MEGMEET

MEGMEET
Shenzhen SC: 002851

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

Industrial Automation

■ Servo System ☐ Control System ☐ Elevator Controller ☐ Linear Motors ☐ IoT Solution ☐ Encoder
☐ Variable Frequency Drive ☐ Internal Gear Pump

eMobility & EV Infrastructure

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

Intelligent Equipment

☐ Intelligent Welding ☐ Electric Submersible-Progressing Cavity Pump
☐ Industrial Microwave ☐ Polysilicon Water Quenching Equipment
☐ Automatic Car Washing Machine ☐ Intelligent Lifting Devices

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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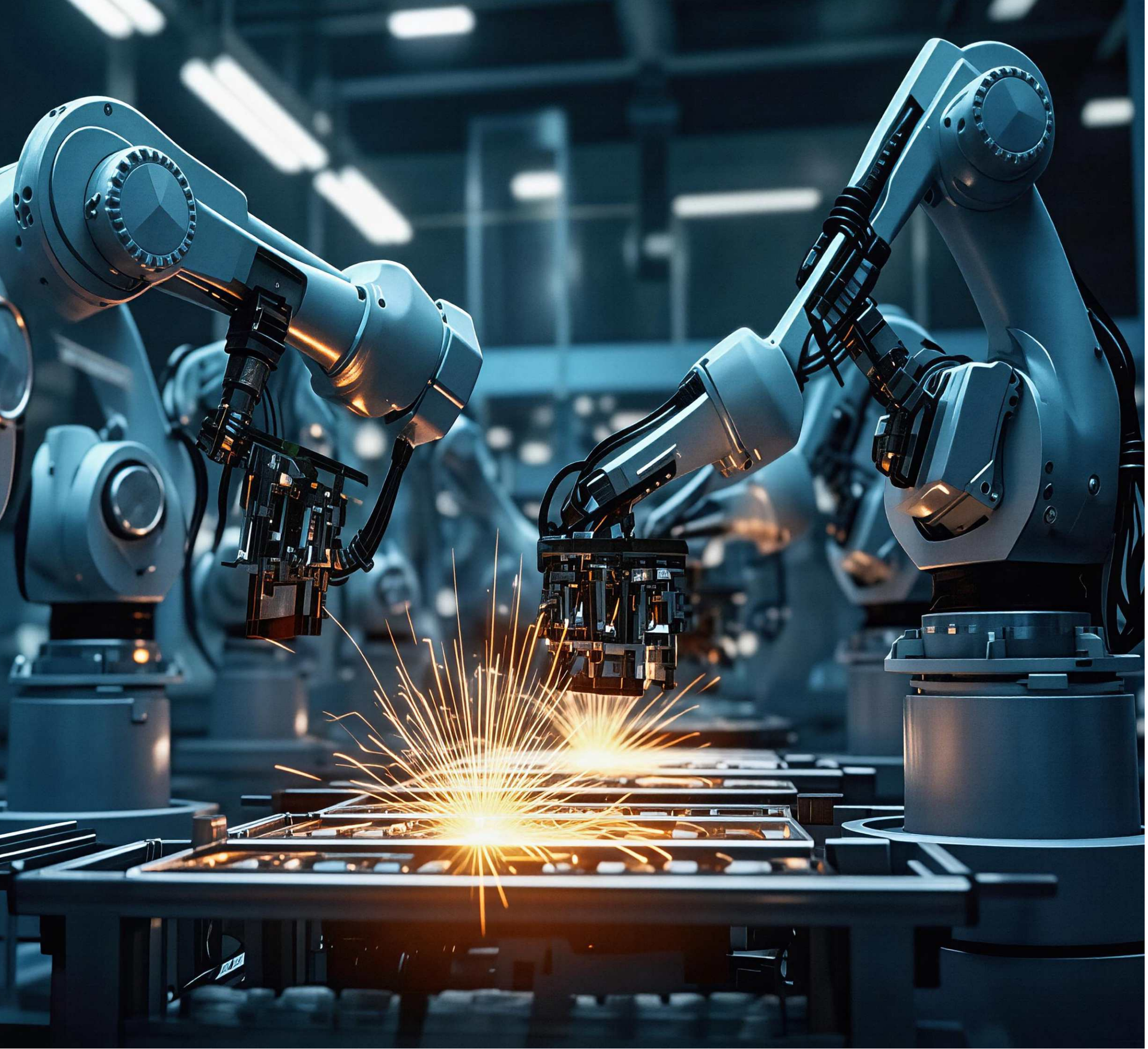
Megmeet

Version: 202605

M5 Series Servo System

Global Leading Solution Provider In Electrical Automation



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ABOUT MEGMEET

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, emobility & EV Infrastructure, Intelligent Equipment, Home Appliance Control Solutions, and Precision Connection.

MEGMEET has established a robust R&D, manufacturing, marketing, and service platform, with over 13,000 employees, including more than 3,000 R&D staff worldwide. MEGMEET's global presence includes R&D Centers in China, the United States, and Germany; Manufacturing Centers in Thailand, India, the United States, and China; and Regional Offices across North America, South America, Europe, Central Asia, Northeast Asia, Southeast Asia, India, the Middle East, Oceania, and Africa.

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.

3000+ R&D Staff

10 R&D Centers

9 Manufacturing Bases

13000+ Total Employees

1990+ No. of Patents & IP Rights

R&D CAPABILITY

Sustainable R&D Investment

R&D Investment

R&D Employees
>3000

Percentage against Total Employees
23%

Percentage against Total Sales
>12%

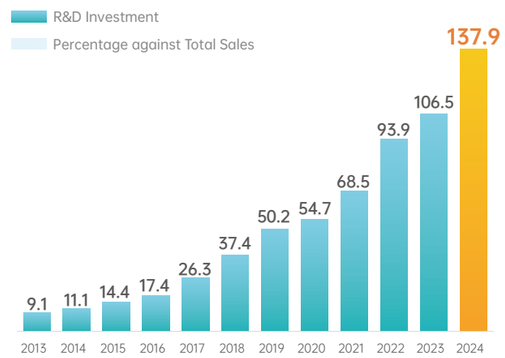
Patents & Industry Standards

No. of Patents & IP Rights
1990+
400+ new in 2024

National & International standards
32
- 9 lead author

Industry Standards Drafted
38
- 28 lead author

R&D Investment
(in Millions of USD)



Percentage against Total Sales

13.77%	12.13%	11.93%	10.98%	11.81%	10.52%	9.42%	10.90%	11.09%	11.55%	11.41%	12.04%

Testing Capabilities & Management System

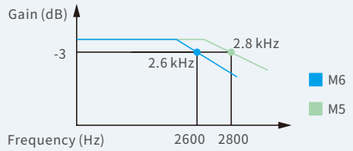
MEGMEET's testing capabilities and management system have been certified by CNAS, TUV, UL-WTDP, and UL-CTF. MEGMEET's test results are recognized globally.

Introduction

Megmeet's new-generation M5 series servo system is featured with high response, high precision and high synchronization, and equipped with advanced functions such as online inertia identification, gain auto-tuning, vibration suppression, and quadrant compensation. Together with the intelligent Megmeet host controller, M5 is able to meet market requirements for mechanical equipment by high precision, high stability, high efficiency and ease of use.

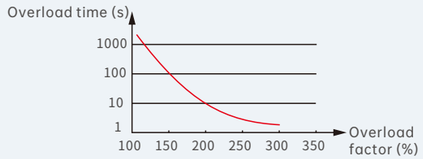
High response

- Increase from 2.6 kHz to 2.8 kHz
- High current loop and speed loop refresh frequency
- Faster response to commands
- High rigidity



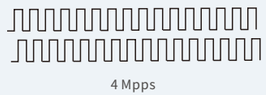
High overload

Overload capacity up to 3 times



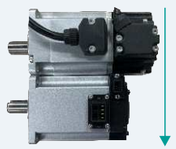
High bandwidth

- Input and output pulse up to 4 Mpps
- Supports differential and open-collector input
- Three pulse modes: A/B orthogonal, direction + pulse and CW/CCW



Optimized motor

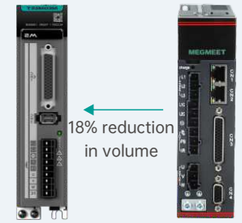
- Smaller size with the same power, lowering mechanical installation requirements
- IP67 as the standard configuration, enhancing protection
- Better shock resistance of encoders
- Motors with various speeds



Power (W)	Motor	Frame	Length	Length (with brake)
400	SPM-SC*0604M*K-ST4-L	60	90.1	119.5
	SPM-SC*0604M*K-M	60	112	152.5

Increased power density of drive

- A solution with innovative design
- Smaller size, more compact structure
- Less installation space required in the electrical cabinet, facilitating installation and maintenance



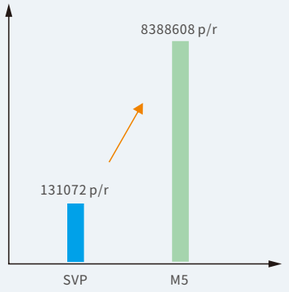
Power (W)	Drive	Dimensions (mm)	Volume (L)
400	M5	151*171*40	1.03
	M6	168.8*162*46	1.26

High precision encoder

17-bit single-turn or 23-bit multi-turn photoelectric/magnetic absolute encoders as the standard configuration for the entire series

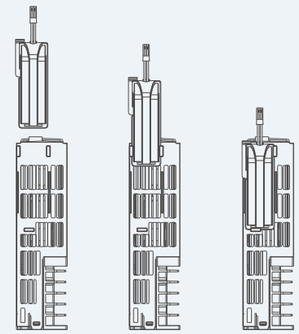
23-bit multi-turn absolute encoder

- High resolution, 8388608 p/r, 65536 turns of absolute positions in maximum
- The low-speed torque is more stable and the positioning is more accurate
- The motor still remains in its position after the servo unit is powered off



Installation of absolute encoder battery

- Easier to install/replace the battery
- Beautiful, neat, and less interference



Important Function

Inertia identification

Both offline and online inertia identification can be performed. Through inertia identification, the load inertia ratio can be accurately obtained, which is helpful to complete the commissioning quickly and achieve the best control effect.

Gain adjustment

- Automatic gain adjustment: By selecting the rigidity level, matching gain parameters are automatically generated to meet the requirements of rapidity and stability.
- Manual gain adjustment: Manually fine-tune the gain to optimize the control effect.
- Speed feedforward: The function is used in the position control mode to reduce position following errors.
- Torque feedforward: In the position control mode, it can reduce the position deviation during acceleration and deceleration; and in the speed control mode, it can reduce the speed deviation when the speed is fixed.
- Multiple gain switchover modes

Torque disturbance observation

In a non-torque control mode, by detecting and estimating the external disturbance torque received by the system, the torque reference can be compensated to reduce the influence of external disturbance on the servo so as to reduce vibration.

High-frequency mechanical resonance suppression

Automatically search for high-frequency mechanical resonance frequency points, and reduce the gain at a specific frequency through 4 sets of traps, which can suppress mechanical resonance.

Low-frequency mechanical resonance suppression

For long-end mechanical loads, the low-frequency resonance suppression function can effectively reduce the end jitter caused by positioning completion or emergency stop.

Friction compensation

For loads with high friction, such as drive shafts of belts, friction compensation can shorten positioning time and reduce machining errors caused by friction.

Quadrant compensation

In the application of arc trajectory interpolation with more than 2 axes, quadrant compensation can reduce the arc distortion caused by friction non-linearity (the trajectory protrusion at the alternation of the four quadrants), and increase the accuracy of servo system control and the uniformity of motion.

STO

Safe Torque Off function to avoid electric shock and mechanical injuries in case of device failure, without the need for an output contactor.

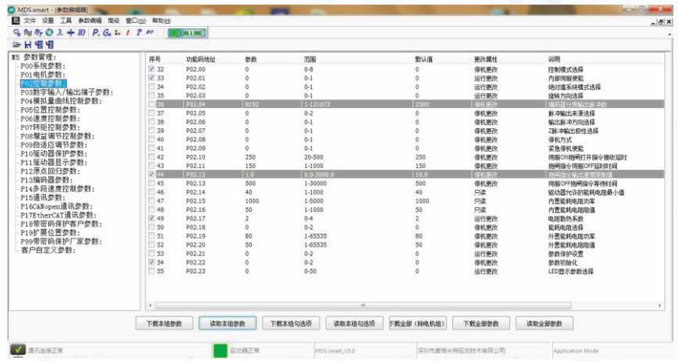
Touch probe

Two high-speed touch probes.

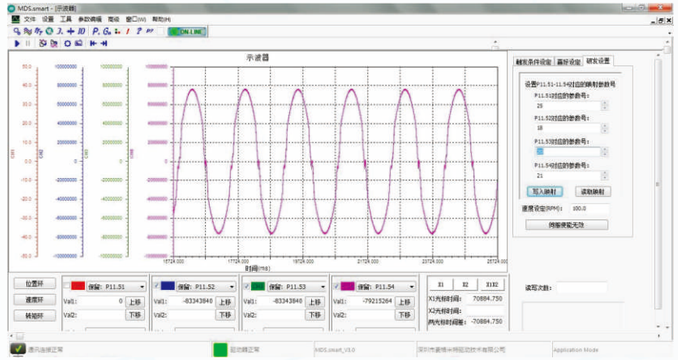
Motor cogging torque compensation

Reduce the torque ripple caused by the cogging effect of motor, thus improving the stability of servo system.

Host Computer Software

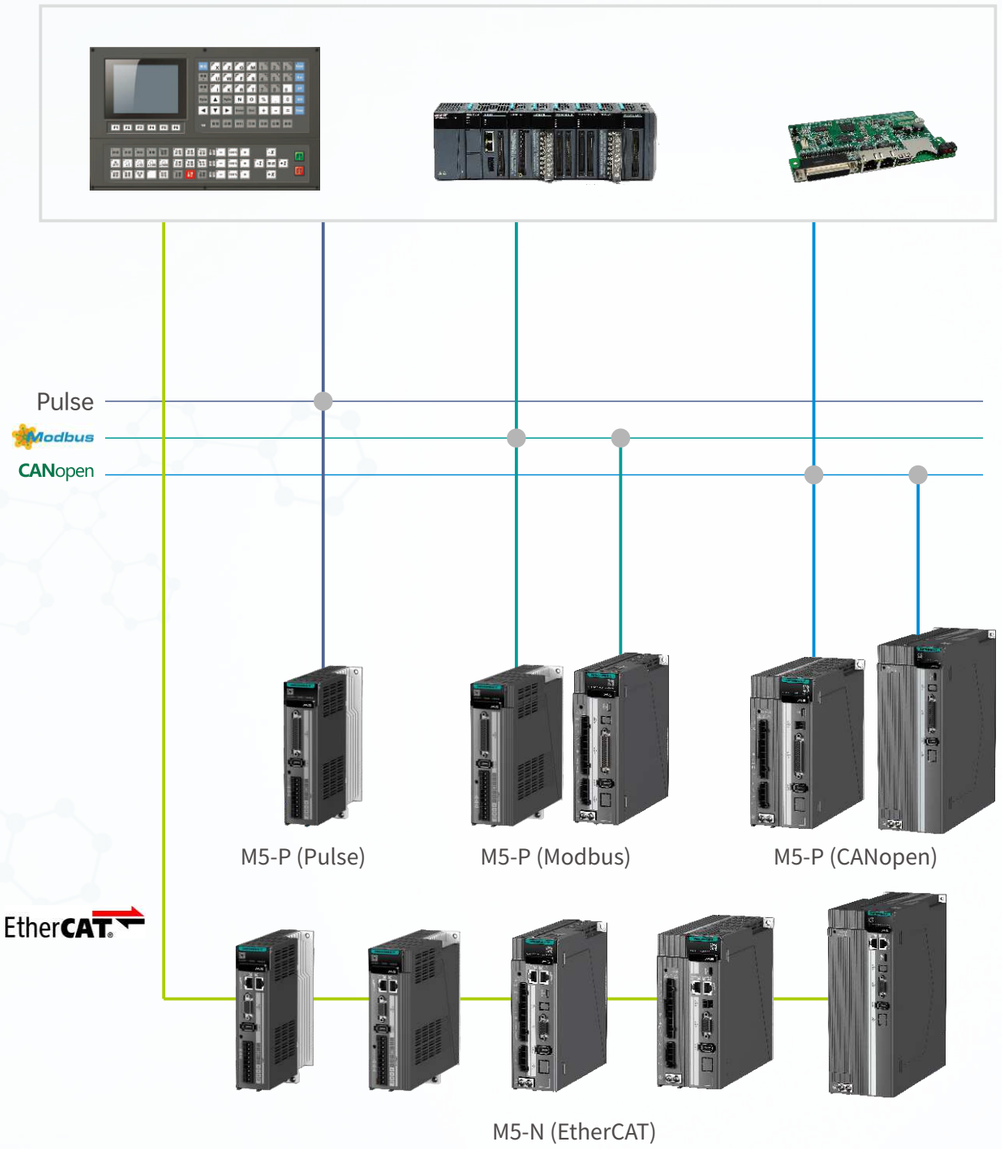


- Parameter auto-tuning
- Friendly HMI
- Shared USB port for firmware upgrade and host computer communication
- Centralized management: parameter upload & download and firmware upgrade of multiple drives
- Innovative power supply, parameter output and fault check through USB
  Blind matching supported for Type-C



- Real-time online data monitoring with 32 bit * 4-channel real-time oscilloscope display and sampling frequency up to 16 K
- Import and export of 30 s data

System Overview



Servo Drive Model

M5 – P S 5R5 A – XX

1 2 3 4 5 6

1 Product series

M5 series servo

2 Drive type

P: Pulse type

N: EtherCAT

3 Voltage level

S: 220 V

T: 380 V

4 Rated current

220 V

1R6: 1.6 A
2R8: 2.8 A
5R5: 5.5 A
7R6: 7.6 A
012: 11.6 A
016: 15.6 A

380 V

3R5: 3.5 A
5R4: 5.4 A
8R4: 8.4 A
012: 11.9 A
017: 16.5 A
021: 20.8 A
026: 25.7 A

5 Structural features

A: Standard version

B: Small size version

6 Software features

Null: Standard version

CO: CANopen

SF: STO version

Servo Drive Electrical Specifications

Voltage class	220 V					
Model	M5-*S1R6A	M5-*S2R8A	M5-*S5R5A	M5-*S7R6A	M5-*S012A	M5-*S016A
Power rating	200 W	400 W	750 W	1 kW	1.5 kW	2 kW
Size	Size A		Size B		Size D	
Phase	Single-phase		Single/Three-phase		Three-phase	
Rated input current (A)	2.3	4.0	7.6/3.7	9.6/5.1	8.0	11.0
Rated output current (A)	1.6	2.8	5.5	7.6	11.6	15.6
Max. output current (A)	5.8	10.1	16.9	22.0	32.0	44.0
Main circuit power	200 to 240V, -10% to +10%, 50/60 Hz					
Control circuit power	/				Single-phase 200 to 240 V, -10% to +10%, 50/60 Hz	
Braking resistor	No built-in braking resistor		Built-in braking resistor		Built-in braking resistor	

Voltage class	380 V						
Model	M5-*T3R5B	M5-*T5R4B	M5-*T8R4A	M5-*T012A	M5-*T017A	M5-*T021A	M5-*T026A
Power rating	1 kW	1.5 kW	2 kW	3 kW	4.4 kW	5.5 kW	7.5 kW
Size	Size C		Size D		Size E		
Phase	Three-phase						
Rated input current (A)	2.4	3.6	5.5	8.0	11.6	15.0	19.7
Rated output current (A)	3.5	5.4	8.4	11.9	16.5	20.8	25.7
Max. output current (A)	11.0	15.0	23.0	32.0	45.0	55.0	65.0
Main circuit power	380 to 440 V, -10% to +10%, 50/60 Hz						
Control circuit power	Single-phase 380 to 440 V, -10% to +10%, 50/60 Hz						
Braking resistor	Built-in braking resistor						

Servo Motor Model

SPM – S C 8 06 02 M A K – ST1 – X
1 2 3 4 5 6 7 8 9 10 11

1 Product series
SPM series

2 Voltage class
S: 220 V
T: 380 V

3 Rated speed
A: 1000 rpm
D: 1500 rpm
E: 2000 rpm
B: 2500 rpm
C: 3000 rpm
F: 4000 rpm
G: 5000 rpm

4 Encoder type
6: 23-bit multi-turn absolute optical encoder
8: 17-bit multi-turn absolute magnetic encoder

5 Motor frame
04: 40
06: 60
08: 80
10: 100
13: 130
18: 180

6 Power
Below 100 W:
one number and one letter
A: Power = Number * 10
Example: 5A = 5 * 10 = 50 W

100 W to 9.9 kW:
two numbers
Power = Number * 100
Example: 02 = 2 * 100 = 200 W

7 Inertia
L: Low inertia
M: Medium inertia

8 Whether with brake
A: No
B: Yes

9 Definition
M: With keyway without oil seal
O: Round shaft with oil seal
K: With keyway and oil seal

10 Motor type
ST1: Straight plug standard type
ST4: Straight plug economical type
Blank: Lead wire standard type

11 Motor design number

Cable Model

Power cable model

SPL – MC04 – M5 – XX – X
1 2 3 4 5

1 Product series
SPL series

2 Cable type
MA05: L series straight plug motor power cable, compatible with 40&60&80 frames, cross sectional area 0.75 mm^2
MC04: W series aviation plug motor power cable, compatible with 130 frame, cross sectional area 1.5 mm^2
MD04: W series aviation plug motor power cable, compatible with 180 frame, cross sectional area 2.5 mm^2

3 Applicable drive
M5: M5 series

4 Cable length
03: 3 m
10: 10 m
.....

5 Flexible cable or not
Blank: Normal cable
R2: 10 million times flexible cable

Encoder cable model

SPL – E 0 A – M5 – XX – X
1 2 3 4 5 6 7

1 Product series
SPL series

2 Cable type
E: Encoder cable

3 Encoder type
0: Absolute encoder

4 Plug type
3: Straight plug (with battery case)
4: Straight plug (without battery case)
A: Aviation plug (with battery case)
B: Aviation plug (without battery case)

5 Applicable drive
M5: M5 series

6 Cable length
03: 3 m
10: 10 m
.....

7 Flexible cable or not
Blank: Normal cable
R2: 10 million times flexible cable

Servo System Configuration

220 V servo system configuration

Motor model	Drive model	Power cable (without brake)	Power cable (with brake)	Encoder cable (with battery)	Encoder cable (without battery)
40/60/80 frame 50 W to 1 kW Vn = 3000 rpm Vmax = 6000/5000 rpm Straight plug standard/economical motors Medium inertia					
SPM-SC*045AM*K-ST1-L	M5-*S1R6A	SPL-MA05-M5-XX	SPL-BMA05-M5-XX	SPL-E03-M5-XX	SPL-E04-M5-XX
SPM-SC*0401M*K-ST1-L	M5-*S1R6A	SPL-MA05-M5-XX	SPL-BMA05-M5-XX	SPL-E03-M5-XX	SPL-E04-M5-XX
SPM-SC*0602M*K-ST1-L	M5-*S1R6A	SPL-MA05-M5-XX	SPL-BMA05-M5-XX	SPL-E03-M5-XX	SPL-E04-M5-XX
SPM-SC*0604M*K-ST4-L	M5-*S2R8A	SPL-MA05-M5-XX	SPL-BMA05-M5-XX	SPL-E03-M5-XX	SPL-E04-M5-XX
SPM-SC*0807M*K-ST4-L	M5-*S5R5A	SPL-MA05-M5-XX	SPL-BMA05-M5-XX	SPL-E03-M5-XX	SPL-E04-M5-XX
SPM-SC*0810M*K-ST4-L	M5-*S7R6A	SPL-MA05-M5-XX	SPL-BMA05-M5-XX	SPL-E03-M5-XX	SPL-E04-M5-XX
100 frame 1 kW to 2.5 kW Vn = 3000 rpm Vmax = 6000/5000 rpm Aviation plug standard motors Low inertia					
SPM-SC*1010L*K-W	M5-*S7R6A	SPL-MC04-M5-XX	SPL-BMC04-M5-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
SPM-SC*1015L*K-W	M5-*S012A	SPL-MC04-M5-XX	SPL-BMC04-M5-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
SPM-SC*1020L*K-W	M5-*S012A	SPL-MC04-M5-XX	SPL-BMC04-M5-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
SPM-SC*1025L*K-W	M5-*S016A	SPL-MC04-M5-XX	SPL-BMC04-M5-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
130 frame 850 W to 2.2 kW Vn = 1500 rpm Vmax = 3000 rpm Aviation plug standard motors Medium inertia					
SPM-SD*1308M*K-W	M5-*S7R6A	SPL-MC04-M5-XX	SPL-BMC04-M5-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
SPM-SD*1313M*K-W	M5-*S012A	SPL-MC04-M5-XX	SPL-BMC04-M5-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
SPM-SD*1318M*K-W	M5-*S016A	SPL-MC04-M5-XX	SPL-BMC04-M5-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
SPM-SD*1322M*K-W	M5-*S016A	SPL-MC04-M5-XX	SPL-BMC04-M5-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
130 frame 1.1 kW to 1.7 kW Vn = 2000 rpm Vmax = 4000 rpm Aviation plug standard motors Medium inertia					
SPM-SE*1311M*K-W	M5-*S7R6A	SPL-MC04-M5-XX	SPL-BMC04-M5-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
SPM-SE*1317M*K-W	M5-*S016A	SPL-MC04-M5-XX	SPL-BMC04-M5-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
130 frame 1.7 kW to 2.6 kW Vn = 3000 rpm Vmax = 5000 rpm Aviation plug standard motors Medium inertia					
SPM-SC*1317M*K-W	M5-*S012A	SPL-MC04-M5-XX	SPL-BMC04-M5-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
SPM-SC*1326M*K-W	M5-*S016A	SPL-MC04-M5-XX	SPL-BMC04-M5-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX

380 V servo system configuration

Motor model	Drive model	Power cable (without brake)	Power cable (with brake)	Encoder cable (with battery)	Encoder cable (without battery)
100 frame 1 kW to 2.5 kW Vn = 3000 rpm Vmax = 6000/5000 rpm Aviation plug standard motors Low inertia					
SPM-TC*1010L*K-W	M5-*T3R5B	SPL-MC04-M5-XX	SPL-BMC04-M5-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
SPM-TC*1015L*K-W	M5-*T5R4B	SPL-MC04-M5-XX	SPL-BMC04-M5-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
SPM-TC*1020L*K-W	M5-*T8R4A	SPL-MC04-M5-XX	SPL-BMC04-M5-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
SPM-TC*1025L*K-W	M5-*T8R4A	SPL-MC04-M5-XX	SPL-BMC04-M5-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
130 frame 850 W to 2.2 kW Vn = 1500 rpm Vmax = 3000 rpm Aviation plug standard motors Medium inertia					
SPM-TD*1308M*K-W2	M5-*T3R5B	SPL-MC04-M5-XX	SPL-BMC04-M5-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
SPM-TD*1313M*K-W2	M5-*T5R4B	SPL-MC04-M5-XX	SPL-BMC04-M5-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
SPM-TD*1318M*K-W	M5-*T8R4A	SPL-MC04-M5-XX	SPL-BMC04-M5-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
SPM-TD*1322M*K-W	M5-*T012A	SPL-MC04-M5-XX	SPL-BMC04-M5-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
130 frame 1.1 kW to 3 kW Vn = 2000 rpm Vmax = 4000 rpm Aviation plug standard motors Medium inertia					
SPM-TE*1311M*K-W	M5-*T5R4B	SPL-MC04-M5-XX	SPL-BMC04-M5-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
SPM-TE*1317M*K-W	M5-*T8R4A	SPL-MC04-M5-XX	SPL-BMC04-M5-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
SPM-TE*1324M*K-W	M5-*T012A	SPL-MC04-M5-XX	SPL-BMC04-M5-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
SPM-TE*1330M*K-W	M5-*T012A	SPL-MC04-M5-XX	SPL-BMC04-M5-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
130 frame 1.7 kW to 4.5 kW Vn = 3000 rpm Vmax = 5000 rpm Aviation plug standard motors Medium inertia					
SPM-TC*1317M*K-W	M5-*T8R4A	SPL-MC04-M5-XX	SPL-BMC04-M5-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
SPM-TC*1326M*K-W	M5-*T012A	SPL-MC04-M5-XX	SPL-BMC04-M5-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
SPM-TC*1336M*K-W	M5-*T012A	SPL-MC04-M5-XX	SPL-BMC04-M5-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
SPM-TC*1345M*K-W	M5-*T017A	SPL-MC04-M5-XX	SPL-BMC04-M5-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
180 frame 2.9 kW to 7.5 kW Vn = 1500 rpm Vmax = 3000 rpm Aviation plug standard motors Medium inertia					
SPM-TD*1829M*K-W	M5-*T012A	SPL-MD04-XX	SPL-MD04-XX + SPL-B03-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
SPM-TD*1844M*K-W	M5-*T017A	SPL-MD04-M5-XX	SPL-MD04-M5-XX + SPL-B03-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
SPM-TD*1855M*K-W	M5-*T021A	SPL-MD04-M5-XX	SPL-MD04-M5-XX + SPL-B03-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX
SPM-TD*1875M*K-W	M5-*T026A	SPL-MD04-M5-XX	SPL-MD04-M5-XX + SPL-B03-XX	SPL-E0A-M5-XX	SPL-E0B-M5-XX

Technical Parameters of Motors

Motor model	Rated voltage (V)	Rated power (W)	Rated speed (rpm)	Max. speed (rpm)	Rated torque (N·m)	Peak torque (N·m)	Rated current (A)	Peak current (A)	Rotor inertia (10^{-4}kg·m^2)
40/60/80 frame 50 W to 1 kW Vn = 3000 rpm Vmax = 6000/5000 rpm Straight plug standard/economical motors Medium inertia									
SPM-SC*045AM*K-ST1-L	220	50	3000	6000	0.16	0.48	0.93	2.88	0.036(0.046)
SPM-SC*0401M*K-ST1-L	220	100	3000	6000	0.32	1.11	0.92	3.36	0.062(0.072)
SPM-SC*0602M*K-ST1-L	220	200	3000	6000	0.64	2.23	1.5	5.4	0.28(0.3)
SPM-SC*0604M*K-ST4-L	220	400	3000	5000	1.27	3.81	2.1	6.5	0.56(0.58)
SPM-SC*0807M*K-ST4-L	220	750	3000	5000	2.39	7.17	4.1	13.4	1.5(1.65)
SPM-SC*0810M*K-ST4-L	220	1000	3000	5000	3.18	11.14	5.7	21	1.73(1.88)
100 frame 1 kW to 2.5 kW Vn = 3000 rpm Vmax = 6000/5000 rpm Aviation plug standard motors Low inertia									
SPM-SC*1010L*K-W	220	1000	3000	6000	3.18	9.54	7	22	2.26(3)
SPM-SC*1015L*K-W	220	1500	3000	6000	4.77	14.31	10	31	3.1(3.83)
SPM-SC*1020L*K-W	220	2000	3000	5000	6.37	19.11	11.6	36	3.93(4.46)
SPM-SC*1025L*K-W	220	2500	3000	5000	7.96	23.88	14.5	44	4.76(5.5)
SPM-TC*1010L*K-W	380	1000	3000	6000	3.18	9.54	3.5	11	2.26(3)
SPM-TC*1015L*K-W	380	1500	3000	6000	4.77	14.31	5	16	3.1(3.83)
SPM-TC*1020L*K-W	380	2000	3000	5000	6.37	19.11	6	18	3.93(4.46)
SPM-TC*1025L*K-W	380	2500	3000	5000	7.96	23.88	7.5	22	4.76(5.5)
130 frame 850 W to 2.2 kW Vn = 1500 rpm Vmax = 3000 rpm Aviation plug standard motors Medium inertia									
SPM-SD*1308M*K-W	220	850	1500	3000	5.39	16.17	6.9	20.7	10.9(12.3)
SPM-SD*1313M*K-W	220	1300	1500	3000	8.34	25.2	10.7	32.1	16.9(18.3)
SPM-SD*1318M*K-W	220	1800	1500	3000	11.5	34.5	13.8	41.4	21.4(22.6)
SPM-SD*1322M*K-W	220	2200	1500	3000	14.3	40	14.5	40.5	27.1(28.4)
SPM-TD*1308M*K-W2	380	850	1500	3000	5.39	16.17	3.1	9.3	10.9(12.3)
SPM-TD*1313M*K-W2	380	1300	1500	3000	8.34	25.02	5	15	16.9(18.3)
SPM-TD*1318M*K-W	380	1800	1500	3000	11.5	34.5	8.5	25.5	21.4(22.6)
SPM-TD*1322M*K-W	380	2200	1500	3000	14.3	40	10.5	29.4	27.1(28.4)
130 frame 1.1 kW to 3 kW Vn = 2000 rpm Vmax = 4000 rpm Aviation plug standard motors Medium inertia									
SPM-SE*1311M*K-W	220	1100	2000	4000	5.39	16.17	7.5	22.5	10.9(12.3)
SPM-SE*1317M*K-W	220	1700	2000	4000	8.34	25.2	12	36	16.9(18.3)
SPM-TE*1311M*K-W	380	1100	2000	4000	5.39	16.17	4.5	13.5	10.9(12.3)
SPM-TE*1317M*K-W	380	1700	2000	4000	8.34	25.2	6.6	19.8	16.9(18.3)
SPM-TE*1324M*K-W	380	2400	2000	4000	11.5	34.5	9.5	28.5	21.4(22.6)
SPM-TE*1330M*K-W	380	3000	2000	4000	14.3	40	11.5	32.2	27.1(28.4)
130 frame 1.7 kW to 4.5 kW Vn = 3000 rpm Vmax = 5000 rpm Aviation plug standard motors Medium inertia									
SPM-SC*1317M*K-W	220	1700	3000	5000	5.399	10.78	9.5	19	10.9(12.3)
SPM-SC*1326M*K-W	220	2600	3000	5000	8.34	16.7	14.5	29	16.9(18.3)
SPM-TC*1317M*K-W	380	1700	3000	5000	5.399	10.78	6	12	10.9(12.3)
SPM-TC*1326M*K-W	380	2600	3000	5000	8.34	16.7	9.5	19	16.9(18.3)
SPM-TC*1336M*K-W	380	3600	3000	5000	11.5	23	12	24	21.4(22.6)
SPM-TC*1345M*K-W	380	4500	3000	5000	14.3	28.6	14.5	29	27.1(28.4)
180 frame 2.9 kW to 7.5 kW Vn = 1500 rpm Vmax = 3000 rpm Aviation plug standard motors Medium inertia									
SPM-TD*1829M*K-W	380	2900	1500	3000	18.6	55.8	11.9	35.7	63.5(69.5)
SPM-TD*1844M*K-W	380	4400	1500	3000	28.4	85.2	16.5	49.5	88.5(94.5)
SPM-TD*1855M*K-W	380	5500	1500	3000	35	105	20.8	62.4	114.4(120.4)
SPM-TD*1875M*K-W	380	7500	1500	3000	48	120	26	65	136.6(142.6)

Note: Parameters in parentheses belong to motors with brakes.

M5-P General Specifications

Basic specifications	
Main circuit power supply	200 to 240 V, -10% to +10%, 50/60 Hz or 380 to 440 V, -10% to +10%, 50/60 Hz
Control mode	IGBT, PWM control, and sine wave current drive mode
Encoder	Absolute encoder
Interface	
Key	5 keys
LED display	Five 8-segment LEDs
Power indicator	CHARGE indicator
IO	
DI (various functions defined by parameters)	8 general inputs, optocoupler isolation, NPN and PNP inputs available Input voltage range 20 to 30 V, input impedance 3.9 K
DO (various functions defined by parameters)	5 general outputs, optocoupler isolation, NPN and PNP outputs available Maximum operating voltage 30 V, maximum current 100 mA
Communication	
RS485	Modbus communication protocol
USB	Connect the computer and the servo drive for commissioning and relevant tuning
General function	
Auto-adjustment	The host computer issues an action 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	Position mode; Speed mode; Torque mode; Position/Speed mode switchover; Speed/Torque mode switchover; Position/Torque mode switchover
Pulse frequency division	Arbitrary frequency division
Protection function	Overvoltage, undervoltage, overcurrent, overspeed, stall, overheat, overload, encoder abnormality, input phase loss, and excessive position deviation
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
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 computer software
Inertia identification	Offline and online system inertia identification
Torque observer	Load torque observation and compensation
Friction compensation	System friction compensation
Touch probe	Two touch probes
Motor cogging torque compensation	Supported

M5-N General Specifications

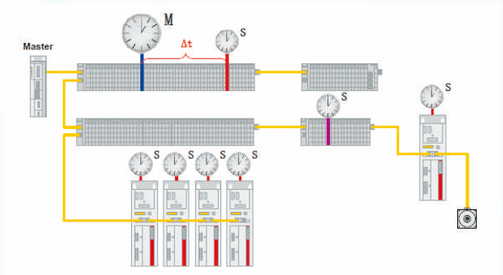
Basic specifications	
Main circuit power supply	200 to 240 V, -10% to +10%, 50/60 Hz or 380 to 440 V, -10% to +10%, 50/60 Hz
Control mode	IGBT, PWM control, and sine wave current drive mode
Encoder	Absolute encoder
Interface	
Key	5 keys
LED display	Five 8-segment LEDs
Power indicator	CHARGE indicator
STO safety function	General safety STO function, optional
IO	
DI (various functions defined by parameters)	5 general inputs, optocoupler isolation, NPN and PNP inputs available Input voltage range 20 to 30 V, input impedance 3.9 K
DO (various functions defined by parameters)	3 general outputs, optocoupler isolation, NPN and PNP outputs available Maximum operating voltage 30 V, maximum current 100 mA
Communication	
EtherCAT	CoE and SoE communication protocols, in compliance with CiA402 profile
USB	Connect the computer and the servo drive for commissioning and relevant tuning
General function	
Auto-adjustment	The host computer issues an action 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	Position mode; Speed mode; Torque mode; Position/Speed mode switchover; Speed/Torque mode switchover; Position/Torque mode switchover; EtherCAT mode
Protection function	Overvoltage, undervoltage, overcurrent, overspeed, stall, overheat, overload, encoder abnormality, input phase loss, and excessive position deviation
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
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 computer software
Inertia identification	Offline and online system inertia identification
Torque observer	Load torque observation and compensation
Friction compensation	System friction compensation
Touch probe function	Two touch probes
Motor cogging torque compensation	Supported

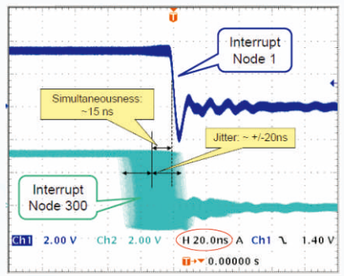
M5-N Communication Specifications

Communication standard	
IEC 61158 Type12, IEC 61800-7 CiA402 Drive Profile (CoE)	
Physical layer	
Transmission protocol	100 BASE-TX (IEEE 802.3)
Transmission distance	Less than 100 m between two nodes
Interface	CN3 (RJ45): EtherCAT Signal IN CN4 (RJ45): EtherCAT Signal OUT
Cable	Category 5 twisted pair
Application layer	
SDO	SDO request, SDO response
PDO	Mutable PDO mapping
CiA402 Drive Profile	Profile Position Mode Profile Velocity Mode Profile Torque Mode Homing Mode Cyclic Synchronous Position Mode Cyclic Synchronous Velocity Mode Cyclic Synchronous Torque Mode
Sync mode	
Distributed Clock (DC) mode	

Network Synchronization

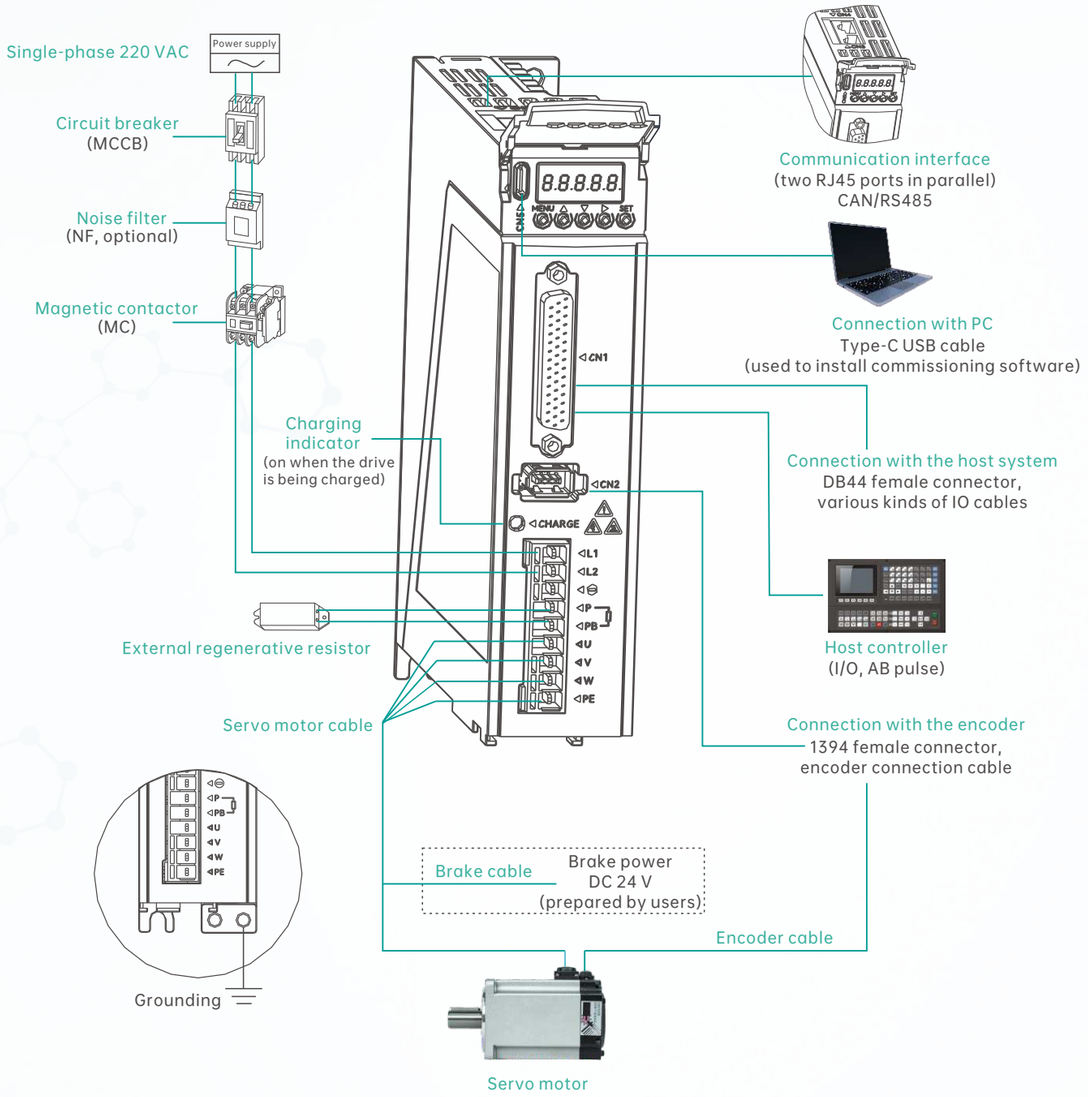
- The EtherCAT network selects the first slave clock as the reference clock, and the clocks of all other devices (including master and slave) are synchronized with this reference clock.
- Through the synchronization signal (SYNC), all EtherCAT devices can use the same system clock to control the synchronous task execution of each device, and realize the synchronization of local tasks of each device with the reference clock.
- The system can achieve a jitter of 20 ns and a synchronization error of 15 ns, even though 300 nodes are between two devices with the cable length up to 120 m.



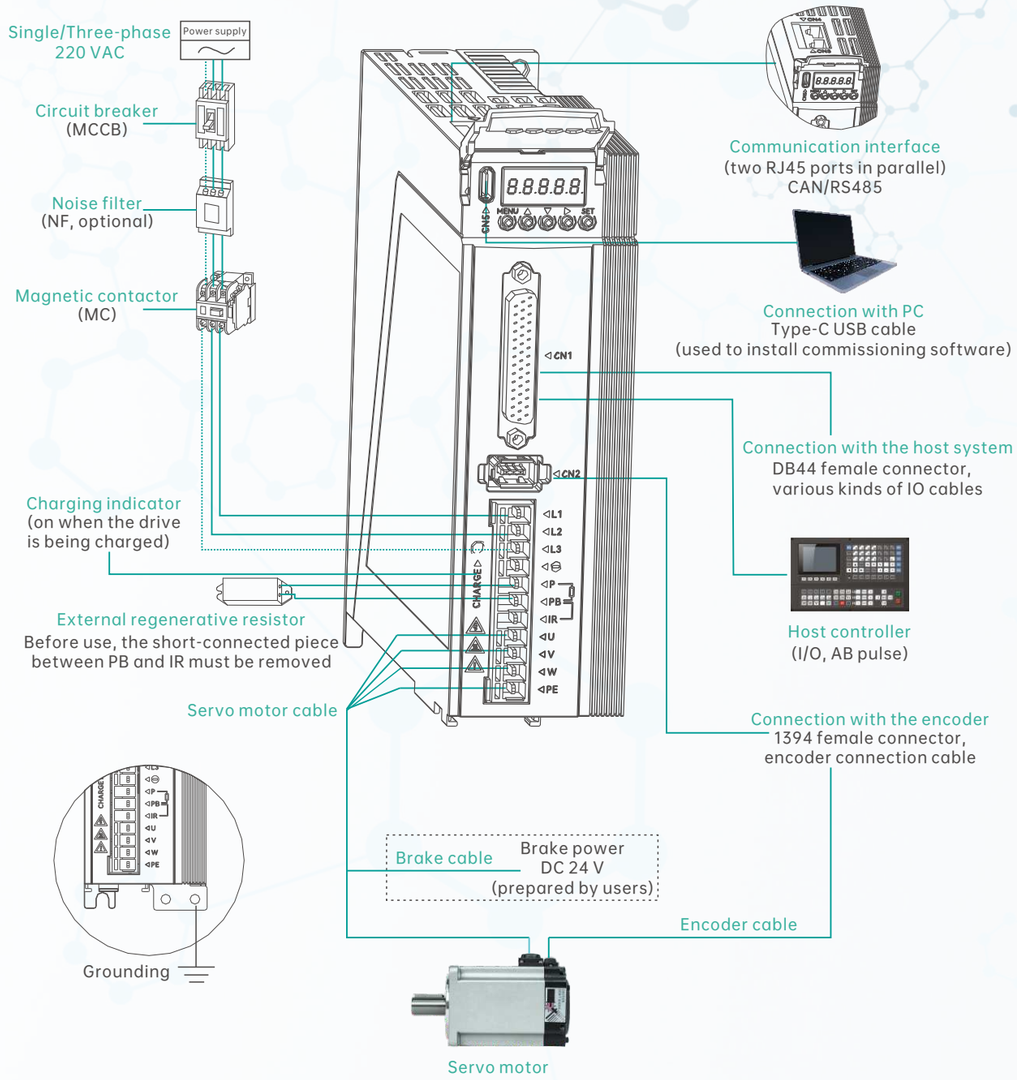


M5-P Drive Wiring

Size A models connected to peripheral devices



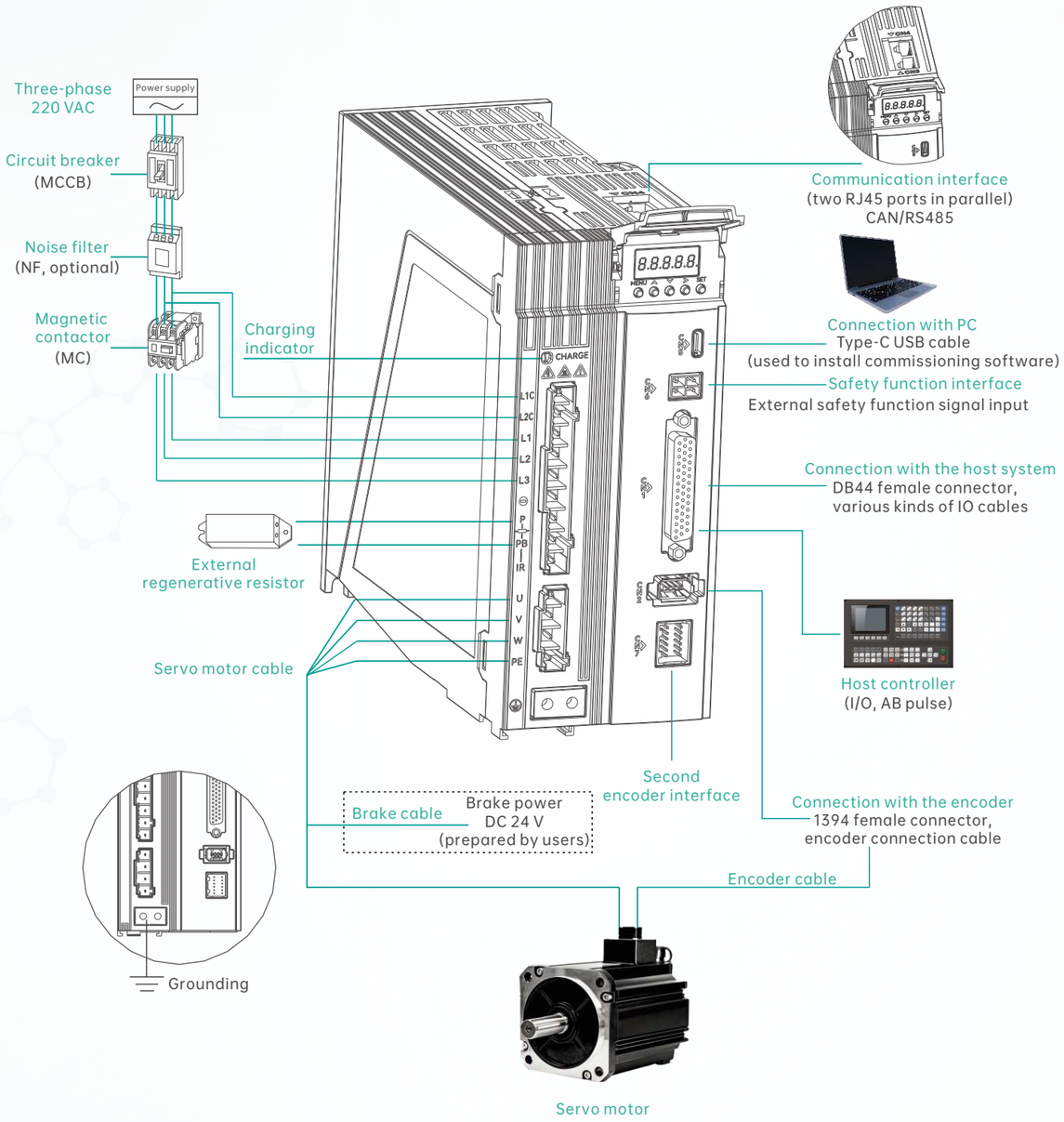
Size B models connected to peripheral devices



Note: This figure shows the wiring with single/three-phase 220 VAC power supply.

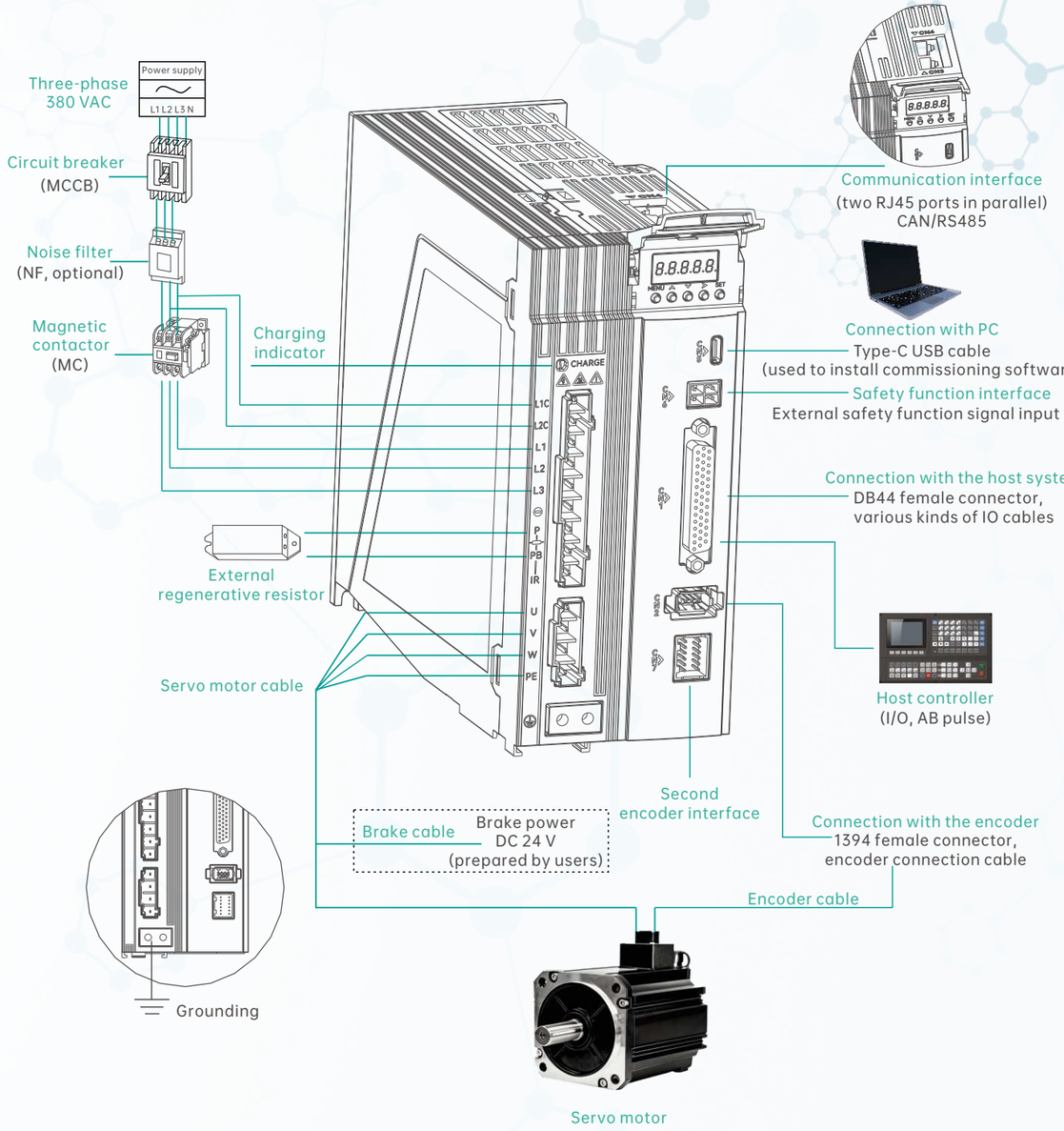
M5-P Drive Wiring

Size C & Size D models connected to peripheral devices



Note: This figure shows the wiring with three-phase 220 VAC power supply.

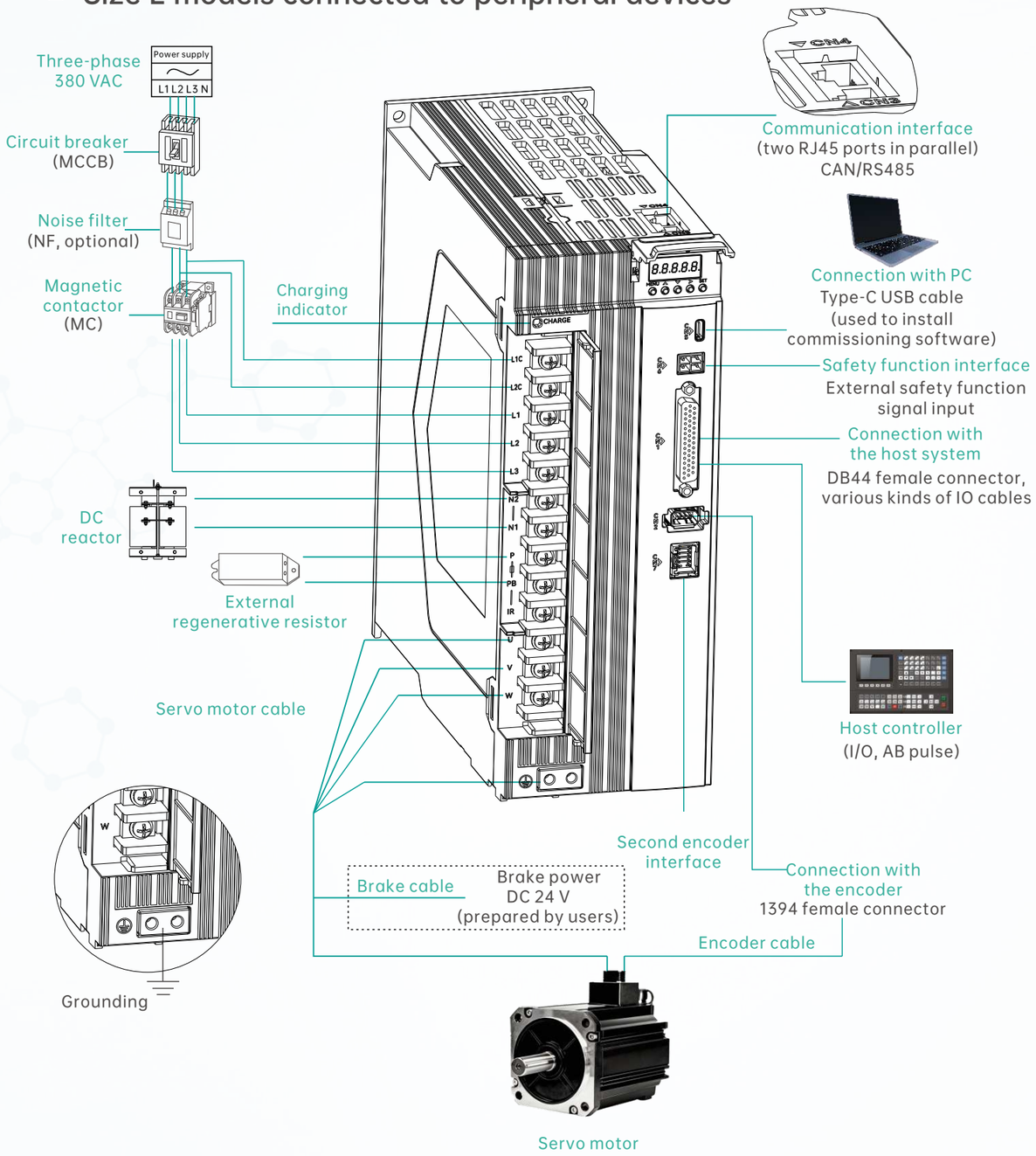
Size C & Size D models connected to peripheral devices



Note: This figure shows the wiring with three-phase 380 VAC power supply.

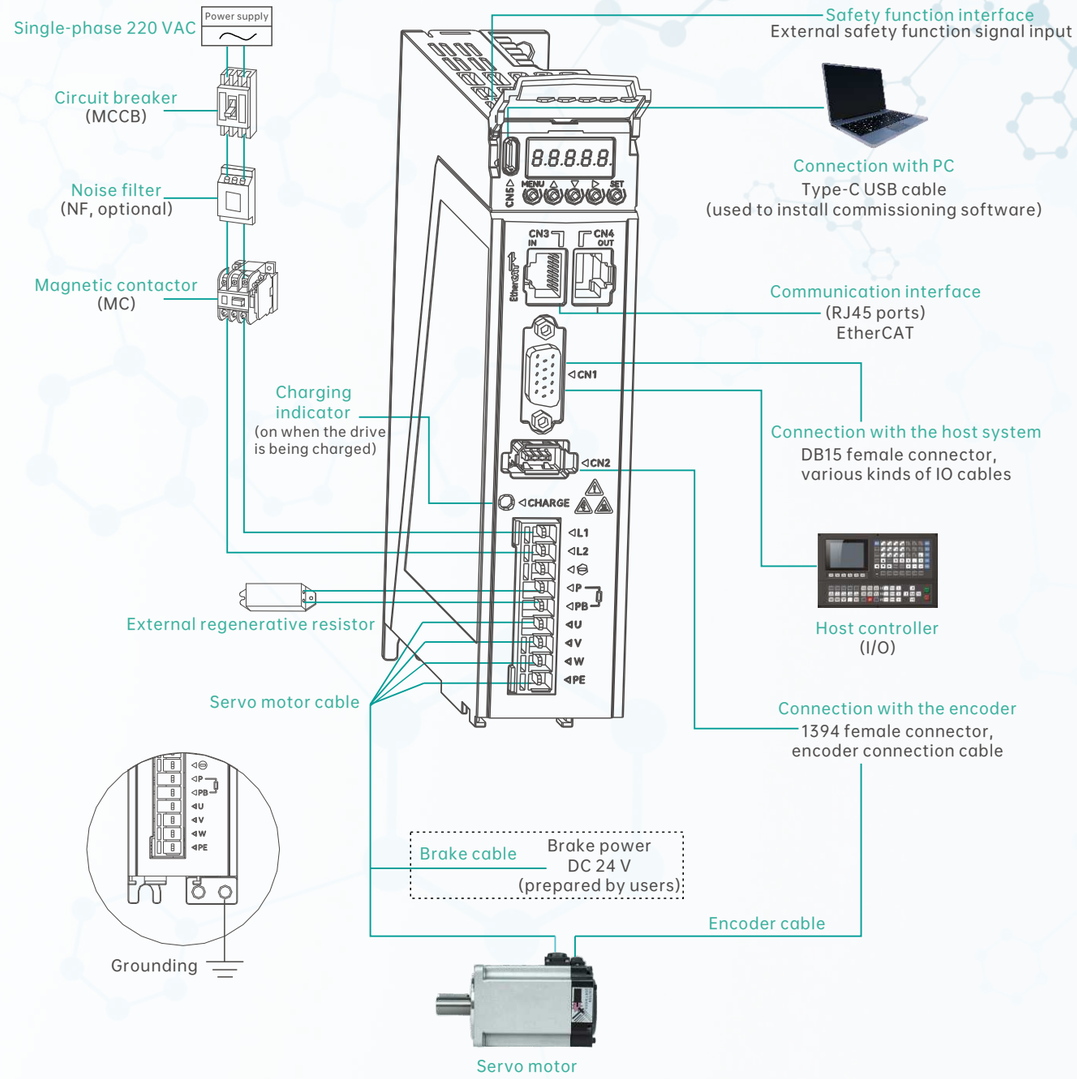
M5-P Drive Wiring

Size E models connected to peripheral devices



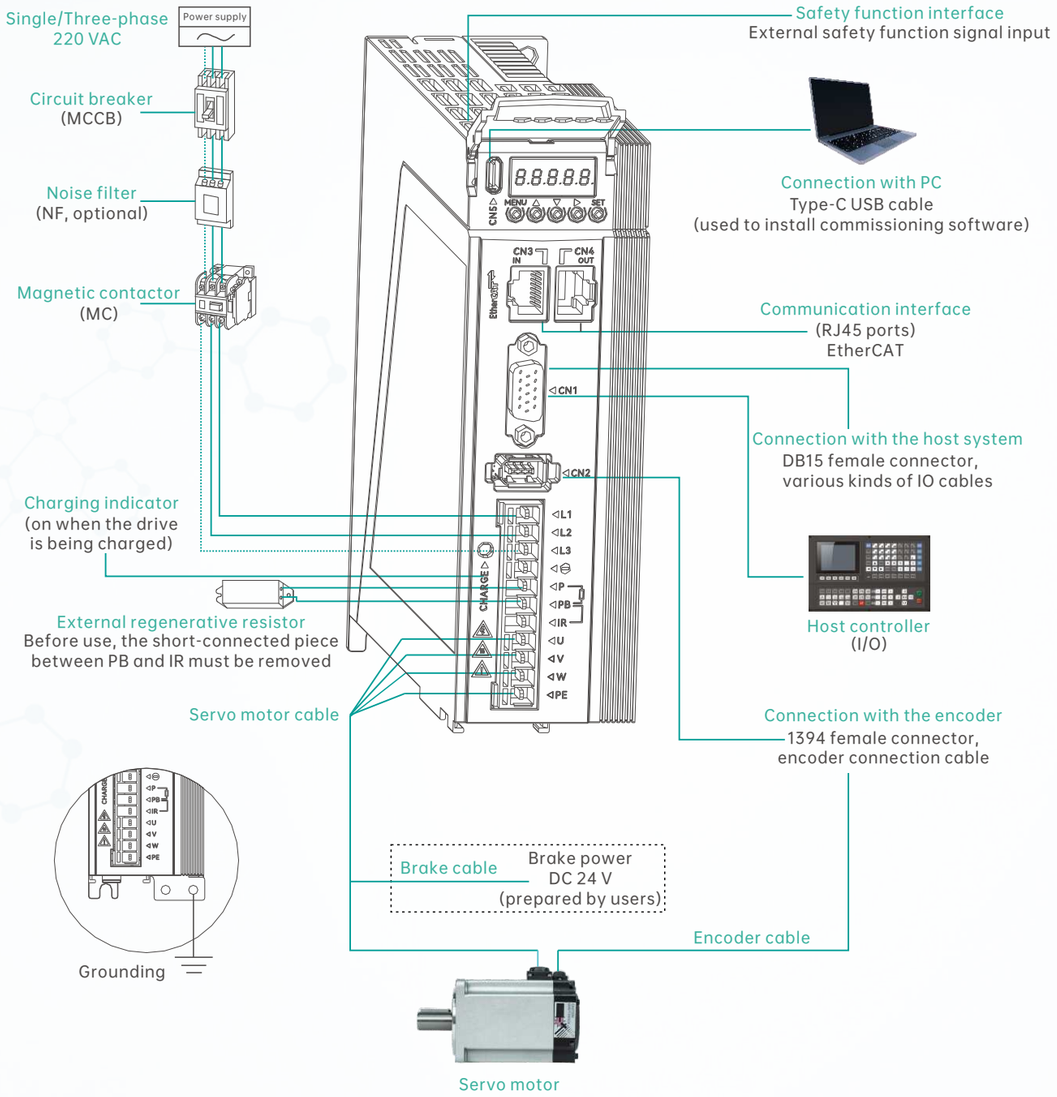
M5-N Drive Wiring

Size A models connected to peripheral devices



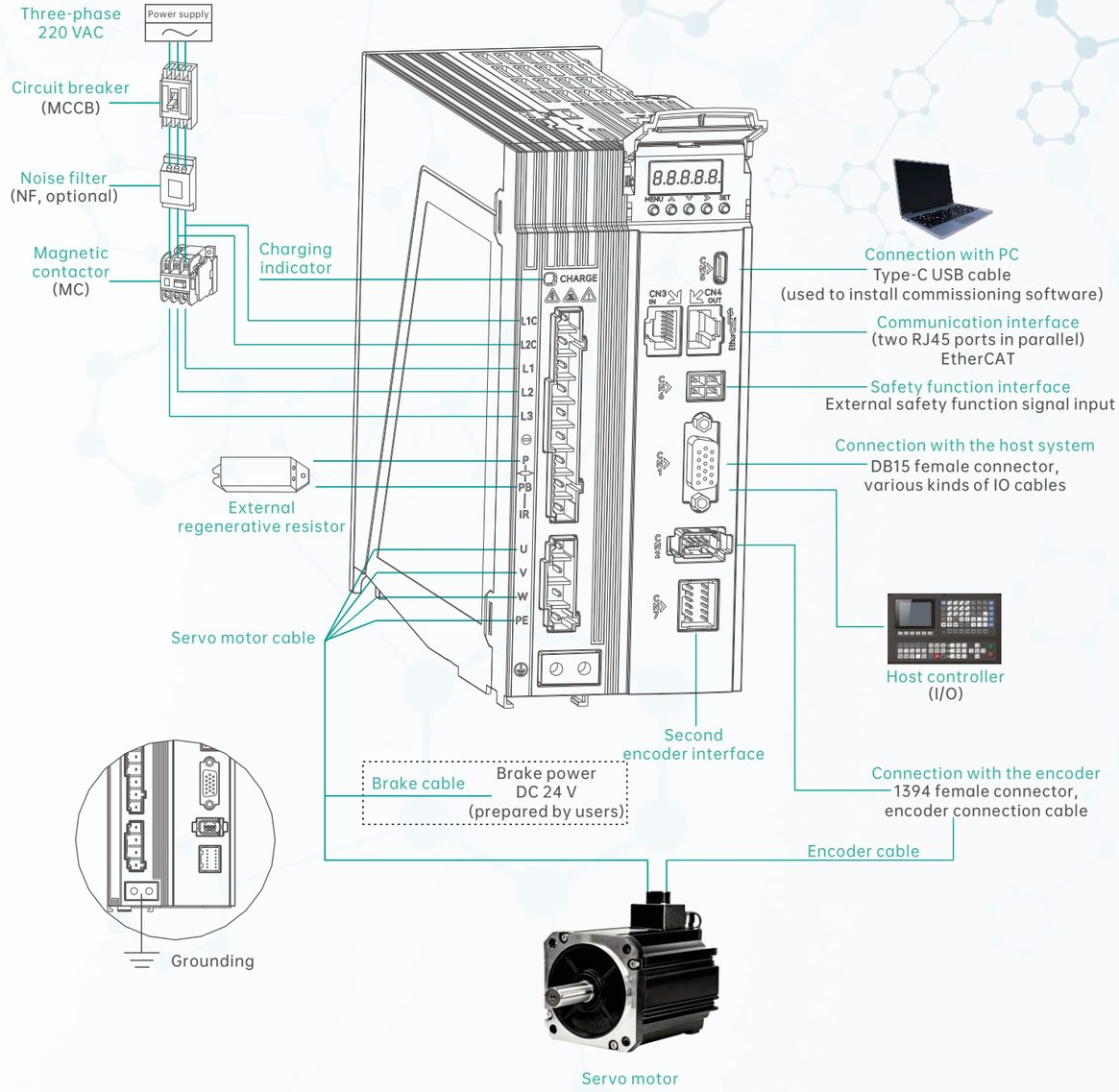
M5-N Drive Wiring

Size B models connected to peripheral devices



Note: This figure shows the wiring with single/three-phase 220 VAC power supply.

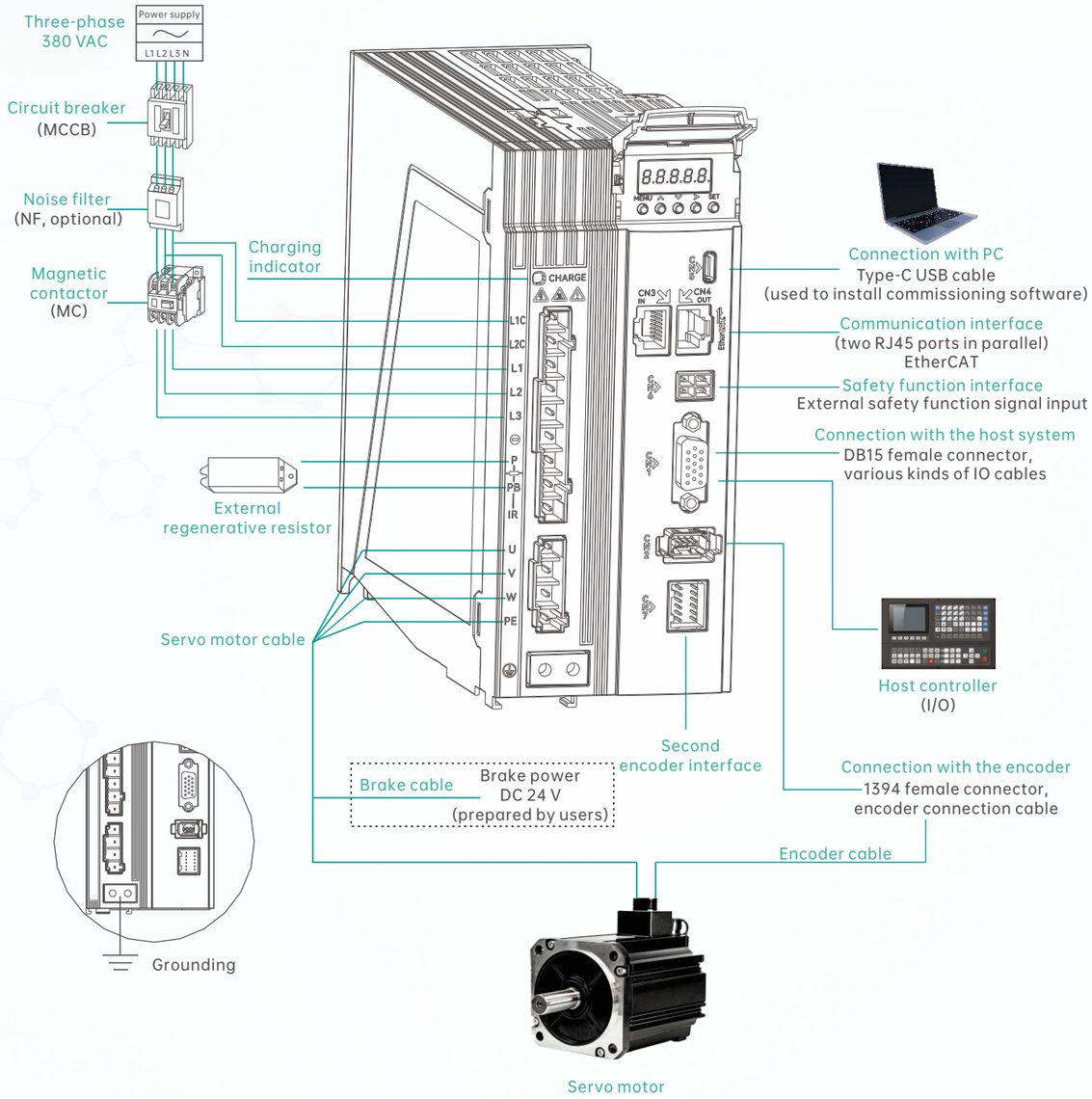
Size C & Size D models connected to peripheral devices



Note: This figure shows the wiring with three-phase 220 VAC power supply.

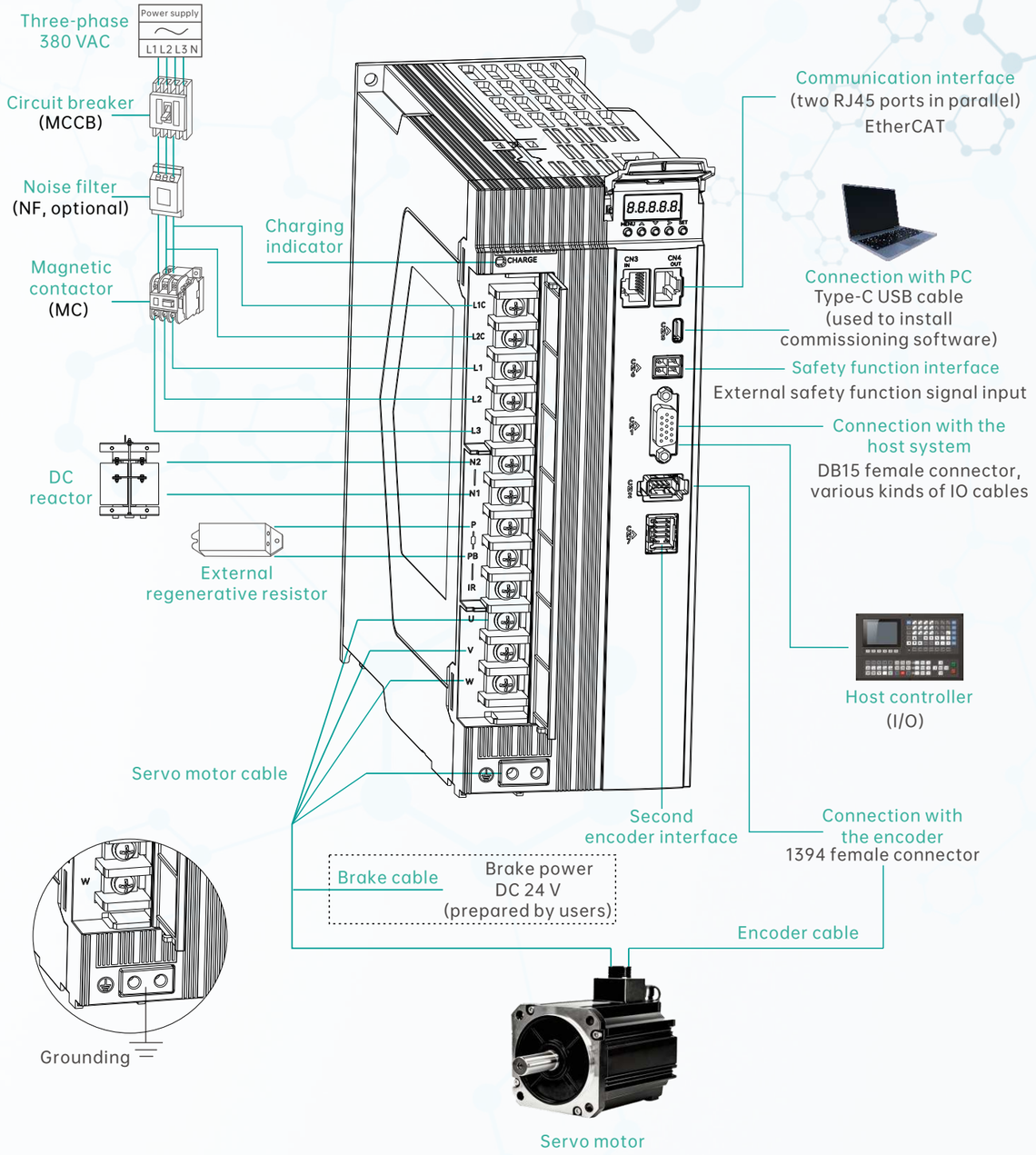
M5-N Drive Wiring

Size C & Size D models connected to peripheral devices



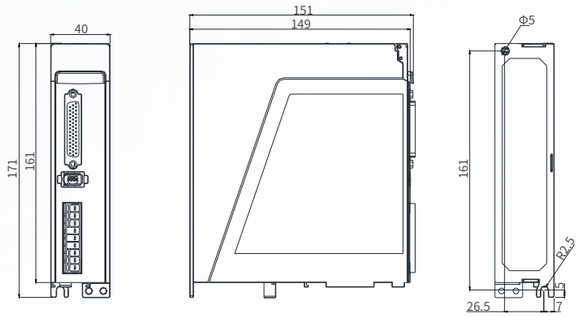
Note: This figure shows the wiring with three-phase 380 VAC power supply.

Size E models connected to peripheral devices

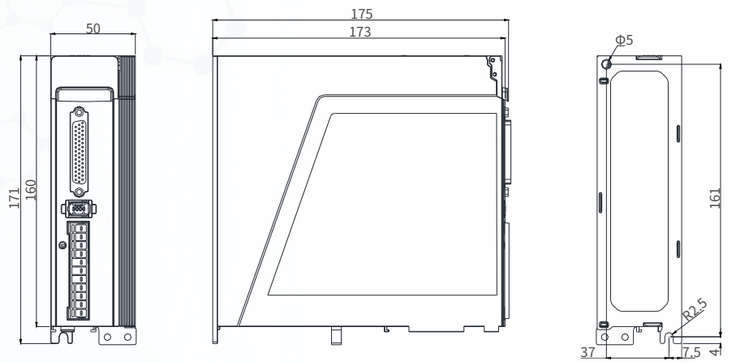


M5-P Dimensions

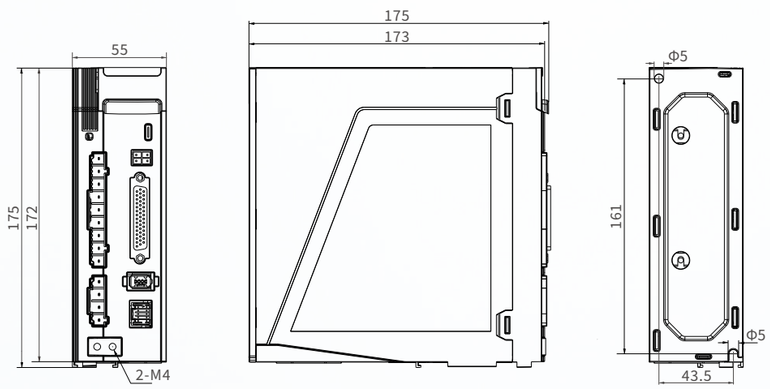
Size A



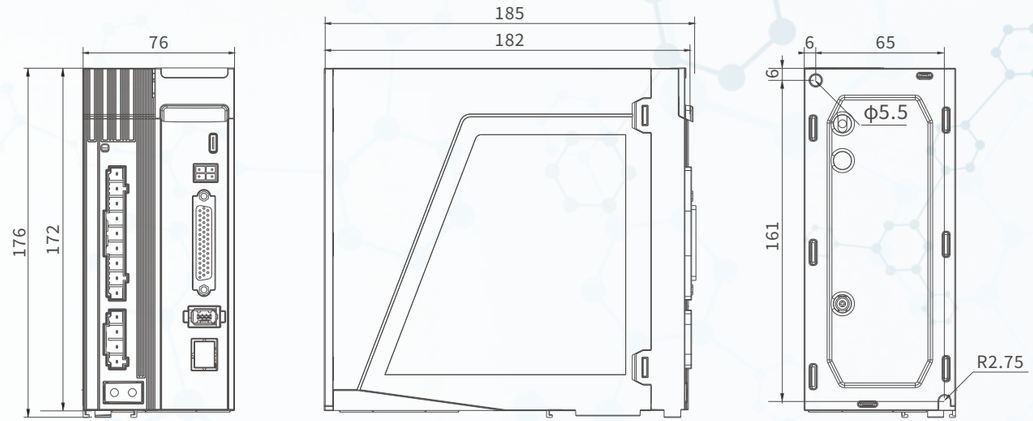
Size B



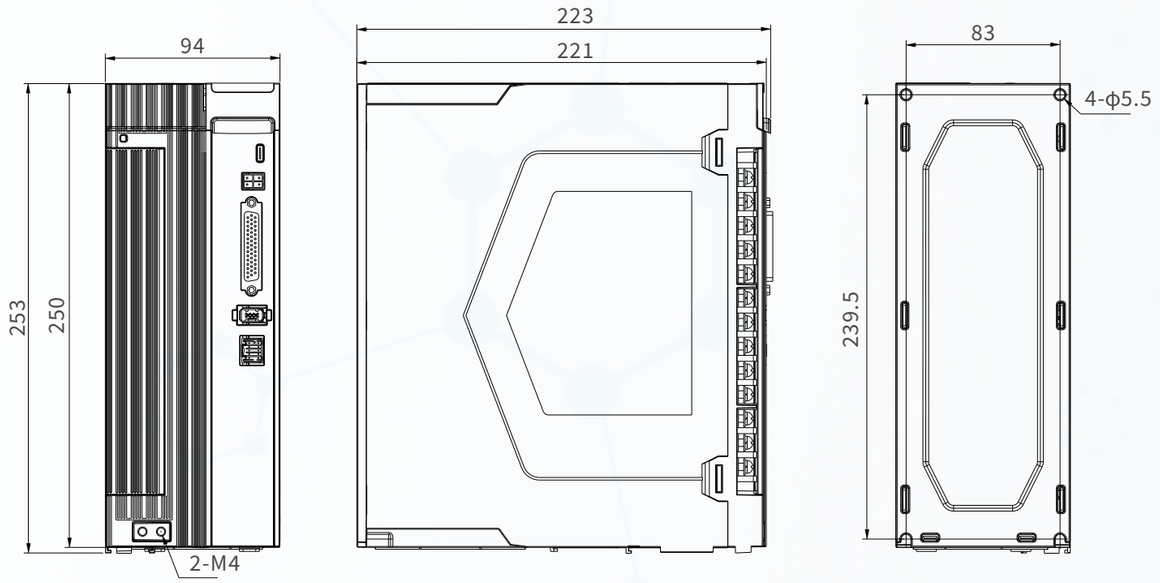
Size C



Size D

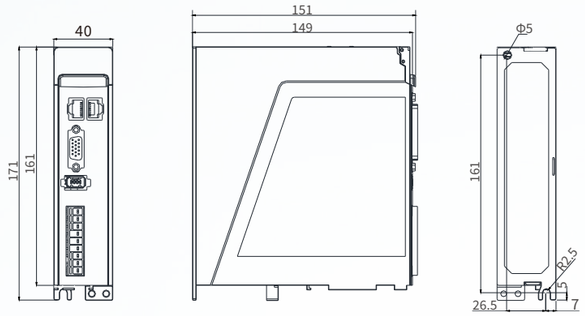


Size E

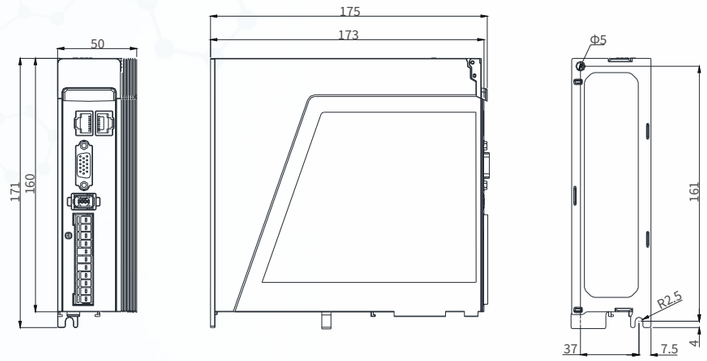


M5-N Dimensions

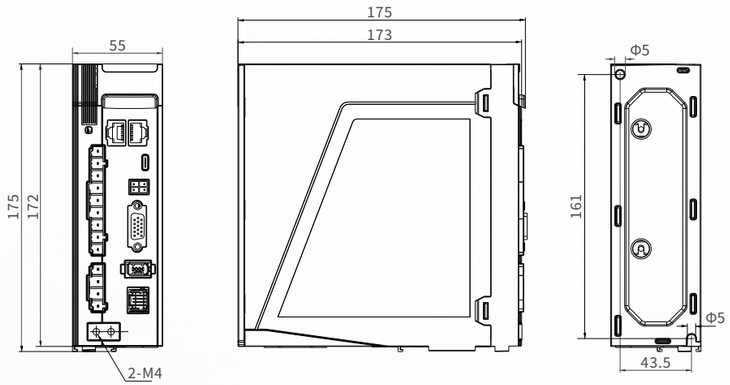
Size A



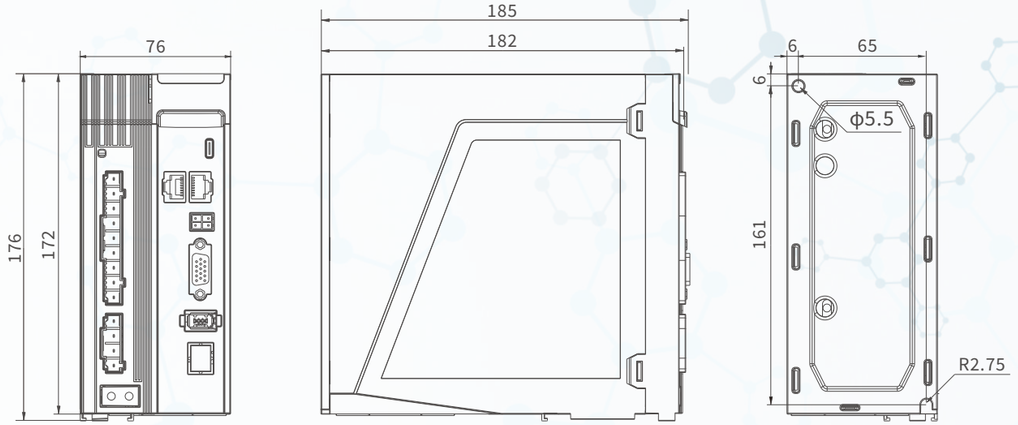
Size B



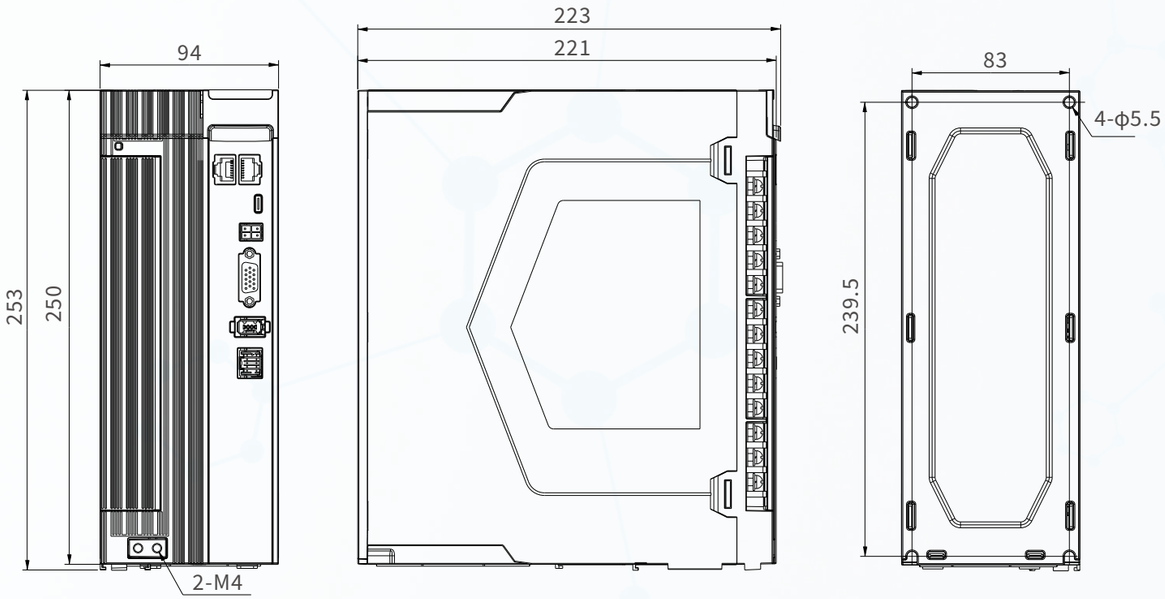
Size C



Size D



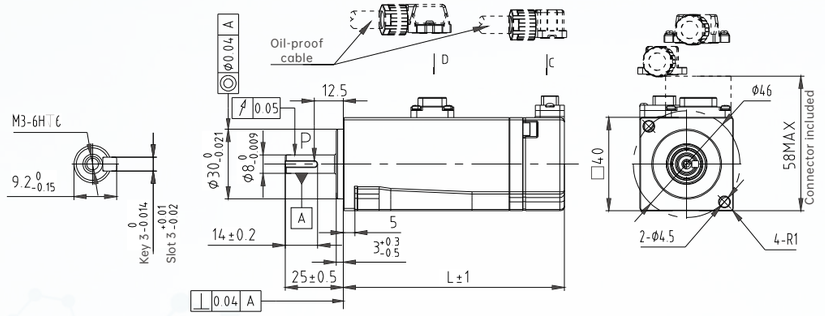
Size E



Servo Motor Dimensions

40/60/80 frame, medium inertia

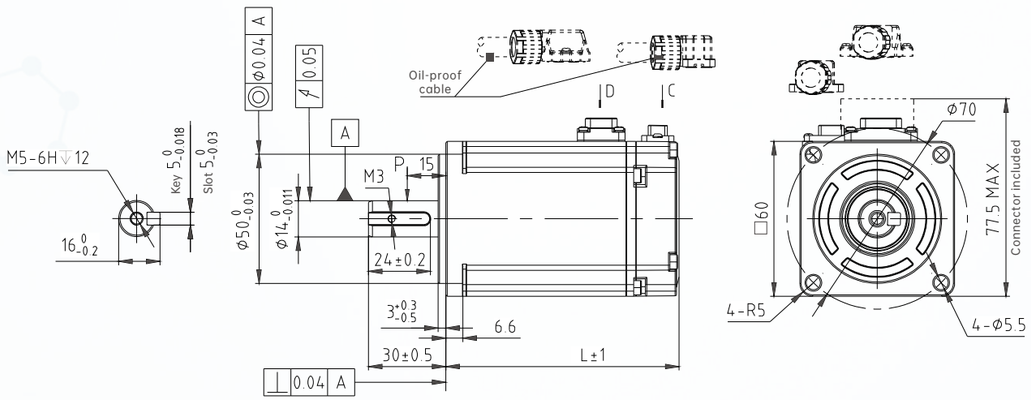
40 frame



Model	L (mm)
SPM-SC*045AM*K-ST1-L	56(84)
SPM-SC*0401M*K-ST1-L	67.7(95)

Note: Dimensions in parentheses are dimensions for motors with brakes.

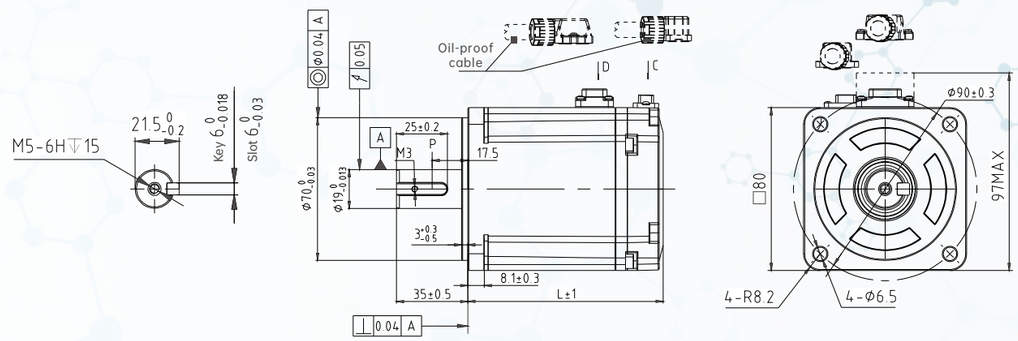
60 frame



Model	L (mm)
SPM-SC*0602M*K-ST1-L	71.8(101.2)
SPM-SC*0604M*K-ST4-L	90.1(119.5)

Note: Dimensions in parentheses are dimensions for motors with brakes.

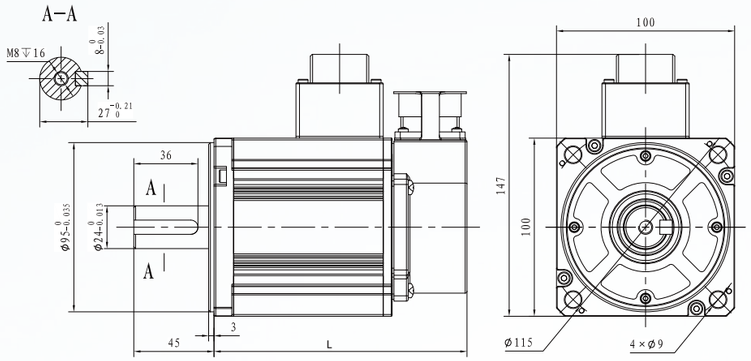
80 frame



Model	L (mm)
SPM-SC*0807M*K-ST4-L	95.7(126.7)
SPM-SC*0810M*K-ST4-L	108.7(139.7)

Note: Dimensions in parentheses are dimensions for motors with brakes.

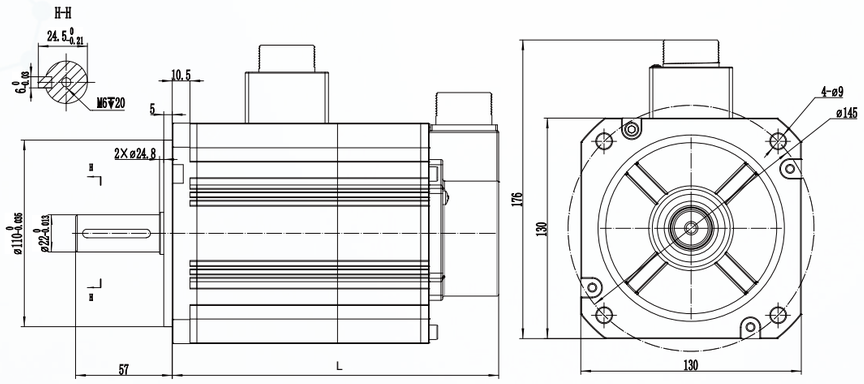
100 frame, low inertia



Model	L (mm)
SPM-SC*1010L*K-W	142(172)
SPM-SC*1015L*K-W	161(191)
SPM-SC*1020L*K-W	180(210)
SPM-SC*1025L*K-W	199(229)
SPM-TC*1010L*K-W	142(172)
SPM-TC*1015L*K-W	161(191)
SPM-TC*1020L*K-W	180(210)
SPM-TC*1025L*K-W	199(229)

Note: Dimensions in parentheses are dimensions for motors with brakes.

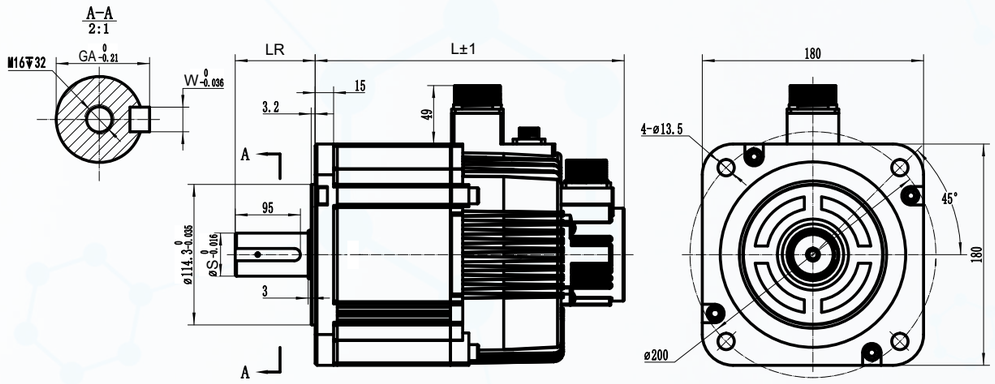
130 frame, medium inertia



Model	L (mm)
SPM-SD*1308M*K-W	135(187)
SPM-SD*1313M*K-W	152.5(204)
SPM-SD*1318M*K-W	170(222)
SPM-SD*1322M*K-W	200(252)
SPM-TD*1308M*K-W2	135(187)
SPM-TD*1313M*K-W2	152.5(204)
SPM-TD*1318M*K-W	170(222)
SPM-TD*1322M*K-W	200(252)
SPM-SE*1311M*K-W	135(187)
SPM-SE*1317M*K-W	152.5(204)
SPM-TE*1311M*K-W	135(187)
SPM-TE*1317M*K-W	152.5(204)
SPM-TE*1324M*K-W	170(222)
SPM-TE*1330M*K-W	200(252)
SPM-SC*1317M*K-W	135(187)
SPM-SC*1326M*K-W	152.5(204)
SPM-TC*1317M*K-W	135(187)
SPM-TC*1326M*K-W	152.5(204)
SPM-TC*1336M*K-W	170(222)
SPM-TC*1345M*K-W	200(252)

Note: Dimensions in parentheses are dimensions for motors with brakes.

180 frame, medium inertia



Model	Shaft length LR (mm)	Shaft diameter S (mm)	Key width W (mm)	Body length L (mm)	Height of shaft and key GA (mm)
SPM-TD*1829M*K-W	79	35	10	205(252)	38
SPM-TD*1844M*K-W	79	35	10	232(279)	38
SPM-TD*1855M*K-W	79	42	12	260(307)	45
SPM-TD*1875M*K-W	79	42	12	284(331.5)	45

Note: Dimensions in parentheses are dimensions for motors with brakes.

Industrial Automation

Communication Layer

EtherNet/IP
Modbus TCP
OPC UA
MQTT


2G/3G/4G Ethernet


PC


SCADA


ERP

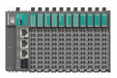

MES


CAM

Control Layer

EtherCAT
CANopen
EtherNet/IP
Modbus TCP
PROFINET


MX600


MC8000


MC6000


MC5000


MU400


MU300


MU200


MU100


GK Panel


MZ800


MC5000S
Remote IO Module


MR400
Remote IO Module


MTCW
Thermostat


MTCE
Thermostat


MDT
Thermostat


MQT
Thermostat


MCP Injection Molding
Machine Controller


Visual
System

Driver Layer

EtherCAT
CANopen
Modbus TCP
EtherNet/IP
PROFINET
MECHATROLINK

Servo Drive


M3


M5


M6


HM6

AC Drive


MV520


MV810


MV820

Air Conditioning


MHP280

Lifting Industry


MV800L


SMILE3000

Machine Tool


SPS


S6

Plastic Machinery


MV600J6

Execution Layer


Servo Motor


Linear Motor


Asynchronous Motor


Encoder


DD Motor


Motor Spindle


Internal Gear Pump


Servo Motor