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**Kinco**

Motion  
Control  
Servo System

➡ **Servo System Catalog**

- JD/FD2S/CD2S
- Series Servo Driver
- Servo Motor



02 Model Description of Servo Driver and Motor

- Kinco JD Series Servo Driver
- Kinco FD2S Series Servo Driver
- Kinco CD2S Series Servo Driver
- Kinco Servo Motor
- Kinco Multi-pole Servo Motor
- Power, Brake, Encoder cable of Motor

04 Servo Driver and Motor Selection Table

- JD/FD2S/CD2S Servo Driver and Motor Selection Table ( 1 ) ( 2 ) ( 3 )
- FD2S/CD2S Servo Driver and Motor Selection Table ( 1 ) ( 2 )
- FD2S/CD2S Servo Driver and Motor Selection Table

07 Servo Driver Introduction

- Panel and Interface Description, Port Description, Technical Specifications, Wiring Diagram, Mechanical Dimension Diagram
- JD servo driver  
(port description , Communication interface description , Technical specifications,wiring diagram,mechanical dimension diagram)
- FD2S servo driver  
(port description , Communication interface description , Technical specifications,wiring diagram,mechanical dimension diagram)
- CD2S servo driver  
(port description , Communication interface description , Technical specifications,wiring diagram,mechanical dimension diagram)

23 Servo Motor Introduction

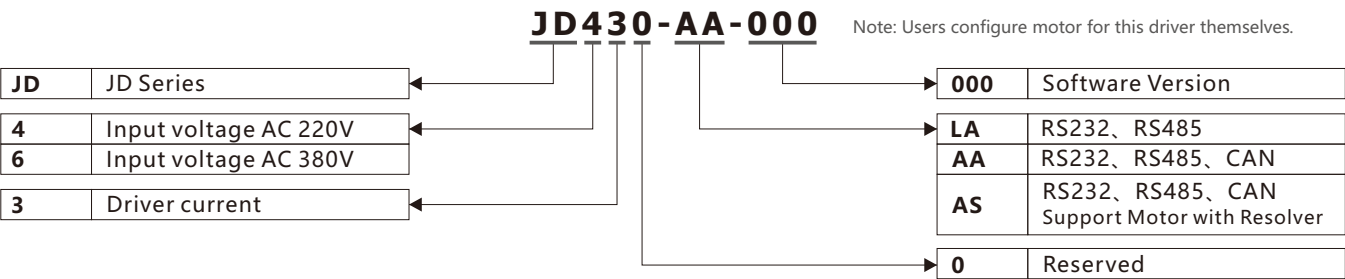
- Technical Specifications Table of SMH Series Servo Motor (40、60、80、110、130、150、180 flange)
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39 Wiring Diagram for Cable

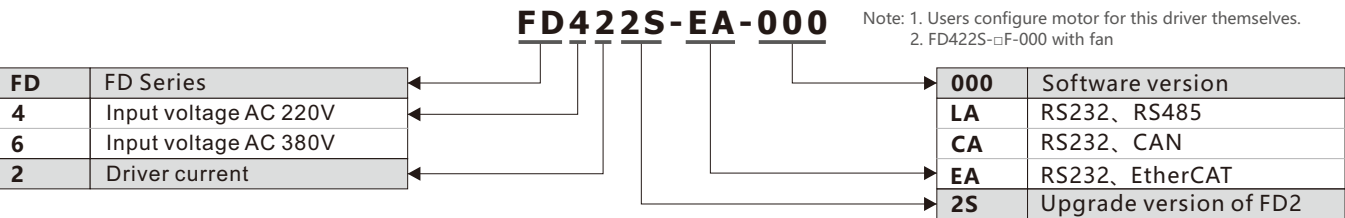
- Wiring Diagram for The Power Cable
- Wiring Diagram for the brake cable
- Wiring Diagram for The Encoder Cable

Model Description of Servo Driver and Motor

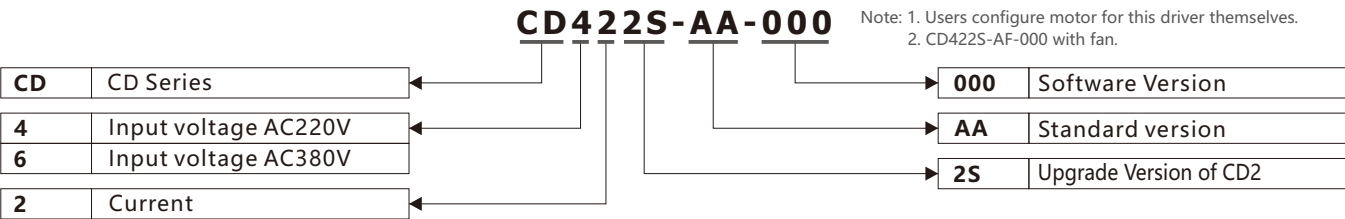
Kinco JD Series Servo Driver



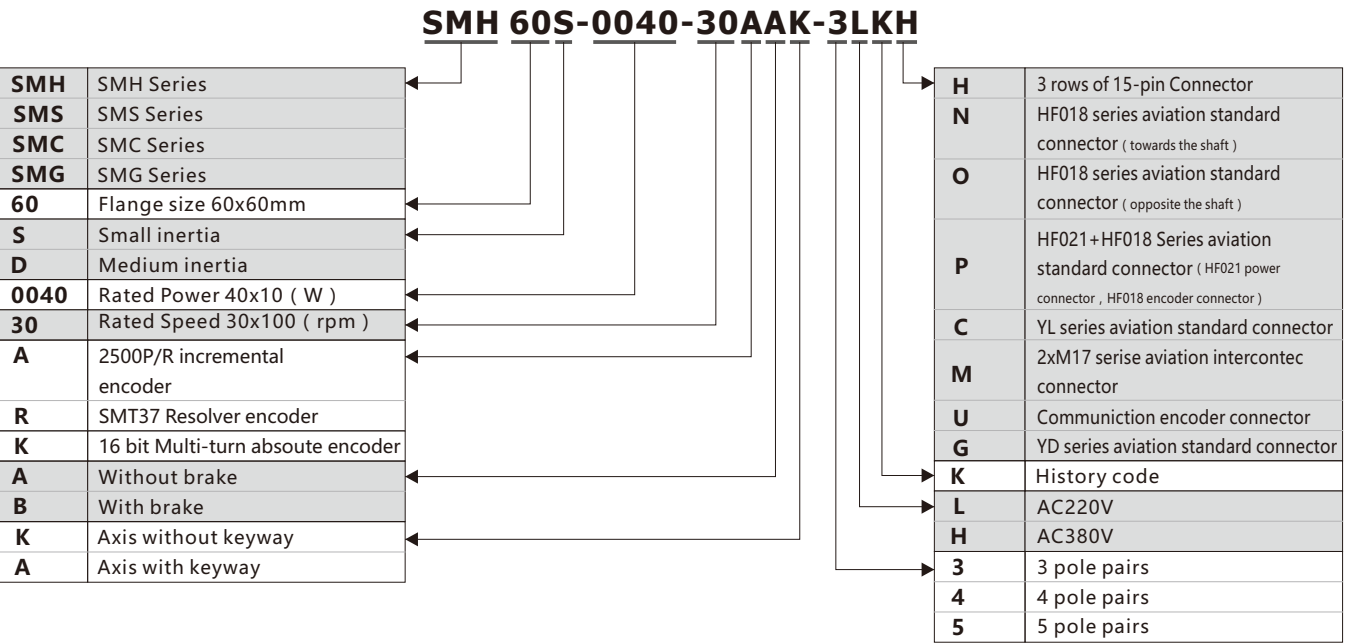
Kinco FD2S Series Servo Driver



Kinco CD2S Series Servo Driver



Kinco Servo Motor



Kinco Multi-pole Servo Motor

|                            |                             |
|----------------------------|-----------------------------|
| <b>57S-0010-10AAK-FLFH</b> |                             |
| <b>57</b>                  | Flange size 57×57mm         |
| <b>85</b>                  | Flange size 85×85mm         |
| <b>S</b>                   | Small Inertia               |
| <b>0010</b>                | Rated Power 100W            |
| <b>10</b>                  | Rated Speed 10x100(rpm)     |
| <b>A</b>                   | 2500P/R incremental encoder |
| <b>H</b>                   | 3 rows of 15-pin Connector  |
| <b>F</b>                   | History code                |
| <b>L</b>                   | AC220V                      |
| <b>F</b>                   | 50 Pole pairs               |
| <b>K</b>                   | With keyway                 |
| <b>A</b>                   | Without brake               |

Power, Brake and Encoder Cable of Motors

|                                |                                                                         |
|--------------------------------|-------------------------------------------------------------------------|
| <b>MOT - 005 - LL - KL - □</b> |                                                                         |
| <b>MOT</b>                     | Power cable                                                             |
| <b>005</b>                     | Rated current 5A                                                        |
| <b>008</b>                     | Rated current 8A                                                        |
| <b>015</b>                     | Rated current 15A                                                       |
| <b>030</b>                     | Rated current 30A                                                       |
| <b>03.05</b>                   | Length of cable: 3m、5m、10m、15m                                          |
| <b>None</b>                    | No brake lead contained in the power cable                              |
| <b>B</b>                       | Brake lead contained in the power cable (For KC/KM/KD motor with brake) |
| <b>KL</b>                      | 4 PIN power connector                                                   |
| <b>KC0</b>                     | HF018 series standard connector                                         |
| <b>KC1</b>                     | YL2207 series standard connector                                        |
| <b>KC2</b>                     | YL2406 series standard connector                                        |
| <b>KC3</b>                     | YL2406-1 series standard connector                                      |
| <b>KC4</b>                     | HFO21 series standard connector                                         |
| <b>Km1</b>                     | M17 series Intercontec connector                                        |
| <b>KG1</b>                     | YD28 series standard aviation connector                                 |
| <b>KG2</b>                     | KG2 YD32 series standard aviation connector                             |

|                                                                                           |                                |
|-------------------------------------------------------------------------------------------|--------------------------------|
| <b>BRA-LL-KL</b>                                                                          |                                |
| For KH suffix SMG motors with brake, please order power cable and brake cable separately. |                                |
| <b>BRA</b>                                                                                | Brake cable                    |
| <b>03.05</b>                                                                              | Length of cable: 3m、5m、10m、15m |
| <b>KL</b>                                                                                 | 2PIN cable connector           |
| <b>MG</b>                                                                                 | 3PIN aviation connector        |

|                                |                                                       |
|--------------------------------|-------------------------------------------------------|
| <b>ENC C A - LL - K H - □□</b> |                                                       |
| <b>ENC</b>                     | Encoder cable                                         |
| <b>C/D</b>                     | Encoder port                                          |
| <b>A/F/G/R</b>                 | PIN definition of encoder port                        |
| <b>03.05</b>                   | Length of cable: 3m、5m、10m、15m                        |
| <b>None</b>                    | Without batterye                                      |
| <b>BT</b>                      | With battery (for 16 bit multi-turn absolute encoder) |
| <b>H</b>                       | Encoder connector form                                |
| <b>K</b>                       | 16-core cable                                         |
| <b>F</b>                       | 10-core cable                                         |
| <b>G</b>                       | 6-core cable                                          |

JD/FD2S/CD2S Servo Driver and Motor Selection Table ( 1 )

| Series                                         | Rated Power /<br>Rated Speed /<br>Rated Torque                                                       | Servo Motor                               | Description                                           | Power/<br>Brake Cable  | Encoder<br>Cable                                                                           | Servo Driver                                                                               |                                                                                            |
|------------------------------------------------|------------------------------------------------------------------------------------------------------|-------------------------------------------|-------------------------------------------------------|------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| Small Inertia 220V                             | 50W<br>3000rpm/0.16Nm                                                                                | SMH40S-0005-30AAK-4LKH                    | 2500P/R incremental connector                         | MOT-005-LL-KL          | ENCCA-LL-KH                                                                                | FD412S-CA-000*1                                                                            |                                                                                            |
|                                                |                                                                                                      | SMH40S-0005-30ABK-4LKH                    | 2500P/R incremental connector with brake              | MOT-005-LL-KLBRA-LL-KL |                                                                                            | FD412S-LA-000*2                                                                            |                                                                                            |
|                                                | 100W<br>3000rpm/0.32Nm                                                                               | SMH40S-0010-30AAK-4LKH                    | 2500P/R incremental connector                         | MOT-005-LL-KL          |                                                                                            | FD412S-EA-000*3                                                                            |                                                                                            |
|                                                |                                                                                                      | SMH40S-0010-30ABK-4LKH                    | 2500P/R incremental connector with brake              | MOT-005-LL-KLBRA-LL-KL |                                                                                            | CD412S-AA-000*4                                                                            |                                                                                            |
|                                                | 200W<br>3000rpm/0.64Nm                                                                               | SMH60S-0020-30AAK-3LKH                    | 2500P/R incremental connector                         | MOT-005-LL-KL          | ENCCA-LL-KC0                                                                               | JD430-AA-000*1<br>FD422S-CA-000*1<br>FD422S-LA-000*2<br>FD422S-EA-000*3<br>CD422S-AA-000*4 |                                                                                            |
|                                                |                                                                                                      | SMH60S-0020-30ABK-3LKH                    | 2500P/R incremental connector with brake              | MOT-005-LL-KLBRA-LL-KL |                                                                                            |                                                                                            |                                                                                            |
|                                                |                                                                                                      | SMH60S-0020-30AAK-3LKN                    | 2500P/R HFO18 ( Towards the shaft ) series connector  | MOT-005-LL-KC0         |                                                                                            |                                                                                            |                                                                                            |
|                                                |                                                                                                      | SMH60S-0020-30ABK-3LKP                    | 2500P/R HFO18+HFO21 series connector with brake       | MOT-005-LL-KC4-B       |                                                                                            |                                                                                            |                                                                                            |
|                                                |                                                                                                      | SMH60S-0020-30AAK-3LKO                    | 2500P/R HFO18 ( Opposite the shaft ) series connector | MOT-005-LL-KC0         |                                                                                            |                                                                                            |                                                                                            |
|                                                |                                                                                                      | SMH60S-0020-30AAK-3LKM                    | 2500P/R 2×M17 series connector                        | MOT-005-LL-KM1         |                                                                                            |                                                                                            |                                                                                            |
|                                                | 400W<br>3000rpm/1.27Nm                                                                               | SMH60S-0020-30ABK-3LKM                    | 2500P/R 2×M17 series connector with brake             | MOT-005-LL-KM1-B       | ENCCA-LL-KM1                                                                               |                                                                                            |                                                                                            |
|                                                |                                                                                                      | SMH60S-0040-30AAK-3LKH                    | 2500P/R incremental connector                         | MOT-005-LL-KL          | ENCCA-LL-KH                                                                                |                                                                                            | JD430-AA-000*1<br>FD422S-CA-000*1<br>FD422S-LA-000*2<br>FD422S-EA-000*3<br>CD422S-AA-000*4 |
|                                                |                                                                                                      | SMH60S-0040-30ABK-3LKH                    | 2500P/R incremental connector with brake              | MOT-005-LL-KLBRA-LL-KL |                                                                                            |                                                                                            |                                                                                            |
|                                                |                                                                                                      | SMH60S-0040-30AAK-3LKN                    | 2500P/R HFO18 ( Towards the shaft ) series connector  | MOT-005-LL-KC0         | ENCCA-LL-KC0                                                                               |                                                                                            |                                                                                            |
|                                                |                                                                                                      | SMH60S-0040-30ABK-3LKP                    | 2500P/R HFO18+HFO21 series connector with brake       | MOT-005-LL-KC4-B       |                                                                                            |                                                                                            |                                                                                            |
|                                                |                                                                                                      | SMH60S-0040-30AAK-3LKO                    | 2500P/R HFO18 ( Opposite the shaft ) series connector | MOT-005-LL-KC0         | ENCCA-LL-KM1                                                                               |                                                                                            |                                                                                            |
|                                                | SMH60S-0040-30AAK-3LKM                                                                               | 2500P/R 2×M17 series connector            | MOT-005-LL-KM1                                        |                        |                                                                                            |                                                                                            |                                                                                            |
|                                                | 750W<br>3000rpm/2.39Nm                                                                               | SMH60S-0040-30ABK-3LKM                    | 2500P/R 2×M17 series connector with brake             | MOT-005-LL-KM1-B       | ENCCA-LL-KM1                                                                               |                                                                                            |                                                                                            |
|                                                |                                                                                                      | SMH80S-0075-30AAK-3LKH                    | 2500P/R incremental connector                         | MOT-005-LL-KL          | ENCCA-LL-KH                                                                                |                                                                                            | FD422S-CA-000*1<br>FD422S-LA-000*2<br>FD422S-EA-000*3<br>CD422S-AA-000*4                   |
|                                                |                                                                                                      | SMH80S-0075-30ABK-3LKH                    | 2500P/R incremental connector with brake              | MOT-005-LL-KLBRA-LL-KL |                                                                                            |                                                                                            |                                                                                            |
|                                                |                                                                                                      | SMH80S-0075-30AAK-3LKN                    | 2500P/R HFO18 ( Towards the shaft ) series connector  | MOT-005-LL-KC0         | ENCCA-LL-KC0                                                                               |                                                                                            |                                                                                            |
|                                                |                                                                                                      | SMH80S-0075-30ABK-3LKP                    | 2500P/R HFO18+HFO21 series connector with brake       | MOT-005-LL-KC4-B       |                                                                                            |                                                                                            |                                                                                            |
|                                                |                                                                                                      | SMH80S-0075-30AAK-3LKO                    | 2500P/R HFO18 ( Opposite the shaft ) series connector | MOT-005-LL-KC0         | ENCCA-LL-KM1                                                                               |                                                                                            |                                                                                            |
|                                                | SMH80S-0075-30AAK-3LKM                                                                               | 2500P/R 2×M17 series connector            | MOT-005-LL-KM1                                        |                        |                                                                                            |                                                                                            |                                                                                            |
|                                                | 4.18Nm<br>6Nm<br>7.5Nm                                                                               | SMH80S-0075-30ABK-3LKM                    | 2500P/R 2×M17 series connector with brake             | MOT-005-LL-KM1-B       | ENCCA-LL-KM1                                                                               |                                                                                            |                                                                                            |
| 4.18Nm                                         |                                                                                                      | 85S-0025-05AAK-FLFN-02                    | 2500P/R Multi-pole servo motor                        | MOTE-005-LL-KC0        | ENCCF-LL-FC0                                                                               | FD422S-CA-000*1<br>FD422S-LA-000*2<br>FD422S-EA-000*3<br>CD422S-AA-000*4                   |                                                                                            |
| 6Nm                                            |                                                                                                      | 85S-0035-05AAK-FLFN-02                    | 2500P/R Multi-pole servo motor                        |                        |                                                                                            |                                                                                            |                                                                                            |
| 7.5Nm                                          | 85S-0045-05AAK-FLFN-02                                                                               | 2500P/R Multi-pole servo motor            |                                                       |                        |                                                                                            |                                                                                            |                                                                                            |
| 1kW<br>3000rpm/3.18Nm                          | SMH80S-0100-30AAK-3LKH<br>SMH80S-0100-30ABK-3LKH<br>SMH80S-0100-30AAK-3LKM<br>SMH80S-0100-30ABK-3LKM | 2500P/R incremental connector             | MOT-008-LL-KL                                         | ENCCA-LL-KH            | JD430-AA-000*1<br>FD432S-CA-000*1<br>FD432S-LA-000*2<br>FD432S-EA-000*3<br>CD432S-AA-000*4 |                                                                                            |                                                                                            |
|                                                |                                                                                                      | 2500P/R incremental connector with brake  | MOT-008-LL-KLBRA-LL-KL                                |                        |                                                                                            |                                                                                            |                                                                                            |
|                                                |                                                                                                      | 2500P/R 2×M17 series connector            | MOT-008-LL-KM1                                        | ENCCA-LL-KM1           |                                                                                            |                                                                                            |                                                                                            |
|                                                |                                                                                                      | 2500P/R 2×M17 series connector with brake | MOT-008-LL-KM1-B                                      |                        |                                                                                            |                                                                                            |                                                                                            |
| Medium Inertia 220V                            | 1.05kW<br>2000rpm/5Nm                                                                                | SMH110D-0105-20AAK-4LKC                   | 2500P/R YL series connector                           | ENCCA-LL-KC1           |                                                                                            | FD432S-CA-000*1<br>FD432S-LA-000*2<br>FD432S-EA-000*3<br>CD432S-AA-000*4                   |                                                                                            |
|                                                |                                                                                                      | SMH110D-0105-20ABK-4LKC ●                 | 2500P/R YL series connector with brake                |                        |                                                                                            |                                                                                            | MOT-008-LL-KC2-B                                                                           |
|                                                | 1.26kW<br>2000rpm/6Nm                                                                                | SMH110D-0126-20AAK-4LKC                   | 2500P/R YL series connector                           | MOT-008-LL-KC1         |                                                                                            |                                                                                            |                                                                                            |
|                                                |                                                                                                      | SMH110D-0126-20ABK-4LKC ●                 | 2500P/R YL series connector with brake                | MOT-008-LL-KC2-B       |                                                                                            |                                                                                            |                                                                                            |
| Medium Inertia 380V                            | 1.25kW<br>3000rpm/4Nm                                                                                | SMH110D-0125-30AAK-4LKC                   | 2500P/R YL series connector                           | ENCCA-LL-KC1           | JD620-AA-000<br>FD622S-CA-000<br>FD622S-LA-000<br>FD622S-AA-000<br>CD622S-AA-000           |                                                                                            |                                                                                            |
|                                                |                                                                                                      | SMH110D-0125-30ABK-4LKC ●                 | 2500P/R YL series connector with brake                |                        |                                                                                            | MOT-008-LL-KC2-B                                                                           |                                                                                            |
|                                                | 1.26kW<br>3000rpm/4Nm                                                                                | SMH110D-0126-30AAK-4HKC                   | 2500P/R YL series connector                           | MOT-008-LL-KC1         |                                                                                            |                                                                                            |                                                                                            |
|                                                |                                                                                                      | SMH110D-0126-30ABK-4HKC ●                 | 2500P/R YL series connector with brake                | MOT-008-LL-KC2-B       |                                                                                            |                                                                                            |                                                                                            |
| 1.57kW<br>3000rpm/5Nm<br>1.88kW<br>3000rpm/6Nm | SMH110D-0157-30AAK-4HKC<br>SMH110D-0157-30ABK-4HKC ●                                                 | 2500P/R YL series connector               | MOT-008-LL-KC1                                        | ENCCA-LL-KC1           | JD620-AA-000<br>FD622S-CA-000<br>FD622S-LA-000<br>FD622S-AA-000<br>CD622S-AA-000           |                                                                                            |                                                                                            |
|                                                |                                                                                                      | 2500P/R YL series connector with brake    | MOT-008-LL-KC2-B                                      |                        |                                                                                            |                                                                                            |                                                                                            |
|                                                | SMH110D-0188-30AAK-4HKC<br>SMH110D-0188-30ABK-4HKC ●                                                 | 2500P/R YL series connector               | MOT-008-LL-KC1                                        |                        |                                                                                            |                                                                                            |                                                                                            |
|                                                |                                                                                                      | 2500P/R YL series connector with brake    | MOT-008-LL-KC2-B                                      |                        |                                                                                            |                                                                                            |                                                                                            |

# Servo Driver and Motor Selection Table

# Servo Driver and Motor Selection Table

JD/FD2S/CD2S Servo Driver and Motor Selection Table ( 2 )

| Series                               | Rated Power/<br>Rated Speed/<br>Rated Torque | Servo Motor               | Description                                   | Power/<br>Brake Cable    | Encoder<br>Cable | Servo Driver                                                                                                                                                                                                                                                                                                     |
|--------------------------------------|----------------------------------------------|---------------------------|-----------------------------------------------|--------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Medium<br>inertia<br>220V<br>or 380V | 1.05kW<br>2000rpm/5Nm                        | SMH130D-0105-20AAK-4HKC   | 2500P/R YL series connector                   | MOT-008-LL-KC2           | ENCCA-LL-KC1     | JD430-AA-000 <sup>*1</sup><br>JD620-AA-000 <sup>*1</sup><br>FD432S-CA-000 <sup>*1</sup><br>FD622S-CA-000 <sup>*1</sup><br>FD432S-LA-000 <sup>*2</sup><br>FD622S-LA-000 <sup>*2</sup><br>FD432S-EA-000 <sup>*3</sup><br>FD622S-EA-000 <sup>*3</sup><br>CD432S-AA-000 <sup>*4</sup><br>CD622S-AA-000 <sup>*4</sup> |
|                                      |                                              | SMH130D-0105-20ABK-4HKC • | 2500P/R YL series connector with brake        | MOT-008-LL-KC2-B         |                  |                                                                                                                                                                                                                                                                                                                  |
|                                      | 1.57kW<br>2000rpm/7.5Nm                      | SMH130D-0157-20AAK-4HKC   | 2500P/R YL series connector                   | MOT-008-LL-KC2           |                  |                                                                                                                                                                                                                                                                                                                  |
|                                      |                                              | SMH130D-0157-20ABK-4HKC • | 2500P/R YL series connector with brake        | MOT-008-LL-KC2-B         |                  |                                                                                                                                                                                                                                                                                                                  |
|                                      | 2.1kW<br>2000rpm/10Nm                        | SMH130D-0210-20AAK-4HKC   | 2500P/R YL series connector                   | MOT-008-LL-KC2           |                  | JD620-AA-000 <sup>*1</sup><br>FD622S-CA-000 <sup>*1</sup><br>FD622S-LA-000 <sup>*2</sup><br>FD622S-EA-000 <sup>*3</sup><br>CD622S-AA-000 <sup>*4</sup>                                                                                                                                                           |
|                                      |                                              | SMH130D-0210-20ABK-4HKC • | 2500P/R YL series connector with brake        | MOT-008-LL-KC2-B         |                  |                                                                                                                                                                                                                                                                                                                  |
|                                      | 2.3kW<br>2000rpm/11.1Nm                      | SMH150D-0230-20AAK-4HKC   | 2500P/R YL series connector                   | MOT-008-LL-KC2           |                  |                                                                                                                                                                                                                                                                                                                  |
|                                      |                                              | SMH150D-0230-20ABK-4HKC • | 2500P/R YL series connector with brake        | MOT-008-LL-KC2-B         |                  |                                                                                                                                                                                                                                                                                                                  |
|                                      | 3kW<br>2000rpm/14.3Nm                        | SMH130D-0300-20AAK-4HKC   | 2500P/R YL series connector                   | MOT-008-LL-KC2           |                  | JD630-AA-000 <sup>*1</sup><br>JD630-LA-000 <sup>*2</sup>                                                                                                                                                                                                                                                         |
|                                      |                                              | SMH130D-0300-20ABK-4HKC • | 2500P/R YL series connector with brake        | MOT-008-LL-KC2-B         |                  |                                                                                                                                                                                                                                                                                                                  |
|                                      | 3kW<br>2000rpm/14.3Nm                        | SMH150D-0300-20AAK-4HKC   | 2500P/R YL series connector                   | MOT-008-LL-KC2           |                  |                                                                                                                                                                                                                                                                                                                  |
|                                      |                                              | SMH150D-0300-20ABK-4HKC • | 2500P/R YL series connector with brake        | MOT-008-LL-KC2-B         |                  |                                                                                                                                                                                                                                                                                                                  |
|                                      | 3.8kW<br>2000rpm/18Nm                        | SMH150D-0380-20AAK-4HKC   | 2500P/R YL series connector                   | MOT-015-LL-KC2           |                  |                                                                                                                                                                                                                                                                                                                  |
|                                      |                                              | SMH150D-0380-20ABK-4HKC • | 2500P/R YL series connector with brake        | MOT-015-LL-KC2-B         |                  |                                                                                                                                                                                                                                                                                                                  |
|                                      | 3.5kW<br>1500rpm/22Nm                        | SMH180D-0350-15AAK-4HKC   | 2500P/R YL series connector                   | MOT-015-LL-KC2           |                  |                                                                                                                                                                                                                                                                                                                  |
|                                      |                                              | SMH180D-0350-15ABK-4HKC • | 2500P/R YL series connector with brake        | MOT-015-LL-KC2-B         |                  |                                                                                                                                                                                                                                                                                                                  |
|                                      | 4.4kW<br>1500rpm/28Nm                        | SMH180D-0440-15AAK-4HKC   | 2500P/R YL series connector                   | MOT-015-LL-KC2           |                  | JD640-AA-000 <sup>*1</sup><br>JD640-LA-000 <sup>*2</sup>                                                                                                                                                                                                                                                         |
|                                      |                                              | SMH180D-0440-15ABK-4HKC • | 2500P/R YL series connector with brake        | MOT-015-LL-KC2-B         |                  |                                                                                                                                                                                                                                                                                                                  |
|                                      | 5.5kW<br>1500rpm/35Nm                        | SMH180D-0550-15RAK-4HKC   | STM37 resolver YL series connector            | MOT-015-LL-KC2           | ENCCR-LL-FC1     | JD640-AR-000 <sup>*1</sup>                                                                                                                                                                                                                                                                                       |
|                                      |                                              | SMH180D-0550-15RBK-4HKC • | STM37 resolver YL series connector with brake | MOT-015-LL-KC2-B         |                  |                                                                                                                                                                                                                                                                                                                  |
|                                      | 7.5kW<br>1500rpm/48Nm                        | SMH180D-0750-15RAK-4HKC   | STM37 resolver YL series connector            | MOT-030-LL-KC3           |                  | JD650-AR-000 <sup>*1</sup>                                                                                                                                                                                                                                                                                       |
|                                      |                                              | SMH180D-0750-15RAK-4HKC • | STM37 resolver YL series connector with brake | MOT-030-LL-KC3-B         |                  |                                                                                                                                                                                                                                                                                                                  |
|                                      | 1.0kW<br>1000rpm/10Nm                        | SMG130D-0100-10AAK-4LKG   | 2500P/R YD series connector                   | MOT-005-LL-KG1           | ENCCA-LL-KG1     | JD430-AA-000 <sup>*1</sup><br>FD422S-CF-000 <sup>*1</sup><br>FD422S-LF-000 <sup>*2</sup><br>FD422S-EF-000 <sup>*3</sup><br>CD422S-AF-000 <sup>*4</sup>                                                                                                                                                           |
|                                      |                                              | SMG130D-0100-10ABK-4LKG • | 2500P/R YD series connector with brake        | MOT-005-LL-KG1/BRA-LL-MG |                  |                                                                                                                                                                                                                                                                                                                  |
|                                      | 1.0kW<br>2000rpm/5Nm                         | SMG130D-0100-20AAK-4LKG   | 2500P/R YD series connector                   | MOT-005-LL-KG1           |                  |                                                                                                                                                                                                                                                                                                                  |
|                                      |                                              | SMG130D-0100-20ABK-4LKG • | 2500P/R YD series connector with brake        | MOT-005-LL-KG1/BRA-LL-MG |                  |                                                                                                                                                                                                                                                                                                                  |
|                                      |                                              | SMG130D-0150-20AAK-4LKG   | 2500P/R YD series connector                   | MOT-008-LL-KG1           |                  | JD430-AA-000 <sup>*1</sup><br>FD432S-CA-000 <sup>*1</sup><br>FD432S-LA-000 <sup>*2</sup><br>FD432S-EA-000 <sup>*3</sup><br>CD432S-AA-000 <sup>*4</sup>                                                                                                                                                           |
|                                      |                                              | SMG130D-0150-20ABK-4LKG • | 2500P/R YD series connector with brake        | MOT-008-LL-KG1/BRA-LL-MG |                  |                                                                                                                                                                                                                                                                                                                  |
|                                      |                                              | SMG130D-0150-20AAK-4HKG   | 2500P/R YD series connector                   | MOT-005-LL-KG1           |                  | J620-AA-000 <sup>*1</sup><br>FD612S-CA-000 <sup>*1</sup><br>FD612S-LA-000 <sup>*2</sup><br>FD612S-EA-000 <sup>*3</sup><br>CD612S-AA-000 <sup>*4</sup>                                                                                                                                                            |
|                                      |                                              | SMG130D-0150-20ABK-4HKG • | 2500P/R YD series connector with brake        | MOT-005-LL-KG1/BRA-LL-MG |                  |                                                                                                                                                                                                                                                                                                                  |
|                                      | 2.0kW<br>2000rpm/10Nm                        | SMG130D-0200-20AAK-4LKG   | 2500P/R YD series connector                   | MOT-015-LL-KG1           |                  | FD432S-CA-000 <sup>*1</sup><br>JD430-AA-000 <sup>*1</sup><br>FD432S-LA-000 <sup>*2</sup><br>FD432S-EA-000 <sup>*3</sup><br>CD432S-AA-000 <sup>*4</sup>                                                                                                                                                           |
|                                      |                                              | SMG130D-0200-20ABK-4LKG • | 2500P/R YD series connector with brake        | MOT-015-LL-KG1/BRA-LL-MG |                  |                                                                                                                                                                                                                                                                                                                  |
|                                      |                                              | SMG130D-0200-20AAK-4HKG   | 2500P/R YD series connector                   | MOT-008-LL-KG1           |                  | FD612S-CA-000 <sup>*1</sup><br>J620-AA-000 <sup>*1</sup><br>FD612S-LA-000 <sup>*2</sup><br>FD612S-EA-000 <sup>*3</sup><br>CD612S-AA-000 <sup>*4</sup>                                                                                                                                                            |
|                                      |                                              | SMG130D-0200-20ABK-4HKG • | 2500P/R YD series connector with brake        | MOT-008-LL-KG1/BRA-LL-MG |                  |                                                                                                                                                                                                                                                                                                                  |

Note: 1. This drive requires the user to select the motor by himself.  
2. \*1--Support CANopen bus control mode  
\*2--Support pulse and MODBUS 485 control mode  
\*3--Support EtherCAT control mode  
\*4--Support pulse control mode  
3. • When the driver drives the brake holding device, the DC24V / 2A relay shall be externally connected.

JD/FD2S/CD2S Servo Driver and Motor Selection Table ( 3 )

| Series                    | Rated Power/<br>Rated Speed/<br>Rated Torque | Servo Motor               | Description                            | Power/<br>Brake Cable    | Encoder<br>Cable | Servo Driver                                                                                                                                          |
|---------------------------|----------------------------------------------|---------------------------|----------------------------------------|--------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Medium<br>inertia<br>380V | 3.0kW<br>2000rpm/15Nm                        | SMG130D-0300-20AAK-4HKG   | 2500P/R YD series connector            | MOT-008-LL-KG1           | ENCCA-LL-KG1     | J620-AA-000 <sup>*1</sup><br>FD622S-CA-000 <sup>*1</sup><br>FD622S-LA-000 <sup>*2</sup><br>FD622S-EA-000 <sup>*3</sup><br>CD622S-AA-000 <sup>*4</sup> |
|                           |                                              | SMG130D-0300-20ABK-4HKG • | 2500P/R YD series connector with brake | MOT-008-LL-KG1/BRA-LL-MG |                  |                                                                                                                                                       |
|                           | 4.4kW<br>1500rpm/27Nm                        | SMG180D-0440-15AAK-4HKG   | 2500P/R YD series connector            | MOT-015-LL-KG2           |                  |                                                                                                                                                       |
|                           |                                              | SMG180D-0440-15ABK-4HKG • | 2500P/R YD series connector with brake | MOT-015-LL-KG2/BRA-LL-MG |                  |                                                                                                                                                       |
|                           | 5.5kW<br>1500rpm/35Nm                        | SMG180D-0550-15AAK-4HKG   | 2500P/R YD series connector            | MOT-015-LL-KG2           |                  | JD640-AA-000 <sup>*1</sup><br>JD640-LA-000 <sup>*2</sup>                                                                                              |
|                           |                                              | SMG180D-0550-15ABK-4HKG • | 2500P/R YD series connector with brake | MOT-015-LL-KG2/BRA-LL-MG |                  |                                                                                                                                                       |
|                           | 7.5kW<br>1500rpm/48Nm                        | SMG180D-0750-15AAK-4HKG   | 2500P/R YD series connector            | MOT-030-LL-KG2           |                  | JD650-AA-000 <sup>*1</sup>                                                                                                                            |
|                           |                                              | SMG180D-0750-15ABK-4HKG • | 2500P/R YD series connector with brake | MOT-030-LL-KG2/BRA-LL-MG |                  |                                                                                                                                                       |

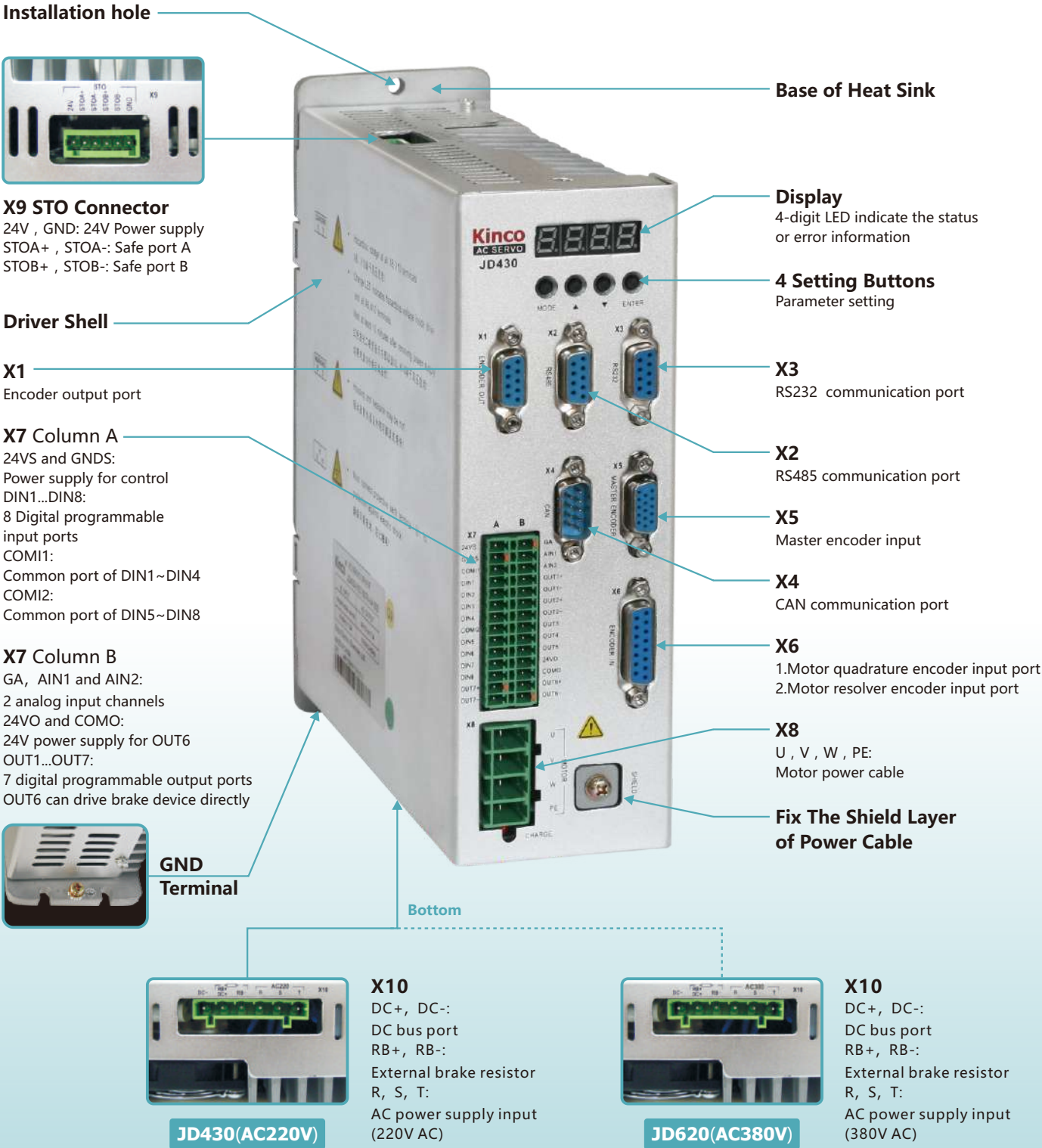
FD2S/CD2S Servo Driver and Motor Selection Table ( 1 )

| Series                               | Rated Power/<br>Rated Speed/<br>Rated Torque | Servo Motor               | Description                                     | Power/<br>Brake Cable   | Encoder<br>Cable | Servo Driver                                                                                                             |                                                                                                                          |
|--------------------------------------|----------------------------------------------|---------------------------|-------------------------------------------------|-------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Small<br>inertia<br>220V             | 200W<br>3000rpm/0.64Nm                       | SMC60S-0020-30AAK-3LKH    | 2500P/R Cable connector                         | MOT-005-LL-KL           | ENCCA-LL-KH      | FD422S-CA-000 <sup>*1</sup><br>FD422S-LA-000 <sup>*2</sup><br>FD422S-EA-000 <sup>*3</sup><br>CD422S-AA-000 <sup>*4</sup> |                                                                                                                          |
|                                      |                                              | SMC60S-0020-30ABK-3LKH    | 2500P/R Cable connector with brake              | MOT-005-LL-KL/BRA-LL-KL |                  |                                                                                                                          |                                                                                                                          |
|                                      |                                              | SMC60S-0020-30AAK-3LKN    | 2500P/R HFO18 series connector                  | MOT-005-LL-KC0          | ENCCA-LL-KC0     |                                                                                                                          |                                                                                                                          |
|                                      |                                              | SMC60S-0020-30ABK-3LKP    | 2500P/R HFO18+HFO21 series connector with brake | MOT-005-LL-KC4-B        |                  |                                                                                                                          |                                                                                                                          |
|                                      | 400W<br>3000rpm/1.27Nm                       | SMC60S-0040-30AAK-3LKH    | 2500P/R Cable connector                         | MOT-005-LL-KL           | ENCCA-LL-KH      |                                                                                                                          |                                                                                                                          |
|                                      |                                              | SMC60S-0040-30ABK-3LKH    | 2500P/R Cable connector with brake              | MOT-005-LL-KL/BRA-LL-KL |                  |                                                                                                                          |                                                                                                                          |
|                                      |                                              | SMC60S-0040-30AAK-3LKN    | 2500P/R HFO18 series connector                  | MOT-005-LL-KC0          | ENCCA-LL-KC0     |                                                                                                                          |                                                                                                                          |
|                                      |                                              | SMC60S-0040-30ABK-3LKP    | 2500P/R HFO18+HFO21 series connector with brake | MOT-005-LL-KC4-B        |                  |                                                                                                                          |                                                                                                                          |
|                                      | 750W<br>3000rpm/2.39Nm                       | SMC80S-0075-30AAK-3LKH    | 2500P/R Cable connector                         | MOT-005-LL-KL           | ENCCA-LL-KH      |                                                                                                                          |                                                                                                                          |
|                                      |                                              | SMC80S-0075-30ABK-3LKH    | 2500P/R Cable connector with brake              | MOT-005-LL-KL/BRA-LL-KL |                  |                                                                                                                          |                                                                                                                          |
|                                      |                                              | SMC80S-0075-30AAK-3LKN    | 2500P/R HFO18 series connector                  | MOT-005-LL-KC0          | ENCCA-LL-KC0     |                                                                                                                          |                                                                                                                          |
|                                      |                                              | SMC80S-0075-30ABK-3LKP    | 2500P/R HFO18+HFO21 series connector with brake | MOT-005-LL-KC4-B        |                  |                                                                                                                          |                                                                                                                          |
| Medium<br>inertia<br>220V<br>or 380V | 1kW<br>2000rpm/4.8Nm                         | SMC130D-0100-20AAK-4LKP   | 2500P/R HFO18+HFO21 series connector            | MOT-005-LL-KC4          | ENCCA-LL-KC0     | FD422S-CF-000 <sup>*1</sup><br>FD422S-LF-000 <sup>*2</sup><br>FD422S-EF-000 <sup>*3</sup><br>CD422S-AF-000 <sup>*4</sup> |                                                                                                                          |
|                                      |                                              | SMC130D-0100-20ABK-4LKP ● | 2500P/R HFO18+HFO21 series connector with brake | MOT-005-LL-KC4-B        |                  |                                                                                                                          |                                                                                                                          |
|                                      | 1.5kW<br>2000rpm/7.2Nm                       | SMC130D-0150-20AAK-4LKP   | 2500P/R HFO18+HFO21 series connector            | MOT-008-LL-KC4          |                  |                                                                                                                          | FD432S-CA-000 <sup>*1</sup><br>FD432S-LA-000 <sup>*2</sup><br>FD432S-EA-000 <sup>*3</sup><br>CD432S-AA-000 <sup>*4</sup> |
|                                      |                                              | SMC130D-0150-20ABK-4LKP ● | 2500P/R HFO18+HFO21 series connector with brake | MOT-008-LL-KC4-B        |                  |                                                                                                                          |                                                                                                                          |
|                                      | 2kW<br>2000rpm/10Nm                          | SMC130D-0200-20AAK-4LKP   | 2500P/R HFO18+HFO21 series connector            | MOT-008-LL-KC4          |                  | FD612S-CA-000 <sup>*1</sup><br>FD612S-LA-000 <sup>*2</sup><br>FD612S-EA-000 <sup>*3</sup><br>CD612S-AA-000 <sup>*4</sup> |                                                                                                                          |
|                                      |                                              | SMC130D-0200-20ABK-4LKP ● | 2500P/R HFO18+HFO21 series connector with brake | MOT-008-LL-KC4-B        |                  |                                                                                                                          |                                                                                                                          |
|                                      | 1.5kW<br>2000rpm/7.2Nm                       | SMC130D-0150-20AAK-4HKP   | 2500P/R HFO18+HFO21 series connector            | MOT-005-LL-KC4          |                  |                                                                                                                          | FD622S-CA-000 <sup>*1</sup><br>FD622S-LA-000 <sup>*2</sup><br>FD622S-EA-000 <sup>*3</sup><br>CD622S-AA-000 <sup>*4</sup> |
|                                      |                                              | SMC130D-0150-20ABK-4HKP ● | 2500P/R HFO18+HFO21 series connector with brake | MOT-005-LL-KC4-B        |                  |                                                                                                                          |                                                                                                                          |
|                                      | 2kW<br>2000rpm/10Nm                          | SMC130D-0200-20AAK-4HKP   | 2500P/R HFO18+HFO21 series connector            | MOT-008-LL-KC4          |                  | FD622S-CA-000 <sup>*1</sup><br>FD622S-LA-000 <sup>*2</sup><br>FD622S-EA-000 <sup>*3</sup><br>CD622S-AA-000 <sup>*4</sup> |                                                                                                                          |
|                                      |                                              | SMC130D-0200-20ABK-4HKP ● | 2500P/R HFO18+HFO21 series connector with brake | MOT-008-LL-KC4-B        |                  |                                                                                                                          |                                                                                                                          |
|                                      | 3kW<br>2000rpm/14.3Nm                        | SMC130D-0300-20AAK-4HKP   | 2500P/R HFO18+HFO21 series connector            | MOT-008-LL-KC4          |                  | FD622S-CA-000 <sup>*1</sup><br>FD622S-LA-000 <sup>*2</sup><br>FD622S-EA-000 <sup>*3</sup><br>CD622S-AA-000 <sup>*4</sup> |                                                                                                                          |
|                                      |                                              | SMC130D-0300-20ABK-4HKP ● | 2500P/R HFO18+HFO21 series connector with brake | MOT-008-LL-KC4-B        |                  |                                                                                                                          |                                                                                                                          |

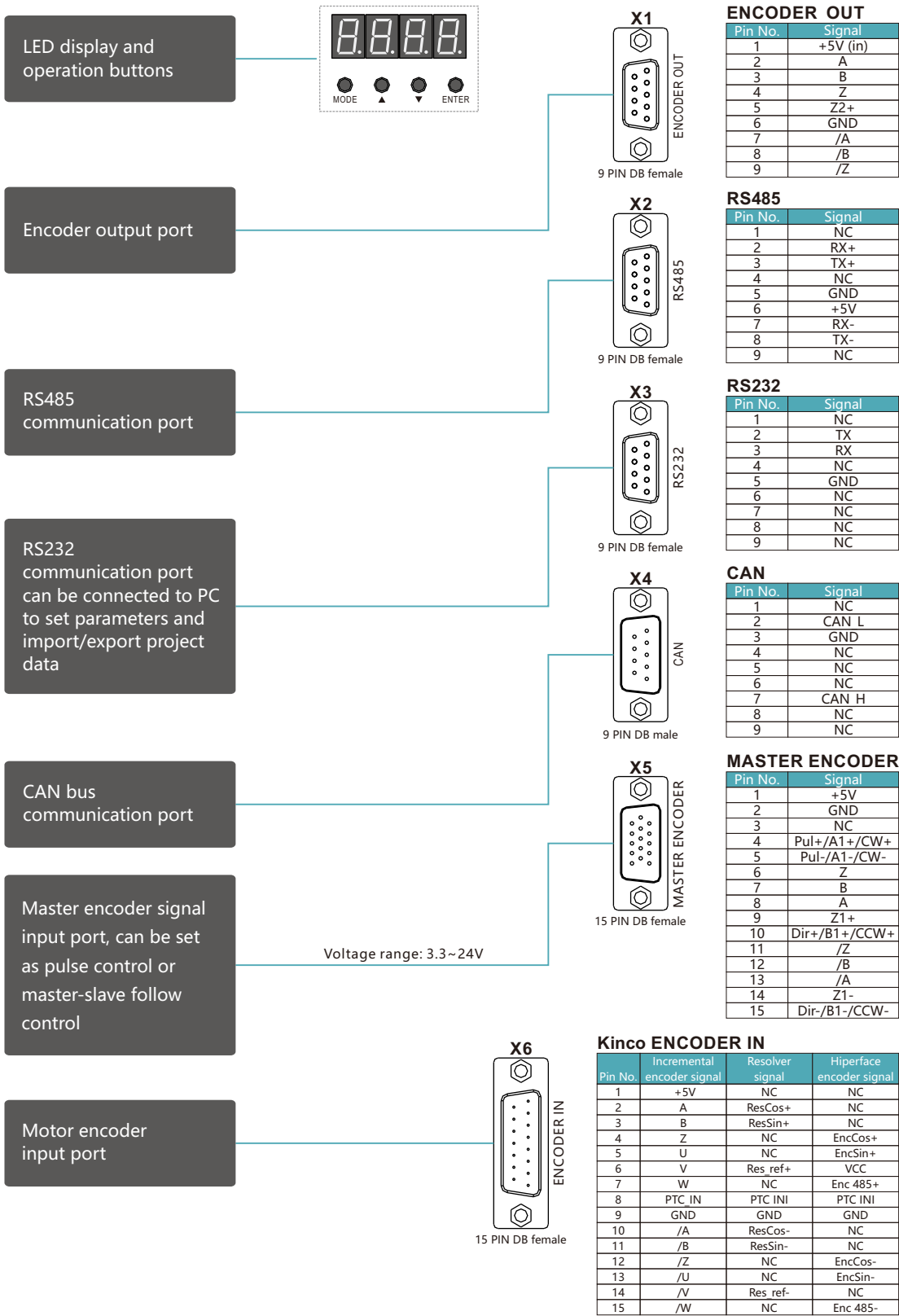
Note: 1. This drive requires the user to select the motor by himself.  
2. \*1--Support CANopen bus control mode  
\*2--Support pulse MODBUS 485 control mode  
\*3--Support EtherCAT control mode  
\*4--Support pulse control mode  
3. • When the driver drives the brake holding device, the DC24V / 2A relay shall be externally connected.

FD2S/CD2S Servo Driver and Motor Selection Table (2)

| Series                               | Rated Power /<br>Rated Speed /<br>Rated Torque | Servo Motor               | Description                                                 | Power/<br>Brake Cable   | Encoder<br>Cable                               | Servo Driver                                                                                                             |
|--------------------------------------|------------------------------------------------|---------------------------|-------------------------------------------------------------|-------------------------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Small<br>inertia<br>220V             | 50W<br>3000rpm/0.16Nm                          | SMS40S-0005-30KAK-5LSU    | 16 bit multi-turn absolute encoder                          | MOT-005-LL-KL           | ENCDCG-LL-GU<br>ENCDCG-(4)-GU-BT <sup>15</sup> | FD412S-CA-000 <sup>*1</sup><br>FD412S-LA-000 <sup>*2</sup><br>FD412S-EA-000 <sup>*3</sup><br>CD412S-AA-000 <sup>*4</sup> |
|                                      |                                                | SMS40S-0005-30KBK-5LSU    | 16 bit multi-turn absolute encoder with brake               | MOT-005-LL-KL/BRA-LL-KL |                                                |                                                                                                                          |
|                                      | 100W<br>3000rpm/0.32Nm                         | SMS40S-0010-30KAK-5LSU    | 16 bit multi-turn absolute encoder                          | MOT-005-LL-KL           |                                                |                                                                                                                          |
|                                      |                                                | SMS40S-0010-30KBK-5LSU    | 16 bit multi-turn absolute encoder with brake               | MOT-005-LL-KL/BRA-LL-KL |                                                |                                                                                                                          |
|                                      | 200W<br>3000rpm/0.64Nm                         | SMS60S-0020-30KAK-3LSU    | 16 bit multi-turn absolute encoder                          | MOT-005-LL-KL           |                                                | FD422S-CA-000 <sup>*1</sup><br>FD422S-LA-000 <sup>*2</sup><br>FD422S-EA-000 <sup>*3</sup><br>CD422S-AA-000 <sup>*4</sup> |
|                                      |                                                | SMS60S-0020-30KBK-3LSU    | 16 bit multi-turn absolute encoder with brake               | MOT-005-LL-KL/BRA-LL-KL |                                                |                                                                                                                          |
|                                      | 400W<br>3000rpm/1.27Nm                         | SMS60S-0040-30KAK-3LSU    | 16 bit multi-turn absolute encoder                          | MOT-005-LL-KL           |                                                |                                                                                                                          |
|                                      |                                                | SMS60S-0040-30KBK-3LSU    | 16 bit multi-turn absolute encoder with brake               | MOT-005-LL-KL/BRA-LL-KL |                                                |                                                                                                                          |
|                                      | 750W<br>3000rpm/2.39Nm                         | SMS80S-0075-30KAK-3LSU    | 16 bit multi-turn absolute encoder                          | MOT-005-LL-KL           |                                                | FD422S-CF-000 <sup>*1</sup><br>FD422S-LF-000 <sup>*2</sup><br>FD422S-EF-000 <sup>*3</sup><br>CD422S-AF-000 <sup>*4</sup> |
|                                      |                                                | SMS80S-0075-30KBK-3LSU    | 16 bit multi-turn absolute encoder with brake               | MOT-005-LL-KL/BRA-LL-KL |                                                |                                                                                                                          |
| Medium<br>inertia<br>220V<br>or 380V | 1kW<br>2000rpm/4.8Nm                           | SMS130D-0100-20KAK-4LKP   | 16 bit multi-turn absolute HFO18+HFO21 connector            | MOT-005-LL-KC4          | ENCDCG-LL-GU<br>ENCDCG-(4)-GU-BT <sup>15</sup> | FD432S-CA-000 <sup>*1</sup><br>FD432S-LA-000 <sup>*2</sup><br>FD432S-EA-000 <sup>*3</sup><br>CD432S-AA-000 <sup>*4</sup> |
|                                      |                                                | SMS130D-0100-20KBK-4LKP • | 16 bit multi-turn absolute HFO18+HFO21 connector with brake | MOT-005-LL-KC4-B        |                                                |                                                                                                                          |
|                                      | 1.5kW<br>2000rpm/7.2Nm                         | SMS130D-0150-20KAK-4LKP   | 16 bit multi-turn absolute HFO18+HFO21 connector            | MOT-008-LL-KC4          |                                                |                                                                                                                          |
|                                      |                                                | SMS130D-0150-20KBK-4LKP • | 16 bit multi-turn absolute HFO18+HFO21 connector with brake | MOT-008-LL-KC4-B        |                                                |                                                                                                                          |
|                                      | 2kW<br>2000rpm/10Nm                            | SMS130D-0200-20KAK-4LKP   | 16 bit multi-turn absolute HFO18+HFO21 connector            | MOT-008-LL-KC4          |                                                | FD612S-CA-000 <sup>*1</sup><br>FD612S-LA-000 <sup>*2</sup><br>FD612S-EA-000 <sup>*3</sup><br>CD612S-AA-000 <sup>*4</sup> |
|                                      |                                                | SMS130D-0200-20KBK-4LKP • | 16 bit multi-turn absolute HFO18+HFO21 connector with brake | MOT-008-LL-KC4-B        |                                                |                                                                                                                          |
|                                      | 1.5kW<br>2000rpm/7.2Nm                         | SMS130D-0150-20KAK-4HKP   | 16 bit multi-turn absolute HFO18+HFO21 connector            | MOT-005-LL-KC4          |                                                |                                                                                                                          |
|                                      |                                                | SMS130D-0150-20KBK-4HKP • | 16 bit multi-turn absolute HFO18+HFO21 connector with brake | MOT-005-LL-KC4-B        |                                                |                                                                                                                          |
|                                      | 2kW<br>2000rpm/10Nm                            | SMS130D-0200-20KAK-4HKP   | 16 bit multi-turn absolute HFO18+HFO21 connector            | MOT-008-LL-KC4          |                                                | FD622S-CA-000 <sup>*1</sup><br>FD622S-LA-000 <sup>*2</sup><br>FD622S-EA-000 <sup>*3</sup><br>CD622S-AA-000 <sup>*4</sup> |
|                                      |                                                | SMS130D-0200-20KBK-4HKP • | 16 bit multi-turn absolute HFO18+HFO21 connector with brake | MOT-008-LL-KC4-B        |                                                |                                                                                                                          |
|                                      | 3kW<br>2000rpm/14.3Nm                          | SMS130D-0300-20KAK-4HKP   | 16 bit multi-turn absolute HFO18+HFO21 connector            | MOT-008-LL-KC4          |                                                |                                                                                                                          |
|                                      |                                                | SMS130D-0300-20KBK-4HKP • | 16 bit multi-turn absolute HFO18+HFO21 connector with brake | MOT-008-LL-KC4-B        |                                                |                                                                                                                          |



Note: 1. JD430/JD620 drivers share the same interface definition, except for X10 power interfaces.  
2. Suggest brake resistor : JD430 39Ω/200W or 75Ω/100W、JD620 75Ω/200W、JD630&JD640 47Ω/500W、JD650 27Ω/1000W,he customer should chose the power brake resistor according to the actual application.

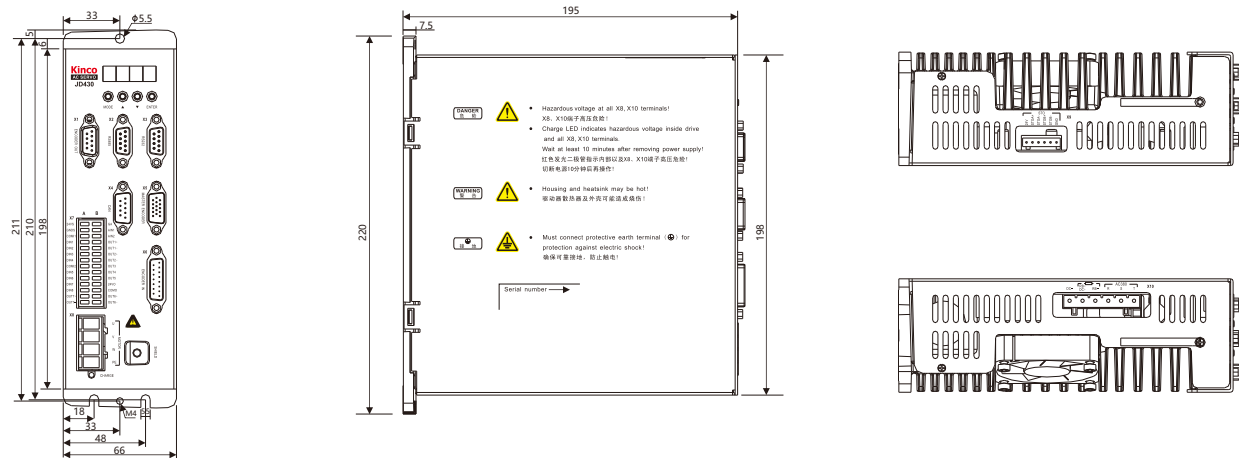


| Technical Specifications of JD Servo Driver |                                |                                                                                                                                                                                                                           |                                 |                                 |                                 |                                 |
|---------------------------------------------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| Model Parameter                             |                                | JD430-AA-000                                                                                                                                                                                                              | JD620-AA-000                    | JD630-□A-000                    | JD640-□R-000                    | JD650-AR-000                    |
| Power                                       | Main supply voltage            | Single-phase or 3-phase AC220V -20/+15% 47~63Hz                                                                                                                                                                           | 3-phase AC380V -20/+15% 47~63Hz | 3-phase AC380V -20/+15% 47~63Hz | 3-phase AC380V -20/+15% 47~63Hz | 3-phase AC380V -20/+15% 47~63Hz |
|                                             | Control circuit voltage        | 18VDC~30VDC 1A                                                                                                                                                                                                            | 18VDC~30VDC 1A                  | 18VDC~30VDC 1A                  | 18VDC~30VDC 1A                  | 18VDC~30VDC 1A                  |
| Current                                     | Rated current (RMS)            | 10A                                                                                                                                                                                                                       | 7A                              | 10A                             | 13A                             | 18A                             |
|                                             | Peak current (PEAK)            | 27.5A                                                                                                                                                                                                                     | 25A                             | 35A                             | 45A                             | 65A                             |
| Brake chopper threshold                     |                                | DC380V±5V                                                                                                                                                                                                                 | DC680V±5V                       | DC680V±5V                       | DC680V±5V                       | DC680V±5V                       |
| Over-voltage alarming threshold             |                                | DC400V±5V                                                                                                                                                                                                                 | DC700V±5V                       | DC700V±5V                       | DC700V±5V                       | DC700V±5V                       |
| Under-voltage alarming threshold            |                                | DC200V±5V                                                                                                                                                                                                                 | DC400V±5V                       | DC400V±5V                       | DC400V±5V                       | DC400V±5V                       |
| Cooling method                              |                                | Forced air cooling                                                                                                                                                                                                        |                                 | Forced air cooling              |                                 | Forced air cooling              |
| Weight (Kg)                                 |                                | 2.51                                                                                                                                                                                                                      |                                 | 3.62                            |                                 | 6.7                             |
| Size(W*H*D, mm)                             |                                | 220×195×66                                                                                                                                                                                                                |                                 | 255×230×77                      |                                 | 320×280.5×95                    |
| General Functions                           | Digital operation panel        | 4 buttons and 4 LED display                                                                                                                                                                                               |                                 |                                 |                                 |                                 |
|                                             | External I/O                   | 7 digital outputs(OUT1, OUT2, OUT7 are 0.1A and OUT3~OUT6 are 0.5A, can define driver ready and other functions freely;<br>8 digital inputs(12.5~30V), can define driver enables and other functions freely.              |                                 |                                 |                                 |                                 |
|                                             | Analog input                   | 2 analog inputs, can be used to control speed and torque, the input range is -10V~10V                                                                                                                                     |                                 |                                 |                                 |                                 |
|                                             | Encoder signal output function | Output encoder signal and master encoder signal are optional, can be used in the multiple axes synchronization, the max. output frequency is 2MHz. Do not support this function if driver is matched with resolver motor. |                                 |                                 |                                 |                                 |
|                                             | Master encoder input function  | Can receive 3.3V~24V pulse/direction signal, CW/CCW signal, and the RS422 difference signal, the max. input frequency is 4MHz.                                                                                            |                                 |                                 |                                 |                                 |
|                                             | Feedback signal                | Incremental encoder 2500P/R<br>Resolver、Hiperface/sincos® Encoder<br>16 bit multi-turn absolute encoder、20 bit single-turn absolute encoder                                                                               |                                 |                                 |                                 |                                 |
|                                             | RS232                          | The max. baudrate is 115.2KHz, use JD-PC software to communicate with PC, or via free protocol to communicate with controller                                                                                             |                                 |                                 |                                 |                                 |
|                                             | RS485                          | The max. baudrate is 115.2KHz, use Modbus RTU protocol to communicate with controller                                                                                                                                     |                                 |                                 |                                 |                                 |
|                                             | CAN BUS                        | The max. baudrate is 1MHz, use CANopen protocol to communicate with controller                                                                                                                                            |                                 |                                 |                                 |                                 |
|                                             | STO function                   | STO port can be connected to safe controller, switch, and sensor to protect the system                                                                                                                                    |                                 |                                 |                                 |                                 |
| Operation Environment                       | Operating temperature          | 0~40℃                                                                                                                                                                                                                     |                                 |                                 |                                 |                                 |
|                                             | Storage temperature            | -10~70℃                                                                                                                                                                                                                   |                                 |                                 |                                 |                                 |
|                                             | Humidity (non-condensing)      | Below 90% RH                                                                                                                                                                                                              |                                 |                                 |                                 |                                 |
|                                             | Protection class               | IP20                                                                                                                                                                                                                      |                                 |                                 |                                 |                                 |
|                                             | Installation environment       | Installed in a dust-free,dry and lockable environment (such as in a electrical cabinet)                                                                                                                                   |                                 |                                 |                                 |                                 |
|                                             | Installation mode              | Vertical installation                                                                                                                                                                                                     |                                 |                                 |                                 |                                 |
|                                             | Height                         | No power limitation below 1000m                                                                                                                                                                                           |                                 |                                 |                                 |                                 |
| Atmospheric pressure                        |                                | 86~106kpa                                                                                                                                                                                                                 |                                 |                                 |                                 |                                 |

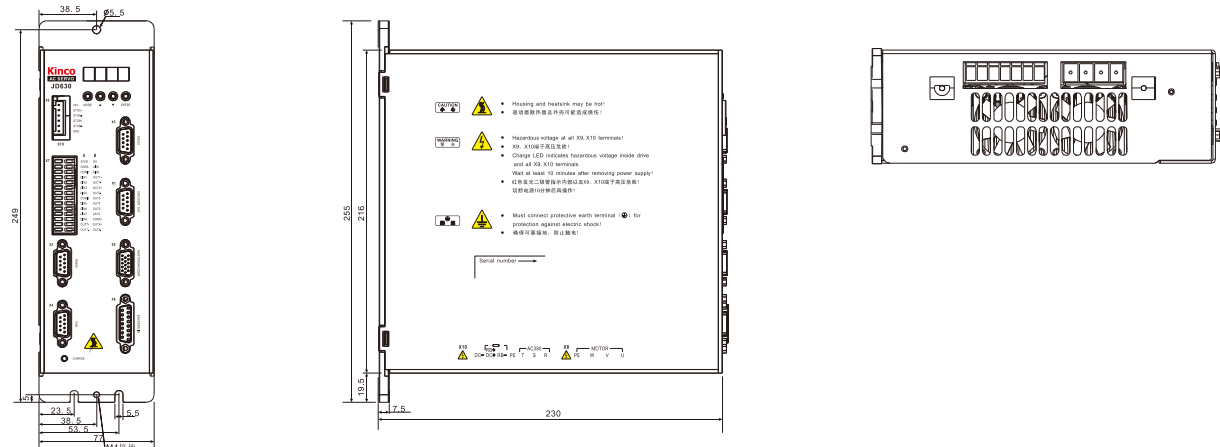
Note① : □=LA : Communication port RS232、RS485  
□=AA: Communication port RS232、RS485、CANopen  
□=AR : Communication port RS232、RS485、CANopen , support motor with Resolver

Note② : AA is a direct driving servo system

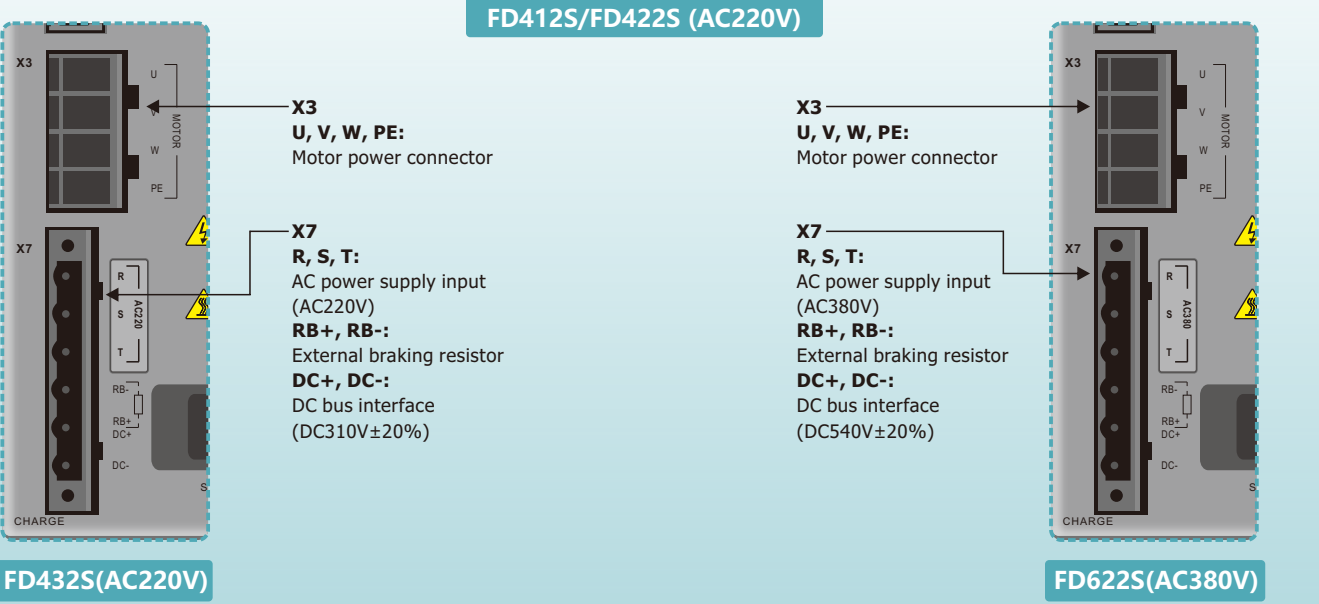
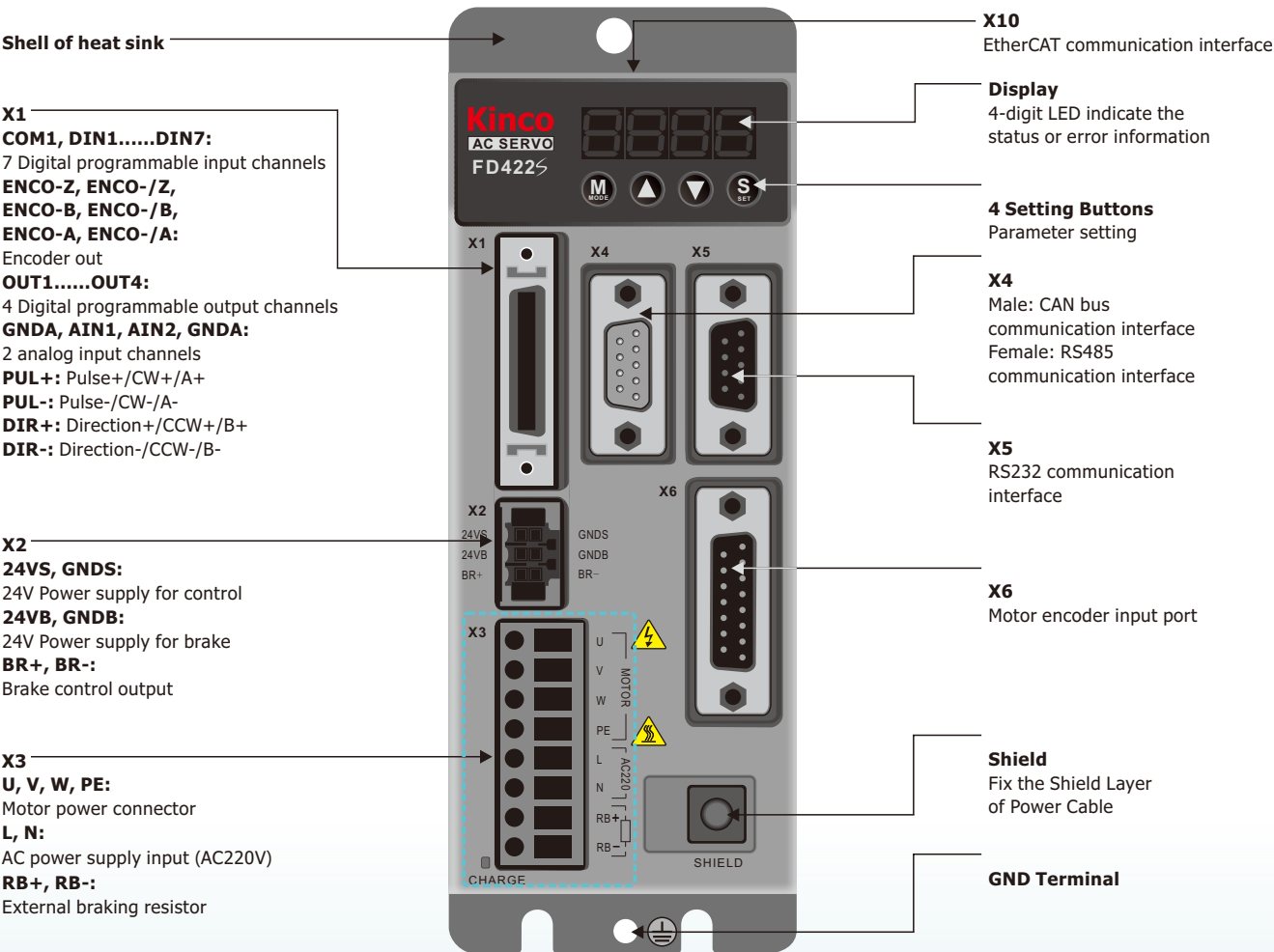
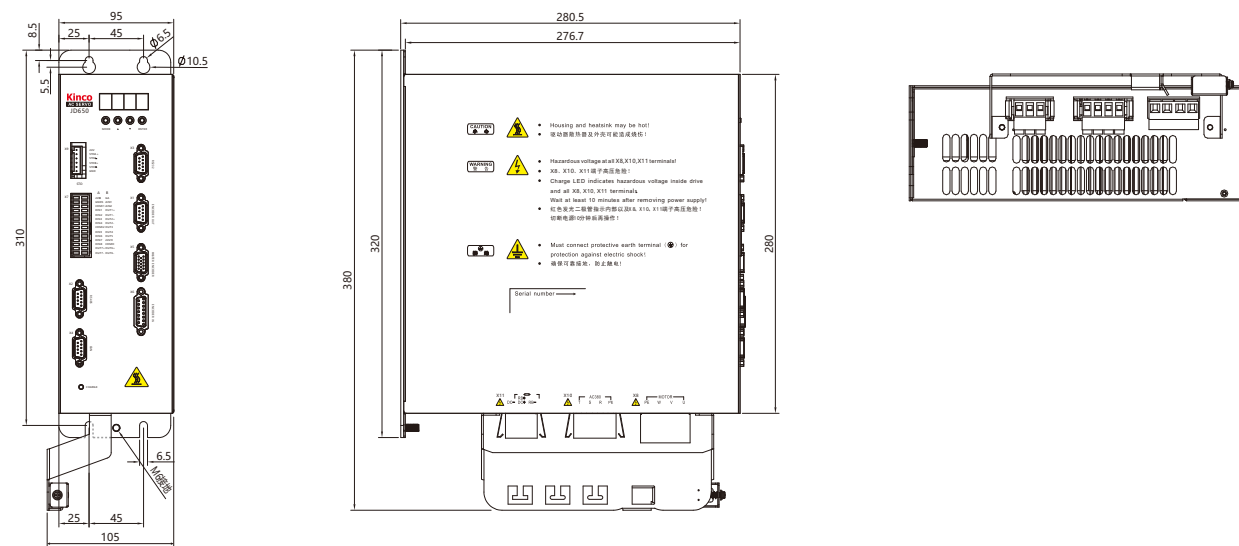
Mechanical Dimension Diagram of JD430/JD620



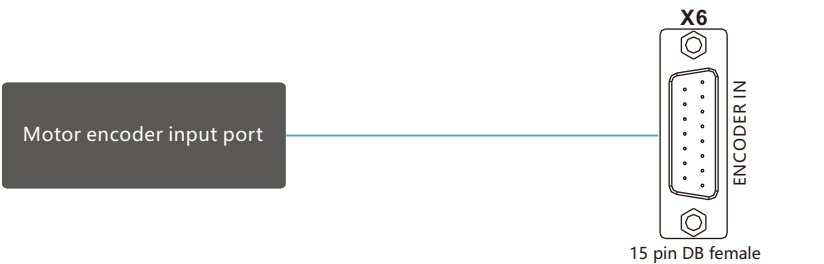
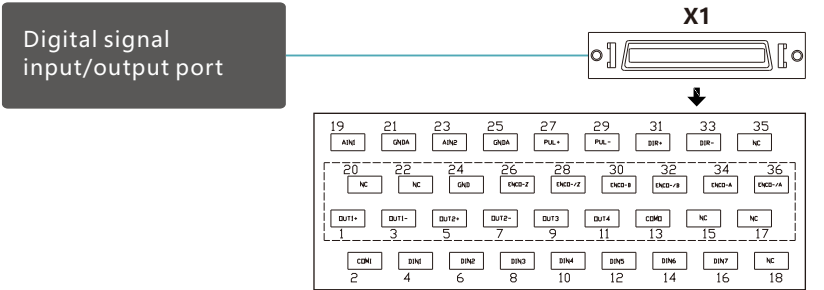
Mechanical Dimension Diagram of JD630/JD640



Mechanical Dimension Diagram of JD650



Note: 1. FD412S/FD422S/FD432S/FD622S share the same interface definition except the X3 and X7 power interfaces;  
2. Suggested brake resistor: FD412S/FD422S 75Ω/100W, FD432S 39Ω/200W, FD622S 75Ω/200W. The customer should choose the power of brake resistor according to the actual application.



X1

| Pin No. | Signal | Pin No. | Signal | Pin No. | Signal  | Pin No. | Signal |
|---------|--------|---------|--------|---------|---------|---------|--------|
| 2       | COM1   | 1       | OUT1+  | 20      | NC      | 19      | AIN1   |
| 4       | DIN1   | 3       | OUT1-  | 22      | NC      | 21      | GNDA   |
| 6       | DIN2   | 5       | OUT2+  | 24      | GND     | 23      | AIN2   |
| 8       | DIN3   | 7       | OUT2-  | 26      | ENCO-Z  | 25      | GNDA   |
| 10      | DIN4   | 9       | OUT3   | 28      | ENCO-/Z | 27      | PUL+   |
| 12      | DIN5   | 11      | OUT4   | 30      | ENCO-B  | 29      | PUL-   |
| 14      | DIN6   | 13      | COM0   | 32      | ENCO-/B | 31      | DIR+   |
| 16      | DIN7   | 15      | NC     | 34      | ENCO-A  | 33      | DIR-   |
| 18      | NC     | 17      | NC     | 36      | ENCO-/A | 35      | NC     |

| CAN     |        | RS485   |        |
|---------|--------|---------|--------|
| Pin No. | Signal | Pin No. | Signal |
| 1       | NC     | 1       | NC     |
| 2       | CAN L  | 2       | RX+    |
| 3       | GND    | 3       | TX+    |
| 4       | NC     | 4       | NC     |
| 5       | NC     | 5       | GND    |
| 6       | NC     | 6       | +5V    |
| 7       | CAN H  | 7       | RX-    |
| 8       | NC     | 8       | TX-    |
| 9       | NC     | 9       | NC     |

RS232

| Pin No. | Signal |
|---------|--------|
| 1       | NC     |
| 2       | TX     |
| 3       | RX     |
| 4       | NC     |
| 5       | GND    |
| 6       | NC     |
| 7       | NC     |
| 8       | NC     |
| 9       | NC     |

ENCODER IN

| Pin No. | Incremental encoder signal | Communication encoder signal |
|---------|----------------------------|------------------------------|
| 1       | +5V                        | +5V                          |
| 2       | A                          | NC                           |
| 3       | B                          | NC                           |
| 4       | Z                          | NC                           |
| 5       | U                          | NC                           |
| 6       | V                          | NC                           |
| 7       | W                          | SD                           |
| 8       | PTC IN                     | NC                           |
| 9       | GND                        | GND                          |
| 10      | /A                         | NC                           |
| 11      | /B                         | NC                           |
| 12      | /Z                         | NC                           |
| 13      | /U                         | NC                           |
| 14      | /V                         | NC                           |
| 15      | /W                         | /SD                          |

EtherCAT

| pin | X10A signal | X10B signal |
|-----|-------------|-------------|
| 1   | TD+         | TD+         |
| 2   | TD-         | TD-         |
| 3   | RD+         | RD+         |
| 4   | NC          | NC          |
| 5   | NC          | NC          |
| 6   | RD-         | RD-         |
| 7   | NC          | NC          |
| 8   | NC          | NC          |

Technical Specifications of FD2S Servo Motor

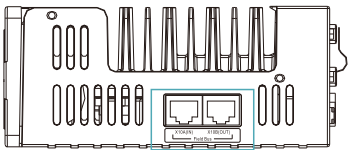
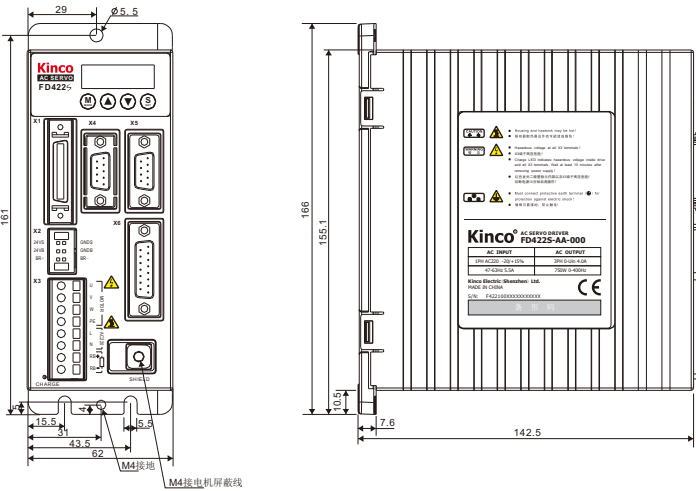
| Model Parameter                      |                                | FD412S-<br>□A-000                                                                                                                                                                                                                                                                                                                                                           | FD422S-<br>□A-000 | FD422S-<br>□F-000 | FD432S-<br>□A-000                                                 | FD612S-<br>□A-000                        | FD622S-<br>□A-000 |
|--------------------------------------|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------|-------------------------------------------------------------------|------------------------------------------|-------------------|
| Power                                | Main supply voltage            | Single-phase AC220V-20/+ 15% 47 ~ 63Hz                                                                                                                                                                                                                                                                                                                                      |                   |                   | Single-phase or 3-phase AC 220 V - 20 / + 15 % 47 ~ 63Hz47 ~ 63Hz | 3-phase AC 380 V - 20 / + 15 % 47 ~ 63Hz |                   |
|                                      | Control circuit voltage        | 18VDC ~ 30VDC 1A                                                                                                                                                                                                                                                                                                                                                            |                   |                   |                                                                   |                                          |                   |
| Current                              | Rated current(RMS)             | 2A                                                                                                                                                                                                                                                                                                                                                                          | 4A                | 5A                | 11A                                                               | 5.5A                                     | 7A                |
|                                      | Peak current(PEAK)             | 7A                                                                                                                                                                                                                                                                                                                                                                          | 15A               | 15A               | 27.5A                                                             | 15A                                      | 25A               |
| Feedback signal                      |                                | 2500 P/R ( incremental encoder with 5V supply 16 bit multi-turn absolute encoder, 20 bit single-turn Communication encoder )                                                                                                                                                                                                                                                |                   |                   |                                                                   |                                          |                   |
| Brake chopper                        |                                | Use an external braking resistor according to application, mainly in occasion of quick stop .                                                                                                                                                                                                                                                                               |                   |                   |                                                                   |                                          |                   |
| Brake chopper threshold              |                                | DC380V±5V                                                                                                                                                                                                                                                                                                                                                                   |                   |                   |                                                                   |                                          |                   |
| Over-voltage alarming threshold      |                                | DC400V±5V                                                                                                                                                                                                                                                                                                                                                                   |                   |                   |                                                                   |                                          |                   |
| Under-voltage alarming threshold     |                                | DC200V±5V                                                                                                                                                                                                                                                                                                                                                                   |                   |                   |                                                                   |                                          |                   |
| Cooling method                       |                                | Natural air cooling                                                                                                                                                                                                                                                                                                                                                         |                   | Fan               | Fan                                                               |                                          |                   |
| Weight(Kg)                           |                                | 1.2                                                                                                                                                                                                                                                                                                                                                                         |                   | 1.2               | 2.4                                                               |                                          |                   |
| General Functions                    | Digital input specification    | 7 digital inputs, with COM1 terminal for PNP (high level valid 12.5V~30V) or NPN (low level valid ) connection                                                                                                                                                                                                                                                              |                   |                   |                                                                   |                                          |                   |
|                                      | Digital input function         | Define freely according to requirement, supporting following functionsDriver enable, driver fault reset, driver mode control, proportional control, positive limit, negative limit, homing signal, reverse command, internal speedsection control, internal positive section control, quick stop, start homing, active command, switch electronic gear ratio, switch gain . |                   |                   |                                                                   |                                          |                   |
|                                      | Digital output specification   | 5 digital outputs, out 1~out 4 current is 100 mA, BR+/BR- (brake control output) current is 500 mA, can drive brake device directly.                                                                                                                                                                                                                                        |                   |                   |                                                                   |                                          |                   |
|                                      | Digital output function        | Define freely according to the requirement, supporting following functions: driver ready, driver fault, position reached, motor at zero speed, motor brake, motor speed reached, Z signal, maximum speed obtained in torque mode, motor brake, position limiting, reference found.                                                                                          |                   |                   |                                                                   |                                          |                   |
|                                      | Analog input                   | 2 analog inputs, can be used to control speed and torque, the input range is -10V ~ 10V"                                                                                                                                                                                                                                                                                    |                   |                   |                                                                   |                                          |                   |
|                                      | Encoder signal output function | Output encoder signal is optional, can be used in the multiple axes synchronization, the maximum output frequency is 2MHz. Motor A, B, Z signal, plus signal (PLS+DIR, CW/CCW, A+B)Do not support this function if the driver is matched with 16 bit multi-turn encoder or 20 bit single-turn encoder"                                                                      |                   |                   |                                                                   |                                          |                   |
|                                      | Protection functions           | Over-voltage protection, under-voltage protection, motor over-heat protection (I2T), short-circuit protection, drive over-heat protection, etc                                                                                                                                                                                                                              |                   |                   |                                                                   |                                          |                   |
| RS232                                |                                | The maximum baudrate is 115.2KHz, use JD-PC software to communicate with PC, or via free protocol to communictr with controller                                                                                                                                                                                                                                             |                   |                   |                                                                   |                                          |                   |
| RS485                                |                                | The maximum baudrate is 115.2KHz, use Modbus RTU protocol to communicate with controler                                                                                                                                                                                                                                                                                     |                   |                   |                                                                   |                                          |                   |
| CAN BUS                              |                                | The maximum baudrate is 1MHz, use CANopen protocol to communicate with controler                                                                                                                                                                                                                                                                                            |                   |                   |                                                                   |                                          |                   |
| EtherCAT                             |                                | The maximum baudrate is 100MHz, support COE ( CIA 402 protocol ) and CSP / CSV / PP / PV / PT / HM mode                                                                                                                                                                                                                                                                     |                   |                   |                                                                   |                                          |                   |
| Environment conditions for operation | Operating temperature          | 0 ~ 400C                                                                                                                                                                                                                                                                                                                                                                    |                   |                   |                                                                   |                                          |                   |
|                                      | Storage temperature            | -100C ~ 700C                                                                                                                                                                                                                                                                                                                                                                |                   |                   |                                                                   |                                          |                   |
|                                      | Humidity(non-condensing)       | Below 90% RH                                                                                                                                                                                                                                                                                                                                                                |                   |                   |                                                                   |                                          |                   |
|                                      | Protection class               | IP20                                                                                                                                                                                                                                                                                                                                                                        |                   |                   |                                                                   |                                          |                   |
|                                      | Installation environment       | Installed in a dust-free, dry, lockable environment ( such as in a electric cabinet )                                                                                                                                                                                                                                                                                       |                   |                   |                                                                   |                                          |                   |
|                                      | Installation mode              | Vertical installation                                                                                                                                                                                                                                                                                                                                                       |                   |                   |                                                                   |                                          |                   |
|                                      | Height                         | No power limit below 1000 m                                                                                                                                                                                                                                                                                                                                                 |                   |                   |                                                                   |                                          |                   |
| Atmospheric pressure                 |                                | 86kpa ~ 106kpa                                                                                                                                                                                                                                                                                                                                                              |                   |                   |                                                                   |                                          |                   |

Note①: □=L ——Communication port RS232, RS485  
□=A/C ——Communication port RS232, CANopen

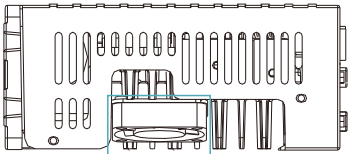
Note②: AA is a direct driving servo system

Mechanical Dimension Diagram of FD412S/FD422S

(Unit: mm)



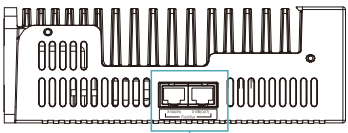
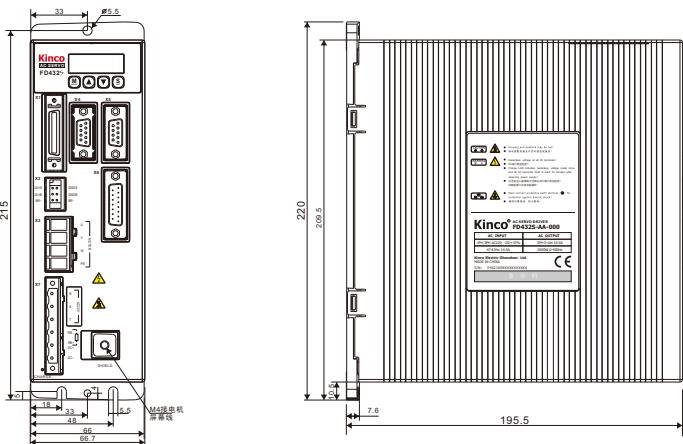
Note: FD412s-ea-000, FD422s-ea-000  
With EtherCAT extension interface.



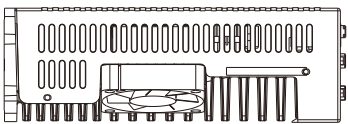
Note: FD412s-□ a-000, FD422s-□ a-000 without fan;  
FD422s-□ f-000 with fan.

Mechanical Dimension Diagram of FD432S

(Unit: mm)

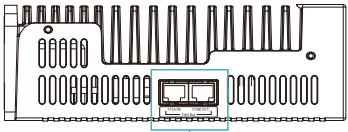
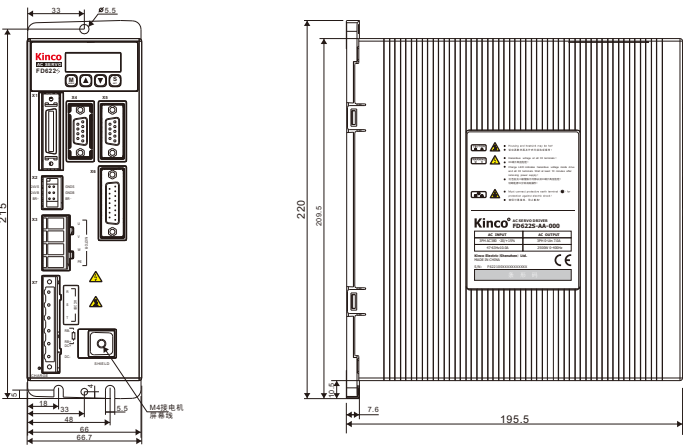


Note: with extension interface FD432s-ea-000  
EtherCAT.

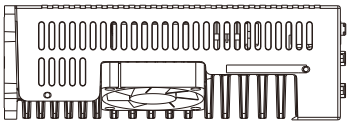


Mechanical Dimension Diagram of FD612S/FD622S

(Unit: mm)



Remarks: FD612s-ea-000, FD622s-ea-000  
With EtherCAT extension interface.



Shell of heat sink

**X1**  
**COM1, DIN1.....DIN7:**  
7 Digital input channels  
**ENCO-Z, ENCO-/Z,**  
**ENCO-B, ENCO-/B,**  
**ENCO-A, ENCO-/A:**  
Encoder out  
**OUT1.....OUT4:**  
4 Digital output channels  
**GNDA, AIN1, AIN2, GNDA:**  
2 analog input channels  
**PUL+:** Pulse+/CW+/A+  
**PUL-:** Pulse-/CW-/A-  
**DIR+:** Direction+/CCW+/B+  
**DIR-:** Direction-/CCW-/B-

**X2**  
**24VS, GNDS:**  
24V Power supply for control  
**24VB, GNDB:**  
24V Power supply for brake  
**BR+, BR-:**  
Brake control output

**X3**  
**U, V, W, PE:**  
Motor power connector  
**L, N:**  
AC power supply input (AC220V)  
**RB+, RB-:**  
External braking resistor

**Display**  
4-digit LED indicate the  
status or error information

**4 Setting Buttons**  
Parameter setting

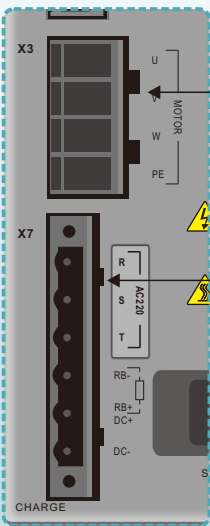
**X5**  
RS232 communication  
interface

**X6**  
Motor encoder input

**Shield**  
Connect to the shield  
of the motor cable

**GND Terminal**

CD412S / CD422S (AC220V)



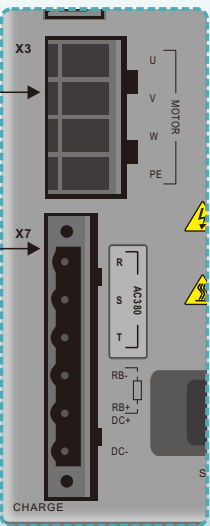
CD432S (AC220V)

**X3**  
**U, V, W, PE:**  
Motor power connector

**X7**  
**R, S, T:**  
AC power supply input  
(AC220V)  
**RB+, RB-:**  
External braking resistor  
**DC+, DC-:**  
DC bus interface  
(DC310V±20%)

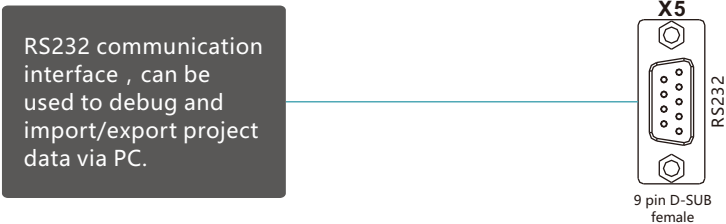
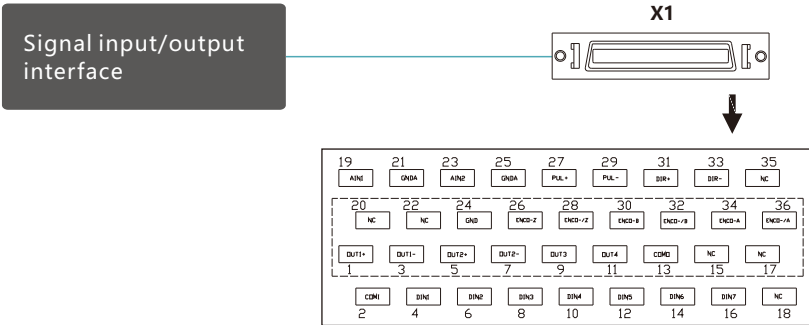
**X3**  
**U, V, W, PE:**  
Motor power connector

**X7**  
**R, S, T:**  
AC power supply input  
(AC380V)  
**RB+, RB-:**  
External braking resistor  
**DC+, DC-:**  
DC bus interface  
(DC540V±20%)



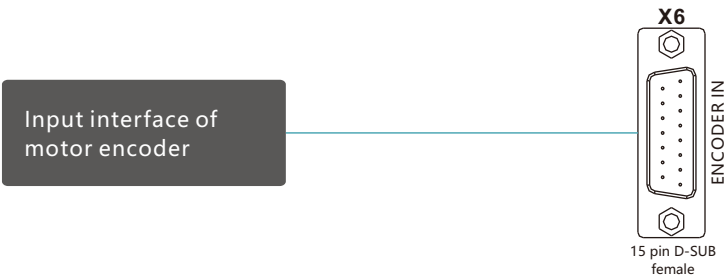
CD622S (AC380V)

**Note:** 1. CD412S/CD422S/CD432S/CD622S drivers share the same interface definition, except for X3 and X7 power interfaces.  
2. Suggested brake resistor: CD412S/CD422S 75Ω/100W, CD432S 39Ω/200W, CD622S 75Ω/200W, The customer should chose the power of brake resister according to the actual application.



RS232

| Pin No. | Signal |
|---------|--------|
| 1       | NC     |
| 2       | TX     |
| 3       | RX     |
| 4       | NC     |
| 5       | GND    |
| 6       | NC     |
| 7       | NC     |
| 8       | NC     |
| 9       | NC     |



ENCODER IN

| Pin No. | Signal |
|---------|--------|
| 1       | +5V    |
| 2       | A      |
| 3       | B      |
| 4       | Z      |
| 5       | U      |
| 6       | V      |
| 7       | W      |
| 8       | PTC IN |
| 9       | GND    |
| 10      | /A     |
| 11      | /B     |
| 12      | /Z     |
| 13      | /U     |
| 14      | /V     |
| 15      | /W     |

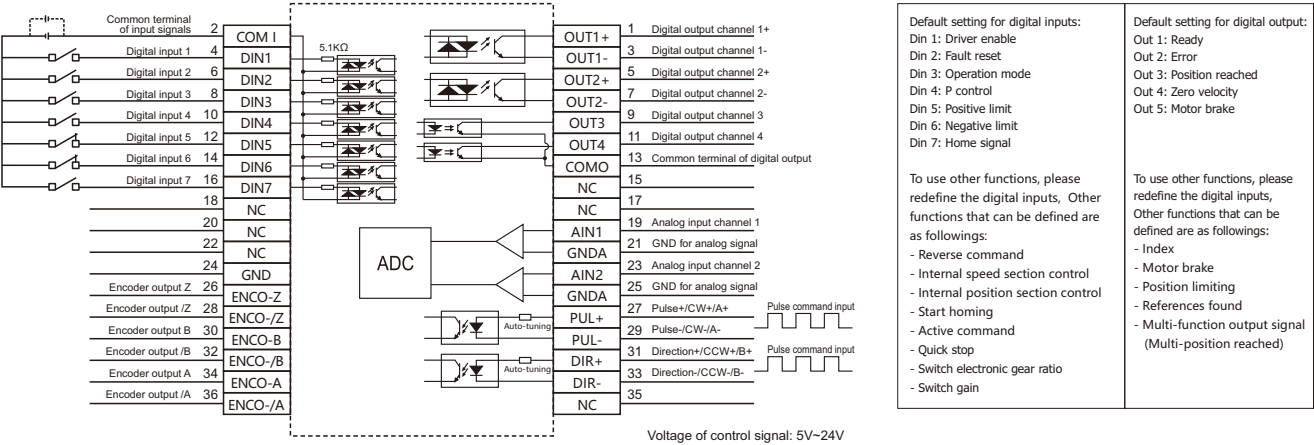
Technical Specifications of CD2S Servo Driver

| Model parameter                  |                                  | CD412S-AA-000                                                                                                                                                                                                                                                                                                                                                                | CD422S-AA-000 | CD422S-AF-000 | CD432S-AA-000                                      | CD612S-AA-000                      | CD622S-AA-000 |
|----------------------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|----------------------------------------------------|------------------------------------|---------------|
| Power                            | Main supply voltage              | Single-phase AC220V<br>-20/+15% 47~63Hz                                                                                                                                                                                                                                                                                                                                      |               |               | Single-phase or 3-phase<br>AC220V -20/+15% 47~63Hz | 3-phase AC380V<br>-20/+15% 47~63Hz |               |
|                                  | Control circuit voltage          | 18VDC~30VDC 1A                                                                                                                                                                                                                                                                                                                                                               |               |               |                                                    |                                    |               |
| Current                          | Max. continuous current          | 2A                                                                                                                                                                                                                                                                                                                                                                           | 4A            | 4.6A          | 11A                                                | 5.5A                               | 7A            |
|                                  | Peak current(PEAK)               | 7A                                                                                                                                                                                                                                                                                                                                                                           | 15A           | 15A           | 27.5A                                              | 15A                                | 25A           |
| Feedback signal                  |                                  | 2500 P/R ( incremental encoder with 5V supply<br>16 bit multi-turn absolute encoder, 20 bit single-turn encoder                                                                                                                                                                                                                                                              |               |               |                                                    |                                    |               |
| Brake chopper                    |                                  | Use an external braking resistor according to application, mainly in occasion of quick stop .                                                                                                                                                                                                                                                                                |               |               |                                                    |                                    |               |
| Brake chopper threshold          |                                  | DC380V±5V                                                                                                                                                                                                                                                                                                                                                                    |               |               |                                                    | DC680V±5V                          |               |
| Over-voltage alarming threshold  |                                  | DC400V±5V                                                                                                                                                                                                                                                                                                                                                                    |               |               |                                                    | DC700V±5V                          |               |
| Under-voltage alarming threshold |                                  | DC200V±5V                                                                                                                                                                                                                                                                                                                                                                    |               |               |                                                    | DC400V±5V                          |               |
| Cooling method                   |                                  | Natural air cooling                                                                                                                                                                                                                                                                                                                                                          |               | Fan           | Fan                                                |                                    |               |
| Weight (Kg)                      |                                  | 1.2                                                                                                                                                                                                                                                                                                                                                                          |               | 1.2           | 2.4                                                |                                    |               |
| Position Mode                    | Maximum frequency of input pulse | Differential signal: 500 KPPS, open-collector signal: 200 KPPS                                                                                                                                                                                                                                                                                                               |               |               |                                                    |                                    |               |
|                                  | Pulse command mode               | Pulse+direction, CCW + CW, A+B Phase( 5V - 24V )                                                                                                                                                                                                                                                                                                                             |               |               |                                                    |                                    |               |
|                                  | Command smoothing                | Low-pass filtering (adjustable by internal parameter setting )                                                                                                                                                                                                                                                                                                               |               |               |                                                    |                                    |               |
|                                  | Feedforward gain                 | Adjustable by internal parameter setting                                                                                                                                                                                                                                                                                                                                     |               |               |                                                    |                                    |               |
|                                  | Electronic gear ratio            | Setting range, Gear factor : -32768 ~ 32767 , Gear divider : 1 ~ 32767 , 1/50≤   Gear factor/Gear divider   ≤50                                                                                                                                                                                                                                                              |               |               |                                                    |                                    |               |
|                                  | Position loop sampling frequency | 1KHz                                                                                                                                                                                                                                                                                                                                                                         |               |               |                                                    |                                    |               |
| Speed Mode                       | Analog input voltage range       | - 10 ~ 10V ( resolution 12 bit )                                                                                                                                                                                                                                                                                                                                             |               |               |                                                    |                                    |               |
|                                  | Input impedance                  | 200K                                                                                                                                                                                                                                                                                                                                                                         |               |               |                                                    |                                    |               |
|                                  | Analog input sampling frequency  | 4KHz                                                                                                                                                                                                                                                                                                                                                                         |               |               |                                                    |                                    |               |
|                                  | Command source                   | External analog command / internal command                                                                                                                                                                                                                                                                                                                                   |               |               |                                                    |                                    |               |
|                                  | Command smoothing                | Low-pass filtering ( adjustable by internal parameter setting )                                                                                                                                                                                                                                                                                                              |               |               |                                                    |                                    |               |
|                                  | Input voltage dead-zone setting  | Adjustable by internal parameter setting                                                                                                                                                                                                                                                                                                                                     |               |               |                                                    |                                    |               |
|                                  | Input voltage offset setting     | Adjustable by internal parameter setting                                                                                                                                                                                                                                                                                                                                     |               |               |                                                    |                                    |               |
|                                  | Speed limit                      | Adjustable by internal parameter setting                                                                                                                                                                                                                                                                                                                                     |               |               |                                                    |                                    |               |
|                                  | Torque limit                     | Adjustable by internal parameter setting/external analog command                                                                                                                                                                                                                                                                                                             |               |               |                                                    |                                    |               |
| Torque Mode                      | Speed loop sampling frequency    | 4KHz                                                                                                                                                                                                                                                                                                                                                                         |               |               |                                                    |                                    |               |
|                                  | Analog voltage input range       | -10 ~ 10V ( Resolution 12 bit )                                                                                                                                                                                                                                                                                                                                              |               |               |                                                    |                                    |               |
|                                  | Input impedance                  | 200K                                                                                                                                                                                                                                                                                                                                                                         |               |               |                                                    |                                    |               |
|                                  | Input sampling frequency         | 4KHz                                                                                                                                                                                                                                                                                                                                                                         |               |               |                                                    |                                    |               |
|                                  | Command source                   | External analog command / internal command                                                                                                                                                                                                                                                                                                                                   |               |               |                                                    |                                    |               |
|                                  | Command smoothing                | Low-pass filtering ( adjustable by internal parameter setting )                                                                                                                                                                                                                                                                                                              |               |               |                                                    |                                    |               |
|                                  | Speed limit                      | Adjustable by internal parameter setting/external analog command                                                                                                                                                                                                                                                                                                             |               |               |                                                    |                                    |               |
|                                  | Input voltage dead-zone setting  | Adjustable by internal parameter setting                                                                                                                                                                                                                                                                                                                                     |               |               |                                                    |                                    |               |
|                                  | Input voltage offset setting     | Adjustable by internal parameter setting                                                                                                                                                                                                                                                                                                                                     |               |               |                                                    |                                    |               |
| Digital Input                    | Digital input specification      | 7 digital inputs, with COM1 terminal for PNP (high level valid 12.5V~30V) or NPN (low level valid ) connection                                                                                                                                                                                                                                                               |               |               |                                                    |                                    |               |
|                                  | Digital input function           | Define freely according to requirement, supporting following functions. Driver enable, driver fault reset, driver mode control, proportional control, positive limit, negative limit, homing signal, reverse command, internal speed section control, internal positive section control, quick stop, start homing, active command, switch electronic gear ratio, switch gain |               |               |                                                    |                                    |               |
| Digital Output                   | Digital output specification     | 5 digital outputs,out 1~out 4 current is 100 mA, BR+/BR-(brake control output) current is 500 mA,can drive brake device directly                                                                                                                                                                                                                                             |               |               |                                                    |                                    |               |
|                                  | Digital output function          | Define freely according to the requirement, supporting following functions: driver ready, driver fault, position reached, motor at zero speed, motor brake, motor speed reached, Z signal, maximum speed obtained in torque mode, motor brake, position limiting, reference found                                                                                            |               |               |                                                    |                                    |               |
| Protection functions             |                                  | Over-voltage protection, under-voltage protection, motor over-heat protection (I2T), short-circuit protection, drive over-heat protection, etc                                                                                                                                                                                                                               |               |               |                                                    |                                    |               |
| Communication interface          |                                  | RS232 ( Connections with PC: 2-2, 3-3, 5-5 )                                                                                                                                                                                                                                                                                                                                 |               |               |                                                    |                                    |               |
| Operation Environment            | Operation temperature            | 0 ~ 400C                                                                                                                                                                                                                                                                                                                                                                     |               |               |                                                    |                                    |               |
|                                  | Storage temperature              | - 100C ~ 700C                                                                                                                                                                                                                                                                                                                                                                |               |               |                                                    |                                    |               |
|                                  | Humidity ( non- condensation )   | Below 90% RH                                                                                                                                                                                                                                                                                                                                                                 |               |               |                                                    |                                    |               |
|                                  | Protection class                 | IP20                                                                                                                                                                                                                                                                                                                                                                         |               |               |                                                    |                                    |               |
|                                  | Installation mode                | Installed in a dust-free, dry, lockable environment ( such as in a electric cabinet )                                                                                                                                                                                                                                                                                        |               |               |                                                    |                                    |               |
|                                  | Installation method              | Vertical installation                                                                                                                                                                                                                                                                                                                                                        |               |               |                                                    |                                    |               |
|                                  | Height                           | No power limit below 1000 m                                                                                                                                                                                                                                                                                                                                                  |               |               |                                                    |                                    |               |
| Atmospheric pressure             |                                  | 86kpa ~ 106kpa                                                                                                                                                                                                                                                                                                                                                               |               |               |                                                    |                                    |               |

# Wiring Diagram of CD2S Servo Driver

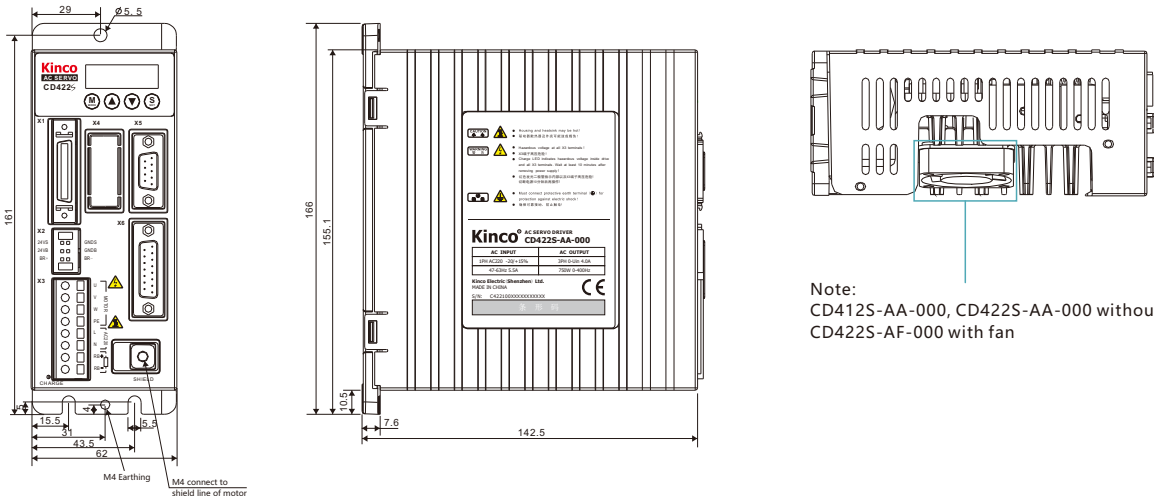
# Mechanical Dimension Diagram of CD2S Servo Driver

## Wiring Diagram for Position Control Mode

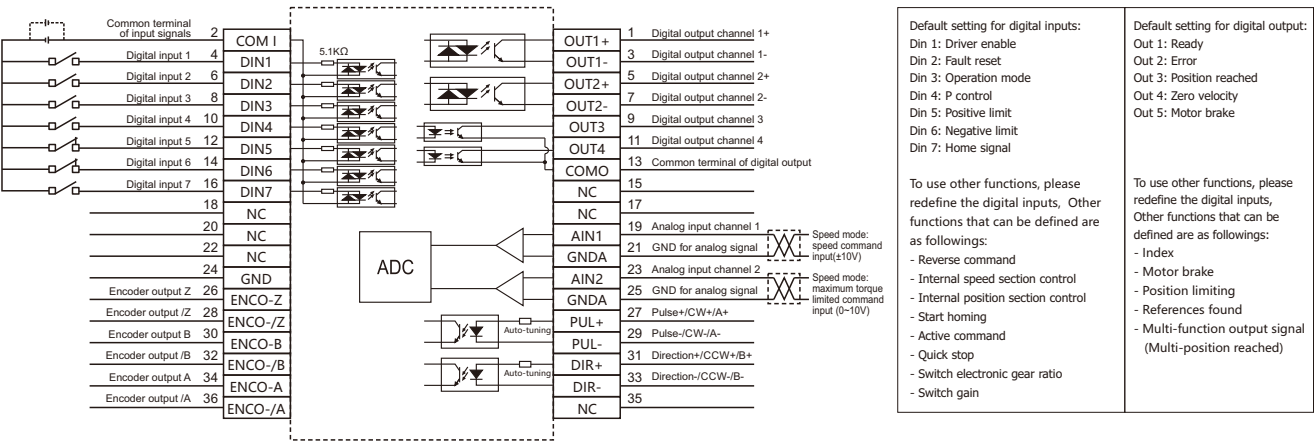


## Mechanical Dimension Diagram of CD412S/CD422S

(Unit: mm)

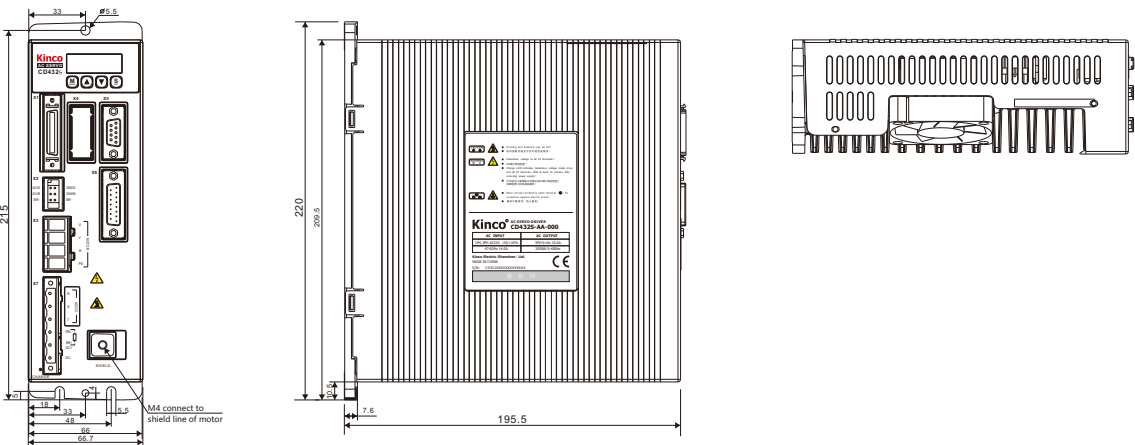


## Wiring Diagram for Speed Control Mode

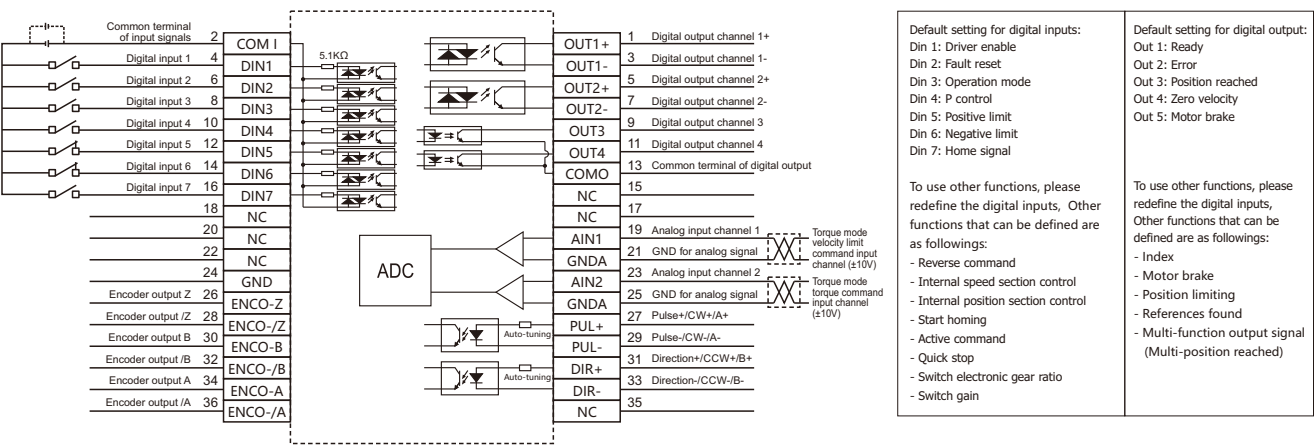


## Mechanical Dimension Diagram of CD432S

(Unit: mm)

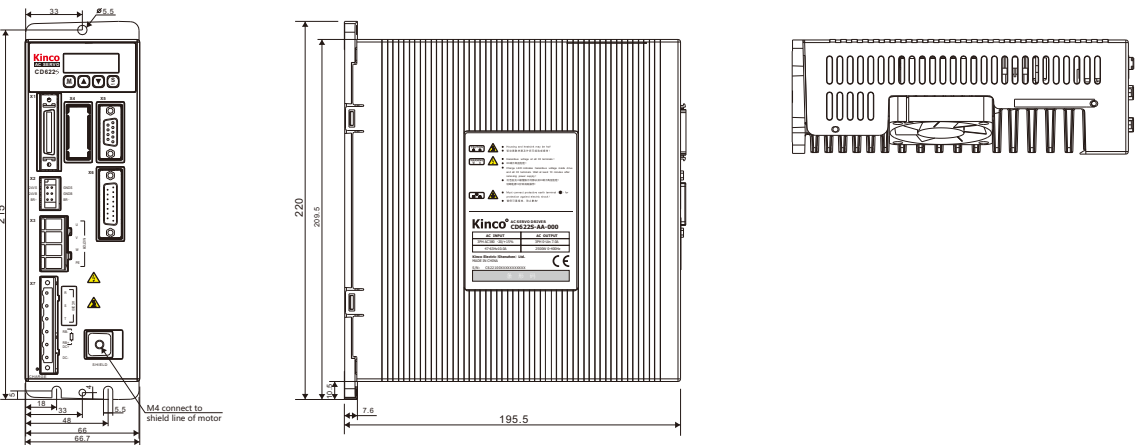


## Wiring Diagram for Torque Control Mode



## Mechanical Dimension Diagram of CD612S/CD622S

(Unit: mm)



Technical Specifications of SMH Servo Motor(1)



| Motor series                                        |                         | SMH Servo Motor                                                                                   |                        |                                                                                  |                        |                                                                                  |                        |
|-----------------------------------------------------|-------------------------|---------------------------------------------------------------------------------------------------|------------------------|----------------------------------------------------------------------------------|------------------------|----------------------------------------------------------------------------------|------------------------|
|                                                     |                         | Small inertia flange size 40mm                                                                    |                        | Small inertia flange size 60mm                                                   |                        | Small inertia flange size 80mm                                                   |                        |
| Model                                               |                         | SMH40S-0005-30A□K-4LKH                                                                            | SMH40S-0010-30A□K-4LKH | SMH60S-0020-30A□K-3LK□                                                           | SMH60S-0040-30A□K-3LK□ | SMH80S-0075-30A□K-3LK□                                                           | SMH80S-0100-30A□K-3LK□ |
| Driver matching                                     |                         | FD412S-CA-000<br>FD412S-LA-000<br>FD412S-EA-000<br>CD412S-AA-000                                  |                        | JD430-AA-000<br>FD422S-CA-000<br>FD422S-LA-000<br>FD422S-EA-000<br>CD422S-AA-000 |                        | JD430-AA-000<br>FD432S-CA-000<br>FD432S-LA-000<br>FD432S-EA-000<br>CD432S-AA-000 |                        |
| DC link voltage UDC                                 |                         | 300                                                                                               | 300                    | 300                                                                              | 300                    | 300                                                                              | 300                    |
| Continuous performance                              | Rated power $P_N$ (W)   | 50                                                                                                | 100                    | 200                                                                              | 400                    | 750                                                                              | 1000                   |
|                                                     | Rated torque $T_N$ (Nm) | 0.16                                                                                              | 0.32                   | 0.64                                                                             | 1.27                   | 2.39                                                                             | 3.18                   |
|                                                     | Rated speed $n_N$ (rpm) | 3000                                                                                              | 3000                   | 3000                                                                             | 3000                   | 3000                                                                             | 3000                   |
|                                                     | Rated current $I_N$ (A) | 0.7                                                                                               | 1.4                    | 1.6                                                                              | 3.1                    | 3.9                                                                              | 6.3                    |
| Maximum torque $T_m$ (Nm)                           |                         | 0.48                                                                                              | 0.96                   | 1.92                                                                             | 3.82                   | 7.17                                                                             | 9.48                   |
| Maximum current $I_m$ (A)                           |                         | 2.1                                                                                               | 4.2                    | 4.8                                                                              | 9.3                    | 11.7                                                                             | 18.9                   |
| Standstill torque $T_s$ (Nm)                        |                         | 0.176                                                                                             | 0.352                  | 0.7                                                                              | 1.39                   | 2.63                                                                             | 3.3                    |
| Standstill current $I_s$ (A)                        |                         | 0.77                                                                                              | 1.54                   | 1.79                                                                             | 3.38                   | 4.4                                                                              | 6.93                   |
| Resistance line-line $R_L$ ( $\Omega$ )             |                         | 16.6                                                                                              | 5.53                   | 8.02                                                                             | 3.52                   | 1.4                                                                              | 0.86                   |
| Inductance line-line $L_L$ (mH)                     |                         | 14                                                                                                | 6                      | 16.3                                                                             | 7.8                    | 7.5                                                                              | 4.5                    |
| Electrical time constant $\tau_e$ (ms)              |                         | 0.84                                                                                              | 1.08                   | 2.03                                                                             | 2.22                   | 5.35                                                                             | 5.23                   |
| Mechanical time constant $\tau_m$ (ms)              |                         | 1.28                                                                                              | 0.86                   | 2.26                                                                             | 1.35                   | 0.75                                                                             | 0.89                   |
| Reverse voltage constant $K_e$ (V/krpm)             |                         | 16                                                                                                | 14                     | 29                                                                               | 29                     | 40                                                                               | 34                     |
| Torque constant $K_t$ (Nm/A)                        |                         | 0.265                                                                                             | 0.265                  | 0.48                                                                             | 0.48                   | 0.662                                                                            | 0.562                  |
| Rotor moment of inertia $J_m$ (Kg·cm <sup>2</sup> ) |                         | 0.031                                                                                             | 0.059                  | 0.375                                                                            | 0.51                   | 1.36                                                                             | 1.9                    |
|                                                     |                         | 0.031 (with brake)                                                                                | 0.061 (with brake)     | 0.379 (with brake)                                                               | 0.514 (with brake)     | 1.385 (with brake)                                                               | 1.925 (with brake)     |
| Pole pair number                                    |                         | 4                                                                                                 | 4                      | 3                                                                                | 3                      | 3                                                                                | 3                      |
| Maximum voltage rising $du/dt$ (KV/ $\mu$ s)        |                         | 8                                                                                                 | 8                      | 8                                                                                | 8                      | 8                                                                                | 8                      |
| Insulation class                                    |                         | F                                                                                                 | F                      | F                                                                                | F                      | F                                                                                | F                      |
| Maximum radial force $F_r$ (N)                      |                         | 120                                                                                               | 120                    | 180                                                                              | 180                    | 335                                                                              | 335                    |
| Maximum axial force $F_a$ (N)                       |                         | 60                                                                                                | 60                     | 90                                                                               | 90                     | 167.5                                                                            | 167.5                  |
| Weight G(Kg)                                        |                         | 0.5                                                                                               | 0.8                    | 1.3                                                                              | 1.8                    | 3.3                                                                              | 3.9                    |
|                                                     |                         | 0.8 (with brake)                                                                                  | 1.0 (with brake)       | 1.8 (with brake)                                                                 | 2.3 (with brake)       | 4 (with brake)                                                                   | 4.6 (with brake)       |
| Length of motor L(mm)                               |                         | 85.3±1                                                                                            | 110.8±1                | 120                                                                              | 150                    | 147                                                                              | 167                    |
|                                                     |                         | 119±1.5(with brake)                                                                               | 145±1.5(with brake)    | 159±1.5(with brake)                                                              | 189±1.5(with brake)    | 197±1.5(with brake)                                                              | 217±1.5(with brake)    |
| Position feedback device                            |                         | 2500 P/R Incremental encoder                                                                      |                        |                                                                                  |                        |                                                                                  |                        |
| Cooling method                                      |                         | Totally enclosed, non - ventilated                                                                |                        |                                                                                  |                        |                                                                                  |                        |
| Protection level                                    |                         | IP65, shaft sealing IP54                                                                          |                        |                                                                                  |                        |                                                                                  |                        |
| Environmental conditions for operation              | Temperature             | -20℃ ~ 40℃ (Non-freezing)                                                                         |                        |                                                                                  |                        |                                                                                  |                        |
|                                                     | Humidity                | Below 90 % RH ( no condensation )                                                                 |                        |                                                                                  |                        |                                                                                  |                        |
|                                                     | Ambient environment     | Away from active gas, combustible gas, oil drops and dust                                         |                        |                                                                                  |                        |                                                                                  |                        |
|                                                     | Altitude                | Maximum altitude 4000m, Rated power at 1000m or below, Above 1000m: Decreasing 1.5% per 100m rise |                        |                                                                                  |                        |                                                                                  |                        |

**Note :** □=A —without brake □=B —with brake □=H —3 rows of 15-pin Connector □=N —HFO18 series aviation standard connector(towards the shaft) □=O —HFO18 series aviation standard connector(opposite the shaft) □=P —HFO21+HFO18 series aviation standard connector(HFO21 power connector,HFO18 encoder connector) □=M —2× M17 series aviation intercontec connector

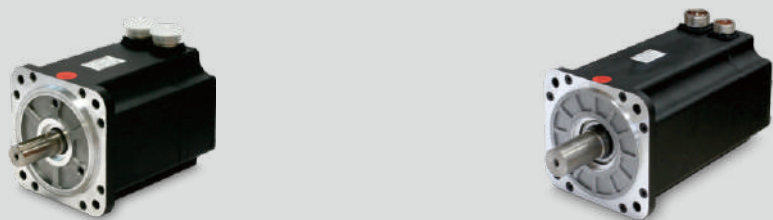
Technical Specifications of SMH Servo Motor(2)



| Motor series                                        |                         | SMH Servo Motor                                                                                            |                                                                                  |                                                                                  |                                                                                  |                                                                                  |                                                                                  |
|-----------------------------------------------------|-------------------------|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
|                                                     |                         | Medium inertia flange size 110mm                                                                           |                                                                                  |                                                                                  |                                                                                  |                                                                                  |                                                                                  |
| Model                                               |                         | SMH110D-0125-30A□K-4LKC                                                                                    | SMH110D-0126-30A□K-4HKC                                                          | SMH110D-0105-20A□K-4LKC                                                          | SMH110D-0157-30A□K-4HKC                                                          | SMH110D-0126-20A□K-4LKC                                                          | SMH110D-0188-30A□K-4HKC                                                          |
| Driver matching                                     |                         | JD430-AA-000<br>FD432S-CA-000<br>FD432S-LA-000<br>FD432S-EA-000<br>CD432S-AA-000                           | JD620-AA-000<br>FD622S-CA-000<br>FD622S-LA-000<br>FD622S-EA-000<br>CD622S-AA-000 | JD430-AA-000<br>FD432S-CA-000<br>FD432S-LA-000<br>FD432S-EA-000<br>CD432S-AA-000 | JD620-AA-000<br>FD622S-CA-000<br>FD622S-LA-000<br>FD622S-EA-000<br>CD622S-AA-000 | JD430-AA-000<br>FD432S-CA-000<br>FD432S-LA-000<br>FD432S-EA-000<br>CD432S-AA-000 | JD620-AA-000<br>FD622S-CA-000<br>FD622S-LA-000<br>FD622S-EA-000<br>CD622S-AA-000 |
| DC link voltage UDC                                 |                         | 300                                                                                                        | 560                                                                              | 300                                                                              | 560                                                                              | 300                                                                              | 560                                                                              |
| Continuous performance                              | Rated power $P_N$ (W)   | 1250                                                                                                       | 1260                                                                             | 1050                                                                             | 1570                                                                             | 1260                                                                             | 1880                                                                             |
|                                                     | Rated torque $T_N$ (Nm) | 4                                                                                                          | 4                                                                                | 5.0                                                                              | 5.0                                                                              | 6.0                                                                              | 6.0                                                                              |
|                                                     | Rated speed $n_N$ (rpm) | 2000                                                                                                       | 3000                                                                             | 2000                                                                             | 3000                                                                             | 2000                                                                             | 3000                                                                             |
|                                                     | Rated current $I_N$ (A) | 6.5                                                                                                        | 4.3                                                                              | 5.9                                                                              | 5.9                                                                              | 6.2                                                                              | 6.2                                                                              |
| Maximum torque $T_m$ (Nm)                           |                         | 12                                                                                                         | 12                                                                               | 15.0                                                                             | 15.0                                                                             | 18.0                                                                             | 18.0                                                                             |
| Maximum current $I_m$ (A)                           |                         | 19.5                                                                                                       | 12.9                                                                             | 17.7                                                                             | 17.7                                                                             | 18.6                                                                             | 18.6                                                                             |
| Standstill torque $T_s$ (Nm)                        |                         | 4.4                                                                                                        | 4.4                                                                              | 5.5                                                                              | 5.5                                                                              | 6.6                                                                              | 6.6                                                                              |
| Standstill current $I_s$ (A)                        |                         | 6.82                                                                                                       | 4.73                                                                             | 6.49                                                                             | 6.49                                                                             | 6.765                                                                            | 6.765                                                                            |
| Resistance line-line $R_L$ ( $\Omega$ )             |                         | 0.8                                                                                                        | 1.83                                                                             | 1.03                                                                             | 1.03                                                                             | 1.258                                                                            | 1.258                                                                            |
| Inductance line-line $L_L$ (mH)                     |                         | 6.4                                                                                                        | 13.5                                                                             | 7.8                                                                              | 7.8                                                                              | 9.62                                                                             | 9.62                                                                             |
| Electrical time constant $\tau_e$ (ms)              |                         | 7.9                                                                                                        | 7.37                                                                             | 7.57                                                                             | 7.57                                                                             | 7.64                                                                             | 7.64                                                                             |
| Mechanical time constant $\tau_m$ (ms)              |                         | 1.4                                                                                                        | 1.63                                                                             | 1.55                                                                             | 1.55                                                                             | 1.65                                                                             | 1.65                                                                             |
| Reverse voltage constant $K_e$ (V/krpm)             |                         | 45                                                                                                         | 64                                                                               | 55                                                                               | 55                                                                               | 64                                                                               | 64                                                                               |
| Torque constant $K_t$ (Nm/A)                        |                         | 0.744                                                                                                      | 1.058                                                                            | 0.910                                                                            | 0.910                                                                            | 1.058                                                                            | 1.058                                                                            |
| Rotor moment of inertia $J_m$ (Kg·cm <sup>2</sup> ) |                         | 5.8                                                                                                        | 5.8                                                                              | 7.2                                                                              | 7.2                                                                              | 8.5                                                                              | 8.5                                                                              |
|                                                     |                         | 5.85 (with brake)                                                                                          | 5.85 (with brake)                                                                | 7.25 (with brake)                                                                | 7.25 (with brake)                                                                | 8.55 (with brake)                                                                | 8.55 (with brake)                                                                |
| Pole pair number                                    |                         | 4                                                                                                          | 4                                                                                | 4                                                                                | 4                                                                                | 4                                                                                | 4                                                                                |
| Maximum voltage rising $du/dt$ (KV/ $\mu$ s)        |                         | 8                                                                                                          | 8                                                                                | 8                                                                                | 8                                                                                | 8                                                                                | 8                                                                                |
| Insulation class                                    |                         | F                                                                                                          | F                                                                                | F                                                                                | F                                                                                | F                                                                                | F                                                                                |
| Maximum radial force $F_r$ (N)                      |                         | 630                                                                                                        | 630                                                                              | 630                                                                              | 630                                                                              | 630                                                                              | 630                                                                              |
| Maximum axial force $F_a$ (N)                       |                         | 315                                                                                                        | 315                                                                              | 315                                                                              | 315                                                                              | 315                                                                              | 315                                                                              |
| Weight G(Kg)                                        |                         | 6.2                                                                                                        | 6.2                                                                              | 7.2                                                                              | 7.2                                                                              | 8.2                                                                              | 8.2                                                                              |
|                                                     |                         | 8.2 (with brake)                                                                                           | 8.2 (with brake)                                                                 | 9.2 (with brake)                                                                 | 9.2 (with brake)                                                                 | 10.2 (with brake)                                                                | 10.2 (with brake)                                                                |
| Length of motor L(mm)                               |                         | 168                                                                                                        | 168                                                                              | 185                                                                              | 185                                                                              | 202                                                                              | 202                                                                              |
|                                                     |                         | 228±1 (with brake)                                                                                         | 228±1 (with brake)                                                               | 245±1 (with brake)                                                               | 245±1 (with brake)                                                               | 262±1 (with brake)                                                               | 262±1 (with brake)                                                               |
| Position feedback device                            |                         | 2500 P/R Incremental encoder                                                                               |                                                                                  |                                                                                  |                                                                                  |                                                                                  |                                                                                  |
| Cooling method                                      |                         | Totally enclosed, non - ventilated                                                                         |                                                                                  |                                                                                  |                                                                                  |                                                                                  |                                                                                  |
| Protection level                                    |                         | IP65, shaft sealing IP54                                                                                   |                                                                                  |                                                                                  |                                                                                  |                                                                                  |                                                                                  |
| Environmental conditions for operation              | Temperature             | - 20 ~ 40℃ ( non-freezing )                                                                                |                                                                                  |                                                                                  |                                                                                  |                                                                                  |                                                                                  |
|                                                     | Humidity                | Below 90 % RH ( no condensation )                                                                          |                                                                                  |                                                                                  |                                                                                  |                                                                                  |                                                                                  |
|                                                     | Ambient environment     | Away from active gas,combustible gas,oil drops and dust                                                    |                                                                                  |                                                                                  |                                                                                  |                                                                                  |                                                                                  |
|                                                     | Altitude                | Maximum altitude 4000 m, rated power at 1000 m or below. Above 1000m, decreasing 1.5 % per every 100m rise |                                                                                  |                                                                                  |                                                                                  |                                                                                  |                                                                                  |

**Note :** □=A —without brake □=B —with brake

Technical Specifications of SMH Servo Motor(3)



| Motor series                                        |                         | SMH Series Motor                                                                                           |                                                                  |                                                                                  |                              |                                                                                  |                              |                             |
|-----------------------------------------------------|-------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------|----------------------------------------------------------------------------------|------------------------------|-----------------------------|
|                                                     |                         | Medium inertia flange size 130mm                                                                           |                                                                  |                                                                                  |                              | Medium inertia flange size 150mm                                                 |                              |                             |
| Model                                               |                         | SMH130D-0105<br>-20A□K-4HKC                                                                                | SMH130D-0157<br>-20A□K-4HKC                                      | SMH130D-0210<br>-20A□K-4HKC                                                      | SMH130D-0300<br>-20A□K-4HKC  | SMH150D-0230<br>-20A□K-4HKC                                                      | SMH150D-0300<br>-20A□K-4HKC  | SMH150D-0380<br>-20A□K-4HKC |
| Driver matching                                     |                         | JD430-AA-000<br>JD620-AA-000<br>FD622S-CA-000<br>FD622S-LA-000<br>FD622S-EA-000<br>CD622S-AA-000           | FD432S-CA-000<br>FD432S-LA-000<br>FD432S-EA-000<br>CD432S-AA-000 | JD620-AA-000<br>FD622S-CA-000<br>FD622S-LA-000<br>FD622S-EA-000<br>CD622S-AA-000 | JD630-AA-000<br>JD630-LA-000 | JD620-AA-000<br>FD622S-CA-000<br>FD622S-LA-000<br>FD622S-EA-000<br>CD622S-AA-000 | JD630-LA-000<br>JD630-AA-000 |                             |
| DC link voltage UDC                                 |                         | 560                                                                                                        | 560                                                              | 560                                                                              | 560                          | 560                                                                              | 560                          | 560                         |
| Continuous performance                              | Rated power $P_N$ (W)   | 1050                                                                                                       | 1570                                                             | 2100                                                                             | 3000                         | 2300                                                                             | 3000                         | 3800                        |
|                                                     | Rated torque $T_N$ (Nm) | 5                                                                                                          | 7.5                                                              | 10                                                                               | 14.3                         | 11.1                                                                             | 14.3                         | 18                          |
|                                                     | Rated speed $n_N$ (rpm) | 2000                                                                                                       | 2000                                                             | 2000                                                                             | 2000                         | 2000                                                                             | 2000                         | 2000                        |
|                                                     | Rated current $I_N$ (A) | 4.3                                                                                                        | 6.3                                                              | 7.6                                                                              | 7.9                          | 7.1                                                                              | 8.5                          | 9.3                         |
| Maximum torque $T_m$ (Nm)                           |                         | 12.5                                                                                                       | 18.75                                                            | 25                                                                               | 35.75                        | 27.5                                                                             | 35.75                        | 45                          |
| Maximum current $I_m$ (A)                           |                         | 10.75                                                                                                      | 15.75                                                            | 19                                                                               | 19.75                        | 17.75                                                                            | 21.25                        | 23.25                       |
| Standstill torque $T_s$ (Nm)                        |                         | 5.5                                                                                                        | 8.25                                                             | 11                                                                               | 15.73                        | 12.1                                                                             | 15.73                        | 19.8                        |
| Standstill current $I_s$ (A)                        |                         | 4.73                                                                                                       | 6.93                                                             | 8.36                                                                             | 8.7                          | 7.81                                                                             | 9.35                         | 10.23                       |
| Resistance line-line $R_L$ ( $\Omega$ )             |                         | 1.85                                                                                                       | 1.17                                                             | 0.98                                                                             | 0.84                         | 2.2                                                                              | 1.4                          | 1.3                         |
| Inductance line-line $L_L$ (mH)                     |                         | 23.7                                                                                                       | 16.2                                                             | 14.3                                                                             | 12.7                         | 14(AVG)                                                                          | 10.6(AVG)                    | 10.5(AVG)                   |
| Electrical time constant $\tau_e$ (ms)              |                         | 12.81                                                                                                      | 13.846                                                           | 14.592                                                                           | 14.94                        | 6.36                                                                             | 7.57                         | 8.08                        |
| Mechanical time constant $\tau_m$ (ms)              |                         | 2.868                                                                                                      | 2.529                                                            | 2.268                                                                            | 1.53                         | 4.68                                                                             | 3.68                         | 3.32                        |
| Reverse voltage constant $K_e$ (V/krpm)             |                         | 70                                                                                                         | 72                                                               | 80                                                                               | 110                          | 100                                                                              | 107                          | 125                         |
| Torque constant $K_t$ (Nm/A)                        |                         | 1.1578                                                                                                     | 1.191                                                            | 1.3232                                                                           | 1.82                         | 1.65                                                                             | 1.77                         | 2.07                        |
| Rotor moment of inertia $J_m$ (Kg-cm <sup>2</sup> ) |                         | 12                                                                                                         | 17.7                                                             | 23.4                                                                             | 34.8                         | 33.5                                                                             | 47.6                         | 63.1                        |
|                                                     |                         | 12.0(with brake)                                                                                           | 17.74(with brake)                                                | 23.44(with brake)                                                                | 34.9(with brake)             | 33.6(with brake)                                                                 | 47.7(with brake)             | 63.2(with brake)            |
| Pole pair number                                    |                         | 4                                                                                                          | 4                                                                | 4                                                                                | 4                            | 4                                                                                | 4                            | 4                           |
| Maximum voltage rising $du/dt$ (KV/ $\mu$ s)        |                         | 8                                                                                                          | 8                                                                | 8                                                                                | 8                            | 8                                                                                | 8                            | 8                           |
| Insulation class                                    |                         | F                                                                                                          | F                                                                | F                                                                                | F                            | F                                                                                | F                            | F                           |
| Maximum radial force $F$ (N)                        |                         | 900                                                                                                        | 900                                                              | 900                                                                              | 900                          | 1200                                                                             | 1200                         | 1200                        |
| Maximum axial force $F$ (N)                         |                         | 450                                                                                                        | 450                                                              | 450                                                                              | 450                          | 600                                                                              | 600                          | 600                         |
| Weight $G$ (Kg)                                     |                         | 7.5                                                                                                        | 9.1                                                              | 10.7                                                                             | 13.9                         | 12                                                                               | 15                           | 18                          |
|                                                     |                         | 9.7(with brake)                                                                                            | 11.3(with brake)                                                 | 12.9(with brake)                                                                 | 14.9(with brake)             | 15.5(with brake)                                                                 | 18.5(with brake)             | 22.5(with brake)            |
| Length of motor $L$ (mm)                            |                         | 159±1.5                                                                                                    | 179±1.5                                                          | 199±1.5                                                                          | 239±0.15                     | 226±1.5                                                                          | 254±1.5                      | 282±1.5                     |
|                                                     |                         | 220±1.5(with brake)                                                                                        | 240±1.5(with brake)                                              | 260±1.5(with brake)                                                              | 280±1.5(with brake)          | 292±1.5(with brake)                                                              | 320±1.5(with brake)          | 352±1.5(with brake)         |
| Position feedback device                            |                         | 2500 P/R Incremental encoder                                                                               |                                                                  |                                                                                  |                              |                                                                                  |                              |                             |
| Cooling method                                      |                         | Totally enclosed, non - ventilated                                                                         |                                                                  |                                                                                  |                              |                                                                                  |                              |                             |
| Protection level                                    |                         | IP65, shaft sealing IP54                                                                                   |                                                                  |                                                                                  |                              |                                                                                  |                              |                             |
| Environmental conditions for operation              | Temperature             | - 20 ~ 40°C ( non-freezing )                                                                               |                                                                  |                                                                                  |                              |                                                                                  |                              |                             |
|                                                     | Humidity                | Below 90 % RH ( no condensation )                                                                          |                                                                  |                                                                                  |                              |                                                                                  |                              |                             |
|                                                     | Ambient environment     | Away from active gas,combustible gas,oil drops and dust                                                    |                                                                  |                                                                                  |                              |                                                                                  |                              |                             |
|                                                     | Altitude                | Maximum altitude 4000 m, rated power at 1000 m or below. Above 1000m, decreasing 1.5 % per every 100m rise |                                                                  |                                                                                  |                              |                                                                                  |                              |                             |

Note : □=A —without brake  
□=B —with brake

Technical Specifications of SMH Servo Motor(4)

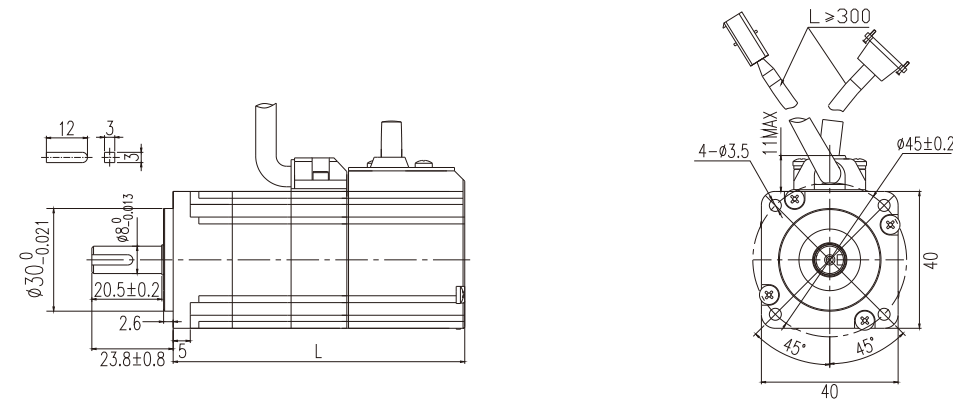


| Motor series                                        |                         | SMH Series Motor                                                                                  |                              |                             |                             |
|-----------------------------------------------------|-------------------------|---------------------------------------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|
|                                                     |                         | Medium inertia flange size 180mm                                                                  |                              |                             |                             |
| Model                                               |                         | SMH180D-0350<br>-15A□K-4HKC                                                                       | SMH180D-0440<br>-15A□K-4HKC  | SMH180D-0440<br>-15A□K-4HKC | SMH180D-0750<br>-15A□K-4HKC |
| Driver matching                                     |                         | JD630-LA-000<br>JD630-AA-000                                                                      | JD640-LA-000<br>JD640-AA-000 | JD640-AR-000                | JD650-AR-000                |
| DC link voltage UDC                                 |                         | 560                                                                                               | 560                          | 560                         | 560                         |
| Continuous performance                              | Rated power $P_N$ (W)   | 3500                                                                                              | 4400                         | 4400                        | 7500                        |
|                                                     | Rated torque $T_N$ (Nm) | 22                                                                                                | 28                           | 28                          | 48                          |
|                                                     | Rated speed $n_N$ (rpm) | 1500                                                                                              | 1500                         | 1500                        | 1500                        |
|                                                     | Rated current $I_N$ (A) | 10.3                                                                                              | 11.9                         | 11.9                        | 19.2(REF)                   |
| Maximum torque $T_m$ (Nm)                           |                         | 55                                                                                                | 70                           | 70                          | 120                         |
| Maximum current $I_m$ (A)                           |                         | 25.75                                                                                             | 29.75                        | 29.75                       | 47.9(REF)                   |
| Standstill torque $T_s$ (Nm)                        |                         | 24.2                                                                                              | 30.8                         | 30.8                        | 52.8                        |
| Standstill current $I_s$ (A)                        |                         | 11.33                                                                                             | 13.09                        | 13.09                       | 21.1(REF)                   |
| Resistance line-line $R_L$ ( $\Omega$ )             |                         | 1.2                                                                                               | 0.65                         | 0.65                        | 0.38                        |
| Inductance line-line $L_L$ (mH)                     |                         | 12.7(AVG)                                                                                         | 8.5                          | 8.5                         | 5.89                        |
| Electrical time constant $\tau_e$ (ms)              |                         | 10.58                                                                                             | 13.08                        | 13.08                       | 15.5                        |
| Mechanical time constant $\tau_m$ (ms)              |                         | 3.42                                                                                              | 2.16                         | 2.16                        | 1.81                        |
| Reverse voltage constant $K_e$ (V/krpm)             |                         | 135                                                                                               | 150                          | 150                         | 159                         |
| Torque constant $K_t$ (Nm/A)                        |                         | 2.23                                                                                              | 2.48                         | 2.48                        | 2.63                        |
| Rotor moment of inertia $J_m$ (Kg-cm <sup>2</sup> ) |                         | 82                                                                                                | 118                          | 118                         | 190                         |
|                                                     |                         | 82.2 (with brake)                                                                                 | 118.2 (with brake)           | 118.2 (with brake)          | 190.3 (with brake)          |
| Pole pair number                                    |                         | 4                                                                                                 | 4                            | 4                           | 4                           |
| Maximum voltage rising $du/dt$ (KV/ $\mu$ s)        |                         | 8                                                                                                 | 8                            | 8                           | 8                           |
| Insulation class                                    |                         | F                                                                                                 | F                            | F                           | F                           |
| Maximum radial force $F$ (N)                        |                         | 1600                                                                                              | 1600                         | 1600                        | 1600                        |
| Maximum axial force $F$ (N)                         |                         | 800                                                                                               | 800                          | 800                         | 800                         |
| Weight $G$ (Kg)                                     |                         | 22.7                                                                                              | 28.6                         | 28.6                        | 40                          |
|                                                     |                         | 27.9 (with brake)                                                                                 | 33.8 (with brake)            | 33.8 (with brake)           | 47 (with brake)             |
| Length of motor $L$ (mm)                            |                         | 260±1.5                                                                                           | 298±1.5                      | 298±1.5                     | 374±1.5                     |
|                                                     |                         | 332±1.5 (with brake)                                                                              | 370±1.5 (with brake)         | 370±1.5 (with brake)        | 451±1.5 (with brake)        |
| Position feedback device                            |                         | Incremental encoder 2500P/R                                                                       |                              |                             |                             |
| Cooling method                                      |                         | Totally enclosed, non-ventilated                                                                  |                              |                             |                             |
| Protection level                                    |                         | IP65 for body, shaft sealing IP54                                                                 |                              |                             |                             |
| Environmental conditions for operation              | Temperature             | -20°C ~ 40°C (Non-freezing)                                                                       |                              |                             |                             |
|                                                     | Humidity                | Below 90% RH (Non-condensing)                                                                     |                              |                             |                             |
|                                                     | Ambient environment     | Away from active gas, combustible gas, oil drops and dust                                         |                              |                             |                             |
|                                                     | Altitude                | Maximum altitude 4000m, Rated power at 1000m or below, Above 1000m: Decreasing 1.5% per 100m rise |                              |                             |                             |

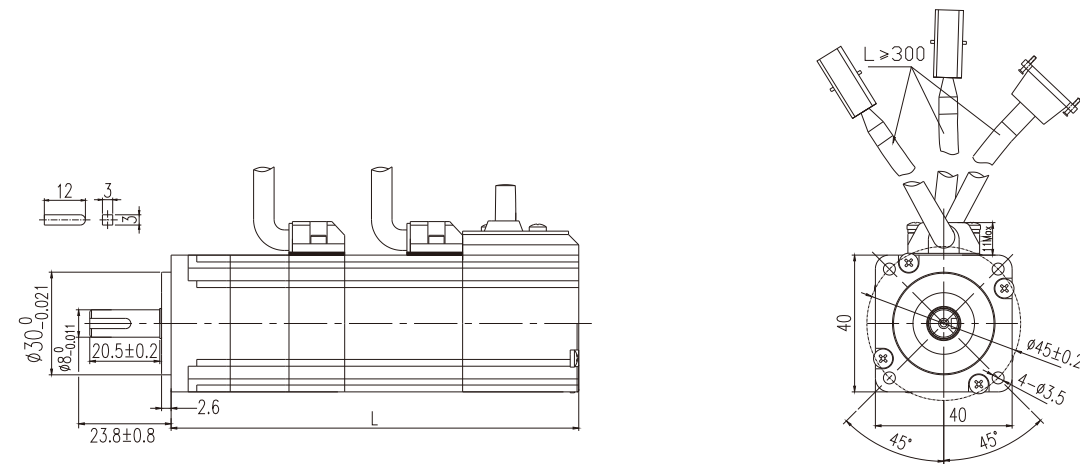
Note : □=A —without brake  
□=B —with brake

# Mechanical Dimensions of SMH Servo Motors (40 flanges)

## SMH Series 40 Flange Outlet Motor

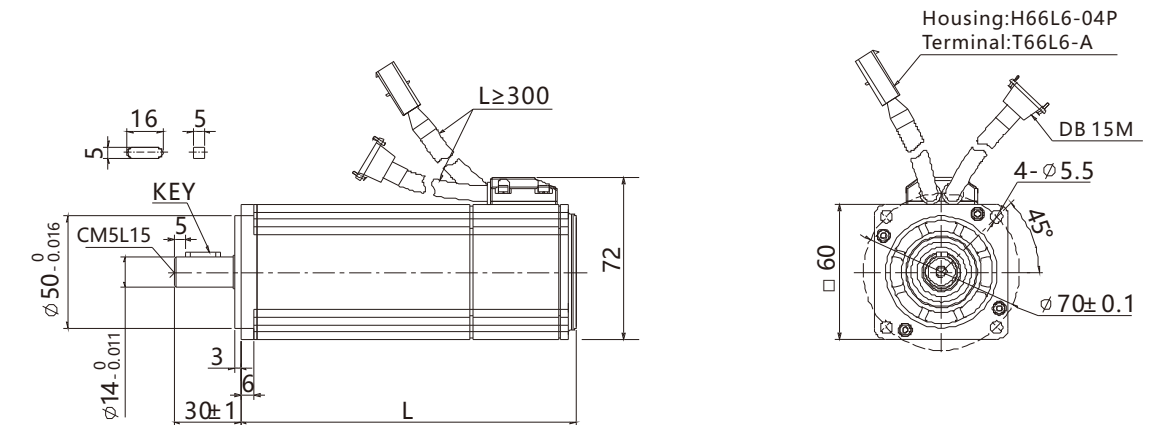


## SMH Series 40 Flange Outlet Motor ( with brake )

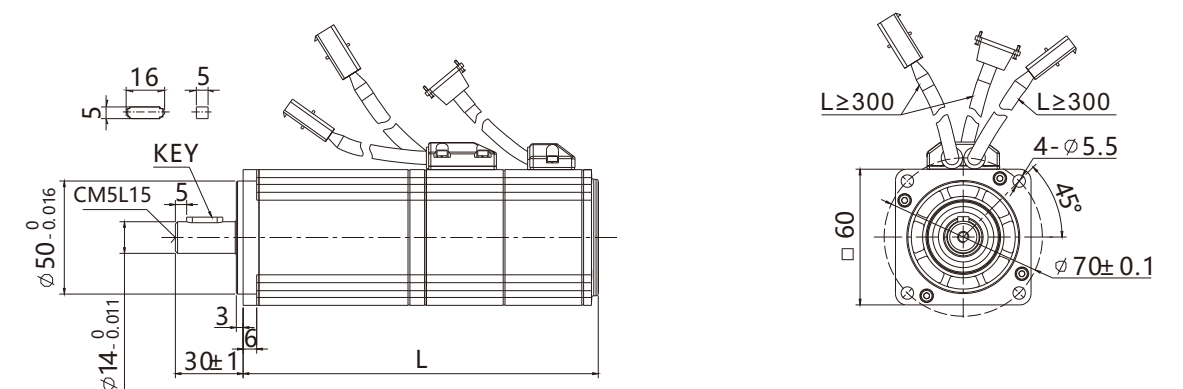


# Mechanical Dimensions of SMH Servo Motors (60 flanges)

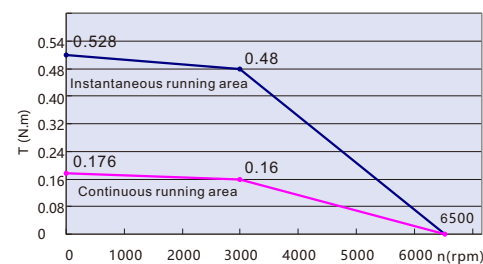
## SMH Series 60 Flange Outlet Motor



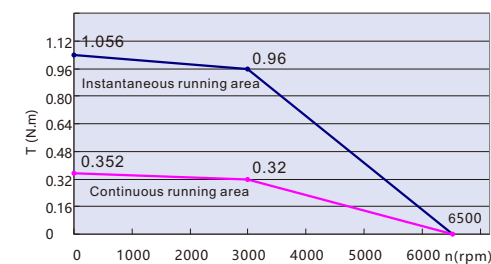
## SMH Series 60 Flange Outlet Motor ( with brake )



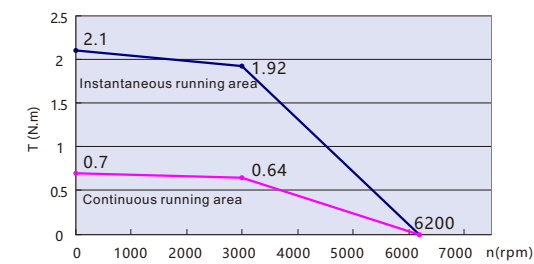
SMH40S-0005-30A K-4LKH 50W



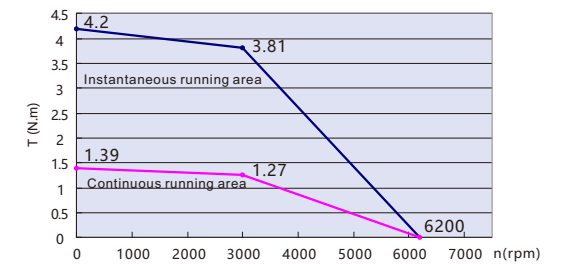
SMH40S-0010-30A K-4LKH 100W



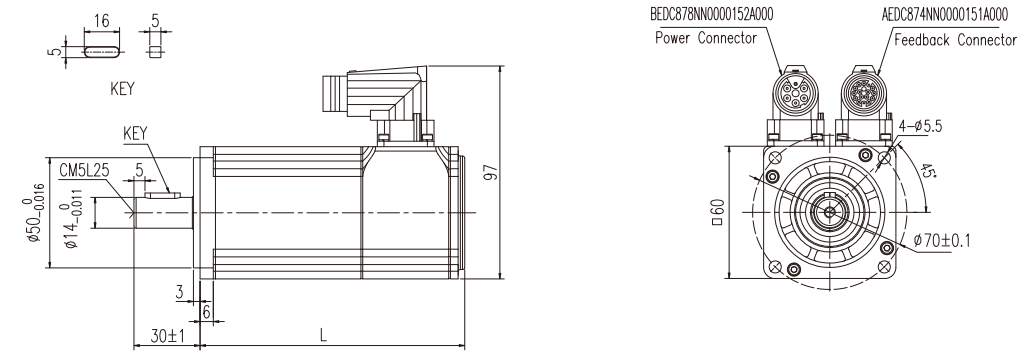
SMH60S-0020-30A K-3LK 200W



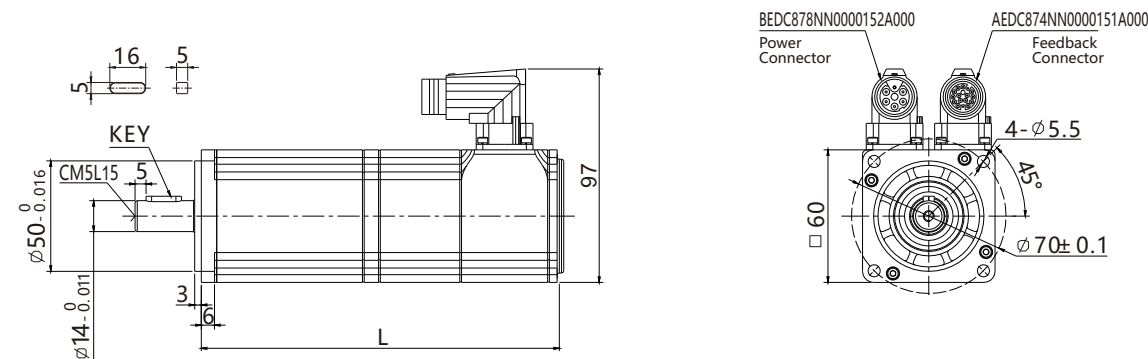
SMH60S-0040-30A K-3LK 400W



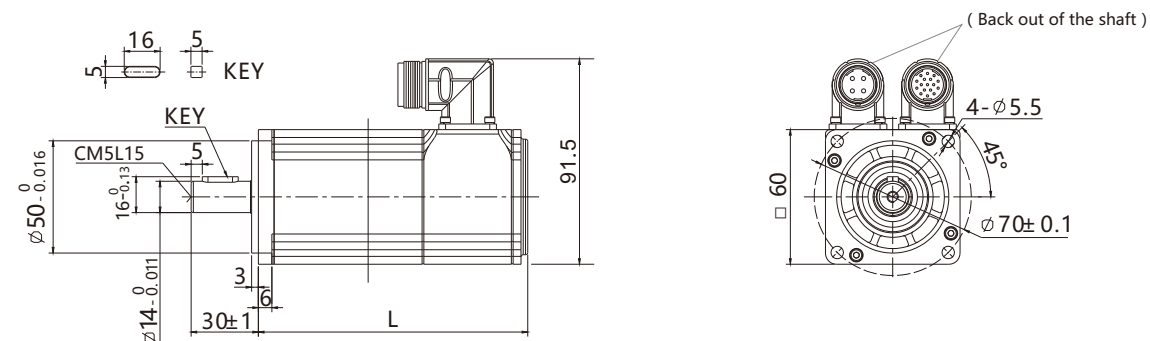
## SMH Series 60 flange inlet aviation socket motor



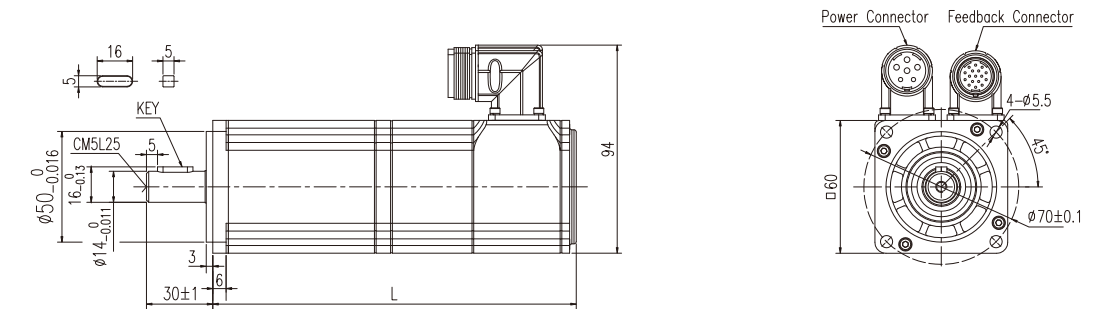
## SMH Series 60 flange inlet aviation socket motor ( with brake )



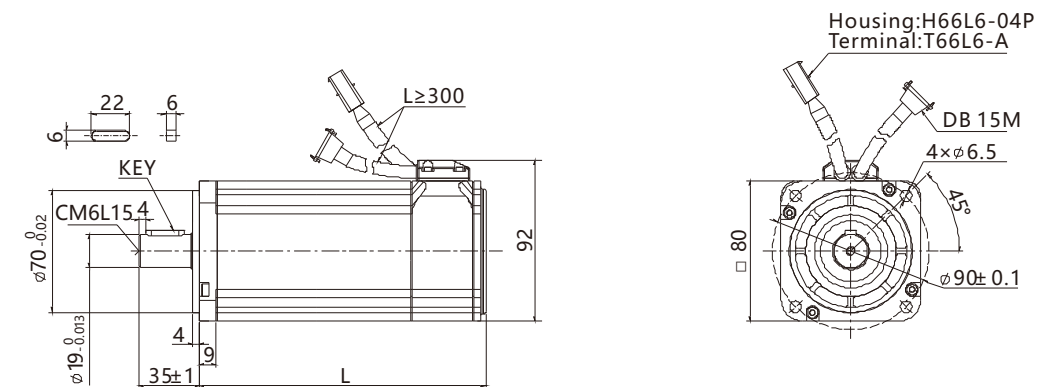
## SMH Series 60 flange HFO aviation socket motor



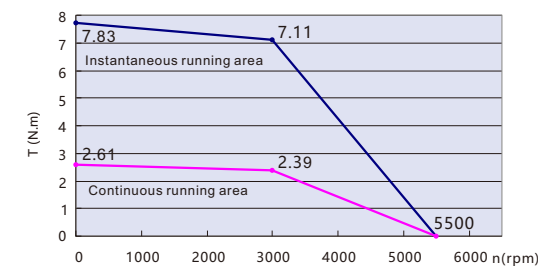
## SMH Series 60 flange HFO aviation socket motor(with brake)



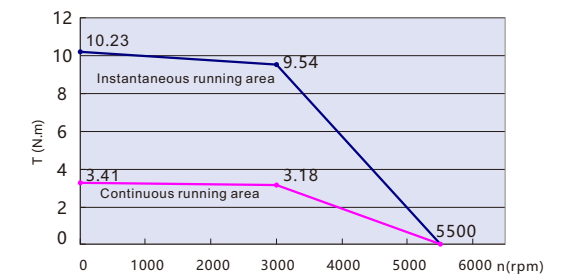
## SMH Series 80 Flange Outlet Motor



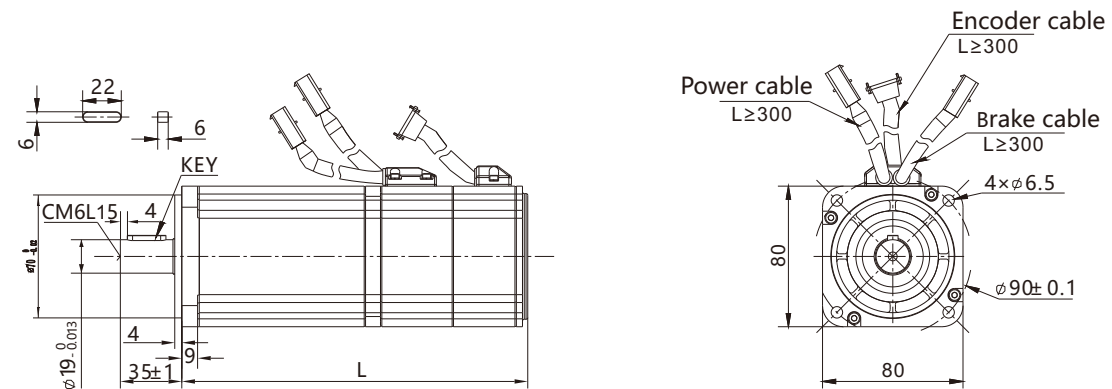
## SMH80S-0075-30A K-3LK 750W



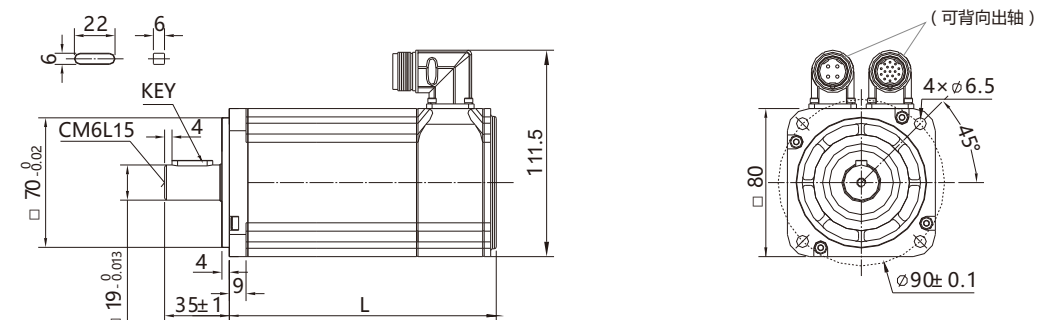
## SMH80S-0100-30A K-3LK 1000W



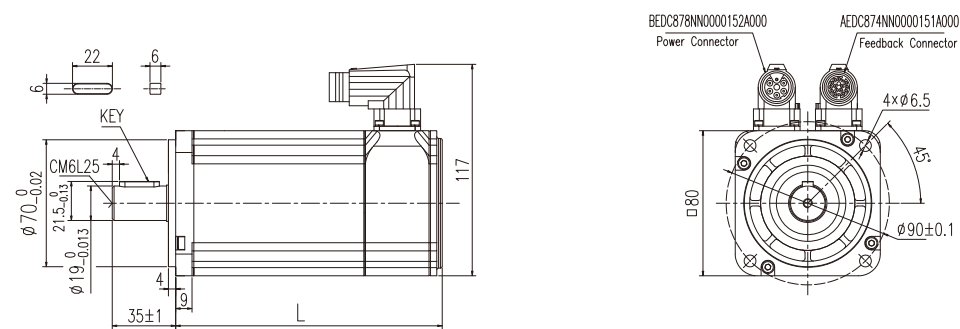
SMH Series 80 Flange Outlet Motor ( with brake )



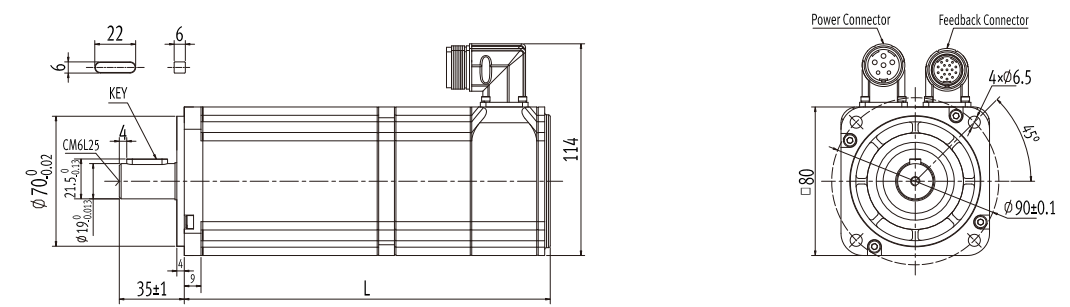
SMH Series 80 flange HFO aviation socket motor



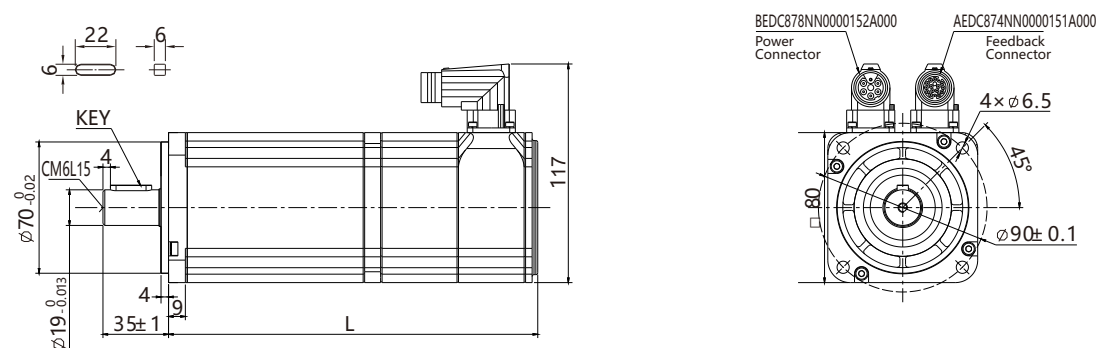
SMH Series 80 flange inlet aviation socket motor



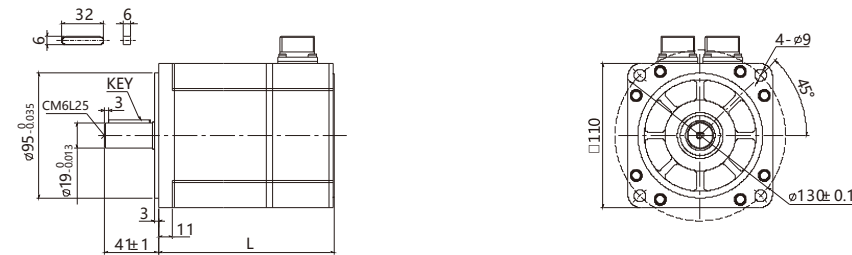
SMH Series 80 flange HFO aviation socket motor (with brake)



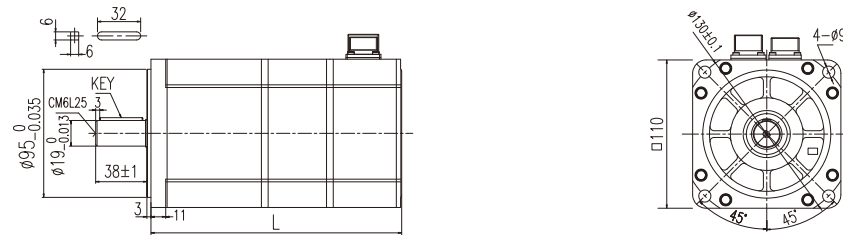
SMH Series 80 flange inlet aviation socket motor ( with brake )



## SMH Series 110 flange general aviation socket motor

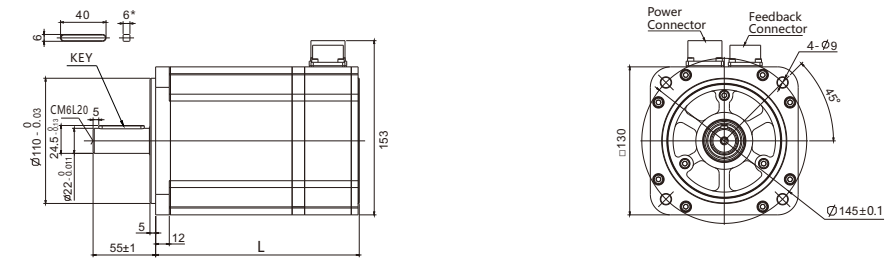


## SMH Series 110 flange general aviation socket motor (with brake)

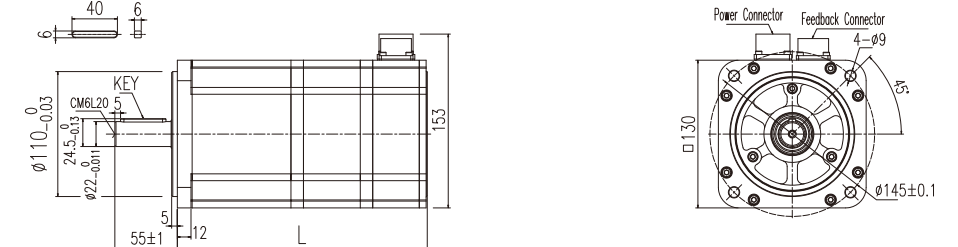


## SMH Series 130 flange general aviation socket motor

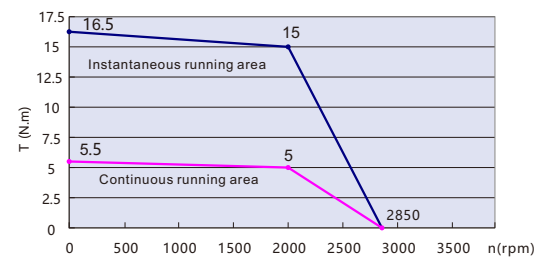
\*Note: the SMH130D-0300-20A □ K-4HKC key is 8.



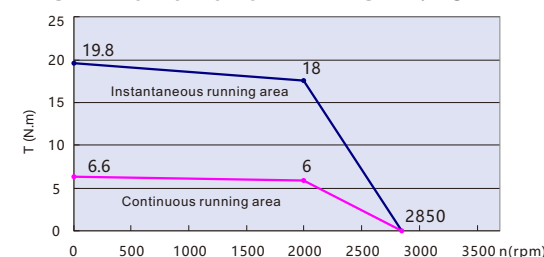
## SMH Series 130 flange general aviation socket motor (with brake)



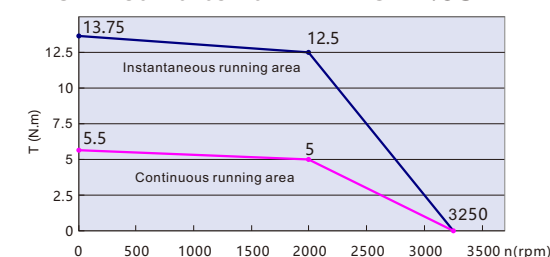
SMH110D-0105-20A □ K-4LKC 1.05KW



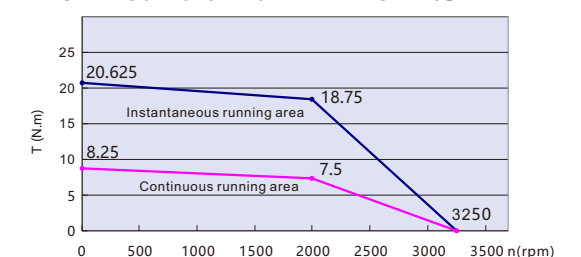
SMH110D-0126-20A □ K-4LKC 1.26KW



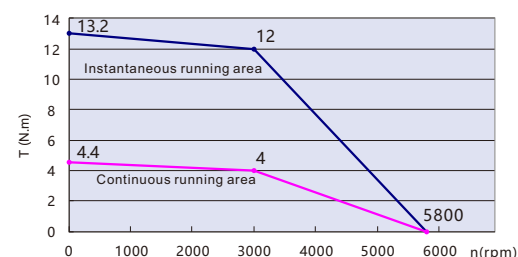
SMH130D-0105-20A □ K-4HKC 1.05KW



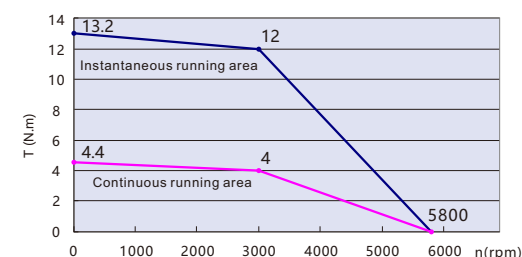
SMH130D-0157-20A □ K-4HKC 1.57KW



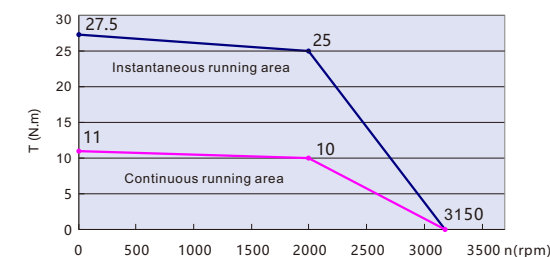
SMH110D-0125-30A □ K-4LKC 1.25KW



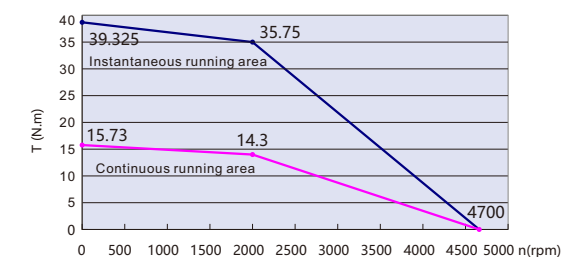
SMH110D-0126-30A □ K-4HKC 1.26KW



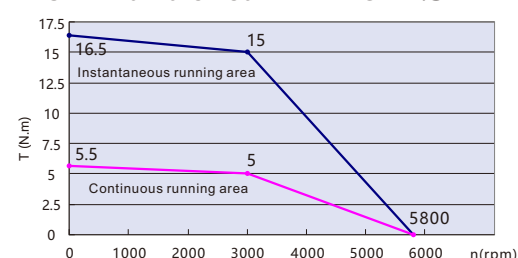
SMH130D-0210-20A □ K-4HKC 2.1KW



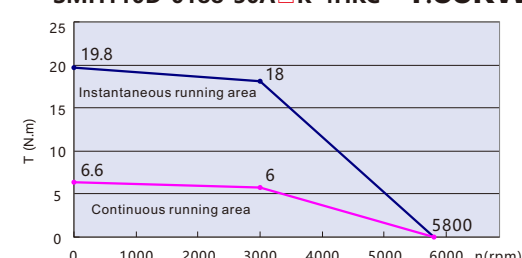
SMH130D-0300-20A □ K-4HKC 3KW



SMH110D-0157-30A □ K-4HKC 1.57KW



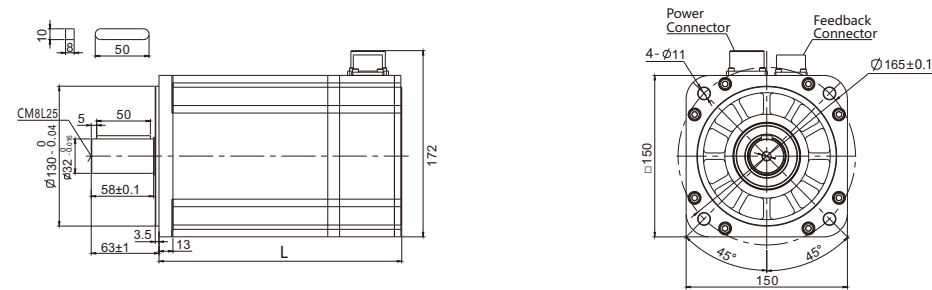
SMH110D-0188-30A □ K-4HKC 1.88KW



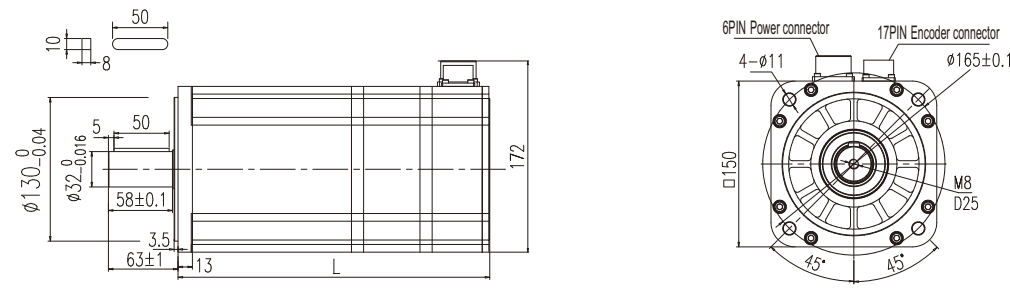
# Mechanical Dimensions of SMH Servo Motors (150 flanges)

# Mechanical Dimensions of SMH Servo Motors (180 flanges)

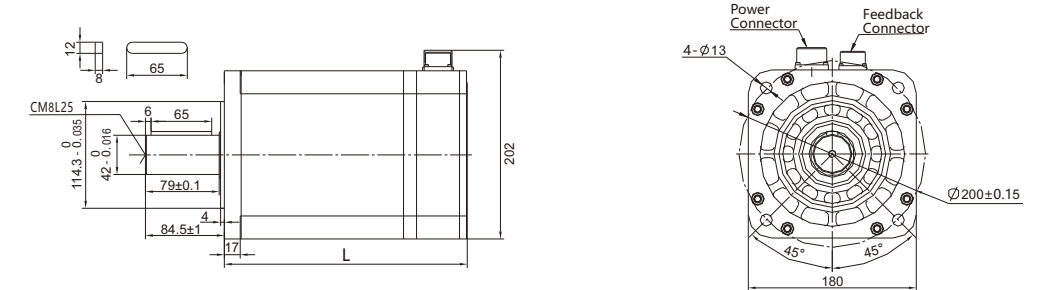
SMH Series 150 flange general aviation socket motor



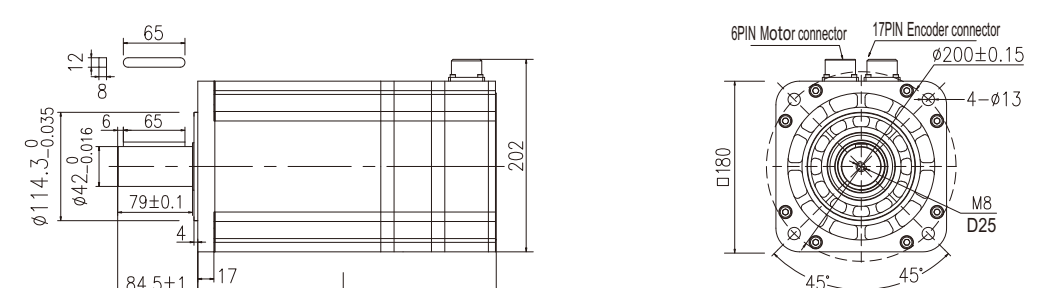
SMH Series 150 flange general aviation socket motor (with brake)



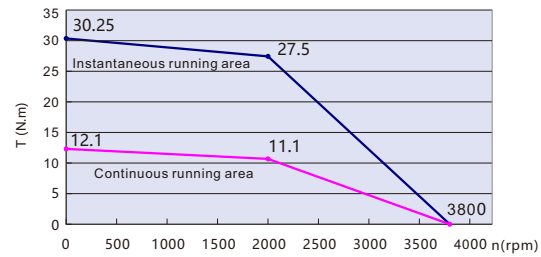
SMH Series 180 flange general aviation socket motor



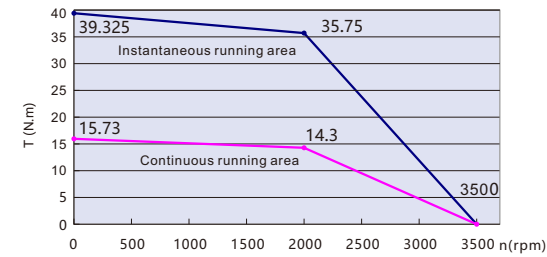
SMH Series 180 flange general aviation socket motor (with brake)



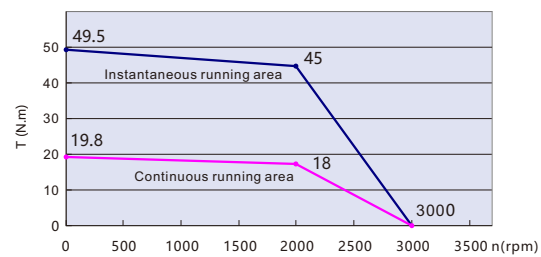
SMH150D-0230-20A K-4HKC 2.3KW



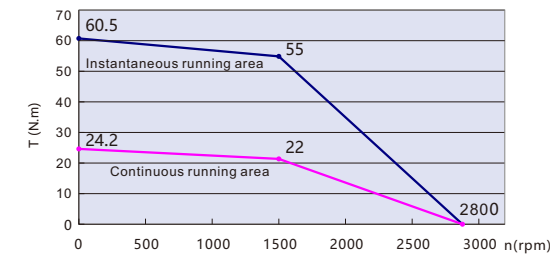
SMH150D-0300-20A K-4HKC 3KW



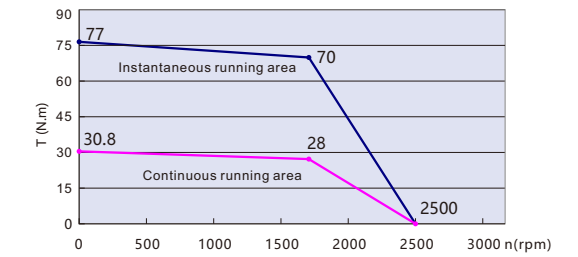
SMH150D-0380-20A K-4HKC 3.8KW



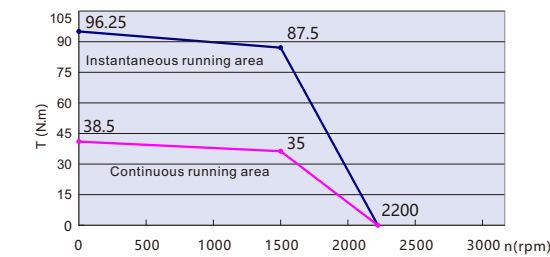
SMH180D-0350-15A K-4HKC 3.5KW



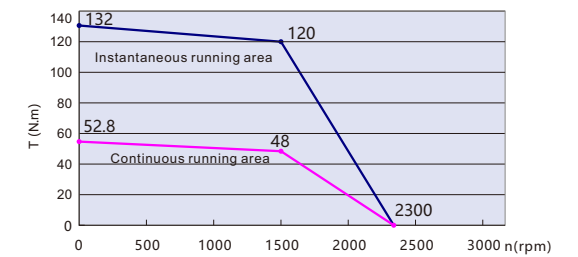
SMH180D-0440-15A K-4HKC 4.4KW



SMH180D-0550-15R K-4HKC 5.5KW



SMH180D-0750-15R K-4HKC 7.5KW



Technical Specifications of SMG Servo Motor (1)



| Motor Series                                                                   | SMG Series Motor                                                                        |                                    |                                                                                                   |                                                                                  |                                                                                                   |                                                                                  |                                                                                  |
|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|------------------------------------|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
|                                                                                | Medium inertia flange size 130mm                                                        |                                    |                                                                                                   |                                                                                  |                                                                                                   |                                                                                  |                                                                                  |
| Model                                                                          | SMG130D-0100<br>-10A□K-4LKG                                                             | SMG130D-0100<br>-20A□K-4LKG        | SMG130D-0150<br>-20A□K-4LKG                                                                       | SMG130D-0150<br>-20A□K-4HKG                                                      | SMG130D-0200<br>-20A□K-4LKG                                                                       | SMG130D-0200<br>-20A□K-4HKG                                                      | SMG130D-0300<br>-20A□K-4HKG                                                      |
| Driver matching                                                                | FD422S-LF-000<br>FD422S-CF-000<br>FD422S-EF-000<br>CD422S-AF-000<br>JD430-AA-000        |                                    | CD432S-AA-000<br>FD432S-LA-000<br>FD432S-CA-000<br>FD432S-EA-000<br>CD612S-AA-000<br>JD430-AA-000 | FD612S-LA-000<br>FD612S-CA-000<br>FD612S-EA-000<br>CD612S-AA-000<br>JD620-AA-000 | CD432S-AA-000<br>FD432S-LA-000<br>FD432S-CA-000<br>FD432S-EA-000<br>CD612S-AA-000<br>JD430-AA-000 | FD612S-LA-000<br>FD612S-CA-000<br>FD612S-EA-000<br>CD612S-AA-000<br>JD620-AA-000 | FD622S-LA-000<br>FD622S-CA-000<br>FD622S-EA-000<br>CD622S-AA-000<br>JD620-AA-000 |
| Rated Power (kW)                                                               | 1                                                                                       | 1                                  | 1.5                                                                                               | 1.5                                                                              | 2                                                                                                 | 2                                                                                | 3                                                                                |
| Rated voltage (V)                                                              | 220                                                                                     | 220                                | 220                                                                                               | 380                                                                              | 220                                                                                               | 380                                                                              | 380                                                                              |
| Rated current (A)                                                              | 4.5                                                                                     | 5                                  | 7.5                                                                                               | 4.7                                                                              | 10                                                                                                | 5.9                                                                              | 7.4                                                                              |
| Rated speed (RPM)                                                              | 1000                                                                                    | 2000                               | 2000                                                                                              | 2000                                                                             | 2000                                                                                              | 2000                                                                             | 2000                                                                             |
| Rated torque (Nm)                                                              | 10                                                                                      | 5                                  | 7.7                                                                                               | 7.7                                                                              | 10                                                                                                | 10                                                                               | 15                                                                               |
| Peak torque (Nm)                                                               | 20                                                                                      | 12.5                               | 19.25                                                                                             | 19.25                                                                            | 25                                                                                                | 25                                                                               | 30                                                                               |
| Peak current (A)                                                               | 9                                                                                       | 12.5                               | 18.75                                                                                             | 11.75                                                                            | 25                                                                                                | 14.75                                                                            | 18.5                                                                             |
| Reverse voltage                                                                | 140                                                                                     | 68                                 | 68                                                                                                | 111                                                                              | 70                                                                                                | 115                                                                              | 125                                                                              |
| constant K <sub>e</sub> (V/1000r/min)<br>Torque constant k <sub>t</sub> (Nm/A) | 2.2                                                                                     | 1                                  | 1.03                                                                                              | 1.64                                                                             | 1                                                                                                 | 1.69                                                                             | 2.03                                                                             |
| Rotor moment of inertia J <sub>m</sub> (Kg•m <sup>2</sup> )                    | 1.94×10 <sup>-3</sup>                                                                   | 1.06×10 <sup>-3</sup>              | 1.53×10 <sup>-3</sup>                                                                             | 1.53×10 <sup>-3</sup>                                                            | 1.94×10 <sup>-3</sup>                                                                             | 1.94×10 <sup>-3</sup>                                                            | 2.77×10 <sup>-3</sup>                                                            |
|                                                                                | 1.95×10 <sup>-3</sup> (with brake)                                                      | 1.07×10 <sup>-3</sup> (with brake) | 1.54×10 <sup>-3</sup> (with brake)                                                                | 1.54×10 <sup>-3</sup> (with brake)                                               | 1.95×10 <sup>-3</sup> (with brake)                                                                | 1.95×10 <sup>-3</sup> (with brake)                                               | 2.78×10 <sup>-3</sup> (with brake)                                               |
| Resistance Line-Line R <sub>L</sub> (Ω)                                        | 2.7                                                                                     | 1.84                               | 1.01                                                                                              | 2.49                                                                             | 0.73                                                                                              | 1.986                                                                            | 1.41                                                                             |
| Inductance Line-Line L <sub>L</sub> (mH)                                       | 8.8                                                                                     | 4.9                                | 2.94                                                                                              | 7.08                                                                             | 2.45                                                                                              | 6.2                                                                              | 5.5                                                                              |
| Electrical time constant τ <sub>e</sub> (ms)                                   | 3.26                                                                                    | 2.66                               | 2.91                                                                                              | 2.84                                                                             | 3.36                                                                                              | 3.12                                                                             | 3.9                                                                              |
| Length of motor L (mm)                                                         | 213±1                                                                                   | 171±1                              | 192±1                                                                                             | 192±1                                                                            | 209±1                                                                                             | 209±1                                                                            | 231±1                                                                            |
|                                                                                | 294±1 (with brake)                                                                      | 228±1 (with brake)                 | 249±1 (with brake)                                                                                | 249±1 (with brake)                                                               | 290±1 (with brake)                                                                                | 290±1 (with brake)                                                               | 312±1 (with brake)                                                               |
| Weight (Kg)                                                                    | 10.2±0.7                                                                                | 6.6±0.7                            | 8.3±0.7                                                                                           | 8.3±0.7                                                                          | 9.8±0.7                                                                                           | 9.8±0.7                                                                          | 11.7±0.7                                                                         |
|                                                                                | 12.5±0.7 (with brake)                                                                   | 8.9±0.7 (with brake)               | 10.6±0.7 (with brake)                                                                             | 10.6±0.7 (with brake)                                                            | 12.1±0.7 (with brake)                                                                             | 12.1±0.7 (with brake)                                                            | 14±0.7 (with brake)                                                              |
| Maximum radial force F <sub>r</sub> (N)                                        | 900                                                                                     | 900                                | 900                                                                                               | 900                                                                              | 900                                                                                               | 900                                                                              | 900                                                                              |
| Maximum axial force F <sub>a</sub> (N)                                         | 300                                                                                     | 300                                | 300                                                                                               | 300                                                                              | 300                                                                                               | 300                                                                              | 300                                                                              |
| Pole pair number                                                               | 4                                                                                       |                                    |                                                                                                   |                                                                                  |                                                                                                   |                                                                                  |                                                                                  |
| Encoder                                                                        | 2500 P/R Incremental encoder                                                            |                                    |                                                                                                   |                                                                                  |                                                                                                   |                                                                                  |                                                                                  |
| Insulation class                                                               | F                                                                                       |                                    |                                                                                                   |                                                                                  |                                                                                                   |                                                                                  |                                                                                  |
| Protection level                                                               | IP65                                                                                    |                                    |                                                                                                   |                                                                                  |                                                                                                   |                                                                                  |                                                                                  |
| Environment conditions for operation                                           | Temperature: - 20 ~ 40°C ( non-freezing ) ;Humidity : Below 90 % RH ( no condensation ) |                                    |                                                                                                   |                                                                                  |                                                                                                   |                                                                                  |                                                                                  |

Note : □=A —without brake  
□=B —with brake

Technical Specifications of SMG Servo Motor(2)



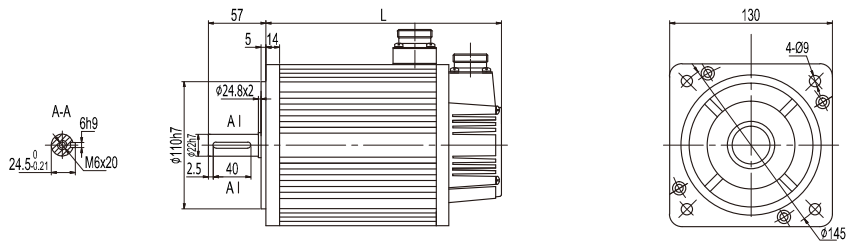
| Motor Series                                                | SMG Series Motor                                                                        |                                       |                                       |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------|
|                                                             | Medium inertia flange size 180mm                                                        |                                       |                                       |
| Model                                                       | SMG180D-0440-15A□K-4HKG                                                                 | SMG180D-0550-15A□K-4HKG               | SMG180D-0750-15A□K-4HKG               |
| Driver matching                                             | JD640-LA-000<br>JD640-AA-000                                                            |                                       | JD650-AA-000                          |
| Rated Power (kW)                                            | 4.4                                                                                     | 5.5                                   | 7.5                                   |
| Rated voltage (V)                                           | 380                                                                                     | 380                                   | 380                                   |
| Rated current (A)                                           | 10                                                                                      | 12                                    | 20                                    |
| Rated speed (RPM)                                           | 1500                                                                                    | 1500                                  | 1500                                  |
| Rated torque (Nm)                                           | 27                                                                                      | 35                                    | 48                                    |
| Peak torque (Nm)                                            | 67                                                                                      | 70                                    | 96                                    |
| Peak current (A)                                            | 24.81                                                                                   | 30                                    | 50                                    |
| Reverse voltage constant K <sub>e</sub> (V/1000r/min)       | 172                                                                                     | 181                                   | 156                                   |
| Torque constant k <sub>t</sub> (Nm/A)                       | 2.7                                                                                     | 2.9                                   | 2.4                                   |
| Rotor moment of inertia J <sub>m</sub> (Kg•m <sup>2</sup> ) | 9.64 × 10 <sup>-3</sup>                                                                 | 12.25 × 10 <sup>-3</sup>              | 16.72 × 10 <sup>-3</sup>              |
|                                                             | 9.66 × 10 <sup>-3</sup> (with brake)                                                    | 12.28 × 10 <sup>-3</sup> (with brake) | 16.75 × 10 <sup>-3</sup> (with brake) |
| Resistance Line - Line R <sub>L</sub> (Ω)                   | 0.796                                                                                   | 0.62                                  | 0.273                                 |
| Inductance Line - Line L <sub>L</sub> (mH)                  | 4.83                                                                                    | 4                                     | 2.14                                  |
| Electrical time constant τ <sub>e</sub> (ms)                | 6                                                                                       | 6.45                                  | 7.8                                   |
| Length of motor L ( mm )                                    | 262±1.4                                                                                 | 292±1.4                               | 346±1.4                               |
|                                                             | 334±1.4 (with brake)                                                                    | 365±1.4 (with brake)                  | 418±1.4 (with brake)                  |
| Weight (Kg)                                                 | 25.5±0.7                                                                                | 30.5±0.7                              | 40±0.7                                |
|                                                             | 30.7±0.7 (with brake)                                                                   | 37.5±0.7 (with brake)                 | 47±0.7 (with brake)                   |
| Maximum radial force F <sub>r</sub> F(N)                    | 1500                                                                                    | 1500                                  | 1500                                  |
| Maximum axial force F (N)                                   | 600                                                                                     | 600                                   | 600                                   |
| Pole pair number                                            | 4                                                                                       |                                       |                                       |
| Encoder                                                     | 2500 P/R Incremental encoder                                                            |                                       |                                       |
| Insulation class                                            | F                                                                                       |                                       |                                       |
| Protection level                                            | IP65                                                                                    |                                       |                                       |
| Environment conditions for operation                        | Temperature: - 20 ~ 40°C ( non-freezing ) ;Humidity : Below 90 % RH ( no condensation ) |                                       |                                       |

Note : □=A —without brake  
□=B —with brake

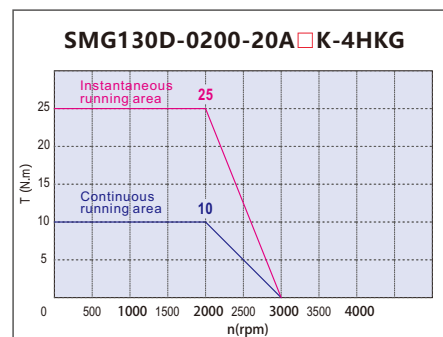
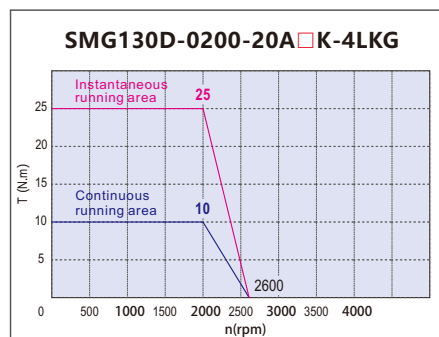
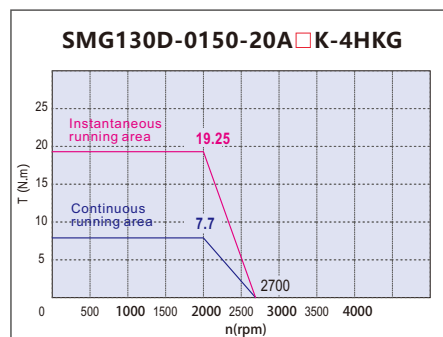
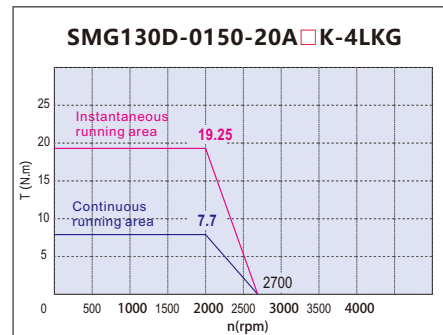
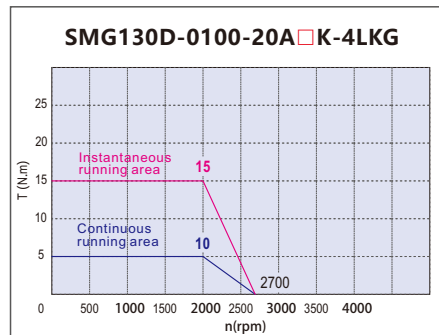
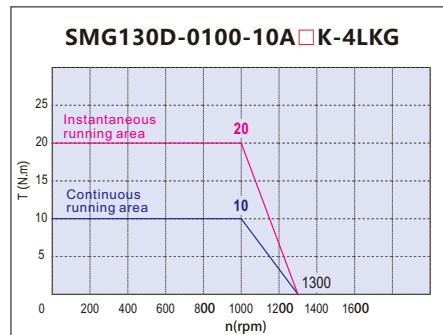
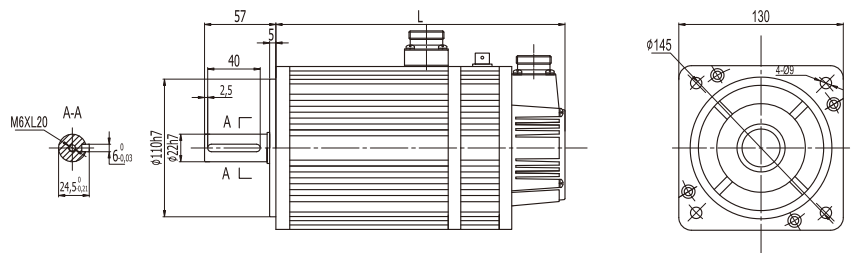
## Mechanical Dimensions of **SMH** Servo Motors (130 flanges)

## Mechanical Dimensions of **SMH** Servo Motors (180 flanges)

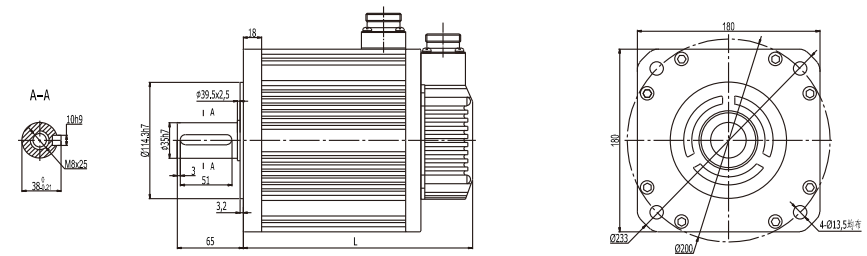
## SMG Series 130 flange general aviation socket motor



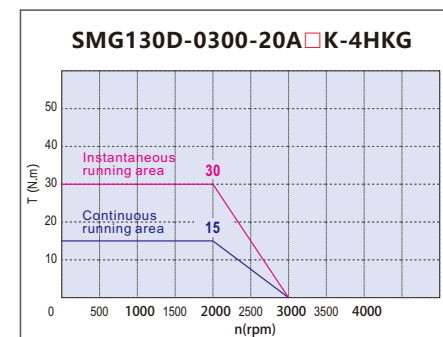
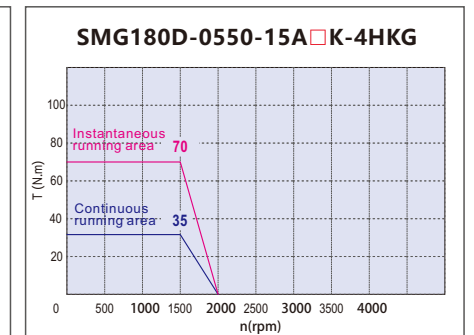
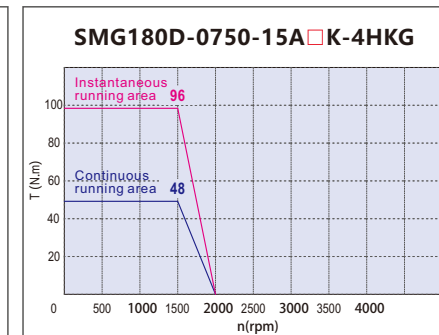
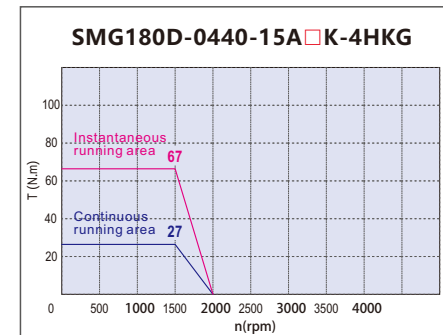
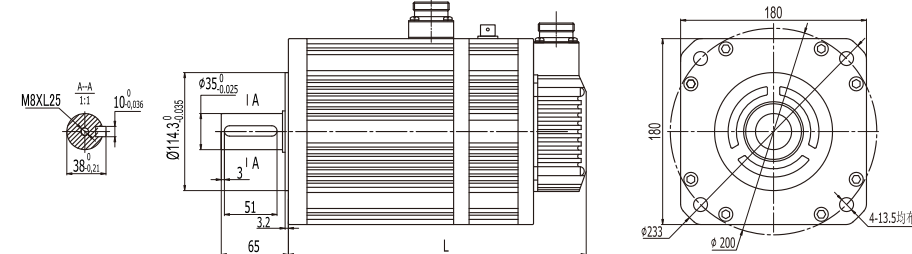
## SMG Series 130 flange general aviation socket motor (with brake)

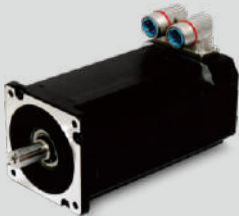


## SMG Series 180 flange general aviation socket motor

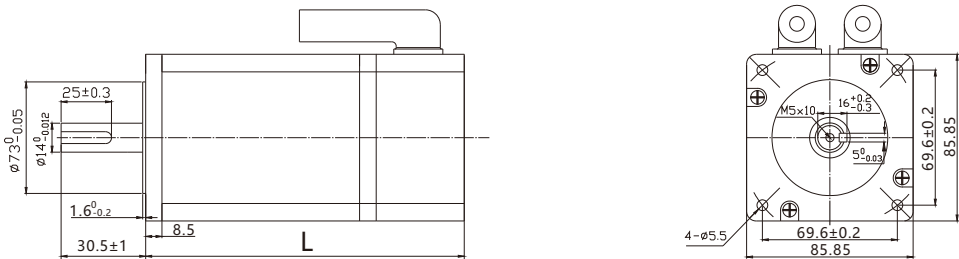


## SMG Series 180 flange general aviation socket motor (with brake)

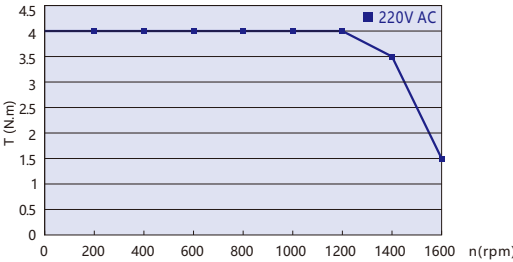


|  |                                                                  |                        |                        |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------|------------------------|------------------------|
| Multi-pole servo motor                                                            | Multipole servo motor                                            |                        |                        |
|                                                                                   | Small inertia flange size 85mm                                   |                        |                        |
| Model                                                                             | 85S-0025-05AAK-FLFN-02                                           | 85S-0035-05AAK-FLFN-02 | 85S-0045-05AAK-FLFN-02 |
| Driver matching                                                                   | FD422S-CA-000<br>FD422S-LA-000<br>FD422S-EA-000<br>CD422S-AA-000 |                        |                        |
| Rated phase current (A)                                                           | 4                                                                | 4                      | 4                      |
| Holding torque (Nm)                                                               | 4.18                                                             | 6                      | 7.5                    |
| Damping torque (Nm)                                                               | 0.3                                                              | 0.4                    | 0.45                   |
| Resistance line-line (Ω)                                                          | 1.13                                                             | 2.3                    | 1.78                   |
| Inductance line-line (mH)                                                         | 5.75                                                             | 12.4                   | 17.1                   |
| Rotor moment of inertia J <sub>m</sub> ( Kg·cm2 )                                 | 0.232                                                            | 0.33                   | 0.44                   |
| Length L (mm)                                                                     | 142±1                                                            | 172±1                  | 202±1                  |
| Maximum radial force F <sub>r</sub> (N)                                           | 60                                                               | 60                     | 60                     |
| Maximum axial force F <sub>a</sub> (N)                                            | 220                                                              | 220                    | 220                    |
| weight (Kg)                                                                       | 2.7                                                              | 3.8                    | 5.3                    |
| Dielectric strength                                                               | 1500V AC 1S 5mA                                                  |                        |                        |
| Insulation class                                                                  | B                                                                |                        |                        |
| operation teperature                                                              | - 20 ~ 50℃                                                       |                        |                        |
| Surface temperature rising                                                        | Max,80℃                                                          |                        |                        |
| Insulation impedance                                                              | Min.100MΩ , 500V DC                                              |                        |                        |

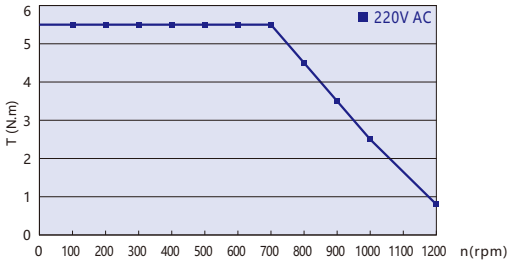
Multipole 85S aviation socket motor



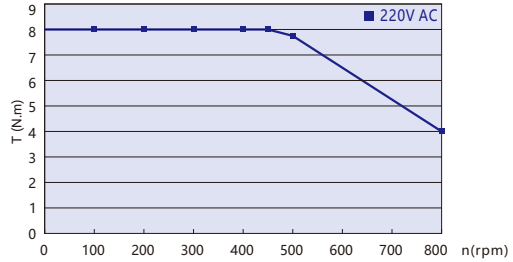
85S-0025-05AAK-FLFN-02    **4.18NM**



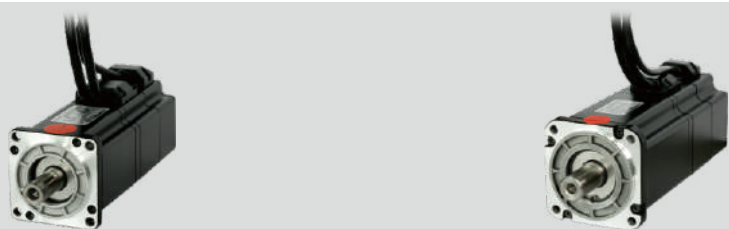
85S-0035-05AAK-FLFN-02    **6NM**



85S-0045-05AAK-FLFN-02    **8NM**



Technical Specifications of SMC Magnetolectric Encoder Motor (1)



| Model                                               |                         | SMC Series Motor                                                                                           |                        |                                |
|-----------------------------------------------------|-------------------------|------------------------------------------------------------------------------------------------------------|------------------------|--------------------------------|
|                                                     |                         | Small inertia flange size 60mm                                                                             |                        | Small inertia flange size 80mm |
| Driver matching                                     |                         | SMC60S-0020-30A□K-3LK□                                                                                     | SMC60S-0040-30A□K-3LK□ | SMC80S-0075-30A□K-3LK□         |
| DC link voltage UDC                                 |                         | FD422S-CA-000<br>FD422S-LA-000<br>FD422S-EA-000<br>CD422S-AA-000                                           |                        |                                |
| DC link voltage UDC                                 |                         | 300                                                                                                        | 300                    | 300                            |
| Maintain torque                                     | Rated power $P_N$ (W)   | 200                                                                                                        | 400                    | 750                            |
|                                                     | Rated torque $T_N$ (Nm) | 0.64                                                                                                       | 1.27                   | 2.39                           |
|                                                     | Rated speed $n_N$ (rpm) | 3000                                                                                                       | 3000                   | 3000                           |
|                                                     | Rated current $I_N$ (A) | 1.4                                                                                                        | 2.4                    | 3.8                            |
| maximum torque $T_m$ (Nm)                           |                         | 1.92                                                                                                       | 3.81                   | 7.17                           |
| maximum current $I_m$ (A)                           |                         | 4.2                                                                                                        | 7.2                    | 11.4                           |
| Standstill torque $T_s$ (Nm)                        |                         | 0.7                                                                                                        | 1.4                    | 2.63                           |
| Standstill current $I_s$ (A)                        |                         | 1.5                                                                                                        | 2.6                    | 4.2                            |
| Resistance Line - Line $R_L$ ( $\Omega$ )           |                         | 11.2                                                                                                       | 5.8                    | 2.1                            |
| Inductance Line - Line $L_L$ (mH)                   |                         | 20.9                                                                                                       | 11.5                   | 10.5                           |
| Electrical time constant $\tau_e$ (ms)              |                         | 1.87                                                                                                       | 1.98                   | 5                              |
| Mechanical time constant $\tau_m$ (ms)              |                         | 1.8                                                                                                        | 1.29                   | 0.9                            |
| Reverse voltage constant $K_e$ (V/krpm)             |                         | 29                                                                                                         | 34                     | 40                             |
| Torque constant $K_t$ (Nm/A)                        |                         | 0.48                                                                                                       | 0.562                  | 0.662                          |
| Rotor moment of inertia $J_m$ (Kg·cm <sup>2</sup> ) |                         | 0.214                                                                                                      | 0.405                  | 1.087                          |
|                                                     |                         | 0.218(with brake)                                                                                          | 0.409(with brake)      | 1.099(with brake)              |
| Maintain torque $T$ (Nm)                            |                         | 1.3                                                                                                        | 1.3                    | 3.2                            |
| pole pair number                                    |                         | 3                                                                                                          | 3                      | 3                              |
| Maximum voltage rising $du/dt$ (KV/ $\mu$ s)        |                         | 8                                                                                                          | 8                      | 8                              |
| Insulation class                                    |                         | F                                                                                                          | F                      | F                              |
| Maximum radial force $F_r$ (N)                      |                         | 180                                                                                                        | 180                    | 335                            |
| Maximum axial force $F_a$ (N)                       |                         | 90                                                                                                         | 90                     | 167.5                          |
| Weight $G$ (Kg)                                     |                         | 1.1                                                                                                        | 1.6                    | 2.8                            |
|                                                     |                         | 1.6(with brake)                                                                                            | 2.1(with brake)        | 3.4(with brake)                |
| Length of motor $L$ (mm)                            |                         | 109±1.5                                                                                                    | 135±1.5                | 139±1.5                        |
|                                                     |                         | 150±1.5(with brake)                                                                                        | 176±1.5(with brake)    | 182±1.5(with brake)            |
| Position feedback device                            |                         | 2500 P/R Incremental encoder                                                                               |                        |                                |
| Cooling method                                      |                         | Totally enclosed, non - ventilated                                                                         |                        |                                |
| Protection level                                    |                         | IP65, shaft sealing IP54                                                                                   |                        |                                |
| Environment conditions for operation                | Temperature             | - 20 ~ 40°C ( non-freezing )                                                                               |                        |                                |
|                                                     | Humidity                | Below 90 % RH ( no condensation )                                                                          |                        |                                |
|                                                     | Ambient environment     | Away from active gas,combustible gas,oil drops and dust                                                    |                        |                                |
|                                                     | Altitude                | Maximum altitude 4000 m, rated power at 1000 m or below. Above 1000m, decreasing 1.5 % per every 100m rise |                        |                                |

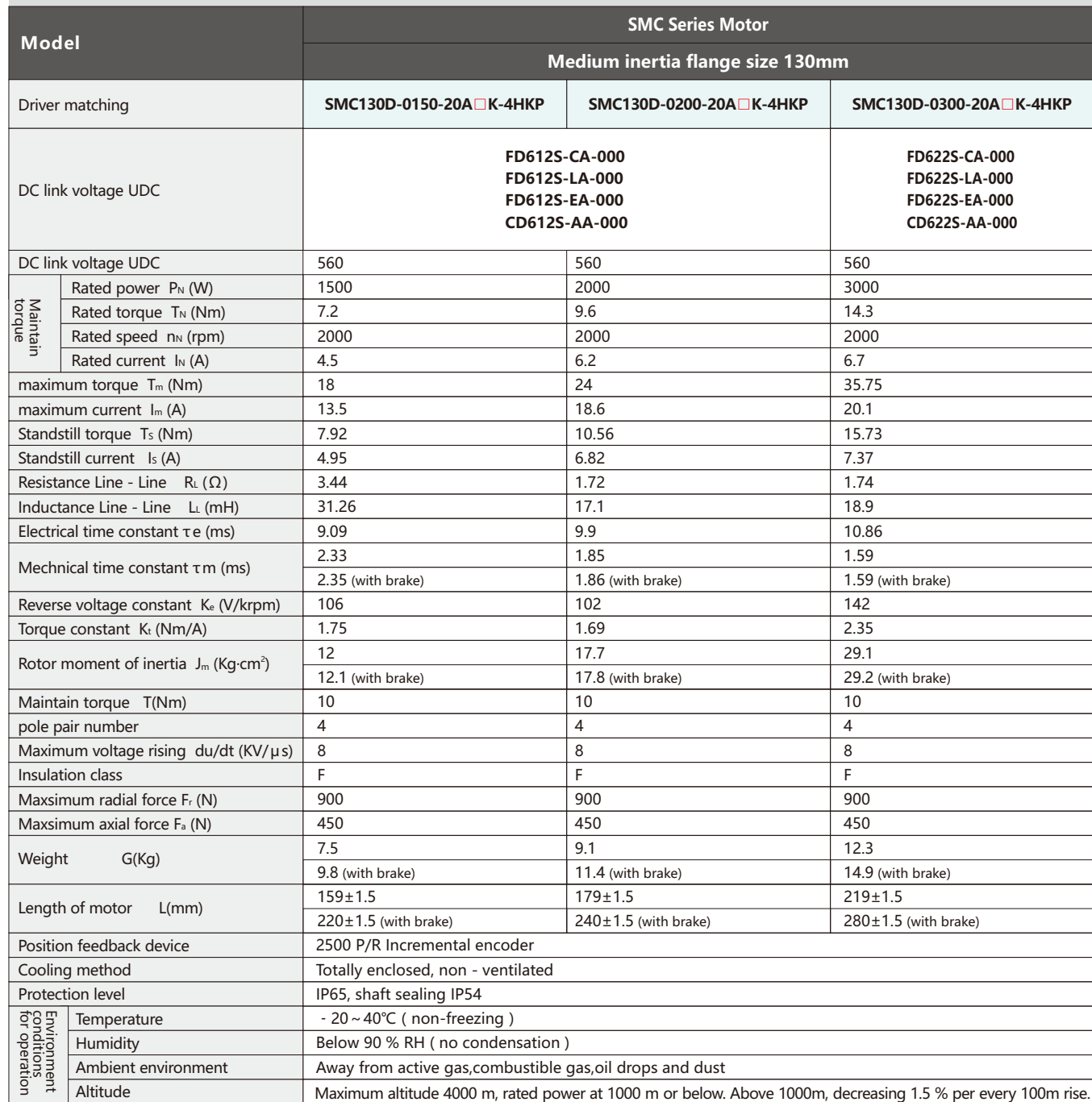
**Note :** □=A — without brake    □=H — 3 rows of 15-pin Connector  
□=B — with brake    □=N — HFO18 series aviation standard connector(towards the shaft)  
□=P — HFO21+HFO18 series aviation standard connector(HFO21 power connector,HFO18 encoder connector)

Technical Specifications of SMC Magnetolectric Encoder Motor (2)



| Model                                               |                         | SMC Series Motor                                                                                           |                                                                  |                         |
|-----------------------------------------------------|-------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|-------------------------|
|                                                     |                         | Medium inertia flange size 130mm                                                                           |                                                                  |                         |
| Driver matching                                     |                         | SMC130D-0100-20A□K-4LKP                                                                                    | SMC130D-0150-20A□K-4LKP                                          | SMC130D-0200-20A□K-4LKP |
| DC link voltage UDC                                 |                         | FD422S-CF-000<br>FD422S-LF-000<br>FD422S-EF-000<br>CD422S-AF-000                                           | FD432S-CA-000<br>FD432S-LA-000<br>FD432S-EA-000<br>CD432S-AA-000 |                         |
| DC link voltage UDC                                 |                         | 300                                                                                                        | 300                                                              | 300                     |
| Maintain torque                                     | Rated power $P_N$ (W)   | 1000                                                                                                       | 1500                                                             | 2000                    |
|                                                     | Rated torque $T_N$ (Nm) | 4.8                                                                                                        | 7.2                                                              | 9.6                     |
|                                                     | Rated speed $n_N$ (rpm) | 2000                                                                                                       | 2000                                                             | 2000                    |
|                                                     | Rated current $I_N$ (A) | 4.4                                                                                                        | 6.8                                                              | 8.8                     |
| maximum torque $T_m$ (Nm)                           |                         | 12                                                                                                         | 18                                                               | 24                      |
| maximum current $I_m$ (A)                           |                         | 13.2                                                                                                       | 20.4                                                             | 26.4                    |
| Standstill torque $T_s$ (Nm)                        |                         | 5.28                                                                                                       | 7.92                                                             | 10.56                   |
| Standstill current $I_s$ (A)                        |                         | 4.84                                                                                                       | 7.48                                                             | 9.68                    |
| Resistance Line - Line $R_L$ ( $\Omega$ )           |                         | 3.1                                                                                                        | 1.51                                                             | 0.93                    |
| Inductance Line - Line $L_L$ (mH)                   |                         | 24.07                                                                                                      | 13.8                                                             | 8.8                     |
| Electrical time constant $\tau_e$ (ms)              |                         | 7.76                                                                                                       | 9.14                                                             | 9.46                    |
| Mechanical time constant $\tau_m$ (ms)              |                         | 2.72                                                                                                       | 2.28                                                             | 1.97                    |
|                                                     |                         | 2.76 (with brake)                                                                                          | 2.3 (with brake)                                                 | 1.98 (with brake)       |
| Reverse voltage constant $K_e$ (V/krpm)             |                         | 73                                                                                                         | 71                                                               | 72.8                    |
| Torque constant $K_t$ (Nm/A)                        |                         | 1.21                                                                                                       | 1.17                                                             | 1.2                     |
| Rotor moment of inertia $J_m$ (Kg·cm <sup>2</sup> ) |                         | 7.4                                                                                                        | 12                                                               | 17.7                    |
|                                                     |                         | 7.5 (with brake)                                                                                           | 12.1 (with brake)                                                | 17.8 (with brake)       |
| Maintain torque $T$ (Nm)                            |                         | 10                                                                                                         | 10                                                               | 10                      |
| pole pair number                                    |                         | 4                                                                                                          | 4                                                                | 4                       |
| Maximum voltage rising $du/dt$ (KV/ $\mu$ s)        |                         | 8                                                                                                          | 8                                                                | 8                       |
| Insulation class                                    |                         | F                                                                                                          | F                                                                | F                       |
| Maximum radial force $F_r$ (N)                      |                         | 900                                                                                                        | 900                                                              | 900                     |
| Maximum axial force $F_a$ (N)                       |                         | 450                                                                                                        | 450                                                              | 450                     |
| Weight $G$ (Kg)                                     |                         | 6.2                                                                                                        | 7.5                                                              | 9.1                     |
|                                                     |                         | 8.5 (with brake)                                                                                           | 9.8 (with brake)                                                 | 11.4 (with brake)       |
| Length of motor $L$ (mm)                            |                         | 143±1.5                                                                                                    | 159±1.5                                                          | 179±1.5                 |
|                                                     |                         | 204±1.5 (with brake)                                                                                       | 220±1.5 (with brake)                                             | 240±1.5 (with brake)    |
| Position feedback device                            |                         | 2500 P/R Incremental encoder                                                                               |                                                                  |                         |
| Cooling method                                      |                         | Totally enclosed, non - ventilated                                                                         |                                                                  |                         |
| Protection level                                    |                         | IP65, shaft sealing IP54                                                                                   |                                                                  |                         |
| Environment conditions for operation                | Temperature             | - 20 ~ 40°C ( non-freezing )                                                                               |                                                                  |                         |
|                                                     | Humidity                | Below 90 % RH ( no condensation )                                                                          |                                                                  |                         |
|                                                     | Ambient environment     | Away from active gas,combustible gas,oil drops and dust                                                    |                                                                  |                         |
|                                                     | Altitude                | Maximum altitude 4000 m, rated power at 1000 m or below. Above 1000m, decreasing 1.5 % per every 100m rise |                                                                  |                         |

**Note :** □=A — without brake  
□=B — with brake



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The graph shows the torque-speed characteristic of a 1000W motor. The y-axis represents Torque ( $T$ ) in N.m, ranging from 0 to 2.5. The x-axis represents Speed ( $n$ ) in rpm, ranging from 0 to 6000. A blue line represents the motor's operating range, starting at a torque of 2.1 N.m at 0 rpm and decreasing to 0 N.m at 6000 rpm. A horizontal line at  $T = 0.7$  N.m divides the graph into two regions: the 'Instantaneous running area' above and the 'Continuous running area' below. Key data points on the curve are marked: 1.92 N.m at 3000 rpm and 0.64 N.m at 4000 rpm.

| Speed ( $n$ in rpm) | Torque ( $T$ in N.m) |
|---------------------|----------------------|
| 0                   | 2.1                  |
| 3000                | 1.92                 |
| 4000                | 0.64                 |
| 6000                | 0                    |

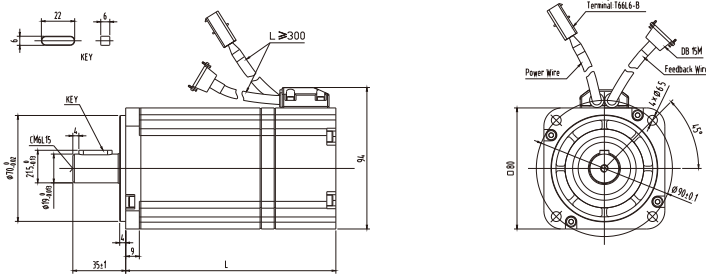
The graph shows the torque-speed characteristics for a 1000 W, 400 V, 1470 rpm, 4-pole induction motor. The x-axis represents speed  $n$  in rpm, ranging from 0 to 6000. The y-axis represents torque  $T$  in Nm, ranging from 0 to 4.5. Two operating regions are identified:

- Instantaneous running area:** This region is bounded by a line starting at  $T = 4.2$  Nm at  $n = 0$  and ending at  $T = 3.81$  Nm at  $n = 3000$  rpm.
- Continuous running area:** This region is bounded by a line starting at  $T = 1.4$  Nm at  $n = 0$  and ending at  $T = 0$  Nm at  $n = 6000$  rpm.

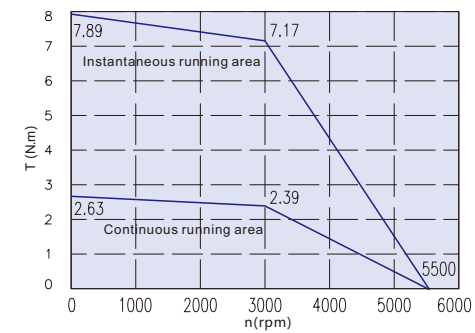
The graph indicates that the motor can operate at a torque of up to 4.2 Nm at zero speed for instantaneous operation, and up to 3.81 Nm at 3000 rpm for continuous operation. The continuous running area is limited to a torque of 1.4 Nm at zero speed.

[illegible]

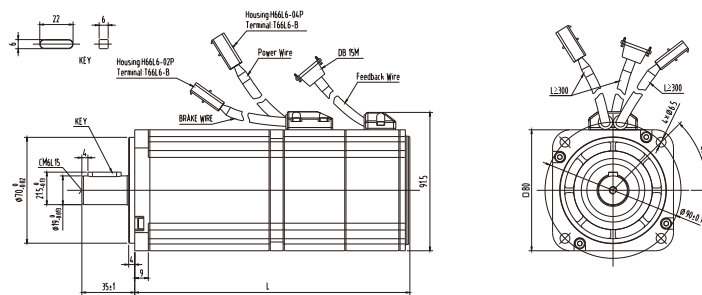
## SMC Series 80 flange lead - out motor



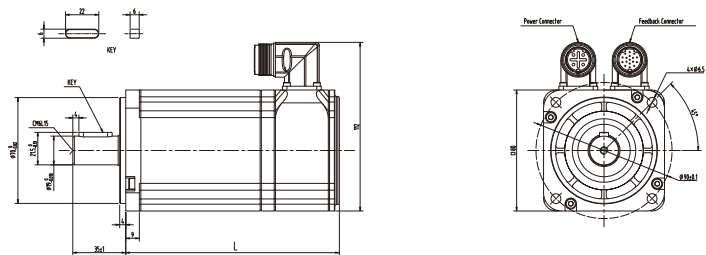
**SMC80S-0075-30A ☐ K-3LK ☐ 750W**



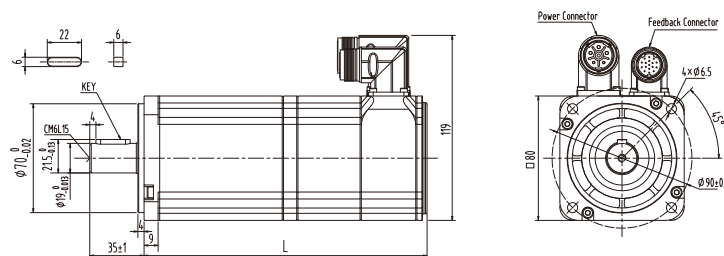
### SMC Series 80 flange lead - out motor<sub>(with brake)</sub>



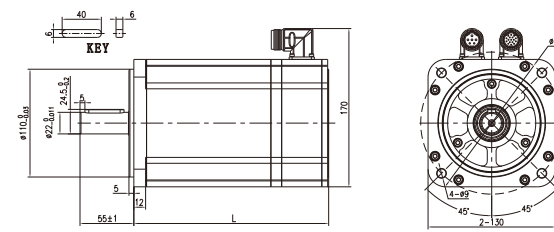
## SMC Series 80 flange HFO aviation socket motor



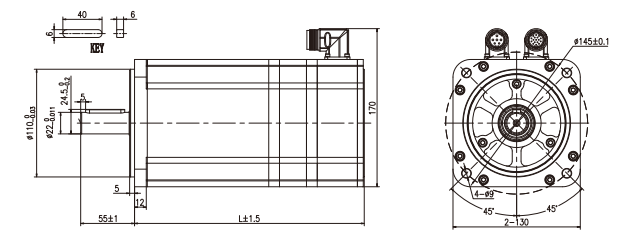
### SMC Series 80 flange HFO aviation socket motor (with brake)



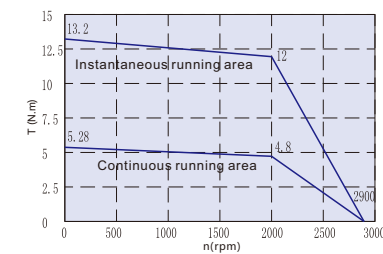
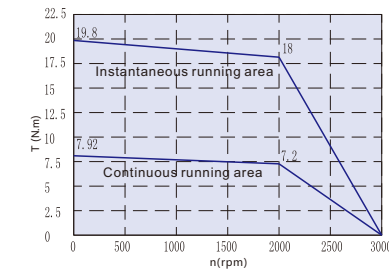
## SMC series 130 flange general aviation socket motor



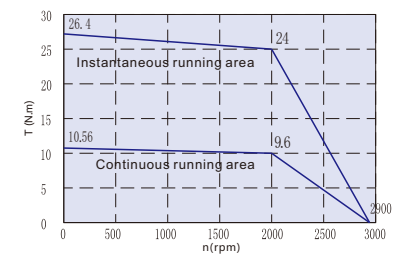
**SMC series 130 flange general aviation socket motor (with brake)**



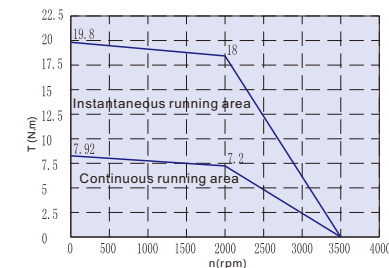
## SMC130D-0100-20A□K-4LKP

SMC130D-0150-20A ☐ K-4LKP

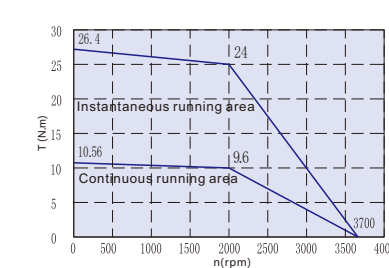
## SMC130D-0200-20A□K-4LKP



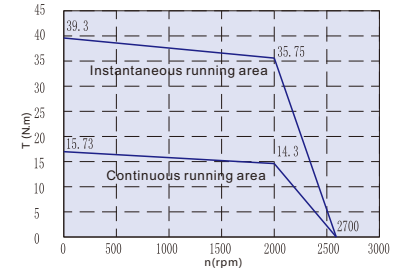
SMC130D-0150-20A□K-4HKP



**SMC130D-0200-20A□K-4HKP**



## SMC130D-0300-20A□K-4HKP



Technical Specifications of SMS Magnetolectric Encoder Motor(1)



| Model                                               |                           | SMS Series Motor                                                                                           |                        |                                                                  |                        |                                |
|-----------------------------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------|------------------------|------------------------------------------------------------------|------------------------|--------------------------------|
|                                                     |                           | Small inertia flange size 40mm                                                                             |                        | Small inertia flange size 60mm                                   |                        | Small inertia flange size 80mm |
| Driver matching                                     |                           | SMS40S-0005-30K□K-5LSU                                                                                     | SMS40S-0010-30K□K-5LSU | SMS60S-0020-30K□K-3LSU                                           | SMS60S-0040-30K□K-3LSU | SMS80S-0075-30K□K-3LSU         |
| DC link voltage UDC                                 |                           | FD412S-CA-000<br>FD412S-LA-000<br>FD412S-EA-000<br>CD412S-AA-000                                           |                        | FD422S-CA-000<br>FD422S-LA-000<br>FD422S-EA-000<br>CD422S-AA-000 |                        |                                |
| DC link voltage UDC                                 |                           | 300                                                                                                        | 300                    | 300                                                              | 300                    | 300                            |
| Maintain torque                                     | Rated power $P_N$ (W)     | 50                                                                                                         | 100                    | 200                                                              | 400                    | 750                            |
|                                                     | Rated torque $T_N$ (Nm)   | 0.16                                                                                                       | 0.32                   | 0.64                                                             | 1.27                   | 2.39                           |
|                                                     | Rated speed $n_N$ (rpm)   | 3000                                                                                                       | 3000                   | 3000                                                             | 3000                   | 3000                           |
|                                                     | Rated current $I_N$ (A)   | 0.7                                                                                                        | 1.4                    | 1.4                                                              | 2.4                    | 3.8                            |
|                                                     | maximum torque $T_m$ (Nm) | 0.48                                                                                                       | 0.96                   | 1.92                                                             | 3.81                   | 7.17                           |
| maximum current $I_m$ (A)                           |                           | 2.25                                                                                                       | 4.2                    | 4.2                                                              | 7.2                    | 11.4                           |
| Standstill torque $T_s$ (Nm)                        |                           | 0.176                                                                                                      | 0.352                  | 0.7                                                              | 1.4                    | 2.63                           |
| Standstill current $I_s$ (A)                        |                           | 0.83                                                                                                       | 1.54                   | 1.5                                                              | 2.6                    | 4.2                            |
| Resistance Line - Line $R_L$ ( $\Omega$ )           |                           | 16.2                                                                                                       | 7.9                    | 11.2                                                             | 5.8                    | 2.1                            |
| Inductance Line - Line $L_L$ (mH)                   |                           | 18.5                                                                                                       | 10.5                   | 20.9                                                             | 11.5                   | 10.5                           |
| Electrical time constant $\tau_e$ (ms)              |                           | 1.14                                                                                                       | 1.33                   | 1.87                                                             | 1.98                   | 5                              |
| Mechanical time constant $\tau_m$ (ms)              |                           | 1.51                                                                                                       | 0.99                   | 1.8                                                              | 1.29                   | 0.9                            |
|                                                     |                           | 0.51(with brake)                                                                                           | 0.99(with brake)       | 1.85(with brake)                                                 | 1.3(with brake)        | 0.9(with brake)                |
| Reverse voltage constant $K_e$ (V/krpm)             |                           | 14                                                                                                         | 16.2                   | 29                                                               | 34                     | 40                             |
| Torque constant $K_t$ (Nm/A)                        |                           | 0.232                                                                                                      | 0.268                  | 0.48                                                             | 0.563                  | 0.662                          |
| Rotor moment of inertia $J_m$ (Kg-cm <sup>2</sup> ) |                           | 0.018                                                                                                      | 0.033                  | 0.214                                                            | 0.405                  | 1.087                          |
|                                                     |                           | 0.021 (with brake)                                                                                         | 0.046(with brake)      | 0.218(with brake)                                                | 0.409(with brake)      | 1.099(with brake)              |
| Maintain torque $T$ (Nm)                            |                           | 0.32                                                                                                       | 0.32                   | 1.5                                                              | 1.5                    | 3.2                            |
| pole pair number                                    |                           | 5                                                                                                          | 5                      | 3                                                                | 3                      | 3                              |
| Maximum voltage rising $du/dt$ (KV/ $\mu$ s)        |                           | 8                                                                                                          | 8                      | 8                                                                | 8                      | 8                              |
| Insulation class                                    |                           | F                                                                                                          | F                      | F                                                                | F                      | F                              |
| Maximum radial force $F_r$ (N)                      |                           | 120                                                                                                        | 120                    | 180                                                              | 180                    | 335                            |
| Maximum axial force $F_a$ (N)                       |                           | 60                                                                                                         | 60                     | 90                                                               | 90                     | 167.5                          |
| Weight $G$ (Kg)                                     |                           | 0.5                                                                                                        | 0.7                    | 1.2                                                              | 1.6                    | 2.8                            |
|                                                     |                           | 0.6(brake)                                                                                                 | 0.7(with brake)        | 1.6(with brake)                                                  | 2.1(with brake)        | 3.4(with brake)                |
| Length of motor $L$ (mm)                            |                           | 74.6±1                                                                                                     | 96.6±1                 | 91±1.5                                                           | 117±1.5                | 128.5±1.5                      |
|                                                     |                           | 104.6±1(with brake)                                                                                        | 126.6(with brake)      | 121±1.5(with brake)                                              | 147±1.5(with brake)    | 158±1.5(with brake)            |
| Position feedback device                            |                           | multi-turn absolute encoder                                                                                |                        |                                                                  |                        |                                |
| Cooling method                                      |                           | Totally enclosed, non - ventilated                                                                         |                        |                                                                  |                        |                                |
| Protection level                                    |                           | IP65, shaft sealing IP54                                                                                   |                        |                                                                  |                        |                                |
| Environment conditions for operation                | Temperature               | - 20 ~ 40°C ( non-freezing )                                                                               |                        |                                                                  |                        |                                |
|                                                     | Humidity                  | Below 90 % RH ( no condensation )                                                                          |                        |                                                                  |                        |                                |
|                                                     | Ambient environment       | Away from active gas,combustible gas,oil drops and dust                                                    |                        |                                                                  |                        |                                |
|                                                     | Altitude                  | Maximum altitude 4000 m, rated power at 1000 m or below. Above 1000m, decreasing 1.5 % per every 100m rise |                        |                                                                  |                        |                                |

Note : □=A — without brake  
□=B — with brake

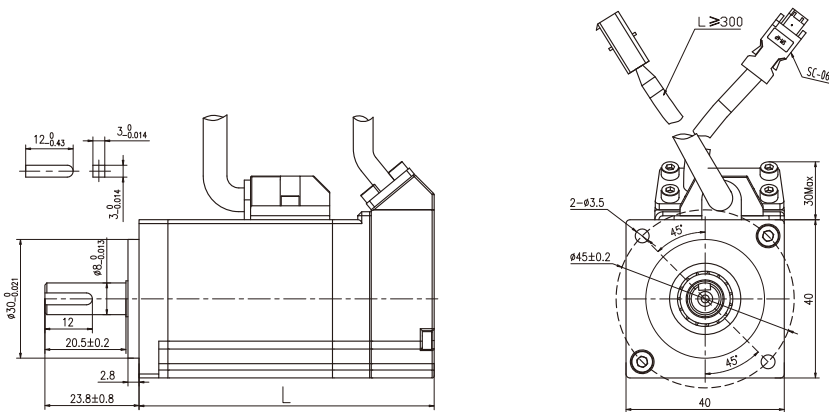
Technical Specifications of SMS Magnetolectric Encoder Motor(2)



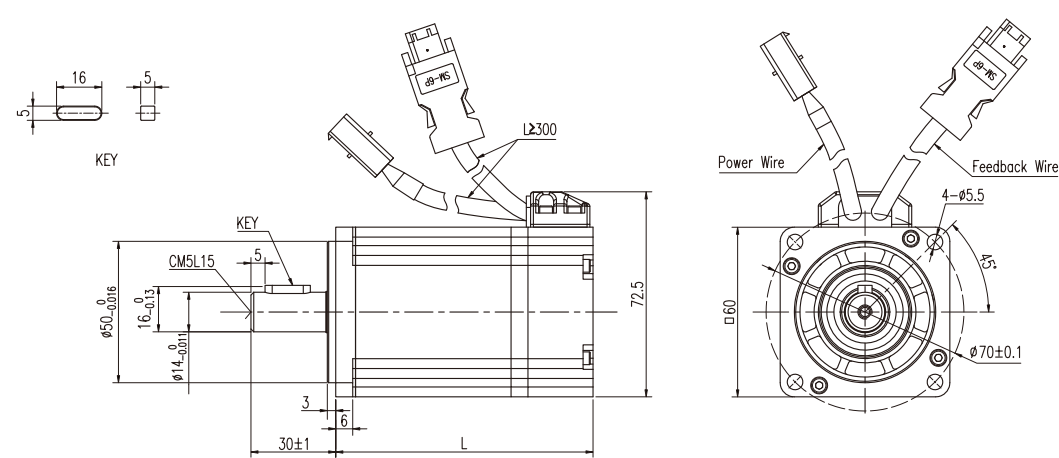
| Model                                               |                           | SMS Series Motor                                                                                           |                                                                  |                         |                                                                  |                         |                                                                  |
|-----------------------------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|-------------------------|------------------------------------------------------------------|-------------------------|------------------------------------------------------------------|
|                                                     |                           | Medium inertia flange size 130mm                                                                           |                                                                  |                         |                                                                  |                         |                                                                  |
| Driver matching                                     |                           | SMS130D-0100-20K□K-4LKP                                                                                    | SMS130D-0150-20K□K-4LKP                                          | SMS130D-0200-20K□K-4LKP | SMS130D-0150-20K□K-4HKP                                          | SMS130D-0200-20K□K-4HKP | SMS130D-0300-20K□K-4HKP                                          |
| DC link voltage UDC                                 |                           | FD422S-CA-000<br>FD422S-LA-000<br>FD422S-EA-000<br>CD422S-AA-000                                           | FD432S-CA-000<br>FD432S-LA-000<br>FD432S-EA-000<br>CD432S-AA-000 |                         | FD612S-CA-000<br>FD612S-LA-000<br>FD612S-EA-000<br>CD612S-AA-000 |                         | FD622S-CA-000<br>FD622S-LA-000<br>FD622S-EA-000<br>CD622S-AA-000 |
| DC link voltage UDC                                 |                           | 300                                                                                                        | 300                                                              | 300                     | 300                                                              | 300                     | 300                                                              |
| Maintain torque                                     | Rated power $P_N$ (W)     | 1000                                                                                                       | 1500                                                             | 2000                    | 1500                                                             | 2000                    | 3000                                                             |
|                                                     | Rated torque $T_N$ (Nm)   | 4.8                                                                                                        | 7.2                                                              | 9.6                     | 7.2                                                              | 9.6                     | 14.3                                                             |
|                                                     | Rated speed $n_N$ (rpm)   | 2000                                                                                                       | 2000                                                             | 2000                    | 2000                                                             | 2000                    | 2000                                                             |
|                                                     | Rated current $I_N$ (A)   | 4.4                                                                                                        | 6.8                                                              | 8.8                     | 4.5                                                              | 6.2                     | 6.7                                                              |
|                                                     | maximum torque $T_m$ (Nm) | 12                                                                                                         | 18                                                               | 24                      | 18                                                               | 24                      | 35.75                                                            |
| maximum current $I_m$ (A)                           |                           | 13.2                                                                                                       | 20.4                                                             | 26.4                    | 13.5                                                             | 18.6                    | 20.1                                                             |
| Standstill torque $T_s$ (Nm)                        |                           | 5.28                                                                                                       | 7.92                                                             | 10.56                   | 7.92                                                             | 10.56                   | 15.73                                                            |
| Standstill current $I_s$ (A)                        |                           | 4.84                                                                                                       | 7.48                                                             | 9.68                    | 4.95                                                             | 6.82                    | 7.37                                                             |
| Resistance Line - Line $R_L$ ( $\Omega$ )           |                           | 3.1                                                                                                        | 1.51                                                             | 0.93                    | 3.44                                                             | 1.72                    | 1.74                                                             |
| Inductance Line - Line $L_L$ (mH)                   |                           | 24.07                                                                                                      | 13.8                                                             | 8.8                     | 31.26                                                            | 17.1                    | 18.9                                                             |
| Electrical time constant $\tau_e$ (ms)              |                           | 7.76                                                                                                       | 9.14                                                             | 9.46                    | 9.09                                                             | 9.9                     | 10.86                                                            |
| Mechanical time constant $\tau_m$ (ms)              |                           | 2.72                                                                                                       | 2.28                                                             | 1.97                    | 2.33                                                             | 1.85                    | 1.59                                                             |
|                                                     |                           | 2.76(with brake)                                                                                           | 2.3(with brake)                                                  | 1.98(with brake)        | 2.35(with brake)                                                 | 1.86(with brake)        | 1.59(with brake)                                                 |
| Reverse voltage constant $K_e$ (V/krpm)             |                           | 73                                                                                                         | 71                                                               | 72.8                    | 106                                                              | 102                     | 142                                                              |
| Torque constant $K_t$ (Nm/A)                        |                           | 1.21                                                                                                       | 1.17                                                             | 1.2                     | 1.75                                                             | 1.69                    | 2.35                                                             |
| Rotor moment of inertia $J_m$ (Kg-cm <sup>2</sup> ) |                           | 7.4                                                                                                        | 12                                                               | 17.7                    | 12                                                               | 17.7                    | 29.1                                                             |
|                                                     |                           | 7.5(with brake)                                                                                            | 12.1 (with brake)                                                | 17.8(with brake)        | 12.1 (with brake)                                                | 17.8(with brake)        | 29.2(with brake)                                                 |
| Maintain torque $T$ (Nm)                            |                           | 10                                                                                                         | 10                                                               | 10                      | 10                                                               | 10                      | 10                                                               |
| pole pair number                                    |                           | 4                                                                                                          | 4                                                                | 4                       | 4                                                                | 4                       | 4                                                                |
| Maximum voltage rising $du/dt$ (KV/ $\mu$ s)        |                           | 8                                                                                                          | 8                                                                | 8                       | 8                                                                | 8                       | 8                                                                |
| Insulation class                                    |                           | F                                                                                                          | F                                                                | F                       | F                                                                | F                       | F                                                                |
| Maximum radial force $F_r$ (N)                      |                           | 900                                                                                                        | 900                                                              | 900                     | 900                                                              | 900                     | 900                                                              |
| Maximum axial force $F_a$ (N)                       |                           | 450                                                                                                        | 450                                                              | 450                     | 450                                                              | 450                     | 450                                                              |
| Weight $G$ (Kg)                                     |                           | 6.2                                                                                                        | 7.5                                                              | 9.1                     | 7.5                                                              | 9.1                     | 12.3                                                             |
|                                                     |                           | 8.5(with brake)                                                                                            | 9.8(with brake)                                                  | 11.4(with brake)        | 9.8(with brake)                                                  | 11.4(with brake)        | 14.9(with brake)                                                 |
| Length of motor $L$ (mm)                            |                           | 143±1.5                                                                                                    | 159±1.5                                                          | 179±1.5                 | 159±1.5                                                          | 179±1.5                 | 219±1.5                                                          |
|                                                     |                           | 204±1.5(with brake)                                                                                        | 220±1.5(with brake)                                              | 240±1.5(with brake)     | 220±1.5(with brake)                                              | 240±1.5(with brake)     | 280±1.5(with brake)                                              |
| Position feedback device                            |                           | multi-turn absolute encoder                                                                                |                                                                  |                         |                                                                  |                         |                                                                  |
| Cooling method                                      |                           | Totally enclosed, non - ventilated                                                                         |                                                                  |                         |                                                                  |                         |                                                                  |
| Protection level                                    |                           | IP65, shaft sealing IP54                                                                                   |                                                                  |                         |                                                                  |                         |                                                                  |
| Environment conditions for operation                | Temperature               | - 20 ~ 40°C ( non-freezing )                                                                               |                                                                  |                         |                                                                  |                         |                                                                  |
|                                                     | Humidity                  | Below 90 % RH ( no condensation )                                                                          |                                                                  |                         |                                                                  |                         |                                                                  |
|                                                     | Ambient environment       | Away from active gas,combustible gas,oil drops and dust                                                    |                                                                  |                         |                                                                  |                         |                                                                  |
|                                                     | Altitude                  | Maximum altitude 4000 m, rated power at 1000 m or below. Above 1000m, decreasing 1.5 % per every 100m rise |                                                                  |                         |                                                                  |                         |                                                                  |

Note : □=A — without brake  
□=B — with brake

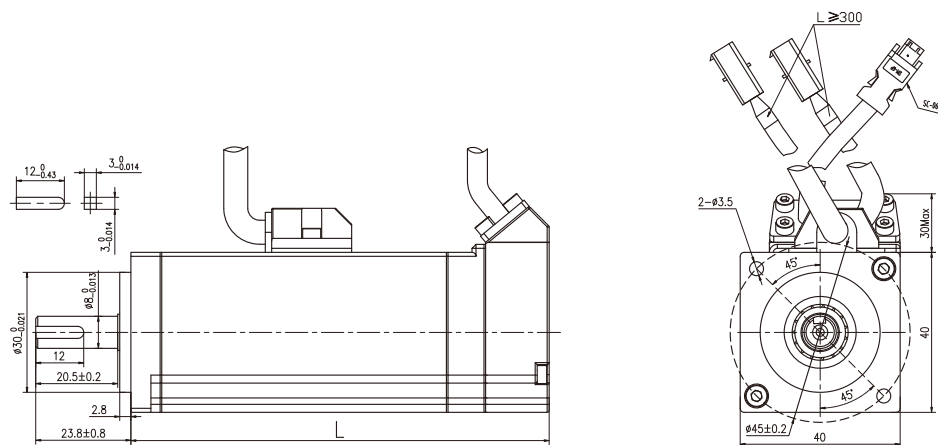
SMS Series 40 flange communication encoder motor



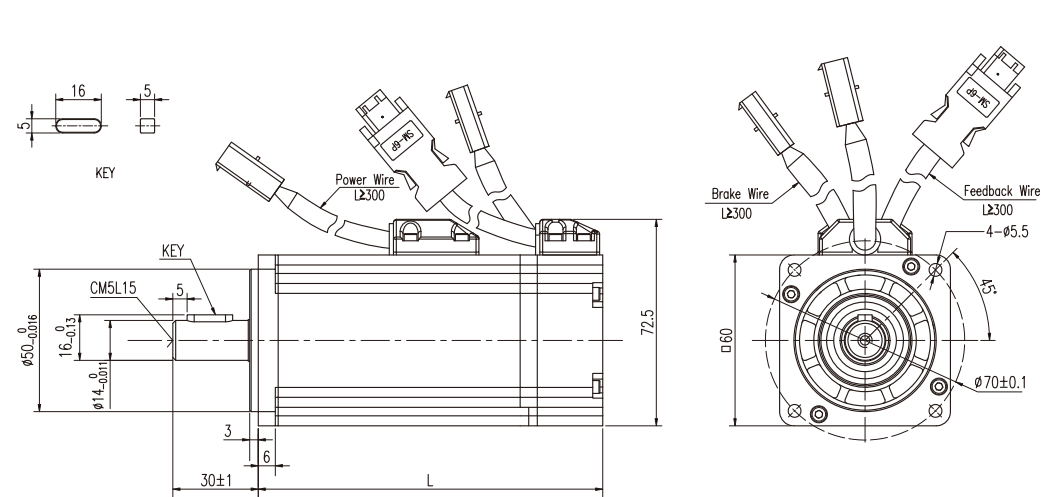
SMS Series 60 flange communication encoder motor



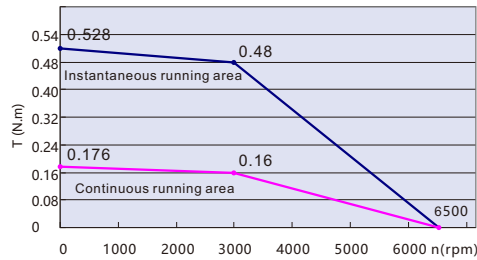
SMS Series 40 flange communication encoder motor (with brake)



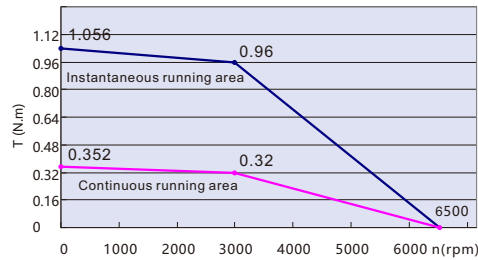
SMS Series 60 flange communication encoder motor (with brake)



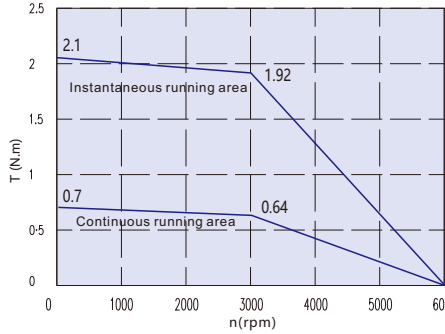
SMS40S-0005-30K  $\square$  K-5LSU 50W



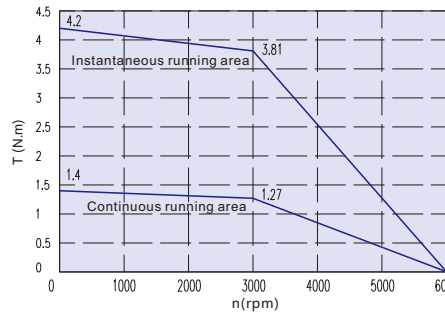
SMS40S-0010-30K  $\square$  K-5LSU 100W



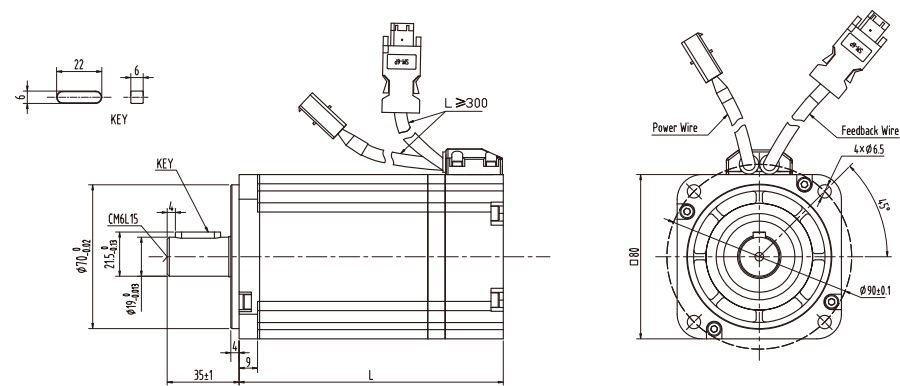
SMS60S-0020-30K  $\square$  K-3LSU 200W



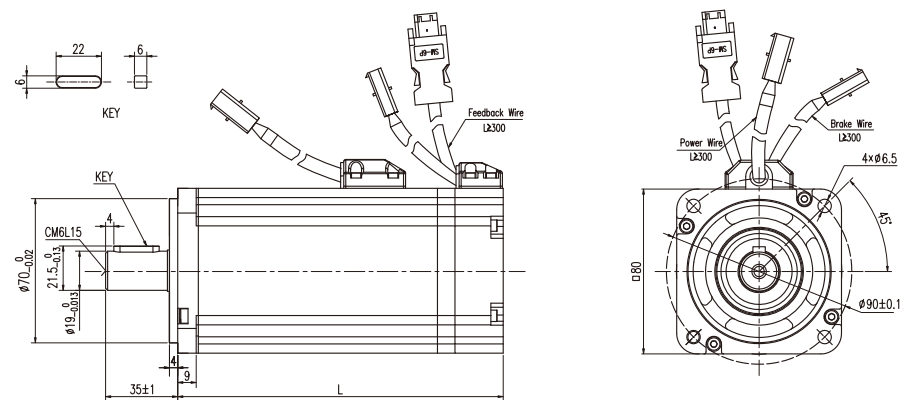
SMS60S-0040-30K  $\square$  K-3LSU 400W



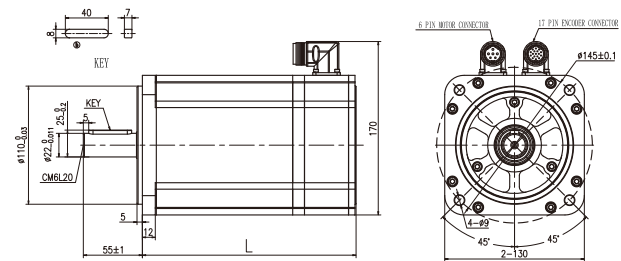
SMS Series 80 flange communication encoder motor



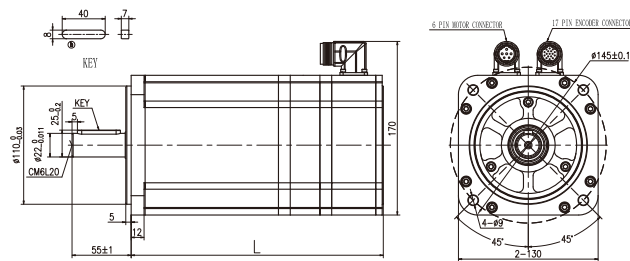
SMS Series 80 flange communication encoder motor (with brake)



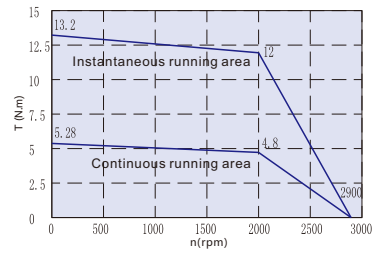
SMS Series 130 flange communication encoder motor



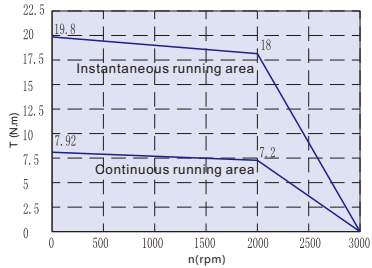
SMS Series 130 flange communication encoder motor (with brake)



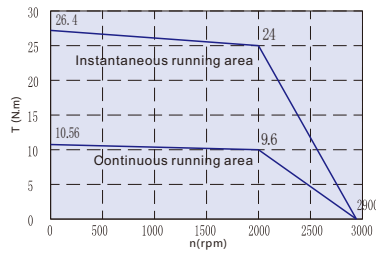
SMS130D-0100-20 K-4LKP



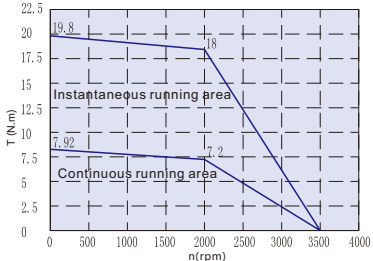
SMS130D-0150-20 K-4LKP



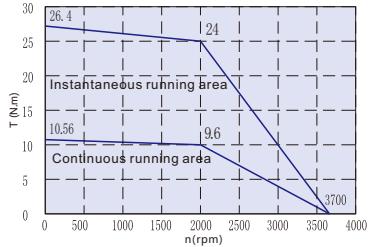
SMS130D-0200-20 K-4LKP



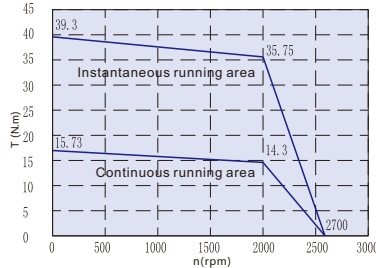
SMS130D-0150-20 K-4HKP



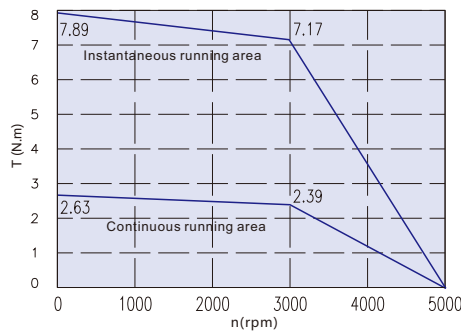
SMS130D-0200-20 K-4HKP



SMS130D-0300-20 K-4HKP



SMS80S-0075-30K K-3LSU 750W

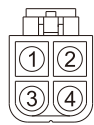


# Power Cable Wiring List

# Power Cable Wiring List

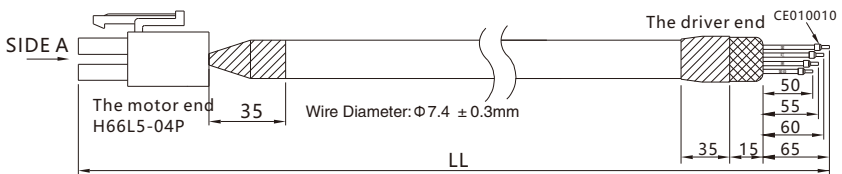
## MOT-005-LL-KL

Wire Spec : UL2586 4C\*18AWG(41/0.16T)  
18AWG cross sectional area=0.8107mm<sup>2</sup>



Side A  
4 pin connector

| MOT-005-LL-KL |        |               |
|---------------|--------|---------------|
| Wire color    | Signal | 4PIN Terminal |
| Yellow        | U      | PIN1          |
| Red           | V      | PIN2          |
| Black         | W      | PIN3          |
| Yellow green  | PE     | PIN4          |



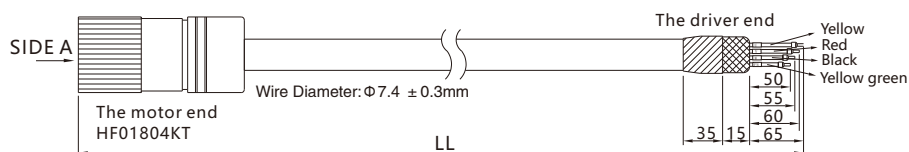
## MOT-005-LL-KC0

Wire Spec : UL2586 4C\*18AWG(41/0.16T)  
18AWG cross sectional area=0.8107mm<sup>2</sup>



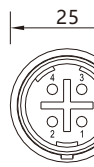
SIDE A  
4 PIN

| MOT-005-LL-KC0 |        |               |
|----------------|--------|---------------|
| Wire color     | Signal | 4PIN Terminal |
| Yellow         | U      | PIN2          |
| Red            | V      | PIN3          |
| Black          | W      | PIN4          |
| Yellow green   | PE     | PIN1          |
| Metal ring     | Shield | Shielded      |



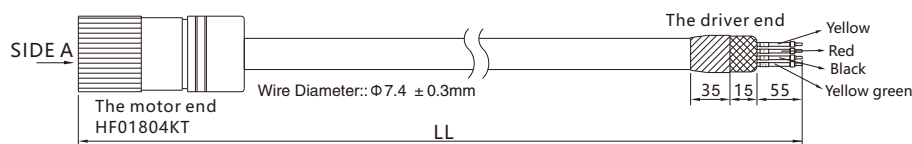
## MOTE-005-LL-KC0

Wire Spec : UL2586 4C\*18AWG(41/0.16T)  
18AWG cross sectional area=0.8107mm<sup>2</sup>



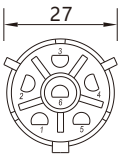
SIDE A  
4 PIN

| MOTE-005-LL-KC0 |        |               |
|-----------------|--------|---------------|
| Wire color      | Signal | 4PIN Terminal |
| Yellow          | U      | PIN2          |
| Red             | V      | PIN3          |
| Black           | W      | PIN4          |
| Yellow green    | PE     | PIN1          |
| Metal ring      | Shield | Shielded      |



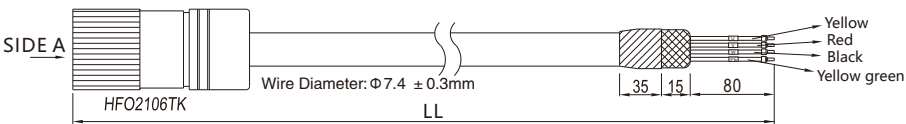
## MOT-005-LL-KC4

Wire Spec : UL2586 4C\*18AWG(41/0.16T)  
18AWG cross sectional area=0.8107mm<sup>2</sup>



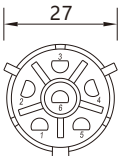
SIDE A  
6PIN

| MOT-005-LL-KC4 |        |           |
|----------------|--------|-----------|
| Wire color     | Signal | HFO2106TK |
| Yellow         | U      | PIN2      |
| Red            | V      | PIN3      |
| Black          | W      | PIN4      |
| Yellow green   | PE     | PIN6      |



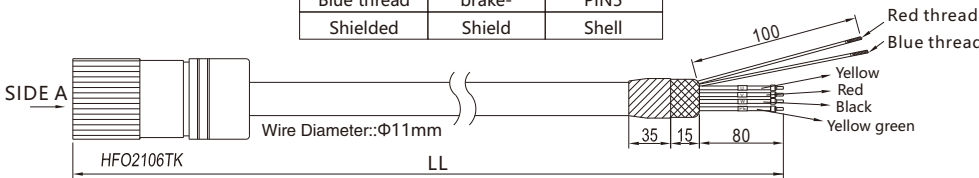
## MOT-005-LL-KC4-B

Wire Spec : RVVYP 4\*18AWG+2\*20AWG BLACK  
18AWG cross sectional area=0.8107mm<sup>2</sup>  
20AWG cross sectional area=0.5189mm<sup>2</sup>



SIDE A  
6PIN

| MOT-005-LL-KC4-B |        |           |
|------------------|--------|-----------|
| Wire color       | Signal | HFO2106TK |
| Yellow           | U      | PIN2      |
| Red              | V      | PIN3      |
| Black            | W      | PIN4      |
| Yellow green     | PE     | PIN6      |
| Red thread       | brake+ | PIN1      |
| Blue thread      | brake- | PIN5      |
| Shielded         | Shield | Shell     |

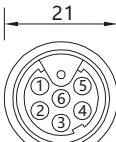


# Power Cable Wiring List

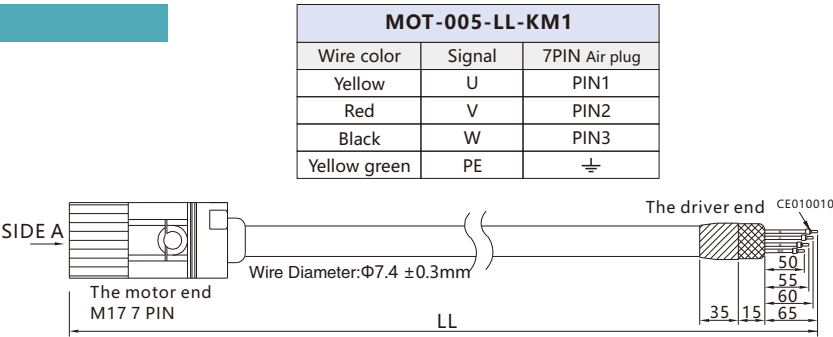
# Power Cable Wiring List

## MOT-005-LL-KM1

Wire Spec : UL2586 4C\*18AWG(41/0.16T)  
18AWG cross sectional area=0.8107mm<sup>2</sup>



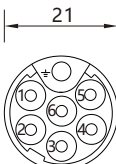
SIDE A  
The driver end



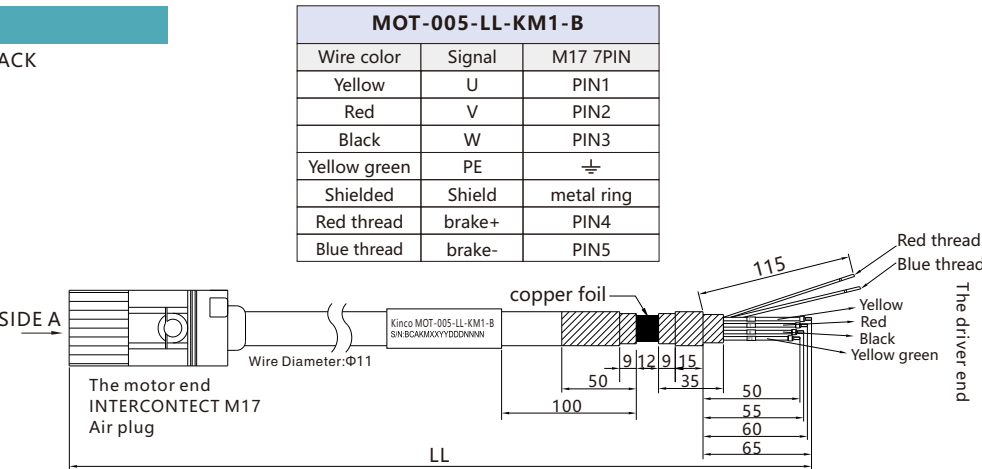
| MOT-005-LL-KM1 |        |               |
|----------------|--------|---------------|
| Wire color     | Signal | 7PIN Air plug |
| Yellow         | U      | PIN1          |
| Red            | V      | PIN2          |
| Black          | W      | PIN3          |
| Yellow green   | PE     | ⊥             |

## MOT-005-LL-KM1-B

Wire Spec : RVVYP 4\*18AWG+2\*20AWG BLACK  
18AWG cross sectional area=0.8107mm<sup>2</sup>  
20AWG cross sectional area=0.5189mm<sup>2</sup>



SIDE A  
7PIN



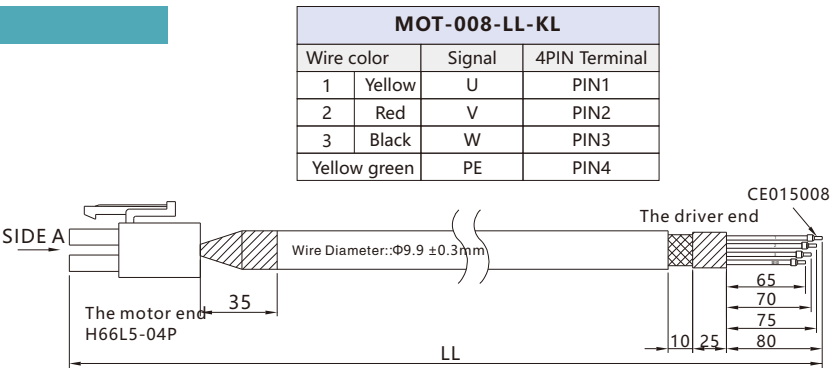
| MOT-005-LL-KM1-B |        |            |
|------------------|--------|------------|
| Wire color       | Signal | M17 7PIN   |
| Yellow           | U      | PIN1       |
| Red              | V      | PIN2       |
| Black            | W      | PIN3       |
| Yellow green     | PE     | ⊥          |
| Shielded         | Shield | metal ring |
| Red thread       | brake+ | PIN4       |
| Blue thread      | brake- | PIN5       |

## MOT-008-LL-KL

Wire Spec : UL2586 4\*16AWG  
16AWG cross sectional area=1.318mm<sup>2</sup>



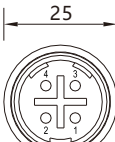
SIDE A  
4PIN



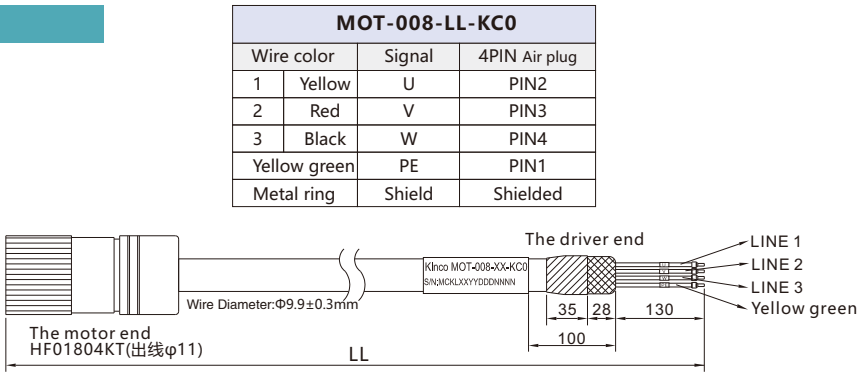
| MOT-008-LL-KL |        |               |
|---------------|--------|---------------|
| Wire color    | Signal | 4PIN Terminal |
| 1 Yellow      | U      | PIN1          |
| 2 Red         | V      | PIN2          |
| 3 Black       | W      | PIN3          |
| Yellow green  | PE     | PIN4          |

## MOT-008-LL-KC0

Wire Spec : UL2586 4\*16AWG  
16AWG cross sectional area=1.318mm<sup>2</sup>



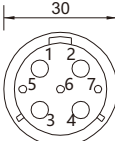
SIDE A  
4 PIN



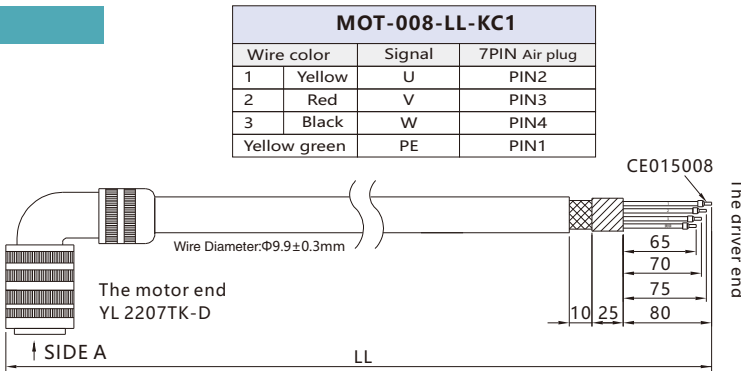
| MOT-008-LL-KC0 |        |               |
|----------------|--------|---------------|
| Wire color     | Signal | 4PIN Air plug |
| 1 Yellow       | U      | PIN2          |
| 2 Red          | V      | PIN3          |
| 3 Black        | W      | PIN4          |
| Yellow green   | PE     | PIN1          |
| Metal ring     | Shield | Shielded      |

## MOT-008-LL-KC1

Wire Spec : UL2586 4\*16AWG  
16AWG cross sectional area=1.318mm<sup>2</sup>



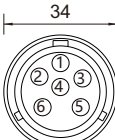
SIDE A  
The driver end



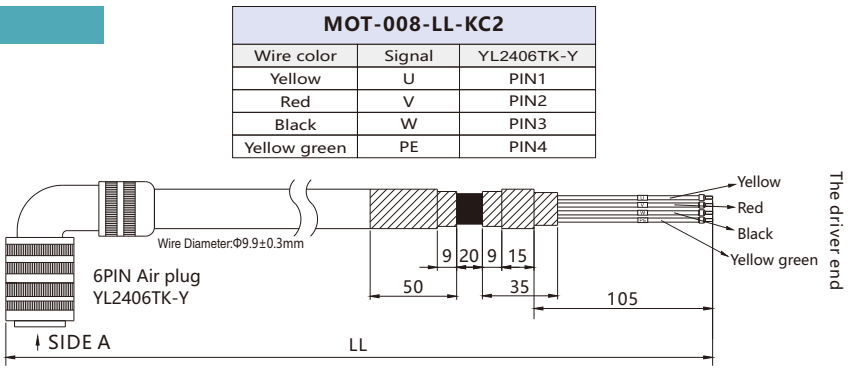
| MOT-008-LL-KC1 |        |               |
|----------------|--------|---------------|
| Wire color     | Signal | 7PIN Air plug |
| 1 Yellow       | U      | PIN2          |
| 2 Red          | V      | PIN3          |
| 3 Black        | W      | PIN4          |
| Yellow green   | PE     | PIN1          |

## MOT-008-LL-KC2

Wire Spec : UL2586 4\*16AWG  
16AWG cross sectional area=1.318mm<sup>2</sup>



SIDE A  
The driver end



| MOT-008-LL-KC2 |        |            |
|----------------|--------|------------|
| Wire color     | Signal | YL2406TK-Y |
| Yellow         | U      | PIN1       |
| Red            | V      | PIN2       |
| Black          | W      | PIN3       |
| Yellow green   | PE     | PIN4       |