

Kinco

PROVEN PERFORMANCE

Customers in over 60 countries and in diverse markets and sectors.



Motion
Control
Servo System

Low-voltage Servo System Catalog

- FD1X4S Servo Driver
- FD1X3 Servo Driver
- Low-voltage Servo Motor
- MD series integrated Servo Motor

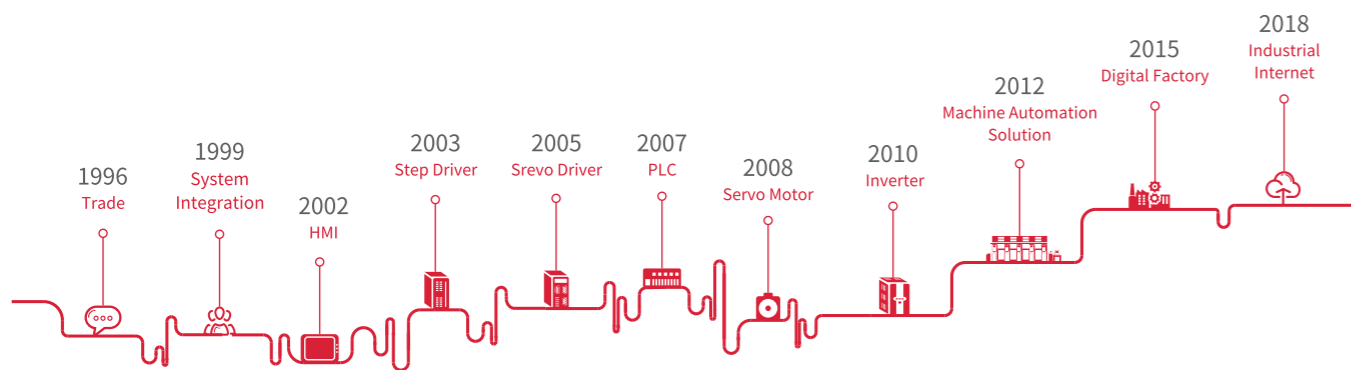


Kinco® Automation

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Shanghai Kinco Co., Ltd. specializes in research and development, production, sales and technical services of mobility standard products and intelligent hardware products, and is China's leading supplier of machine mobility and intelligent solutions. In 1996, Bucco relied on the HMI, servo system, stepping system, programmable logic controller PLC, low voltage inverter and other standard automation products to provide the whole world with moving equipment manufacturers. Solution, let China move the banner of the solution to the whole world. The company's mechanical products have led the popularization of HMI in China, and its market share has remained a leading position among the brands for many years. The company's mission is to "make Chinese manufacturing the world's top manufacturing". It insists on the research and development of technology platform for resource precession, and has research and development institutions in Shanghai, Shenzhen and Changzhou. The company already has a comprehensive range of controls, drivers, Mobile technology platforms for machine interaction, communication and mechatronic design. In the field of machine movement, Kinco focuses on the industry and has developed machines suitable for logistics movement, service machines, medical instruments, professional machines and 3C machines. Special solutions for bed, ozone and other industries.

In the field of Smart factory, Kinco aims at the on-site management layer, PLC control and communication layer, Scada and system integration layer of manufacturing enterprises through the perfect dynamic technology platform and software system developed for intelligence. MES management provides the easiest intelligent solution for customers.

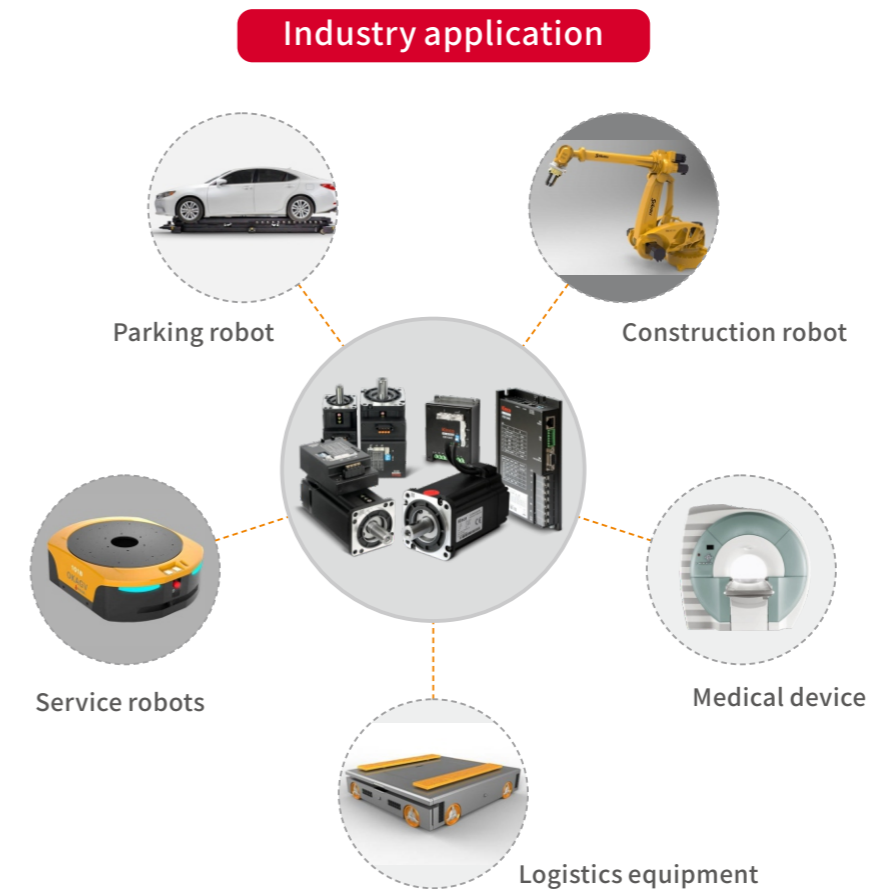
Kinco takes "wisdom makes good life" as its vision and adheres to the values of "conscience makes success, craftsman makes innovation". Kinco is a platform for helping employees to develop their creative potential as much as possible and a partner to help customers achieve success in their innovative operation. We develop our products and business with innovative thinking and real spirit, adhere to our ideals, and hope that the creation of the class will make the world more beautiful.

Kinco low voltage servo system

FD, OD, MD series low voltage servo drive is a new generation of small size, good performance, high stability products developed by Kinco after years of market research, according to the characteristics of logistics automation industry.

The working voltage of Kinco low voltage servo system is DC24 ~ 70V, Support CAN, Modbus, Ethercat and pulse control, Can match the photoelectric, magnetolectric, multi-turn absolute value and other encoder motor, the product configuration is more flexible. It is widely used in logistics storage equipment, mobile handling equipment, sorting car, mobile service robot and other fields with high requirements on voltage and volume.

We also provide customized low-voltage servo drivers and motors for customers who have special requirements for communication, installation and protection.



EtherCAT[®] CANopen[®] Modbus

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Standards and Certificates



EU Low voltage instruction : 2014/35/EU
 Standards : EN61800-5-1:2007+A1:2017
 Standards : EN 60034-1: 2010



EMC testing

EU EMC instruction : 2014/30/EU
 Standards : EN61000-6-4:2007+A1:2011
 Standards : EN61000-6-2:2005



G2 series servo motors and servo drivers configuration table (Short motor body, DC48V)

Power	Servo Motor	Description	Power cable	Encoder cable	Servo Driver		
					CANopen	RS485+ Pluse	EtherCAT
50W	SMC40S-0005-30MAK-5DSU	Magnetolectric encoder	MOT-005-LL-KL-D	ENCOG-LL-GU	OD114S-CA-000	OD114S-LA-000	OD114S-EA-000
	SMS40S-0005-30KAK-5DSU	Multi-turn absolute value encoder		ENCHG-LL-GU	FD114S-CB-000	FD114S-LB-000	FD114S-EB-000
				ENCHG-(4)-GU-BT★	FD114S-CB-003	FD114S-LB-003	
100W	SMC40S-0010-30MAK-5DSU	Magnetolectric encoder		ENCOG-LL-GU	OD114S-CA-000	OD114S-LA-000	OD114S-EA-000
	SMS40S-0010-30KAK-5DSU	Multi-turn absolute value encoder		ENCHG-LL-GU	FD114S-CB-000	FD114S-LB-000	FD114S-EB-000
				ENCHG-(4)-GU-BT★	FD114S-CB-003	FD114S-LB-003	
200W	SMC60S-0020-30MAK-5DSU	Magnetolectric encoder	MOT-008-LL-KL-D	ENCOG-LL-GU	OD124S-CA-000	OD124S-LA-000	OD124S-EA-000
	SMC60S-0020-30AAK-5DSH	2500P/R encoder		ENCOA-LL-KH	OD124S-CA-000	OD124S-LA-000	OD124S-EA-000
				ENCHA-LL-KH	FD124S-CA-000	FD124S-LA-000	FD124S-EA-000
400W	SMC60S-0040-30MAK-5DSU	Magnetolectric encoder		ENCOA-LL-KH	FD123-CA-000	FD123-LA-000	FD123-EA-000
	SMC60S-0040-30AAK-5DSH	2500P/R encoder		ENCHA-LL-KH	FD124S-CA-000	FD124S-LA-000	FD124S-EA-000
				ENCCA-LL-KH	FD123-CA-000	FD123-LA-000	FD123-EA-000
600W	SMC60S-0060-30MAK-5DSU	Magnetolectric encoder	MOT-015-LL-KL-SP	ENCHG-LL-GU	FD134S-CA-000	FD134S-LA-000	FD134S-EA-000
	SMC60S-0060-30AAK-5DSH	2500P/R encoder		ENCOA-LL-KH	FD134S-CA-000	FD134S-LA-000	FD134S-EA-000
				ENCHA-LL-KH	FD134S-CA-000	FD134S-LA-000	FD134S-EA-000
750W	SMC80S-0075-30MAK-5DSU	Magnetolectric encoder		ENCCA-LL-KH	FD133-CA-000	FD133-LA-000	FD133-EA-000
	SMC80S-0075-30AAK-5DSH	2500P/R encoder		ENCHA-LL-KH	FD134S-CA-000	FD134S-LA-000	FD134S-EA-000
				ENCCA-LL-KH	FD133-CA-000	FD133-LA-000	FD133-EA-000
1kW	SMC80S-0100-30MAK-5DSU	Magnetolectric encoder	MOTF-030-LL-KL-SP	ENCOG-LL-GU	FD144S-CA-000	FD144S-LA-000	FD144S-EA-000
	SMC80S-0100-30AAK-5DSH	2500P/R encoder		ENCHA-LL-KH			

Note: 1、The 'LL' in the power line/brake line list indicates the cable length. See the model description.
 2、★ENCHG-(4)-GU-BT is a necessary battery power cable for multi-coil absolute value encoder motor, with a wire length of 40CM (If the battery monitor is not suitable for live applications, Encdg-LL-GU is an optional extension cable.)

G2 series servo motors with brake and servo drivers configuration table (Short motor body, DC48V)

Power	Servo Motor	Description	Power cable	Encoder cable	Servo Driver			
					CANopen	RS485+ Pluse	EtherCAT	
50W	SMC40S-0005-30MBK-5DSU	Magnetolectric encoder with brake	MOT-005-LL-KL-D	ENCOG-LL-GU	OD114S-CA-000	OD114S-LA-000	OD114S-EA-000	
	SMS40S-0005-30KBK-5DSU	Multi-turn absolute value encoder with brake	BRA-LL-KL	ENCHG-LL-GU	FD114S-CB-000	FD114S-LB-000	FD114S-EB-000	
				ENCHG-(4)-GU-BT★	FD114S-CB-003	FD114S-LB-003		
100W	SMC40S-0010-30MBK-5DSU	Magnetolectric encoder with brake	MOT-005-LL-KL-D BRA-LL-KL	ENCOG-LL-GU	OD114S-CA-000	OD114S-LA-000	OD114S-EA-000	
				ENCHG-LL-GU	FD114S-CB-000	FD114S-LB-000	FD114S-EB-000	
				ENCHG-(4)-GU-BT★	FD114S-CB-003	FD114S-LB-003		
				ENCDG-LL-GU				
200W	SMC60S-0020-30MBK-5DSU	Magnetolectric encoder with brake	MOT-005-LL-KL-D	ENCHG-LL-GU	FD124S-CB-000	FD124S-LB-000	FD124S-EB-000	
				ENCOG-LL-GU	OD124S-CA-000	OD124S-LA-000	OD124S-EA-000	
	SMC60S-0020-30ABK-5DSH	2500P/R encoder with brake	BRA-LL-KL	ENCOA-LL-KH	OD124S-CA-000	OD124S-LA-000	OD124S-EA-000	
				ENCHA-LL-KH	FD124S-CB-000	FD124S-LB-000	FD124S-EB-000	
				ENCCA-LL-KH	FD123-CA-000	FD123-LA-000	FD123-EA-000	
400W	SMC60S-0040-30MBK-5DSU	Magnetolectric encoder with brake	MOT-008-LL-KL-D	ENCHG-LL-GU	FD124S-CB-000	FD124S-LB-000	FD124S-EB-000	
				ENCOG-LL-GU	OD124S-CA-000	OD124S-LA-000	OD124S-EA-000	
	SMC60S-0040-30ABK-5DSH	2500P/R encoder with brake	BRA-LL-KL	ENCOA-LL-KH	OD124S-CA-000	OD124S-LA-000	OD124S-EA-000	
				ENCHA-LL-KH	FD124S-CB-000	FD124S-LB-000	FD124S-EB-000	
				ENCCA-LL-KH	FD123-CA-000	FD123-LA-000	FD123-EA-000	
600W	SMC60S-0060-30MBK-5DSU	Magnetolectric encoder with brake	MOT-015-LL-KL-SP BRA-LL-KL	ENCHG-LL-GU	FD134S-CB-000	FD134S-LB-000	FD134S-EB-000	
				ENCOG-LL-GU	FD134S-CB-000-D2	FD134S-LB-000-D2		
	SMC60S-0060-30ABK-5DSH	2500P/R encoder with brake	MOT-015-LL-KL-SP-1 BRA-LL-KL	ENCOA-LL-KH	OD134S-CA-000	OD134S-LA-000	OD134S-EA-000	
				ENCHG-LL-GU				
				MOT-015-LL-KL-SP	ENCHG-LL-GU	FD134S-CB-000	FD134S-LB-000	FD134S-EB-000
				BRA-LL-KL	ENCHG-LL-GU	FD134S-CB-000-D2	FD134S-LB-000-D2	
750W	SMC80S-0075-30MBK-5DSU	Magnetolectric encoder with brake	MOT-015-LL-KL-SP BRA-LL-KL	ENCHG-LL-GU	FD134S-CB-000	FD134S-LB-000	FD134S-EB-000	
				ENCOG-LL-GU	FD134S-CB-000-D2	FD134S-LB-000-D2		
	SMC80S-0075-30ABK-5DSH	2500P/R encoder with brake	MOT-015-LL-KL-SP-1 BRA-LL-KL	ENCOA-LL-KH	OD134S-CA-000	OD134S-LA-000	OD134S-EA-000	
				ENCHG-LL-GU				
				MOT-015-LL-KL-SP	ENCHG-LL-GU	FD134S-CB-000	FD134S-LB-000	FD134S-EB-000
1kW	SMC80S-0100-30MBK-5DSU	Magnetolectric encoder with brake	MOTF-030-LL-KL-SP BRA-LL-KL	ENCHG-LL-GU	FD144S-CB-000	FD144S-LB-000	FD144S-EB-000	
	SMC80S-0100-30ABK-5DSH	2500P/R encoder with brake		ENCHG-LL-GU				

Note: 1. The 'LL' in the power line/brake line list indicates the cable length. See the model description.

2. ★ENCHG-(4)-GU-BT is a necessary battery power cable for multi-coil absolute value encoder motor, with a wire length of 40CM (If the battery monitor is not suitable for live applications, Encdg-LL-GU is an optional extension cable.)

G1 series servo motors and servo drivers configuration table (DC48V)

Power	Servo Motor	Description	Power cable	Encoder cable	Servo Driver		
					CANopen	RS485+ Pluse	EtherCAT
200W	SMC60S-0020-30MAK-3DSU	Magnetolectric encoder		ENCOG-LL-GU	OD124S-CA-000	OD124S-LA-000	OD124S-EA-000
				ENCHG-LL-GU	FD124S-CA-000	FD124S-LA-000	FD124S-EA-000
	SMS60S-0020-30KAK-3DSU	Multi-turn absolute value encoder	MOT-005-LL-KL-D	ENCCG-(4)-GU-BT★	FD123-CA-003	FD123-LA-003	FD123-EA-003
				ENCDG-LL-GU			
	SMC60S-0020-30AAK-3DSH	2500P/R encoder		ENCOA-LL-KH	OD124S-CA-000	OD124S-LA-000	OD124S-EA-000
				ENCHG-LL-GU	FD124S-CA-000	FD124S-LA-000	FD124S-EB-000
400W	SMC60S-0040-30MAK-3DSU	Magnetolectric encoder		ENCOG-LL-GU	OD124S-CA-000	OD124S-LA-000	OD124S-EA-000
				ENCHG-LL-GU	FD124S-CA-000	FD124S-LA-000	FD124S-EA-000
	SMS60S-0040-30KAK-3DSU	Multi-turn absolute value encoder	MOT-008-LL-KL-D	ENCCG-(4)-GU-BT★	FD123-CA-003	FD123-LA-003	FD123-EA-003
				ENCDG-LL-GU			
	SMC60S-0040-30AAK-3DSH	2500P/R encoder		ENCOA-LL-KH	OD124S-CA-000	OD124S-LA-000	OD124S-EA-000
				ENCHG-LL-GU	FD124S-CA-000	FD124S-LA-000	FD124S-EB-000
750W	SMC80S-0075-30MAK-3DSU	Magnetolectric encoder	MOT-015-LL-KL-SP-1 MOT-015-LL-KL-SP	ENCOG-LL-GU	OD134S-CA-000	OD134S-LA-000	OD134S-EA-000
				ENCHG-LL-GU	FD134S-CA-000	FD134S-LA-000	FD134S-EA-000
	SMS80S-0075-30KAK-3DSU	Multi-turn absolute value encoder	MOT-015-LL-KL-SP	ENCCG-(4)-GU-BT★	FD133-CA-003	FD133-LA-003	FD133-EA-003
				ENCDG-LL-GU			
	SMC80S-0075-30AAK-3DSH	2500P/R encoder	MOT-015-LL-KL-SP-1 MOT-015-LL-KL-SP	ENCOA-LL-KH	OD134S-CA-000	OD134S-LA-000	OD134S-EA-000
				ENCHG-LL-GU	FD134S-CA-000	FD134S-LA-000	FD134S-EB-000
1.2kW	SMH110D-0120-30AAK-4DKR	2500P/R Encoder aviation socket motor	MOT-040-LL-KC5	ENCHG-LL-GU	FD134S-CA-000	FD134S-LA-000	FD134S-EA-000
	SMC130D-0120-30AAK-4DKR	2500P/R Encoder aviation socket motor		ENCHG-LL-GU	FD134S-CA-000	FD134S-LA-000	FD134S-EA-000
1.5kW	SMC130D-0150-30AAK-4DKR	2500P/R Encoder aviation socket motor		ENCHG-LL-GU	FD133-CA-000	FD133-LA-000	FD133-EA-000

Note: 1. The 'LL' in the power line/brake line list indicates the cable length. See the model description.

2. ★ENCHG-(4)-GU-BT is a necessary battery power cable for multi-coil absolute value encoder motor, with a wire length of 40CM (If the battery monitor is not suitable for live applications, Encdg-LL-GU is an optional extension cable.)

G1 series servo motors with brake and servo drivers configuration table (DC48V)

Power	Servo Motor	Description	Power cable	Encoder cable	Servo Driver		
					CANopen	RS485+ Pluse	EtherCAT
200W	SMC60S-0020-30MBK-3DSU	Magnetolectric encoder with brake	MOT-005-LL-KL-D BRA-LL-KL	ENCOG-LL-GU ENCHG-LL-GU	OD124S-CA-000 FD124S-CB-000	OD124S-LA-000 FD124S-LB-000	OD124S-EA-000 FD124S-EB-000
	SMS60S-0020-30KBK-3DSU	Multi-turn absolute value encoder with brake	MOT-005-LL-KL-D BRA-LL-KL	ENCCG-(4)-GU-BT★ ENCDG-LL-GU	FD123-CA-003	FD123-LA-003	FD123-EA-003
	SMC60S-0020-30ABK-3DSH	2500P/R encoder with brake	MOT-005-LL-KL-D BRA-LL-KL	ENCOA-LL-KH ENCHA-LL-KH ENCCA-LL-KH	OD124S-CA-000 FD124S-CB-000 FD123-CA-000	OD124S-LA-000 FD124S-LB-000 FD123-LA-000	OD124S-EA-000 FD124S-EB-000 FD123-EA-000
400W	SMC60S-0040-30MBK-3DSU	Magnetolectric encoder with brake	MOT-008-LL-KL-D BRA-LL-KL	ENCOG-LL-GU ENCHG-LL-GU	OD124S-CA-000 FD124S-CB-000	OD124S-LA-000 FD124S-LB-000	OD124S-EA-000 FD124S-EB-000
	SMS60S-0040-30KBK-3DSU	Multi-turn absolute value encoder with brake	MOT-008-LL-KL-D BRA-LL-KL	ENCCG-(4)-GU-BT★ ENCDG-LL-GU	FD123-CA-003	FD123-LA-003	FD123-EA-003
	SMC60S-0040-30ABK-3DSH	2500P/R encoder with brake	MOT-008-LL-KL-D BRA-LL-KL	ENCOA-LL-KH ENCHA-LL-KH ENCCA-LL-KH	OD124S-CA-000 FD124S-CB-000 FD123-CA-000	OD124S-LA-000 FD124S-LB-000 FD123-LA-000	OD124S-EA-000 FD124S-EB-000 FD123-EA-000
750W	SMC80S-0075-30MBK-3DSU	Magnetolectric encoder with brake	MOT-015-LL-KL-SP-1 BRA-LL-KL	ENCOG-LL-GU	OD134S-CA-000	OD134S-LA-000	OD134S-EA-000
			MOT-015-LL-KL-SP BRA-LL-KL	ENCHG-LL-GU	FD134S-CB-000 FD134S-CB-000-D2	FD134S-LB-000 FD134S-LB-000-D2	FD134S-EB-000
	SMS80S-0075-30KBK-3DSU	Multi-turn absolute value encoder with brake	MOT-015-LL-KL-SP BRA-LL-KL	ENCCG-(4)-GU-BT★ ENCDG-LL-GU	FD133-CA-003	FD133-LA-003	FD133-EA-003
SMC80S-0075-30ABK-3DSH	2500P/R encoder with brake	MOT-015-LL-KL-SP-1 BRA-LL-KL	ENCOA-LL-KH	OD134S-CA-000	OD134S-LA-000	OD134S-EA-000	
		MOT-015-LL-KL-SP BRA-LL-KL	ENCHA-LL-KH ENCCA-LL-KH	FD134S-CB-000 FD134S-CB-000-D2	FD134S-LB-000 FD134S-LB-000-D2	FD134S-EB-000	
1.2kW	SMH110D-0120-30ABK-4DKR	2500P/R Encoder aviation socket brake motor	MOT-040-LL-KC5-B	ENCHA-LL-KC0	FD144S-CB-000	FD144S-LB-000	FD144S-EB-000
	SMC130D-0120-30ABK-4DKR	2500P/R Encoder aviation socket brake motor					
1.5kW	SMC130D-0150-30ABK-4DKR	2500P/R Encoder aviation socket brake motor					

Note: 1. The 'LL' in the power line/brake line list indicates the cable length. See the model description.
2. ★ENCHG-(4)-GU-BT is a necessary battery power cable for multi-coil absolute value encoder motor, with a wire length of 40CM (If the battery monitor is not suitable for live applications, Encdg-LL-GU is an optional extension cable.)

Introduction of low voltage servo driver

Product feature:

Support position, speed and torque control modes

Support for CANopen, EtherCAT, RS485 and other communication protocols

Support photoelectric, Magnetolectric, absolute value and other types of encoder motor Low voltage servo motor capable of driving 50W~1.5Kw

According to the needs of the AGV industry to provide a variety of special functions: two-in-one driver, alarm braking, enhanced battery life... For space sensitive customers, we launched a palm size OD series of drivers, and can be customized according to the user's different working conditions



Drive naming rule

Model: **FD124S-CB-000-D2**
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧

①-Serial number FD: FD series
 OD: OD series

⑤-Control mode L: RS232, RS485, Pulse
 C: RS232, CANopen
 E: RS232, EtherCAT

②-Voltage input specification 1: Input voltage DC24~70V

③-Rated output current 1: 5Arms
 2: 15Arms
 3: 25Arms
 4: 40Arms

⑥-Type A: Do not directly drive the brake device
 B: Can drive the brake device directly

⑦-Software version number 000: Software version number

④-Drive version 3: Version 3 low voltage driver
 4S: Version 4S low voltage driver

⑧-Driving mode D2 Two-in-one drive

Note: FD124S, FD134S, FD144S rated output current is respectively 15Arms, 25Arms, 40Arms, measured by installing the driver on the oxidized black 6063 aluminum plate with the length * width * height of 300mm*300mm*10mm of the auxiliary radiator.

FD1X4S Technical Specifications Table



Model Parameter		FD1X4S Technical Specifications Table			
		FD114S-□B-00□	FD124S-□■-000	FD134S-□■-000	FD144S-□■-000
Main supply voltage		24VDC~70VDC			
Rated output current	Rated current (rms)	5Arms	15Arms (Up to 12Arms without auxiliary radiator)	25Arms (Up to 20Arms without auxiliary radiator)	40Arms (Up to 30Arms without auxiliary radiator)
	Peak current (PEAK)	12Ap	48Ap	80Ap	120Ap
Feedback signal		2500P/R(Incremental differential 5V encoder), Magnetolectric encoder, absolute value encoder(Apply to FD114S-□□-003)			
Brake chopper		Via wiring an external braking resistor (mainly in quick start and stop application) , brake chopper threshold is 73V(Adjustable via software).			
Brake chopper threshold		DC73V ± 2V (Default value, Adjustable via software)			
Over-voltage alarming threshold		DC83V ± 2V			
Under-voltage alarming threshold		18V±2V			
Cooling method		Natural air cooling Note: The continuous output current of FD124S, FD134S, FD144S are 15Arms, 25Arms and 40Arms respectively. (Need Oxidized black 6063 on aluminum cooling. The size of auxiliary radiator is 300mm*300mm*10mm)			
Weight(Kg)		0.3	0.3	0.6	0.9
General functions	Input specification	4 digital inputs, common COM1 end, high level:12.5-30VDC, low level:0-5VDC, max frequency:1KHz, input impedance:5KΩ (The brake motor driver is a 3 digital inputs)			
	Input function	Define freely according to requirement, supporting following functions: Driver enable, driver fault reset, driver mode control, speed loop proportional control, positive limit, negative limit, homing signal, reverse command, internal speed section control, internal positive section control, quick stop, start homing, active command, switch electronic gear ratio, switch gain			
	Output specification	2 digital outputs, brake motor driver is 1 digital signal output			
	Impulsive control	Pulse + direction, CCW+CW, phase A+phase B (5V~24V) Note: FD1X4S-L□-000 support this function			
	Output function	Define freely according to requirement, supporting following functions: Driver ready, driver fault, position reached, motor zero speed, motor brake, motor speed reached, Z signal, maximum speed obtained in torque mode, motor brake, position limiting, reference found.			
	RS232	Default baudrate setting is 38400, the max. baudrate is 115.2KHz, use Kinco software to communicate with PC, or via free protocol to communicate with controller.			
Protection function		Over-voltage protection, under-voltage protection, motor over-heat protection(I ² T), short-circuit protection, drive over-heat protection, etc.			
Bus function	Modbus/RS485	The max. baudrate is 115.2KHz, use Modbus RTU protocol to communicate with controller			
	Canopen	Support maximum 1MHz baudrate. Communicate with controller via CANopen protocol			
	Ethercat	Support CoE(CiA402 protocol) and CSP/CSV/PP/PV/PT/HM mode, Communication speed 100M.			
Operation Environment	Operation temperature	0~40°C			
	Storage temperature	- 10°C~70°C			
	Humidity(non-condensing)	Below 90%RH			
	Protection class	IP20			
	Installation environment	Installed in a dust-free, dry and lockable environment (such as in a electrical cabinet)			
	Installation mode	Install vertically or horizontally			
	Height	Rated working altitude at 1000m or below, Above 1000m: Dcreasing 1.5% per 100m rise, maximum altitude 4000m			
	Atmospheric pressure	86kpa~106kpa			

Note 1:

- =L: Communication port RS232, RS485, pulse
- =C: Communication port RS232, CANopen
- =E: Communication port RS232, Ethercat
- =A: Cannot directly drive brake, motor holding brake needs external power supply device
- =B: Can directly drive brake

Note 2:

- 00□=003: Match SMS series encoder motor

FD134S Two-in-one driver Technical Specifications Table



Model Parameter		FD134S Two-in-one driver	
		FD134S-CB-000-D2	FD134S-LB-000-D2
Power	Main supply voltage	24VDC~70VDC	
	Built-in fuse	None	
	Control circuit voltage	24VDC	
Current	Rated current (rms)	20A (Up to 15A without auxiliary heat dissipation)	
	Peak current (PEAK)	80A	
Feedback signal		2500P/R (Incremental differential 5V encoder) 、 Magnetolectric encoder	
Brake chopper		Via wiring an external braking resistor (mainly in quick start and stop application) , Braking voltage absorption point is 73V (Software Configuration)	
Brake chopper threshold		DC73V ± 2V (Default value, Adjustable via software)	
Over-voltage alarming threshold		DC83V ± 2V	
Under-voltage alarming threshold		DC18V±2V	
Cooling method		Natural air cooling Note: The continuous output current of FD124S, FD134S, FD144S are 15Arms, 25Arms and 40Arms respectively. (Need Oxidized black 6063 on aluminum cooling. The size of auxiliary radiator is 300mm*300mm*10mm)	
Weight (Kg)		0.9	
Machine dimension (mm)		207*100.5*33.9	
General Functions	Input specification	3 digital inputs, with COM1 terminal, high level:12.5~30VDC, low level:0-5VDC, max frequency:1KHz, input impedance:5KΩ	
	Input function	Define freely according to requirement, supporting following functions: Driver enable, driver fault reset, driver mode control, proportional control, positive limit, negative limit, homing signal, reverse command, internal speed section control, internal positive section control, quick stop, start homing, active command, switch electronic gear ratio, switch gain.	
	Output specification	1 digital output, drive capability is 100mA	
	Pulse direction control	Pulse+Direction, CCW+CW, A Phase+B Phase (5~24V) , Note:Only FD134S-LB-000-D2 support the function	
	Output function	Define freely according to requirement, supporting following functions: Driver ready, driver fault, position reached, motor zero speed, motor brake, motor speed reached, Z signal, maximum speed obtained in torque mode, motor brake, position limiting, reference found.	
	RS232	The max. baudrate is 115.2KHz, use Kinco software to communicate with PC, or via free protocol to communicate with controller	
	Brake	1 circuit brake output(Built-in 24V brake power supply,the output capacity is 0.8A)	
Protection function		Over-voltage protection, under-voltage protection, motor over-heat protection(I ² T), short-circuit protection, drive over-heat protection, etc.	
Bus communication function	Modbus/RS485	The max. baudrate is 115.2KHz, use Modbus RTU protocol to communicate with controller.	
	Canopen	Support maximum 1MHz baudrate. Communicate with controller via CANopen protocol	
Operation environment	Operating temperature	0~400C	
	Storage temperature	- 100C~700C	
	Humidity (non-condensing)	Below 90%RH	
	Protection class	IP20	
	Installation environment	Installed in a dust-free, dry and lockable environment (such as in a electrical cabinet)	
	Installation mode	Vertical installation	
	Height	Rated working altitude at 1000m or below, Above 1000m: Dcreasing 1.5% per 100m rise, maximum altitude 4000m	
	Atmospheric pressure	86kpa~106kpa	

Note: LB: Communication port RS232、RS485、Pulse
CB: Communication port RS232、CANopen

FD1X3 Technical Specifications Table



Model Parameter		FD1X3 servo driver	
		FD123-□□-00□	FD133-□□-00□
Power	Main supply voltage	24VDC~70VDC	
	Control circuit voltage	24VDC 1A (Optional)	
Current	Rated current (rms)	10A	20A
	Peak current (PEAK)	45A	50A
Feedback signal	"2500P/R (Incremental differential 5V encoder) (suitable for FD1X3-□□-000);Absolute value encoderr(suitable for FD1X3-□□-003)"		
Brake chopper	Via wiring an external braking resistor (mainly in quick start and stop application)		
Brake chopper threshold	DC73V ± 2V (Default value, Adjustable via software)		
Over-voltage alarming threshold	DC83V ± 2V		
Under-voltage alarming threshold	DC18V ± 2V		
Cooling method	Natural air cooling		
Weight (Kg)	0.565		0.889
General Functions	Input specification	4 digital inputs, with COM1 terminal, high level:12.5~30VDC,low level:0~5VDC, max frequency:1KHZ, input impedance:5KΩ	
	Input function	Define freely according to requirement, supporting following functions: Driver enable, driver fault reset, driver mode control, proportional control, positive limit, negative limit, homing signal, reverse command, internal speed section control, internal positive section control, quick stop, start homing, actie command, switch electronic gear ratio, switch gain.	
	Impulse control	Pulse + direction、CCW+CW、PhaseA+PhaseB(5V~24V)	
	Output specification	3 digital outputs, the output of OUT1、OUT2 is 100mA, The output current of brake control output port (OUT5+/OUT5-) is 500mA, can drive brake device directly.	
	Output function	Define freely according to requirement, supporting following functions: Driver ready, driver fault, position reached, motor zero speed, motor brake, motor speed reached, Z signal, maximum speed obtained in torque mode, motor brake, position limiting, reference found.	
	RS232	The max. baudrate is 115.2KHz, use Kinco software to communicate with PC, or via free protocol to communicate with controller	
	Protection function	Over-voltage protection, under-voltage protection, motor over-heat protection(I2T), short-circuit protection, drive over-heat protection, etc.	
Bus communication function	Modbus/RS485	The max. baudrate is 115.2KHz, use Modbus RTU protocol to communicate with controller.	
	Canopen	Support maximum 1MHz baudrate. Communicate with controller via CANopen protocol	
	Ethercat	Support CoE(CiA402 protocol) and CSP/CSV/PP/PV/PT/HM mode, Communication speed 100M	
Operation environment	Operating temperature	0~400C	
	Storage temperature	- 100C~700C	
	Humidity (non-condensing)	Below 90%RH	
	Protection class	IP20	
	Installation environment	Installed in a dust-free, dry and lockable environment (such as in a electrical cabinet)	
	Installation mode	Vertical installation	
	Height	Rated working altitude at 1000m or below, Above 1000m: Dcreasing 1.5% per 100m rise, maximum altitude 4000m	

Note: □□=LA: Communication port RS232、RS485
 □□=CA: Communication port RS232、CANopen
 □□=EA: Communication port RS232、Ethercat

00□=003: Match up with SMS series communication encoder motor;

OD1X4S Technical Specifications Table

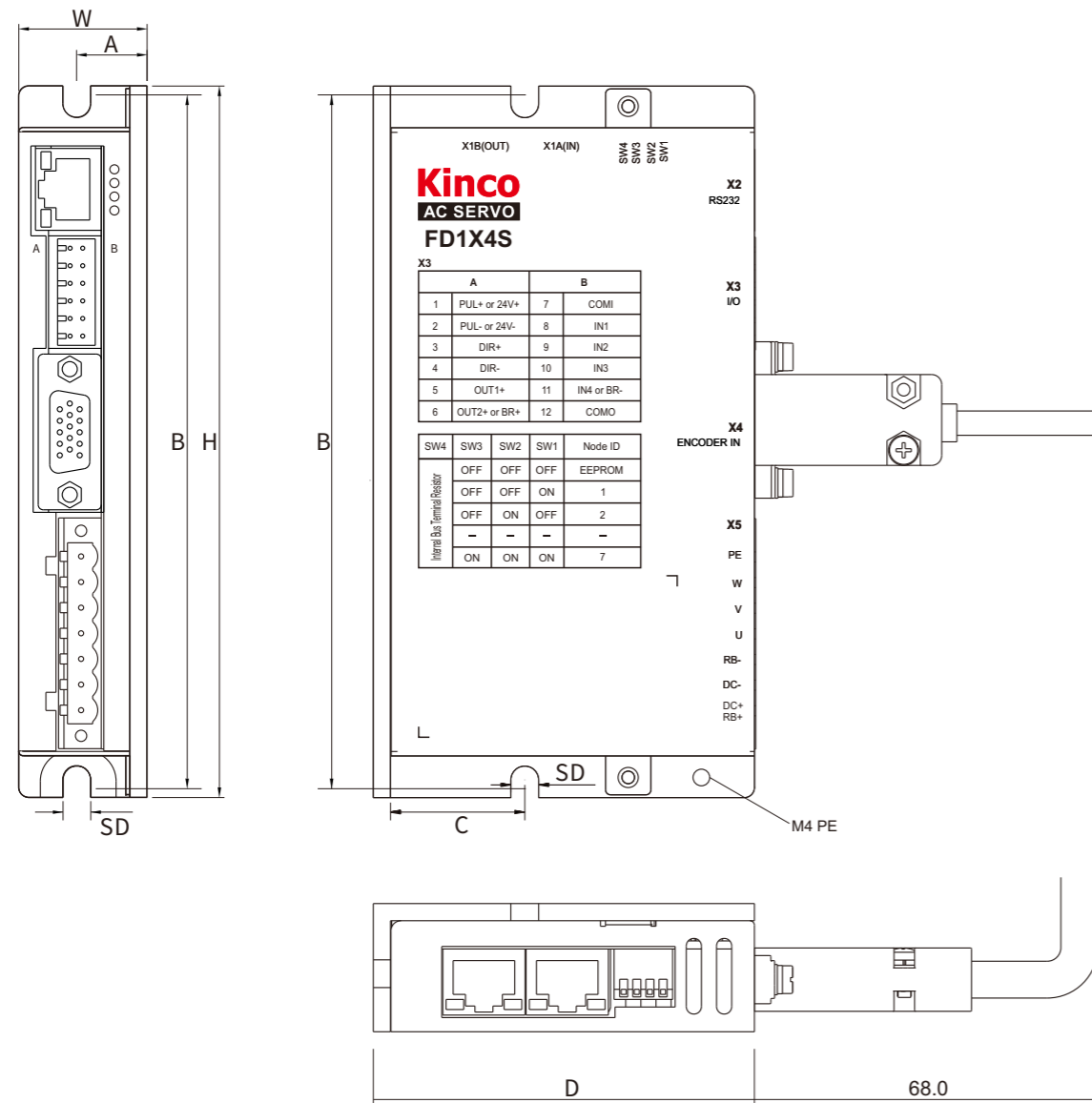


Model Parameter		OD1X4S servo driver		
		OD114S-□□-000	OD124S-□□-000	OD134S-□□-000
Power	Main supply voltage	24VDC~70VDC		
	Control circuit voltage	24VDC 1A (Optional)		
Current	Rated current (rms)	5Arms	10Arms	20Arms
	Peak current (PEAK)	12Ap	36Ap	80Ap
Feedback signal	2"2500P/R(Incremental differential 5V encoder)Magnetolectric encoder"			
Brake chopper	Via wiring an external braking resistor (mainly in quick start and stop application)			
Brake chopper threshold	DC73V ± 2V (Default value, Adjustable via software)			
Over-voltage alarming threshold	DC83V ± 2V			
Under-voltage alarming threshold	DC18V ± 2V			
Cooling method	Natural air cooling		Natural air cooling Note: continuous current 16A (without radiator) Continuous current 20A (Add 150mm*150mm*10mm oxidized black 6063 aluminum radiator)	
Weight(KG)	0.266		0.393	
General Functions	Input specification	4 digital inputs, with COM1 terminal, high level:12.5~30VDC,low level:0~5VDC, max frequency:1KHZ, input impedance:5KΩ		
	Input function	Define freely according to requirement, supporting following functions: Driver enable, driver fault reset, driver mode control, proportional control, positive limit, negative limit, homing signal, reverse command, internal speed section control, internal positive section control, quick stop, start homing, actie command, switch electronic gear ratio, switch gain.		
	Impulsive control	Pulse + direction、CCW+CW、phase A+phase B (5V~24V)		
	Analog input	Voltage input range:-10V~+10V;Input impedances:200K;Input sampling frequency:4KHZ		
	Output specification	2 digital outputs (drive current up to 100mA) 1 brake drive output (external 24VDC drive current up to 500mA)		
	Output function	Define freely according to requirement, supporting following functions: Driver ready, driver fault, position reached, motor zero speed, motor brake, motor speed reached, Z signal, maximum speed obtained in torque mode, motor brake, position limiting, reference found.		
	RS232	The max. baudrate is 115.2KHz, use Kinco software to communicate with PC, or via free protocol to communicate with controller		
Bus communication function	Protection function	Over-voltage protection, under-voltage protection, motor over-heat protection(I2T), short-circuit protection, drive over-heat protection, etc.		
	Modbus/RS485	The max. baudrate is 115.2KHz, use Modbus RTU protocol to communicate with controller.		
	Canopen	Support maximum 1MHz baudrate. Communicate with controller via CANopen protocol		
Operation environment	Ethercat	Support CoE(CiA402 protocol) and CSP/CSV/PP/PV/PT/HM mode, Communication speed 100M		
	Operating temperature	0~40°C		
	Storage temperature	- 10°C~70°C		
	Humidity (non-condensing)	Below 90%RH		
	Protection class	IP20		
	Installation environment	Installed in a dust-free, dry and lockable environment (such as in a electrical cabinet)		
	Installation mode	Vertical installation		
Height	Rated working altitude at 1000m or below, Above 1000m: Dcreasing 1.5% per 100m rise, maximum altitude 4000m			

Note: □□=LA: Communication port RS232、RS485
 □□=CA: Communication port RS232、CANopen
 □□=EA: Communication port RS232、Ethercat

FD1X4S Driver mechanical dimension drawing

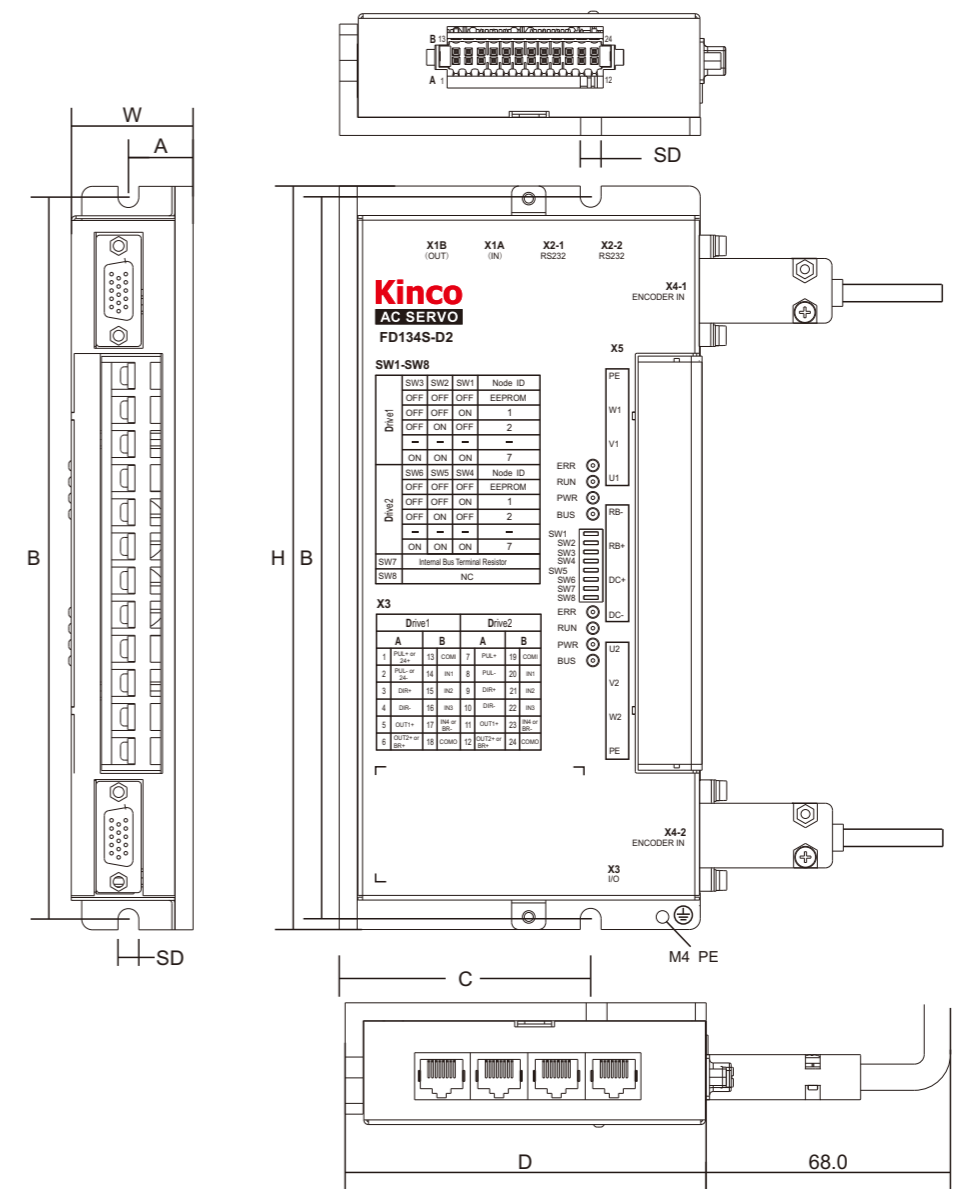
Note: Wiring is needed around the driver, Recommend leaving distance >60mm



Model	Appearance size(mm)			Installation size(mm)			Bore diameter SD(mm)
	H	W	D	A	B	C	
FD114S	141	25.4	75.5	14	137.5	30	5.5
FD124S							
FD134S	174.6	31	100.5	18	168	70	5.8
FD144S	200	35.8	100.5	18	193.4		

FD134S Two-in-one Driver mechanical dimension drawing

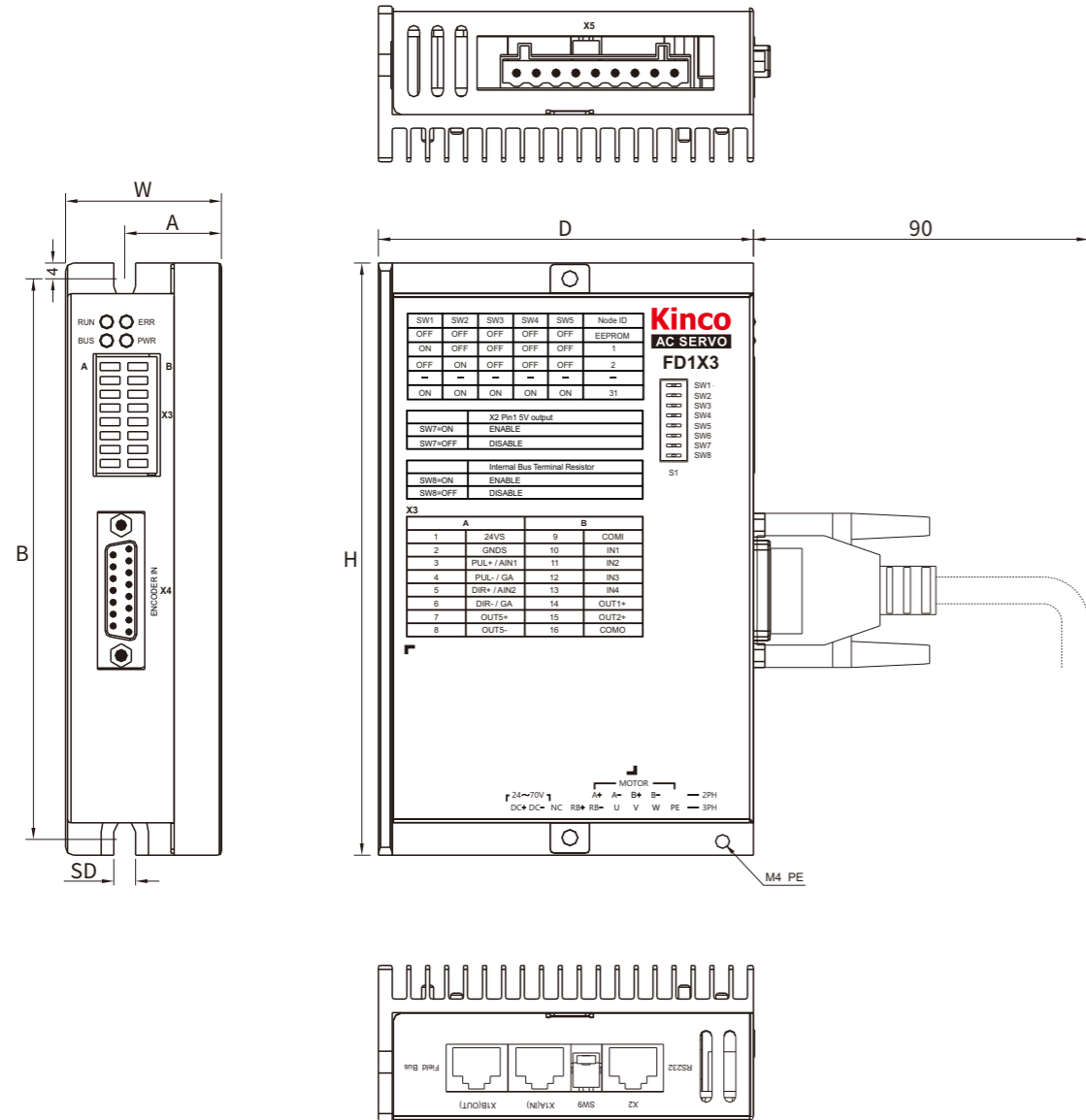
Note: Wiring is needed around the driver, Recommend leaving distance >60mm



Model	Appearance size(mm)			Installation size(mm)			Bore diameter SD(mm)
	H	W	D	A	B	C	
FD134S-CB-000-D2	207	33.9	100.5	18	201	70	5.8
FD134S-LB-000-D2							

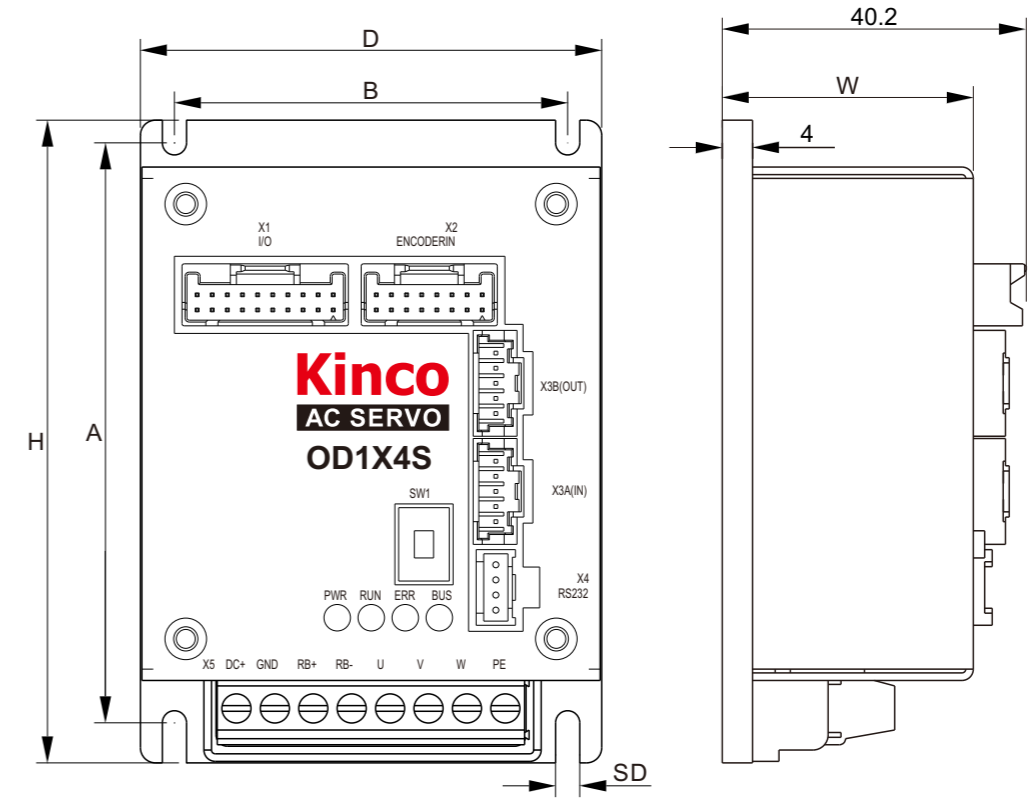
FD1X3 Driver mechanical dimension drawing

Note: Wiring is needed around the driver, Recommend leaving distance >60mm



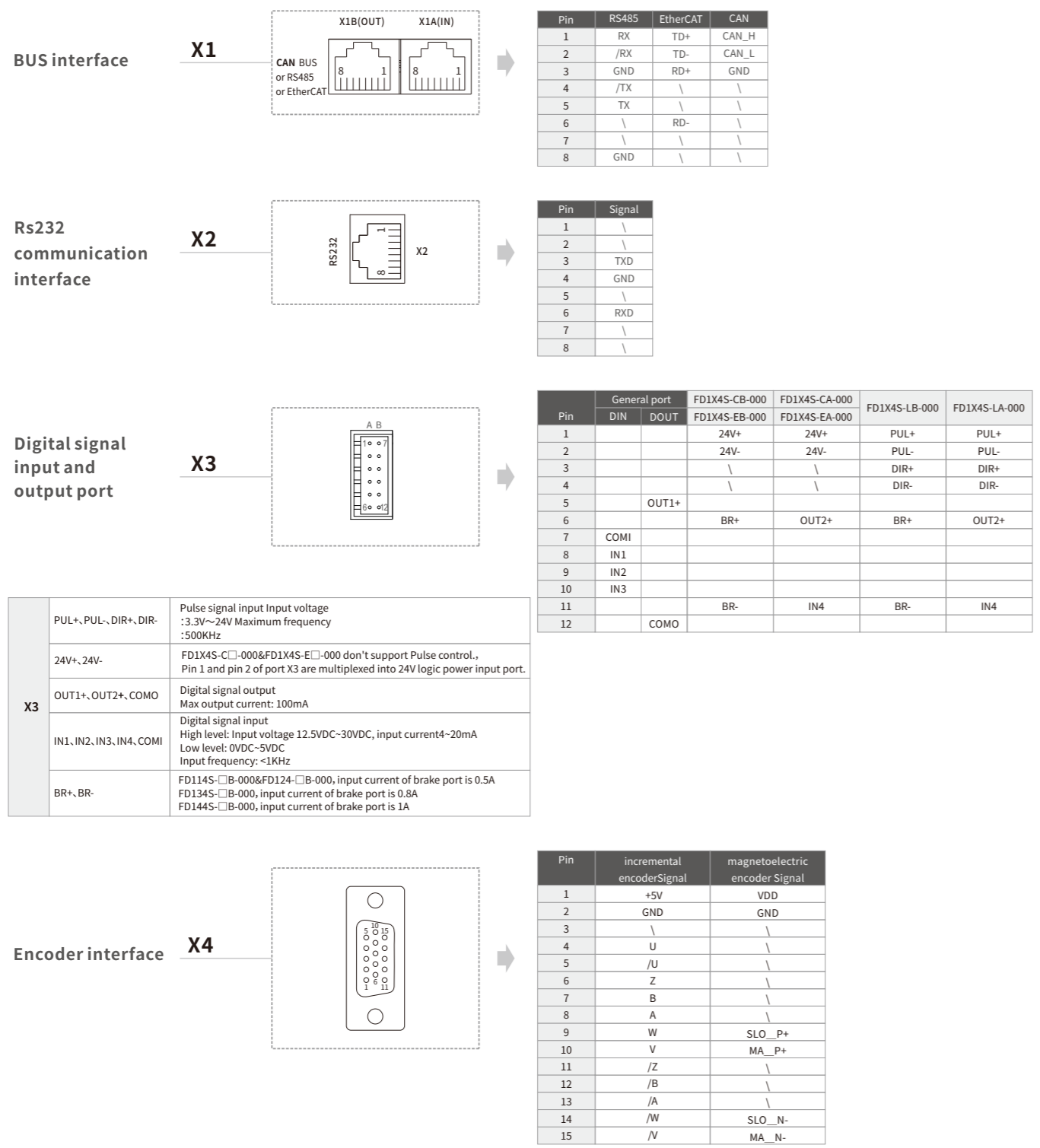
Model	Appearance size(mm)			Installation size(mm)		Bore diameter SD(mm)
	H	W	D	A	B	
FD123	150	39.5	95	24.5	142	5.5
FD133	192	52	97.5	37	184	

OD1X4S Driver mechanical dimension drawing



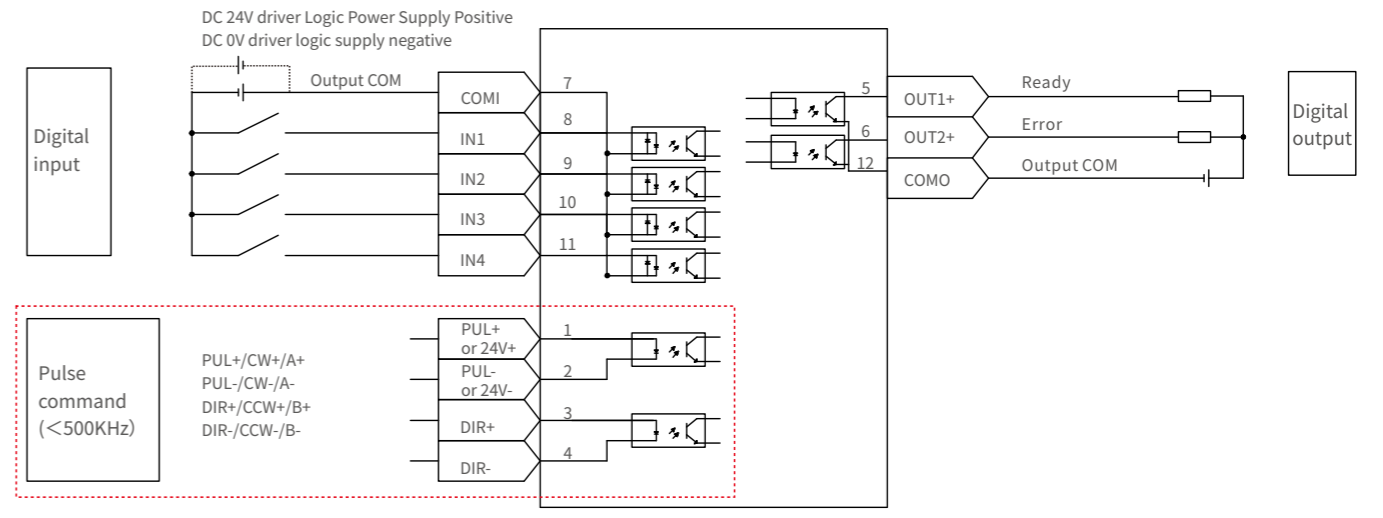
Model	Appearance size(mm)			Installation size(mm)		Bore diameter SD(mm)
	H	W	D	A	B	
OD114S	85	33.2	61	76.7	52	3.2
OD124S				101.4	60	
OD134S	107	33.2	77.4	101.4	60	

FD1X4S Port Description

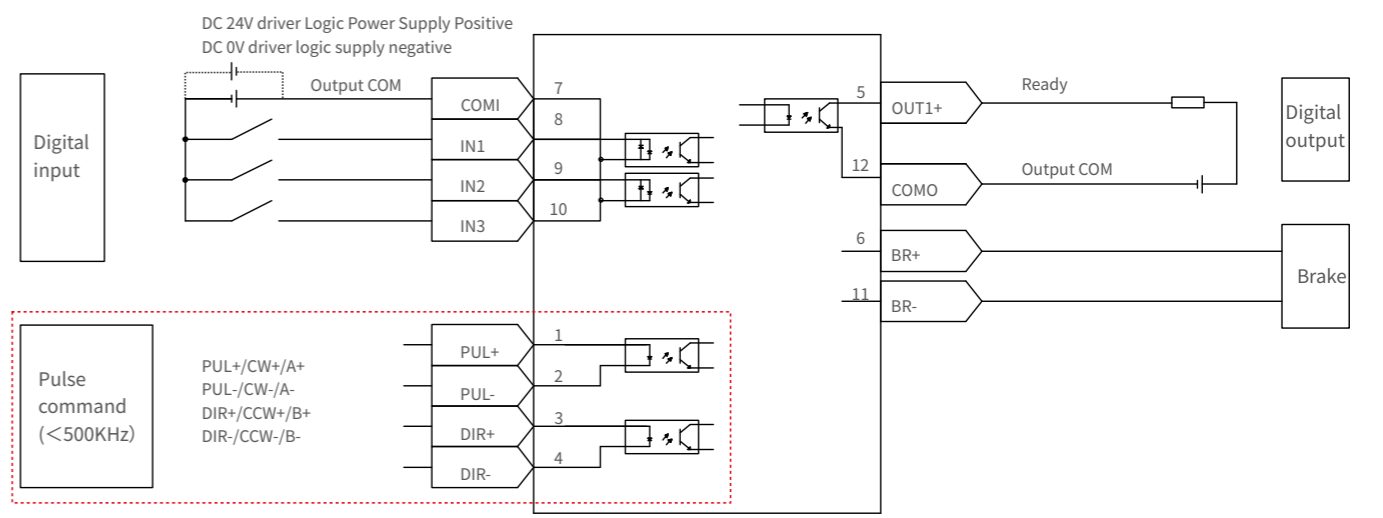


FD1X4S description of servo driver wiring port

Wiring Diagram of X3 Port FD114S, FD124S, FD134S, FD144S



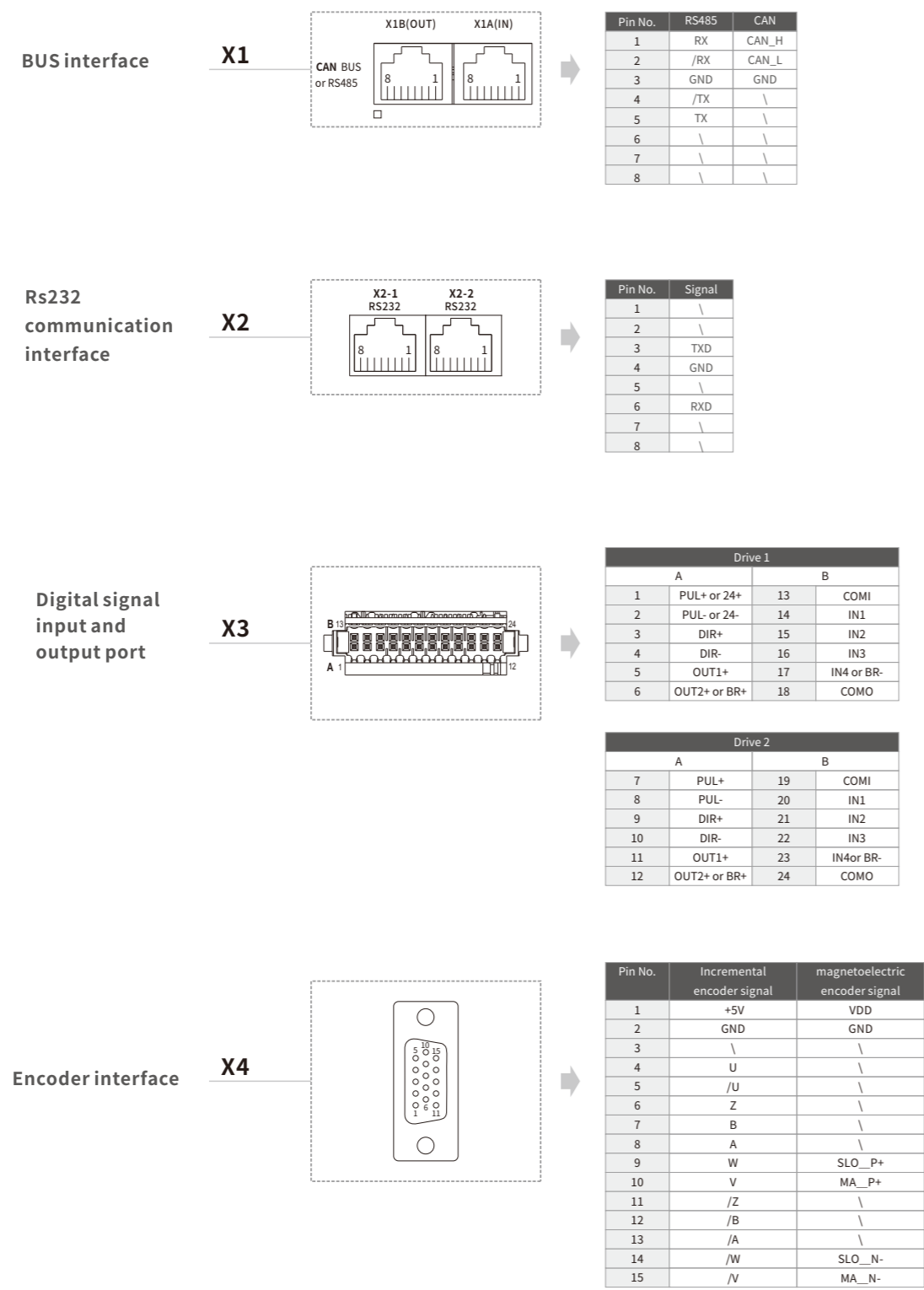
Note:Apply to FD1X4S-□A-000
FD1X4S-CA-000 & FD1X4S-EB-000 don't support pulse control
FD1X4S-LA-000 don't have 24V logic power input port



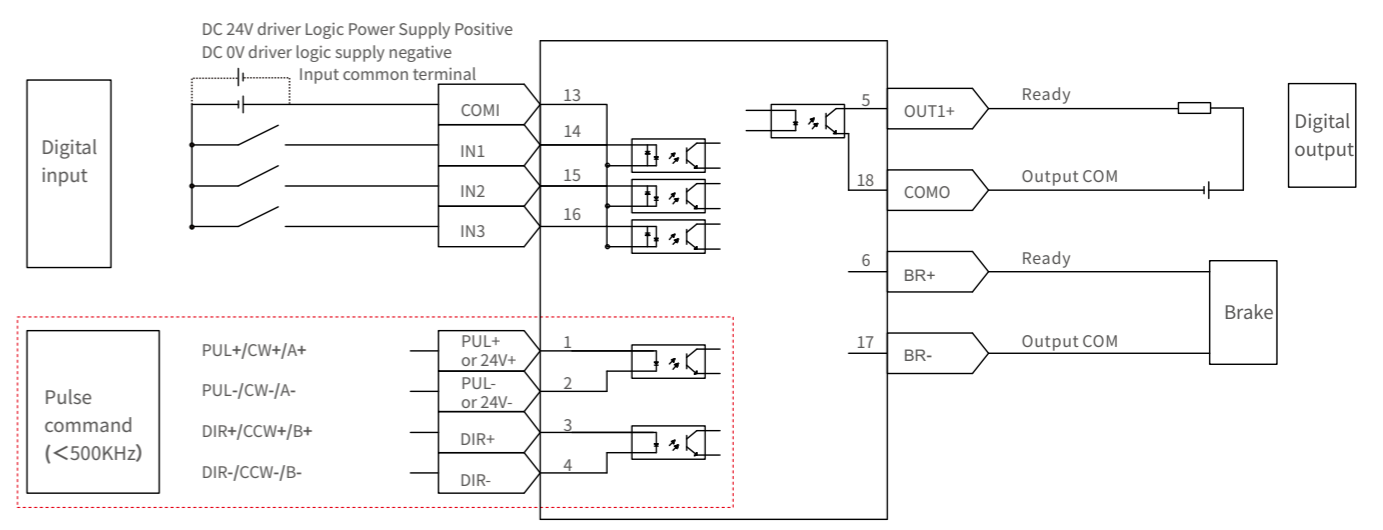
Note:Apply to FD1X4S-□A-000
FD1X4S-CA-000 & FD1X4S-EB-000 don't support pulse control
FD1X4S-LA-000 don't have 24V logic power input port

FD134S Two-in-one servo driver description of servo driver wiring port

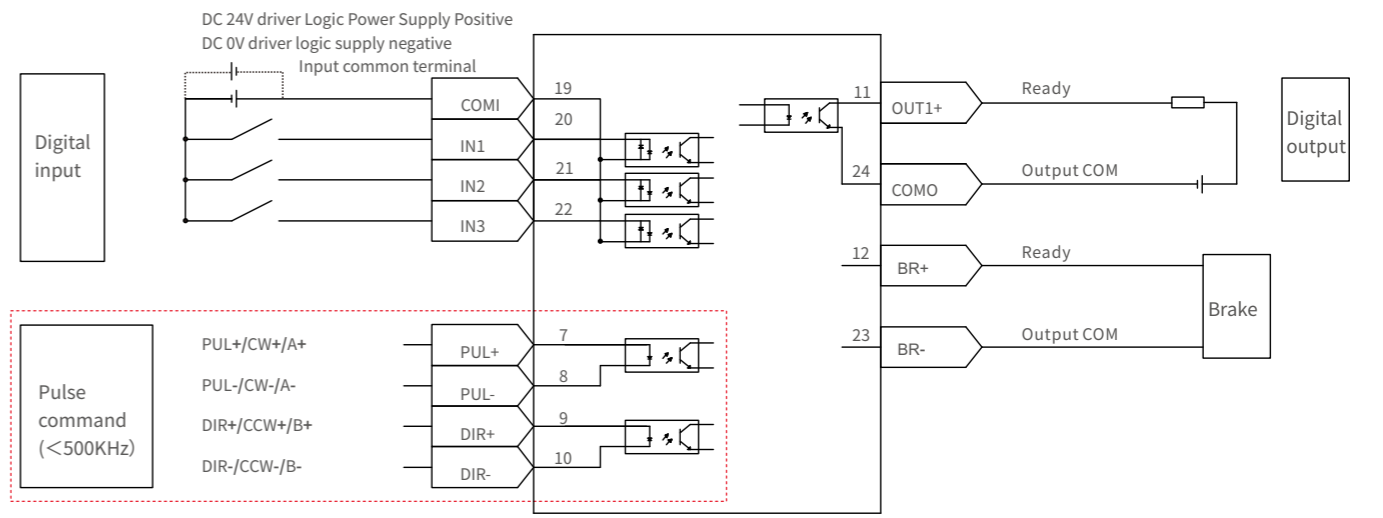
FD134S Two-in-one servo driver description of servo driver wiring port



FD134S Two-in-one



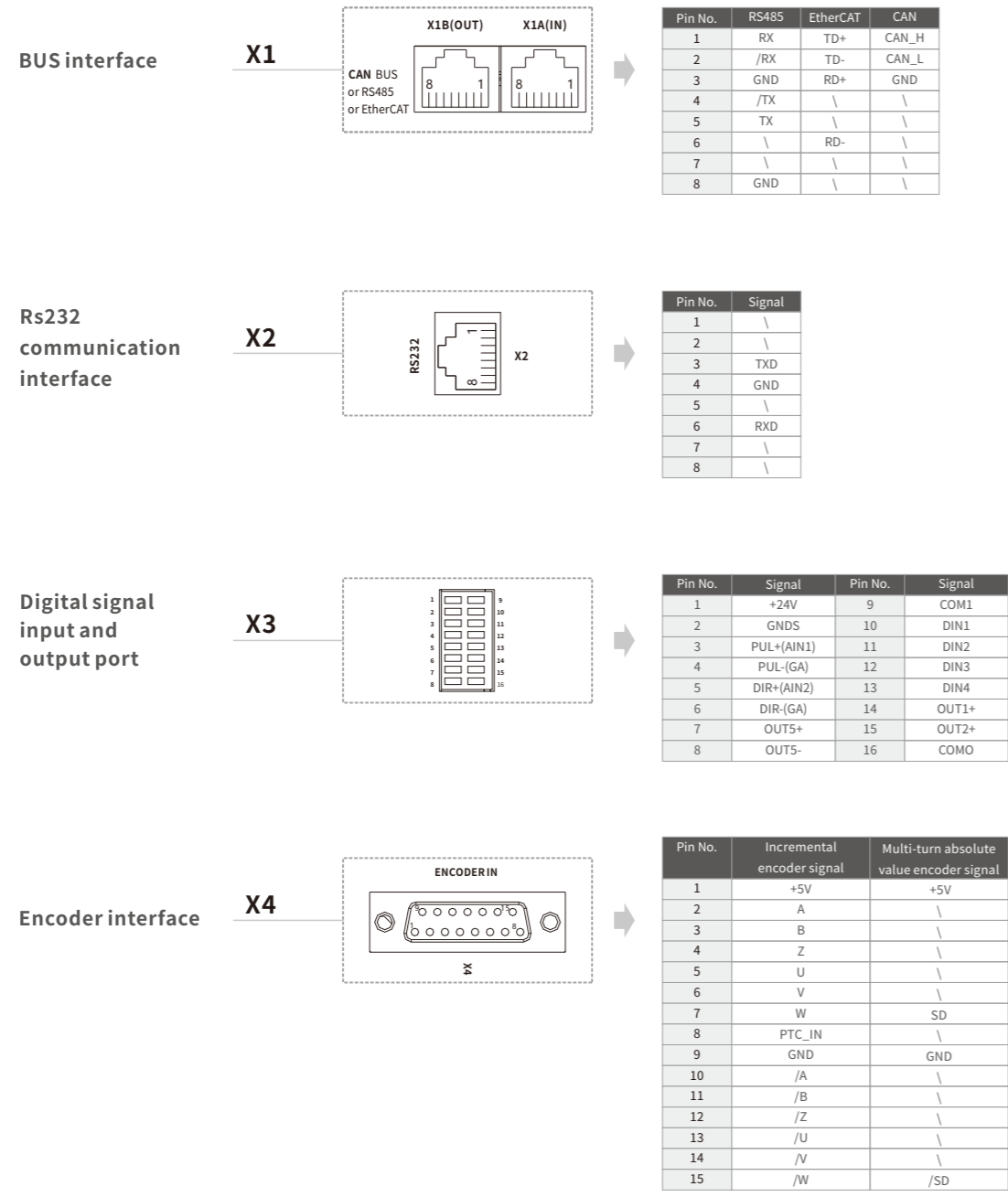
Driver 1



Driver 2

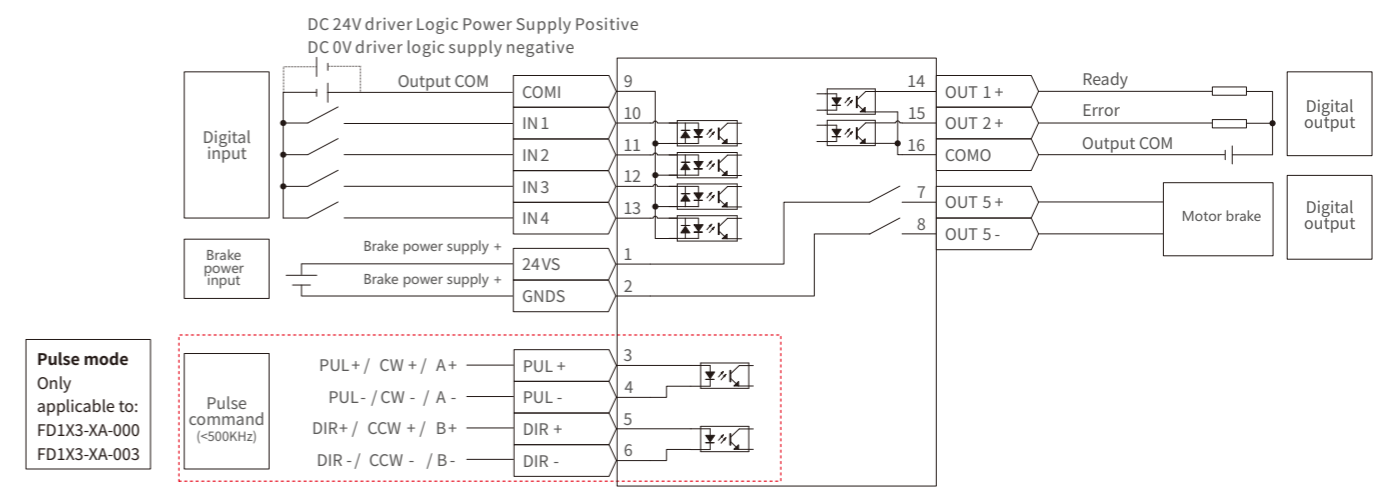
Note: FD134S-CB-000-D2 don't support pulse control
FD134S-LB-000-D2 don't have 24V logic power input port
Driver 1, Driver 2 share a 24V logic power supply

FD1X3 servo driver description of servo driver wiring port



FD1X3 servo driver wiring port description

Wiring diagram of IO terminals X3 of FD123 & Fd133

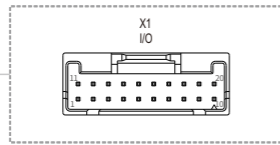


OD1X4S servo driver wiring port description

OD1X4S servo driver wiring port description

Digital signal input and output port

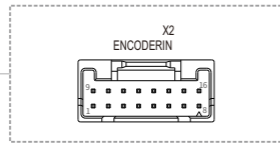
X1



Pin No.	Signal	Pin No.	Signal
1	OUT5+	11	COMI
2	OUT5-	12	IN1
3	GND	13	IN2
4	AIN+	14	IN3
5	AIN-	15	IN4
6	OUT1+	16	PUL+
7	OUT1-	17	PUL-
8	OUT2+	18	DIR+
9	OUT2-	19	DIR-
10	GND	20	24V+

Encoder interface

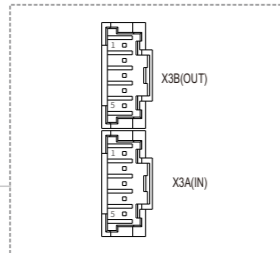
X2



Pin No.	Incremental encoder signal	Magnetolectric encoder signal
1	+5V	VDD
2	A	\
3	B	\
4	Z	\
5	U	\
6	V	MA_P+
7	W	SLO_P+
8	PTC_IN	\
9	GND	GND
10	/A	\
11	/B	\
12	/Z	\
13	/U	\
14	/V	MA_N-
15	/W	SLO_N-
16	shield	shield

BUS interface

X3

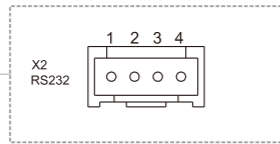


Pin No.	RS485	EtherCAT	CAN
1	RX+	RX+	\
2	RX-	RX-	CAN_H
3	TX-	TX+	CAN_L
4	TX+	TX-	\
5	GND	GND	GND

Note:
Kinco communication cable can be purchased:
OD-P5-(5)

RS232 communication interface

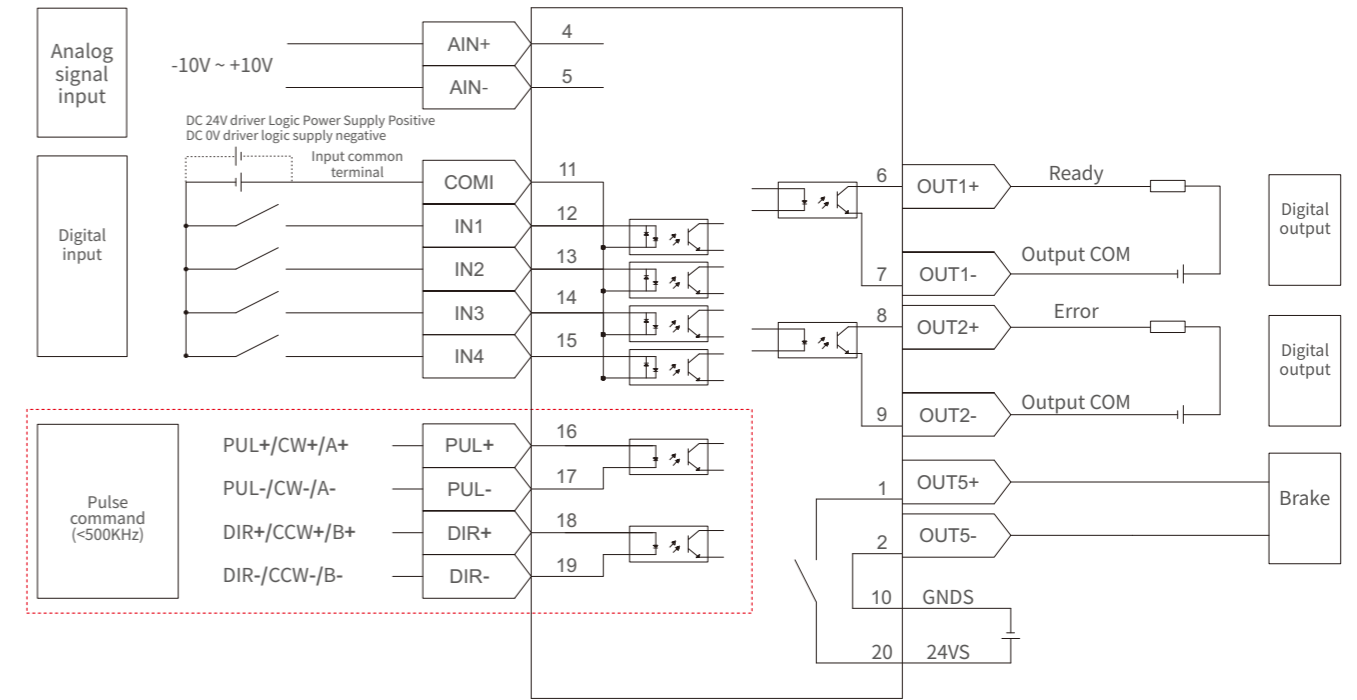
X4



Pin No.	Signal
1	GND
2	GND
3	TX
4	RX

Note:
Kinco communication cable can be purchased:
OD124RS232-0.5m

OD1X4S IO terminal wiring diagram



MD Series integrated servo driver

Innovative and practical integrated design

Compact structure

The product integrates servo driver and low-voltage servo motor as one, which is smaller in volume and saves equipment installation space.

High Reliability

The connection line between the motor and the driver is omitted to reduce the equipment failure caused by connection problems and reduce the equipment failure rate.

Lower cost

Save the connection cable, effectively reduce the equipment cost.



Integrated servo motor naming rules

MD Series integrated servo driver Model description

Model: **MD 60- 040 - D M A K - CA - 000**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

①-Series name	MD: Integrated servo motor	⑤-Encoder type	M: Magnetolectric encoder
②-flange	60: 60x60(mm) 80: 80x80(mm)	⑥- Brake	A: Without brake B: brake
③-Rated power	020: 20x10(W) 040: 40x10(W) 075: 75x10(W)	⑦-The shaft style	K: Withkey
④-Supply voltage	D: DC48V	⑧ Control mode	LA: RS232, RS485 CA: RS232, CANopen EA: RS232, EtherCAT

⑨ Software version 000: Software version

Note: Oil seal is an optional accessory and may not be installed on unnecessary occasions

MD integrated servo motor technical parameter

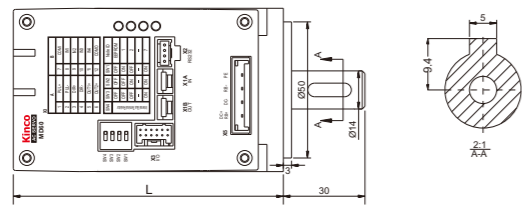
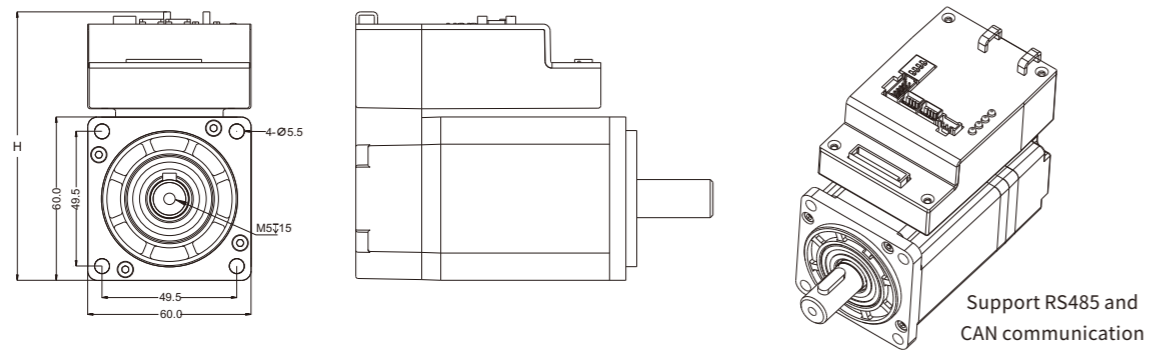


Model parameters		MD integrated servomotor		
		MD60-020-DM□K-■A-000	MD60-040-DM□K-■A-000	MD80-075-DM□K-■A-000
Power	Power	24VDC~70VDC	24VDC~70VDC	24VDC~70VDC
Current	Rated current (rms)	5Arms	10Arms	20Arms
	Peak current(PEAK)	21Ap	36Ap	80Ap
Brake holding torqueT(Nm)		1.5	1.5	3.2
Feedback signal		Magnetolectric encoder		
Brake chopper		Via wiring an external braking resistor (mainly in quick start and stop application)		
Brake chopper threshold		DC73V ± 2V (Default value, Adjustable via software)		
Over-voltage alarming threshold		DC83V ± 2V		
Under-voltage alarming threshold		DC18V ± 2V		
Cooling method		Natural air cooling		
Input specification		4 digital inputs, with COM1 terminal, high level:12.5~30VDC,low level:0~5VDC, max frequency:1KHZ, input impedance:5KΩ		
Output specification		2 digital outputs COMO terminal (drive current up to 100mA)		
Impulsive control		Pulse+Direction, CCW+CW, A Phase+B Phase (5~24V) The input voltage: 3.3V~24V; Maximum frequency: 500KHz (Note: MD□□-□□□□-DM□K-EA-000 don't support this function)		
Brake		Built-in brake power supply		
RS232		Default baud rate is 38400bps, the maximum support is 115.2kbps Baud rate, upper computer Kincoservo+		
RS485		The max. baudrate is 115.2KHz, use Modbus RTU protocol to communicate with controller.		
CAN BUS		Support maximum 1MHz baudrate. Communicate with controller via CANopen protocol		
EtherCAT		Support CoE(CiA402 protocol) and CSP/CSV/PP/PV/PT/HM mode, Communication speed 100M		
Rated Speed nN(rpm)		3000		
Rated Torque Tn(Nm)		0.64	1.27	2.39
Moment of inertia Jm (Kg · cm ²)		0.214	0.405	1.087
		0.218 (Brake)	0.409 (Brake)	1.099 (Brake)
Operation Environment	Operation temperature	0~40°C		
	Storage temperature	-10°C~70°C		
	Humidity(non-condensing)	Below 90%RH		
	Protection class	IP20		
	Installation environment	Installed in a dust-free, dry and lockable environment (such as in a electrical cabinet)		
	Installation mode	Install vertically or horizontally		
	Height	Rated working altitude at 1000m or below, Above 1000m: Dcreasing 1.5% per 100m rise, maximum altitude 4000m		
Atmospheric pressure	86kpa~106kpa			

Note: □=A: Without brake ■=L: Com port RS232, RS485
□=B: Brake ■=C: Com port RS232, CANopen
■=E: Com port RS232, EtherCAT

MD mechanical dimension drawing

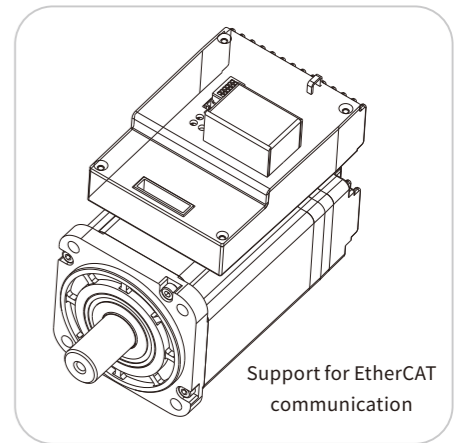
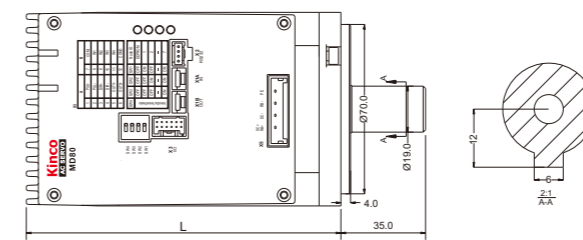
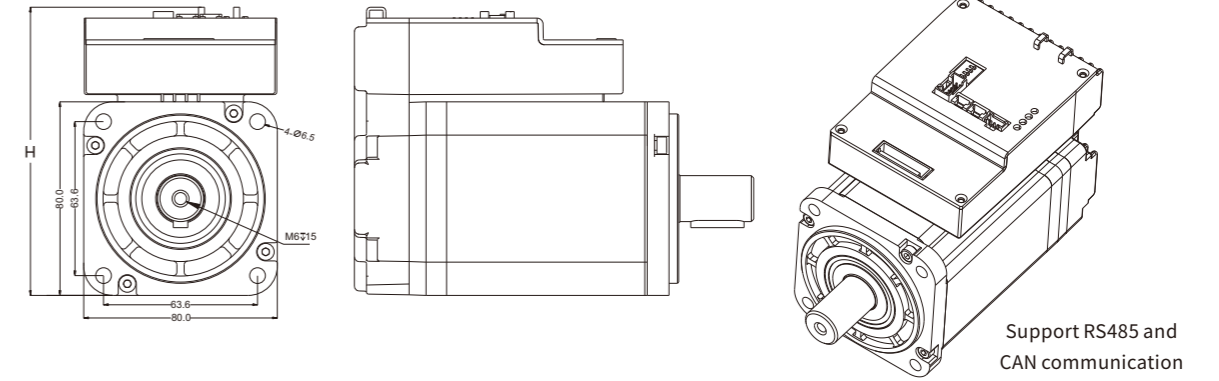
MD mechanical dimension drawing (Unit:mm)



Md60 Series model	Brake	Weight (KG)	Body height H(mm)	Body size L (mm)
MD60-020-DMAK-LA-000		1.2	98.6	99.2±1.5
MD60-020-DMAK-CA-000		1.25	113.1	
MD60-020-DMAK-EA-000		1.25	113.1	129.2±1.5
MD60-020-DMBK-LA-000	✓	1.6	98.6	
MD60-020-DMBK-CA-000		1.6	98.6	125.2±1.5
MD60-040-DMAK-LA-000		1.6	98.6	
MD60-040-DMAK-CA-000		1.6	98.6	155.2±1.5
MD60-040-DMAK-EA-000		1.65	113.1	
MD60-040-DMBK-LA-000		2	98.6	155.2±1.5
MD60-040-DMBK-CA-000	✓	2	98.6	

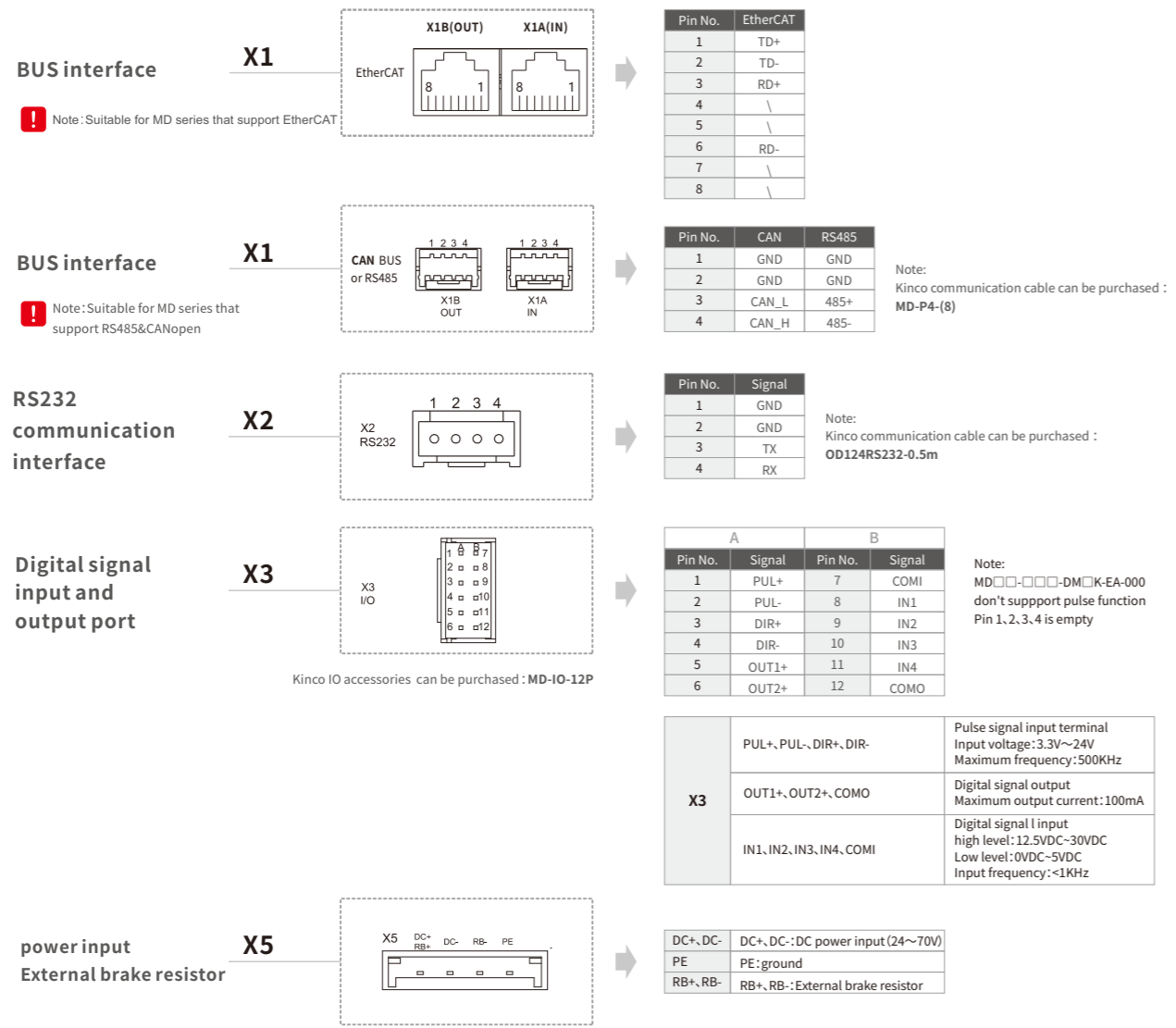
MD mechanical dimension drawing

MD mechanical dimension drawing (Unit:mm)



Md80 Series model	Brake	Weight (KG)	Body heightH (mm)	Body sizeL (mm)
MD80-075-DMAK-LA-000		2.9	119.1	130±1.5
MD80-075-DMAK-CA-000			133.6	
MD80-075-DMAK-EA-000		2.95	133.6	164.2±1.5
MD80-075-DMBK-LA-000	✓	3.5	119.1	
MD80-075-DMBK-CA-000		3.5	119.1	164.2±1.5
MD80-075-DMBK-EA-000	✓	3.5	119.1	

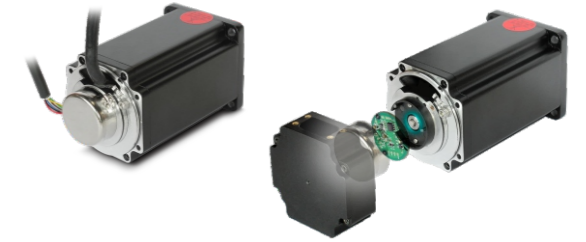
MD series terminal description



New generation G2 series servo motor

New electromagnetic design

The 12-slot and 10-pole design has low torque and low torque ripple, which is beneficial to reduce the vibration during the motor operation and make the torque output more stable ;



New structure short fuselage

The fuselage structure is redesigned to shorten the fuselage length, which can save more installation space and reduce the size of equipment for customers ;

Latest magnetic weaving technology

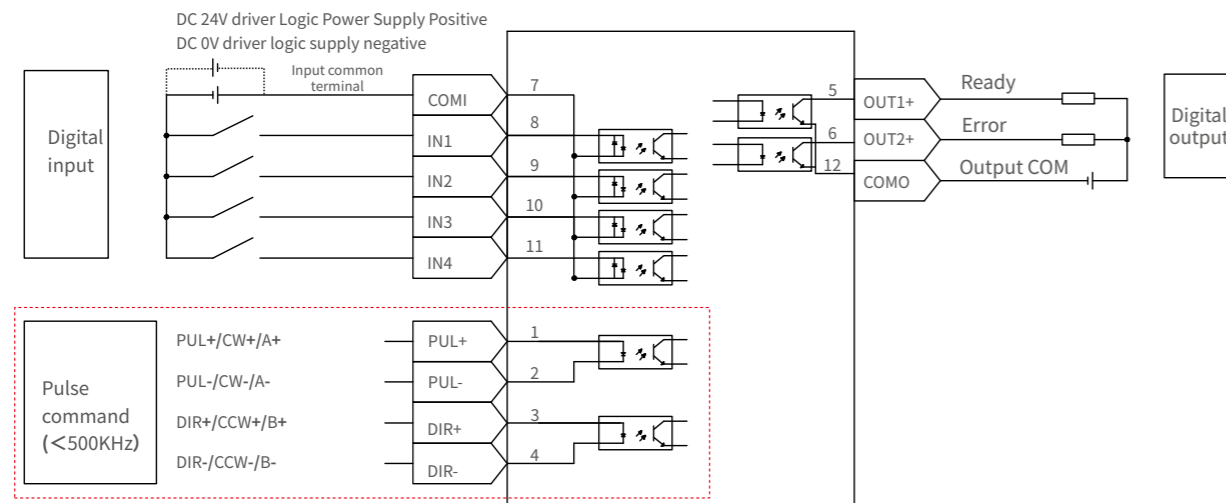
Self-designed magnetolectric encoder, good earthquake resistance, high cost performance ;

Insulation grade F

The industry motor in the highest insulation level, in the high temperature limit environment, can maintain high reliability, stability.



Wiring diagram of input and output terminals X3 (MD series)



Motor model description

model: SMC 60 S - 0040 - 30 M A K - 5 D S U

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫

①-Series name	SMH: SMH series SMC: SMC series SMS: SMS series	⑥-Encoder type	A: 2500P/R incremental encoder M: Magnetolectric encoder K: Multi-loop absolute value encoder
②-Flange	40: 40x40(mm) 60: 60x60(mm) 80: 80x80(mm) 110: 110x110(mm) 130: 130x130(mm)	⑦-Brake	A: Without brake B: Brake
③-Inertia type	S: Small inertia D: Medium inertia	⑧-The shaft style	K: With key
④-Rated power	0005: 5x10(W) 0010: 10x10(W) 0020: 20x10(W) 0040: 40x10(W) 0060: 60x10(W) 0075: 75x10(W) 0100: 100x10(W) 0120: 120x10(W) 0150: 150x10(W)	⑨-Pole pairs	3: 3 pole pairs 5: 5 pole pairs
⑤-Rated speed	30: 30x100(rpm)	⑩-Supply voltage	D: DC48V
		⑪-Motor version number	K: Version K S: Version S
		⑫-Outgoing mode of motor	H: Three rows of 15-pin metal case encoder sockets U: Communication encoder socket R: Aviation socket

Note: Oil seal is an optional accessory and may not be installed on unnecessary occasions

Motor Model List

Low-voltage G2 servo motor specifications and models table (DC48V)

Flange size (mm)	Servo motor model	Encoder type	Moment of inertia Jm(Kg·cm ²)	Rated power Pn(W)	Rated torque Tn(Nm)	Rated current In(A)	Rated speed nN(rpm)
40x40	SMC40S-0005-30M□K-5DSU	Magnetolectric encoder	0.018(0.021)	50	0.16	1.5	3000
	SMS40S-0005-30K□K-5DSU	Multi-turn absolute value encoder					
	SMC40S-0010-30M□K-5DSU	Magnetolectric encoder					
	SMS40S-0010-30K□K-5DSU	Multi-turn absolute value encoder					
60x60	SMC60S-0020-30M□K-5DSU	Magnetolectric encoder	0.14(0.144)	200	0.64	5.7	
	SMC60S-0020-30A□K-5DSH	2500P/R Encoder					
	SMC60S-0040-30M□K-5DSU	Magnetolectric encoder					
	SMC60S-0040-30A□K-5DSH	2500P/R Encoder					
	SMC60S-0060-30M□K-5DSU	Magnetolectric encoder					
	SMC60S-0060-30A□K-5DSH	2500P/R Encoder					
80x80	SMC80S-0075-30M□K-5DSU	Magnetolectric encoder	1.027(1.099)	750	2.39	19.9	
	SMC80S-0075-30A□K-5DSH	2500P/R Encoder					
	SMC80S-0100-30M□K-5DSU	Magnetolectric encoder					
	SMC80S-0100-30A□K-5DSH	2500P/R Encoder					
			1.36(1.41)	1000	3.18	26.4	

Note1: Operating environment

Temperature: -20~40°C (no ice)

Humidity: Below 90%RH (no condensation)

Environment: Keep away from corrosion, flammable gases, oil droplets, and dust

Altitude: 1000~4000m, for every 100m increase in altitude, the power decreases by 1.5%

Protection class: IP65, shaft IP54

Note2: □=A: Without brake

□=B: Brake

Note3: The values in the brackets of the column of moment of inertia are the column values of the moment of inertia of the brake motor

Low-voltage G1 servo motor specifications and models table (DC48V)

Flange size (mm)	Servo motor model	Encoder type	Moment of inertia Jm(Kg·cm ²)	Rated power Pn(W)	Rated torque Tn(Nm)	Rated current In(A)	Rated speed nN(rpm)
60x60	SMC60S-0020-30M□K-3DSU	Magnetolectric encoder	0.214(0.219)	200	0.64	5.1	3000
	SMS60S-0020-30K□K-3DSU	Multi-turn absolute value encoder					
	SMC60S-0020-30A□K-3DSH	2500P/R Encoder					
	SMC60S-0040-30M□K-3DSU	Magnetolectric encoder					
	SMS60S-0040-30K□K-3DSU	Multi-turn absolute value encoder					
	SMC60S-0040-30A□K-3DSH	2500P/R Encoder					
80x80	SMC80S-0075-30M□K-3DSU	Magnetolectric encoder	1.087(1.099)	750	2.39	19	
	SMS80S-0075-30K□K-3DSU	Multi-turn absolute value encoder					
	SMC80S-0075-30A□K-3DSH	2500P/R Encoder					
110x110	SMH110D-0120-30A□K-4DKR	2500P/R Encoder	5.8(6.1)	1200	4	32	
130x130	SMC130D-0120-30A□K-4DKR		7.4(7.5)				
	SMC130D-0150-30A□K-4DKR		12(12.1)				

Note1: Operating environment

Temperature: -20~40°C (no ice)

Humidity: Below 90%RH (no condensation)

Environment: Keep away from corrosion, flammable gases, oil droplets, and dust

Altitude: 1000~4000m, for every 100m increase in altitude, the power decreases by 1.5%

Protection class: IP65, shaft IP54

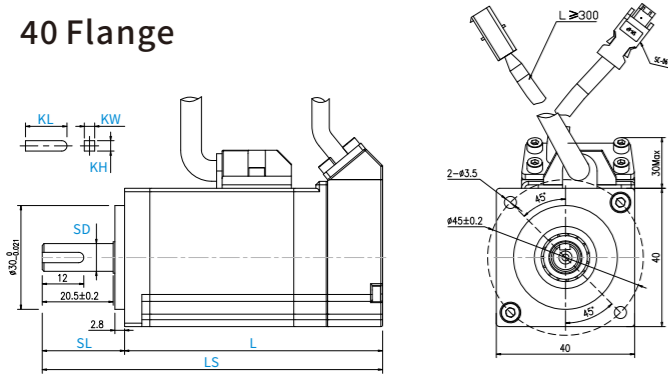
Note2: □=A: Without brake

□=B: Brake

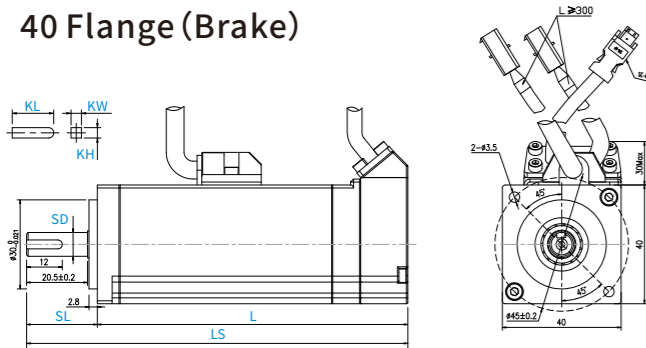
Note3: The values in the brackets of the column of moment of inertia are the column values of the moment of inertia of the brake motor

Dimension drawing of G2 series servo motors (short fuselage, DC48V)

40 Flange

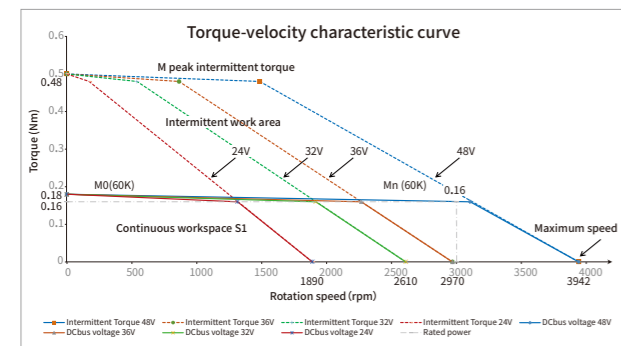


40 Flange (Brake)

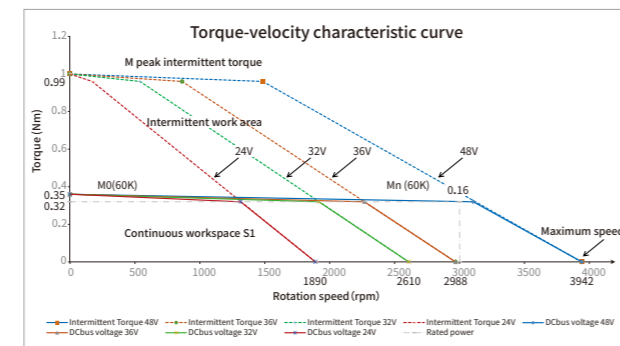


Flange size (mm)	Servo motor model	Brake	Weight (KG)	Overall size(mm)		Shaft size (mm)			The key size (mm)		
				LS	L	SL	SD	Screw hole x Depth	KL	KW	KH
40x40	SMC40S-0005-30MAK-5DSU		0.4	98.4±1.5	74.6±1.5	23.8±0.8	8	M3x6	12	3	3
	SMS40S-0005-30KAK-5DSU										
	SMC40S-0005-30MBK-5DSU	✓	0.6	128.4±1.5	104.6±1.5						
	SMS40S-0005-30KBK-5DSU										
	SMC40S-0010-30MAK-5DSU		0.57	120.4±1.5	96.6±1.5						
	SMS40S-0010-30KAK-5DSU										
	SMC40S-0010-30MBK-5DSU	✓	0.77	150.4±1.5	126.6±1.5						
	SMS40S-0010-30KBK-5DSU										

50W

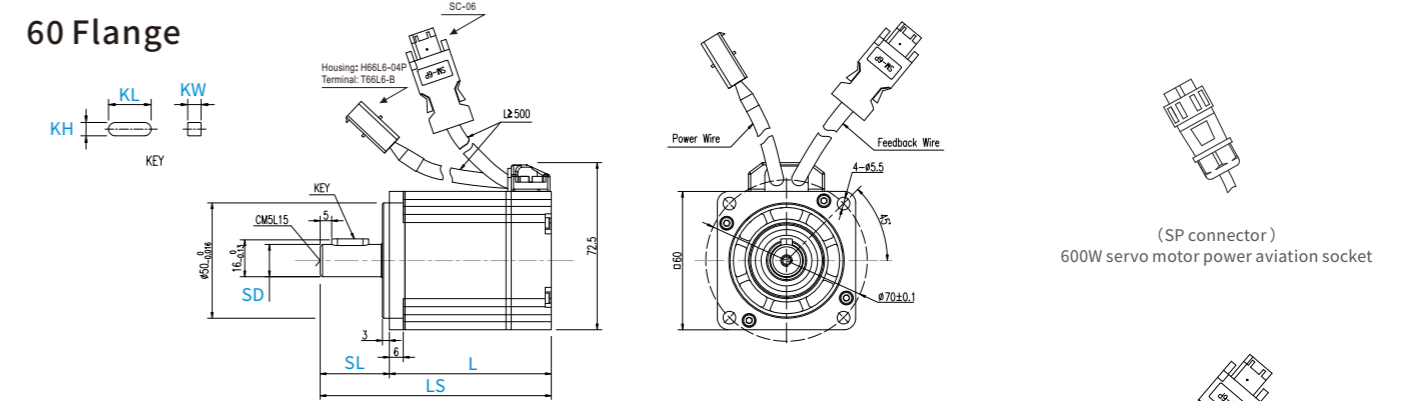


100W

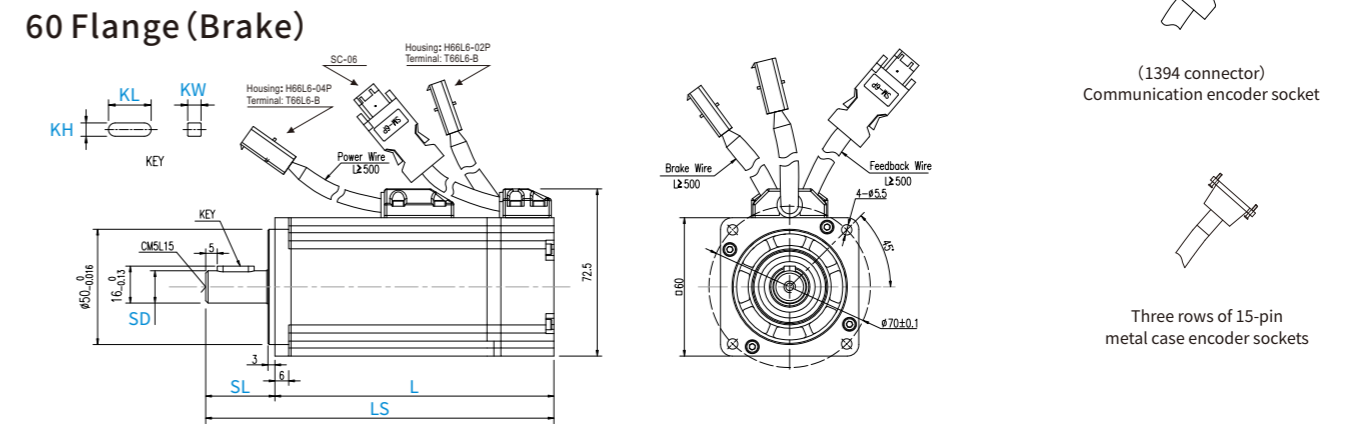


Dimension drawing of G2 series servo motors (short fuselage, DC48V)

60 Flange

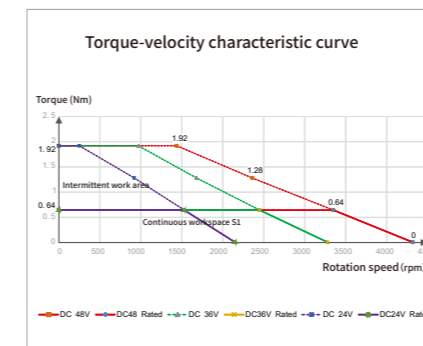


60 Flange (Brake)

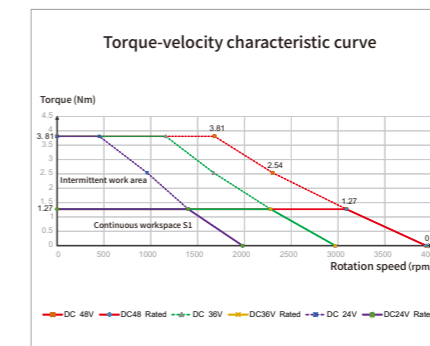


Flange size (mm)	Servo motor model	Brake	Weight (KG)	Overall size(mm)		Shaft size (mm)			The key size (mm)		
				LS	L	SL	SD	Screw hole x Depth	KL	KW	KH
60x60	SMC60S-0020-30MAK-5DSU		0.9	105±1.5	75±1.5	30±1	14	M5x15	16	5	5
	SMS60S-0020-30AAK-5DSH										
	SMC60S-0020-30MAK-5DSU	✓	1.2	142.5±1.5	112.5±1.5						
	SMS60S-0020-30AAK-5DSH										
	SMC60S-0020-30MBK-5DSU	✓	1.3	152.5±1.5	122.5±1.5						
	SMS60S-0020-30MBK-5DSH										
	SMC60S-0040-30MAK-5DSU		1.2	127±1.5	97±1.5						
	SMS60S-0040-30AAK-5DSH										
	SMC60S-0040-30MAK-5DSU	✓	1.6	164.5±1.5	134.5±1.5						
	SMS60S-0040-30AAK-5DSH										
	SMC60S-0040-30MBK-5DSU	✓	1.9	174±1.5	144±1.5						
	SMS60S-0040-30MBK-5DSH										
	SMC60S-0060-30MAK-5DSU		2.3	197.5±1.5	167.5±1.5						
	SMS60S-0060-30AAK-5DSH										
SMC60S-0060-30MBK-5DSU	✓	2.3	197.5±1.5	167.5±1.5							
SMS60S-0060-30MBK-5DSH											
SMC60S-0060-30ABK-5DSH		207±1.5	177±1.5								

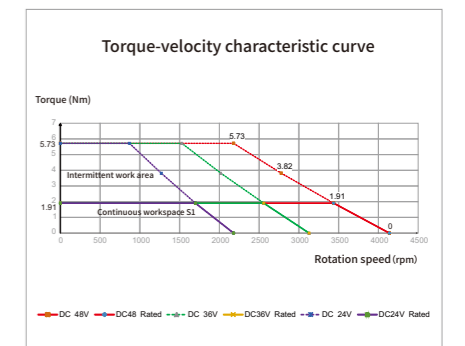
200W



400W

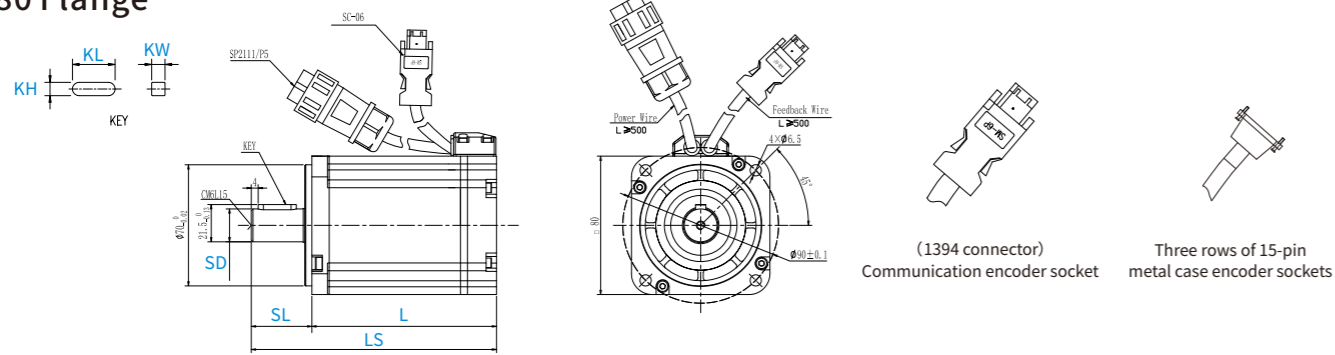


600W

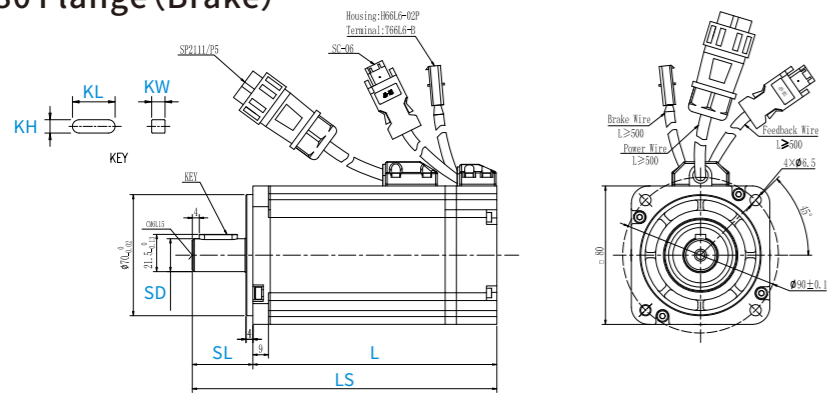


Dimension drawing of G2 series servo motors (short fuselage, DC48V)

80 Flange

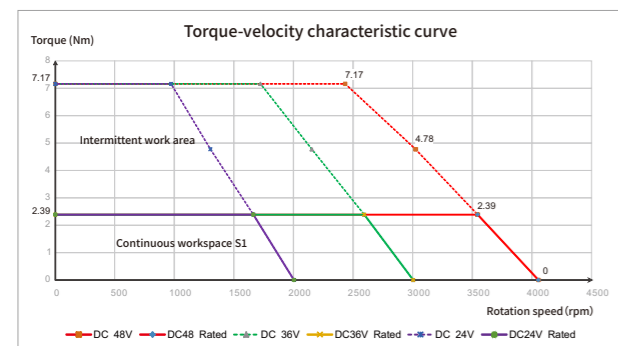


80 Flange (Brake)

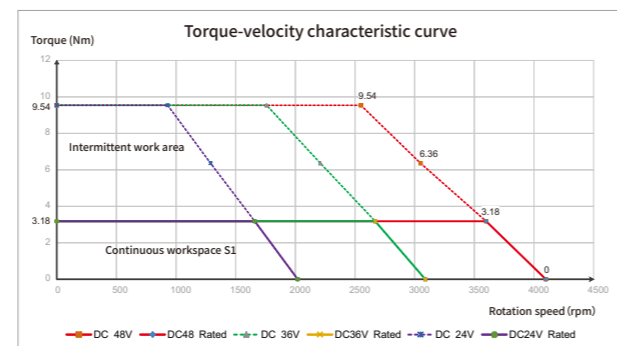


Flange size (mm)	Servo motor model	Brake	Weight (KG)	Overall size(mm)		Shaft size (mm)			The key size (mm)		
				LS	L	SL	SD	Screw hole x Depth	KL	KW	KH
80x80	SMC80S-0075-30MAK-5DSU		2.3	141.7±1.5	106.7±1.5	35±1	19	M6x15	22	6	6
	SMC80S-0075-30AAK-5DSH		2.4	153.2±1.5	118.2±1.5						
	SMC80S-0075-30MBK-5DSU	✓	3	176±1.5	141±1.5						
	SMC80S-0075-30ABK-5DSH		3.2	185±1.5	150±1.5						
	SMC80S-0100-30MAK-5DSU		2.8	157.7±1.5	122.7±1.5						
	SMC80S-0100-30AAK-5DSH		3	169.2±1.5	134.2±1.5						
	SMC80S-0100-30MBK-5DSU	✓	3.3	192±1.5	157±1.5						
	SMC80S-0100-30ABK-5DSH		3.6	201±1.5	166±1.5						

750W

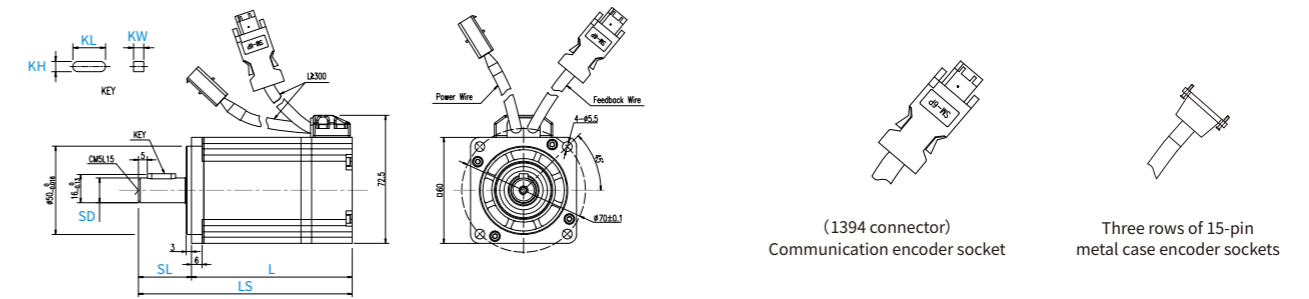


1000W

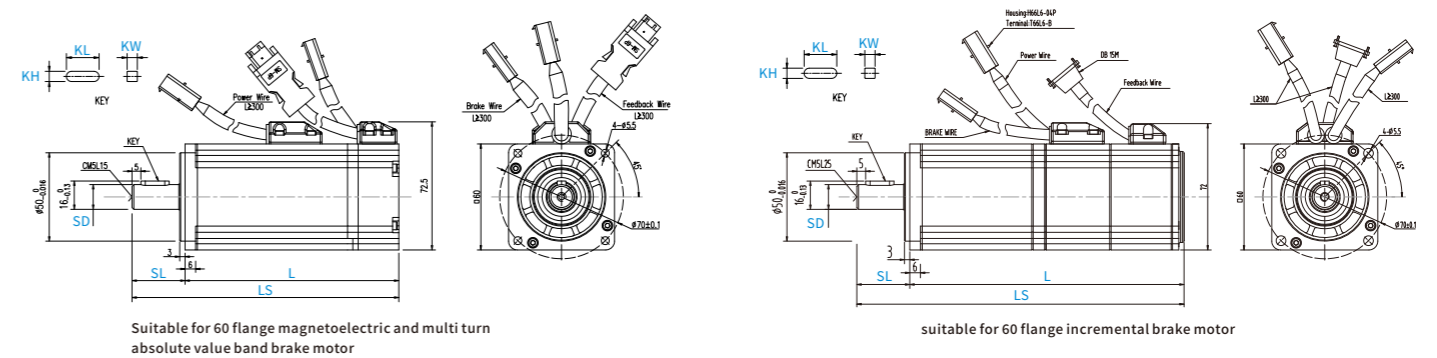


Dimension drawing of G1 series servo motors (DC48V)

60 Flange

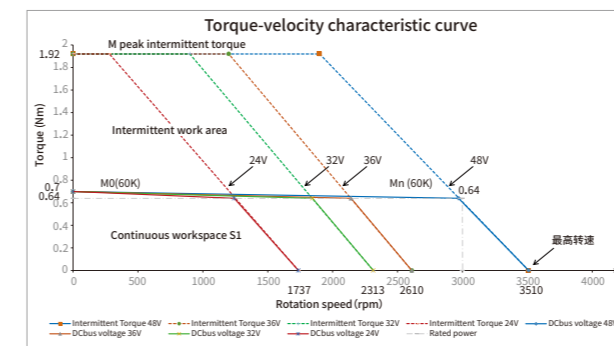


60 Flange (Brake)

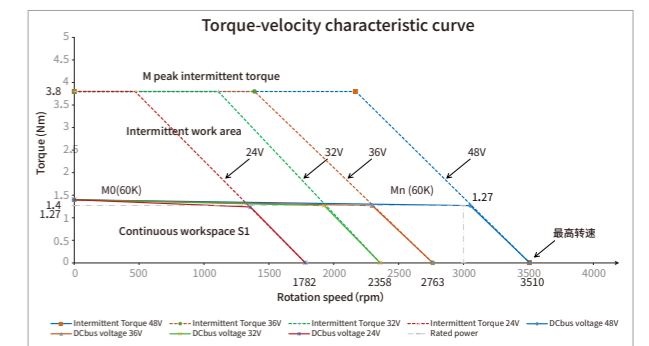


Flange size (mm)	Servo motor model	Brake	Weight (KG)	Overall size(mm)		Shaft size (mm)			The key size (mm)		
				LS	L	SL	SD	Screw hole x Depth	KL	KW	KH
60x60	SMC60S-0020-30MAK-3DSU		1.2	121±1.5	91±1.5	30±1	14	M5x15	16	5	5
	SMS60S-0020-30KAK-3DSU										
	SMC60S-0020-30AAK-3DSH		1.1	134±1.5	104±1.5						
	SMC60S-0020-30MBK-3DSU		1.6	151±1.5	121±1.5						
	SMS60S-0020-30KBK-3DSU	✓									
	SMC60S-0020-30ABK-3DSH		1.6	180±1.5	150±1.5						
	SMC60S-0040-30MAK-3DSU		1.6	147±1.5	117±1.5						
	SMS60S-0040-30KAK-3DSU										
	SMC60S-0040-30AAK-3DSH		1.6	160±1.5	130±1.5						
	SMC60S-0040-30MBK-3DSU		2.1	177±1.5	147±1.5						
	SMS60S-0040-30KBK-3DSU	✓									
	SMC60S-0040-30ABK-3DSH		2.1	206±1.5	176±1.5						

200W

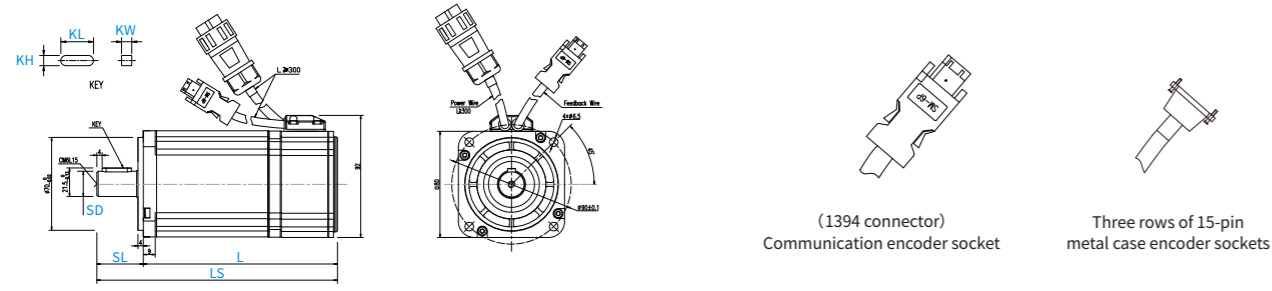


400W

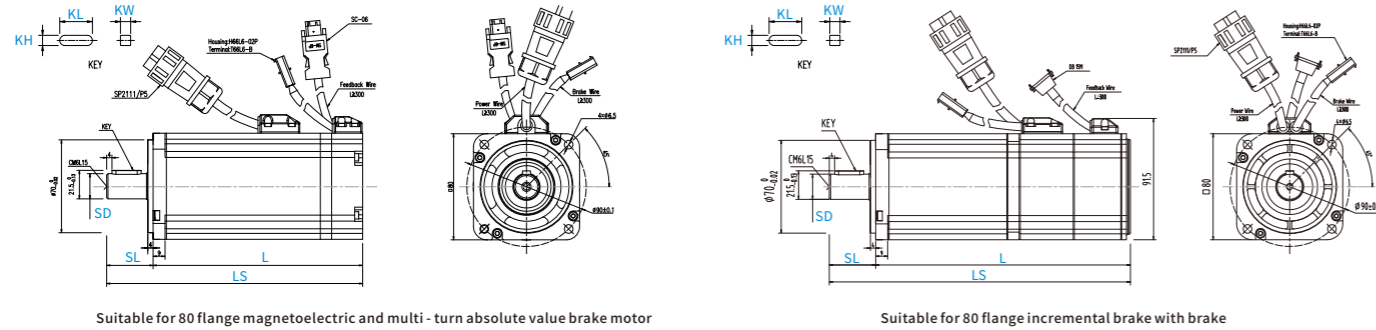


Dimension drawing of G1 series servo motors (DC48V)

80 Flange

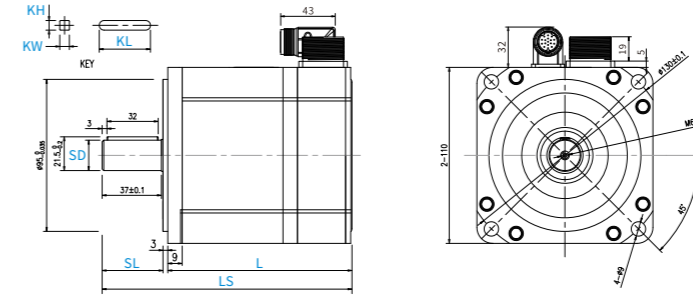


80 Flange (Brake)

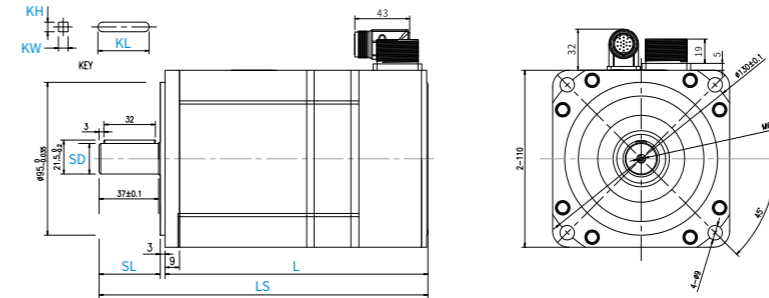


Dimension drawing of G1 series servo motors (DC48V)

110 Flange



110 Flange (Brake)

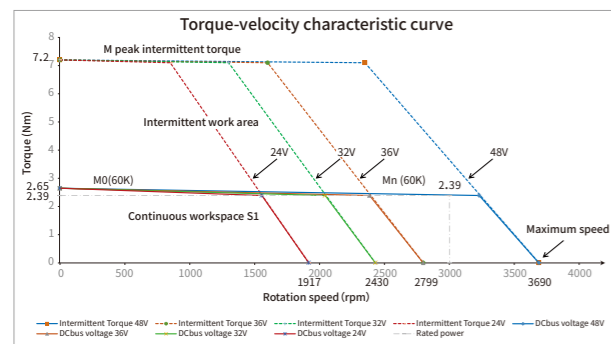


Flange size (mm)	Servo motor model	Brake	Weight (KG)	Overall size(mm)		Shaft size (mm)			The key size (mm)		
				LS	L	SL	SD	Screw hole x Depth	KL	KW	KH
80x80	SMC80S-0075-30MAK-3DSU		2.8	163.5±1.5	128.5±1.5	35±1	19	M6x15	22	6	6
	SMS80S-0075-30KAK-3DSU										
	SMC80S-0075-30AAK-3DSH		2.9	175±1.5	140±1.5						
	SMC80S-0075-30MBK-3DSU	✓	3.4	193±1.5	158±1.5						
	SMS80S-0075-30KBK-3DSU		3.5	222±1.5	187±1.5						
	SMC80S-0075-30ABK-3DSH										

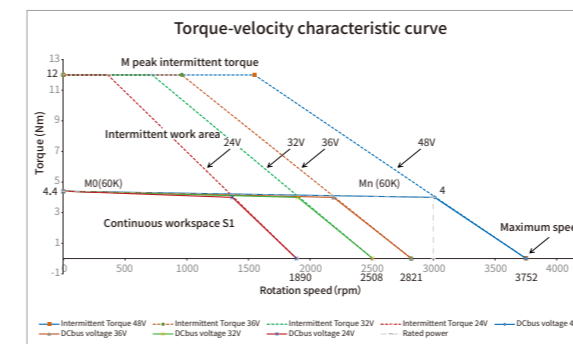
Flange size (mm)	Servo motor model	Brake	Weight (KG)	Overall size(mm)		Shaft size (mm)			The key size (mm)		
				LS	L	SL	SD	Screw hole x Depth	KL	KW	KH
110x110	SMH110D-0120-30AAK-4DKR		6.2	206±1.5	168±1.5	38±1	19	M6x20	32	6	6
	SMH110D-0120-30ABK-4DKR	✓	7.2	266±1.5	228±1.5						

Note: The minimum installation size shall refer to the MOT-040-LL-KC5 slot height of the power cable

750W

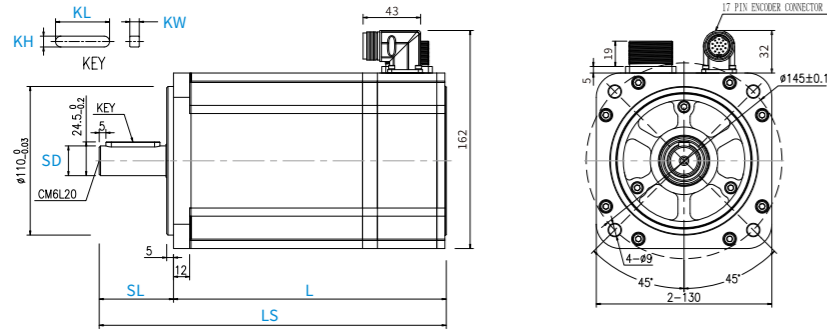


1.2kW

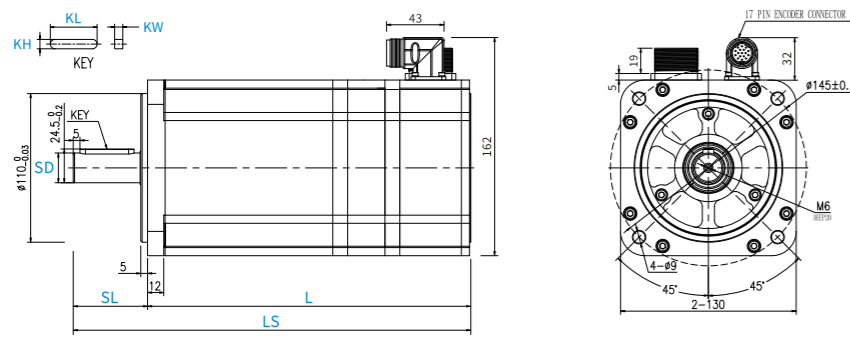


Dimension drawing of G1 series servo motors (DC48V)

130 Flange



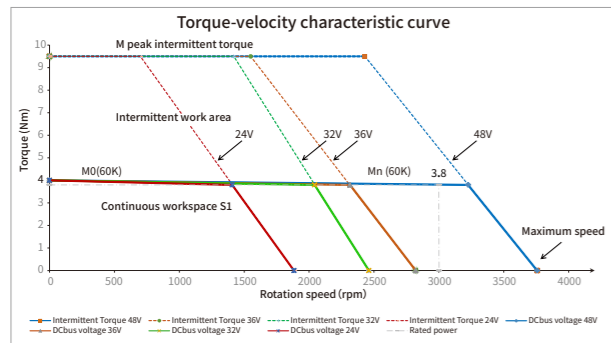
130 Flange (Brake)



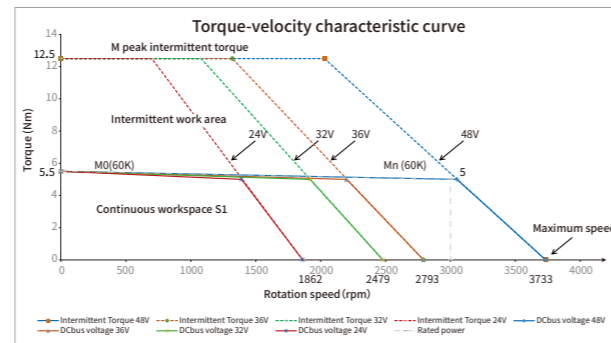
Flange size (mm)	Servo motor model	Brake	Weight (KG)	Overall size(mm)		Shaft size (mm)			The key size (mm)		
				LS	L	SL	SD	Screw hole x Depth	KL	KW	KH
130x130	SMC130D-0120-30AAK-4DKR		6.2	202±1.5	147±1.5	55±1	22	M6x20	40	6	6
	SMC130D-0120-30ABK-4DKR	✓	8.5	263±1.5	208±1.5						
	SMC130D-0150-30AAK-4DKR		7.5	218±1.5	163±1.5						
	SMC130D-0150-30ABK-4DKR	✓	9.8	279±1.5	224±1.5						

Note: The minimum installation size shall refer to the MOT-040-LL-KC5 slot height of the power cable

1.2kW



1.5kW



Naming rules for motor cables

Power cable: **MOT F - 005-03 - KL - D**

① ② ③ ④ ⑤ ⑥

① - Cable function type	MOT: Motor power cable	④ - Cable length	(5): 0.5 m 01: 1 m 02: 2 m 03: 3 m
② - Cable type	F: The flexible cable Empty: Ordinary cable	⑤ - Outgoing type of motor	KL: 4PIN power plug KC5: Aviation socket
③ - Rated current	005: 5A 008: 8A 015: 15A 040: 40A	⑥ - Connector types	D: DC servo standard connector SP: SP21 series common aviation plugs B: brake - power integrated cable Empty: Ordinary cable

Encoder cable: **ENC H G F - 03 - G U - □ □**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① - Cable function type	ENC: Motor encoder wire	⑤ - Cable length	(5): 0.5 m 01: 1 m 02: 2 m 03: 3 m
② - Driver encoder interface type	C: Two rows of 15-pin connector H: Three rows of 15 pin connector D: 1394 connector O: Compact quick lock connector	⑥ - Conductor type	K: 16 core G: 6 core
③ - Driver interface definition	A: Incremental encoder G: Communication encoder	⑦ - Type of motor end encoder connector	U: 1394 connector C0: HFO series common air connector H: Three rows of 15-pin D-Sub encoder connector
④ - Cable type	F: The flexible cable 空: Empty: Ordinary cable	⑧ - Cable accessories	BT: With battery (suitable for multi-turn absolute value encoder motors) Empty: No battery

Brake cable: **BRA F - 03 - KL**

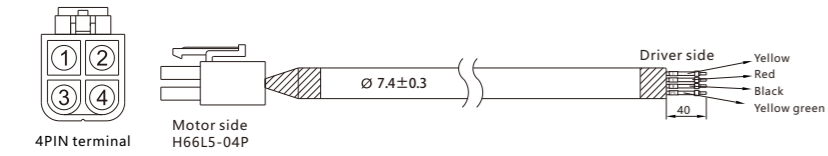
① ② ③ ④

① - Cable function type	BRA: Motor brake cable	③ - Cable length	(5): 0.5 m 01: 1 m 02: 2 m 03: 3 m
② - Cable type	F: The flexible cable Empty: Ordinary cable	④ - Connector types	KL: 2PIN brake connector

Cable(Encoder cable)

MOT-005-LL-KL-D

Wire spec: 4C×18AWG(41/0.16T)-PVC
18AWG cross sectional area 0.8107mm²



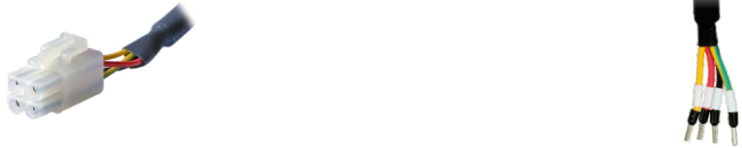
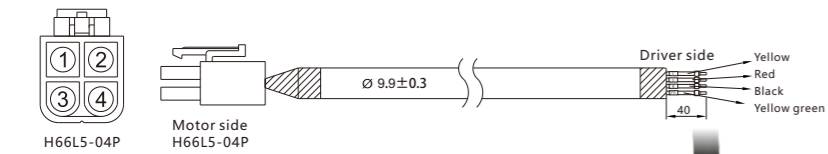
MOT-005-LL-KL-D		
Color	Signal	4PIN plug
Yellow	U	PIN1
Red	V	PIN2
Black	W	PIN3
Yellow green	PE	PIN4

Corresponding accessory: MOT-KL

Corresponding flexible cable **MOTF-005-LL-KL-D**
wire specification: 4C×18AWG(7/18/0.10T) 500 million times
wire diameter: 7.3±0.5mm

MOT-008-LL-KL-D

Wire spec: 4×16AWG
16AWG cross sectional area 1.318mm²



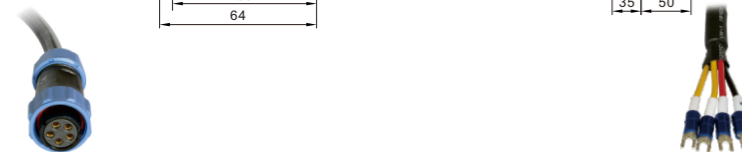
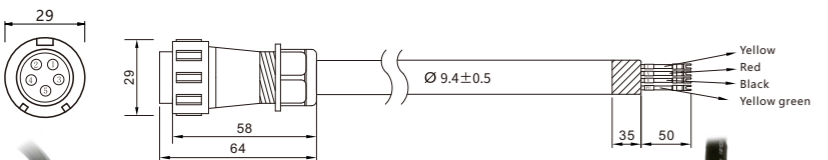
MOT-008-LL-KL-D		
Color	Signal	H66L5-04P
Yellow	U	PIN1
Red	V	PIN2
Black	W	PIN3
Yellow green	PE	PIN4

Corresponding accessory: MOT-KL

Corresponding flexible cable **MOTF-008-LL-KL-D**
wire specification: 4×1.5mm², BLACK
wire diameter: 9.3±0.5mm

MOT-015-LL-KL-SP

Wire spec: 4×14AWG(50/0.25T)
14AWG cross sectional area 2.075mm²



MOT-015-LL-KL-SP		
Color	Signal	5PIN Air insertion
Yellow	U	PIN1
Red	V	PIN2
Black	W	PIN3
Yellow green	PE+Shielding	PIN4
NC	NC	PIN5

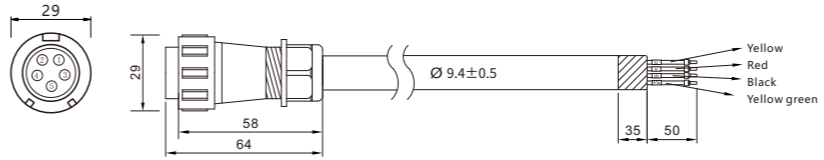
Corresponding accessory: MOT-015-KL-SP

Corresponding flexible cable **MOTF-015-LL-KL-SP**
wire specification: 4×14AWG BLACK
wire diameter: 11.7±0.5mm

Cable(Power cable)

MOT-015-LL-KL-SP-1

Wire spec: 4×14AWG(50/0.25T)
14AWG cross sectional area 2.075mm²

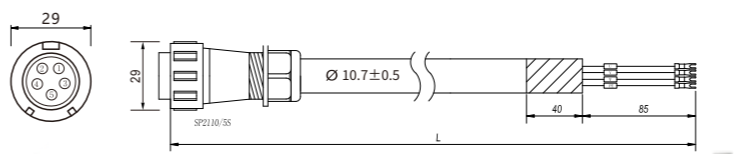


MOT-015-LL-KL-SP-1		
Color	Signal	5PIN Air insertion
Yellow	U	PIN1
Red	V	PIN2
Black	W	PIN3
Yellow green	PE+Shielding	PIN4
NC	NC	PIN5

Corresponding accessory: MOT-015-KL-SP

MOTF-030-LL-KL-SP

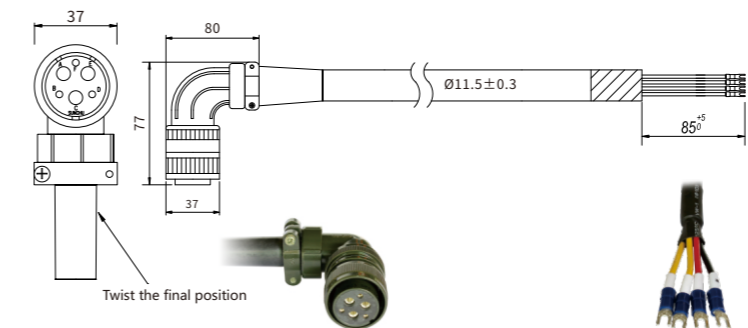
Wire spec: UL2261 4×12AWG(500万次)
12AWG cross sectional area 3.332mm²



MOTF-030-LL-KL-SP		
Color	Signal	5PIN Air insertion
Yellow	U	PIN1
Red	V	PIN2
Black	W	PIN3
Yellowgreen+Shielding	PE+Shielding	PIN4
NC	NC	PIN5

MOT-040-LL-KC5

Wire spec: 3c×10AWG+3X19AGW
10AWG cross sectional area 5.26mm²
19AWG cross sectional area 0.5667mm²



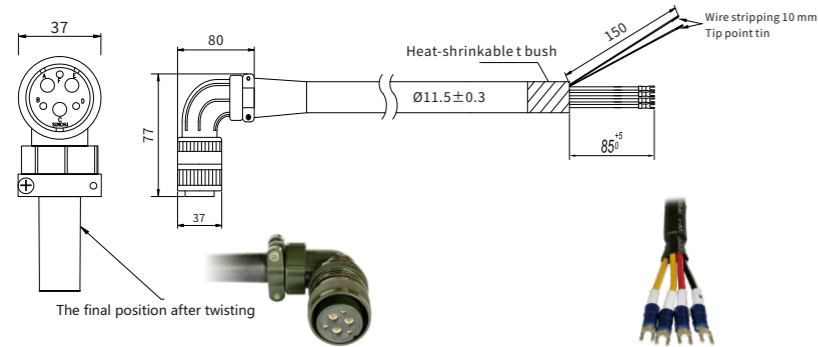
MOT-040-LL-KC5		
Color	Signal	Air insertion
Yellow	U	PINA
Red	V	PINE
Green	W	PINC
Yellow green	PE	PINF
Shielding wire	Shielding	Metal ring

Corresponding accessory: MOT-KC5-B

Cable (Power cable/Encoder cable)

MOT-040-LL-KC5-B

Wire spec: 3cx10AWG+3X19AGW
 10AWG cross sectional area 5.26mm²
 19AWG cross sectional area 0.5667mm²

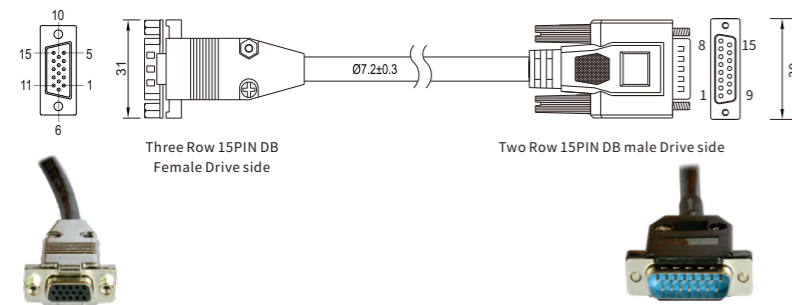


MOT-040-LL-KC5-B		
Color	Signal	Air insertion
Yellow	U	PINA
Red	V	PINE
Black	W	PINC
Yellowgreen	PE	PINF
Red	Brake+	PINB
Blue	Brake-	PIND
shielding	shielding	Shell

Corresponding accessory: MOT-KC5-B

ENCCA-LL-KH

Wire spec: 24AWG/1P+28AWG/7P+AB 1061
 24AWG cross sectional area 0.2047mm²
 28AWG cross sectional area 0.0804mm²



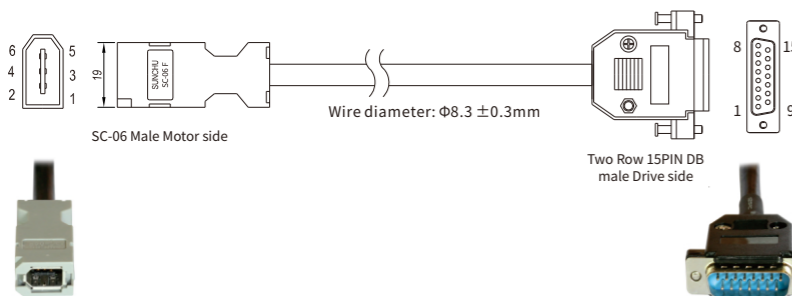
ENCCA-LL-KH				
Three rows of 15PIN DB	Double row 15PIN DB	Signal	Color of external cable	Color of motor cable
PIN1	PIN1	+5V	Red (thick)	Red
PIN8	PIN2	A	Orange	Blue black
PIN7	PIN3	B	Yellow	Green
PIN6	PIN4	Z	Green	Yellow
PIN4	PIN5	U	Brown	Brown black
PIN10	PIN6	V	Purple	White black
PIN9	PIN7	W	Blue	Gray black
PIN2	PIN9	GND	Black (thick)	Black
PIN13	PIN10	/A	Orange white	Blue
PIN12	PIN11	/B	Yellow white	Green black
PIN11	PIN12	/Z	Green white	Yellow black
PIN5	PIN13	/U	Brown white	Brown
PIN15	PIN14	/V	Purple white	white
PIN14	PIN15	/W	Blue whitw	Gray
No PIN3	No PIN8			
Belonging ring	Db part	Shielding	Shielded wire	Shielded wire

Corresponding accessory: ENCCA-KH

Corresponding flexible cable ENCCAF-LL-KH
 wire specification: 2*24AWG+7*28AWG BLACK
 wire diameter: 10 ± 0.5mm

ENCCG-LL-GU

Wire spec: 1P*20AWG(26/0.16T)+2P*24AWG(11/0.16T) (OD 7.4mm)
 20AWG cross sectional area 0.5189mm²
 24AWG cross sectional area 0.2047mm²



ENCCG-LL-GU				
SC-06F	Color	Signal 1	Signal 2	DB15 Female
PIN1	Red	VDD	VDD	PIN1
PIN2	Black	GND	GND	PIN9
PIN3	Brown	MA_P+	\	PIN6
PIN4	Blue	MA_N-	\	PIN14
PIN5	Yellow	SLO_P+	SD	PIN7
PIN6	Green	SLO_N-	/SD	PIN15
Shell	Shielded wire	Shielding	Shielding	Shell

Note: Signal 1 for magnetolectric encoders,
 signal 2 for absolute value encoders.

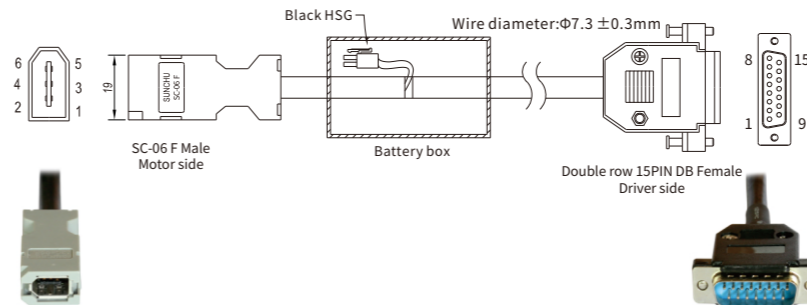
Corresponding accessory: ENCCG-GU

corresponding flexible cable ENCCGF-LL-GU
 Wire specification: 1P*20AWG(72/0.10T)+2P*24AWG(32/0.10T)
 5 million times (OD 7.4mm)
 wire diameter: 7.4 ± 0.5mm

Cable (Encoder cable)

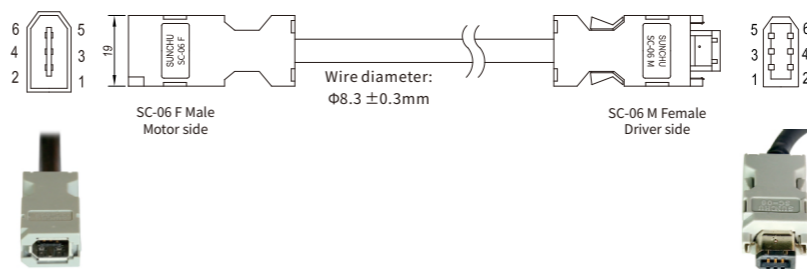
ENCCG-(4)-GU-BT

Wire spec: 3 × 2 × 0.2mm²



ENCDG-LL-GU

Wire spec: 1P*20AWG(26/0.16T)+2P*24AWG(11/0.16T) (OD 7.4mm)
 20AWG cross sectional area 0.5189mm²
 24AWG cross sectional area 0.2047mm²



ENCCG-(4)-GU-BT					
SC-06F	Color	Black HSG	External single wire	Signal	Db15 Female
PIN1	Red			+5V	PIN1
PIN2	Black			GND	PIN9
PIN3	Brown	PIN1	Red	BAT+	
PIN4	Blue	PIN2	Black	BAT-	
PIN5	Ywllow			SD	PIN7
PIN6	Green			/SD	PIN15
Shell	Shielded wire			Shielding	Shell

ENCDG-LL-GU			
Color	SC-06	Signal1	Signal 2
Red	PIN1	VDD	+5V
Black	PIN2	GND	GND
Brown	PIN3	MA_P+	BAT+
Blue	PIN4	MA_N-	BAT-
Yellow	PIN5	SLO_P+	SD
Green	PIN6	SLO_N-	/SD
Shielded wire	Shell	Shielding	Shielding

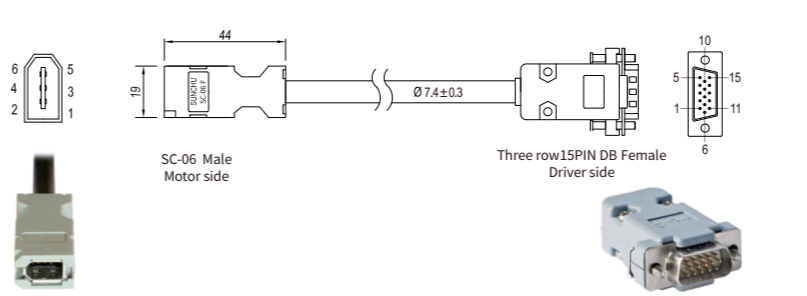
Note: Signal 1 for magnetolectric encoders,
 signal 2 for absolute value encoders.

Corresponding accessory: ENCDG-GU

corresponding flexible cable ENCDGF-LL-GU
 Wire specification: 1P*20AWG(72/0.10T)+2P*24AWG(32/0.10T)
 5 million times (OD 7.4mm)
 Wire diameter: 7.4 ± 0.5mm

ENCHG-LL-GU

Wire spec: 1P*20AWG(26/0.16T)+2P*24AWG(11/0.16T) (OD 7.4mm)
 20AWG cross sectional area 0.5189mm²
 24AWG cross sectional area 0.2047mm²



ENCHG-LL-GU				
SC-06F	Color	Signal 1	Signal 2	DB 15 公
PIN1	Red	VDD	VDD	PIN1
PIN2	Black	GND	GND	PIN2
PIN3	Brown	MA_P+	\	PIN10
PIN4	Blue	MA_N-	\	PIN15
PIN5	Yellow	SLO_P+	SD	PIN9
PIN6	Green	SLO_N-	/SD	PIN14
Shell	Shielded wire	Shielding	Shielding	Shell

Note: Signal 1 for magnetolectric encoders,
 signal 2 for absolute value encoders.

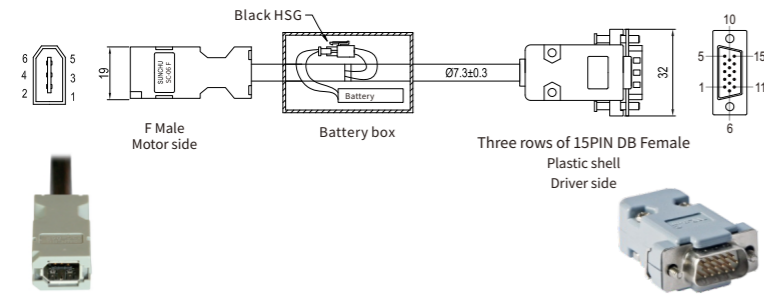
Corresponding accessory: ENCDG-GU

corresponding flexible cable ENCHGF-LL-GU
 Wire specification: 1P*20AWG(72/0.10T)+2P*24AWG(32/0.10T)
 5 million times (OD 7.4mm)
 Wire diameter: 7.4 ± 0.5mm

Cable (Encoder cable)

ENCHG-(4)-GU-BT

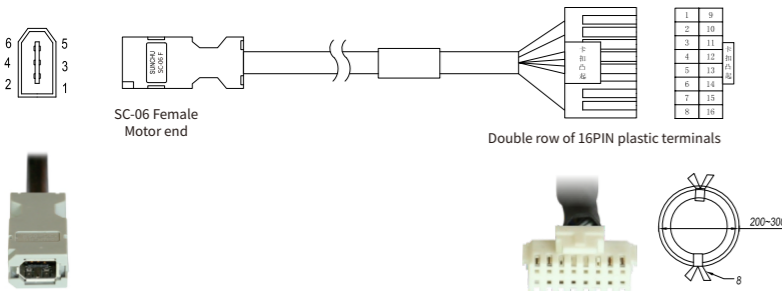
Wire spec: 3×2×0.2mm²



ENCHG-(4)-GU-BT					
SC-06F	Color	Black HSG	External single wire	Signal	Db15 Female
PIN1	Red			+5V	PIN1
PIN2	Black			GND	PIN9
PIN3	Brown	PIN1	Red	BAT+	
PIN4	Blue	PIN2	Black	BAT-	
PIN5	Yellow			SD	PIN7
PIN6	Green			/SD	PIN15
Shell	Shielded wire			Shielding	Shell

ENCOG-LL-GU

Wire spec: 3×2×0.2mm²



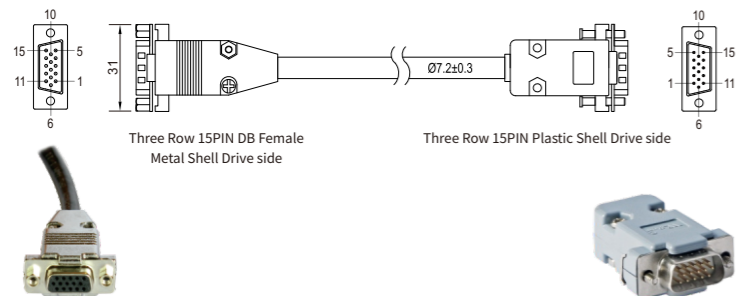
ENCOG-LL-GU				
SC-06	Color	Signal 1	Signal 2	Double row of 16PIN 16PIN
PIN1	Red	VDD	VDD	PIN1
PIN2	Black	GND	GND	PIN9
PIN3	Brown	MA_P+	BAT+	PIN6
PIN4	Blue	MA_N-	BAT-	PIN14
PIN5	Yellow	SLO_P+	SD	PIN7
PIN6	Green	SLO_N-	/SD	PIN15
Shell	Shielded wire	Shielding	Shielding	PIN16

Note: Signal 1 for magnetoelectric encoders, signal 2 for absolute value encoders.

Corresponding accessory package: ENCOG-GU

ENCHA-LL-KH

Wire spec: 24AWG/1P+28AWG/7P+AB 1061
24AWG cross sectional area 0.2047mm²
28AWG cross sectional area 0.0804mm²



ENCHA-LL-KH			
Three rows of 15PIN DB Female	Three rows of 15PIN DB Male	Signal	Color
PIN1	PIN1	+5V	Red (Thick)
PIN8	PIN8	A	Orange
PIN7	PIN7	B	Yellow
PIN6	PIN6	Z	Green
PIN4	PIN4	U	Brown
PIN10	PIN10	V	Purple
PIN9	PIN9	W	Blue
PIN2	PIN2	GND	Black (Thick)
PIN13	PIN13	/A	Orange white
PIN12	PIN12	/B	Yellow white
PIN11	PIN11	/Z	Green white
PIN5	PIN5	/U	Brown white
PIN15	PIN15	/V	Purple white
PIN14	PIN14	/W	Blue white
Shell	Shell	Shielded	Shielded wire

Corresponding accessory: ENCHA-KH

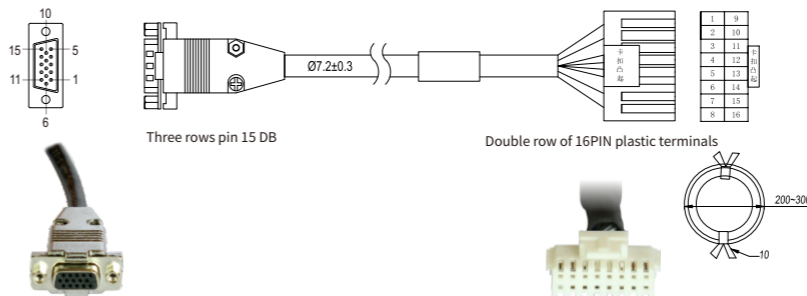
Corresponding flexible cable ENCHAF-LL-KH

Wire specification: 2*24AWG+7*2*26AWG BLACK
Wire diameter: 10±0.5mm

Cable(Encoder cable/Brake cable)

ENCOA-LL-KH

Wire spec: 24AWG/1P+28AWG/7P+AB 1061
24AWG cross sectional area 0.2047mm²
28AWG cross sectional area 0.0804mm²



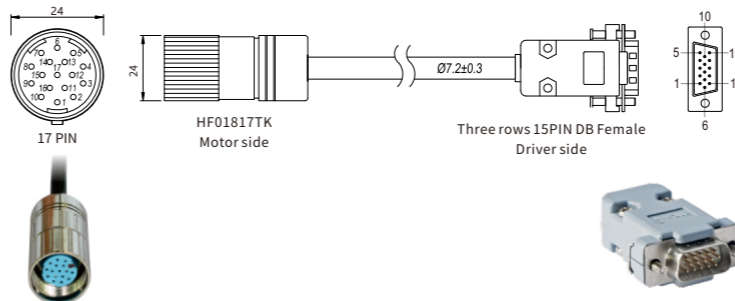
ENCOA-LL-KH			
Three rows pin 15 DB	Double row of 16PIN plastic terminals	Signal	Color
PIN1	PIN1	+5V	Red (Thick)
PIN8	PIN2	A	Orange
PIN7	PIN3	B	Yellow
PIN6	PIN4	Z	Green
PIN4	PIN5	U	Brown
PIN10	PIN6	V	Purple
PIN9	PIN7	W	Blue
PIN2	PIN9	GND	Black (Thick)
PIN13	PIN10	/A	Orange white
PIN12	PIN11	/B	Yellow white
PIN11	PIN12	/Z	Green white
PIN5	PIN13	/U	Brown white
PIN15	PIN14	/V	Purple white
PIN14	PIN15	/W	Blue white
Shell	PIN16	Shielding	Shielded wire

Corresponding accessory package: ENCOA-KH

Corresponding flexible cable ENCOAF-LL-KH
Wire specification: 2*24AWG+7*2*26AWG BLACK
wire diameter: 10±0.5mm

ENCHA-LL-KC0

Wire spec: 24AWG/1P+28AWG/7P+AB 1061
24AWG cross sectional area 0.2047mm²
28AWG cross sectional area 0.0804mm²



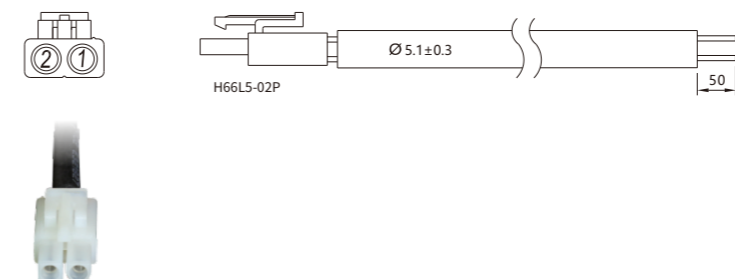
ENCHA-LL-KC0			
17 PIN Air insertion	Three rows pin 15 DB	Signal	Color
PIN1	PIN1	+5V	Red (Thick)
PIN3	PIN8	A	Orange
PIN5	PIN7	B	Yellow
PIN14	PIN6	Z	Green
PIN9	PIN4	U	Brown
PIN11	PIN10	V	Purple
PIN16	PIN9	W	Blue
PIN2	PIN2	GND	Black (Thick)
PIN4	PIN13	/A	Orange white
PIN6	PIN12	/B	Yellow white
PIN15	PIN11	/Z	Green white
PIN10	PIN5	/U	Brown white
PIN12	PIN15	/V	Purple white
PIN17	PIN14	/W	Blue white
Belonging ring	Belonging to the shell	Shielding	Shielded wire

Corresponding accessory package: ENCHA-KC0

Corresponding flexible cable ENCHAF-LL-KC0
Wire specification: 2*24AWG+7*2*26AWG BLACK
wire diameter: 10±0.5mm

BRA-LL-KL

Wire spec: 2C×20AWG
20AWG cross sectional area 0.5189mm²

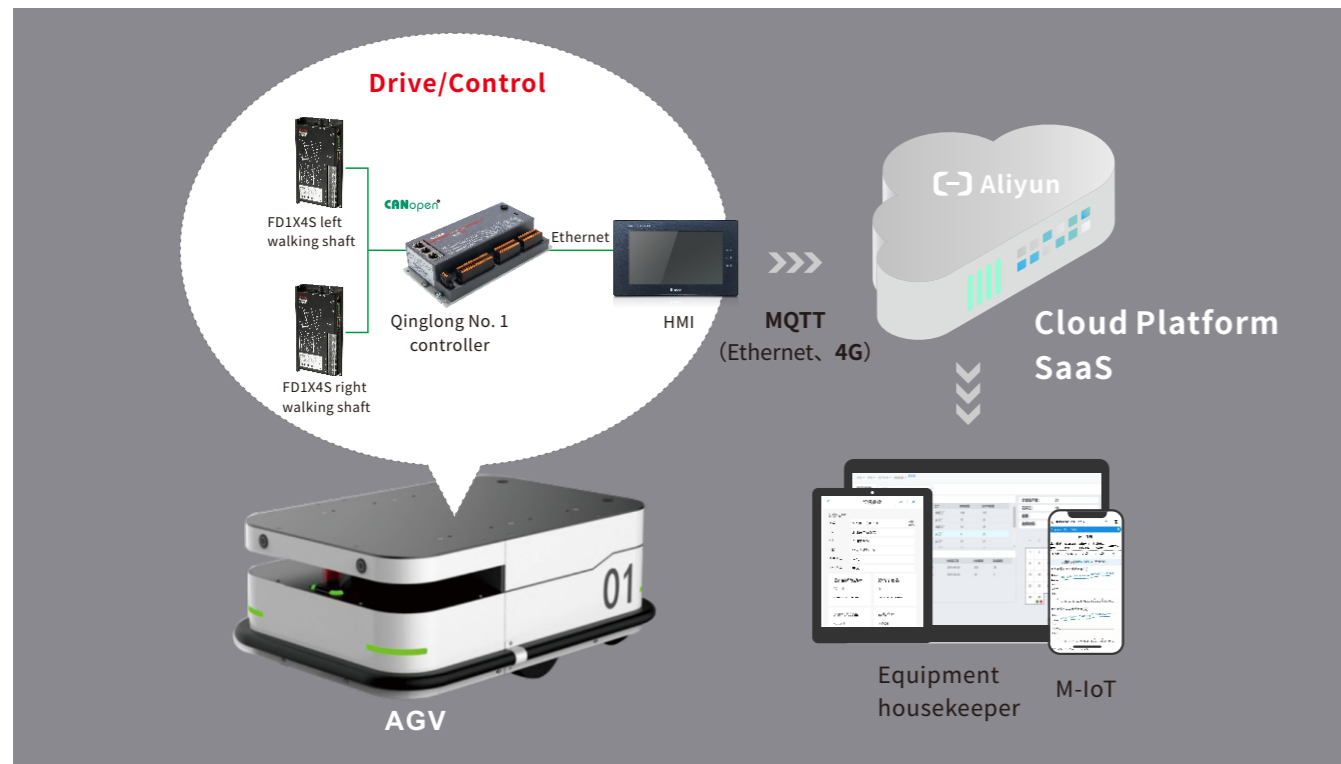


BRA-LL-KL		
Color	Signal	2PIN terminal
Red	brake +	PIN1
Blue	brake -	PIN2

Corresponding accessory package: BRA-KL

Corresponding flexible cable BRAF-LL-KL
Wire specification: 2C*20AWG(72/0.10T) 5 million times
wire diameter: 5.5±0.5mm

AGV machine automation and Internet of Things solutions



■ Description Schemes

Kinco AGV machine automation and Internet of Things control scheme has the characteristics of stability, reliability and efficiency. The low-voltage servo drive system of the drive layer is used as the implementation part of THE AGV to realize the specific trajectory movement of the robot and provide a stable and reliable power system for the car. Through the "Qinglong No. 1" controller in the control layer, relevant data can be quickly and stably obtained from AGV sensors, and algorithm processing such as navigation and obstacle avoidance can be carried out. Finally, corresponding operation can be carried out by the control servo. Finally, through Gren series HMI, MQTT protocol directly connects AGV operation parameters, operation status, servo drive parameters and other data to Alibaba Cloud IoT platform, and real-time view of AGV operation status and real-time receive alarm prompts and other information on mobile phone or electronic Kanban through Kinco SaaS platform software.

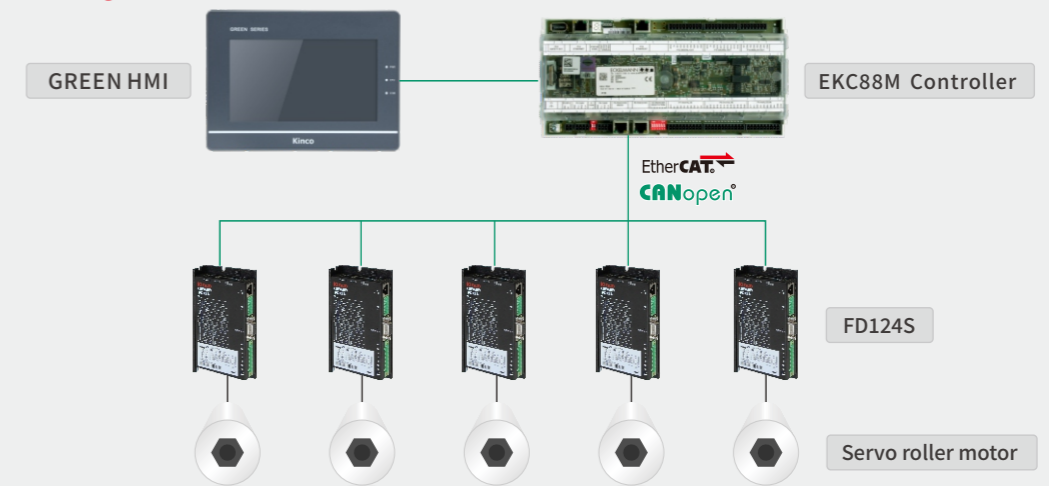
■ Program features and advantages

- Higher space utilization:** the volume of the driver is about 50% smaller than that of the whole machine, which can meet the strict space requirements of AGV;
- Rich communication interface:** the driver supports standard CANopen, EtherCAT and other communication modes, which can be seamlessly connected with NDC, Beofu and other mainstream controllers in the market;
- Improve AGV operation efficiency:** The overload capacity of the motor is 300% absolute, which can improve the instant overload capacity of the AGV car, and can set more speed, thus improving the operation efficiency of the car;
- Meet the requirements of heavy-duty and high-precision applications:** the motor power segment ranges from 50W to 1.5KW. The encoder supports magnetic coding, Incremental Tamortran type, nikon absolute value, etc., which can help customers develop more comprehensive types such as heavy-duty or high-precision applications;
- Safety and stability:** The driver has alarm synchronous braking, 24V brake power output, intelligent energy saving and other functions;
- Powerful controller:** "Tsing Long No. 1" controller integrates magnetic navigation dual drive differential speed, steering wheel control, color-band navigation TWO-DIMENSIONAL code navigation algorithm library, which is more convenient for customers to start the development, and the controller interface is rich, integrating 2-way EtherNET, 2-way CAN and 4-way RS485 interface, which is more convenient for customers to control peripheral parts;
- Connected to the cloud, remote monitoring:** The touch screen is internally integrated with 4G or WIF module, which can be directly connected to the cloud platform conveniently and quickly without any additional module. By analyzing and organizing the historical data through the software of Kinco SaaS platform, it can help you find the early fault of the equipment in time, extend the life of the equipment and reduce the operation and maintenance management cost.

Cross belt sorting car solution



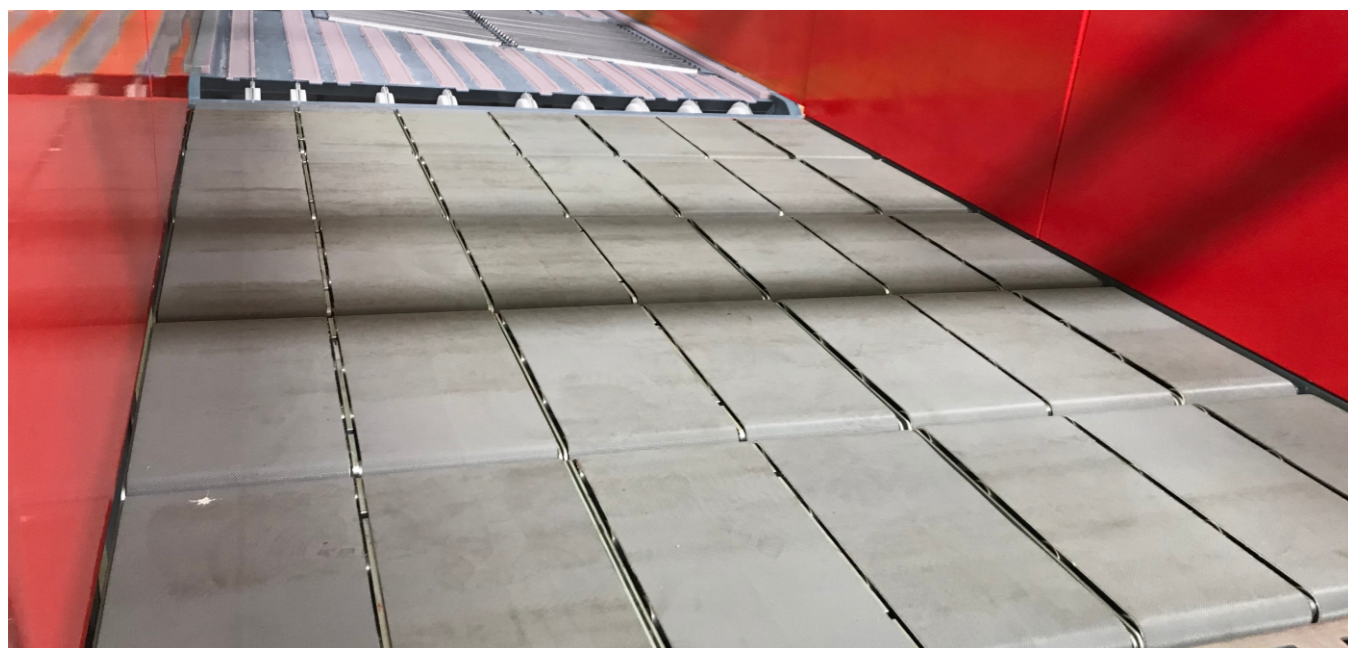
■ Solution topology



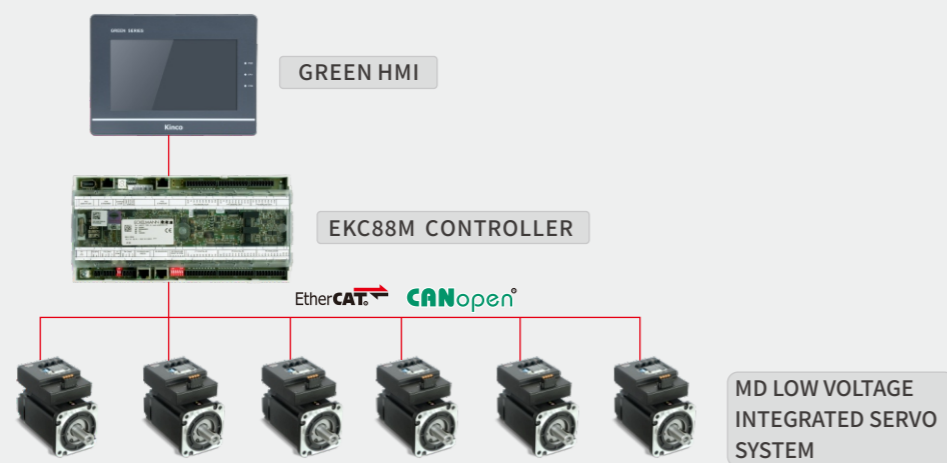
■ Program features and advantages

- No gear belt, easy installation and maintenance, simple structure of the car body, saving space, reducing the weight of the car, reducing energy consumption;
- The roller with 65536 resolution encoder is driven by the servo electric roller, which makes the upper and lower packages with different weights more accurate and higher consistent acceleration;
- The car starts at millisecond level and finishes the start instantaneously, with faster response and higher efficiency, which can adapt to the loop speed of 3m/s and above;
- Specially designed for the roller sorting industry, rated power 400W, rated torque 5Nm, rated speed 700rpm, to meet the vast majority of the sorting requirements;
- Support Ethercat, Canopen and Modbus protocol, which can be seamlessly connected with PLC of Siemens, Beckhoff, Omron, etc., to meet various sorting communication needs; 6. Support data to go to the cloud, and check the running state of the product and receive alarm prompt information through the mobile phone in real time.

One piece separation equipment solution



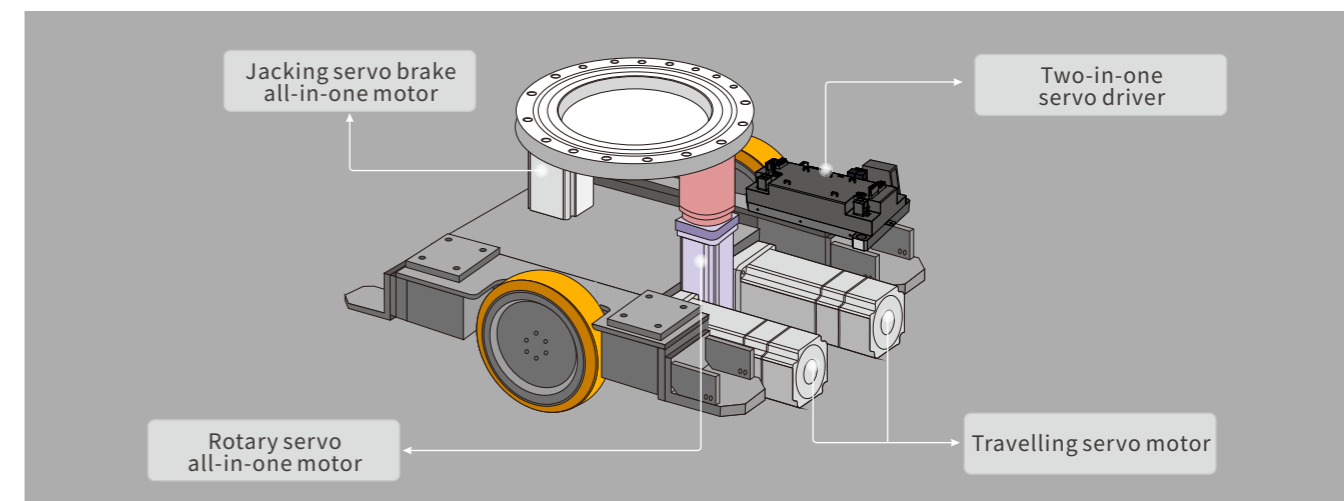
■ Solution topology



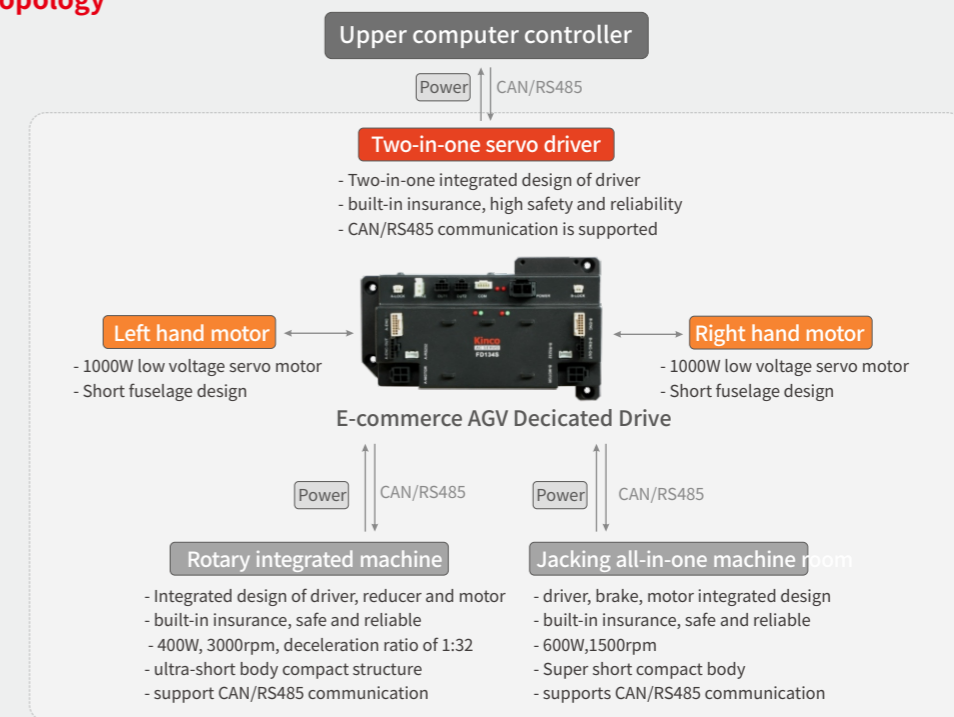
■ Program features and advantages

1. Integrated, modular, compact structure, occupies less equipment space, and can greatly reduce the volume of the electric control cabinet;
2. The power line and encoder line are completely eliminated, with convenient wiring and high cost performance;
3. Powerful communication and high real-time integration of CANopen, EtherCAT and other bus communication;
4. Ensure the stable start and stop of the equipment, fast speed and high efficiency, which can guarantee the sorting efficiency of 5,000-600 pieces/hour.

E-commerce AGV control scheme



■ Solution topology



■ Program features and advantages

1. Modular design is more convenient

In the AGV scheme of Kinco e-commerce, the drive of two walking wheels is integrated into a two-in-one driver, and the jacking and rotary motors are controlled by an all-in-one machine. The new modular design concept makes THE AGV more convenient in terms of production, assembly and later maintenance.

2. The modular design is more reliable

The modular design of the all-in-one machine eliminates the connection between the jacking and rotary motors and the drive, reducing the potential risks such as bad contact and broken wires, and making the AGV system run more reliably.

3. Modular design can effectively reduce costs

Save the connection cable between the motor and the driver, effectively reduce the system cost; Modular design makes assembly easier and faster for workers, saves equipment assembly time and reduces labor cost.

4. Flexible and diversified scheme configuration

Kinco introduces two different load schemes of 500Kg/1000Kg, and customers can freely choose according to different load models.