SERVOTRONIX
always in motion™

BD3 Series Servo Drive Naming Rules

BD 3 S - 2D8 2A EB - ST

① ② ③ ④ ⑤ ⑥ ⑦

① Driving type

BD	Bundle Drive

② Generation

3	Third generation

③ Function orientation

E	Economical model
S	Standard model
P	Premium model

④ Current rating

1D6	Persistent 1.6 Arms, maximum 5.6 Arms
2D8	Persistent 2.8 Arms, maximum 9.8 Arms
3D5	Persistent 3.5 Arms, maximum 11 Arms
5D4	Persistent 5.4 Arms, maximum 14 Arms
5D5	Persistent 5.5 Arms, maximum 16.9 Arms
…	

⑤ Input power supply voltage

2A	single/ three phase 220V, -10% ~ +10%, 50/60 Hz
4D	three phase 380V, -10% ~ +10%, 50/60 Hz

⑥ Communication interface

AP	Position pulse
EB	EtherCAT
PN	ProfiNET
CN	CANOpen

⑦ Special specifications

Blank	Standard
ST	STO
BS	Brake Resistor+ STO

BD3 Series Drive Specification

Model		BD3E-1D62AEB BD3S-1D62AEB BD3S-1D62AEB-ST	BD3E-2D82AEB BD3S-2D82AEB BD3E-2D82AEB-ST BD3S-2D82AEB-ST	BD3E-2D82AEB-BS BD3S-2D82AEB-BS	BD3E-5D52AEB BD3S-5D52AEB BD3E-5D52AEB-ST BD3S-5D52AEB-ST	BD3E-3D54DEB BD3S-3D54DEB BD3E-3D54DEB-ST BD3S-3D54DEB-ST	BD3E-5D44DEB BD3S-5D44DEB BD3E-5D44DEB-ST BD3S-5D44DEB-ST	BD3E-8D44DEB BD3S-8D44DEB BD3E-8D44DEB-ST BD3S-8D44DEB-ST	BD3E-0124DEB BD3S-0124DEB BD3E-0124DEB-ST BD3S-0124DEB-ST
Maximum motor capacity (w)		200	400		750	1000	1500	2000	3000
Continuous output current [Arms]		1.6	2.8	2.8	5.5	3.5	5.4	8.4	11.9
Instantaneous maximum output current [Arms]		5.8	9.8	9.8	16.9	11	14	20	29.7
Main circuit	Power supply	1ph AC 200V-240V +10% ～ -10%，50/60Hz				3ph AC 380V-440V +10% ～ -10%，50/60Hz			
	Input current [Arms]	2.3	4	4	7.9	2.4	3.6	5.6	8
Control power supply		Power from bus and sharing rectification							
Regenerative resistor	Built-in resistance value [Ω]	No	No	40	40	100		50	
	Built-in resistance power [W]	No	No	50	50	60		75	
	Maximum absorbed braking energy for capacitor [J]	13.15	26.29	26.29	22.41	34.28	34.28	50.41	50.41
	External minimum allowable resistance [Ω]	50	45	40	40	80	60	45	40
Chassis		A		B		C		D	
Dimension	W(mm)	45		50		60		75	
	H(mm)	160		160		160		160	
	D(mm)	173		173		196		196	
Fan		No	No	Yes	Yes	Yes	Yes	Yes	Yes

Servotronix Motion Control Ltd.

Address: Room 605, Building B2, Kexing Science Park, No. 15, Keyuan Road, Nanshan District, Shenzhen, Guangdong, China
Tel : 400-111-8669
Fax: +86 0755 86626665
E-mail : servotronix@midea.com
Official website : www.servotronix.cn

SERVOTRONIX
always in motion™

BD3 Series AC Servo System

BD3S Standard AC Servo System

Import Substitution Pefect Choice

350%
Peak overload

3.2 kHz
Velocity loop response bandwidth

23 bit
Multi-turn optical encoder

255-axis
Supporting synchronous control of 255-axis EtherCAT network equipment

PH2 series servo motors as standard

EtherCAT
Network communication

6000r/min
Maximum speed

3.5 times
overload capacity

1.5%
Cogging torque

2 million
times of brake switching life

23-bit encoder
resolution

CE
certification

IP65
motor protection

BD3E Economical AC Servo System

Reliable and Easy to Use

350%
Peak overload

2.1 kHz
Velocity loop response bandwidth

20bit
single/multi-turn magnetic encoder

255-axis
Supporting synchronous control of 255-axis EtherCAT network equipment

PM2 series servo motors as standard

EtherCAT
Network communication

6000r/min
Maximum speed

3.5 times
overload capacity

20-bit encoder
resolution

CE
certification

IP65
motor protection

01.
Exquisite Design Delivers Craftsmanship

Hidden battery compartment
Simple wiring and stable connection

Ethernet debugging interface
Stable and convenient; supporting EtherCAT debugging, easy for remote parameter downloading and firmware maintenance

Strong and weak current separation design
Powerful anti-interference ability

Easy code scanning
Unique code for each machine, easy to identify and trace product information

02.
Easy to Debug Live at Power Up

MTP electronic nameplate
Motor plug-and-play

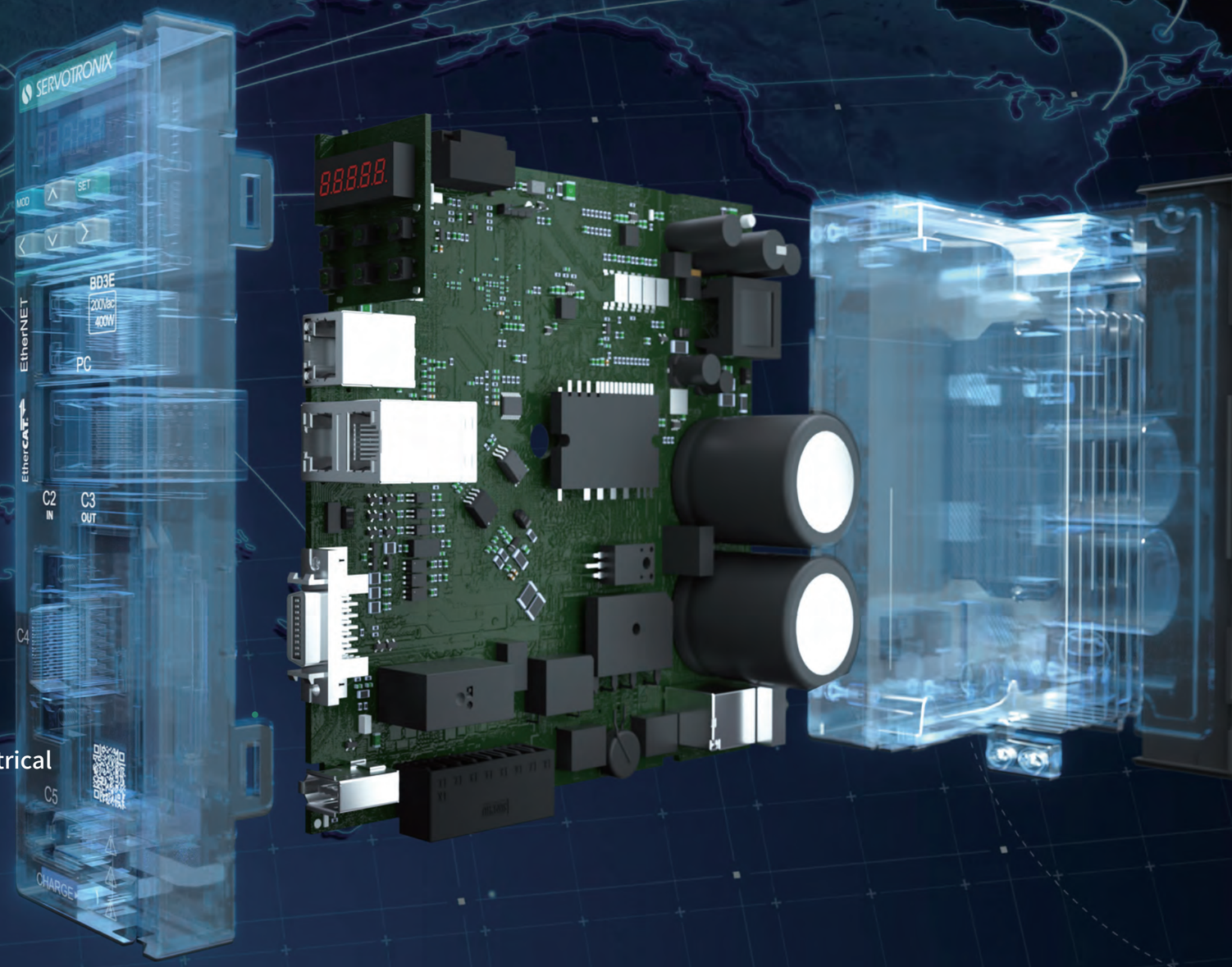
Absolute encoder
Limit and origin are not required

Graphical debugging wizard,
easy to understand

One-key self-tuning
saving 90% debugging time

Control panel
With six keys, parameter debugging, system tuning, troubleshooting and alarm clearing can be mastered in one hand

03.
Trustworthy and Rigid



Active heat dissipation design+conformal coating

Withstanding harsh environments such as high temperature, high humidity and much dust

Pass IEC 61800 test

Withstanding complex electrical environment

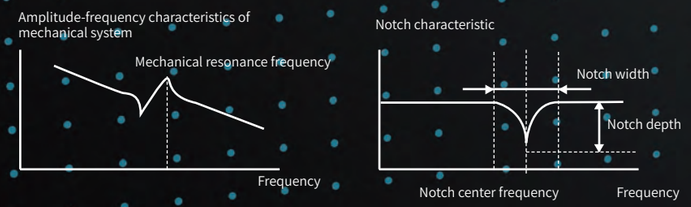
High quality materials

Strict process control; excellent quality and precision deliver stable running and efficient production

Products meet CE certification standards

CE certification issued by TUV, meeting the safety requirements of overseas customers

04.
Advanced Algorithm Combines Rigidity and Flexibility



Fast tuning

MTP electronic nameplate+self-tuning

Collision detection

Open-loop force control simplifies system structure and saves sensor cost

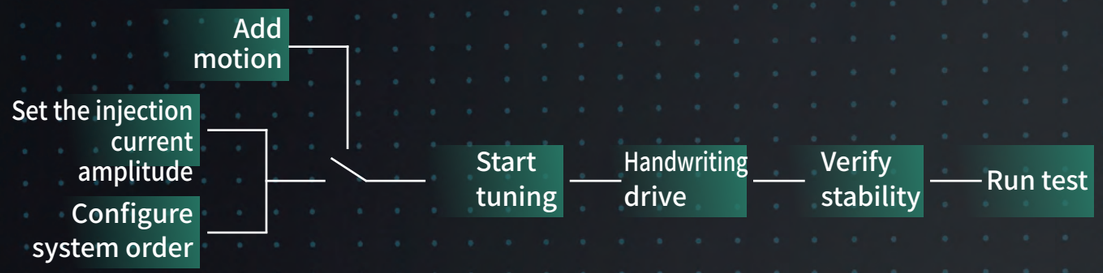
Vibration suppression

Full frequency domain (low frequency+intermediate frequency+high frequency) vibration suppression; rigid+flexible load vibration suppression

HDM control algorithm

Frequency domain design mode based on mechanical model, delivering the optimal servo control gain and filtering parameters

05. Simple Mode - Automatic Tuning



Application advantages:

High reliability

Model-based parameter self-tuning, providing high reliability

Small moving distance of the object

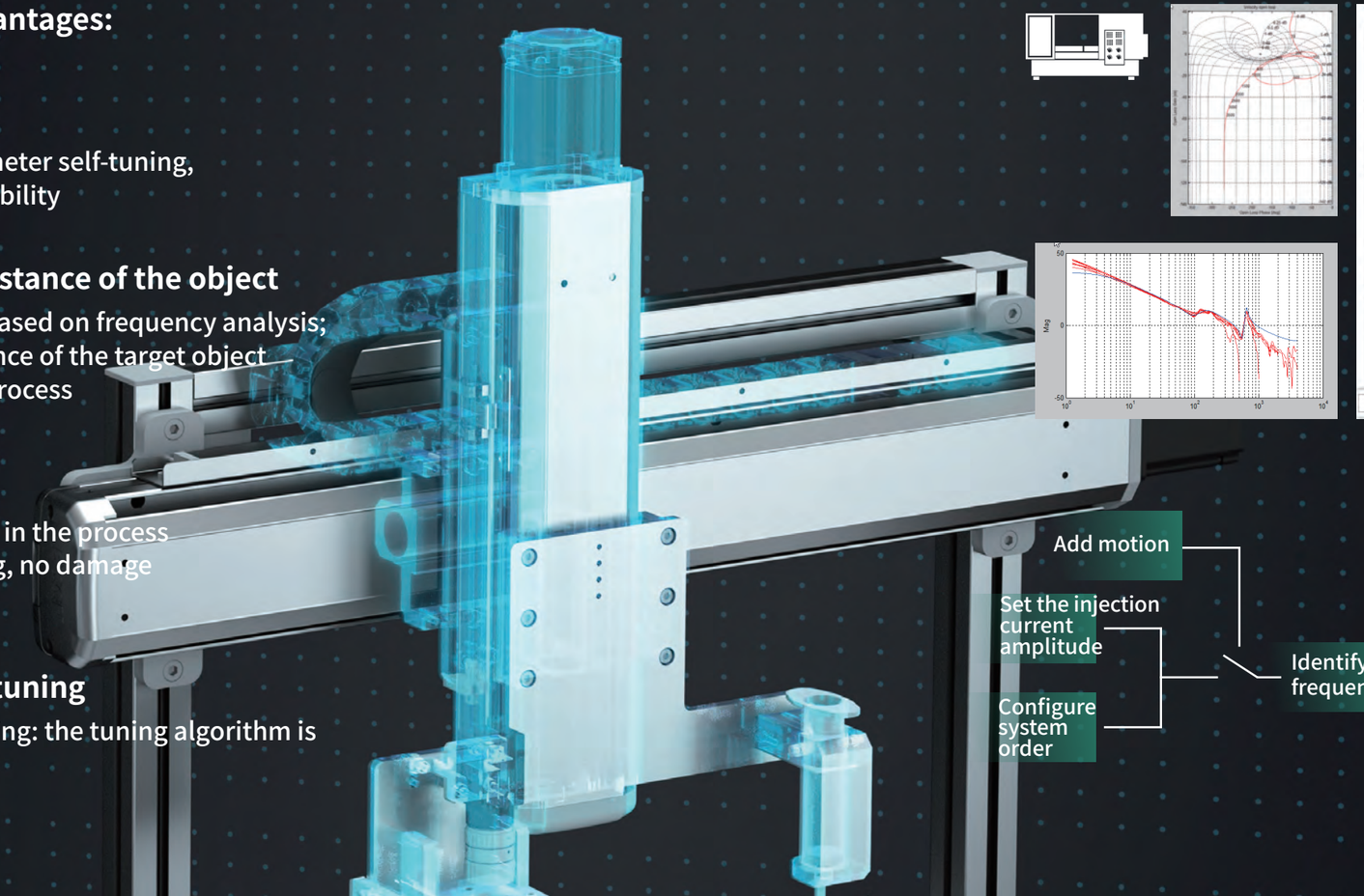
Parameter tuning based on frequency analysis; small moving distance of the target object during the tuning process

No vibration

No severe vibration in the process of parameter tuning, no damage to the machine

Fast parameter tuning

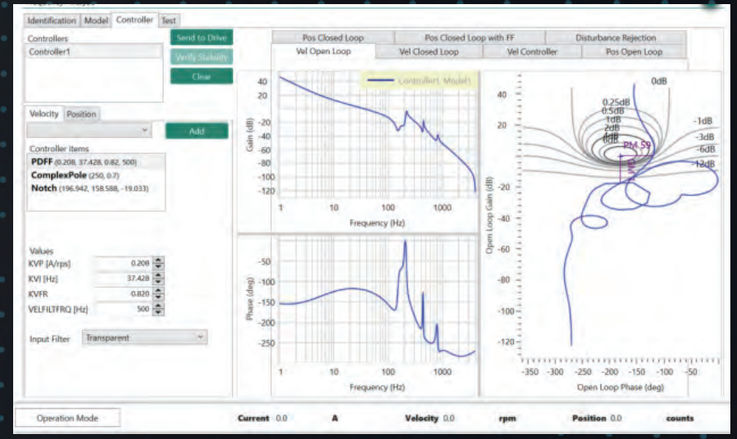
Fast parameter tuning: the tuning algorithm is realized in PC

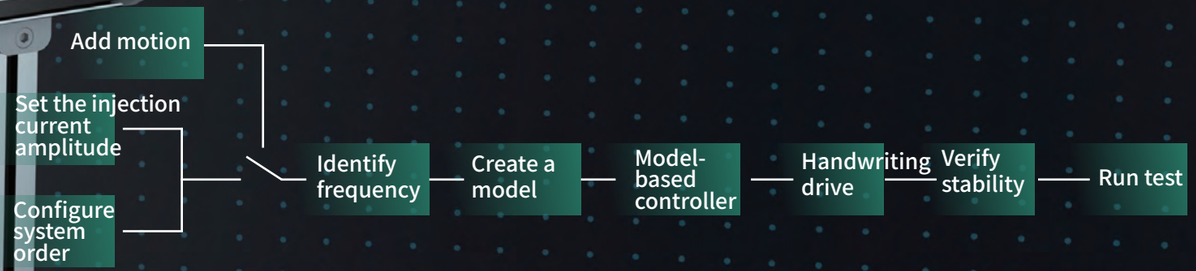


06. Expert Mode - HDM Algorithm Based on Frequency Domain Analysis of Machine Model

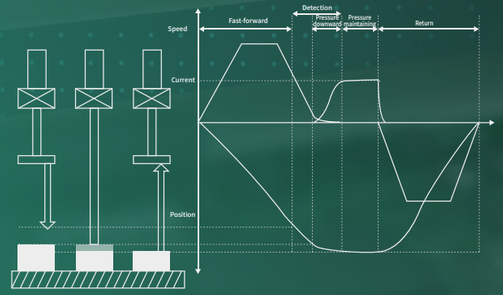
Identifying the system, automatically designing parameters, and improving the control performance

System characteristic identification ····· System modeling ····· Control scheme design ····· Control scheme verification

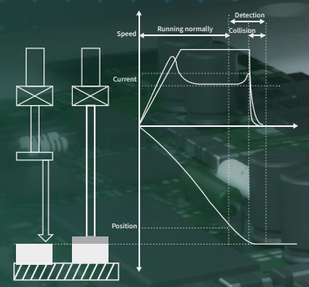




07.
Open-Loop Force Control



Pressure maintaining process



Collision protection

Accurate sensor-less pressure control

Optional pressure maintaining function and collision protection

Pressure maintaining supports 5-segment position and pressure setting

Accurate collision protection to avoid false alarm.

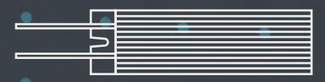
08.
Safe and Reliable Easy to Use

Narrow box
The 400W special model has built-in regenerative resistor, which saves the space of electric cabinet, shortens the deceleration time and improves the braking ability

Dynamic braking
Reducing the free parking distance after power failure

STO safety torque shutdown
Simplifying the design of the overall safety function system of the equipment

Collision detection
Can be set to return to homing or stop after collision



For other domestic manufacturers, 400w models need external regenerative resistor

Lithium battery PV 3C electronic Universal automation

Woodworking machinery Food packaging Laser processing

Control product

MC804

high-performance motion controller
Supporting 16 axes in 1ms
Supporting 32 axes in 2ms

SC301

Compact motion controller
Rich interfaces, supporting 16 axes

PT series touch screen

Easy to use, with comprehensive functions

ET series IO module

Can be extended to the right based on SC301
Can be distributed and flexibly arranged

Drive Product

BD3S Standard AC Servo System
BD3E Economical AC Servo System

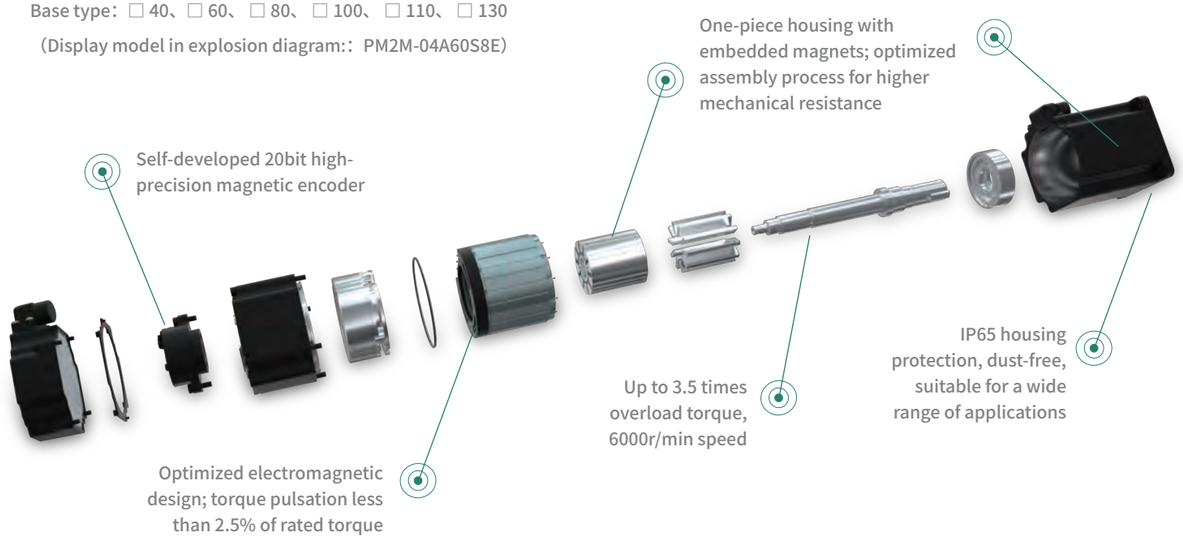
PM Series Servo Motors

Reliable and Powerful

Power range：0.05~3.0kW

Base type：☐ 40、☐ 60、☐ 80、☐ 100、☐ 110、☐ 130

（Display model in explosion diagram:：PM2M-04A60S8E）



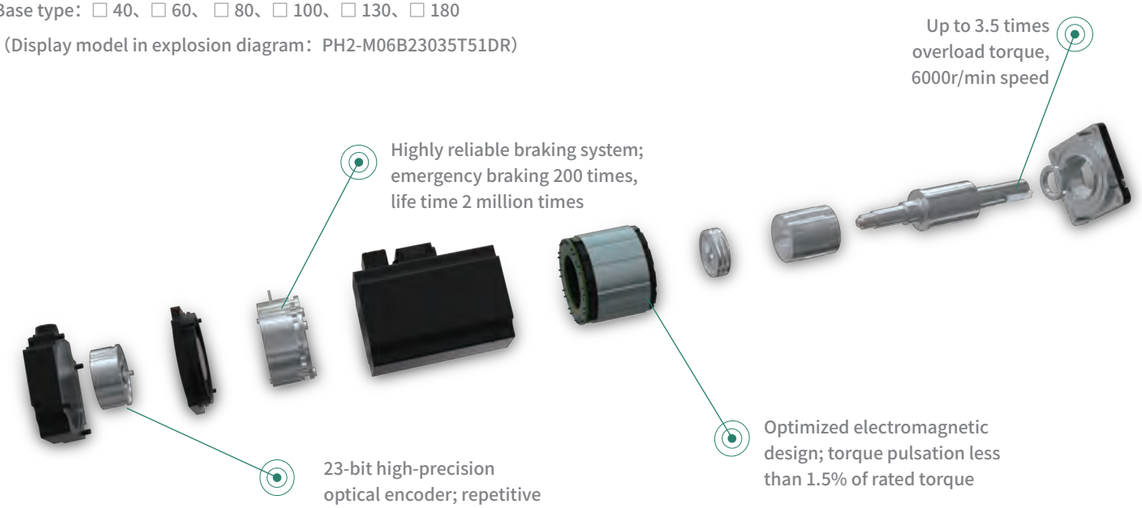
PH2 Series Servo Motors

Excellent performance, stable and reliable; wise choice for import replacement

Power range：0.05~3kW

Base type：☐ 40、☐ 60、☐ 80、☐ 100、☐ 130、☐ 180

（Display model in explosion diagram：PH2-M06B23035T51DR）



PM series servo drive naming rules

PM 2 M - 04 A 60 # S 8 S **

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

① Serial number

PM	PM2 series

② Type of inertia

Symbol	Specifications
S	Small inertia
M	Medium inertia
H	Large inertia
G	Super large inertia

③ Rated output power

Symbol	Specifications
A3	30W
A5	50W
01	100W
02	200W
04	400W
08	750W
09	850W
10	1.0kW
13	1.3kW
15	1.5kW
18	1.8kW
20	2.0kW
25	2.5kW
29	2.9kW
30	3.0kW

④ Input power supply voltage

Symbol	Specifications
A	220VAC
B	380VAC

⑤ Machine base number

Symbol	Specifications
40	☐ 40 Machine base
60	☐ 60 Machine base
80	☐ 80 Machine base
100	☐ 100 Machine base
110	☐ 110 Machine base
130	☐ 130 Machine base

⑥ Electromagnetic scheme

Symbol	Specifications
No	Default version
A	Electromagnetic version A
B	Electromagnetic version B

⑦ Encoder type

Symbol	Specifications
S	20-bit single-turn absolute encoder (magnetic)
T	20-bit multi-turn absolute encoder (magnetic)

⑧ Shaft end specification

Symbol	Specifications
8	Straight shaft with key and hole

⑨ Options

Symbol	Specifications
1	No option (without oil seal or brake)
B	With brake
S	With oil seal
E	With oil seal and brake

⑩ Special specifications

Symbol	Specifications
No	Standard product
**	Customization, ** can be an indefinite digit combination of letters and numbers.

PRDH2 series servo drive naming rules

PH2 - M 06 B 2 30 3 5 T5 0 D **

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫

① PH2 series

② Inertia

L	Small inertia
M	Medium inertia
H	Large inertia

③ Flange size

04	40 mm
06	60 mm
08	80 mm
10	100 mm
13	130 mm
18	180 mm

④ Electromagnetic scheme

A	Electromagnetic version A
B	Electromagnetic version B
C	Electromagnetic version C
D	Electromagnetic version D

⑤ Rated voltage level

2	220 VAC
4	380VAC

⑥ Rated speed

10	1000 rpm
15	1500 rpm
20	2000 rpm
30	3000 rpm

⑦ Shaft and oil seal

2	With key
3	With key and oil seal

⑧ IP protection

5	IP65

⑨ Feedback type

T5	23-bit multi-turn optical encoder

⑩ Brake

0	Without brake
1	With brake

⑪ Interface type

D	Wire harness+connector
A	Aircraft connector

⑫ Custom code

**	Customization, ** can be an indefinite digit combination of letters and numbers.