MD Series integrated servo driver

Innovative and practical integrated design

Compact structure

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

High Reliability

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

Lower cost

Save the connection cable,
effectively reduce the equipment cost.

Integrated servo motor naming rules

MD Series integrated servo driver Model description

Model: MD 60- 040 - D M A K - CA - 000
     ① ②   ③   ④ ⑤ ⑥ ⑦   ⑧   ⑨

①-Series name	MD：Integated servo motor	⑤-Encoder type	M：Magnetoelectric encoder
②-flange	60：60x60(mm) 80：80x80(mm)	⑥-Brake	A：Without brake B：brake
③-Rated power	020：20x10(W) 040：40x10(W) 075：75x10(W)	⑦-The shaft style	K：Withkey
④-Supply voltage	D：DC48V	⑧ Control mode	LA：RS232、RS485 CA：RS232、CANopen EA：RS232、EtherCAT
		⑨Software version	000：Software version

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

MD integrated servo motor technical prameter

| Model parameters		MD integrated servomotor		
		MD60-020-DM□K-■A-000	MD60-040-DM□K-■A-000	MD80-075-DM□K-■A-000
Power	Power	24VDC～70VDC	24VDC～70VDC	24VDC～70VDC
Current	Rated current (rms)	5Arms	10Arms	20Arms
	Peak current(PEAK)	21Ap	36Ap	80Ap
Brake holding torqueT(Nm)		1.5	1.5	3.2
Feedback signal		Magnetoelectric encoder		
Brake chopper		Via wiring an external braking resistor (mainly in quick start and stop application)		
Brake chopper threshold		DC73V ± 2V (Default value, Adjustable via software)		
Over-voltage alarming threshold		DC83V ± 2V		
Under-voltage alarming threshold		DC18V ± 2V		
Cooling method		Natural air cooling		
Input specification		4 digital inputs, with COM1 terminal, high level:12.5～30VDC,low level:0～5VDC, max frequency:1KHZ, input impedance:5KΩ		
Output specification		2 digital outputs COMO terminal (drive current up to 100mA)		
Impulsive control		Pulse+Direction、CCW+CW、A Phase+B Phase (5~24V) The input voltage：3.3V～24V;		
		Maximum frequency：500KHz (Note:MD□□-□□□-DM□K-EA-000 don't support this function)		
Brake		Built-in brake power supply		
RS232		Default baud rate is 38400bps, the maximum support is 115.2kbps Baud rate, upper computer Kincoservo+		
RS485		The max. baudrate is 115.2KHz, use Modbus RTU protocol to communicate with controller.		
CAN BUS		Support maximum 1MHz baudrate. Communicate with controller via CANopen protocol		
EtherCAT		Support CoE(CiA402 protocol) and CSP/CSV/PP/PV/PT/HM mode，Communication speed 100M		
Rated Speed nN(rpm)		3000		
Rated Torque Tn(Nm)		0.64	1.27	2.39
Moment of inertia Jm (Kg · cm2)		0.214	0.405	1.087
		0.218（Brake）	0.409（Brake）	1.099（Brake）
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	Install vertically or horizontally		
	Height	Rated working altitude at 1000m or below，Above 1000m: Drecreasing 1.5% per 100m rise, maximum altitude 4000m		
	Atmospheric pressure	86kpa~106kpa		

Note：□=A：Wtihout brake   ■=L：Com port RS232、RS485
     □=B：Brake   ■=C：Com port RS232、CANopen
                       ■=E：Com port RS232、EtherCAT

MD mechanical dimension drawing

MD mechanical dimension drawing (Unit：mm)
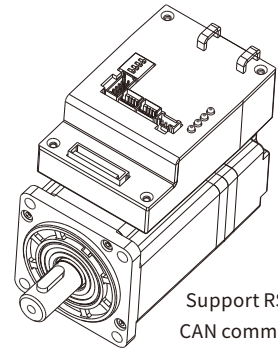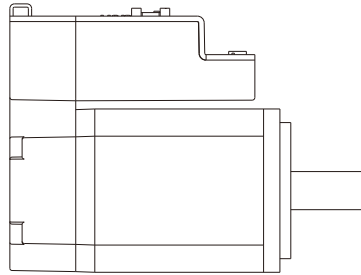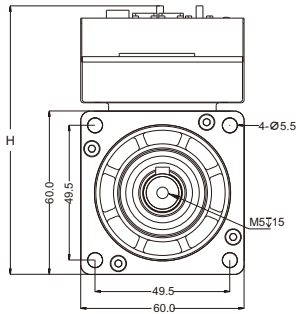
Support RS485 and CAN communication
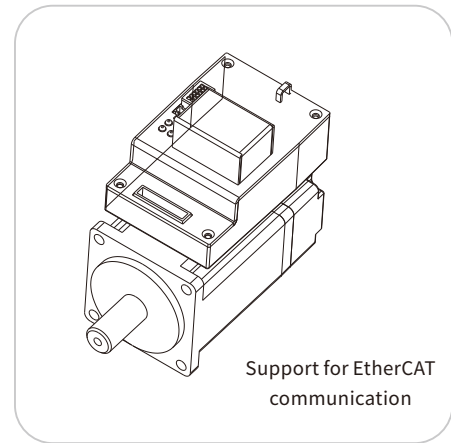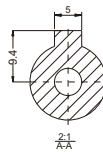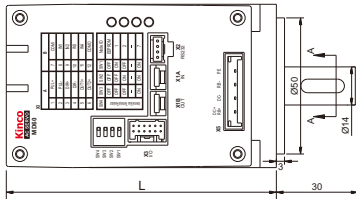
Support for EtherCAT communication

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

MD mechanical dimension drawing

MD mechanical dimension drawing （Unit：mm）

Support RS485 and
CAN communication

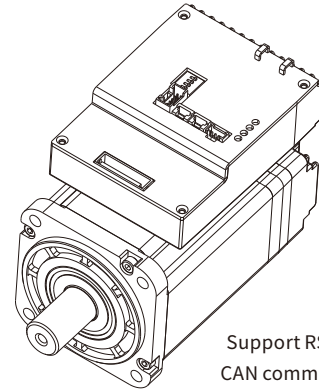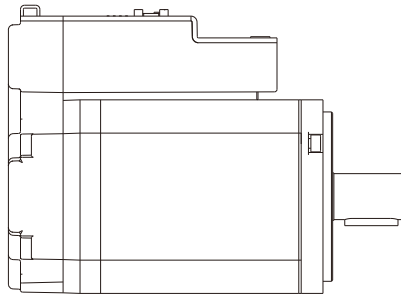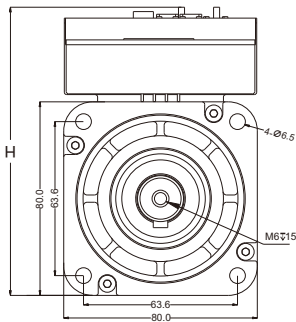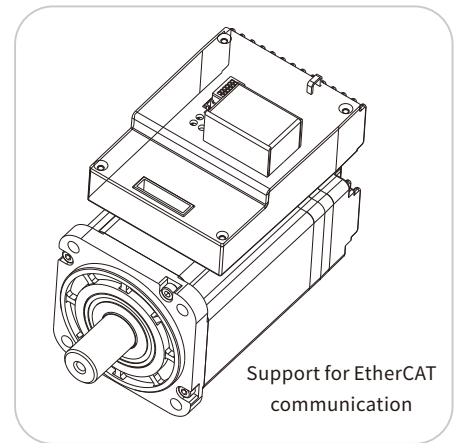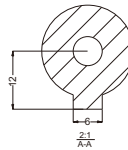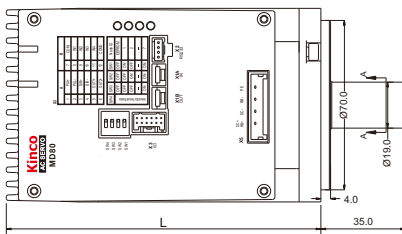Support for EtherCAT
communication

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

MD series terminal description

BUS interface **X1**

EtherCAT

X1B(OUT) X1A(IN)

8 1 | 8 1

!Note: Suitable for MD series that support EtherCAT

Pin No.	EtherCAT
1	TD+
2	TD-
3	RD+
4	\
5	\
6	RD-
7	\
8	\

BUS interface **X1**

CAN BUS or RS485

1 2 3 4 | 1 2 3 4

X1B OUT | X1A IN

!Note: Suitable for MD series that support RS485&CANopen

Pin No.	CAN	RS485
1	GND	GND
2	GND	GND
3	CAN_L	485+
4	CAN_H	485-

Note:
Kinco communication cable can be purchased:
MD-P4-(8)

RS232 communication interface **X2**

X2 RS232

1 2 3 4

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

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

Digital signal input and output port **X3**

X3 I/O

	A		B	
Pin No.	Signal	Pin No.	Signal	
1	PUL+	7	COMI	
2	PUL-	8	IN1	
3	DIR+	9	IN2	
4	DIR-	10	IN3	
5	OUT1+	11	IN4	
6	OUT2+	12	COMO	

Note:
MD□□-□□□-DM□K-EA-000
don't suppport pulse function
Pin 1、2、3、4 is empty

Kinco IO accessories can be purchased: **MD-IO-12P**

X3	PUL+、PUL-、DIR+、DIR-	Pulse signal input terminal Input voltage: 3.3V～24V Maximum frequency: 500KHz
	OUT1+、OUT2+、COMO	Digital signal output Maximum output current: 100mA
	IN1、IN2、IN3、IN4、COMI	Digital signal l input high level: 12.5VDC~30VDC Low level: 0VDC~5VDC Input frequency: <1KHz

power input External brake resistor **X5**

X5 DC+ RB+ DC- RB- PE

DC+、DC-	DC+、DC-: DC power input (24～70V)
PE	PE: ground
RB+、RB-	RB+、RB-: External brake resistor

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

DC 24V driver Logic Power Supply Positive
DC 0V driver logic supply negative

Input common terminal

Digital input

COMI 7
IN1 8
IN2 9
IN3 10
IN4 11

5 OUT1+ Ready
6 OUT2+ Error
12 COMO Output COM

Digital output

Pulse command (<500KHz)

PUL+/CW+/A+ — PUL+ 1
PUL-/CW-/A- — PUL- 2
DIR+/CCW+/B+ — DIR+ 3
DIR-/CCW-/B- — DIR- 4