



## P Series AC Servo Catalogue

Normal Pulse Type

EtherCAT Type



### SHENZHEN K-EASY AUTOMATION CO.,LIMITED

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## COMPANY PROFILE

Shenzhen K-Easy Automation Co., Limited is a professional manufacturer, specialize in R&D And production of AC drives. We have built up a comprehensive product family. Frequency inverters' power covers the range from 0.4kW to 630kW, and voltage range is between 220V and 480V. More than inverters are running smoothly 300, 000 units at different industrial sites.

JOIN US,  
ENJOY THE BUSINESS.

We believe "quality is life", so we will test all products before shipment, All Module of our VFD will be used quality is life with Infenion only, With years of persistence, the total failure ratio of Our frequency inverters has been controlled below 1%. We never lose a customer because of the quality problem;

With Strong R&D and Engineer Team, makes our after-service very easy, For all doubts and requesting for technologies supporting, We can offer detailed Solution without delay, so for us, "Not Only Products, But also solutions";

All our products will be offered with 24 months Warranty Period instead of 18 months.



### OUR TEAM

- 👉 Problem Rate Less Than 1%;
- 👉 Support OEM Service;
- 👉 Strong Engineer Team.



### OUR SERVICES

- 👉 24 Months Warranty Time;
- 👉 Very Good After Sales-Service, Best;
- 👉 Provide solutions within 2 hours.

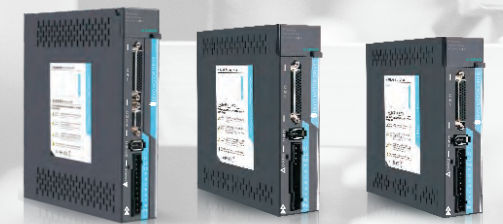


# A



Pulse Type AC Servo System -----01-14

# B



Field Bus Type AC Servo System -----15-22

# C



AC Servo Motor -----23-33

# PRODUCTION KONG FU



Clean & Tidy

## Production environment

☒ Clean and tidy environment is one of the key factors of good quality products.



100% & 100%

## PCB testing

☒ 100% testing  
☒ 100% pass the testing  
☒ Full automatic testing



Professional

## IQC testing

☒ Professional equipment to test the incoming materials.



12hours 50

## Aging test for PCB boards

☒ More than 95% brands without this test step.



24hours 50

## Aging test for finished products

☒ More stricter than other brands



100% two times

## Loading test for small power ratings ( 37kW)

☒ Test for two times.  
1, after manufacturing;  
2, after aging test.  
☒ Full automatic testing.



100% two times

## Loading test for big power ratings (up to 450kW)

☒ Test for two times.  
1, after manufacturing;  
2, after aging test.  
☒ Load current up to 850A.



<0.2%

## An unqualified rate during production process

☒ Less than 0.2%



4000V

## Grouped Pulses testing (4,000V without tripping)

☒ 3,000V is other brands' tripping level.  
☒ Better EMC performance, no failure will be caused by external interferences in normal condition.



10000V

## Static Electricity Testing (10,000V without tripping)

☒ 6,000V is other brands' tripping level.  
☒ No failure will be caused by external static electricity in normal condition.



-30°C~60°C  
10%~95%RH

## Constant temperature & constant humidity testing

☒ Random test, to test the inverters' temperature, humidity, isolation performance.



40±2°C  
93±2%RH  
PH: 6.5~7.2  
24hours

## Salt spray testing

☒ Random test, to test the inverters' corrosively performance.



0.25Hz/180% (SVC)

## Torque testing

☒ Connecting with the real load, to test the inverters' output torque performance at different loads.



4 steps

## Four steps to fix a screw

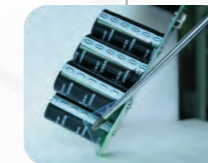
☒ Adjust standard force to the electric screwdriver  
☒ Fix it with standard force  
☒ Fix it with more power force  
☒ Mark it by red color



well-distributed

## Heat dissipation adhesive

☒ Using a metal mesh, to make it well-distributed.  
☒ Better heat dissipation performance than direct brushing.



Isolation layer

## Additional isolation layer

☒ Adding on the capacitor board, to get better isolation performance.



±1g

## Keypad button force

☒ Standard force is 10g±2g, we request the supplier to make the deviation within ±1g.

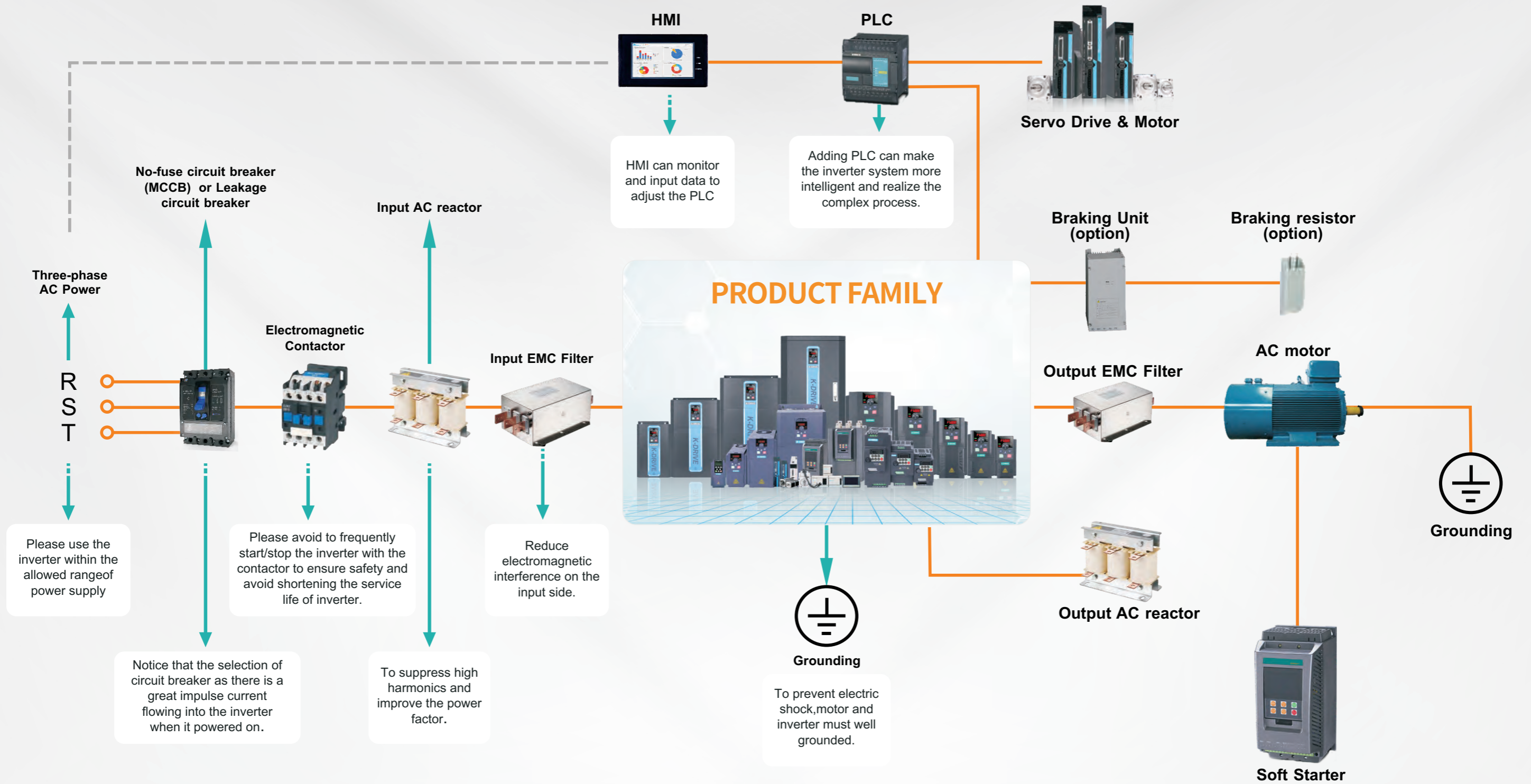


Force adjustment

## Force adjustment for electric screwdriver

☒ Every morning, before production, adjust it to standard force.

# PERIPHERAL DEVICES CONNECTION DIAGRAM





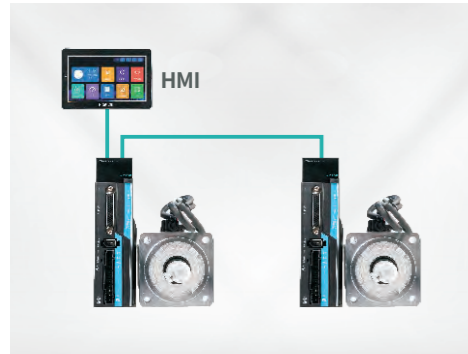
## P SERIES PULSE TYPE AC SERVOS

System Description  
Drive Introduction



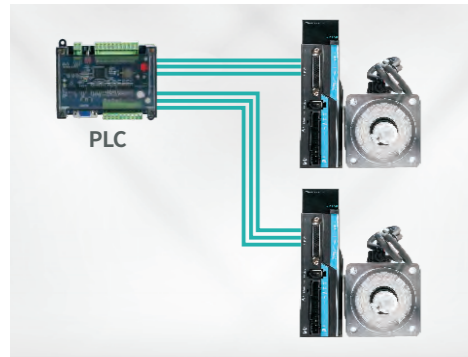
## PRODUCT FEATURES

Strong internal motion control functions which can realize position, speed, torque, homing controlling modes. It also supports I/O control and standard Modbus RTU protocol. It can replace PLC partly, which helps to save cost.



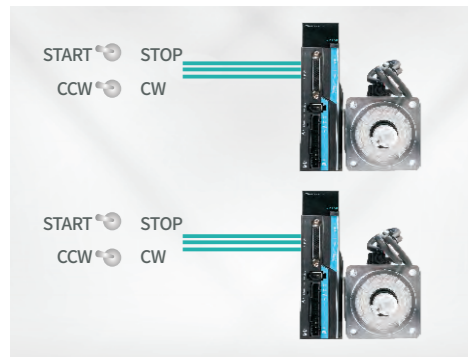
### Easy To Connect With Touch Screen(HMI)

- ◆ Easy control system;
- ◆ Save wirings;
- ◆ Set parameters and state monitoring.



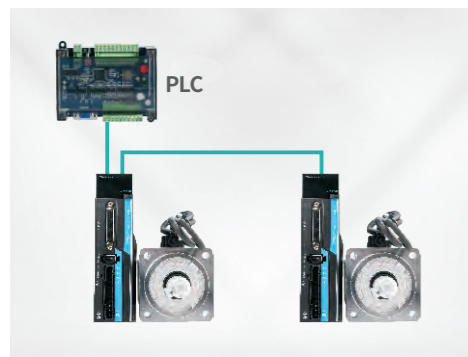
### Realize RS485 to make motion through PLC

- ◆ PLC with RS485 interface;
- ◆ Easy controlling and programming;
- ◆ Save PLC output points.



### Directly To Control Through Swithes

- ◆ Simple motion control case;
- ◆ Low cost design;
- ◆ Circular control of point movement.

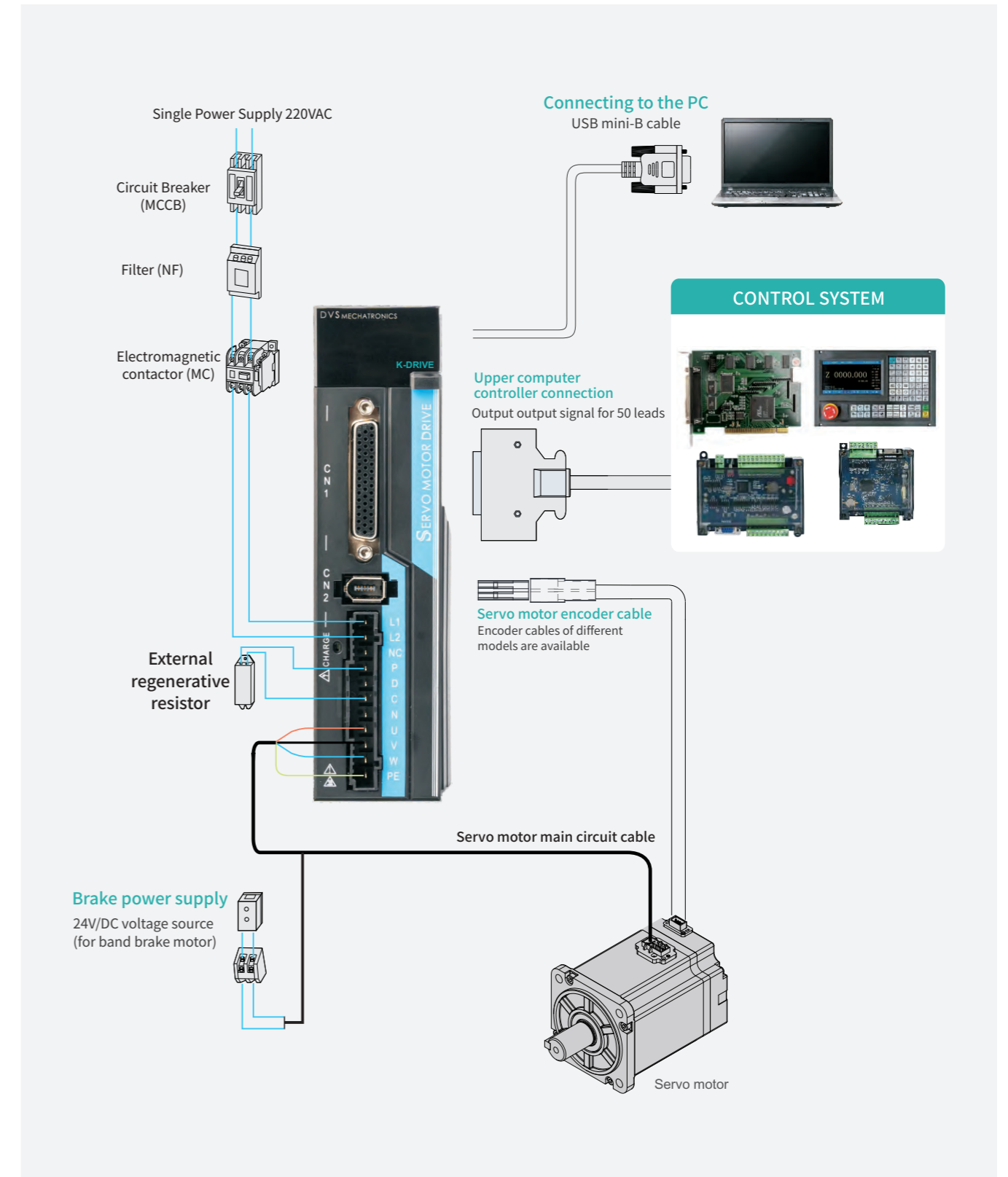


### Through I/O module Of PLC

- ◆ Need PLC pulse output module;
- ◆ Reduce system design cost;
- ◆ Easier contro and operation.

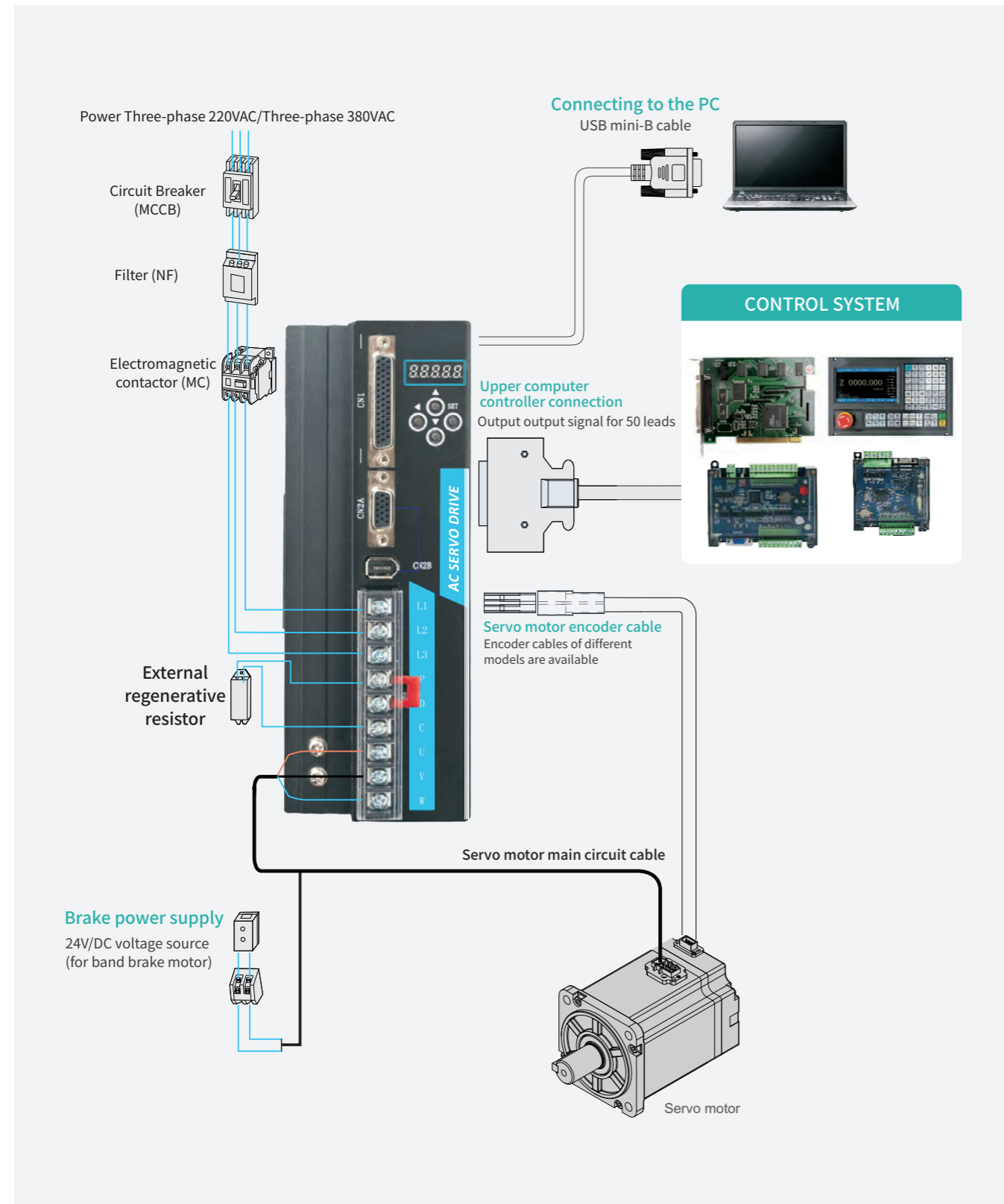
## SYSTEM WIRING EXAMPLE

Drives Of P100S Series As Example:



# SYSTEM WIRING EXAMPLE

Drives Of P300 Series As Example:



# PRODUCT DESCRIPTION

## Name Rules

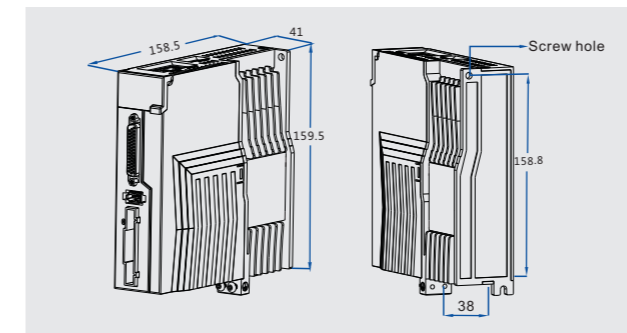
**P 100 S - 40 - □**

①    ②    ③    ④    ⑤

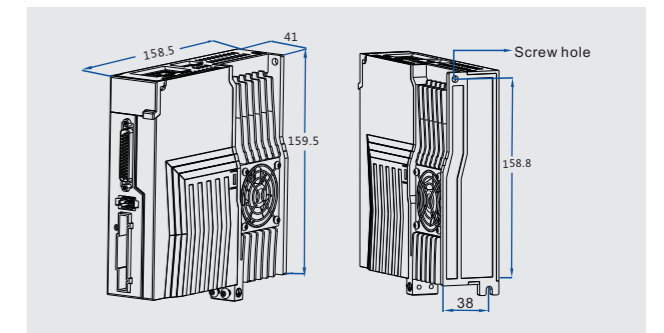
Servo drive naming rules	Serial Number	Name	Meaning
	①	Series	Series servo drives
	②	Range	100: 0.1KW~1KW; 200:1KW~3KW; 300:2KW~4.5KW;
	③	Drive Type	S: pulse simple type H : pulse high performance type E : EtherCAT field bus type
	④	Power Section	40: 100W~400W 75 : 400W~1000 Null : P200 series without it
⑤	Customization	Customization	

## Dimension

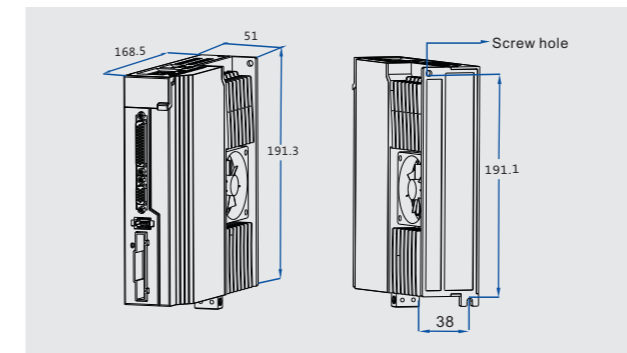
P100S-40/P100H-40 (Company: mm)



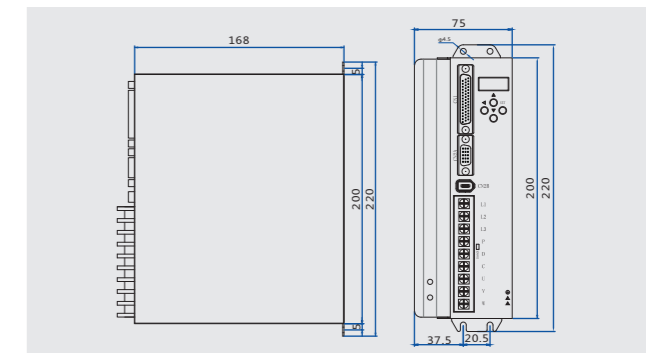
P100S-75/P100H-75 (Company: mm)



P200S/P200H (Company: mm)



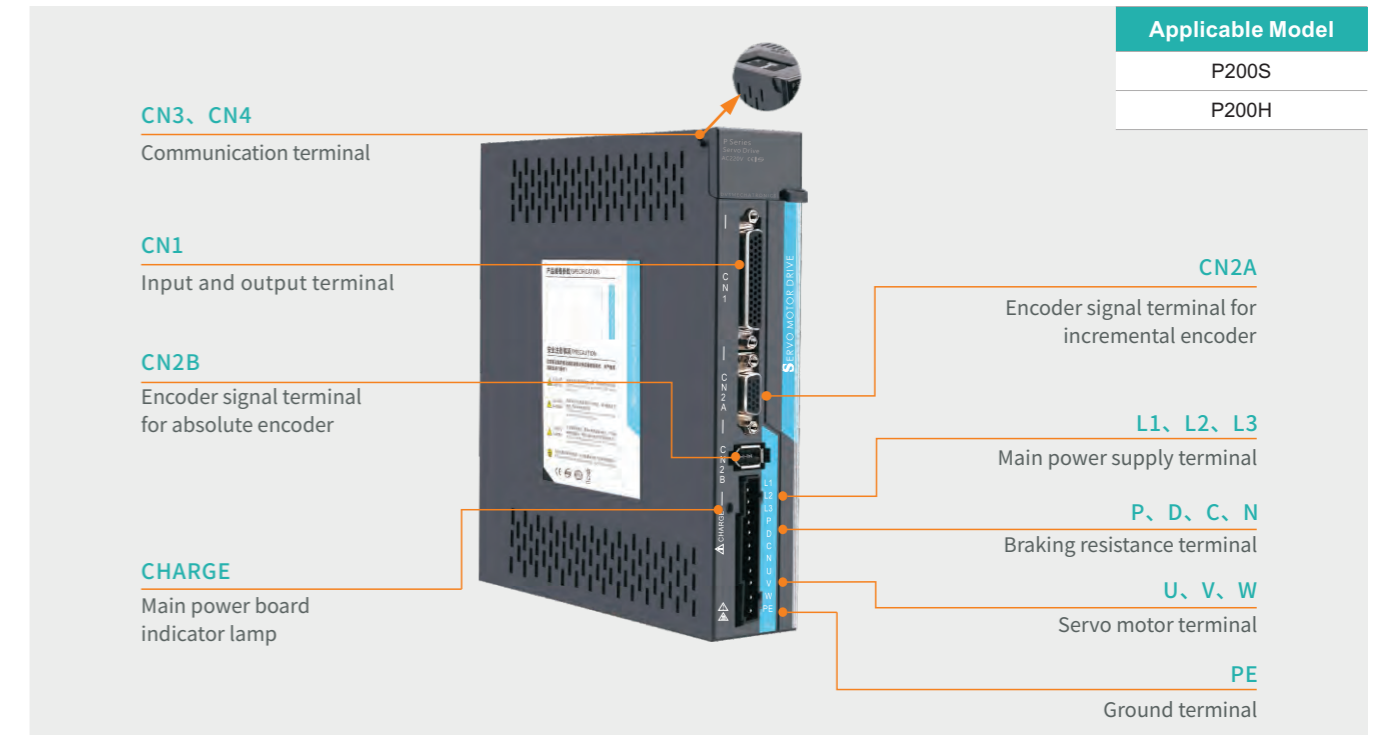
P300S (Company: mm)



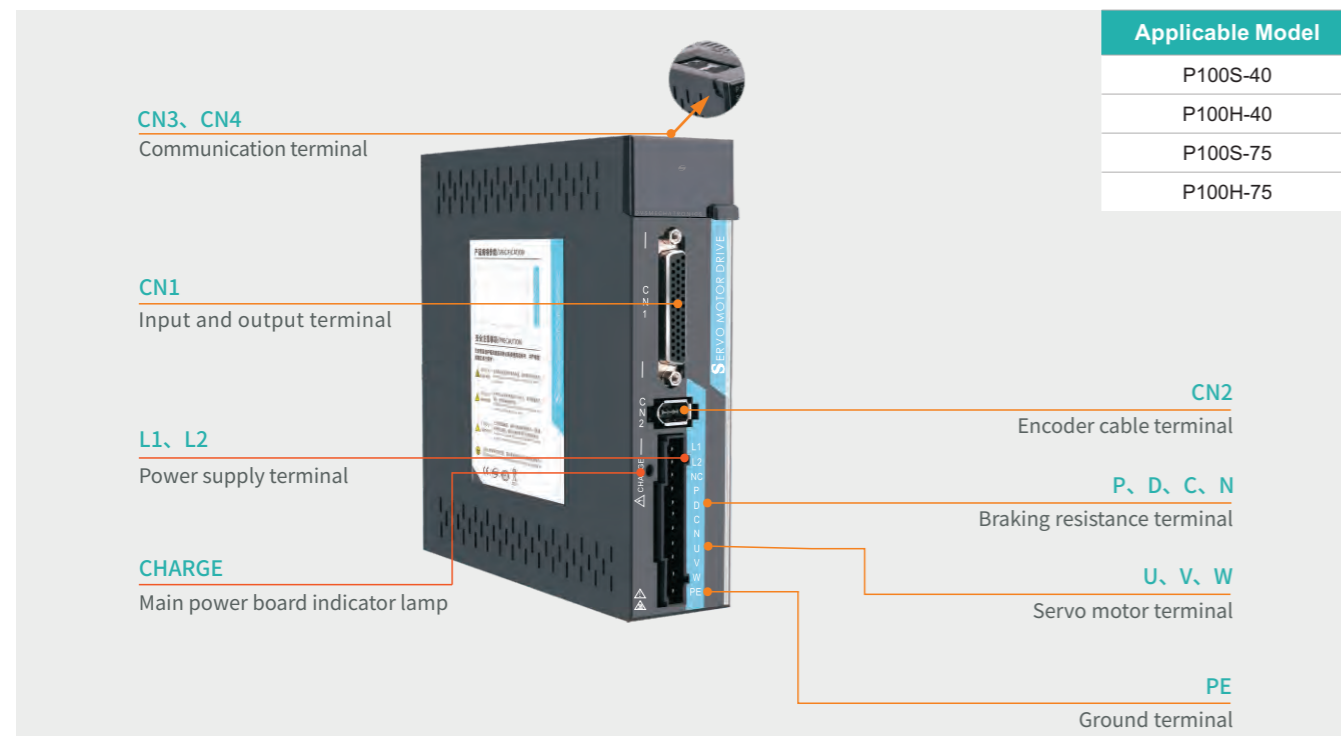
## PECIFICATION

Model	P100S-40	P100H-40	P100S-75	P100H-75	P200S	P200H	P300S
Type	Simple	High performance	Simple	High performance	Simple	High performance	Simple
Output Power	0.1KW~0.4KW	0.1KW~0.4KW	0.75KW~1KW	0.75KW~1KW	1KW~2KW		2KW~4.5KW
Input Power	Single Phase AC220V-15%~+10% 50/60Hz				1/3 Phases AC220V-15%~+10% 50/60Hz		Three-phase AC220V/ Three-phase AC380V- 15%~+10% 50/60Hz
Control Mode	0: Position control. 1: Speed control. 2: Torque control. 3: Speed and position. 4: Position and torque control. 5: Speed and torque control.						
Protection	Overspeed / Under voltage / Over current / Over load / Encoder error / Over position etc.						
Monitoring	Speed / Current position / Command pulse accumulation / Position deviation / Torque / Current / Working state etc.						
Control Input	1: Servo enable clearing	2: Alarm clearance	3: CCW prohibition	4: CW prohibition	5: Deviation counter clearing	6: Command pulse suppression	7: CCW torque limit 8: CW torque limit
Control Input	Servo ready / Servo alarm / Positioning completion / Mechanical brake etc.						
Dynamic Braking Load	Build-in / Build-out Less than 3 times of motor load						
Display	5 digital tubes and 4 operation keys						
Communication	Rs485						
Position Control	Input Mode	0: Pulse+direction 2: A/B phases orthogonal pulse		1: CCW/CW pulses 3: Internal position control			
	Electric Gear Ratio	Gear ratio numerator: 1~32767 Gear ratio denominator: 1~32767					

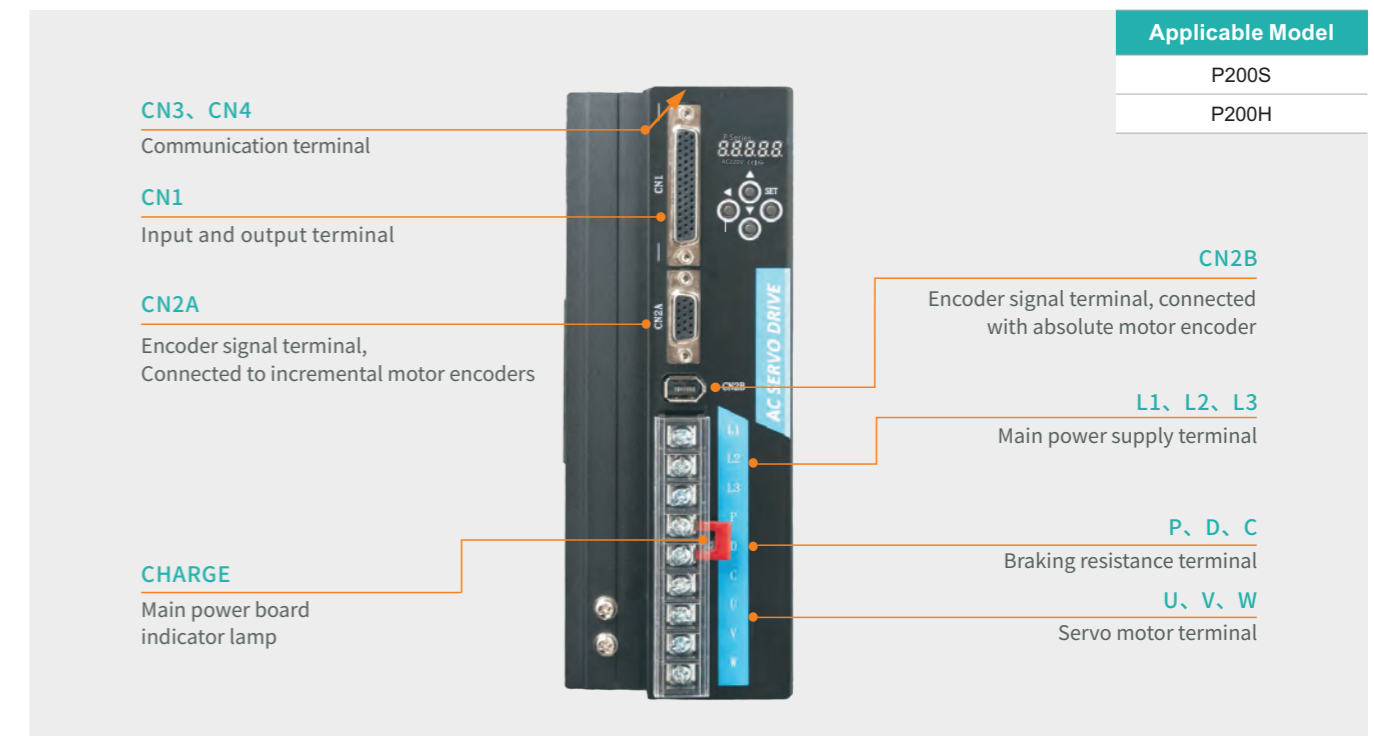
## TERMINAL INTRODUCTION



## TERMINAL INTRODUCTION

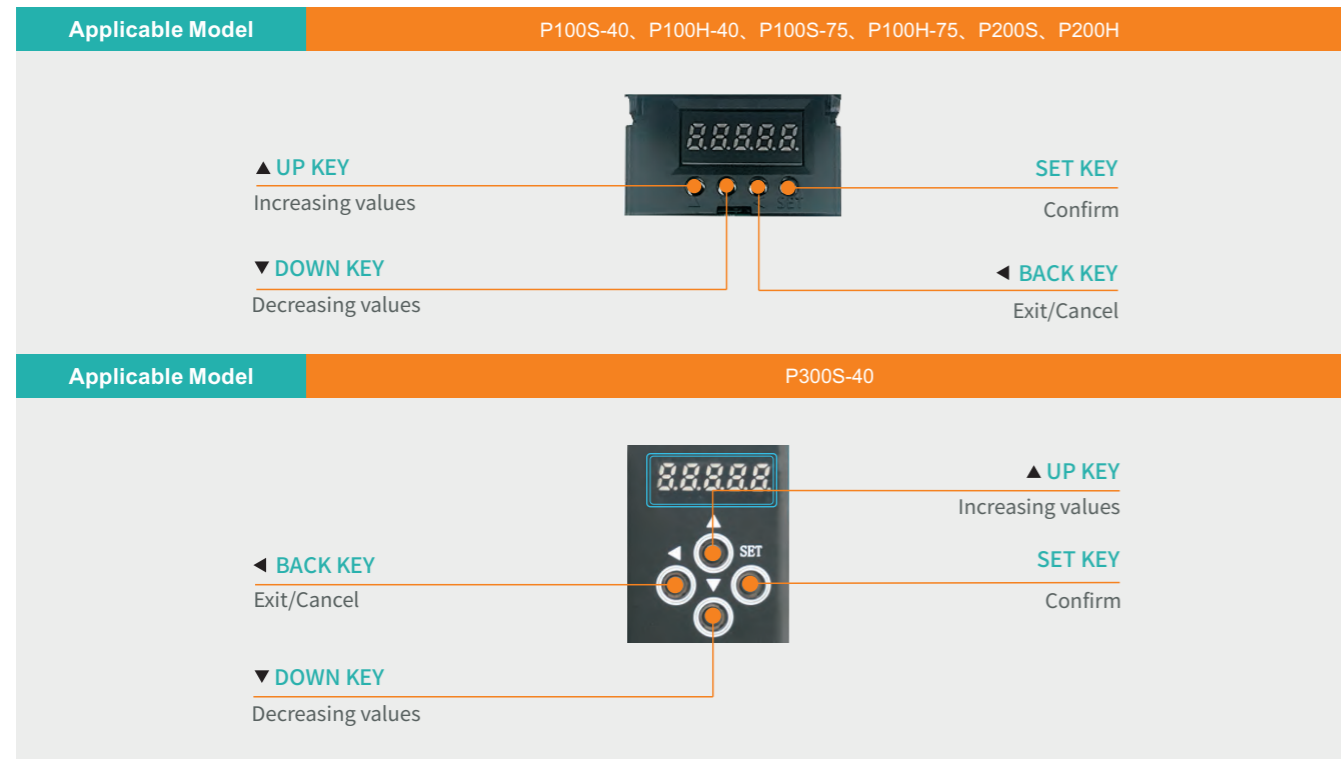


## TERMINAL INTRODUCTION

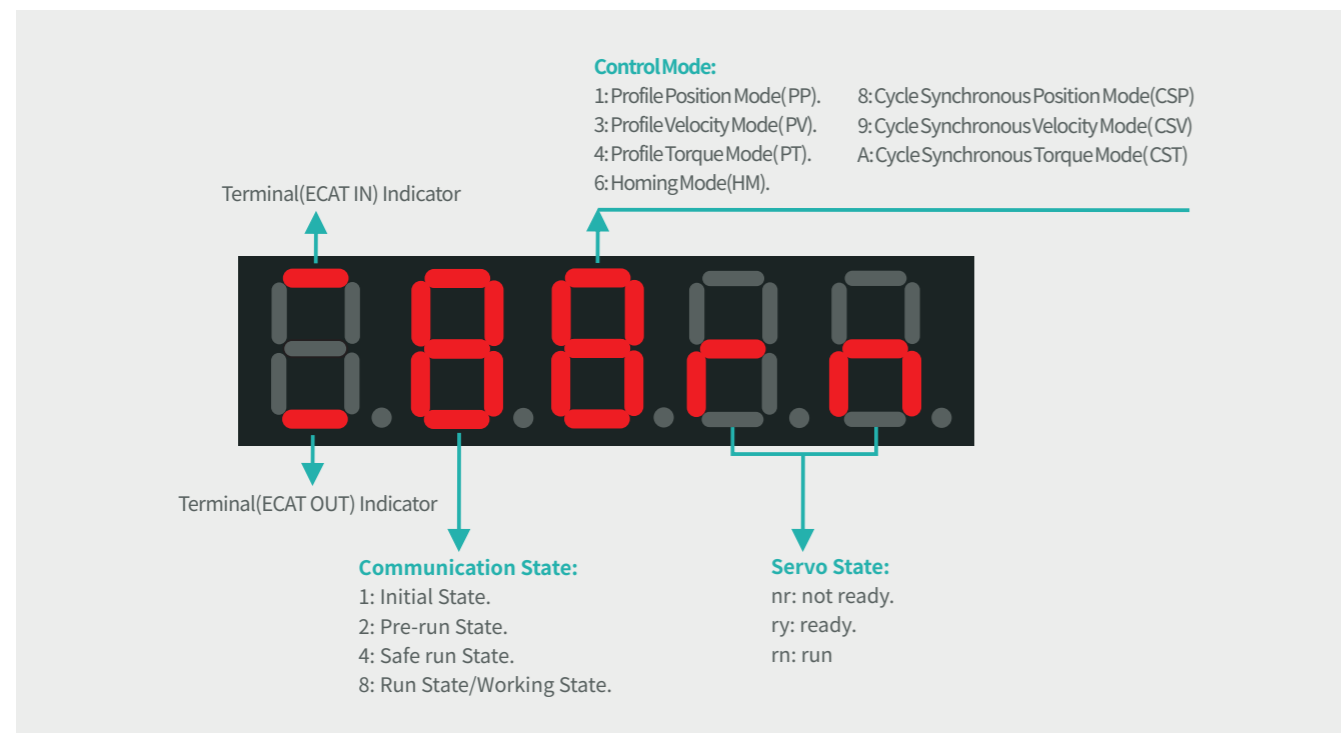




## FRONT PANEL INTRODUCTION



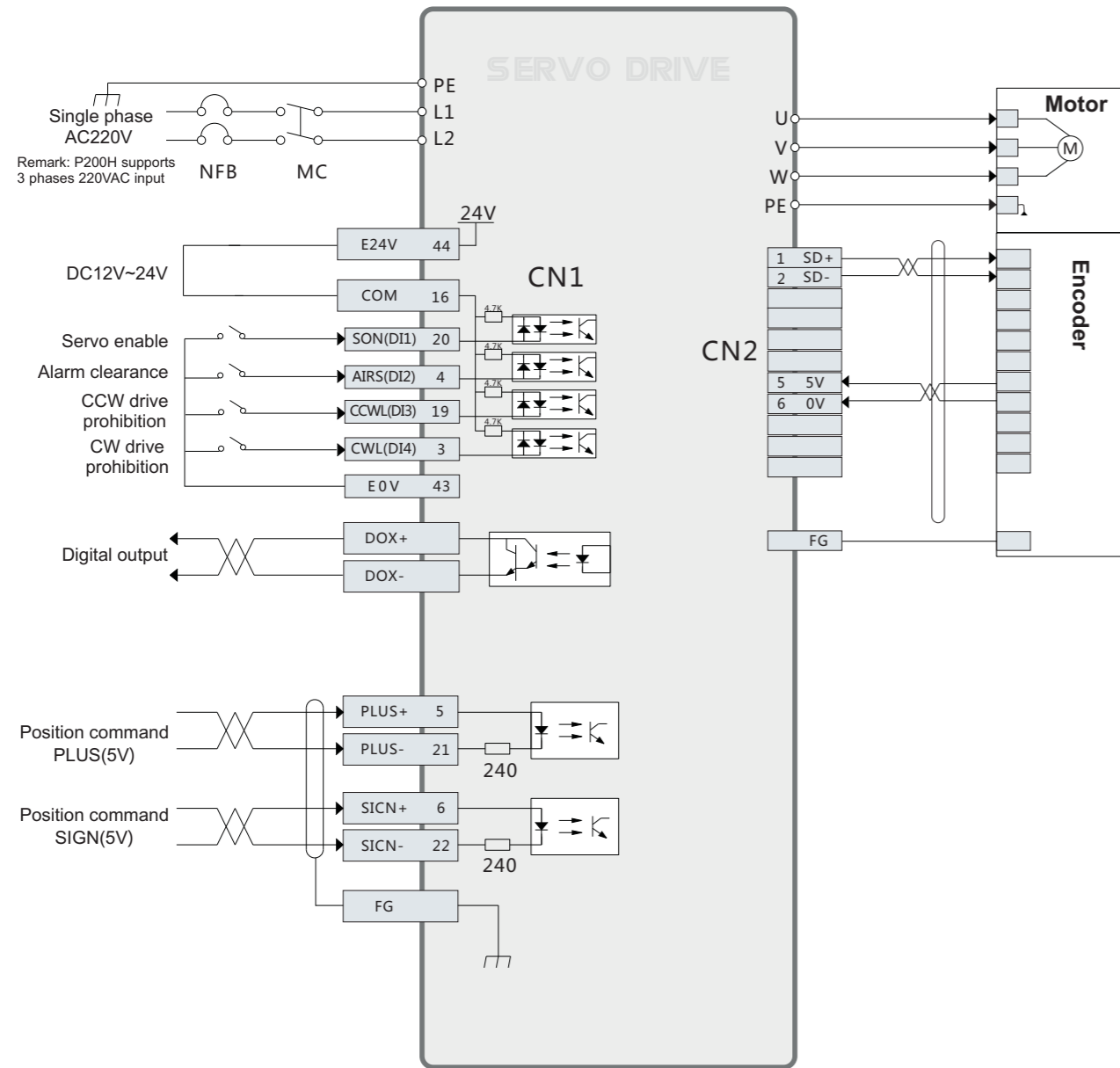
## PANEL STATUS MONITORING



# DRIVE CONTROL MODE WIRING

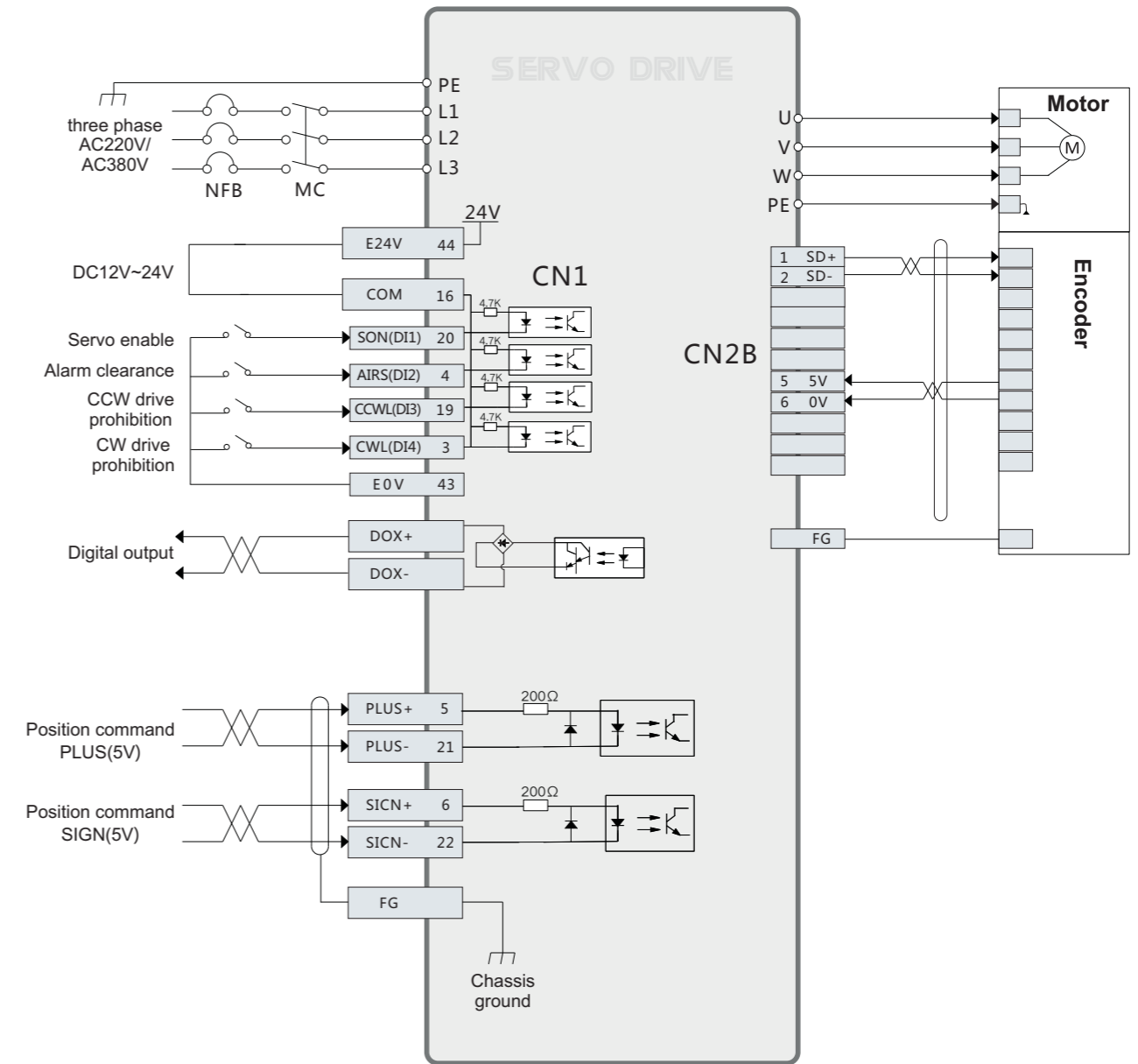
## Position Control Mode

APPLICABLE: P100S-40/P100H-40/P100S-75/P100H-75/P200S/P200H



# DRIVE CONTROL MODE WIRING

APPLICABLE: P300S

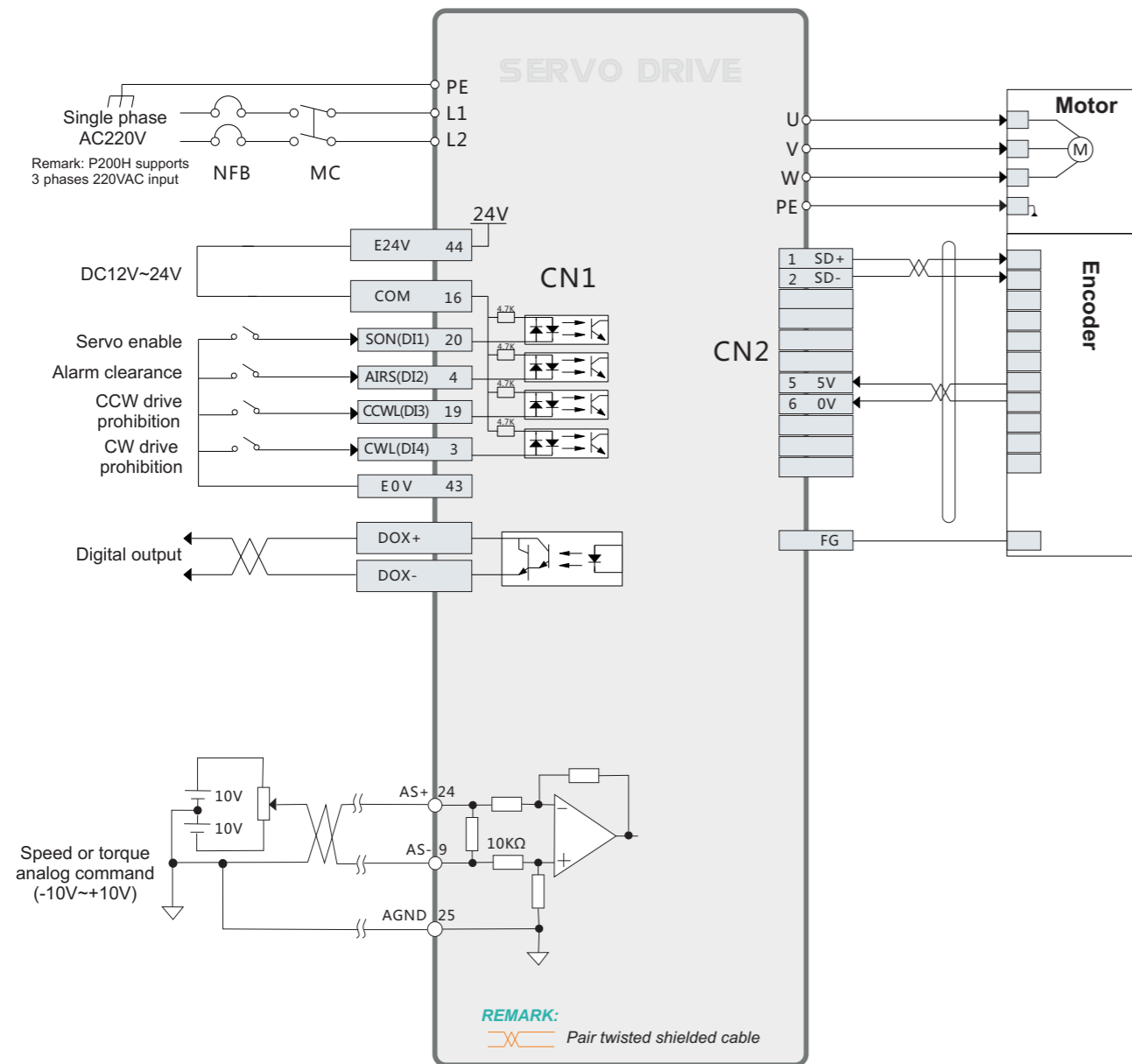


- ◆ Internal +24V power supply ranges from 20V~28V and maximum working current is 100mA. If use external 24V power supply, please connect +24V of the power supply to pin No.16(COM) and 0V to pin No.43(E0V).
- ◆ The output power supply of DO should be prepared by user. The voltage ranges 5V~24V and the maximum allowable voltage for DO terminals is DC30V and current is 50mA.

# DRIVE CONTROL MODE WIRING

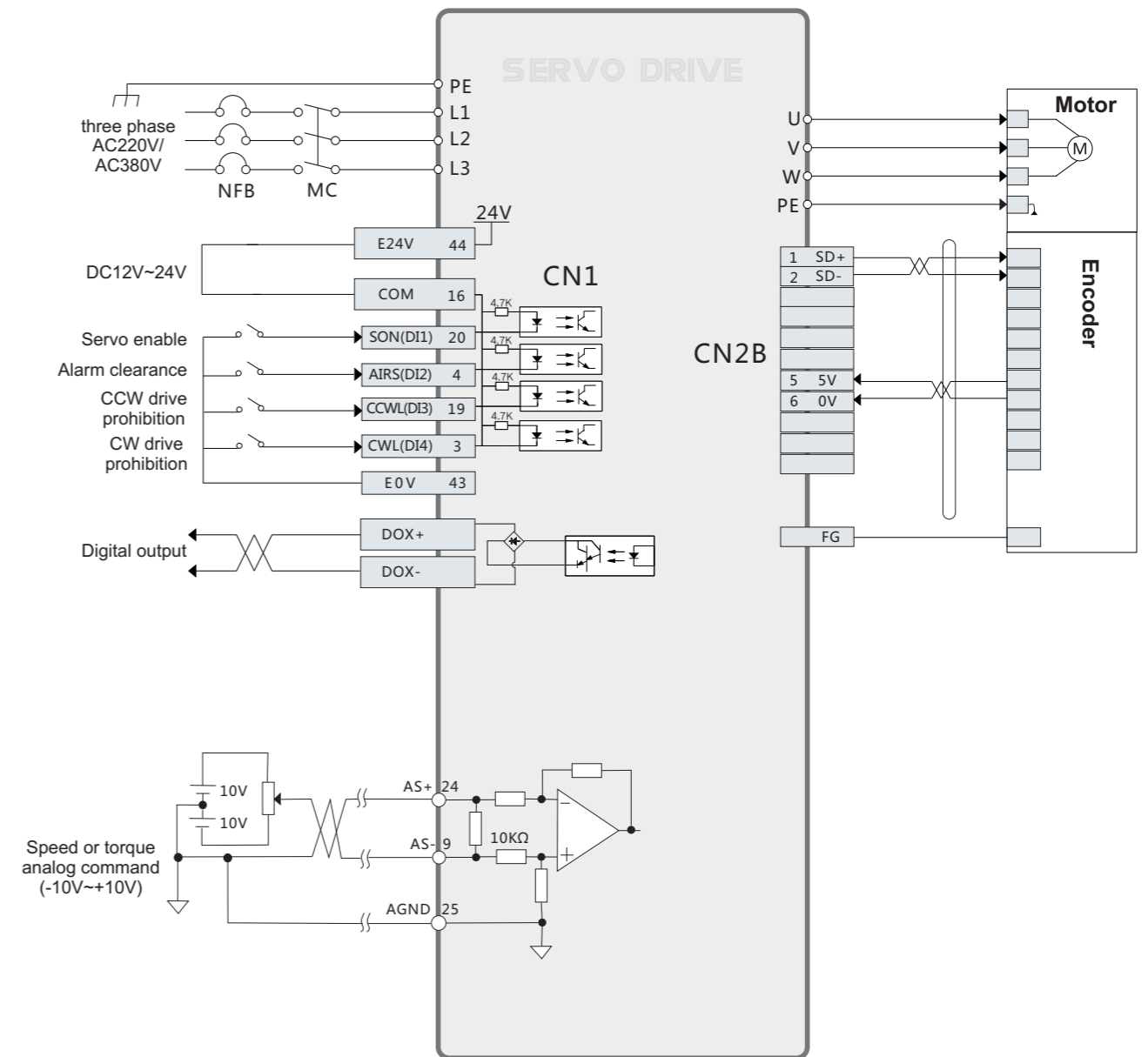
## Speed/torque control mode wiring diagram

APPLICABLE: P100S-40/P100H-40/P100S-75/P100H-75/P200S/P200H



# DRIVE CONTROL MODE WIRING

APPLICABLE: P300S



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- ◆ The output power supply of DO should be prepared by user. The voltage ranges 5V~24V and the maximum allowable voltage for DO terminals is DC30V and current is 50mA.



## ETHERCAT BUS FIELD AC SERVOS

System Description  
Drive Introduction



**K-DRIVE**

Energy efficient, beautiful environment

EtherCAT®

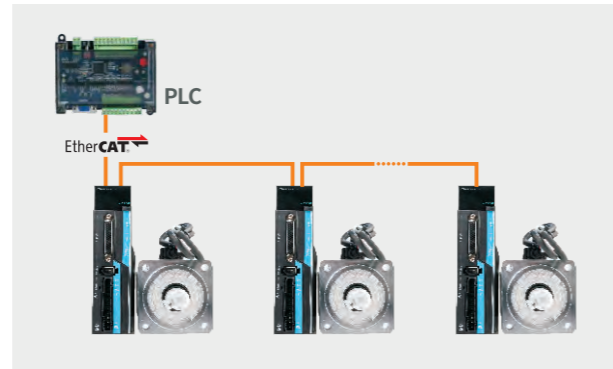


## FEATURE INTRODUCTION

### Integrated EtherCAT Bus for Automated Industrial Ethernet Standards

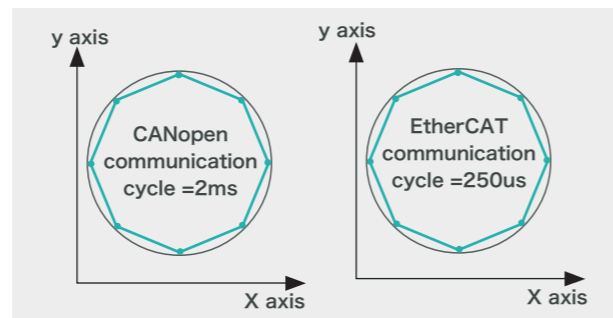
The EtherCAT bus drive uses a standard RJ45 interface and requires only one cable to realize real-time transmission of instructions, as well as status feedback of motors and drives.

It provides a more reliable networking, and greatly reduces the complexity of the system.



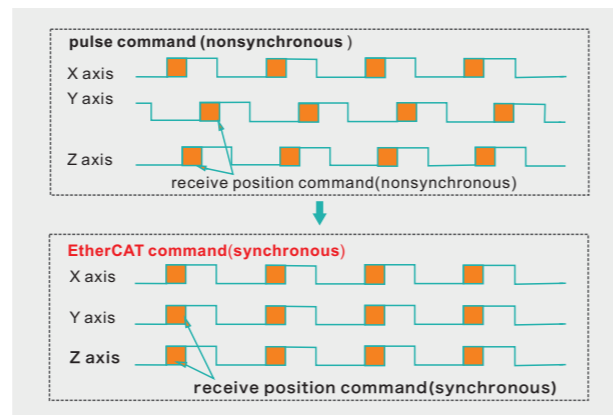
### Microsecond communication cycle with more accurate and smooth position control

Data transmission is bi-directional 100Mbps supporting 1ms communication cycle. When it is less than 1ms, it supports 250us integer multiple (communication cycle related to PC specifications), with more accurate smooth position control. It is suitable for engraving machine and optical fiber machine and other real-time requirements for high occasions.



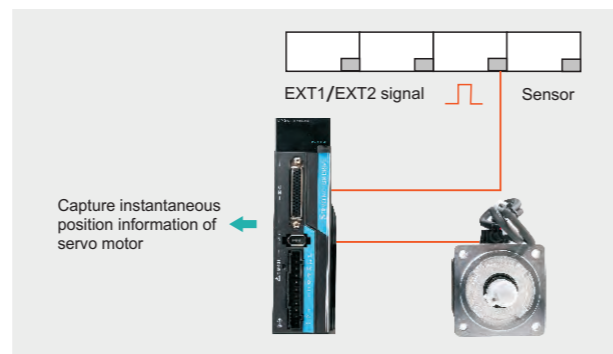
### Precision Synchronization

The synchronization error is less than 15ns and shake is  $\pm 20$ ns by the accurate adjustment of the EtherCAT distributed clock, which can realize multi-axis synchronous communication and is suitable for mechanical devices with high synchronization accuracy.



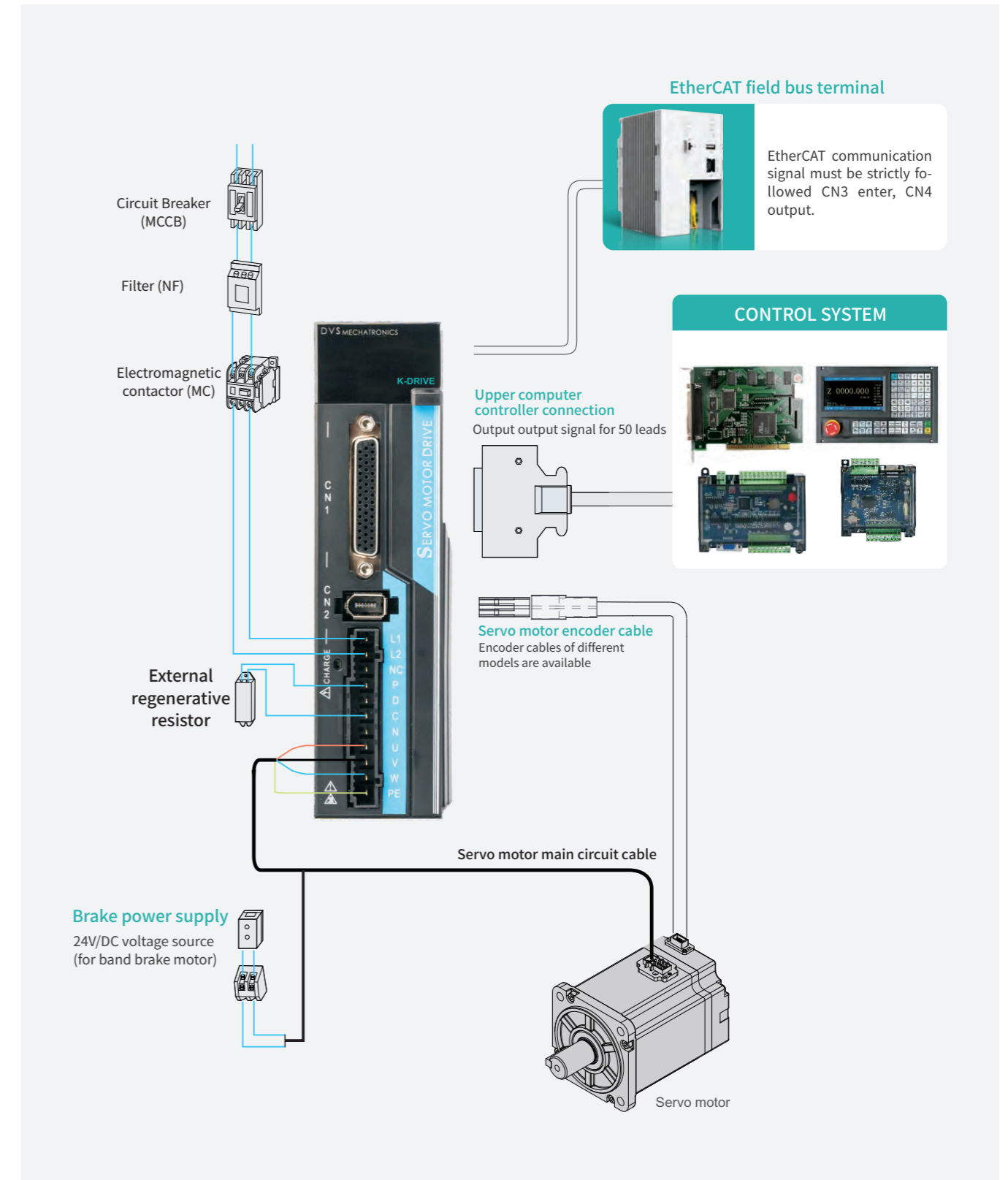
### Real-time Position Capture

The real-time position information of the motor can be acquired and recorded by instantly high speed input signal (EXT1/EXT2) with probe function.



## SYSTEM WIRING EXAMPLE

Drives Of P100S Series As Example:

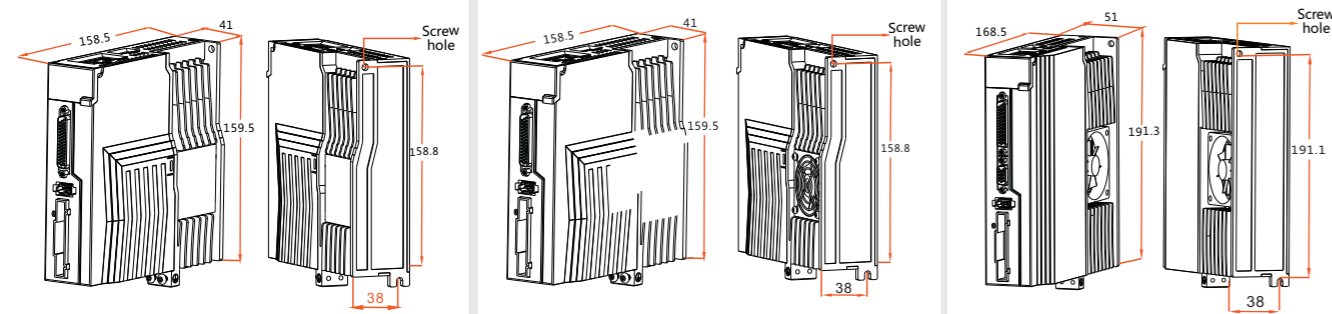


## DIMENSION

■ P100E-40 (Company: mm)

■ P100E-75 (Company: mm)

■ P200E (Company: mm)

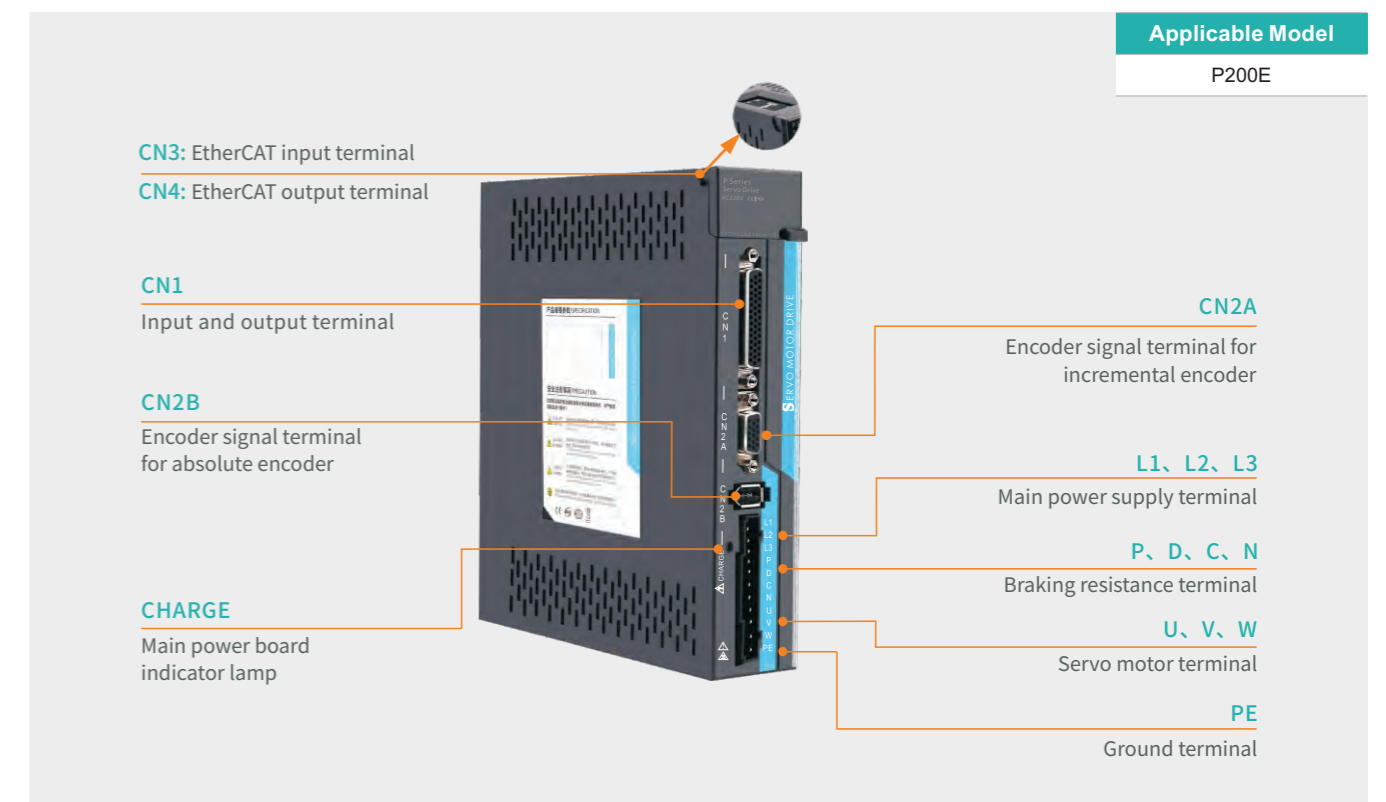
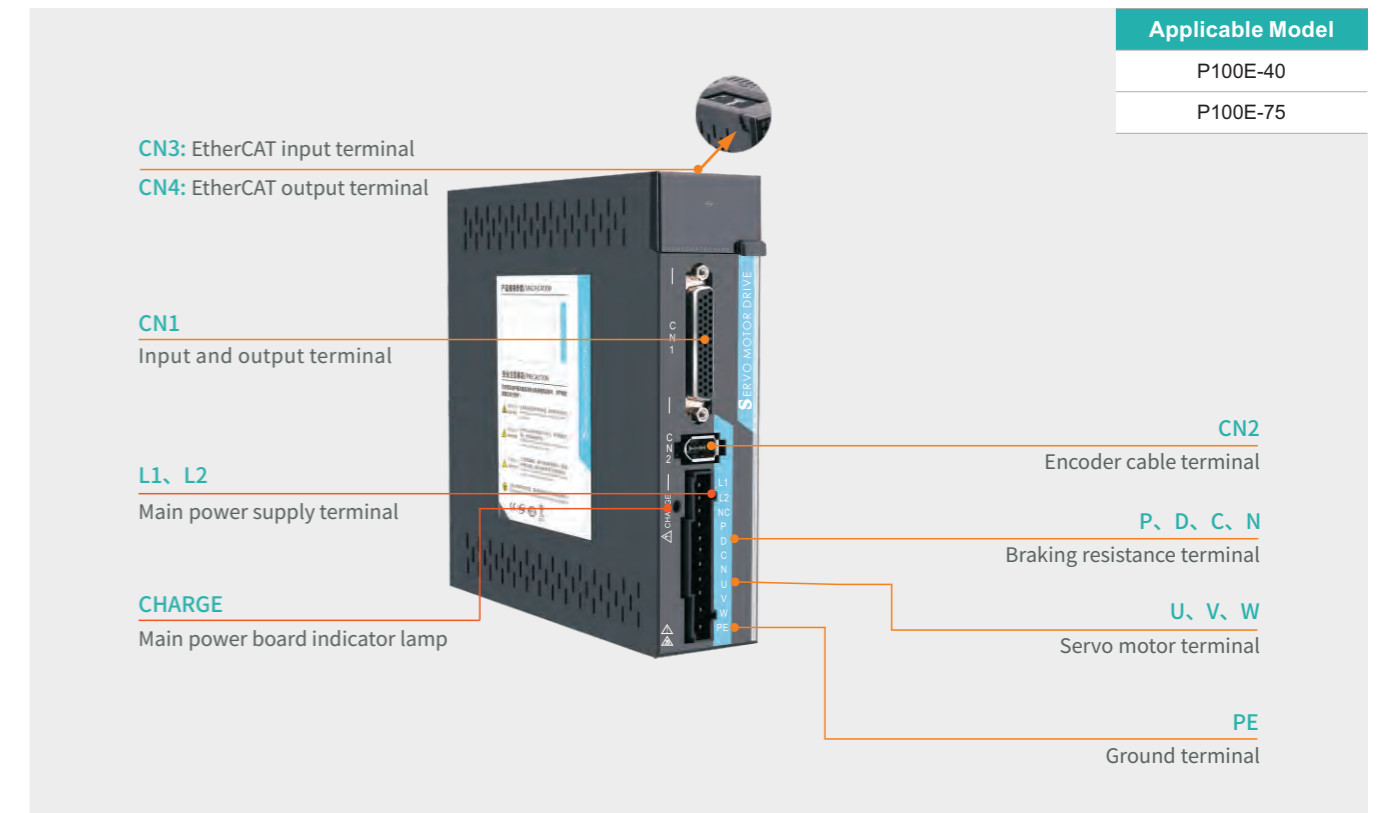


## DRIVE SPECIFICATION

Model	P100E-40	P100E-75	P200E
Output Power	0.1KW~0.4KW	0.75KW~1KW	1KW~2KW
Input Power	Single Phase AC220V-15%~+10% 50/60Hz		1/3 Phases AC220V-15%~+10% 50/60Hz
Monitoring	Speed / Current position / Command pulse accumulation / Position deviation / Torque / Current / Working state etc.		
Control Mode	Position control / Speed control / Test run control / JOG control / Torque control		
Protection	Overspeed / Under voltage / Over current / Over load / Encoder error / Over position etc.		
Control Input	1: Negative limit 2: Positive limit 3: Origin signal 4: CCW prohibition 5: CW prohibition 6: Deviation counter clearing 7: Command pulse suppression 8: CCW torque limit 9: CW torque limit		
Dynamic Braking	Build-in / Build-out		
Load	Less than 3 times of motor load		
Display	5 digital tubes and 4 operation keys		
Input Output Signal	Input signal	8 ways digital inputs: servo enable, alarm clearance, CCW/CW prohibition, zero speed clamp, zero command, command reverse, speed selection, torque selection, pulse input prohibition, homing signal, probe, positive limit, negative limit.	
	Output signal	6 ways digital outputs: servo ready, alarm, zero speed, positioning completion, speed arrival, torque arrival, magnetic brake, servo working, near positioning, torque limit, speed limit.	
Position Control	Input way	EtherCAT field bus communication	
	Electric Gear Ratio	Gear ratio shaft precision: 1-131072 Gear ratio motor precision: 17 bits, 23 bits	

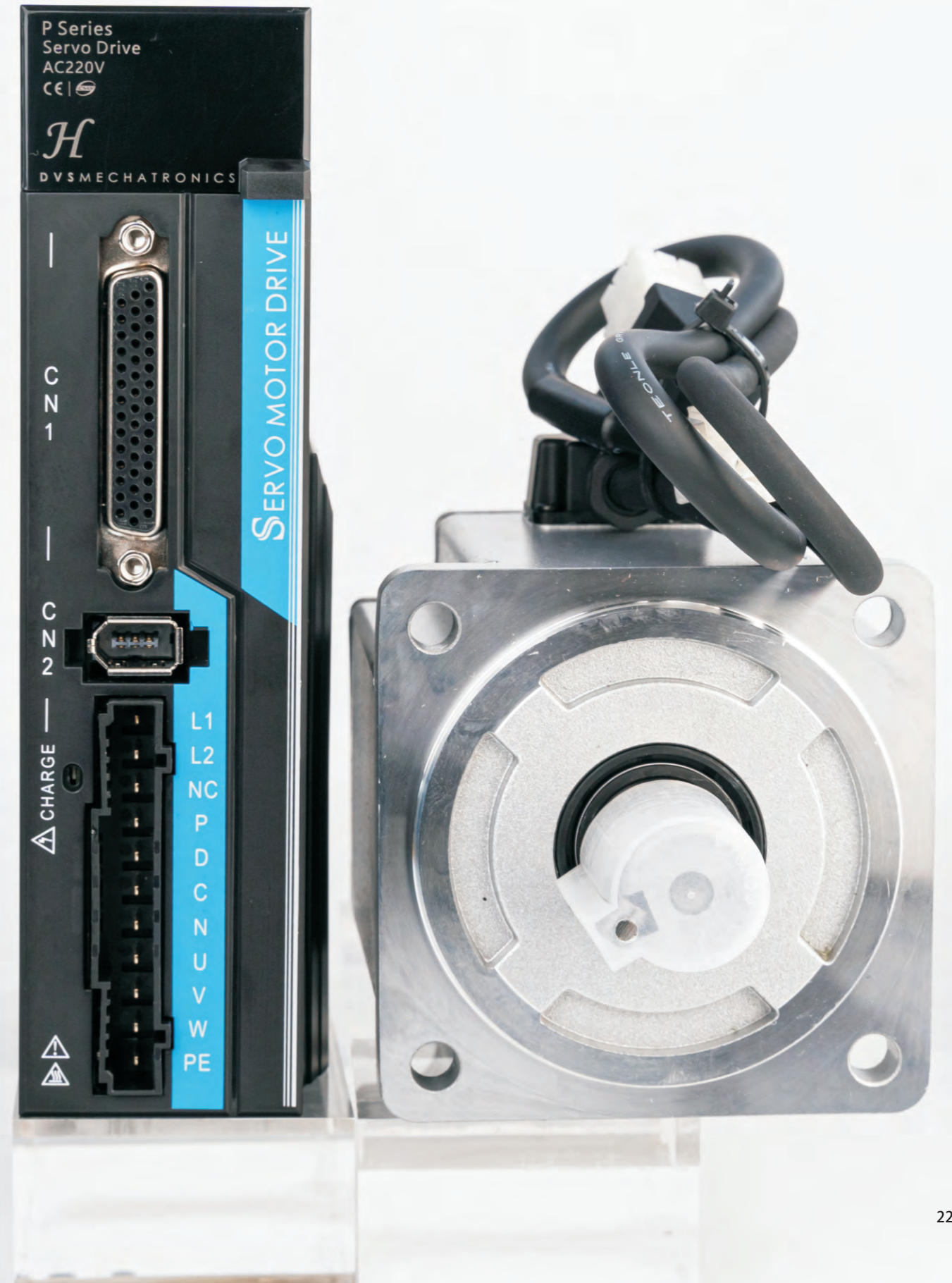
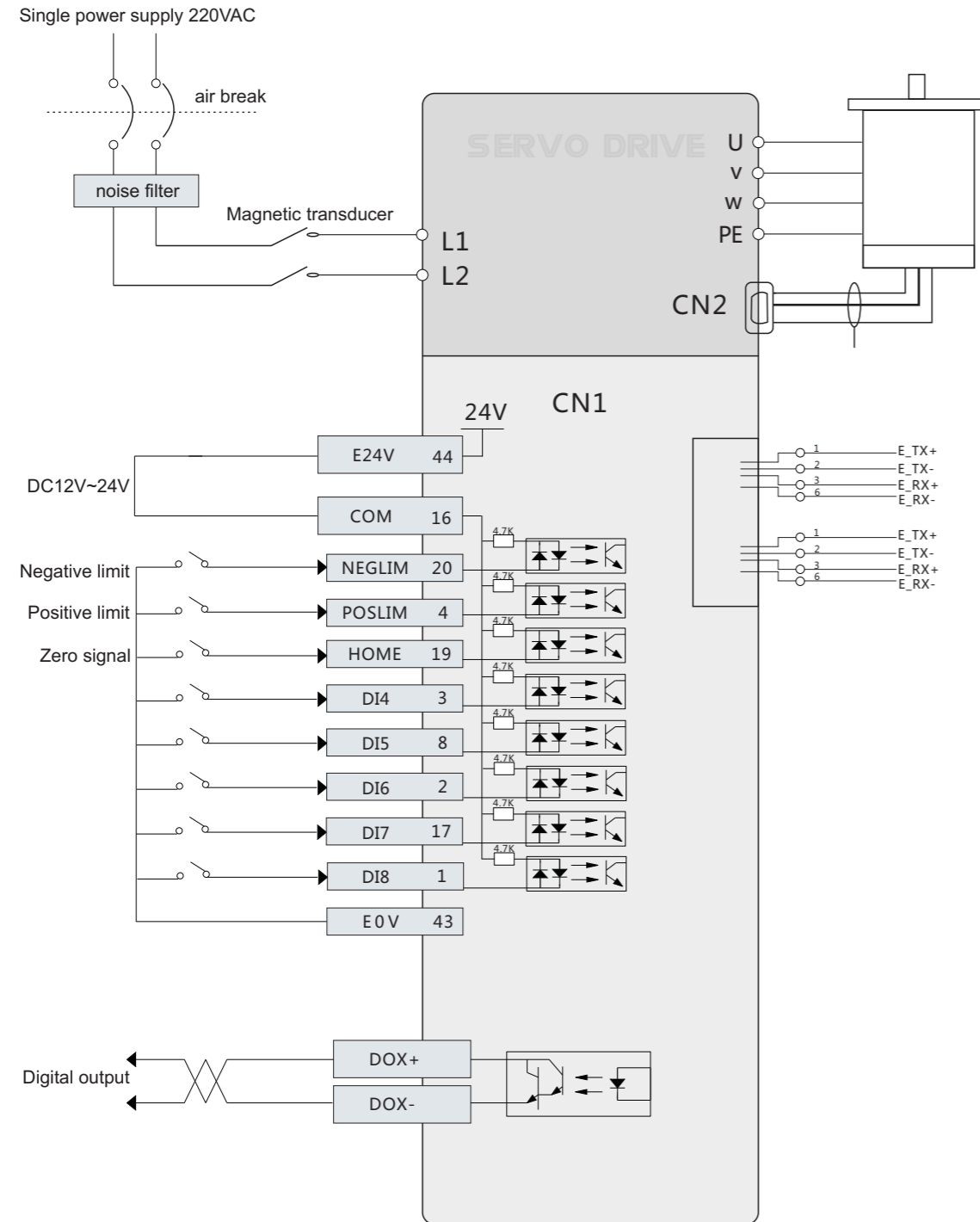


## TERMINAL INTRODUCTION



# ETHERCAT CONTROL WIRING

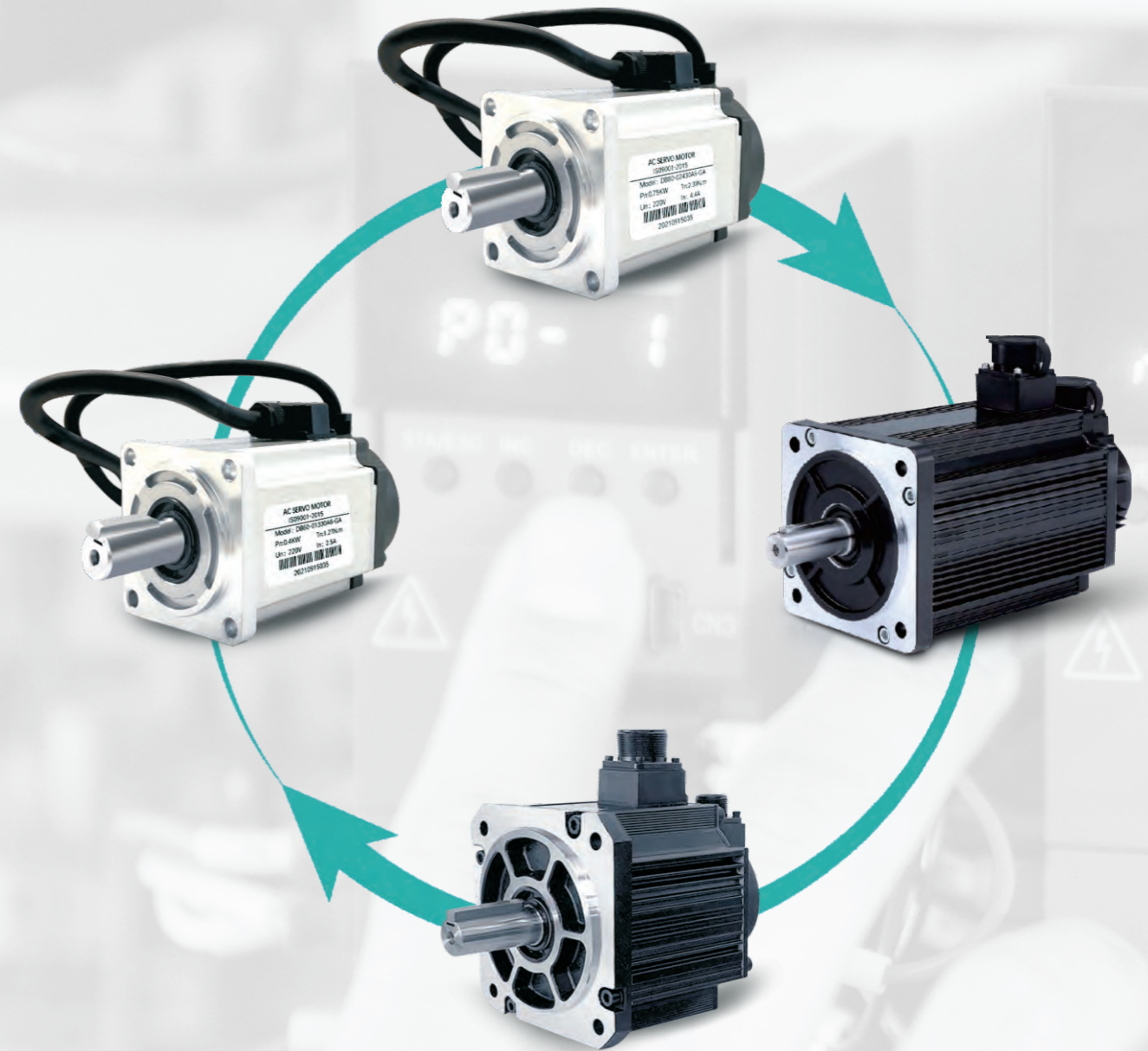
Drives Of P100E Series As Example:





## NEW TYPE AC SERVO MOTOR

AC Servo Motor

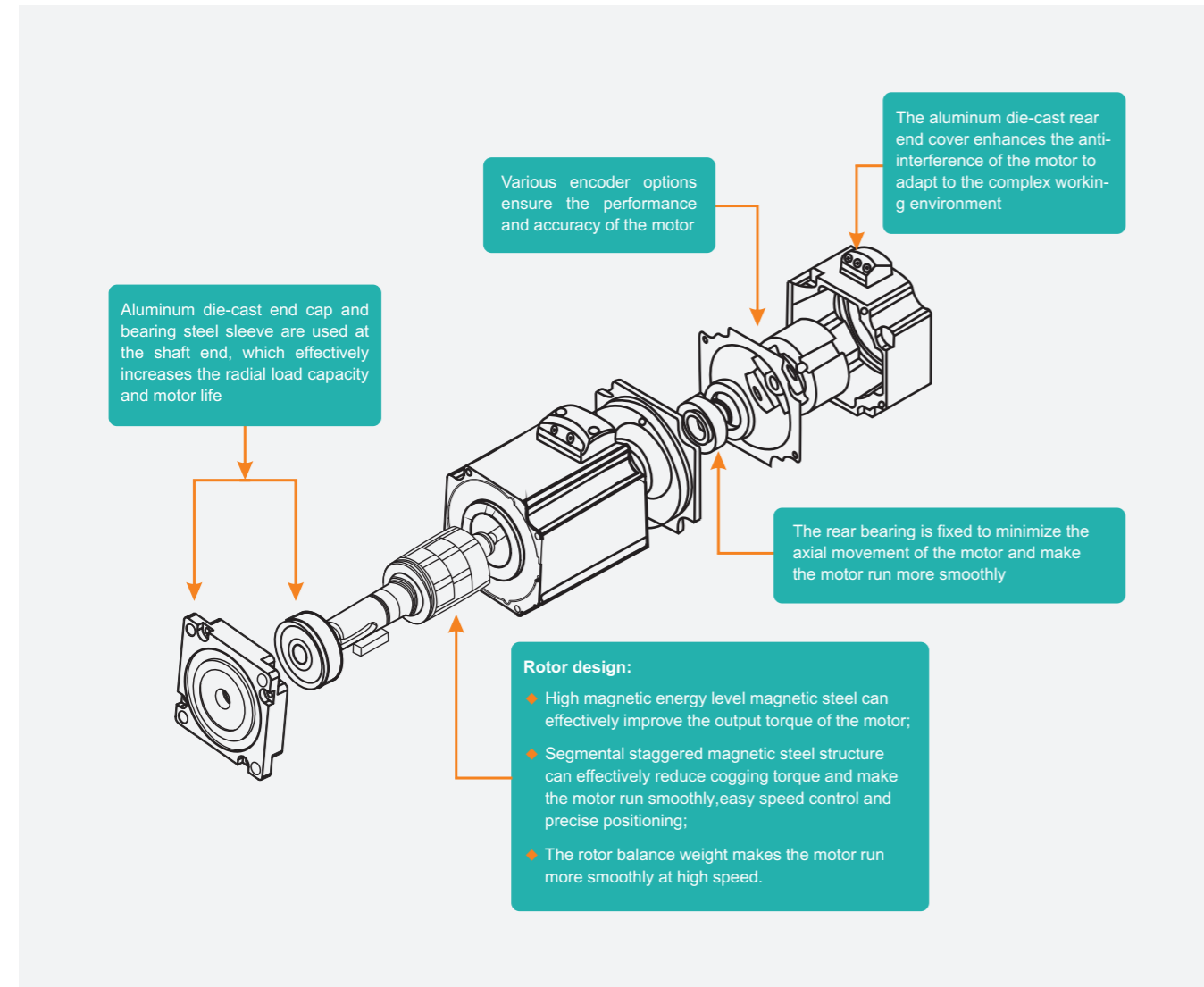




## AC SERVO MOTOR INTRODUCTION

Servo motor refers to the engine that controls the operation of the mechanical components in the servo system. It is an indirect transmission device that assists the motor. The servo motor can control speed and position with high accuracy. Meanwhile, it can convert the voltage signal into torque and speed to drive the control object. The working speed of the servo motor rotor is controlled by the input signal and can react quickly. In the automatic control system, it is used as an actuator and has the characteristics of small electro mechanical time constant and high linearity. It can convert the received electrical signal into the angular displacement or angular velocity on the motor shaft and output them. Its main feature is that there is no selfrotation when there is no signal voltage. And the speed decreases at a uniform speed with the increase of torque.

## BASIC STRUCTURE OF SERVO MOTOR



## OVERALL DIMENSIONS

**DB** **80** - **024** **30** **A6** - **A** - **B**

①      ②      ③      ④      ⑤      ⑥      ⑦

Serial Number	Meaning
①	DN: 4 pairs of poles servo motor DB: 5 pairs of poles servo motor
②	40: Flange 40mm 60: Flange 60mm 80: Flange 80mm 90: Flange 90mm 130: Flange 130mm
③	Rated torque(value×0.1N.m) 024: the rated torque 2.4N.m
④	Rated speed(value×1000rpm) 30: the rated speed 3000rpm
⑤	I2: 2500ppr incremental encoder A1: economical multi-turn 17 bits absolute encoder A6: economical single-turn 17 bits absolute encoder B1: high performance multi-turn 17 bits absolute encoder B4: high performance single-turn 23 bits absolute encoder
⑥	A: AMP connector H: Aviation connector HZ: Aviation straight connector
⑦	B: with a brake Null: without a brake

## MOTOR POWER RANGE

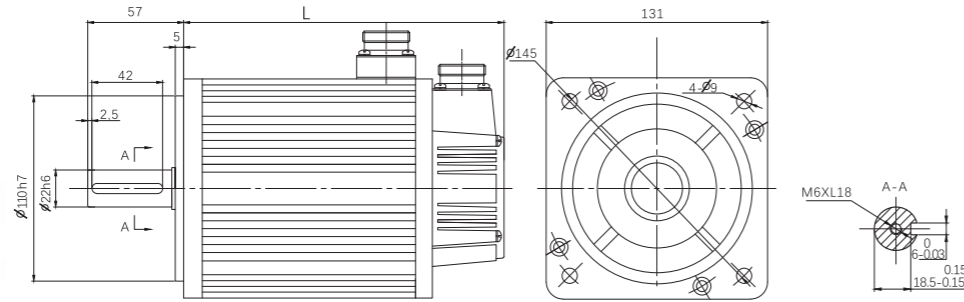
		40mm	60mm	80mm	130mm
Flange					
Rated Power		0.1KW	0.2KW 0.4KW 0.6KW	0.75KW 1.0KW	1.0KW 1.3KW 1.5KW 2.0KW 2.3KW 2.6KW





# SERVO MOTOR PARAMETERS

## DB130 Series Servo Motor



Name	130 Series						
Rated Torque (N.m)	4	5	6	7.7	10		15
					1000rpm	1500rpm	2500rpm
L without a brake(mm)	166	171	179	192	213	209	241

Note: A6 represents that the encoder type is economic single-turn absolute value 17 bits

Model	DN130-04025A6-H	DN130-05025A6-H	DN130-06025A6-H	DN130-07725A6-H	DN130-10010A6-H	DN130-10015A6-H	DN130-10025A6-H	DN130-15015A6-H
Rated Power (KW)	1.0	1.3	1.5	2.0	1.0	1.5	2.6	2.3
Rated Voltage (V)	220	220	220	220	220	220	220	220
Rated Current (A)	4.0	5.0	6.0	7.5	4.5	6.0	10	9.5
Rated Speed (rpm)	2500	2500	2500	2500	1000	1500	2500	1500
Rated Torque (N.m)	4	5	6	7.7	10	10	10	15
Peak Torque (N.m)	12	15	18	22	20	25	25	30
Constant Voltage (V/1000r.min)	72	68	65	68	140	103	70	114
Torque Coefficient (N.m/A)	1.0	1.0	1.0	1.03	2.2	1.67	1.0	1.58
Rotor Inertia (Kg.m <sup>2</sup> )	0.85×10 <sup>-3</sup>	1.06×10 <sup>-3</sup>	1.26×10 <sup>-3</sup>	1.53×10 <sup>-3</sup>	1.94×10 <sup>-3</sup>	1.94×10 <sup>-3</sup>	1.94×10 <sup>-3</sup>	2.77×10 <sup>-3</sup>
Line-line Resistance (Ω)	2.76	1.84	1.21	1.01	2.7	1.5	0.73	1.1
Line-line Inductance (mH)	6.42	4.9	3.87	2.94	8.8	4.37	2.45	4.45
Mechanical Time Constant (Ms)	2.32	2.66	3.26	2.91	3.26	2.91	3.36	4.05
Pole Pairs	10				8			
Encoder Type	17 bits absolute							

### Encoder Type

Symbol	Encoder Type
A6	Economical single-turn 17 bits absolute encoder
A1	Economical multi-turn 17 bits absolute encoder
B4	High performance single-turn 23 bits absolute encoder
B9	Optical single-turn 17 bits absolute encoder
I5	Optical 10000ppr incremental encoder
I2	Optical 2500ppr incremental encoder

### CAUTION



- When installing/removing part to the end of the motor shaft, please do not knock the shaft to prevent the encoder at the another end of the shaft from being knocked out of order.
- As far as possible to prevent shaft seat vibration to prevent bearing damage.

# SERVO MOTOR AND APPLICABLE SERVO DRIVE

## Economical Absolute Encoder Series

Servo Motor				Servo Drive			Cable	
Rated Power(KW)	Model	Flange (mm)	Rated Torque (N.m)	Pulse Type		EtherCAT	Power Cable	Encoder Cable
				Economical	High performance			
0.1	DB40-00330A6-HA	40	0.32	P100S-40	P100H-40	P100E-40	P100P-XX-G-X-4PA	E100P-XX-G-X-9PA
0.2	DB60-00630A6-TJA	60	0.64					
0.4	DB60-00130A6-TJA	60	1.27					
0.75	DB80-02430A6-TJA	80	2.39	P100S-75	P100H-75	P100E-75		
1.0	DB80-03230A6-TJA	80	3.18					
1.3	DB130-08315A6-MH	130	8.3	P200S	P200H	P200E	P200P-XX-G-X-4PH	E200P-XX-G-X-7PH
0.85	DB130-05415A6-MH	130	5.4					
1.0	DN130-04025A6-MH	130	4					
1.0	DN130-10010A6-MH	130	10					
1.3	DN130-05025A6-MH	130	5					
1.5	DN130-06025A6-MH	130	6					
1.5	DN130-10015A6-MH	130	10					
2.0	DN130-07725A6-MH	130	7.7					
2.3	DN130-15015A6-MH	130	15					
2.6	DN130-10025A6-MH	130	10					

## Incremental Encoder Series

Servo Motor					Servo Drive			Cable	
Rated Power(KW)	Model	Flange (mm)	Rated Torque (N.m)	Encoder Resolution (ppr)	Pulse Type		EtherCAT	Power Cable	Encoder Cable
					Economical	High performance			
1.0	DN130-04025I2-MH	130	4	2500	P200S	P200H	P200E	P200P-XX-G-X-4PH	ES200-XX-G-NA-15PH
1.0	DN130-10010I2-MH	130	10	2500					
1.3	DN130-05025I2-MH	130	5	2500					
1.5	DN130-06025I2-MH	130	6	2500					
1.5	DN130-10015I2-MH	130	10	2500					
2.0	DN130-07725I2-MH	130	7.7	2500					
2.3	DN130-15015I2-MH	130	15	2500					
2.6	DN130-10025I2-MH	130	10	2500					

# SERVO MOTOR PARAMETERS

# K-DRIVE

Energy efficient, Beautiful environment

## High Performance Absolute Encoder Series

Servo Motor				Servo Drive			Cable			
Rated Power(KW)	Model	Flange (mm)	Rated Torque (N.m)	Pulse Type		EtherCAT	Power Cable	Encoder Cable		
				Economical	High performance					
0.1	DN40-00330B4-MHZ	40	0.32	P100S-40	P100H-40	P100E-40	PH100-XX-G-NA-4PHZ	EH100-XX-G-NA-7PHZ		
0.2	DN60-00630B4-MHZ	60	0.637							
0.4	DN60-01330B4-MHZ	60	1.27							
0.6	DN60-01930B4-MHZ	60	1.91							
0.4	DN80-01330B4-MHZ	80	1.27	P100S-75	P100H-75	P100E-75				
0.75	DN80-02430B4-MHZ	80	2.39							
0.73	DN80-03520B4-MHZ	80	3.5							
1.0	DN80-04025B4-MHZ	80	4							
1.0	DN130-04025B4-MH	130	4							
1.0	DN130-10010B4-MH	130	10							
1.3	DN130-05025B4-MH	130	5	P200S	P200H	P200E			P200P-XX-G-X-4PH	E200P-XX-G-X-7PH
1.5	DN130-10015A6-MH	130	6							
1.5	DN130-10015B4-MH	130	10							
2.0	DN130-07725B4-MH	130	7.7							
2.3	DN130-15015B4-MH	130	15							
2.6	DN130-10025B4-MH	130	10							

## Supply chain assurance



- ◆ Global first-class brand raw material supplier
- ◆ Perfect supply chain system
- ◆ Qualifications of suppliers: select world-class raw material suppliers to ensure the high quality of products. Assessment of suppliers: It has a complete assessment system and comprehensive assessment in many aspects.

