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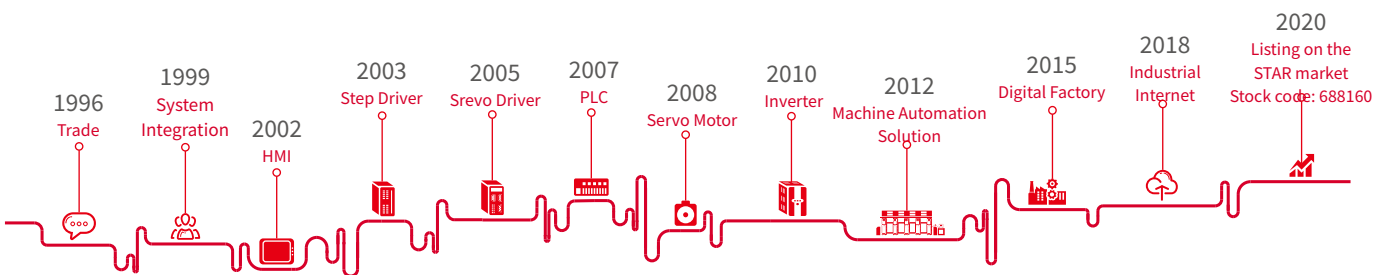


Motion
Control
Servo System

➔ Servo System Catalog

- CD3/FD3 Series Servo Driver
- Servo Motor



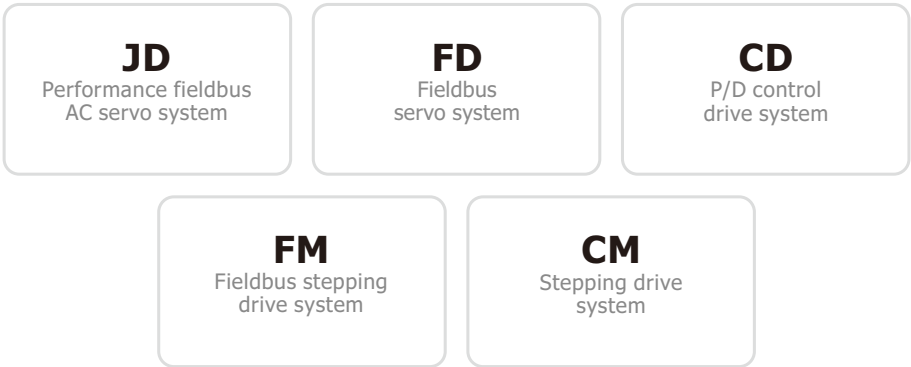


Shanghai Kinco Co., Ltd. specializes in research and development, production, sales and technical services of mobility standard products and intelligent hardware products, and is China's leading supplier of machine mobility and intelligent solutions. In 1996, Bucco relied on the HMI, servo system, stepping system, programmable logic controller PLC, low voltage inverter and other standard automation products to provide the whole world with moving equipment manufacturers. Solution, let China move the banner of the solution to the whole world. The company's mechanical products have led the popularization of HMI in China, and its market share has remained a leading position among the brands for many years.

The company's mission is to "make Chinese manufacturing the world's top manufacturing". It insists on the research and development of technology platform for resource precession, and has research and development institutions in Shanghai, Shenzhen and Changzhou. The company already has a comprehensive range of controls, drivers, Mobile technology platforms for machine interaction, communication and mechatronic design. In the field of machine movement, Kinco focuses on the industry and has developed machines suitable for logistics movement, service machines, medical instruments, professional machines and 3C machines. Special solutions for bed, ozone and other industries.

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

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



- Precision motor control technology originated from germany, with pulse holding, Modbus/CANopen/EtherCAT bus and other control types.
- Can drive all kinds of servo motors and stepper motors, including rotary servo motors, linear motors, direct driver, etc.
- It should be widely used in logistics AGV, 3C, medical, new energy and machinery industries.
- The product conforms to international quality and design standards and is the ODM first choice for International brand servo.

03 SUMMARIZE

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Always, good quality
power expansion 3000W

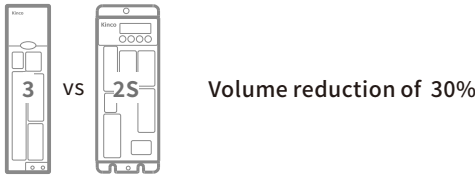
CD3/FD3AC servo family
Add new members!



CD3/FD3 Product features

CD3/FD3 series AC servo system is an economical servo product launched by Bucco to the general servo market, with a power range of 50W~3kW. It can be widely used in logistics, 3C electricity, printing and packaging, textile machinery, machinery, lithium batteries, new energy and other industries.

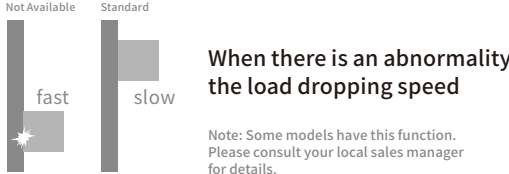
Compact structure, power density



Holding Multiple Encoder Protocols



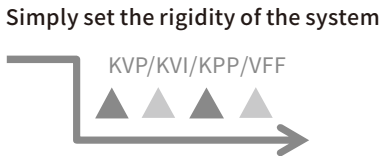
Dynamic braking



Hold fully closed loop



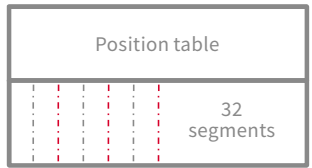
Easy Tune Gain automatic adjustment



Multi-bus communication



32-segment position table



M-IoT



- Perfect adaptation of Kinco M-IoT robot linkage solution.
- Easy access to the cloud enables real-time monitoring and pre-maintenance of equipment.
- Add the function of clearing pulse, it will track down the clamp.
- Support Motor model and parameter identification of the motor.

- Support 4MHz pulse transmission
- Support encoder frequency division output power
- Supply with 220v logic power
- Supply 5V Output

Naming Rules for Drivers and Motors/Cables

Driver: **FD423-EA-000**

① ② ③ ④ ⑤ ⑥



①-Name	CD: CD Series FD: FD Series	④ -Driver version	3: 3rd generation driver
②-Main supply power	4: input AC220V 6: input AC380V	⑤-Controlled type	EA: RS232, EtherCAT CA: RS232, CAN LA: RS232, RS485 AA: Standard for CD Series Drives Only
③-Current	1: AC220V 2A 2: AC220V 3.9A or AC380V 7A 3: AC220V 10A	⑥-Software version	000: Software version number

Motor: **SMC60S-0020-30MAK-3LSU**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫



①-Name	SMC: SMC Series SMS: SMS series	⑦-Brake	A: Without brake B: With brake
②-flang size	40: 40x40(mm) 60: 60x60(mm) 80: 80x80(mm) 130: 130x130(mm)	⑧-Motor outlet type	A: Axis without keyway K: With keys
③-Inertia type	S: Small inertia D: Medium inertia	⑨-Number of pole-pairs	3: 3 pole pair 4: 4 pole pair 5: 5 pole pair
④-Rated power:	0005: 5x10(W) 0010: 10x10(W) 0020: 20x10(W) 0040: 10x40(W)	⑩- Main supply power:	L: AC220V H: AC380V
⑤-Rated speed:	20: 20x100(rpm) 30: 30x100(rpm)	⑪-Motor version number	S: S Version K: K Version
⑥-Encoder type	M: 16 bit single-turn magnetoelectric encoder K: Multi-turn absolute encoder	⑫- Motor outlet type	U: Communication encoder socket P: HFO21+HFO18 series general aviation socket Remarks: Manually insert HFO21 and encoder insert HFO18

Naming Rules for Drivers and Motors/Cables

Power cable: **MOTF-005-LL-KL-Y**

① ② ③ ④ ⑤ ⑥



①-Cable function type	MOT: Motor power cable	④ -Cable length	03:3m/05:5m/ 10:10m 15:15m/20:20m
②-Cable type	F: Cable train cable Empty: Standard cable	⑤-Motor outlet type	KL: 4PIN power connector KC4: HFO21 Series General Aviation
③-Rated current	005: 5A 008: 8A	⑥-Joint type	Y: PE end connector is Y-shaped B: The moving wire includes brake cable (suitable for KC4 aviation socket brake motor)

Encoder cable: **ENC DGF-LL-GU-BT**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧



①-Cable function type	ENC: Motor encoder line	⑤-Cable length	03:3m/05:5m/ 10:10m 15:15m/20:20m
②-Driver encoder port type	D: 1394 connection	⑥-Core wire type	G: 6-core cable
③ Driver connection definition	G: Communication connection	⑦-Type of encoder connector at motor end	U: 1394 connector C0: HFO series general aviation plug
④-Cable type	F: Flexible cable Empty: Standard cable	⑧ Cable accessories	BT: With battery (suitable for multi-turn absolute encoder motor) Empty: Without battery

Brake cable: **BRAF-LL-KL**

① ② ③ ④



①-Cable function type	BRA: Motor brake line	③-Cable length	03:3m/05:5m/ 10:10m 15:15m/20:20m
②-Cable type	F: Flexible cable Empty: Standard cable	④ -Connector type	KL: 2PIN Brake plug

Driver and Motor Configuration

	AC220V	50W		SMC40S-0005-30M□K-5LSU SMS40S-0005-30K□K-5LSU
		100W		SMC40S-0010-30M□K-5LSU SMS40S-0010-30K□K-5LSU
		200W		SMC60S-0020-30M□K-3LSU SMS60S-0020-30K□K-3LSU
	AC220V	400W		SMC60S-0040-30M□K-3LSU SMS60S-0040-30K□K-3LSU
		750W		SMC80S-0075-30M□K-3LSU SMS80S-0075-30K□K-3LSU
		1kW		SMC130D-0100-20G□K-4LSP SMS130D-0100-20K□K-4LKP
	AC220V	1.5kW		SMC130D-0150-20G□K-4LSP SMS130D-0150-20K□K-4LKP
		2kW		SMC130D-0200-20G□K-4LSP SMS130D-0200-20K□K-4LKP
		2kW		SMC130D-0200-20G□K-4LSP SMS130D-0200-20K□K-4LKP
	AC380V	1kW		SMC130D-0100-20G□K-4HSP
		1.5kW		SMC130D-0150-20G□K-4HSP SMS130D-0150-20K□K-4HKP
		2kW		SMC130D-0200-20G□K-4HSP SMS130D-0200-20K□K-4HKP
		3kW		SMC130D-0300-20G□K-4HSP SMS130D-0300-20K□K-4HKP
		3kW		SMC130D-0300-20G□K-4HSP SMS130D-0300-20K□K-4HKP
		3kW		SMC130D-0300-20G□K-4HSP SMS130D-0300-20K□K-4HKP

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

Driver Model List

Series	Model	Power (W)	Main supply voltage	MAX continuous output current (Arms) (A)	Peak current (A)	Control model	Weight (Kg)	Mechanical dimensions (mm)
CD Series	CD413-AA-000	50/100/200	AC220V	2	7	Pulse	0.8	160×138×41
	CD423-AA-000	400/750		3.9	15		1.33	194×185×56
	CD433-AA-000	1000/1500/2000	10	27.5				
	CD623-AA-000	1000/1500/2000/3000	AC380V	7	25			
FD Series	FD413-LA-000	50/100/200	AC220V	2	7	RS485	0.8	160×138×41
	FD413-CA-000					CANopen		
	FD413-EA-000					EtherCAT		
	FD423-LA-000					RS485		
	FD423-CA-000	400/750		3.9	15	CANopen	1.33	194×185×56
	FD423-EA-000					EtherCAT		
	FD433-LA-000	1000/1500/2000		10	27.5	RS485		
	FD433-CA-000					CANopen		
	FD433-EA-000					EtherCAT		
	FD623-LA-000					RS485		
	FD623-CA-000	1000/1500/2000/3000	AC380V	7	25	CANopen	1.33	194×185×56
	FD623-EA-000					EtherCAT		

Motor Model List

Flange size	Model	Rated power Pn(W)	Rated torque Tn(Nm)	Rated speed nN(rpm)	Rated current In(A)	Diameter of axle (mm)	Length of motor (mm)		
							□=A	□=B (with brake)	
40mm	SMC40S-0005-30M□K-5LSU SMS40S-0005-30K□K-5LSU	50	0.16	3000	0.7	8	74.6±1.5	104.6±1.5	
	SMC40S-0010-30M□K-5LSU SMS40S-0010-30K□K-5LSU	100	0.32		1.4		96.6±1.5	126.6±1.5	
	60mm	SMC60S-0020-30M□K-3LSU SMS60S-0020-30K□K-3LSU	200		0.64	14	1.4	91±1.5	121±1.5
		SMC60S-0040-30M□K-3LSU SMS60S-0040-30K□K-3LSU	400		1.27		2.4	117±1.5	147±1.5
80mm		SMC80S-0075-30M□K-3LSU SMS80S-0075-30K□K-3LSU	750		2.39		3.8	19	128.5±1.5
130mm	SMC130D-0100-20G□K-4LSP SMS130D-0100-20K□K-4LKP	1000	4.8		2000	4.4	22	143±1.5	204±1.5
	SMC130D-0100-20G□K-4HSP					2.27			
	SMC130D-0150-20G□K-4LSP SMS130D-0150-20K□K-4LKP	1500	7.2			6.8		159±1.5	220±1.5
	SMC130D-0150-20G□K-4HSP SMS130D-0150-20K□K-4HKP			4.5					
	SMC130D-0200-20G□K-4LSP SMS130D-0200-20K□K-4LKP	2000	9.6	8.8		179±1.5		240±1.5	
	SMC130D-0200-20G□K-4HSP SMS130D-0200-20K□K-4HKP			6.2					
	SMC130D-0300-20G□K-4HSP SMS130D-0300-20K□K-4HKP	3000	14.3	6.7		219±1.5		280±1.5	

CD3/FD3 Parameter Table

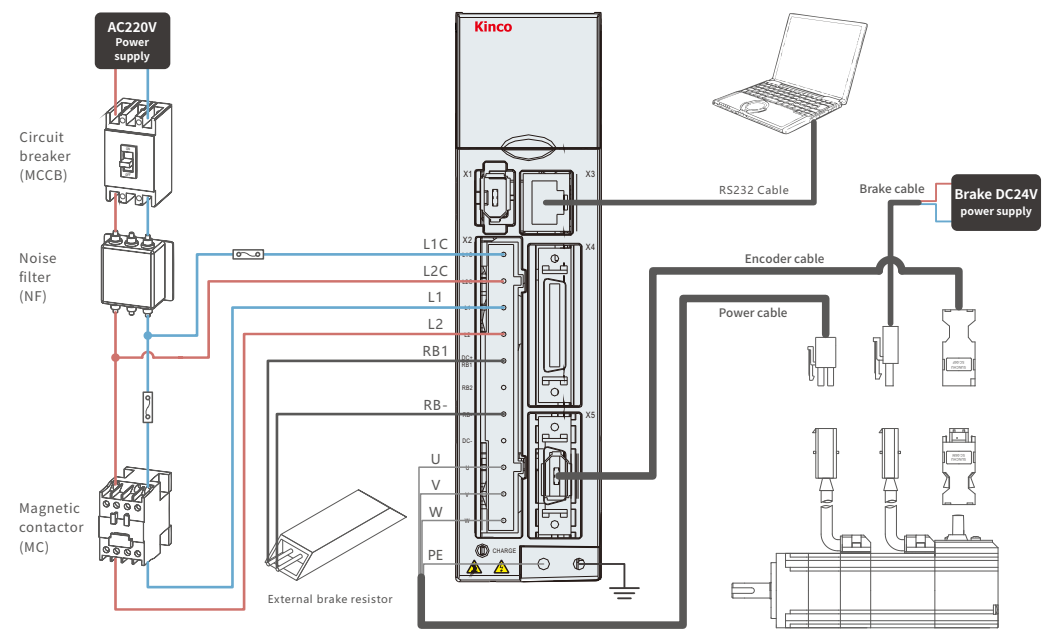
		 			
Model Parameter		CD3-Pulse servo driver			
		CD413-AA-000	CD423-AA-000	CD433-AA-000	CD623-AA-000
Power	Main supply voltage	1PH, 200-240VAC±10% 50/60Hz±3Hz, (750W 7A) , (200W 3A)		1PH, 3PH, 200-240VAC 50/60Hz 14.0A	3PH, 380-415VAC 50/60Hz 12.0A
	Control power	200-240VAC±10%, 50/60Hz±3Hz, 0.5A			
Rated output current	Rated current (rms)	2A	3.9A	10A	7A
	Peak current (PEAK)	7A	15A	27.5A	25A
Feedback signal		16 bit Single-turn magnetoelectric encoder, multi-turn absolute encoder			
Brake chopper		CD413,CD423 Built-in braking resistor 100 Ω, limiting power 10 W;CD433 Built-in braking resistor 100 Ω, limiting power 20 W; CD623 Built-in braking resistor 300 Ω, limiting power 20 W; If the actual power exceeds 10W, an external braking resistor is required. (mainly in quick start and stop application)			
Brake chopper threshold		DC380V±5V	DC380V±5V	DC380V±5V	DC680V±5V
Over-voltage alarming threshold		DC400V±5V	DC400V±5V	DC400V±5V	DC700V±5V
Under-voltage alarming threshold		DC200V±5V	DC200V±5V	DC200V±5V	DC400V±5V
Cooling method		Natural air cooling	With fan	With fan	With fan
Weight (KG)		0.8		1.33	
Position control mode	Maximum input pulse frequency	Differential transmission mode: up to 4MHz, open collector transmission mode: 500KHz			
	Pulse command mode	Pulse+direction, Ccw+CW、 phase A+ phase B (5V~24V)			
	Instruction smoothing mode	Low - pass filtering (internal parameter setting)			
	Feedforward gain	Internal parameter setting			
	Electronic gear ratio	Setting rangeGear factor:-32768~32767, Gear divider:1~32767, 1/50≤ Gear factor/Gear divider ≤50			
	Position loop sampling frequency	1KHz			
Speed control mode	Analog input voltage range	-10~+10V (Resolution 12 bits)			
	Input impedance	200K			
	Analog input sampling frequency	4KHz			
	Command control mode	External analog command / internal command			
	Instruction smoothing mode	Low - pass filtering (internal parameter setting)			
	Input voltage dead zone setting	Internal parameter setting			
	Input voltage offset setting	Internal parameter setting			
	Speed limit	Internal parameter setting			
	Torque limit	Internal parameter setting/External analog command control			
	Speed loop sampling frequency	4KHz			
Torque control mode	Analog voltage input range	-10~+10V (Resolution 12 bits)			
	Input impedance	200K			
	Input sampling frequency	4KHz			
	Command control mode	External analog command / internal command			
	Instruction smoothing mode	Low - pass filtering (Internal parameter setting)			
	Speed limit	Internal parameter setting/External analog command control			
	Input voltage dead zone setting	Internal parameter setting			
	Input voltage offset setting	Internal parameter setting			
Digital input	Input specification	7 digital inputs, with COM1 terminal for PNP (high level valid 12.5~30V) or NPN (low level valid 0~5V) connection			
	Input function	Define freely according to requirement, supporting following functions: Driver enable, driver fault reset, driver mode control, speed loop proportional control, positive limit, negative limit, homing signal, reverse command, internal speed section control, internal positive section control, quick stop, start homing, active command, switch electronic gear ratio, switch gain, Position table function, clear pulse function			
Digital output	Output specification	5 digital output, maximum voltage DC30V, differential output of OUT1 and OUT2, maximum output current of 100mA, single-ended output of OUT 3 ~ OUT 5, maximum output current of 20mA, and motor OUT2 brake output controlled by relay.			
	Output function	Define freely according to requirement, supporting following functions: Driver ready, driver fault, position reached, motor zero speed, motor brake, motor speed reached, Z signal, maximum speed obtained in torque mode, motor lock, position limiting, reference found. Multistage position.			
Encoder signal output function		Output 5V motor A, B and Z signals, frequency division output range 0 ~ 65536; For multi-axis synchronization, maximum output frequency 5MHz			
Protection function		Over-voltage protection, under-voltage protection, motor over-heat protection(I2T), short-circuit protection, driver over-heat protection, etc.			
RS232		RS232(Connection with PC: RJ45 network port)			
Operation environment	Operation temperature	0~40°C			
	Storage temperature	-10°C~70°C			
	Humidity(non-condensing)	Below 90%RH			
	Protection class	IP20			
	Installation environment	Installed in a dust-free, dry and lockable environment (such as in a electrical cabinet)			
	Installation mode	Vertical installation			
	Height	Rated working altitude at 1000m or below, Above 1000m: Decreasing 1.5% per 100m rise, maximum altitude 4000m, there is no power limit below 1000 meters.			
Atmospheric pressure		86kpa~106kpa			

CD3/FD3 Parameter Table

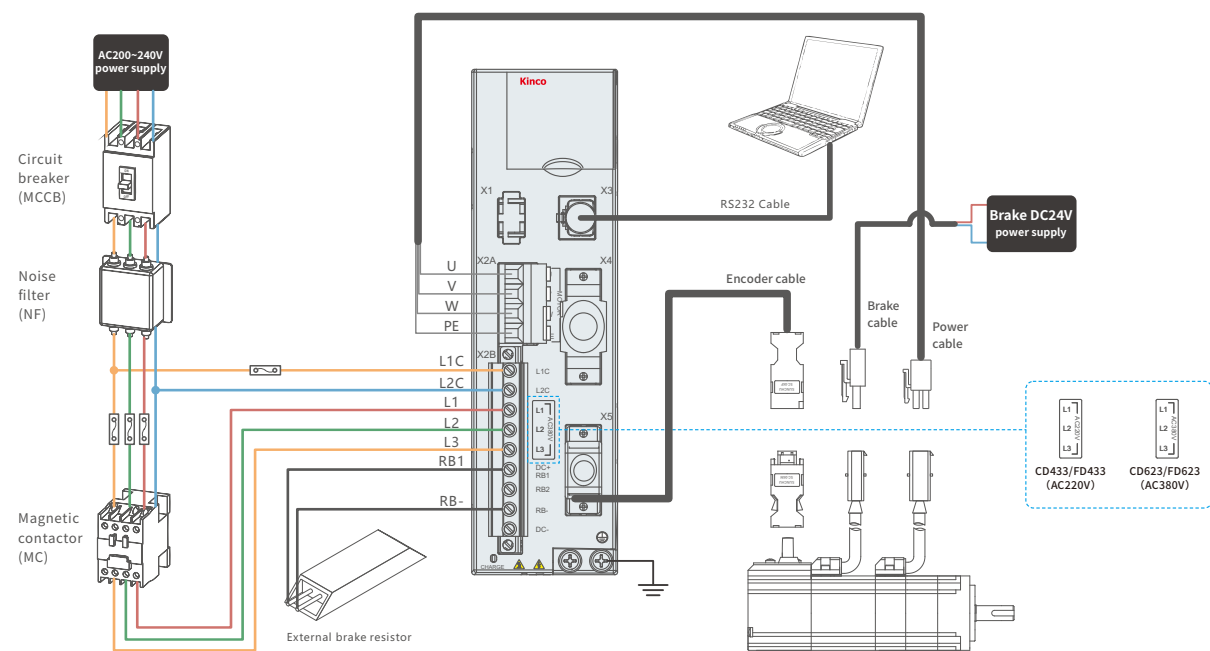
		 			
Model Parameter		FD3-Bus servo driver			
		FD413-□A-000	FD423-□A-000	FD433-□A-000	FD623-□A-000
Power	Main supply voltage	1PH, 200-240VAC±10% 50/60Hz±3Hz, (750W 7A) , (200W 3A)		1PH, 3PH, 200-240VAC 50/60Hz 14.0A	3PH, 380-415VAC 50/60Hz 12.0A
	Control power	200-240VAC±10%, 50/60Hz±3Hz, 0.5A			
Rated output current	Rated current (rms)	2A	3.9A	10A	7A
	Peak current (PEAK)	7A	15A	27.5A	25A
Feedback signal		16 bit Single-turn magnetoelectric encoder, multi-turn absolute encoder			
Brake chopper		FD413, FD423 Built-in braking resistor 100 Ω, limiting power 10 W; FD433 Built-in braking resistor 100 Ω, limiting power 20W; FD623 Built-in braking resistor 300 Ω, limiting power 20 W; If the actual power exceeds 10W, an external braking resistor is required. (mainly in quick start and stop application)			
Brake chopper threshold		DC380V±5V	DC380V±5V	DC380V±5V	DC680V±5V
Over-voltage alarming threshold		DC400V±5V	DC400V±5V	DC400V±5V	DC700V±5V
Under-voltage alarming threshold		DC200V±5V	DC200V±5V	DC200V±5V	DC400V±5V
Cooling method		Natural air cooling	With fan	With fan	With fan
Weight (KG)		0.8		1.33	
Position control mode	Maximum input pulse frequency	Differential transmission mode: up to 4MHz, open collector transmission mode: 500KHz			
	Pulse command mode	Pulse+direction, CCW+CW、 phase A+ phase B (5V~24V)			
	Instruction smoothing mode	Low - pass filtering (internal parameter setting)			
	Feedforward gain	Internal parameter setting			
	Electronic gear ratio	Setting range Gear factor:-32768~32767, Gear divider:1~32767, 1/50≤ Gear factor/Gear divider ≤50			
	Position loop sampling frequency	1KHz			
Speed control mode	Analog input voltage range	-10~+10V (Resolution 12 bits)			
	Input impedance	200K			
	Analog input sampling frequency	4KHz			
	Command control mode	External analog command / internal command			
	Instruction smoothing mode	Low - pass filtering (internal parameter setting)			
	Input voltage dead zone setting	Internal parameter setting			
	Input voltage offset setting	Internal parameter setting			
	Speed limit	Internal parameter setting			
	Torque limit	Internal parameter setting/External analog command control			
Torque control mode	Speed loop sampling frequency	4KHz			
	Analog voltage input range	-10~+10V (Resolution 12 bits)			
	Input impedance	200K			
	Input sampling frequency	4KHz			
	Command control mode	External analog command / internal command			
	Instruction smoothing mode	Low - pass filtering (Internal parameter setting)			
	Speed limit	Internal parameter setting/External analog command control			
	Input voltage dead zone setting	Internal parameter setting			
	Input voltage offset setting	Internal parameter setting			
Digital input	Input specification	7 digital inputs, with COM1 terminal for PNP(high level valid 12.5~30V) or NPN (low level valid 0~5V) connection			
	Input function	Define freely according to requirement, supporting following functions: Driver enable, driver fault reset, driver mode control, speed loop proportional control, positive limit, negative limit, homing signal, reverse command, internal speed section control, internal positive section control, quick stop, start homing, active command, switch electronic gear ratio, switch gain, Position table function, clear pulse function			
Digital output	Output specification	5 digital output, maximum voltage DC30V, differential output of OUT1 and OUT2, maximum output current of 100mA, single-ended output of OUT 3 ~ OUT 5, maximum output current of 20mA, and motor OUT2 brake output controlled by relay			
	Output function	Define freely according to requirement, supporting following functions: Driver ready, driver fault, position reached, motor zero speed, motor brake, motor speed reached, Z signal, maximum speed obtained in torque mode, motor lock, position limiting, reference found. Multistage position			
Encoder signal output function		Output 5V motor A, B and Z signals, frequency division output range 0 ~ 65536; For multi-axis synchronization, maximum output frequency 5MHz			
Protection function		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 communictr with controller			
RS485		The maximum baudrate is 115.2KHz, use Modbus RTU protocol to communicate with controler			
CAN BUS		The maximum baudrate is 1MHz, use CANopen protocol to communicate with controler			
EtherCAT		The maximum baudrate is 100MHz, support COE (CIA 402 protocol) and CSP / CSV / PP / PV / PT / HM mode			
Operation environment	Operation temperature	0~40℃			
	Storage temperature	-10℃~70℃			
	Humidity(non-condensing)	Below 90%RH			
	Protection class	IP20			
	Installation environment	Installed in a dust-free, dry and lockable environment (such as in a electrical cabinet)			
	Installation mode	Vertical installation			
	Height	Rated working altitude at 1000m or below, Above 1000m: Decreasing 1.5% per 100m rise, maximum altitude 4000m, there is no power limit below 1000 meters.			
Atmospheric pressure		86kpa~106kpa			

Note : □=L : RS232、RS485 □=C:RS232、CANopen □=E: RS232、EtherCAT

External wiring diagram of driver



CD413/CD423/FD413/FD423 (AC220V)



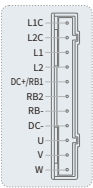
CD433/CD623/FD433/FD623 (AC220V/AC380V)

Note: When enabling the internal braking resistor, please short circuit DC+/RB1 to RB2 (internal braking resistor resistance: CD&FD 413/423 with built-in 100Ω/10W; CD&FD433 has built-in 100Ω/20W; CD&FD623 has 300Ω/20W internal), exceeding the power driver. An over-power alarm of brake resistance will be reported and "0100" will be displayed.

When the actual braking power demand exceeds the limit power, please select to connect the external braking resistor between DC+/RB1 and RB-, and at the same time make sure to switch off. Short wiring of DC+/RB1 and RB2. Please refer to the user manual for selection of external braking resistance.

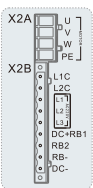
Driver Communication interface Description

Available to CD&FD413/423 driver

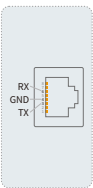


Port No.	Port name	Port type	Pin No.	Single marks	Single name	Specifications
X2	Power terminal	11P 7.5mm Plugging terminal	1	L1C	Control power input	200~240VAC±10% 50/60Hz±3Hz 0.5A
			2	L2C		
			3	L1	Main power supply input	200~240VAC±10% 50/60Hz±3Hz (750W 7A, 200W 3A)
			4	L2		
			5	DC+/RB1	DC bus Brake resistor connection	DC+/RB1, DC- Positive and negative ends of DC bus★
			6	RB2		
			7	RB-		
			8	DC-	Motor cable connection	Connect motor cable U, V, W
			9	U		
			10	V		
			11	W		

Available to CD&FD433/623 driver



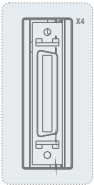
Port No.	Port name	Port type	Pin No.	Single marks	Single name	Specifications
X2A	Power terminal	DINKLE ECH762R-S1156604P-GY (Gray)	1	U	Motor cable port	Connect motor cable U, V, W, PE
			2	V		
			3	W		
			4	PE		
X2B		DINKLE 3EHDRM-09P-GY	1	L1C	Control power input	200~240VAC±10%, 50/60Hz±3Hz, 0.5A
			2	L2C	Main power supply input	1PH,3PH, 200-240VAC 50/60Hz (CD&FD433 14A, CD&FD623 12A)
			3	L1		
			4	L2		
			5	L3	DC bus Brake resistor connection	DC+/RB1, DC- Positive and negative ends of DC bus★
			6	DC+/RB1		
			7	RB-		
			8	DC-		



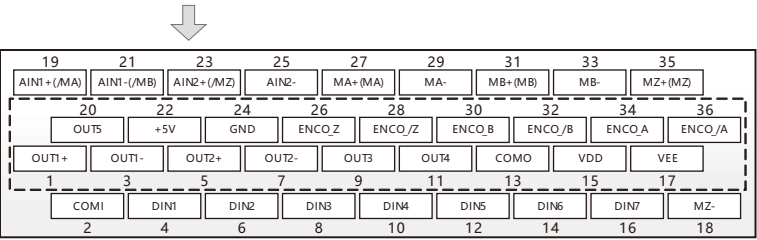
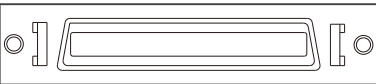
Port No.	Port name	Port type	Pin No.	Single marks	Single name	Specifications
X3	RS232 Communication interface	RJ45 Netport female	1	NC		Can be connected to PC-side PC software for parameter setting, monitoring status, etc.
			2	NC		
			3	TX	Send data	
			4	GND	Ground	
			5	NC		
			6	RX	Receive data	
			7	NC		
			8	NC		

Note: ★ With external brake resistance, short connect DC+/RB1 and RB- and disconnect DC+/RB1 and RB2 at the same time.

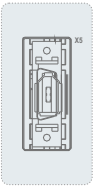
■ Driver Communication interface Description



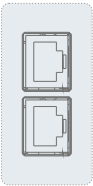
Port No.	Port name	Port type	Pin No.	Single marks	Single name	Specifications
X4	I/O interface	SCSI-36P-F	1	OUT1+	Differential output	Open collector output, maximum voltage DC30V, maximum current 100mA
			3	OUT1-		
			5	OUT2+		
			7	OUT2-		
			9	OUT3	Single-ended output	Maximum voltage DC30V, maximum current 20mA
			11	OUT4		
			20	OUT5		
			13	COMO	Public terminal of OUT3, OUT4, OUT5	Digital output common terminal
			15	VDD	Internal 24V Power Output	Internal 24V power output, voltage range+/-20%, maximum current 300mA
			17	VEE		
			2	COMI	Input signal common terminal	Digital transmission common terminal can be connected to power supply range DC18~30V
			4	DIN1	Digital signal input terminal	High level: 12.5V-30V Low level: 0-5V Maximum input frequency: 1KHz
			6	DIN2		
			8	DIN3		
			10	DIN4		
			12	DIN5		
			14	DIN6		
			16	DIN7		
			19	AIN1+ (/MA)	Analog input1, ±10V	MA, MB, MZ, ma/mb/mz/RS422 differential with 5V Signal input, maximum pulse frequency 4MHz, optional in signal type: ① Pulse+Direction (PLS + DIR) ② Forward and reverse pulse (CW/CCW) ③ A+B phase
			21	AIN1- (/MB)		
			23	AIN2+ (/MZ)	Analog input2, ±10V	
			25	AIN2-		
			27	MA+/(MA)	TTL Signal: MA+,MA-MB+,MB-,MZ+,MZ-, Support maximum frequency: 500KHz, Voltage range DC 3.3-30V Differential signal: MA_/MA,MB_/MB,MZ_/MZ, Support maximum frequency 4MHz, Voltage range DC 3.3-5V	Pulse signal input terminal holds TTL/differential signal. Signal types are optional: ① Pulse+Direction (PLS + DIR) ② Forward and reverse pulse (CW/CCW) ③ A+B phase
			29	MA-		
			31	MB+/(MB)		
			33	MB-		
			35	MZ+/(MZ)		
			18	MZ-		
			22	+5V	Internal 5V Power Output	
			24	GND		
			26	ENCO_Z	Encoder signal output	Output 5V motor A, B, Z signals, Divided frequency output range 0~65536; In multi-axis synchronization, Maximum output frequency 5MHz
			28	ENCO_/Z		
			30	ENCO_B		
			32	ENCO_/B		
			34	ENCO_A		
			36	ENCO_/A		



■ Driver Communication interface Description

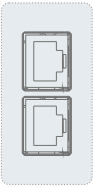


Port No.	Port name	Port type	Pin No.	Single marks	Single name	Specifications
X5	Motor Encoder interface	1394 female	1	+5V	5V power output +	Encoder signal input terminal
			2	GND	5V power output-	
			3	CLOCK+	Clock signal +	
			4	CLOCK-	Clock signal-	
			5	SD	Data signal	
			6	/SD	Data signal	

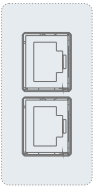


Port No.	Port name	Port type	Pin No.	Single marks	Single name	Port No.	Port name	Port type	Pin No.	Single marks	Single name
X6A	RS485 Communication interface input	RJ45 Netport female	1	RX+	Receive data+	X6B	RS485 Communication interface output	RJ45 Netport female	1	RX+	Receive data+
			2	RX-	Receive data-				2	RX-	Receive data-
			3	NC					3	NC	
			4	TX-	Send data-				4	TX-	Send data-
			5	TX+	Send data+				5	TX+	Send data+
			6	NC					6	NC	
			7	+5VB	Isolated+5V Output *1				7	+5VB	Isolated+5V Output *1
			8	GNDB	ground				8	GNDB	ground

*1 Specification: built-in 100 Ω resistance, used as a pull-up resistor or pulldown resistor, cannot be used as the output power.



Port No.	Port name	Port type	Pin No.	Single marks	Single name	Port No.	Port name	Port type	Pin No.	Single marks	Single name
X6A	CAN Communication interface input	RJ45 Netport female	1	CAN_H	Singal+	X6B	CAN Communication interface output	RJ45 Netport female	1	CAN_H	Singal+
			2	CAN_L	Singal-				2	CAN_L	Singal-
			3	GNDB	Ground				3	GNDB	Ground
			4	NC					4	NC	
			5	NC					5	NC	
			6	NC					6	NC	
			7	NC					7	NC	
			8	NC					8	NC	

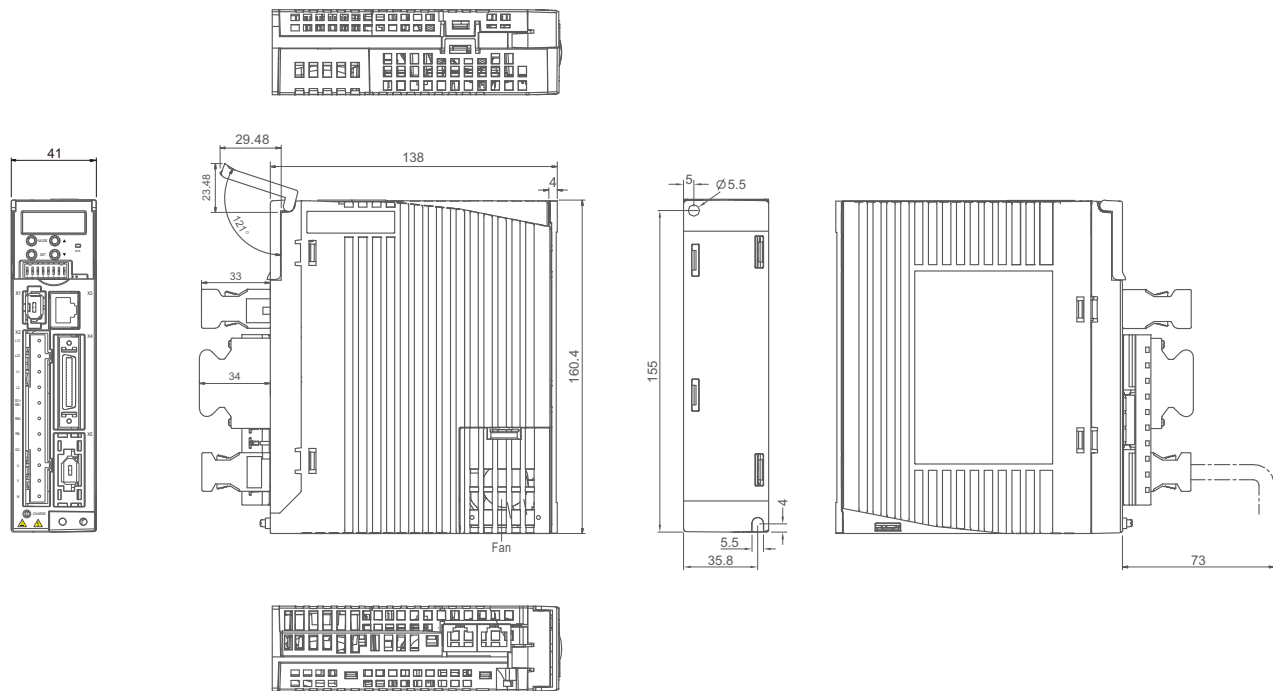


Port No.	Port name	Port type	Pin No.	Single marks	Single name	Port No.	Port name	Port type	Pin No.	Single marks	Single name
X6A	EtherCAT Communication interface input	RJ45 Netport female	1	TD+	Receive singal+	X6B	EtherCAT Communication interface output	RJ45 Netport female	1	TD+	Receive singal+
			2	TD-	Receive singal-				2	TD-	Receive singal-
			3	RD+	Send singal+				3	RD+	Send singal+
			4	NC					4	NC	
			5	NC					5	NC	
			6	RD-	Send singal-				6	RD-	Send singal-
			7	NC					7	NC	
			8	NC					8	NC	

Port No.	Port name	Specifications
SW1	8 dip switch	Communication ID dip switch
SW2	On CANopen-only drives are	Terminal resistance switch

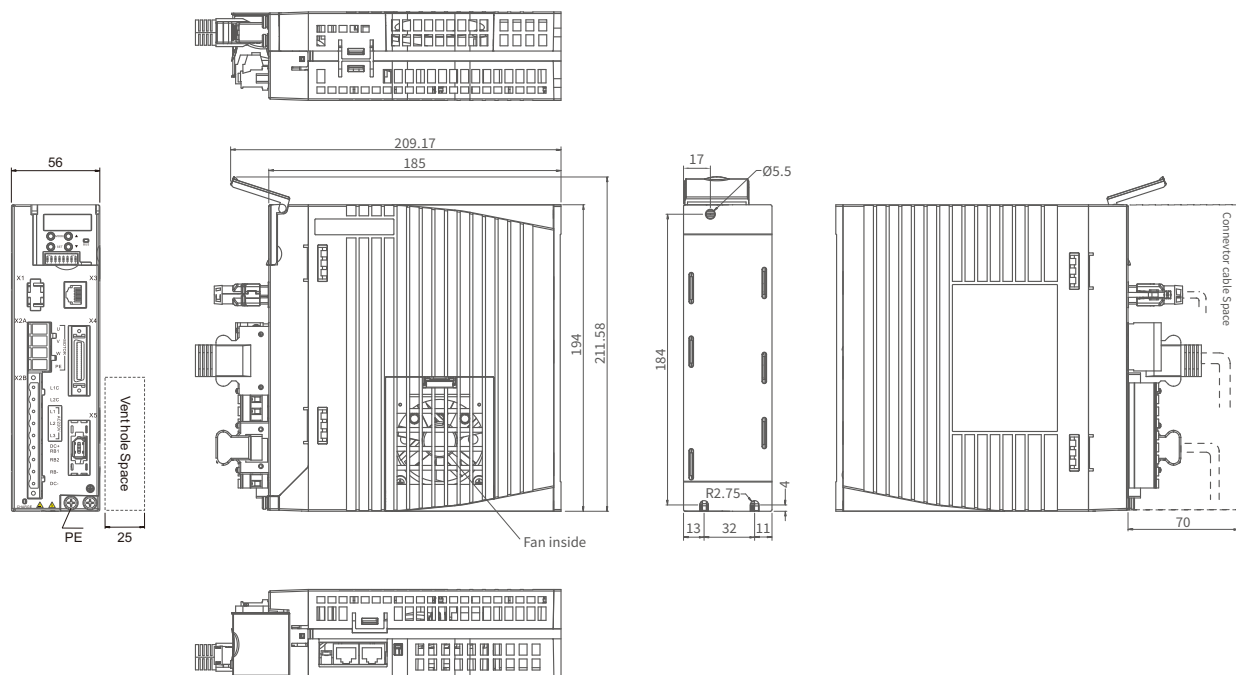
CD&FD413/CD&FD423 dimensions

Note: wiring space should be reserved around the driver, >60mm is better; CD413-AA-000, FD413-□A-000 without fan.



CD&FD433/CD&FD623 dimensions

Note: wiring space should be reserved around the driver, >60mm is better.



The new 16-bit high performance magnetoelectric encoder
Good shock resistance and high cost performance

The motor body is further shrunk
The insulation grade of the motor is F

RELIABLE & STABLE



Technical Specifications of Servo Motor

				
Model parameter			Small inertia, flange size of 40mm	
Servo motor			SMC40S-0005-30M□K-5LSU SMS40S-0005-30K□K-5LSU	SMC40S-0010-30M□K-5LSU SMS40S-0010-30K□K-5LSU
Avaliable driver			CD413-AA-000 FD413-LA-000 FD413-CA-000 FD413-EA-000	
DC link voltage VDC			300	300
Continuous performance	Rated power	Pn (W)	50	100
	Rated torque	Tn (N.m)	0.16	0.32
	Rated speed	nN (rpm)	3000	3000
	Rated current	In (A)	0.7	1.4
Maximum torque		Tm (N.m)	0.48	0.96
Maximum current		Im (A)	2.25	4.2
Standstill torque		Ts (N.m)	0.176	0.352
Standstill current		Is (A)	0.83	1.54
Resistance Line - Line		RL (Ω)	16.2	7.9
Inductance Line - Line		LL (mH)	18.5	10.5
Electrical time constant		τe (ms)	1.14	1.33
Mechanical time constant τm (ms)			1.51	0.99
			1.51 (with brake)	0.99 (with brake)
Reverse voltage constant		Ke (V/krpm)	14	16.2
Torque constant		kt (N.m/A)	0.232	0.268
Rotor moment of inertia Jm (Kg•cm ²)			0.018	0.033
			0.021 (with brake)	0.046 (with brake)
Brake holding torque		T (Nm)	0.32	0.32
Pole pair number			5	5
Maximum voltage rising du/dt (kv/μs)			8	8
Insulation class			F	F
Maxsimum radial force		Fr (N)	120	120
Maxsimum axial force		Fa (N)	60	60
Weight		G (Kg)	0.4	0.57
			0.6 (with brake)	0.77 (with brake)
Length of motor		L (mm)	74.6±1	96.6±1
			104.6±1.5 (with brake)	126.6±1 (with brake)
Position feedback device		SMC series-16 bit single-turn magnetoelectric encoder; SMS series-Multi-turn absolute encoder		
Cooling method		Totally enclosed, non - ventilated		
Protection level		IP65, shaft sealing IP54 (Note: Add oil seal IP54 at the shaft end and do not add oil seal IP50)		
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 4000m, rated power at 1000m or below. Above 1000m, decreasing 1.5% per every 100m rise		

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

Technical Specifications of Servo Motor

 					
Model parameter		Small inertia , flange size of 60mm		Small inertia , flange size of 80mm	
Servo motor		SMC60S-0020-30M□K-3LSU SMS60S-0020-30K□K-3LSU	SMC60S-0040-30M□K-3LSU SMS60S-0040-30K□K-3LSU	SMC80S-0075-30M□K-3LSU SMS80S-0075-30K□K-3LSU	
Available driver		CD413-AA-000 FD413-LA-000 FD413-CA-000 FD413-EA-000	CD423-AA-000 FD423-LA-000 FD423-CA-000 FD423-EA-000		
DC link voltage VDC		300	300	300	
Continuous performance	Rated power	Pn (W)	200	400	750
	Rated torque	Tn (N.m)	0.64	1.27	2.39
	Rated speed	nN (rpm)	3000	3000	3000
	Rated current	In (A)	1.4	2.4	3.8
	Maximum torque	Tm (N.m)	1.92	3.81	7.17
Maximum current		Im (A)	4.2	7.2	11.4
Standstill torque		Ts (N.m)	0.7	1.4	2.63
Standstill current		Is (A)	1.5	2.6	4.2
Resistance Line - Line		RL (Ω)	11.2	5.8	2.1
Inductance Line - Line		LL (mH)	20.9	11.5	10.5
Electrical time constant		τe (ms)	1.87	1.98	5
Mechanical time constant τm (ms)			1.8	1.29	0.9
			1.85 (with brake)	1.3 (with brake)	0.9 (with brake)
Reverse voltage constant		Ke (V/krpm)	29	34	40
Torque constant		kt (N.m/A)	0.48	0.562	0.662
Rotor moment of inertia Jm (Kg·cm ²)			0.214	0.405	1.087
			0.218 (with brake)	0.409 (with brake)	1.099 (with brake)
Brake holding torque		T (Nm)	1.5	1.5	3.2
Pole pair number			3	3	3
Maximum voltage rising du/dt (kv/μs)			8	8	8
Insulation class			F	F	F
Maxsimum radial force		Fr (N)	180	180	335
Maxsimum axial force		Fa (N)	90	90	167.5
Weight		G (Kg)	1.2	1.6	2.8
			1.6 (with brake)	2.1 (with brake)	3.4 (with brake)
Length of motor		L (mm)	91±1.5	117±1.5	128.5±1.5
			121±1.5 (with brake)	147±1.5 (with brake)	158±1.5 (with brake)
Position feedback device		SMC series-16 bit single-turn magnetoelectric encoder; SMS series-Multi-turn absolute encoder			
Cooling method		Totally enclosed, non - ventilated			
Protection level		IP65, shaft sealing IP54 (Note: Add oil seal IP54 at the shaft end and do not add oil seal IP50)			
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 4000m, rated power at 1000m or below. Above 1000m, decreasing 1.5% per every 100m rise			

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

■ Technical Specifications of Servo Motor

					
Model parameter			Medium inertia, flang size of 130mm		
Servo motor			SMC130D-0100-20G□K-4LSP SMS130D-0100-20K□K-4LKP	SMC130D-0150-20G□K-4LSP SMS130D-0150-20K□K-4LKP	SMC130D-0200-20G□K-4LSP SMS130D-0200-20K□K-4LKP
Avaliable driver			CD433-AA-000 FD433-LA-000 FD433-CA-000 FD433-EA-000		
DC link voltage VDC			300	300	300
Continuous performance	Rated power	Pn (W)	1	1.5	2
	Rated torque	Tn (N.m)	4.8	7.2	9.6
	Rated speed	nN (rpm)	2000	2000	2000
	Rated current	In (A)	4.4	6.8	8.8
Maximum torque		Tm (N.m)	12	18	24
Maximum current		Im (A)	13.2	20.4	26.4
Standstill torque		Ts (N.m)	5.28	7.92	10.56
Standstill current		Is (A)	4.84	7.48	9.68
Resistance Line - Line		RL (Ω)	3.1	1.51	0.93
Inductance Line - Line		LL (mH)	24.07	13.8	8.8
Electrical time constant		τe (ms)	7.76	9.14	9.46
Mechanical time constant		τm (ms)	2.72	2.28	1.97
			2.76 (with brake)	2.3 (with brake)	1.98 (with brake)
Reverse voltage constant		Ke (V/krpm)	73	71	72.8
Torque constant		kt (N.m/A)	1.21	1.17	1.2
Rotor moment of inertia		Jm (Kg•cm ²)	7.4	12	17.7
			7.5 (with brake)	12.1 (with brake)	17.8 (with brake)
Brake holding torque		T (Nm)	10	10	10
Pole pair number			4	4	4
Maximum voltage rising		du/dt (kv/μs)	8	8	8
Insulation class			F	F	F
Maxsimum radial force		Fr (N)	900	900	900
Maxsimum axial force		Fa (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		SMC series-16 bit single-turn magnetoelectric encoder; SMS series-Multi-turn absolute encoder			
Cooling method		Totally enclosed, non - ventilated			
Protection level		IP65, shaft sealing IP54 (Note: Add oil seal IP54 at the shaft end and do not add oil seal IP50)			
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 4000m, rated power at 1000m or below. Above 1000m, decreasing 1.5% per every 100m rise		

Note: □ = A : Motor without brake
 ▣ = B : Motor with brake

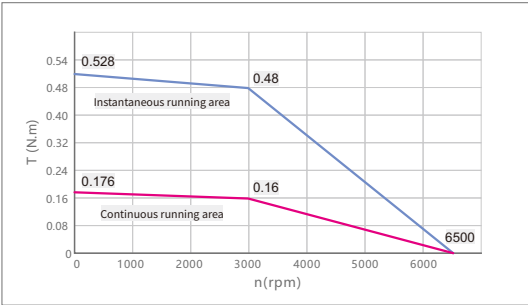
■ Technical Specifications of Servo Motor

						
Model parameter			Medium inertia, flang size of 130mm			
Servo motor			SMC130D-0100-20G□K-4HSP	SMC130D-0150-20G□K-4HSP SMS130D-0150-20K□K-4HKP	SMC130D-0200-20G□K-4HSP SMS130D-0200-20K□K-4HKP	SMC130D-0300-20G□K-4HSP SMS130D-0300-20K□K-4HKP
Avaliable driver			CD623-AA-000 FD623-LA-000 FD623-CA-000 FD623-EA-000			
DC link voltage VDC			560	560	560	560
Continuous performance	Rated power	Pn (W)	1	1.5	2	3
	Rated torque	Tn (N.m)	4.8	7.2	9.6	14.3
	Rated speed	nN (rpm)	2000	2000	2000	2000
	Rated current	In (A)	2.27	4.5	6.2	6.7
	Maximum torque	Tm (N.m)	12	18	24	35.75
Maximum current			Im (A)	6.81	13.5	18.6
Standstill torque			Ts (N.m)	5.28	7.92	10.56
Standstill current			Is (A)	2.5	4.95	6.82
Resistance Line - Line			RL (Ω)	11.87	3.44	1.72
Inductance Line - Line			LL (mH)	88.81	31.26	17.1
Electrical time constant			τe (ms)	7.48	9.09	9.9
Mechanical time constant			τm (ms)	2.8	2.33	1.85
				2.84 (with brake)	2.35 (with brake)	1.86 (with brake)
Reverse voltage constant			Ke (V/krpm)	141	106	102
Torque constant			kt (N.m/A)	2.33	1.75	1.69
Rotor moment of inertia			Jm (Kg·cm ²)	7.4	12	17.7
				7.5 (with brake)	12.1 (with brake)	17.8 (with brake)
Brake holding torque			T (Nm)	10	10	10
Pole pair number				4	4	4
Maximum voltage rising			du/dt (kv/μs)	8	8	8
Insulation class				F	F	F
Maxsimum radial force			Fr (N)	900	900	900
Maxsimum axial force			Fa (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			SMC series-16 bit single-turn magnetoelectric encoder; SMS series-Multi-turn absolute encoder			
Cooling method			Totally enclosed, non - ventilated			
Protection level			IP65, shaft sealing IP54 (Note: Add oil seal IP54 at the shaft end and do not add oil seal IP50)			
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 4000m, rated power at 1000m or below. Above 1000m, decreasing 1.5% per every 100m rise			

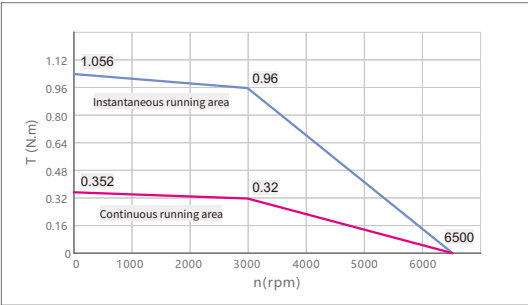
Note: □ = A : Motor without brake
 ▣ = B : Motor with brake

Torque curve of servo motor

SMC40S-0005-30M□K-5LSU
SMS40S-0005-30K□K-5LSU AC220V/ **50W**

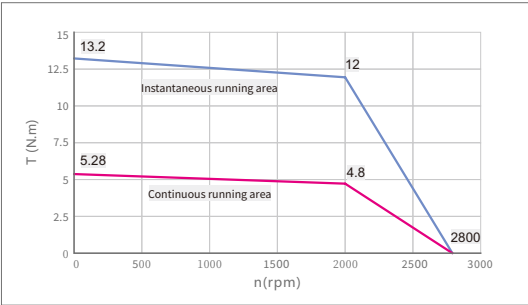


SMC40S-0010-30M□K-5LSU
SMS40S-0010-30K□K-5LSU AC220V/ **100W**

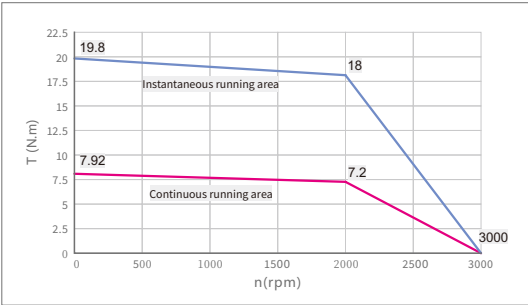


Torque curve of servo motor

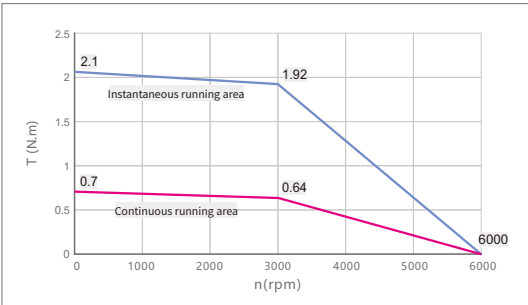
SMC130D-0100-20G□K-4HSP
AC380V/ **1kW**



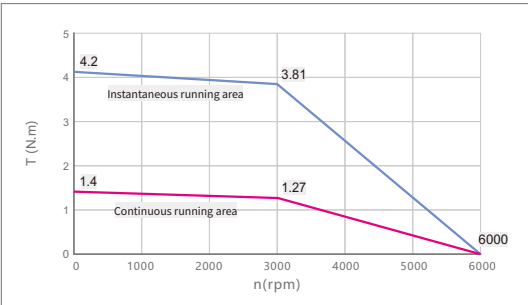
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SMS130D-0150-20K□K-4LKP AC220V/ **1.5kW**



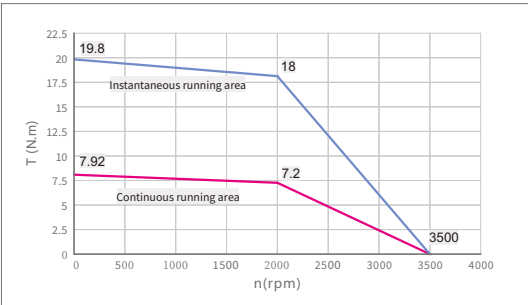
SMC60S-0020-30M□K-3LSU
SMS60S-0020-30K□K-3LSU AC220V/ **200W**



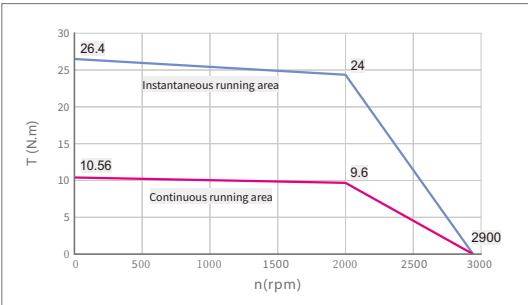
SMC60S-0040-30M□K-3LSU
SMS60S-0040-30K□K-3LSU AC220V/ **400W**



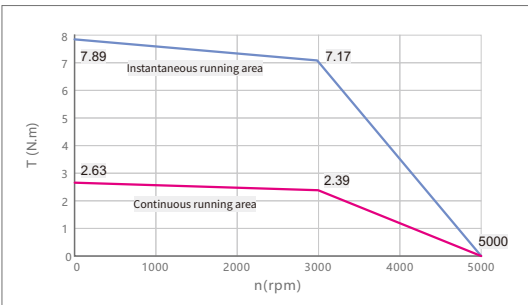
SMC130D-0150-20G□K-4HSP
SMS130D-0150-20K□K-4HHP AC380V/ **1.5kW**



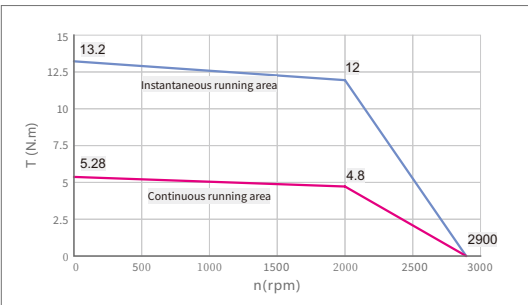
SMC130D-0200-20G□K-4LSP
SMS130D-0200-20K□K-4LKP AC220V/ **2kW**



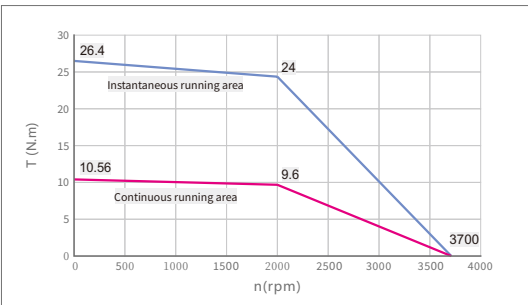
SMC80S-0075-30M□K-3LSU
SMS80S-0075-30K□K-3LSU AC220V/ **750W**



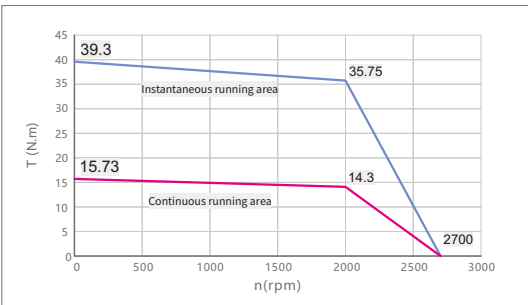
SMC130D-0100-20G□K-4LSP
SMS130D-0100-20K□K-4LKP AC220V/ **1kW**



SMC130D-0200-20G□K-4HSP
SMS130D-0200-20K□K-4HHP AC380V/ **2kW**



SMC130D-0300-20G□K-4HSP
SMS130D-0300-20K□K-4HHP AC380V/ **3kW**

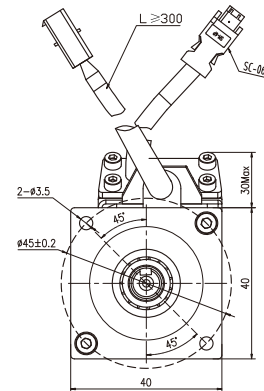
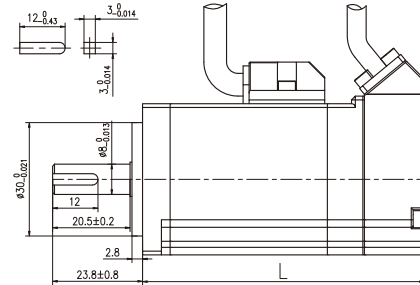


Motor Dimensions

Unit:mm

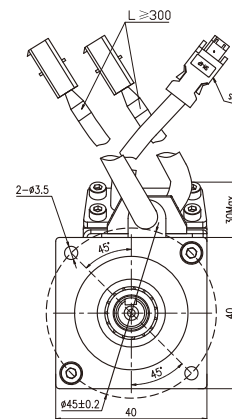
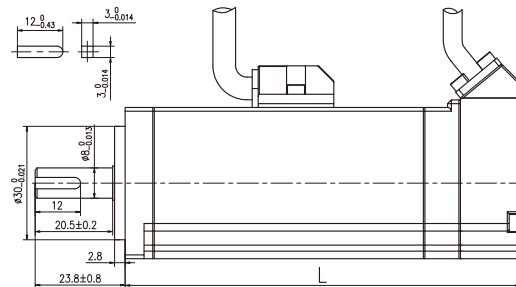
Motor of flange size 40mm

Motor model	Length of motor L (mm)
SMC40S-0005-30KAK-5LSU	74.6±1.5
SMS40S-0005-30KAK-5LSU	
SMC40S-0010-30MAK-5LSU	96.6±1.5
SMS40S-0010-30KAK-5LSU	



Motor of flange size 40mm (with brake)

Motor model	Length of motor L (mm)
SMC40S-0005-30MBK-5LSU	104.6±1.5
SMS40S-0005-30KBK-5LSU	
SMC40S-0010-30MBK-5LSU	126.6±1.5
SMS40S-0010-30KBK-5LSU	



Motor power cable

 Housing: H66L6-04P Terminal: T66L6-A	PIN	Signal	Color
	1	U	Yellow
	2	V	Red
	3	W	Black
	4	PE $\perp$	Yellow/Green

Motor brake cable

 Housing: H66L6-02P Terminal: T66L6-B	PIN	Signal	Color
	1	BRAKE (+)	Red
	2	BRAKE (-)	Blue

Motor encoder cable

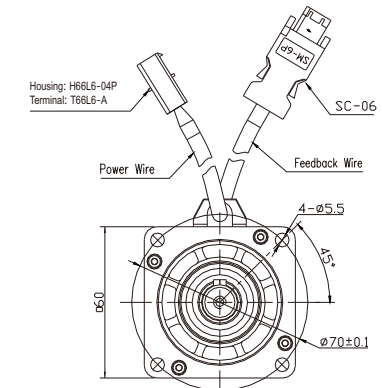
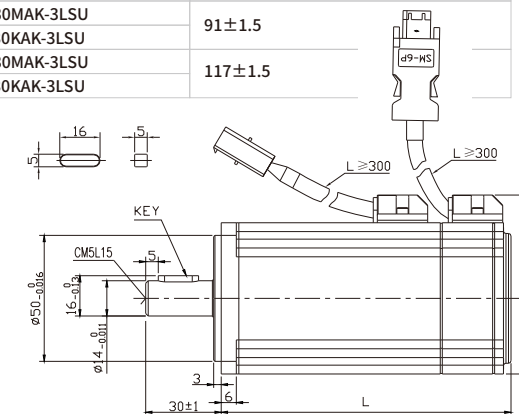
 SC-06	PIN	(SMS) Absolute encoder		(SMC) Magnetoelectric encoder	
		Signal	Color	Signal	Color
	1	VCC +5V	White	VDD	Red
	2	GND	Black	GND	Black
	3	VB	Orange	MA_P+	Brown
	4	GND	Brown	MA_N-	Blue
	5	SD	Blue	SLO_P+	Yellow
6	/SD	Purple	SLO_N-	Green	

■ **Motor Dimensions** Unit: mm

Unit: mm

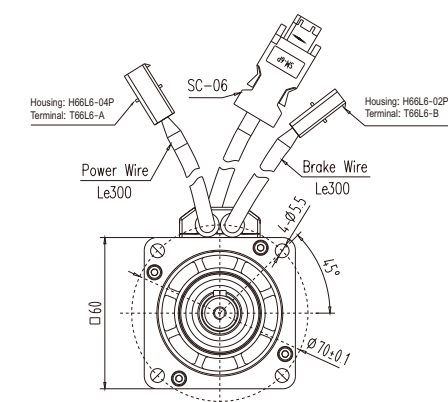
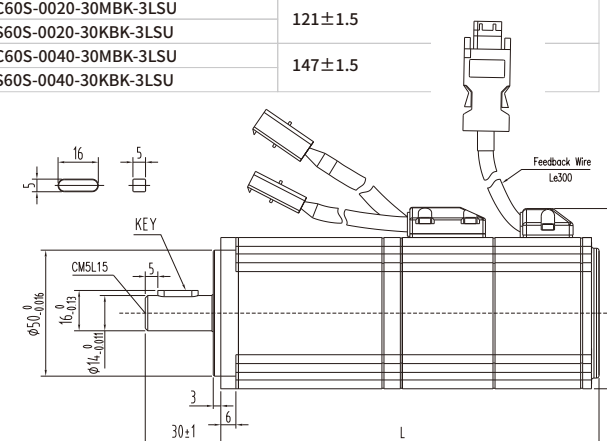
Motor of flange size 60mm

Motor model	Length of motor L (mm)
SMC60S-0020-30MAK-3LSU	91±1.5
SMS60S-0020-30KAK-3LSU	
SMC60S-0040-30MAK-3LSU	117±1.5
SMS60S-0040-30KAK-3LSU	



Motor of flange size 60mm (with brake)

Motor model	Length of motor L (mm)
SMC60S-0020-30MBK-3LSU	121±1.5
SMS60S-0020-30KBK-3LSU	
SMC60S-0040-30MBK-3LSU	147±1.5
SMS60S-0040-30KBK-3LSU	



Motor power cable

 Housing: H66L6-04P Terminal: T66L6-A	PIN	Signal	Color
	1	U	Yellow
	2	V	Red
	3	W	Black
	4	PE 	Yellow/Green

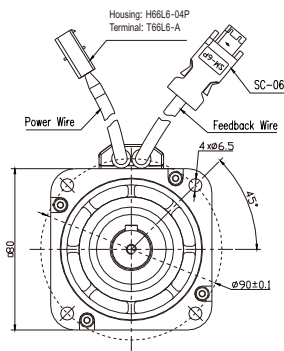
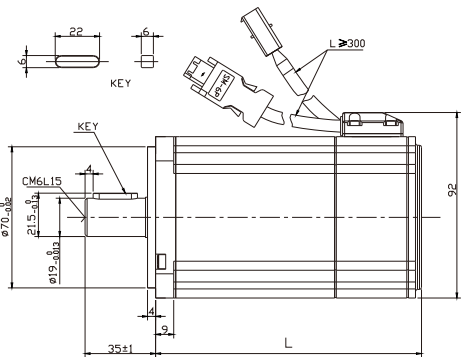
Motor brake cable

 Housing: H66L6-02P Terminal: T66L6-B	PIN	Signal	Color
	1	BRAKE (+)	Red
	2	BRAKE (-)	Blue

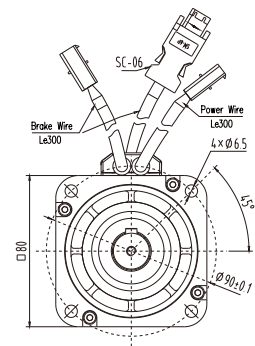
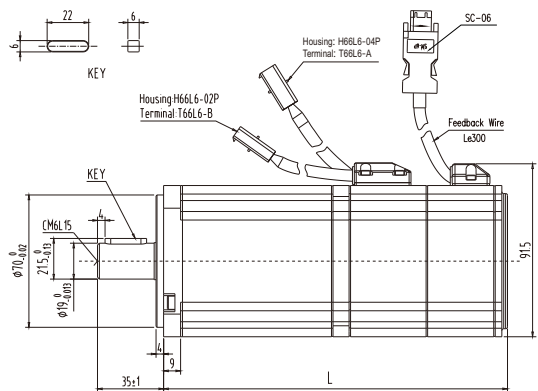
Motor encoder cable

 SC-06	PIN	(SMS) Absolute encoder		(SMC) Magnetoelectric encoder	
		Signal	Color	Signal	Color
	1	VCC +5V	White	VDD	Red
	2	GND	Black	GND	Black
	3	VB	Orange	MA_P+	Brown
	4	GND	Brown	MA_N-	Blue
	5	SD	Blue	SLO_P+	Yellow
	6	/SD	Purple	SLO_N-	Green

Motor of flange size 80mm	
Motor model	Length of motor L (mm)
SMC80S-0075-30MAK-3LSU	128.5±1.5
SMS80S-0075-30KAK-3LSU	



Motor of flange size 80mm (with brake)	
Motor model	Length of motor L (mm)
SMC80S-0075-30MBK-3LSU	158±1.5
SMS80S-0075-30KBK-3LSU	

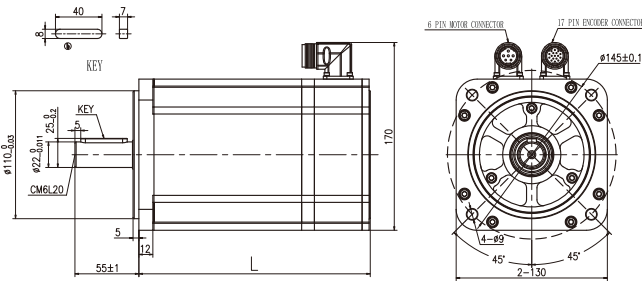


Motor power cable			
	PIN	Signal	Color
	1	U	Yellow
	2	V	Red
	3	W	Black
	4	PE	Yellow/Green
Housing: H66L6-04P Terminal: T66L6-A			

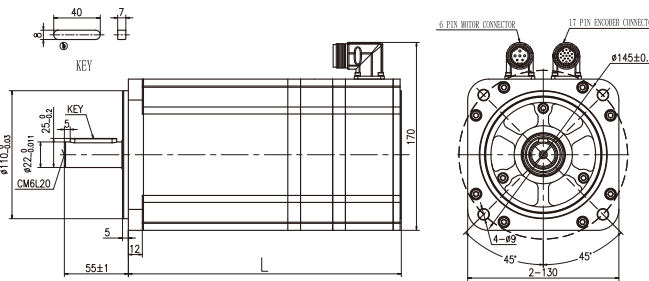
Motor brake cable			
	PIN	Signal	Color
	1	BRAKE (+)	Red
	2	BRAKE (-)	Blue
Housing: H66L6-02P Terminal: T66L6-B			

Motor encoder cable					
	PIN	(SMS) Absolute encoder		(SMC) Magnetolectric encoder	
		Signal	Color	Signal	Color
SC-06	1	VCC +5V	White	VDD	Red
	2	GND	Black	GND	Black
	3	VB	Orange	MA_P+	Brown
	4	GND	Brown	MA_N-	Blue
	5	SD	Blue	SLO_P+	Yellow
	6	/SD	Purple	SLO_N-	Green

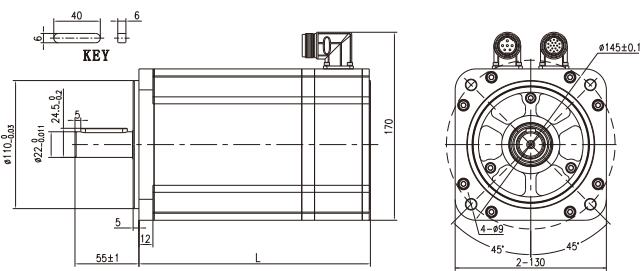
Aviation socket motor of flange size 130mm	
Motor model	Length of motor L (mm)
SMS130D-0100-20KAK-4LKP	143±1.5
SMS130D-0150-20KAK-4LKP	159±1.5
SMS130D-0150-20KAK-4HKP	
SMS130D-0200-20KAK-4LKP	179±1.5
SMS130D-0200-20KAK-4HKP	
SMS130D-0300-20KAK-4HKP	219±1.5



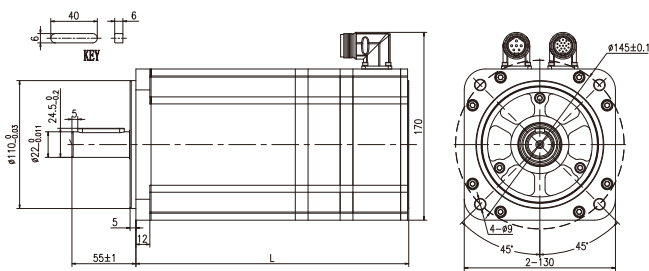
Aviation socket motor of flange size 130mm (with brake)	
Motor model	Length of motor L (mm)
SMS130D-0100-20KBK-4LKP	204±1.5
SMS130D-0150-20KBK-4LKP	220±1.5
SMS130D-0150-20KBK-4HKP	
SMS130D-0200-20KBK-4LKP	240±1.5
SMS130D-0200-20KBK-4HKP	
SMS130D-0300-20KBK-4HKP	280±1.5



Aviation socket motor of flange size 130mm	
Motor model	Length of motor L (mm)
SMC130D-0100-20GAK-4LSP	143±1.5
SMC130D-0100-20GAK-4HSP	
SMC130D-0150-20GAK-4LSP	159±1.5
SMC130D-0150-20GAK-4HSP	
SMC130D-0200-20GAK-4LSP	179±1.5
SMC130D-0200-20GAK-4HSP	
SMC130D-0300-20GAK-4HSP	219±1.5



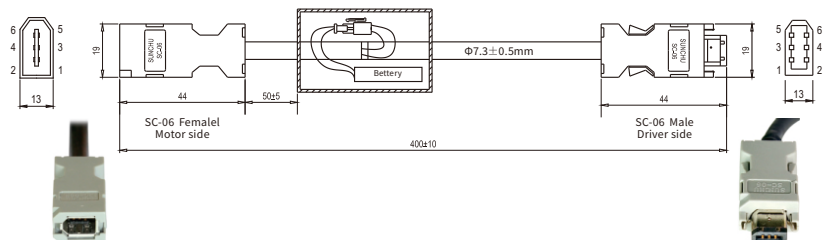
Aviation socket motor of flange size 130mm (with brake)	
Motor model	Length of motor L (mm)
SMC130D-0100-20GBK-4LSP	204±1.5
SMC130D-0100-20GBK-4HSP	
SMC130D-0150-20GBK-4LSP	220±1.5
SMC130D-0150-20GBK-4HSP	
SMC130D-0200-20GBK-4LSP	240±1.5
SMC130D-0200-20GBK-4HSP	
SMC130D-0300-20GBK-4HSP	280±1.5



Cable wiring instructions

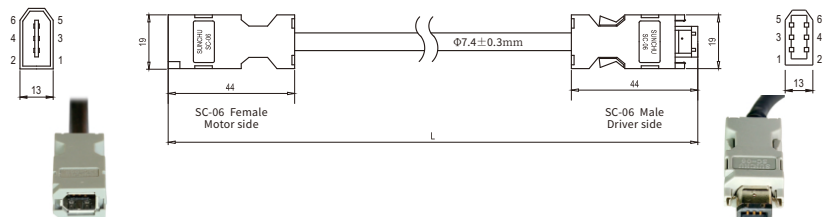
ENCDDG-(4)-GU-BT

Wire spec.:3×2×0.2mm²



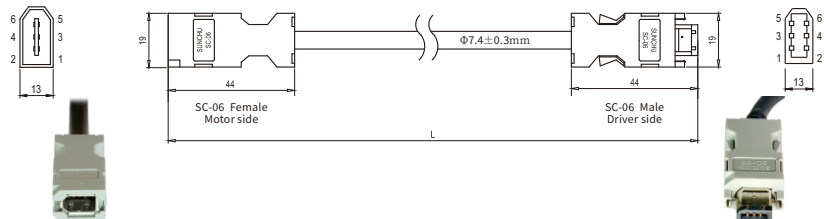
ENCDDGF-LL-GU

Wire spec.:UL2661 1P×20AWG(72/0.10T)+2P×24AWG(32/0.10T)
20AWG cross section area is 0.5189mm²
24AWG cross section area is 0.2047mm²



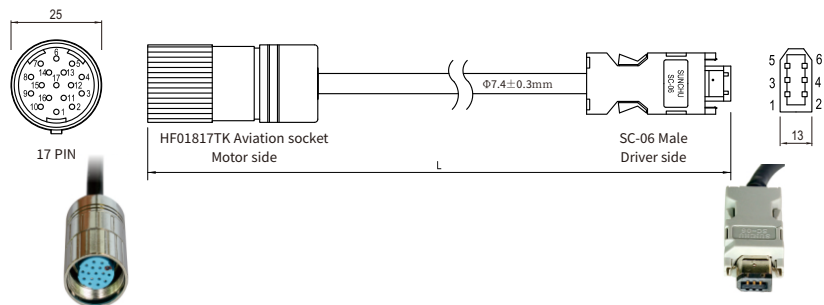
ENCDDG-LL-GU

Wire spec.:UL2661 1P×20AWG+2P×24AWG
20AWG cross section area is 0.5189mm²
24AWG cross section area is 0.2047mm²



ENCDDG-LL-GC0

Wire spec.:UL2661 1P×20AWG(72/0.10T)+2P×24AWG(32/0.10T)
20AWG cross section area is 0.5189mm²
24AWG cross section area is 0.2047mm²



SC-06F	Color	Black HSG	Ext. single cable	Signal	SC-06 M
PIN1	Red			+5V	PIN1
PIN2	Black			GND	PIN2
PIN3	Brown	PIN1	Red	BAT+	
PIN4	Blue	PIN2	Black	BAT-	
PIN5	Yellow			SD	PIN5
PIN6	Green			/SD	PIN6
Shell	Shield			Shield	Shell

SC-06	Color	Signal 1	Signal 2
PIN1	Red	VDD	+5V
PIN2	Black	GND	GND
PIN3	Brown	MA_P+	BAT+
PIN4	Blue	MA_N-	BAT-
PIN5	Yellow	SLO_P+	SD
PIN6	Green	SLO_N-	/SD
Shell	Shield	Shield	Shield

Note: Signal 1 is suitable for SMC series magnetolectric encoder motor.
Signal 2 is suitable for SMS series motor.

SC-06	Color	Signal 1	Signal 2
PIN1	Red	VDD	+5V
PIN2	Black	GND	GND
PIN3	Brown	MA_P+	BAT+
PIN4	Blue	MA_N-	BAT-
PIN5	Yellow	SLO_P+	SD
PIN6	Green	SLO_N-	/SD
Shell	Shield	Shield	Shield

Note: Signal 1 is suitable for SMC series magnetolectric encoder motor.
Signal 2 is suitable for SMS series motor.

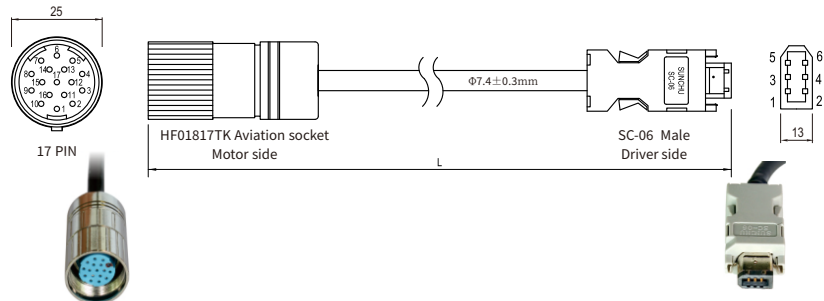
HF01817TK	Color	Signal 1	Signal 2	SC-06
PIN1	Red	VDD	VDD	PIN1
PIN2	Black	GND	GND	PIN2
PIN3	Brown	MA_P+	BAT+	PIN3
PIN4	Blue	MA_N-	BAT-	PIN4
PIN16	Yellow	SLO_P+	SD	PIN5
PIN17	Green	SLO_N-	/SD	PIN6
Shell	Shield	Shield	Shield	Shell

Note: Signal 1 is suitable for SMC series magnetolectric encoder motor.
Signal 2 is suitable for SMS series motor.

Cable wiring instructions

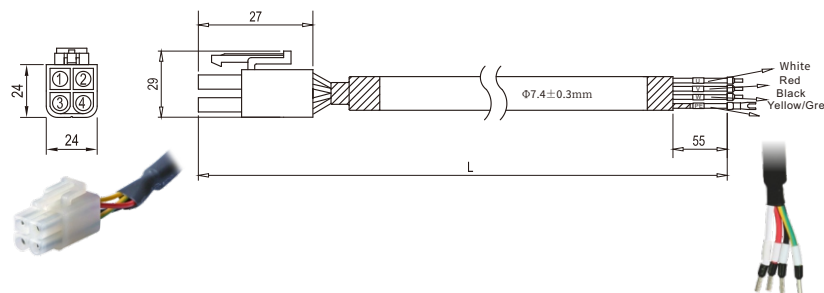
ENCDDGF-LL-GC0

Wire spec.:UL2661 1P×20AWG(26/0.16T)+2P×24AWG(11/0.16T)
20AWG cross section area is 0.5189mm²
24AWG cross section area is 0.2047mm²



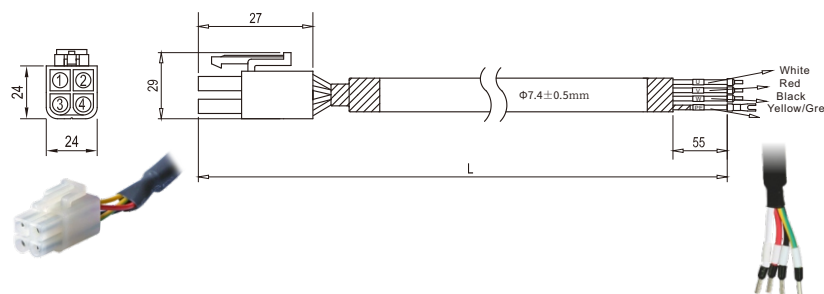
MOT-005-LL-KL-Y

Wire spec.:UL20328 4C×18AWG(41/0.16T) black
18AWG cross section area is 0.8107mm²



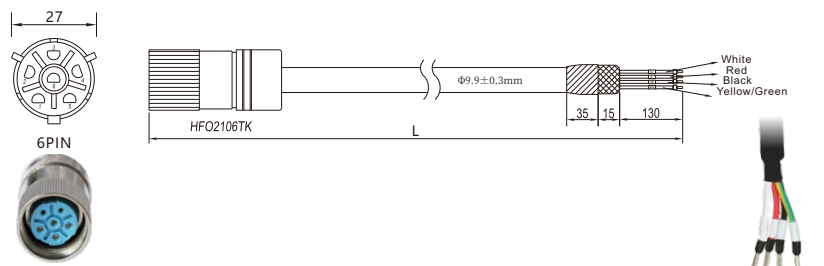
MOTF-005-LL-KL-Y

Wire spec.:UL2661 4C×18AWG(7/18/0.10T) black
18AWG cross section area is 0.8107mm²



MOT-008-LL-KC4

Wire spec.:UL2586 4×16AWG
16AWG cross section area is 1.318mm²



HF01817TK	Color	Signal 1	Signal 2	SC-06
PIN1	Red	VDD	VDD	PIN1
PIN2	Black	GND	GND	PIN2
PIN3	Brown	MA_P+	BAT+	PIN3
PIN4	Blue	MA_N-	BAT-	PIN4
PIN16	Yellow	SLO_P+	SD	PIN5
PIN17	Green	SLO_N-	/SD	PIN6
Shell	Shield	Shield	Shield	Shell

Note: Signal 1 is suitable for SMC series magnetolectric encoder motor.
Signal 2 is suitable for SMS series motor.

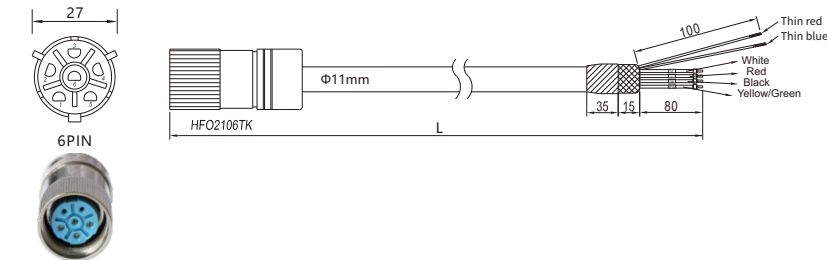
Color	Signal	HSG plug
White	U	PIN1
Red	V	PIN2
Black	W	PIN3
Yellow/Green	PE	PIN4

Color	Signal	HSG Plug
White	U	PIN1
Red	V	PIN2
Black	W	PIN3
Yellow/Green	PE	PIN4

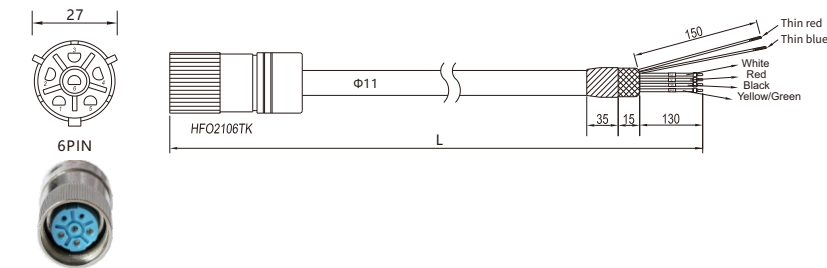
Color	Signal	HF02106TK
White	U	PIN2
Red	V	PIN3
Black	W	PIN4
Yellow/Green	PE	PIN6

■ Cable wiring instructions

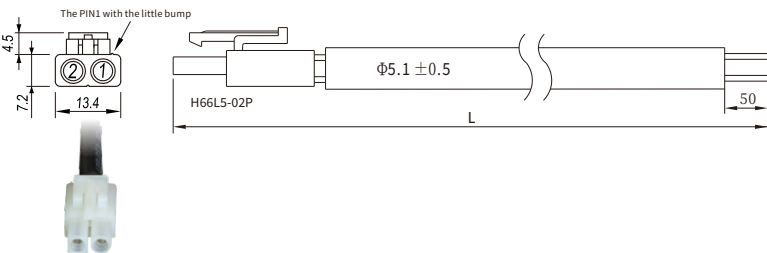
MOT-005-LL-KC4-B
Wire spec.:RVVYP 4*18AWG+2*20AWG BLACK 18AWG cross section area is 0.8107mm ² 20AWG cross section area is 0.5189mm ²



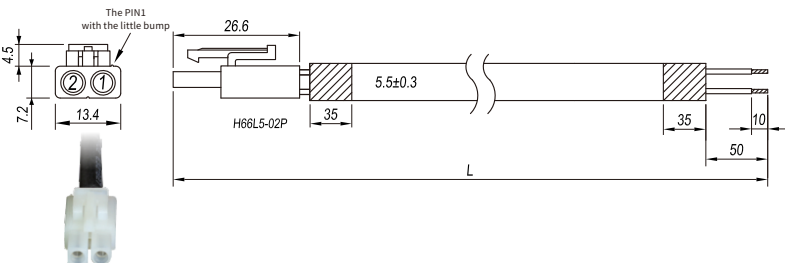
MOT-008-LL-KC4-B
Wire spec.:RVVYP 4×1.5mm²+2×0.5mm²



BRA-LL-KL
Wire spec.:UL2464 2C*20AWG 20AWG cross section area is 0.5189mm ²



BRAF-LL-KL
Wire spec.:EKM71373 2*20AWG BLACK 20AWG cross section area is 0.5189mm ²



Color	Signal	HFO2106TK
White	U	PIN2
Red	V	PIN3
Black	W	PIN4
Yellow/Green	PE	PIN6
Thin red	brake+	PIN1
Thin blue	brake-	PIN5
Shield	Shield	Shell

Color	Signal	HFO2106TK
White	U	PIN2
Red	V	PIN3
Black	W	PIN4
Yellow/Green	PE	PIN6
Thin red	brake+	PIN1
Thin blue	brake-	PIN5

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

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

Driver, Motor and Cable Selection Table

Series	Rated power/ Rated speed/ Rated torque	Servo Motor	Description	Servo Driver				Power/ Brake Cable	Encoder Cable
				EtherCAT	CANopen	Modbus 485	Pulse		
SMS Series	50W 3000rpm 0.16Nm	SMS40S-0005-30KAK-5LSU	Multi-turn absolute encoder	FD413-EA-000	FD413-CA-000	FD413-LA-000	CD413-AA-000	MOT-005-LL-KL-Y	ENCDG-LL-GU
		SMS40S-0005-30KBK-5LSU*	Multi-turn absolute encoder					MOT-005-LL-KL-Y/BRA-LL-KL	
	100W 3000rpm 0.32Nm	SMS40S-0010-30KAK-5LSU	Multi-turn absolute encoder					MOT-005-LL-KL-Y	
		SMS40S-0010-30KBK-5LSU*	Multi-turn absolute encoder					MOT-005-LL-KL-Y/BRA-LL-KL	
	200W 3000rpm 0.64Nm	SMS60S-0020-30KAK-3LSU	Multi-turn absolute encoder	FD423-EA-000	FD423-CA-000	FD423-LA-000	CD423-AA-000	MOT-005-LL-KL-Y	ENCDG-(4)-GU-BT
		SMS60S-0020-30KBK-3LSU*	Multi-turn absolute encoder					MOT-005-LL-KL-Y/BRA-LL-KL	
	400W 3000rpm 1.27Nm	SMS60S-0040-30KAK-3LSU	Multi-turn absolute encoder					MOT-005-LL-KL-Y	
		SMS60S-0040-30KBK-3LSU*	Multi-turn absolute encoder					MOT-005-LL-KL-Y/BRA-LL-KL	
	750W 3000rpm 2.39Nm	SMS80S-0075-30KAK-3LSU	Multi-turn absolute encoder	FD433-EA-000	FD433-CA-000	FD433-LA-000	CD433-AA-000	MOT-005-LL-KL-Y	ENCDG-LL-GC0
		SMS80S-0075-30KBK-3LSU*	Multi-turn absolute encoder					MOT-005-LL-KL-Y/BRA-LL-KL	
	1kW 2000rpm 4.8Nm	SMS130D-0100-20KAK-4LKP	Multi-turn absolute aviation socket encoder					MOT-005-LL-KC4	
		SMS130D-0100-20KBK-4LKP*	Multi-turn absolute aviation socket encoder					MOT-005-LL-KC4-B	
	1.5kW 2000rpm 7.2Nm	SMS130D-0150-20KAK-4LKP	Multi-turn absolute aviation socket encoder	FD623-EA-000	FD623-CA-000	FD623-LA-000	CD623-AA-000	MOT-008-LL-KC4	ENCDG-(4)-GU-BT
		SMS130D-0150-20KBK-4LKP*	Multi-turn absolute aviation socket encoder					MOT-008-LL-KC4-B	
	2kW 2000rpm 10Nm	SMS130D-0200-20KAK-4LKP	Multi-turn absolute aviation socket encoder					MOT-008-LL-KC4	
		SMS130D-0200-20KBK-4LKP*	Multi-turn absolute aviation socket encoder					MOT-008-LL-KC4-B	
SMC Series	1.5kW 2000rpm 7.2Nm	SMS130D-0150-20KAK-4HKP	Multi-turn absolute aviation socket encoder	FD433-EA-000	FD433-CA-000	FD433-LA-000	CD433-AA-000	MOT-005-LL-KC4	ENCDG-LL-GU
		SMS130D-0150-20KBK-4HKP*	Multi-turn absolute aviation socket encoder					MOT-005-LL-KC4-B	
	2kW 2000rpm 10Nm	SMS130D-0200-20KAK-4HKP	Multi-turn absolute aviation socket encoder					MOT-008-LL-KC4	
		SMS130D-0200-20KBK-4HKP*	Multi-turn absolute aviation socket encoder					MOT-008-LL-KC4-B	
	3kW 2000rpm 14.3Nm	SMS130D-0300-20KAK-4HKP	Multi-turn absolute aviation socket encoder	FD623-EA-000	FD623-CA-000	FD623-LA-000	CD623-AA-000	MOT-008-LL-KC4	ENCDG-LL-GC0
		SMS130D-0300-20KBK-4HKP*	Multi-turn absolute aviation socket encoder					MOT-008-LL-KC4-B	
	50W 3000rpm 0.16Nm	SMC40S-0005-30MAK-5LSU	16 bit single-turn Magnetolectric encoder	FD413-EA-000	FD413-CA-000	FD413-LA-000	CD413-AA-000	MOT-005-LL-KL-Y	ENCDG-LL-GU
		SMC40S-0005-30MBK-5LSU*	16 bit single-turn Magnetolectric encoder					MOT-005-LL-KL-Y/BRA-LL-KL	
	100W 3000rpm 0.32Nm	SMC40S-0010-30MAK-5LSU	16 bit single-turn Magnetolectric encoder					MOT-005-LL-KL-Y	
		SMC40S-0010-30MBK-5LSU*	16 bit single-turn Magnetolectric encoder					MOT-005-LL-KL-Y/BRA-LL-KL	
	200W 3000rpm 0.64Nm	SMC60S-0020-30MAK-3LSU	16 bit single-turn Magnetolectric encoder	FD423-EA-000	FD423-CA-000	FD423-LA-000	CD423-AA-000	MOT-005-LL-KL-Y	ENCDG-LL-GU
		SMC60S-0020-30MBK-3LSU*	16 bit single-turn Magnetolectric encoder					MOT-005-LL-KL-Y/BRA-LL-KL	
	400W 3000rpm 1.27Nm	SMC60S-0040-30MAK-3LSU	16 bit single-turn Magnetolectric encoder					MOT-005-LL-KL-Y	
		SMC60S-0040-30MBK-3LSU*	16 bit single-turn Magnetolectric encoder					MOT-005-LL-KL-Y/BRA-LL-KL	
	750W 3000rpm 2.39Nm	SMC80S-0075-30MAK-3LSU	16 bit single-turn Magnetolectric encoder	FD433-EA-000	FD433-CA-000	FD433-LA-000	CD433-AA-000	MOT-005-LL-KL-Y	ENCDG-LL-GU
		SMC80S-0075-30MBK-3LSU*	16 bit single-turn Magnetolectric encoder					MOT-005-LL-KL-Y/BRA-LL-KL	
SMC Series	1kW 2000rpm 4.8Nm	SMC130D-0100-20GAK-4LSP	16 bit single-turn Magnetolectric aviation socket encoder	FD433-EA-000	FD433-CA-000	FD433-LA-000	CD433-AA-000	MOT-005-LL-KC4	ENCDG-LL-GC0
		SMC130D-0100-20GBK-4LSP*	16 bit single-turn Magnetolectric aviation socket encoder					MOT-005-LL-KC4-B	
	1.5kW 2000rpm 7.2Nm	SMC130D-0150-20GAK-4LSP	16 bit single-turn Magnetolectric aviation socket encoder					MOT-008-LL-KC4	
		SMC130D-0150-20GBK-4LSP*	16 bit single-turn Magnetolectric aviation socket encoder					MOT-008-LL-KC4-B	
	2kW 2000rpm 10Nm	SMC130D-0200-20GAK-4LSP	16 bit single-turn Magnetolectric aviation socket encoder	FD623-EA-000	FD623-CA-000	FD623-LA-000	CD623-AA-000	MOT-008-LL-KC4	ENCDG-LL-GC0
		SMC130D-0200-20GBK-4LSP*	16 bit single-turn Magnetolectric aviation socket encoder					MOT-008-LL-KC4-B	
	1kW 2000rpm 4.8Nm	SMC130D-0100-20GAK-4HSP	16 bit single-turn Magnetolectric aviation socket encoder	FD433-EA-000	FD433-CA-000	FD433-LA-000	CD433-AA-000	MOT-005-LL-KC4	ENCDG-LL-GC0
		SMC130D-0100-20GBK-4HSP*	16 bit single-turn Magnetolectric aviation socket encoder					MOT-005-LL-KC4-B	
	1.5kW 2000rpm 7.2Nm	SMC130D-0150-20GAK-4HSP	16 bit single-turn Magnetolectric aviation socket encoder					MOT-005-LL-KC4	
		SMC130D-0150-20GBK-4HSP*	16 bit single-turn Magnetolectric aviation socket encoder					MOT-005-LL-KC4-B	
	2kW 2000rpm 10Nm	SMC130D-0200-20GAK-4HSP	16 bit single-turn Magnetolectric aviation socket encoder	FD623-EA-000	FD623-CA-000	FD623-LA-000	CD623-AA-000	MOT-008-LL-KC4	ENCDG-LL-GC0
		SMC130D-0200-20GBK-4HSP*	16 bit single-turn Magnetolectric aviation socket encoder					MOT-008-LL-KC4-B	
	3kW 2000rpm 14.3Nm	SMC130D-0300-20GAK-4HSP	16 bit single-turn Magnetolectric aviation socket encoder					MOT-008-LL-KC4	
		SMC130D-0300-20GBK-4HSP*	16 bit single-turn Magnetolectric aviation socket encoder					MOT-008-LL-KC4-B	

Note: * When the driver drives the band brake device, DC24V/2A relay shall be externally connected.
★ ENCDG-(4)-GU-BT is a battery-powered cable for the motor of the multi-loop absolute value encoder, with a length of 40cm.