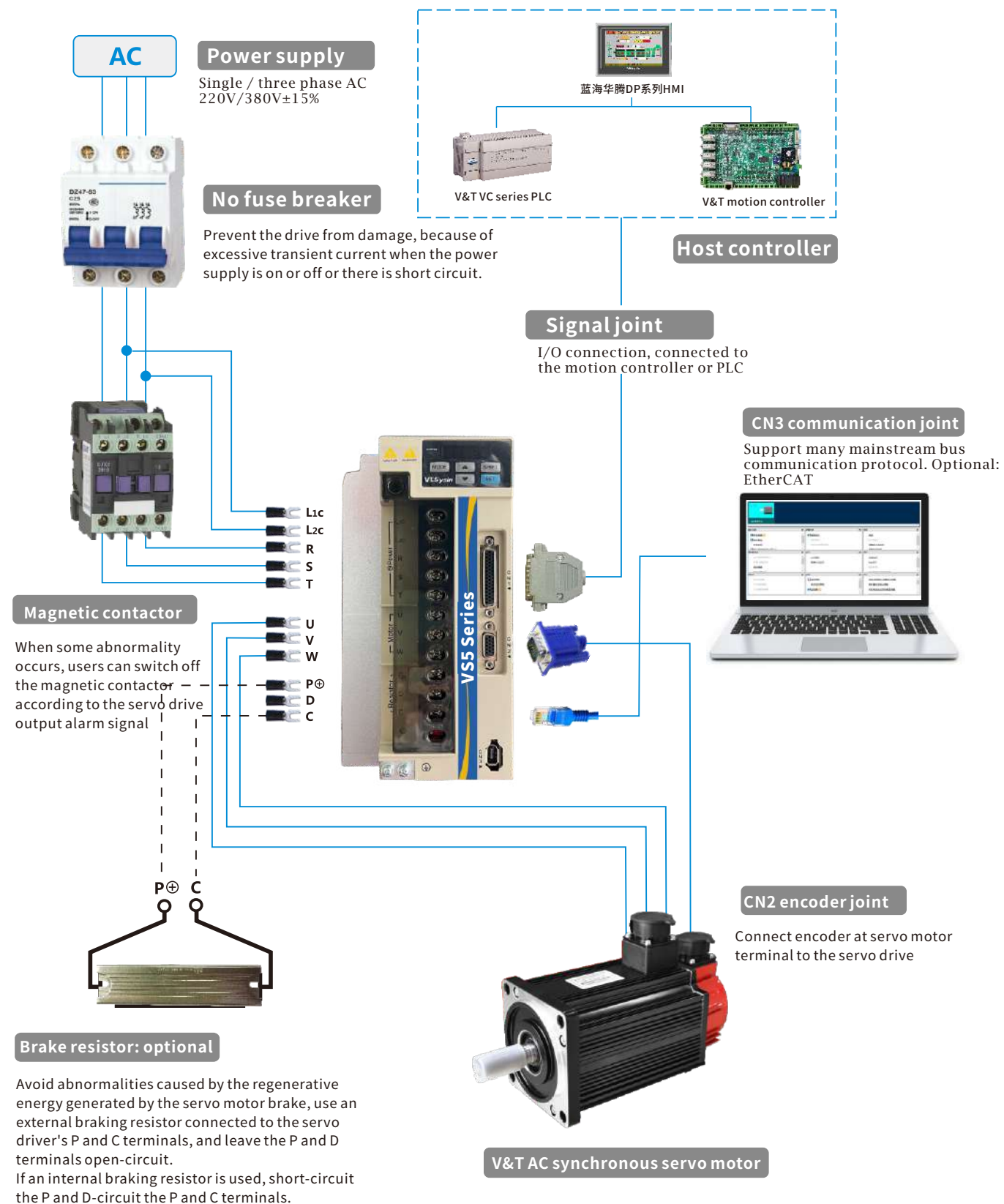


Interface Explanation

- ① **Display**
5-bit 7-segment LED displays the servo status and alarm
 - ② **Power supply indicator**
If the indicator lights up, it shows that there is high voltage in the DC busbar
 - ③ **Operation**
There is function parameter and monitoring setting in the operation status
MODE: mode status input setting; SHIFT: left shift key
▲:increase the displaying contents ; ▼decrease the displaying content
SET:Confirm setting key
 - ④ **Control circuit power supply**
L1c.L2 csupplying control power input wiring, 50/60Hz power supply
 - ⑤ **Power supply main circuit, power supply indicator**
R.S.T main circuit power supply input wiring
 - ⑥ **Brake resistor**
1.When the external brake resistor is used, P⊕.C terminal connects the brake resistor and the P⊕.D terminal is open-circuited.
2.When the internal brake resistor is used, P⊕.C terminal is open-circuited and the P⊕.D terminal is short-circuited.
3.When the external brake resistor is used, P⊕.⊖terminal connects the brake resistor and the P⊕.D and P⊕.C terminals are open-circuited.
 - ⑦ **Servo motor output**
Connected with the U.V.W motor power plug; can't be connected with main circuit power. It will causedrive damage if the connection is incorrect
 - ⑧ **GND terminal**
- ※ : 220V and 380V voltage are optional for the servo drive with this cabinet.Before use, please confirm the power voltage is as same as the drive voltage.

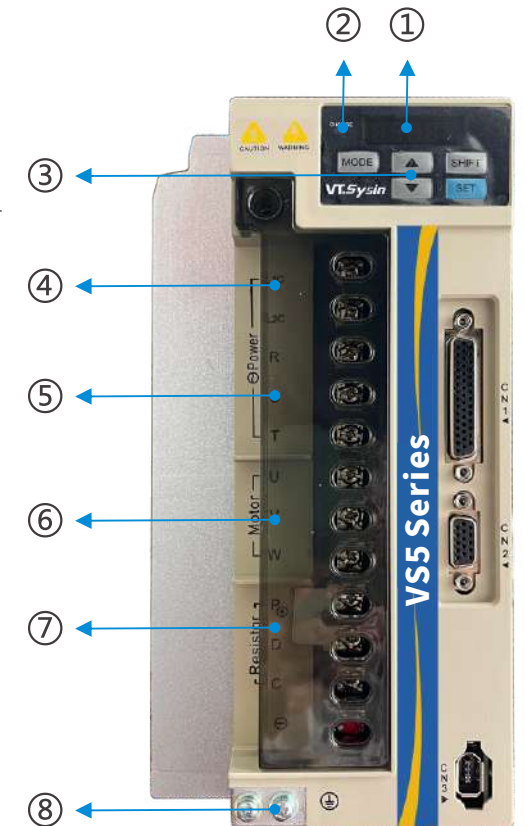


Peripheral Wiring Diagram

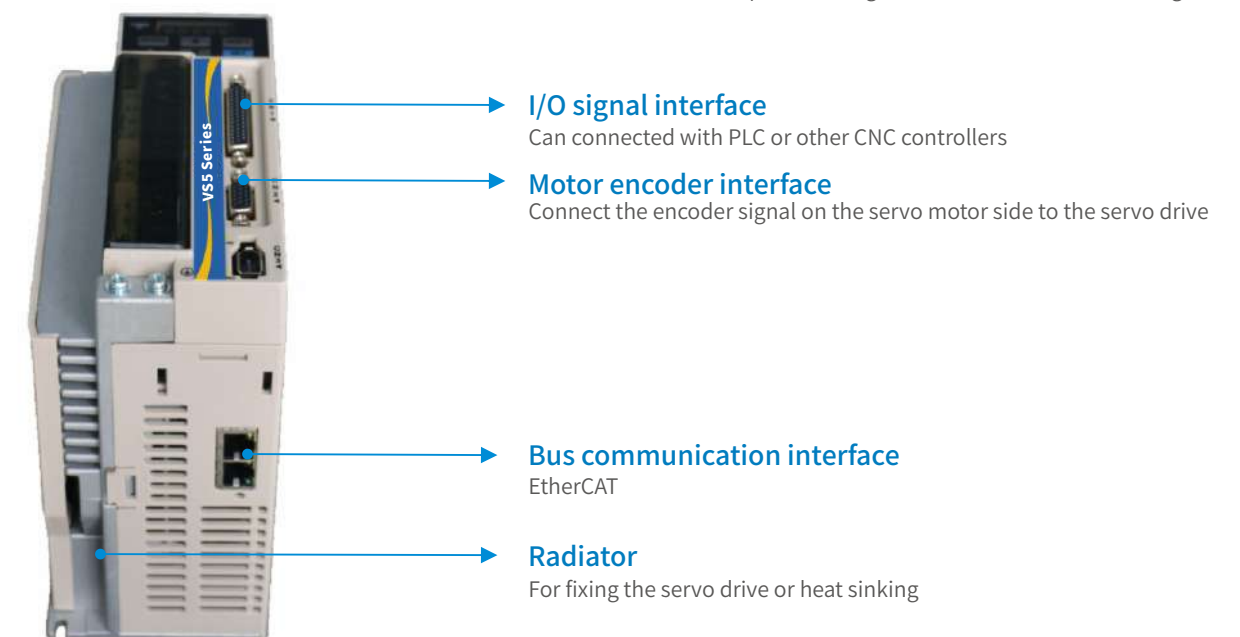


Interface Explanation

- ① **Display**
5-bit 7-segment LED displays the servo status and alarm
- ② **Power supply indicator**
If the indicator lights up, it shows that there is high voltage in the DC busbar
- ③ **Operation**
There is function parameter and monitoring setting in the operation status
MODE: mode status input setting; SHIFT: left shift key
▲: increase the displaying contents ; ▼: decrease the displaying content
SET: Confirm setting key
- ④ **Control circuit power supply**
L1c.L2 supplying control power input wiring, 50/60Hz power supply
- ⑤ **Power supply main circuit, power supply indicator**
R.S.T main circuit power supply input wiring
- ⑦ **Servo motor output**
Connected with the U.V.W motor power plug; can't be connected with main circuit power. It will causedrive damage if the connection is incorrect
- ⑥ **Brake resistor**
1. When the external brake resistor is used, P⊕.C terminal connects the brake resistor and the P⊕.D terminal is open-circuited.
2. When the internal brake resistor is used, P⊕.C terminal is open-circuited and the P⊕.D terminal is short-circuited.
3. When the external brake resistor is used, P⊕.⊖ terminal connects the brake resistor and the P⊕.D and P⊕.C terminals are open-circuited.
- ⑧ **GND terminal**

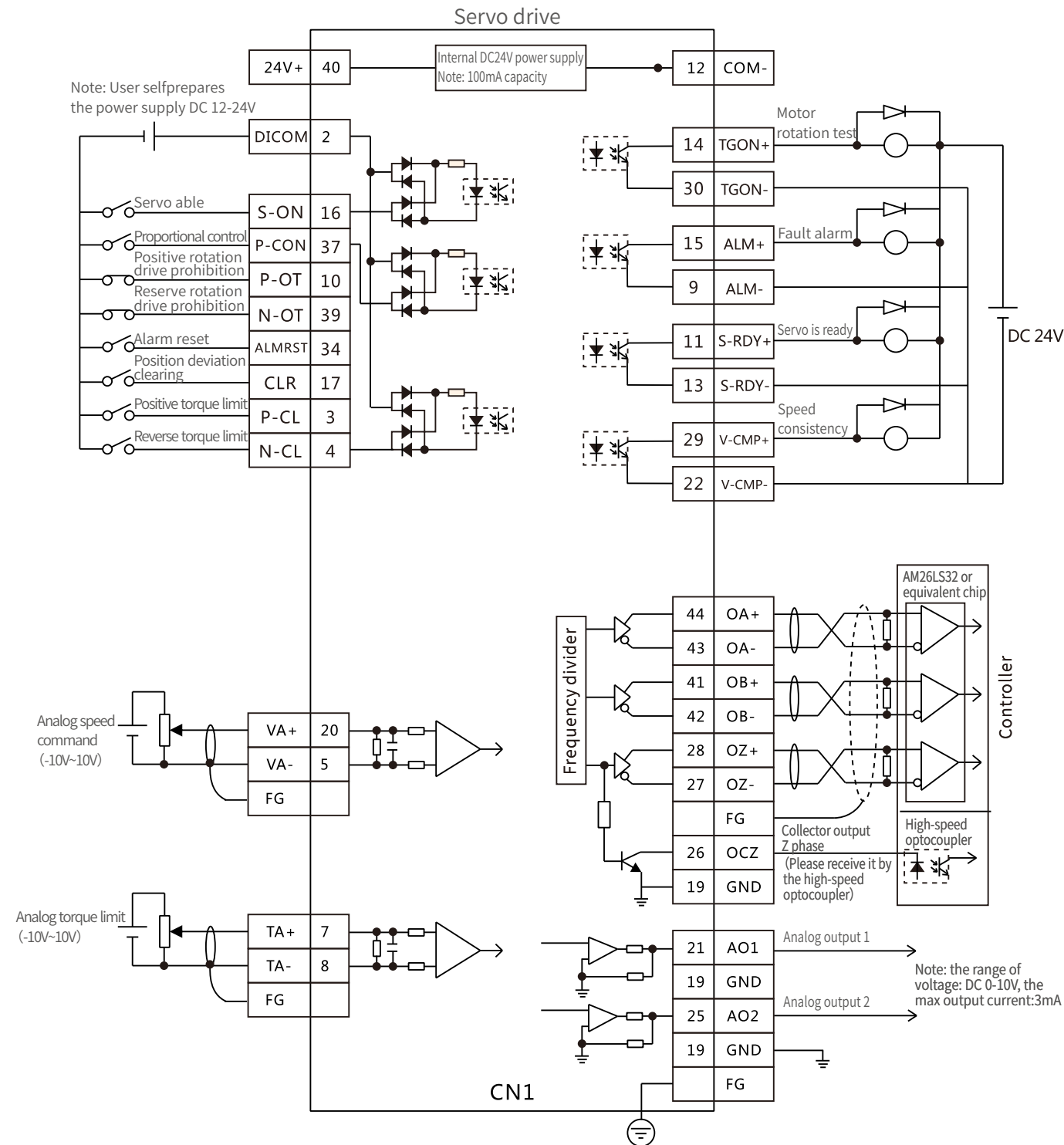


※ : 220V and 380V voltage are optional for the servo drive with this cabinet. Before use, please confirm the power voltage is as same as the drive voltage.



Wiring Diagram

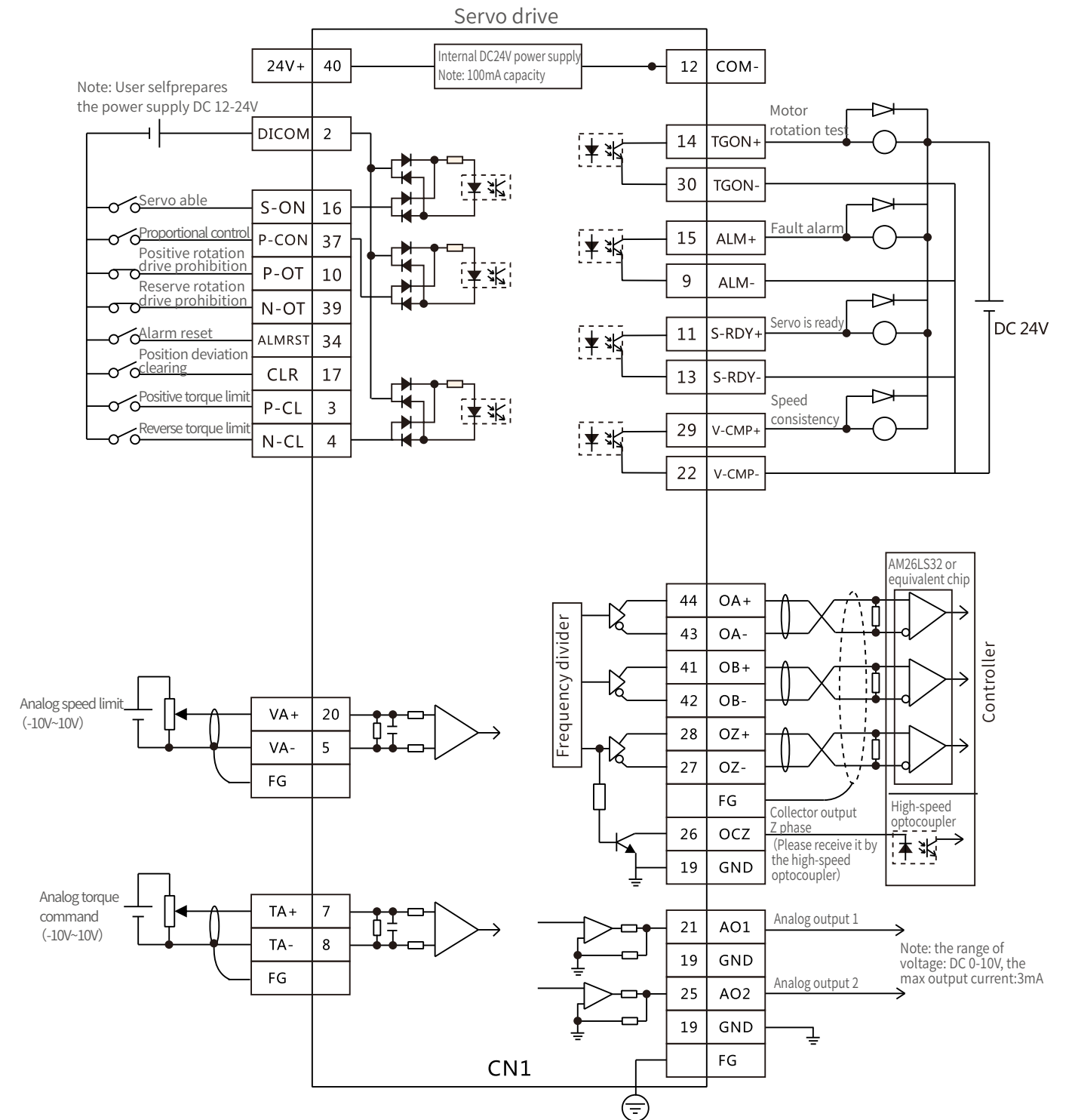
► The standard wiring on the speed control mode



- 1、() is a kind of twisted shielded pair
- 2、() is the power supply, which is prepared by the user.
- 3、D5 cabinet

Wiring Diagram

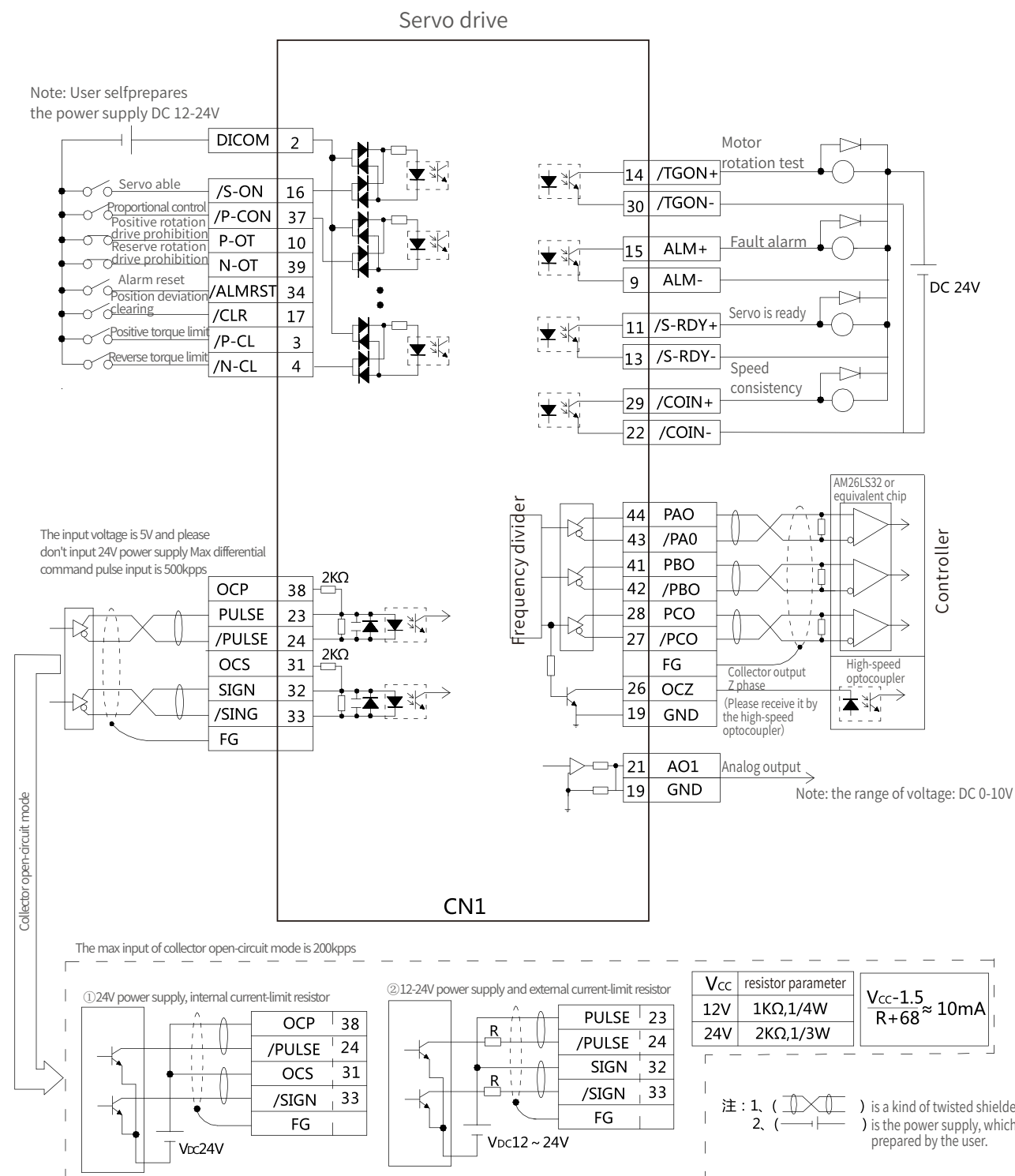
► The standard wiring on the vector control mode



- 1、() is a kind of twisted shielded pair
- 2、() is the power supply, which is prepared by the user.
- 3、D5 cabinet

Specification

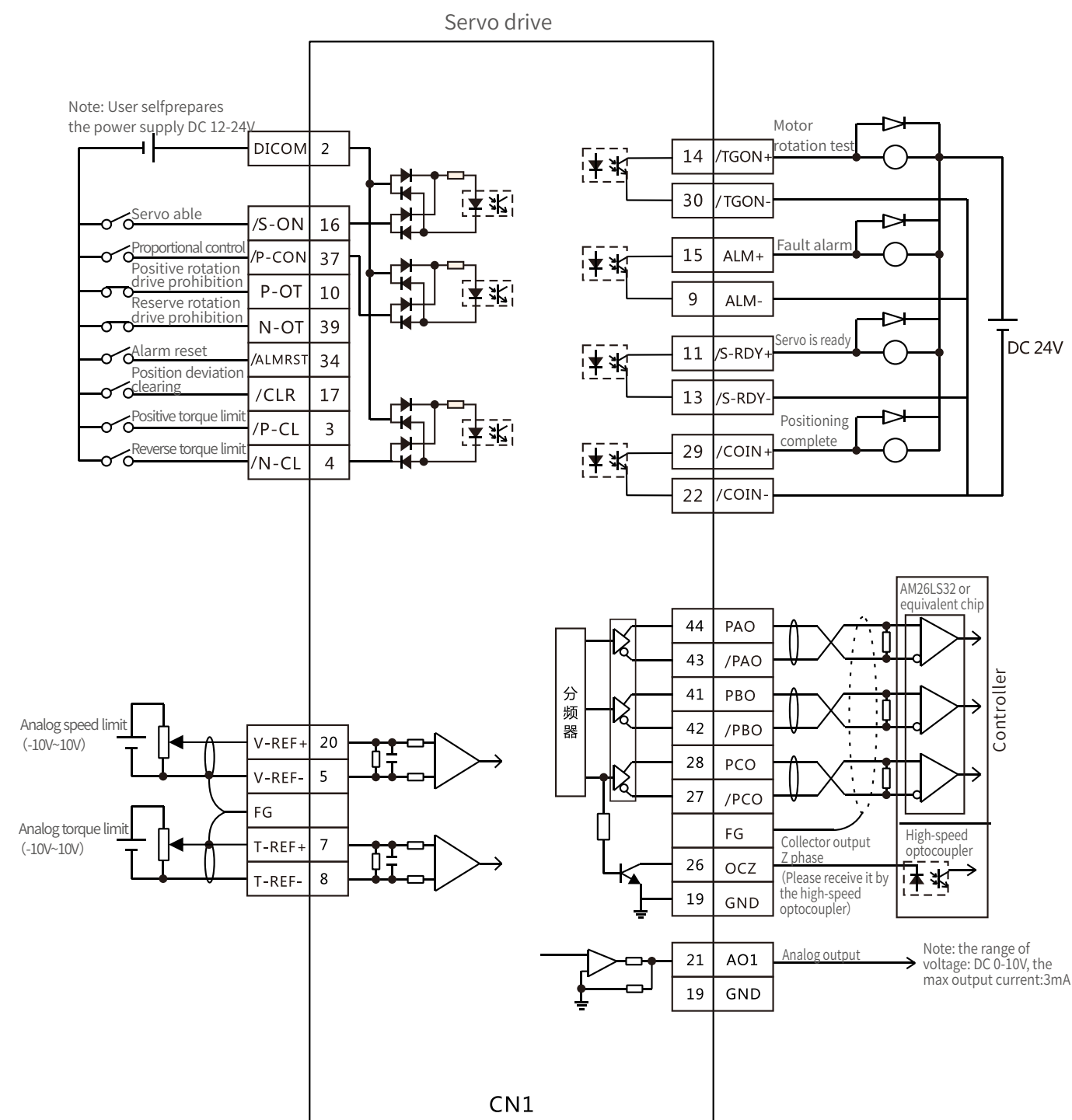
► The standard wiring on the position control mode



注:
D1、D2、D3、D4 Cabinet

Outline Dimension (220V)

► The standard wiring on the speed control mode/torque control mode



Note:
D1、D2、D3、D4 Cabinet

Customer Case

High speed labeler

- Servo-based probe function, with medium and large highspeed PLC;
- The label accuracy requirements is 0.5mm; measured accuracy is $\pm 0.3\text{mm}$.
- Measured label speed is 36,000 / hour; The speed is faster than the original imported servo brand by more than 30%.



Semiconductor Sorting Equipment

- Rigid and easy-to-adjust performance based on the fast response of the servo;
- Single beat meets the 80ms/time requirement of equipment; the Repeatability is from 0.02 to 0.05mm;
- Arbitrary start and stop can be seamless.
- Reduce scrap rate by more than 20%.

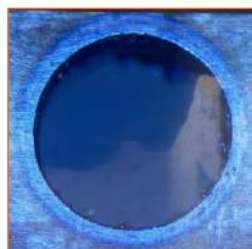


Precision laser cutting equipment

- High-speed fly-cutting round holes, square holes and ellipse
- Processing speed is up to 1.5G acceleration.
- Cutting accuracy is up to 0.03mm;
- Processing arc without burrs; saving processes;
- High consistency of parameters improves commissioning efficiency

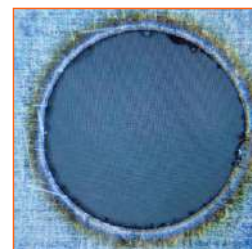


The round hole with 2mm diameter processing effect contrast (electron microscope magnified 300 times)



hole's cutting surface is flat and its cutting arc is smooth and beautiful; small round hole arc consistency is strong; precision is less than 0.01mm.

V512 processing effect



There is fluctuation at the arc linear of flying cut small round hole; the arc surface is uneven, small round hole arc consistency is low and the test accuracy is higher than 0.1mm.

Some imported brand processing effect

Multi-color printing equipment

- Use of 4MHz high frequency pulses in conjunction with system cam synchronization.
- Torque control with high precision, 2% torque startup possible.
- Easy to adjust the tension, film winding and stretching flat.
- Strong synchronization of line speeds, high repeatability of printing;
- Multi-axis using EtherCAT bus, fast control and easy and quick wiring.

