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FRECON

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For FRECON Website
20160302(V1.1)

FRECON



SD1000 Series

Servo System



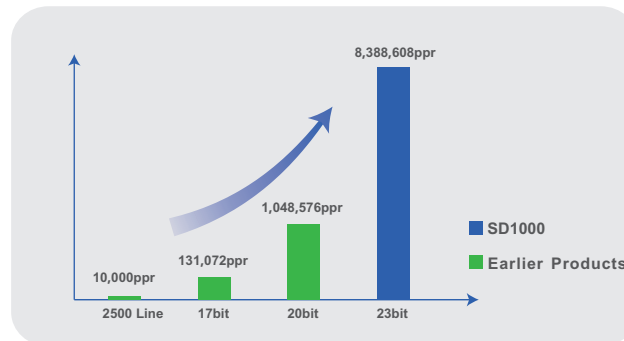
FRECON ELECTRIC (SHENZHEN) CO.,LTD.

Stable and Reliable Servo System

23bit ABS/INC High Accuracy Encoder

Applies to machine tools, electronic equipment, engraving machine, packaging equipment, printing equipment.

- Independent R&D of the 23 bit encoder, encoder resolution to 8388608 pulses per turn.
- Support incremental and absolute encoder.

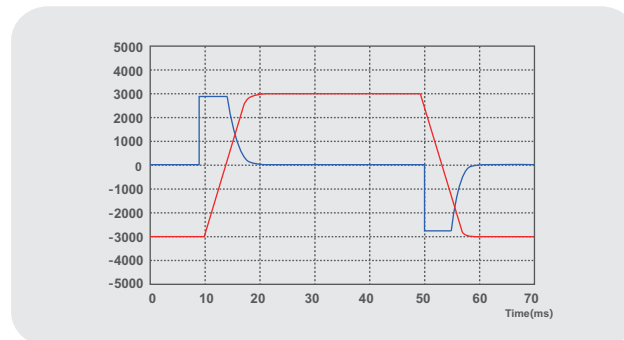


MSL/MAL Servo Motor High Acceleration Performance

Applies to grinding machine, welding equipment, wire cutting, edm machine tools, and etc.

The excellent performance of acceleration and deceleration

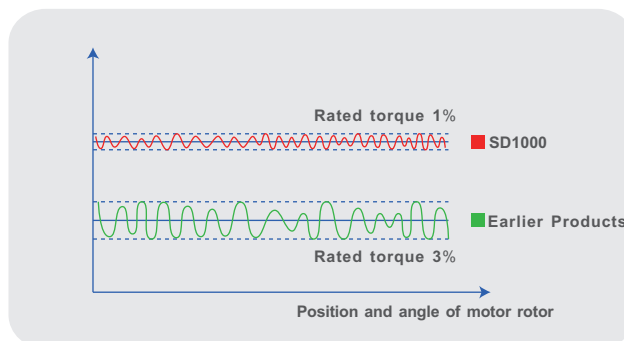
- MS series: automation industry, medium and small inertia, high rotating speed, high overload speed.
- MA series: machine tool industry, medium and small inertia, medium rotate speed, high ratio of torque and current.
- Acceleration from -3000r/min to 3000r/min takes time 6-7ms.



MSL/MAL Servo Motor Low Cogging Torque

Low Cogging Torque

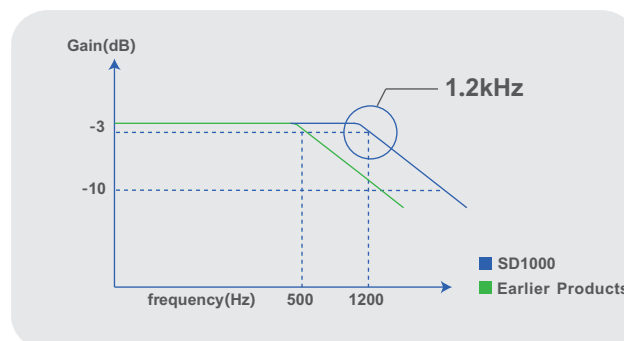
- The best combination of motor's pole number and cogging number can significantly reduce the fluctuation range of the electric torque, positioning torque smaller, to achieve a more smoothly running.
- SD1000 Series software compensates torque ripple, to effectively improve the torque accuracy.



1.2kHz response bandwidth/positioning time close to 1ms

Applies to LED industry, lithium industry, robot, machine tool etc.

- Speed response bandwidth is 1.2kHz
- High response control based on the torque feedforward, can reduce the response delay, position setting time optimal up to 1ms.



Stable and Reliable Servo System

Differential drive connection can support 1M pulse input / single terminal drive optional

Applies to machine tool, mechanical hand etc.

Single terminal drive convenient for PLC connection.

- Both instruction input and feedback output frequency can reach 1Mpps, which can achieve high resolution running.
- Special order version supports 24V NPN/PNP single terminal drive, the highest frequency 200kHz.

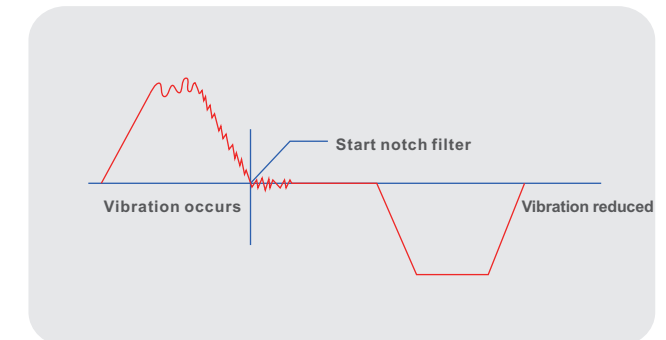
Note: the 24V single terminal drive connection is a special order version S3, pls note when ordering.



Notch filter can suppress high frequency vibration

Notch Filter

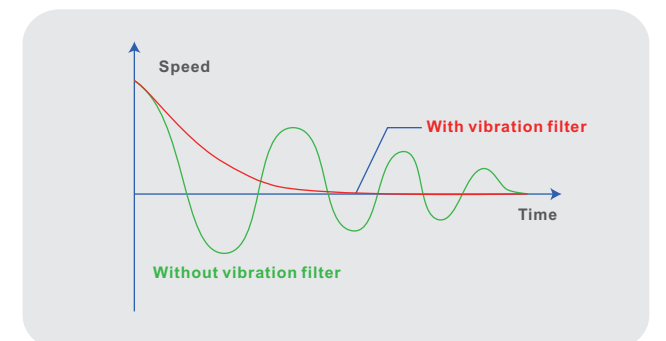
- Set notch filter, which can greatly reduce the noise and vibration caused by mechanical resonance of the device, to achieve quick response action.
- There are 2 notch filters, set the frequency of 50~1500Hz, can be done a deep adjustment.



Vibration filter suppresses low frequency jitter

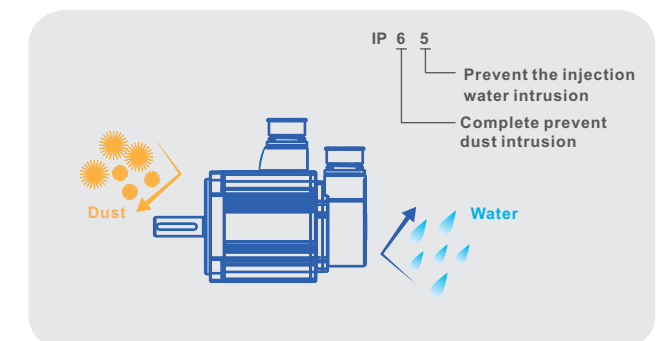
Vibration Filter

- Vibration filter can remove the natural vibration frequency, and sharply reduce the swing of axis when stops, for the frequency 1-100Hz



MS/MA Servo motor IP65 protection grade

- MSL/MAL Motor featured with IP65 protection grade.
- Motor axle head with oil seal standard.

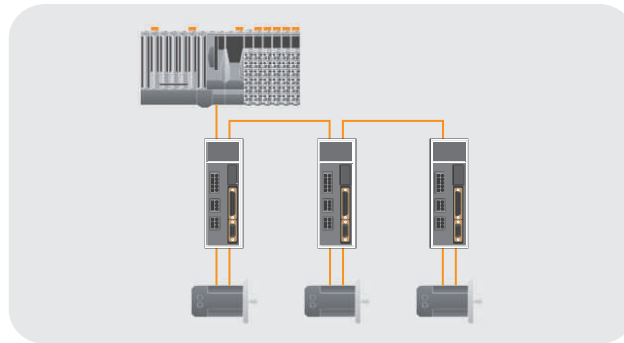


Stable and Reliable Servo System

Matching modbus protocol communication/ CAN communication optional

- Matching modbus protocol: applies to robot, CNC system, automation equipment, etc.
- Matching CAN communication: Customized industry specific communication protocol on customers' requirements.
- Modbus and CAN bus using RJ45 installation; wiring is simple, stable and reliable.

Note: Modbus communication and CAN communication are non – standard functions, need to be customized.

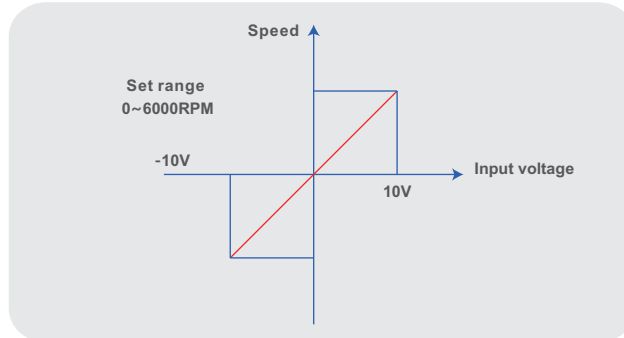


16bit high accuracy ADC optional

Applies to engraving and milling machine, glass machinery, electronic manufacturing equipment, etc.

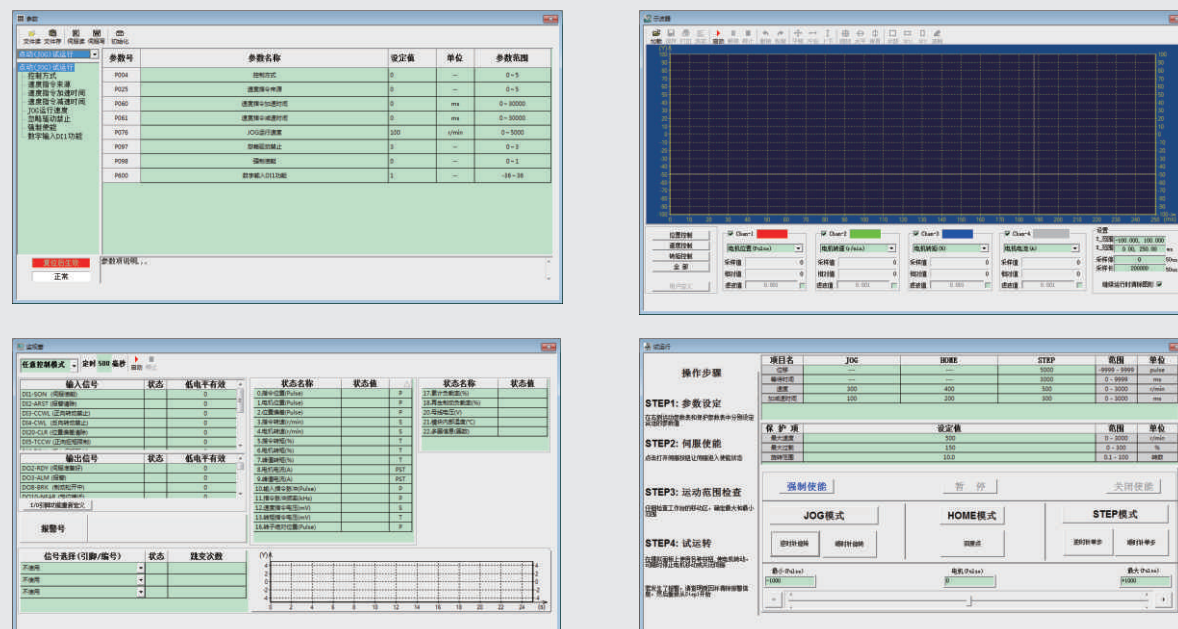
- SD1000 series servo standard common analog with 12bit resolution, optional 16bit high accuracy analog, which can meet the requirements of high accuracy analog and common accuracy analog.

Note: 16bit high precision analog quantity instruction is a non - standard function, need customized.



Servosoft Software

- USB communication interface, plug and play.
- Support parameter reading and parameter download.
- Support real-time recording, online debugging.



SD1000 Series Servo Drive

Technical Data

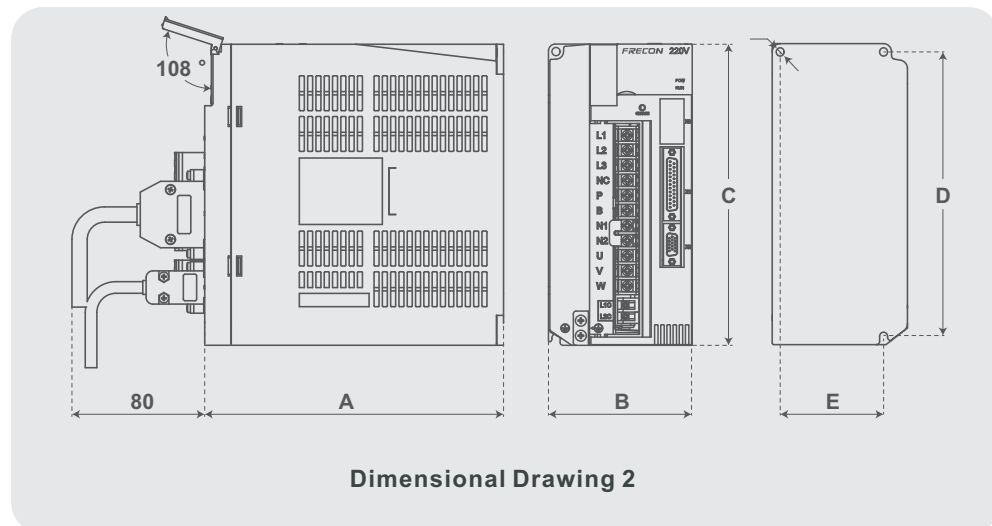
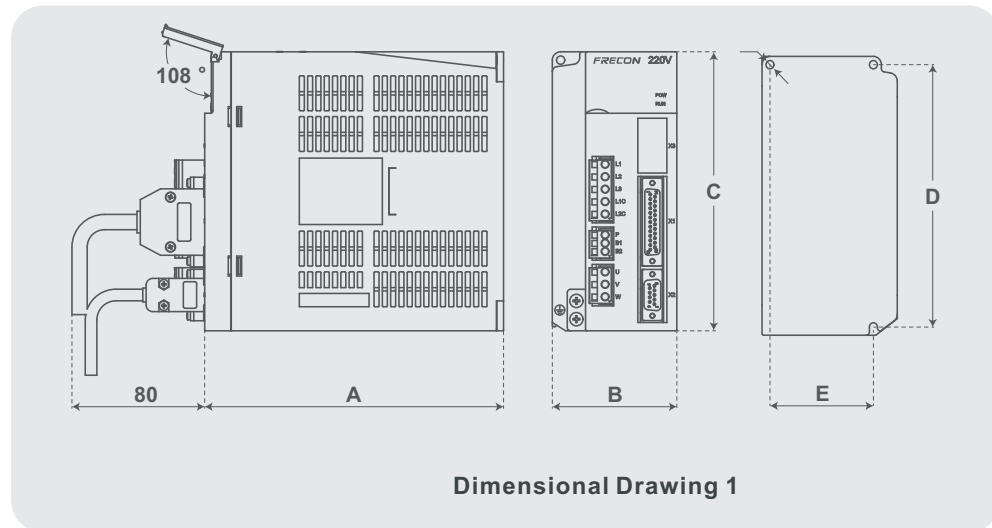
※ In order to facilitate the editing operation :SD1000-L=SL SD1000-H=SH

SD1000 series	Specifications	SL0.1	SL0.2	SL0.5	SL0.8	SL1.0	SL1.5	SL2.5	SL3.5	SL5.5	SH0.6	SH1.0	SH1.5	SH2.0	SH3.0	SH5.0	SH7.5
Input Power	Single phase AC220V, -15%~+10%, 50/60Hz	●	●	●	●	●											
	Three phase AC220V, -15%~+10%, 50/60Hz				●	●	●	●	●	●							
	Three phase AC380V, -15%~+10%, 50/60Hz										●	●	●	●	●	●	●
Environment	Temperature	Operation : 0~40°C, Storage : -40~+50°C															
	Humidity	Operation : 40%~80% (No condensation) Storage up to 93% (No condensation)															
	Atmospheric Pressure	86kPa~106kPa															
Protection Grade	IP20	√															
Control Mode	Vector Control	√															
Regenerative Braking	External	●									●						●
	Internal/ External optional		●	●	●	●	●	●	●		●	●	●	●	●		
Feedback Mode	23bitINC/ABS Encoder	√															
Control Mode	Position/Speed/Torque	√															
Digital Input	5 programmable input terminals (optoelectronic isolation) Functions: servo enable, alarm clearing, forward driving prohibited, reverse drive prohibited, forward torque limit, reverse torque limit, emergency shutdown, electronic gear selection 1, electronic gear select 2, position deviation clear, pulse input prohibited.	√															
Digital Output	3 programmable input terminals (optoelectronic isolation) Functions: servo ready, alarm, positioning finished, speed arrival, electromagnetic brake, torque limit.	√															
Encoder signal output	A、B、Z differential output, Z signal open collector output position.	√															
Position	Input Mode	Differential Input : ≤ 1000kHz (kpps) Single Terminal Input: ≤ 200kHz (kpps)															
	Instruction Mode	Pulse + symbol, forward / reverse pulse, orthogonal pulse															
	Electronic gear ratio	1~32767/1~32767															
Monitoring Functions	Rotate speed, current position, position deviation, motor torque, motor current, instruction pulse frequency protection functions	√															
Protection functions	Over speed, over voltage, over current, over load, brake abnormal, encoder abnormal, position overproof and other characteristics.	√															
Characteristics	Speed frequency response	≥ 1.2kHz															
	Speed fluctuation rate	< ± 0.03% (Load0%~100%) < ± 0.02% (Power-15%~+10%)															
	Speed ratio	1:5000															

Note: "●" means support, "●" means support but not recommended, "√" means SD1000 full range support.

SD1000 Series Servo Drive

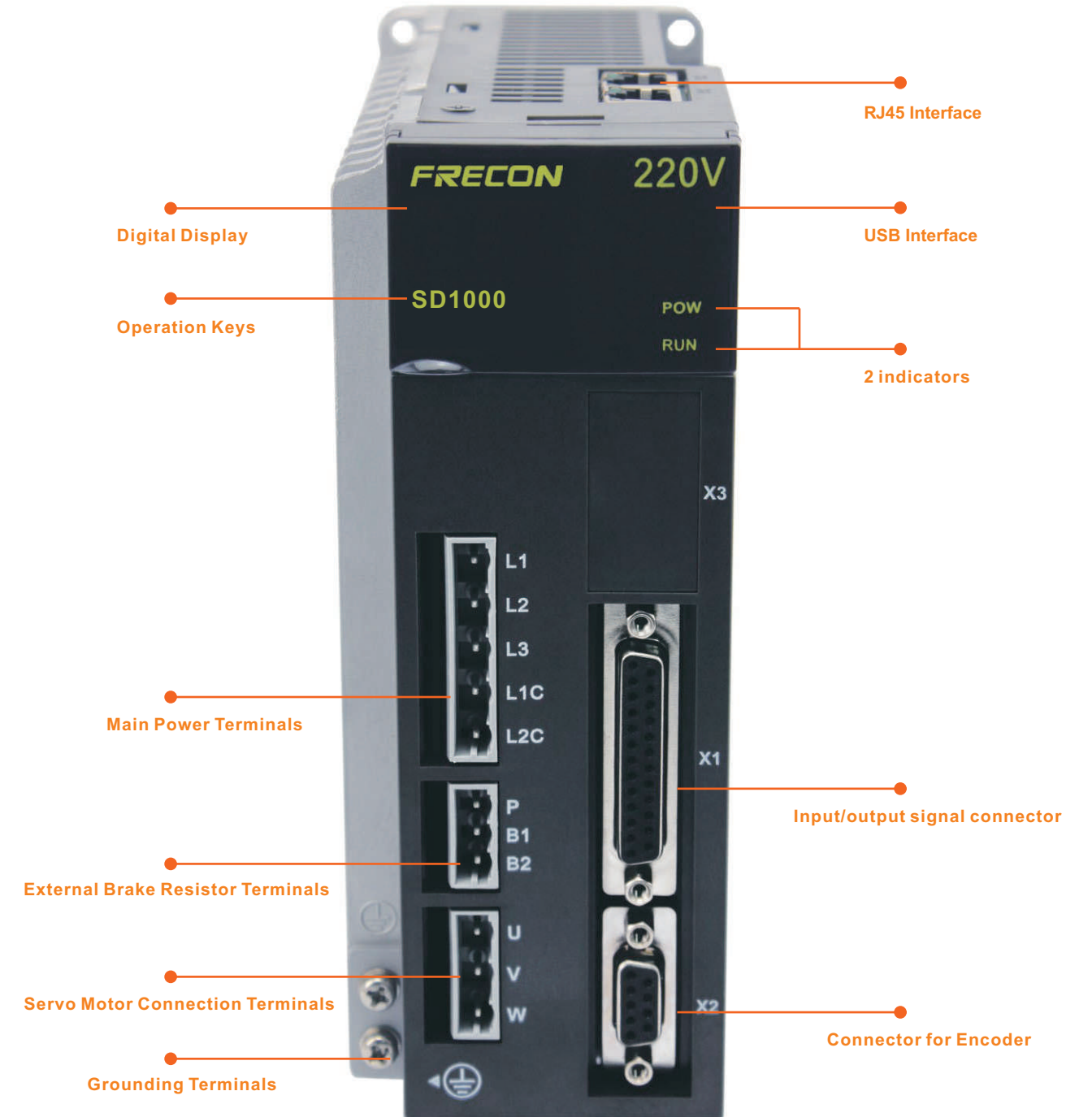
Dimensional Drawing



✘ In order to facilitate the editing operation :SD1000-L=SL SD1000-H=SH

Model Number Dimension (mm)	Dimensional Drawing 1							Dimensional Drawing 2				
	SL0.1	SL0.2	SL0.5	SL0.8	SL1.0	SL1.5	SL2.5	SL3.5	SL5.5			
							SH0.6	SH1.0	SH1.5	SH2.0	SH3.0	SH5.0
A	150	150	180	180	180	180	180	180	210			
B	55	65	75	85	95	95	105	115				
C	168	168	168	168	168	200	220	250				
D	158	158	158	158	158	189	209	239				
E	—	55	65	65	65	84	94	104				

SD1000 Series Terminal Definition



Note: driver configuration is suitable for SD1000L0.1, SD1000L0.2, SD1000L0.5, SD1000L0.8, SD1000L1.0, SD1000L1.5, etc.

SD1000 Series Terminal Definition

Forceful electric power terminal description

In order to facilitate the editing operation :SD1000-L=SL

Name	forceful electric power terminal symbol	Model Number	Detailed Description
Main Circuit Power Terminals	L1、L2	SL0.1、SL0.2、SL0.5	Connect external AC power, single phase 220VAC -15%~+10 50/60Hz
	L1、L2、L3	SL0.8、SL1.0、SL1.5、SL2.5、SL3.5、SL5.5	Connect external AC power, three phase 220VAC -15%~+10 50/60Hz
	L1、L2、L3	SD1000 full range	Connect external AC power, three phase 380 VAC -15%~+10 50/60Hz
Control Circuit Power Terminals	L1C、L2C	SD1000 full range	Connect external AC power, single phase 220VAC -15%~+10 50/60Hz
	24V、0V	SD1000 full range	External DC24V
Brake Resistor Terminal	P、B1、B2	SL0.1、SL0.2、SL0.5、SL0.8、SL1.0、SL1.5、SL2.5	When use external braking resistor, disconnected B1 and B2, and the external braking resistor connected to the end P and B1, make B2 suspended.
	NC、P、B	SL3.5、SL5.5	When use external braking resistor, firstly disconnect the wirings of internal brake resistor between P and B, meanwhile, connect the 2 cables of internal brake resistor to NC, and then connect the external brake resistor to P and B.
Power Harmonic Rejection DC reactor connection terminals	N1、N2	SL3.5、SL5.5	When suppress the power harmonics, connect DC reactor to N1 and N2.
Motor Connection Terminals	U	SD1000 full range	Output to the motor U phase power supply
	V		Output to the motor V phase power supply
	W		Output to the motor W phase power supply
Grounding Terminals	⊕	SD1000 full range	Motor Casing Grounding Terminals
	⊖		Driver Grounding Terminals

X1 terminal signal instruction

Control signal terminal name	Pin number	Function	
Digital input	DI1	14	Photoelectric isolation input, function can be programmed Defined by the parameter P100~P104
	DI2	2	
	DI3	15	
	DI4	3	
	DI5	16	
COM+	1	DI Power Supply (DC12V~24V)	
Digital output	DO1	4	Photoelectric isolated output, maximum output power 50mA/25V, function can be programmed, by parameter P130~P132
	DO2	17	
	DO3	5	
	DOCOM	18	
Position pulse instruction	PULS+	20	High speed photoelectric isolation input, the working mode is set by parameter P035: Pulse + symbol Forward / reverse pulse Orthogonal pulse
	PULS-	7	
	SIGN+	19	
	SIGN-	6	
Analog instruction input	AS+	21	Speed / torque of analog input Range :-10V~+10V
	AS-	8	Analog signal grounding
	AGND	9	
Encoder signal output	OA+	11	Differential drive of the encoder signal after frequency division (Line Driver)Output
	OA-	23	
	OB+	12	
	OB-	24	
	OZ+	13	
	OZ-	25	
CZ	22	Z signal open-collector output	
GND	10	Encoder Signal Grounding	
Shielding wire protection	Plug with metal case	Shielded wires for connecting shielded cable	

X2 terminal signal instruction

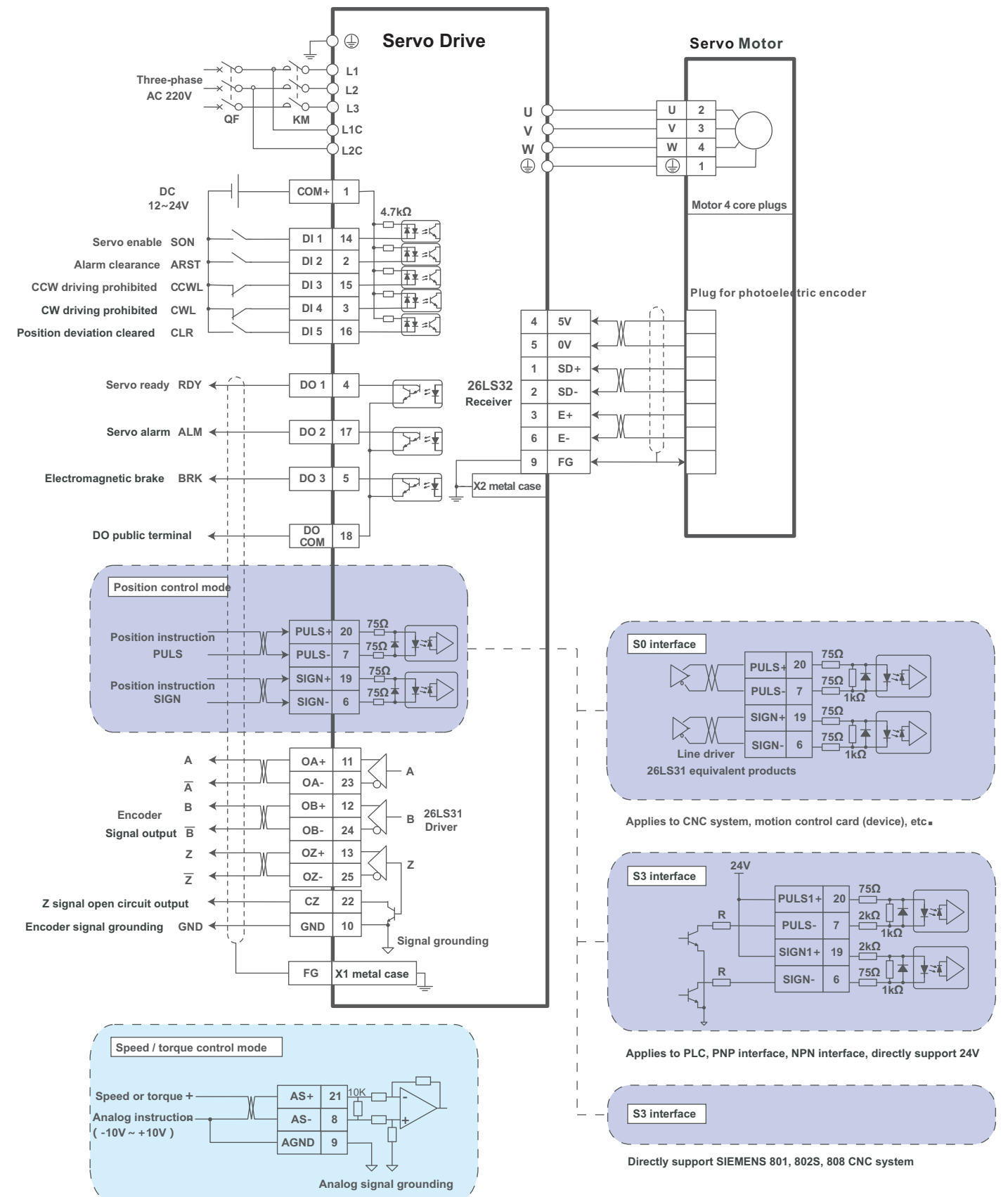
Encoder signal name	Pin number		Function
	Absolute type	Incremental type	
Encoder power supply	5V	4	Encoder use 5V power supply (provided by driver), when the cable longer than 20m, in order to prevent the encoder voltage from decrease, power and grounding can use multi-line connection or use thick wires
	0V	5	
Signal input	SD+	1	Connect to absolute encoder signal output
	SD-	2	
External battery pin	E+	3	External battery pin
	E-	6	
Shielded wire protective grounding	FG	9	Connected to signal cable shielding line

X5、X6 terminal signal instruction

Rj45 terminal name	Pin number	Function	
RS-485 input / output signal cable	485B	1	Isolated 485B
	485A	2	Isolated 485A
	485-GND	6	RS485 grounding
CAN input / output signal cable	CANH	4	Isolated CAN high level input voltage input / output
	CANL	5	Isolated CAN low level input voltage input / output
	CAN-GND	8	CAN grounding
Shielding wire protection	PE	7	Grounding
	PE	3	Grounding

SD1000 Series Servo Drive

Control Mode

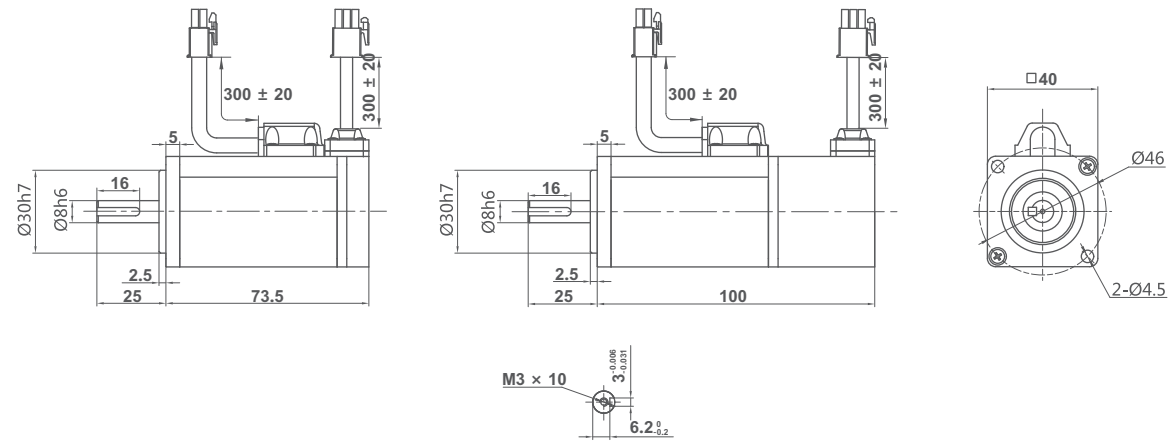


MSL series Motor 40

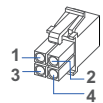
Motor Technical Parameters

Model	Rated power kW	Rated voltage V	Rated current A	Peak current A	Rated speed rpm	Maximum speed rpm	Rated torque N·M	Peak torque N·M	Inertia ($\times 10^{-3}$ kg·m ²) (inertia with brake)	Motor weight kg (weight with brake)	
40MSL00330	0.1	220	1.10	3.00	3000	5000	0.318	0.95	0.035(0.052)	0.3(0.5)	
Brake parameter	Brake voltage (DC) V	Brake torque N·m	Brake power W	Environmental parameters for operation	Operation temperature °C	Operation humidity	Protection grade IP				
	24	0.318	4.0		0~+40	The relative humidity is lower than 90% (No condensation)	IP65				

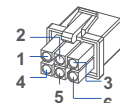
Motor Dimensions



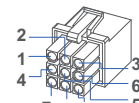
Motor Connection Definition



Standard power plug	
Terminal symbol	Signal
1	U
2	V
3	W
4	Shielding wire



With brake power plug	
Terminal symbol	Signal
1	U
2	V
3	W
4	Shielding wire
5	BK+
6	BK-



Absolute value signal plug	
Terminal symbol	Signal
1	SD+
2	SD-
3	Battery +
4	—
5	—
6	VCC
7	GND
8	Battery -
9	Shielding wire

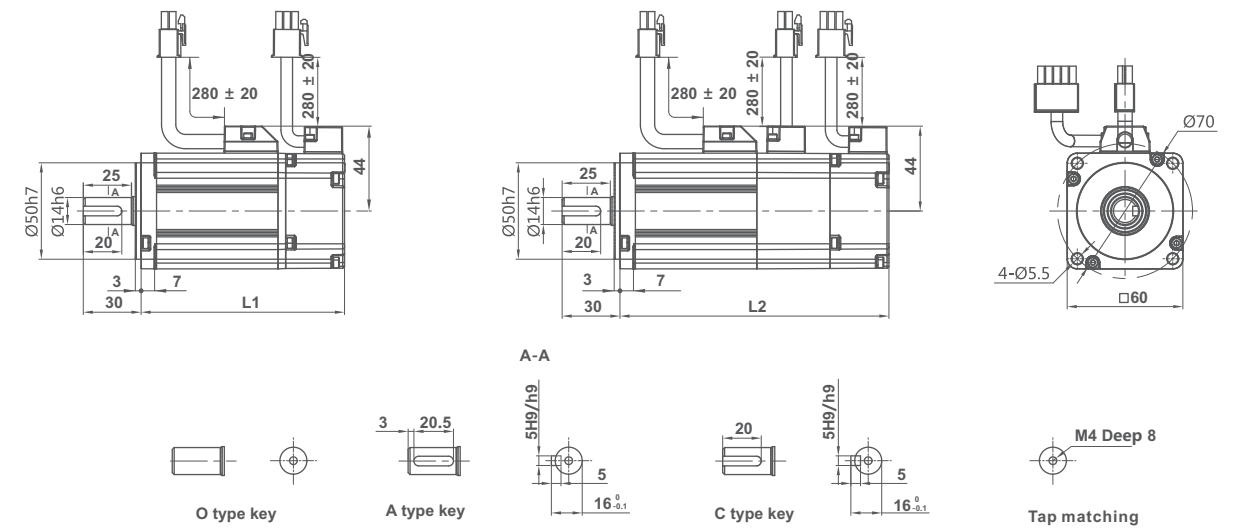
Note: 40 motor only supports.

MSL series Motor 60

Motor Technical Parameters

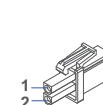
Model	Rated power kW	Rated voltage V	Rated current A	Peak current A	Rated speed rpm	Maximum speed rpm	Rated torque N·M	Peak torque N·M	Inertia ($\times 10^{-3}$ kg·m ²) (inertia with brake)	Motor weight kg (weight with brake)	
60MSL00630	0.2	220	1.70	5.10	3000	6000	0.64	1.92	0.017(0.019)	1.10(1.60)	
60MSL01330	0.4	220	2.70	8.10	3000	6000	1.27	3.81	0.027(0.030)	1.60(2.00)	
60MSL01930	0.6	220	3.50	10.50	3000	6000	1.91	5.73	0.044(0.047)	1.80(2.20)	
Brake parameter	Brake voltage (DC) V	Brake torque N·m	Brake power W	Environmental parameters for operation	Operation temperature °C	Operation humidity	Protection grade IP				
	24	1.3	7.2		0~+40	The relative humidity is lower than 90% (No condensation)	IP65				

Motor Dimensions

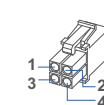


Rated torque (N·m)	L(mm)		
	L1	L2	Absolute value motor
0.64	105.5	130.5	144.0
1.27	139.5	164.5	178.0
1.91	114.0	139.0	153.0
	148.0	173.0	187.0

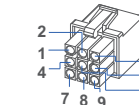
Motor Connection Definition



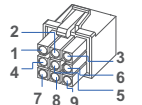
Brake plug	
Terminal symbol	Signal
1	Power supply +
2	Power supply -



Power supply plug	
Terminal symbol	Signal
1	U
2	V
3	W
4	Shielding wire



Absolute value signal plug	
Terminal symbol	Signal
1	SD+
2	SD-
3	Battery +
4	—
5	—
6	VCC
7	GND
8	Battery -
9	Shielding wire



Incremental signal plug	
Terminal symbol	Signal
1	SD+
2	SD-
3	—
4	—
5	—
6	VCC
7	GND
8	—
9	Shielding wire

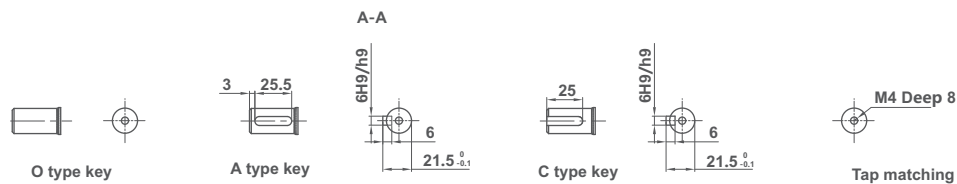
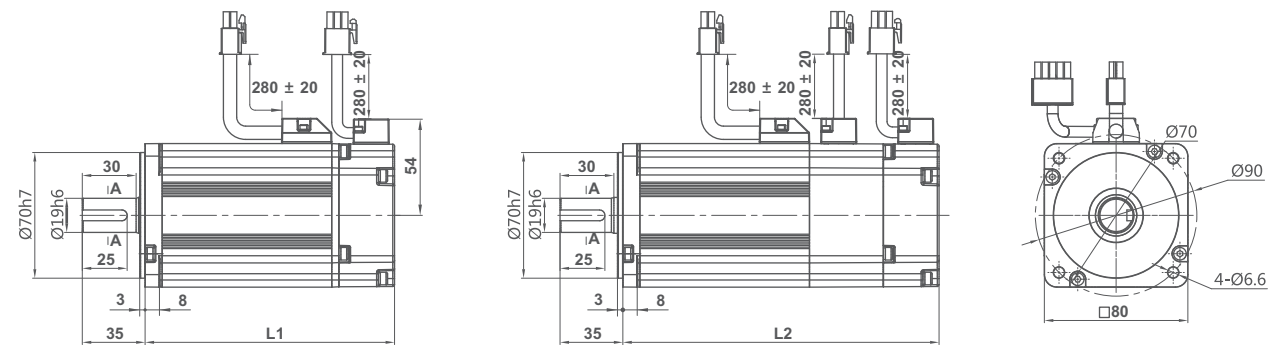
MSL series Motor 80

Motor Technical Parameters

Model	Rated power kW	Rated voltage V	Rated current A	Peak current A	Rated speed rpm	Maximum speed rpm	Rated torque N·M	Peak torque N·M	Inertia ($\times 10^{-3} \text{kg}\cdot\text{m}^2$) (inertia with brake)	Motor weight kg (weight with brake)
80MSL01330	0.4	220	2.40	7.20	3000	6000	1.27	3.81	0.068(0.073)	2.10(2.70)
80MSL02430	0.75	220	5.00	15.00	3000	6000	2.39	7.17	0.113(0.118)	2.90(3.50)
80MSL03230	1.0	220	6.30	18.90	3000	6000	3.18	9.54	0.113(0.118)	2.90(3.50)

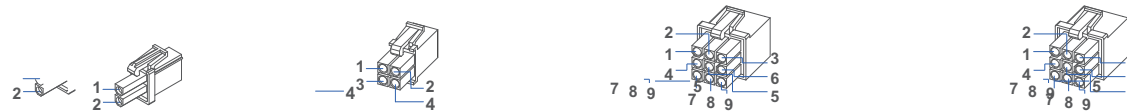
Brake parameter	Brake voltage (DC) V	Brake torque N·m	Brake power W	Environmental parameters for operation	Operation temperature °C	Operation humidity	Protection grade IP
	24	3.2	11.5		0~+40	The relative humidity is lower than 90% (No condensation)	

Motor Dimensions



Rated torque (N·m)		1.27	2.39	3.20
L(mm)	L1	114.0	139.0	139.0
	L2	151.0	176.0	176.0
L(mm)	L1	122.5	147.5	147.5
	L2	159.5	184.5	184.5
Absolute value motor				

Motor Connection Definition



Terminal symbol	Signal
1	Power supply +
2	Power supply -

Terminal symbol	Signal
1	U
2	V
3	W
4	Shielding wire

Terminal symbol	Signal
1	SD+
2	SD-
3	Battery +
4	—
5	—
6	VCC
7	GND
8	Battery -
9	Shielding wire

Terminal symbol	Signal
1	SD+
2	SD-
3	—
4	—
5	—
6	VCC
7	GND
8	—
9	Shielding wire

Note: 40 motor only supports.

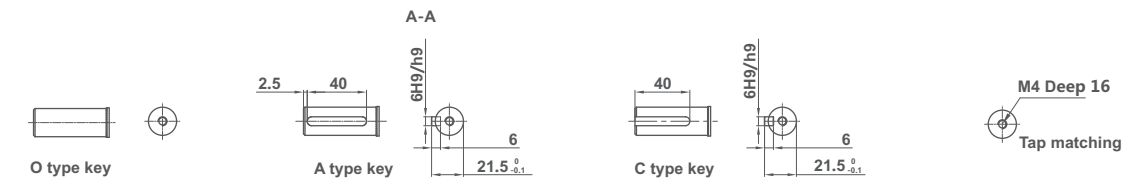
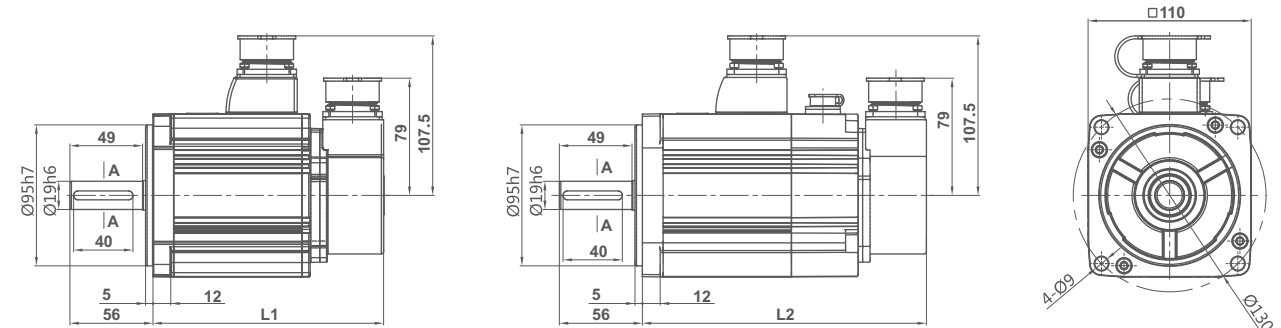
MSL/MAL series Motor 110

Motor Technical Parameters

Model	Rated power kW	Rated voltage V	Rated current A	Peak current A	Rated speed rpm	Maximum speed rpm	Rated torque N·M	Peak torque N·M	Inertia ($\times 10^{-3} \text{kg}\cdot\text{m}^2$) (inertia with brake)	Motor weight kg (weight with brake)
110MSL03225	0.83	220	4.50	13.50	2500	4500	3.18	9.54	0.26(0.28)	4.50(6.20)
110MSL04825	1.25	220	6.10	18.30	2500	4500	4.77	14.31	0.37(0.39)	5.60(7.20)
110MSL06425	1.67	220	8.40	25.20	2500	4500	6.37	19.11	0.50(0.52)	6.70(8.30)
110MAL04030	1.26	220	5.30	15.90	3000	4000	4.00	12.00	0.31(0.33)	4.80(6.60)
110MAL05030	1.57	220	5.80	17.40	3000	3500	5.00	15.00	0.43(0.45)	6.00(7.60)
110MAL06030	1.88	220	6.60	19.80	3000	3500	6.00	18.00	0.50(0.52)	6.70(8.30)

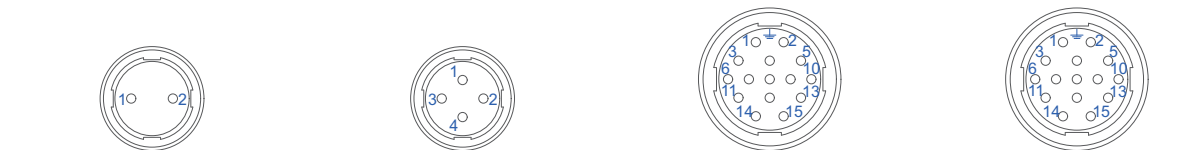
Brake parameter	Brake voltage (DC) V	Brake torque N·m	Brake power W	Environmental parameters for operation	Operation temperature °C	Operation humidity	Protection grade IP
	24	8	14.4		0~+40	The relative humidity is lower than 90% (No condensation)	

Motor Dimensions



Rated torque (N·m)		3.18	4.77	6.37	4.00	5.00	6.00
L(mm)	L1	155.5	175.5	195.5	163.5	183.5	195.5
	L2	191.5	211.5	231.5	199.5	219.5	231.5

Motor Connection Definition



Terminal symbol	Signal
1	Power supply +
2	Power supply -

Terminal symbol	Signal
1	Shielding wire
2	U
3	V
4	W

Terminal symbol	Signal
1	Shielding wire
2	VCC
3	GND
4	Battery +
5	Battery -
6	SD+
7	SD-
8	—
9	—
10	—
11	—
12	—
13	—
14	—
15	—

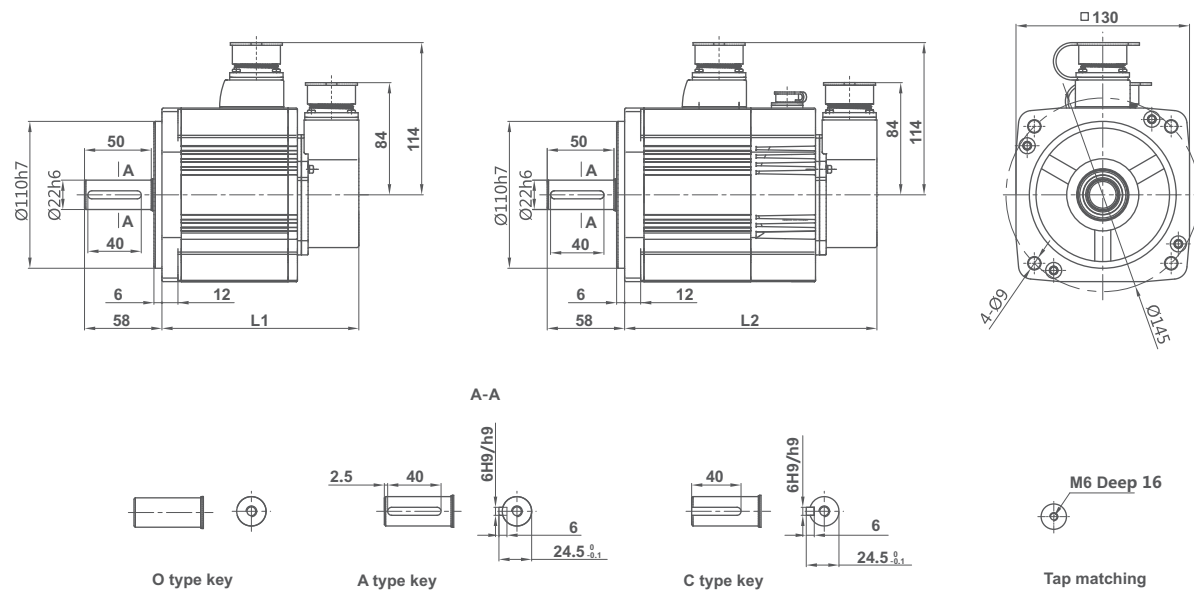
Terminal symbol	Signal
1	Shielding wire
2	VCC
3	GND
4	—
5	—
6	SD+
7	SD-
8	—
9	—
10	—
11	—
12	—
13	—
14	—
15	—

MSL/MAL series Motor 130

Motor Technical Parameters

Model	Rated power kW	Rated voltage V	Rated current A	Peak current A	Rated speed rpm	Maximum speed rpm	Rated torque N·M	Peak torque N·M	Inertia ($\times 10^{-3}$ kg.m ²) (inertia with brake)	Motor weight kg (weight with brake)
130MSL04820	1.00	220	5.80	17.40	2000	4000	4.77	14.31	0.48(0.58)	5.50(8.10)
130MSL05025	1.31	220	6.10	18.30	2500	4000	5.00	15.00	0.48(0.58)	5.50(8.10)
130MSL07220	1.50	220	8.60	25.80	2000	4000	7.16	21.48	0.71(0.74)	7.10(9.70)
130MSL09620	2.00	220	11.30	33.90	2000	4000	9.55	28.65	0.94(0.97)	8.70(11.30)
130MSL10025	2.62	220	11.50	34.50	2500	4000	10.00	30.00	0.94(0.97)	8.70(11.30)
130MSL14320	2.99	220	14.10	42.30	2000	3500	14.30	42.90	1.41(1.44)	12.30(14.70)
130MAL06025	1.57	220	5.90	17.70	2500	3000	6.00	18.00	0.65(0.68)	6.80(9.30)
130MAL07725	2.02	220	7.70	23.10	2500	3000	7.70	23.10	0.83(0.86)	8.00(10.60)
130MAL10015	1.57	220	6.60	19.80	1500	2000	10.00	30.00	0.94(0.97)	8.80(11.40)
130MAL15015	2.36	220	9.00	27.00	1500	2000	15.00	45.00	1.41(1.44)	12.10(14.60)

Motor Dimensions



Type	MSL					MAL				
Rated torque (N·m)	4.77	5.00	7.16	9.55	10.00	6.00	7.70	10.00	15.00	
L(mm)	L1	147.5	167.5	187.5	227.5	162.5	177.5	187.5	227.5	
	L2	189.0	209.0	229.0	269.0	204.0	219.0	229.0	269.0	

Motor Connection Definition

Motor power line, brake line and encoder line same to wiring specifications of MSL/MAL series motor.

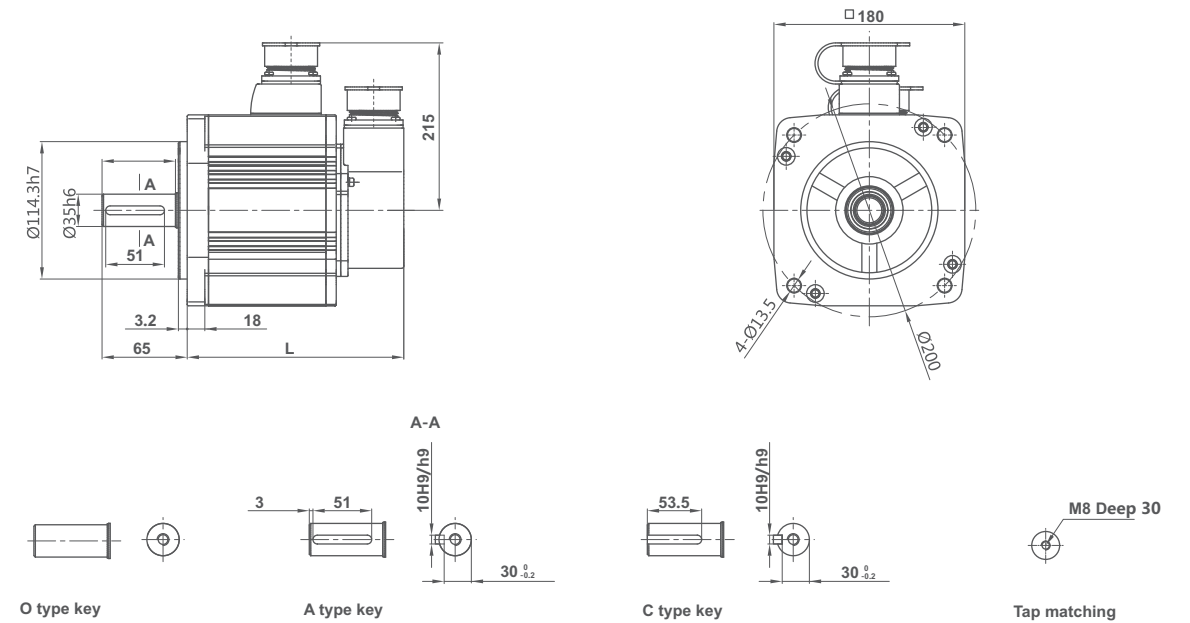
MSL series Motor 180

Motor Technical Parameters

Model	Rated power kW	Rated voltage V	Rated current A	Peak current A	Rated speed rpm	Rated torque N·M	Peak torque N·M	Inertia ($\times 10^{-3}$ kg.m ²)	Motor weight kg
180MSL19015	3.00	220	12.00	36.00	1500	19.00	47.00	3.80	20.5
180MSL27015	4.30	220	16.00	48.00	1500	27.00	67.00	6.10	25.5
180MSL35015	5.50	220	19.00	57.00	1500	35.00	70.00	8.60	30.5
180MSL48015	7.50	220	32.00	96.00	1500	48.00	96.00	9.50	40.0

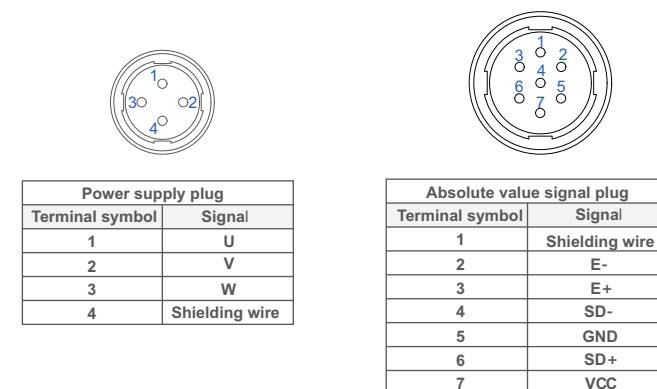
Brake parameter	Operation temperature °C	Operation humidity	Protection grade IP
	0 ~ +40	The relative humidity is lower than 90% (No condensation)	IP65

Motor Dimensions



Rated torque (N·m)	19.00	27.00	35.00	48.00
L(mm)	232.0	262.0	292.0	346.0

Motor Connection Definition



Note: 180 motor only supports multi-circle absolute value encoder.

Order Number Description

Servo Drive SD1000

SD1000 - L - 1.0 - B0S0M

① ② ③ ④ ⑤ ⑥



① Symbol	Series No.
SD1000	SD1000 series servo System

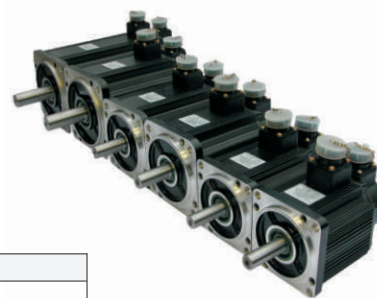
② Symbol	Main power supply voltage
L	220V
H	380V

③ Symbol	Support rated power of motor
0.1	0.1kW
0.2	0.2kW
0.5	0.5kW
0.8	0.8kW
1.0	1.0kW
1.5	1.5kW
2.5	2.5kW
3.5	3.5kW
5.5	5.5kW

④ Symbol	Encoder
B0	23bit Yuheng Incremental Encoder
E3	Tamagawa 23bit absolute encoder

⑤ Symbol	Control mode
S0	Standard 5V differential signal input
S3	Standard 24V single terminal signal input
S8	Special specification for Siemens CNC

⑥ Symbol	Communication protocol
M	Support Modbus
C	Support CAN
O	Do not support Modbus and CAN bus



Servo Motor

110 M A L 040 30 - B0 N O

① ② ③ ④ ⑤ ⑥ ⑦

① Symbol	The base number
40	40mm
60	60mm
80	80mm
110	110mm
130	130mm
150	150mm
180	180mm

④ Symbol	Rated speed
10	1000rpm
15	1500rpm
20	2000rpm
25	2500rpm
30	3000rpm

② Symbol	Main power supply voltage
L	220V
H	380V

⑤ Symbol	Encoder
B0/B	23bit Yuheng Incremental Encoder
E3/M	Tamagawa 23bit absolute encoder

③ Symbol	Rated torque
040	4.00N.m
050	5.00N.m
060	6.00N.m
096	9.55N.m
100	10.00N.m

⑥ Symbol	Brake
N	Not configured
Z	configure electric-loss brake

⑦ Symbol	Specifications
O	Circular shaft
A	Closed key
C	Forelock key

Order Number Description

P □□□ - 04 075 A04

① ② ③ ④ ⑤

① Symbol	Cable type
P	Power cable
B	Brake cable

② Symbol	Cable length
030	3m
050	5m
070	7m
100	10m

③ Symbol	Plug
02	2 core brake cable plug
04	4 core power cable plug
06	6 core brake power plug (motor 40 series)

④ Symbol	Cable specification
050	0.50mm ² (Rated current)
075	0.75mm ² (Rated current)
150	1.50mm ² (Rated current)
250	2.50mm ² (Rated current)
400	4.00mm ² (Rated current)
600	6.00mm ² (Rated current)

⑤ Symbol	Motor side connector
A04	4 core amp connector (motor 40 series, 60 series, 80 series)
H04	4 core air plug connector (motor 110 series, 130 series)
H04B	4 core air plug connector (motor 180)

L □□□ - ETH

① ② ③

① Symbol	Cable type
L	Communication cable

② Symbol	Cable length
003	0.3m
010	1.0m
030	3.0m

③ Symbol	Specifications
ETH	Standard RJ45 communication cable

USB_ISO Isolation Communication Suite

1 USB_ISO box

1 USB_1m cable



E □□□ - DB09 □□ A09

① ② ③ ④ ⑤

① Symbol	Cable type
E	Encoder cable

② Symbol	The base number
030	3m
050	5m
070	7m
100	10m

③ Symbol	Plug specification
DB09	Servo driver terminal DB09
DB15	Servo driver terminal DB15
S261	Servo driver terminal S261

④ Symbol	Encoder specification
B0	Serial 23bit incremental encoder
E3	Serial 23bit absolute encoder

⑤ Symbol	Encoder
A09	15 core air plug connector
A15	9 core amp connector

C □□□ - SD1000 DB25 S/808D

① ② ③ ④ ⑤

① Symbol	Cable type
C	Control cable

② Symbol	Cable length
030	3m
050	5m
070	7m
100	10m

③ Adapter driver series

④ Symbol	Plug specification
DB25	Servo driver terminal DB25
DB44	Servo driver terminal DB44
S361	Servo driver terminal S361

⑤ Symbol	CNC system
S/808D	Siemens 808D CNC system

220V Matching table

✂ In order to facilitate the editing operation :SD1000-L=SL

Motor model	Torque N·M	Rated speed rpm	Power kW	Voltage V	Rotor inertia ($\times 10^{-3} \text{kg}\cdot\text{m}^2$)	suggest match	Can match	Power cable	Encoder cable	Brake cable
40MSL00330	0.318	3000	0.10	220	0.0035	SL0.1		P□□□-04075A04	E□□□-DB09E3A09	P□□□-04075A06
60MSL00630	0.64	3000	0.20	220	0.017	SL0.2		P□□□-04075A04	E□□□-DB09□□ A09	B□□□-02050A02
60MSL01330	1.27	3000	0.40	220	0.027	SL0.5		P□□□-04075A04	E□□□-DB09□□ A09	B□□□-02050A02
60MSL01930	1.91	3000	0.60	220	0.044	SL0.8	SL0.5	P□□□-04075A04	E□□□-DB09□□ A09	B□□□-02050A02
80MSL01330	1.27	3000	0.40	220	0.068	SL0.5		P□□□-04075A04	E□□□-DB09□□ A09	B□□□-02050A02
80MSL02430	2.39	3000	0.75	220	0.113	SL0.8	SL1.0	P□□□-04075A04	E□□□-DB09□□ A09	B□□□-02050A02
80MSL03230	3.18	3000	1.00	220	0.113	SL1.0		P□□□-04075A04	E□□□-DB09□□ A09	B□□□-02050A02
110MSL03225	3.18	2500	0.83	220	0.26	SL1.0	TL1.5	P□□□-04150H04	E□□□-DB09□□ H15	B□□□-02050H02
110MSL04825	4.77	2500	1.25	220	0.37	SL1.5		P□□□-04150H04	E□□□-DB09□□ H15	B□□□-02050H02
110MSL06425	6.37	2500	1.67	220	0.50	SL1.0	SL1.5	P□□□-04150H04	E□□□-DB09□□ H15	B□□□-02050H02
110MAL04030	4.00	3000	1.26	220	0.31	SL1.5		P□□□-04150H04	E□□□-DB09□□ H15	B□□□-02050H02
110MAL05030	5.00	3000	1.57	220	0.43	SL1.5		P□□□-04150H04	E□□□-DB09□□ H15	B□□□-02050H02
110MAL06030	6.00	3000	1.88	220	0.50	SL1.5		P□□□-04150H04	E□□□-DB09□□ H15	B□□□-02050H02
130MSL04820	4.77	2000	1.00	220	0.48	SL1.0	SL1.5	P□□□-04150H04	E□□□-DB09□□ H15	B□□□-02050H02
130MSL05025	5.00	2500	1.31	220	0.48	SL1.5	SL1.0	P□□□-04150H04	E□□□-DB09□□ H15	B□□□-02050H02
130MSL07220	7.16	2000	1.50	220	0.71	SL1.5	SL2.5	P□□□-04150H04	E□□□-DB09□□ H15	B□□□-02050H02
130MSL09620	9.55	2000	2.00	220	0.94	SL2.5	SL3.5	P□□□-04150H04	E□□□-DB09□□ H15	B□□□-02050H02
130MSL10025	10.00	2500	2.62	220	0.94	SL2.5		P□□□-04150H04	E□□□-DB09□□ H15	B□□□-02050H02
130MSL14320	14.30	2000	3.00	220	1.41	SL3.5	SL5.5	P□□□-04250H04	E□□□-DB09□□ H15	B□□□-02050H02
130MAL06025	6.00	2500	1.57	220	0.65	SL1.5		P□□□-04150H04	E□□□-DB09□□ H15	B□□□-02050H02
130MAL07725	7.70	2500	2.02	220	0.83	SL2.5	SL1.5	P□□□-04150H04	E□□□-DB09□□ H15	B□□□-02050H02
130MAL10015	10.00	1500	1.57	220	0.94	SL1.5		P□□□-04150H04	E□□□-DB09□□ H15	B□□□-02050H02
130MAL15015	15.00	1500	2.36	220	1.41	SL2.5	SL1.5	P□□□-04150H04	E□□□-DB09□□ H15	B□□□-02050H02
180MSL19015	19.00	1500	3.00	220	3.80	SL3.5	SL5.5	P□□□-04250H04B	E□□□-DB09E3H09	B□□□-02050H02
180MSL27015	27.00	1500	4.30	220	6.10	SL5.5		P□□□-04250H04B	E□□□-DB09E3H09	B□□□-02050H02
180MSL35015	35.00	1500	5.50	220	8.60	SL5.5		P□□□-04250H04B	E□□□-DB09E3H09	B□□□-02050H02
180MSL48015	48.00	1500	7.50	220	9.50	SL5.5		P□□□-04250H04B	E□□□-DB09E3H09	B□□□-02050H02

380V Matching table

✂ In order to facilitate the editing operation :SD1000-H=SH

Motor model	Torque N·M	Rated speed rpm	Power kW	Voltage V	Rotor inertia ($\times 10^{-3} \text{kg}\cdot\text{m}^2$)	suggest match	Can match	Power cable	Encoder cable	Brake cable
60MSH00630	0.64	3000	0.20	380	0.017	SH0.6		P□□□-04075A04	E□□□-DB09□□ A09	B□□□-02050A02
60MSH01330	1.27	3000	0.40	380	0.027	SH0.6		P□□□-04075A04	E□□□-DB09□□ A09	B□□□-02050A02
60MSH01930	1.91	3000	0.60	380	0.044	SH0.6		P□□□-04075A04	E□□□-DB09□□ A09	B□□□-02050A02
80MSH01330	1.27	3000	0.40	380	0.068	SH0.6		P□□□-04075A04	E□□□-DB09□□ A09	B□□□-02050A02
80MSH02430	2.39	3000	0.75	380	0.113	SH1.0		P□□□-04075A04	E□□□-DB09□□ A09	B□□□-02050A02
80MSH03230	3.18	3000	1.00	380	0.113	SH1.0		P□□□-04075A04	E□□□-DB09□□ A09	B□□□-02050A02
110MAH04030	4.00	3000	1.26	380	0.31	SH1.5	SH1.0	P□□□-04150H04	E□□□-DB09□□ H15	B□□□-02050H02
110MAH05030	5.00	3000	1.57	380	0.43	SH1.5		P□□□-04150H04	E□□□-DB09□□ H15	B□□□-02050H02
110MAH06030	6.00	3000	1.88	380	0.50	SH1.5	SH2.0	P□□□-04150H04	E□□□-DB09□□ H15	B□□□-02050H02
130MSH04820	4.77	2000	1.00	380	0.48	SH1.0		P□□□-04150H04	E□□□-DB09□□ H15	B□□□-02050H02
130MSH05025	5.00	2500	1.31	380	0.48	SH1.5	SH1.0	P□□□-04150H04	E□□□-DB09□□ H15	B□□□-02050H02
130MSH10025	10.00	2500	2.62	380	0.94	SH3.0		P□□□-04150H04	E□□□-DB09□□ H15	B□□□-02050H02
130MAH06025	6.00	2500	1.57	380	0.65	SH1.5		P□□□-04150H04	E□□□-DB09□□ H15	B□□□-02050H02
130MAH07725	7.70	2500	2.00	380	0.83	SH2.0		P□□□-04150H04	E□□□-DB09□□ H15	B□□□-02050H02
130MAH10015	10.00	1500	1.57	380	0.94	SH1.5		P□□□-04150H04	E□□□-DB09□□ H15	B□□□-02050H02
130MAH15015	15.00	1500	2.36	380	1.41	SH3.0		P□□□-04150H04	E□□□-DB09E3H09	B□□□-02050H02
180MSH19015	19.00	1500	3.00	380	3.80	SH3.0		P□□□-04250H04B	E□□□-DB09E3H09	B□□□-02050H02
180MSH27015	27.00	1500	4.30	380	6.10	SH5.0		P□□□-04250H04B	E□□□-DB09E3H09	B□□□-02050H02
180MSH35015	35.00	1500	5.50	380	8.60	SH5.0	SH7.5	P□□□-04250H04B	E□□□-DB09E3H09	B□□□-02050H02
180MSH48015	48.00	1500	7.50	380	9.50	SH7.5		P□□□-04250H04B	E□□□-DB09E3H09	B□□□-02050H02

- Note: 1. Motor 40 and Motor 180 only support E3 (absolute) series encoder;
 2. 3 digits "□□□" reserved in adaptation table power cable order number, for cable length specification, more details please refer to the introduction of cable specification;
 3. 2 digits "□□" reserved in adaptation table encoder order numbers, for encoder specification, "B0" is serial 23bit incremental encoder, "E3" is serial 23bit absolute encoder, more details please refer to the introduction of cable specification.