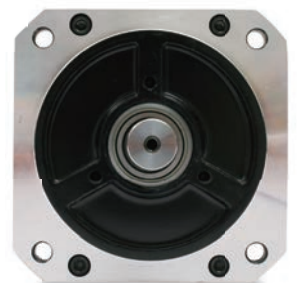




# JSDG2S

# JSDE2

TECO AC Servo System



# JSDG2S series

## High-performance communication servo motor driver

|   |    |
|---|----|
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# JSDE2 series

## Standard servo motor driver

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# JSMA series

## Servo motor series

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## Integrated Automation Solutions Provider

---

TECO has long invested in the automation field. In the last 60 years, the company has continued to improve our automation knowledge from induction motors to different electronic control related products.

### ● Following the automation trend

TECO automation integration solutions for motors, drivers, and controllers matched with human-machine interface. TECO can provide different automation system solutions according to the customer's industry demands and applications. TECO professional electronic control skills and rich industry application experience can be used to continuously provide customers with high speed and precise automation products.

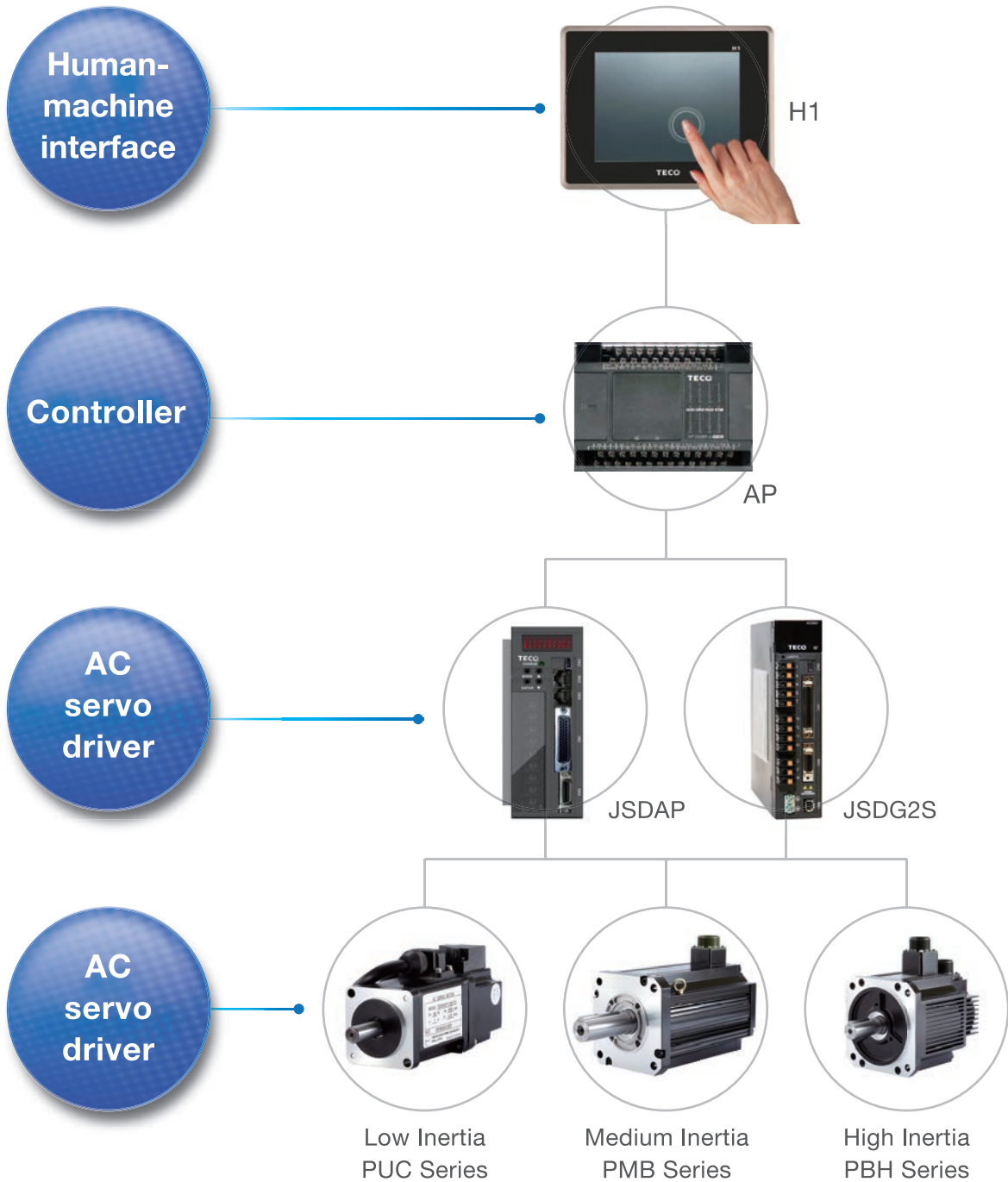
### ● Second generation – S

TECO is introducing the second generation servo product JSDG2S. G2 (Generation II) refers to brand new products produced using TECO's market experience integrated with newly developed technology.

The "S" refers to servo characteristics brought to you by TECO. First, the brand new "slim" design clearly shows TECO's technological capabilities. "Stable" demonstrates that TECO servos are precise yet stable. "Suitable" states that TECO's brand new auto-tuning capability can be applied to different types of machines, and can make suitable adjustments.



TECO is a provider of electronic control solutions. We can link multiple types of electronic control products, from base-level equipment up to the control level equipment. We provide systematic solution strategies to satisfy customers' different market application needs.



# JSDG2S Features

1.5 KHz

## High response bandwidth

1.8 times that of the previous generation

- Utilize high-end magnetic field control technology.
- Matched with high-speed computing core component.
- Shorten the arrival setting time.
- Improve the production capability of equipment and machines.

23bit

## High-resolution encoder

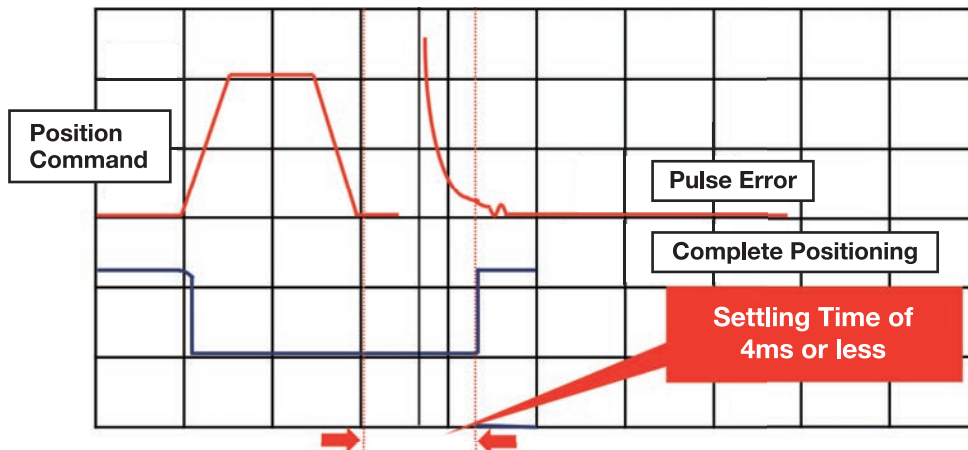
10,000 times that of the previous generation

- 8,388,608 pulse/rev high resolution.
- Can be matched with incremental/absolute encoder.
- Provide machines and equipment with more precise positioning.



### G2S high response characteristic can significantly reduce setup time.

\*When this data condition uses JSDG2S-15A to match with JSMA-PUC04A3K, and the load inertia ratio is double

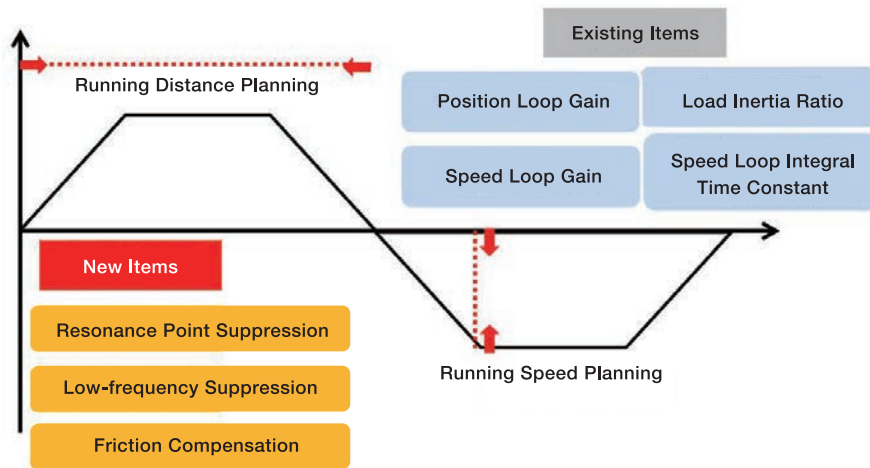


- G2S high response characteristic can significantly reduce setup time.

**Automatically adjusts the gain**

**More detailed auto-tuning**

In addition to the original normal gain parameters, G2S also has other added adjustment functions so that customers can make more precise adjustments for different applications and requirements. The simple PCLiNK interface can be used to complete setting and adjustments.



**Resonance Suppression**

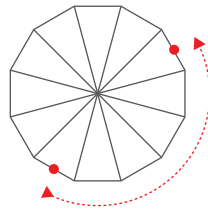
- ◆ Solved the resonance frequency of the machine mechanism so that it runs smoothly.
- ◆ A total of eight high- and low-frequency resonance suppression points for multi-point setting according to machine requirements.



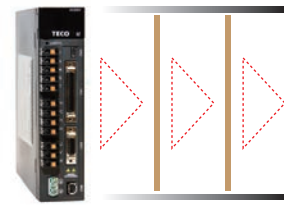
The high frequency setting is 0-2000Hz with a total of five sets.  
The low frequency setting is 0-200Hz with a total of three sets.

**Multiple application function**

In addition to the three major modes (position/speed/torque), other additional application functions such as E-cam, torrent magazine, and gantry simultaneous movement are also provided. The hardware also provides input interface with a fully closed loop (supports optical ruler) to improve the applicability of the driver.



The torrent magazine has built-in smart tool change. The shortest path to achieve the maximum benefit.



Double-axle gantrysimultaneous control. Controls the horizontal movement of rigid mechanisms.

**High-speed communication function**

**Realize multiple axle application high-speed communication**

- ✓ Realize high-speed communication
- ✓ Reduce machine wiring
- ✓ Realize multiple axle

Match with CANopen (standard)/EtherCAT (optional) high-speed communication function to realize multiple axle high-speed application. Connect with IoT to instantly and rapidly transmit data. Taking the first step towards becoming a smart factory.



**Miniaturization design**

Miniaturize machine types below 1KW to reduce the size required for the electronic control box and to demonstrate advancements in product design.



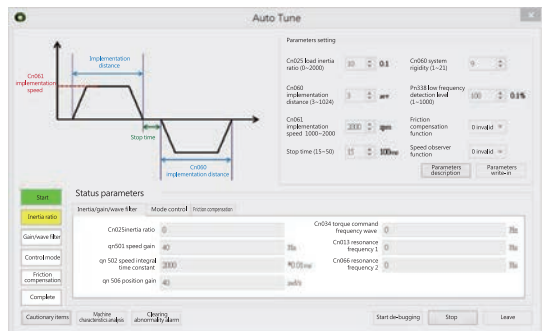
**7%**

**33%**

**Specialized convenient software**

**Show parameter functions as menu selections/oscilloscope function**

Brand new specialized software that makes it easy for customers to set up and to backup Parameters.



# Model Description

## Servo Driver

**JS D G2S - 15 A □**

TECO AC Servo Product Number

Driver

Series: G2S series

input Voltage:  
 A: AC 200V Single-/Three-phase Common  
 A3: AC 200V Three-phase Common  
 B: AC 400V three phase input

Optional model (communications)  
 E: EtherCAT communications

Model (power):

| 200V Model (A) | 400V Model (B) |
|----------------|----------------|
| 10             | 100W           |
| 15             | 400W           |
| 20             | 750W           |
| 30             | 1KW            |
| 50             | 2KW            |
| 75             | 3KW            |
| 100            | 4.4KW          |
| 150            | 5.5KW          |
| 200            | 7.5KW          |
| 300            | 15KW           |

## Servo Motor

**JSMA - PUC04A3 □ □**

TECO AC Servo Product Number

Servo Motor

A Series

IP67 Rating

Motor Speed  
 A : 1000rpm  
 H : 1500rpm  
 B : 2000rpm  
 C : 3000rpm

Motor Speed  
 A : AC 200V  
 B : AC 400V

Encode Specifications  
 3 : 23bit  
 W : 23bit\*  
 \*ABS

Mechanical Brake: No  
 B: Yes

Motor Inertia

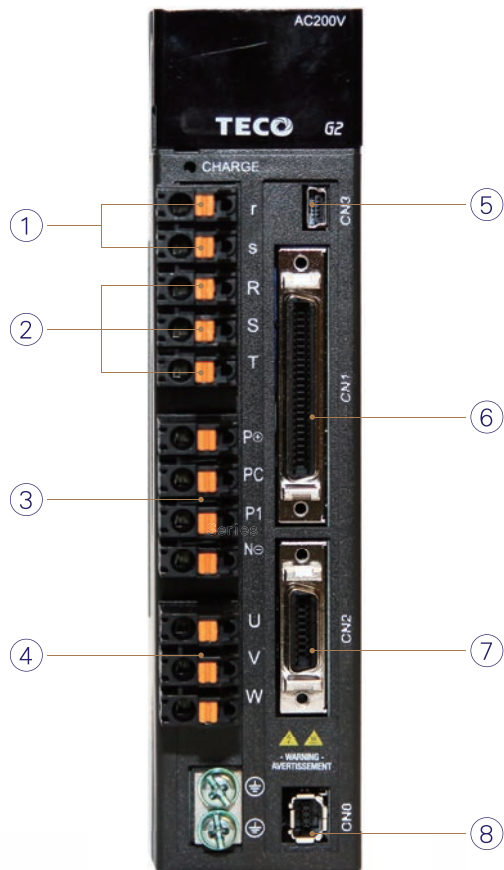
Motor Rated Power

| Motor Rated Power | Motor Inertia |
|-------------------|---------------|
| □                 | No No         |
| K                 | Yes No        |
| O                 | No Yes        |
| A                 | Yes Yes       |

| Motor Inertia          | Motor Rated Power        |
|------------------------|--------------------------|
| S/U: Ultra Low Inertia | P5 50W 10 1KW 44 4.4KW   |
| L: Low Inertia         | 1 100W 13 1.3KW 55 5.5KW |
| M/I: Medium Inertia    | 3 300W 15 1.5KW 75 7.5KW |
| B/H: High Inerti       | 4 400W 18 1.8KW 110 11KW |
|                        | 5 500W 20 2.0KW 150 15KW |
|                        | 8 750W 29 2.9KW          |
|                        | 9 850W 30 3.0KW          |

| Key slot | Oil seal |
|----------|----------|
| □        | No No    |
| K        | Yes No   |
| O        | No Yes   |
| A        | Yes Yes  |

## Driver Interface Description



### ① Circuit Input Power ( r, s )

r and s are the control loop for the driver. The input specification is single-phase 200 – 230Vac with a frequency of 50/60 Hz.

### ② Main Circuit Input Power ( R, S, T )

50W-1KW: Single-/Three-phase AC200-230V  
1.5KW-15KW: Three-phase AC200-230V

### ③ External Brake Resistor Connector

Fitted to P-PC ends when use. Keep the PC - P1 end open.

### ④ Servo Motor Output Power

Connect to servo motor U, V, W connectors to provide power connection.

### ⑤ Software Operation Interface ( CN3 )

Connect to a computer using a USB port. Used in conjunction with TECO servo PC software.

### ⑥ I/O Signal Connector ( CN1 )

Connect to external signals. It can be used in conjunction with a TECO terminal block module or TECO controller AP PLC.

### ⑦ I/O Signal Connector ( CN1 )

Connect the servo motor signal to the driver.

### ⑧ Fully enclosed loop connection ( CN8 )

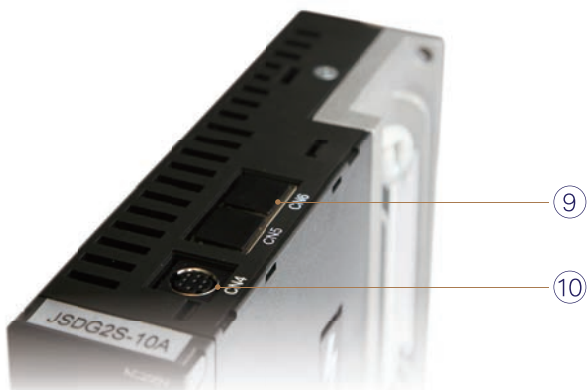


### ⑨ RJ45 communication interface ( CN5/CN6 )

Supports RS-485/CANopen/EtherCAT communication for multiple driver link and use.

### ⑩ Communication Port ( CN4 )

MODBUS communication port.

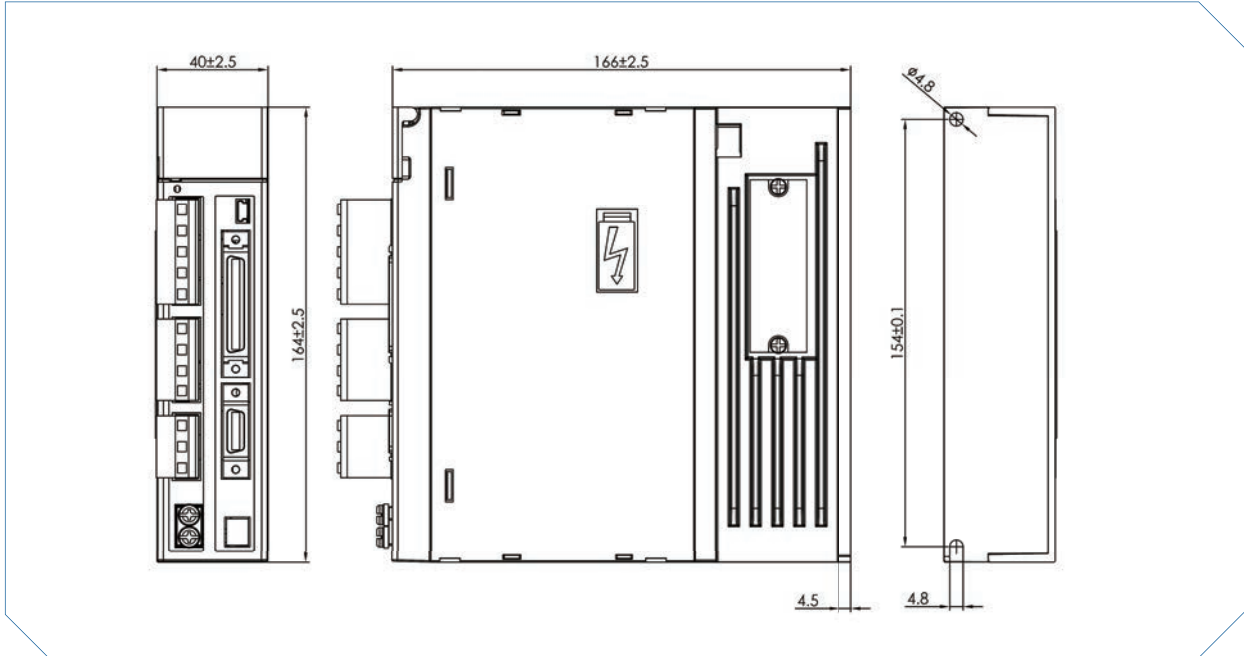


# Servo Driver Specifications

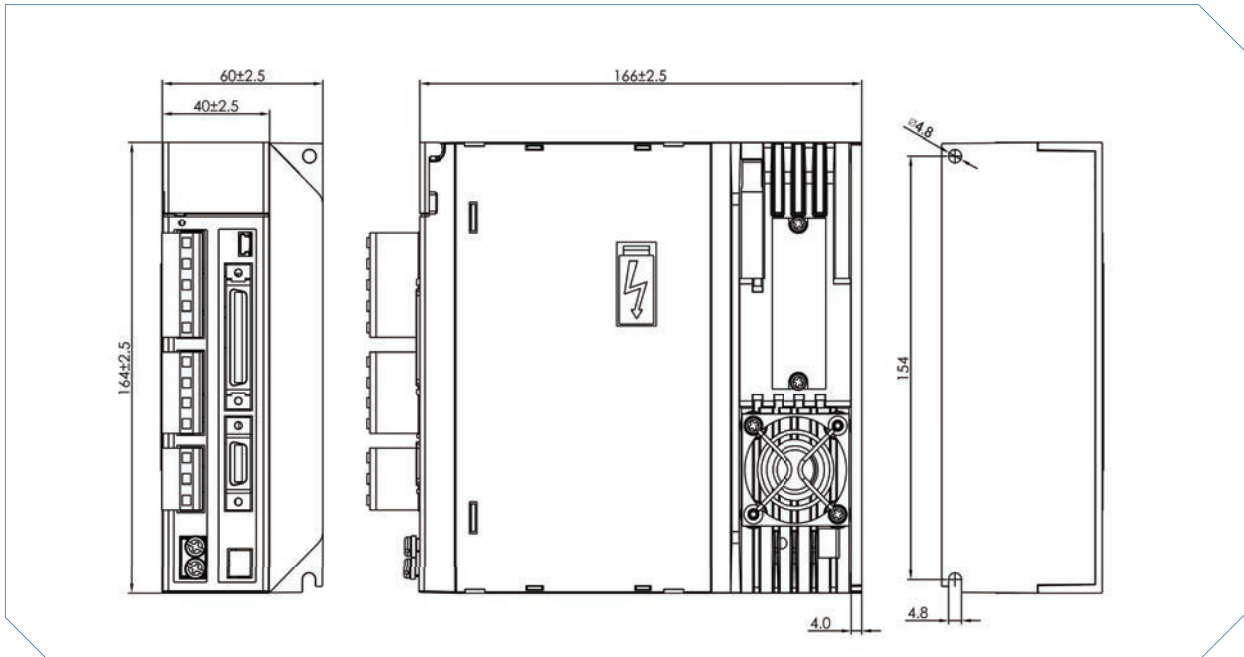
|                       | Servo Driver Model<br>JSDG2S-□□□□  | 200V Class  |     |      |     |      |                                 |       |       |       |   |  |
|-----------------------|--|---|-----|------|-----|------|---------------------------------|-------|-------|-------|---|--|
|                       |  | 10A   | 15A | 20A  | 30A | 50A3 | 75A3                            | 100A3 | 150A3 | 200A3 | 300A3   |  |
| Basic Specifications  | The maximum capacity [KW] of servo motors that this driver is suitable for | 0.1   | 0.4 | 0.75 | 1.0 | 2.0  | 3.0                             | 4.4   | 5.5   | 7.5   | 15.0  |  |
|                       | Continuous Output Current [Arms]   | 2.1   | 3.5 | 4.4  | 5.6 | 9.2  | 14                              | 25.3  | 33.2  | 42.1  | 78  |  |
|                       | Maximum Output Current [Arms]  | 5.7   | 8.5 | 11.3 | 17  | 28.3 | 42.4                            | 56.6  | 84.9  | 113   | 170   |  |
|                       | Input Power  | Main Circuit R, S, T  |     |      |     |      | Single- /Three-phase AC170-253V |       |       |       |   |  |
|                       | Control Method   | Natural Cooling   |     |      |     |      | Fan Cooling                     |       |       |       |   |  |
| Features              | Feedback [encoder resolution]  | Three-phase Full-wave Rectification IGBT PWM Control (sinusoidal current drive)   |     |      |     |      |                                 |       |       |       |   |  |
|                       | Display and Operation  | 23 bits (incremental/absolute type)   |     |      |     |      |                                 |       |       |       |   |  |
|                       | Control Mode   | Main/control loop power source indication light; five position, seven section indicator; four function operating key  |     |      |     |      |                                 |       |       |       |   |  |
|                       | Regenerative Brake   | Position (external pulse command) , position (internal position command) , speed, torque and dual mode switching (position/speed, speed/torque, position/torque)  |     |      |     |      |                                 |       |       |       | Built-in brake transistor and external brake resistor |  |
|                       | Protection   | Multiple abnormality alarm warning  |     |      |     |      |                                 |       |       |       |   |  |
| Position Control Mode | Communication Interface  | RS-485 (Modbus protocol) /CANopen (standard) /EtherCAT (optional)   |     |      |     |      |                                 |       |       |       |   |  |
|                       | Command Control Method   | External command pulse command/32 internal register commands  |     |      |     |      |                                 |       |       |       |   |  |
|                       | External Command   | Positive and Negative Edge Trigger : direction + pulse, CCW + CW pulse, phase difference pulse (phase A + phase B)  |     |      |     |      |                                 |       |       |       |   |  |
|                       | Pulse Input  | Existing driver (Line Driver + 5V positioning) , open collector (+ 5~ + 24V)  |     |      |     |      |                                 |       |       |       |   |  |
|                       | Waveform   | 4Mpps (line driver) /200Kpps (open collector)   |     |      |     |      |                                 |       |       |       |   |  |
|                       | Maximum Frequency  | 1 / 1000 ≤ electric gear ratio ≤ 4000   |     |      |     |      |                                 |       |       |       |   |  |
|                       | Electronic Gear Ratio  | Smoothing Time Constant : 0-10 seconds  |     |      |     |      |                                 |       |       |       |   |  |
|                       | Command Smoothing Method   | 0 ~ 50000 pulse   |     |      |     |      |                                 |       |       |       |   |  |
| Speed Control Mode    | Positioning Completion Judgment  | 0 ~ 100%  |     |      |     |      |                                 |       |       |       |   |  |
|                       | Feedforward Gain Compensation  | Internal Parameter Setting  |     |      |     |      |                                 |       |       |       |   |  |
|                       | Origin Return Function   | External Analog Command/Three-step Internal Speed Command   |     |      |     |      |                                 |       |       |       |   |  |
|                       | Command Control Method   | 0 - ±10Vdc/0-6000rpm (internal parameter setting)   |     |      |     |      |                                 |       |       |       |   |  |
|                       | External Command   | 10KΩ  |     |      |     |      |                                 |       |       |       |   |  |
|                       | Pulse Input  | 1 : 5000  |     |      |     |      |                                 |       |       |       |   |  |
|                       | Speed Control Range  | Load Fluctuation : 0-100% ±0.03% or less (at rated speed)   |     |      |     |      |                                 |       |       |       |   |  |
|                       | Speed Fluctuation  | Voltage Fluctuation : ±10% ±0.2% or less (at rated speed)   |     |      |     |      |                                 |       |       |       |   |  |
|                       | Temperature Fluctuation  | Temperature Fluctuation : 0-50°C ±0.5% or less (at rated speed)   |     |      |     |      |                                 |       |       |       |   |  |
|                       | Command Smoothing Method   | Linear Time Constant : 0-50 seconds ; S-shape Time Constant : 0-5 seconds ; Smoothing Time Constant : 0-10 seconds  |     |      |     |      |                                 |       |       |       |   |  |
| Torque Control Mode   | Frequency characteristic   | 1.5KHz (JL=JM)  |     |      |     |      |                                 |       |       |       |   |  |
|                       | Torque Limit   | External Analog Command/Internal Parameter Setting  |     |      |     |      |                                 |       |       |       |   |  |
|                       | Zero-speed Judgment/Speed Arrival Judgment                                 | 0-4500rpm (internal parameter setting)  |     |      |     |      |                                 |       |       |       |   |  |
|                       | Command Control Method   | External Analog Command/Internal Torque Command   |     |      |     |      |                                 |       |       |       |   |  |
|                       | External Analog Command  | 0 ~ ±10Vdc / 0 ~ 300%   |     |      |     |      |                                 |       |       |       |   |  |
|                       | Input Impedance  | 10KΩ  |     |      |     |      |                                 |       |       |       |   |  |
| Input/Output Signal   | Command Smoothing Method   | Linear Time Constant : 0-50 seconds ; Smoothing Time Constant : 0-10 seconds  |     |      |     |      |                                 |       |       |       |   |  |
|                       | Speed Limit  | External Analog Command/Internal Parameter Setting  |     |      |     |      |                                 |       |       |       |   |  |
|                       | Torque Arrival Judgment  | 0 - 300% (internal parameter setting)   |     |      |     |      |                                 |       |       |       |   |  |
|                       | Position Output  | Phase A, B, Z line drive output/phase Z open collector output   |     |      |     |      |                                 |       |       |       |   |  |
|                       | Digital input [NPN / PNP]  | Pulse output 1 - encoder pulses per revolution (Any position can be set using internal parameters)  |     |      |     |      |                                 |       |       |       |   |  |
| Input/Output Signal   | Digital output [Photocoupler]  | 12 points that can be planned at any time   |     |      |     |      |                                 |       |       |       |   |  |
|                       | Digital output [Photocoupler]  | Servo start, error alarm clear, P/PI switching, CCW/CW direction drive prohibition, external torque limit, pulse error removal, servo lock, emergency stop, internal speed command selection, control mode switching, position command prohibition, gain switching, electronic gear ratio numerator selection, internal position command trigger, internal position command pause, return to origin, external reference origin, internal position command selection |     |      |     |      |                                 |       |       |       |   |  |
|                       | Analog monitor output  | The fixed output contact function varies under different circumstances as described below.<br>[No alarm, no-magazine mode] : limited torque/in P action/drive prohibited/Base Block<br>[No alarm, magazine mode] : tool handle position 1/tool handle position 2/tool handle position 3/tool handle position 4<br>[When alarm occurs] : abnormality alarm code 0/abnormality alarm code 1/abnormality alarm code 2/abnormality alarm code 3                         |     |      |     |      |                                 |       |       |       |   |  |
| Environment           | Location   | Indoors (avoid direct sunlight) , Non-corrosive Mist (avoid fumes, flammable gases and dust)  |     |      |     |      |                                 |       |       |       |   |  |
|                       | Altitude   | Up to 1000M   |     |      |     |      |                                 |       |       |       |   |  |
|                       | Temperature  | Operating Temperature : 0 - 50°C ; Storage Temperature : -20 - +65°C  |     |      |     |      |                                 |       |       |       |   |  |
|                       | Humidity   | Up to 90%RH (non-condensing)  |     |      |     |      |                                 |       |       |       |   |  |
|                       | Vibration  | 10 ~ 57Hz : 20m/s <sup>2</sup> ; 57Hz ~ 150Hz : 2G  |     |      |     |      |                                 |       |       |       |   |  |
| Safety regulation     | CE Declaration   | In compliance with EN61800-3 and EN61800-5-1  |     |      |     |      |                                 |       |       |       |   |  |
|                       | UL Certification   | UL508C  |     |      |     |      |                                 |       |       |       |   |  |

## Servo Driver Dimensions

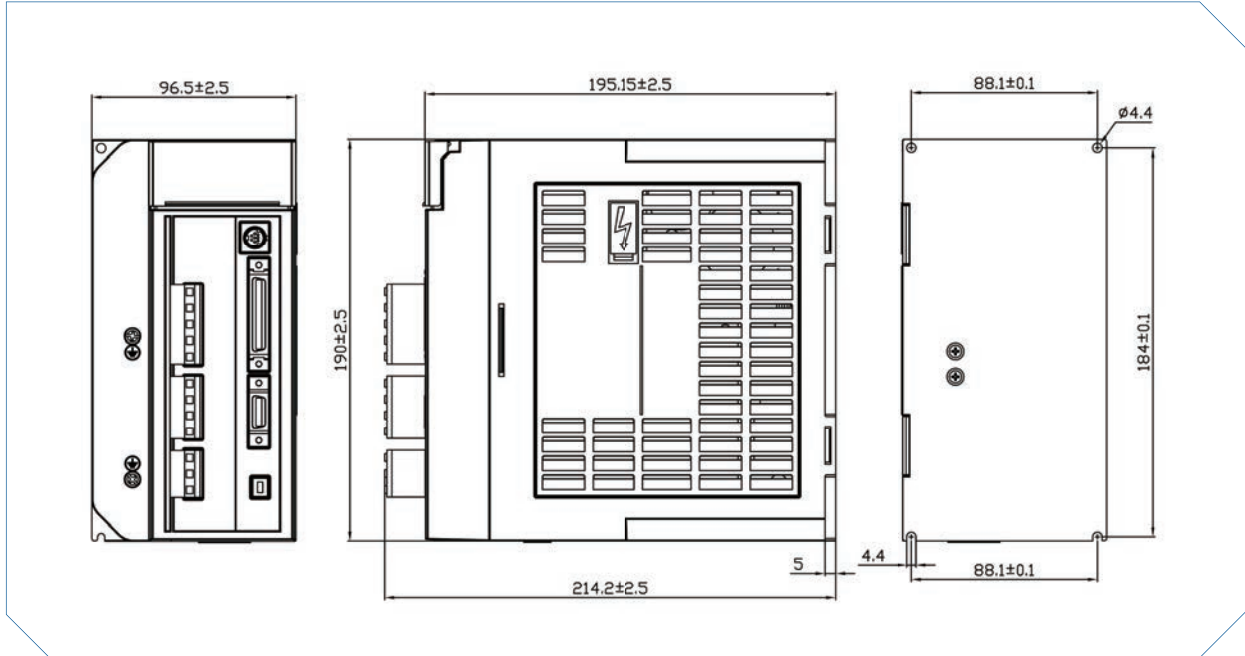
**JSDG2S - 10A / JSDG2S - 15A** | Weight 1.36 Kg



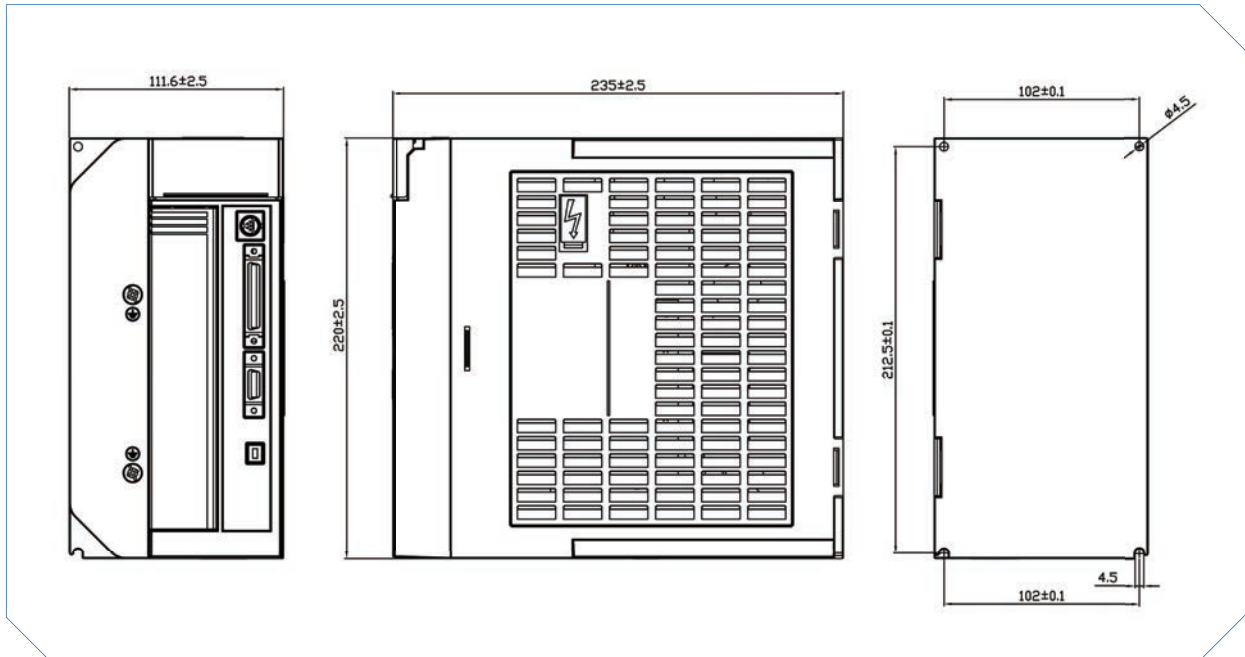
**JSDG2S - 20A / JSDG2S - 30A** | Weight 1.54 Kg



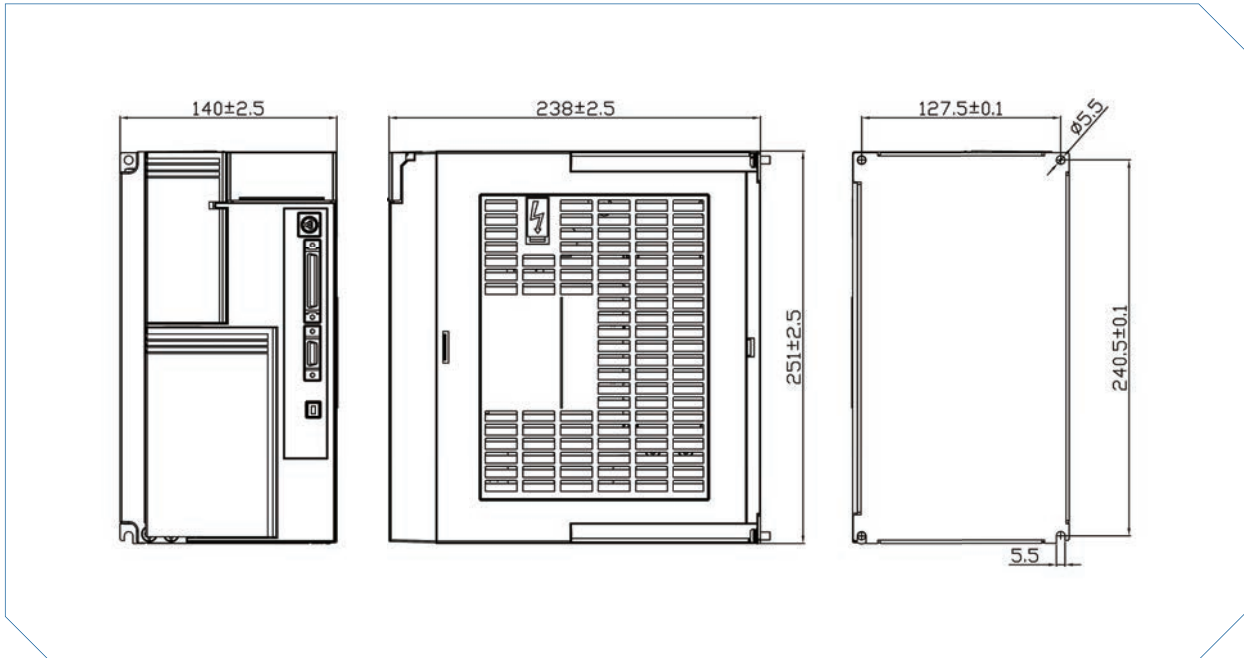
**JSDG2S-50A3 / JSDG2S-75A3** | Weight 3.3Kg



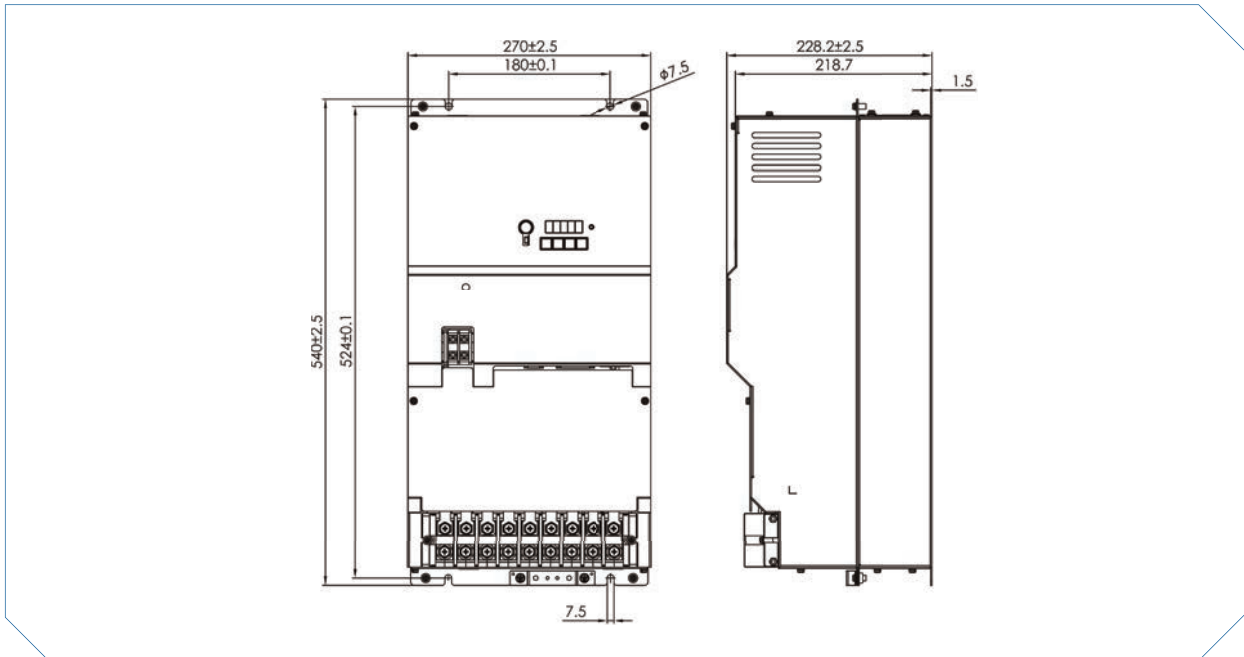
**JSDG2S-100A3 / JSDG2S-150A3** | Weight 6Kg



**JSDG2S-200A3** | Weight 8 Kg



**JSDG2S-300A3** | Weight 21Kg

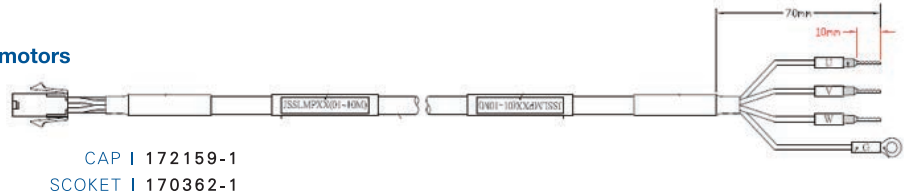


# Motor Power Trunk

## Motor Power Trunk

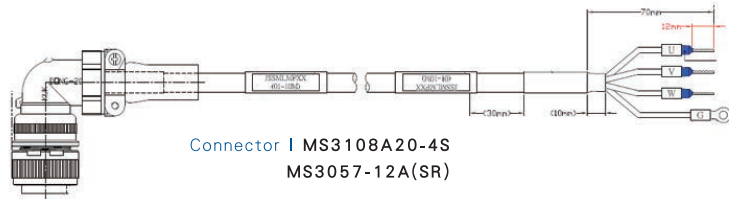
Matched with UC/BC/LC series motors

| No.       | Length (m) |
|-----------|------------|
| JSSLMP001 | 1          |
| JSSLMP003 | 3          |
| JSSLMP005 | 5          |
| JSSLMP010 | 10         |



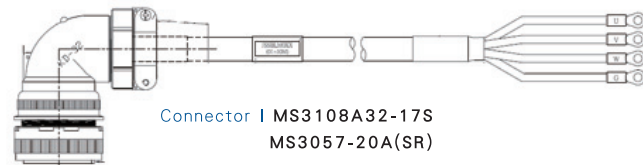
Matched with MB/BH09/BH13/BH18 series motors

| No.       | Length (m) |
|-----------|------------|
| JSSMLP001 | 1          |
| JSSMLP003 | 3          |
| JSSMLP005 | 5          |
| JSSMLP010 | 10         |



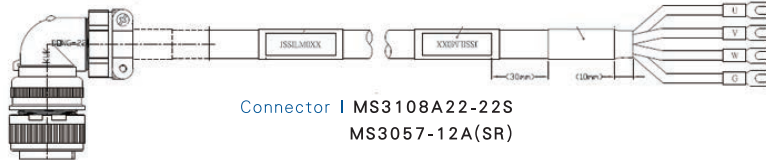
Matched with IH44/IH55/IH75/BH44/BH55 series motors

| No.       | Length (m) |
|-----------|------------|
| JSSBLM001 | 1          |
| JSSBLM001 | 3          |
| JSSBLM001 | 5          |
| JSSBLM001 | 10         |



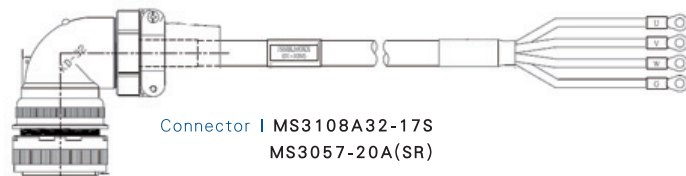
Matched with BH18 - 18/BH29 series motors

| No.       | Length (m) |
|-----------|------------|
| JSSILM001 | 1          |
| JSSILM001 | 3          |
| JSSILM001 | 5          |
| JSSILM001 | 10         |

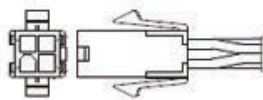


Matched with IH110/IH150/BH75 series motors

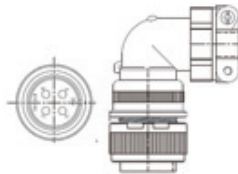
| No.       | Length (m) |
|-----------|------------|
| JSSFLM001 | 1          |
| JSSFLM001 | 3          |
| JSSFLM001 | 5          |
| JSSFLM001 | 10         |



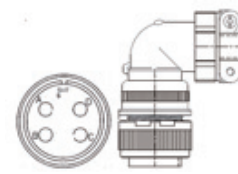
## Encoder Connector



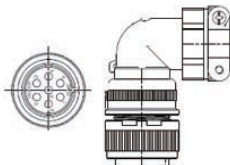
**JSSCNM04**  
CAP 172159-1 SCOKET 170362-1



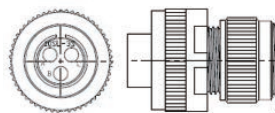
**JSSCNML04**  
Connector MS3108A20-4S MS3057-12A(SR)



**JSSCNBL04**  
Connector MS3108A32-17S MS3057-20A(SR)



**JSSCNML07** (with brake contact)  
Connector MS310820-15S MS3057-12A(SR)



**JSSCNBL03** (brake contact)  
Connector MS3106A10SL-3S MS3057-4A(SR)

### Encoder Trunk

Matched with UC/BC/LC series motors

| No.      | Length (m) |
|----------|------------|
| JSSLG001 | 1          |
| JSSLG003 | 3          |
| JSSLG005 | 5          |
| JSSLG010 | 10         |

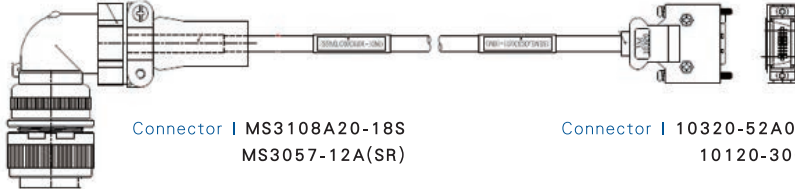


Connector | 172161-1  
Terminal | 170361-1

Connector | 10320-52A0-008  
10120-3000PE

Matched with MB/IH/BH series motors

| No.       | Length (m) |
|-----------|------------|
| JSSMLG001 | 1          |
| JSSMLG003 | 3          |
| JSSMLG005 | 5          |
| JSSMLG010 | 10         |



Connector | MS3108A20-18S  
MS3057-12A(SR)

Connector | 10320-52A0-008  
10120-3000PE

### Encoder Trunk ( with absolute encoder )

Matched with UC/BC/LC series motors

| No.      | Length (m) |
|----------|------------|
| JSSLB001 | 1          |
| JSSLB003 | 3          |
| JSSLB005 | 5          |
| JSSLB010 | 10         |

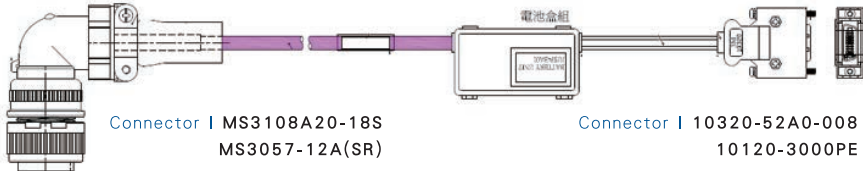


Connector | 172161-1  
Terminal | 170361-1

Connector | 10320-52A0-008  
10120-3000PE

Matched with MB/IH/BH series motors

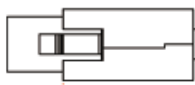
| No.       | Length (m) |
|-----------|------------|
| JSSMLB001 | 1          |
| JSSMLB003 | 3          |
| JSSMLB005 | 5          |
| JSSMLB010 | 10         |



Connector | MS3108A20-18S  
MS3057-12A(SR)

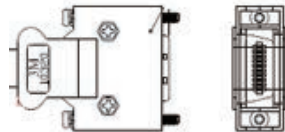
Connector | 10320-52A0-008  
10120-3000PE

### Encoder Connector



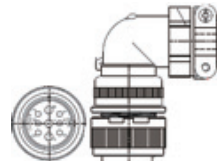
#### JSSCNP09

Connector 172161-1  
Terminal 170361-1



#### JSSCN20P

Connector MS3108A20-18S  
MS3057-12A(SR)

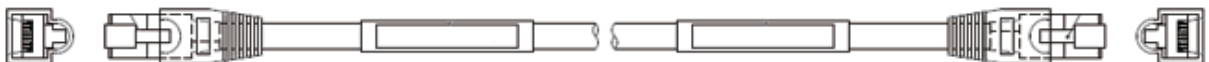


#### JSSCNPL09

Connector 10320-52A0-008  
10120-3000PE

### CANopen/EtherCAT communication wire

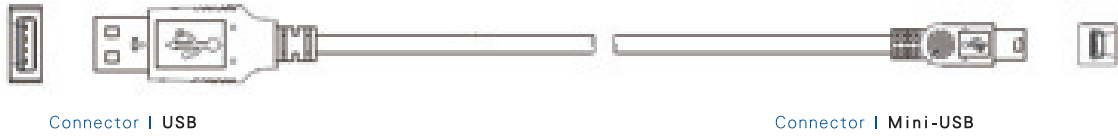
| No.        | Length (m) | No.        | Length (m) |
|------------|------------|------------|------------|
| JSSRTR0001 | 0.1        | JSSRTR0020 | 2          |
| JSSRTR0003 | 0.3        | JSSRTR0030 | 3          |
| JSSRTR0005 | 0.5        | JSSRTR0040 | 4          |
| JSSRTR0010 | 1          | JSSRTR0050 | 5          |



Connector | RJ-45

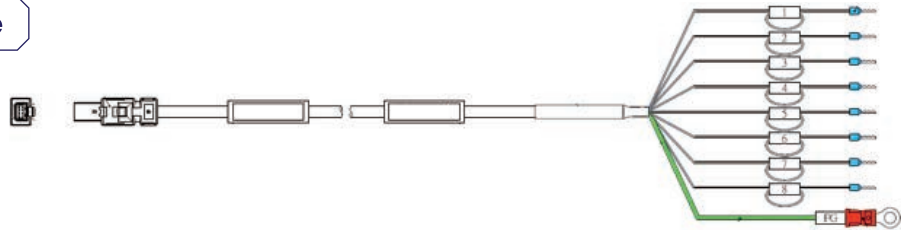
### Computer Communication Cable

| No.       | Length (m) |
|-----------|------------|
| JSSDUC001 | 1          |
| JSSDUC002 | 2          |



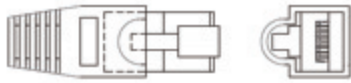
### Fully closed loop wire

| No.       | Length (m) |
|-----------|------------|
| JSSFCL001 | 1          |
| JSSFCL003 | 3          |
| JSSFCL005 | 5          |
| JSSFCL010 | 10         |



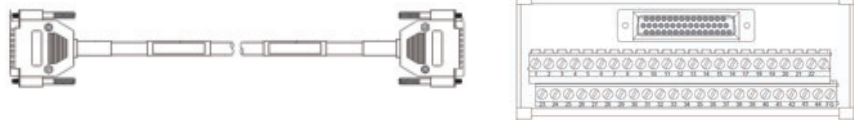
### Terminal Resistor ( RS485/ CANopen )

| No.     |
|---------|
| JSSTR01 |



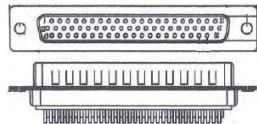
### Terminal Block Module

| No.       | Length (m) |
|-----------|------------|
| JSSCN50P  | --         |
| JSSTBC0P5 | 0.5        |
| JSSTBC001 | 1          |
| JSSTBC002 | 2          |



### CN1 Connector

| No.      |
|----------|
| JSSCN50P |



## Commonly Used Servo System Combinations

| Motor Series  | Capacity (W) | Motor Model | Matched with Driver | CN1 Connector | Incremental Encoder Cable | Absolute Encoder Cable | 3m Power Cord |
|---|--------------|-------------|---------------------|---------------|---------------------------|------------------------|---------------|
| <b>PUC Series</b><br>Super low inertia<br>Small Capacity<br>3000rpm | 50W          | PUCP5A3K    | JSDG2S-10A          | JSSCN50P      | JSSLG003                  | JSSLB003               | JSSLMP003     |
|   | 100W         | PUC01A3K    | JSDG2S-10A          | JSSCN50P      | JSSLG003                  | JSSLB003               | JSSLMP003     |
|   | 200W         | PUC02A3K    | JSDG2S-15A          | JSSCN50P      | JSSLG003                  | JSSLB003               | JSSLMP003     |
|   | 400W         | PUC04A3K    | JSDG2S-15A          | JSSCN50P      | JSSLG003                  | JSSLB003               | JSSLMP003     |
|   | 750W         | PUC08A3K    | JSDG2S-20A          | JSSCN50P      | JSSLG003                  | JSSLB003               | JSSLMP003     |
| <b>PBC Series</b><br>High Inertia<br>Small Capacity<br>3000rpm      | 100W         | PBC01A3K    | JSDG2S-10A          | JSSCN50P      | JSSLG003                  | JSSLB003               | JSSLMP003     |
|   | 200W         | PBC02A3K    | JSDG2S-10A          | JSSCN50P      | JSSLG003                  | JSSLB003               | JSSLMP003     |
|   | 400W         | PBC04A3K    | JSDG2S-15A          | JSSCN50P      | JSSLG003                  | JSSLB003               | JSSLMP003     |
|   | 750W         | PBC08A3K    | JSDG2S-20A          | JSSCN50P      | JSSLG003                  | JSSLB003               | JSSLMP003     |
| <b>PLC Series</b><br>Low Inertia<br>Small Capacity<br>3000rpm       | 300W         | PLC03A3K    | JSDG2S-15A          | JSSCN50P      | JSSLG003                  | JSSLB003               | JSSLMP003     |
|   | 750W         | PLC08A3K    | JSDG2S-20A          | JSSCN50P      | JSSLG003                  | JSSLB003               | JSSLMP003     |

Note: Motors with brakes below 750W are used in conjunction with the same power cords. For detailed wiring, please refer to the manual.

| Motor Series  | Capacity (KW) | Motor Model        | Matched with Driver | CN1 Connector | Incremental Encoder Cable | Absolute Encoder Cable | 3m Power Cord | Power Cord (including brake) |
|---|---------------|--------------------|---------------------|---------------|---------------------------|------------------------|---------------|------------------------------|
| <b>PMB Series</b><br>Medium Inertia<br>Medium Capacity<br>2000rpm | 1KW           | PMB10A3K           | JSDG2S-30A          | JSSCN50P      | JSSMLG003                 | JSSMLB003              | JSSMLMP003    | JSSCMLMBP003                 |
|   | 1.5KW         | PMB15A3K           | JSDG2S-30A/50A3     | JSSCN50P      | JSSMLG003                 | JSSMLB003              | JSSMLMP003    | JSSCMLMBP003                 |
|   | 2KW           | PMB20A3K           | JSDG2S-50A3         | JSSCN50P      | JSSMLG003                 | JSSMLB003              | JSSMLMP003    | JSSCMLMBP003                 |
|   | 3KW           | PMB30A3K           | JSDG2S-75A3         | JSSCN50P      | JSSMLG003                 | JSSMLB003              | JSSMLMP003    | JSSCMLMBP003                 |
| <b>PBH Series</b><br>High Inertia<br>Medium Capacity<br>1500rpm   | 0.85KW        | BH09               | JSDG2S-30A/50A3     | JSSCN50P      | JSSMLG003                 | JSSMLB003              | JSSMLMP003    | JSSCMLMBP003                 |
|   | 1.3KW         | BH13               | JSDG2S-50A3/75A3    | JSSCN50P      | JSSMLG003                 | JSSMLB003              | JSSMLMP003    | JSSCMLMBP003                 |
|   | 1.8KW         | BH18               | JSDG2S-75A3         | JSSCN50P      | JSSMLG003                 | JSSMLB003              | JSSMLMP003    | JSSCMLMBP003                 |
|   |               | BH18_18            | JSDG2S-75A3/100A3   | JSSCN50P      | JSSMLG003                 | JSSMLB003              | JSSILM003     | JSSCNBL03                    |
|   | 2.9KW         | PBH29              | JSDG2S-100A3        | JSSCN50P      | JSSMLG003                 | JSSMLB003              | JSSILM003     | JSSCNBL03                    |
|   | 4.4KW         | PBH44              | JSDG2S-150A3        | JSSCN50P      | JSSMLG003                 | JSSMLB003              | JSSBLM003     | JSSCNBL03                    |
|   | 5.5KW         | PBH55              | JSDG2S-150A3/200A3  | JSSCN50P      | JSSMLG003                 | JSSMLB003              | JSSBLM003     | JSSCNBL03                    |
| 7.5KW   | PBH75         | JSDG2S-200A3/300A3 | JSSCN50P            | JSSMLG003     | JSSMLB003                 | JSSFLM003              | JSSCNBL03     |                              |
| <b>PIH Series</b><br>Medium Inertia<br>Medium Capacity<br>1500rpm | 3KW           | PIH30A3K           | JSDG2S-75A3         | JSSCN50P      | JSSMLG003                 | JSSMLB003              | JSSBLM003     | JSSCNBL03                    |
|   | 4.4KW         | PIH44              | JSDG2S-100A3        | JSSCN50P      | JSSMLG003                 | JSSMLB003              | JSSBLM003     | JSSCNBL03                    |
|   | 5.5KW         | PIH55              | JSDG2S-150A3        | JSSCN50P      | JSSMLG003                 | JSSMLB003              | JSSBLM003     | JSSCNBL03                    |
|   | 7.5KW         | PIH75              | JSDG2S-200A3/300A3  | JSSCN50P      | JSSMLG003                 | JSSMLB003              | JSSBLM003     | JSSCNBL03                    |
|   | 11KW          | PIH110             | JSDG2S-200A3/300A3  | JSSCN50P      | JSSMLG003                 | JSSMLB003              | JSSFLM003     | JSSCNBL03                    |
|   | 15KW          | PIH150             | JSDG2S-300A3        | JSSCN50P      | JSSMLG003                 | JSSMLB003              | JSSFLM003     | JSSCNBL03                    |

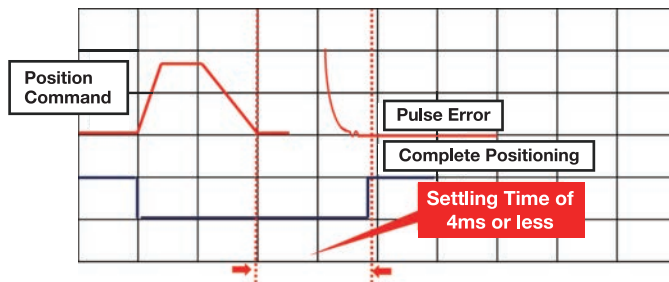
Note: If brake connector is purchased for the RMB/PBH series motor, the drive wire does not need to be purchased.

# JSDE2 Features

## High-speed Responsiveness

Responsiveness  
1.2 KHz

- ◆ Significantly Shorter Settling Time.
- ◆ Quick Response, High Responsiveness and Accurate Positioning.



## Accurate Control and Positioning

Standard Configuration  
23bit

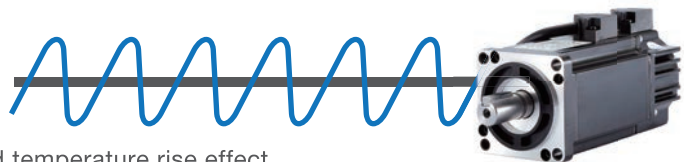
- ◆ Equipped with a standard high resolution 8,388,608 pulse/rev encoder.
- ◆ Incremental/absolute types for different applications.
- ◆ More stable low-speed operation and more precise positioning.
- ◆ Japanese encoder offers quality guarantee.

## Motor Maximum Speed

Maximum Speed  
6,000 rpm

- ◆ Increased from 4,500rpm to 6,000rpm.
- ◆ Improve productivity to meet application requirements.

## Low Cogging Torque



- ◆ Improved motor efficiency and reduced temperature rise effect.
- ◆ Low cogging torque provides stable low-speed operation.

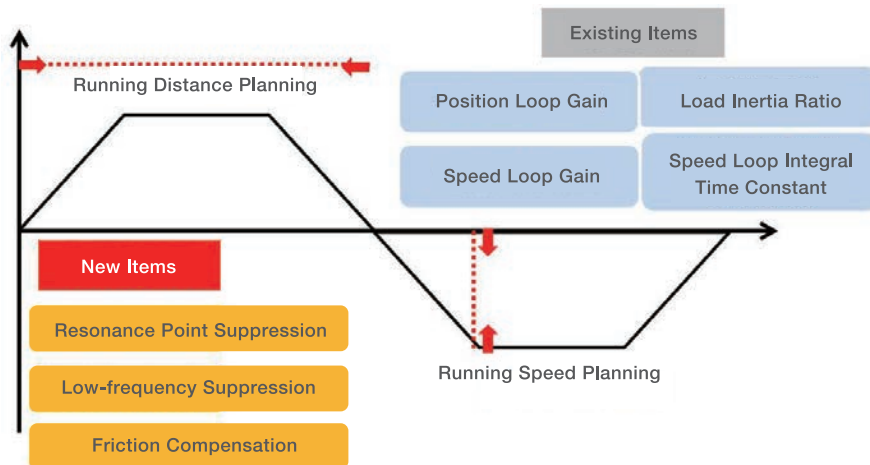
## Motor Miniaturization

- ◆ The new motor series is 7% smaller than previous models. (take 400W for example)



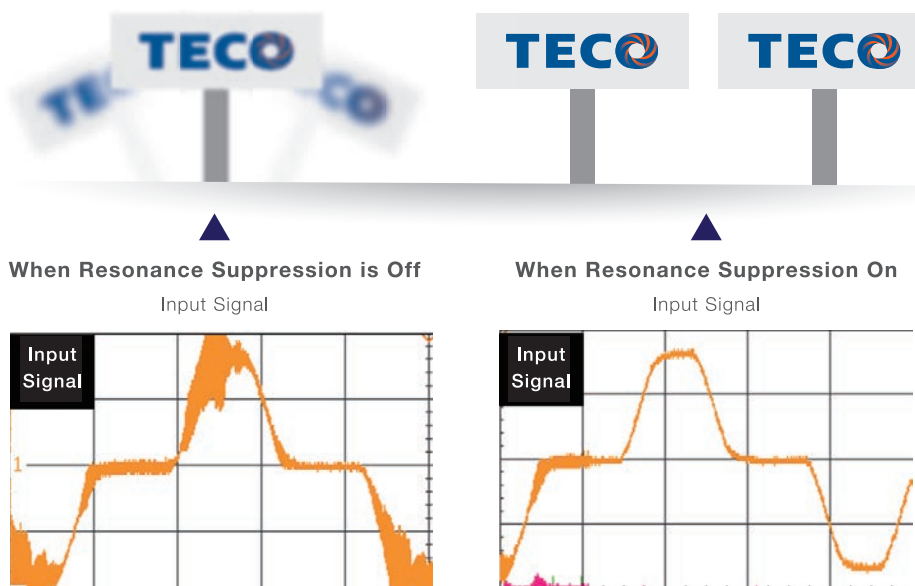
### Auto-Tuning

- ◆ The new auto-tuning algorithm optimizes the equipment.
- ◆ The path selection for tuning can be automatically planned according to machine status.
- ◆ Both panel buttons and PC software support auto-tuning.



### High- and Low-Frequency Resonance Suppression

- ◆ Solved the resonance frequency of the machine mechanism so that it runs smoothly.
- ◆ A total of eight high- and low-frequency resonance suppression points for multi-point setting according to machine requirements.



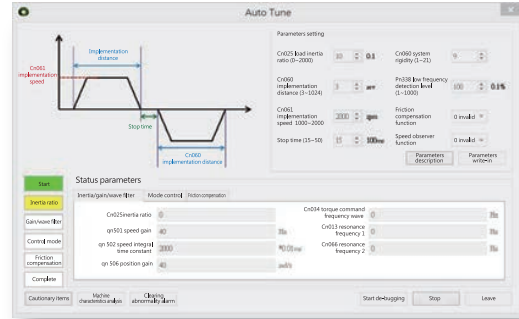
The high frequency setting is 0-2000Hz with a total of five sets.  
 The low frequency setting is 0-200Hz with a total of three sets.

## PC-Software

- ◆ The customers can easily set up, adjust or monitor the machine through the software interface.

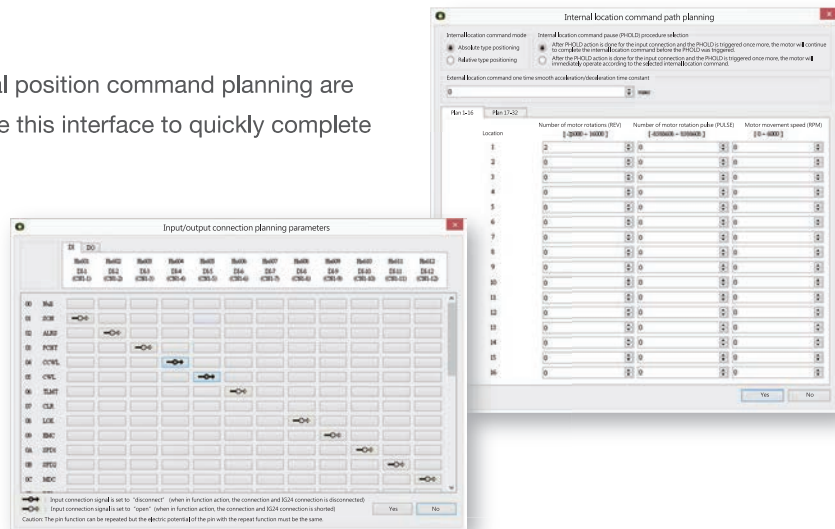
## Adjustment

The customers can configure tuning-related parameters through the PC software. A single standalone interface with tuning status display allows customers to see everything at a glance.



## Planning

I/O function planning and internal position command planning are provided. The customers can use this interface to quickly complete the required function planning.



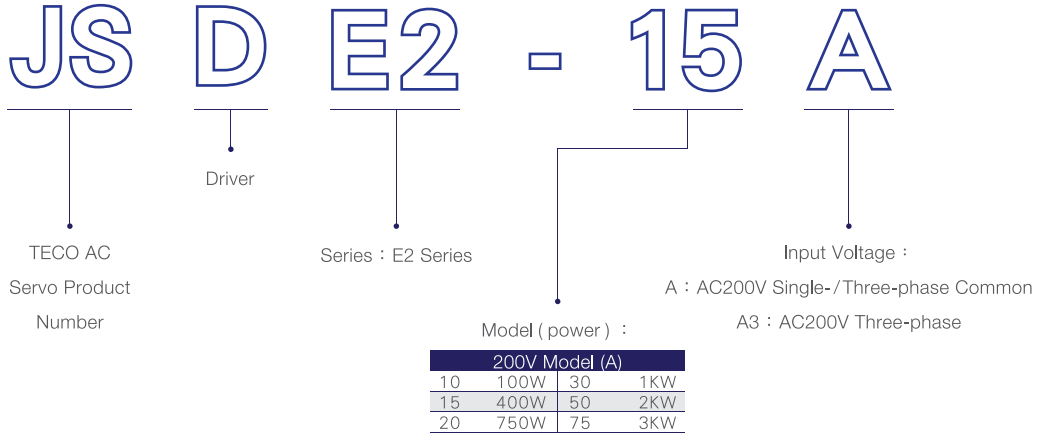
## Monitoring

The 4-channel oscilloscope function allows users to select the content to be monitored according to their needs, as well as its parameter setting status and alarm parameter processing.

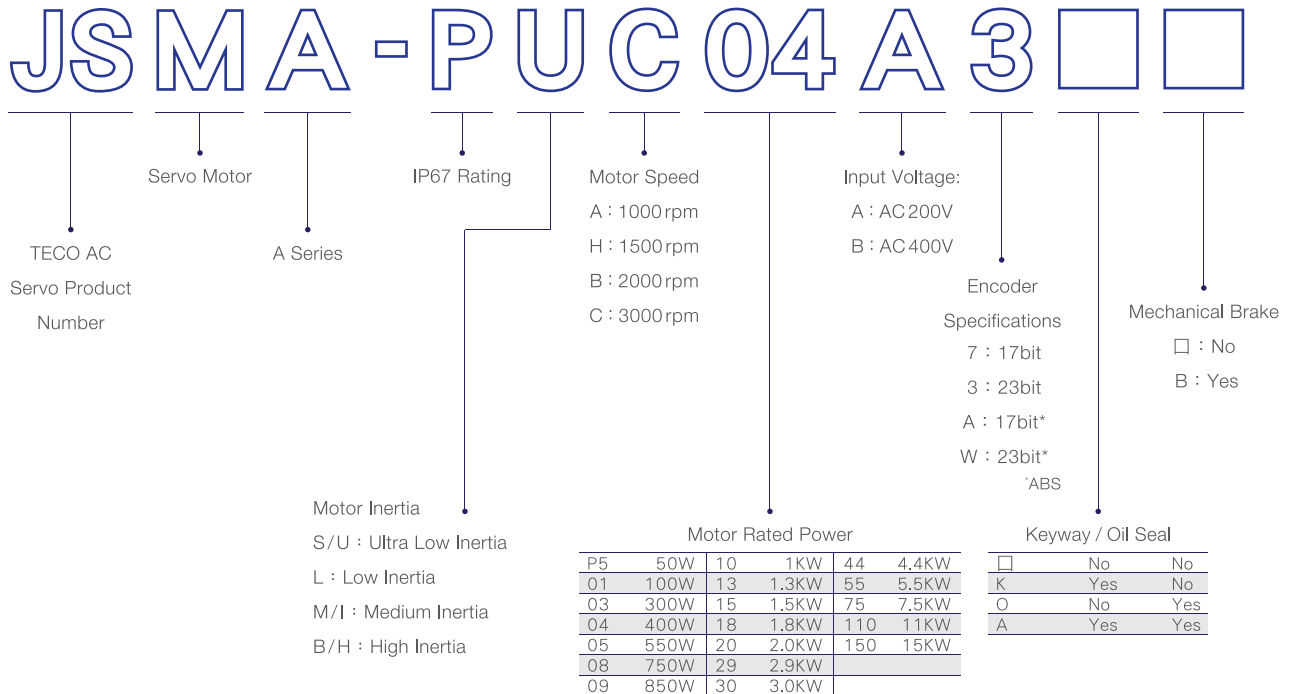


# Model Description

## Servo Driver



## Servo Motor



## Driver Interface Description



### ① Keypad Control Buttons

Used for parameter function setting and adjustment. MODE is used for mode selection, which is adjusted with the up and down arrow keys; ENTER is used for confirmation.

### ② Main Circuit Input Power ( R , S , T )

50W-1KW: Single-/Three-phase AC200-230V.  
1.5KW-3KW: Three-phase AC200-230V.

### ③ External Brake Resistor Connector

Connect to both ends of P-PC.

### ④ Servo Motor Output Power

Connect to servo motor U, V, W connectors to provide power connection.

### ⑤ Software Operation Interface ( CN3 )

Connect to a computer using a USB port. Used in conjunction with TECO servo PC software.

### ⑥ Communication Port ( CN5/6 )

MODBUS communication port.

### ⑦ I/O Signal Connector ( CN1 )

Connect to external signals. It can be used in conjunction with a TECO terminal block module or TECO controller AP PLC.

### ⑧ Encoder Connector ( CN2 )

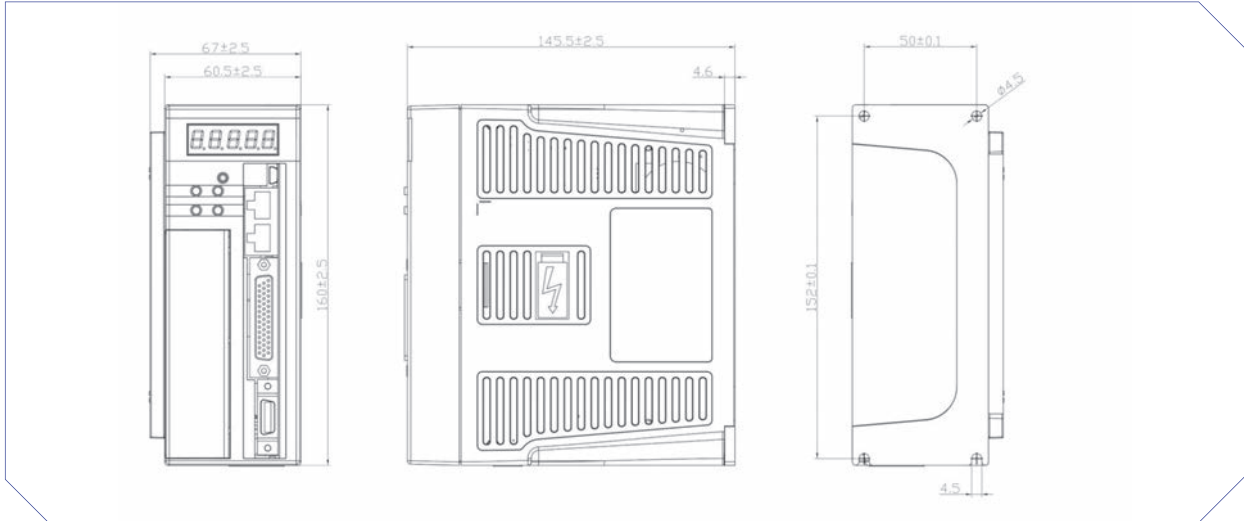
Connect the servo motor signal to the driver.

## Servo Driver Specifications

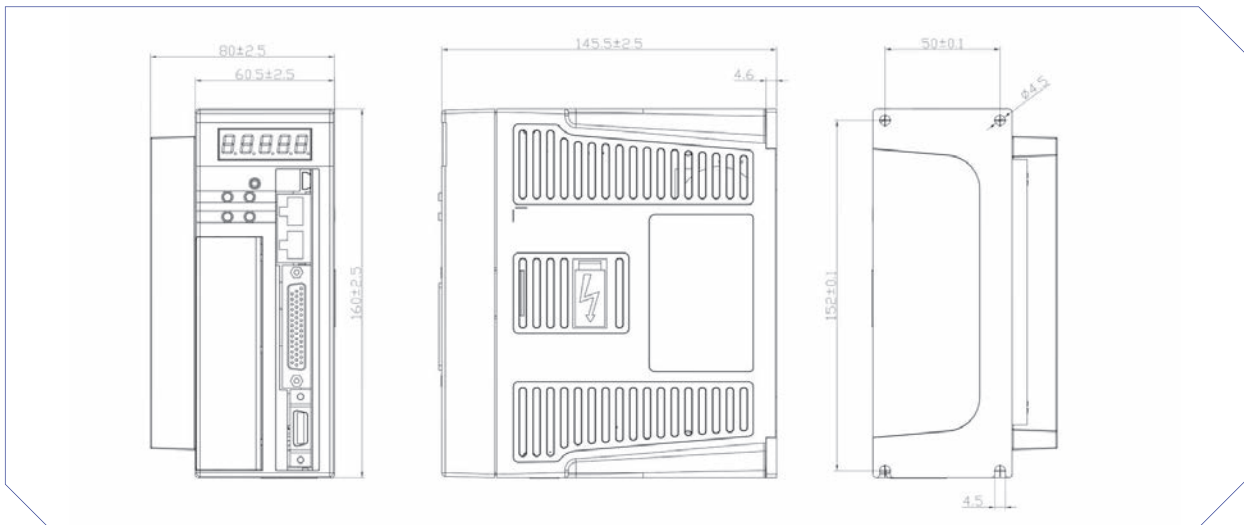
| Servo Driver Model<br>JSDE2-□□□□             |  | 200V Class   |  |             |      |  |      |
|--|--|--|--|-------------|------|--|------|
|  |  | 10A  | 15A  | 20A         | 30A  | 50A3                                     | 75A3 |
| Basic Specifications                         | Servo Motor Capacity [KW]                            | 0.1  | 0.4  | 0.75        | 1.0  | 2.0                                      | 3.0  |
|  | Continuous Output Current [Arms]                     | 0.94   | 2.5  | 4.4         | 5.16 | 9.5                                      | 15.0 |
|  | Maximum Output Current [Arms]                        | 2.82   | 7.5  | 13.2        | 15.5 | 28.5                                     | 42.0 |
|  | Main Circuit R, S, T                                 | Single-phase or Three-phase<br>AC 200 ~ 230V, -15 ~ +10%   |  |             |      | Three-phase<br>AC 200 ~ 230V, -15 ~ +10% |      |
|  | Cooling Method                                       | Natural Cooling  |  | Fan Cooling |      |  |      |
|  | Control Method                                       | Three-phase Full-wave Rectification IGBT PWM Control (sinusoidal current drive)  |  |             |      |  |      |
|  | Encoder Resolution                                   | Communication Encoder : 17bit (INC / ABS) / 23bit (INC / ABS)  |  |             |      |  |      |
| Features                                     | Display and Operation                                | CHARGE Indicator : five-digit seven-segment display : four function keys   |  |             |      |  |      |
|  | Control Mode   | Position ( external pulse command ) , position ( internal position command ) , speed, torque and dual mode switching ( position / speed, speed / torque, position / torque ) , magazine mode   |  |             |      |  |      |
|  | Regenerative Brake                                   | Built-in brake transistor / external brake resistor  |  |             |      |  |      |
|  | Protection   | Various error alarms   |  |             |      |  |      |
|  | Communication Interface                              | USB / RS - 485   |  |             |      |  |      |
| Position Control Mode                        | Command Control Method                               | External command pulse command / 32 internal register commands   |  |             |      |  |      |
|  | External Command Pulse Input                         | Type   | Positive and Negative Edge Trigger : direction + pulse, CCW pulse + CW pulse, phase difference pulse (phase A + phase B)   |             |      |  |      |
|  |  | Waveform   | Line driver ( +5V level ) , open collector ( +5 ~ +24V level )   |             |      |  |      |
|  |  | Maximum Frequency  | 4Mpps ( line driver ) / 200Kpps ( open collector )   |             |      |  |      |
|  | Electronic Gear Ratio                                | 1 / 1000 $\leq$ A / B $\leq$ 4000 ( A = 1 ~ 8388608 ; B = 1 ~ 8388608 )  |  |             |      |  |      |
|  | Command Smoothing Method                             | 4Mpps ( line driver ) / 200Kpps ( open collector )   |  |             |      |  |      |
|  | Positioning Completion Judgment                      | 0 ~ 41943040 Pulse   |  |             |      |  |      |
|  | Feedforward Gain Compensation                        | 0 ~ 100 %  |  |             |      |  |      |
| Origin Return Function                       | Internal Parameter Setting                           |  |  |             |      |  |      |
| Speed Control Mode                           | Origin Return Function                               | External Analog Command / Three-step Internal Speed Command  |  |             |      |  |      |
|  | External Analog Command                              | Voltage Range  | 0 ~ $\pm$ 10Vdc  |             |      |  |      |
|  |  | Input Impedance  | 10K $\Omega$   |             |      |  |      |
|  | Speed Control Range                                  | 1 : 5000   |  |             |      |  |      |
|  | Speed Fluctuation                                    | Load Fluctuation : 0-100% $\pm$ 0.03% or less ( at rated speed )   |  |             |      |  |      |
|  |  | Voltage Fluctuation : $\pm$ 10% fluctuation $\pm$ 0.2% or less ( at rated speed )  |  |             |      |  |      |
|  |  | Temperature Fluctuation : 0-50°C $\pm$ 0.5% or less ( at rated speed )   |  |             |      |  |      |
|  | Command Smoothing Method                             | Linear Time Constant : 0-50 seconds ; S-shape Time Constant : 0-5 seconds ; Smoothing Time Constant : 0-10 seconds   |  |             |      |  |      |
| Torque Limit                                 | External Analog Command / Internal Parameter Setting |  |  |             |      |  |      |
| Zero-speed Judgment / Speed Arrival Judgment | 0-4500rpm ( internal parameter setting )             |  |  |             |      |  |      |
| Torque Control Mode                          | Command Control Method                               | External Analog Command / Internal Torque Command  |  |             |      |  |      |
|  | External Analog Command                              | Voltage Range  | 0 ~ $\pm$ 10Vdc  |             |      |  |      |
|  |  | Input Impedance  | 10K $\Omega$   |             |      |  |      |
|  | Command Smoothing Method                             | Linear Time Constant : 0-50 seconds ; Smoothing Time Constant : 0-10 seconds   |  |             |      |  |      |
|  | Speed Limit  | External Analog Command / Internal Parameter Setting   |  |             |      |  |      |
| Torque Arrival Judgment                      | 0-300% ( internal parameter setting )                |  |  |             |      |  |      |
| Input/Output Signal                          | Position Output                                      | Output Type  | Phase A, B, Z line drive output/phase Z open collector output  |             |      |  |      |
|  |  | Division Ratio   | Pulse output 1 - encoder pulses per revolution ( internal parameter arbitrary value setting )  |             |      |  |      |
|  | Digital Input [NPN/PNP]                              | 8 points Customizable  | Servo start, error alarm clear, P/PI switching, CCW / CW direction drive prohibition, external torque limit, pulse error removal, servo lock, emergency stop, internal speed command selection, control mode switching, position command prohibition, gain switching, electronic gear ratio numerator selection, internal position command trigger, internal position command pause, return to origin, external reference origin, internal position command selection, virtual contact digit input, etc. |             |      |  |      |
|  | Digital Output [NPN/PNP]                             | 2 points Fixed Output  | The fixed output contact function varies under different circumstances as described below.<br>[ No alarm ] : Torque Limit / P Active [ Alarm occurred ] : Error Alarm Code 0 / Error Alarm Code 1  |             |      |  |      |
| 4 points Customizable                        |  | Servo ready, servo error, zero speed signal, mechanical brake signal, speed arrival signal, positioning completion signal, origin return completion signal, torque arrival output completion signal, magazine mode tool position display, motor overload signal, encoder battery error signal, positive and negative limit signals, virtual contact digital output, etc. |  |             |      |  |      |
| Environment                                  | Location   | Indoors ( avoid direct sunlight )  |  |             |      |  |      |
|  |  | Non-corrosive Mist ( avoid fumes, flammable gases and dust )   |  |             |      |  |      |
|  | Altitude   | Up to 1000M  |  |             |      |  |      |
|  | Temperature  | Operating Temperature : 0 - 50°C; Storage Temperature : -20 - +85°C  |  |             |      |  |      |
|  | Humidity   | Up to 95%RH ( non-condensing )   |  |             |      |  |      |
| Vibration                                    | 10 ~ 57Hz : 20m / s <sup>2</sup> ; 57 ~ 150Hz : 2G   |  |  |             |      |  |      |
| Safety Certification                         | CE Declaration                                       | In compliance with EN61800 - 3 and EN61800 - 5 -1  |  |             |      |  |      |
|  | UL Certification                                     | UL508C   |  |             |      |  |      |

## Servo Driver Dimensions

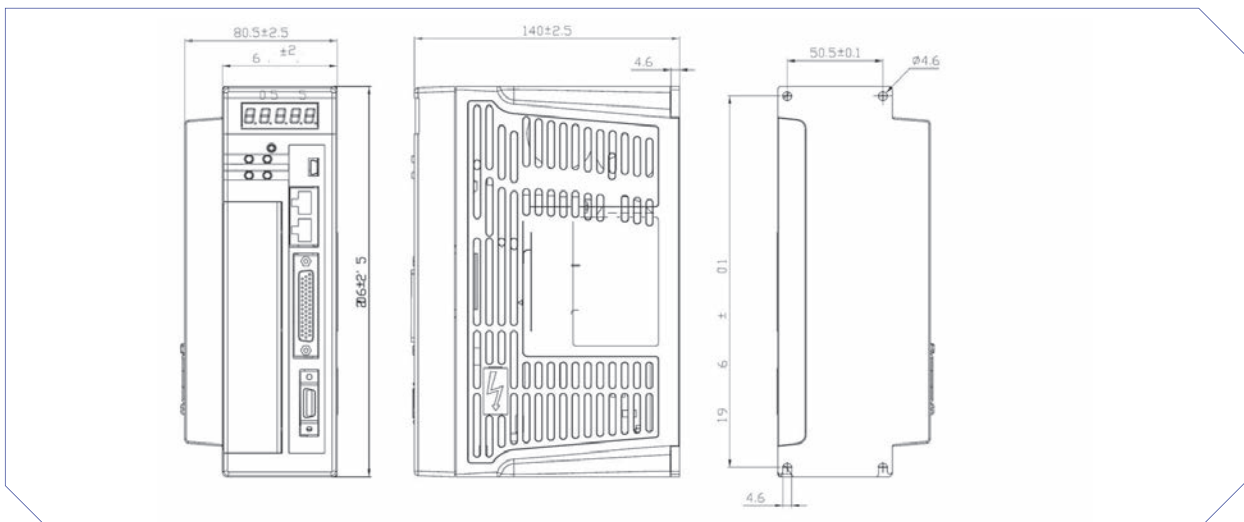
**JSDE2-10A、JSDE2-15A** | Weight 1.45Kg



**JSDE2-20A、JSDE2-30A** | Weight 1.55Kg



**JSDE2-50A3、JSDE2-75A3** | Weight 2.52Kg



# Motor Power Trunk

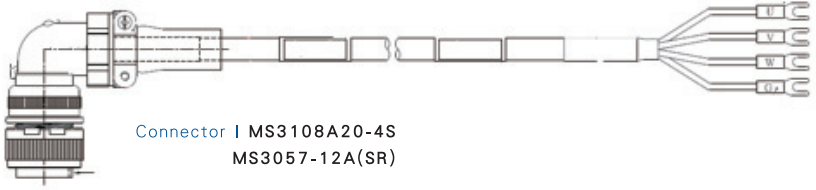
## Motor Power Trunk

| No.      | Length (m) |
|----------|------------|
| JSSLM001 | 1          |
| JSSLM003 | 3          |
| JSSLM005 | 5          |
| JSSLM010 | 10         |



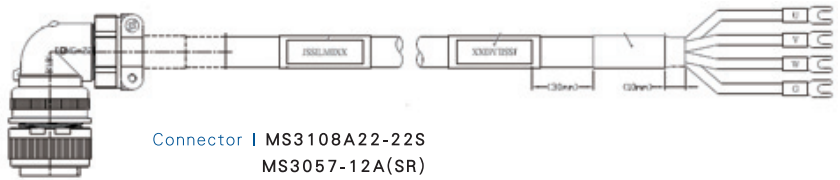
CAP | 172159-1  
SCOKET | 170362-1

| No.       | Length (m) |
|-----------|------------|
| JSSMLM001 | 1          |
| JSSMLM003 | 3          |
| JSSMLM005 | 5          |
| JSSMLM010 | 10         |



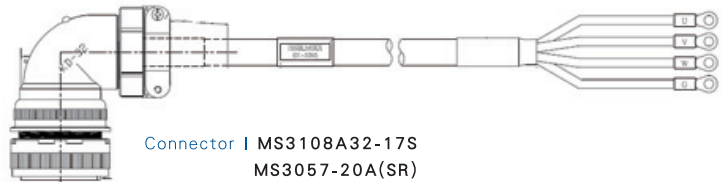
Connector | MS3108A20-4S  
MS3057-12A(SR)

| No.        | Length (m) |
|------------|------------|
| JSSILM001  | 1          |
| JSSILM003  | 3          |
| JSSILM005  | 5          |
| JSSILM0010 | 10         |



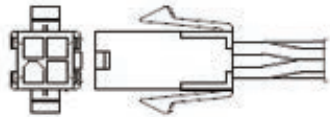
Connector | MS3108A22-22S  
MS3057-12A(SR)

| No.        | Length (m) |
|------------|------------|
| JSSBLM001  | 1          |
| JSSBLM003  | 3          |
| JSSBLM005  | 5          |
| JSSBLM0010 | 10         |

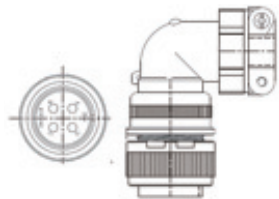


Connector | MS3108A32-17S  
MS3057-20A(SR)

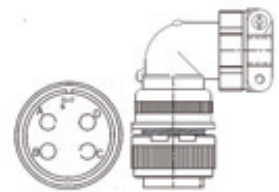
## Motor Power Connector



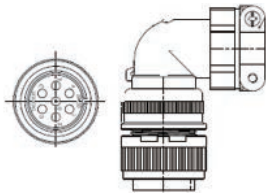
**JSSCNM04**  
CAP SCOKET  
172159-1 170362-1



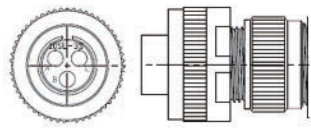
**JSSCNML04**  
Connector  
MS3108A20-4S MS3057-12A(SR)



**JSSCNBL04**  
Connector  
MS3108A32-17S MS3057-20A(SR)



**JSSCNML07** (with brake contact)  
Connector  
MS310820-15S MS3057-12A(SR)



**JSSCNBL03** (brake contact)  
Connector  
MS3106A10SL-3S MS3057-4A(SR)

## Encoder Trunk

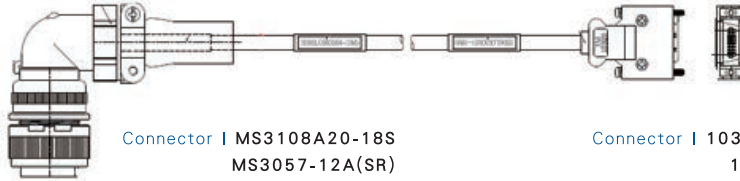
| No.      | Length (m) |
|----------|------------|
| JSSLG001 | 1          |
| JSSLG003 | 3          |
| JSSLG005 | 5          |
| JSSLG010 | 10         |



Connector | 172161-1  
Terminal | 170361-1

Connector | 10320-52A0-008  
10120-3000PE

| No.       | Length (m) |
|-----------|------------|
| JSSMLG001 | 1          |
| JSSMLG003 | 3          |
| JSSMLG005 | 5          |
| JSSMLG010 | 10         |



Connector | MS3108A20-18S  
MS3057-12A(SR)

Connector | 10320-52A0-008  
10120-3000PE

## Encoder Trunk ( with absolute encoder )

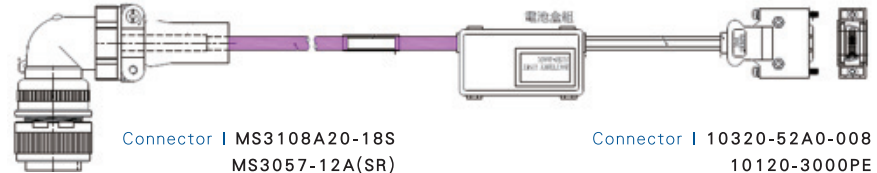
| No.      | Length (m) |
|----------|------------|
| JSSLB001 | 1          |
| JSSLB003 | 3          |
| JSSLB005 | 5          |
| JSSLB010 | 10         |



Connector | 172161-1  
Terminal | 170361-1

Connector | 10320-52A0-008  
10120-3000PE

| No.       | Length (m) |
|-----------|------------|
| JSSMLB001 | 1          |
| JSSMLB003 | 3          |
| JSSMLB005 | 5          |
| JSSMLB010 | 10         |



Connector | MS3108A20-18S  
MS3057-12A(SR)

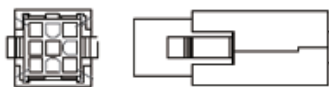
Connector | 10320-52A0-008  
10120-3000PE

## Encoder Battery

| No.     |
|---------|
| JSSBATS |

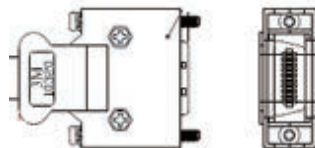


## Encoder Connector



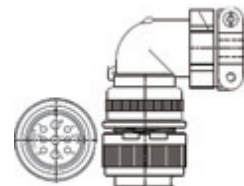
### JSSCNP09

Connector 172161-1  
Terminal 170361-1



### JSSCN20P

Connector 10320-52A0-008 10120-3000PE



### JSSCNPL09

Connector MS3108A20-18S MS3057-12A(SR)

### Computer Communication Cable

| No.       | Length (m) |
|-----------|------------|
| JSSDUC001 | 1          |
| JSSDUC002 | 2          |



Connector | USB

Connector | Mini-USB

### Communication Cable

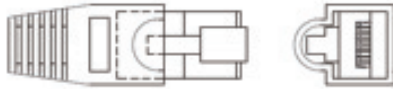
| No.        | Length (m) | No.        | Length (m) |
|------------|------------|------------|------------|
| JSSRTR0001 | 0.1        | JSSRTR0020 | 2          |
| JSSRTR0003 | 0.3        | JSSRTR0030 | 3          |
| JSSRTR0005 | 0.5        | JSSRTR0040 | 4          |
| JSSRTR0010 | 1          | JSSRTR0050 | 5          |



Connector | RJ-45

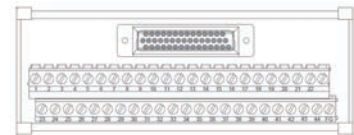
### Terminal Resistor

| No.     |
|---------|
| JSSTR01 |



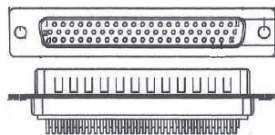
### Terminal Block Module

| No.         | Length (m) |
|-------------|------------|
| JSSE2TB44P  | --         |
| JSSE2TBC0P5 | 0.5        |
| JSSE2TBC001 | 1          |
| JSSE2TBC002 | 2          |



### CN1 Connector

| No.       |
|-----------|
| JSSECN44P |

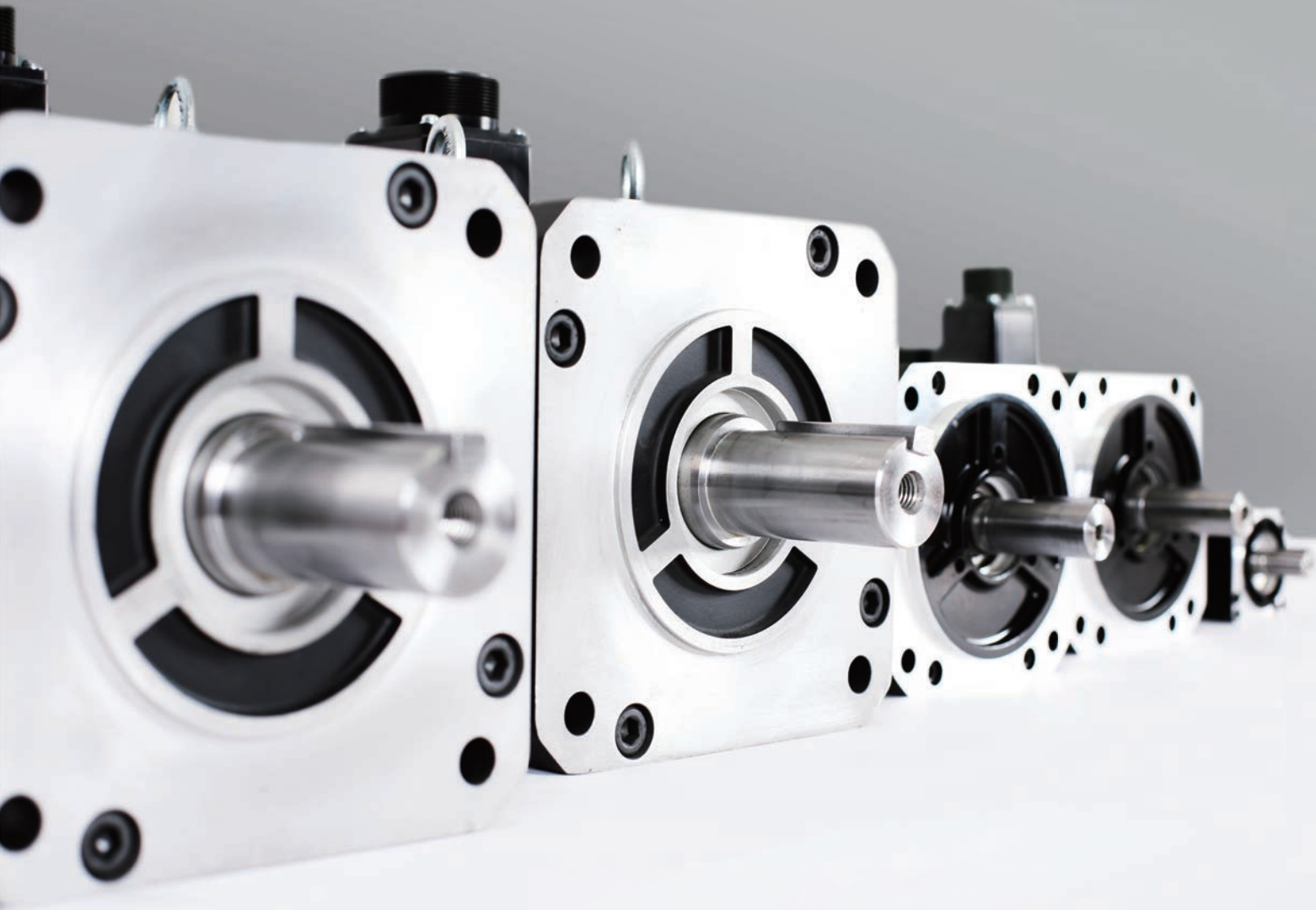


## Commonly Used Servo System Combinations

| Motor Series  | Capacity (W) | Motor Model | Driver    | CN1 Connector | Incremental Encoder Cable | Absolute Encoder Cable | 3m Power Cord |
|---|--------------|-------------|-----------|---------------|---------------------------|------------------------|---------------|
| <b>PUC Series</b><br>Ultra-low Inertia<br>Small Capacity<br>3000rpm | 50W          | PUCP5A3K    | JSDE2-10A | JSSECN44P     | JSSLG003                  | JSSLB003               | JSSLM003      |
|   | 100W         | PUC01A3K    | JSDE2-10A | JSSECN44P     | JSSLG003                  | JSSLB003               | JSSLM003      |
|   | 200W         | PUC02A3K    | JSDE2-15A | JSSECN44P     | JSSLG003                  | JSSLB003               | JSSLM003      |
|   | 400W         | PUC04A3K    | JSDE2-15A | JSSECN44P     | JSSLG003                  | JSSLB003               | JSSLM003      |
|   | 750W         | PUC08A3K    | JSDE2-20A | JSSECN44P     | JSSLG003                  | JSSLB003               | JSSLM003      |
| <b>PBC Series</b><br>High Inertia<br>Small Capacity<br>3000rpm      | 100W         | PBC01A3K    | JSDE2-10A | JSSECN44P     | JSSLG003                  | JSSLB003               | JSSLM003      |
|   | 200W         | PBC02A3K    | JSDE2-15A | JSSECN44P     | JSSLG003                  | JSSLB003               | JSSLM003      |
|   | 400W         | PBC04A3K    | JSDE2-15A | JSSECN44P     | JSSLG003                  | JSSLB003               | JSSLM003      |
|   | 750W         | PBC08A3K    | JSDE2-20A | JSSECN44P     | JSSLG003                  | JSSLB003               | JSSLM003      |
| <b>PLC Series</b><br>Low Inertia<br>Small Capacity<br>3000rpm       | 300W         | PLC03A3K    | JSDE2-15A | JSSECN44P     | JSSLG003                  | JSSLB003               | JSSLM003      |
|   | 750W         | PLC08A3K    | JSDE2-20A | JSSECN44P     | JSSLG003                  | JSSLB003               | JSSLM003      |

Note : Motors with brakes below 750W are used in conjunction with the same power cords. For detailed wiring, please refer to the manual.

| Motor Series  | Capacity (KW) | Motor Model | Driver          | CN1 Connector | Incremental Encoder Cable | Absolute Encoder Cable | 3m Power Cord | Motor Brake Connector |
|---|---------------|-------------|-----------------|---------------|---------------------------|------------------------|---------------|-----------------------|
| <b>PMB Series</b><br>Medium Inertia<br>Medium Capacity<br>2000rpm | 1KW           | PMB10A3K    | JSDE2-30A       | JSSECN44P     | JSSMLG003                 | JSSMLB003              | JSSMLM003     | JSSCNML07             |
|   | 1.5KW         | PMB15A3K    | JSDE2-30A/50A3  | JSSECN44P     | JSSMLG003                 | JSSMLB003              | JSSMLM003     | JSSCNML07             |
|   | 2KW           | PMB20A3K    | JSDE2-50A3      | JSSECN44P     | JSSMLG003                 | JSSMLB003              | JSSMLM003     | JSSCNML07             |
|   | 3KW           | PMB30A3K    | JSDE2-75A3      | JSSECN44P     | JSSMLG003                 | JSSMLB003              | JSSMLM003     | JSSCNML07             |
| <b>PBH Series</b><br>High Inertia<br>Medium Capacity<br>1500rpm   | 0.85KW        | BH09        | JSDE2-30A/50A3  | JSSECN44P     | JSSMLG003                 | JSSMLB003              | JSSMLM003     | JSSCNML07             |
|   | 1.3KW         | BH13        | JSDE2-503A/75A3 | JSSECN44P     | JSSMLG003                 | JSSMLB003              | JSSMLM003     | JSSCNML07             |
|   | 1.8KW         | BH18        | JSDE2-75A3      | JSSECN44P     | JSSMLG003                 | JSSMLB003              | JSSMLM003     | JSSCNML07             |
|   |               | BH18_18     | JSDE2-75A3      | JSSECN44P     | JSSMLG003                 | JSSMLB003              | JSSILM003     | JSSCNBL03             |
| <b>PIH Series</b><br>Medium Inertia<br>Medium Capacity<br>1500rpm | 3KW           | PIH30A3K    | JSDE2-75A3      | JSSECN44P     | JSSMLG003                 | JSSMLB003              | JSSBLM003     | JSSCNBL03             |



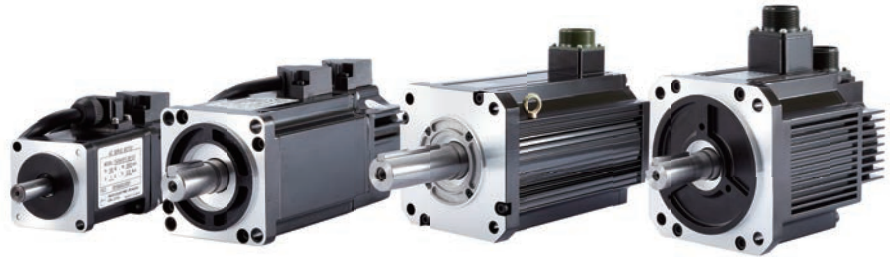
**JSMA Features**

## Motor characteristics

G2S series matched with TECO's new JSMA series AC servo motor can increase the resolution of the encoder to 23 bit.

In addition, we are introducing brand new low, medium, and high inertia series motors. Thus, we can provide customers with servo motor in the 50W – 15kW power range.

The brand new series of motors not only provides high-resolution encoder, but their performance has also been improved. The highest rotation speed has been increased to 6,000 rpm (machines under 750W). The machine's body length has been significantly shortened. Heat dissipation has also been improved to significantly decrease motor temperature. Cogging torque has been lowered to less than 2%. All the objectives can be achieved in any application scenario.



## Motor Specifications

### Low Inertia Series

| JSMA Low Inertia Series<br>JSMA-P□□□□□A | Symbol    | Unit               | UCP5*   | UC01* | UC02* | UC04* | UC08* | LC03* | LC08* |
|---|-----------|--------------------|---------|-------|-------|-------|-------|-------|-------|
| Rated Output Power                      | $P_R$     | kW                 | 0.05    | 0.1   | 0.2   | 0.4   | 0.75  | 0.3   | 0.75  |
| Rated Torque                            | $T_R$     | N-m                | 0.16    | 0.32  | 0.64  | 1.27  | 2.39  | 0.95  | 2.39  |
| Instantaneous Maximum Torque            | $T_{max}$ | N-m                | 0.48    | 0.95  | 1.91  | 3.81  | 7.16  | 2.86  | 7.16  |
| Rated Speed                             | $N_R$     | rpm                | 3000    |       |       |       |       |       |       |
| Instantaneous Maximum Speed             | $N_{max}$ | rpm                | 6000    | 6000  | 6000  | 6000  | 5000  | 4500  | 3800  |
| Rated Phase Current                     | $I_R$     | A                  | 1       | 0.9   | 1.6   | 2.6   | 4.3   | 2     | 3.75  |
| Instantaneous Maximum Current           | $I_{max}$ | A                  | 3       | 2.7   | 4.8   | 8.1   | 14    | 6     | 11.25 |
| Torque Constant                         | $K_T$     | N-m/A              | 0.16    | 0.32  | 0.46  | 0.49  | 0.56  | 0.52  | 0.77  |
| Rotor Inertia                           | $J_M$     | kg-cm <sup>2</sup> | 0.022   | 0.041 | 0.17  | 0.28  | 0.9   | 0.67  | 2.46  |
| Rotor Inertia (with brake)              | $J_M$     | kg-cm <sup>2</sup> | 0.028   | 0.047 | 0.23  | 0.34  | 1.03  | 0.67  | 2.46  |
| Motor Impedance                         | $R_a$     | $\Omega$           | 12.9    | 25.4  | 6.4   | 3.15  | 1.48  | 5.58  | 2.18  |
| Motor Inductive Reactance               | $L_a$     | mH                 | 14.8    | 26.5  | 16.2  | 11    | 10.1  | 11.6  | 7.7   |
| Weight (standard)                       | $W$       | kg                 | 0.35    | 0.48  | 1     | 1.37  | 2.4   | 1.59  | 3.05  |
| Weight (with brake)                     | $W$       | kg                 | 0.57    | 0.7   | 1.4   | 1.87  | 3.8   | 1.59  | 5.35  |
| Insulation Class                        | -         | -                  | Class F |       |       |       |       |       |       |
| Operating Temperature                   | $T$       | $^{\circ}\text{C}$ | 0~40    |       |       |       |       |       |       |
| Operating Humidity                      | RH        | %                  | <80     |       |       |       |       |       |       |
| Storage Temperature                     | $T$       | $^{\circ}\text{C}$ | -20~60  |       |       |       |       |       |       |
| Storage Humidity                        | RH        | %                  | <80     |       |       |       |       |       |       |

(1) G2S is suitable for all the motor models shown above (2) E2 is suitable for motors marked with an asterisk (\*)

Medium Inertia Series

| JSMA Medium Inertia Series<br>JSMA-P□□□□A | Symbol    | Unit               | MB10*   | MB15* | MB20* | MB30* | IH30    | IH44  | IH55  | IH75  | IH110 | IH150 |  |  |
|---|-----------|--------------------|---------|-------|-------|-------|---------|-------|-------|-------|-------|-------|--|--|
| Rated Output Power                        | $P_R$     | kW                 | 1.0     | 1.5   | 2.0   | 3.0   | 3       | 4.4   | 5.5   | 7.5   | 11    | 15    |  |  |
| Rated Torque                              | $T_R$     | N-m                | 4.78    | 7.16  | 9.55  | 14.33 | 19.1    | 28    | 35.1  | 47.8  | 70    | 95.5  |  |  |
| Instantaneous Maximum Torque              | $T_{max}$ | N-m                | 14.33   | 21.49 | 28.65 | 42.69 | 47.75   | 70    | 87.75 | 122.6 | 175   | 204   |  |  |
| Rated Speed                               | $N_R$     | rpm                | 2000    | 2000  | 2000  | 2000  | 1500    | 1500  | 1500  | 1500  | 1500  | 1500  |  |  |
| Instantaneous Maximum Speed               | $N_{max}$ | rpm                | 2800    | 2800  | 2500  | 2500  | 2000    | 2000  | 2000  | 2000  | 2000  | 2000  |  |  |
| Rated Phase Current                       | $I_R$     | A                  | 5.16    | 7.57  | 9.18  | 14.0  | 16      | 23.6  | 28.5  | 38.6  | 51    | 78    |  |  |
| Instantaneous Maximum Current             | $I_{max}$ | A                  | 15.50   | 22.71 | 27.50 | 42.00 | 40      | 59    | 71.2  | 99.1  | 127.5 | 170   |  |  |
| Torque Constant                           | $K_T$     | N-m/A              | 1.02    | 1.04  | 1.14  | 1.13  | 1.19    | 1.19  | 1.23  | 1.24  | 1.45  | 1.22  |  |  |
| Rotor Inertia                             | $J_M$     | kg-cm <sup>2</sup> | 6.26    | 8.88  | 12.14 | 17.92 | 39.95   | 59.17 | 77.9  | 108.4 | 155.3 | 235.2 |  |  |
| Rotor Inertia (with brake)                | $J_M$     | kg-cm <sup>2</sup> | 6.96    | 9.58  | 12.84 | 18.62 | 42.36   | -     | -     | -     | -     | -     |  |  |
| Motor Impedance                           | $R_a$     | $\Omega$           | 1.22    | 0.79  | 0.58  | 0.33  | 0.275   | 0.167 | 0.129 | 0.1   | 0.07  | 0.034 |  |  |
| Motor Inductive Reactance                 | $L_a$     | mH                 | 6.7     | 4.7   | 3.8   | 2.1   | 6.8     | 4.3   | 3.2   | 2.5   | 2     | 0.99  |  |  |
| Weight (standard)                         | W         | kg                 | 6.47    | 8.08  | 10.16 | 13.87 | 16.9    | 22.1  | 27.1  | T.B.D | 51    | T.B.D |  |  |
| Weight (with brake)                       | W         | kg                 | 8.08    | 9.69  | 11.7  | 15.48 | 21      | -     | -     | -     | -     | -     |  |  |
| Insulation Class                          | -         | -                  | Class B |       |       |       | Class F |       |       |       |       |       |  |  |
| Operating Temperature                     | T         | °C                 | 0-40    |       |       |       |         |       |       |       |       |       |  |  |
| Operating Humidity                        | RH        | %                  | <90     |       |       |       |         |       |       |       |       |       |  |  |
| Storage Temperature                       | T         | °C                 | -20-60  |       |       |       |         |       |       |       |       |       |  |  |
| Storage Humidity                          | RH        | %                  | <90     |       |       |       | <80     |       |       |       | <90   |       |  |  |

(1) G2S is suitable for all the motor models shown above (2) E2 is suitable for motors marked with an asterisk (\*)

| JSMA Medium Inertia Series<br>JSMA-P□□□□A | Symbol    | Unit               | MA05*    | MA10* | MC10* | MA15* | MC15* | MC20* | MC30* |
|---|-----------|--------------------|----------|-------|-------|-------|-------|-------|-------|
| Rated Output Power                        | $P_R$     | kW                 | 0.55     | 1     | 1     | 1.5   | 1.5   | 2     | 3     |
| Rated Torque                              | $T_R$     | N-m                | 5.25     | 9.55  | 3.2   | 14.32 | 4.78  | 6.37  | 9.55  |
| Instantaneous Maximum Torque              | $T_{max}$ | N-m                | 15.76    | 28.65 | 9.6   | 42.96 | 14.33 | 19.11 | 28.65 |
| Rated Speed                               | $N_R$     | rpm                | 1000     | 1000  | 3000  | 1000  | 3000  | 3000  | 3000  |
| Instantaneous Maximum Speed               | $N_{max}$ | rpm                | 1500     | 1350  | 3700  | 1250  | 3700  | 3850  | 3850  |
| Rated Phase Current                       | $I_R$     | A                  | 3.43     | 5.16  | 4.96  | 7.45  | 7.06  | 9.5   | 14    |
| Instantaneous Maximum Current             | $I_{max}$ | A                  | 10.3     | 15.5  | 14.88 | 22.35 | 21.2  | 28.5  | 42    |
| Torque Constant                           | $K_T$     | N-m/A              | 1.68     | 2.04  | 0.72  | 2.11  | 0.74  | 0.74  | 0.75  |
| Rotor Inertia                             | $J_M$     | kg-cm <sup>2</sup> | 6.26     | 12.14 | 4.6   | 17.92 | 6.26  | 8.88  | 12.54 |
| Rotor Inertia (with brake)                | $J_M$     | kg-cm <sup>2</sup> | 6.96     | 12.84 | 5.3   | 18.62 | 6.96  | 9.58  | 12.84 |
| Motor Impedance                           | $R_a$     | $\Omega$           | 3.58     | 1.85  | 1.02  | 1.19  | 0.65  | 0.4   | 0.25  |
| Motor Inductive Reactance                 | $L_a$     | mH                 | 18.3     | 12.1  | 5.1   | 8.4   | 3.6   | 2.4   | 1.6   |
| Weight (standard)                         | W         | Kg                 | 6.49     | 10.16 | 5.29  | 13.87 | 6.47  | 8.08  | 10.16 |
| Weight (with brake)                       | W         | Kg                 | 8.08     | 11.77 | 6.9   | 15.48 | 8.08  | 9.69  | 11.77 |
| Insulation Class                          | -         | -                  | Class B  |       |       |       |       |       |       |
| Operating Temperature                     | T         | °C                 | 0-40     |       |       |       |       |       |       |
| Operating Humidity                        | RH        | %                  | <90      |       |       |       |       |       |       |
| Storage Temperature                       | T         | °C                 | -20 ~ 60 |       |       |       |       |       |       |
| Storage Humidity                          | RH        | %                  | <90      |       |       |       |       |       |       |

(1) G2S is suitable for all the motor models shown above (2) E2 is suitable for motors marked with an asterisk (\*)

High Inertia Series

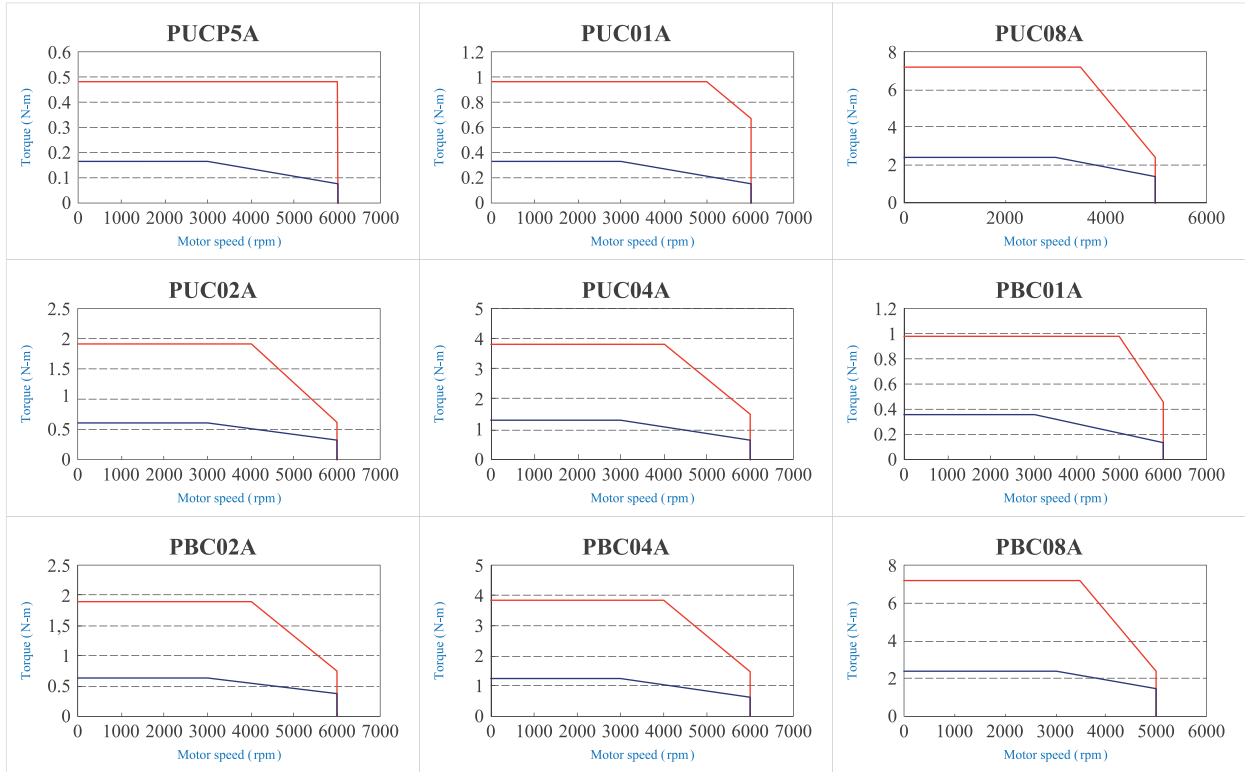
| JSMA High Inertia Series<br>JSMA-P□□□□A | Symbol    | Unit               | BC01*   | BC02* | BC04* | BC08* | BH09* | BH13* | BH18* | BH 18_18* | BH29  | BH44  | BH55  | BH75  |
|---|-----------|--------------------|---------|-------|-------|-------|-------|-------|-------|-----------|-------|-------|-------|-------|
| Rated Output Power                      | $P_R$     | kW                 | 0.1     | 0.2   | 0.4   | 0.75  | 0.85  | 1.3   | 1.8   | 1.8       | 2.9   | 4.4   | 5.5   | 7.5   |
| Rated Torque                            | $T_R$     | N-m                | 0.32    | 0.64  | 1.27  | 2.39  | 5.39  | 8.34  | 11.5  | 11.5      | 18.5  | 28.4  | 35    | 48    |
| Instantaneous Maximum Torque            | $T_{max}$ | N-m                | 0.95    | 1.91  | 3.81  | 7.16  | 13.8  | 23.3  | 28.7  | 27.6      | 44.3  | 71.1  | 87.6  | 119   |
| Rated Speed                             | $N_R$     | rpm                | 3000    | 3000  | 3000  | 3000  | 1500  | 1500  | 1500  | 1500      | 1500  | 1500  | 1500  | 1500  |
| Instantaneous Maximum Speed             | $N_{max}$ | rpm                | 6000    | 6000  | 6000  | 5000  | 3000  | 3000  | 3000  | 3000      | 3000  | 3000  | 3000  | 3000  |
| Rated Phase Current                     | $I_R$     | A                  | 0.9     | 1.6   | 2.6   | 4.3   | 7     | 11.4  | 14.8  | 17.8      | 24    | 33.5  | 42.1  | 54.7  |
| Instantaneous Maximum Current           | $I_{max}$ | A                  | 2.7     | 4.8   | 8.1   | 14    | 18.1  | 32.4  | 37.4  | 42.7      | 58    | 85    | 110   | 136   |
| Torque Constant                         | $K_T$     | N-m/A              | 0.35    | 0.46  | 0.47  | 0.56  | 0.75  | 0.72  | 0.78  | 0.65      | 0.77  | 0.84  | 0.83  | 0.88  |
| Rotor Inertia                           | $J_M$     | kg-cm <sup>2</sup> | 0.082   | 0.42  | 0.67  | 1.51  | 13.34 | 20.07 | 26.66 | 31.9      | 45.55 | 65.41 | 89.98 | 129.8 |
| Rotor Inertia (with brake)              | $J_M$     | kg-cm <sup>2</sup> | 0.089   | 0.48  | 0.73  | 1.64  | 14.04 | 20.77 | 27.36 | 34.31     |       |       |       |       |
| Motor Impedance                         | $R_a$     | $\Omega$           | 24      | 6.4   | 3.15  | 1.48  | 0.65  | 0.355 | 0.255 | 0.16      | 0.113 | 0.091 | 0.054 | 0.039 |
| Motor Inductive Reactance               | $L_a$     | mH                 | 22      | 16.2  | 11    | 10.1  | 5.5   | 3.4   | 2.7   | 2.7       | 2.5   | 2.2   | 1.4   | 1.1   |
| Weight (standard)                       | W         | kg                 | 0.48    | 1.1   | 1.53  | 2.7   | 6.7   | 8.9   | 11.1  | 14.1      | 18    | 23.5  | 35    | 41.2  |
| Weight (with brake)                     | W         | kg                 | 0.7     | 1.5   | 2.03  | 4.1   | 8.3   | 10.5  | 12.7  | 18.6      |       |       |       |       |
| Insulation Class                        | -         | -                  | Class F |       |       |       |       |       |       |           |       |       |       |       |
| Operating Temperature                   | T         | °C                 | 0-40    |       |       |       |       |       |       |           |       |       |       |       |
| Operating Humidity                      | RH        | %                  | <80     |       |       |       |       |       |       |           |       |       |       |       |
| Storage Temperature                     | T         | °C                 | -20-60  |       |       |       |       |       |       |           |       |       |       |       |
| Storage Humidity                        | RH        | %                  | <80     |       |       |       |       |       |       |           |       |       |       |       |

(1) G2S is suitable for all the motor models shown above (2) E2 is suitable for motors marked with an asterisk (\*)

# Motor TN curve

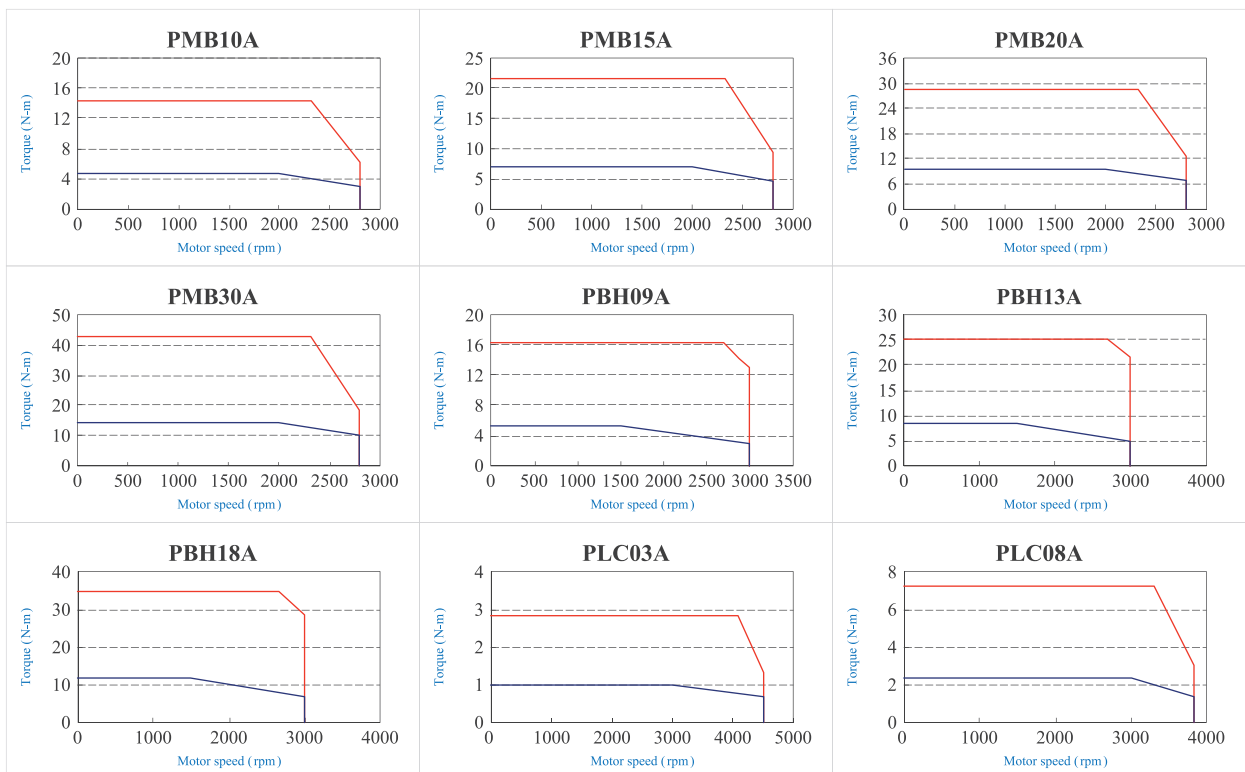
## Up to 80 Frame Series

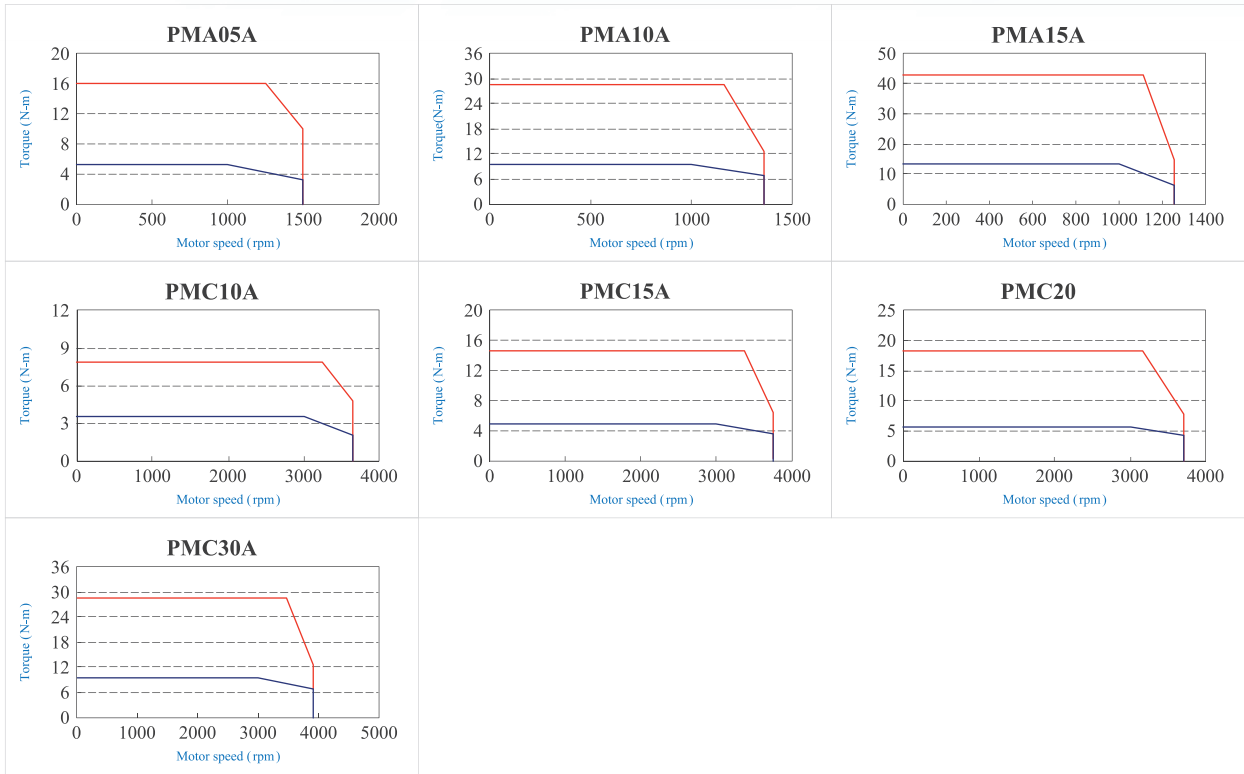
— Intermittent Working Area | — Continuous Working Area



## Up to 130 Frame Series

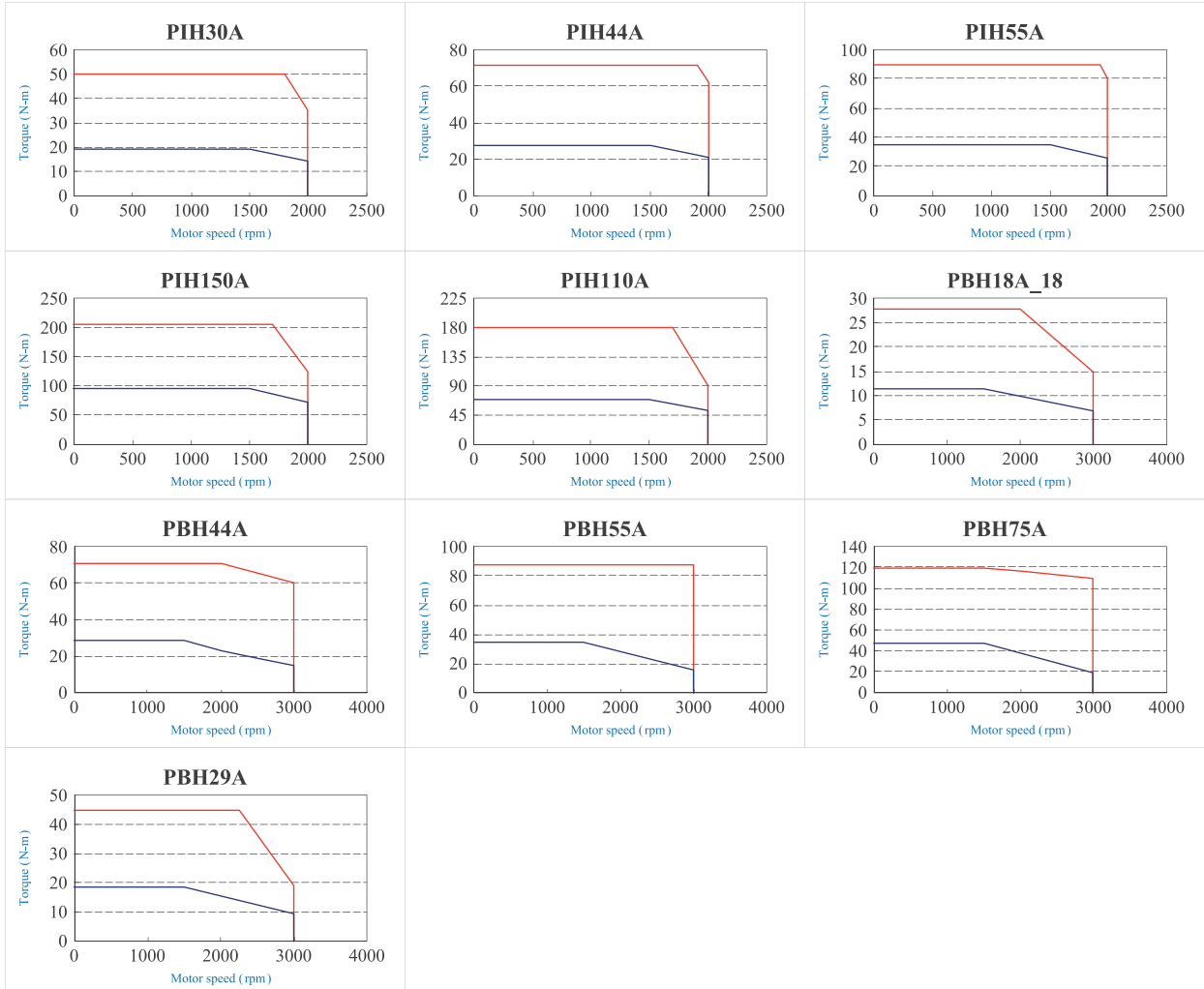
— Intermittent Working Area | — Continuous Working Area





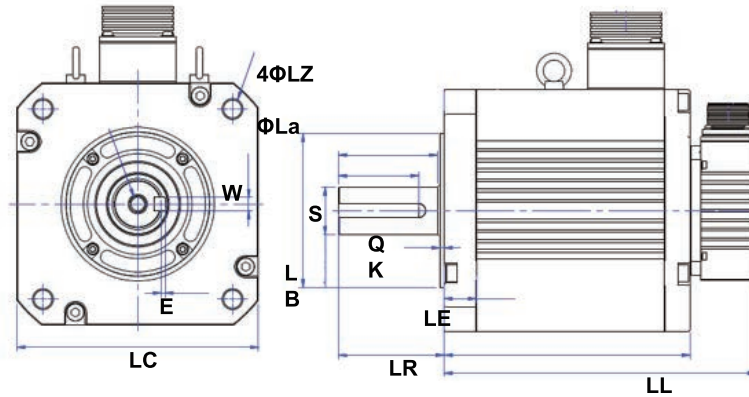
**Up to 220 Frame Series**

— Intermittent Working Area | — Continuous Working Area



# Integrated Automation Solutions Provider

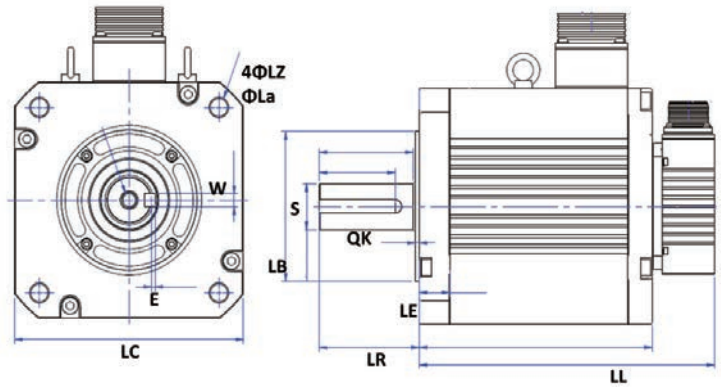
Up to 80 Frame Series



| Up to 80 Frame Series<br>JSMA-P□□□□A | JSMA-PUC Series |       |       |       |       | JSMA-PBC Series |       |       |       | JSMA-PLC Series |       |
|--------------------------------------|-----------------|-------|-------|-------|-------|-----------------|-------|-------|-------|-----------------|-------|
|                                      | UCP5*           | UC01* | UC02* | UC04* | UC08* | BC01*           | BC02* | BC04* | BC08* | LC03*           | LC08* |
| LZ Φ                                 | Φ 4.5           | Φ 4.5 | Φ 5.5 | Φ 5.5 | Φ 6.5 | Φ 4.5           | Φ 5.5 | Φ 5.5 | Φ 6.5 | Φ 5.5           | Φ 6.5 |
| La Φ                                 | Φ 46            | Φ 46  | Φ 70  | Φ 70  | Φ 90  | Φ 46            | Φ 70  | Φ 70  | Φ 90  | Φ 90            | Φ 100 |
| LC                                   | 40              | 40    | 60    | 60    | 80    | 40              | 60    | 60    | 80    | 76              | 86    |
| E                                    | -               | -     | 2     | 2     | 2.5   | -               | 2     | 2     | 2.5   | 2               | 2     |
| W                                    | -               | -     | 5     | 5     | 6     | -               | 5     | 5     | 6     | 5               | 5     |
| S Φ                                  | Φ 8             | Φ 8   | Φ 14  | Φ 14  | Φ 19  | Φ 8             | Φ 14  | Φ 14  | Φ 19  | Φ 14            | Φ 16  |
| LB Φ                                 | Φ 30            | Φ 30  | Φ 50  | Φ 50  | Φ 70  | Φ 30            | Φ 50  | Φ 50  | Φ 70  | Φ 70            | Φ 80  |
| QK                                   | -               | -     | 20    | 20    | 28    | -               | 20    | 20    | 28    | 20              | 25    |
| LE                                   | 2.5             | 2.5   | 3     | 3     | 3     | 2.5             | 3     | 3     | 3     | 3               | 3     |
| LR                                   | 25              | 25    | 30    | 30    | 40    | 25              | 30    | 30    | 40    | 30              | 35    |
| LL (without brake)                   | 73              | 88    | 101   | 123   | 122.2 | 86              | 101   | 128.5 | 137   | 113.4           | 148   |
| LL (with brake)                      | 116.6           | 131.6 | 139.5 | 161.5 | 160.5 | 129.6           | 139.5 | 167   | 175.3 | 147.8           | 183.2 |

(1) G2S is suitable for all the motor models shown above (2) E2 is suitable for motors marked with an asterisk (\*)

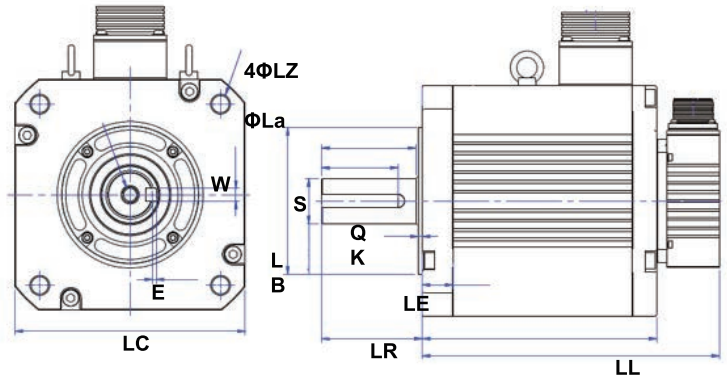
**Up to 130 Frame Series**



| Up to 130 Frame Series<br>JSMA-P□□□□A | MB Series |       |       |       | BH Series |       |       | MA Series |       |       | MC Series |       |       |       |
|---------------------------------------|-----------|-------|-------|-------|-----------|-------|-------|-----------|-------|-------|-----------|-------|-------|-------|
|                                       | MB10*     | MB15* | MB20* | MB30* | BH09*     | BH13* | BH18* | MA05*     | MA10* | MA15* | MC10*     | MC15* | MC20* | MC30* |
| LZ Φ                                  | Φ 9       | Φ 9   | Φ 9   | Φ 9   | Φ 9       | Φ 9   | Φ 9   | Φ 9       | Φ 9   | Φ 9   | Φ 9       | Φ 9   | Φ 9   | Φ 9   |
| La Φ                                  | Φ 145     | Φ 145 | Φ 145 | Φ 145 | Φ 145     | Φ 145 | Φ 145 | Φ 145     | Φ 145 | Φ 145 | Φ 145     | Φ 145 | Φ 145 | Φ 145 |
| LC                                    | 130.4     | 130.4 | 130.4 | 130.4 | 130       | 130   | 130   | 130.4     | 130.4 | 130.4 | 130.4     | 130.4 | 130.4 | 130.4 |
| E                                     | 2.5       | 2.5   | 2.5   | 2.5   | 2.5       | 2.5   | 2.5   | 2.5       | 2.5   | 2.5   | 2.5       | 2.5   | 2.5   | 2.5   |
| W                                     | 6         | 6     | 6     | 6     | 6         | 6     | 6     | 6         | 6     | 6     | 6         | 6     | 6     | 6     |
| S Φ                                   | Φ 22      | Φ 22  | Φ 22  | Φ 22  | Φ 22      | Φ 22  | Φ 22  | Φ 22      | Φ 22  | Φ 22  | Φ 22      | Φ 22  | Φ 22  | Φ 22  |
| LB Φ                                  | Φ 110     | Φ 110 | Φ 110 | Φ 110 | Φ 110     | Φ 110 | Φ 110 | Φ 110     | Φ 110 | Φ 110 | Φ 110     | Φ 110 | Φ 110 | Φ 110 |
| QK                                    | 35        | 35    | 35    | 35    | 35        | 35    | 35    | 35        | 35    | 35    | 35        | 35    | 35    | 35    |
| LE                                    | 6         | 6     | 6     | 6     | 6         | 6     | 6     | 6         | 6     | 6     | 6         | 6     | 6     | 6     |
| LR                                    | 58        | 58    | 58    | 58    | 58        | 58    | 58    | 58        | 58    | 58    | 58        | 58    | 58    | 58    |
| LL (without brake)                    | 164.8     | 183.8 | 213.8 | 264.8 | 153.3     | 178.3 | 203.3 | 163.8     | 213.8 | 263.8 | 148.8     | 163.8 | 184.8 | 213.8 |
| LL (with brake)                       | 218.3     | 238.3 | 268.3 | 318.3 | 195.9     | 220.9 | 245.9 | 218.3     | 268.3 | 318.3 | 207.9     | 218.3 | 238.3 | 268.3 |

(1) G2S is suitable for all the motor models shown above (2) E2 is suitable for motors marked with an asterisk (\*)

**Up to 220 Frame Series**



| Up to 130 Frame Series<br>JSMA-P□□□□A | IH Series |         |         |         | BH Series |         |         |         |         |        | IH Series |  |
|---------------------------------------|-----------|---------|---------|---------|-----------|---------|---------|---------|---------|--------|-----------|--|
|                                       | IH30*     | IH44    | IH55    | IH75    | BH18_18*  | BH29    | BH44    | BH55    | BH75    | IH110  | IH150     |  |
| LZ Φ                                  | Φ 13.5    | Φ 13.5  | Φ 13.5  | Φ 13.5  | Φ 13.5    | Φ 13.5  | Φ 13.5  | Φ 13.5  | Φ 13.5  | Φ 13.5 | Φ 13.5    |  |
| La Φ                                  | Φ 200     | Φ 200   | Φ 200   | Φ 200   | Φ 200     | Φ 200   | Φ 200   | Φ 200   | Φ 200   | Φ 235  | Φ 235     |  |
| LC                                    | 180       | 180     | 180     | 180     | 180       | 180     | 180     | 180     | 180     | 220    | 220       |  |
| E                                     | 3         | 3       | 3       | 3       | 3         | 3       | 3       | 3       | 3       | 3      | 4         |  |
| W                                     | 10        | 10      | 10      | 12      | 10        | 10      | 10      | 12      | 12      | 12     | 16        |  |
| S Φ                                   | Φ 35      | Φ 35    | Φ 42    | Φ 42    | Φ 35      | Φ 35    | Φ 35    | Φ 42    | Φ 42    | Φ 42   | Φ 55      |  |
| LB Φ                                  | Φ 114.3   | Φ 114.3 | Φ 114.3 | Φ 114.3 | Φ 114.3   | Φ 114.3 | Φ 114.3 | Φ 114.3 | Φ 114.3 | Φ 200  | Φ 200     |  |
| QK                                    | 60        | 60      | 60      | 60      | 60        | 60      | 60      | 90      | 90      | 90     | 90        |  |
| LE                                    | 3.2       | 3.2     | 3.2     | 3.2     | 3.2       | 3.2     | 3.2     | 3.2     | 3.2     | 4      | 4         |  |
| LR                                    | 79        | 79      | 113     | 113     | 79        | 79      | 79      | 113     | 113     | 116    | 116       |  |
| LL (without brake)                    | 191.4     | 221.4   | 248.9   | 306.4   | 178.4     | 200.4   | 232.4   | 268.4   | 342.4   | 352    | 429       |  |
| LL (with brake)                       | 243.6     | 273.6   | 301.1   | 359.6   | 230.6     | 252.6   | 284.6   | 320.6   | 394.6   | 433    | 502       |  |

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