FINGER CNC

Open Design Infinite Possibilities

F01/F02 Series Selection Manual

Version No: F202506SSF-EN

Guangzhou Finger Technology Co., Ltd

CONTENTS

1.Document Overview

1.1 Revision History

Modification Date	Note
20250619	Initial Draft

1.2 About FINGER CNC

Guangzhou Finger Technology Co., Ltd. is committed to creating high-performance open CNC systems, making automation development simpler. As one of China's leading high-performance controller manufacturers, Finger Technology focuses on customer needs and continually pushes the boundaries of technological innovation. The company has built a comprehensive automation ecosystem with key technologies, offering differentiated solutions and convenient services to clients. Finger strives to help customers gain value from its products, accelerate growth, and generate substantial returns.

Finger Technology is fundamentally driven by technology, originating from CNC but not confined to it. Firmly rooted in CNC technology, the company actively explores motion controllers, edge computing controllers, Open CNC development platforms, CAD/CAM technologies, machine vision technologies, and industrial Internet of Things (IoT) technologies. Its industry-leading Open CNC development platform makes the customized development of machine equipment electrical controls more cost-effective and simpler. With seven core technologies embedded (motion control, HMI, PLC, machine vision, CAD/CAM, IoT, and 3D simulation), Finger Technology provides customers with the best one-stop solutions. Leveraging its outstanding open product architecture

and diverse technology integration capabilities, Finger Technology has accumulated extensive product experience and a solid customer base in industries such as lathes, milling machines, grinding machines, spring machines, tool machines, woodworking machinery, winding machines, pipe bending machines, and 3C electronics, continuously achieving excellence.

Devotion to excellence, innovation with craftsmanship, pursuit of precision, symbiosis and win-win, and integrity are the core business philosophy and values upheld by Finger Technology since its establishment. We have always remained true to our original intention, striving forward with determination, and continuously working towards becoming the world's leading open CNC system brand, ensuring that Chinese manufacturing and Chinese services resonate globally.

2.System Introduction

2.1 F01 Series

- **F01 Series Servo Drives**

The F01 Series, designed for EtherCAT communication applications, enables real-time transmission of user data, process data, and diagnostic data through a single cable.

- **HB Series Servo Motors**

The HB Series features naturally cooled permanent magnet synchronous motors that dissipate heat through the motor surface, supporting up to IP67 protection grade. With an overload capacity of 350%, it effortlessly handles high-load torque demands, significantly boosting production efficiency.

- **Excellent Performance**

1. Outstanding performance with a variety of advanced functions.
2. Enables faster, more stable, and more precise drive scenarios.
3. High responsiveness: 3 kHz velocity loop bandwidth.
4. High precision: Supports 23-bit absolute encoders.
5. High speed: EtherCAT bus version supports 125 μs synchronization cycle.

- **Reliable Operation**

1. Safe functional design, high-quality component selection, and comprehensive testing and validation.
2. Built-in dynamic braking function.
3. Supports STO (Safe Torque Off) function (optional).
4. High-quality motor bearings extend service life.
5. Stable operation of the drive even in harsh environments.
6. CE certified, meeting export equipment requirements.

- **Easy to Use**

1. Quick and simple connection with control systems.
2. Stable operation without extensive adjustments.
3. Integrated communication interfaces improve wiring efficiency.
4. Compact design fits demanding installation spaces.
5. Bus servo parameter copying for fast setup.
6. One-click upload/download & FOE function improve production efficiency.

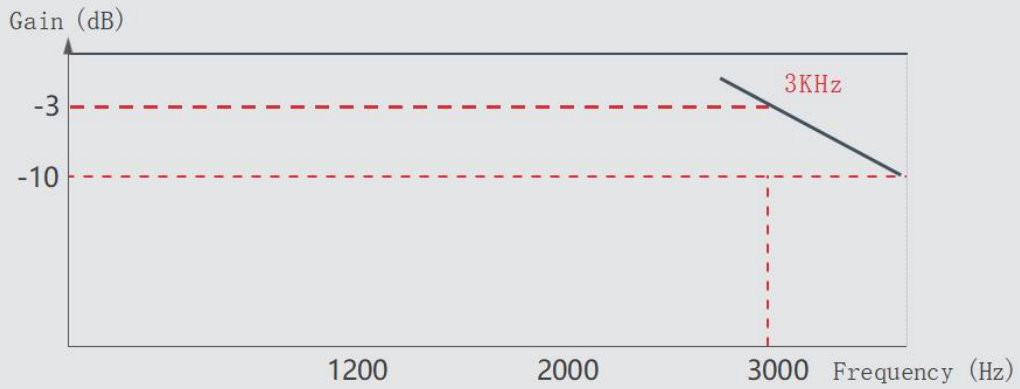
- **Efficient Service**

1. Comprehensive support from model selection to maintenance, aimed at fully meeting or even exceeding customer expectations.
2. 24-hour response time, problem resolution within 48 hours.
3. All-round support to optimize your productivity.

2.1.1 Key Features

- **Higher Dynamic Response**

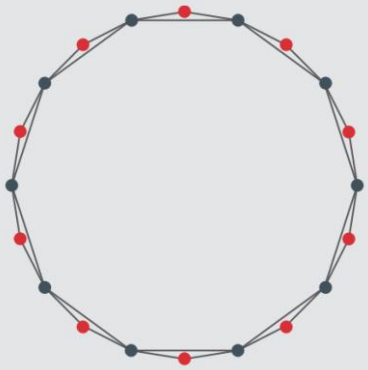
With a 3 kHz velocity loop bandwidth, it offers faster command tracking and effectively reduces the settling time for position achievement.



Note: Velocity loop bandwidth refers to the highest frequency of speed commands that a servo system can respond to.

- **Shorter Communication Cycle**

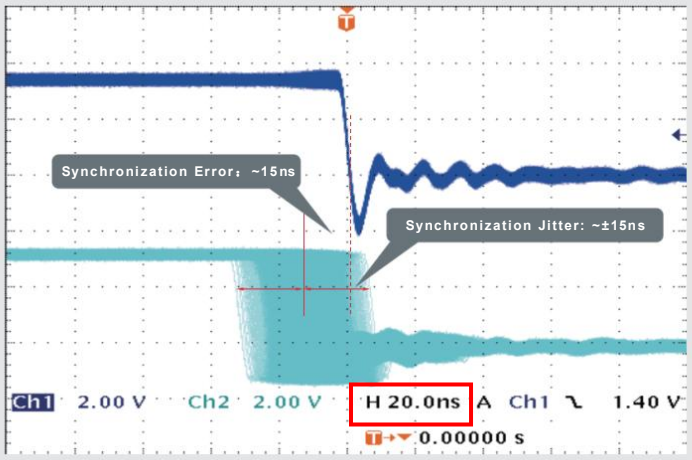
The entire series adopts high-performance main control chips, significantly enhancing communication capability. All EtherCAT operating modes support a 125 μs synchronization cycle.



Trajectory control is more precise.

- **Lower Synchronization Jitter**

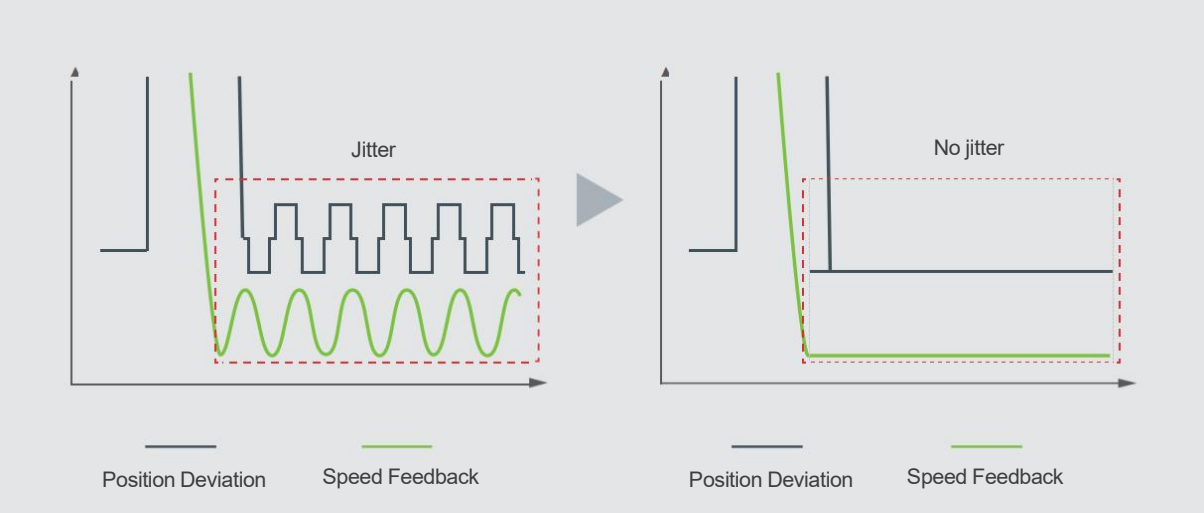
By precisely adjusting the EtherCAT distributed clock, synchronization across 300 nodes over a 120-meter distance achieves a synchronization error of 15 ns and synchronization jitter of ±20 ns. The position loop control is synchronized with the synchronization signals, further enhancing multi-axis control synchronization.



Note: Synchronization error refers to the time deviation between any two nodes receiving the synchronization signal; synchronization jitter refers to the fluctuation error in the interval time of the synchronization signals.

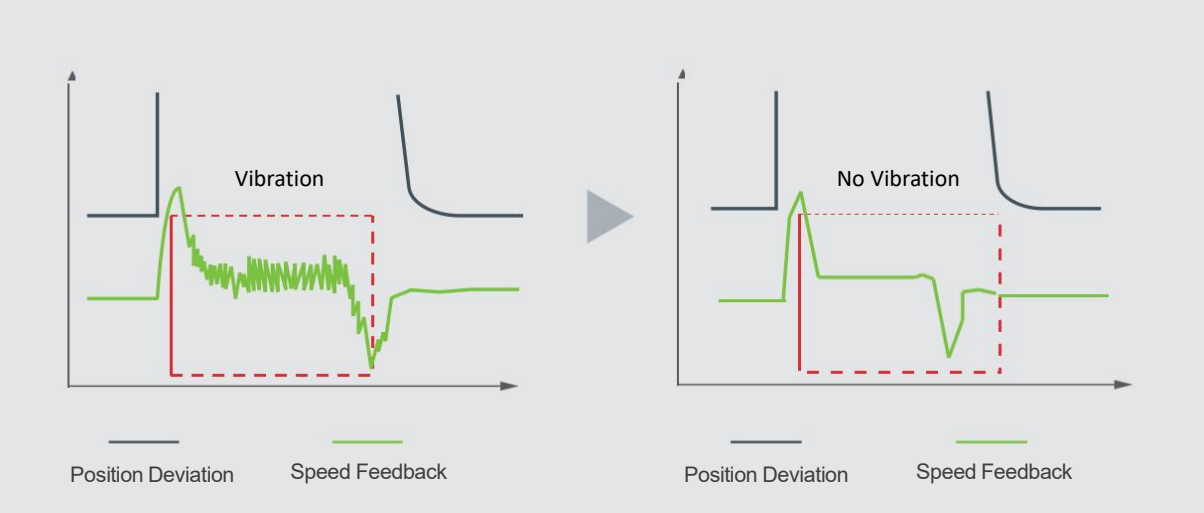
- **Low-Frequency Jitter Suppression**

The enhanced jitter suppression function simultaneously reduces two Type s of low-frequency jitter at the end of the device, improving the stability of the system and increasing production efficiency.



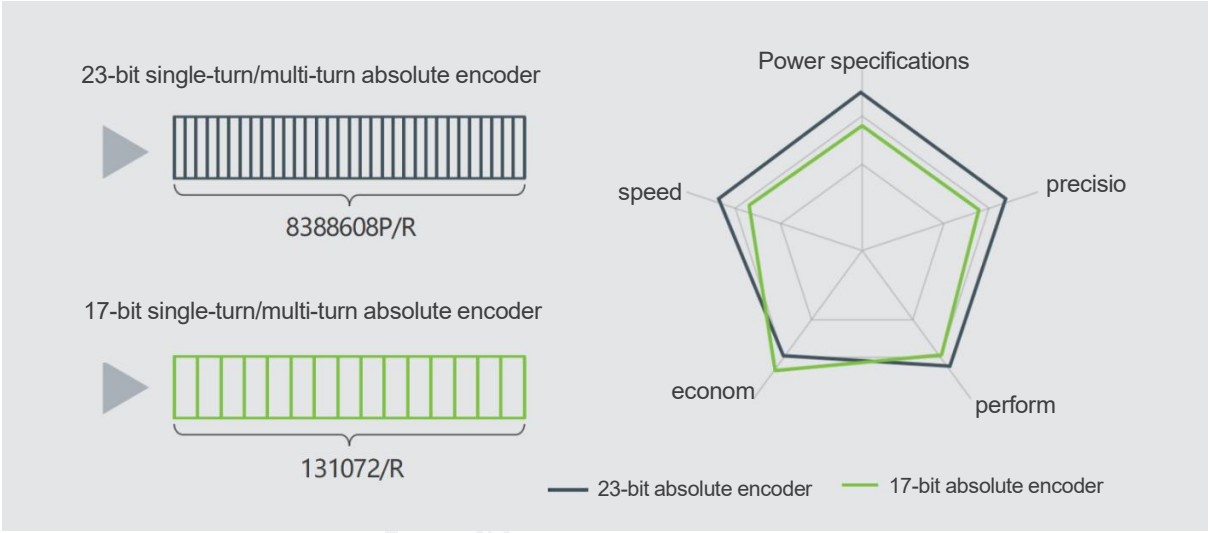
- **High-Frequency Vibration Suppression**

Equipped with 5 sets of notch filters: 2 adaptive notch filters and 3 manual notch filters; enhances product usability with excellent effectiveness, effectively reducing vibration.



- **High Positioning Accuracy**

Uses high-resolution encoders combined with built-in absolute encoder calibration and FINGER's high-performance control algorithms to achieve smooth and precise motor control.



2.2 F02 Series

The F02 is a new generation high-performance servo drive system launched by FINGER Technology. This system aims to achieve an optimized balance among stronger productivity, higher production efficiency, and lower production costs, providing a drive solution with excellent performance-to-cost ratio to boost your business success.

The F02 servo driver is paired with the HB series servo motors, covering a power range from 50W to 7.5kW. It adopts EtherCAT bus communication and is specially designed to meet various standard application requirements.

- **Outstanding Performance**

1. Excellent performance with multiple advanced features to build faster, more stable, and more accurate drive scenarios, ensuring worry-free production.

2. High responsiveness: 3.2 kHz speed loop bandwidth
3. High precision: Supports 23-bit and 26-bit absolute encoders
4. High speed: Supports 125 μs synchronization cycle
5. High compatibility: Compatible with various mainstream bus controllers
6. High efficiency: High dynamics and precision for increased productivity

- **Comprehensive Product Range**

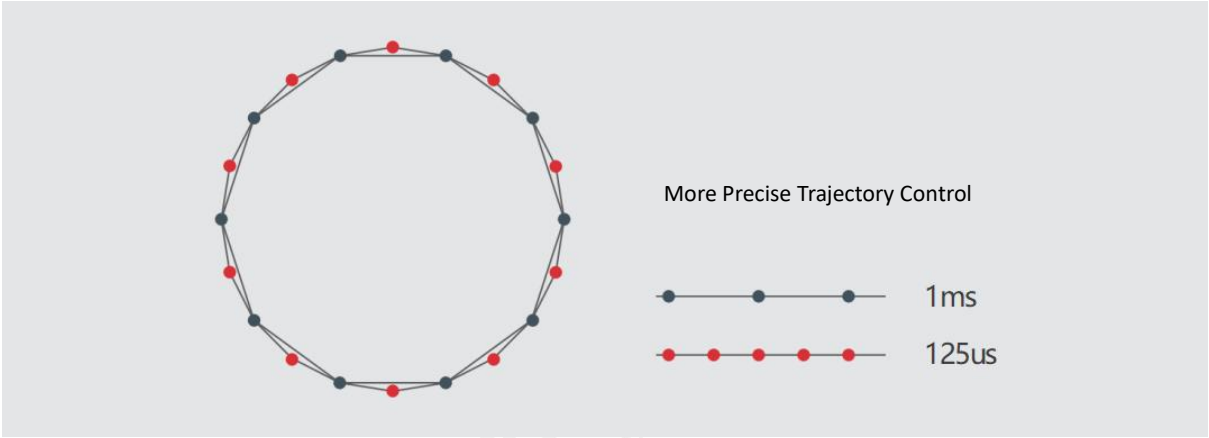
1. Offers a rich series of drive products and accessories, allowing easy construction of systems tailored to customer needs.
2. EtherCAT control versions available
3. Standard and safety (STO) Type s
4. Perfectly matched drive/motor product combinations and accessories

The hardware and software optimizations of the F02 servo system work collaboratively, enabling easy integration into your system to meet diverse application requirements.

2.2.1 Key Features

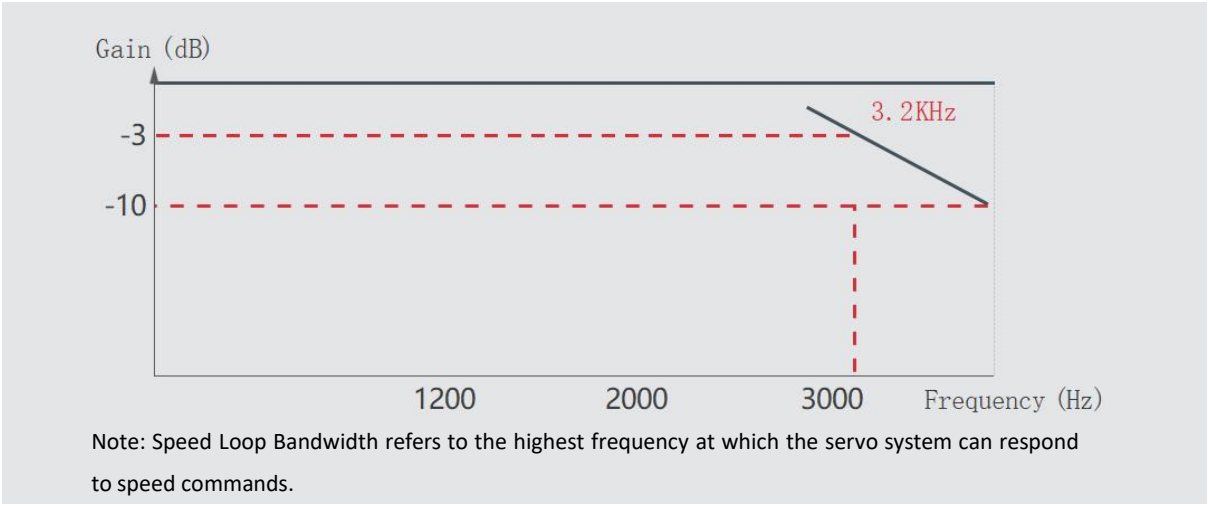
- **Shorter Communication Cycle**

The entire series utilizes higher-performance main control chips, significantly enhancing communication and interaction capabilities. It supports a 125μs synchronization cycle across all EtherCAT operating modes.



- **Higher Dynamic Response**

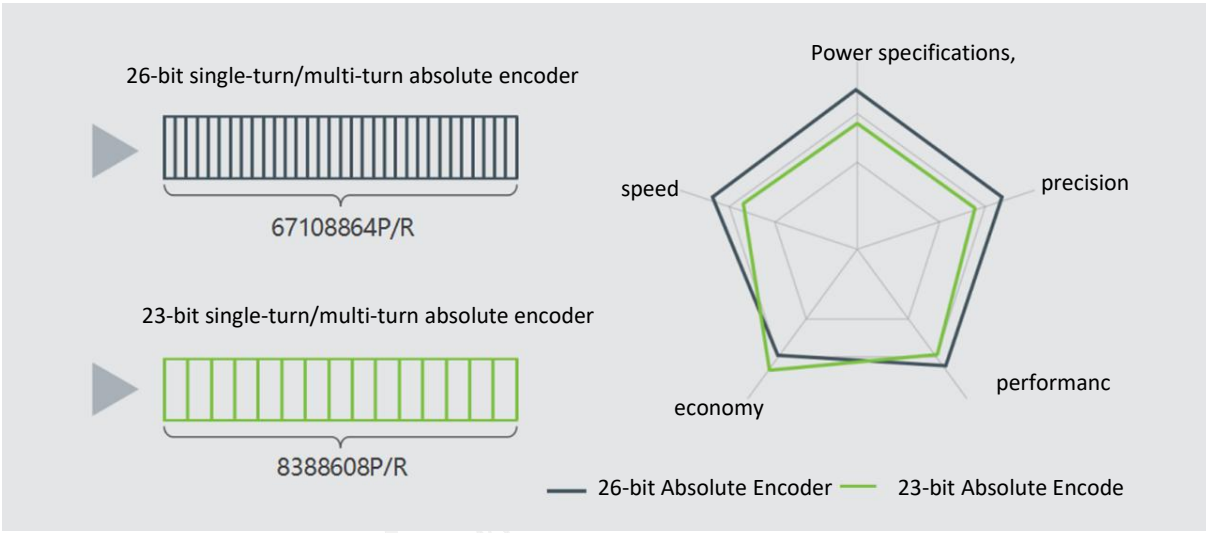
With a 3.2kHz speed loop bandwidth, command following is faster, effectively reducing the tuning time required to reach the target position.



Note: Speed Loop Bandwidth refers to the highest frequency at which the servo system can respond to speed commands.

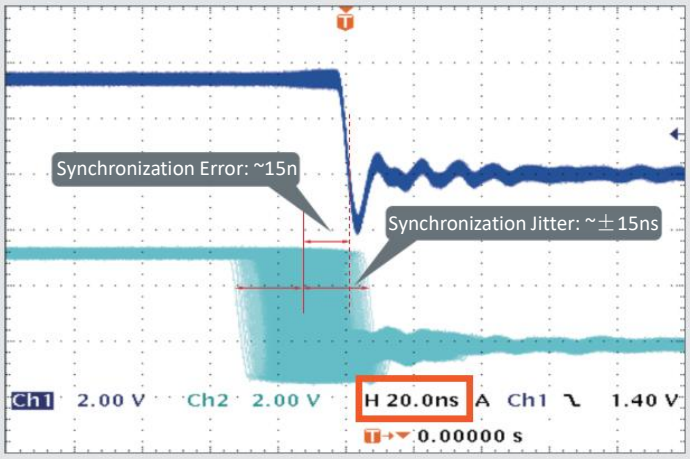
- **High Positioning Accuracy**

Utilizes high-resolution encoders combined with built-in absolute encoder accuracy calibration. Together with FINGER's high-performance control algorithms, this ensures smooth and precise motor control.



- **Smaller Synchronization Jitter**

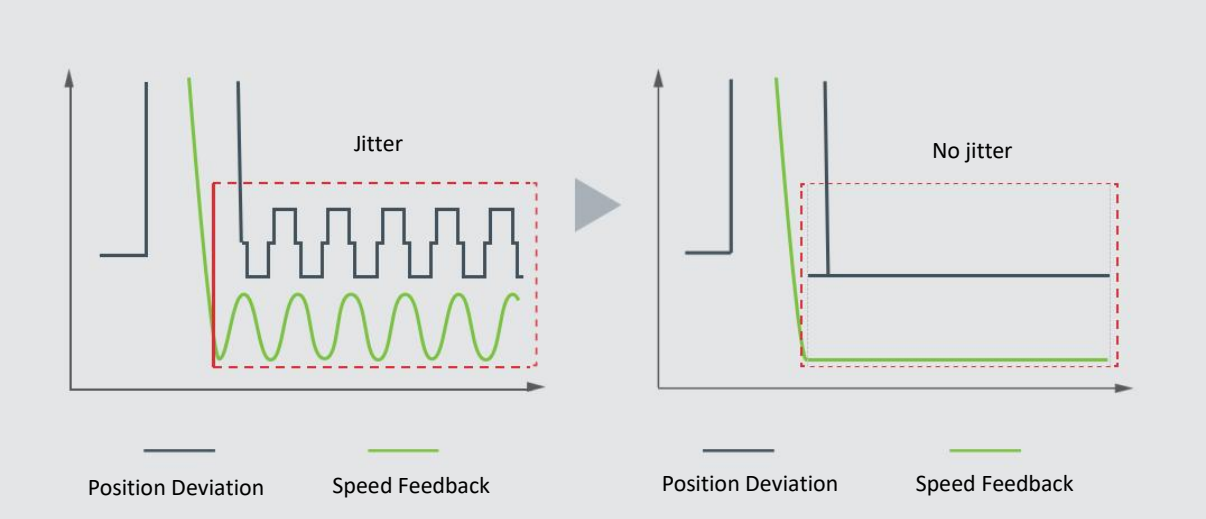
Through precise adjustment of EtherCAT distributed clocks, synchronization jitter is significantly reduced. The system achieves synchronization accuracy of 15 ns error and ±20 ns jitter across 300 nodes over a 120-meter distance. Position loop control is synchronized with the synchronization signal, further enhancing multi-axis motion control coordination.



Note:
Synchronization error refers to the time deviation between any two nodes receiving the synchronization signal.
Synchronization jitter refers to the variation in the time intervals between synchronization signals.

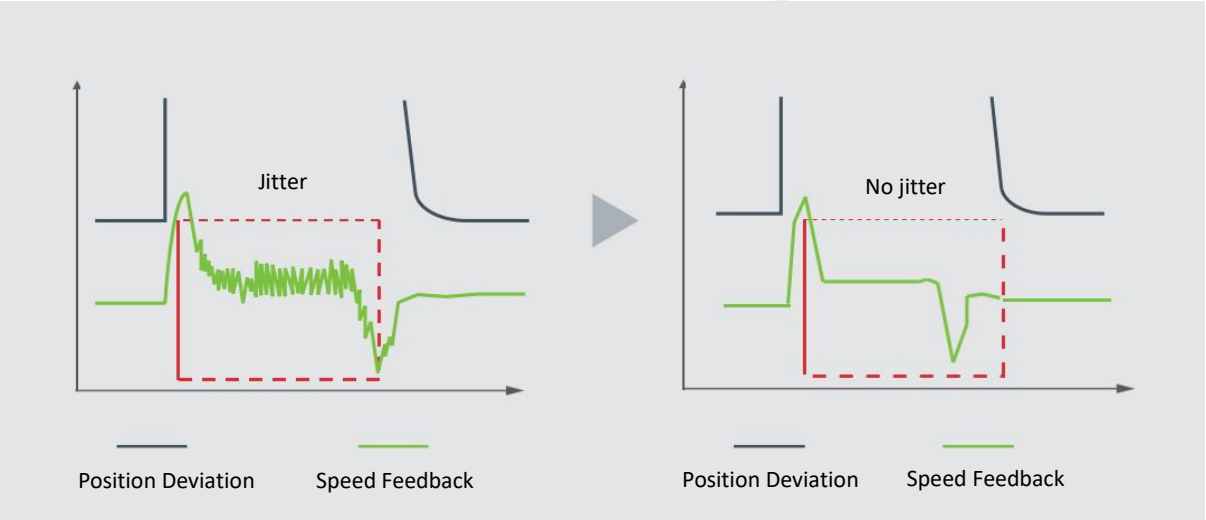
- **Low-Frequency Vibration Suppression**

Enhanced vibration suppression functionality allows simultaneous suppression of two Type s of low-frequency vibrations at the end of the device, improving system stability and production efficiency.



- **High-Frequency Vibration Suppression**

Equipped with 5 notch filters: 2 adaptive notch filters and 3 manual notch filters. These features enhance ease of use and deliver excellent results in effectively reducing vibrations.



- **User-Friendly**

Innovative and compact design greatly improves usability and convenience.

- **Minimal Space Requirements**

As a compact system solution, it uses next-generation power devices and innovative design to significantly reduce overall space requirements, greatly enhancing the flexibility of drive system layout.

- **Easier Debugging**

1. Intuitive and Efficient Debug Interface: Connects to YIDA controllers via bus; servo parameters can be adjusted directly through the dedicated servo tuning interface on the controller.
2. Batch Debugging in One Go: Servo parameter settings can be conveniently copied from one drive unit to others via the bus.

- **More Convenient Operation**

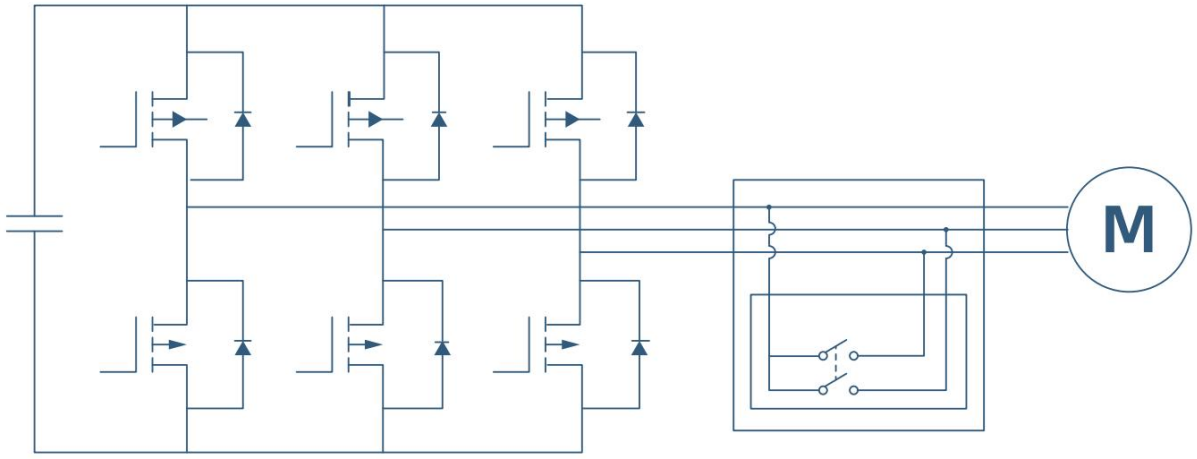
1. Simple Connection: Compatible with industrial Ethernet standards for automation. Operated via PC software, enabling real-time transmission of user/process data and diagnostics, reducing overall system complexity.
2. One-Click Upload/Download: Simultaneous upload/download without strict limitations. Speed depends on the number of devices; parameters are read/written via network port chaining.
3. FOE Function: Firmware files can be imported via the controller and programmed with one click.

- **A Safe and Reliable Choice**

A Safe and Reliable Choice

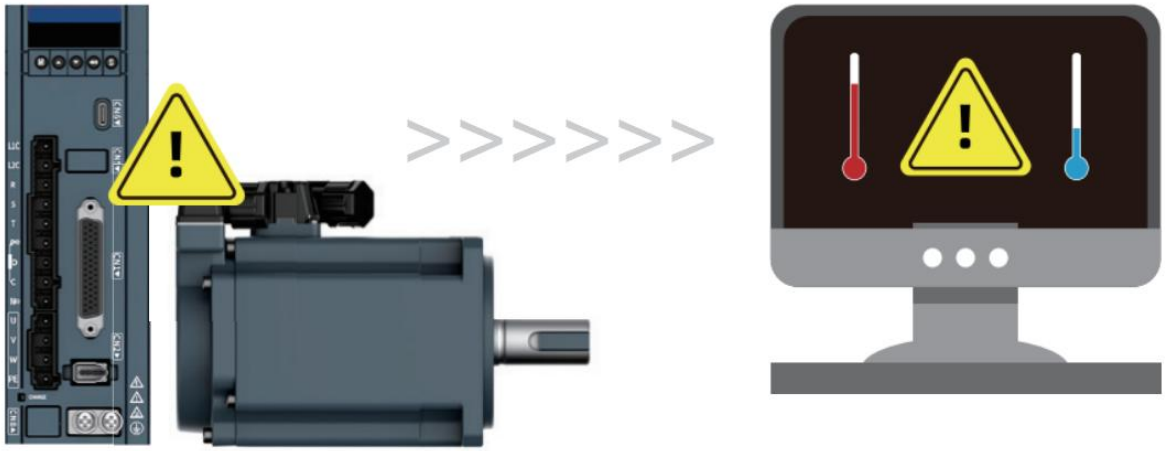
- **Built-in Dynamic Braking**

In the event of servo faults, emergency stops, shutdowns, or motor brake failures, dynamic braking is activated to prevent rapid motor rotation from damaging equipment or causing injury—greatly enhancing safety.



- **Built-in Temperature Monitoring**

Both the servo drive and servo motor are equipped with temperature protection features. Temperature status is directly monitored through sensors, allowing for early detection and prevention of faults, ensuring safe and reliable operation.

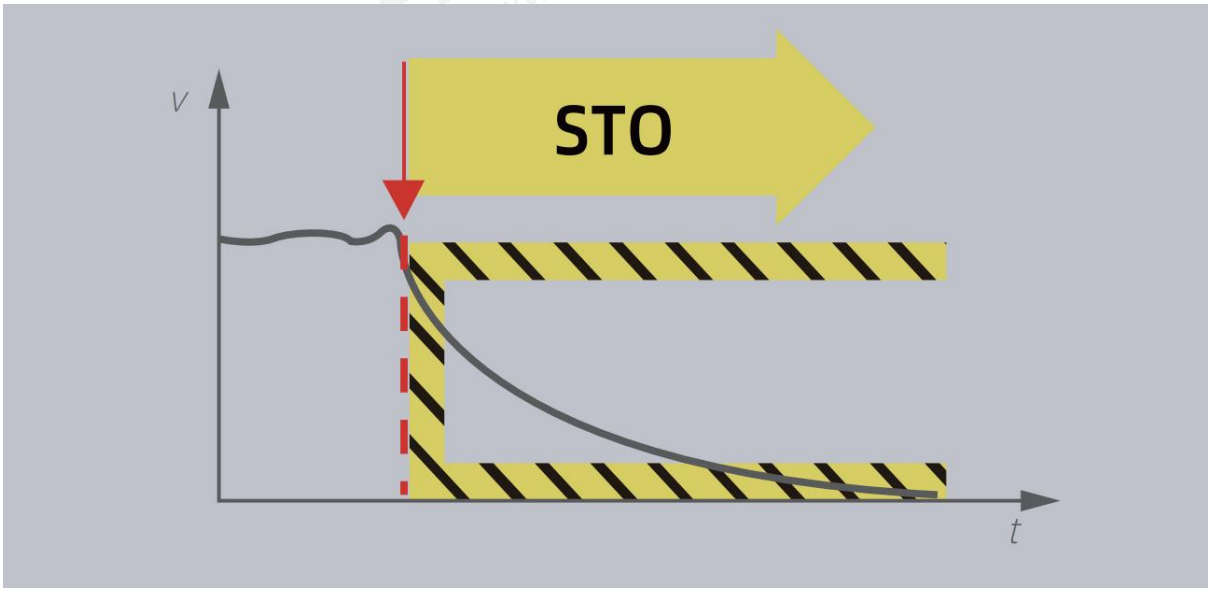


- **Adaptability to Harsh Environments**

1. High protection design ensures stable operation of the drive in harsh environments.
2. Wide voltage range: Single-phase/Three-phase AC 200V240V (–10%+10%); Three-phase AC 380V480V (–10%+10%)
3. Coated PCB boards enhance the drive's stability in harsh environments.

- **Integrated Safety Function STO**

Optional Safe Torque Off (STO) function: Prevents electric shocks or mechanical injuries in fault conditions without the need for output contactors.



- **High-Quality Motor**

Newly designed structure and manufacturing process for motors, offering longer service life.

3.Technical Data

- **Single-phase 220V Grade Servo Driver**

Projects	SIZE-A Type		SIZE-B Type
Power	0.05kW、0.1kW、0.2kW	0.4kW	0.75kW
Driver Model: F01N	1R6A	2R8A	5R5A
Continuous Output Current (Arms)	1.6	2.8	5.5
Maximum Output Current (Arms)	5.8	10.1	16.9
Main Circuit Power Supply	Single-phase AC200V240V, -10%+10%, 50/60Hz		
Control Circuit Power Supply	Bus power supply, shared power input and rectification		
Braking Processing Function	External brake resistor		internal dynamic resistor

- **Three-phase 220V Class Servo Drive**

Projects	SIZE-C Type	SIZE-D Type
Power	1.0kW	-
Driver Model: F01N	7R6A	-
Continuous Output Current (Arms)	7.6	-
Maximum Output Current (Arms)	23	-
Main Circuit Power Supply	Single-phase/Three-phase AC200V240V, -10%+10%, 50/60Hz	
Control Circuit Power Supply	Single-phase AC200V240V, -10%+10%, 50/60Hz	
Braking Processing Function	Built-in braking resistor	

- **Three-phase 380V Grade Servo Drive**

Projects	SIZE-C Type		SIZE-D Type		SIZE-E Type		
Power	0.85kW	1.5kW	2.0kW	3.0kW	5.0kW	6.0kW	7.5kW
Driver Model: F01N	3R5B	5R4B	8R4B	012B	017B	021B	026B
Continuous Output Current (Arms)	3.5	5.4	8.4	11.9	16.5	20.8	25.7
Maximum Output Current (Arms)	11	14	20	29.75	42	55	65
Main Circuit Power Supply	Three-phase AC380V440V, -10%+10%, 50/60Hz						
Control Circuit Power Supply	Single-phase AC380V440V, -10%+10%, 50/60Hz						
Braking Processing Function	Built-in brake resistor.						

- **Basic Specifications**

Projects	Specifications
Control Mode	IGBT PWM control, sinusoidal current drive mode 220V, 380V: Single-phase or three-phase full bridge rectification
Encoder Feedback	23-bit multi-turn absolute encoder (can be used as a single-turn absolute encoder without a battery); F02 supports 23-bit/26-bit multi-turn absolute encoder
Operating Temperature	0~+55°C (for temperatures above 45°C, derating by 10% for every 5°C increase)
Storage Temperature	-40~+70℃
Altitude	Maximum Altitude: 2000m, derating by 1% for every 100m above 1000m
Protection Level	IP20 (excluding terminal "IP00")

- **Speed-Torque Control Mode**

Projects	Specifications
Speed Control Range	1:6000 (The lower limit is defined as the condition where the motor does not stall under rated torque load)
Speed Loop Bandwidth	3 kHz (3.2 kHz for F02 series)
Torque Control Accuracy	±1%
Ramp Time Setting	0–100 seconds (acceleration and deceleration can be set separately)
Speed Command Input	Network-based command input via EtherCAT
Torque Command Input	

- **Position Control Mode**

Projects	Specifications
Positioning Time	1~10ms

Position Command Input	Network Command Source: EtherCAT
Digital Input Signal	P-OT (Forward Overtravel Switch), N-OT (Reverse Overtravel Switch) Home Switch (Origin Switch), Touch Probe 1, Touch Probe 2
Digital Output Signal	3-Channel DO, DO Load Capacity 50mA Voltage Range 5V30V S-RDY (Servo Ready), ALM (Alarm Output), BK (Brake Output)

- **Built-in Functions**

Projects	Specifications
Overtravel (OT) Protection	Immediate stop upon activation of P-OT (positive overtravel) or N-OT (negative overtravel) signals.
Protection Functions	Overcurrent, Overvoltage, Undervoltage, Overload, Main Circuit Detection Fault, Heatsink Overheating, Overspeed, Encoder Fault, CPU Fault, Parameter Error
Protection Functions	Main power CHARGE, 5-digit LED display
Vibration Suppression Function	Equipped with 5 notch filters (frequency range: 50–8000 Hz), including 2 adaptive filters
Connection Interface	USB
Communication Protocol	EtherCAT
Multi-Station Communication	EtherCAT: Supports up to 255 slave stations
Multi-Station Communication	Multi-Station Communication
Functions	Status Display, User Parameter Configuration, Monitoring Display, Alarm Tracking Display, JOG Operation, Mapping Functions for Speed and Torque Command Signals

Others	Gain Adjustment, Alarm Log, IO Configuration, JOG Operation

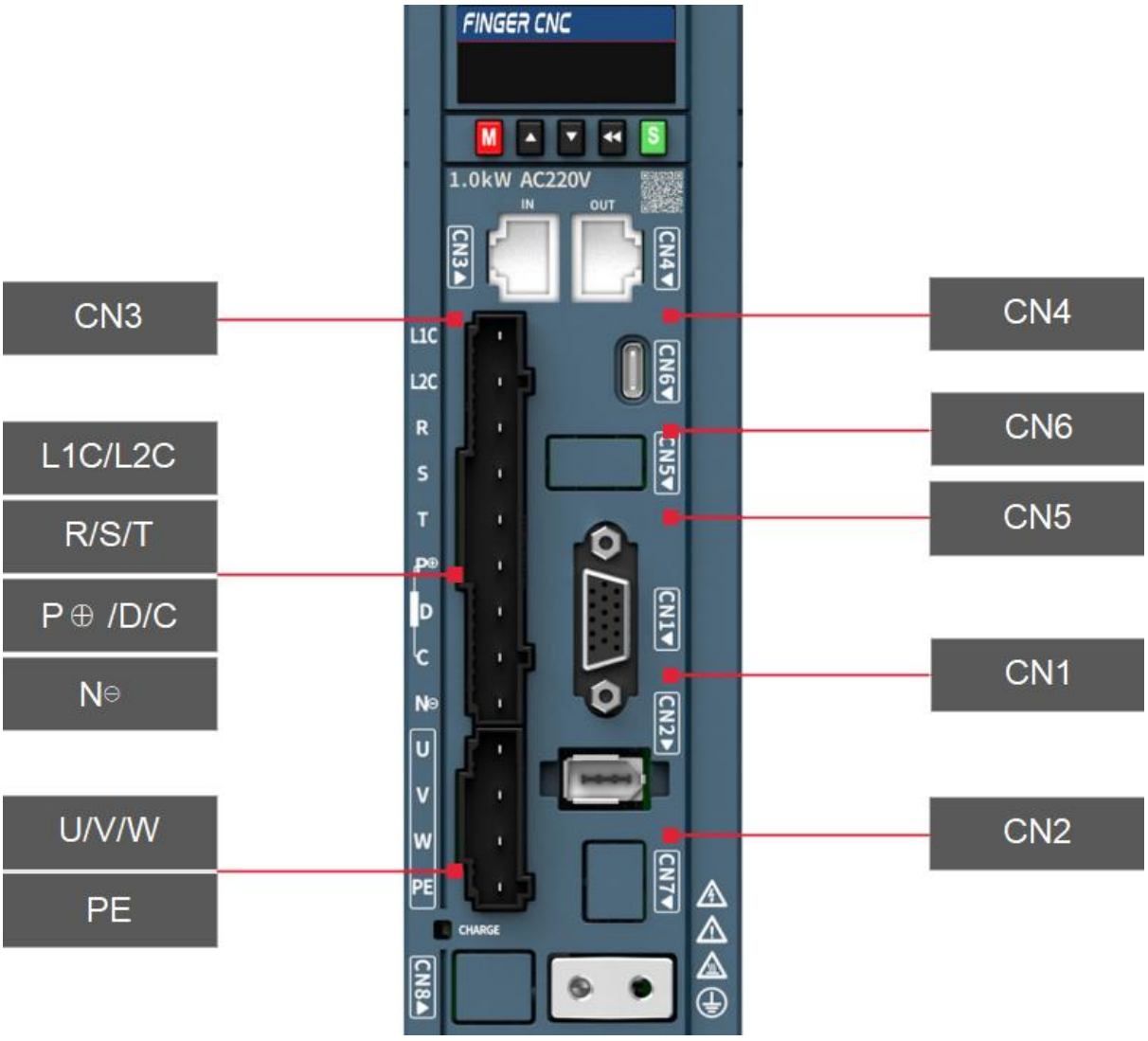
- **Communication Specifications**

Projects	Specifications
Communication Protocol	EtherCAT Protocol
Supported Services	CoE(PDO,SDO)
Synchronization Method	DC - Distributed Clock
Physical Layer	100BASE-TX
Baud Rate	100Mbit/s(100Base-TX)
Duplex Mode	Full Duplex
Topology	Ring, Line Topology
Transmission Medium	Shielded Cat 5e or high-spec Ethernet cables
Transmission Distance	Less than 100m between two nodes (in good environmental conditions, with high-quality cables)
Slave Count	Protocol supports up to 65535, actual usage does not exceed 100 devices
EtherCAT Frame Length	44 bytes ~ 1498 bytes
Process Data	Maximum Ethernet Frame: 1486 bytes
Synchronization Jitter Between Two Slaves	<1us
Refresh Time	1000 Digital Inputs/Outputs: ~30us; 100 Servo Axes: ~100us; Different refresh times defined for different interfaces
Communication Error Rate	10-10 Ethernet Standard
Communication Error Rate	8 Units
Storage Synchronization Management Unit	8 Units
Storage Synchronization	8kB

Management Unit	
Storage Synchronization Management Unit	64-bit
EEPROM Capacity	32kbit initialization data written by EtherCAT master

4.F01/F02 Port Description

Note: The diagram illustrates the F01N port distribution using the SIZEC model as an example. Other models may have different layouts. Please refer to the physical device.



CN1: User control interface

CN2: Encoder interface

CN3: Communication network port IN

CN4: Communication network port OUT

CN5: STO interface (optional)

CN6: Debug communication interface

L1C/L2C: Control loop power input

R/S/T: Main circuit power input

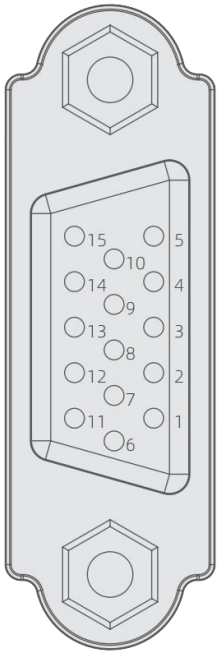
P⊕/D/C: External brake resistor

N⊖ : Bus negative

U/V/W: Motor power output

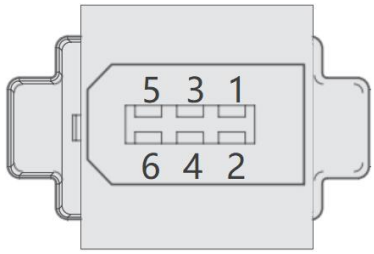
PE: Motor grounding terminal

- **CN1 User Control Interface**

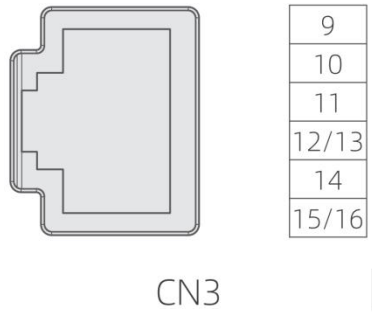
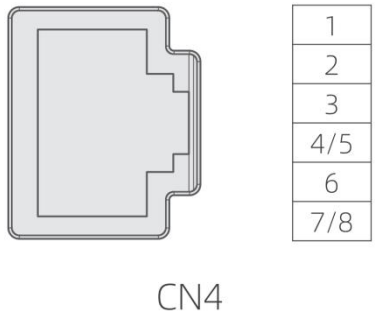
Terminals	Pins		Definitions
	10	D11	Forward Overrun Switch
	9	D12	Reverse Overrun Switch
	8	D13	Origin Switch
	7	D14	Probe 2
	11	D15	Probe 1
	15	+24V	Internal 24V Power Supply, Voltage Range: +20~28V, Maximum Output Current: 150mA (Note: Shared with the CN5 STO function terminal, total current limit 150mA)
	14	COM-	
	13	COM+	DI Input Terminal Common Terminal

	1	D01+	Servo Ready
	6	D01-	
	3	D02+	Fault
	2	D02-	
	5	D03+	Brake
	4	D03-	

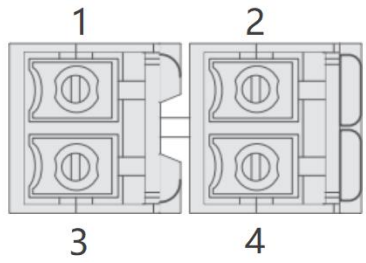
- **CN2 Encoder Interface**

Terminals	Pins		Definitions
	1	+5V	5V Power
	2	0V	Power 0V
	3	Reserved	-
	4	Reserved	-
	5	PS+	Encoder Signal +
	6	PS-	Encoder Signal -
	Housing	PE	Shielding

- **CN3/CN4 Communication Interface**

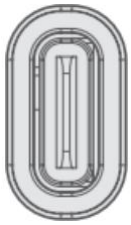
Terminals	Pins		Definitions
	9	TD+	Data Send+
	10	TD-	Data Send-
	11	RD+	Data Receive+
	12/13	-	-
	14	RD-	Data Receive-
	15/16	-	-
	1	TD+	Data Send+
	2	TD-	Data Send-
	3	RD+	Data Receive+
	4/5	-	-
	6	RD-	Data Receive-
	7/8	-	-

- **CN5 STO Function Interface**

Terminals	Pins		Definitions
	1	COM	STO Reference Ground
	2	24V	STO Reference Ground
	3	STO1	Control Input for STO1
	4	STO2	Control Input for STO2

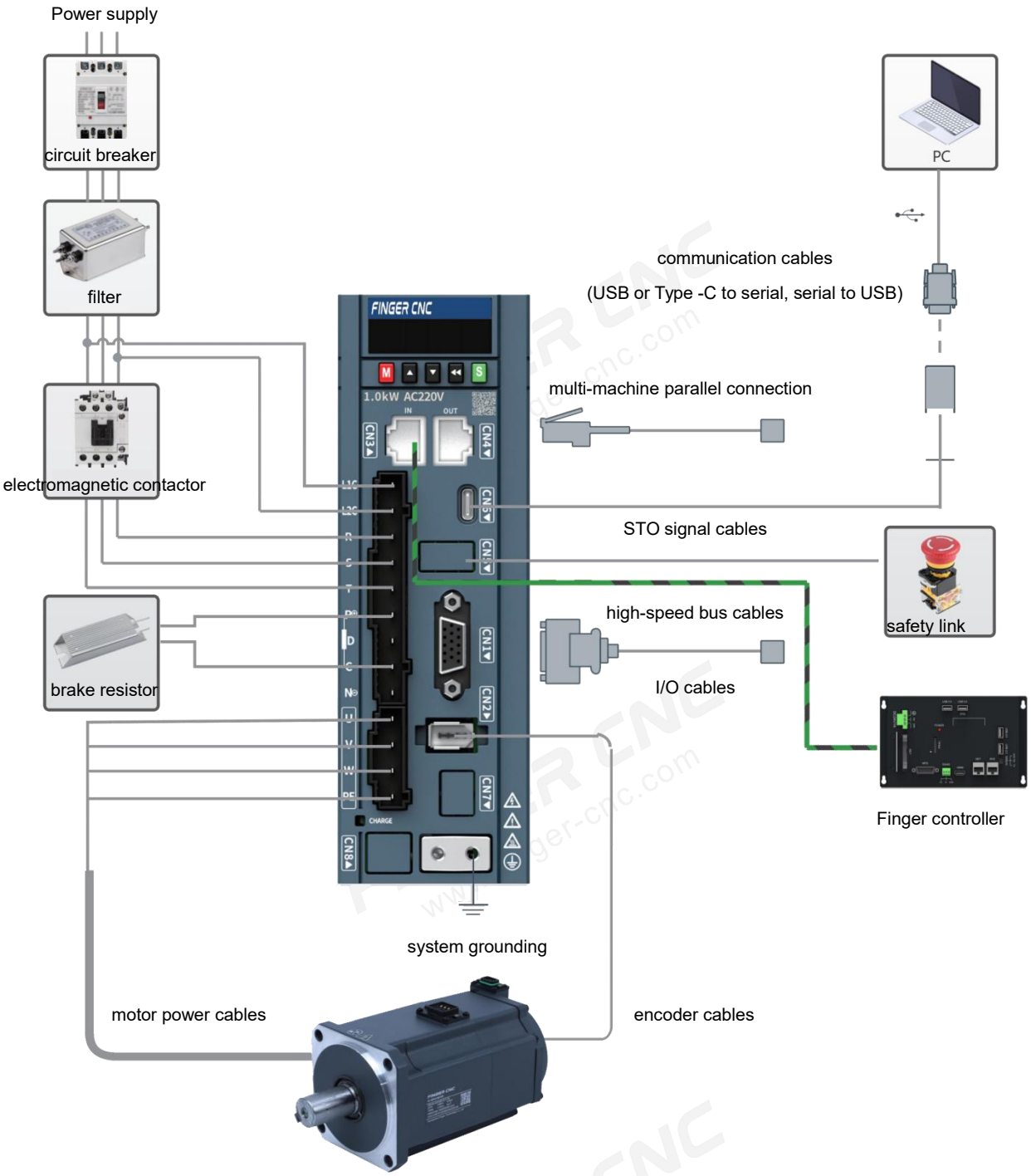
- **CN6 Debug Communication Interface**

Terminals	Pins	Definitions

	Type -C	Use a USB cable or serial cable (two-stage wiring: Type -C to serial, serial to USB) to connect the driver to the PC.

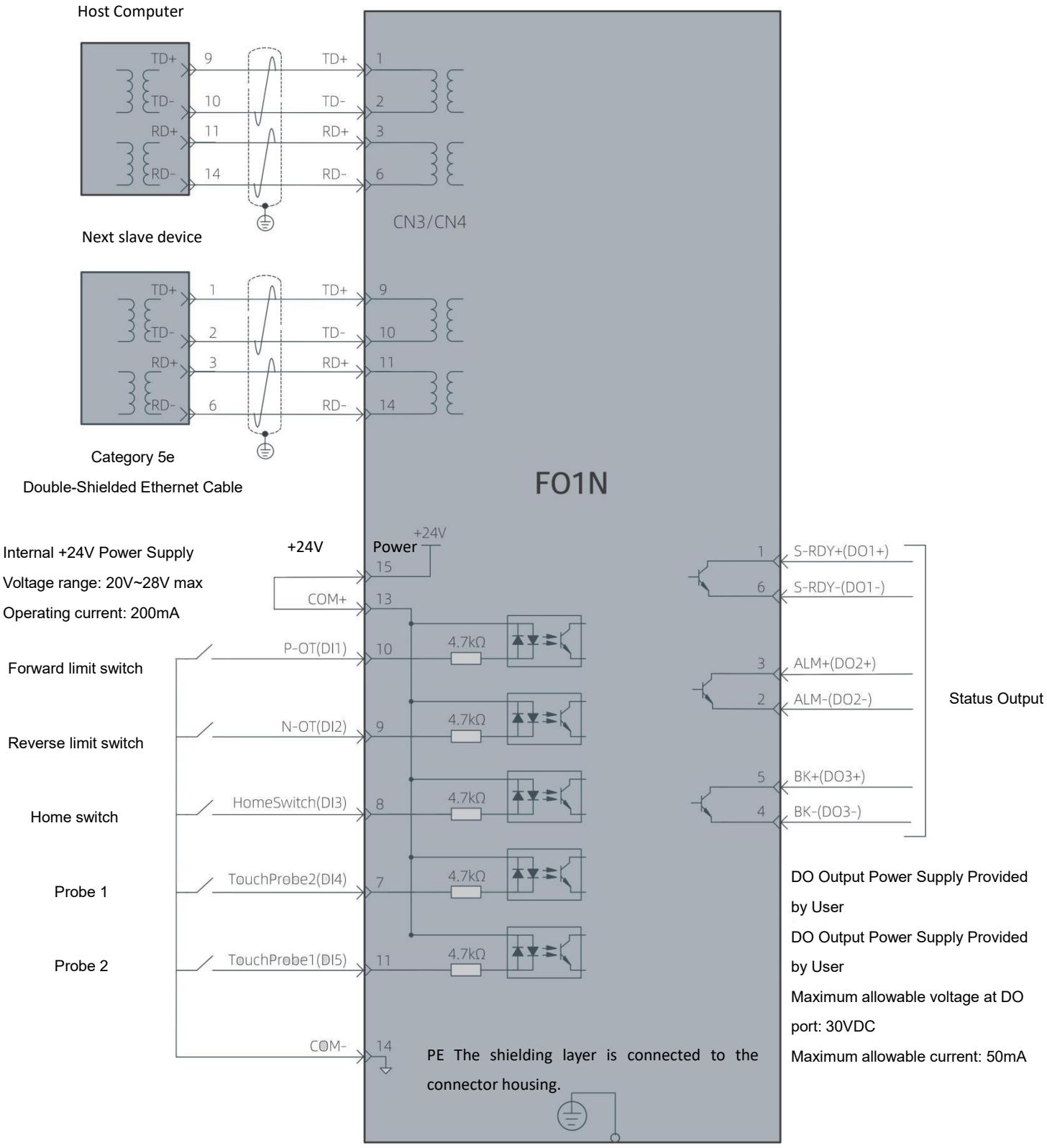
5.F01/F02 Device Connection

Note: The diagram illustrates the connection of peripheral devices to the F01N model using the SIZEC variant as an example. Other models may have slight differences due to varying terminal layouts.



Note: When connecting an external brake resistor, remove the jumper between P⊕ and D.

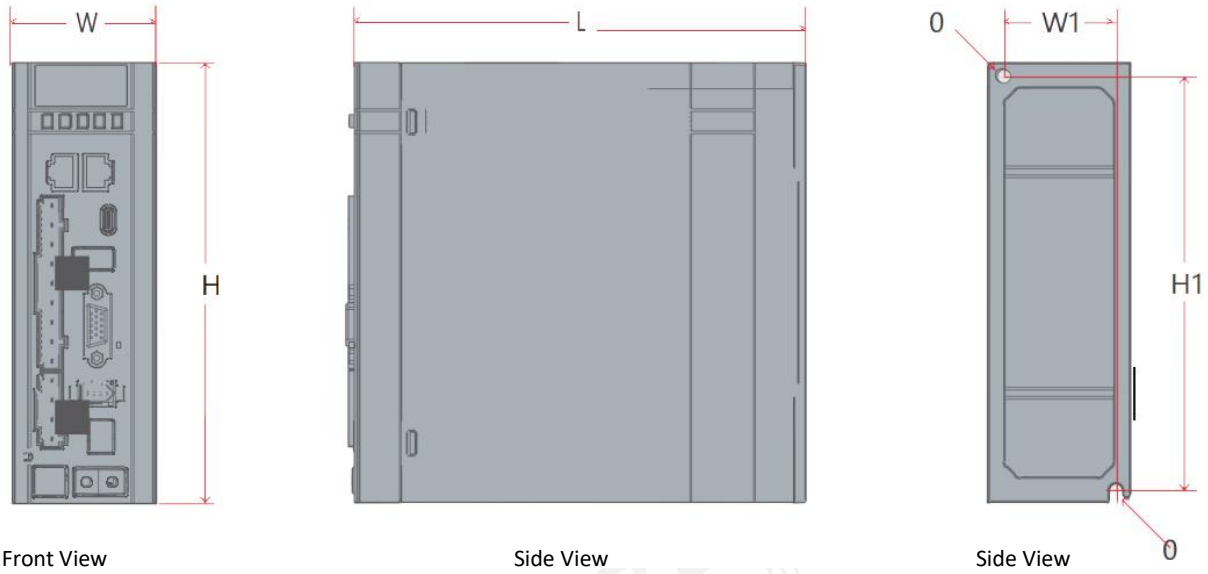
6.F01/F02 Electrical Diagram



Note: The diagram shows NPN input mode

7.F01/F02 Product Dimensions

Note: The diagram shows the external appearance of the F01N series driver using the SIZEC model as an example. For detailed dimension information, please refer to the product dimension list.



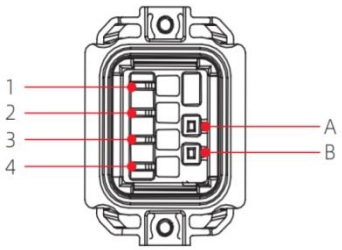
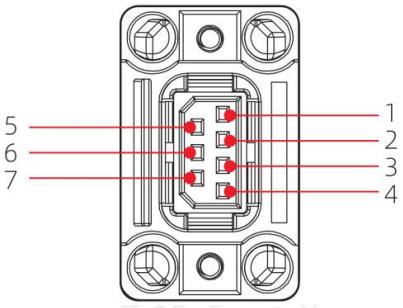
Front View　　Side View　　Side View

7.1 F01 Product Dimension List

Model	Drive Model	W(mm)	H(mm)	L(mm)	W1(mm)	H1(mm)	Ø(mm)
SIZE A	F01N-1R6A F01N-2R8A	40.0	170.0	150.0	28.0	161.0	5.0
SIZE B	F01N-5R5A	50.0	170.0	174.0	37.0	161.0	5.0
SIZE C	F01N-7R6A F01N-3R5B F01N-5R4B	55.0	170.0	174.0	44.0	160.0	5.0
SIZE D	F01N-8R4B F01N-012B	80.0	170.0	182.0	71.0	160.0	5.0
SIZE E	F01N-017B	90.0	250.0	230.0	78.0	240.5	5.0

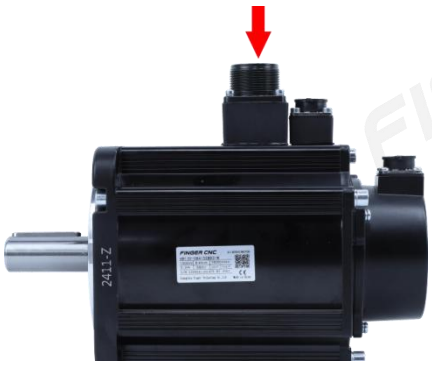
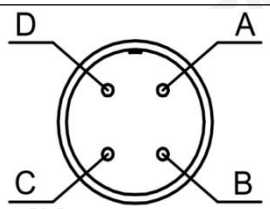
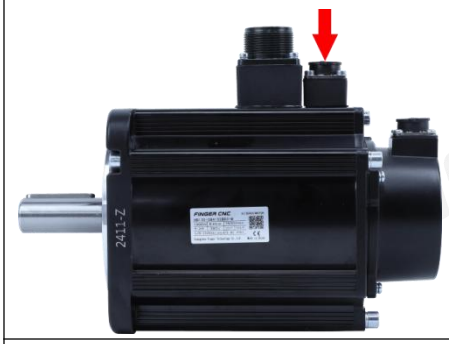
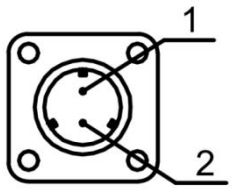
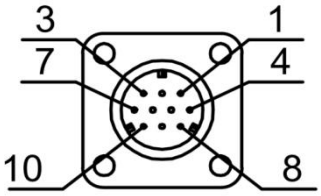
	F01N-021B F01N-026B						

7.2 HB Terminal Definitions

Cable Type (40–80 Flange)	Terminal Layout (Cable Side)	Pin Number	Function / Purpose
 Power Input Connector 		1	Phase V
		2	Phase U
		3	Phase W
		4	Ground
		A	Brake (Non-polarized)
		B	Brake (Non-polarized)
 Encoder connector 		1	DATA+
		2	DATA-
		3	BAT+
		4	BAT-
		5	+5V
		6	0V
		7	Housing

Note: The diagram is for reference only. For motor matching and dimensional information, please

refer to the actual pairing specifications and drawings. Pay attention to the mirrored relationship between the motor side and the cable side.

Cable Type (110-180 Flange)	Terminal Layout (Cable Side)	Pin Number	Function / Purpose
Power Input Connector 		1	Phase V
		2	Phase U
		3	Phase W
		4	Ground
Brake Connector 		1	DC+24V
		2	0V
Encoder Connector 		1	DATA+
		2	DATA-
		4	+5V
		5	BAT+
		6	BAT-
		9	0V
		10	Housing

Note: The diagram is for reference only. Please refer to the matching specifications and technical drawings for the correct motor compatibility and dimensional details. Be aware of the mirrored relationship between the motor side and the cable side.

7.3 HB Motor Specifications

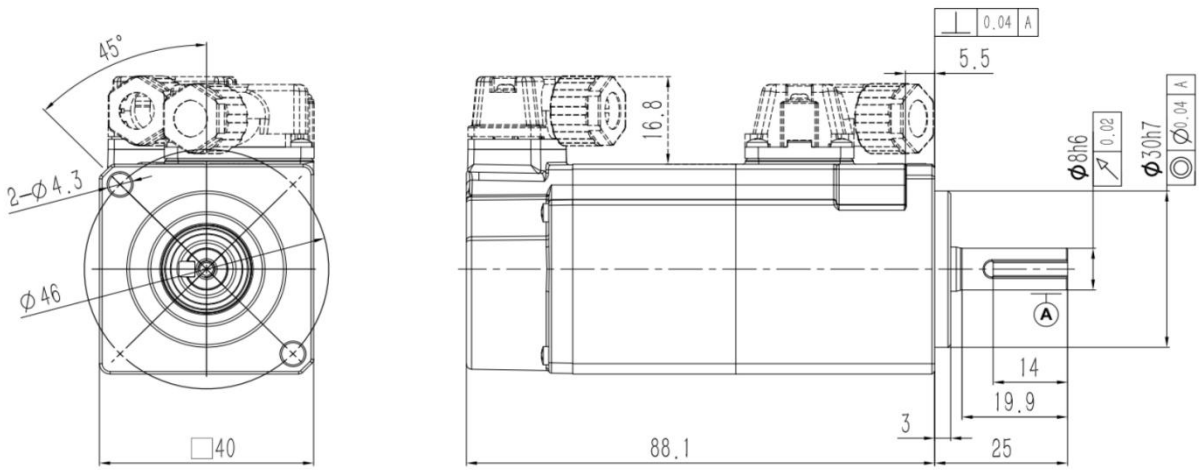
7.3.1 HB Motor Specifications

- **50W (Frame Size 40)**

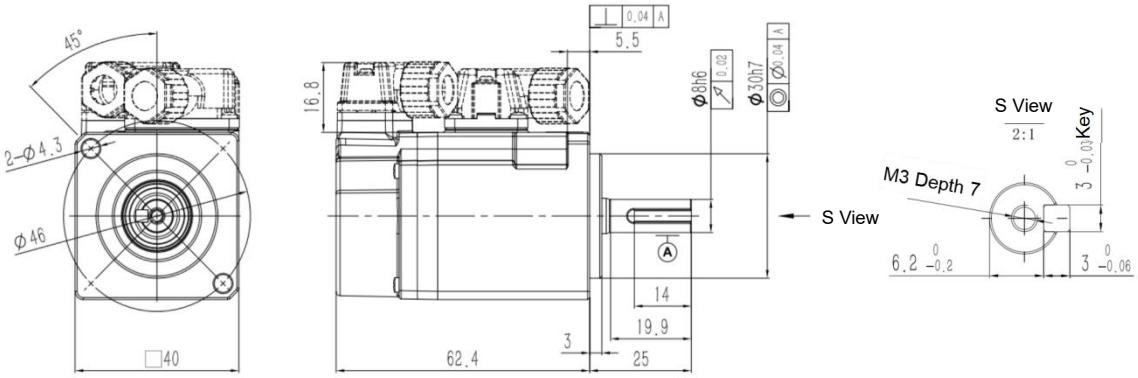
Project (HB-XXXXXXXXXX)	HB040-00230SAD3-W (Brake)	HB040-00230SAD1-W (Non-brake)
Rated Power (W)	50	
Rated Current (A)	0.58	
Maximum Current (A)	2.2	
Rated Torque (N·m)	0.16	
Maximum Torque (N·m)	0.56	
Rotor Inertia (10^-4·kg·m²)	0.021	0.018
Rated Speed (rpm)	3000	
Maximum Speed (rpm)	6000	
Rated Voltage (V)	220	

- **Product Dimensions (Unit: mm)**

HB040-00330EAD3-W (Brake)



HB040-00330EAD1-W (Non-brake)

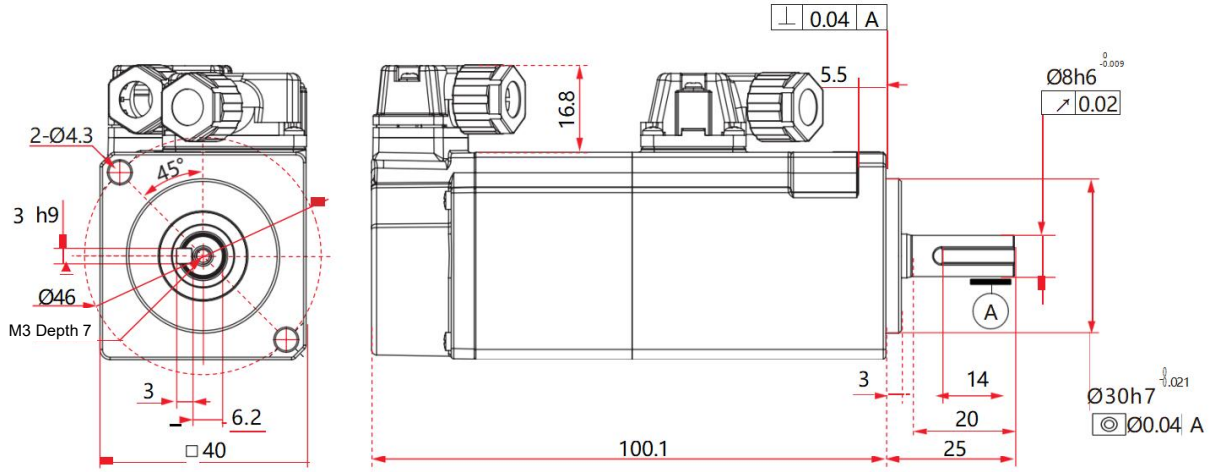


- **100W (Frame size 40)**

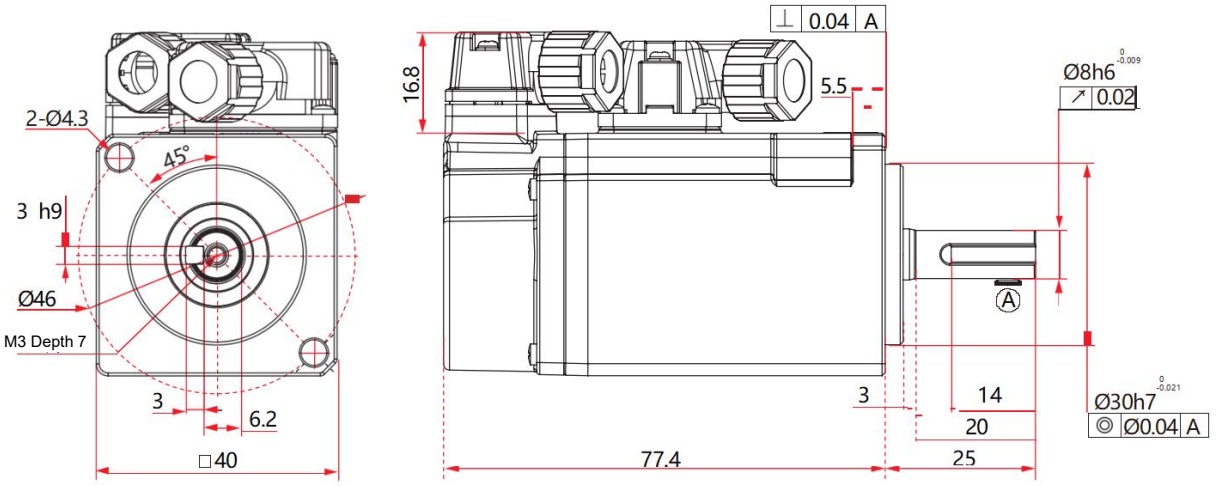
Project (HB-XXXXXXXXXX)	HB040-00330EAD3-W (Brake)	HB040-00330EAD1-W (Non-brake)
Rated Power (W)	100	
Rated Current (A)	1.1	
Maximum Current (A)	3.9	
Rated Torque (N·m)	0.32	
Maximum Torque (N·m)	1.12	
Rotor Inertia (10^-4·kg·m²)	0.033	0.03
Rated Speed (rpm)	3000	
Maximum Speed (rpm)	6000	
Rated Voltage (V)	220	

- **Product Dimensions (Unit: mm)**

HB040-00330EAD3-W(Brake)



HB040-00330EAD1-W (Non-brake)



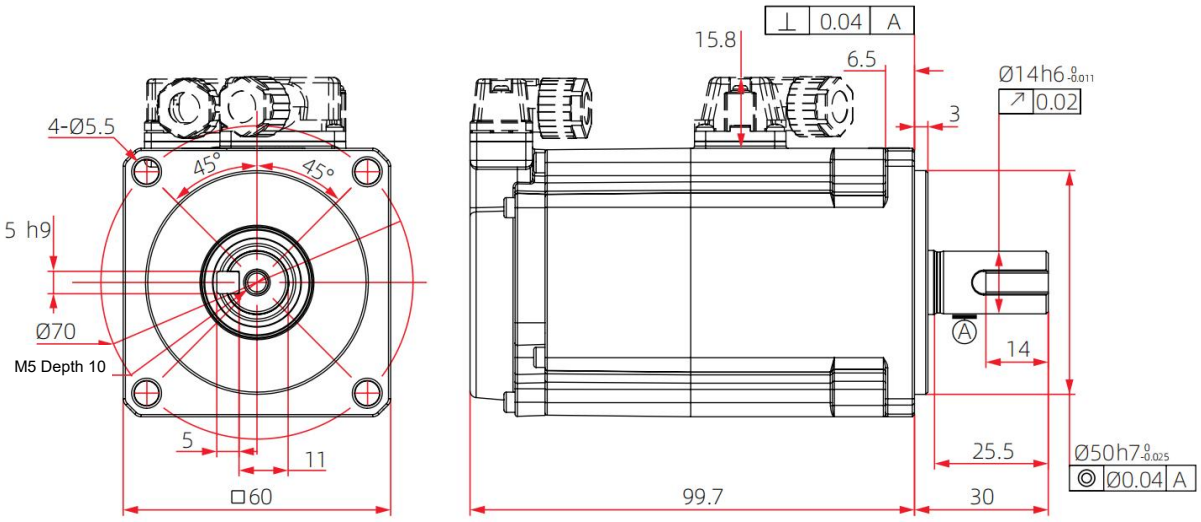
- **200W (Frame size 60)**

Project （HB-XXXXXXXXXX）	HB060-00630EAD3-W (Brake)	HB060-00630EAD1-W (Non-brake)
Rated Power (W)	200	
Rated Current (A)	1.29	
Maximum Current (A)	4.41	
Rated Torque (N·m)	0.64	
Maximum Torque (N·m)	2.23	
Rotor Inertia (10^-4·kg·m²)	0.35	0.34
Overload Ratio	3.5	

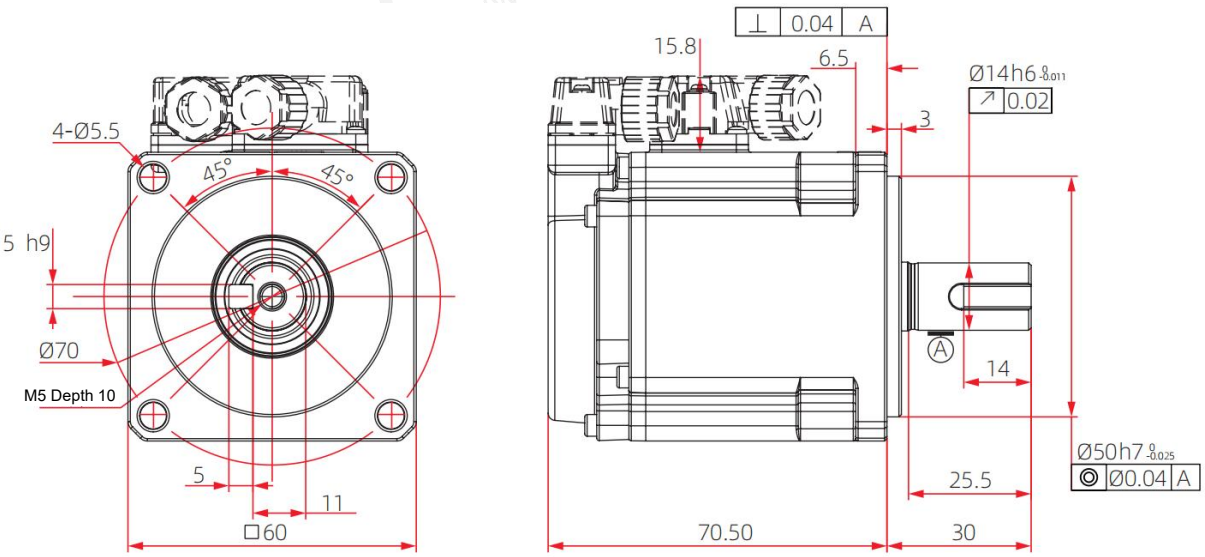
Rated Speed (rpm)	3000
Maximum Speed (rpm)	6000
Rated Voltage (V)	220

- **Product Dimensions (Unit: mm)**

HB060-00630EAD3-W (Brake)



HB060-00630EAD1-W (Non-brake)



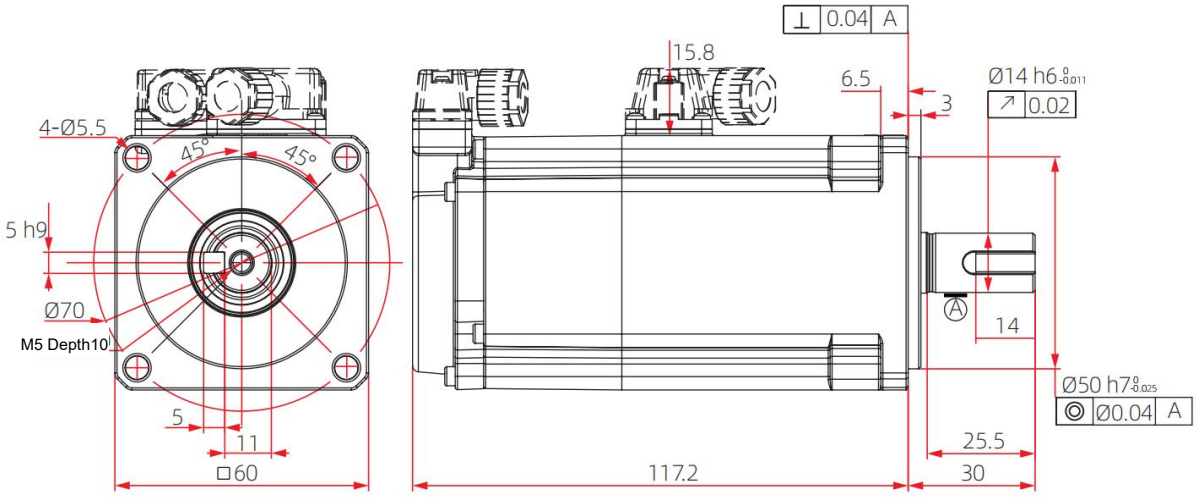
- **400W (Frame size 60)**

Project（HB-XXXXXXXXXX）	HB060-01330EAD3-W	HB060-01330EAD1-W

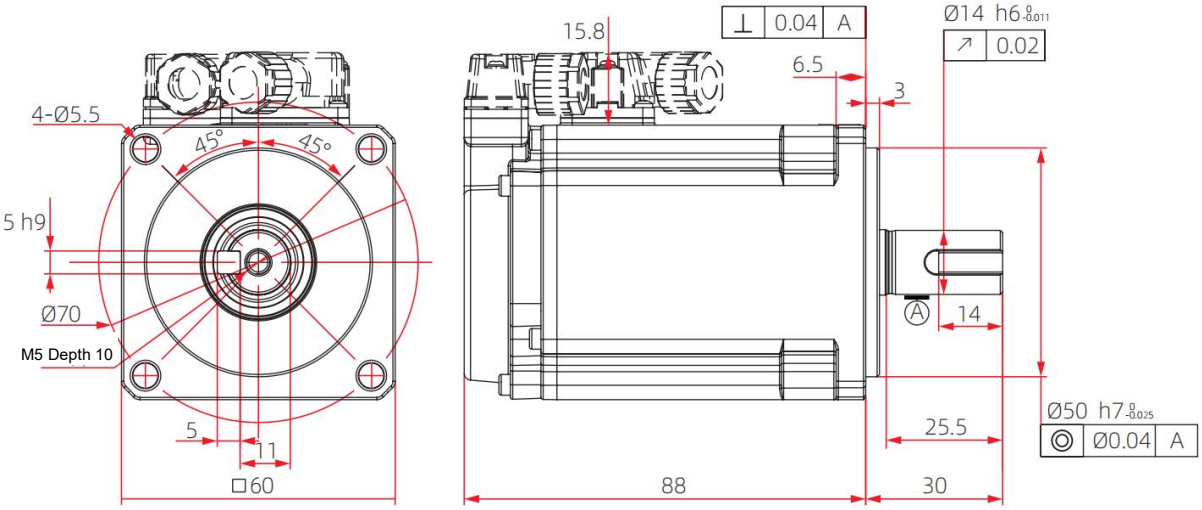
	(Brake)	(Non-brake)
Rated Power (W)	400	
Rated Current (A)	2.6	
Maximum Current (A)	8.6	
Rated Torque (N·m)	1.27	
Maximum Torque (N·m)	4.45	
Rotor Inertia (10^-4·kg·m²)	0.60	0.59
Overload Ratio	3.5	
Rated Speed (rpm)	3000	
Maximum Speed (rpm)	6000	
Rated Voltage (V)	220	

- **Product Dimensions (Unit: mm)**

HB060-01330EAD3-W (Brake)



HB060-01330EAD1-W (Non-brake)

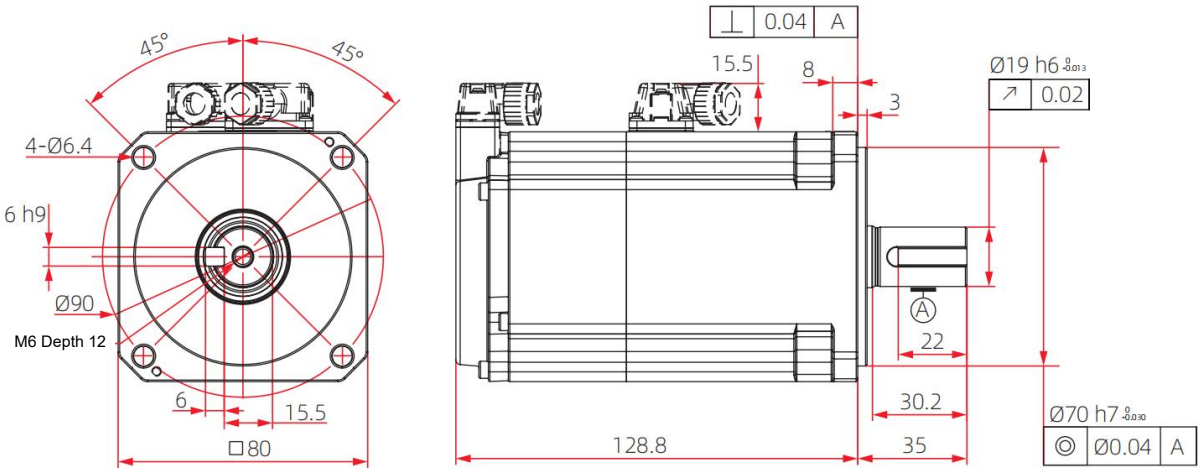


- **750W (Frame size 80)**

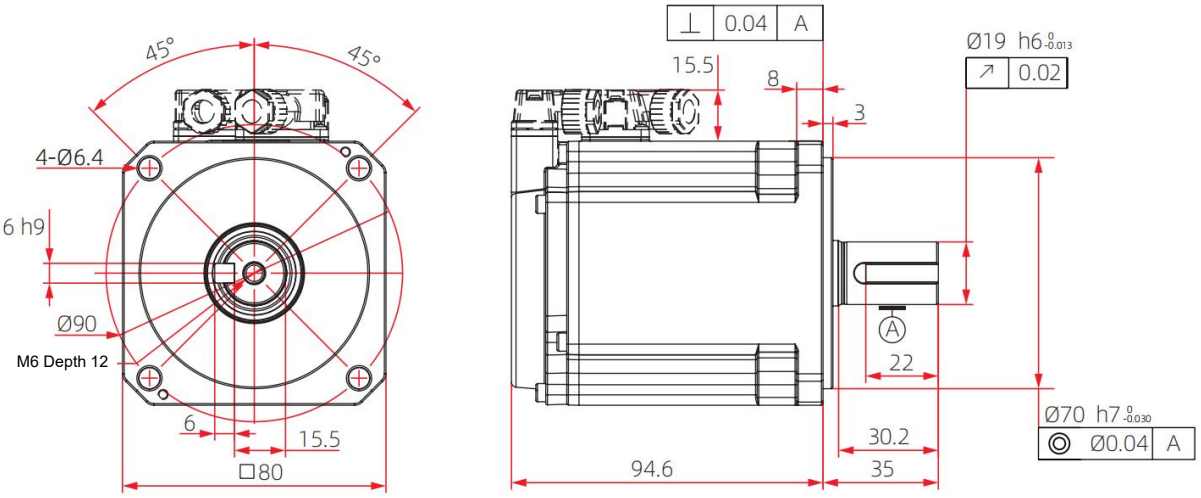
Project（HB-XXXXXXXXXX）	**HB080-02430EAD3-W (Brake)**	**HB080-02430EAD1-W (Non-brake)**
Rated Power (W)	750	
Rated Current (A)	4.60	
Maximum Current (A)	16.30	
Rated Torque (N·m)	2.39	
Maximum Torque (N·m)	8.36	
Rotor Inertia (10^-4·kg·m²)	1.77	1.72
Rated Voltage (V)	3.5	
Rated Speed (rpm)	3000	
Maximum Speed (rpm)	6000	
Rated Voltage (V)	220	

- **Product Dimensions (Unit: mm)**

HB080-02430EAD3-W (Brake)



HB080-02430EAD1-W (Non-brake)



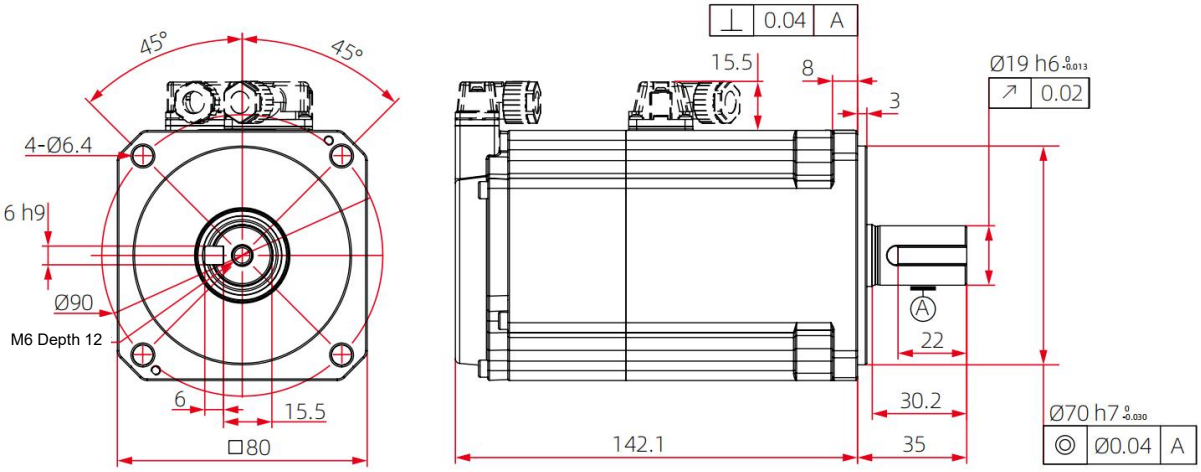
- **1kW（Frame size 80）**

Project （HB-XXXXXXXXXX）	HB080-03230EAD3-W (Brake)	HB080-03230EAD1-W (Non-brake)
Rated Power (W)	1000	
Rated Current (A)	6.3	
Maximum Current (A)	20.9	
Rated Torque (N·m)	3.18	
Maximum Torque (N·m)	11.13	
Rotor Inertia（10-4·kg·m²)	2.28	2.23

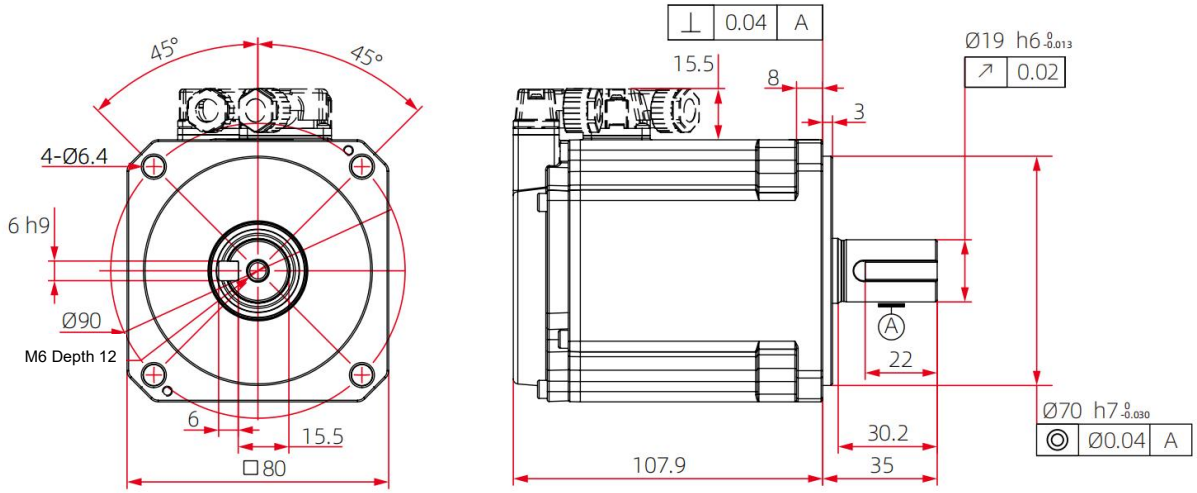
Overload Ratio	3.5
Rated Speed (rpm)	3000
Maximum Speed (rpm)	6000
Rated Voltage (V)	220

- **Product Dimensions (Unit: mm)**

HB080-03230EAD3-W (brake)



HB080-03230EAD1-W (Non-brake)



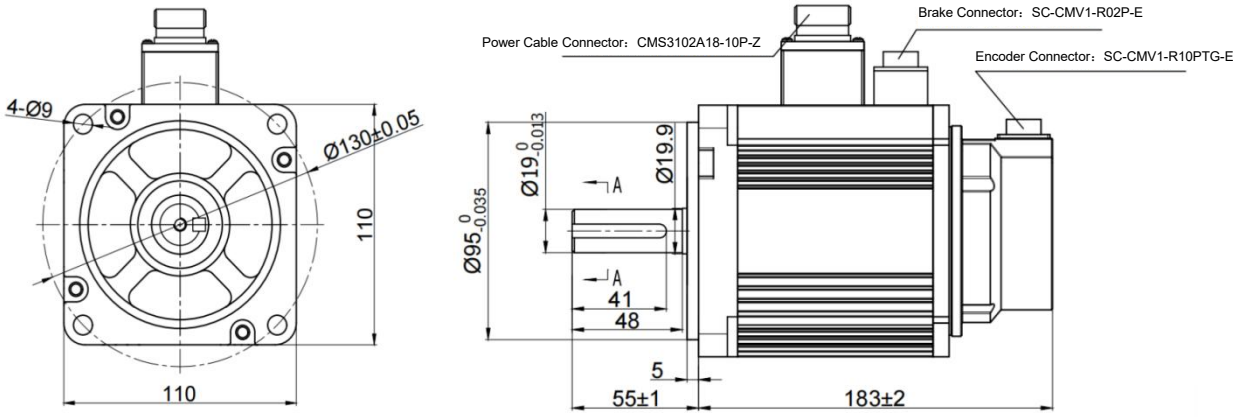
7.3.2 380V Model

- **1.3KW (Frame size 110 / 380V model)**

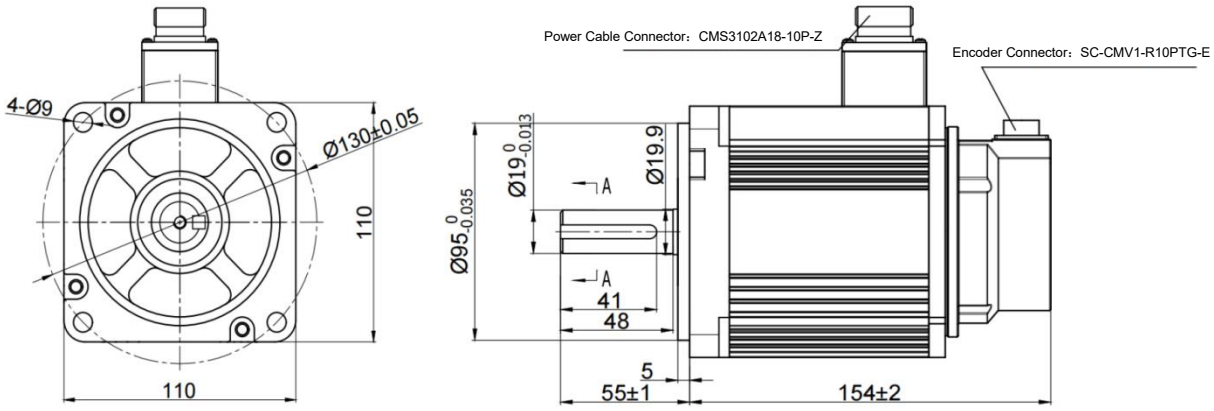
Project（HB-XXXXXXXXXX）	HB110-04230EBD3-W (Brake)	HB110-04230EBD1-W (Non-brake)
Rated Power (W)	1300	
Rated Current (A)	3	
Maximum Current (A)	9	
Rated Torque (N·m)	4.2	
Maximum Torque (N·m)	12.6	
Rotor Inertia（10-4·kg·m²)	8.51	7.87
Overload Ratio	3	
Rated Speed (rpm)	3000	
Maximum Speed (rpm)	3500	
Rated Voltage (V)	380	

- **Product Dimensions (Unit: mm)**

HB110-04230EBD3-W (Brake)



HB110-04230EBD1-W (Non-brake)

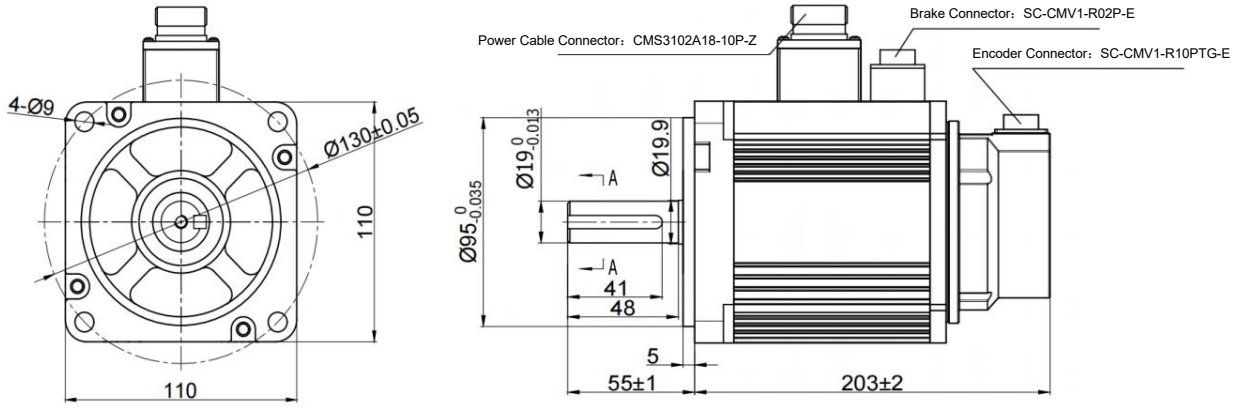


- **1.3KW (Frame size 110 / 380V model)**

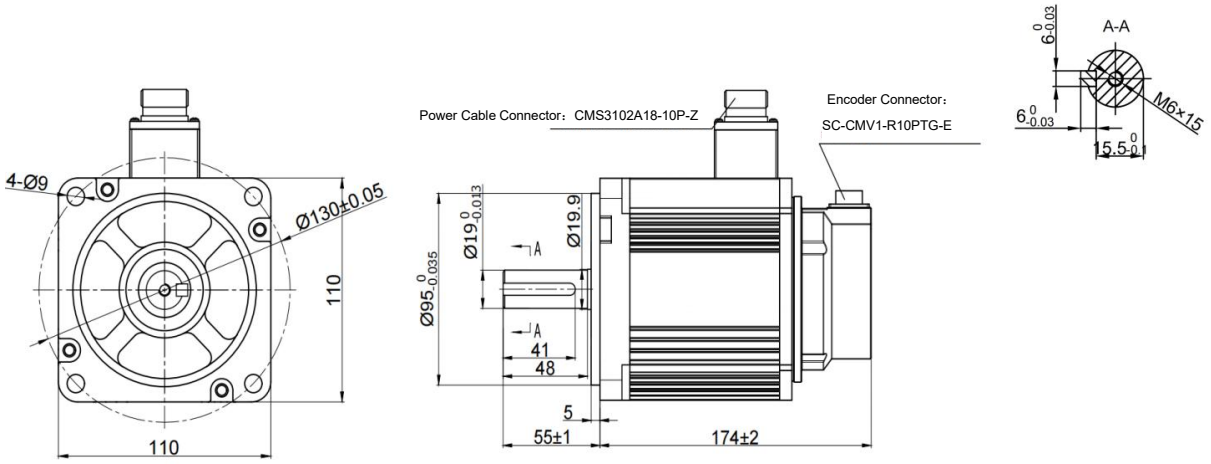
Project（HB-XXXXXXXXXX）	**HB110-06420EBD3-W (Brake)**	**HB110-06420EBD1-W (Non-brake)**
Rated Power (W)	1300	
Rated Current (A)	3.3	
Maximum Current (A)	9.9	
Rated Torque (N·m)	6.4	
Maximum Torque (N·m)	19.2	
Rotor Inertia（10-4·kg·m²)	11.25	10.61
Overload Ratio	3	
Rated Speed (rpm)	2000	
Maximum Speed (rpm)	3000	
Rated Voltage (V)	380	

- **Product Dimensions (Unit: mm)**

HB110-06420EBD3-W (Brake)



HB110-06420EBD1-W (Non-brake)



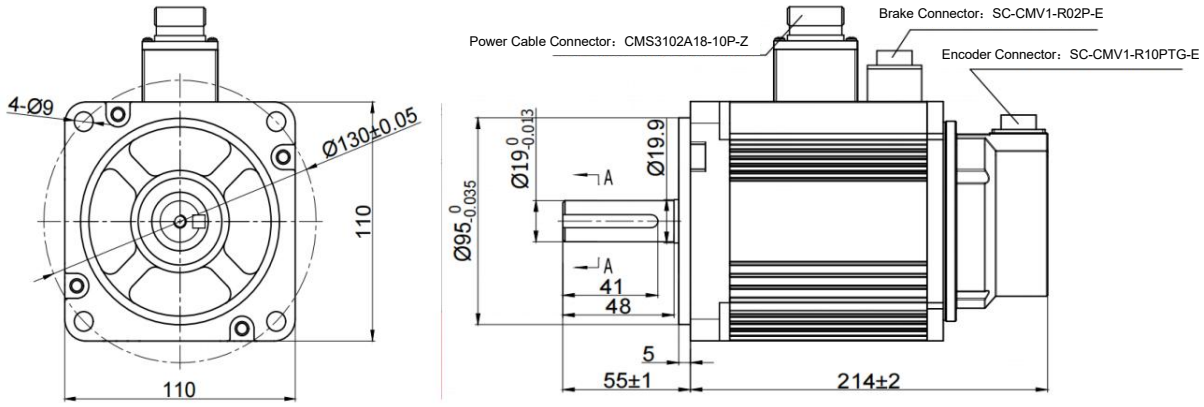
- **1.6KW (Frame size 110 / 380V model)**

Project（HB-XXXXXXXXXX）	**HB110-07520EBD3-W (Brake)**	**HB110-07520EBD1-W (Non-brake)**
Rated Power (W)	1600	
Rated Current (A)	4.6	
Maximum Current (A)	13.8	
Rated Torque (N·m)	7.5	
Maximum Torque (N·m)	22.5	
Rotor Inertia（10-4·kg·m²)	13.02	12.38
Overload Ratio	3	
Rated Speed (rpm)	2000	

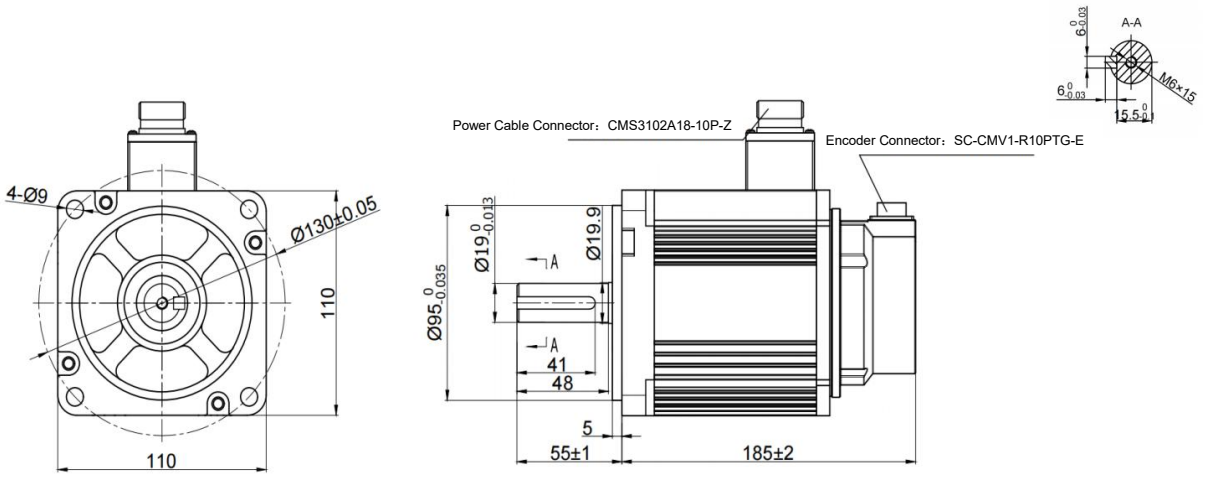
Maximum Speed (rpm)	3000
Rated Voltage (V)	380

- **Product Dimensions (Unit: mm)**

HB110-07520EBD3-W (Brake)



HB110-07520EBD1-W (Non-brake)



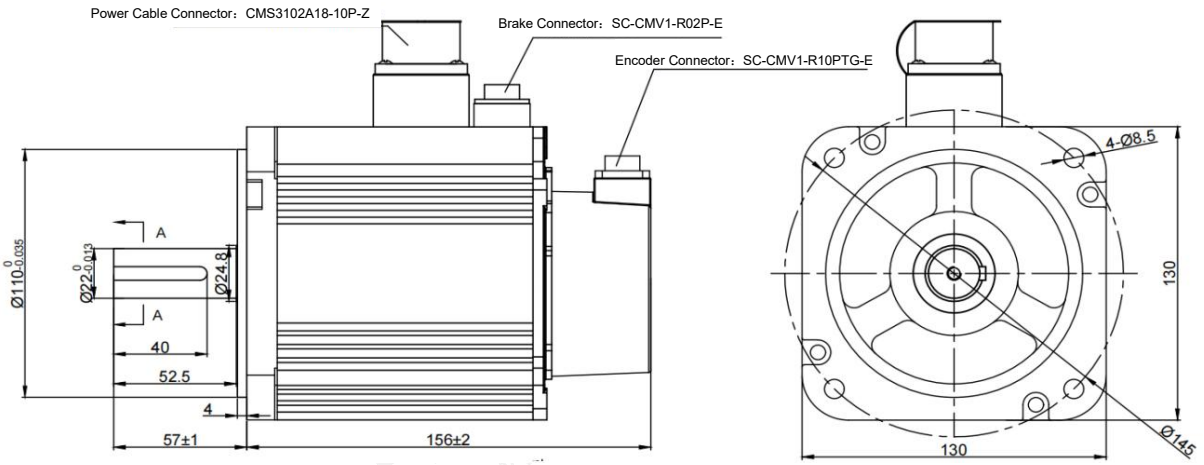
- **850W (Frame size 130 / 380V model)**

Project（HB-XXXXXXXXXX）	**HB130-05415EBD3-W (Brake)**	**HB130-05415EBD1-W (Non-brake)**
Rated Power (W)	850	
Rated Current (A)	3.5	
Maximum Current (A)	10.5	

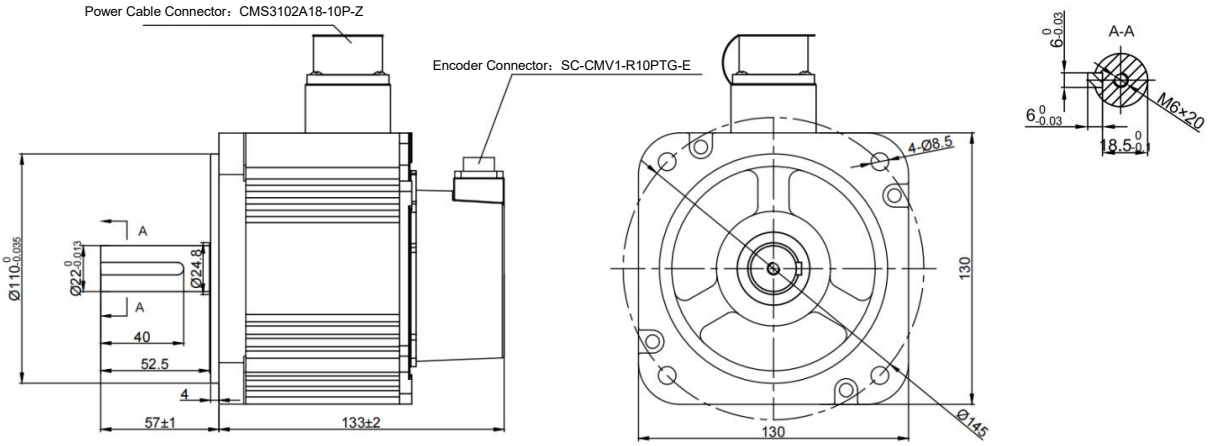
Rated Torque (N·m)	5.4	
Maximum Torque (N·m)	16.2	
Rotor Inertia（10-4·kg·m²)	13.5	11.6
Rated Speed (rpm)	1500	
Maximum Speed (rpm)	3000	
Rated Voltage (V)	380	

- **Product Dimensions (Unit: mm)**

HB130-05415EBD3-W (Brake)



HB130-05415EBD1-W (Non-brake)



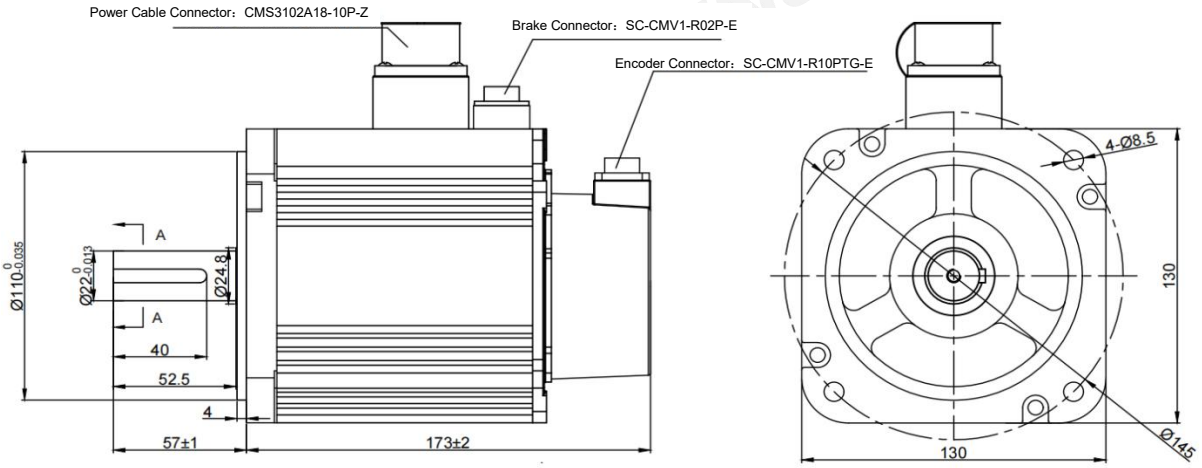
- **1.3kW (Frame size 130 / 380V model)**

Project（HB-XXXXXXXXXX）	HB130-08415EBD3-W	HB130-08415EBD1-W

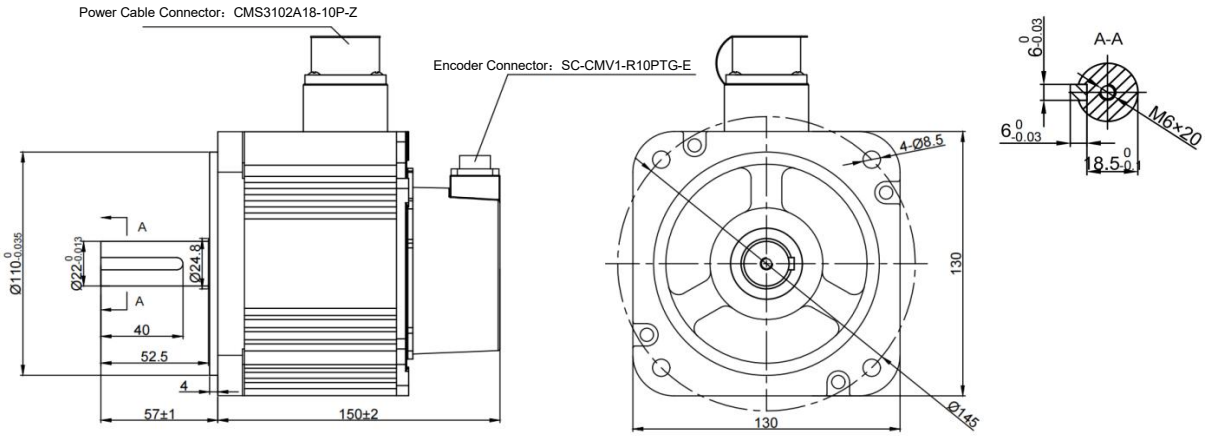
	(Brake)	(Non-brake)
Rated Power (W)	1300	
Rated Current (A)	5.2	
Maximum Current (A)	15.6	
Rated Torque (N·m)	8.4	
Maximum Torque (N·m)	25.2	
Rotor Inertia（10-4·kg·m²)	19.2	17.3
Rated Speed (rpm)	1500	
Maximum Speed (rpm)	3000	
Rated Voltage (V)	380	

- **Product Dimensions (Unit: mm)**

HB130-08415EBD3-W (Brake)



HB130-08415EBD1-W (Non-brake)

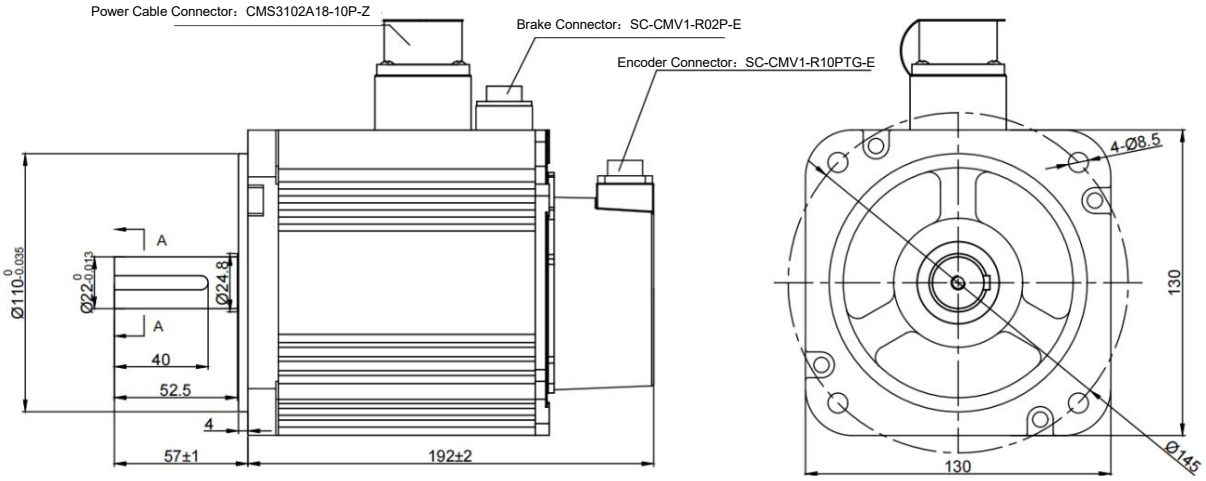


- **1.8kW (Frame size 130)**

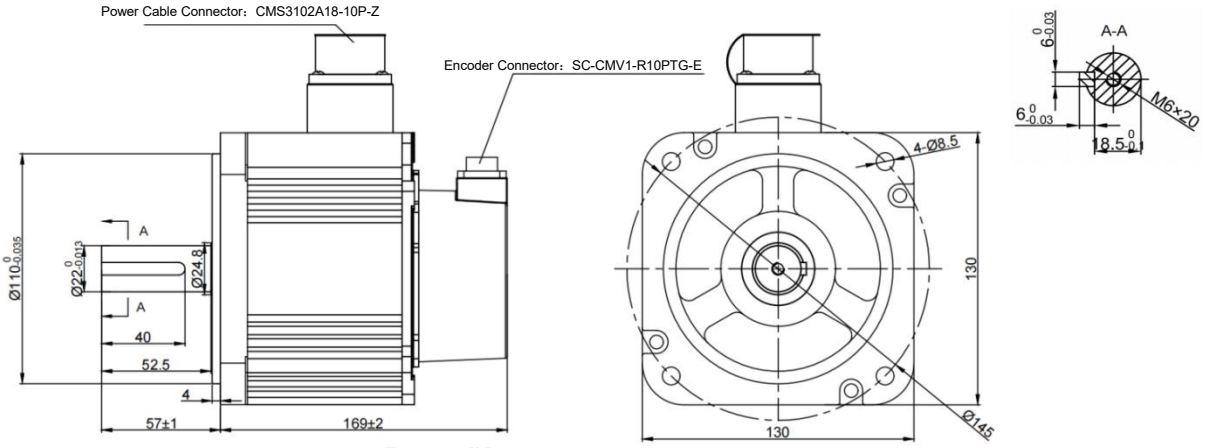
Project（HB-XXXXXXXXXX）	HB130-11515EBD3-W (Brake)	HB130-11515EBD1-W (Non-brake)
Rated Power (W)	1800	
Rated Current (A)	6.8	
Maximum Current (A)	20.4	
Rated Torque (N·m)	11.5	
Maximum Torque (N·m)	34.5	
Rotor Inertia（10-4·kg·m²)	25.6	23.7
Rated Speed (rpm)	1500	
Maximum Speed (rpm)	3000	
Rated Voltage (V)	380	

- **Product Dimensions (Unit: mm)**

HB130-11515EBD3-W (Brake)



HB130-11515EBD1-W (Non-brake)



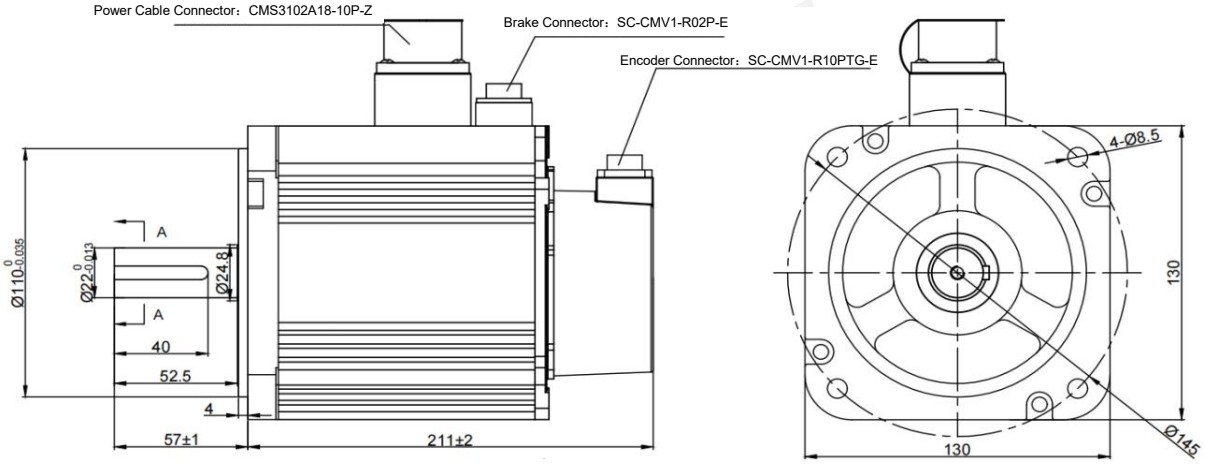
- **2.3kW (Frame size 130)**

Project（HB-XXXXXXXXXX）	**HB130-14615EBD3-W (Brake)**	**HB130-14615EBD1-W (Non-brake)**
Rated Power (W)	2300	
Rated Current (A)	9	
Maximum Current (A)	27	
Rated Torque (N·m)	14.6	
Maximum Torque (N·m)	43.8	
Rotor Inertia（10-4·kg·m²)	32.1	30.2
Rated Speed (rpm)	1500	
Maximum Speed (rpm)	3000	

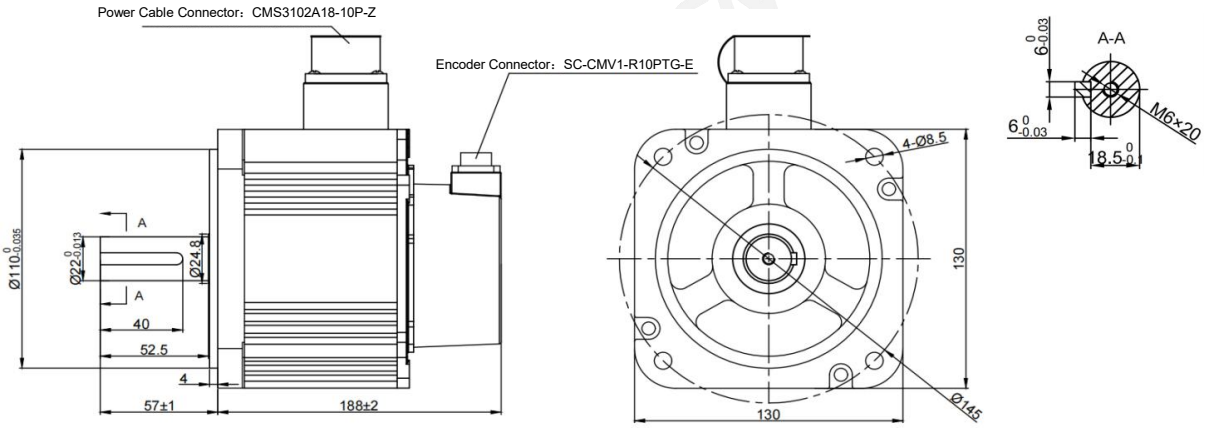
Rated Voltage (V)	380

- **Product Dimensions (Unit: mm)**

HB130-14615EBD3-W (Brake)



HB130-14615EBD1-W (Non-brake)



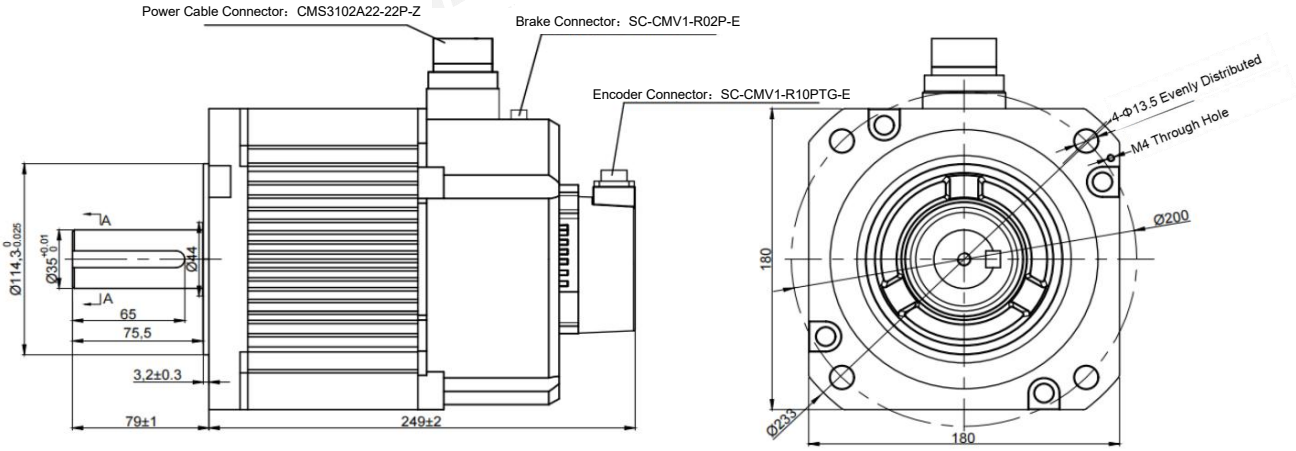
- **2.9kW (Frame size 180)**

Project（HB-XXXXXXXXXX）	**HB180-18615EBD3-W (Brake)**	**HB180-18615EBD1-W (Non-brake)**
Rated Power (W)	2900	
Rated Current (A)	11.4	
Maximum Current (A)	34.2	
Rated Torque (N·m)	18.6	

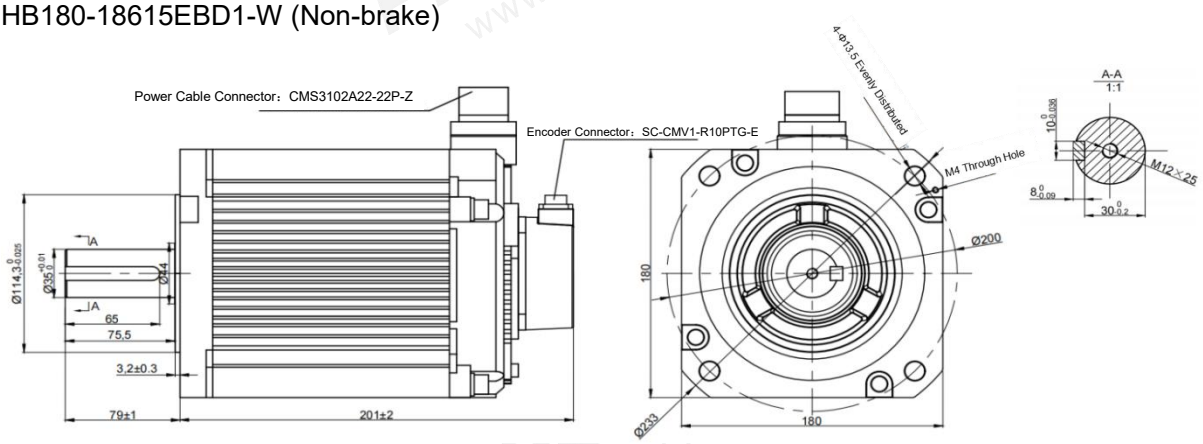
Maximum Torque (N·m)	55.8	
Rotor Inertia（10-4·kg·m²)	65.3	56.8
Rated Speed (rpm)	1500	
Maximum Speed (rpm)	3000	
Rated Voltage (V)	380	

- **Product Dimensions (Unit: mm)**

HB180-18615EBD3-W (Brake)



HB180-18615EBD1-W (Non-brake)



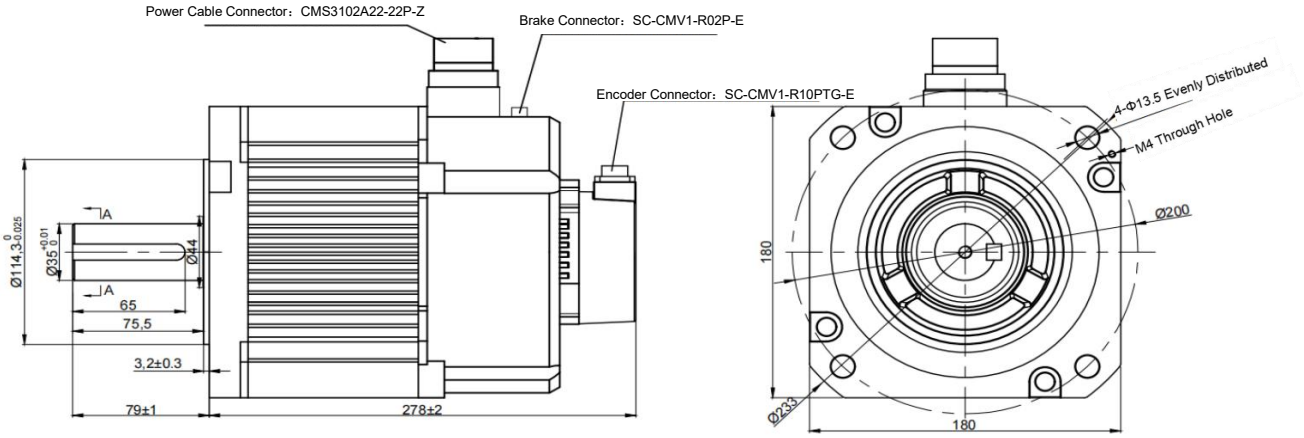
- **4.4kW (Frame size 180)**

Project（HB-XXXXXXXXXX）	**HB180-28415EBD3-W (Brake)**	**HB180-28415EBD1-W (Non-brake)**
Rated Power (W)	4400	

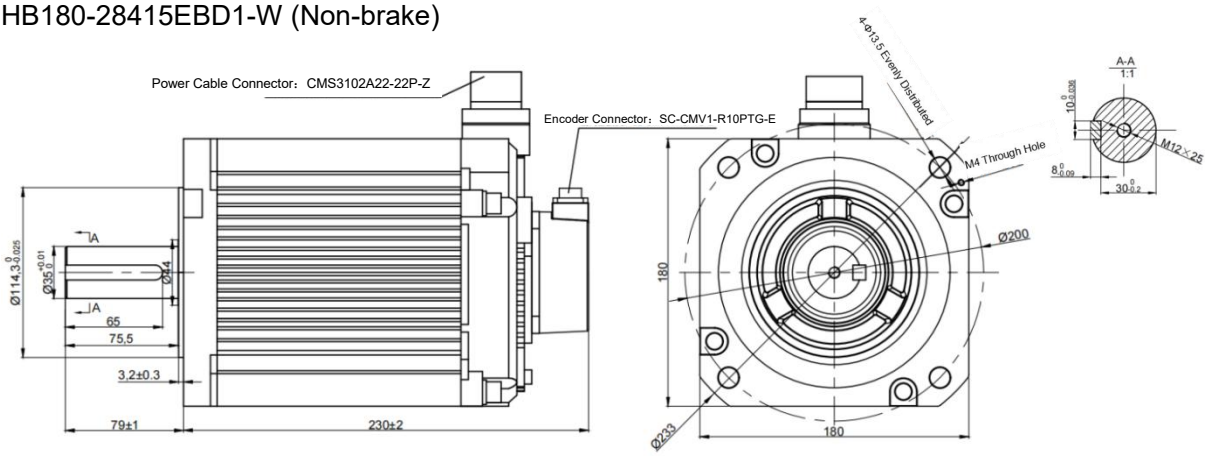
Rated Current (A)	15.5	
Maximum Current (A)	46.5	
Rated Torque (N·m)	28.4	
Maximum Torque (N·m)	85	
Rotor Inertia（10-4·kg·m²)	86	78.2
Rated Speed (rpm)	1500	
Maximum Speed (rpm)	3000	
Rated Voltage (V)	380	

- **Product Dimensions (Unit: mm)**

HB180-28415EBD3-W (Brake)



HB180-28415EBD1-W (Non-brake)

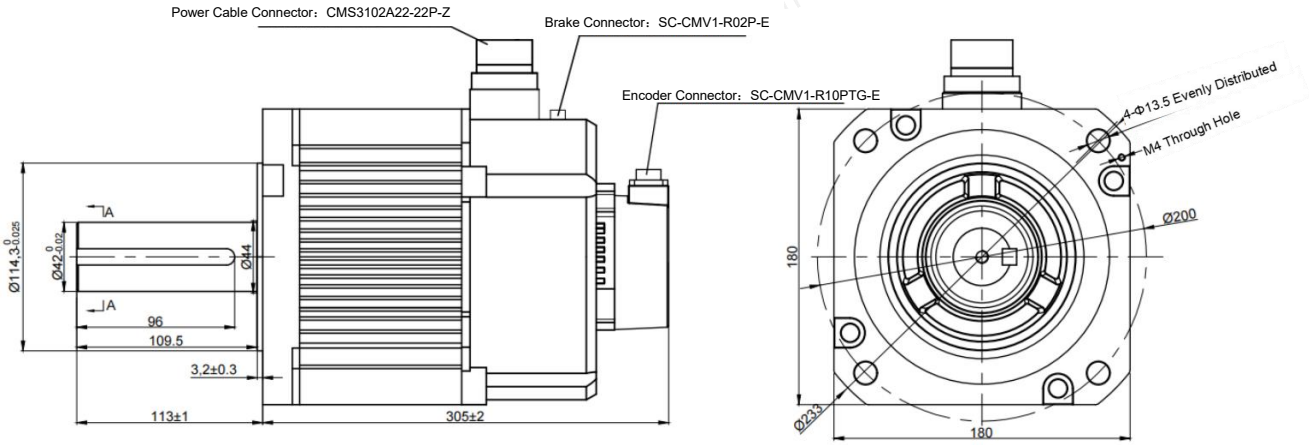


- **5.5kW (Frame size 180)**

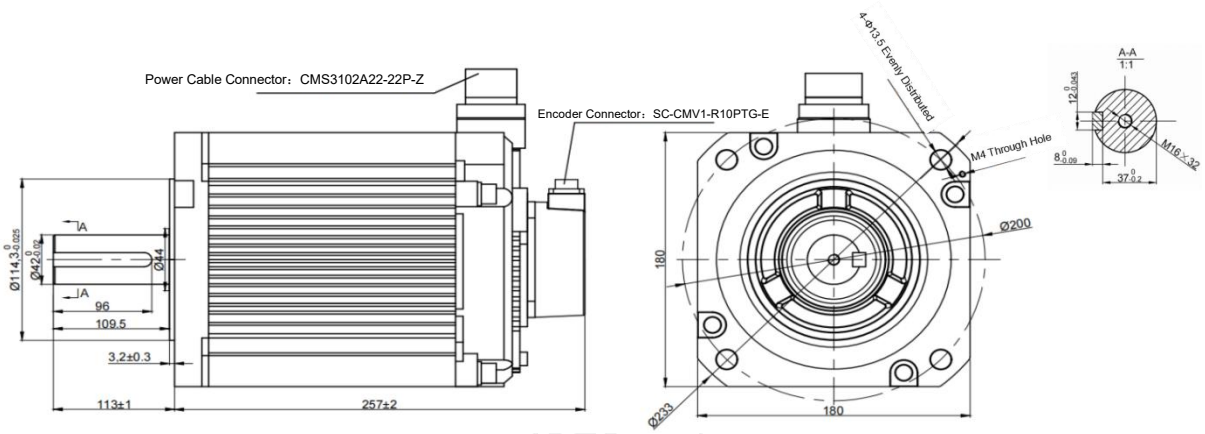
Project（HB-XXXXXXXXXX）	HB180-35015EBD3-W (Brake)	HB180-35015EBD1-W (Non-brake)
Rated Power (W)	5500	
Rated Current (A)	20.6	
Maximum Current (A)	51.5	
Rated Torque (N·m)	35	
Maximum Torque (N·m)	87.5	
Rotor Inertia（10-4·kg·m²)	118	109
Rated Speed (rpm)	1500	
Maximum Speed (rpm)	3000	
Rated Voltage (V)	380	

- **Product Dimensions (Unit: mm)**

HB180-35015EBD3-W (Brake)



HB180-35015EBD1-W (Non-brake)

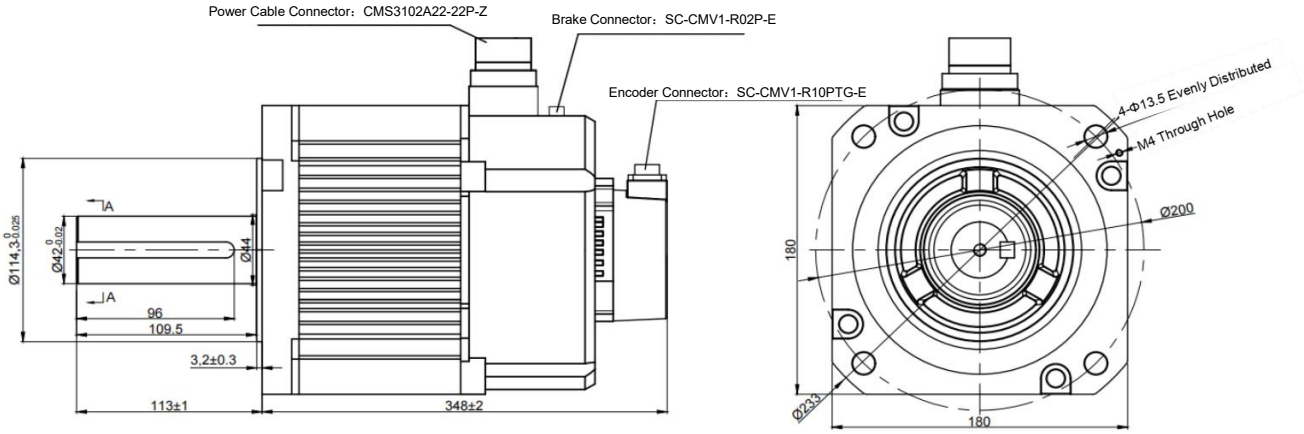


- **7.5kW (Frame size 180)**

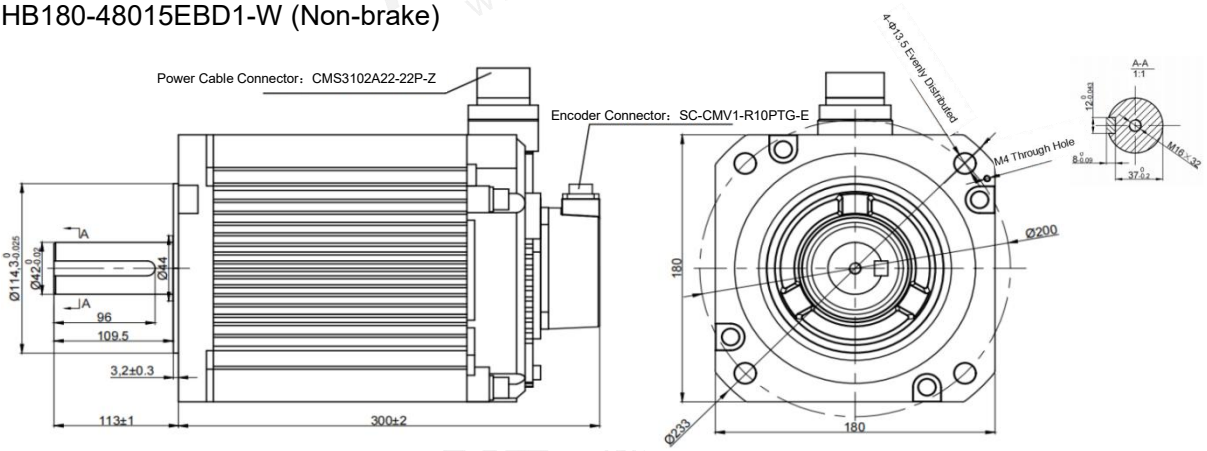
Project（HB-XXXXXXXXXX）	HB180-48015EBD3-W (Brake)	HB180-48015EBD1-W (Non-brake)
Rated Power (W)	7500	
Rated Current (A)	25.7	
Maximum Current (A)	64.2	
Rated Torque (N·m)	48	
Maximum Torque (N·m)	119	
Rotor Inertia（10-4·kg·m²)	140	130
Rated Speed (rpm)	1500	
Maximum Speed (rpm)	3000	
Rated Voltage (V)	380	

- **Product Dimensions (Unit: mm)**

HB180-48015EBD3-W (Brake)



HB180-48015EBD1-W (Non-brake)



7.3.3Machine Tool Power Head Motor

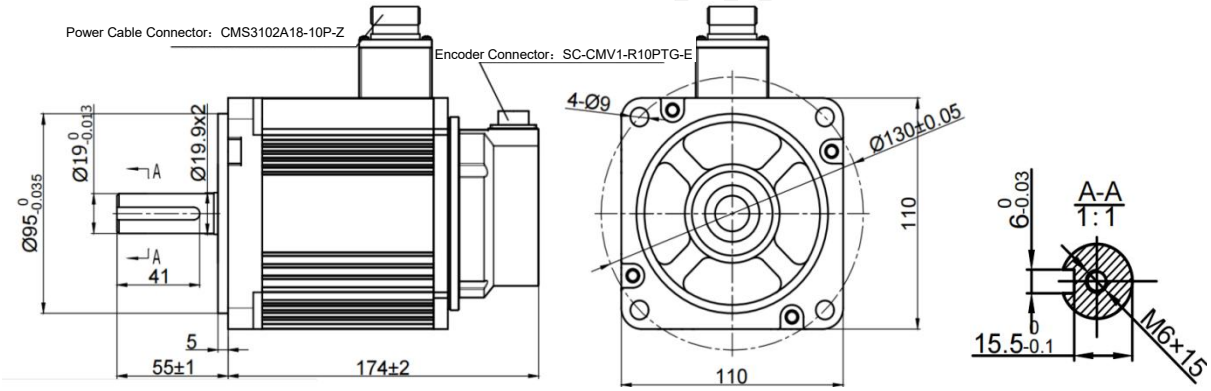
- **2kW (Frame size 110)**

Project（HB-XXXXXXXXXX）	**-**	**HB110-06430EBR1-W (Non-brake)**
Rated Power (W)	2000	
Rated Current (A)	4.6	
Maximum Current (A)	13.8	
Rated Torque (N·m)	6.4	
Maximum Torque (N·m)	19.2	
Rotor Inertia（10-4·kg·m²)	-	10.61
Rated Speed (rpm)	3000	

Maximum Speed (rpm)	4000
Rated Voltage (V)	380

- **Product Dimensions (Unit: mm)**

HB110-06430EBR1-W (Non-brake)

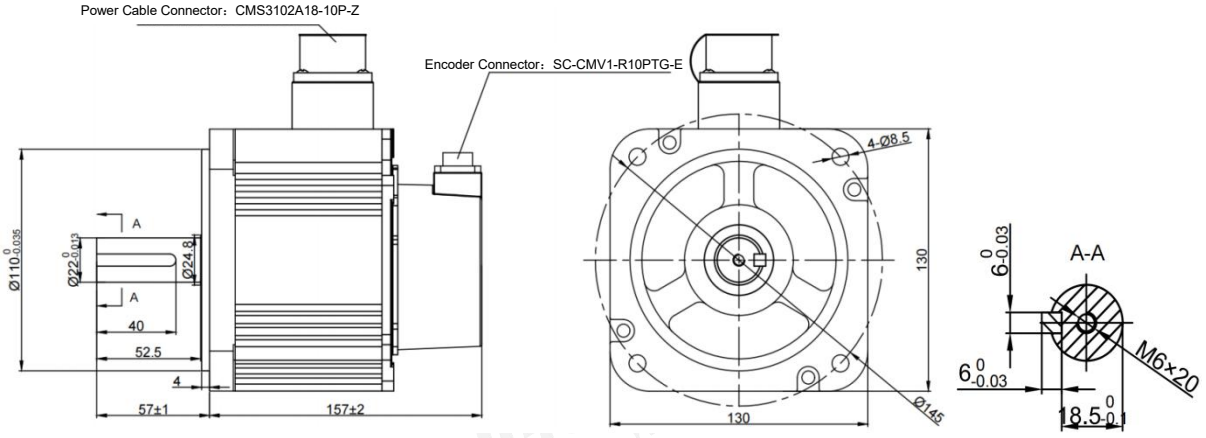


- **1.8kW (Frame size 130)**

Project（HB-XXXXXXXXXX）	**-**	**HB130-08420EBR1-W (Non-brake)**
Rated Power (W)	1800	
Rated Current (A)	6.7	
Maximum Current (A)	20.1	
Rated Torque (N·m)	8.4	
Maximum Torque (N·m)	25.2	
Rotor Inertia（10-4·kg·m²)	-	19.34
Rated Speed (rpm)	2000	
Maximum Speed (rpm)	5000	
Rated Voltage (V)	380	

- **Product Dimensions (Unit: mm)**

HB130-08420EBR1-W (Non-brake)

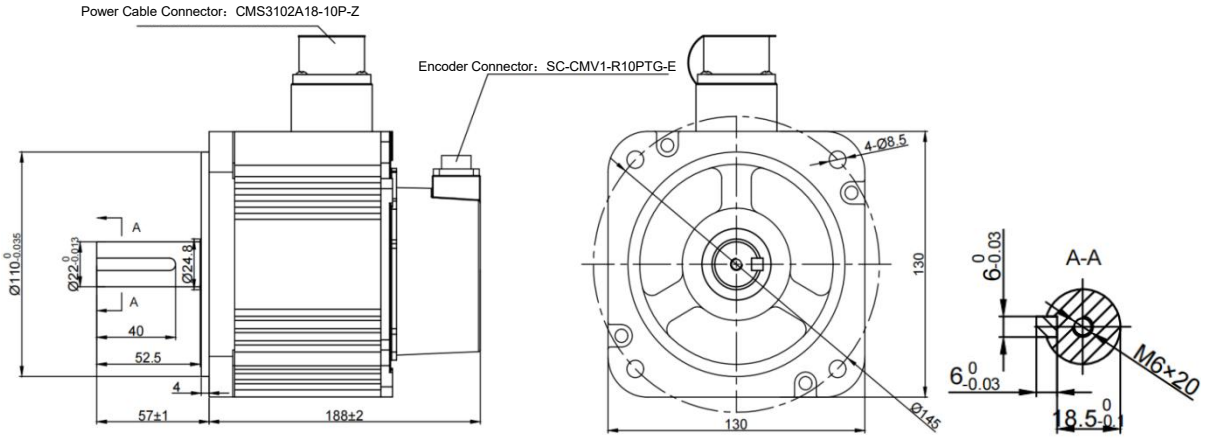


- **2.4kW (Frame size 130)**

Project（HB-XXXXXXXXXX）	**-**	**HB130-11520EBR1-W (Non-brake)**
Rated Power (W)	2400	
Rated Current (A)	8.2	
Maximum Current (A)	24.6	
Rated Torque (N·m)	11.5	
Maximum Torque (N·m)	34.5	
Rotor Inertia（10-4·kg·m²)	-	30.2
Rated Speed (rpm)	2000	
Maximum Speed (rpm)	5000	
Rated Voltage (V)	380	

- **Product Dimensions (Unit: mm)**

HB130-11520EBR1-W (Non-brake)

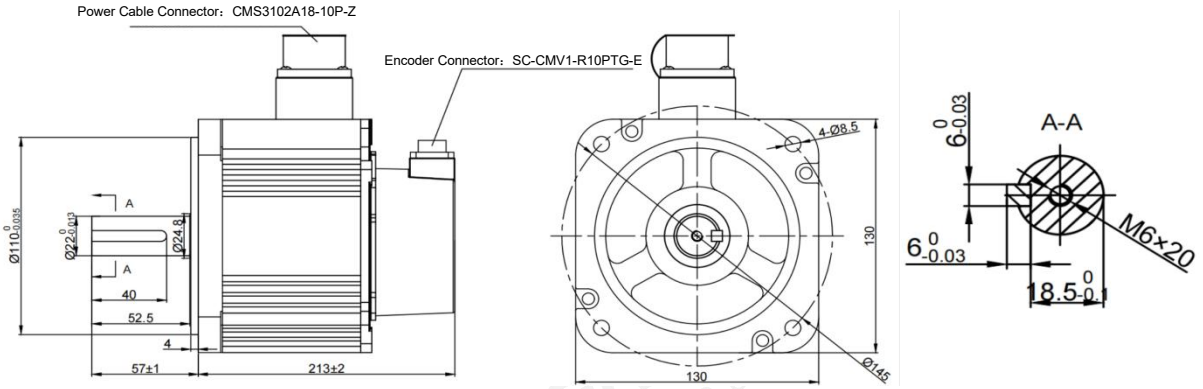


- **3.1kW (Frame size 130)**

Project（HB-XXXXXXXXXX）	**-**	**HB130-14620EBR1-W (Non-brake)**
Rated Power (W)	3100	
Rated Current (A)	10.2	
Maximum Current (A)	30.6	
Rated Torque (N·m)	14.6	
Maximum Torque (N·m)	43.8	
Rotor Inertia（10-4·kg·m²)	-	38.9
Rated Speed (rpm)	2000	
Maximum Speed (rpm)	5000	
Rated Voltage (V)	380	

- **Product Dimensions (Unit: mm)**

HB130-14620EBR1-W (Non-brake)

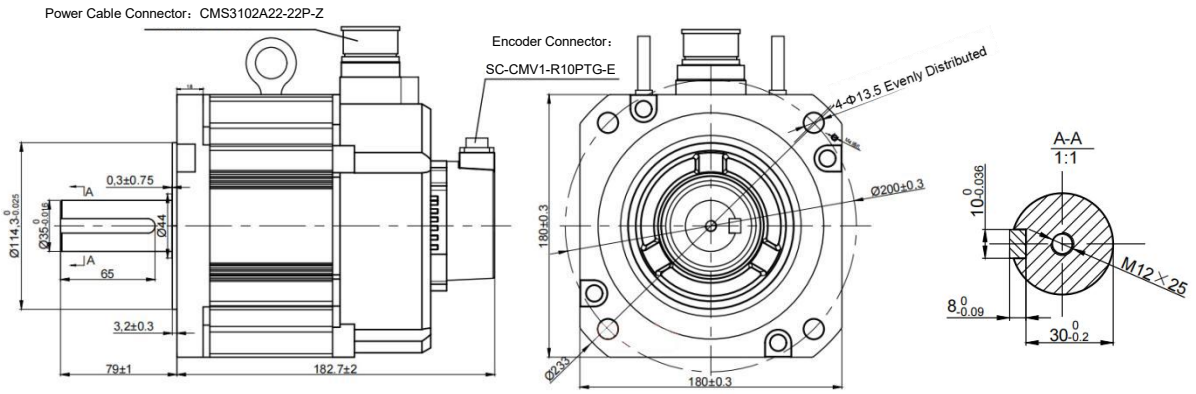


- **4.8kW (Frame size 180)**

Project（HB-XXXXXXXXXX）	**-**	**HB180-18625EBD1-W (Non-brake)**
Rated Power (W)	4800	
Rated Current (A)	17.5	
Maximum Current (A)	52.5	
Rated Torque (N·m)	18.6	
Maximum Torque (N·m)	55.8	
Rotor Inertia（10-4·kg·m²)	-	47.4
Rated Speed (rpm)	2500	
Maximum Speed (rpm)	4500	
Rated Voltage (V)	380	

- **Product Dimensions (Unit: mm)**

HB180-18625EBD1-W (Non-brake)

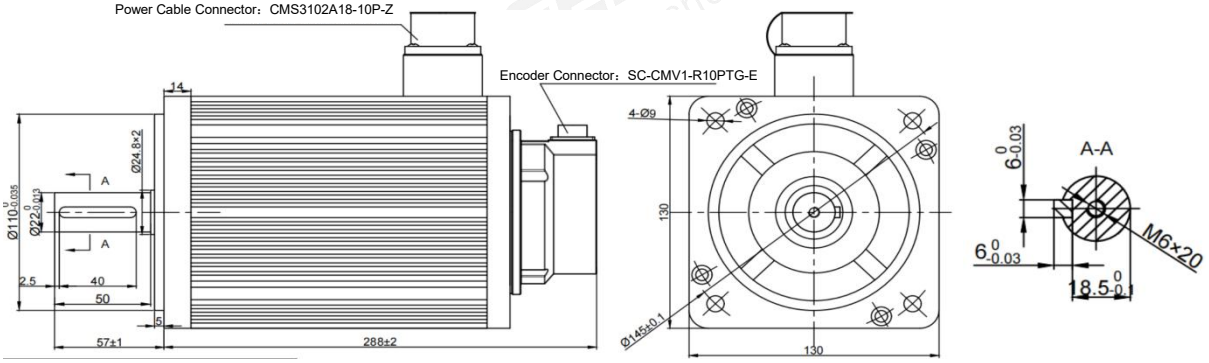


- **3.6kW (Frame size 130)**

Project（HB-XXXXXXXXXX）	**-**	**HB130-23015EBR1-W (Non-brake)**
Rated Power (W)	3600	
Rated Current (A)	12.5	
Maximum Current (A)	25	
Rated Torque (N·m)	23	
Maximum Torque (N·m)	46	
Rotor Inertia（10-4·kg·m²)	-	43.3
Rated Speed (rpm)	1500	
Maximum Speed (rpm)	3000	
Rated Voltage (V)	380	

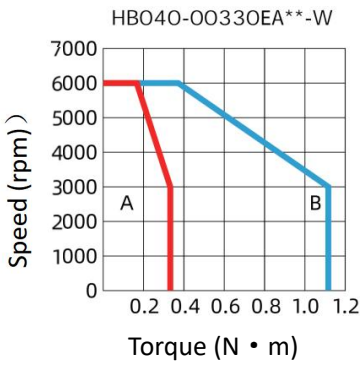
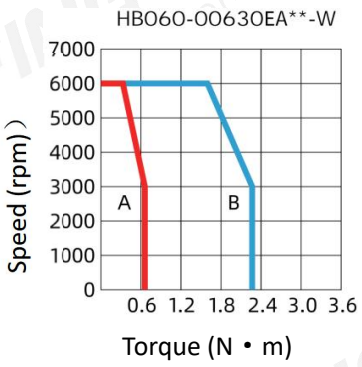
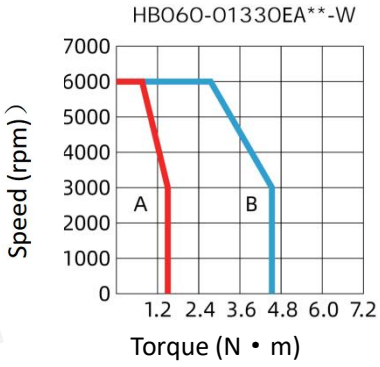
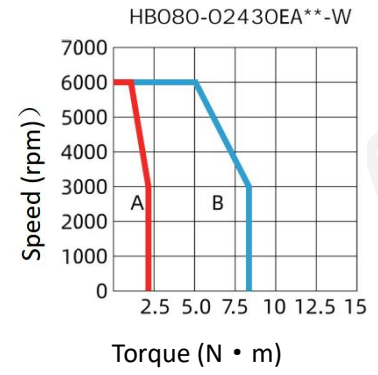
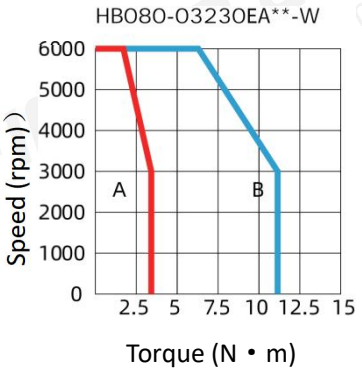
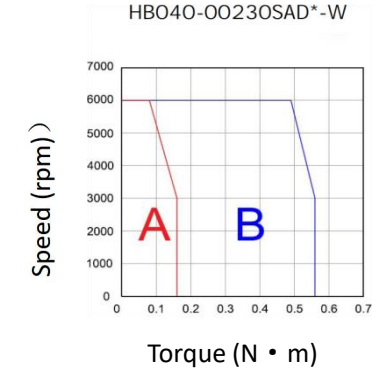
- **Product Dimensions (Unit: mm)**

HB130-23015EBR1-W (Non-brake)



8.HB Motor Torque-Speed Characteristics

8.1 220V Model

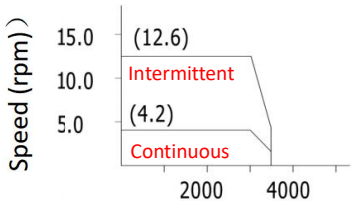
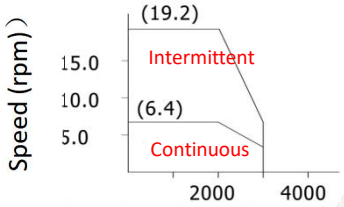
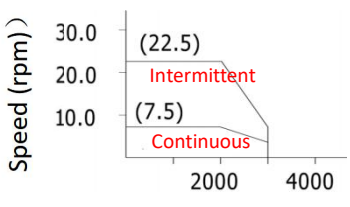
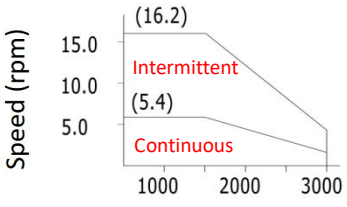
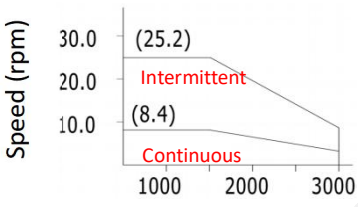
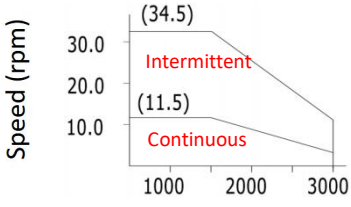
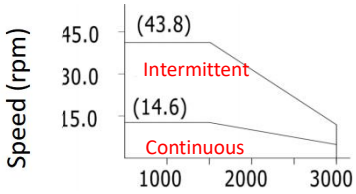
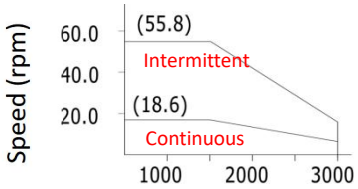
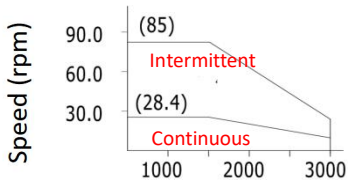
100W (Frame size 40)	200W（100W (Frame size 40）	400W（Frame size 60）
		
750W（Frame size 80）	**1000W（Frame size 80）**	**50W（Frame size 40）**
		

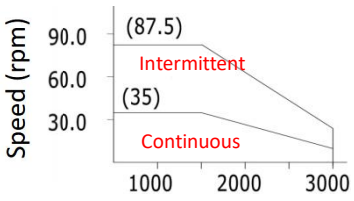
A ——— Continuous Operating Area

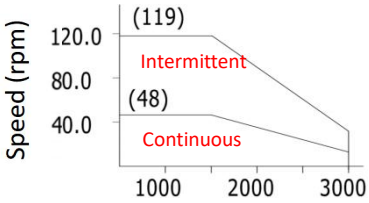
B ——— Short-Time Operating Area

8.2 380V Model

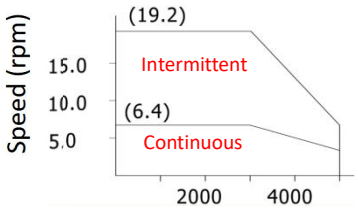
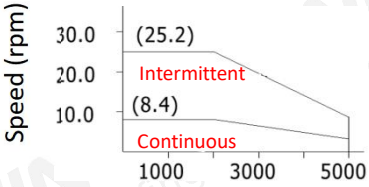
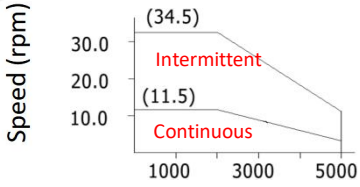
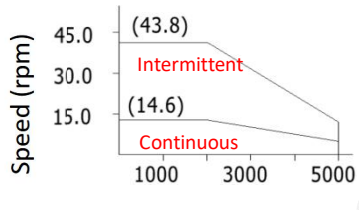
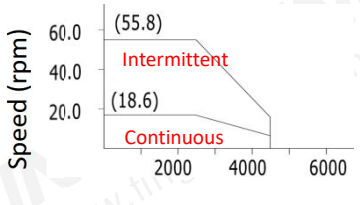
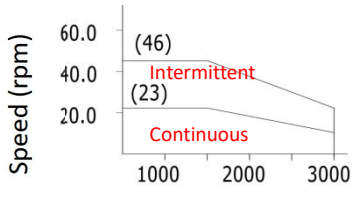
1300W （Frame size 110/3000rpm）	1300W （Frame size 110/2000rpm）	1600W （Frame size 110）
HB110-04230EBD*-W	HB110-06420EBD*-W	HB110-07520EBD*-W

		
850W **（Frame size 130）**	**1300W** **（Frame size 130）**	**1800W** **（Frame size 130）**
HB130-05415EBD*-W	**HB130-08415EBD*-W**	**HB130-11515EBD*-W**
		
2300W **（Frame size 180）**	**2900W** **（Frame size 180）**	**4400W** **（Frame size 180）**
HB130-14615EBD*-W	**HB180-18615EBD*-W**	**HB180-28415EBD*-W**
		
5500W **（Frame size 180）**	**7500W** **（Frame size 180）**	
HB180-35015EBD*-W	**HB130-14615EBD*-W**	





8.3 Machine Tool Power Head Motor — 380V Model

2000W (Frame size 110 / 3000 rpm)	1800W (Frame size 130 / 2000 rpm)	2400W (Frame size 130 / 2000 rpm)
HB110-06430EB*1-W	HB130-08420EBR1-W	HB130-11520EBR1-W
		
2100W （130 Frame size/2000rpm）	4800W （180 Frame size/2500rpm）	3600W （130 Frame size/1500rpm）
HB130-14620EBR1-W	HB180-18625EBD1-W	HB130-23015EBR1-W
		

9.Product Selection

9.1 High-Precision Servo Motors

HB series, enhancing dynamic response capability.

- **Model Description**

HB-060-00615SAD1-WS

HB: [Product Series] HB series motors

060: [Flange Size] 40: 40mm; 60: 60mm; 80: 80mm; 110: 110mm; 130: 130mm

006: [Rated Torque] 004: 0.32 N·m; 006: 0.64 N·m; 013: 1.27 N·m; 350: 35.0 N·m

15: [Rated Speed] 15: 1500 rpm; 20: 2000 rpm; 40: 4000 rpm

S: [Inertia] S: Low inertia; E: High inertia; H: Ultra-high inertia

A: [Voltage Level] A: 220V; B: 380V

D: [Encoder Type] D: 23BTT multi-turn absolute (optical encoder); R: 17BIT multi-turn absolute (magnetic encoder)

1: [Shaft End Type] 1: Keyed shaft without brake; 2: Plain shaft without brake; 3: Keyed shaft with brake; 4: Plain shaft with brake

W: [Protection Level] W: IP6; none: IP65

S: [Special Customization] F: With fan; S: Customized shaft (shortened); P: Customized shaft (thinned)

9.2 High-Performance Servo Drives

F0* series, optimized performance, widely applicable.

- **Model Description**

F0*N-3R5B-2-STO

F0*: [Product Series] FO1/F02 series servo drives

N: [Product Type] N: EtherCAT bus Type

3R5: [Rated Current] 03: 3A; 021: 21A; 3R5: 3.5A

B: [Voltage Level] A: 220V; B: 380V

2: [Number of Axes] Default: Single-axis drive; 2/3/4: Dual/Triple/Quad-axis drive (not supported yet)

STO: [Non-standard Function Type] Default: Standard model; STO: Safe Torque Off function

10. Configuration Relationship Between Drive and Motor

- **Standard 220V Models**

<table>
<tr><th></th><th colspan="2">Type A</th><th>Type B</th></tr>
<tr><td rowspan="2">Drive Model F01N-</td><td colspan="2">Single-phase 220V</td><td>Single-phase 220V</td></tr>
<tr><td>1R6A</td><td>2R8A</td><td>5R5A</td></tr>
<tr><td rowspan="8">Motor Model HB Series</td><td>50W</td><td>400W</td><td>750W</td></tr>
<tr><td>HB040-00230SAD1-W
HB040-00230SAD3-W</td><td rowspan="7">HB060-01330EAD1-W
HB060-01330EAD3-W
HB060-00630EAD1-W
HB060-00630EAD3-W</td><td rowspan="7">HB080-02430EAD1-W
HB080-02430EAD3-W</td></tr>
<tr><td>100W</td></tr>
<tr><td>HB040-00330EAD1-W
HB040-00330EAD3-W</td></tr>
<tr><td>200W</td></tr>
<tr><td colspan="2"></td></tr>
<tr><td colspan="2"></td></tr>
<tr><td colspan="2"></td></tr>
</table>

	Type C	Type D
Drive Model F01N-	Single-phase /Three-phase 220V	Single-phase /Three-phase 220V
	7R6A	-
Motor Model HB Series	1KW	
	HB080-03230EAD1-W HB080-03230EAD3-W	

- **Standard 380V Models**

	Type C		Type D	
Drive Model F01N-	Three-phase 380V		Three-phase 380V	
	3R5B	5R4B	8R4B	012B
Motor Model HB Series	1.3KW	1.3kW	1.8kW	2.3kW
	HB110-04230EBD1-W HB110-04230EBD3-W HB110-06420EBD1-W HB110-06420EBD3-W	HB130-08415EBD1-W HB130-08415EBD3-W	HB130-11515EBD1-W HB130-11515EBD3-W	HB130-14615EBD1-W HB130-14615EBD3-W
	0.85kW	1.6kW		2.9kW
	HB130-05415EBD1-W HB130-05415EBD3-W	HB110-07520EBD1-W HB110-07520EBD3-W		HB180-18615EBD1-W HB180-18615EBD3-W

	Type E		
Drive Model F01N-	Three-phase 380V		
	017B	021B	026B
Motor Model HB Series	4.4kW	5.5kW	7.5kW
	HB180-28415EBD1-W HB180-28415EBD3-W	HB180-35015EBD1-W HB180-35015EBD3-W	HB180-48015EBD1-W HB180-48015EBD3-W

- **Machine Tool Power Head Motor**

	Type C	Type D	
Drive Model F01N-	Three-phase 380V	Three-phase 380V	
	5R4B	8R4B	012B
Motor Model HB Series	2kW	1.8kW	3.1KW
	HB110-06430EBR1-W	HB130-08420E BR1-W	HB130-14620E BR1-W
		2.4kw	3.6KW
		HB130-11520EB R1-W	HB130-23015E BR1-W

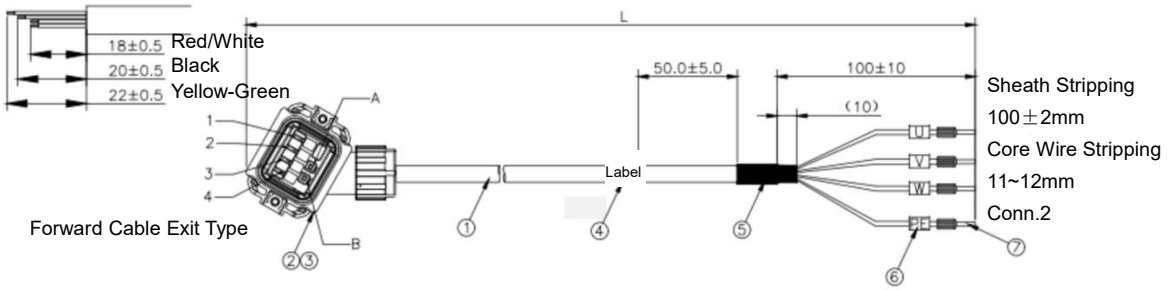
	Type E
Drive Model F01N-	Three-phase 380V
	021B
Motor Model HB Series	4.8kW
	HB180-18625EBD1-W

Attached: Cable Specification for Accessories

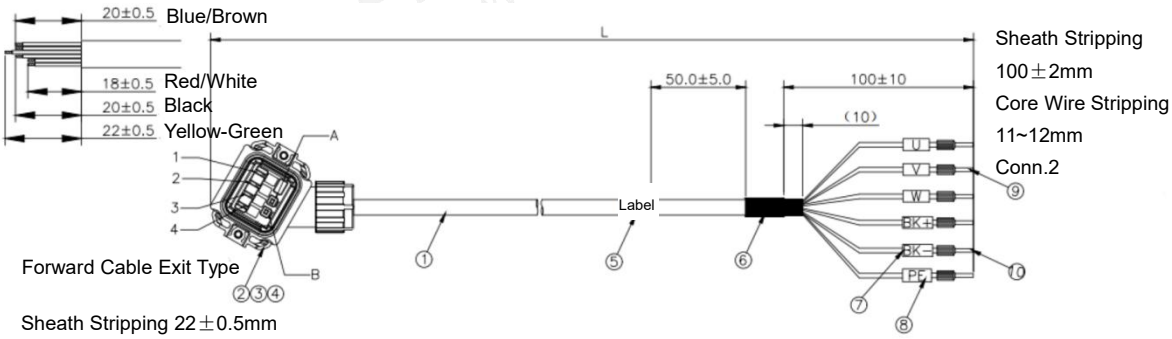
Power cord								
HB Power Line Naming Convention								
M	**B**	**4D**	**B4**	**-**	**G**	**150**	**-**	**05**
Wire category	**Motor type**	**Motor side power line plug**	**Drive side power line plug**		**Wire netting material**	**Wire specification (Conductor cross-sectional area)**		**Wire length**
Power line	B: HB series motors	6A: 6-core HA/HB through-hole plug (4-core power;2-core brake)	N: No plugs, terminal wire connection (U-shaped terminals + O-shaped terminals)		T: Anti-corrosion and high-temperature oil-resistant cable tray (Bend radius ≥ 7.5D)	050:0.5mm²;40/60/80 flange motor		03：3M
		6C: 6-core HA/HB through-hole plug (4-core power;2-core floating)	B4: Standard needle-shaped terminals (with PE as the needle type)		G: Ordinary cable tray (TRVV)			05：5M
		4D: Three bamboo 4-core power plug (HB110-130 flange motor)			Default: Non-cable tray (RRVV)	150:1.5mm²; 110-130 inch flange motor, 180 inch flange 2.9KW motor		10：10M
		4E: Three bamboo 4-core power plug (HB180 flange motor)				220：2.2mm²;180 mm diameter 4.4kW motor		
						350:3.5mm²;180 flange (5.5 - 7.5		

						kw)		

Reference example picture of cable appearance (40-80 flange)



Sheath Stripping 22±0.5mm Core Wire Stripping 2.5~3mm Conn.1

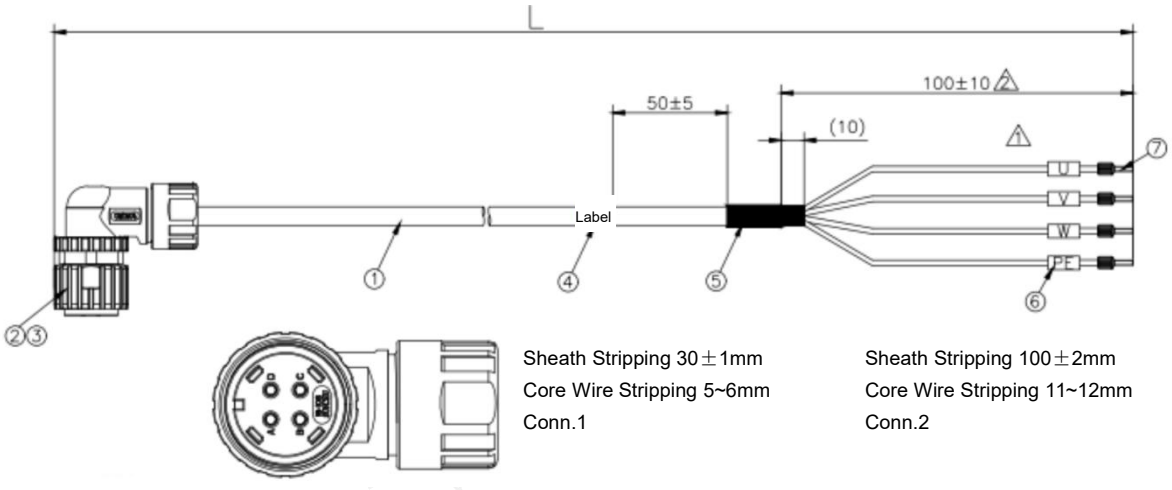


Sheath Stripping 22±0.5mm

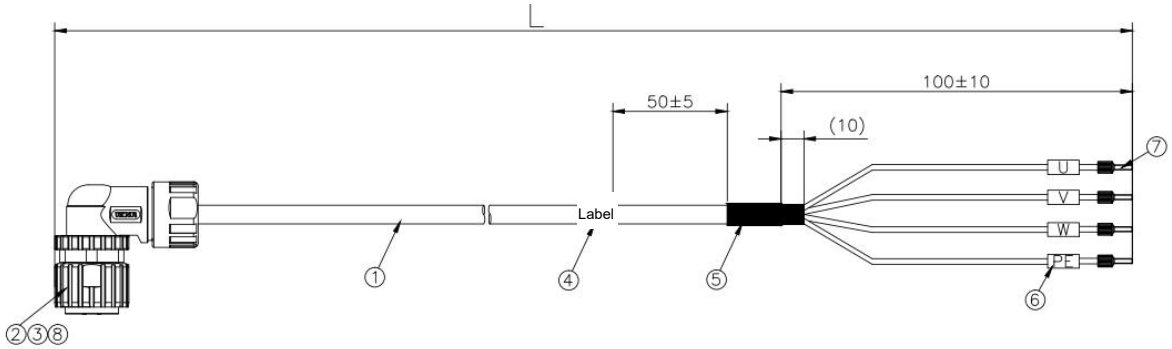
Red, White, Black, Yellow-Green Core Wire Stripping 2.5~3mm Blue, Brown Core Wire Stripping 1.5±0.2mm Conn.1

Reference example picture of cable appearance（110-180 flange）

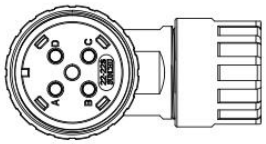
Connector Orientation Diagram



Connector Orientation Diagram

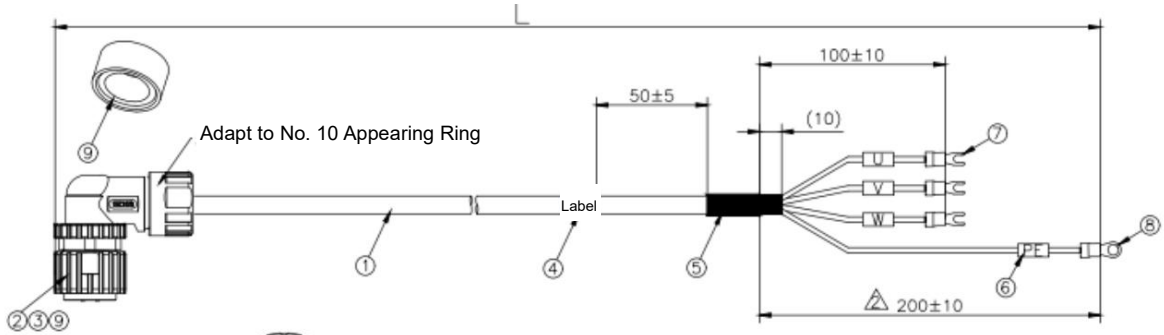


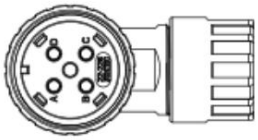
Sheath Stripping 30±1mm
Core Wire Stripping 5~6mm
Conn.1



Sheath Stripping 100±2mm
Core Wire Stripping 11~12mm
Conn.2

Connector Orientation Diagram





Sheath Stripping 30±1mm
Core Wire Stripping 5~6mm
Conn.1

Sheath Stripping 200±2mm
Red, White, Black Core Wires Retained 100mm
Core Wire Stripping 6~7mm
Conn.2

Connector Orientation Diagram

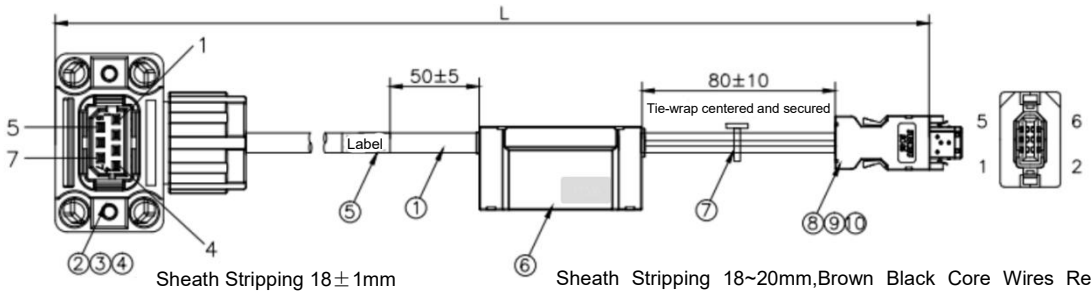
Encoder cable

HB Encoder Cable Naming Rules

E	B	10B	3E	-		3P	-	05
Wire type category	**Motor type**	**Motor side encoder cable connector**	**Encoder plug on the drive side**		**Wire netting material**	**Wire specification**		**Wire length**
Encoder cable	B: HB series	7B: HB motor series	3E: F01 series drives		T: Anti-corrosion and	3P: Absolute Value		03：3M

	motors	40-80 flange Direct-insert motor 7-pin plug	6-pin absolute value encoder plugs		high-temperature oil-resistant drag chain (bending radius ≥ 7.5D)	with Battery Box Cable		
		10B: HB motor series 110/130/180 flange, 10-pin plug			G: Ordinary flexible conduit (TRVV)			05：5M
					Default: Non-strapline wire (RVV)			10：10M

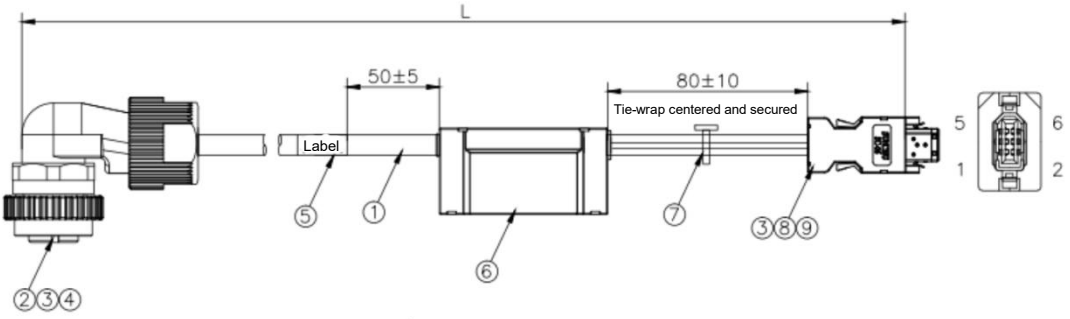
Reference example picture of cable appearance (40-80 flange)



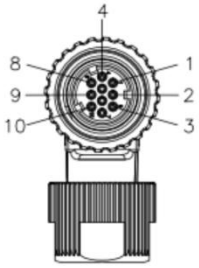
Sheath Stripping 18±1mm
Core Wire Stripping 1.5±0.2mm
Conn.1

Sheath Stripping 18~20mm,Brown Black Core Wires Retained 10~12mm,Core Wire Stripping 4~5mm,Other Core Wire Stripping 2~3mm,Conn.2

Reference example picture of cable appearance（110-180 flange）



Sheath Stripping 25±1mm
Core Wire Stripping 2~3mm
Conn.1



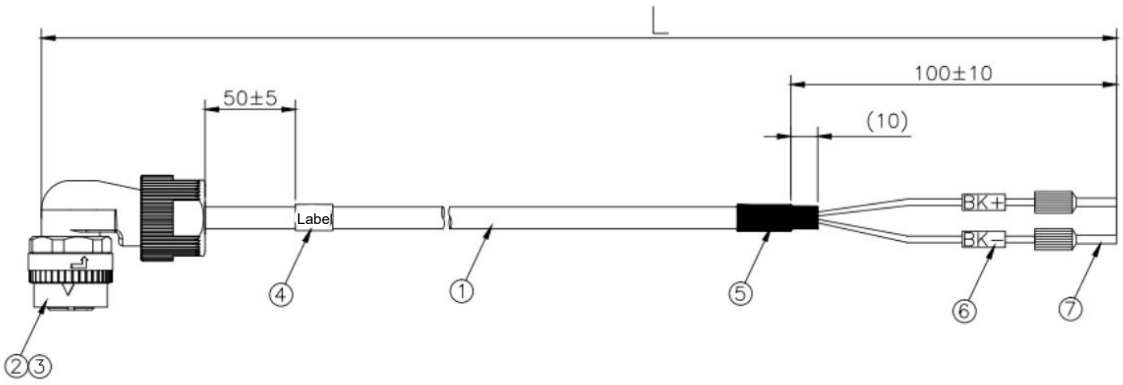
Sheath Stripping 18~20mm
Brown Black Core Wires Retained 10~12mm
Core Wire Stripping 4~5mm
Other Core Wire Stripping 2~3mm
Conn.2

Connector Orientation Diagram

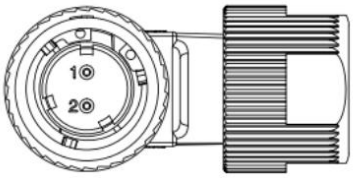
Brake cable

HB Brake Line Naming Rules

BK	-	HB	-	05
Wire type category		**Motor side brake connector**		**Wire length**
Brake cable		HB: HB series motor 110/130/180 flange brake plug		03：3M
				05：5M
				10：10M



Sheath Stripping 20±1mm
Core Wire Stripping 2~3mm
Conn.1

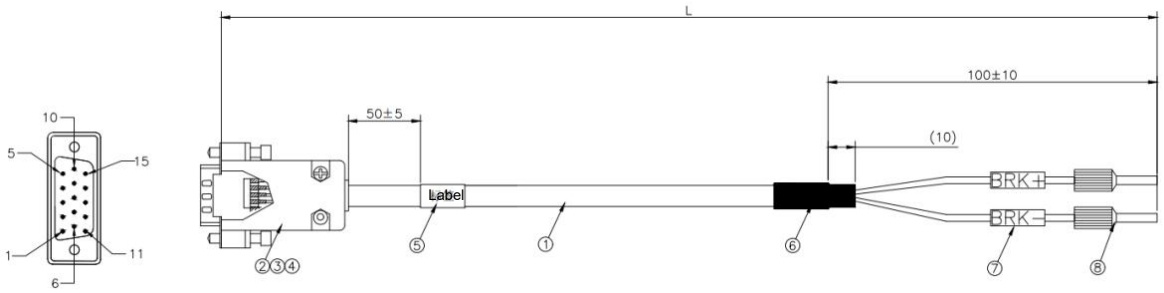


Sheath Stripping 100±2mm
Core Wire Stripping 11~12mm
Conn.2

Connector Orientation Diagram

Naming rules for the F0* series brake lines

BK	-	FD	-	02
Wire category		**Drive side brake connector plug**		**Wire length**
Brake cable		FD: F01/F02 series drive for CN1 (brake) plug		02：2M



Front View

Sheath Stripping 25±2mm
Core Wire Stripping 3~4mm
Conn.1

Sheath Stripping 100±2mm
Core Wire Stripping 11~12mm
Conn.2

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