

# SMH110D Servo Motor



FEATURES

- 110mm Frame Size
- Power Rating up to 1260 Watts
- Rated Torque up to 6.0 Nm
- Rated Speed of 3000 RPM
- Brake Option Available
- 2500PPR Incremental Encoder
- Totally Enclosed, Non-Ventilated
- IP65 Protection for Body, IP54 Shaft Sealing
- CE Certified



DESCRIPTION

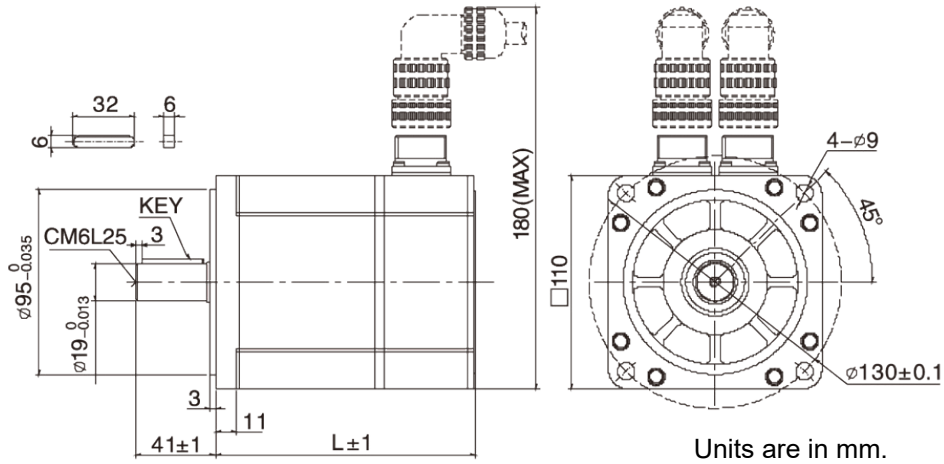
The SMH110D Series Servo Motor offers a solution to servo applications requiring position and speed control. This servo motor series comes standard with a 2,500 Pulses per Revolution (PPR) Incremental Encoder, runs at a rated speed of 3000 RPM, provides peak values up to 300% of the rated torque and current values, and has a rated torque of 4.0 to 6.0 Nm with a 1050-1260 Watt power rating. This servo motor series enables industrial motion control applications to attain a great combination of position and speed functionality.

CUSTOM ORDER LAYOUT

| Model  | SMH110D-0105-20AAK-4LKC<br>SMH110D-0105-20ABK-4LKC | SMH110D-0125-30AAK-4LKC<br>SMH110D-0125-30ABK-4LKC | SMH110D-0126-20AAK-4LKC<br>SMH110D-0126-20ABK-4LKC |
|--|--|--|--|
| Compatible Driver                                | FD432-LA/AA/CA<br>FD432S-LA/AA/CA                  | FD432-LA/AA/CA<br>FD432S-LA/AA/CA                  | FD432-LA/AA/CA<br>FD432S-LA/AA/CA                  |
| DC Link Voltage (VDC)                            | 300  | 300  | 300  |
| Rated Power (W)                                  | 1050   | 1250   | 1260   |
| Rated Torque (Nm)                                | 5.0  | 4.0  | 6.0  |
| Rated Speed (RPM)                                | 2000   | 3000   | 2000   |
| Max Speed (RPM)                                  | 2000   | 3000   | 2000   |
| Rated Current (A)                                | 5.9  | 6.50   | 6.2  |
| Maximum Torque (Nm)                              | 15.0   | 12.0   | 18.0   |
| Maximum Current (A)                              | 17.7   | 19.5   | 18.6   |
| Standstill Torque (Nm)                           | 5.5  | 4.4  | 6.6  |
| Standstill Current (A)                           | 6.49   | 6.82   | 6.765  |
| Resistance Line-Line (Ω)                         | 1.03   | 0.8  | 1.258  |
| Inductance Line-Line (mH)                        | 7.8  | 6.4  | 9.62   |
| Electrical Time Constant (ms)                    | 7.57   | 7.9  | 7.64   |
| Mechanical Time Constant (ms)                    | 1.55   | 1.4  | 1.65   |
| Reverse Voltage Constant Ke (V/krpm)             | 55   | 45   | 64   |
| Torque Constant Kt (Nm/A)                        | 0.910  | 0.744  | 1.058  |
| Rotor Moment of Inertia Jm (Kg.cm <sup>2</sup> ) | 7.20<br>7.25 (with brake)                          | 5.80<br>5.85 (with brake)                          | 8.5<br>8.55 (with brake)                           |
| Brake Holding Torque (Nm)                        | 10   | 10   | 10   |
| Pole Pair Number                                 | 4  | 4  | 4  |
| Maximum Voltage Rising du/dt (KV/μs)             | 8  | 8  | 8  |
| Insulation Class                                 | F  | F  | F  |
| Maximum Radical Force F (N)                      | 630  | 630  | 630  |
| Maximum Axial Force F (N)                        | 315  | 315  | 315  |

L011358 \*Note: Part Numbers with -ABK are equipped with a brake

Dimension Drawing for SMH110D-0105-20AAK-4LKC, SMH110D-0125-30AAK-3LKC, SMH110D-0125-20AAK-4LKC

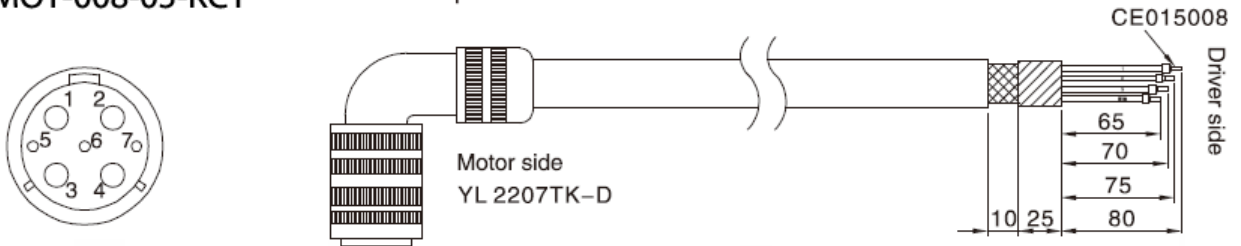


| Model                  | SMH110D-0105-20AAK-4LKC<br>SMH110D-0105-20ABK-4LKC | SMH110D-0125-30AAK-4LKC<br>SMH110D-0125-30ABK-4LKC | SMH110D-0126-20AAK-4LKC<br>SMH110D-0126-20ABK-4LKC |
|------------------------|--|--|--|
| Length of Motor L (mm) | 185<br>245±1 (with brake)                          | 168<br>228±1 (with brake)                          | 202<br>262±1 (with brake)                          |

Motor Cable: MOT-008-05-KC1 for SMH110D-0105-20AAK-4LKC, SMH110D-0125-30AAK-4LKC, and SMH110D-0126-20AAK-4LKC

### MOT-008-05-KC1

Wire spec. cable 4C × 1.5mm<sup>2</sup>



| MOT-008-05-KC1 |        |       |
|----------------|--------|-------|
| Cable Color    | Signal | PIN # |
| 1              | U      | PIN 2 |
| 2              | V      | PIN 3 |
| 3              | W      | PIN 4 |
| Yellow-Green   | PE     | PIN 1 |

# SMH110D Servo Motor

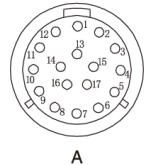
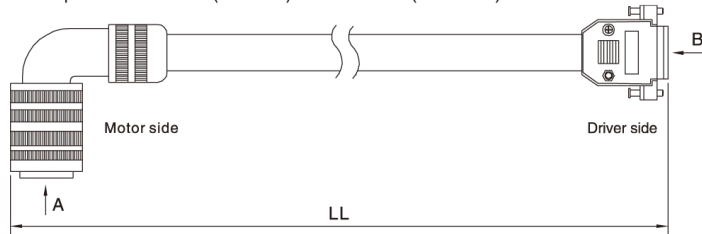


Encoder Cable: ENCCA-05-KC1 for SMH110D-0105-20AAK-4LKC, SMH110D-0125-30AAK-4LKC, and SMH110D-0126-20AAK-4LKC

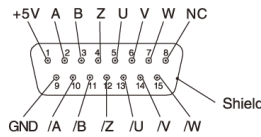
ENCODER PINOUT

### ENCCA-05-KC1

Wire spec. 1P x 24AWG(7/0.20T)+7P x 28AWG(7/0.127T)



YL 2217TK



D-sub 15-pin male plug

| ENCCA-05-KC1        |                   |        |                     |                  |
|---------------------|-------------------|--------|---------------------|------------------|
| Three-row 15 pin DB | Two-row 15 pin DB | Signal | External Wire Color | Motor Wire Color |
| PIN 1               | PIN 1             | +5V    | Red (thick)         | Red              |
| PIN 3               | PIN 2             | A      | Orange              | Blue             |
| PIN 5               | PIN 3             | B      | Yellow              | Green            |
| PIN 14              | PIN 4             | Z      | Green               | Yellow           |
| PIN 9               | PIN 5             | U      | Brown               | Brown            |
| PIN 11              | PIN 6             | V      | Purple              | Gray             |
| PIN 16              | PIN 7             | W      | Blue                | White            |
| PIN 2               | PIN 9             | GND    | Black (thick)       | Black            |
| PIN 4               | PIN 10            | /A     | Orange-White        | Blue-Black       |
| PIN 6               | PIN 11            | /B     | Yellow-White        | Green-Black      |
| PIN 15              | PIN 12            | /Z     | Green-White         | Yellow-Black     |
| PIN 10              | PIN 13            | /U     | Brown-White         | Brown-Black      |
| PIN 12              | PIN 14            | /V     | Purple-White        | Gray-Black       |
| PIN 17              | PIN 15            | /W     | Blue-White          | White-Black      |
| Internal Metal Ring | DB Metal Shell    | Shield | Shield              | Shield           |

SPECIFICATIONS

| Model   | Motor Cable      | Encoder Cable | Brake Cable      |
|---|------------------|---------------|------------------|
| SMH110D-0105-20AAK-4LKC<br>SMH110D-0125-30AAK-4LKC<br>SMH110D-0126-20AAK-4LKC | MOT-008-05-KC1   | ENCCA-05-KC1  | --               |
| SMH110D-0105-20ABK-4LKC<br>SMH110D-0125-30ABK-4LKC<br>SMH110D-0126-20ABK-4LKC | MOT-008-05-KC2-B | ENCCA-05-KC1  | MOT-008-05-KC2-B |

| Model                                 | SMH110D-0105-20AAK-4LKC<br>SMH110D-0105-20ABK-4LKC  | SMH110D-0125-30AAK-4LKC<br>SMH110D-0125-30ABK-4LKC | SMH110D-0126-20AAK-4LKC<br>SMH110D-0126-20ABK-4LKC |
|---------------------------------------|---|--|--|
| Length of Motor L (mm)                | 185<br>245±1 (with brake)   | 168<br>228±1 (with brake)                          | 202<br>262±1 (with brake)                          |
| Position Feedback Device              | Incremental Encoder 2500PPR   |  |  |
| Cooling Method                        | Totally Enclosed, Non-Ventilated  |  |  |
| Protection Level                      | IP65 for Body, Shaft Sealing IP54   |  |  |
| Temperature                           | -20°C~40°C  |  |  |
| Humidity                              | Below 90% RH (No Condensing)  |  |  |
| Environmental Conditions of Operation | 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 |  |  |