

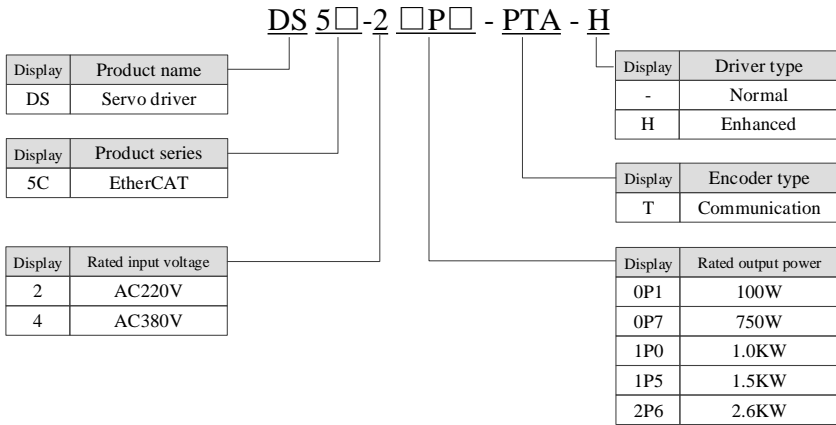
XINJE

DS5C

Wuxi Xinje Electric Co., Ltd.

Data No. S431005 1.4

1-1-2. Naming rule

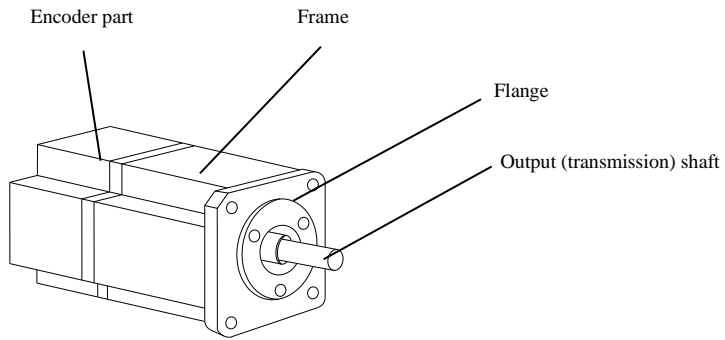


1-1-3. Performance

| | | |
|--------------------|--|--|
| Servo unit | DS5C series 220V | |
| Suitable encoder | Standard: 17bit/ 23bit encoder | |
| Input power supply | DS5C-2□P□-PTA: single phase AC200~240V, 50/60Hz [below 1.5KW (except 1.5KW) can use single phase AC200~240V 50/60Hz; 1.5KW and up please use single phase or 3-phase AC200~240V 50/60Hz. (for single phase power supply, please connect R, T, otherwise it will affect the power-off memory)] DS5C-4□P□-PTA: 3-phase AC380~440V, 50/60Hz | |
| Control method | 3-phase full wave rectifier IPM PWM control sine current driving mode | |
| Using condition | Using temperature | -10~+40 °C |
| | Storage temperature | -20~+60 °C |
| | Humidity | Below 90% RH (no condensation) |
| | Resistance to vibration and impact strength | 4.9m/s ² / 19.6m/s ² |
| Structure | Base installation | |

1-2. Servo motor

1-2-1. Part description



1-2-2. Naming rule

- MS5 series motor

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

| Name | inertia |
|------|----------------|
| MS5S | Low inertia |
| MS5G | Middle inertia |
| MS5H | High inertia |

| Name | Base no. |
|------|----------|
| 60 | 60 base |
| 80 | 80 base |

| Name | Product name |
|------|-------------------|
| ST | Sine driven motor |

| Name | Oil seal |
|------|---------------|
| - | - |
| E | with oil seal |

| Name | Encoder type |
|------|--------------|
| C | Magnetic |
| T | Optical |

| Name | Encoder precision |
|------|-----------------------|
| S | Single rotate 17 bits |
| M | Multi-rotate 17 bits |
| U | Single rotate 23 bits |
| L | Multi-rotate 23 bits |

| Name | Rated torque (N-m) | Rated speed (rpm) |
|-------|--------------------|-------------------|
| 00630 | 0.637 | 3000 |
| 01330 | 1.3 | 3000 |
| 02430 | 2.39 | 3000 |

| Name | Design no. |
|------|------------|
| S01 | standard |

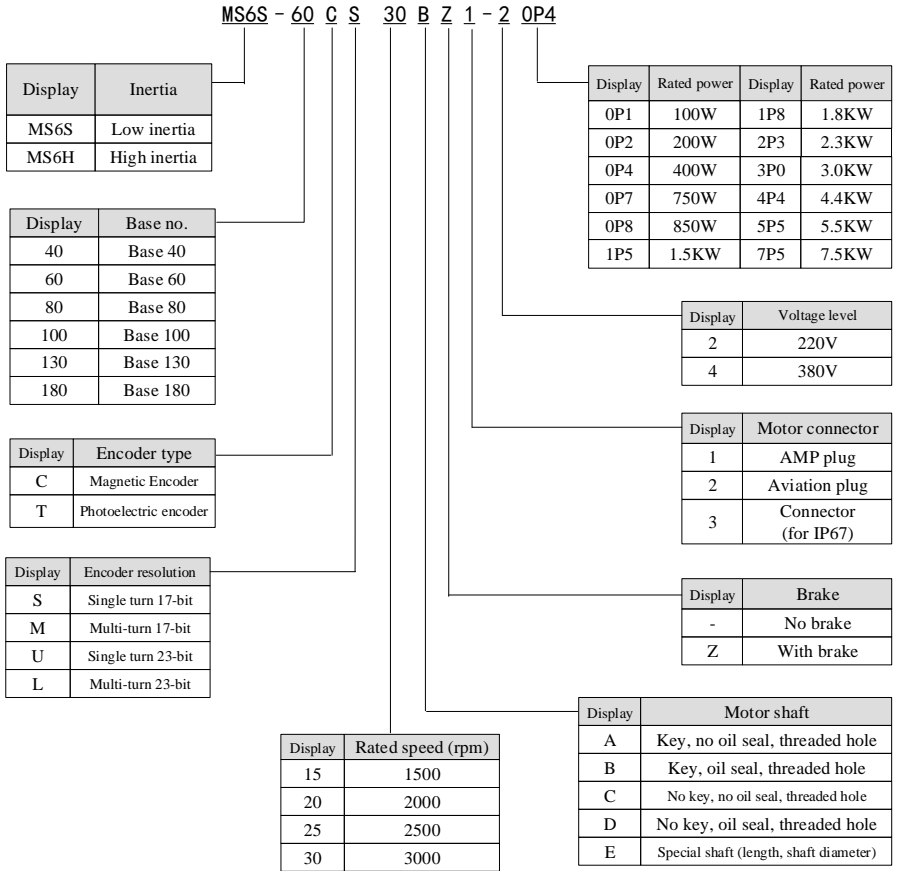
| Name | Rated power (KW) |
|------|------------------|
| 0P2 | 0.2 |
| 0P4 | 0.4 |
| 0P7 | 0.75 |

| Name | Voltage level |
|------|---------------|
| 2 | 220V |
| 4 | 380V |

| Name | Power-off brake |
|------|-----------------|
| - | - |
| Z | with |

| Name | Shaft |
|------|----------|
| A | No key |
| B | With key |

■ MS6 series motor



Note: at present, the type selection of encoder is only the combination of CS, CM, TL and T!

Standard type 1 is an amp connector for 80 and below flange.

Standard type 2 is a small aviation plug connector for 80 and below flange.

1-3. Cables

1-3-1. Cable configuration

■ Encoder cable

CP-SL-□□-03

| Display | Cable type |
|---------|---------------|
| CP | Normal |
| CPT | High flexible |

| Display | Connector type |
|---------|-----------------------------|
| SP | AMP plug |
| SW | 7-core aviation plug |
| SL | 15-core aviation plug |
| SC | 10-core small aviation plug |

| Display | Battery box |
|---------|-------------|
| M | Without |
| B | With |
| BM | With |

| Display | Length (m) |
|---------|------------|
| 03 | 3 |
| 05 | 5 |
| 08 | 8 |
| 12 | 12 |
| 16 | 16 |
| 20 | 20 |

■ Power cable

CM - P 07 - M - 03

| Display | Cable type |
|---------|--|
| CM | Normal |
| CMT | High flexible |
| CMBT | High flexible with brake aviation plug |

| Display | Connector type |
|---------|---------------------------------|
| P | Small power 4-core amp plug |
| W | 6-core waterproof aviation plug |
| L | 4-core small aviation plug |
| XL | 4-core medium aviation plug |
| V | 4-core waterproof aviation plug |
| D | O type terminal |

| Display | Diameter (mm ²) |
|---------|-----------------------------|
| 07 | 0.75 |
| 15 | 1.5 |
| 25 | 2.5 |
| 60 | 6 |
| 100 | 10 |

| Display | Length (m) |
|---------|------------|
| 03 | 3 |
| 05 | 5 |
| 08 | 8 |

| Display | Cable type |
|---------|------------|
| M | White amp |
| - | Black amp |

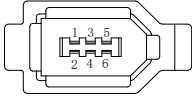
■ Brake cable

- ◆ Applicable to motors 80 and below with suffix S01, brake cable model shall be selected: CB-P03-length (ordinary material) / CBT-P03-length (high flexible material).
- ◆ Suitable for 750W and below power motors with suffix S02: CMBT-W07-M-length.
- ◆ For MSSG 130 flange medium inertia holding brake motor, the cable shall select power cable and brake cable in one unit.
- ◆ The standard wiring length of Xinje includes 2m, 3m, 5m, 8m, 10m, 12m, 16m and 20m, among which the non high flexible encoder cable and non high flexible power cable applicable to motors with suffix S01 of 80 and below have specifications of 25m and 30m.

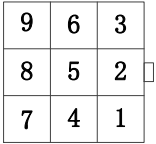
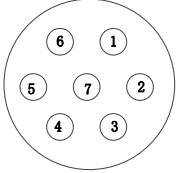
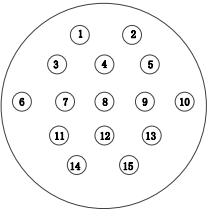
1-3-2. Cable terminal definition

■ Encoder cable

(1) Encoder terminal definition on servo driver side (flange 220 and below)

| Connector | Pin definition | |
|---|----------------|-------|
| | No. | Name |
|  | 1 | 5V |
| | 2 | GND |
| | 3 | / |
| | 4 | / |
| | 5 | 485-A |
| | 6 | 485-B |

(2) Encoder cable connection on motor side (flange 220 and below)

| Connector | Pin definition | | Suitable model |
|---|----------------|--------------|---|
| | No. | Name | |
|  | 1 | Battery + | Suitable for MS5-40, 60, 80 flange S01 motor Suitable for MS6-40, 60, 80 flange B1 motor |
| | 2 | Battery - | |
| | 3 | Shield cable | |
| | 4 | 485-A | |
| | 5 | 485-B | |
| | 6 | / | |
| | 7 | 5V | |
| | 8 | GND | |
| | 9 | / | |
|  | No. | Name | Suitable for MS5-40, 60, 80 flange S02 motor Suitable for MS6-40, 60, 80 flange B2 motor |
| | 1 | Shield cable | |
| | 2 | Battery + | |
| | 3 | Battery - | |
| | 4 | 485-A | |
| | 5 | 485-B | |
| | 6 | 5V | |
| | 7 | GND | |
|  | No. | Name | Suitable for 110 and above flange (exclude 130 flange medium inertia, flange 220) |
| | 1 | Shield cable | |
| | 2 | / | |
| | 3 | 485-B | |
| | 4 | 485-A | |
| | 5 | / | |
| | 6 | GND | |
| | 7 | Battery - | |
| | 8 | 5V | |
| 9 | Battery + | | |

| | | | |
|--|------|--------------|--|
| | No. | Name | Suitable for 130 flange medium inertia motor |
| | 1 | / | |
| | 2 | 5V | |
| | 3 | GND | |
| | 4 | 485-A | |
| | 5 | 485-B | |
| | 6 | Battery + | |
| | 7 | Battery - | |
| | 8, 9 | / | |
| | 10 | Shield cable | |

(3) Flange 220 encoder cable two sides connection

| Motor side | | | Driver side | |
|------------|-----|--------------------|-------------|------------|
| Appearance | No. | Name | No. | Appearance |
| | 1 | Shield cable | 5 | |
| | 2 | / | / | |
| | 3 | 485-B | 3 | |
| | 4 | 485-A | 4 | |
| | 5 | / | / | |
| | 6 | GND | 6 | |
| | 7 | Battery - | / | |
| | 8 | 5V | 8 | |
| | 9 | Battery + | / | |
| | 14 | Temperature sensor | 1 | |
| | 15 | Temperature sensor | 2 | |

Description of battery box:

- (1) The above encoder contains the pins of battery+, battery- and the cables defined are used for absolute value motor, and the cables of non absolute value motor do not have this pin.
- (2) Only the absolute value motor is equipped with a cable external battery box. The battery box has a 3.6V/2.7Ah high-capacity battery, and has the function of power-off battery replacement. The service time is more than 2 years.



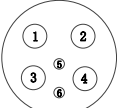
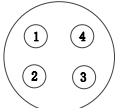
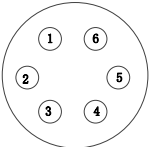
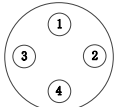
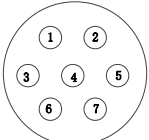
■ Power cable

(1) Power cable pin definition on servo driver side

| Connector | Pin definition | |
|-----------|----------------|------------|
| | Color | Definition |
| | Brown | U |
| | Black | V |
| | Blue | W |

| | | |
|--|--------------|----|
| | Yellow green | PE |
|--|--------------|----|

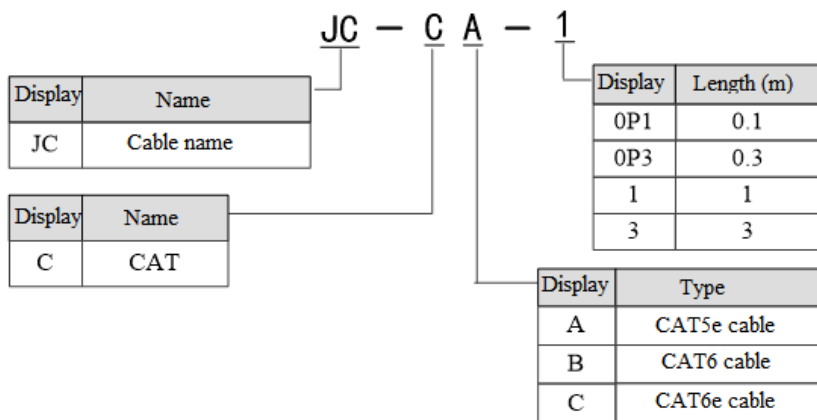
(2) Power cable connection on motor side

| Connector | Pin definition | | Suitable model |
|---|----------------|------|--|
| | No. | Name | |
|  | 1 | U | Suitable for 40, 60, 80 flange motor |
| | 2 | W | |
| | 3 | V | |
| | 4 | PE | |
|  | 1 | BK+ | Suitable for 40, 60, 80 flange motor brake |
| | 2 | BK- | |
|  | 1 | PE | Suitable for 750W and below small aviation plug motor |
| | 2 | U | |
| | 3 | V | |
| | 4 | W | |
| | 5 | BK+ | |
| | 6 | BK- | |
|  | 1 | U | Suitable for 40, 60, 80 flange B2 motor |
| | 2 | W | |
| | 3 | V | |
| | 4 | PE | |
|  | 1 | U | Suitable for 40, 60, 80 flange B2 brake motor |
| | 2 | W | |
| | 3 | V | |
| | 4 | PE | |
| | 5 | BK+ | |
| | 6 | BK- | |
|  | 1 | PE | Suitable for 110 and above motor (include 130 flange medium inertia non brake motor) |
| | 2 | U | |
| | 3 | V | |
| | 4 | W | |
|  | 1 | PE | Suitable for 130 flange medium inertia brake motor |
| | 2 | U | |
| | 3 | V | |
| | 4 | W | |
| | 5 | BK+ | |
| | 6 | BK- | |
| | 7 | / | |

Holding brake pin description:

The above cable with the definition of BK + and BK - pins is used for the motor with brake. The cable without brake motor has no such pin and is an empty terminal.

■ EtherCAT communication cable



1-4. Selection of regenerative resistance

1-4-1. Selection of regenerative resistance

When the servo motor is driven by the generator mode, the power returns to the servo amplifier side, which is called regenerative power. The regenerated power is absorbed by charging the smooth capacitor of the servo amplifier. After exceeding the rechargeable energy, the regenerative resistance is used to consume the regenerative power.

The servo motor driven by regenerative (generator) mode is as follows:

- The deceleration stop period during acceleration and deceleration operation
- Running vertically and axially
- When the external load drives the motor to rotate.

| Servo driver model | Regenerative resistance connection terminals |
|--------------------|--|
| DS5C-□□P□-PTA | <p>(1) Using built-in regenerative resistance, short P + and D terminals, P + and C are disconnected.</p> <p>(2) Use external regenerative resistance for 5.5kw and below drivers, connect regenerative resistance to P + and C terminals, remove P + and D short wiring, P0-25 = power value, P0-26 = resistance value.</p> |