

**PROVEN PERFORMANCE**

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



# Kinco

Motion  
Control  
Servo System

## ➤ Servo System Catalog

- JD/FD2S/CD2S Series Servo Driver
- Servo Motor



**Kinco® Automation**

www.en.kinco.cn Email:sales@kinco.cn

(All trademarks and logos in this brochure are property of and registered by their respective owners.)

K1E05-2301

## 02 Model Description of Servo Driver and Motor

- Kinco JD Series Servo Driver
- Kinco FD2S Series Servo Driver
- Kinco CD2S Series Servo Driver
- Kinco Servo Motor
- Kinco Multi-pole Servo Motor
- Power, Brake, Encoder cable of Motor

## 04 Servo Driver and Motor Selection Table

- JD/FD2S/CD2S Servo Driver and Motor Selection Table (1) (2) (3)
- FD2S/CD2S Servo Driver and Motor Selection Table

## 08 Servo Driver Introduction

Panel and Interface Description, Port Description, Technical Specifications, Wiring Diagram, Mechanical Dimension Diagram

### JD servo driver

(port description, Communication interface description, Technical specifications, wiring diagram, mechanical dimension diagram)

### FD2S servo driver

(port description, Communication interface description, Technical specifications, wiring diagram, mechanical dimension diagram)

### CD2S servo driver

(port description, Communication interface description, Technical specifications, wiring diagram, mechanical dimension diagram)

## 21 Servo Motor Introduction

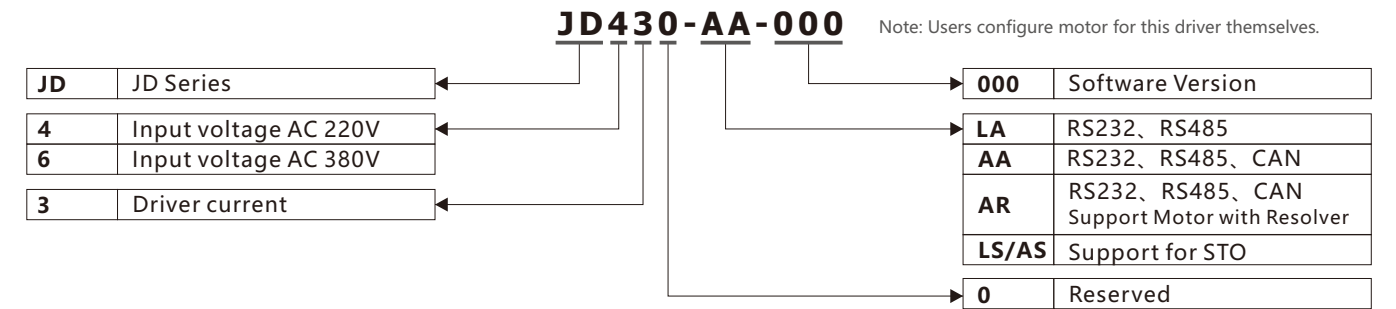
- Table of SMH series servo motor technical parameters (60, 80, 110, 130, 150, 180 flange)
- Dimension of SMH series servo motor/torque-frequency curve
- Table of SMG series servo motor technical parameters (130, 180 flange)
- Dimension of SMG series servo motor/torque-frequency curve
- Table of Multipolar servo motor technical parameters (85 flange)
- Dimension of Multipolar servo motor/torque-frequency curve
- Table of SMC series servo motor technical parameters (60, 80, 130 flange)
- Dimension of SMC series servo motor/torque-frequency curve

## 53 Wiring Diagram for Cable

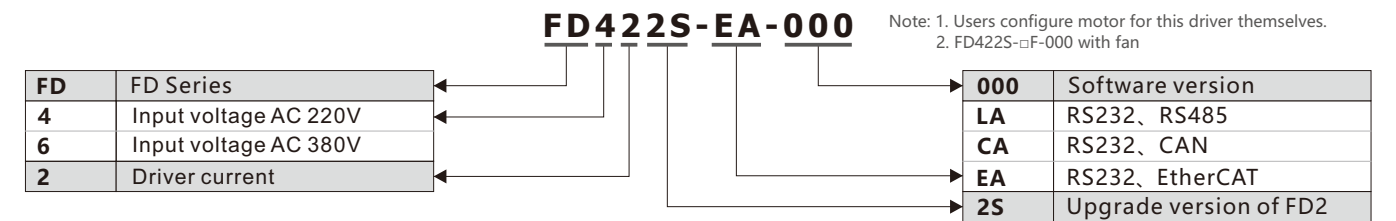
- Wiring Diagram for The Power Cable
- Wiring Diagram for the brake cable
- Wiring Diagram for The Encoder Cable

# Model Description of Servo Driver and Motor

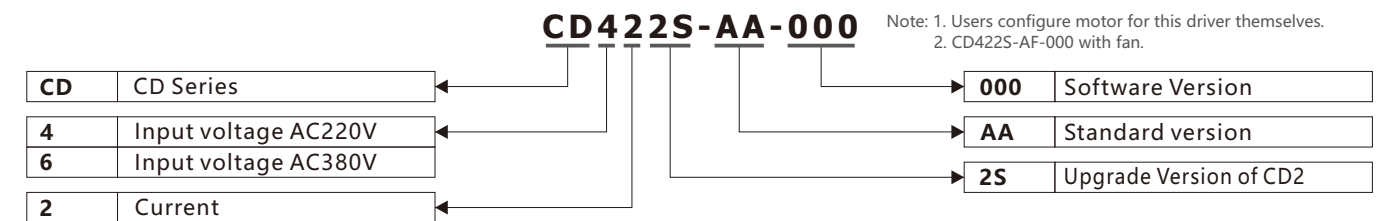
## Kinco JD Series Servo Driver



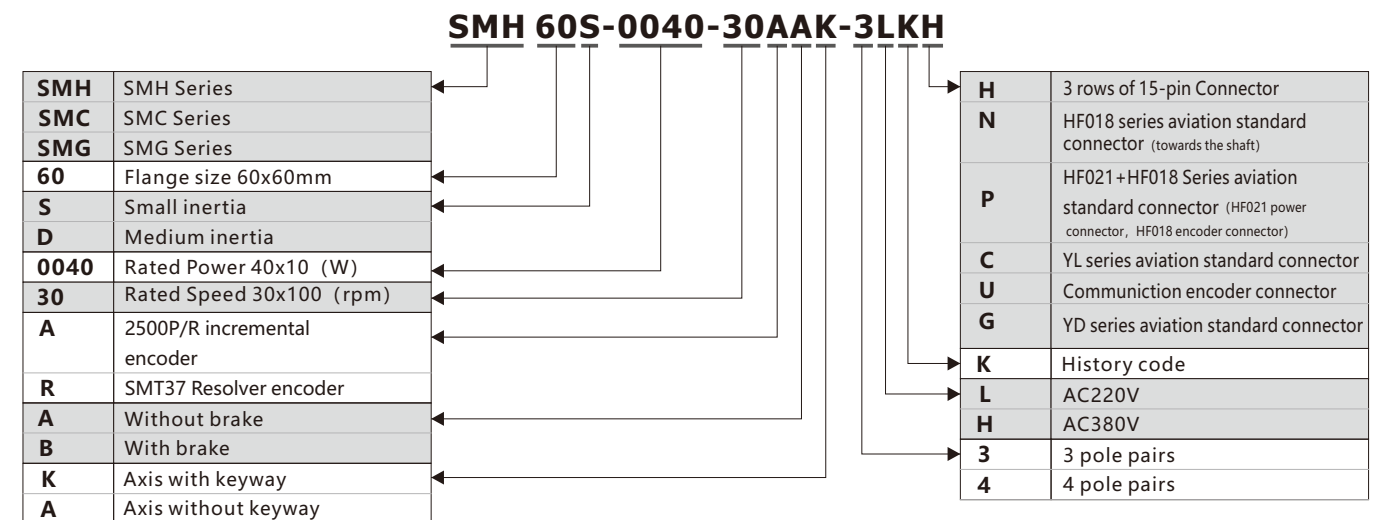
## Kinco FD2S Series Servo Driver



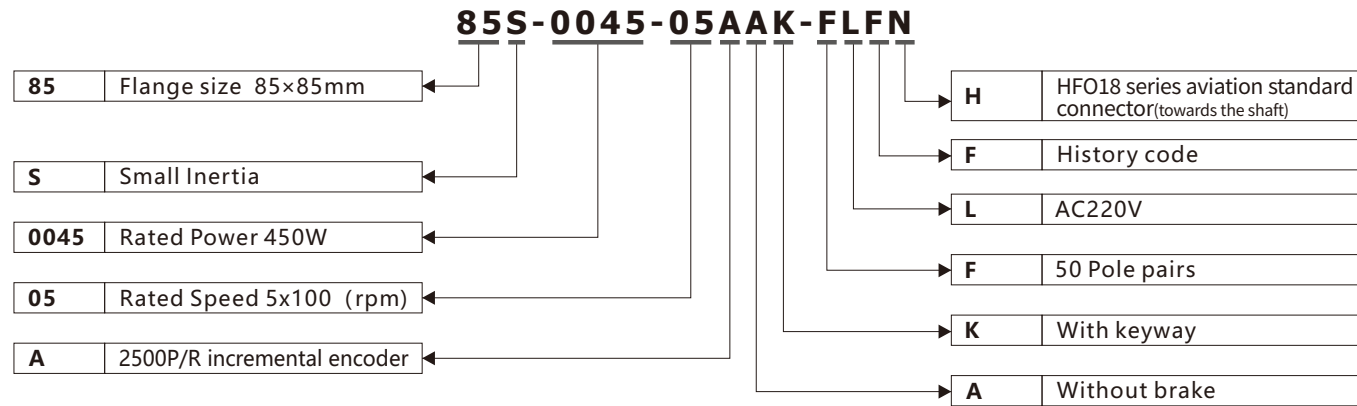
## Kinco CD2S Series Servo Driver



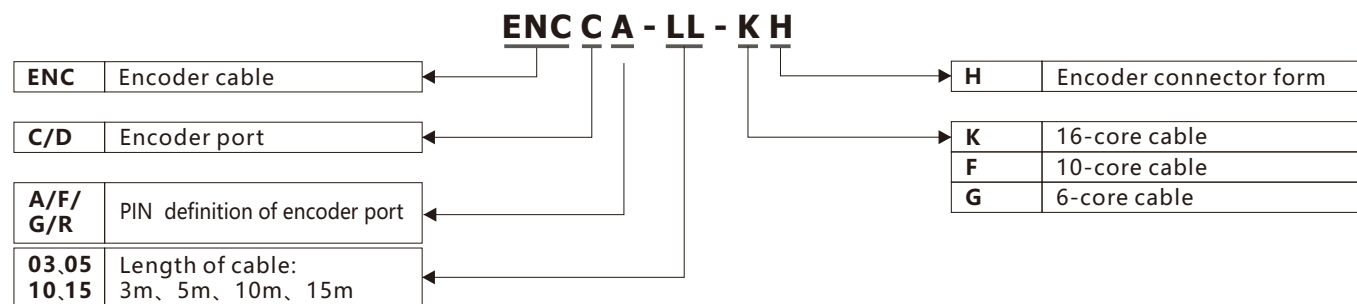
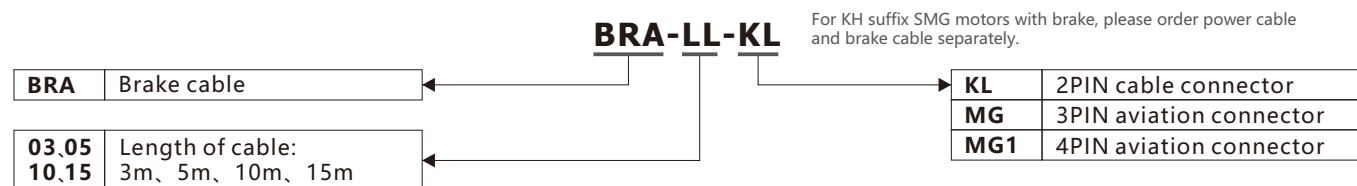
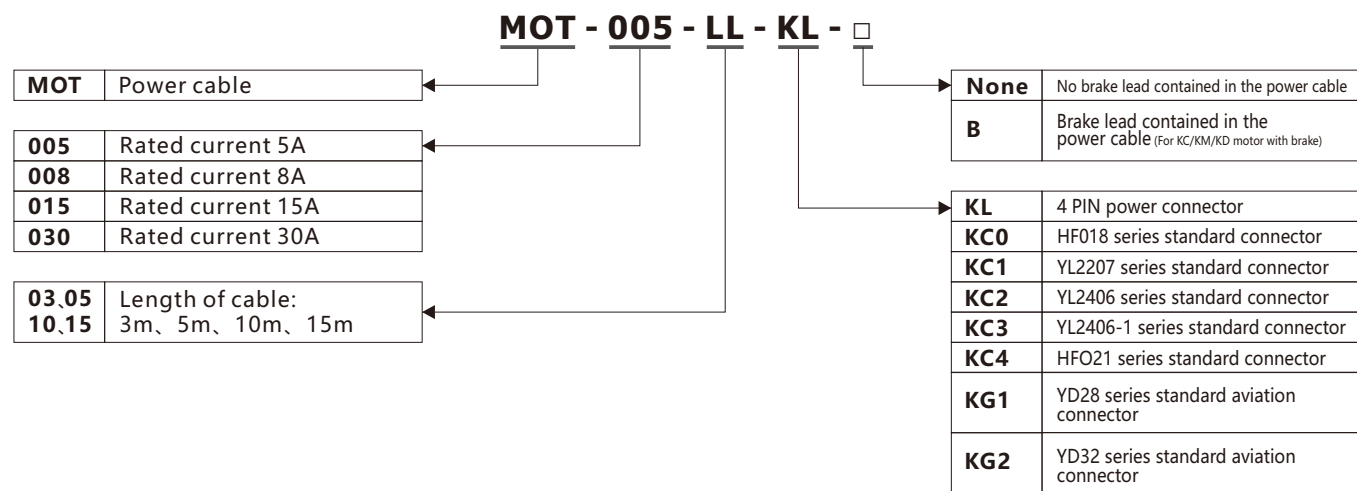
## Kinco Servo Motor



## Kinco Multi-pole Servo Motor



## Power, Brake and Encoder Cable of Motors



## JD/FD2S/CD2S Servo Driver and Motor Selection Table (1)

Series	Rated Power / Rated Speed / Rated Torque	Servo Motor	Description	Power / Brake Cable	Encoder Cable	Servo Driver
Small Inertia 220V	200W 3000rpm/0.64Nm	SMH60S-0020-30AAK-3LKH	2500P/R incremental connector	MOT-005-LL-KL	ENCCA-LL-KH	JD430-AA-000* <sup>1</sup> FD422S-CA-000* <sup>1</sup> FD422S-LA-000* <sup>2</sup> FD422S-EA-000* <sup>3</sup> CD422S-AA-000* <sup>4</sup>
		SMH60S-0020-30ABK-3LKH •	2500P/R incremental connector with brake	MOT-005-LL-KL/BRA-LL-KL		
		SMH60S-0020-30AAK-3LKN	2500P/R HFO18 (Towards the shaft) series connector	MOT-005-LL-KC0	ENCCA-LL-KC0	
		SMH60S-0020-30ABK-3LKP •	2500P/R HFO18+HFO21 series connector with brake	MOT-005-LL-KC4-B		
	400W 3000rpm/1.27Nm	SMH60S-0040-30AAK-3LKH	2500P/R incremental connector	MOT-005-LL-KL	ENCCA-LL-KH	
		SMH60S-0040-30ABK-3LKH •	2500P/R incremental connector with brake	MOT-005-LL-KL/BRA-LL-KL		
		SMH60S-0040-30AAK-3LKN	2500P/R HFO18 (Towards the shaft) series connector	MOT-005-LL-KC0	ENCCA-LL-KC0	
		SMH60S-0040-30ABK-3LKP •	2500P/R HFO18+HFO21 series connector with brake	MOT-005-LL-KC4-B		
	750W 3000rpm/2.39Nm	SMH80S-0075-30AAK-3LKH	2500P/R incremental connector	MOT-005-LL-KL	ENCCA-LL-KH	
		SMH80S-0075-30ABK-3LKH •	2500P/R incremental connector with brake	MOT-005-LL-KL/BRA-LL-KL		
		SMH80S-0075-30AAK-3LKN	2500P/R HFO18 (Towards the shaft) series connector	MOT-005-LL-KC0	ENCCA-LL-KC0	
		SMH80S-0075-30ABK-3LKP •	2500P/R HFO18+HFO21 series connector with brake	MOT-005-LL-KC4-B		
Medium Inertia 220V	4.18Nm	85S-0025-05AAK-FLFN-02	2500P/R Multi-pole servo motor	MOTE-005-LL-KC0	ENCCF-LL-FC0	
		85S-0035-05AAK-FLFN-02	2500P/R Multi-pole servo motor			
	7.5Nm	85S-0045-05AAK-FLFN-02	2500P/R Multi-pole servo motor			
		1kW 3000rpm/3.18Nm	SMH80S-0100-30AAK-3LKH	2500P/R incremental connector		MOT-008-LL-KL
	SMH80S-0100-30ABK-3LKH •	2500P/R incremental connector with brake	MOT-008-LL-KL/BRA-LL-KL			
Medium Inertia 220V	1.05kW 2000rpm/5Nm	SMH110D-0105-20AAK-4LKC	2500P/R YL series connector	MOT-008-LL-KC1	ENCCA-LL-KC1	
		SMH110D-0105-20ABK-4LKC •	2500P/R YL series connector with brake	MOT-008-LL-KC2-B		
	1.26kW 2000rpm/6Nm	SMH110D-0126-20AAK-4LKC	2500P/R YL series connector	MOT-008-LL-KC1		
		SMH110D-0126-20ABK-4LKC •	2500P/R YL series connector with brake	MOT-008-LL-KC2-B		
	1.25kW 3000rpm/4Nm	SMH110D-0125-30AAK-4LKC	2500P/R YL series connector	MOT-008-LL-KC1		
		SMH110D-0125-30ABK-4LKC •	2500P/R YL series connector with brake	MOT-008-LL-KC2-B		
Medium Inertia 380V	1.26kW 3000rpm/4Nm	SMH110D-0126-30AAK-4HHC	2500P/R YL series connector	MOT-008-LL-KC1	ENCCA-LL-KC1	
		SMH110D-0126-30ABK-4HHC •	2500P/R YL series connector with brake	MOT-008-LL-KC2-B		
	1.57kW 3000rpm/5Nm	SMH110D-0157-30AAK-4HHC	2500P/R YL series connector	MOT-008-LL-KC1		
		SMH110D-0157-30ABK-4HHC •	2500P/R YL series connector with brake	MOT-008-LL-KC2-B		
	1.88kW 3000rpm/6Nm	SMH110D-0188-30AAK-4HHC	2500P/R YL series connector	MOT-008-LL-KC1		
		SMH110D-0188-30ABK-4HHC •	2500P/R YL series connector with brake	MOT-008-LL-KC2-B		



# Servo Driver and Motor Selection Table

# Servo Driver and Motor Selection Table

JD/FD2S/CD2S Servo Driver and Motor Selection Table (2)

Series	Rated Power/ Rated Speed/ Rated Torque	Servo Motor	Description	Power/ Brake Cable	Encoder Cable	Servo Driver
Medium inertia 220V or 380V	1.05kW 2000rpm/5Nm	SMH130D-0105-20AAK-4HKC	2500P/R YL series connector	MOT-008-LL-KC2	ENCCA-LL-KC1	JD430-AA-000 <sup>*1</sup> JD620-AA-000 <sup>*1</sup> FD432S-CA-000 <sup>*1</sup> FD622S-CA-000 <sup>*1</sup> FD432S-LA-000 <sup>*2</sup> FD622S-LA-000 <sup>*2</sup> FD432S-EA-000 <sup>*3</sup> FD622S-EA-000 <sup>*3</sup> CD432S-AA-000 <sup>*4</sup> CD622S-AA-000 <sup>*4</sup>
		SMH130D-0105-20ABK-4HKC •	2500P/R YL series connector with brake	MOT-008-LL-KC2-B		
	1.57kW 2000rpm/7.5Nm	SMH130D-0157-20AAK-4HKC	2500P/R YL series connector	MOT-008-LL-KC2		
		SMH130D-0157-20ABK-4HKC •	2500P/R YL series connector with brake	MOT-008-LL-KC2-B		
	2.1kW 2000rpm/10Nm	SMH130D-0210-20AAK-4HKC	2500P/R YL series connector	MOT-008-LL-KC2		
		SMH130D-0210-20ABK-4HKC •	2500P/R YL series connector with brake	MOT-008-LL-KC2-B		
	2.3kW 2000rpm/11.1Nm	SMH150D-0230-20AAK-4HKC	2500P/R YL series connector	MOT-008-LL-KC2		
		SMH150D-0230-20ABK-4HKC •	2500P/R YL series connector with brake	MOT-008-LL-KC2-B		
	3kW 2000rpm/14.3Nm	SMH130D-0300-20AAK-4HKC	2500P/R YL series connector	MOT-008-LL-KC2		
		SMH130D-0300-20ABK-4HKC •	2500P/R YL series connector with brake	MOT-008-LL-KC2-B		
	3kW 2000rpm/14.3Nm	SMH150D-0300-20AAK-4HKC	2500P/R YL series connector	MOT-008-LL-KC2		
		SMH150D-0300-20ABK-4HKC •	2500P/R YL series connector with brake	MOT-008-LL-KC2-B		
	3.8kW 2000rpm/18Nm	SMH150D-0380-20AAK-4HKC	2500P/R YL series connector	MOT-015-LL-KC2		
		SMH150D-0380-20ABK-4HKC •	2500P/R YL series connector with brake	MOT-015-LL-KC2-B		
	3.5kW 1500rpm/22Nm	SMH180D-0350-15AAK-4HKC	2500P/R YL series connector	MOT-015-LL-KC2		
		SMH180D-0350-15ABK-4HKC •	2500P/R YL series connector with brake	MOT-015-LL-KC2-B		
	4.4kW 1500rpm/28Nm	SMH180D-0440-15AAK-4HKC	2500P/R YL series connector	MOT-015-LL-KC2		
		SMH180D-0440-15ABK-4HKC •	2500P/R YL series connector with brake	MOT-015-LL-KC2-B		
5.5kW 1500rpm/35Nm	SMH180D-0550-15RAK-4HKC	STM37 resolver YL series connector	MOT-015-LL-KC2			
	SMH180D-0550-15RBK-4HKC	STM37 resolver YL series connector with brake	MOT-015-LL-KC2-B			
7.5kW 1500rpm/48Nm	SMH180D-0750-15RAK-4HKC	STM37 resolver YL series connector	MOT-030-LL-KC3	ENCCR-LL-FC1	JD640-AA-000 <sup>*1</sup> JD640-LA-000 <sup>*2</sup>	
					JD630-AA-000 <sup>*1</sup> JD630-LA-000 <sup>*2</sup>	
					JD640-AR-000 <sup>*1</sup>	
					JD650-AR-000 <sup>*1</sup>	

Note: 1. This drive requires the user to select the motor by himself.

2. \*1--Support CANopen bus control mode

\*2--Support pulse and MODBUS 485 control mode

\*3--Support EtherCAT control mode

\*4--Support pulse control mode

3. • When the driver drives the brake holding device, the DC24V / 2A relay shall be externally connected.

JD/FD2S/CD2S Servo Driver and Motor Selection Table (3)

Series	Rated Power/ Rated Speed/ Rated Torque	Servo Motor	Description	Power/ Brake Cable	Encoder Cable	Servo Driver
Medium inertia 380V	1.0kW 1000rpm/10Nm	SMG130D-0100-10AAK-4LKG	2500P/R YD series connector	MOT-005-LL-KG1	ENCCA-LL-KG1	JD430-AA-000 <sup>*1</sup> FD422S-CF-000 <sup>*1</sup> FD422S-LF-000 <sup>*2</sup> FD422S-EF-000 <sup>*3</sup> CD422S-AF-000 <sup>*4</sup>
		SMG130D-0100-10ABK-4LKG •	2500P/R YD series connector with brake	MOT-005-LL-KG1/BRA-LL-MG		
	1.0kW 2000rpm/5Nm	SMG130D-0100-20AAK-4LKG	2500P/R YD series connector	MOT-005-LL-KG1		
		SMG130D-0100-20ABK-4LKG •	2500P/R YD series connector with brake	MOT-005-LL-KG1/BRA-LL-MG		
	1.5kW 2000rpm/7.7Nm	SMG130D-0150-20AAK-4LKG	2500P/R YD series connector	MOT-008-LL-KG1		
		SMG130D-0150-20ABK-4LKG •	2500P/R YD series connector with brake	MOT-008-LL-KG1/BRA-LL-MG		
	2.0kW 2000rpm/10Nm	SMG130D-0150-20AAK-4HKG	2500P/R YD series connector	MOT-005-LL-KG1		
		SMG130D-0150-20ABK-4HKG •	2500P/R YD series connector with brake	MOT-005-LL-KG1/BRA-LL-MG		
	2.0kW 2000rpm/10Nm	SMG130D-0200-20AAK-4LKG	2500P/R YD series connector	MOT-015-LL-KG1		
		SMG130D-0200-20ABK-4LKG •	2500P/R YD series connector with brake	MOT-015-LL-KG1/BRA-LL-MG		
	2.0kW 2000rpm/10Nm	SMG130D-0200-20AAK-4HKG	2500P/R YD series connector	MOT-008-LL-KG1		
		SMG130D-0200-20ABK-4HKG •	2500P/R YD series connector with brake	MOT-008-LL-KG1/BRA-LL-MG		
	3.0kW 2000rpm/15Nm	SMG130D-0300-20AAK-4HKG	2500P/R YD series connector	MOT-008-LL-KG1		
		SMG130D-0300-20ABK-4HKG •	2500P/R YD series connector with brake	MOT-008-LL-KG1/BRA-LL-MG		
	4.4kW 1500rpm/27Nm	SMG180D-0440-15AAK-4HKG	2500P/R YD series connector	MOT-015-LL-KG2		
		SMG180D-0440-15ABK-4HKG •	2500P/R YD series connector with brake	MOT-015-LL-KG2/BRA-LL-MG1		
	5.5kW 1500rpm/35Nm	SMG180D-0550-15AAK-4HKG	2500P/R YD series connector	MOT-015-LL-KG2		
		SMG180D-0550-15ABK-4HKG •	2500P/R YD series connector with brake	MOT-015-LL-KG2/BRA-LL-MG1		
7.5kW 1500rpm/48Nm	SMG180D-0750-15AAK-4HKG	2500P/R YD series connector	MOT-030-LL-KG2			
	SMG180D-0750-15ABK-4HKG	2500P/R YD series connector with brake	MOT-030-LL-KG2/BRA-LL-MG1			
					JD620-AA-000 <sup>*1</sup> FD622S-CA-000 <sup>*1</sup> FD622S-LA-000 <sup>*2</sup> FD622S-EA-000 <sup>*3</sup> CD622S-AA-000 <sup>*4</sup>	
					FD432S-CA-000 <sup>*1</sup> JD430-AA-000 <sup>*1</sup> FD432S-LA-000 <sup>*2</sup> FD432S-EA-000 <sup>*3</sup> CD432S-AA-000 <sup>*4</sup>	
					FD612S-CA-000 <sup>*1</sup> JD620-AA-000 <sup>*1</sup> FD612S-LA-000 <sup>*2</sup> FD612S-EA-000 <sup>*3</sup> CD612S-AA-000 <sup>*4</sup>	
					JD640-AA-000 <sup>*1</sup> JD640-LA-000 <sup>*2</sup>	
					JD650-AA-000 <sup>*1</sup>	

Note: 1. This drive requires the user to select the motor by himself.

2. \*1--Support CANopen bus control mode

\*2--Support pulse MODBUS 485 control mode

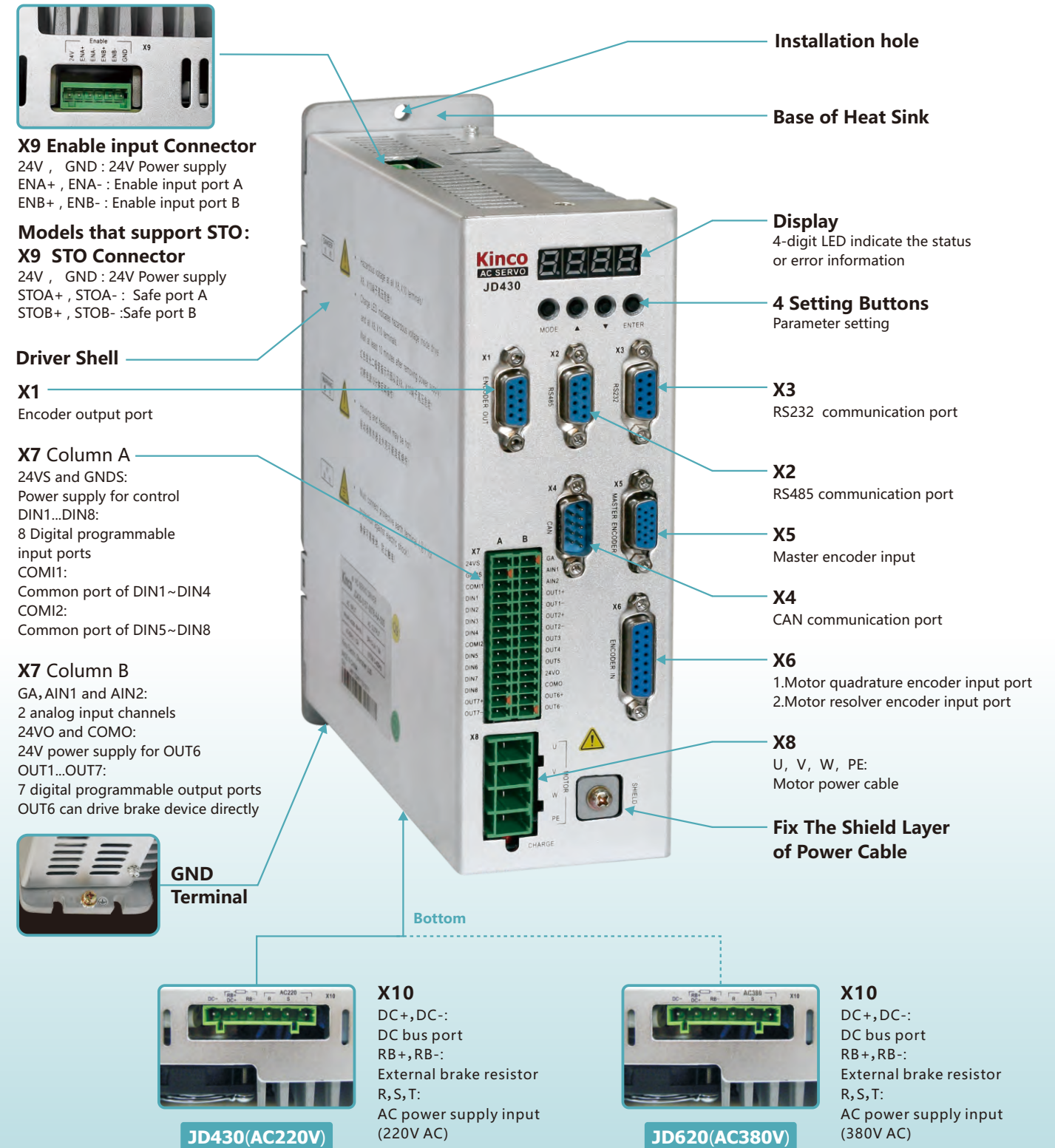
\*3--Support EtherCAT control mode

\*4--Support pulse control mode

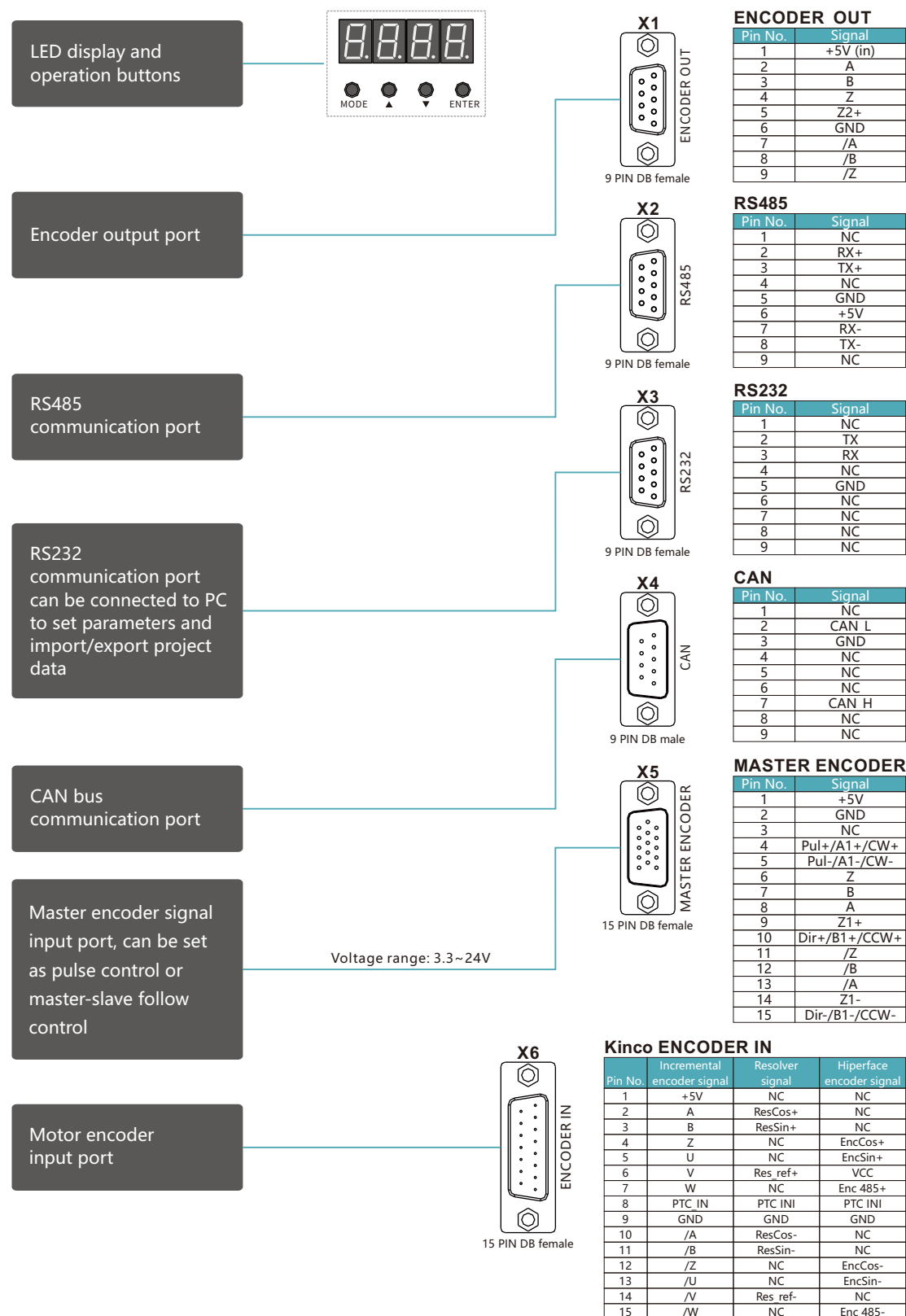
3. • When the driver drives the brake holding device, the DC24V / 2A relay shall be externally connected.

FD2S/CD2S Servo Driver and Motor Selection Table (4)

Series	Rated Power / Rated Speed / Rated Torque	Servo Motor	Description	Power / Brake Cable	Encoder Cable	Servo Driver
Small inertia 220V	200W 3000rpm/0.64Nm	SMC60S-0020-30AAK-3LKH	2500P/R Cable connector	MOT-005-LL-KL	ENCCA-LL-KH	FD422S-CA-000 <sup>1</sup>
		SMC60S-0020-30ABK-3LKH •	2500P/R Cable connector with brake	MOT-005-LL-KL/BRA-LL-KL		FD422S-LA-000 <sup>2</sup>
		SMC60S-0020-30AAK-3LKN	2500P/R HFO18 series connector	MOT-005-LL-KC0	ENCCA-LL-KC0	FD422S-EA-000 <sup>3</sup>
		SMC60S-0020-30ABK-3LKP •	2500P/R HFO18+HFO21 series connector with brake	MOT-005-LL-KC4-B		CD422S-AA-000 <sup>4</sup>
	400W 3000rpm/1.27Nm	SMC60S-0040-30AAK-3LKH	2500P/R Cable connector	MOT-005-LL-KL	ENCCA-LL-KH	FD422S-CF-000 <sup>1</sup>
		SMC60S-0040-30ABK-3LKH •	2500P/R Cable connector with brake	MOT-005-LL-KL/BRA-LL-KL		FD422S-LF-000 <sup>2</sup>
		SMC60S-0040-30AAK-3LKN	2500P/R HFO18 series connector	MOT-005-LL-KC0	ENCCA-LL-KC0	FD422S-EF-000 <sup>3</sup>
		SMC60S-0040-30ABK-3LKP •	2500P/R HFO18+HFO21 series connector with brake	MOT-005-LL-KC4-B		CD422S-AF-000 <sup>4</sup>
	750W 3000rpm/2.39Nm	SMC80S-0075-30AAK-3LKH	2500P/R Cable connector	MOT-005-LL-KL	ENCCA-LL-KH	FD422S-CF-000 <sup>1</sup>
		SMC80S-0075-30ABK-3LKH •	2500P/R Cable connector with brake	MOT-005-LL-KL/BRA-LL-KL		FD422S-LF-000 <sup>2</sup>
		SMC80S-0075-30AAK-3LKN	2500P/R HFO18 series connector	MOT-005-LL-KC0	ENCCA-LL-KC0	FD422S-EF-000 <sup>3</sup>
		SMC80S-0075-30ABK-3LKP •	2500P/R HFO18+HFO21 series connector with brake	MOT-005-LL-KC4-B		CD422S-AF-000 <sup>4</sup>
Medium inertia 220V or 380V	1kW 2000rpm/4.8Nm	SMC130D-0100-20AAK-4LKP	2500P/R HFO18+HFO21 series connector	MOT-005-LL-KC4	ENCCA-LL-KC0	FD432S-CA-000 <sup>1</sup>
		SMC130D-0100-20ABK-4LKP •	2500P/R HFO18+HFO21 series connector with brake	MOT-005-LL-KC4-B		FD432S-LA-000 <sup>2</sup>
	1.5kW 2000rpm/7.2Nm	SMC130D-0150-20AAK-4LKP	2500P/R HFO18+HFO21 series connector	MOT-008-LL-KC4	ENCCA-LL-KC0	FD432S-EA-000 <sup>3</sup>
		SMC130D-0150-20ABK-4LKP •	2500P/R HFO18+HFO21 series connector with brake	MOT-008-LL-KC4-B		CD432S-AA-000 <sup>4</sup>
	2kW 2000rpm/10Nm	SMC130D-0200-20AAK-4LKP	2500P/R HFO18+HFO21 series connector	MOT-008-LL-KC4	ENCCA-LL-KC0	FD612S-CA-000 <sup>1</sup>
		SMC130D-0200-20ABK-4LKP •	2500P/R HFO18+HFO21 series connector with brake	MOT-008-LL-KC4-B		FD612S-LA-000 <sup>2</sup>
	1.5kW 2000rpm/7.2Nm	SMC130D-0150-20AAK-4HKP	2500P/R HFO18+HFO21 series connector	MOT-005-LL-KC4	ENCCA-LL-KC0	FD612S-EA-000 <sup>3</sup>
		SMC130D-0150-20ABK-4HKP •	2500P/R HFO18+HFO21 series connector with brake	MOT-005-LL-KC4-B		CD612S-AA-000 <sup>4</sup>
	2kW 2000rpm/10Nm	SMC130D-0200-20AAK-4HKP	2500P/R HFO18+HFO21 series connector	MOT-008-LL-KC4	ENCCA-LL-KC0	FD612S-EA-000 <sup>3</sup>
		SMC130D-0200-20ABK-4HKP •	2500P/R HFO18+HFO21 series connector with brake	MOT-008-LL-KC4-B		CD612S-AA-000 <sup>4</sup>
	3kW 2000rpm/14.3Nm	SMC130D-0300-20AAK-4HKP	2500P/R HFO18+HFO21 series connector	MOT-008-LL-KC4	ENCCA-LL-KC0	FD622S-CA-000 <sup>1</sup>
		SMC130D-0300-20ABK-4HKP •	2500P/R HFO18+HFO21 series connector with brake	MOT-008-LL-KC4-B		FD622S-LA-000 <sup>2</sup>



Note: 1. JD430/JD620 drivers share the same interface definition, except for X10 power interfaces.  
2. Suggest brake resistor: JD430 39Ω/200W or 75Ω/100W, JD620 75Ω/200W, JD630&JD640 47Ω/500W, JD650 27Ω/1000W, the customer should choose the power brake resistor according to the actual application.



Technical Specifications of JD Servo Driver					
Model Parameter	JD430-AA-000	JD620-AA-000	JD630-□A-000	JD640-□R-000	JD650-AR-000
Power	Main supply voltage	1PH, 3PH, 20VAC-20/+15% 47~63Hz	3-phase AC380V -20/+15% 47~63Hz		
	Control circuit voltage	18VDC~30VDC 1A	18VDC~30VDC 1A	18VDC~30VDC 1A	18VDC~30VDC 1A
Current	Rated current (RMS)	10A	7A	10A	13A
	Peak current (PEAK)	27.5A	25A	35A	45A
	Brake chopper threshold	DC380V±5V	DC680V±5V	DC680V±5V	DC680V±5V
	Over-voltage alarming threshold	DC400V±5V	DC700V±5V	DC700V±5V	DC700V±5V
	Under-voltage alarming threshold	DC200V±5V	DC400V±5V	DC400V±5V	DC400V±5V
	Cooling method	Forced air cooling		Forced air cooling	Forced air cooling
	Weight (Kg)	2.51	3.62		6.7
	Size(W*H*D, mm)	220×195×66		255×230×77	320×280.5×95
General Functions	Digital operation panel	4 buttons and 4 LED display			
	External I/O	7 digital outputs(OUT1, OUT2, OUT7 are 0.1A and OUT3~OUT6 are 0.5A, can define driver ready and other functions freely; 8 digital inputs(12.5~30V), can define driver enables and other functions freely.			
	Analog input	2 analog inputs, can be used to control speed and torque, the input range is -10V~10V			
	Encoder signal output function	Used for Multi-axis synchronization. The maximum output frequency is 2MHZ Servo drive that matches rotary encoder motor does not support this function.			
	Master encoder input function	Can receive 3.3V~24V pulse/direction signal, CW/CCW signal, and the RS422 difference signal, the max. input frequency is 4MHZ.			
	Feedback signal	Incremental encoder 2500P/R Resolver、Hiperface/sincos® Encoder			
	RS232	The max. baudrate is 115.2KHz, use JD-PC software to communicate with PC, or via free protocol to communicate with controller			
RS485	The max. baudrate is 115.2KHz, use Modbus RTU protocol to communicate with controller				
CAN BUS	The max. baudrate is 1MHz, use CANopen protocol to communicate with controller				
STO function	STO port can be connected to safe controller, switch, and sensor to protect the system				
Operation Environment	Operating temperature	0~40°C			
	Storage temperature	-10~70°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	No power limitation below 1000m				
Atmospheric pressure	86~106kpa				

Note①: □=LA: Communication port RS232, RS485  
 □=AA: Communication port RS232, RS485, CANopen  
 □=AR: Communication port RS232, RS485, CANopen, support motor with Resolver

Note②: AA is a direct driving servo system

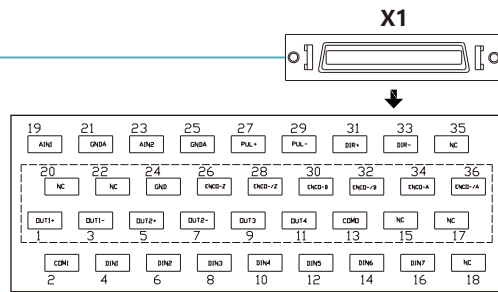




LED display and operation buttons



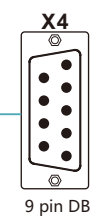
Digital signal input/output port



**X1**

Pin No.	Signal	Pin No.	Signal	Pin No.	Signal	Pin No.	Signal
2	COM1	1	OUT1+	22	NC	19	AIN1
4	DIN1	3	OUT1-	20	NC	21	GND
6	DIN2	5	OUT2+	24	GND	23	AIN2
8	DIN3	7	OUT2-	26	ENCO-Z	25	GND
10	DIN4	9	OUT3	28	ENCO-/Z	27	PUL+
12	DIN5	11	OUT4	30	ENCO-B	29	PUL-
14	DIN6	13	COM0	32	ENCO-/B	31	DIR+
16	DIN7	15	NC	34	ENCO-A	33	DIR-
18	NC	17	NC	36	ENCO-/A	35	NC

Male: CAN bus communication port  
Female: RS485 communication port



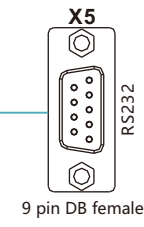
**CAN**

Pin No.	Signal
1	NC
2	CAN L
3	GND
4	NC
5	NC
6	NC
7	CAN H
8	NC
9	NC

**RS485**

Pin No.	Signal
1	NC
2	RX+
3	TX+
4	NC
5	GND
6	+5V
7	RX-
8	TX-
9	NC

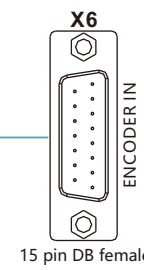
RS232 communication port, can be connected to PC to set parameters and import/export project data



**RS232**

Pin No.	Signal
1	NC
2	TX
3	RX
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC

Motor encoder input port



**ENCODER IN**

Pin No.	Incremental encoder signal	Communication encoder signal
1	+5V	+5V
2	A	NC
3	B	NC
4	Z	NC
5	U	NC
6	V	NC
7	W	SD
8	PTC IN	NC
9	GND	GND
10	/A	NC
11	/B	NC
12	/Z	NC
13	/U	NC
14	/V	NC
15	/W	/SD

EtherCAT communication interface



**EtherCAT**

pin	X10A signal	X10B signal
1	TD+	TD+
2	TD-	TD-
3	RD+	RD+
4	NC	NC
5	NC	NC
6	RD-	RD-
7	NC	NC
8	NC	NC

## Technical Specifications of FD2S Servo Motor

Model Parameter	FD412S- □A-000	FD422S- □A-000	FD422S- □F-000	FD432S- □A-000	FD612S- □A-000	FD622S- □A-000
Power	Main supply voltage			1PH, 3PH, AC220V-20/+15% 47~63Hz		3PH, AC380V-20/+15% 47~63Hz
	Control circuit voltage					
Current	Rated current(RMS)		2A	4A	5A	11A
	Peak current(PEAK)		7A	15A	15A	27.5A
Feedback signal		2500 P/R ( incremental encoder with 5V supply )				
Brake chopper		Use an external braking resistor according to application, mainly in occasion of quick stop .				
Brake chopper threshold		DC380V±5V				
Over-voltage alarming threshold		DC400V±5V				
Under-voltage alarming threshold		DC200V±5V				
Cooling method		Natural air cooling		Fan	Fan	
Weight(Kg)		1.2		1.2	2.4	
General Functions	Digital input specification		7 digital inputs, with COM1 terminal for PNP (high level valid 12.5V~30V) or NPN (low level valid ) connection			
	Digital 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 .			
	Digital output specification		5 digital outputs, out 1~out 4 current is 100 mA, BR+/BR- (brake control output) current is 500 mA, can drive brake device directly.			
	Digital output function		Define freely according to the requirement, supporting following functions: driver ready, driver fault, position reached, motor at zero speed, motor brake, motor speed reached, Z signal, maximum speed obtained in torque mode, motor brake, position limiting, reference found.			
	Analog input		2 analog inputs, can be used to control speed and torque, the input range is -10V ~ 10V"			
	Encoder signal output function		Motor A, B, Z signal, pulse signal ((PLS+DIR, CW/CCW, A+B)			
Protection functions		Over-voltage protection, under-voltage protection, motor over-heat protection (I2T), short-circuit protection, drive over-heat protection, etc				
RS232		The maximum baudrate is 115.2KHz, use JD-PC software to communicate with PC, or via free protocol to communicate with controller				
RS485		The maximum baudrate is 115.2KHz, use Modbus RTU protocol to communicate with controller				
CAN BUS		The maximum baudrate is 1MHz, use CANopen protocol to communicate with controller				
EtherCAT		The maximum baudrate is 100MHz, support COE ( CIA 402 protocol ) and CSP / CSV / PP / PV / PT / HM mode				
Environment conditions for operation	Operating temperature		0 ~ 40°C			
	Storage temperature		-100°C ~ 700°C			
	Humidity(non-condensing)		Below 90% RH			
	Protection class		IP20			
	Installation environment		Installed in a dust-free, dry, lockable environment ( such as in a electric cabinet )			
	Installation mode		Vertical installation			
Height		No power limit below 1000 m				
Atmospheric pressure		86kpa ~ 106kpa				

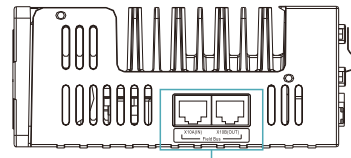
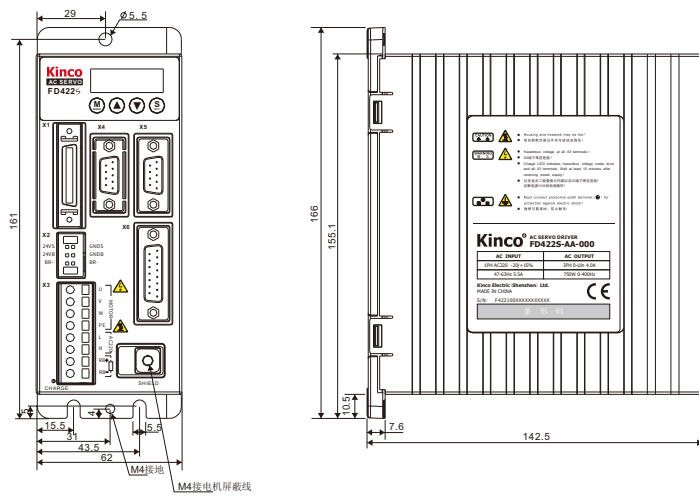
Note①: □=L —Communication port RS232, RS485  
□=A/C —Communication port RS232, CANopen

Note②: AA is a direct driving servo system

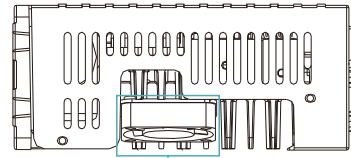


## Mechanical Dimension Diagram of FD412S/FD422S

(Unit: mm)



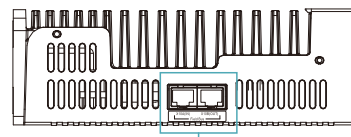
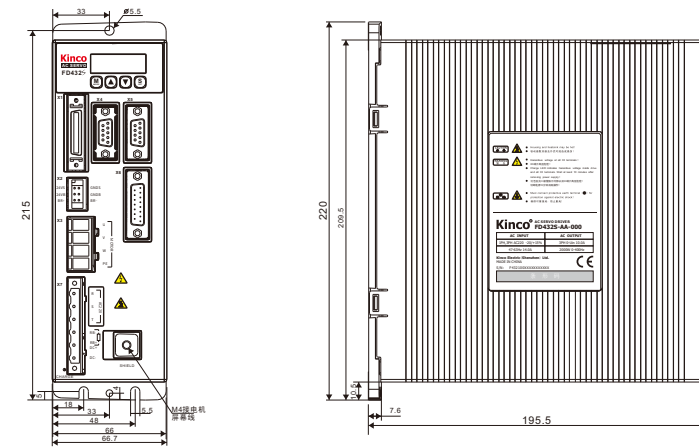
Note: FD412S-EA-000, FD422S-EA-000  
With EtherCAT extension interface.



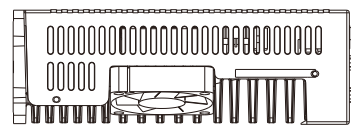
Note: FD412S-□ A-000, FD422S-□ A-000 without fan;  
FD422S-□ F-000 with fan.

## Mechanical Dimension Diagram of FD432S

(Unit: mm)

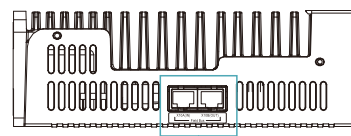
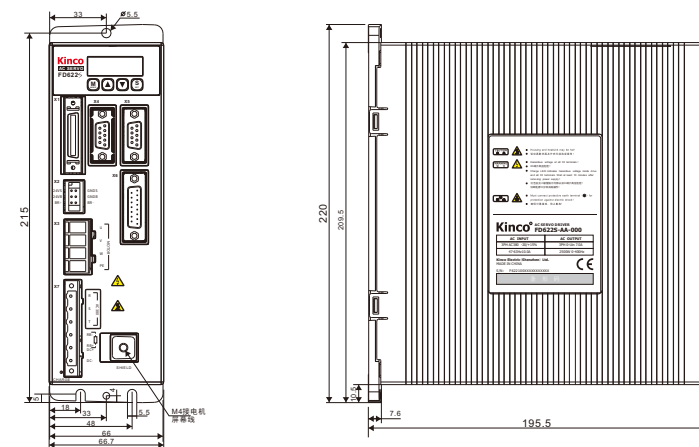


Note: with extension interface FD432S-EA-000  
EtherCAT.

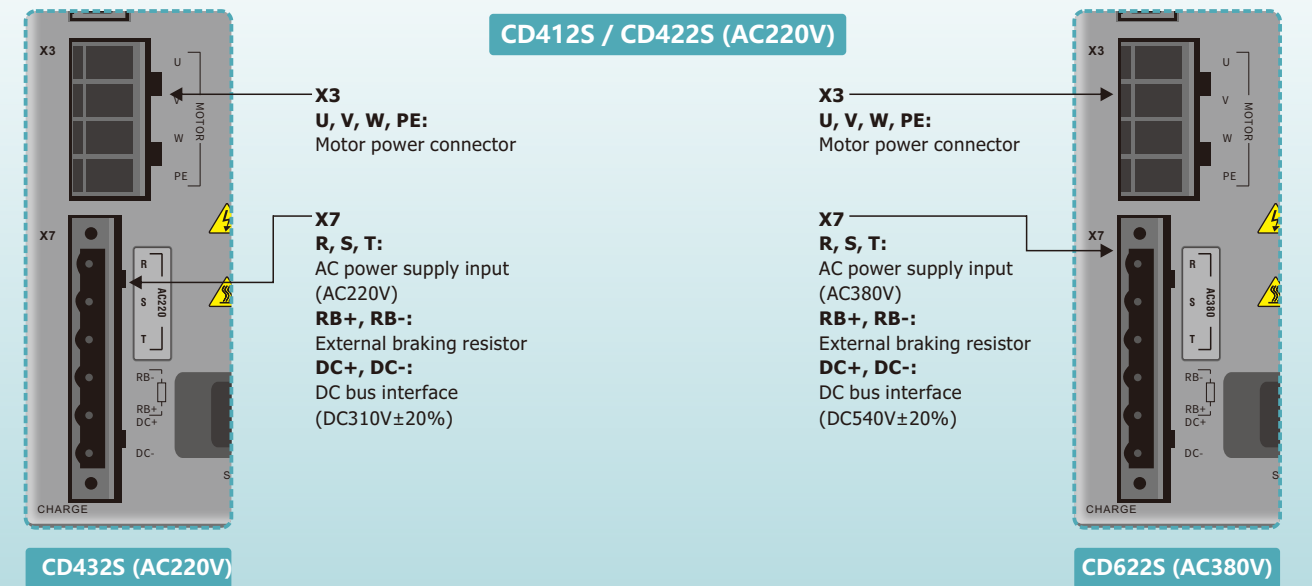
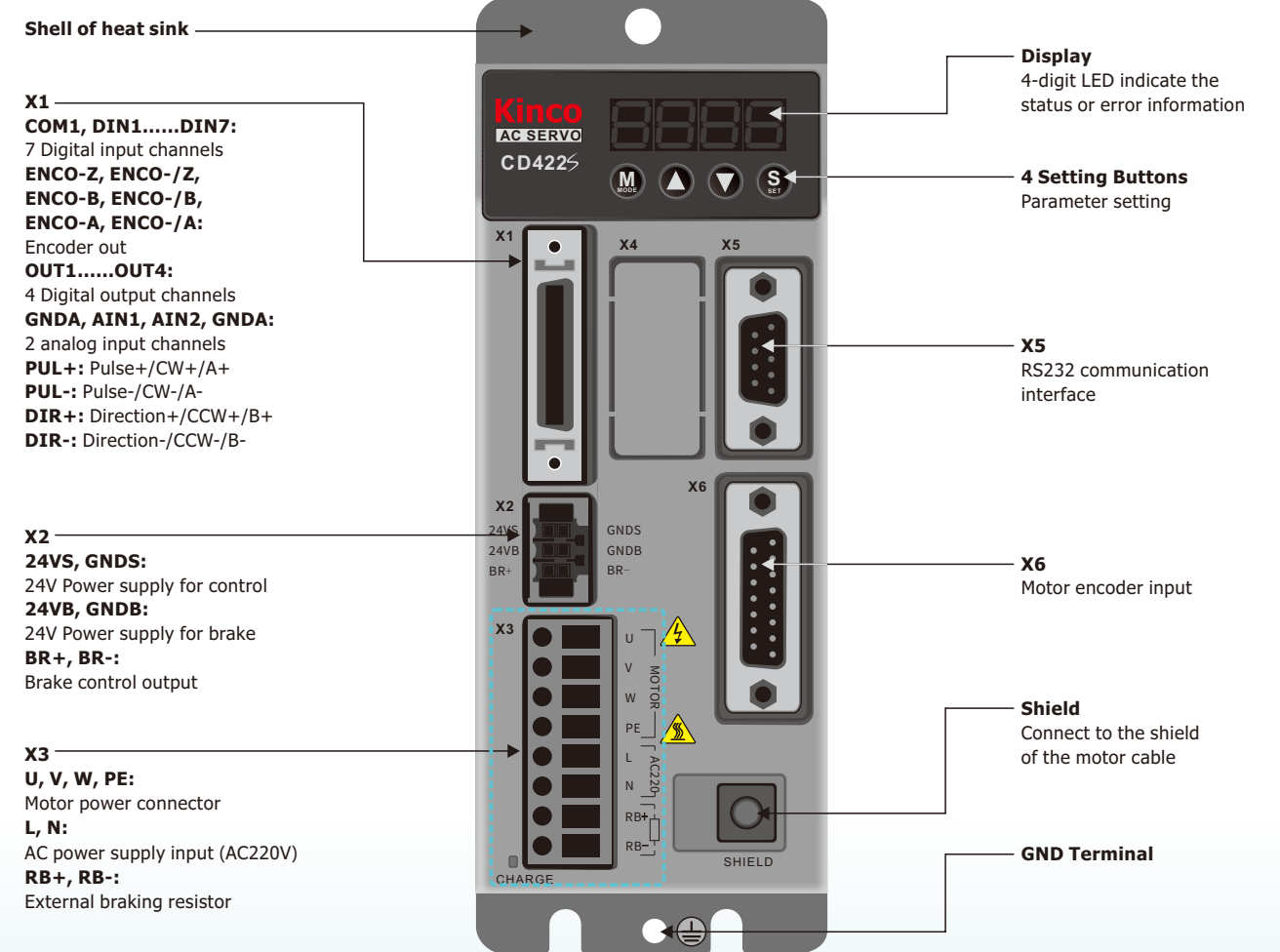
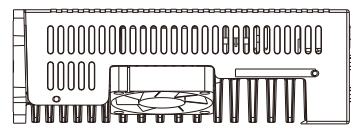


## Mechanical Dimension Diagram of FD612S/FD622S

(Unit: mm)



Remarks: FD612S-RA-000, FD622S-EA-000  
With EtherCAT extension interface.

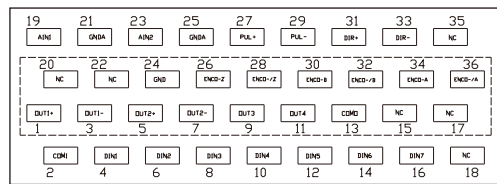


Note: 1. CD412S/CD422S/CD432S/CD622S drivers share the same interface definition, except for X3 and X7 power interfaces.  
2. Suggested brake resistor: CD412S/CD422S 75Ω/100W, CD432S 39Ω/200W, CD622S 75Ω/200W, The customer should chose the power of brake resistor according to the actual application.

LED display and Setting Buttons



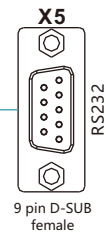
Signal input/output interface



X1

Pin No.	Signal	Pin No.	Signal	Pin No.	Signal	Pin No.	Signal
2	COM1	1	OUT1+	20	NC	19	AIN1
4	DIN1	3	OUT1-	22	NC	21	GND
6	DIN2	5	OUT2+	24	GND	23	AIN2
8	DIN3	7	OUT2-	26	ENCO-Z	25	GND
10	DIN4	9	OUT3	28	ENCO-/Z	27	PUL+
12	DIN5	11	OUT4	30	ENCO-B	29	PUL-
14	DIN6	13	COM0	32	ENCO-/B	31	DIR+
16	DIN7	15	NC	34	ENCO-A	33	DIR-
18	NC	17	NC	36	ENCO-/A	35	NC

RS232 communication interface, can be used to debug and import/export project data via PC.

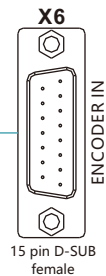


9 pin D-SUB female

RS232

Pin No.	Signal
1	NC
2	TX
3	RX
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC

Input interface of motor encoder



15 pin D-SUB female

ENCODER IN

Pin No.	Signal
1	+5V
2	A
3	B
4	Z
5	U
6	V
7	W
8	PTC IN
9	GND
10	/A
11	/B
12	/Z
13	/U
14	/V
15	/W

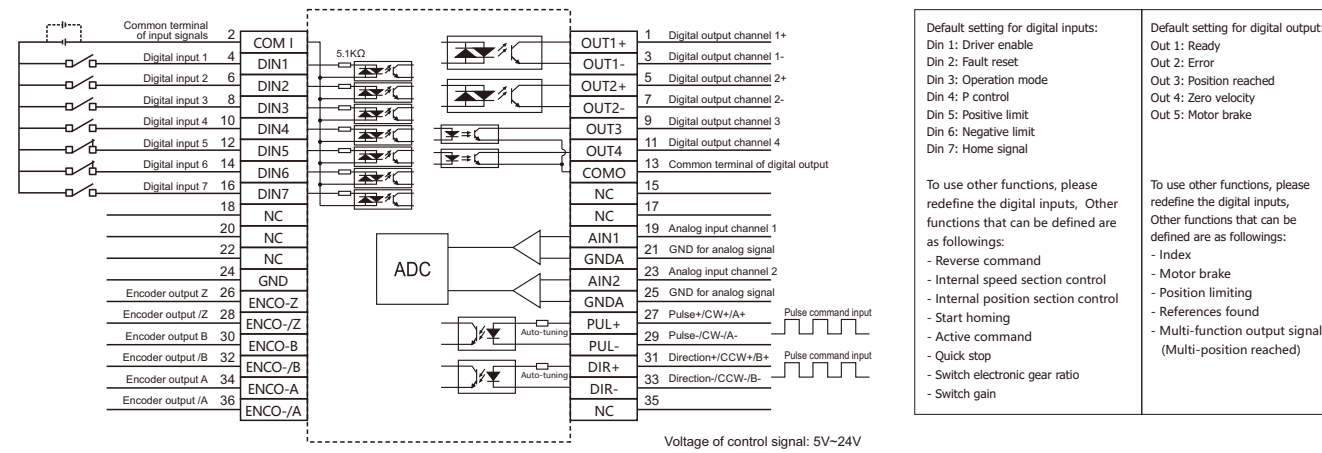
## Technical Specifications of CD2S Servo Driver

Model parameter	CD412S-AA-000	CD422S-AA-000	CD422S-AF-000	CD432S-AA-000	CD612S-AA-000	CD622S-AA-000
Power	Main supply voltage	1PH, AC220V -20/+15% 47 ~ 63Hz			1PH,3PH, AC220V -20/+15% 47~63Hz	3PH, AC380V -20/+15% 47~63Hz
	Control circuit voltage	18VDC~30VDC 1A				
Current	Max. continuous current	2A	4A	4.6A	11A	5.5A
	Peak current(PEAK)	7A	15A	15A	27.5A	15A
Feedback signal	2500 P/R ( incremental encoder with 5V supply)					
Brake chopper	Use an external braking resistor according to application, mainly in occasion of quick stop .					
Brake chopper threshold	DC380V±5V				DC680V±5V	
Over-voltage alarming threshold	DC400V±5V				DC700V±5V	
Under-voltage alarming threshold	DC200V±5V				DC400V±5V	
Cooling method	Natural air cooling		Fan	Fan		
Weight (Kg)	1.2		1.2	2.4		
Position Mode	Maximum frequency of input pulse	Differential signal: 500 KPPS, open-collector signal: 200 KPPS				
	Pulse command mode	Pulse+direction, CCW + CW, A+B Phase( 5V - 24V )				
	Command smoothing	Low-pass filtering (adjustable by internal parameter setting )				
	Feedforward gain	Adjustable by internal parameter setting				
Speed Mode	Electronic gear ratio	Setting range, Gear factor: -32768 ~ 32767, Gear divider: 1 ~ 32767, 1/50≤   Gear factor/Gear divider   ≤50				
	Position loop sampling frequency	- 10 ~ 10V ( resolution 12 bit )				
	Analog input voltage range	200K				
	Input impedance	4KHz				
Torque Mode	Analog input sampling frequency	External analog command / internal command				
	Command source	Low-pass filtering ( adjustable by internal parameter setting )				
	Command smoothing	Adjustable by internal parameter setting				
	Input voltage dead-zone setting	Adjustable by internal parameter setting				
	Input voltage offset setting	Adjustable by internal parameter setting				
	Speed limit	Adjustable by internal parameter setting/external analog command				
	Torque limit	4KHz				
Digital Input	Speed loop sampling frequency	-10 ~ 10V (Resolution 12 bit)				
	Analog voltage input range	200K				
	Input impedance	4KHz				
	Input sampling frequency	External analog command / internal command				
Digital Output	Command source	Low-pass filtering ( adjustable by internal parameter setting )				
	Command smoothing	Adjustable by internal parameter setting/external analog command				
Protection	Speed limit	Adjustable by internal parameter setting				
	Input voltage dead-zone setting	Adjustable by internal parameter setting				
Communication interface	Input voltage offset setting	7 digital inputs, with COM1 terminal for PNP (high level valid 12.5V~30V) or NPN (low level valid ) connection				
	Digital input specification	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				
Operation Environment	Digital input function	5 digital outputs,out 1~out 4 current is 100 mA, BR+/BR-(brake control output) current is 500 mA,can drive brake device directly				
	Digital output specification	Define freely according to the requirement, supporting following functions: driver ready, driver fault, position reached, motor at zero speed, motor brake, motor speed reached, Z signal, maximum speed obtained in torque mode, motor brake, position limiting, reference found				
Digital Output	Digital output function	Over-voltage protection, under-voltage protection, motor over-heat protection (I2T), short-circuit protection, drive over-heat protection, etc				
	Digital output specification	RS232 ( Connections with PC: 2-2, 3-3, 5-5 )				
Operation Environment	Operation temperature	0 ~ 400C				
	Storage temperature	- 100C ~ 700C				
Operation Environment	Humidity ( non- condensation )	Below 90% RH				
	Protection class	IP20				
Operation Environment	Installation mode	Installed in a dust-free, dry, lockable environment ( such as in a electric cabinet )				
	Installation method	Vertical installation				
Operation Environment	Height	No power limit below 1000 m				
	Atmospheric pressure	86kpa ~ 106kpa				

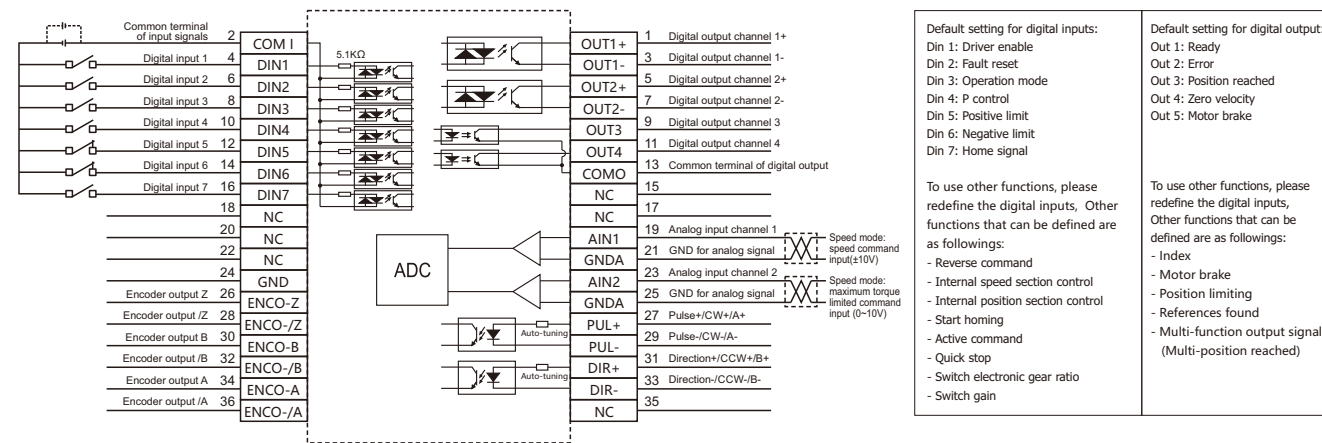
# Wiring Diagram of CD2S Servo Driver

# Mechanical Dimension Diagram of CD2S Servo Driver

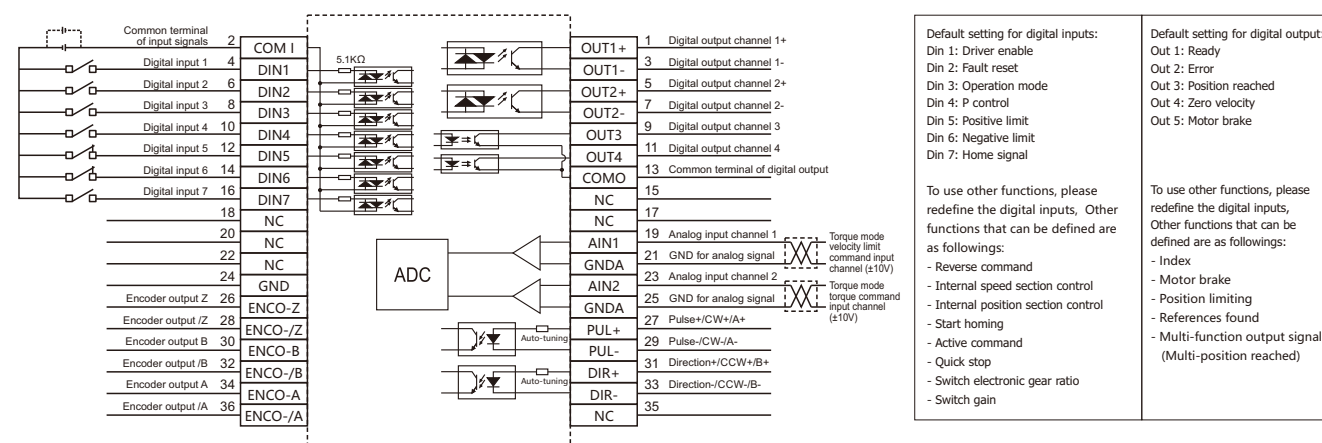
## Wiring Diagram for Position Control Mode



## Wiring Diagram for Speed Control Mode

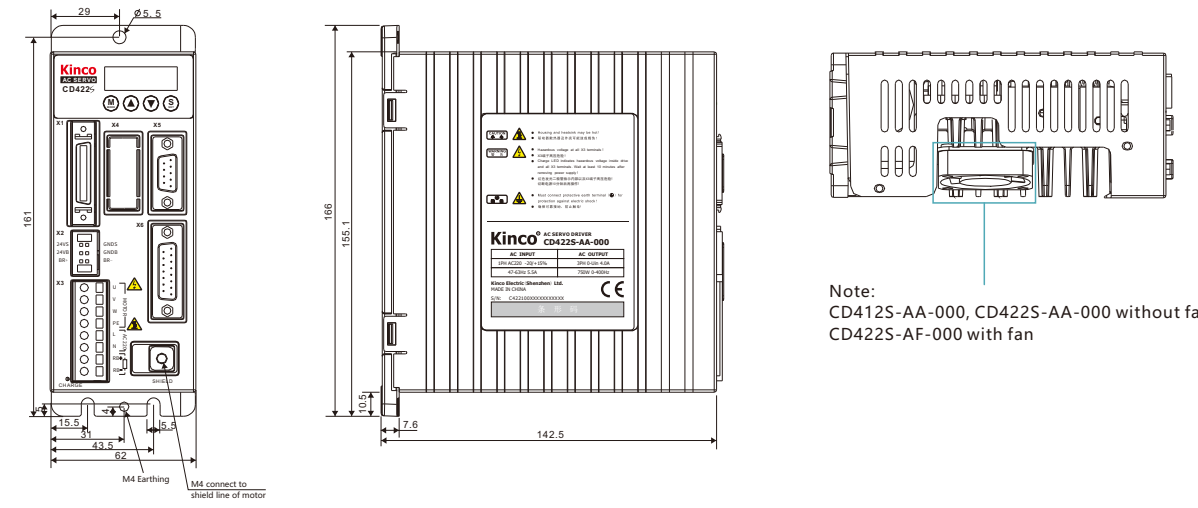


## Wiring Diagram for Torque Control Mode



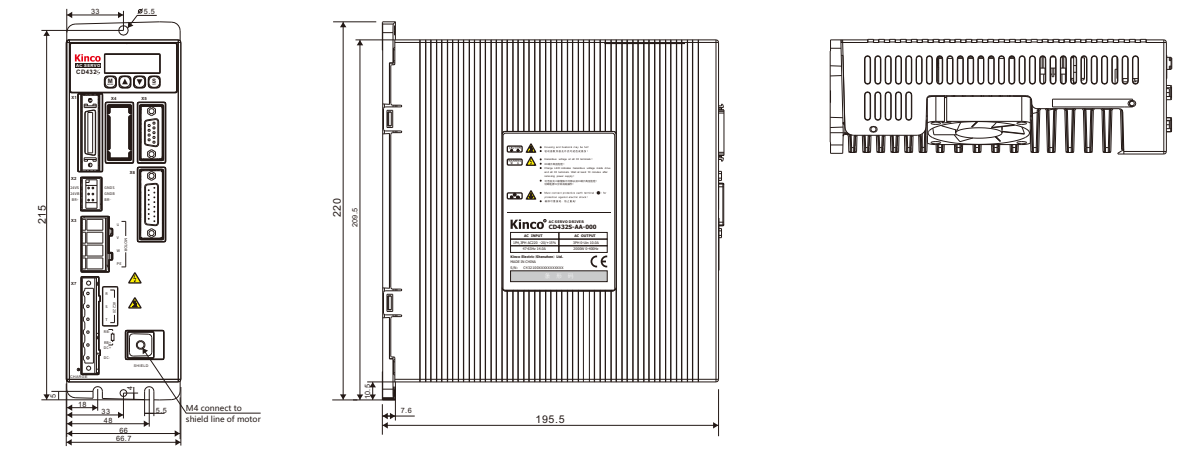
## Mechanical Dimension Diagram of CD412S/CD422S

(Unit: mm)



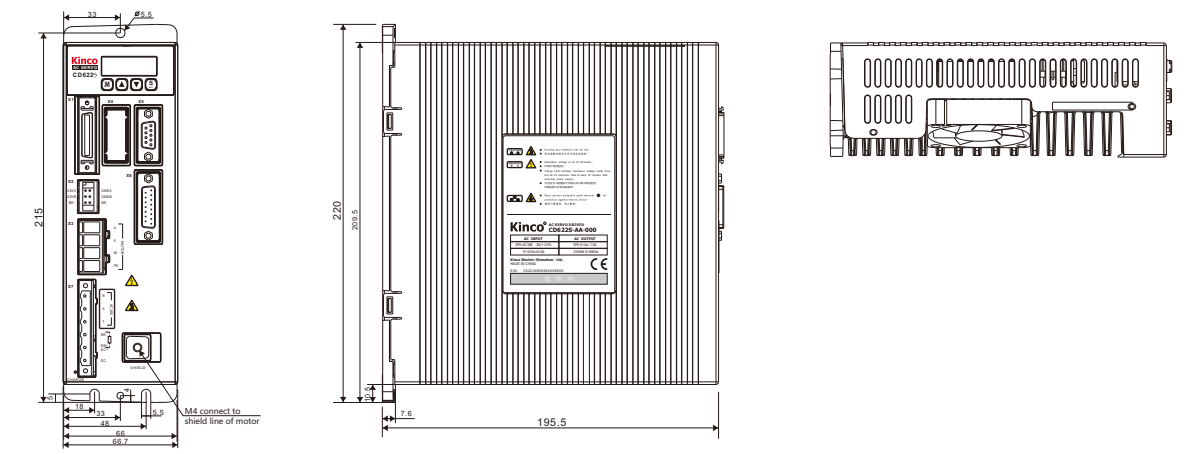
## Mechanical Dimension Diagram of CD432S

(Unit: mm)



## Mechanical Dimension Diagram of CD612S/CD622S

(Unit: mm)





# Technical Specifications of SMH Servo Motor(1)



Motor series	SMH Servo Motor			
	Small inertia flange size 60mm		Small inertia flange size 80mm	
Model	SMH60S-0020-30A□K-3LK□	SMH60S-0040-30A□K-3LK□	SMH80S-0075-30A□K-3LK□	SMH80S-0100-30A□K-3LK□
Driver matching	JD430-AA-000 FD422S-CA-000 FD422S-LA-000 FD422S-EA-000 CD422S-AA-000		JD430-AA-000 FD432S-CA-000 FD432S-LA-000 FD432S-EA-000 CD432S-AA-000	
DC link voltage UDC	300	300	300	300
Continuous performance	Rated power $P_N$ (W)	200	400	1000
	Rated torque $T_N$ (Nm)	0.64	1.27	2.39
	Rated speed $n_N$ (rpm)	3000	3000	3000
	Rated current $I_N$ (A)	1.6	3.1	3.9
Maximum torque $T_m$ (Nm)	1.92	3.82	7.17	9.48
Maximum current $I_m$ (A)	4.8	9.3	11.7	18.9
Standstill torque $T_s$ (Nm)	0.7	1.39	2.63	3.3
Standstill current $I_s$ (A)	1.79	3.38	4.4	6.93
Resistance line-line $R_L$ ( $\Omega$ )	8.02	3.52	1.4	0.86
Inductance line-line $L_L$ (mH)	16.3	7.8	7.5	4.5
Electrical time constant $\tau_e$ (ms)	2.03	2.22	5.35	5.23
Mechanical time constant $\tau_m$ (ms)	2.26	1.35	0.75	0.89
Reverse voltage constant $K_e$ (V/krpm)	29	29	40	34
Torque constant $K_t$ (Nm/A)	0.48	0.48	0.662	0.562
Rotor moment of inertia $J_m$ (Kg-cm <sup>2</sup> )	0.375	0.51	1.36	1.9
	0.379 (with brake)	0.514 (with brake)	1.385 (with brake)	1.925 (with brake)
Pole pair number	3	3	3	3
Maximum voltage rising $du/dt$ (KV/ $\mu$ s)	8	8	8	8
Insulation class	F	F	F	F
Maximum radial force $F_r$ (N)	180	180	335	335
Maximum axial force $F_a$ (N)	90	90	167.5	167.5
Weight G(Kg)	1.3	1.8	3.3	3.9
	1.8 (with brake)	2.3 (with brake)	4 (with brake)	4.6 (with brake)
Length of motor L(mm)	120	150	147	167
	159±1.5(with brake)	189±1.5(with brake)	197±1.5(with brake)	217±1.5(with brake)
Position feedback device	2500 P/R Incremental encoder			
Cooling method	Totally enclosed, non - ventilated			
Protection level	IP65, shaft sealing IP54			
Environmental conditions for operation	Temperature	-20°C ~ 40°C (Non-freezing)		
	Humidity	Below 90 % RH ( no condensation )		
	Ambient environment	Away from active gas, combustible gas, oil drops and dust		
	Altitude	Maximum altitude 4000m, Rated power at 1000m or below, Above 1000m: Decreasing 1.5% per 100m rise		

**Note:** □=A —without brake □=B —with brake □=H —3 rows of 15-pin Connector □=N —HFO18 series aviation standard connector(towards the shaft) □=P —HFO21+HFO18 series aviation standard connector(HFO21 power connector,HFO18 encoder connector)

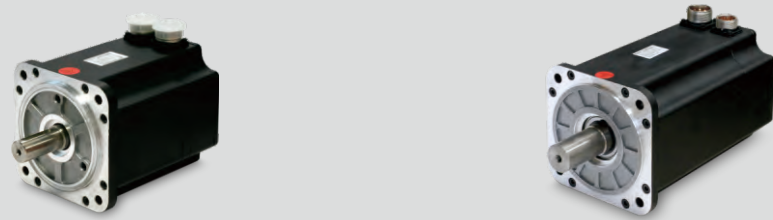
# Technical Specifications of SMH Servo Motor(2)



Motor series	SMH Servo Motor						
	Medium inertia flange size 110mm						
Model	SMH110D-0125-30A□K-4LKC	SMH110D-0126-30A□K-4HKC	SMH110D-0105-20A□K-4LKC	SMH110D-0157-30A□K-4HKC	SMH110D-0126-20A□K-4LKC	SMH110D-0188-30A□K-4HKC	
Driver matching	JD430-AA-000 FD432S-CA-000 FD432S-LA-000 FD432S-EA-000 CD432S-AA-000	JD620-AA-000 FD622S-CA-000 FD622S-LA-000 FD622S-EA-000 CD622S-AA-000	JD430-AA-000 FD432S-CA-000 FD432S-LA-000 FD432S-EA-000 CD432S-AA-000	JD620-AA-000 FD622S-CA-000 FD622S-LA-000 FD622S-EA-000 CD622S-AA-000	JD430-AA-000 FD432S-CA-000 FD432S-LA-000 FD432S-EA-000 CD432S-AA-000	JD620-AA-000 FD622S-CA-000 FD622S-LA-000 FD622S-EA-000 CD622S-AA-000	
DC link voltage UDC	300	560	300	560	300	560	
Continuous performance	Rated power $P_N$ (W)	1250	1260	1050	1570	1260	1880
	Rated torque $T_N$ (Nm)	4	4	5.0	5.0	6.0	6.0
	Rated speed $n_N$ (rpm)	2000	3000	2000	3000	2000	3000
	Rated current $I_N$ (A)	6.5	4.3	5.9	5.9	6.2	6.2
Maximum torque $T_m$ (Nm)	12	12	15.0	15.0	18.0	18.0	
Maximum current $I_m$ (A)	19.5	12.9	17.7	17.7	18.6	18.6	
Standstill torque $T_s$ (Nm)	4.4	4.4	5.5	5.5	6.6	6.6	
Standstill current $I_s$ (A)	6.82	4.73	6.49	6.49	6.765	6.765	
Resistance line-line $R_L$ ( $\Omega$ )	0.8	1.83	1.03	1.03	1.258	1.258	
Inductance line-line $L_L$ (mH)	6.4	13.5	7.8	7.8	9.62	9.62	
Electrical time constant $\tau_e$ (ms)	7.9	7.37	7.57	7.57	7.64	7.64	
Mechanical time constant $\tau_m$ (ms)	1.4	1.63	1.55	1.55	1.65	1.65	
Reverse voltage constant $K_e$ (V/krpm)	45	64	55	55	64	64	
Torque constant $K_t$ (Nm/A)	0.744	1.058	0.910	0.910	1.058	1.058	
Rotor moment of inertia $J_m$ (Kg-cm <sup>2</sup> )	5.8	5.8	7.2	7.2	8.5	8.5	
	5.85 (with brake)	5.85 (with brake)	7.25 (with brake)	7.25 (with brake)	8.55 (with brake)	8.55 (with brake)	
Pole pair number	4	4	4	4	4	4	
Maximum voltage rising $du/dt$ (KV/ $\mu$ s)	8	8	8	8	8	8	
Insulation class	F	F	F	F	F	F	
Maximum radial force $F_r$ (N)	630	630	630	630	630	630	
Maximum axial force $F_a$ (N)	315	315	315	315	315	315	
Weight G(Kg)	6.2	6.2	7.2	7.2	8.2	8.2	
	8.2 (with brake)	8.2 (with brake)	9.2 (with brake)	9.2 (with brake)	10.2 (with brake)	10.2 (with brake)	
Length of motor L(mm)	168	168	185	185	202	202	
	228±1 (with brake)	228±1 (with brake)	245±1 (with brake)	245±1 (with brake)	262±1 (with brake)	262±1 (with brake)	
Position feedback device	2500 P/R Incremental encoder						
Cooling method	Totally enclosed, non - ventilated						
Protection level	IP65, shaft sealing IP54						
Environmental conditions for operation	Temperature	- 20 ~ 40°C (non-freezing)					
	Humidity	Below 90 % RH ( no condensation )					
	Ambient environment	Away from active gas, combustible gas, oil drops and dust					
	Altitude	Maximum altitude 4000 m, rated power at 1000 m or below. Above 1000m, decreasing 1.5 % per every 100m rise					

**Note:** □=A —without brake □=B —with brake

# Technical Specifications of SMH Servo Motor(3)



Motor series	SMH Series Motor						
	Medium inertia flange size 130mm				Medium inertia flange size 150mm		
Model	SMH130D-0105 -20A□K-4HKC	SMH130D-0157 -20A□K-4HKC	SMH130D-0210 -20A□K-4HKC	SMH130D-0300 -20A□K-4HKC	SMH150D-0230 -20A□K-4HKC	SMH150D-0300 -20A□K-4HKC	SMH150D-0380 -20A□K-4HKC
Driver matching	JD430-AA-000 JD620-AA-000 FD622S-CA-000 FD622S-LA-000 FD622S-EA-000 CD622S-AA-000	FD432S-CA-000 FD432S-LA-000 FD432S-EA-000 CD432S-AA-000	JD620-AA-000 FD622S-CA-000 FD622S-LA-000 FD622S-EA-000 CD622S-AA-000	JD630-AA-000 JD630-LA-000	JD620-AA-000 FD622S-CA-000 FD622S-LA-000 FD622S-EA-000 CD622S-AA-000	JD630-LA-000 JD630-AA-000	
DC link voltage UDC	560	560	560	560	560	560	560
Continuous performance	Rated power $P_N$ (W)	1050	1570	2100	3000	2300	3800
	Rated torque $T_N$ (Nm)	5	7.5	10	14.3	11.1	18
	Rated speed $n_N$ (rpm)	2000	2000	2000	2000	2000	2000
	Rated current $I_N$ (A)	4.3	6.3	7.6	7.9	7.1	9.3
Maximum torque $T_m$ (Nm)	12.5	18.75	25	35.75	27.5	35.75	45
Maximum current $I_m$ (A)	10.75	15.75	19	19.75	17.75	21.25	23.25
Standstill torque $T_s$ (Nm)	5.5	8.25	11	15.73	12.1	15.73	19.8
Standstill current $I_s$ (A)	4.73	6.93	8.36	8.7	7.81	9.35	10.23
Resistance line-line $R_L$ ( $\Omega$ )	1.85	1.17	0.98	0.84	2.2	1.4	1.3
Inductance line-line $L_L$ (mH)	23.7	16.2	14.3	12.7	14(AVG)	10.6(AVG)	10.5(AVG)
Electrical time constant $\tau_e$ (ms)	12.81	13.846	14.592	14.94	6.36	7.57	8.08
Mechanical time constant $\tau_m$ (ms)	2.868	2.529	2.268	1.53	4.68	3.68	3.32
Reverse voltage constant $K_e$ (V/krpm)	70	72	80	110	100	107	125
Torque constant $K_t$ (Nm/A)	1.1578	1.191	1.3232	1.82	1.65	1.77	2.07
Rotor moment of inertia $J_m$ (Kg-cm <sup>2</sup> )	12	17.7	23.4	34.8	33.5	47.6	63.1
	12.0(with brake)	17.74(with brake)	23.44(with brake)	34.9(with brake)	33.6(with brake)	47.7(with brake)	63.2(with brake)
Pole pair number	4	4	4	4	4	4	4
Maximum voltage rising $du/dt$ (KV/ $\mu$ s)	8	8	8	8	8	8	8
Insulation class	F	F	F	F	F	F	F
Maximum radial force $F$ (N)	900	900	900	900	1200	1200	1200
Maximum axial force $F$ (N)	450	450	450	450	600	600	600
Weight $G$ (Kg)	7.5	9.1	10.7	13.9	12	15	18
	9.7(with brake)	11.3(with brake)	12.9(with brake)	14.9(with brake)	15.5(with brake)	18.5(with brake)	22.5(with brake)
Length of motor $L$ (mm)	159±1.5	179±1.5	199±1.5	239±0.15	226±1.5	254±1.5	282±1.5
	220±1.5(with brake)	240±1.5(with brake)	260±1.5(with brake)	280±1.5(with brake)	292±1.5(with brake)	320±1.5(with brake)	352±1.5(with brake)
Position feedback device	2500 P/R Incremental encoder						
Cooling method	Totally enclosed, non - ventilated						
Protection level	IP65, shaft sealing IP54						
Environmental conditions for operation	Temperature	- 20 ~ 40°C (non-freezing)					
	Humidity	Below 90 % RH ( no condensation )					
	Ambient environment	Away from active gas,combustible gas,oil drops and dust					
	Altitude	Maximum altitude 4000 m, rated power at 1000 m or below. Above 1000m, decreasing 1.5 % per every 100m rise					

Note: □=A —without brake  
 □=B —with brake

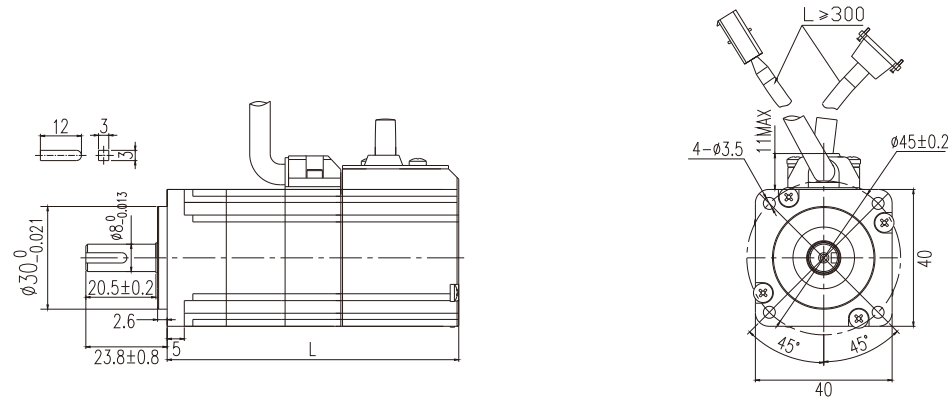
# Technical Specifications of SMH Servo Motor(4)



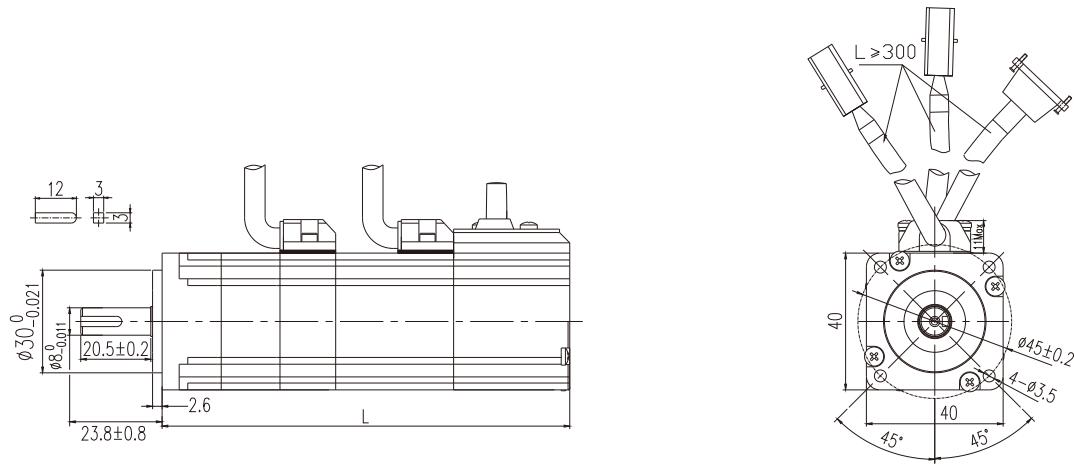
Motor series	SMH Series Motor				
	Medium inertia flange size 180mm				
Model	SMH180D-0350 -15A□K-4HKC	SMH180D-0440 -15A□K-4HKC	SMH180D-0550 -15R□K-4HKC	SMH180D-0750 -15R□K-4HKC	
Driver matching	JD630-LA-000 JD630-AA-000	JD640-LA-000 JD640-AA-000	JD640-AR-000	JD650-AR-000	
DC link voltage UDC	560	560	560	560	
Continuous performance	Rated power $P_N$ (W)	3500	4400	4400	7500
	Rated torque $T_N$ (Nm)	22	28	28	48
	Rated speed $n_N$ (rpm)	1500	1500	1500	1500
	Rated current $I_N$ (A)	10.3	11.9	11.9	19.2(REF)
Maximum torque $T_m$ (Nm)	55	70	70	120	
Maximum current $I_m$ (A)	25.75	29.75	29.75	47.9(REF)	
Standstill torque $T_s$ (Nm)	24.2	30.8	30.8	52.8	
Standstill current $I_s$ (A)	11.33	13.09	13.09	21.1(REF)	
Resistance line-line $R_L$ ( $\Omega$ )	1.2	0.65	0.65	0.38	
Inductance line-line $L_L$ (mH)	12.7(AVG)	8.5	8.5	5.89	
Electrical time constant $\tau_e$ (ms)	10.58	13.08	13.08	15.5	
Mechanical time constant $\tau_m$ (ms)	3.42	2.16	2.16	1.81	
Reverse voltage constant $K_e$ (V/krpm)	135	150	150	159	
Torque constant $K_t$ (Nm/A)	2.23	2.48	2.48	2.63	
Rotor moment of inertia $J_m$ (Kg-cm <sup>2</sup> )	82	118	118	190	
	82.2 (with brake)	118.2 (with brake)	118.2 (with brake)	190.3 (with brake)	
Pole pair number	4	4	4	4	
Maximum voltage rising $du/dt$ (KV/ $\mu$ s)	8	8	8	8	
Insulation class	F	F	F	F	
Maximum radial force $F$ (N)	1600	1600	1600	1600	
Maximum axial force $F$ (N)	800	800	800	800	
Weight $G$ (Kg)	22.7	28.6	28.6	40	
	27.9 (with brake)	33.8 (with brake)	33.8 (with brake)	47 (with brake)	
Length of motor $L$ (mm)	260±1.5	298±1.5	298±1.5	374±1.5	
	332±1.5 (with brake)	370±1.5 (with brake)	370±1.5 (with brake)	451±1.5 (with brake)	
Position feedback device	Incremental encoder 2500P/R		SMT37 rotary transformer		
Cooling method	Totally enclosed, non-ventilated				
Protection level	IP65 for body, shaft sealing IP54				
Environmental conditions for operation	Temperature	-20°C ~ 40°C (Non-freezing)			
	Humidity	Below 90% RH (Non-condensing)			
	Ambient environment	Away from active gas, combustible gas, oil drops and dust			
	Altitude	Maximum altitude 4000m, Rated power at 1000m or below, Above 1000m: Decreasing 1.5% per 100m rise			

Note: □=A —without brake  
 □=B —with brake

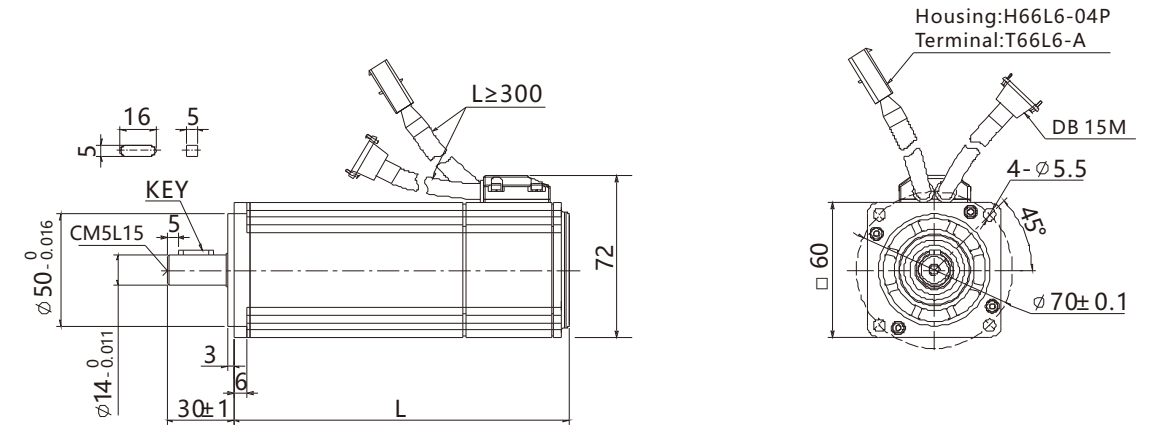
## SMH Series 40 Flange Outlet Motor



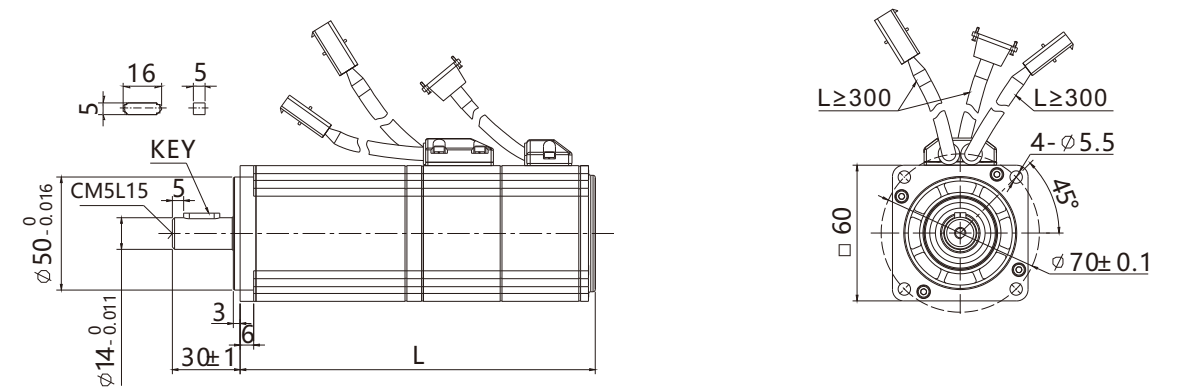
## SMH Series 40 Flange Outlet Motor (with brake)



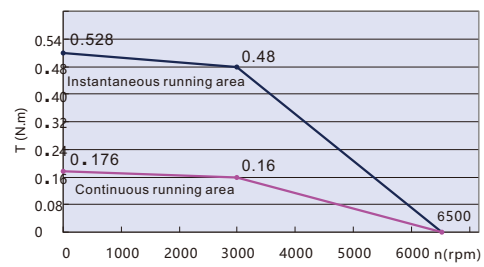
## SMH Series 60 Flange Outlet Motor



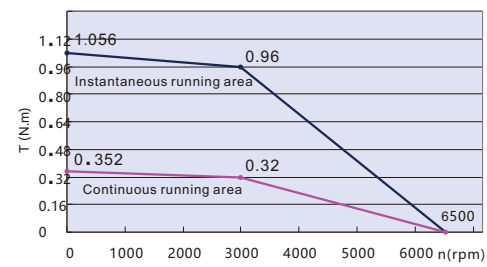
## SMH Series 60 Flange Outlet Motor (with brake)



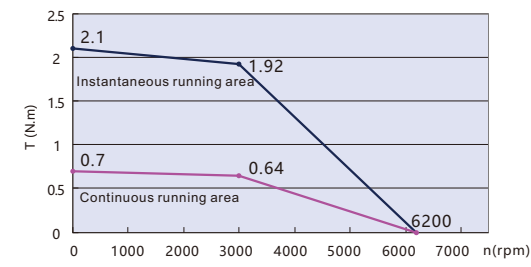
SMH40S-0005-30A □ K-4LKH 50W



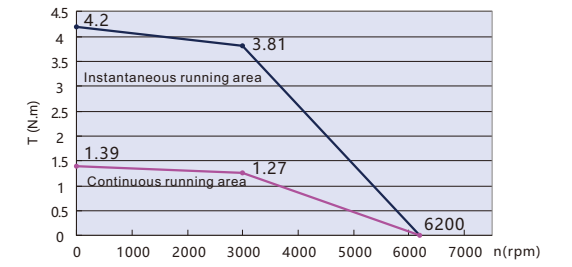
SMH40S-0010-30A □ K-4LKH 100W



SMH60S-0020-30A □ K-3LK □ 200W

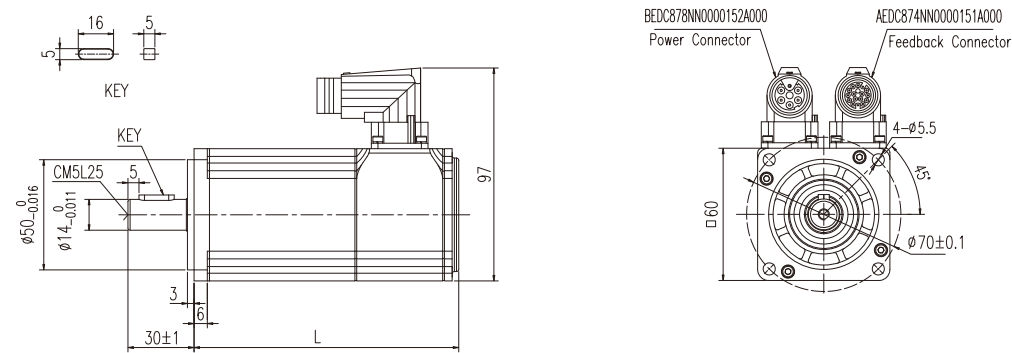


SMH60S-0040-30A □ K-3LK □ 400W

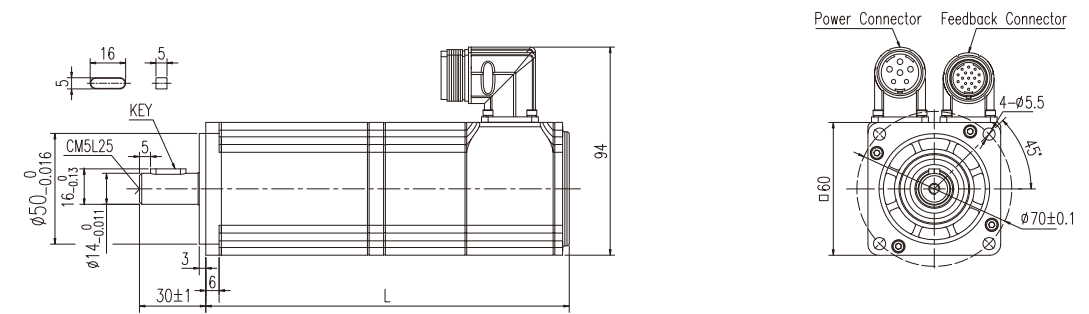




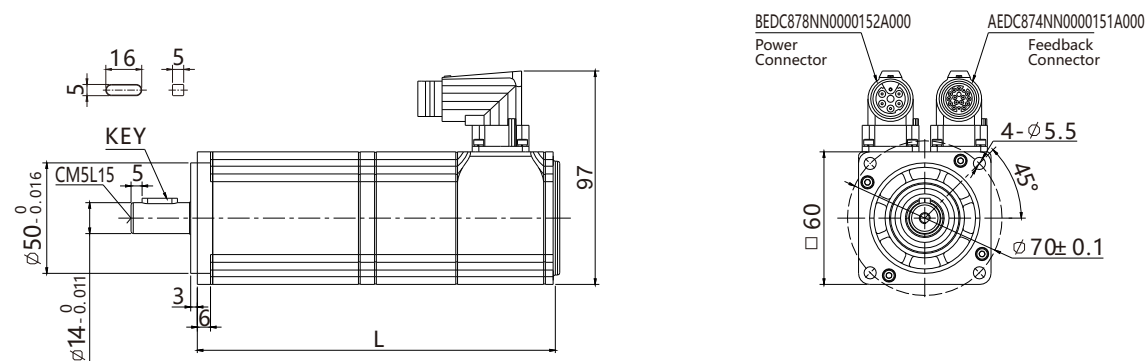
## SMH Series 60 flange inlet aviation socket motor



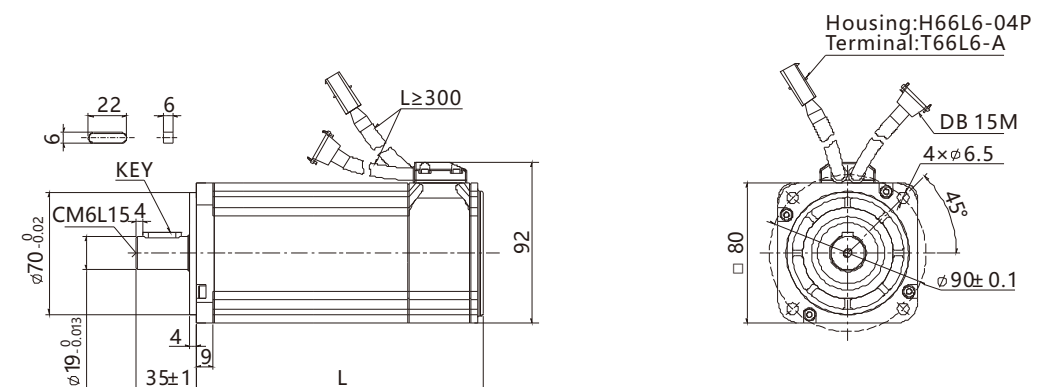
## SMH Series 60 flange HFO aviation socket motor (with brake)



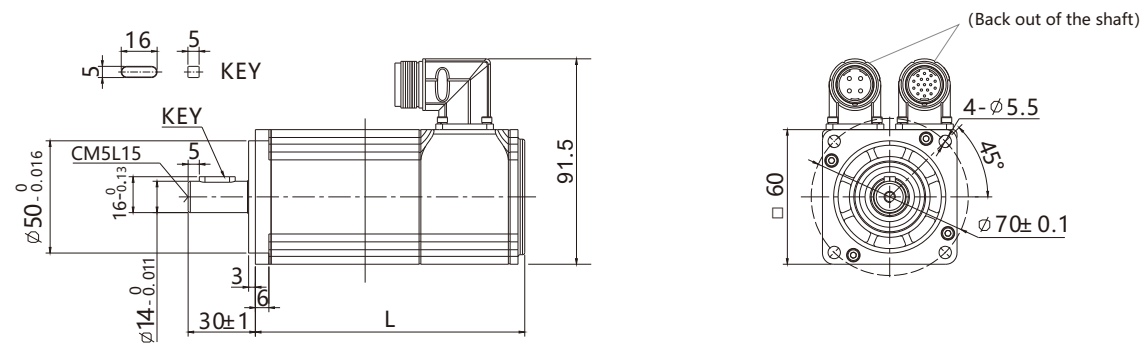
## SMH Series 60 flange inlet aviation socket motor (with brake)



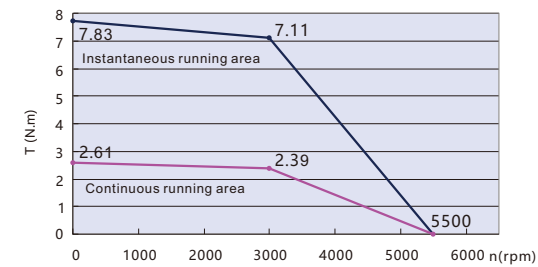
## SMH Series 80 Flange Outlet Motor



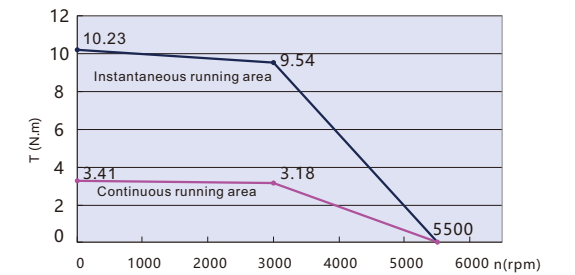
## SMH Series 60 flange HFO aviation socket motor



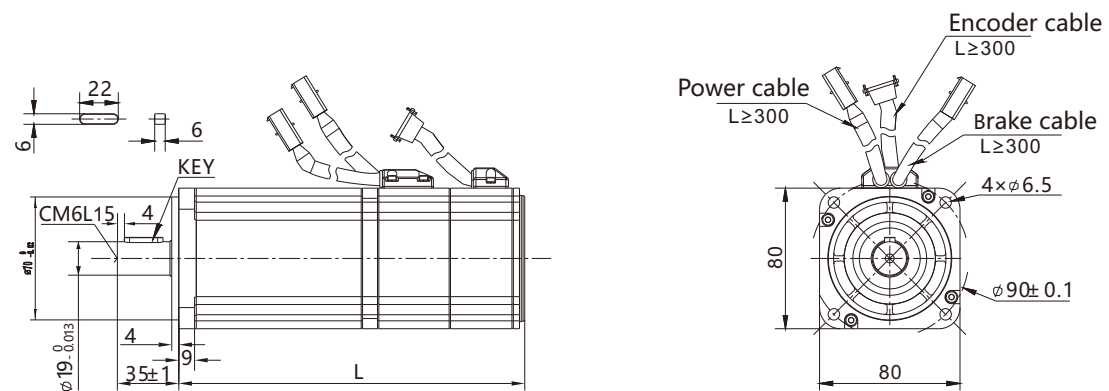
SMH80S-0075-30A □ K-3LK □ 750W



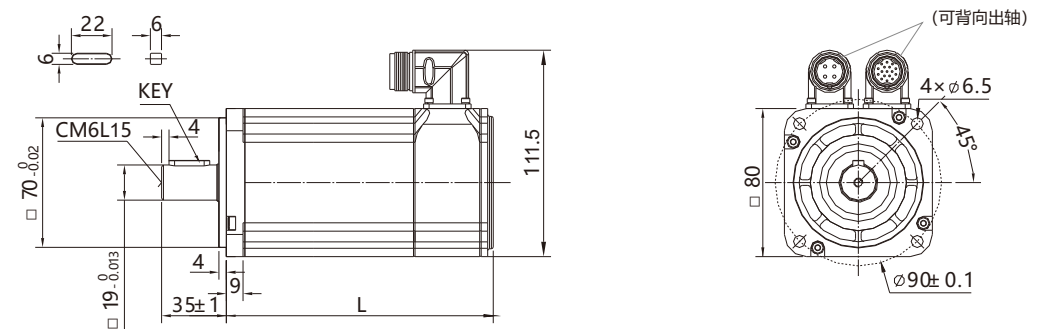
SMH80S-0100-30A □ K-3LK □ 1000W



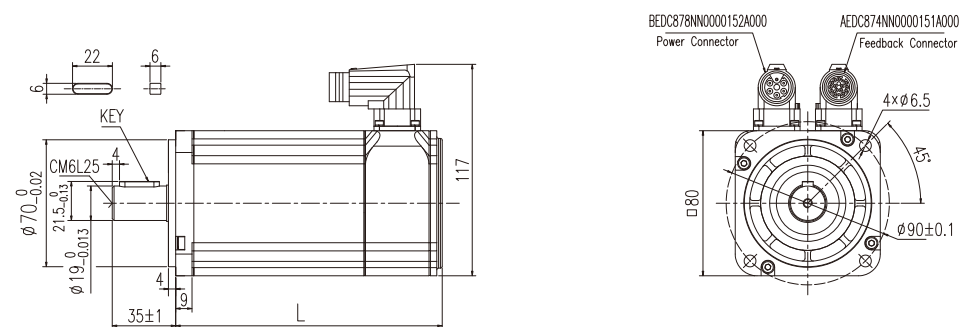
**SMH Series 80 Flange Outlet Motor (with brake)**



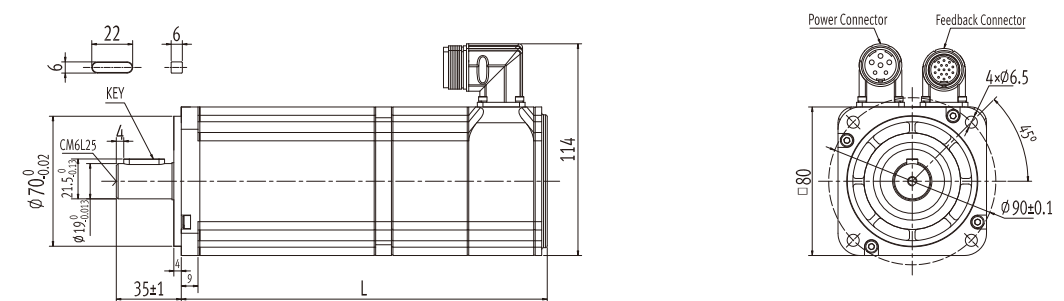
**SMH Series 80 Flange HFO Aviation Socket Motor**



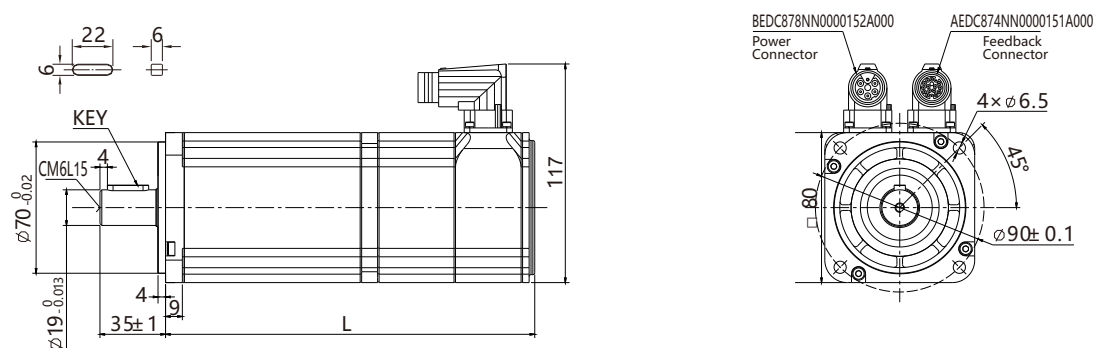
**SMH Series 80 Flange Inlet Aviation Socket Motor**



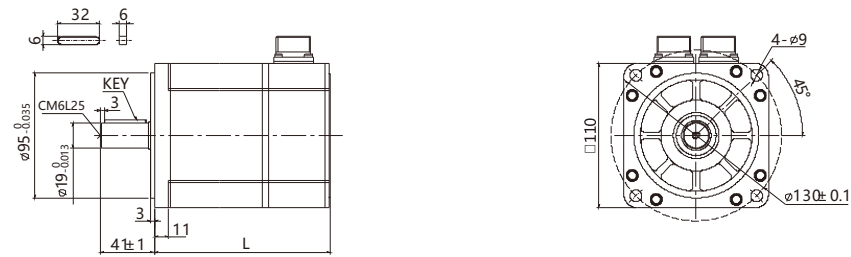
**SMH Series 80 Flange HFO Aviation Socket Motor (with brake)**



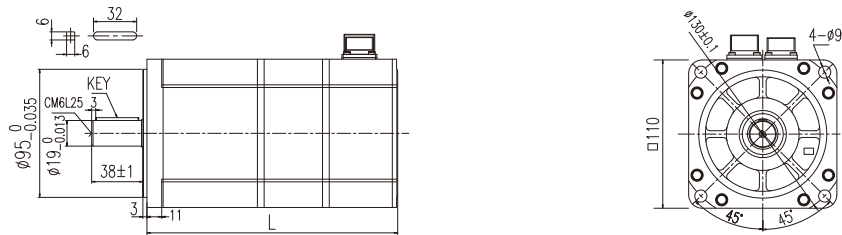
**SMH Series 80 Flange Inlet Aviation Socket Motor (with brake)**



## SMH Series 110 Flange General Aviation Socket Motor

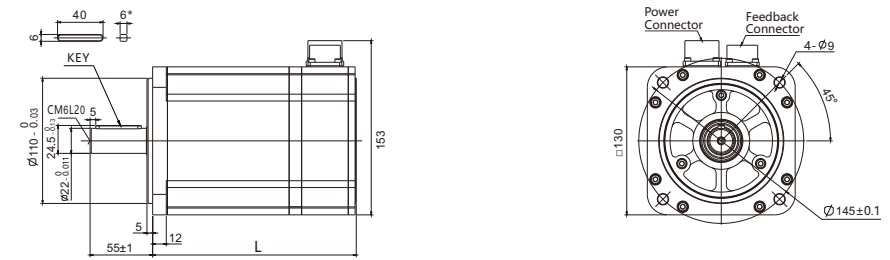


## SMH Series 110 Flange General Aviation Socket Motor (with brake)

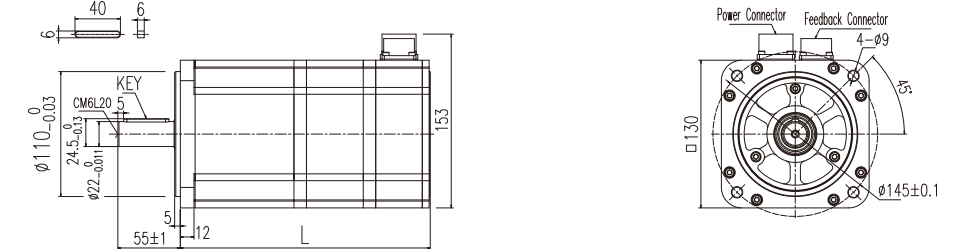


## SMH Series 130 Flange General Aviation Socket Motor

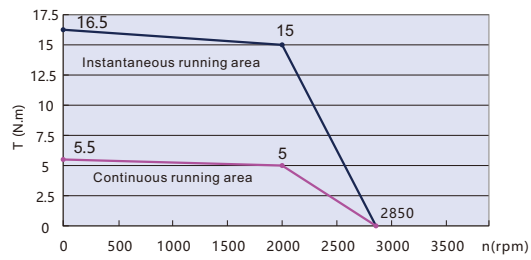
\*Note: the SMH130D-0300-20A □ K-4HKC key is 8.



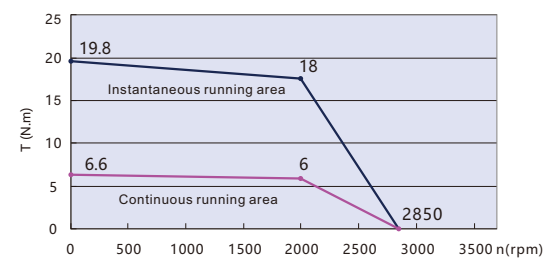
## SMH Series 130 Flange General Aviation Socket Motor (with brake)



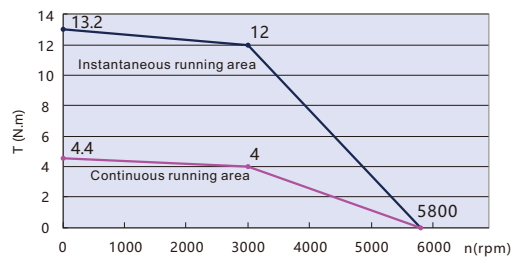
**SMH110D-0105-20A □ K-4LKC 1.05KW**



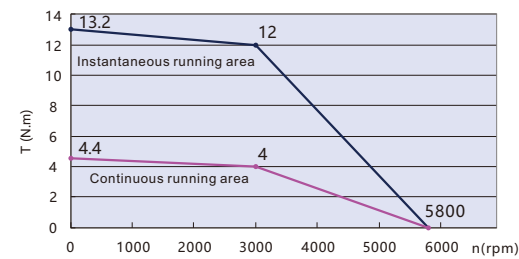
**SMH110D-0126-20A □ K-4LKC 1.26KW**



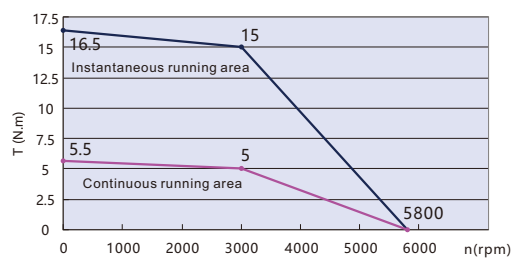
**SMH110D-0125-30A □ K-4LKC 1.25KW**



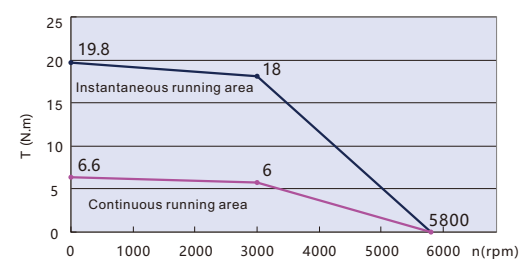
**SMH110D-0126-30A □ K-4HKC 1.26KW**



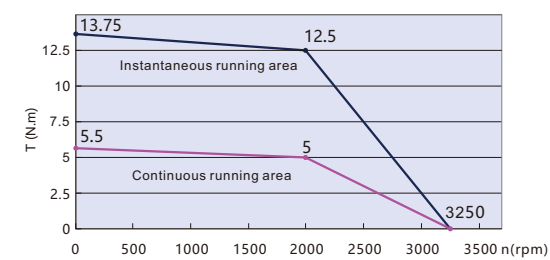
**SMH110D-0157-30A □ K-4HKC 1.57KW**



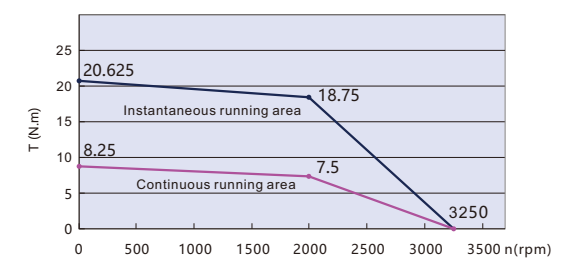
**SMH110D-0188-30A □ K-4HKC 1.88KW**



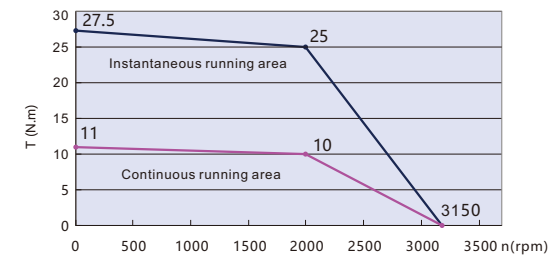
**SMH130D-0105-20A □ K-4HKC 1.05KW**



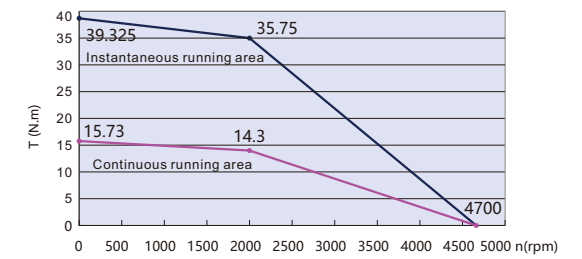
**SMH130D-0157-20A □ K-4HKC 1.57KW**



**SMH130D-0210-20A □ K-4HKC 2.1KW**

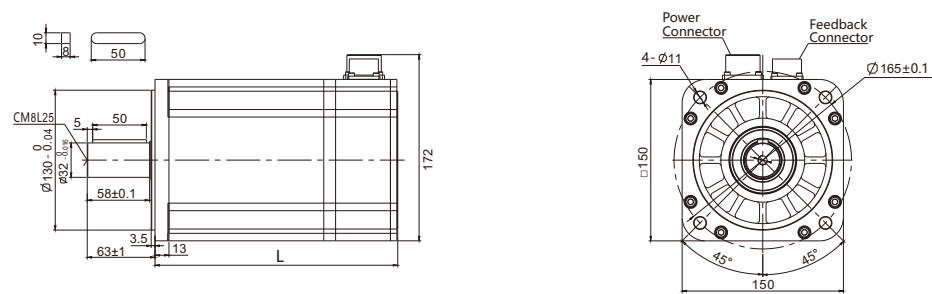


**SMH130D-0300-20A □ K-4HKC 3KW**

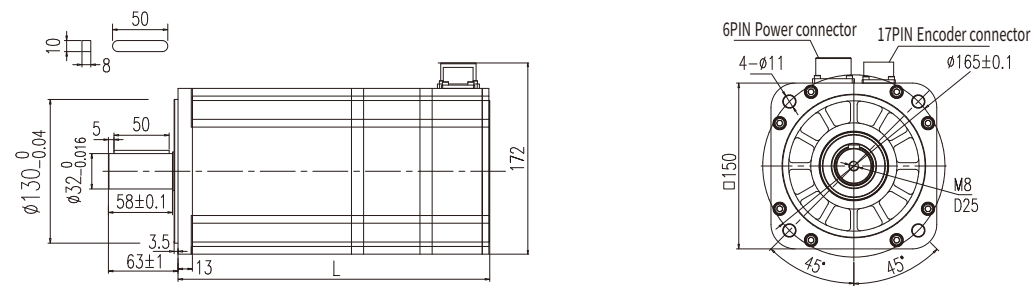




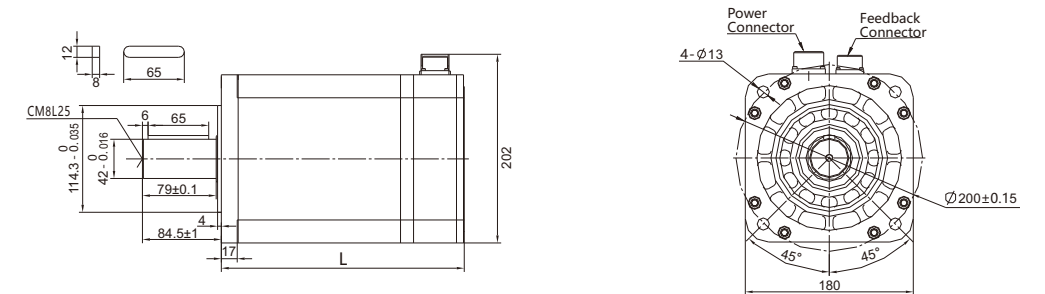
## SMH Series 150 Flange General Aviation Socket Motor



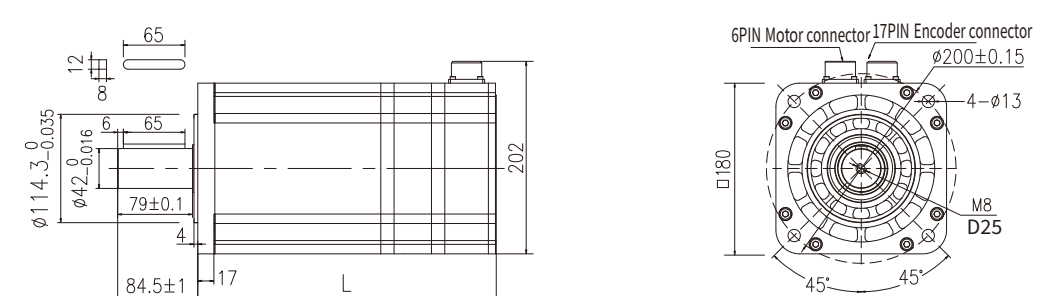
## SMH Series 150 Flange General Aviation Socket Motor (with brake)



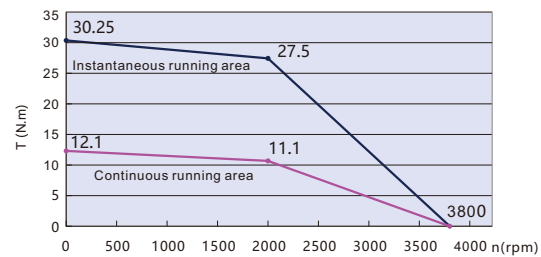
## SMH Series 180 Flange General Aviation Socket Motor



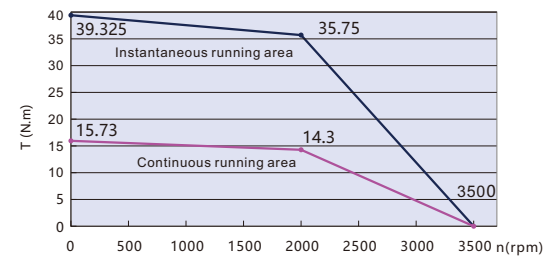
## SMH Series 180 Flange General Aviation Socket Motor (with brake)



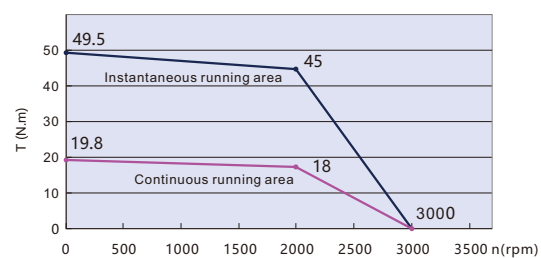
**SMH150D-0230-20A □K-4HKC 2.3KW**



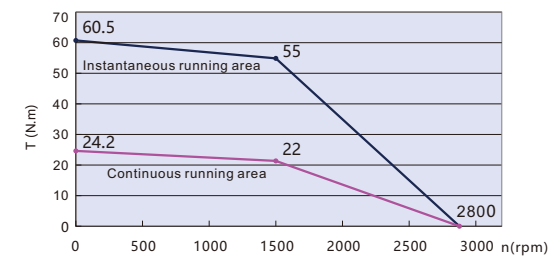
**SMH150D-0300-20A □K-4HKC 3KW**



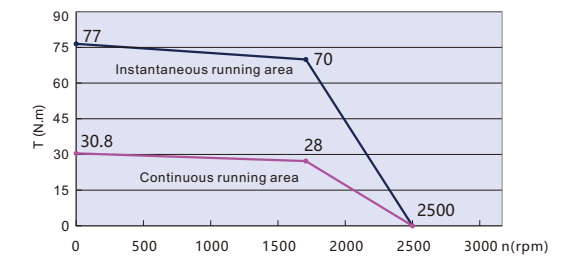
**SMH150D-0380-20A □K-4HKC 3.8KW**



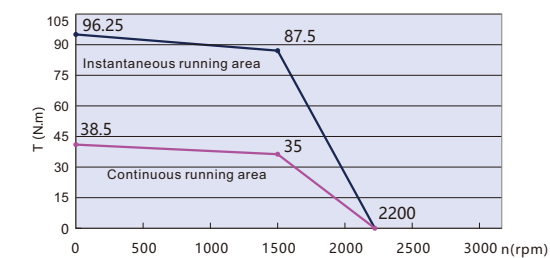
**SMH180D-0350-15A □K-4HKC 3.5KW**



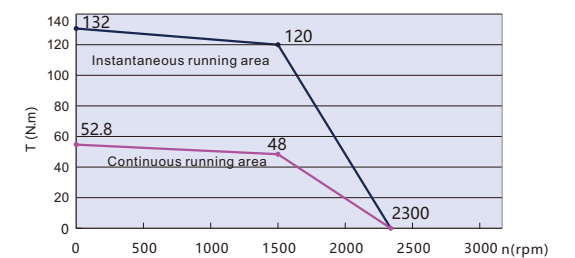
**SMH180D-0440-15A □K-4HKC 4.4KW**



**SMH180D-0550-15R □K-4HKC 5.5KW**



**SMH180D-0750-15R □K-4HKC 7.5KW**



# Technical Specifications of SMG Servo Motor (1)



Motor Series	SMG Series Motor						
	Medium inertia flange size 130mm						
Model	SMG130D-0100 -10A□K-4LKG	SMG130D-0100 -20A□K-4LKG	SMG130D-0150 -20A□K-4LKG	SMG130D-0150 -20A□K-4HKG	SMG130D-0200 -20A□K-4LKG	SMG130D-0200 -20A□K-4HKG	SMG130D-0300 -20A□K-4HKG
Driver matching	FD422S-LF-000 FD422S-CF-000 FD422S-EF-000 CD422S-AF-000 JD430-AA-000	CD432S-AA-000 FD432S-LA-000 FD432S-CA-000 FD432S-EA-000 JD430-AA-000	FD612S-LA-000 FD612S-CA-000 FD612S-EA-000 CD612S-AA-000 JD620-AA-000	CD432S-AA-000 FD432S-LA-000 FD432S-CA-000 FD432S-EA-000 JD430-AA-000	FD612S-LA-000 FD612S-CA-000 FD612S-EA-000 CD612S-AA-000 JD620-AA-000	FD622S-LA-000 FD622S-CA-000 FD622S-EA-000 CD622S-AA-000 JD620-AA-000	
Rated Power (kW)	1	1	1.5	1.5	2	2	3
Rated voltage (V)	220	220	220	380	220	380	380
Rated current (A)	4.5	5	7.5	4.7	10	5.9	7.4
Rated speed (RPM)	1000	2000	2000	2000	2000	2000	2000
Rated torque (Nm)	10	5	7.7	7.7	10	10	15
Peak torque (Nm)	20	12.5	19.25	19.25	25	25	30
Peak current (A)	9	12.5	18.75	11.75	25	14.75	18.5
Reverse voltage	140	68	68	111	70	115	125
constant $K_e$ (V/1000r/min) Torque constant $k_t$ (Nm/A)	2.2	1	1.03	1.64	1	1.69	2.03
Rotor moment of inertia $J_m$ (Kg·m <sup>2</sup> )	$1.94 \times 10^{-3}$ $1.95 \times 10^{-3}$ (with brake)	$1.06 \times 10^{-3}$ $1.07 \times 10^{-3}$ (with brake)	$1.53 \times 10^{-3}$ $1.54 \times 10^{-3}$ (with brake)	$1.53 \times 10^{-3}$ $1.54 \times 10^{-3}$ (with brake)	$1.94 \times 10^{-3}$ $1.95 \times 10^{-3}$ (with brake)	$1.94 \times 10^{-3}$ $1.95 \times 10^{-3}$ (with brake)	$2.77 \times 10^{-3}$ $2.78 \times 10^{-3}$ (with brake)
Resistance Line-Line $R_L$ (Ω)	2.7	1.84	1.01	2.49	0.73	1.986	1.41
Inductance Line-Line $L_L$ (mH)	8.8	4.9	2.94	7.08	2.45	6.2	5.5
Electrical time constant $\tau_e$ (ms)	3.26	2.66	2.91	2.84	3.36	3.12	3.9
Length of motor L (mm)	213±1 294±1 (with brake)	171±1 228±1 (with brake)	192±1 249±1 (with brake)	192±1 249±1 (with brake)	209±1 290±1 (with brake)	209±1 290±1 (with brake)	231±1 312±1 (with brake)
Weight (Kg)	10.2±0.7 12.5±0.7 (with brake)	6.6±0.7 8.9±0.7 (with brake)	8.3±0.7 10.6±0.7 (with brake)	8.3±0.7 10.6±0.7 (with brake)	9.8±0.7 12.1±0.7 (with brake)	9.8±0.7 12.1±0.7 (with brake)	11.7±0.7 14±0.7 (with brake)
Maximum radial force $F_r$ (N)	900	900	900	900	900	900	900
Maximum axial force $F_a$ (N)	300	300	300	300	300	300	300
Pole pair number	4						
Encoder	2500 P/R Incremental encoder						
Insulation class	F						
Protection level	IP65						
Environment conditions for operation	Temperature: - 20 ~ 40°C (non-freezing) ;Humidity: Below 90 % RH ( no condensation )						

Note: □=A —without brake  
□=B —with brake

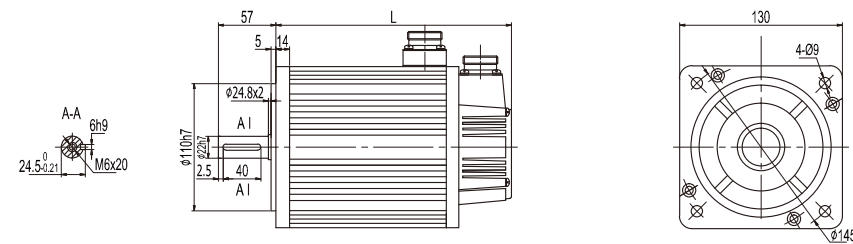
# Technical Specifications of SMG Servo Motor(2)



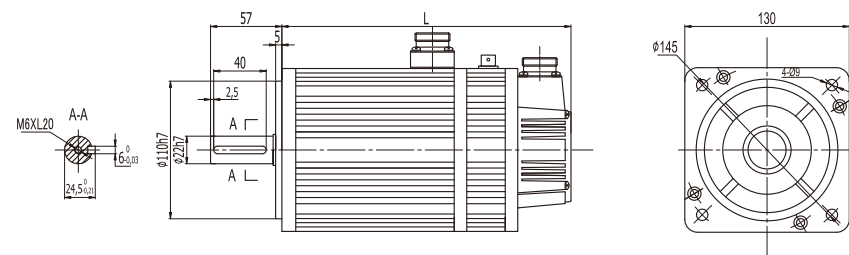
Motor Series	SMG Series Motor		
	Medium inertia flange size 180mm		
Model	SMG180D-0440-15A□K-4HKG	SMG180D-0550-15A□K-4HKG	SMG180D-0750-15A□K-4HKG
Driver matching	JD640-LA-000 JD640-AA-000		JD650-AA-000
Rated Power (kW)	4.4	5.5	7.5
Rated voltage (V)	380	380	380
Rated current (A)	10	12	20
Rated speed (RPM)	1500	1500	1500
Rated torque (Nm)	27	35	48
Peak torque (Nm)	67	70	96
Peak current (A)	24.81	30	50
Reverse voltage constant $K_e$ (V/1000r/min)	172	181	156
Torque constant $k_t$ (Nm/A)	2.7	2.9	2.4
Rotor moment of inertia $J_m$ (Kg·m <sup>2</sup> )	$9.64 \times 10^{-3}$ $9.66 \times 10^{-3}$ (with brake)	$12.25 \times 10^{-3}$ $12.28 \times 10^{-3}$ (with brake)	$16.72 \times 10^{-3}$ $16.75 \times 10^{-3}$ (with brake)
Resistance Line - Line $R_L$ (Ω)	0.796	0.62	0.273
Inductance Line - Line $L_L$ (mH)	4.83	4	2.14
Electrical time constant $\tau_e$ (ms)	6	6.45	7.8
Length of motor L (mm)	262±1.4 334±1.4 (with brake)	292±1.4 365±1.4 (with brake)	346±1.4 418±1.4 (with brake)
Weight (Kg)	25.5±0.7 30.7±0.7 (with brake)	30.5±0.7 37.5±0.7 (with brake)	40±0.7 47±0.7 (with brake)
Maximum radial force $F_r$ F(N)	1500	1500	1500
Maximum axial force F (N)	600	600	600
Pole pair number	4		
Encoder	2500 P/R Incremental encoder		
Insulation class	F		
Protection level	IP65		
Environment conditions for operation	Temperature: - 20 ~ 40°C (non-freezing) ;Humidity: Below 90 % RH ( no condensation )		

Note: □=A —without brake  
□=B —with brake

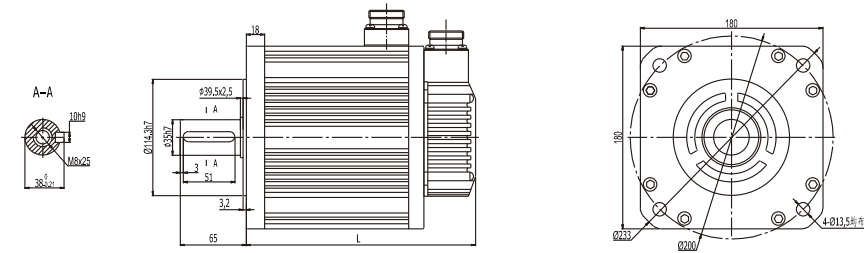
## SMG Series 130 Flange General Aviation Socket Motor



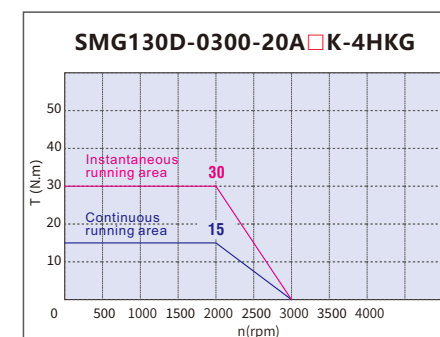
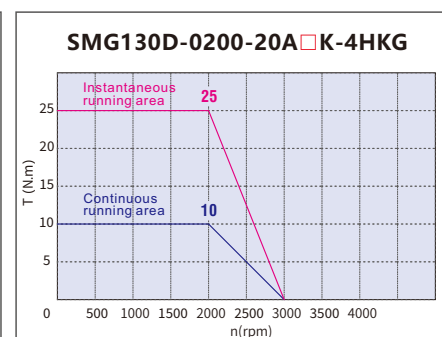
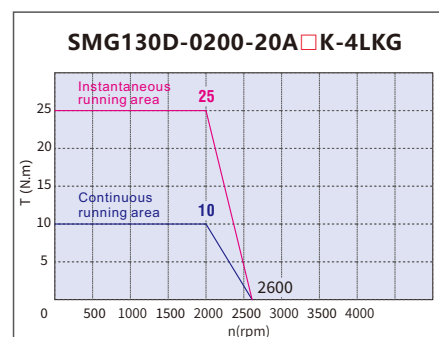
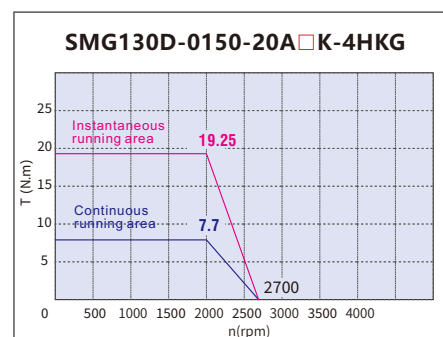
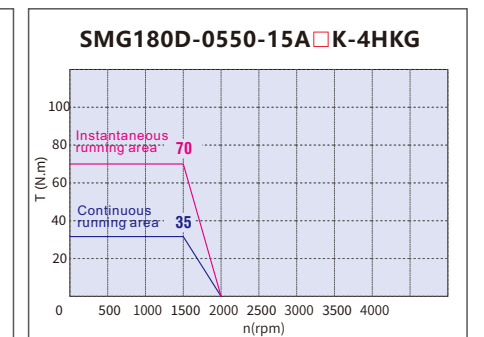
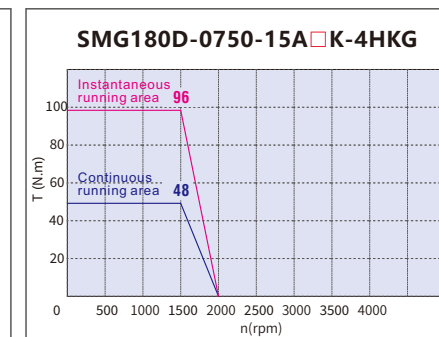
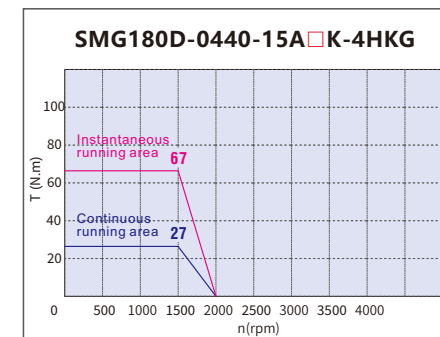
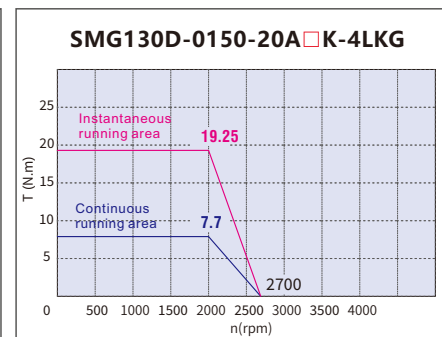
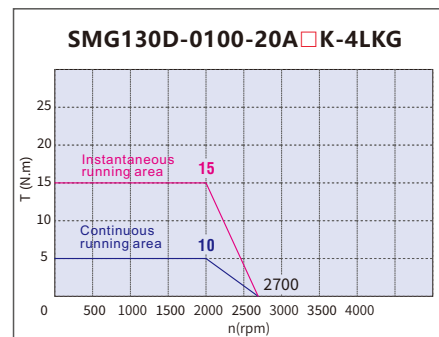
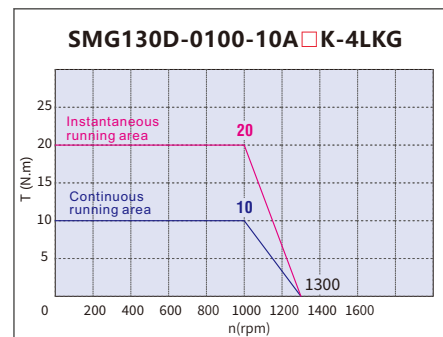
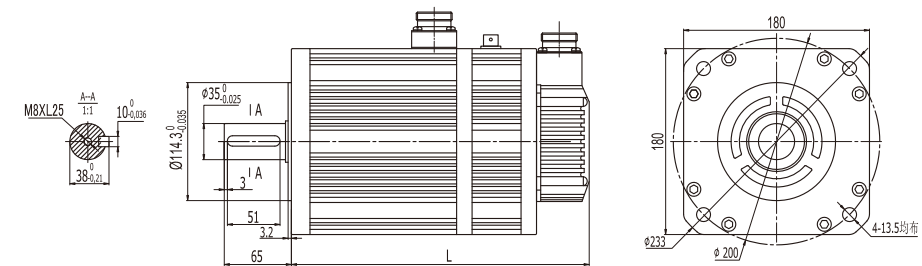
## SMG Series 130 Flange General Aviation Socket Motor (with brake)



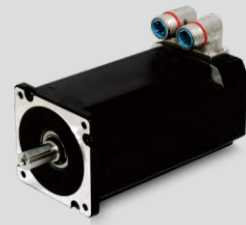
## SMG Series 180 Flange General Aviation Socket Motor



## SMG Series 180 Flange General Aviation Socket Motor (with brake)

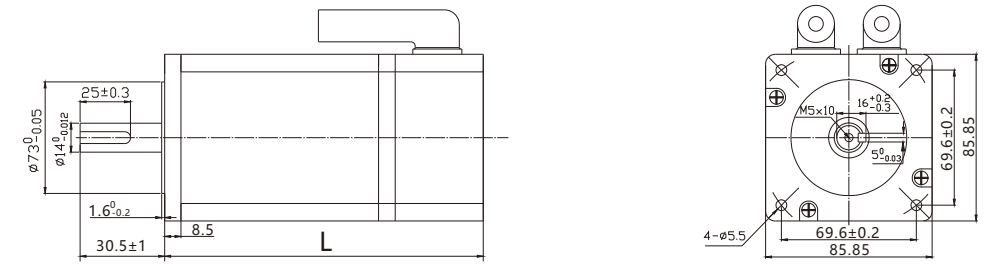




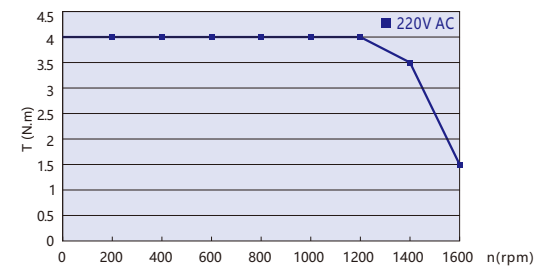


Multi-pole servo motor	Multipole servo motor		
	Small inertia flange size 85mm		
Model	85S-0025-05AAK-FLFN-02	85S-0035-05AAK-FLFN-02	85S-0045-05AAK-FLFN-02
Driver matching	FD422S-CA-000 FD422S-LA-000 FD422S-EA-000 CD422S-AA-000		
Rated phase current (A)	4	4	4
Holding torque (Nm)	4.18	6	7.5
Damping torque (Nm)	0.3	0.4	0.45
Resistance line-line (Ω)	1.13	2.3	1.78
Inductance line-line (mH)	5.75	12.4	17.1
Rotor moment of inertia $J_m$ ( Kg·cm <sup>2</sup> )	0.232	0.33	0.44
Length L (mm)	142±1	172±1	202±1
Maximum radial force $F_r$ (N)	60	60	60
Maximum axial force $F_a$ (N)	220	220	220
weight (Kg)	2.7	3.8	5.3
Dielectric strength	1500V AC 1S 5mA		
Insulation class	B		
operation teperature	- 20 ~ 50°C		
Surface temperature rising	Max,80°C		
Insulation impedance	Min.100MΩ, 500V DC		

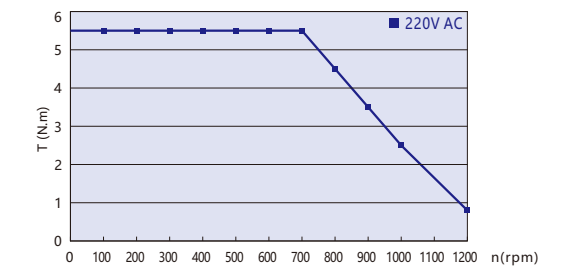
## Multipole 85S Aviation Socket Motor



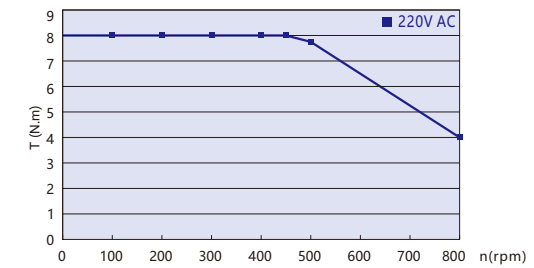
**85S-0025-05AAK-FLFN-02 4.18NM**



**85S-0035-05AAK-FLFN-02 6NM**



**85S-0045-05AAK-FLFN-02 8NM**





Model	SMC Series Motor		
	Small inertia flange size 60mm		Small inertia flange size 80mm
Driver matching	SMC60S-0020-30A□K-3LK□	SMC60S-0040-30A□K-3LK□	SMC80S-0075-30A□K-3LK□
DC link voltage UDC	FD422S-CA-000 FD422S-LA-000 FD422S-EA-000 CD422S-AA-000		
DC link voltage UDC	300	300	300
Maintain torque	Rated power $P_N$ (W)	200	400
	Rated torque $T_N$ (Nm)	0.64	1.27
	Rated speed $n_N$ (rpm)	3000	3000
	Rated current $I_N$ (A)	1.4	2.4
maximum torque $T_m$ (Nm)	1.92	3.81	7.17
maximum current $I_m$ (A)	4.2	7.2	11.4
Standstill torque $T_s$ (Nm)	0.7	1.4	2.63
Standstill current $I_s$ (A)	1.5	2.6	4.2
Resistance Line - Line $R_L$ ( $\Omega$ )	11.2	5.8	2.1
Inductance Line - Line $L_L$ (mH)	20.9	11.5	10.5
Electrical time constant $\tau_e$ (ms)	1.87	1.98	5
Mechanical time constant $\tau_m$ (ms)	1.8	1.29	0.9
Reverse voltage constant $K_e$ (V/krpm)	29	34	40
Torque constant $K_t$ (Nm/A)	0.48	0.562	0.662
Rotor moment of inertia $J_m$ (Kg-cm <sup>2</sup> )	0.214	0.405	1.087
Maintain torque $T$ (Nm)	0.218(with brake)	0.409(with brake)	1.099(with brake)
pole pair number	3	3	3
Maximum voltage rising $du/dt$ (KV/ $\mu$ s)	8	8	8
Insulation class	F	F	F
Maximum radial force $F_r$ (N)	180	180	335
Maximum axial force $F_a$ (N)	90	90	167.5
Weight $G$ (Kg)	1.1	1.6	2.8
	1.6(with brake)	2.1(with brake)	3.4(with brake)
Length of motor $L$ (mm)	109±1.5	135±1.5	139±1.5
	150±1.5(with brake)	176±1.5(with brake)	182±1.5(with brake)
Position feedback device	2500 P/R Incremental encoder		
Cooling method	Totally enclosed, non - ventilated		
Protection level	IP65, shaft sealing IP54		
Environment conditions for operation	Temperature	- 20 ~ 40°C (non-freezing)	
	Humidity	Below 90 % RH ( no condensation )	
	Ambient environment	Away from active gas,combustible gas,oil drops and dust	
	Altitude	Maximum altitude 4000 m, rated power at 1000 m or below. Above 1000m, decreasing 1.5 % per every 100m rise	

**Note:** □=A — without brake □=H — 3 rows of 15-pin Connector  
 □=B — with brake □=N — HFO18 series aviation standard connector(towards the shaft)  
 □=P — HFO21+HFO18 series aviation standard connector(HFO21 power connector,HFO18 encoder connector)



Model	SMC Series Motor		
	Medium inertia flange size 130mm		
Driver matching	SMC130D-0100-20A□K-4LKP	SMC130D-0150-20A□K-4LKP	SMC130D-0200-20A□K-4LKP
DC link voltage UDC	FD422S-CF-000 FD422S-LF-000 FD422S-EF-000 CD422S-AF-000	FD432S-CA-000 FD432S-LA-000 FD432S-EA-000 CD432S-AA-000	
DC link voltage UDC	300	300	300
Maintain torque	Rated power $P_N$ (W)	1000	1500
	Rated torque $T_N$ (Nm)	4.8	7.2
	Rated speed $n_N$ (rpm)	2000	2000
	Rated current $I_N$ (A)	4.4	6.8
maximum torque $T_m$ (Nm)	12	18	24
maximum current $I_m$ (A)	13.2	20.4	26.4
Standstill torque $T_s$ (Nm)	5.28	7.92	10.56
Standstill current $I_s$ (A)	4.84	7.48	9.68
Resistance Line - Line $R_L$ ( $\Omega$ )	3.1	1.51	0.93
Inductance Line - Line $L_L$ (mH)	24.07	13.8	8.8
Electrical time constant $\tau_e$ (ms)	7.76	9.14	9.46
Mechanical time constant $\tau_m$ (ms)	2.72	2.28	1.97
	2.76 (with brake)	2.3 (with brake)	1.98 (with brake)
Reverse voltage constant $K_e$ (V/krpm)	73	71	72.8
Torque constant $K_t$ (Nm/A)	1.21	1.17	1.2
Rotor moment of inertia $J_m$ (Kg-cm <sup>2</sup> )	7.4	12	17.7
Maintain torque $T$ (Nm)	7.5 (with brake)	12.1 (with brake)	17.8 (with brake)
pole pair number	4	4	4
Maximum voltage rising $du/dt$ (KV/ $\mu$ s)	8	8	8
Insulation class	F	F	F
Maximum radial force $F_r$ (N)	900	900	900
Maximum axial force $F_a$ (N)	450	450	450
Weight $G$ (Kg)	6.2	7.5	9.1
	8.5 (with brake)	9.8 (with brake)	11.4 (with brake)
Length of motor $L$ (mm)	143±1.5	159±1.5	179±1.5
	204±1.5 (with brake)	220±1.5 (with brake)	240±1.5 (with brake)
Position feedback device	2500 P/R Incremental encoder		
Cooling method	Totally enclosed, non - ventilated		
Protection level	IP65, shaft sealing IP54		
Environment conditions for operation	Temperature	- 20 ~ 40°C (non-freezing)	
	Humidity	Below 90 % RH ( no condensation )	
	Ambient environment	Away from active gas,combustible gas,oil drops and dust	
	Altitude	Maximum altitude 4000 m, rated power at 1000 m or below. Above 1000m, decreasing 1.5 % per every 100m rise	

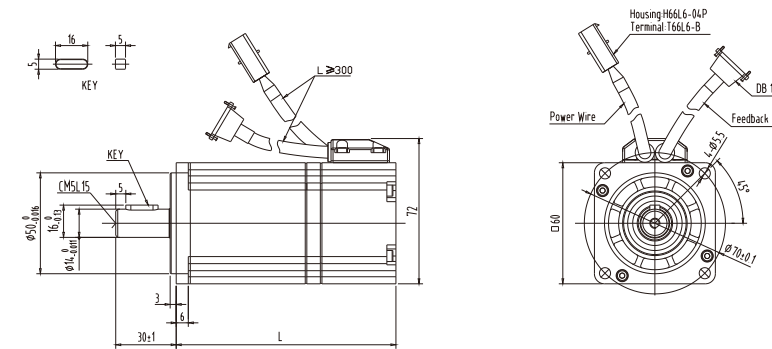
**Note:** □=A — without brake  
 □=B — with brake



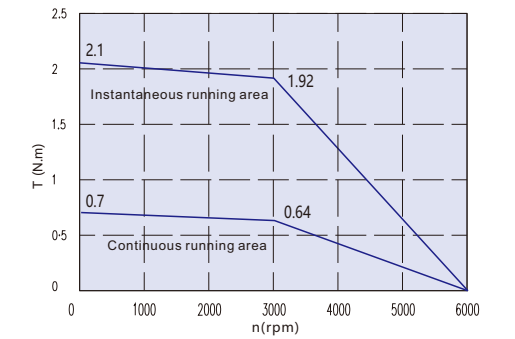
Model		SMC Series Motor		
		Medium inertia flange size 130mm		
Driver matching		SMC130D-0150-20A□K-4HKP	SMC130D-0200-20A□K-4HKP	SMC130D-0300-20A□K-4HKP
DC link voltage UDC		FD612S-CA-000 FD612S-LA-000 FD612S-EA-000 CD612S-AA-000		FD622S-CA-000 FD622S-LA-000 FD622S-EA-000 CD622S-AA-000
DC link voltage UDC		560	560	560
Maintain torque	Rated power $P_N$ (W)	1500	2000	3000
	Rated torque $T_N$ (Nm)	7.2	9.6	14.3
	Rated speed $n_N$ (rpm)	2000	2000	2000
	Rated current $I_N$ (A)	4.5	6.2	6.7
maximum torque $T_m$ (Nm)		18	24	35.75
maximum current $I_m$ (A)		13.5	18.6	20.1
Standstill torque $T_s$ (Nm)		7.92	10.56	15.73
Standstill current $I_s$ (A)		4.95	6.82	7.37
Resistance Line - Line $R_L$ ( $\Omega$ )		3.44	1.72	1.74
Inductance Line - Line $L_L$ (mH)		31.26	17.1	18.9
Electrical time constant $\tau_e$ (ms)		9.09	9.9	10.86
Mechanical time constant $\tau_m$ (ms)		2.33	1.85	1.59
		2.35 (with brake)	1.86 (with brake)	1.59 (with brake)
Reverse voltage constant $K_e$ (V/krpm)		106	102	142
Torque constant $K_t$ (Nm/A)		1.75	1.69	2.35
Rotor moment of inertia $J_m$ (Kg·cm <sup>2</sup> )		12	17.7	29.1
		12.1 (with brake)	17.8 (with brake)	29.2 (with brake)
Maintain torque $T$ (Nm)		10	10	10
pole pair number		4	4	4
Maximum voltage rising $du/dt$ (KV/ $\mu$ s)		8	8	8
Insulation class		F	F	F
Maximum radial force $F_r$ (N)		900	900	900
Maximum axial force $F_a$ (N)		450	450	450
Weight $G$ (Kg)		7.5	9.1	12.3
		9.8 (with brake)	11.4 (with brake)	14.9 (with brake)
Length of motor $L$ (mm)		159±1.5	179±1.5	219±1.5
		220±1.5 (with brake)	240±1.5 (with brake)	280±1.5 (with brake)
Position feedback device		2500 P/R Incremental encoder		
Cooling method		Totally enclosed, non - ventilated		
Protection level		IP65, shaft sealing IP54		
Environment conditions for operation	Temperature	- 20 ~ 40°C ( non-freezing )		
	Humidity	Below 90 % RH ( no condensation )		
	Ambient environment	Away from active gas,combustible gas,oil drops and dust		
	Altitude	Maximum altitude 4000 m, rated power at 1000 m or below. Above 1000m, decreasing 1.5 % per every 100m rise.		

Note: □=A — without brake  
 □=B — with brake

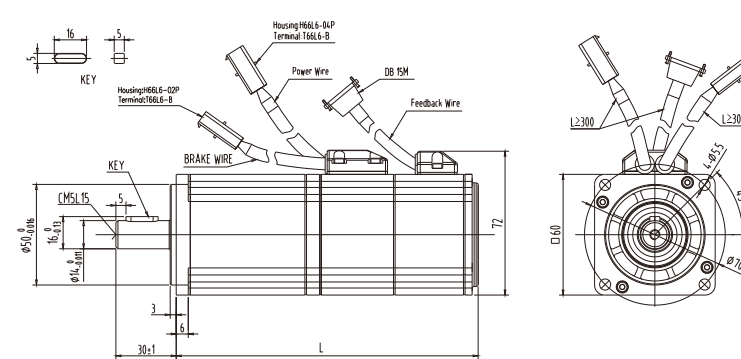
## SMC Series 60 Flange Lead - Out Motor



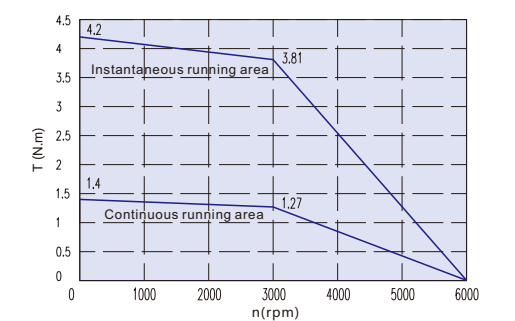
## SMC60S-0020-30A□K-3LK□ 200W



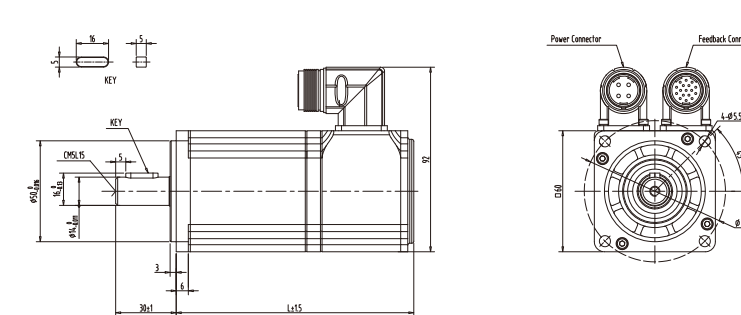
## SMC Series 60 Flange Lead - Out Motor (with brake)



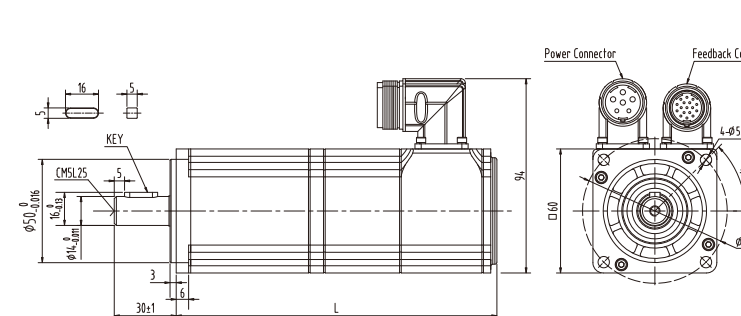
## SMC60S-0040-30A□K-3LK□ 400W



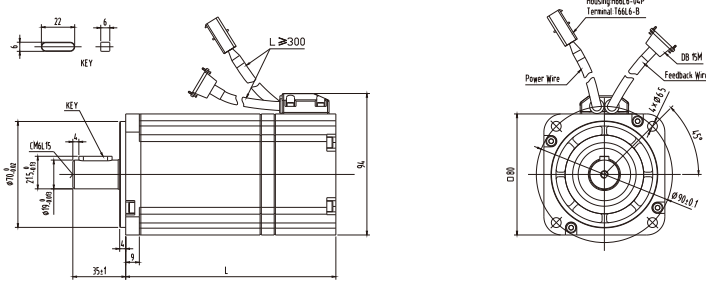
## SMC Series 60 Flange HFO Aviation Socket Motor



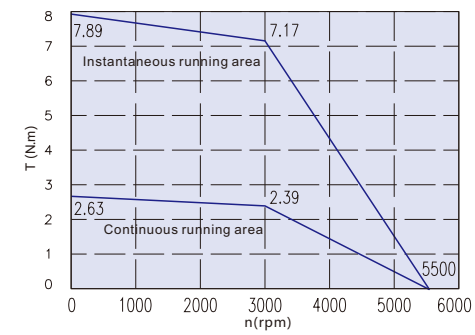
## SMC Series 60 Flange HFO Aviation Socket Motor (with brake)



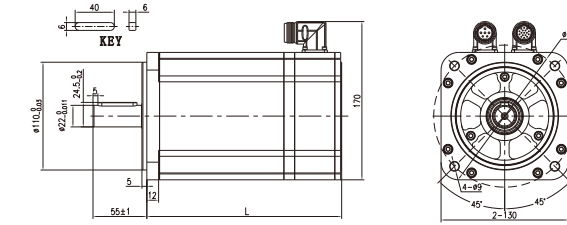
## SMC Series 80 Lange Lead - Out Motor



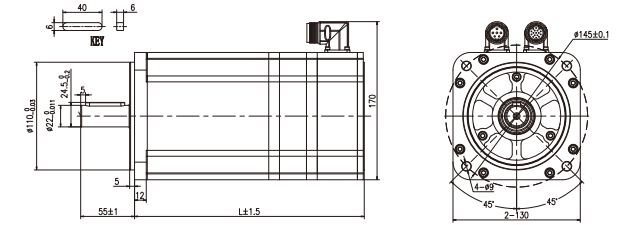
## SMC80S-0075-30A □ K-3LK □ 750W



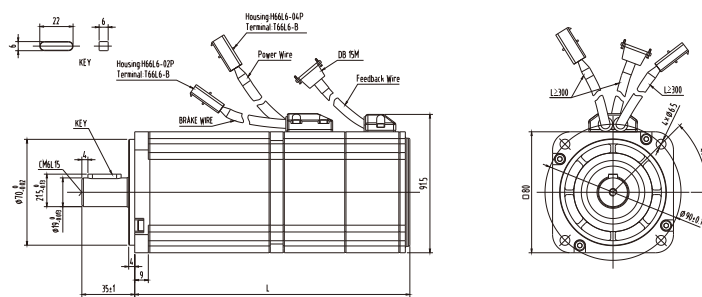
## SMC Series 130 Flange General Aviation Socket Motor



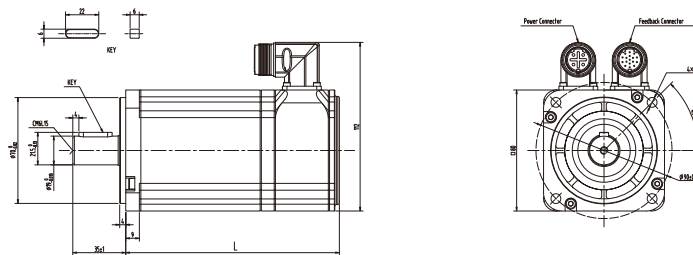
## SMC Series 130 Flange General Aviation Socket Motor (with brake)



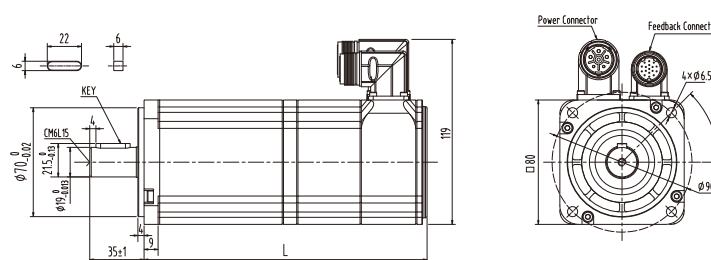
## SMC Series 80 Flange Lead - Out Motor (with brake)



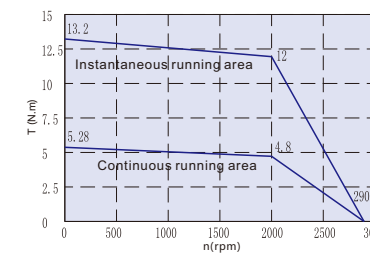
## SMC Series 80 Flange HFO Aviation Socket Motor



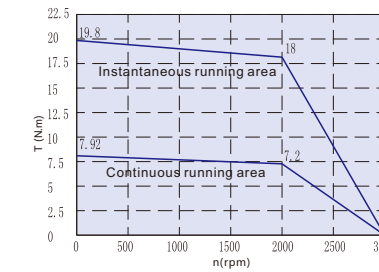
## SMC Series 80 Flange HFO Aviation Socket Motor (with brake)



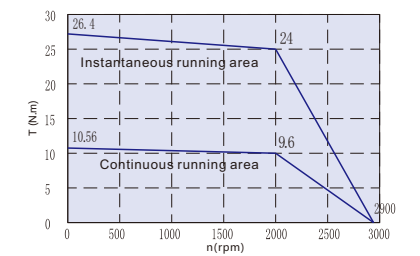
## SMC130D-0100-20A □ K-4LKP



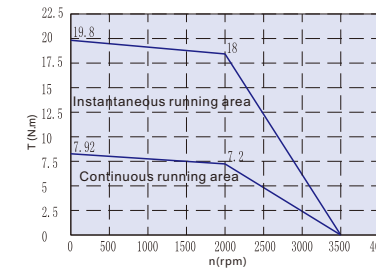
## SMC130D-0150-20A □ K-4LKP



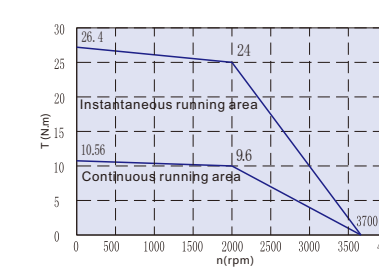
## SMC130D-0200-20A □ K-4LKP



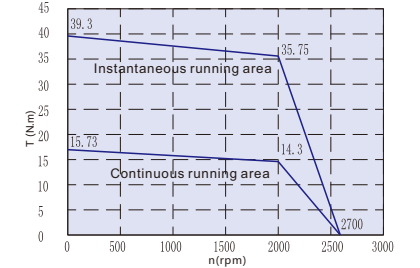
## SMC130D-0150-20A □ K-4HKP



## SMC130D-0200-20A □ K-4HKP



## SMC130D-0300-20A □ K-4HKP





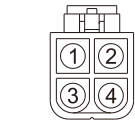
# Power Cable Wiring List

# Power Cable Wiring List

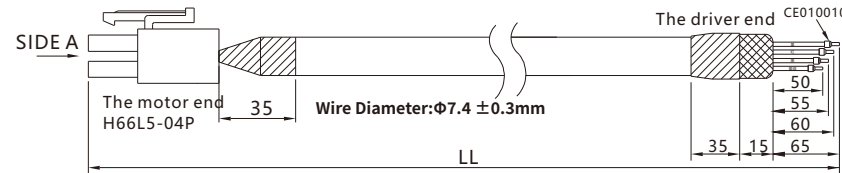
## MOT-005-LL-KL

Wire Spec: UL2586 4C\*18AWG(41/0.16T)  
18AWG cross sectional area=0.8107mm<sup>2</sup>

Wire color	Signal	4PIN Terminal
White	U	PIN1
Red	V	PIN2
Black	W	PIN3
Yellow green	PE	PIN4



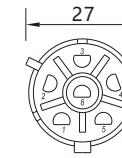
Side A  
4 pin connector



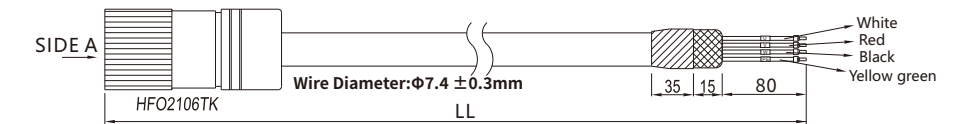
## MOT-005-LL-KC4

Wire Spec: UL2586 4C\*18AWG(41/0.16T)  
18AWG cross sectional area=0.8107mm<sup>2</sup>

Wire color	Signal	HFO2106TK
White	U	PIN2
Red	V	PIN3
Black	W	PIN4
Yellow green	PE	PIN6



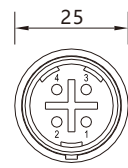
Side A  
6PIN



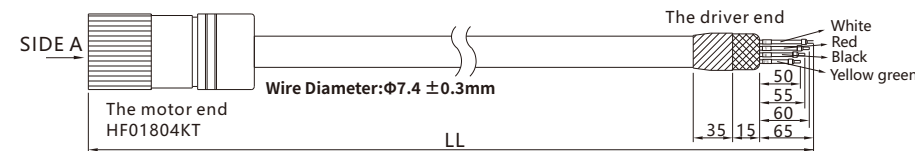
## MOT-005-LL-KC0

Wire Spec: UL2586 4C\*18AWG(41/0.16T)  
18AWG cross sectional area=0.8107mm<sup>2</sup>

Wire color	Signal	4PIN Terminal
White	U	PIN2
Red	V	PIN3
Black	W	PIN4
Yellow green	PE	PIN1
Metal ring	Shield	Shielded



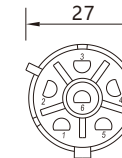
Side A  
4 PIN



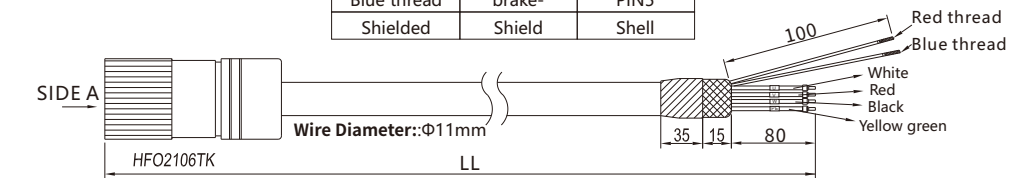
## MOT-005-LL-KC4-B

Wire Spec: RVVYP 4\*18AWG+2\*20AWG BLACK  
18AWG cross sectional area=0.8107mm<sup>2</sup>  
20AWG cross sectional area=0.5189mm<sup>2</sup>

Wire color	Signal	HFO2106TK
White	U	PIN2
Red	V	PIN3
Black	W	PIN4
Yellow green	PE	PIN6
Red thread	brake+	PIN1
Blue thread	brake-	PIN5
Shielded	Shield	Shell



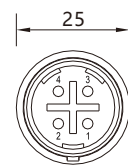
Side A  
6PIN



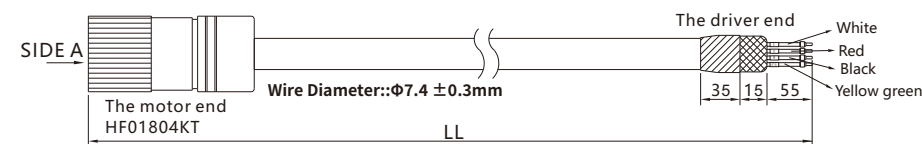
## MOTE-005-LL-KC0

Wire Spec: UL2586 4C\*18AWG(41/0.16T)  
18AWG cross sectional area=0.8107mm<sup>2</sup>

Wire color	Signal	4PIN Terminal
White	U	PIN2
Red	V	PIN3
Black	W	PIN4
Yellow green	PE	PIN1
Metal ring	Shield	Shielded

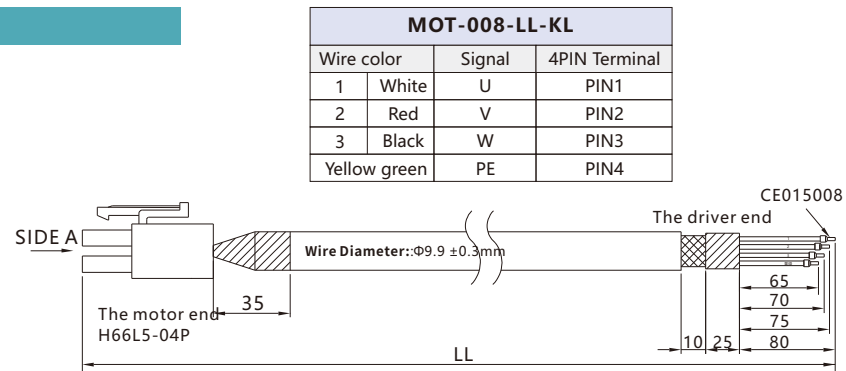


Side A  
4 PIN



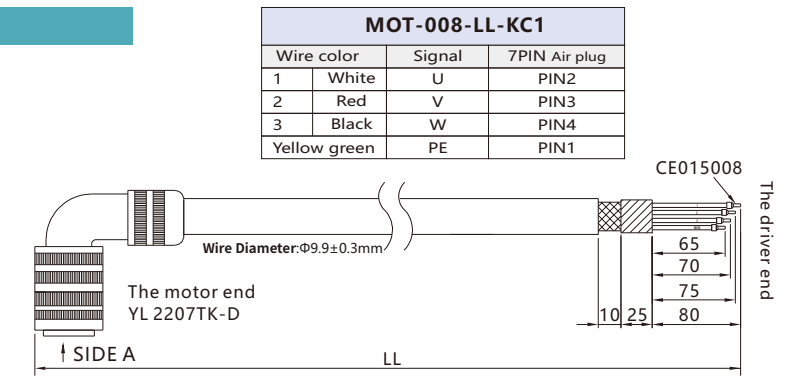
## MOT-008-LL-KL

Wire Spec: UL2586 4\*16AWG  
16AWG cross sectional area=1.318mm<sup>2</sup>



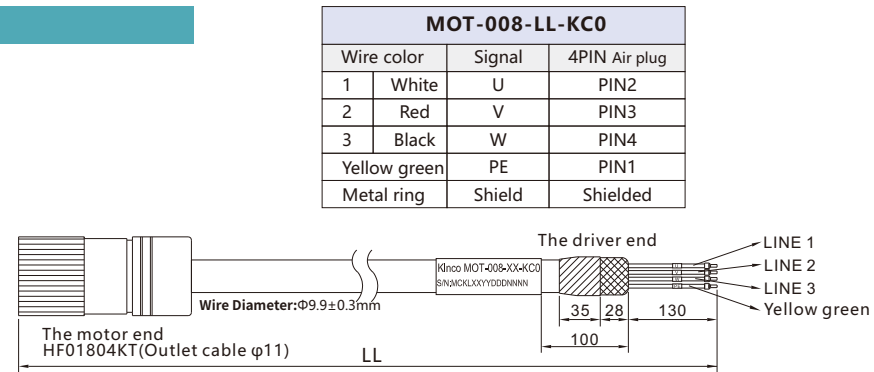
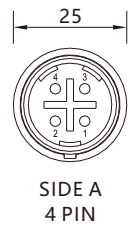
## MOT-008-LL-KC1

Wire Spec: UL2586 4\*16AWG  
16AWG cross sectional area=1.318mm<sup>2</sup>



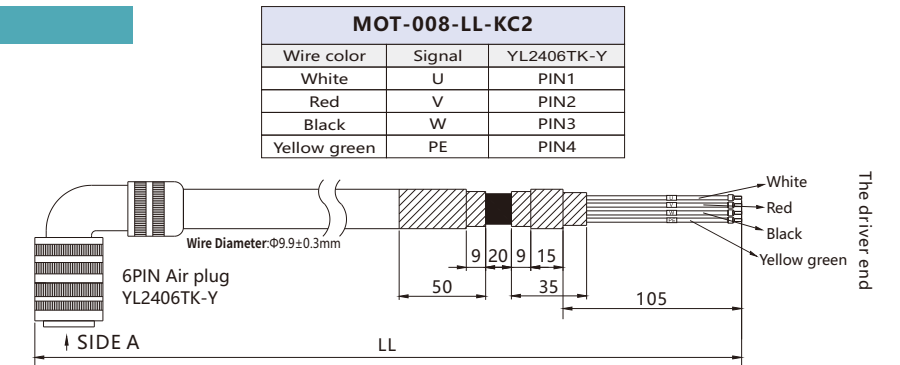
## MOT-008-LL-KC0

Wire Spec: UL2586 4\*16AWG  
16AWG cross sectional area=1.318mm<sup>2</sup>



## MOT-008-LL-KC2

Wire Spec: UL2586 4\*16AWG  
16AWG cross sectional area=1.318mm<sup>2</sup>

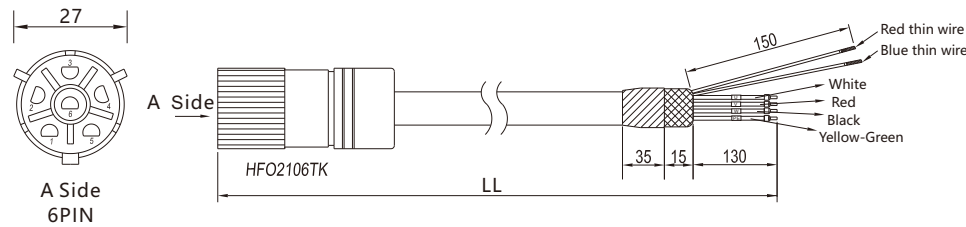


# Power Cable Wiring List

# Power Cable Wiring List

## MOT-008-LL-KC4-B

Wire Spec. 4x1.5mm<sup>2</sup>+2x0.5mm<sup>2</sup>

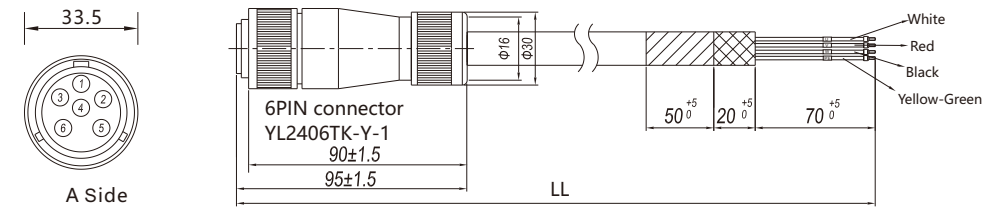


Cable color	Signal	HFO2106TK
White	U	PIN2
Red	V	PIN3
Black	W	PIN4
Yellow-Green	PE	PIN6
Red thin wire	brake+	PIN1
Blue thin wire	brake-	PIN5

## MOT-015-LL-KC2

Power Cable Cableplus UL2856 4x14AWG(50/0.25T)

The sectional area of 14AWG is 2.075mm<sup>2</sup>

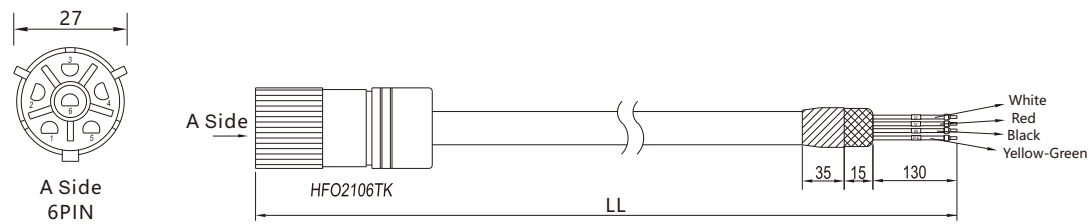


Cable color	Signal	YL2406TK-Y-1
White	U	PIN1
Red	V	PIN2
Black	W	PIN3
Yellow-Green	PE	PIN4
Shield terminal	Shield	Metal ring

## MOT-008-LL-KC4

Wire Spec. UL2586 4x16AWG

The sectional area of 16AWG is 1.318mm<sup>2</sup>

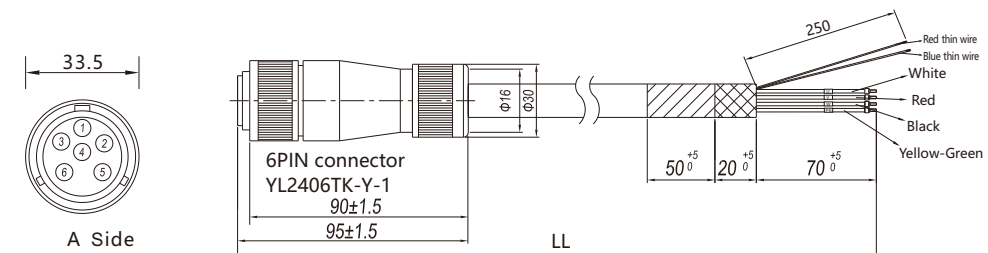


Cable color	Signal	HFO2106TK
White	U	PIN2
Red	V	PIN3
Black	W	PIN4
Yellow-Green	PE	PIN6

## MOT-015-LL-KC2-B

Power Cable Cableplus

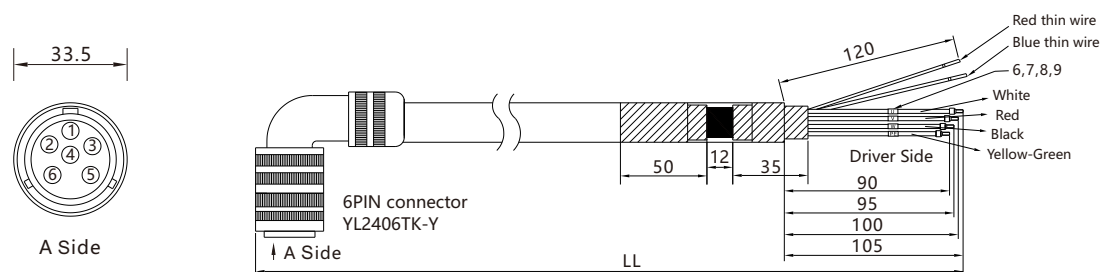
EKM715734x2.5mm<sup>2</sup>+2x0.5mm<sup>2</sup>



Cable color	Signal	YL2406TK-Y-1
White	U	PIN1
Red	V	PIN2
Black	W	PIN3
Yellow-Green	PE	PIN4
Red thin wire	brake+	PIN5
Blue thin wire	brake-	PIN6
Shield terminal	Shield	Metal ring

## MOT-008-LL-KC2-B

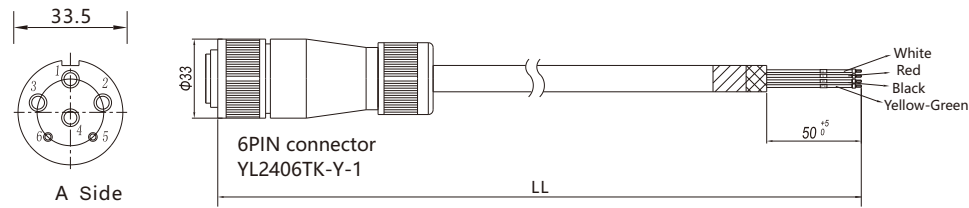
Wire Spec. ECHU RVVYP 4x1.5mm<sup>2</sup>+2x0.5mm<sup>2</sup>



Cable color	Signal	YL2406TK-Y
White	U	PIN1
Red	V	PIN2
Black	W	PIN3
Yellow-Green	PE	PIN4
Red thin wire	brake+	PIN5
Blue thin wire	brake-	PIN6
Shield terminal	Shield	Metal ring

## MOT-030-LL-KC3

Wire Spec. ECHU RVVYP 4×4mm<sup>2</sup>

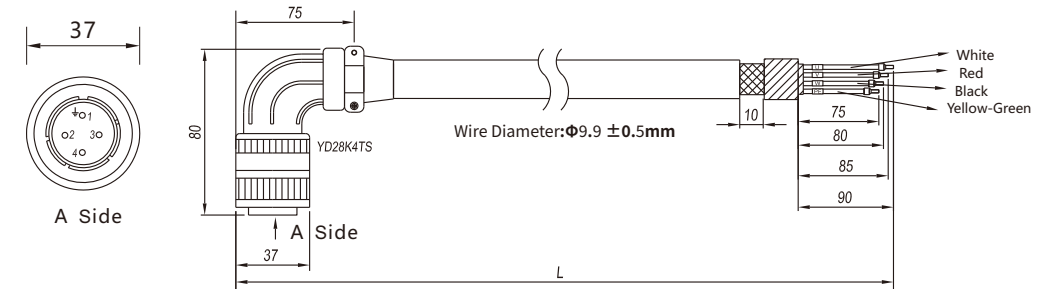


MOT-030-LL-KC3		
Cable color	Signal	YL2406TK-Y-1
White	U	PIN1
Red	V	PIN2
Green	W	PIN3
Yellow-Green	PE	PIN4
Shield terminal	Shield	Metal ring

## MOT-008-LL-KG1

Wire specifications: 4C\*16AWG

16AWG Corresponding sectional area 1.318mm<sup>2</sup>

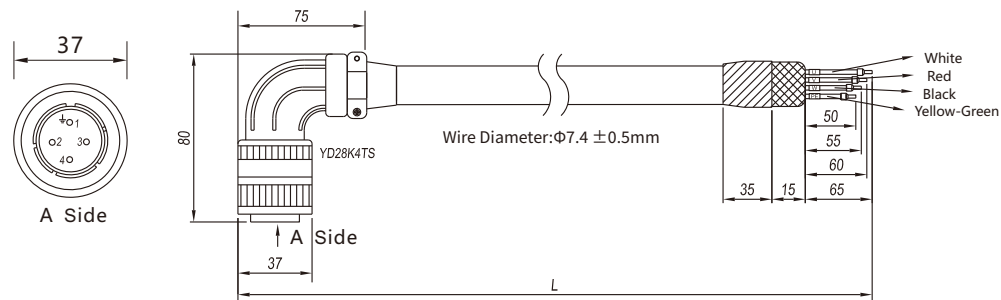


MOT-008-LL-KG1		
Color	Signal	YD28K4TS aviation plug
White	U	PIN2
Red	V	PIN3
Black	W	PIN4
Yellowgreen	PE	PIN1
shield	shielding	PIN1

## MOT-005-LL-KG1

Wire specifications: 4C\*18AWG(41/0.16T)

18AWG Corresponding sectional area 0.8107mm<sup>2</sup>

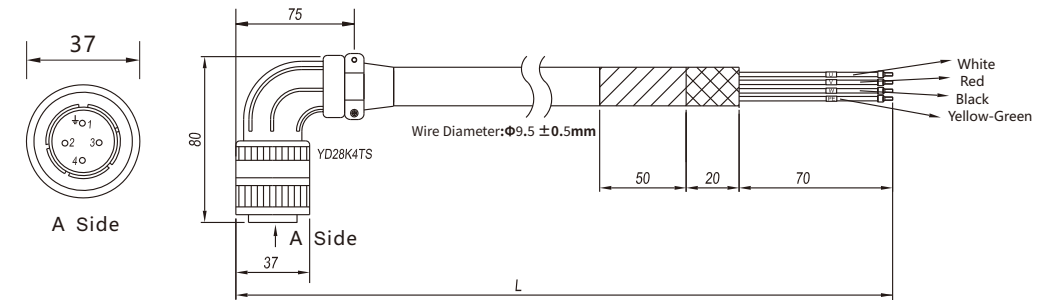


MOT-005-LL-KG1		
Color	Signal	YD32K4TS aviation plug
White	U	PIN2
Red	V	PIN3
Black	W	PIN4
Yellowgreen	PE	PIN1
shield	shielding	PIN1

## MOT-015-LL-KG1

Wire specifications: 4\*14AWG(50/0.25T)

14AWG Corresponding sectional area 2.075mm<sup>2</sup>



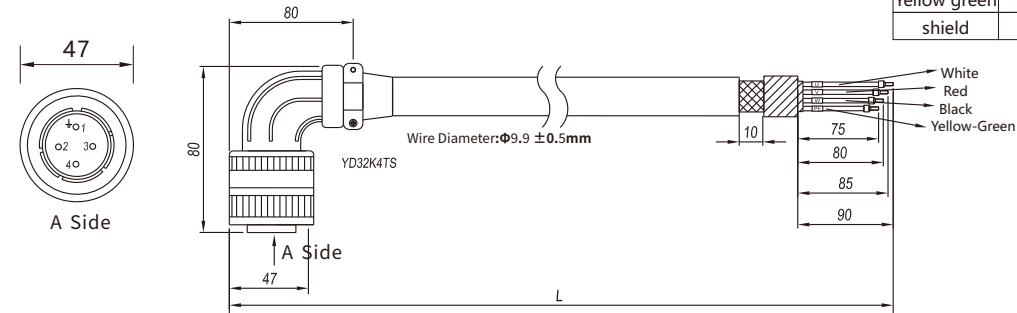
MOT-015-LL-KG1		
Color	Signal	YD28K4TS aviation plug
White	U	PIN2
Red	V	PIN3
Black	W	PIN4
Yellowgreen	PE	PIN1
shield	shielding	PIN1



## MOT-008-LL-KG2

Wire specifications: 4\*16AWG  
16AWG Corresponding sectional area 1.318mm<sup>2</sup>

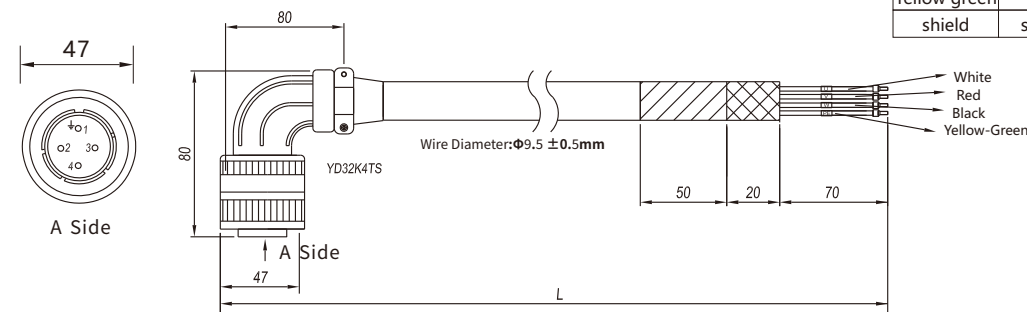
MOT-008-LL-KG2		
Color	Signal	YD32K4TS aviation plug
White	U	PIN2
Red	V	PIN3
Black	W	PIN4
Yellow green	PE	PIN1
shield	shielding	PIN1



## MOT-015-LL-KG2

Wire specifications: 4\*14AWG(50/0.25T)  
14AWG Corresponding sectional area 2.075mm<sup>2</sup>

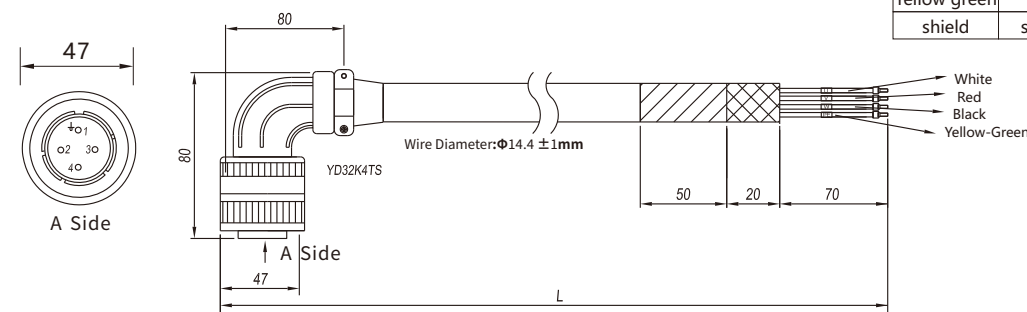
MOT-015-LL-KG2		
Color	Signal	YD32K4TS aviation plug
White	U	PIN2
Red	V	PIN3
Black	W	PIN4
Yellow green	PE	PIN1
shield	shielding	PIN1



## MOT-030-LL-KG2

Wire specifications: 4\*4mm<sup>2</sup>

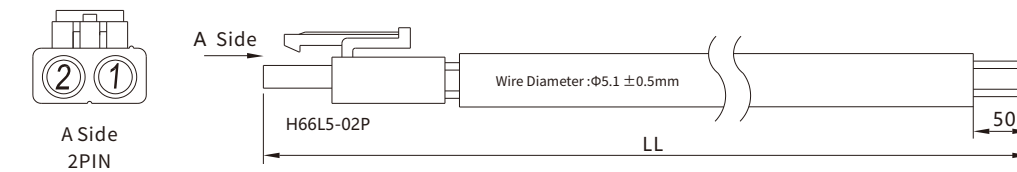
MOT-030-LL-KG2		
Color	Signal	YD32K4TS aviation plug
White	U	PIN2
Red	V	PIN3
Black	W	PIN4
Yellow green	PE	PIN1
shield	shielding	PIN1



## BRA-LL-KL

Wire specifications: 2C\*20AWG  
20AWG Corresponding sectional area 0.5189mm<sup>2</sup>

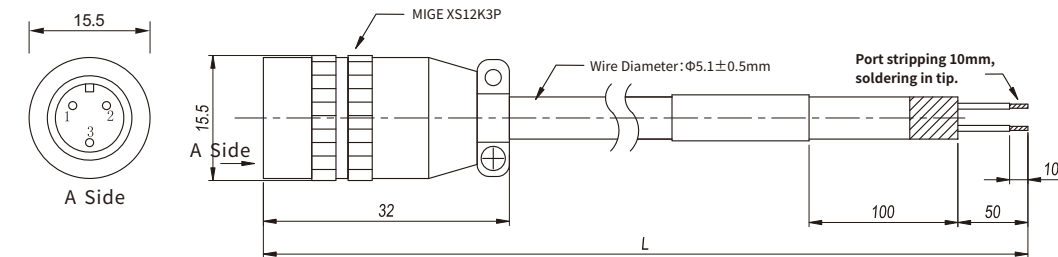
BRA-LL-KL		
Color	Signal	2PIN plug
Red	brake+	PIN1
Blue	brake-	PIN2



## BRA-LL-MG

Wire specifications: 2\*20AWG  
20AWG Corresponding sectional area 0.5189mm<sup>2</sup>

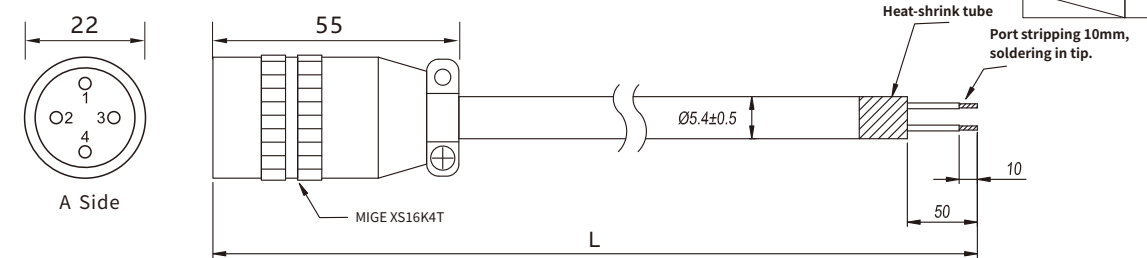
BRA-LL-MG		
Color	Signal	PIN
Red	brake+	PIN1
Blue	brake-	PIN2



## BRA-LL-MG1

Wire specifications: 2\*20AWG  
20AWG Corresponding sectional area 0.5189mm<sup>2</sup>

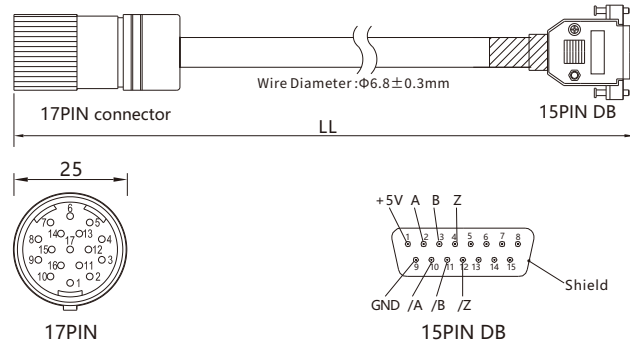
BRA-LL-MG1		
Color	Signal	PIN
Red	brake+	PIN1
Blue	brake-	PIN2
		PIN3
		PIN4



# Wiring Diagram for The Encoder Cable

## ENCFF-LL-FC0

Wire specifications: 24AWG/1P+28AWG/4P+AB(85%) 1061  
 The sectional area of 24AWG is 0.2047mm<sup>2</sup>  
 The sectional area of 28AWG is 0.0804mm<sup>2</sup>

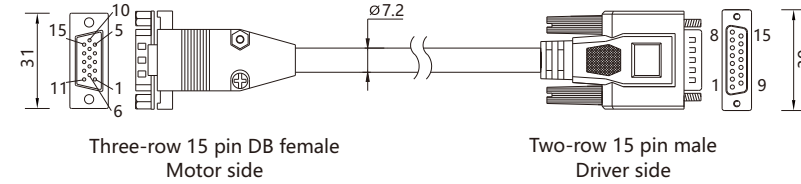


## ENCFF-LL-FC0

17PIN connector	15PIN DB	Signal	External wire colour	Motor wire colour
PIN1	PIN1	+5V	Red(thick)	Red
PIN3	PIN2	A	Brown	Blue-black
PIN5	PIN3	B	Yellow	Green
PIN14	PIN4	Z	Green	Yellow
PIN2	PIN9	GND	Black(thick)	Black
PIN4	PIN10	/A	Brown-white	Blue
PIN6	PIN11	/B	Yellow-white	Green-black
PIN15	PIN12	/Z	Green-white	Yellow-black
Other pins empty	Other pins empty			
Metal coil	Shell	Shield	Shield	Shield

## ENCCA-LL-KH

Wire Spec. 1P×24AWG(7/0.20T)+7P×28AWG(7/0.127T)  
 The sectional area of 24AWG is 0.2047mm<sup>2</sup>  
 The sectional area of 28AWG is 0.0804mm<sup>2</sup>

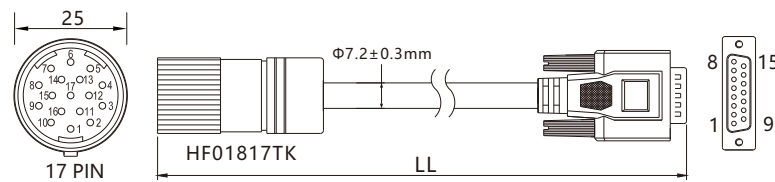


## ENCCA-LL-KH

Three-row 15 pin DB	Two-row 15 pin DB	Signal	External wire color	Motor wire color
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-white	Gray
PIN3 empty	PIN8 empty			
Metal shell	DB metal shell	Shield	Shield	Metal shell

## ENCCA-LL-KC0

Wire specifications: 24AWG/1P+28AWG/7P+AB 1061  
 The sectional area of 24AWG is 0.2047mm<sup>2</sup>  
 The sectional area of 28AWG is 0.0804mm<sup>2</sup>

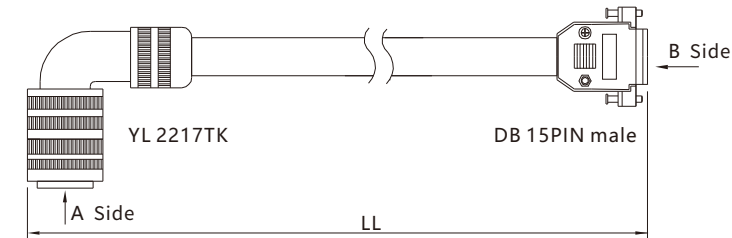


## ENCCA-LL-KC0/ENCCA-LL-KC1

17PIN	15PIN DB	Signal	External wire colour	Motor wire colour
PIN1	PIN1	+5V	Red(thick)	Red
PIN3	PIN2	A	Orange	Blue
PIN5	PIN3	B	Yellow	Green
PIN14	PIN4	Z	Green	Yellow
PIN9	PIN5	U	Brown	Brown
PIN11	PIN6	V	Purple	Gray
PIN16	PIN7	W	Blue	White
PIN2	PIN9	GND	Black(thick)	Black
PIN4	PIN10	/A	Orange-white	Blue-black
PIN6	PIN11	/B	Yellow-white	Green-black
PIN15	PIN12	/Z	Green-white	Yellow-black
PIN10	PIN13	/U	Brown-white	Brown-black
PIN12	PIN14	/V	Purple-white	Gray-black
PIN17	PIN15	/W	Blue-white	White-black
Internal metal ring	DB metal shell	Shield	Shield	Shield

## ENCCR-LL-FC1

Wire Spec. UL2464 24AWG/1P+28AWG/4P  
 The sectional area of 24AWG is 0.2047mm<sup>2</sup>  
 The sectional area of 28AWG is 0.0804mm<sup>2</sup>

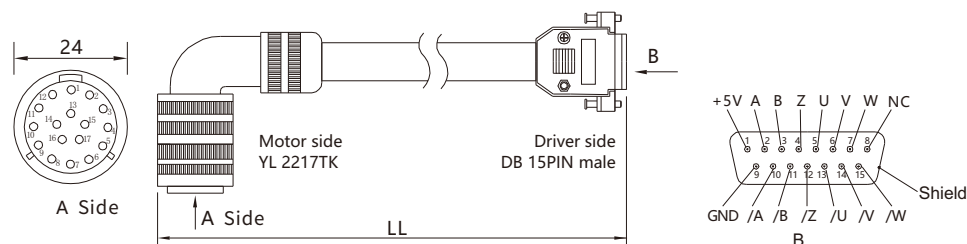


## ENCCR-LL-FC1

YL2217TK	15PIN DB	Signal	Wire color
PIN1	PIN6	ref+	Brown
PIN2	PIN14	ref-	Brown-white
PIN3	PIN2	cos+	Green
PIN4	PIN10	cos-	Green-white
PIN5	PIN3	sin+	Yellow
PIN6	PIN11	sin-	Yellow-white
PIN7	PIN8	KTY+	Blue
PIN8	PIN9	KTY-	Blue-white
Metal ring	Metal shell	Shield	Shield

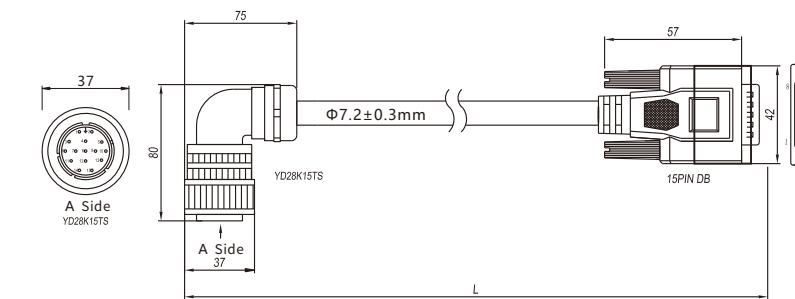
## ENCCA-LL-KC1

Wire specifications: 24AWG/1P+28AWG/7P+AB 1061  
 The sectional area of 24AWG is 0.2047mm<sup>2</sup>  
 The sectional area of 28AWG is 0.0804mm<sup>2</sup>



## ENCCA-LL-KG1

Wire specifications: 24AWG/1P+28AWG/7P+AB 1061  
 24AWG Corresponding sectional area 0.2047mm<sup>2</sup>  
 28AWG Corresponding sectional area 0.0804mm<sup>2</sup>



## ENCCA-LL-KG1

YD28K15TS	15PIN DB	Signal	Color
PIN2	PIN1	+5V	Red (thick)
PIN4	PIN2	A	Orange
PIN5	PIN3	B	Yellow
PIN6	PIN4	Z	Green
PIN10	PIN5	U	Brown
PIN11	PIN6	V	Purple
PIN12	PIN7	W	Blue
PIN3	PIN9	GND	Black (thick)
PIN7	PIN10	/A	Orangewhite
PIN8	PIN11	/B	Yellowwhite
PIN9	PIN12	/Z	Greenwhite
PIN13	PIN13	/U	Brownwhite
PIN14	PIN14	/V	Purplewhite
PIN15	PIN15	/W	Bluewhite
PIN1	DB metal part	PE	Shield