

# DM5 Series High-Performance Low Voltage Servo System

## Power Solutions

- Telecom Power
- Server Power
- Electric Power
- Medical Power
- Display Power
- LED Power
- Laser Power
- OA Power
- Flat Panel Power
- Bi-directional Inverters for Portable Power
- Solar & BESS & EV Charging Solution

## Industry Automation

- Servo System
- Control System
- Elevator Controller
- Linear Motors
- IOT Solution
- Encoder
- Variable Frequency Drive
- Internal Gear Pump

## New Energy Solutions

- Multiplexed EV Charging System(OBC & DC-DC)
- Power Electronic Unit(2-in-1, 3-in-1)
- E-Compressor
- TV EDU
- Motor Control Unit
- Construction Machinery Controller
- Intelligent Active Hydraulic Suspension (i-AHS)
- Railway A/C Controller
- Railway VFD
- Light Electric Vehicle Controller
- Thermal Mgmt. System

## Home Appliance Control Solutions

- Residential A/C Controller
- Commercial A/C Controller
- Heat Pump Controller
- Vehicle A/C Controller
- Solar A/C Controller
- Mini Compressor Controller
- Refrigerator Controller
- Washer/Dryer Controller
- Residential Microwave
- Industrial Microwave
- Smart Bidet
- RF Thawing System

## Precision Connection

- FFC
- FPC
- Coaxial Cable
- CCS
- Litz Wire
- Peek Wire



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Version: 202504

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MEGMEET is a comprehensive solution provider for hardware and software R&D, production, sales, and service in the field of electrical automation. With power electronics and automation control at its core, MEGMEET's main businesses include Power Solutions, Industrial Automation, New Energy Solutions, Intelligent Equipment, Home Appliance Control Solutions, and Precision Connection.

MEGMEET has established a robust R&D, manufacturing, marketing, and service platform, with over 7,600 employees worldwide. MEGMEET's global presence includes R&D Centers in China, Germany, and the United States; Manufacturing Centers in Thailand, India, and China; and Regional Offices across North America, Europe, and Asia.

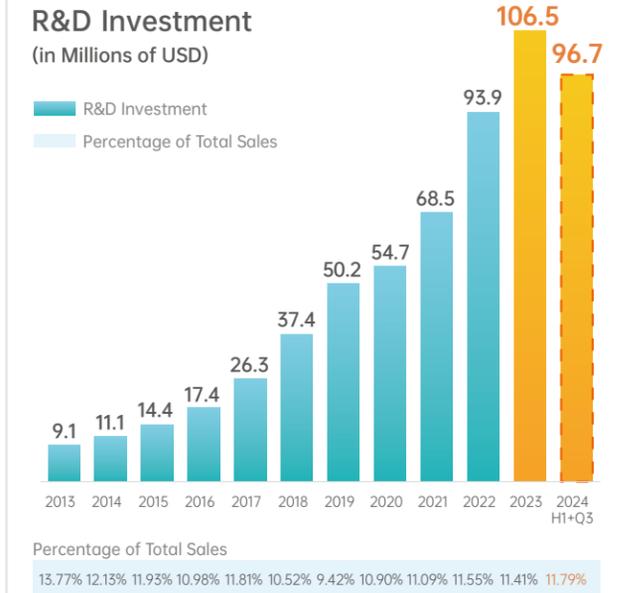
MEGMEET is committed to creating a cleaner living environment for all human beings through more efficient energy utilization and improved manufacturing efficiency. MEGMEET aims to become the world leader in electrical automation and achieve the goal of MEGMEET EVERYWHERE.

 <b>2800+</b> R&D Staff	 <b>10</b> R&D Centers	 <b>9</b> R&D Manufacturing Bases
 <b>7600+</b> Total Employees	 <b>1990+</b> No. of Patents & IP Rights	

# R&D CAPABILITY

## Sustainable R&D Investment

<b>R&amp;D Investment</b>	<b>Patents &amp; Industry Standards</b>
R&D Employees <b>&gt;2800</b> 	No. of Patents & IP Rights <b>1990+</b> ↑ 400+ new in 2024
Percentage of Total Employees <b>36%</b> 	National & International standards <b>32</b> • 9 lead author
Percentage of Total Sales <b>&gt;11%</b> 	Industry Standards Drafted <b>38</b> • 28 lead author



## Testing Capabilities & Management System



MEGMEET's testing capabilities and management system have been certified by CNAS, TUV, UL-WTDP, and UL-CTF. MEGMEET's test results are recognized globally.



# DM5 Series High-Performance Low Voltage Servo System

DM5 series low-voltage servo system is developed for logistics, service robots and other sectors that require automation. It can be charged within the range from 24 to 70 VDC, and can be used together with various kinds of motors, with multiple control modes such as pulse, CAN, EtherCAT available. Featured with high performance, high stability, and small size, DM5 servo system is an ideal choice for goods transportation and storage vehicles/equipment, service robots, and the like.



Multiple Communication Protocols

Multiple Command Channels

Easy Installation

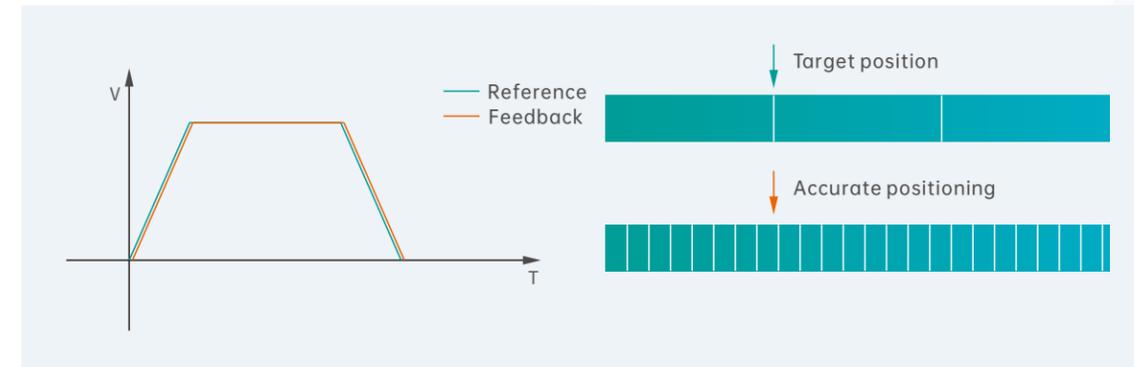
Multiple Control Modes

Various Motors

## Product Features

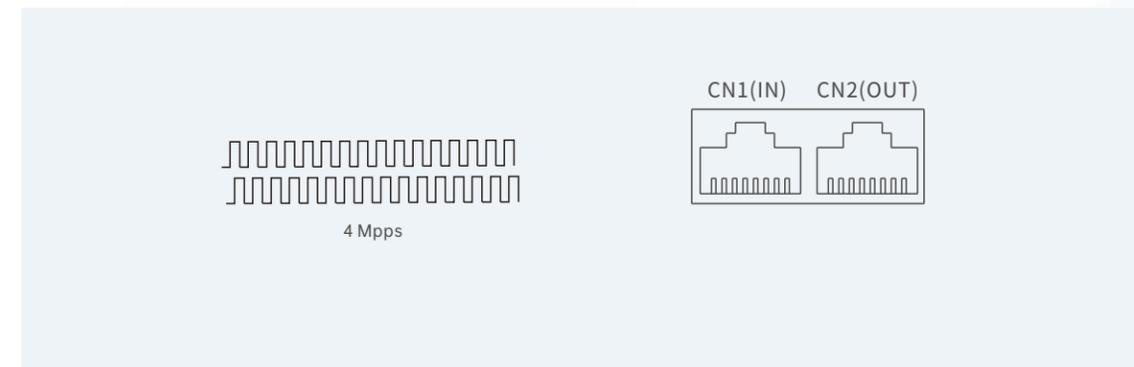
### 01 Multiple control modes

Motor speed, position and torque control



### 02 Multiple command channels

Pulse and communication control



### 03 Multiple communication protocols

EtherCAT, CANopen, and Modbus protocols for you to choose

EtherCAT

CANopen

Modbus

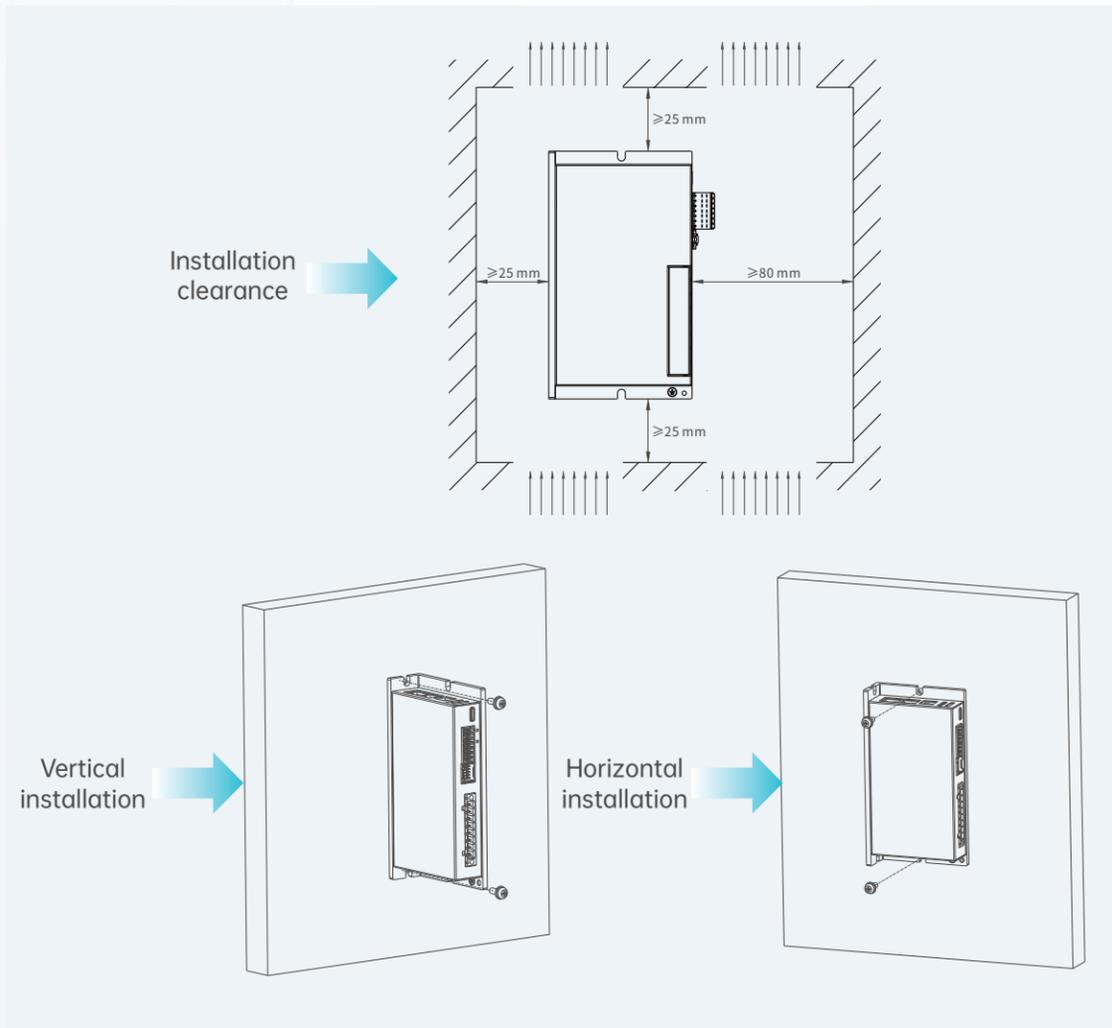
## 04 Wide range of motors

50 W to 1 kW motors with magnetic encoders

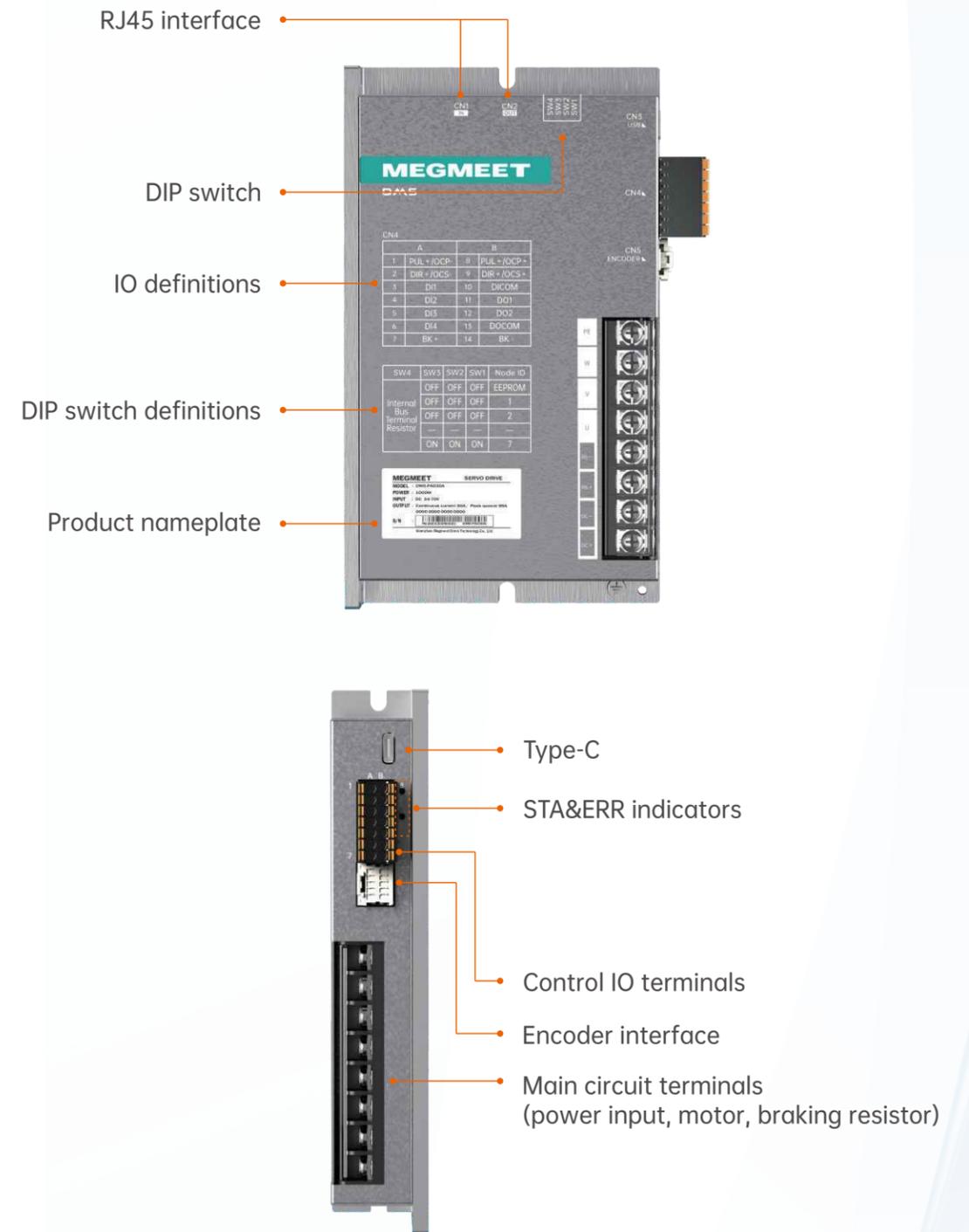


## 05 Flexible installation

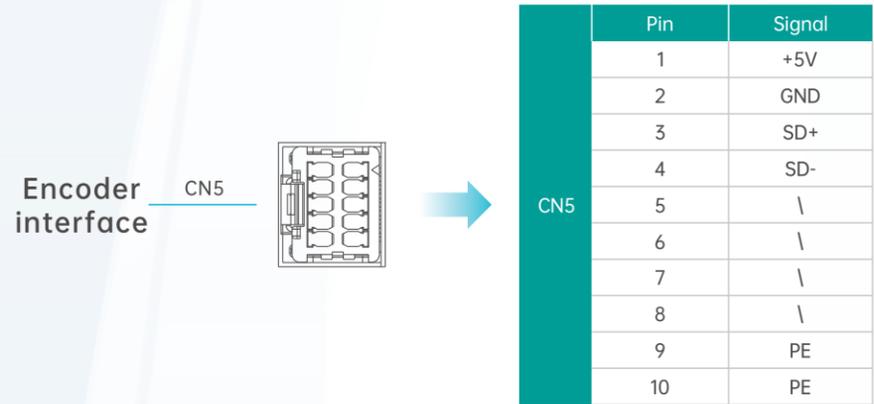
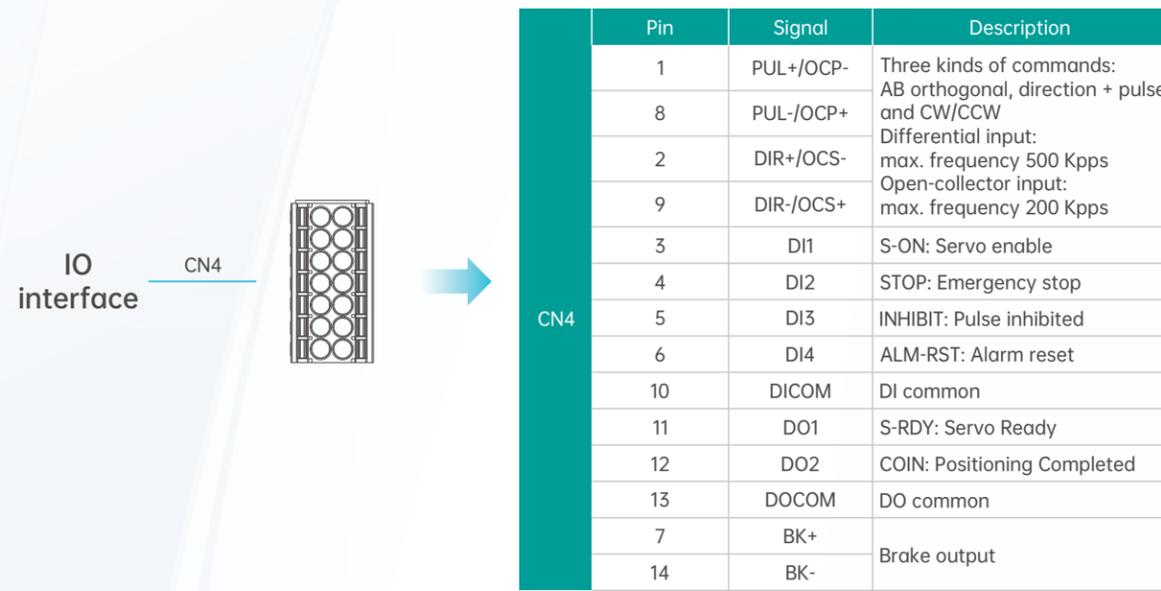
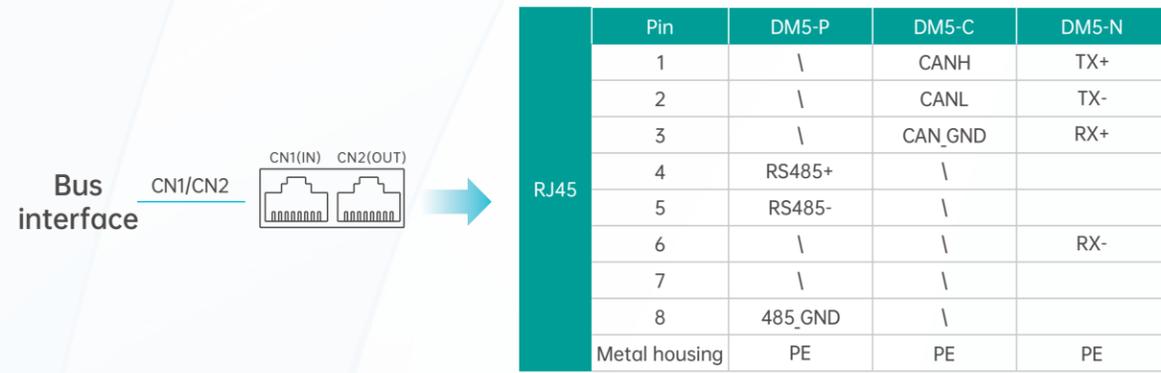
Small size, with auxiliary cooling baseplate as an option



## Product Overview



# Interface Description



# DM5 Naming Rule

DM5 - P A 015 B - XX

1 2 3 4 5 6

<p><b>1 Product series</b></p> <p>DM5: DM5 series</p>	<p><b>2 Communication</b></p> <p>P: General type C: CANopen N: EtherCAT</p>	<p><b>3 Voltage class</b></p> <p>A: 24 to 70 V B: 48 to 96 V C: 70 to 110 V</p>
<p><b>4 Rated current</b></p> <p>015: 15 A 030: 30 A</p>	<p><b>5 Brake</b></p> <p>B: With brake</p>	<p><b>6 Description</b></p> <p>XX: Reserved</p>

# DM5 Electrical Specifications

Input voltage (VDC)	Drive model	Rated output current (A)	Peak output current (A)	Control mode	Brake power	Discharge resistor	Cooling method	Dimensions (mm)	Commonly applied motor power (kW)
24 to 70 V	DM5-PA015B	15 A (up to 12 A without auxiliary cooling)	48 A	RS485, pulse	Built-in	External	Natural cooling + auxiliary cooling metal housing	142x77x29 mm	0.2 0.4
	DM5-CA015B			CANopen					
	DM5-NA015B			EtherCAT					
	DM5-PA030B	30 A (up to 22 A without auxiliary cooling)	99 A	RS485, pulse				171x100x30 mm	0.75 1.0
	DM5-CA030B			CANopen					
	DM5-NA030B			EtherCAT					

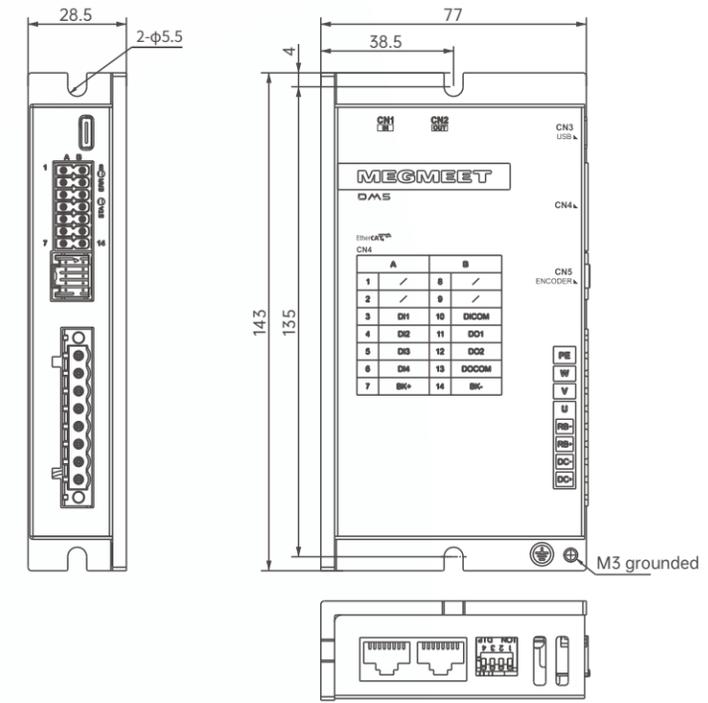
# DM5 System Configuration

Power (W)	Motor model	Encoder type	Connection type	Brake cable	Power cable	Encoder cable	Servo drive		
							RS485+pulse	CANopen	EtherCAT
50	SPM-DC8045AM*K-AAXX-L	17-bit multi-turn magnetic encoder	Directly connected to the servo drive	Directly connected to the drive, with no cable requirements. XX indicates the outgoing cable length. The standard cable length is 500 mm, with corresponding XX being 05.			DM5-PA015B	DM5-CA015B	DM5-NA015B
100	SPM-DC80401M*K-AAXX-L								
200	SPM-DC80602M*K-AAXX-L								
400	SPM-DC80604M*K-AAXX-L								
600	SPM-DC80606M*K-BAXX-L								
750	SPM-DC80807M*K-BAXX-L								
1000	SPM-DC80810M*K-BAXX-L						DM5-PA030B	DM5-CA030B	DM5-NA030B

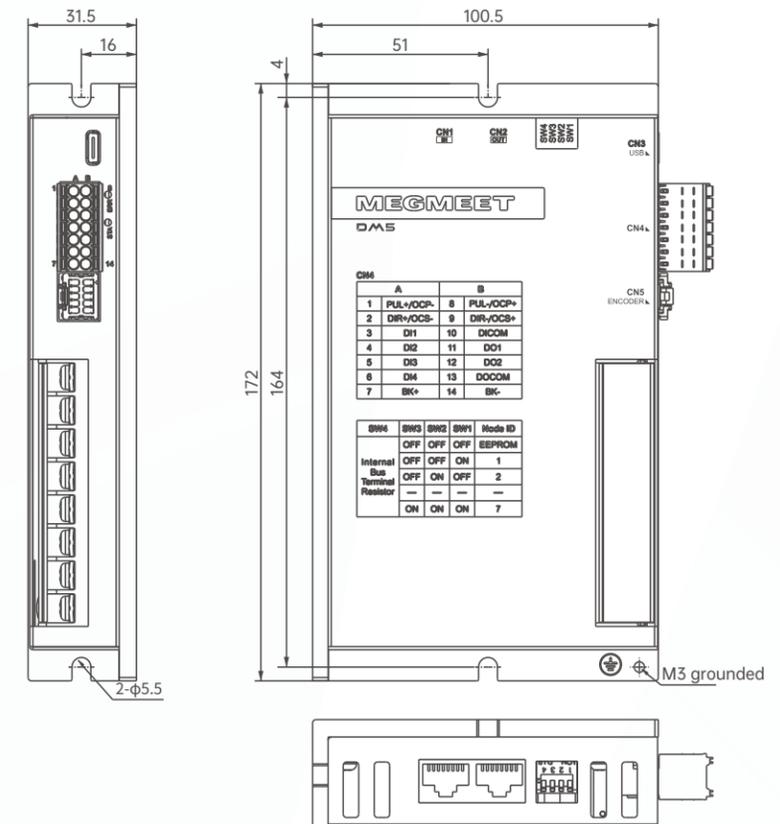
Power (W)	Motor model	Encoder type	Connection type	Brake cable	Power cable	Encoder cable	Servo drive		
							RS485+pulse	CANopen	EtherCAT
50	SPM-DC8045AMAK-ECXX-L	17-bit multi-turn magnetic encoder	Via aviation plug	Brake&Power cable	SPL-MG11-XX-R2	SPL-E21-XX-R2	DM5-PA015B	DM5-CA015B	DM5-NA015B
	SPM-DC8045AMBK-FCXX-L			Brake&Power cable	SPL-BMG11-XX-R2	SPL-E21-XX-R2			
100	SPM-DC80401MAK-ECXX-L			Brake&Power cable	SPL-MG11-XX-R2	SPL-E21-XX-R2			
	SPM-DC80401MBK-FCXX-L			Brake&Power cable	SPL-BMG11-XX-R2	SPL-E21-XX-R2			
200	SPM-DC80602MAK-ECXX-L			SPL-B21-XX-R2	SPL-MG11-XX-R2	SPL-E21-XX-R2			
	SPM-DC80602MBK-ECXX-L			SPL-B21-XX-R2	SPL-MG11-XX-R2	SPL-E21-XX-R2			
400	SPM-DC80604MAK-GCXX-L			SPL-B21-XX-R2	SPL-MH21-XX-R2	SPL-E21-XX-R2			
	SPM-DC80604MBK-GCXX-L			SPL-B21-XX-R2	SPL-MH21-XX-R2	SPL-E21-XX-R2			
600	SPM-DC80606MAK-GCXX-L			SPL-B21-XX-R2	SPL-MI22-XX-R2	SPL-E21-XX-R2			
	SPM-DC80606MBK-GCXX-L			SPL-B21-XX-R2	SPL-MI22-XX-R2	SPL-E21-XX-R2			
750	SPM-DC80807MAK-GCXX-L			SPL-B21-XX-R2	SPL-MJ22-XX-R2	SPL-E21-XX-R2			
	SPM-DC80807MBK-GCXX-L			SPL-B21-XX-R2	SPL-MJ22-XX-R2	SPL-E21-XX-R2			
1000	SPM-DC80810MAK-GCXX-L	SPL-B21-XX-R2	SPL-MJ22-XX-R2	SPL-E21-XX-R2	DM5-PA030B	DM5-CA030B	DM5-NA030B		
	SPM-DC80810MBK-GCXX-L	SPL-B21-XX-R2	SPL-MJ22-XX-R2	SPL-E21-XX-R2					

# Product Dimensions

## Size A

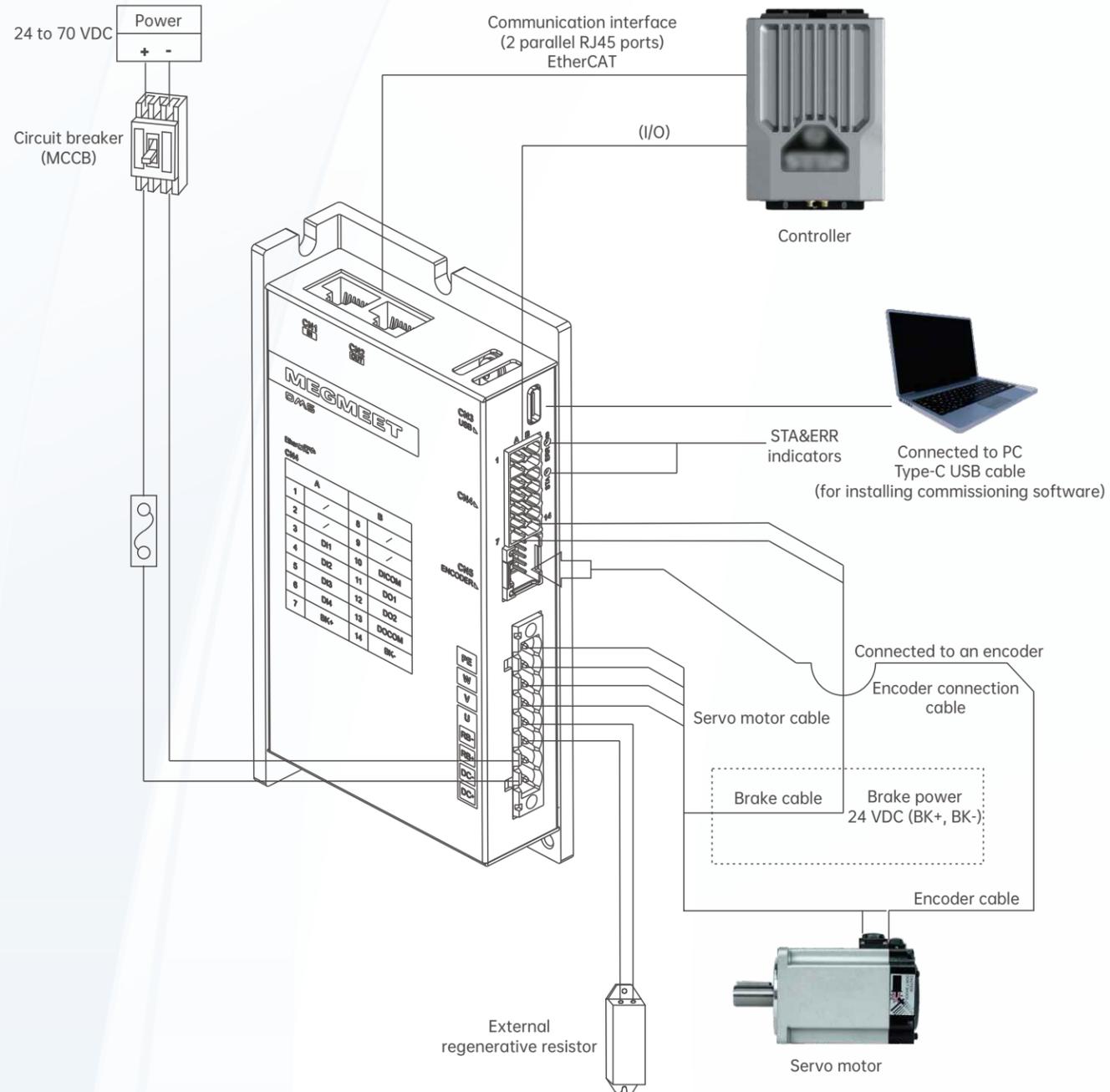


## Size B

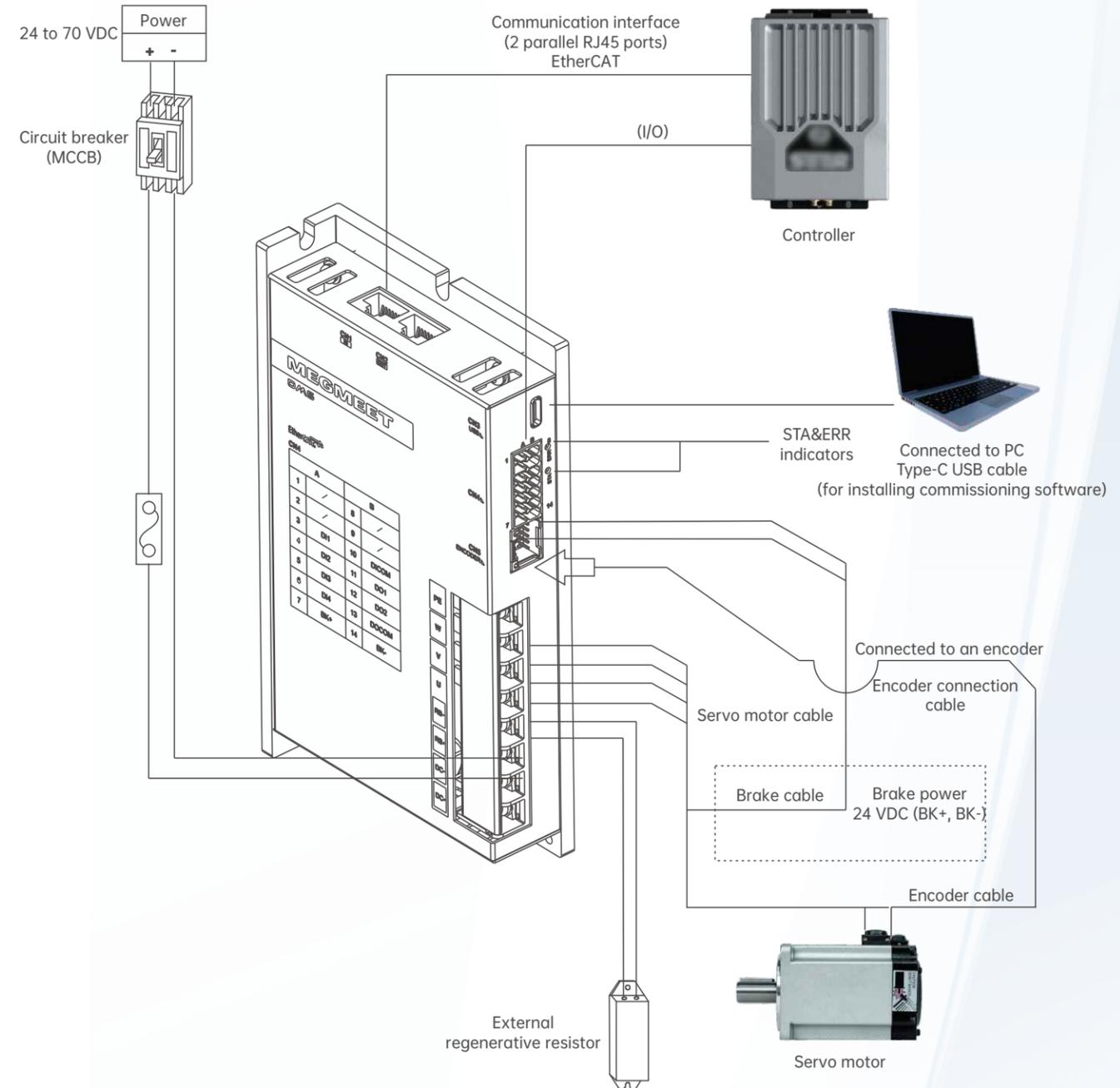


# DM5-N Drive Wiring

## Size A wiring

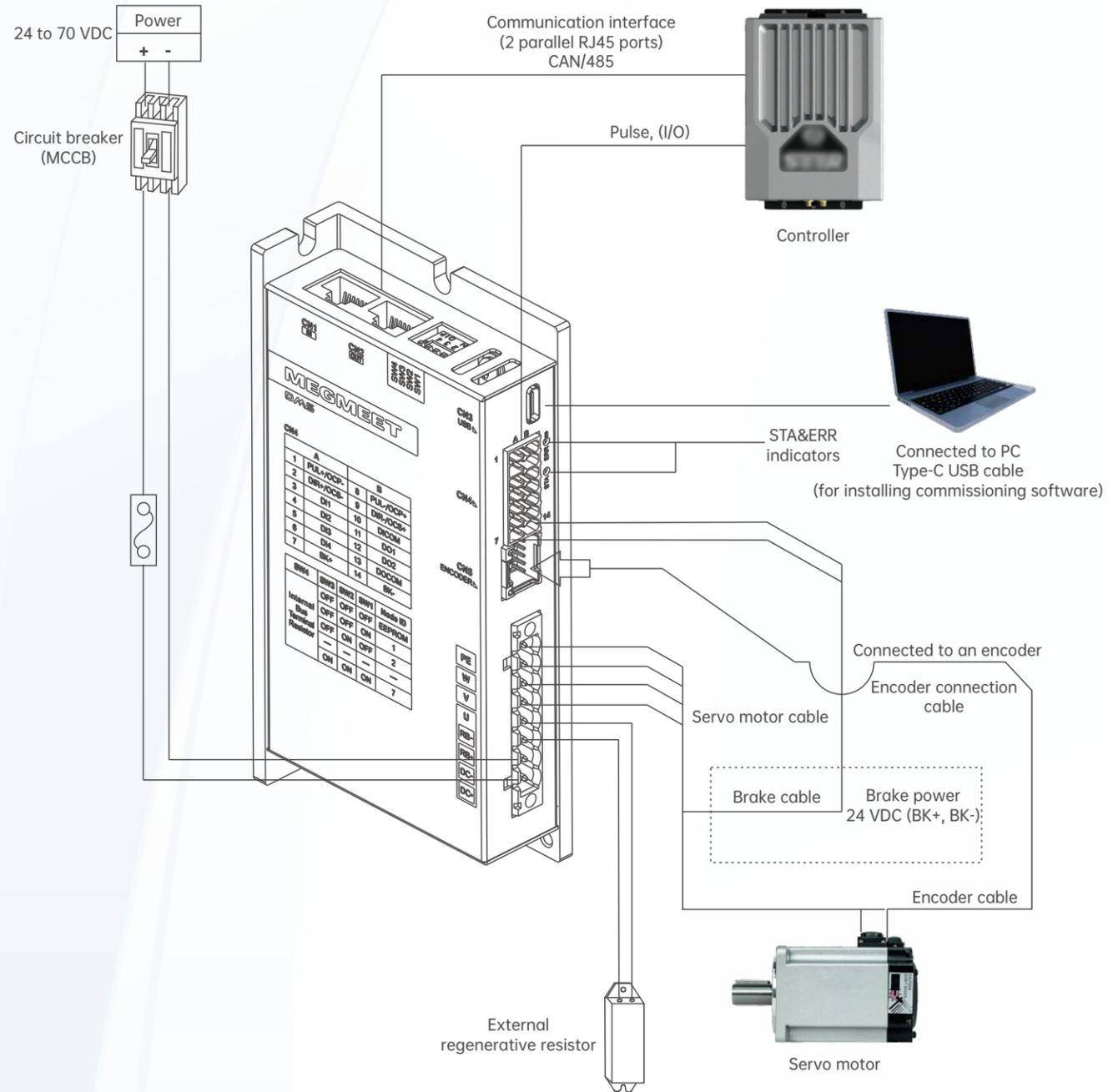


## Size B wiring

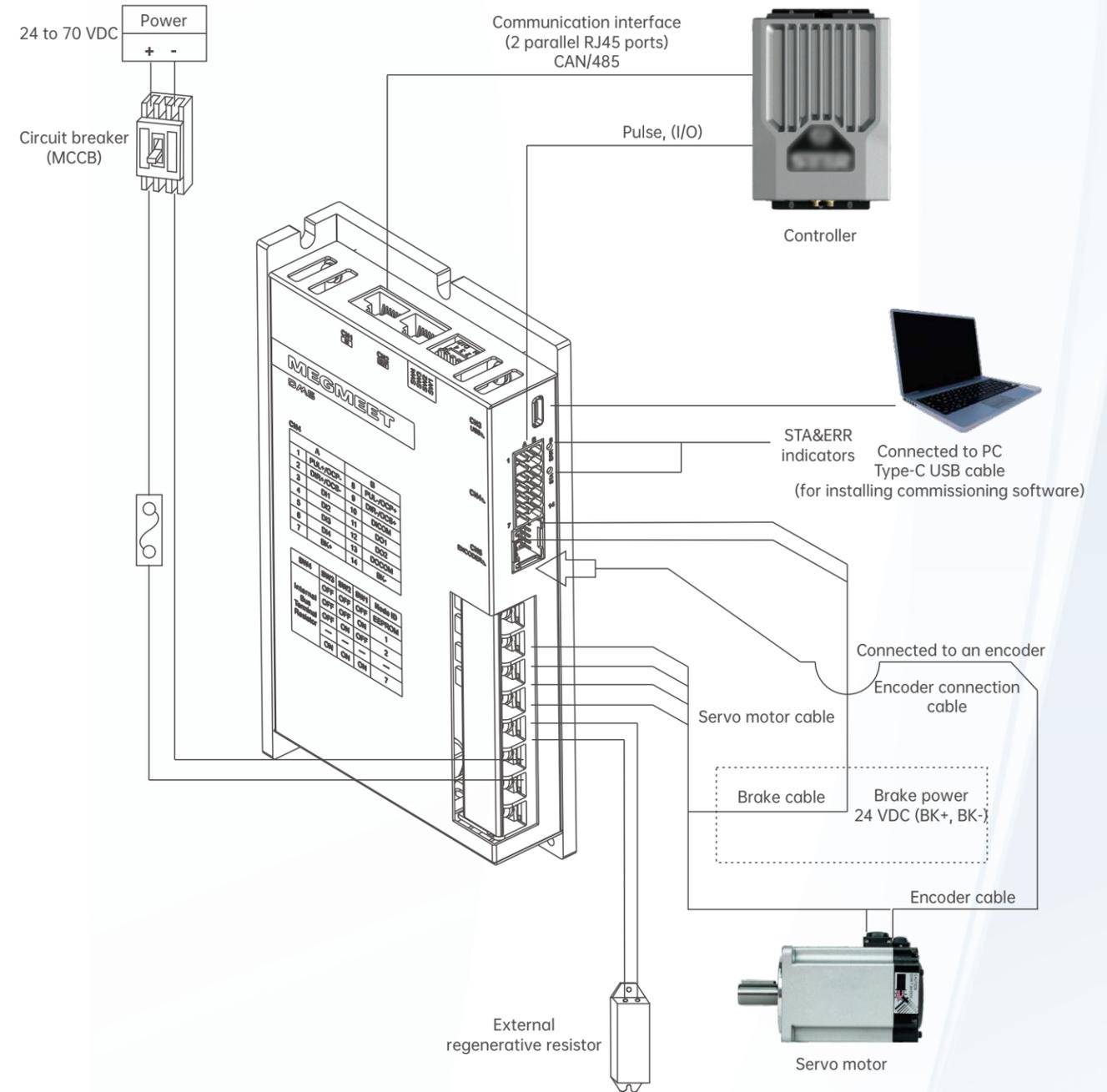


# DM5-P/C Drive Wiring

## Size A wiring



## Size B wiring



# Technical Specifications

Basic specifications		
Control mode	MOSFET PWM control, sine wave current drive	
Main circuit power supply	24 to 70 VDC	
Working efficiency	≥ 95%	
Encoder	Tamagawa absolute encoders supported; communication-type photoelectric and magnetoelectric encoders (single-turn, multi-turn) supported	
IO		
Digital signal	DI	4 general inputs, optocoupler isolation, both NPN and PNP inputs available Input voltage range: 20 to 30 V, input impedance: 3.9 K Various functions can be defined through function codes Maximum input frequency: 300 Hz
	DO	2 general outputs, optocoupler isolation, both NPN and PNP outputs available Maximum operating voltage 30 V, maximum current 50 mA Various functions can be defined through function codes
Pulse signal	Pulse reference	Optocoupler isolation Open-collector input, input pulse frequency ≤ 200 Kpps Only for the DM5-P version, compatible with both 5 V and 24 V systems
	High-speed pulse reference	Differential input Input pulse frequency ≤ 500 Kpps Only for the DM5-P version
	Pulse feedback	Not supported
Communication function		
485	Two RJ45	Modbus protocols supported, for the DM5-P version
CAN	Two RJ45	CANopen protocols supported, for the DM5-C version
EtherCAT	Two RJ45	EtherCAT supported, for the DM5-N version
USB	USB Type-C	Communication with PC, for commissioning and upgrade of parameters and programs
Others		
State	LED indication	2 LEDs. STA: State indicator; ERR: Error indicator
Brake power supply	24 V brake power supply built in the drive	
Brake output interface	The whole series has this interface, no matter with or without brake.	
Braking interface	Action upon overvoltage (shorting is strictly prohibited as short circuit protection is not supported)	
Braking resistor	External	
4-position DIP switch (doubled for two shafts)	This switch is only reserved for DM5-P and DM5-C, not for DM5-N. The positions 1-3 are used to set the CAN ID of the device and the position 4 is used to set the bus impedance (120 Ω). If 1-3 are not toggled on, the host controller can set the CAN ID of the device and write it to EEPROM.	
General function		
Auto-adjustment	The host controller issues a command to run the motor, during which the load moment of inertia ratio is estimated in real time and the rigidity level is automatically set.	
Switchover of multiple control modes	1. Position mode; 2. Speed mode; 3. Torque mode; 4. Position/Speed mode switchover; 5. Speed/Torque mode switchover; 6. Position/Torque mode switchover; 7. CANopen; 8. EtherCAT	
Pulse frequency division	No such function	
Protection function	Overvoltage, undervoltage, overcurrent, locked rotor, overspeed, stall, overheat, overload, encoder abnormality, input phase loss, and excessive position deviation (measuring braking resistor)	
High-frequency vibration suppression	4 sets of notch filters, suppressing the vibration from 0 to 4000 Hz; 1 set of speed reference notch filter from 0 to 1000 Hz	
End vibration suppression	2 sets of filters, suppressing the end low-frequency vibration from 1 Hz to 100 Hz	
Homing mode	Multiple homing modes	

General function			
Reverse clearance compensation	Used to improve the response delay that occurs when the traveling direction of the machine is reversed		
Mechanical analyzer	Used to analyze frequency features of the mechanical system through the host software		
Inertia identification	Offline and online system inertia identification		
Torque observer	Load torque observation and compensation		
Friction compensation	System friction compensation		
Position control			
Control input	Deviation counter clear, pulse command input inhibited, electronic gear ratio switchover and so on		
Control output	Positioning completed		
Pulse input	Pulse type	1. Pulse + direction; 2. A/B pulse orthogonal; 3. CW/CCW pulse	
	Input type	1. Differential input; 2. Open-collector input	
	Pulse frequency	Differential: up to 500 Kpps for the high-speed port, and pulse width above 1 us Open-collector: up to 200 Kpps, and pulse width above 2.5 us	
	Pulse filter	First-order reference smooth filter or FIR filter	
Electronic gear	4 sets of electronic gear ratio		
Multiple position references	16-segment position selection by 4 DIs		
Speed control			
Performance	Speed variation rate	Load variation rate	0 to 100% of load: below 0.5% (at rated speed)
		Voltage variation rate	Rated voltage ±10%: 0.5% (at rated speed)
		Temperature variation rate	25±25°C: below 0.5% (at rated speed)
	Speed control range	1 to 5000	
	Speed loop response	2 kHz	
Soft start time	0 to 6000 ms		
Control input	Internal speed reference 1/2/3, zero speed clamp, and so on		
Control output	Speed arrival, and so on		
Internal speed reference	Switchover of 8-segment speed reference by 3 DIs		
Speed reference filter	First-order delay filter for speed reference		
Torque control			
Performance	Torque control accuracy	±1%	
	Frequency feature	3 kHz	
Control input	Zero speed clamp, torque reference symbol input, and so on		
Control output	Speed arrival, and so on		
Speed limit function	Set speed limit values through function codes		
Torque reference filter	First-order delay filter for torque reference		

# Motor Model

SPM - B C 8 06 04 M A K - AA 05 - L

1 2 3 4 5 6 7 8 9 10 11 12

## 1 Product series

SPM: SPM series

## 2 Rated voltage (V)

A: 12 E: 60  
B: 24 F: 72  
C: 36 G: 80  
D: 48 ...

48 V is the default configuration.  
For other voltage requirements,  
please contact us.

## 3 Rated speed

A: 1000 E: 2000  
B: 2500 F: 4000  
C: 3000 G: 5000  
D: 1500 ...

## 4 Encoder type

5: 17-bit single-turn  
absolute optical encoder  
6: 23-bit multi-turn  
absolute optical encoder  
7: 17-bit single-turn  
absolute magnetic encoder  
8: 17-bit multi-turn  
absolute magnetic encoder

## 5 Frame

02: 20\*20 10: 100\*100  
04: 40\*40 11: 110\*110  
06: 60\*60 13: 130\*130  
08: 80\*80 18: 180\*180

## 6 Rated power

5A: 50 06: 600  
01: 100 07: 750  
02: 200 10: 1000  
04: 400

## 7 Inertia type

L: Low inertia  
M: Medium inertia  
H: High inertia

## 8 With/Without brake

A: Without brake  
B: With brake

## 9 Output shaft

M: With keyway without oil seal  
K: With keyway with oil seal  
O: Optical shaft with oil seal  
C: External spline with oil seal  
D: D-type shaft with oil seal

## 10 Terminal combination

Mark	Power terminal	Encoder terminal
AA	UVW and PE are needle-type terminals	Molex 10 pin female
BA	UVW and PE are U-type terminals	Molex 10 pin female
EC	Aviation plug GM-1310/P-4B	Aviation plug GM-1310/P-7
FC	Aviation plug GM-1310/P-6B	Aviation plug GM-1310/P-7
GC	Aviation plug GM-2110/P-4	Aviation plug GM-1310/P-7

## 11 Cable length (m)

03: 3\*0.1  
05: 5\*0.1  
10: 10\*0.1

## 12 Motor design number

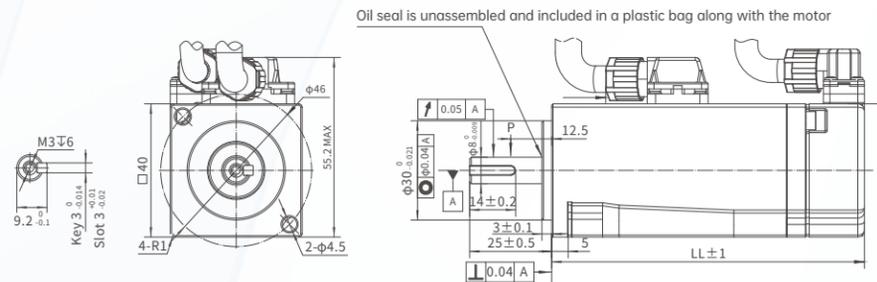
# Basic Specifications of Motors

Motor model	SPM-DC8045AM*K-AAXX-L	SPM-DC80401M*K-AAXX-L	SPM-DC80602M*K-AAXX-L
Voltage (V)	48	48	48
Power (W)	50	100	200
Rated speed (rpm)	3000	3000	3000
Max. speed (rpm)	4000	4000	4000
Rated torque (N·m)	0.16	0.32	0.64
Peak torque (N·m)	0.48	0.96	1.92
Rated current (A)	3.0	5.7	6.0
Peak current (A)	9.3	17.7	18.6
Motor frame	40	40	60
Moment of inertia (kg·cm <sup>2</sup> )	0.046(0.036)	0.072(0.062)	0.3(0.29)
Number of pole pairs (P)	5	5	5
Brake voltage (V)	24	24	24
Brake power (W)	6.9	6.9	7.5
Brake static torque (N·m)	≥0.4	≥0.4	≥1.5

Motor model	SPM-DC80604M*K-AAXX-L	SPM-DC80606M*K-BAXX-L	SPM-DC80807M*K-BAXX-L	SPM-DC80810M*K-BAXX-L
Voltage (V)	48	48	48	48
Power (W)	400	600	750	1000
Rated speed (rpm)	3000	3000	3000	3000
Max. speed (rpm)	4000	4000	4000	4000
Rated torque (N·m)	1.27	1.91	2.39	3.2
Peak torque (N·m)	3.81	5.73	7.17	9.6
Rated current (A)	10	15	19	28
Peak current (A)	31	46.5	59	87
Motor frame	60	60	80	80
Moment of inertia (kg·cm <sup>2</sup> )	0.59(0.58)	0.84(0.83)	1.65(1.5)	1.95(1.8)
Number of pole pairs (P)	5	5	5	5
Brake voltage (V)	24	24	24	24
Brake power (W)	7.5	8.3	11.5	11.5
Brake static torque (N·m)	≥1.5	≥2	≥3.2	≥3.2

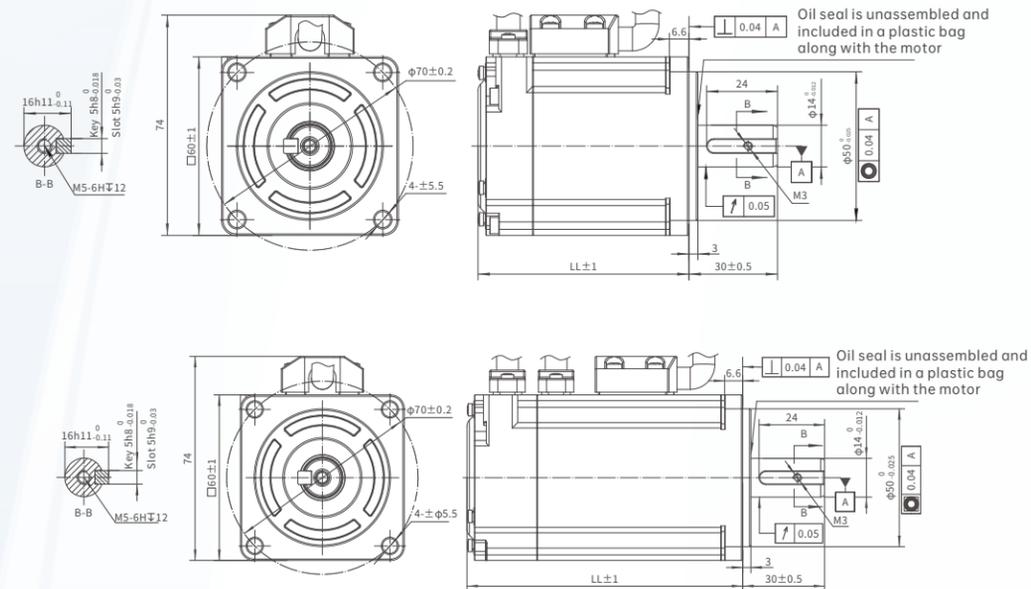
# Motor Dimensions

## 40 frame



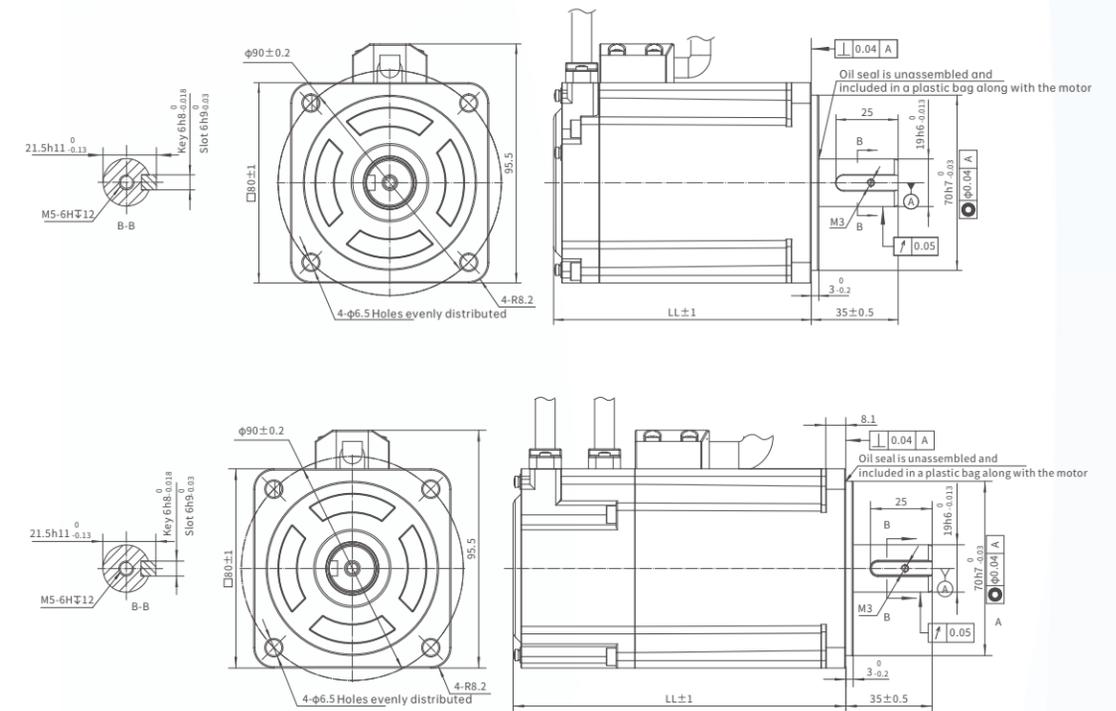
Frame	Power (W)	Motor model	Motor length LL	
			Without brake	With brake
40	50	SPM-DC8045AM*K-AAXX-L	56.7	84
40	100	SPM-DC80401M*K-AAXX-L	67.7	95

## 60 frame



Frame	Power (W)	Motor model	Motor length LL	
			Without brake	With brake
60	200	SPM-DC80602M*K-AAXX-L	71.6	101.9
60	400	SPM-DC80604M*K-AAXX-L	88.6	118.1
60	600	SPM-DC80606M*K-BAXX-L	108.6	138.1

## 80 frame



Frame	Power (W)	Motor model	Motor length LL	
			Without brake	With brake
80	750	SPM-DC80807M*K-BAXX-L	90.9	121.9
80	1000	SPM-DC80810M*K-BAXX-L	103.9	134.9

# Naming Rules of Motor Cables

## Power cable

SPL - B MH 1 2 - 03 - R2  
 ① ② ③ ④ ⑤ ⑥ ⑦

**① Product series**  
SPL: SPL series

**② With/Without brake**  
None: Without brake  
B: With brake

**③ Copper wire**  
MG: Cross-sectional area 0.75 mm<sup>2</sup>  
MH: Cross-sectional area 1.5 mm<sup>2</sup>  
MI: Cross-sectional area 2.5 mm<sup>2</sup>  
MJ: Cross-sectional area 3.3 mm<sup>2</sup>  
MK: Cross-sectional area 4.0 mm<sup>2</sup>

**④ Motor side terminal**

Mark	Motor side terminal (without brake)	Motor side terminal (with brake)
1	Aviation plug GM-1311/S-4B	Aviation plug GM-1311/S-6B
2	Aviation plug GM-2111/S-4	/

**⑤ Drive side terminal**  
1: UVW and PE are needle-type terminals  
2: UVW and PE are U-type terminals  
3: UVW are needle-type and PE is U-type  
4: UVW are U-type and PE is needle-type

**⑥ Cable length**  
03: 3 m  
05: 5 m  
10: 10 m

**⑦ Bending resistance**  
None: Normal cable  
R1: 5 million times flexible cable  
R2: 10 million times flexible cable  
R3: 20 million times flexible cable  
R4: 30 million times flexible cable

## Encoder cable

SPL - E 2 1 B - 03 - R2  
 ① ② ③ ④ ⑤ ⑥ ⑦

**① Product series**  
SPL: SPL series

**② Cable type**  
E: Encoder cable

**③ Motor side terminal**  
2: Aviation plug GM-1311/S-7

**④ Drive side terminal**  
1: Molex 10 pin male

**⑤ With/Without battery**  
None: Without battery and battery cable  
A: With battery cable, without battery  
B: With battery

**⑥ Cable length**  
03: 3 m  
05: 5 m  
10: 10 m

**⑦ Bending resistance**  
None: Normal cable  
R1: 5 million times flexible cable  
R2: 10 million times flexible cable  
R3: 20 million times flexible cable  
R4: 30 million times flexible cable

## Brake cable

SPL - B 2 1 - 03 - R2  
 ① ② ③ ④ ⑤ ⑥

**① Product series**  
SPL: SPL series

**② Cable type**  
B: Brake cable

**③ Motor side terminal**  
2: Aviation plug GM-1311/S-2

**④ Drive side terminal**  
1: Needle type

**⑤ Cable length**  
03: 3 m  
05: 5 m  
10: 10 m

**⑥ Bending resistance**  
None: Normal cable  
R1: 5 million times flexible cable  
R2: 10 million times flexible cable  
R3: 20 million times flexible cable  
R4: 30 million times flexible cable

# Motor Cable Selection

## Power cable selection

Terminal combinations for standard power cables					
No.	AWG	Mark	Terminal combination		Suitable motor power
			Motor side terminal	Drive side terminal	
1	18 AWG (About 0.8 mm <sup>2</sup> )	MG11	Aviation plug GM-1311/S-4B	Needle-type	50 W to 200 W motors
2	18 AWG + 22 AWG	BMG11	Aviation plug GM-1311/S-6B	Needle-type	50 W to 100 W brake motors
3	15 AWG (About 1.5 mm <sup>2</sup> )	MH21	Aviation plug GM-2111/S-4	Needle-type	400 W motors
4	13 AWG (About 2.5 mm <sup>2</sup> )	MI22	Aviation plug GM-2111/S-4	U-type	600 W motors
5	12 AWG (About 3.3 mm <sup>2</sup> )	MJ22	Aviation plug GM-2111/S-4	U-type	750 W to 1 kW motors

## Power cable definition

SPL-MG11-** definition (50 W to 200 W motors)					
A side (drive side): needle-type terminal			B side (motor side): aviation plug GM-1311/S-4B		
Pin	Signal	Signal	Pin		
Needle type with label	U	U	1		
Needle type with label	V	V	2		
Needle type with label	W	W	3		
Needle type with label	PE	PE	4		

SPL-BMG11-** definition (50 W to 100 W brake motors)					
A side (drive side): needle-type terminal			B side (motor side): aviation plug GM-1311/S-6B		
Pin	Signal	Signal	Pin		
Needle type with label	U	U	1		
Needle type with label	V	V	2		
Needle type with label	W	W	3		
Needle type with label	PE	PE	4		
Needle type with label	0V	0V	5		
Needle type with label	24V	24V	6		

SPL-MH21-** definition (400 W motors)					
A side (drive side): needle-type terminal			B side (motor side): aviation plug GM-2111/S-4		
Pin	Signal	Signal	Pin		
Needle type with label	U	U	1		
Needle type with label	V	V	2		
Needle type with label	W	W	3		
Needle type with label	PE	PE	4		

SPL-MI22-** definition (600 W motors)					
A side (drive side): U-type terminal			B side (motor side): aviation plug GM-2111/S-4		
Pin	Signal	Signal	Pin		
U type with label	U	U	1		
U type with label	V	V	2		
U type with label	W	W	3		
U type with label	PE	PE	4		

SPL-MJ22-** definition (750 W to 1 kW motors)			
A side (drive side): U-type terminal		B side (motor side): aviation plug GM-2111/S-4	
Pin	Signal	Signal	Pin
U type with label	U	U	1
U type with label	V	V	2
U type with label	W	W	3
U type with label	PE	PE	4

## Encoder cable selection

Terminal combinations for standard encoder cables					
No.	AWG	Mark	Terminal combination		Suitable motor power
			Motor side terminal	Drive side terminal	
1	26 AWG (About 0.128 mm <sup>2</sup> )	E21	Aviation plug GM-1311/S-7	Molex 10 pin male	50 W to 1 kW motors

## Encoder cable definition

SPL-E21-** definition (50 W to 1 kW motors)					
A side (drive side): CJT connector A2011HA-2x5P			B side (motor side): aviation plug GM-1311/S-7		
Pin	Signal	Signal	Pin		
1	5V	5V	2		
2	GND	GND	3		
3	SD+	SD+	4		
4	SD-	SD-	5		
5	Battery not connected to drive side	Battery+	6		
6	Battery not connected to drive side	Battery-	7		
7	/	/	/		
8	/	/	/		
9	PE	PE	1		
10	/	/	/		

## Brake cable selection

Terminal combinations for standard brake cables					
No.	AWG	Mark	Terminal combination		Suitable motor power
			Motor side terminal	Drive side terminal	
1	22 AWG (About 0.325 mm <sup>2</sup> )	B21	Aviation plug GM-1311/S-2	Needle-type terminal	200 W to 1 kW brake motors

## Brake cable definition

SPL-B21-** definition (200 W to 1 kW brake motors)					
A side (drive side): needle-type terminal			B side (motor side): aviation plug GM-1311/S-2		
Pin	Signal	Signal	Pin		
Needle type terminal with label	+24V	+24V	1		
Needle type terminal with label	0V	0V	2		

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