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K1E17-1811

# Kinco

Motion Control

Servo System

## Servo System Catalog

- CD3/FD3 Series Servo Driver
- Servo Motor

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# Model Description of Servo Driver and Motor

## Kinco CD3 Series Servo Driver

**CD423-AA-000**

| | |
|---|---|
| **CD** | CD Series |
| **4** | Input voltage AC220V |
| **2** | Driver current |

| | |
|---|---|
| **000** | Software version |
| **AA** | Standard model |
| **3** | CD Third generation |

## Kinco FD3 Series Servo Driver

**FD423-EA-000**

Note: FD413-AA-000 and FD423-AA-000 support Interpolation mode based on CAN, support linear motor, support DD motor.

| | |
|---|---|
| **FD** | FD Series |
| **4** | Input voltage AC220V |
| **2** | Driver current |

| | |
|---|---|
| **000** | Software version |
| **EA** | RS232、EtherCAT |
| **CA** | RS232、CAN |
| **LA** | RS232、RS485 |
| **3** | FD Third generation |

## Kinco Servo Motor

**SMS 60S-0040-30MAK-3LSU**

| | |
|---|---|
| **SMH** | SMH Series |
| **SMC** | SMC Series |
| **SMS** | SMS Series |
| **60** | Flange size 60×60mm |
| **S** | Small inertia |
| **0040** | Rated power 40×10(W) |
| **30** | Rated speed 30×100(rpm) |
| **J** | 20 bit single-turn encoder |
| **K** | 16 bit multi-turn absolute encoder |
| **M** | 17 bit single-turn magnetoelectric encoder |

| | |
|---|---|
| **U** | Communication encoder connector |
| **K** | Version K |
| **S** | Version S |
| **L** | AC220V |
| **3** | 3 Pole pairs |
| **5** | 5 Pole pairs |
| **K** | With keyway |
| **A** | Without keyway |
| **A** | Without brake |
| **B** | With brake |

## Power, Brake and Encoder Cable of Motor

**MOT F - 005 - LL - KL - Y**

| | |
|---|---|
| **MOT** | Power cable |
| **F** | Flexible cable |
| **005** | Rated current 5A |

| | |
|---|---|
| **Y** | Y type for PE terminal connector |
| **KL** | 4 PIN power connector |
| **03、05<br>10、15** | Length of cable:<br>3, 5, 10, 15m |

**ENC D G F - LL - G U - BT**

| | |
|---|---|
| **ENC** | Encoder cable |
| **D** | Encoder port at driver side |
| **G** | Encoder PIN definition at driver side |
| **F** | Flexible cable |
| **03、05<br>10、15** | Length of cable:<br>3, 5, 10, 15m |

| | |
|---|---|
| **BT** | BT With battery<br>(for multi-turn absolute encoder) |
| **□□** | No battery |
| **U** | 1394 series U type plug |
| **G** | 6-core cable |

**BRA F-LL-KL**

**Note :** For motors with brake, please order power cable and brake cable.

| | |
|---|---|
| **BRA** | Brake cable |
| **F** | Flexible cable |

| | |
|---|---|
| **KL** | 2 PIN connector |
| **03、05<br>10、15** | Length of cable:<br>3, 5, 10, 15m |

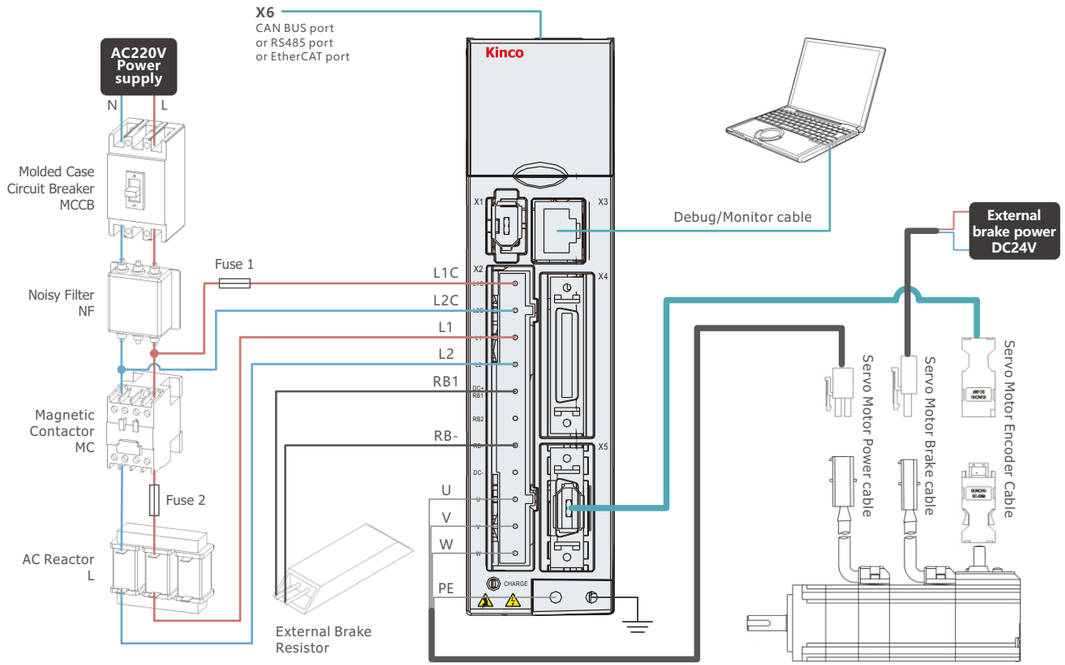
# Servo Driver and Motor Selection Table

## CD3/FD3 Servo Driver and Motor Selection Table

| Series | Rated Power/ Rated Speed/ Rated Torgue | Servo Motor | Description | Servo Driver | | | | Power/Brake cable | Encoder cable |
|---|---|---|---|---|---|---|---|---|---|
| | | | | EtherCAT | CANopen | Pules MODBUS 485 | Pules | | |
| SMC | 50W 3000rpm 0.16Nm | SMC40S-0005-30MAK-5LSU | 16 bit single-turn magnetoelectric encoder | FD413-EA-000 | FD413-CA-000 | FD413-LA-000 | CD413-AA-000 | MOT-005-LL-KL-Y | ENCDG-LL-GU |
| | | SMC40S-0005-30MBK-5LSU | 16 bit single-turn magnetoelectric encoder with brake | | | | | MOT-005-LL-KL-Y/BRA-LL-KL | |
| | 100W 3000rpm 0.32Nm | SMC40S-0010-30MAK-5LSU | 16 bit single-turn magnetoelectric encoder | | | | | MOT-005-LL-KL-Y | |
| | | SMC40S-0010-30MBK-5LSU | 16 bit single-turn magnetoelectric encoder with brake | | | | | MOT-005-LL-KL-Y/BRA-LL-KL | |
| | 200W 3000rpm 0.64Nm | SMC60S-0020-30MAK-3LSU | 16 bit single-turn magnetoelectric encoder | FD423-EA-000 | FD423-CA-000 | FD423-LA-000 | CD423-AA-000 | MOT-005-LL-KL-Y | |
| | | SMC60S-0020-30MBK-3LSU | 16 bit single-turn magnetoelectric encoder with brake | | | | | MOT-005-LL-KL-Y/BRA-LL-KL | |
| | 400W 3000rpm 1.27Nm | SMC60S-0040-30MAK-3LSU | 16 bit single-turn magnetoelectric encoder | | | | | MOT-005-LL-KL-Y | |
| | | SMC60S-0040-30MBK-3LSU | 16 bit single-turn magnetoelectric encoder with brake | | | | | MOT-005-LL-KL-Y/BRA-LL-KL | |
| | 750W 3000rpm 2.39Nm | SMC80S-0075-30MAK-3LSU | 16 bit single-turn magnetoelectric encoder | | | | | MOT-005-LL-KL-Y | |
| | | SMC80S-0075-30MBK-3LSU | 16 bit single-turn magnetoelectric encoder with brake | | | | | MOT-005-LL-KL-Y/BRA-LL-KL | |
| SMS | 50W 3000rpm 0.16Nm | SMS40S-0005-30JAK-5LKU | 20 bit single-turn encoder | FD413-EA-000 | FD413-CA-000 | FD413-LA-000 | CD413-AA-000 | MOT-005-LL-KL-Y | ENCDG-LL-GU |
| | | SMS40S-0005-30JBK-5LKU | 20 bit single-turn encoder with brake | | | | | MOT-005-LL-KL-Y/BRA-LL-KL | |
| | | SMS40S-0005-30KAK-5LKU | 16 bit multi-turn absolute encoder | | | | | MOT-005-LL-KL-Y | ENCDG-LL-GU ENCDG-(4)-GU-BT* |
| | | SMS40S-0005-30KBK-5LKU | 16 bit multi-turn absolute encoder with brake | | | | | MOT-005-LL-KL-Y/BRA-LL-KL | |
| | 100W 3000rpm 0.32Nm | SMS40S-0010-30JAK-5LKU | 20 bit single-turn encoder | FD413-EA-000 | FD413-CA-000 | FD413-LA-000 | CD413-AA-000 | MOT-005-LL-KL-Y | ENCDG-LL-GU |
| | | SMS40S-0010-30JBK-5LKU | 20 bit single-turn encoder with brake | | | | | MOT-005-LL-KL-Y/BRA-LL-KL | |
| | | SMS40S-0010-30KAK-5LKU | 16 bit multi-turn absolute encoder | | | | | MOT-005-LL-KL-Y | ENCDG-LL-GU ENCDG-(4)-GU-BT* |
| | | SMS40S-0010-30KBK-5LKU | 16 bit multi-turn absolute encoder with brake | | | | | MOT-005-LL-KL-Y/BRA-LL-KL | |
| | 200W 3000rpm 0.64Nm | SMS60S-0020-30JAK-3LKU | 20 bit single-turn encode | FD413-EA-000 | FD413-CA-000 | FD413-LA-000 | CD413-AA-000 | MOT-005-LL-KL-Y | ENCDG-LL-GU |
| | | SMS60S-0020-30JBK-3LKU | 20 bit single-turn encoder with brake | | | | | MOT-005-LL-KL-Y/BRA-LL-KL | |
| | | SMS60S-0020-30KAK-3LKU | 16 bit multi-turn absolute encoder | | | | | MOT-005-LL-KL-Y | ENCDG-LL-GU ENCDG-(4)-GU-BT* |
| | | SMS60S-0020-30KBK-3LKU | 16 bit multi-turn absolute encoder with brake | | | | | MOT-005-LL-KL-Y/BRA-LL-KL | |
| | 400W 3000rpm 1.27Nm | SMS60S-0040-30JAK-3LKU | 20 bit single-turn encoder | FD423-EA-000 | FD423-CA-000 | FD423-LA-000 | CD423-AA-000 | MOT-005-LL-KL-Y | ENCDG-LL-GU |
| | | SMS60S-0040-30JBK-3LKU | 20 bit single-turn encoder with brake | | | | | MOT-005-LL-KL-Y/BRA-LL-KL | |
| | | SMS60S-0040-30KAK-3LKU | 16 bit multi-turn absolute encoder | | | | | MOT-005-LL-KL-Y | ENCDG-LL-GU ENCDG-(4)-GU-BT* |
| | | SMS60S-0040-30KBK-3LKU | 16 bit multi-turn absolute encoder with brake | | | | | MOT-005-LL-KL-Y/BRA-LL-KL | |
| | 750W 3000rpm 2.39Nm | SMS80S-0075-30JAK-3LKU | 20 bit single-turn encoder | FD423-EA-000 | FD423-CA-000 | FD423-LA-000 | CD423-AA-000 | MOT-005-LL-KL-Y | ENCDG-LL-GU |
| | | SMS80S-0075-30JBK-3LKU | 20 bit single-turn encoder with brake | | | | | MOT-005-LL-KL-Y/BRA-LL-KL | |
| | | SMS80S-0075-30KAK-3LKU | 16 bit multi-turn absolute encoder | | | | | MOT-005-LL-KL-Y | ENCDG-LL-GU ENCDG-(4)-GU-BT* |
| | | SMS80S-0075-30KBK-3LKU | 16 bit multi-turn absolute encoder with brake | | | | | MOT-005-LL-KL-Y/BRA-LL-KL | |

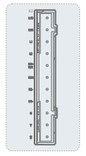
**Note :** □=L : RS232、RS485
□=C : RS232、CANopen
□=E : RS232、EtherCAT

**Note :** 1) It needs DC 24V/2A delay when driver drive the brake device.
2) ★ ENCCG-(4)-GU-BT is the battery cable which supplies power for 16 bit multi-turn absolute encoder of motor, the length is 40cm.




Note:
1) When use internal brake resistor, please short circuit DC+/RB1 to RB2. The internal brake resistor is 100 Ohm and 10W. If exceeding the power of brake resistor, the driver will show over power of brake resistor alarm and display 0100 on panel.
2) When real brake power is over 10W, please use external brake resistor. Connect DC+/RB1 and RB-, but at the same time, must disconnect the short circuit of DC+/RB1 and RB2 first. Please refer to user manual to select brake resistor.

## Communication Port Introduction

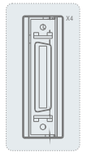


| Port No. | Port name | Port type | PIN No. | Signal marks | Signal name | Description |
|---|---|---|---|---|---|---|
| X2 | Power supply terminal | 11P 7.5mm insertable and extractable terminal | 1 | L1C | Control circuit power supply input | 200-240VAC±10% 50-60Hz±3Hz 0.5A |
| | | | 2 | L2C | | |
| | | | 3 | L1 | Main power supply input | 200-240VAC±10% 50-60Hz±3Hz (750W 5.5A , 200W 1.5A ) |
| | | | 4 | L2 | | |
| | | | 5 | DC+/RB1 | DC BUS Brake resistor port | The DC+/RB1 and DC- are the positive/negative terminal of DC Bus. |
| | | | 6 | RB2 | | |
| | | | 7 | RB- | | |
| | | | 8 | DC- | | |
| | | | 9 | U | Motor cable port | Wire U, V, W cable of motor |
| | | | 10 | V | | |
| | | | 11 | W | | |

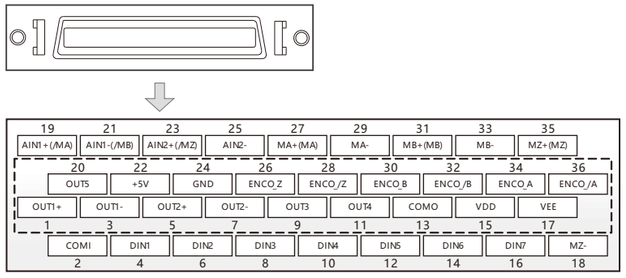
| Port No. | Port name | Port type | PIN No. | Signal marks | Signal name | Description |
|---|---|---|---|---|---|---|
| X3 | RS232 Communication port | RJ45 | 1 | NC | | Connect to PC to set parameters and monitor via software. |
| | | | 2 | NC | | |
| | | | 3 | TX | Driver data send | |
| | | | 4 | GND | Signal ground | |
| | | | 5 | NC | | |
| | | | 6 | RX | Driver data receive | |
| | | | 7 | NC | | |
| | | | 8 | NC | | |

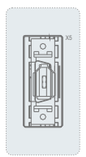






| Port No. | Port name | Port type | PIN No. | Signal marks | Signal name | Description |
|---|---|---|---|---|---|---|
| X4 | I/O | SCSI-36P-F | 1 | OUT1+ | Differential signal output | Open collector output<br>Maximum voltage DC 30V Maximum current DC 100mA |
| | | | 3 | OUT1- | | |
| | | | 5 | OUT2+ | | Open collector output<br>Maximum voltage DC 30V Maximum current DC 100mA |
| | | | 7 | OUT2- | | |
| | | | 9 | OUT3 | Normal output | Maximum voltage DC 30V Maximum current DC 20mA |
| | | | 11 | OUT4 | | Maximum voltage DC 30V Maximum current DC 20mA |
| | | | 20 | OUT5 | | Maximum voltage DC 30V Maximum current DC 2OmA |
| | | | 13 | COMO | OUT3,OUT4,OUT5 Com port | |
| | | | 15 | VDD | Internal 24V output | 24V power supply output inside, Voltage range +/- 20%, maximum current DC 300mA |
| | | | 17 | VEE | | |
| | | | 2 | COMI | DINx Com port | Com port of digital signal input, Input voltage range 18~30V DC |
| | | | 4 | DIN1 | Digital signal input | High level : 12.5V-30V<br>Low level : 0-5V<br>Input frequency : 1KHz Max |
| | | | 6 | DIN2 | | |
| | | | 8 | DIN3 | | |
| | | | 10 | DIN4 | | |
| | | | 12 | DIN5 | | |
| | | | 14 | DIN6 | | |
| | | | 16 | DIN7 | | |
| | | | 19 | AIN1+ ( MA/ ) | Analog input 1 , ±10V | MA, MB, MZ, MA/, MB/, MZ/ support 5V RS422 differential signal input, maximum 4MHz. Optional signal type:<br>1) Pulse/Direction<br>2) Forward/Reverse<br>3) A/B phase, please use twisted and shield cable |
| | | | 21 | AIN1- ( MB/ ) | | |
| | | | 23 | AIN2+ ( MZ/ ) | Analog input 2 , ±10V | |
| | | | 25 | AIN2- | | |
| | | | 27 | MA+/(MA) | MA+, MA-,MB+,MB-,MZ+,MZ-, Support pulse frequency input maximum 500KHz.<br>MA、MB、MZ, MA/、MB/、MZ/, Support pulse frequency input maximum 4MHz. | Pulse signal input, support TTL signal, input voltage range 12~30V DC, maximum pulse frequency 500KHz.<br>Optional signal type:<br>1) Pulse/Direction<br>2) Forward/Reverse-->double pulse<br>3) A/B phase, please use twisted and shield cable |
| | | | 29 | MA- | | |
| | | | 31 | MB+/(MB) | | |
| | | | 33 | MB- | | |
| | | | 35 | MZ+/(MZ) | | |
| | | | 18 | MZ- | | |
| | | | 22 | +5V | Internal 5V output | |
| | | | 24 | GND | | |
| | | | 26 | ENCO_Z | Encoder signal output | Encoder signal output |
| | | | 28 | ENCO_/Z | | |
| | | | 30 | ENCO_B | | |
| | | | 32 | ENCO_/B | | |
| | | | 34 | ENCO_A | | |
| | | | 36 | ENCO_/A | | |



| Port No. | Port name | Port type | PIN No. | Signal marks | Signal name | Description |
|---|---|---|---|---|---|---|
| X5 | Encoder port of motor | 1394 Female socket | 1 | +5V | 5V Positive terminal of power output | Encoder signal input |
| | | | 2 | GND | Negative terminal of power output | |
| | | | 3 | CLOCK+ | Positive terminal of Clock | |
| | | | 4 | CLOCK- | Negative terminal of Clock | |
| | | | 5 | SD | Data signal | |
| | | | 6 | /SD | Data signal | |

| Port No. | Port name | Port type | PIN No. | Signal marks | Signal name |
|---|---|---|---|---|---|
| X6A | RS485 Communication port input | RJ45 | 1 | RX+ | Receive data |
| | | | 2 | RX- | Receive data |
| | | | 3 | NC | |
| | | | 4 | TX- | Send data |
| | | | 5 | TX+ | Send data |
| | | | 6 | NC | |
| | | | 7 | +5VB | Isolated 5V output *1 |
| | | | 8 | GNDB | Signal ground |

| Port No. | Port name | Port type | PIN No. | Signal marks | Signal name |
|---|---|---|---|---|---|
| X6B | RS485 Communication port output | RJ45 | 1 | RX+ | Receive data |
| | | | 2 | RX- | Receive data |
| | | | 3 | NC | |
| | | | 4 | TX- | Send data |
| | | | 5 | TX+ | Send data |
| | | | 6 | NC | |
| | | | 7 | +5VB | Isolated 5V output *1 |
| | | | 8 | GNDB | Signal ground |

*1 Introduction： Series a 100 Ohm resistance inside, used as pull-up resistance or pull-down resistance.

| Port No. | Port name | Port type | PIN No. | Signal marks | Signal name |
|---|---|---|---|---|---|
| X6A | CAN Communication port input | RJ45 | 1 | CAN_H | Positive signal |
| | | | 2 | CAN_L | Negative signal |
| | | | 3 | GNDB | Signal ground |
| | | | 4 | NC | |
| | | | 5 | NC | |
| | | | 6 | NC | |
| | | | 7 | NC | |
| | | | 8 | NC | |

| Port No. | Port name | Port type | PIN No. | Signal marks | Signal name |
|---|---|---|---|---|---|
| X6B | CAN Communication port output | RJ45 | 1 | CAN_H | CANopen Positive signal |
| | | | 2 | CAN_L | CANopen Negative signal |
| | | | 3 | GNDB | Signal ground |
| | | | 4 | NC | |
| | | | 5 | NC | |
| | | | 6 | NC | |
| | | | 7 | NC | |
| | | | 8 | NC | |

| Port No. | Port name | Port type | PIN No. | Signal marks | Signal name |
|---|---|---|---|---|---|
| X6A | EtherCAT Communication port input | RJ45 | 1 | RD+ | Receive data |
| | | | 2 | RD- | Receive data |
| | | | 3 | TD+ | Send data |
| | | | 4 | NC | |
| | | | 5 | NC | |
| | | | 6 | TD- | Send data |
| | | | 7 | NC | |
| | | | 8 | NC | |

| Port No. | Port name | Port type | PIN No. | Signal marks | Signal name |
|---|---|---|---|---|---|
| X6B | EtherCAT Communication port output | RJ45 | 1 | RD+ | Receive data |
| | | | 2 | RD- | Receive data |
| | | | 3 | TD+ | Send data |
| | | | 4 | NC | |
| | | | 5 | NC | |
| | | | 6 | TD- | Send data |
| | | | 7 | NC | |
| | | | 8 | NC | |

| Port No. | Signal name | Description |
|---|---|---|
| SW1 | Available only on driver that supports CANopen protocol | End terminal resistance switch |
| SW2 | 8 DIP switch | BUS ID switch |





## Technical Specifications Table of CD3 Series Servo Driver

| | Model Parameter | CD413-AA-000 | CD423-AA-000 |
|---|---|---|---|
| Power | Main supply voltage | 200-240VAC±10% 50/60Hz±3Hz 0.5A | |
| | Control circuit voltage | 200-240VAC±10% 50/60Hz±3Hz (750W 5.5A ) , ( 200W 1.5A ) | |
| Current | Maximum Continuous Output current (RMS) | 2A | 4A |
| | Peak current (PEAK) | 7A | 15A |
| | Feedback signal | 17 bit single-turn magnetoelectric encoder, 16 bit multi-turn absolute encoder, 20 bit single-turn encoder | |
| | Brake chopper | Inbuilt 100 Ohm/10W brake resistor. When the real power of brake resistor is over 10W, please add an external braking resistor (mainly in quick start and stop application) | |
| | Brake chopper threshold | DC380V±5V | |
| | Over-voltage alarming threshold | DC400V±5V | |
| | Under-voltage alarming threshold | DC200V±5V | |
| | Cooling method | Natural air cooling | Fan |
| | Weight (Kg) | 0.8 | |
| Position Mode | Max. frequency of input pulse | Differential signal: 4MPPS, Open- collector signal: 200KPPS | |
| | Pulse command mode | P+D, 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 12bit ) | |
| | Input impedance | 200KΩ | |
| | 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 control | |
| | Speed loop sampling frequency | 4KHz | |
| Torque Mode | Analog voltage input range | -10～+10V ( Resolution 12bit ) | |
| | Input impedance | 200KΩ | |
| | 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 control | |
| | Input voltage dead-zone setting | Adjustable by internal parameter setting | |
| | Input voltage offset setting | Adjustable by internal parameter setting | |
| | Current sampling frequency | 16KHz | |
| Digital Input | Input specification | 7 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, position table etc. | |
| Digital Output | Output specification | 5 digital outputs, Maximum voltage DC30V; OUT1 and OUT2 are differential output, maximum current 100mA; OUT3~OUT5 are normal output, maximum current 20mA; OUT2 is also a brake control output port, via connecting a relay to control the brake of motor. | |
| | Output function | Define freely according to requirement, supporting following functions: Driver ready, driver fault, position reached, motor zero speed, motor brake, motor speed reached, Z signal, maximum speed obtained in torque mode, motor brake, position limiting, reference found, multi-position reached etc. | |
| | Protection function | Over-voltage protection, under-voltage protection, motor over-heat protection($I^2T$),short-circuit protection, drive over-heat protection, etc. | |
| | RS232 port | RJ45 type. use Kinco servo software to communicate with PC | |
| Operation Environment | Operating temperature | 0～40℃ | |
| | Storage temperature | -10℃～70℃ | |
| | Humidity(non-condensing) | 5～95% | |
| | 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 | 86kpa～106kpa | |

# Technical Specifications Table of FD3 Series Servo Driver

## Technical Specifications Table of FD3 Series Servo Driver

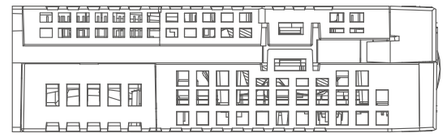
| | Model Parameter | FD413-□A-000 | FD423-□A-000 |
|---|---|---|---|
| Power | Main supply voltage | 200-240VAC±10% 50/60Hz±3Hz (750W 5.5A)(200W 1.5A) | |
| | Control circuit voltage | 200-240VAC±10% 50/60Hz±3Hz 0.5A | |
| Current | Maximum Continuous Output current (RMS) | 2A | 4A |
| | Peak current (PEAK) | 7A | 15A |
| | Feedback signal | 16 bit single-turn magnetoelectric encoder, 16 bit multi-turn absolute encoder, 20 bit single-turn encoder | |
| | Brake chopper | Inbuilt 100 Ohm/10W brake resistor. When the real power of brake resistor is over 10W, please add an external braking resistor(mainly in quick start and stop application) | |
| | Brake chopper threshold | DC380V±5V | |
| | Over-voltage alarming threshold | DC400V±5V | |
| | Under-voltage alarming threshold | DC200V±5V | |
| | Cooling method | Natural air cooling | Fan |
| | Weight (KG) | 0.8 | |
| Position mode | Max.frequency of input pulse | Differencial signal: 4MPPS,Open-collector signal: 200KPPS | |
| | Pulse command mode | P+D,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 12bit) | |
| | Input impedance | 200KΩ | |
| | 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 control | |
| | Speed loop sampling frequency | 4KHz | |
| Torque | Analog voltage input range | -10~+10V(Resolution 12bit) | |
| | Input impedance | 200KΩ | |
| | 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 control | |
| | Input voltage dead-zone setting | Adjustable by internal parameter setting | |
| | Input voltage offset setting | Adjustable by internal parameter setting | |
| | Current sampling frequency | 16KHz | |
| Digital input | Input specification | 7 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, position table etc. | |
| Digital output | Output specification | 5 digital outputs, Maximum voltage DC30V; OUT1 and OUT2 are differential outputs, maximum current 100mA; OUT3~OUT5 are normal outputs, maximum current 20mA; OUT2 is also a brake control output port, via connecting a relay to control the brake of motor. | |
| | Output function | Define freely according to requirement, supporting following functions: Driver ready, driver fault, position reached, motor zero speed, motor brake, motor speed reached, Z signal, maximum speed obtained in torque mode, motor brake, position limiting, reference found, multi-position reached etc. | |
| | Encoder signal output function | Output 5V A,B,Z signal of encoder from the motor. Adjustable encoder resolution ,range: 0~65536. Maximum 2MHz frequency output. | |
| | Protection functions | Over-voltage protection, under-voltage protection, motor over-heat protection($I^2T$), short-circuit protection, drive over-heat protection, etc. | |
| | RS232 | RS232(Connect with PC by: RJ45 net port) | |
| | RS485 | The max. baudrate is 115.2KHz, use Modbus RTU protocol to communicate with controller. | |
| | CANopen | Support maximum 1MHz baudrate. Communicate with controller via CANopen protocol. | |
| | EtherCAT | Support CoE(CiA402 protocol) and CSP/CSV/PP/PV/PT/HM mode. Communication speed 100M. | |
| Operation Environment | Operating temperature | 0~40℃ | |
| | Storage temperature | -10℃~70℃ | |
| | Humidity (non-condensing) | 5%~95% | |
| | 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 | 86kpa~106kpa | |

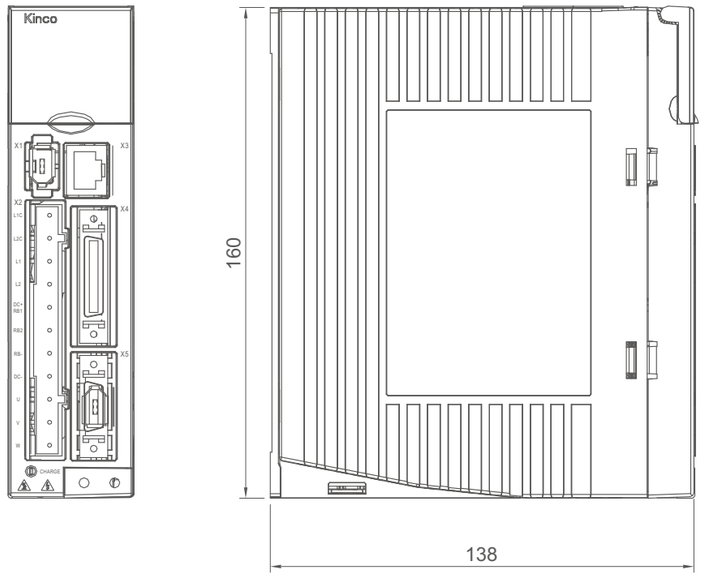


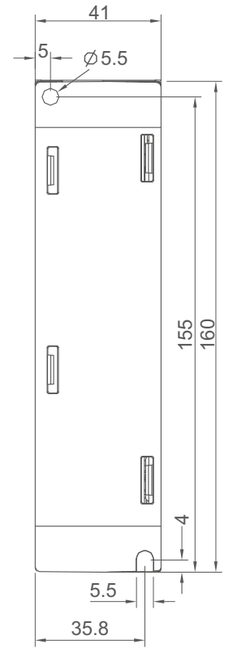
# CD3/FD3 Mechanical Dimension Diagram (unit: mm )

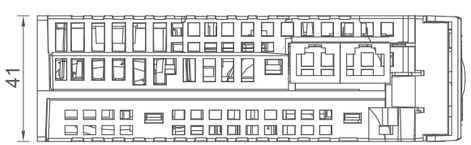
## CD3/FD3 Mechanical Dimension Diagram

Wiring space (>60mm is best) around driver need to be reserved.
CD413-AA-000,FD413-□A-000 No fan





## SMS Series Servo Motor (40 Flange)

| Motor Model | | SMS40S-0005-30[1][2]K-5LKU | SMS40S-0010-30[1][2]K-5LKU |
|---|---|---|---|
| Driver matching | | **CD413-AA-000<br>FD413-LA-000 , FD413-EA-000<br>FD413-CA-000** | |
| DC link voltage UDC | | 300 | 300 |
| Continuous performance | Rated power Pn(W) | 50 | 100 |
| | Rated torque Tn(Nm) | 0.16 | 0.32 |
| | Rated speed nN(rpm) | 3000 | 3000 |
| | Rated curent In(A) | 0.7 | 1.4 |
| Maximum torque Tm(Nm) | | 0.48 | 0.96 |
| Maximum current Im(A) | | 2.25 | 4.2 |
| Standstill torque Ts(Nm) | | 0.176 | 0.352 |
| Standstill current Is(A) | | 0.83 | 1.54 |
| Resistance line-line RL(Ω) | | 16.2 | 7.9 |
| Inductance line-line LL(mH) | | 18.5 | 10.5 |
| Electrical time constant τe (ms) | | 1.14 | 1.33 |
| Mechanical time constant τm (ms) | | 1.51 | 0.99 |
| Reverse voltage constant Ke (V/krpm) | | 14 | 16.2 |
| Torque constant Kt (Nm/A) | | 0.232 | 0.268 |
| Rotor moment of inertia Jm (Kg•cm$^2$ ) | | 0.018 | 0.033 |
| | | 0.021 ( with brake ) | 0.046 ( with brake ) |
| Pole pair number | | 5 | 5 |
| Maximum voltage rising du/dt (KV/μs) | | 8 | 8 |
| Insulation class | | F | F |
| Maximum radial force F(N) | | 120 | 120 |
| Maximum axial force F(N) | | 60 | 60 |
| Weight G(Kg) | | 0.4 | 0.57 |
| | | 0.6 ( with brake ) | 0.77 ( with brake ) |
| Length of motor L(mm) | | 74.6±1 | 96.6±1 |
| | | 104.6±1 ( with brake ) | 126.6 ( with brake ) |
| Position feedback device | | 20 bit single-turn encoder, 16 bit multi-turn absolute encoder | |
| Cooling method | | Totally enclosed, non-ventilated | |
| Protection level | | IP65 for body, shaft sealing IP54 | |
| Environmental conditions for operation | Temperature | -20℃ ~ 40℃ (Non-freezing) | |
| | Humidity | Below 90% RH(No-condensing) | |
| | Ambient environment | Away from active gas, combustible gas, oil drops and dust | |
| | Altitude | Maximum altitude 4000m, Rated power at 1000m or below,<br>Above 1000m: Decreasing 1.5% per 100m rise | |

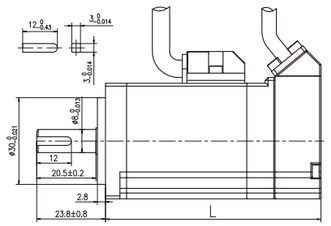
**Note:** [1]=J : 20 bit single-turn encoder motor [2]=A : Without brake
[1]=K : 16 bit multi-turn absolute encoder motor [2]=B : With brake

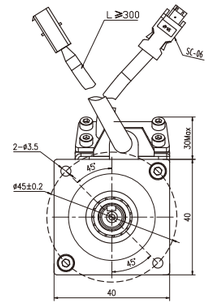




## SMS Series Servo Motor (40 Flange)

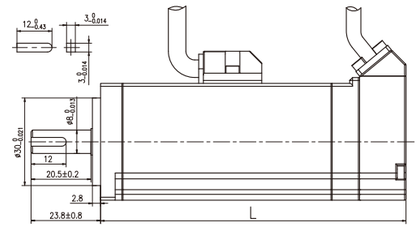
- SMS40S-0005-30□AK-5LKU
- SMS40S-0010-30□AK-5LKU

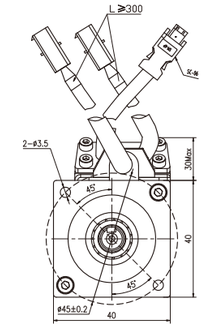



## SMS Series Servo Motor (40 Flange, with brake)

- SMS40S-0005-30□BK-5LKU
- SMS40S-0010-30□BK-5LKU




### Motor power cable

Housing: H66L6-04P
Terminal: T66L6-A

| PIN | Signal | Cable color |
|---|---|---|
| 1 | U | Yellow |
| 2 | V | Red |
| 3 | W | Black |
| 4 | PE ⏚ | Yellow-Green |

### Motor Brake Cable

Housing: H66L6-02P
Terminal: T66L6-B

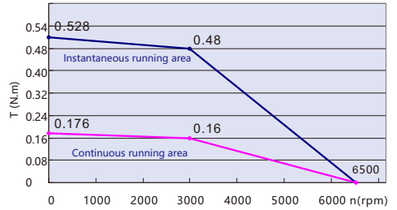
| PIN | Signal | Cable color |
|---|---|---|
| 1 | BRAKE (+) | Red |
| 2 | BRAKE (-) | Blue |

### Motor encoder cable

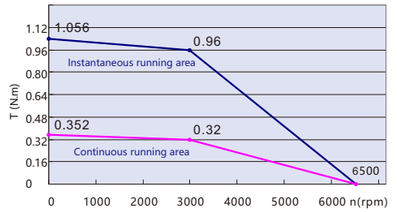

SC-06

| PIN | Single-turn | | Multi-turn | |
|---|---|---|---|---|
| | Signal | Cable color | Signal | Cable color |
| 1 | VCC +5V | White | VCC +5V | White |
| 2 | GND | Black | GND | Black |
| 3 | NC | NC | VB | Orange |
| 4 | NC | NC | GND | Brown |
| 5 | SD | Blue | SD | Blue |
| 6 | /SD | Purple | /SD | Purple |

**SMS40S-0005-30□□K-5LKU** **50W**




**SMS40S-0010-30□□K-5LKU** **100W**



# Technical Specifications Table of SMS Series Servo Motor

## SMS Series Servo Motor (60, 80 Flange)

| Motor Model | | SMS60S-0020-30[1][2]K-3LKU | SMS60S-0040-30[1][2]K-3LKU | SMS80S-0075-30[1][2]K-3LKU |
|---|---|---|---|---|
| Driver matching | | **CD413-AA-000<br>FD413-CA-000<br>FD413-LA-000<br>FD413-EA-000** | **CD423-AA-000<br>FD423-CA-000<br>FD423-LA-000 , FD423-EA-000** | |
| DC link voltage UDC UDC | | 300 | 300 | 300 |
| Continuous performance | Rated power Pn(W) | 200 | 400 | 750 |
| | Rated torque Tn(Nm) | 0.64 | 1.27 | 2.39 |
| | Rated speed nN(rpm) | 3000 | 3000 | 3000 |
| | Rated curent In(A) | 1.4 | 2.4 | 3.8 |
| Maximum torque Tm(Nm) | | 1.92 | 3.81 | 7.17 |
| Maximum current Im(A) | | 4.2 | 7.2 | 11.4 |
| Standstill torque Ts(Nm) | | 0.7 | 1.4 | 2.63 |
| Standstill current Is(A) | | 1.5 | 2.6 | 4.2 |
| Resistance line-line RL(Ω) | | 11.2 | 5.8 | 2.1 |
| Inductance line-line LL(mH) | | 20.9 | 11.5 | 10.5 |
| Electrical time constant τe (ms) | | 1.87 | 1.98 | 5 |
| Mechanical time constant τm (ms) | | 1.8 | 1.29 | 0.9 |
| Reverse voltage constant Ke (V/krpm) | | 29 | 34 | 40 |
| Torque constant Kt (Nm/A) | | 0.48 | 0.562 | 0.662 |
| Rotor moment of inertia Jm ($Kg•cm^2$) | | 0.214 | 0.405 | 1.087 |
| | | 0.218 ( with brake ) | 0.409 ( with brake ) | 1.099 ( with brake ) |
| Holding torque of brake | | 1.3 | 1.3 | 3.2 |
| Pole pair number | | 3 | 3 | 3 |
| Maximum voltage rising du/dt (KV/μs) | | 8 | 8 | 8 |
| Insulation class | | F | F | F |
| Maximum radial force F(N) | | 180 | 180 | 335 |
| Maximum axial force F(N) | | 90 | 90 | 167.5 |
| Weight G(Kg) | | 1.1 | 1.6 | 2.8 |
| | | 1.6 ( with brake ) | 2.1 ( with brake ) | 3.5 ( with brake ) |
| Length of motor L(mm) | | 94 ± 1.5 | 115 ± 1.5 | 132 ± 1.5 |
| | | 144±1.5 ( with brake ) | 170±1.5 ( with brake ) | 172±1.5 ( with brake ) |
| Position feedback device | | 20 bit single-turn encoder, 16 bit multi-turn absolute encoder | | |
| Cooling method | | Totally enclosed, non-ventilated | | |
| Protection level | | IP65 for body, shaft sealing IP54 | | |
| Environmental conditions for operation | Temperature | -20~40℃(Non-freezing) | | |
| | Humidity | Below 90% RH(No-condensing) | | |
| | Ambient environment | Away from active gas, combustible gas, oil drops and dust | | |
| | Altitude | Maximum altitude 4000m, Rated power at 1000m or below,<br>Above 1000m: Decreasing 1.5% per 100m rise | | |

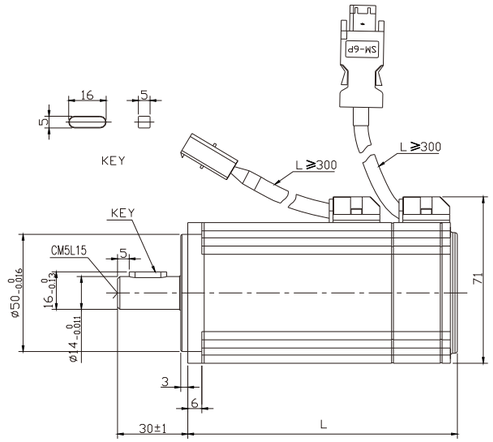
**Note :** [1]=J : 20 bit single-turn encoder [2]=A : Without brake
[1]=K : 16 bit multi-turn absolute encoder [2]=B : With brake

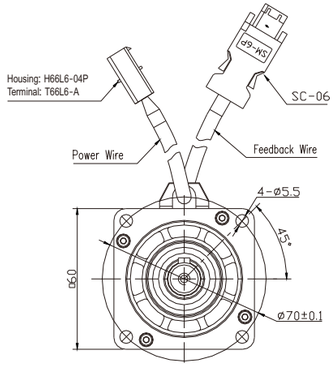


# Dimension/Torque curve of SMS Series Servo Motor (60 Flange)

## SMS Series Servo Motor (60 Flange)

- SMS60S-0020-30□AK-3LKU
- SMS60S-0040-30□AK-3LKU




### Motor power cable

Housing: H66L6-04P
Terminal: T66L6-A

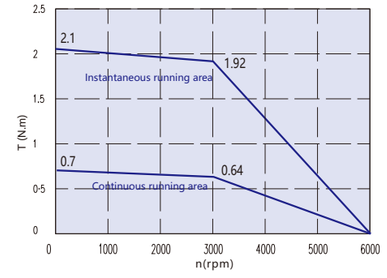
| PIN | Signal | Cable color |
|---|---|---|
| 1 | U | Yellow |
| 2 | V | Red |
| 3 | W | Black |
| 4 | PE ⏚ | Yellow-Green |

### Motor encoder cable


SC-06

| PIN | Single-turn | | Multi-turn | |
|---|---|---|---|---|
| | Signal | Cable color | Signal | Cable color |
| 1 | VCC +5V | White | VCC +5V | White |
| 2 | GND | Black | GND | Black |
| 3 | NC | NC | VB | Orange |
| 4 | NC | NC | GND | Brown |
| 5 | SD | Blue | SD | Blue |
| 6 | /SD | Purple | /SD | Purple |

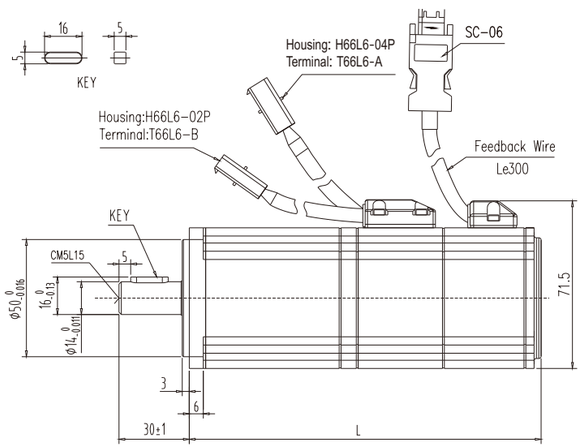
**SMS60S-0020-30□□K-3LKU 200W**

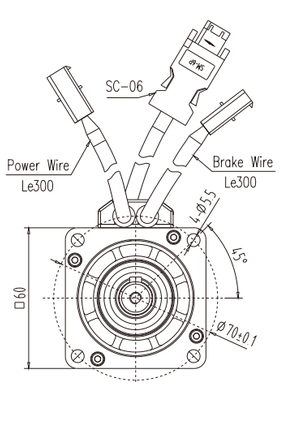


# Dimension/Torque curve of SMS Series Servo Motor (60 Flange)

## SMS Series Servo Motor (60 Flange, with brake)

- SMS60S-0020-30□BK-3LKU
- SMS60S-0040-30□BK-3LKU




### Motor Power Cable

Housing: H66L6-04P
Terminal: T66L6-A

| PIN | Signal | Cable color |
|---|---|---|
| 1 | U | Yellow |
| 2 | V | Red |
| 3 | W | Black |
| 4 | PE ⏚ | Yellow-Green |

### Motor Brake Cable

Housing: H66L6-02P
Terminal: T66L6-B

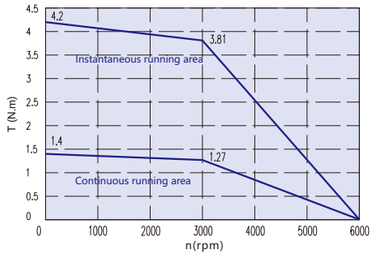
| PIN | Signal | Cable color |
|---|---|---|
| 1 | Brake (+) | Red |
| 2 | Brake (-) | Blue |

### Motor Encoder Cable


SC-06

| PIN | Single-turn | | Multi-turn | |
|---|---|---|---|---|
| | Signal | Cable color | Signal | Cable color |
| 1 | VCC +5V | White | VCC +5V | White |
| 2 | GND | Black | GND | Black |
| 3 | NC | NC | VB | Orange |
| 4 | NC | NC | GND | Brown |
| 5 | SD | Blue | SD | Blue |
| 6 | /SD | Purple | /SD | Purple |

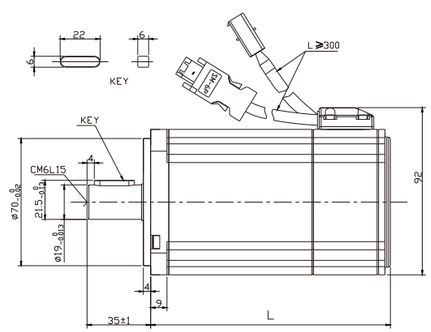
### SMS60S-0040-30□□K-3LKU 400W

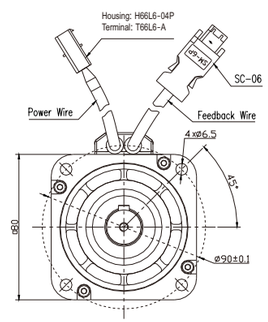



# Dimension/Torque curve of SMS Series Servo Motor (80 Flange)

## SMS Series Servo Motor (80 Flange)

- SMS80S-0075-30□AK-3LKU




### Motor Power Cable

Housing: H66L6-04P
Terminal: T66L6-A

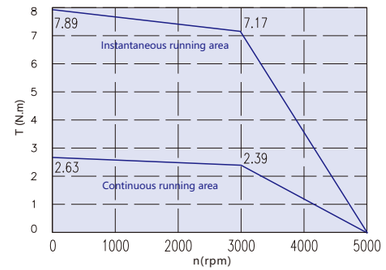
| PIN | Signal | Cable color |
|---|---|---|
| 1 | U | Yellow |
| 2 | V | Red |
| 3 | W | Black |
| 4 | PE ⏚ | Yellow-Green |

### Motor Encoder Cable


SC-06

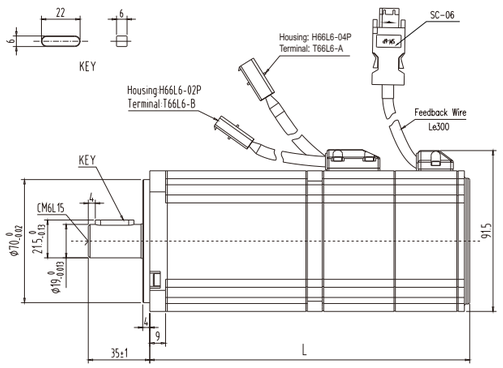
| PIN | Single-turn | | Multi-turn | |
|---|---|---|---|---|
| | Signal | Cable color | Signal | Cable color |
| 1 | VCC +5V | White | VCC +5V | White |
| 2 | GND | Black | GND | Black |
| 3 | NC | NC | VB | Orange |
| 4 | NC | NC | GND | Brown |
| 5 | SD | Blue | SD | Blue |
| 6 | /SD | Purple | /SD | Purple |

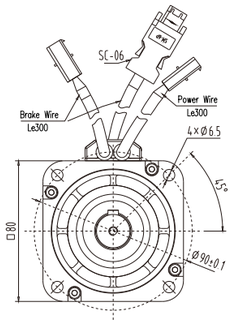
### SMS80S-0075-30□□K-3LKU 750W



## SMS Series Servo Motor (80 Flange, with brake)

- SMS80S-0075-30□BK-3LKU




### Motor Power Cable


Housing: H66L6-04P
Terminal: T66L6-A

| PIN | Signal | Cable color |
|---|---|---|
| 1 | U | Yellow |
| 2 | V | Red |
| 3 | W | Black |
| 4 | PE ⏚ | Yellow-Green |

### Motor Brake Cable


Housing: H66L6-02P
Terminal: T66L6-B

| PIN | Signal | Cable color |
|---|---|---|
| 1 | Brake (+) | Red |
| 2 | Brake (-) | Blue |

### Motor Encoder Cable


SC-06

| PIN | Single-turn | | Multi-turn | |
|---|---|---|---|---|
| | Signal | Cable color | Signal | Cable color |
| 1 | VCC +5V | White | VCC +5V | White |
| 2 | GND | Black | GND | Black |
| 3 | NC | NC | VB | Orange |
| 4 | NC | NC | GND | Brown |
| 5 | SD | Blue | SD | Blue |
| 6 | /SD | Purple | /SD | Purple |



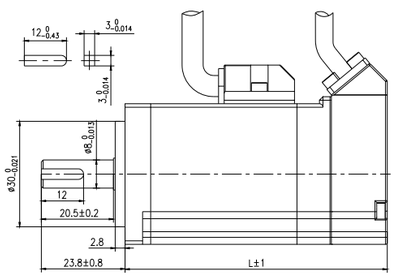


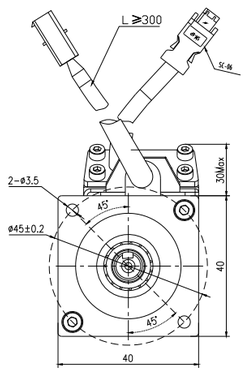
## SMC Series Servo Motor

| Motor Model | | Small inertia, 40 Flange | | Small inertia,60 Flange | | Small inertia,80 Flange |
|---|---|---|---|---|---|---|
| | | SMC40S-0005-30M□K-5LSU | SMC40S-0010-30M□K-5LSU | SMC60S-0020-30M□K-3LSU | SMC60S-0040-30M□K-3LSU | SMC80S-0075-30M□K-3LSU |
| Driver matching | | CD413-AA-000 FD413-EA-000 FD413-CA-000 FD413-LA-000 | | | CD423-AA-000 FD423-EA-000 FD423-CA-000 FD423-LA-000 | |
| DC link voltage UDC | | 300 | 300 | 300 | 300 | 300 |
| Continuous performance | 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 | | 0.48 | 0.96 | 1.92 | 3.81 | 7.17 |
| Maximum current | | 2.25 | 4.2 | 4.2 | 7.2 | 11.4 |
| Standstill torque | | 0.176 | 0.352 | 0.7 | 1.4 | 2.63 |
| Standstill current | | 0.83 | 1.54 | 1.5 | 2.6 | 4.2 |
| Resistance line-line | | 16.2 | 7.9 | 11.2 | 5.8 | 2.1 |
| Inductance line-line | | 18.5 | 10.5 | 20.9 | 11.5 | 10.5 |
| Electric time constant | | 1.14 | 1.33 | 1.87 | 1.98 | 5 |
| Mechanical time constant | | 1.51 | 0.99 | 1.8 | 1.29 | 0.9 |
| Reverse voltage constant | | 14 | 16.2 | 29 | 34 | 4 |
| Torque cosntant | | 0.232 | 0.268 | 0.48 | 0.562 | 0.662 |
| Rotor moment of inertia | | 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) |
| Pole pair number | | 5 | 5 | 3 | 3 | 3 |
| Maximum voltage rising | | 8 | 8 | 8 | 8 | 8 |
| Insulation class | | F | F | F | F | F |
| Maximum radial force | | 120 | 120 | 180 | 180 | 335 |
| Maximum axial force | | 60 | 60 | 90 | 90 | 167.5 |
| Weight | | 0.4 | 0.57 | 1.2 | 1.6 | 2.8 |
| | | 0.6(with brake) | 0.77(with brake) | 1.6(with brake) | 2.1(with brake) | 3.4(with brake) |
| Length of motor | | 74.6±1 | 96.6±1 | 91±1.5 | 117±1.5 | 128.5±1.5 |
| | | 104.6±1.5(with brake) | 126.6±1(with brake) | 121±1.5(with brake) | 147±1.5(with brake) | 158±1.5(with brake) |
| Position feedback device | | 16 bit single-turn magnetoelectric encoder | | | | |
| Cooling method | | Totally enclosed, non-ventilated | | | | |
| Protection level | | IP65 for body, shaft sealing IP54 | | | | |
| Environmental conditions for operation | Temperature | -20℃～40℃ (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 | | | | |

## SMC Series Servo Motor with magnetoelectric encoder(40 Flange)

- SMC40S-0005-30MAK-5LSU
- SMC40S-0010-30MAK-5LSU




### Motor power cable

Housing: H66L6-04P
Terminal: T66L6-A

| PIN | Signal | Color |
|---|---|---|
| 1 | U | Yellow |
| 2 | V | Red |
| 3 | W | Black |
| 4 | PE ⏚ | Yellow/Green |

### Motor encoder cable


SC-06

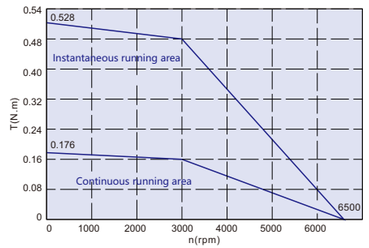
| PIN | Signal | Color |
|---|---|---|
| 1 | VDD | Red |
| 2 | GND | Black |
| 3 | MA_P+ | Brown |
| 4 | MA_N- | Blue |
| 5 | SLO_P+ | Yellow |
| 6 | SLO_N- | Green |

### Motor brake cable

Housing: H66L6-02P
Terminal: T66L6-B

| PIN | Signal | Color |
|---|---|---|
| 1 | BRAKE (+) | Red |
| 2 | BRAKE (-) | Blue |

### SMC40S-0005-30M□K-5LSU 50W

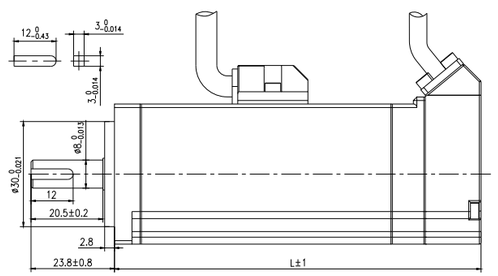


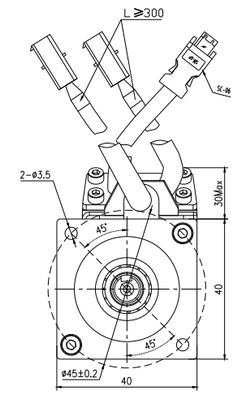





## SMC Series Servo Motor with magnetoelectric encoder(40 Flange, with brake)

- SMC40S-0005-30MBK-5LSU
- SMC40S-0010-30MBK-5LSU




### Motor power cable

Housing: H66L6-04P
Terminal: T66L6-A

| PIN | Signal | Color |
|---|---|---|
| 1 | U | Yellow |
| 2 | V | Red |
| 3 | W | Black |
| 4 | PE ⏚ | Yellow/Green |

### Motor encoder cable


SC-06

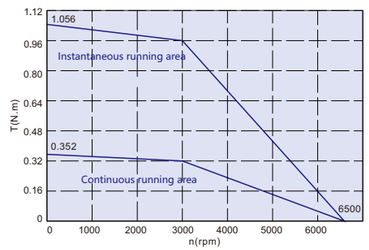
| PIN | Signal | Color |
|---|---|---|
| 1 | VDD | Red |
| 2 | GND | Black |
| 3 | MA_P+ | Brown |
| 4 | MA_N- | Blue |
| 5 | SLO_P+ | Yellow |
| 6 | SLO_N- | Green |

### Motor brake cable

Housing: H66L6-02P
Terminal: T66L6-B

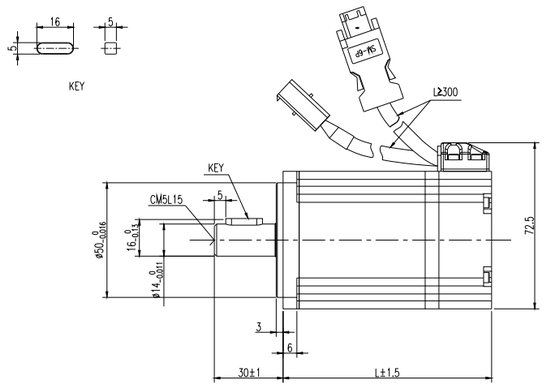
| PIN | Signal | Color |
|---|---|---|
| 1 | BRAKE (+) | Red |
| 2 | BRAKE (-) | Blue |

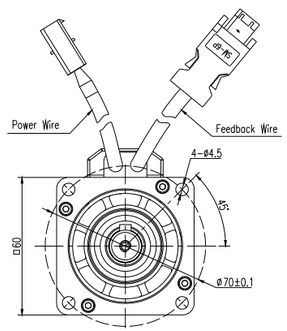
### SMC40S-0010-30M□K-5LSU 100W



## SMC Series Servo Motor with magnetoelectric encoder(60 Flange)

- SMC60S-0020-30MAK-3LSU
- SMC60S-0040-30MAK-3LSU



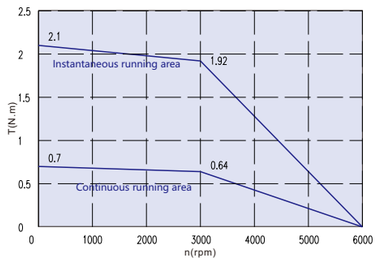




| Motor power cable | | | |
|---|---|---|---|
| Housing: H66L6-04P<br>Terminal: T66L6-A | PIN | Signal | Color |
| | 1 | U | Yellow |
| | 2 | V | Red |
| | 3 | W | Black |
| | 4 | PE ⏚ | Yellow/Green |

| Motor encoder cable | | | |
|---|---|---|---|
| 6 4 2<br>5 3 1<br>SC-06 | PIN | Signal | Color |
| | 1 | VDD | Red |
| | 2 | GND | Black |
| | 3 | MA_P+ | Brown |
| | 4 | MA_N- | Blue |
| | 5 | SLO_P+ | Yellow |
| | 6 | SLO_N- | Green |

| Motor brake cable | | | |
|---|---|---|---|
| Housing: H66L6-02P<br>Terminal: T66L6-B | PIN | Signal | Color |
| | 1 | BRAKE (+) | Red |
| | 2 | BRAKE (-) | Blue |

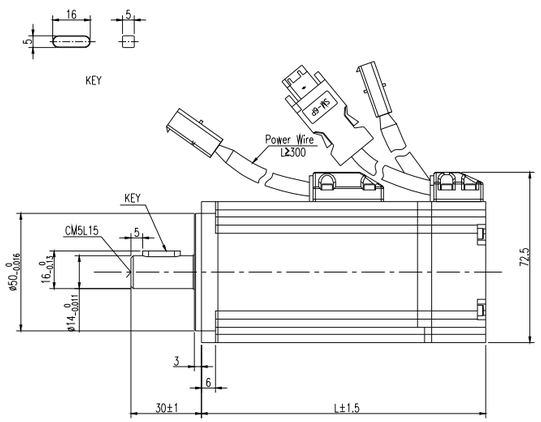
### SMC60S-0020-30M□K-3LSU

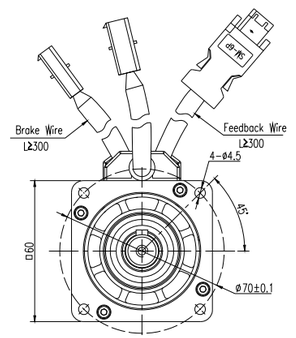





## SMC Series Servo Motor with magnetoelectric encoder(60 Flange, with brake)

- SMC60S-0020-30MBK-3LSU
- SMC60S-0040-30MBK-3LSU



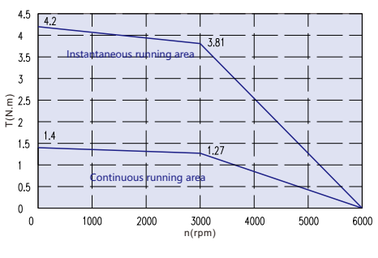




| Motor power cable | | | |
|---|---|---|---|
| Housing: H66L6-04P<br>Terminal: T66L6-A | PIN | Signal | Color |
| | 1 | U | Yellow |
| | 2 | V | Red |
| | 3 | W | Black |
| | 4 | PE ⏚ | Yellow/Green |

| Motor encoder cable | | | |
|---|---|---|---|
| 6 4 2<br>5 3 1<br>SC-06 | PIN | Signal | Color |
| | 1 | VDD | Red |
| | 2 | GND | Black |
| | 3 | MA_P+ | Brown |
| | 4 | MA_N- | Blue |
| | 5 | SLO_P+ | Yellow |
| | 6 | SLO_N- | Green |

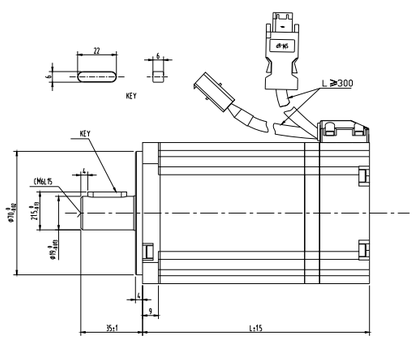
| Motor brake cable | | | |
|---|---|---|---|
| Housing: H66L6-02P<br>Terminal: T66L6-B | PIN | Signal | Color |
| | 1 | BRAKE (+) | Red |
| | 2 | BRAKE (-) | Blue |

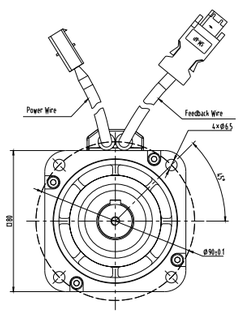
### SMC60S-0040-30M□K-3LSU



## SMC Series Servo Motor with magnetoelectric encoder(80 Flange)

- SMC80S-0075-30MAK-3LSU




### Motor power cable

Housing: H66L6-04P
Terminal: T66L6-A

| PIN | Signal | Color |
|---|---|---|
| 1 | U | Yellow |
| 2 | V | Red |
| 3 | W | Black |
| 4 | PE ⏚ | Yellow/Green |

### Motor encoder cable


SC-06

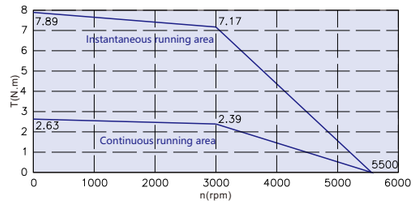
| PIN | Signal | Color |
|---|---|---|
| 1 | VDD | Red |
| 2 | GND | Black |
| 3 | MA_P+ | Brown |
| 4 | MA_N- | Blue |
| 5 | SLO_P+ | Yellow |
| 6 | SLO_N- | Green |

### Motor brake cable

Housing: H66L6-02P
Terminal: T66L6-B

| PIN | Signal | Color |
|---|---|---|
| 1 | BRAKE (+) | Red |
| 2 | BRAKE (-) | Blue |

### SMC80S-0075-30M□K-3LSU

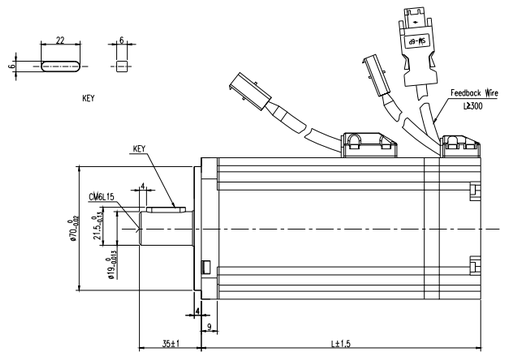


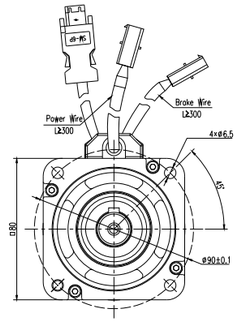





## SMC Series Servo Motor with magnetoelectric encoder(80 Flange, with brake)

- SMC80S-0075-30MBK-3LSU




### Motor power cable

Housing: H66L6-04P
Terminal: T66L6-A

| PIN | Signal | Color |
|---|---|---|
| 1 | U | Yellow |
| 2 | V | Red |
| 3 | W | Black |
| 4 | PE ⏚ | Yellow/Green |

### Motor encoder cable


SC-06

| PIN | Signal | Color |
|---|---|---|
| 1 | VDD | Red |
| 2 | GND | Black |
| 3 | MA_P+ | Brown |
| 4 | MA_N- | Blue |
| 5 | SLO_P+ | Yellow |
| 6 | SLO_N- | Green |

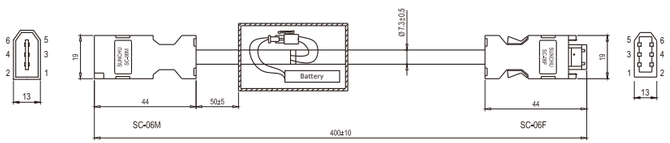
### Motor brake cable

Housing: H66L6-02P
Terminal: T66L6-B

| PIN | Signal | Color |
|---|---|---|
| 1 | BRAKE (+) | Red |
| 2 | BRAKE (-) | Blue |

## ENCDG-(4)-GU-BT

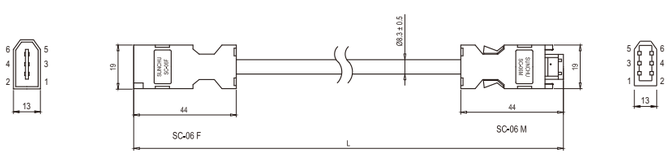
Wire Spec. : 3×2×0.2mm²




| SC-06F | Wire color | Black HSG | External wire | Signal | SC-06 M |
|---|---|---|---|---|---|
| PIN1 | Red | | | +5V | PIN1 |
| PIN2 | Black | | | GND | PIN2 |
| PIN3 | Brown | PIN1 | Red | BAT+ | |
| PIN4 | Blue | PIN2 | Black | BAT- | |
| PIN5 | Yellow | | | SD | PIN5 |
| PIN6 | Green | | | /SD | PIN6 |
| Shell | Shield | | | Shield | Shell |

## ENCDGF-LL-GU

Wire Spec. : Flex UL2661 1P×20AWG+2P×24AWG
20AWG cross sectional area=0.5189mm²

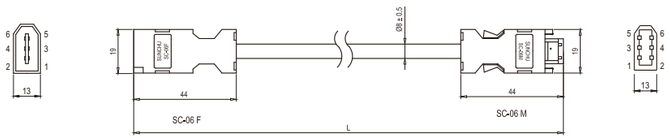



| SC-06 | Color | Signal 1 | Signal 2 |
|---|---|---|---|
| PIN1 | Red | VDD | 5V |
| PIN2 | Black | GND | GND |
| PIN3 | Brown | MA_P+ | BAT+ |
| PIN4 | Blue | MA_N- | BAT- |
| PIN5 | Yellow | SLO_P+ | SD |
| PIN6 | Green | SLO_N- | /SD |
| Shell | Shield wire | Shield | Shield |

Note:
Signal 1 is suitable for SMC Series magnetoelectric encoder motor Signal 2 is suitable for SMS Series motor

## ENCDG-LL-GU

线材规格：UL2661 1P×20AWG+2P×24AWG
20AWG cross sectional area=0.5189mm²
24AWG cross sectional area=0.2047mm²




| SC-06 | Color | Signal 1 | Signal 2 |
|---|---|---|---|
| PIN1 | Red | VDD | 5V |
| PIN2 | Black | GND | GND |
| PIN3 | Brown | MA_P+ | BAT+ |
| PIN4 | Blue | MA_N- | BAT- |
| PIN5 | Yellow | SLO_P+ | SD |
| PIN6 | Green | SLO_N- | /SD |
| Shell | Shield wire | Shield | Shield |

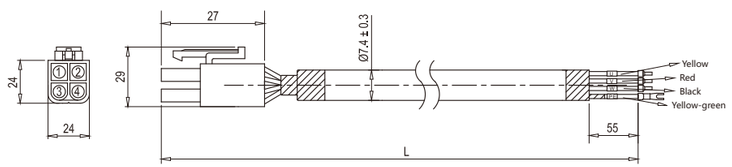
Note:
Signal 1 is suitable for SMC Series magnetoelectric encoder motor Signal 2 is suitable for SMS Series motor





## MOT-005-LL-KL-Y

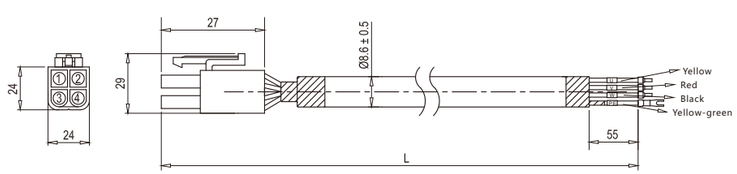
Wire Spec. : UL20328 4C×18AWG(41/0.16T) black
18AWG cross sectional area=0.8107mm²




| Wire color | Signal | HSG Terminal |
|---|---|---|
| Yellow | U | PIN1 |
| Red | V | PIN2 |
| Black | W | PIN3 |
| Yellow-green | PE | PIN4 |

## MOTF-005-LL-KL-Y

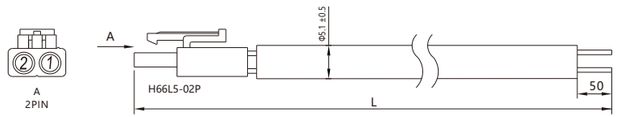
Wire Spec. : UL2661 4C×18AWG(7/18/0.10T) black
18AWG cross sectional area=0.8107mm²




| Wire color | Signal | HSG Terminal |
|---|---|---|
| Yellow | U | PIN1 |
| Red | V | PIN2 |
| Black | W | PIN3 |
| Yellow-green | PE | PIN4 |

## BRA-LL-KL

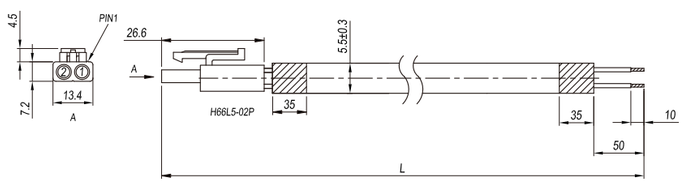
Wire Spec. : UL2464 2C*20AWG
20AWG cross sectional area=0.5189mm²




| Wire color | Signal | 2PIN Terminal |
|---|---|---|
| Red | brake+ | PIN1 |
| Blue | brake- | PIN2 |

## BRAF-LL-KL

Wire Spec. : EKM71373 2*20AWG BLACK
20AWG cross sectional area=0.5189mm²




| Wire color | Signal | 2PIN Terminal |
|---|---|---|
| Red | brake+ | PIN1 |
| Blue | brake- | PIN2 |