

# PKS-FD123-005 Servo System

# Kinco

## FEATURES

- 24-70VDC
- Rated Torque of 0.16 Nm
- Power Ratings up to 50 Watts
- 2,500 PPR Incremental Encoder
- Maximum Speed of 6500 RPM
- IP65 for Body, IP54 Shaft Seal
- Brake Option Available
- Position, Speed, and Torque Control
- RS232 and RS485 Port



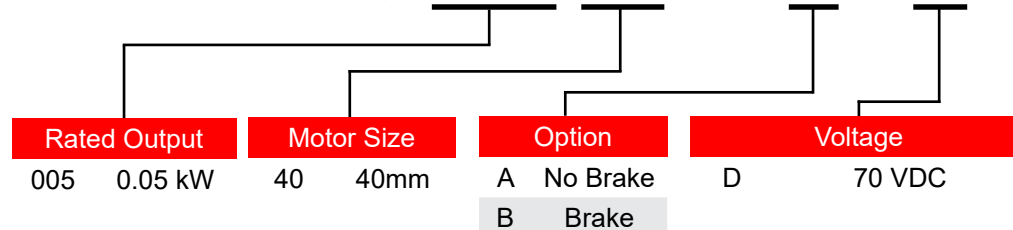
## DESCRIPTION

The PKS-FD123-005 Servo System includes a 50 Watt SMH40S-0005-30AAK-4DKH Servo Motor or SMH40S-0005-30ABK-4DKH Servo Motor with brake, operated by the FD123-LA-000 Servo Drive. These packages are ideal and provide easy start-ups, convenience, and performance. The Servo Motors included in these packages provide torque up to 0.16 Nm. The FD123-LA-000 Servo Drive offers current forward-feedback control, acceleration forward-feedback control, speed viewer and inertia viewer; providing for improved response performance. Each system includes a 5m Motor Power Cable and a 5m Encoder Cable. If purchasing the option with a Brake then a 5m Brake Cable will be included as well.

| Item                      | Rated Voltage (VDC) | Rated Speed (RPM) | Rated Torque (Nm) | Rated Current (Arms) | Inertia (Kg-cm <sup>2</sup> ) | Torque Constant KT (Nm/A) | Resistance (ohms) | Inductance (mH) | Brake (24VDC) | Motor Length (mm) | Shaft Diameter (mm) |
|---------------------------|---------------------|-------------------|-------------------|----------------------|-------------------------------|---------------------------|-------------------|-----------------|---------------|-------------------|---------------------|
| PKS-FD123-005-40S-AAK-DKH | 24-70               | 3000              | 0.16              | 1.2                  | 0.031                         | 0.13                      | 4.2               | 3.5             | No            | 85                | 8                   |
| PKS-FD123-005-40S-ABK-DKH | 24-70               | 3000              | 0.16              | 1.2                  | 0.031                         | 0.13                      | 4.2               | 3.5             | Yes           | 119               | 8                   |

## ORDERING INFORMATION

## PKS-FD123-005-40S-AAK-DKH



L011753

4985 East Landon Drive Anaheim, CA 92807

Tel. (714) 992-6990

Fax. (714) 992-0471

[www.kincoautomation.com](http://www.kincoautomation.com)

# SMH40S-0005 Motor Specifications

# Kinco

## FEATURES

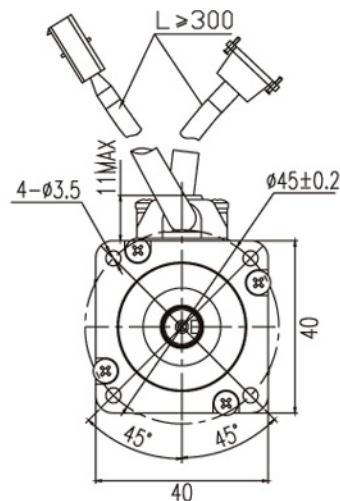
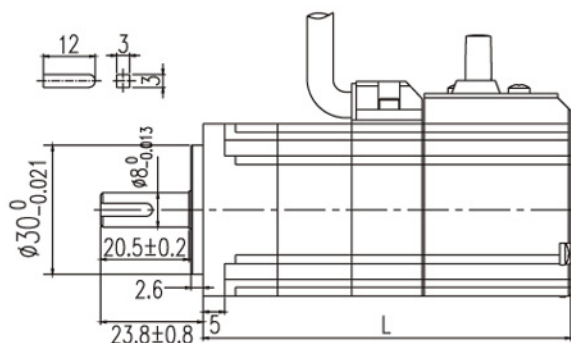
- 70VDC
- 50 W Power Rating
- Rated Torque of 0.16 Nm
- Maximum Speed of 6500 rpm
- 2500 PPR Incremental Encoder Attached
- IP65 for Body, IP54 Shaft Seal
- Brake Option Available
- CE Certified



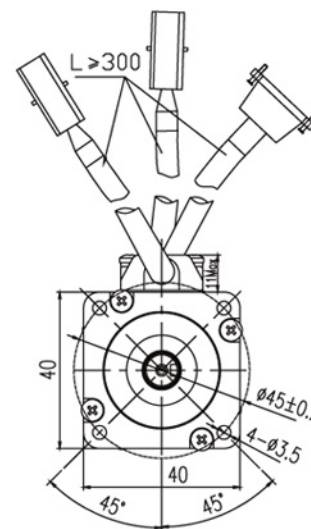
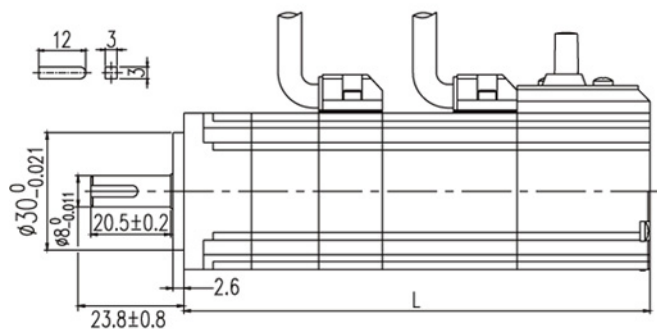
## SPECS

| Item                   | Rated Torque (Nm) | Rated Power (Watts) | Rated Speed (rpm) | Rated Current (Arms) | Inertia (Kg-cm <sup>2</sup> ) | Torque Constant KT (Nm/A) | Resistance (ohms) | Inductance (mH) | Length (mm) | Weight (lbs) |
|------------------------|-------------------|---------------------|-------------------|----------------------|-------------------------------|---------------------------|-------------------|-----------------|-------------|--------------|
| SMH40S-0005-30AAK-4DKH | 0.16              | 50                  | 3000              | 1.2                  | 0.031                         | 0.13                      | 4.2               | 3.5             | 85          | 1.10         |
| SMH40S-0005-30ABK-4DKH | 0.16              | 50                  | 3000              | 1.2                  | 0.031                         | 0.13                      | 4.2               | 3.5             | 119         | 1.76         |

## Standard Option



## Brake Option



Dimensions are in mm

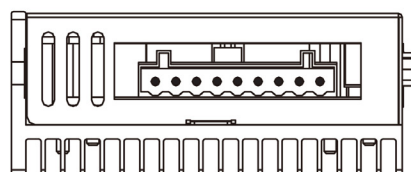
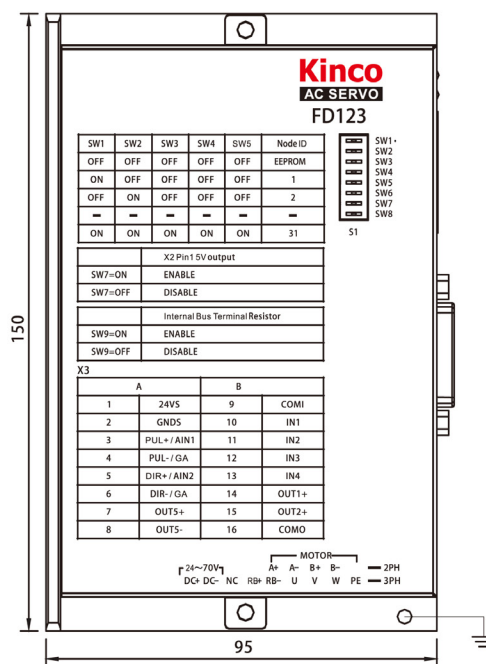
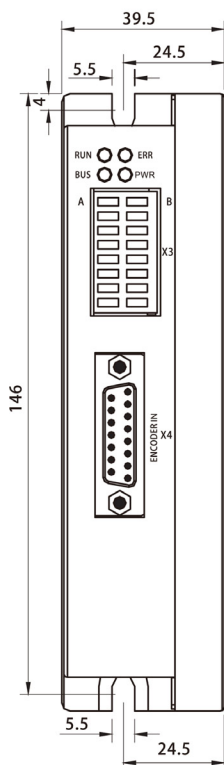
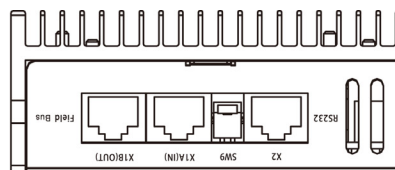
## DIMENSIONS

# FD123-LA-000 Driver Specifications

# Kinco

## FEATURES

- 24-70VDC
- 50-200 Watt Power Range
- Position, Speed and Torque Control
- RS232 and RS485 Port
- CANopen and MOD BUS Standard
- Requires 2500 PPR Encoder Input
- 4 Inputs, 3 Outputs
- CE Certified



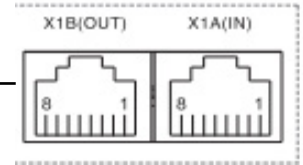
Dimensions are in mm

## RS485

| PIN Number | Signal |
|------------|--------|
| 1          | RX     |
| 2          | /RX    |
| 3          | GND    |
| 4          | /TX    |
| 5          | TX     |
| 6          | NC     |
| 7          | NC     |
| 8          | GND    |

RS485  
Communication  
Port

X1

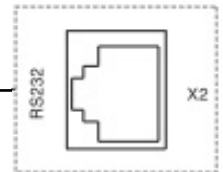


## RS232

| PIN Number | Signal |
|------------|--------|
| 3          | TXD    |
| 4          | GND    |
| 6          | RXD    |
| Others     | NC     |

RS232 Communication  
Interface, Can be Used for  
Debugging and Import/  
Export Project Data Via PC

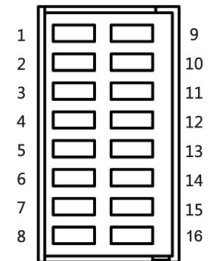
X2



| PIN No. | Signal | PIN No. | Signal |
|---------|--------|---------|--------|
| 1       | +24V   | 9       | COM1   |
| 2       | GNDS   | 10      | DIN1   |
| 3       | PUL+   | 11      | DIN2   |
| 4       | PUL-   | 12      | DIN3   |
| 5       | DIR+   | 13      | DIN4   |
| 6       | DIR-   | 14      | OUT1+  |
| 7       | OUT5+  | 15      | OUT2+  |
| 8       | OUT5-  | 16      | COMO   |

Digital Input/Output  
Terminals

X3

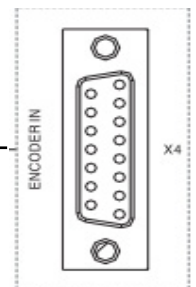


## ENCODER IN

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

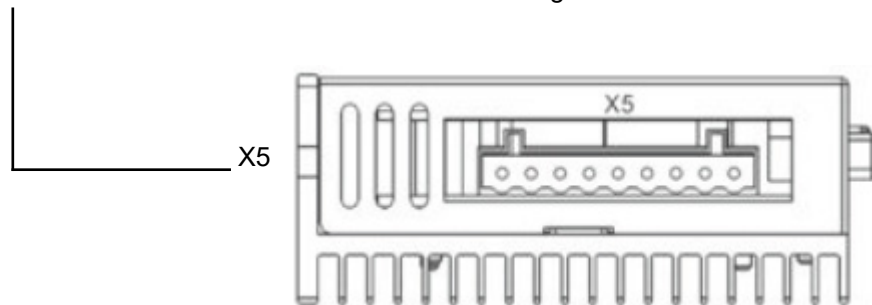
Motor Encoder Input  
Interface

X4



## Motor/Power Supply

| PIN Name | PIN Function                                                |
|----------|-------------------------------------------------------------|
| DC+      | Positive terminal of DC power supply and braking resistor   |
| DC-      | Negative terminal of DC power supply and 24VDC power supply |
| NC       | No function                                                 |
| RB-      | Negative terminal of braking resistor                       |
| RB+      | Positive terminal for braking resistor                      |
| U        | U phase of motor output, A- phase of motor output           |
| V        | V phase of motor output, B+ phase of motor output           |
| W        | W phase of motor output, B- phase of motor output           |
| PE       | Motor earthing                                              |



| Model Parameter                  |                           | FD123-LA-000 Series                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power                            | Main Supply Voltage       | 24VDC-70VDC                                                                                                                                                                                                                                                                                                                                                                   |
|                                  | Control Circuit Voltage   | DC24V 1A (Optional)                                                                                                                                                                                                                                                                                                                                                           |
| Current                          | Rated Current (RMS)       | 10A                                                                                                                                                                                                                                                                                                                                                                           |
|                                  | Peak Current (PEAK)       | 45A                                                                                                                                                                                                                                                                                                                                                                           |
| Feedback Signal                  |                           | 2500PPR Incremental Encoder                                                                                                                                                                                                                                                                                                                                                   |
| Brake Chopper                    |                           | Via Wiring an External Braking Resistor (Mainly in Quick Start and Stop Application)                                                                                                                                                                                                                                                                                          |
| Brake Chopper Threshold          |                           | DC73V $\pm$ 2V (Default Value, Adjustable via Software)                                                                                                                                                                                                                                                                                                                       |
| Over-Voltage Alarming Threshold  |                           | DC86V $\pm$ 2V                                                                                                                                                                                                                                                                                                                                                                |
| Under-Voltage Alarming Threshold |                           | 18V $\pm$ 2V                                                                                                                                                                                                                                                                                                                                                                  |
| Cooling Method                   |                           | Natural Air Cooling                                                                                                                                                                                                                                                                                                                                                           |
| Weight                           |                           | 0.565 Kg                                                                                                                                                                                                                                                                                                                                                                      |
| Digital Input                    | Input Specification       | 4 Digital Inputs, with COMI Terminal for PNP (High Level Valid 12.5-30V) or NPN (Low Level Valid 0-5V) Connection.                                                                                                                                                                                                                                                            |
|                                  | 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                   | Output Specification      | 3 Digital Outputs: OUT1, OUT2 Current is 100mA; The Output Current of Brake Control Output Port (OUT5+/OUT5-) is 500mA, Can Drive Brake Device Directly.                                                                                                                                                                                                                      |
|                                  | Output Function           | Define Freely According to Requirement, Supporting Following Functions: Driver Ready, Driver Fault, Positon Reached, Motor at Zero Speed, Motor Brake, Motor Speed Reached, Z Signal, Maximum Speed Obtained in Torque Mode, Motor Brake, Position Limiting, Reference Found.                                                                                                 |
|                                  | RS232                     | The Max. Baudrate is 115.2KHz, Use Kinco Software to Communicate with PC, or Via Free Protocol to Communicate with Controller.                                                                                                                                                                                                                                                |
|                                  | Protection Function       | Over-Voltage Protection, Under-Voltage Protection, Motor Over-Heat Protection ( $I^2T$ ), Short-Circuit Protection, Drive Over-Heat Protection, Etc.                                                                                                                                                                                                                          |
| RS485                            |                           | The Max. Baudrate is 115.2KHz, use Modbus RTU Protocol to Communicate with Controller.                                                                                                                                                                                                                                                                                        |
| Operation Environment            | Operating Temperature     | 0 ~ 40°C                                                                                                                                                                                                                                                                                                                                                                      |
|                                  | Storage Temperature       | -10°C~70°C                                                                                                                                                                                                                                                                                                                                                                    |
|                                  | 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                                                                                                                                                                                                                                                                                                                                                         |
|                                  | Altitude                  | No Power Limitation Below 1000m                                                                                                                                                                                                                                                                                                                                               |
| Atmospheric Pressure             |                           | 86kpa-106kpa                                                                                                                                                                                                                                                                                                                                                                  |

## Compatible Drivers

| Part Number  | Description  |
|--------------|--------------|
| FD123-LA-000 | Servo Driver |



## Compatible Motors

| Part Number            | Description |
|------------------------|-------------|
| SMH40S-0005-30AAK-4DKH | Servo Motor |
| SMH40S-0005-30ABK-4DKH | Servo Motor |



## Compatible Cables

| Part Number     | Description   |
|-----------------|---------------|
| MOT-005-05-KL-D | Power Cable   |
| ENCCA-05-KH     | Encoder Cable |
| BRA-05-KL       | Brake Cable   |

