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5-PHASE STEPPER MOTOR DRIVERS

Provide world-leading motion control solutions



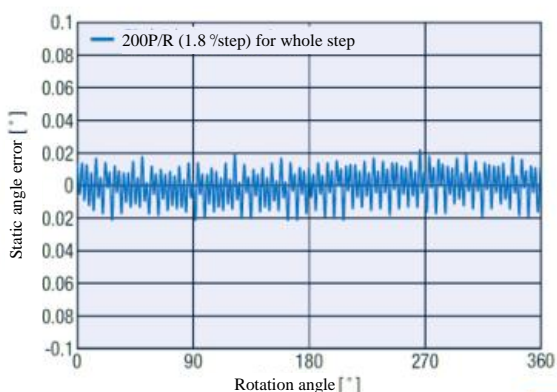
- High precision
- Low vibration, low noise

PRODUCT FEATURES

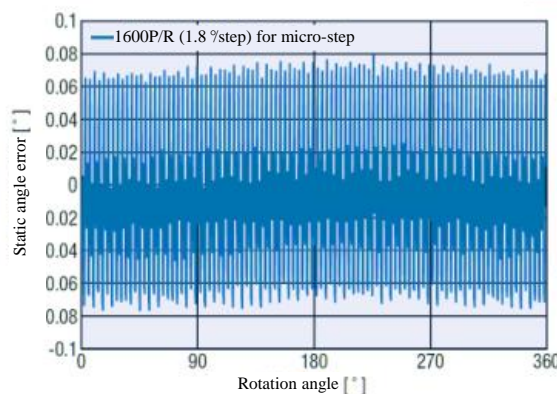
• High precision

The step angle of the 5-phase stepper motor MC series is 0.72° (high-resolution type 0.36°), and the stopping accuracy is ± 0.05 , so it can achieve high-precision positioning. In addition, the static angle error controlled by the micro-step driven driver can achieve high precision that is basically unchanged from the full-step driver.

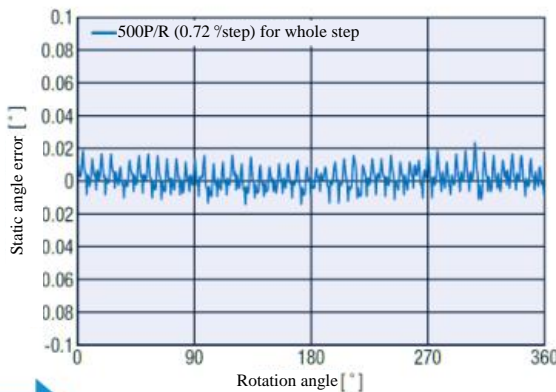
■ Ordinary two-phase motor



Due to micro-step
Stopping accuracy
Deteriorates

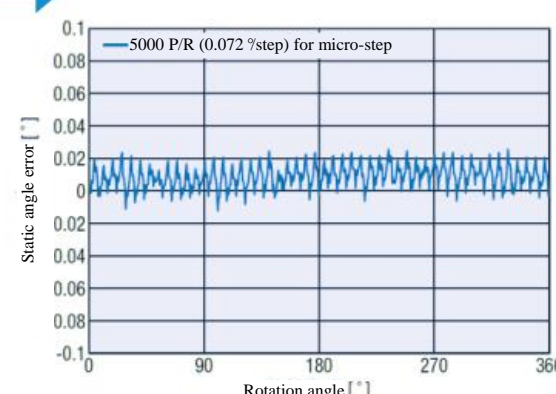


■ 5-phase motor MC series



Even with micro-step
Stopping accuracy
Will not deteriorate

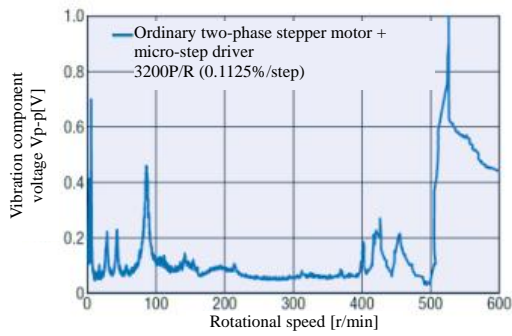
YSSD2 series
Through 5 phases
Can achieve
high-precision positioning



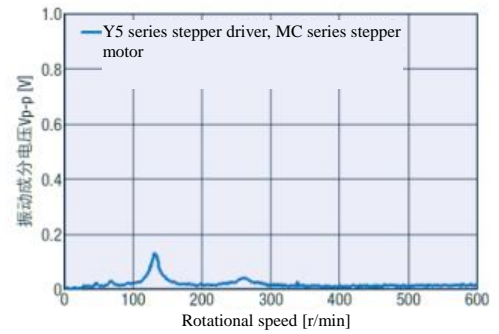
• Low vibration

The basic step angle is relatively small, 0.72° (0.36° for high-resolution type); compared with the 2-phase stepper motor with a basic step angle of 1.8° , it achieves low vibration and low noise. In addition, through the control of the micro-step driven driver, it can realize lower-vibration and lower-noise driving.

■ Vibration curve of ordinary two-phase motor

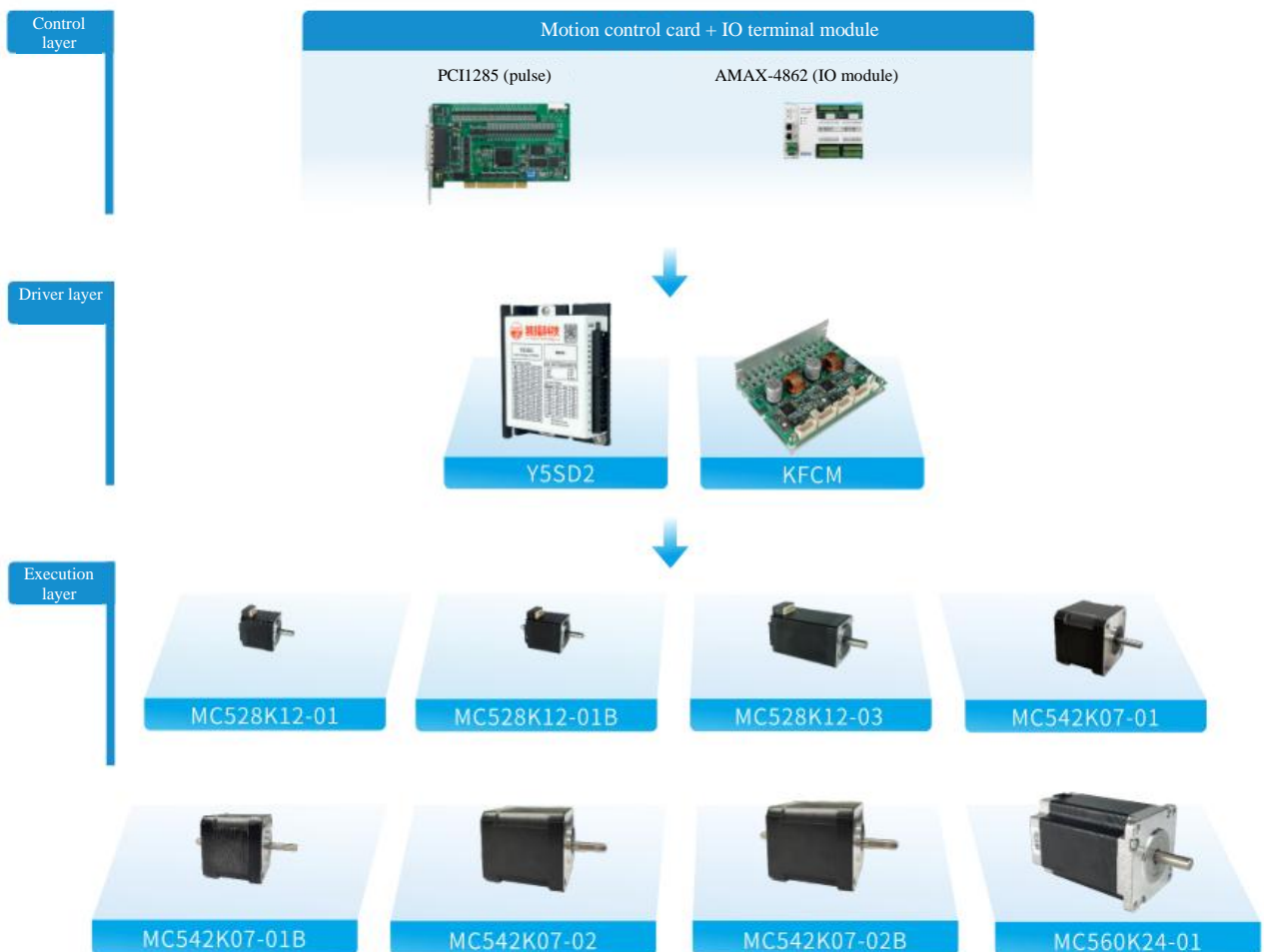


■ Vibration curve of five-phase motor MC series



Y5SD2 series
Through 5 phases
Can further improve
Vibration
characteristics

PRODUCT FAMILY TOPOLOGY



Model and specification parameters

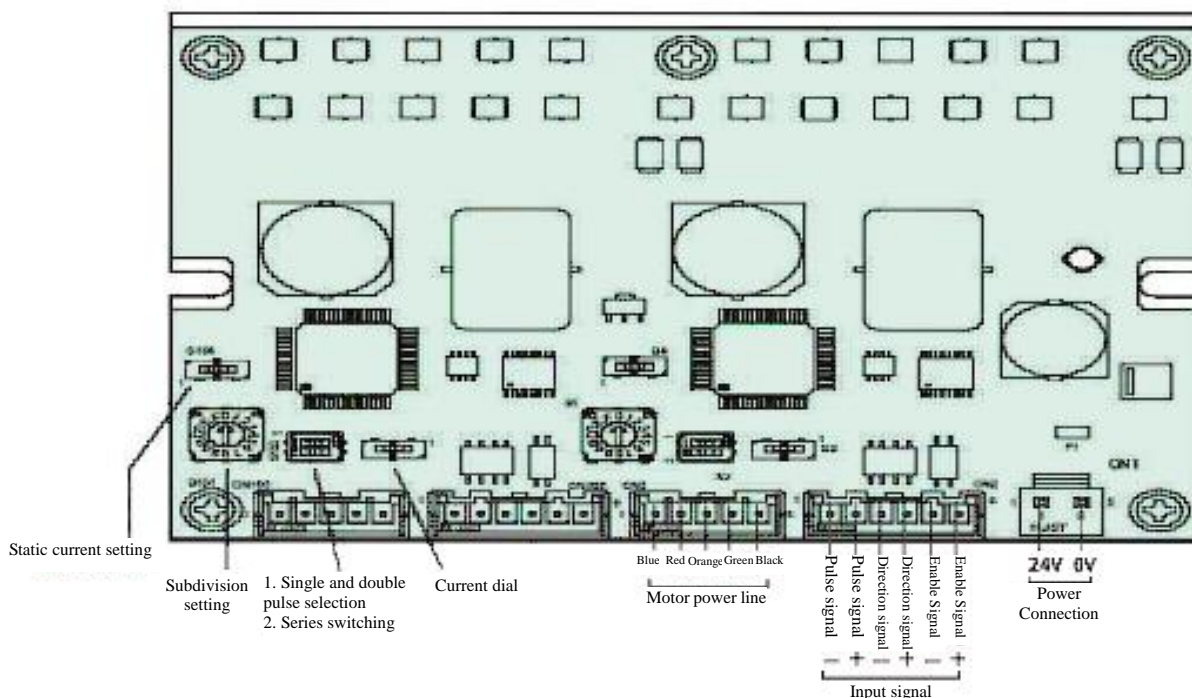
Motor model	MC528K12-01	MC542K07-01 MC542K07-02	MC542K07-01B MC542K07-02B	MC560K24-01
Installation Dimensions	28	42		60
Accessories function	Standard	Single-shaft	Double-shaft	Standard

Driver model	KFD-S0514-1L	KFD-S0514-2L	KFD-S0514-3L
Drive mode	Double-axis		
Factory current	0.35A		
Supply voltage	DC24V ±5%		
Input current	Maximum 1.48A	0.35A/phase, 0.75A/phase, 1.4A/phase Q switching	
Maximum pulse input frequency	Pulse interval of 0.5 μsec or above, pulse frequency below 500kHz		
Operating temperature and humidity	0~40 °C, maximum below 85% Rh		
Storage temperature and humidity	0~40 °C, maximum below 85% Rh	\	

INDUSTRY APPLICATIONS



INTERFACE DESCRIPTION



TYPICAL CONFIGURATION EXAMPLES

Product model		Maximum torque	Rotor moment of inertia	Rated current	Basic step angle	Adapted driver
Single-shaft	MC528K12-01	0.05N.m	9g.cm ²	1.2A	0.72 °	KFD-S0514-1L/2L/3L/Y5SD2
Double-shaft	MC528K12-01B	0.05N.m	9g.cm ²	1.2A	0.72 °	KFD-S0514-1L/2L/3L/Y5SD2
Single-shaft	MC528K12-03	0.091N.m	18g.cm ²	1.2A	0.72 °	KFD-S0514-1L/2L/3L/Y5SD2
Single-shaft	MC542K07-01	15N.cm	54g.cm ²	0.75A	0.72 °	KFD-S0514-1L/2L/3L
Double-shaft	MC542K07-01B	15N.cm	54g.cm ²	0.75A	0.72 °	KFD-S0514-1L/2L/3L
Single-shaft	MC542K07-02	24N.cm	68g.cm ²	0.75A	0.72 °	KFD-S0514-1L/2L/3L
Double-shaft	MC542K07-02B	24N.cm	68g.cm ²	0.75A	0.72 °	KFD-S0514-1L/2L/3L
Single-shaft	MC560K24-01	1.6N.m	580g.cm ²	2.4A	0.72 °	Y5SD2

NAMING RULES

- Naming rules for motors



①	Series name	5-phase MC series
②	Installation dimensions of motor	28mm
③	Rated current	0.75A
④	Model identification	Model identification
⑤	Motor shaft output method	Default: Single output shaft; B: Double output shaft; K: Including the keyway

• Naming rules for drivers



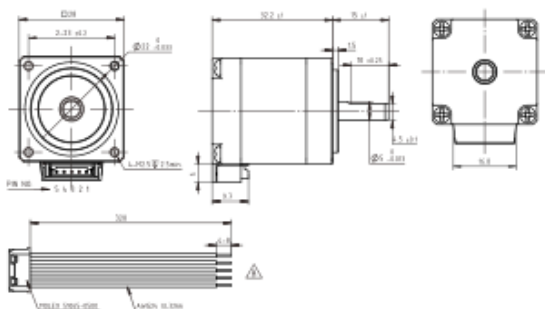
①	KFD	KFD series
②	SO	Double-axis
③	5	5-phase driver
④	14	Maximum output current 1.4A
⑤	1L	1L: Single-shaft; 2L: Double-shaft; 3L: Three-shaft



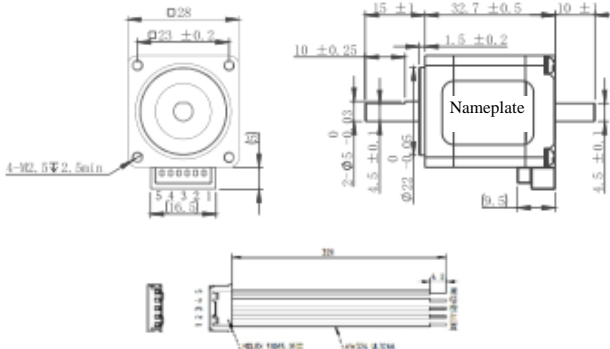
①	Y	Product series
②	5	5: Five-phase stepper; 3: Three-phase stepper; 2: Two-phase stepper
③	SD	DC drive
④	2	Current specification
⑤	S80E	S80E: EtherCAT bus control
⑥	N4	4-shaft

NAMING RULES

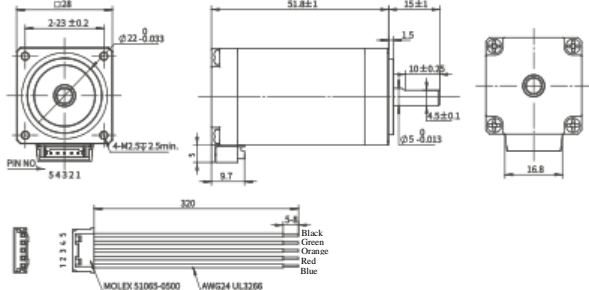
•MC528K12-01



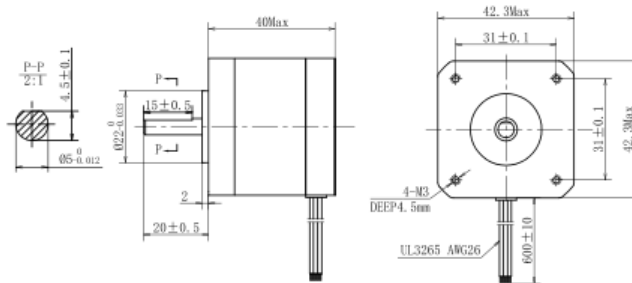
•MC528K12-01B



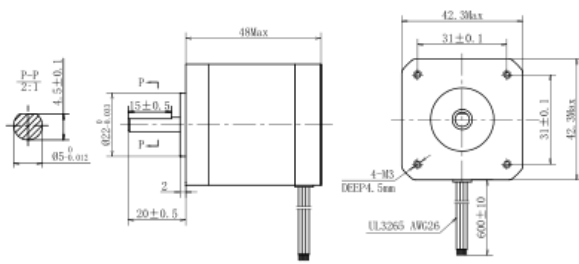
•MC528K12-03



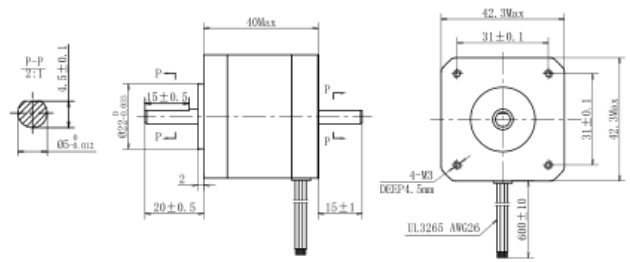
•MC542K07-01



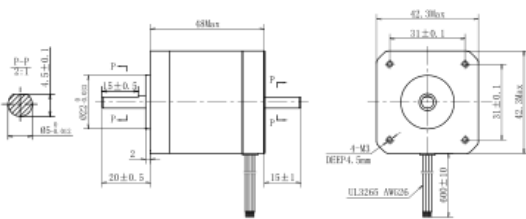
●MC542K07-02



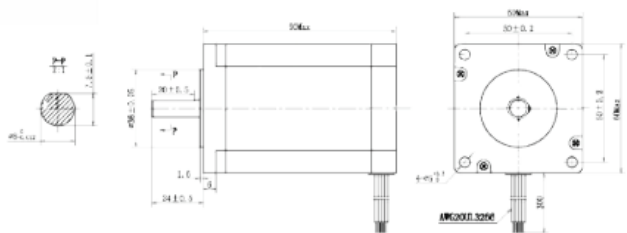
●MC542KD7-01B



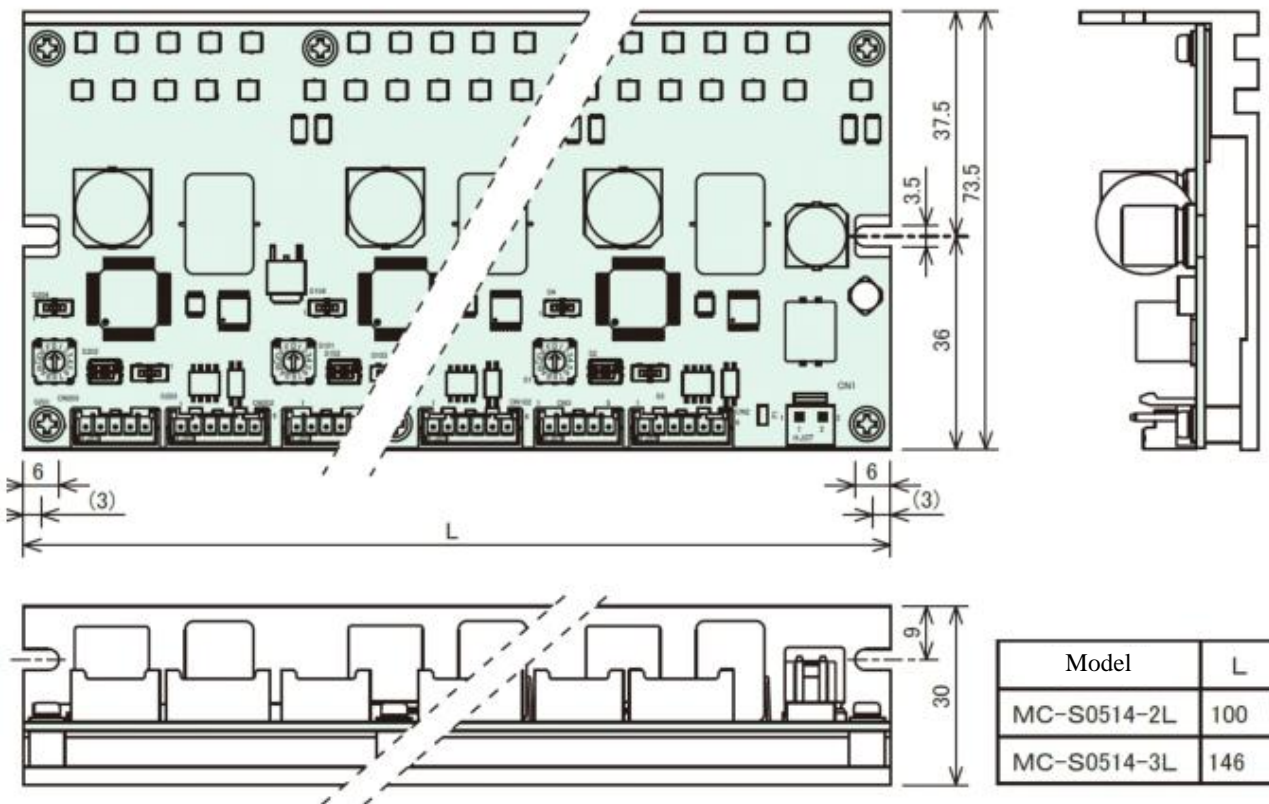
●MC542KD7-02B



●MC560K24-01



● Driver dimensional drawing



Model	L
MC-S0514-2L	100
MC-S0514-3L	146