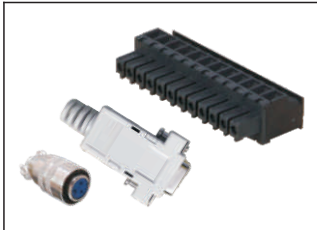
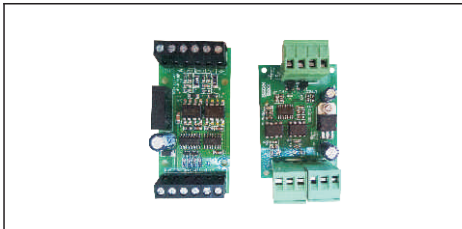


Accessories list

			
Fast terminal	Power connection	Encoder cable	RS232 communication cable
Convenient wiring mode, flexible and simple	- Provide 3 meters cable or customized length cable - Motor with brake has brake power supply connector	Provide 3 meters cable or customized length cable	Provide 1.5 meters cable to connect the controller

		
ABZ signal switching circuit	Regenerative resistor	DS5E fieldbus driver optional module: JA-NE-L <i>NEW</i>
The encoder signal switched between open collector mode and differential mode.	Release the capacitor's regenerative voltage.	Plug in driver CN1 port to implement extended bus function.

Regenerative resistor list

Servo driver model	Built-in regenerative resistor	External regenerative resistor
DS5L/E/C-20P1-PTA DS5L/E/C-20P2-PTA DS5L/E/C-20P4-PTA DS5L/E/C-20P7-PTA	The built-in regenerative resistor is 50Ω100W, short connect P+ and D(already connected when out of factory), disconnect P+ and C, DS5 series driver P0-24 is set to 0.	Connect the regenerative resistor to P+ and C, remove the short connector between P+ and D, DS5 series driver P0-24=1, P0-25=power value, P0-26=resistor value. The external regenerative resistor value is 40Ω to 100Ω, power is larger than

Stable performance accurate control



DS5 series servo system
DS5L/DS5E/DS5C



DS5 series servo system has higher precision, faster response, greater inertia, provides more accurate and rapid control solution for customers.

New DS5 series servo, six advantages

Save space

The servo driver shape is thinner, the motor body is smaller, save the installation space

Gain self-learning

Servo system has rigidity gain adaptive and self-tuning function. Simplify the rigidity gain adjustment process.

Innovation function

Strengthen vibration suppression function, reduce the vibration interference during operation, shorten positioning time, S-curve acceleration deceleration function makes the motor stop and start smoothly.

EtherCAT fieldbus

DS5C series servo supports EtherCAT fieldbus.

Debugging software is simple and practical

Xinje Servo debugging software is easy to operate, has rich functions including parameter setting, storage and downloading, real-time curve collection, rigidity self-tuning.

Higher precision encoder

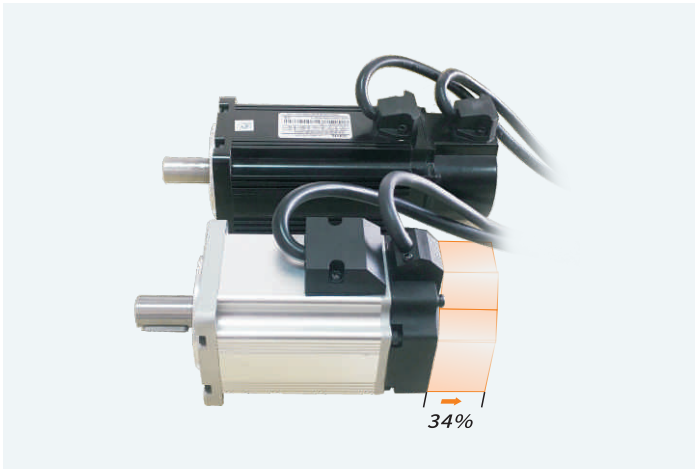
The motor encoder changed from 2500ppr incremental type to 17-bit and 23-bit communication encoder. The control precision is greatly improved.

Save space Take 400W as an example

The servo driver boundary dimension is 35% thinner than the last series products.



The motor body dimension is 34% shorter than the last series products, the total weight reduced by 30%.



EtherCAT fieldbus

EtherCAT (Ethernet control automation technology) is a fieldbus system based on Ethernet open network structure. Because it sets up new standard for system real-time and topological flexibility, and conforms to or even reduces the cost of fieldbus application, it becomes the customer's preferred solution in high precision fast speed industrial automation applications. DS5C series servo system supports EtherCAT fieldbus, can control 64-axis, the control period is 0.5ms.

Gain self-learning

XINJE servo system rigidity gain adjustment has three modes including self-adaption, self-tuning, manual adjustment. It no needs complicated adjustment process, saves the debugging time.

Use directly after installing the motor self-adaption mode

The self-adaption small inertia mode ensures rapid and stable operation when the load inertia changes within 0~20 times. The positioning time is 150ms~200ms. The adaptive range of the load is greatly improved for self-adaption large inertia mode, and when the load inertia frequently changes between 0 and 40 times, it can also run smoothly, the positioning time is 300ms~400ms.

Improve servo response self-tuning mode

Identify the load inertia through the software, find the optimal gain, the position time is 20ms.

Improve servo performance manual mode

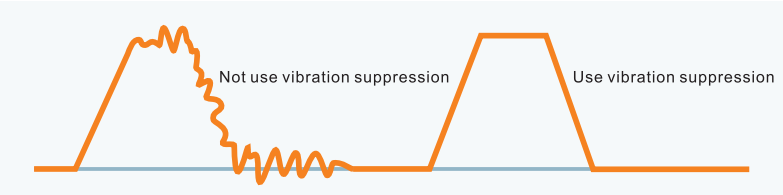
Further gain fine-tuning can shorten the positioning time to 0ms~10ms.

* Note: the above data are measured in the company test environment.

Innovation function

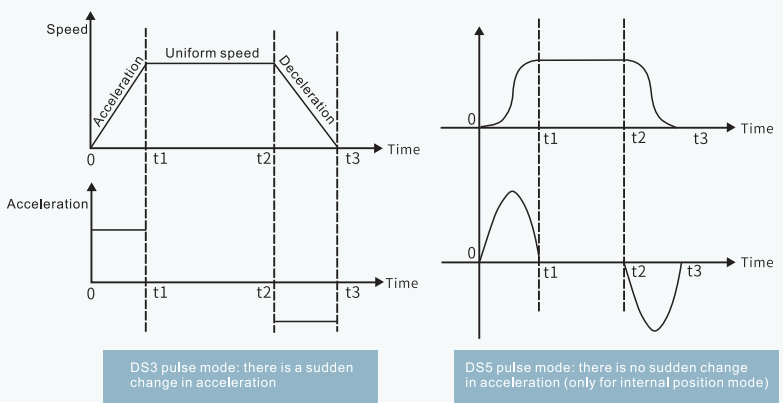
Enhanced resonance suppression function

For the front-end or overall vibration of the device, the vibration frequency part can be removed from the position instruction in order to reduce vibration.



Optimization algorithm and S-curve acceleration and deceleration make the motor start and stop smoothly.

S-curve acceleration and deceleration is softer.



Debugging software is simple and practical

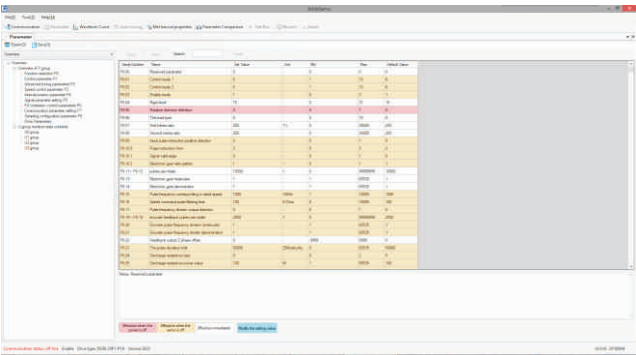
Xinje Servo Tuner software

Xinje servo tuner software integrates the function of parameter setting, storage, loading, real-time data collection, self-tuning and so on, greatly simplifies the debugging process.

Software features

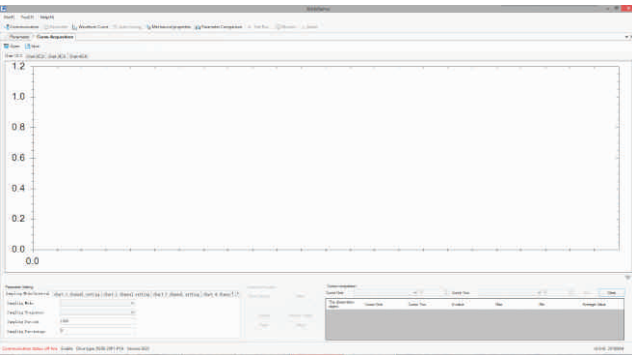
Straightforward parameter setting

Xinje Servo Tuner has the functions of parameter reading, changing, storage and downloading, and with detailed parameter explanation, no manual assistance required. The parameter list identifies the effective time by color, the distinction is more striking.



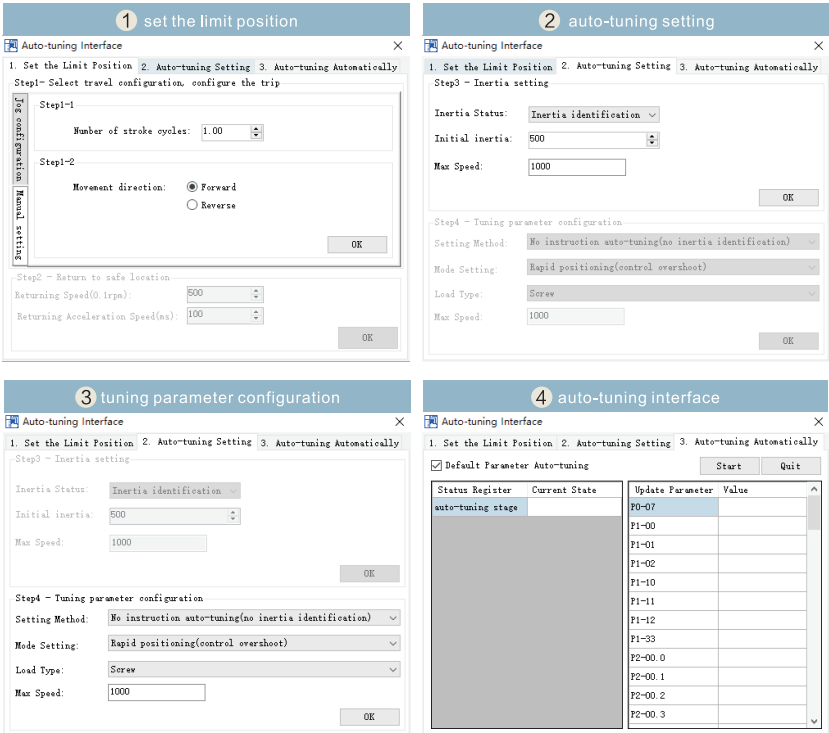
Convenient and practical data collection

Xinje Servo Tuner has detailed and comprehensive data collection, powerful servo data acquisition function including servo speed, torque, position, current, bus voltage. It helps you thorough understand the servo running state, improves the control solution. Parameter setting.



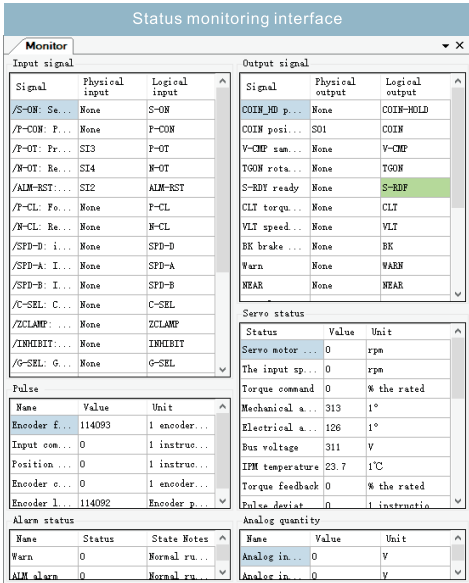
Simple and efficient parameter tuning

Xinje Servo Tuner can work with DS5 series servo to auto-tune the parameters, identify the load inertia online, and real-time tune the best parameters according to device running state.



accurate and fine real-time monitoring

Xinje Servo Tuner can real-time monitor the servo state and alarm status.



Servo driver terminal explanation

Major loop input terminal

Terminal	Function	Explanation	
L/N	Major circuit power supply input terminal	Single phase 200~240V, 50/60Hz	
●	Empty pin		
U、V、W	Motor connection terminal	Connect to the motor	
		Terminal	Cable color
		U	Brown
		V	Black
		W	Blue
PE	Yellow and green		
●	Empty pin		
P+、D、C	Use internal regenerative resistor	Short connect P+ and D, P+ and C are disconnected	
	Use external regenerative resistor	Connect the regenerative resistor to P+ and C, remove the short connector between P+ and D	
⊕	Ground terminal	Connect the motor ground terminal and effectively ground the driver	

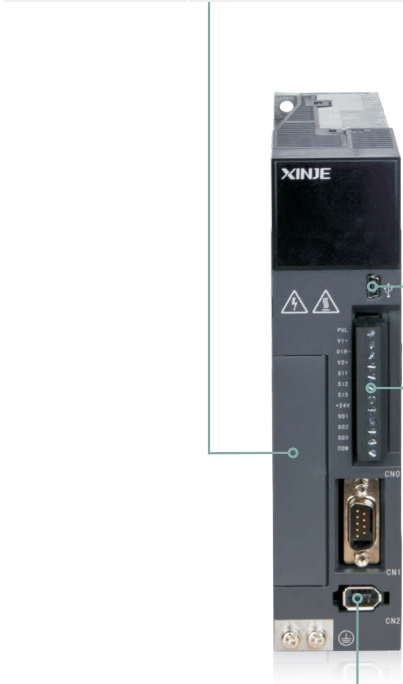
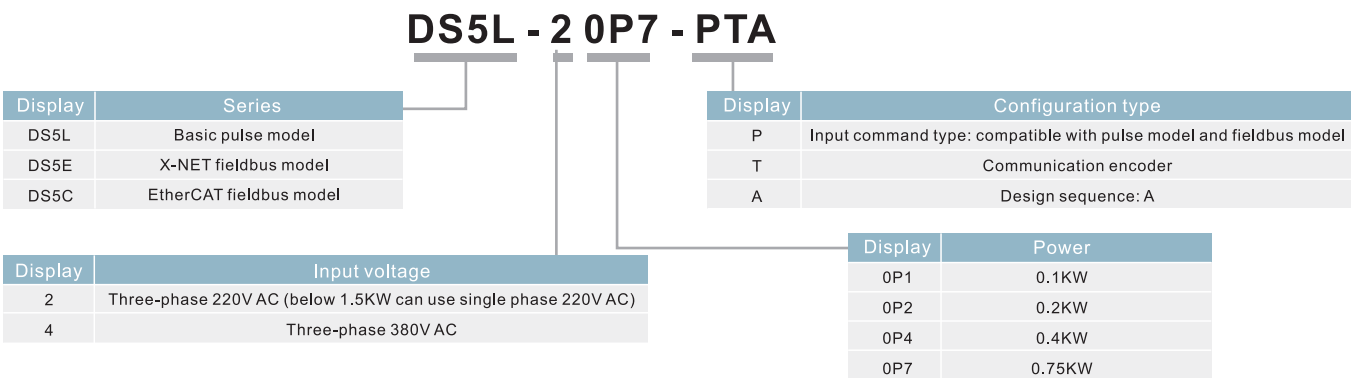
The precision of encoder is improved greatly

With unique signal processing technology, 17-bit incremental communication encoder and 23-bit absolute value encoder are developed.



DS5 servo driver naming rule, performance and configuration

Servo driver naming rule



RS232 communication terminal

Pin number	Explanation
1	RS232 SEND
2	RS232 RECEIVE
3	RS232 SIGNAL GROUND

CN0 signal explanation

Signal name	Defaulted function	Pin number	Function
P-		1	Pulse input PUL-
P+24		2	Open collector input
D-		3	Direction input DIR-
D+24		4	Open collector input
SI1	S-ON	5	Servo ON: motor is powered on
SI2	ALM-RST	6	Alarm cleared: release the servo alarm status
SI3	P-OT	7	Forward run prohibition
+24V	Input 24V	8	Input 24V power supply
SO1	COIN	9	Positioning complete signal
SO2	ALM	10	Alarm output signal
SO3	S-RDY	11	Ready signal
COM	Output terminal ground	12	Output terminal ground

CN2 encoder terminals

Number	Definition
1	5V
2	GND
5	A
6	B

* This figure takes DS5L-20P4-PTA as an example.

DS5 servo driver dimension unit: mm

DS5C-20P1/20P2/20P4-PTA
DS5E-20P1/20P2/20P4-PTA
DS5L-20P1/20P2/20P4-PTA

Dimension drawing of bottom mounting hole

DS5C-20P7-PTA
DS5E-20P7-PTA
DS5L-20P7-PTA

Dimension drawing of bottom mounting hole

* Note: DS5L servo driver CN1 is 15-pin port, DS5E servo driver CN1 is 9-pin port.

MS5S - 80 ST - C S 02430 B Z-2 0P7-S01

5

Servo motor parameters

MS5S series 100W (low inertia) specification

Voltage level	AC 220V	
Motor model MS5S-60ST-	Without brake	With brake
	C00330□-20P1	C00330□Z-20P1
Motor code	5022	5822
Suitable driver	DS5□-20P1-PTA	
Rated output (KW)	0.1	
Rated speed (r/min)	3000	
Max speed (r/min)	6000	
Rated torque (N.m)	0.32	
Instantaneous max torque(N.m)	0.96	
Rated current (A)	0.95	
Instantaneous max current (A)	2.85	
Rotor inertia	0.044/0.053	
Pole-pairs	5	
Encoder	17bit	
Insulation level	Class F(155°C)	
Protection level	IP65	

Brake specification

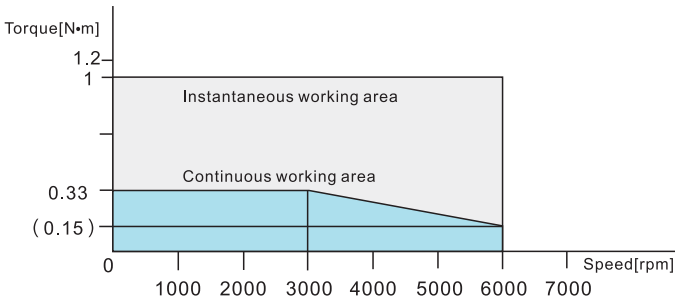
Holding brake, release by excitation, cannot be used for motor rotation brake.

Static friction torque(N.m)	below 0.294
Response time(ms)	below 50
Release time(ms)	below 20
Exciting current DC (V)	0.3
Release voltage DC (V)	above 0.5
Exciting voltage DC (V)	16.8

Allowable load

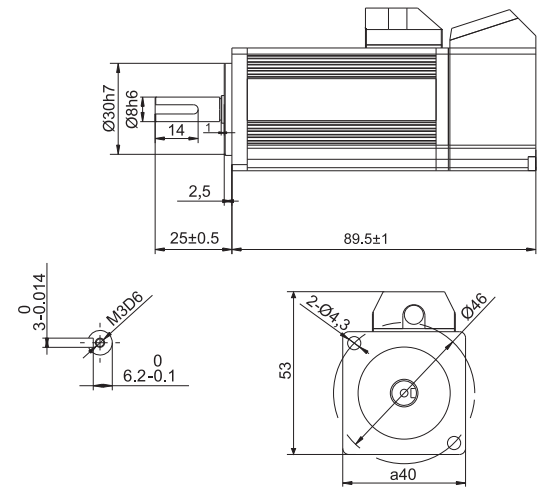
Installing	Radial load P direction (N)	147
	Axial load A direction (N)	88
	Axial load B direction (N)	117.6
Running	Radial load P direction (N)	68.6
	Axial load A, B direction (N)	58.8

Torque features

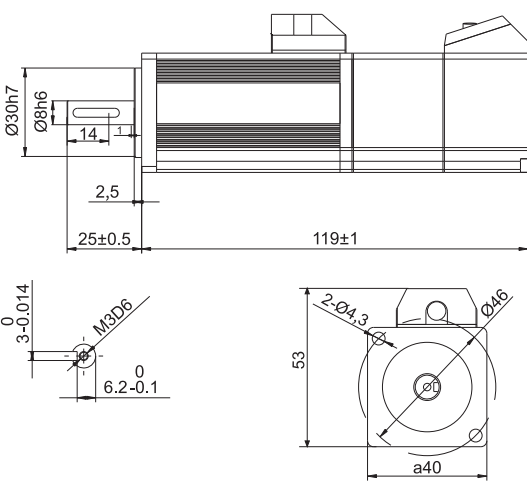


Outline dimension unit:mm

No brake motor dimension



With brake motor dimension



MS5S series 200W (low inertia) specification

Voltage level	AC 220V	
Motor model MS5S-60ST-	Without brake	With brake
	CS00630□-20P2-S01	CS00630□Z-20P2-S01
Motor code	5003	5803
Suitable driver	DS5L/E/C-20P2-PTA	
Rated output (KW)	0.2	
Rated speed (r/min)	3000	
Max speed (r/min)	6500	
Rated torque (N.m)	0.64	
Instantaneous max torque(N.m)	2.24	
Rated current (A)	1.9	
Instantaneous max current (A)	6.65	
Rotor inertia	0.137	0.159
Pole-pairs	5	
Encoder	17bit	
Insulation level	ClassF(155°C)	
Protection level	IP65	

Brake specification

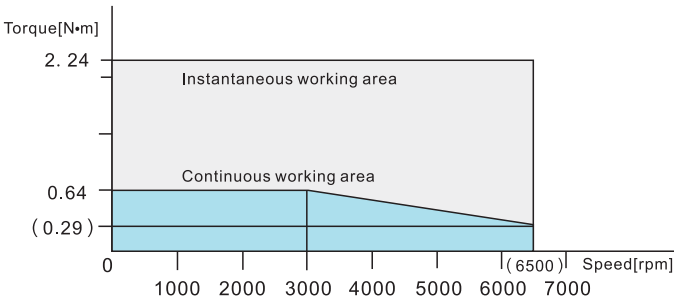
Holding brake, release by excitation, cannot be used for motor rotation brake.

Static friction torque(N.m)	1.3
Response time(ms)	50
Release time(ms)	20
Exciting current DC (V)	0.3
Release voltage DC (V)	1.5
Exciting voltage DC (V)	24
Brake times (time/min)	10

Allowable load

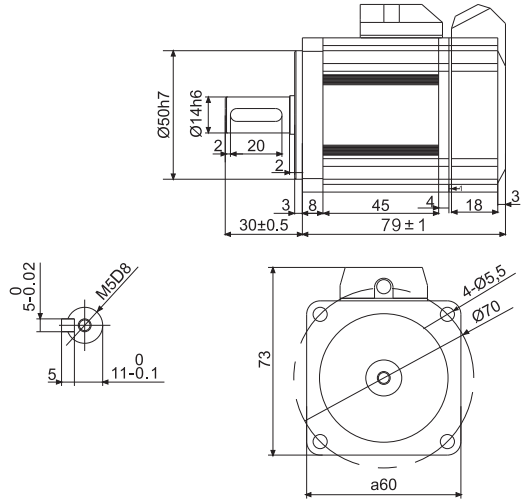
Installing	Radial load P direction (N)	392
	Axial load A direction (N)	147
	Axial load B direction (N)	196
Running	Radial load P direction (N)	245
	Axial load A, B direction (N)	98

Torque features

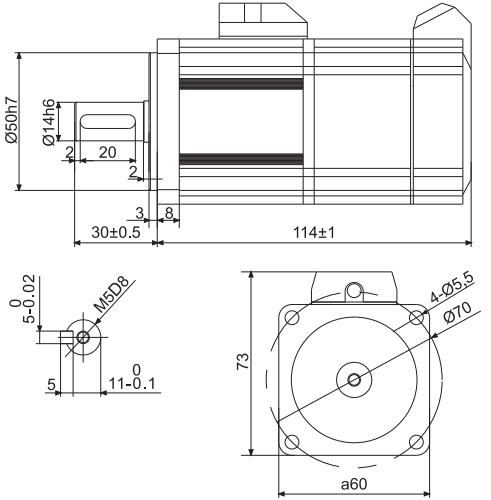


Outline dimension unit:mm

No brake motor dimension



With brake motor dimension



MS5S series 400W (low inertia) specification

Voltage level	AC 220V	
Motor model MS5S-60ST-	Without brake CS01330□-20P4-S01	With brake CS01330□Z-20P4-S01
Motor code	5004	5804
Suitable driver	DS5L/E/C-20P4-PTA	
Rated output (KW)	0.4	
Rated speed (r/min)	3000	
Max speed (r/min)	6500	
Rated torque (N.m)	1.27	
Instantaneous max torque(N.m)	4.445	
Rated current (A)	2.8	
Instantaneous max current (A)	9.8	
Rotor inertia	0.251	0.272
Pole-pairs	5	
Encoder	17bit	
Insulation level	ClassF(155°C)	
Protection level	IP65	

Brake specification

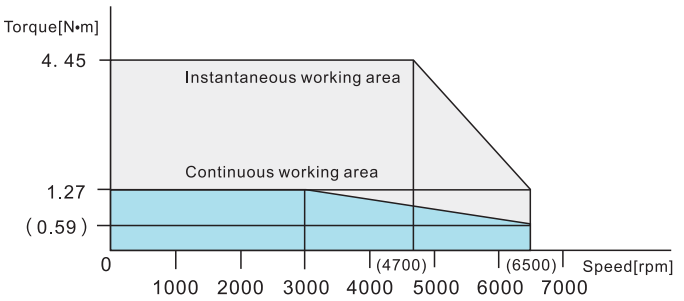
Holding brake, release by excitation, cannot be used for motor rotation brake.

Static friction torque(N.m)	1.3
Response time(ms)	50
Release time(ms)	20
Exciting current DC (V)	0.3
Release voltage DC (V)	1.5
Exciting voltage DC (V)	24
Brake times (time/min)	10

Allowable load

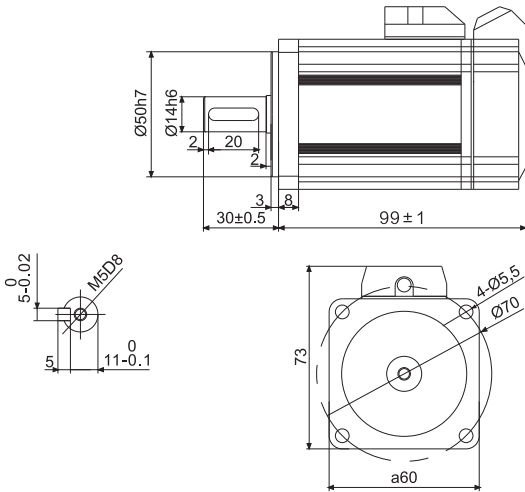
Installing	Radial load P direction (N)	392
	Axial load A direction (N)	147
	Axial load B direction (N)	196
Running	Radial load P direction (N)	245
	Axial load A, B direction (N)	98

Torque features

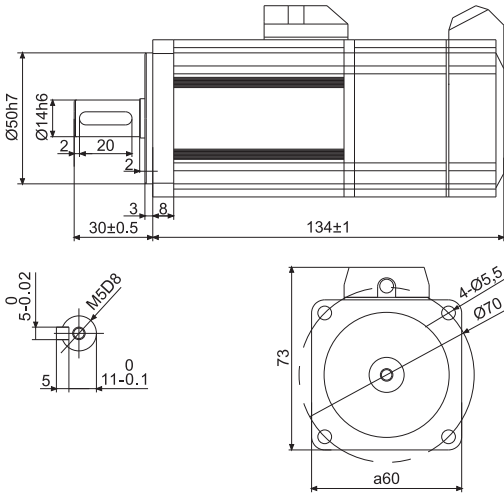


Outline dimension unit:mm

No brake motor dimension



With brake motor dimension



MS5S series 750W (low inertia) specification

Voltage level	AC 220V	
Motor model MS5S-80ST-	Without brake CS02430□-20P7-S01	With brake CS02430□Z-20P7-S01
Motor code	5011	5811
Suitable driver	DS5L/E/C-20P7-PTA	
Rated output (KW)	0.75	
Rated speed (r/min)	3000	
Max speed (r/min)	5000	
Rated torque (N.m)	2.39	
Instantaneous max torque(N.m)	7.17	
Rated current (A)	4	
Instantaneous max current (A)	12	
Rotor inertia	0.902	0.999
Pole-pairs	5	
Encoder	17bit	
Insulation level	ClassF(155°C)	
Protection level	IP65	

Brake specification

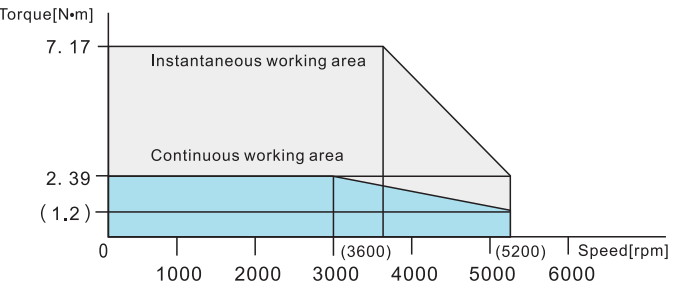
Holding brake, release by excitation, cannot be used for motor rotation brake.

Static friction torque(N.m)	3.5
Response time(ms)	60
Release time(ms)	40
Exciting current DC (V)	0.48
Release voltage DC (V)	1.5
Exciting voltage DC (V)	24
Brake times (time/min)	10

Allowable load

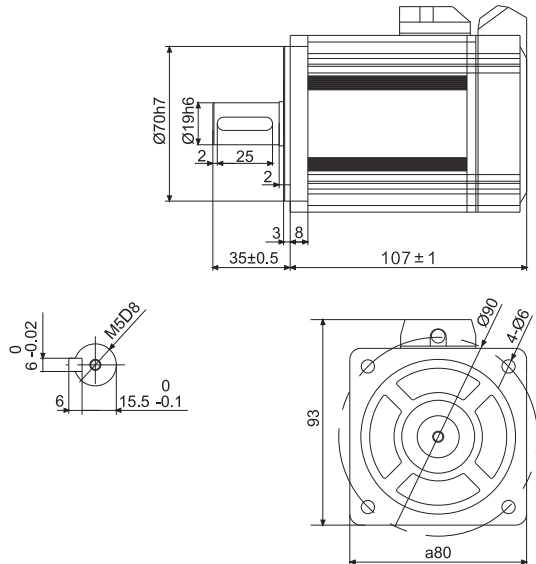
Installing	Radial load P direction (N)	686
	Axial load A direction (N)	294
	Axial load B direction (N)	392
Running	Radial load P direction (N)	392
	Axial load A, B direction (N)	147

Torque features

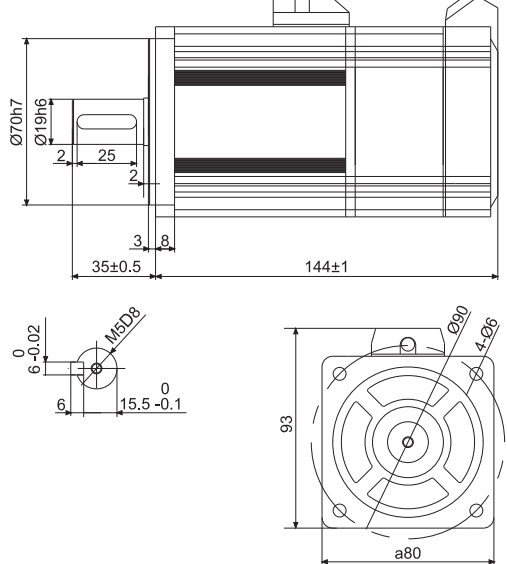


Outline dimension unit:mm

No brake motor dimension



With brake motor dimension



MS5H series 200W (high inertia) specification

Voltage level	AC 220V	
Motor model MS5H-60ST-	Without brake CS00630□-20P2-S01	With brake -
Motor code	50C3	-
Suitable driver	DS5L/E/C-20P2-PTA	
Rated output (KW)	0.2	
Rated speed (r/min)	3000	
Max speed (r/min)	6500	
Rated torque (N.m)	0.64	
Instantaneous max torque(N.m)	2.24	
Rated current (A)	1.9	
Instantaneous max current (A)	6.65	
Rotor inertia	0.537	0.556
Pole-pairs	5	
Encoder	17bit	
Insulation level	Class F(155SS°C)	
Protection level	IP65	

Brake specification

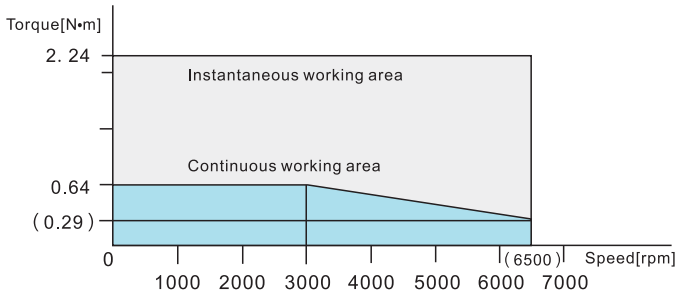
Holding brake, release by excitation, cannot be used for motor rotation brake.

Static friction torque(N.m)	1.3
Response time(ms)	50
Release time(ms)	20
Exciting current DC (V)	0.3
Release voltage DC (V)	1.5
Exciting voltage DC (V)	24
Brake times (time/min)	10

Allowable load

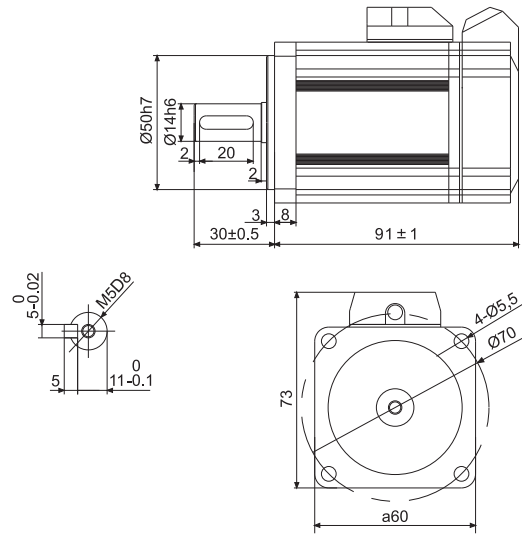
Installing	Radial load P direction (N)	392
	Axial load A direction (N)	147
	Axial load B direction (N)	196
Running	Radial load P direction (N)	245
	Axial load A, B direction (N)	98

Torque features

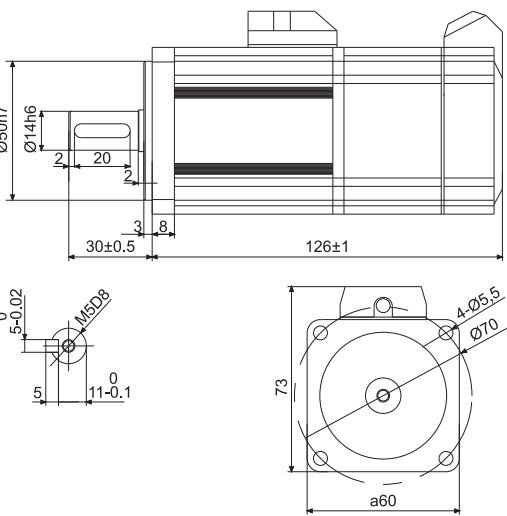


Outline dimension unit:mm

No brake motor dimension



With brake motor dimension



MS5H series 400W (high inertia) specification

Voltage level	AC 220V	
Motor model MS5H-60ST-	Without brake CS01330□-20P4-S01	With brake -
Motor code	50C4	-
Suitable driver	DS5L/E/C-20P4-PTA	
Rated output (KW)	0.4	
Rated speed (r/min)	3000	
Max speed (r/min)	6500	
Rated torque (N.m)	1.27	
Instantaneous max torque(N.m)	4.445	
Rated current (A)	2.8	
Instantaneous max current (A)	9.8	
Rotor inertia	0.648	0.661
Pole-pairs	5	
Encoder	17bit	
Insulation level	ClassF(155°C)	
Protection level	IP65	

Brake specification

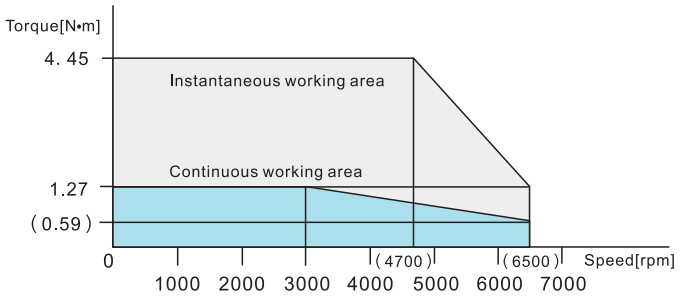
Holding brake, release by excitation, cannot be used for motor rotation brake.

Static friction torque(N.m)	1.3
Response time(ms)	50
Release time(ms)	20
Exciting current DC (V)	0.3
Release voltage DC (V)	1.5
Exciting voltage DC (V)	24
Brake times (time/min)	10

Allowable load

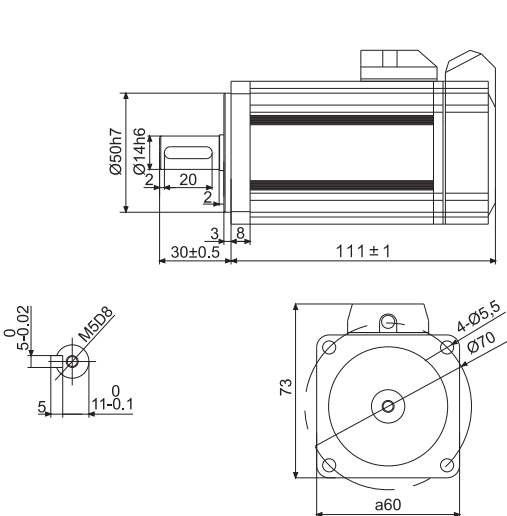
Installing	Radial load P direction (N)	392
	Axial load A direction (N)	147
	Axial load B direction (N)	196
Running	Radial load P direction (N)	245
	Axial load A, B direction (N)	98

Torque features

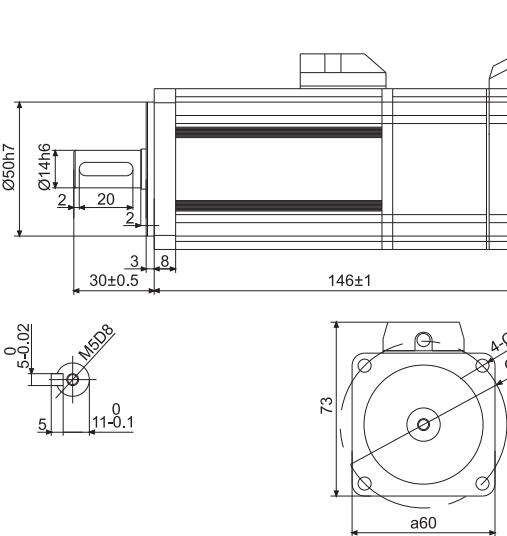


Outline dimension unit:mm

No brake motor dimension



With brake motor dimension



MS5H series 750W (high inertia) specification

Voltage level	AC 220V	
Motor model MS5H-80ST-	Without brake	With brake
	CS02430□-20P7-S01	-
Motor code	50D1	-
Suitable driver	DS5L/E/C-20P7-PTA	
Rated output (KW)	0.75	
Rated speed (r/min)	3000	
Max speed (r/min)	5000	
Rated torque (N.m)	2.39	
Instantaneous max torque(N.m)	7.17	
Rated current (A)	4	
Instantaneous max current (A)	12	
Rotor inertia	1.65	1.66
Pole-pairs	5	
Encoder	17bit	
Insulation level	ClassF(155°C)	
Protection level	IP65	

Brake specification

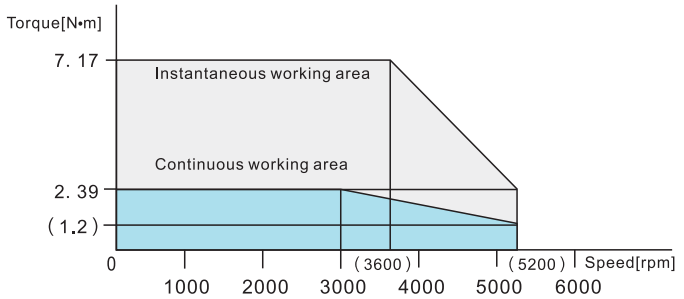
Holding brake, release by excitation, cannot be used for motor rotation brake.

Static friction torque(N.m)	3.5
Response time(ms)	60
Release time(ms)	40
Exciting current DC (V)	0.48
Release voltage DC (V)	1.5
Exciting voltage DC (V)	24
Brake times (time/min)	10

Allowable load

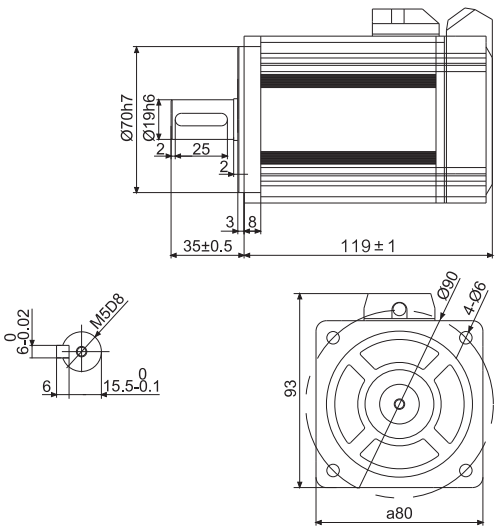
Installing	Radial load P direction (N)	686
	Axial load A direction (N)	294
	Axial load B direction (N)	392
Running	Radial load P direction (N)	392
	Axial load A, B direction (N)	147

Torque features

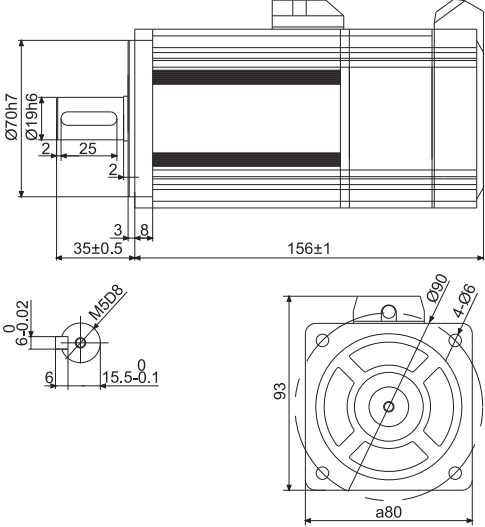


Outline dimension unit:mm

No brake motor dimension



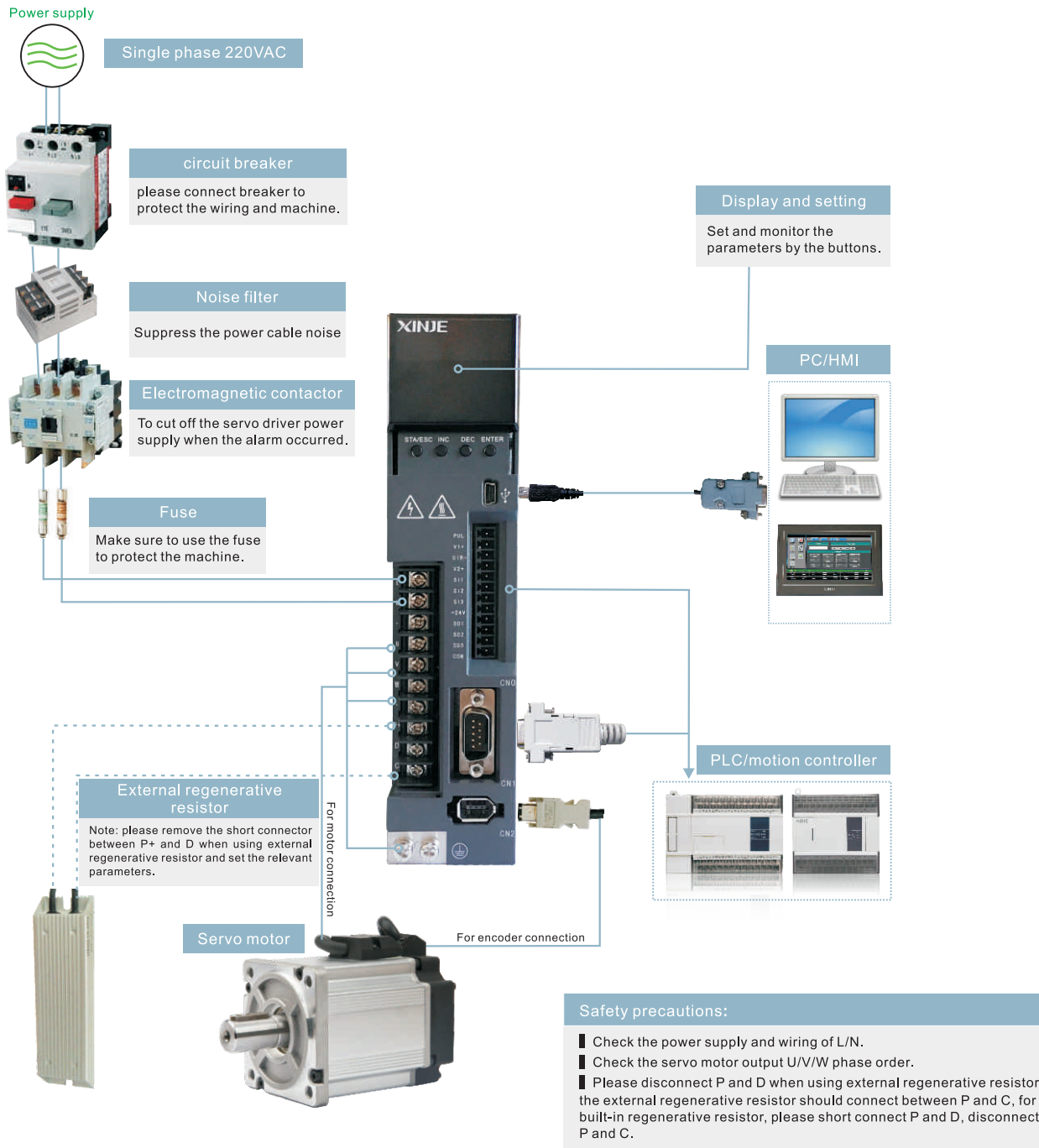
With brake motor dimension



Adaptive table of servo motor and driver

Motor model	Adaptive driver	Voltage level
MS5□-40ST-CS00330□□-20P1-S01	DS5L/E/C-20P1-PTA	Single phase 220V
MS5□-60ST-CS00630□□-20P2-S01	DS5L/E/C-20P2-PTA	Single phase 220V
MS5□-60ST-CS01330□□-20P4-S01	DS5L/E/C-20P4-PTA	Single phase 220V
MS5□-80ST-CS02430□□-20P7-S01	DS5L/E/C-20P7-PTA	Single phase 220V

Servo driver peripheral device connection diagram DS5 series servo driver



* The figure takes DS5L-20P4-PTA as an example.