

Orientalmotor

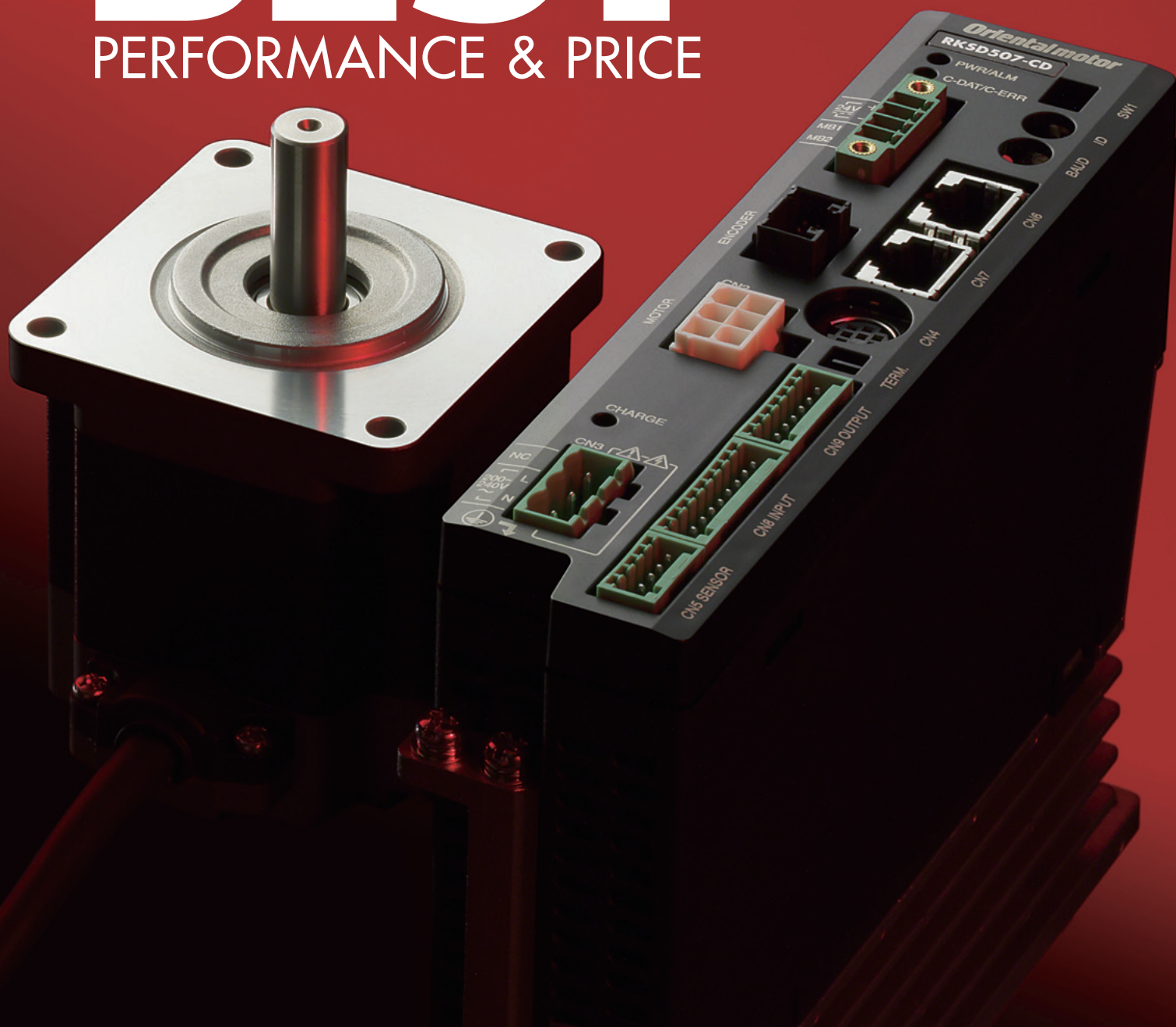
New 5-Phase Stepping Motor and Driver Packages

RK II Series

 Built-in controller type
Pulse input type

BEST

PERFORMANCE & PRICE



An affordable stepping motor re-invented with a new concept of high performance.

BEST

PERFORMANCE & PRICE



A highly reliable stepping motor that is too user-friendly to resist.

SAVE

PRICE & ENERGY

- Compact size, yet low price Page 4
- Reduction power consumption and running cost ... Page 5

EASY

CONNECTION & SYSTEM

- Easy wiring Page 6
- Easy selection Page 6
- 2 types of drivers are available Page 7

HIGH

PERFORMANCE & RELIABILITY

- High accuracy Page 10
- Multiple step angle selections Page 11
- Various kinds of protective functions (Alarm) Page 11



New 5-Phase Stepping Motor and Driver Packages

RK II Series

Price

High-efficiency
with Low Price

Compared to the conventional products, while achieving the significant improvement in motor performance, easy driver operation and function, the price has been lowered.

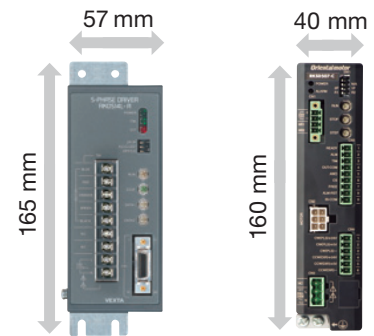
Space Saving

Slim and Compact

This new driver has been created with re-arrangement of the internal components of the previous design, optimizing the usage of the size within the driver. In addition, drivers can be installed side by side, reducing a significant amount of space

- When drivers are installed in contact with each other, the allowable ambient temperature range is 0 to 40°C

Slim & compact driver



Conventional Model
RK Series
Driver

RK II Series
Driver

Installation Area
9405 mm²
(165x57=9405)

Installation Area
6400 mm²
(160x40=6400)



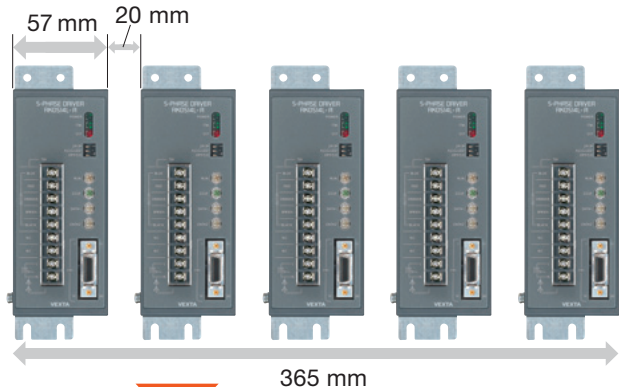
Conventional Model:
RK Series
□ 60 mm
Standard Type

RK II Series
Pulse Input Type
□ 60 mm
Standard Type

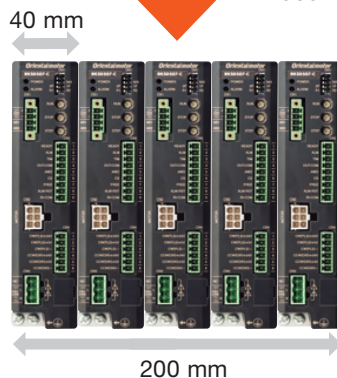
- For price and lead time, please contact the nearest Oriental Motor office, or visit the Oriental Motor website.

Multiple units can be installed in coherently with each other.

Conventional Model:
RK Series
Driver



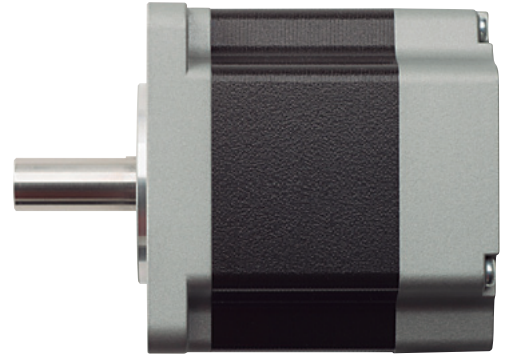
RK II Series
Driver



Installation Width
45% Reduction

MERIT
High-efficiency and compact size, yet cost down.

MERIT
Obtain downsized size and cost for control board.



High Efficiency

Reduces power consumption by up to 47%

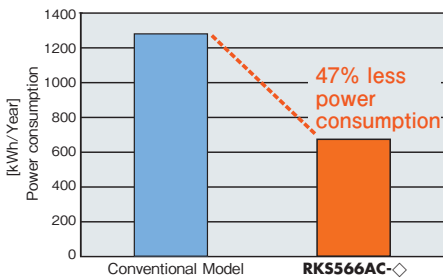
By optimizing the motor material, 47% of the power consumption has been reduced. This results in the decrease of electricity and CO₂ emission. In addition, with the lower heat generated by the motor, there is a lesser requirement of fans or radiation plate.

Lower Heat Generation

Continuous Operation is Achieved

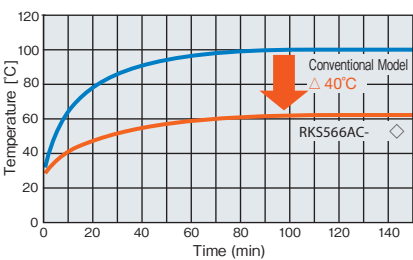
Continuous operation is achieved due to the reduction of motor heat generation by utilizing high-efficiency technology, and there is a lesser requirement of fans or radiation plate.

● Power Consumption Comparison



Operating Condition
 · Spin speed : 1000 r/min
 · Load torque: 0.47 N·m
 · Operating time: 24 hours (Operation 70%, Stand-by 25%, Stop 5%)
 365 days/year

● Motor Surface Temperature Comparison under the Same Conditions

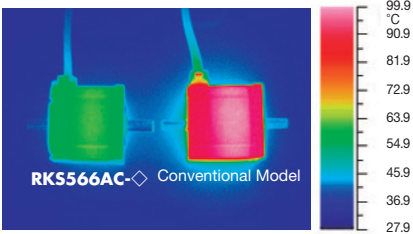


● Power Consumption Comparison

| Items | Conventional Model | RKS566AC-◇ | Comparison | |
|--|--------------------|------------|--------------|----------------|
| | | | Value | Change |
| Power consumption during operation [W] | 204 | 106 | 98 W | Reduced by 48% |
| Power consumption during stand-by [W] | 14 | 13 | 1 W | Reduced by 7% |
| Power consumption [kWh/year] | 1281 | 678 | 603 kWh/year | Reduced by 47% |
| CO ₂ emission equivalent to power consumption ※ [kg/year] | 533 | 282 | 251 kg/year | Reduced by 47% |

※ : Conversion rate: 0.416 kg/kWh

● Distribution of temperature (shown on thermography)



MERIT
 With the maximized motor performance, it is easy to achieve high efficiency and cost savings.

MERIT
 To reduce cost and procedure to take measures to prevent high-temperature.

EASY

CONNECTION & SYSTEM

Easy to wire, easy to select.

Wiring

Easy Wiring

The new I/O connector does not require a screw, eliminating the need for soldering or a special crimping tool. The motor connector can be connected easily by using a dedicated cable. This will reduce wiring time, maintenance and prevent mis-wiring.

● Motor Connector Wiring

- No screw tightening

- Wiring time reduction
- Reduce problems caused by mis-wiring

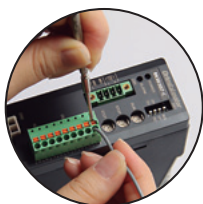
● I/O Connector Wiring

- No soldering
- No crimping tools

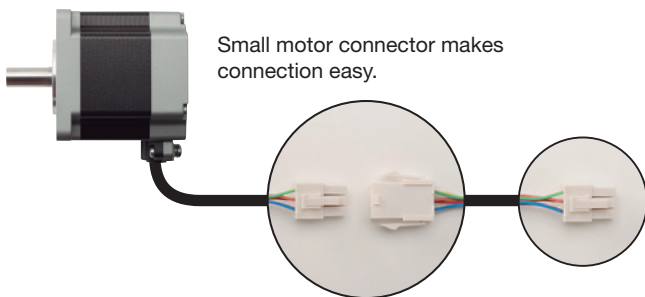
- Wiring time reduction
- Less maintenance



I/O Signal Connectors



Just insert a lead wire while pressing down the orange button with a screwdriver or pointed object.



Selection

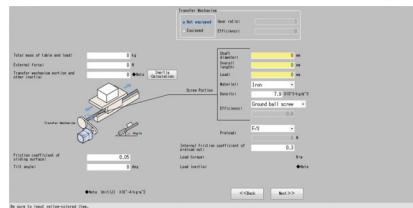
Easy Selection

● Free Motor Selection Service for Customers:

Send us a motor selection inquiry via our website, fax or e-mail.

● Free Motor Selection Software Available for Download:

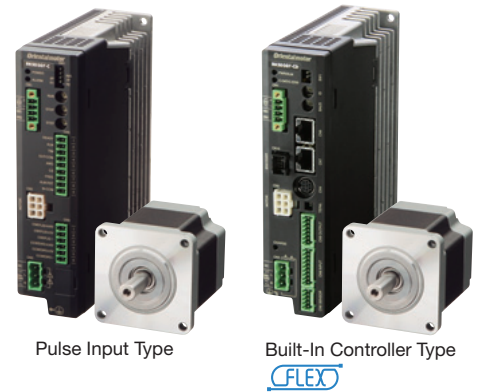
Make your own motor selection for your application by downloading our user friendly motor selection software from our website.



MERIT

The driver has been redesigned, making it more compact and allowing side-by-side in contact installation. It is also more user friendly as wiring has been made easier.

Two types of drivers are available.

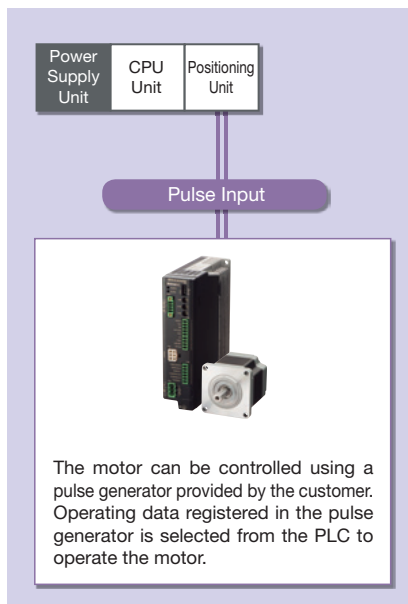


Driver

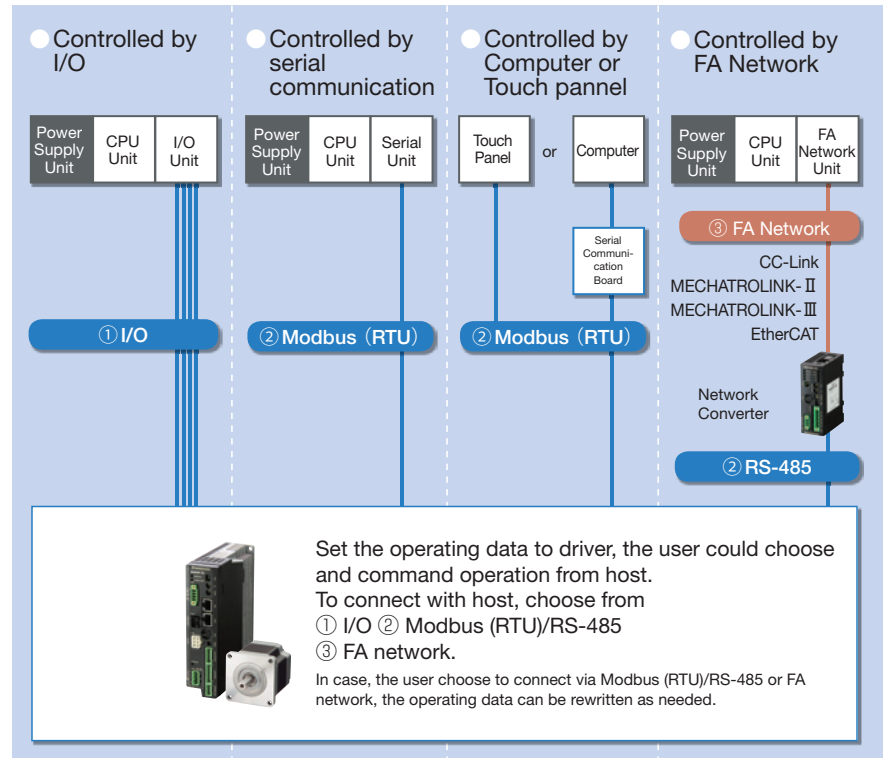
Pulse Input Type
Built-In Controller Type

Select the control method in accordance with your operation system.

Pulse Input Type



Built-In Controller Type **FLEX**



How to connect (Example: Refer to P. 8 and P. 9)

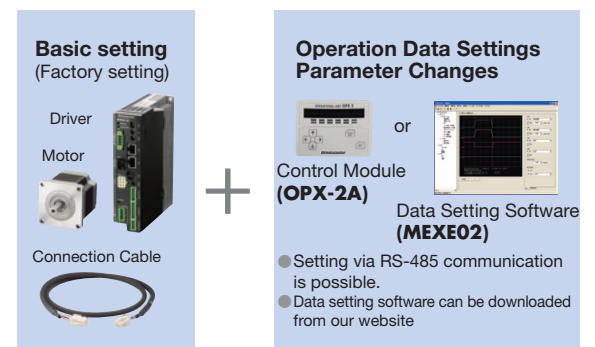
① I/O
The function of a built-in pulse generator lets you build an operation system by connecting directly to a PLC. Since no separate pulse generator is required, the drivers of this type save space and simplify systems.

② Modbus (RTU)/RS-485
Through RS-485 communication, you can set operating data and parameters and input operation commands. A maximum of 31 drivers can be connected to one serial unit. There is also a function for simultaneously starting multiple axes. The unit also has a feature for starting multiple axes simultaneously. The unit supports the Modbus (RTU) protocol, which makes it easy to connect a PLC or similar device to the driver.

③ FA Network
By using a Network Converter (sold separately), you can use CC-Link communication and MECHATROLINK communication. Over these links, operating data and parameters can be set, and operation commands can be sent to the driver.

Speed and moving step angle of motors can be configured by data setting.

The burden on the programmable PLC is reduced because the information necessary for motor operations is built into the driver. This simplifies the system configuration for multi-axis control. Set with control module (sold separately), data setting software, or RS-485 communication.



MERIT
Connects to a Wide Variety of Host System.

EASY

CONNECTION & NETWORK

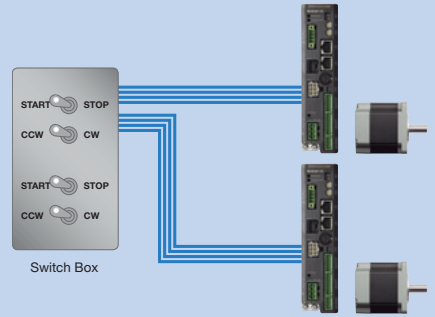
Built-In Controller Type compatible with FLEX.

Example of connection and control of Built-In Controller Type FLEX.

I/O Control

Using a Switch Box

Operating data is set in the driver and the motor can be started or stopped simply by connecting a switch you have on hand. Control can be performed easily without using PLC.



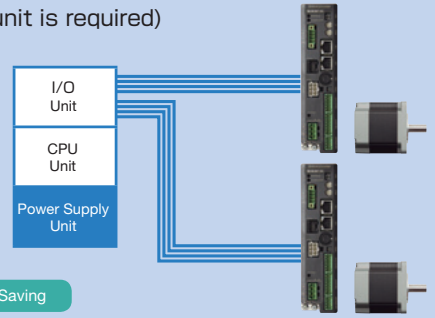
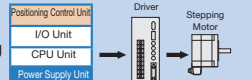
Simple Control

Low Cost

Using PLC (No positioning control unit is required)

When using PLC, you can built an operation system by connecting directly to an I/O Unit. A positioning unit is not necessary on the PLC side therefore space is saved and the system is simplified

Example: System requires positioning control unit



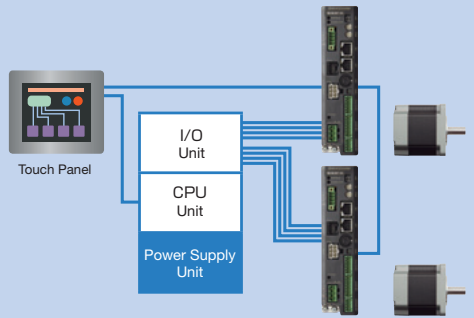
Simple Control

Low Cost

Space Saving

Using PLC and a Touch Panel

Normally, the motor is started and stopped with I/O. Changing the operating data settings and displaying the monitors and alarms is performed with the touch panel using Modbus (RTU) communication. When there is a lot of setup work, changes can be easily performed on the touch panel, and the burden of creating ladders is reduced.



Simple Control

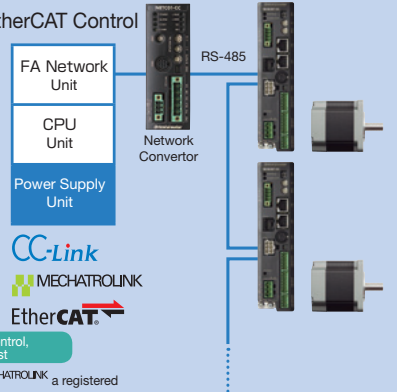
Suitable for one or more products

Network Control

CC-Link Control / MECHATROLINK Control / EtherCAT Control

CC-Link communication, MECHATROLINK communication and Ether CAT communication are available by using network convertor (sold separately). Operating data and parameters can be set and operation commands can be input using various communication methods. Also it shortens the design time.

- Multi-axis control with simple host.
- Can be connected with different types of network.
- Able to send information to a group of slaves at the same time.
- CC-Link: 12 axis max
- MECHATROLINK, EtherCAT: 16 axis max




Simple Control

Simple Wiring

Multi-axis control, lower cost

● CC-Link is a registered trademark of CC-Link Partner Association. ● MECHATROLINK is a registered trademark of MECHATROLINK Members Association.

● EtherCAT is a registered trade mark licensed by Beckhoff Automation in Germany.

FLEX  is a generic name of the products which support Factory Automation network control via I/O control, Modbus (RTU) control and network converter.



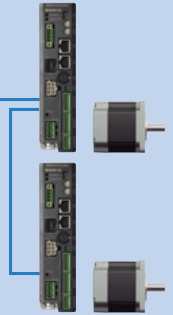
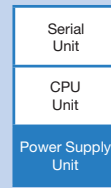
Build-In Controller Type


Modbus (RTU) Control

● Modbus is copyright of Schneider Automation Inc.

Modbus (RTU) control via PLC

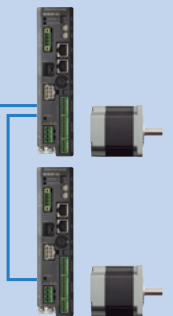
RS-485 communication can be used to set operating data, parameters and input operation commands. A maximum of 31 drivers can be connected to one serial unit. There is also a function for simultaneously starting multiple axes. The motor has a function that enables multiple shafts to be started simultaneously. The protocol supports Modbus (RTU), enabling connection with devices such as touch-screen panel computers and PCs.



- Simple Control
- Simple Wiring
- Compatible with serial unit of several manufactures

Modbus (RTU) control via PC

Operating data, parameters and input operation commands can be input via RS-485 communication board into PC. It also suitable for PC Facility Use.



- Simple Control
- Simple Wiring
- Motor Control by PC

Simple connect to Touch Panel

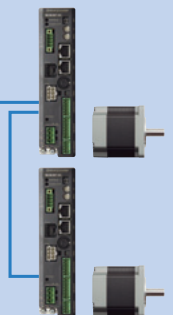
Direct connection to touch panel is available via Modbus (RTU) communication. Operating data, parameters, alarm record and trial operation can be controlled without PLC.

Use touch panel instead of switch



Touch Panels

※ Pro-face (Digital Electronics Corporation) provides exclusive templates for Oriental Motor "Cockpit". For more detail, please refer to Digital Electronics Corporation's website.



- Simple Control
- Simple Wiring
- System Simplification

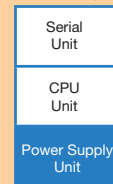
Introduction of Features

Group Sending Function

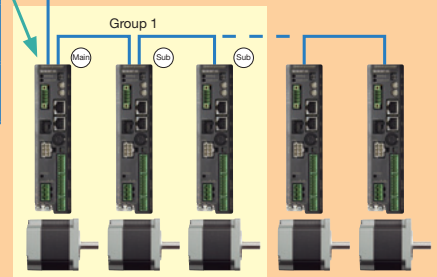
The group sending function simultaneously starts the multi-axis via Modbus (RTU) or FA network. Group some drivers, the used then send operation command to main driver, other drivers in the same group will start operation simultaneously

- Modbus (RTU): Simultaneous start, change of moving angle or speed, monitor are possible.
- FA Network: Simultaneous only

● Modbus (RTU) Communication



Multi-axis simultaneous starting is possible



MERIT
Build-in controller type is compatible with several kinds of system or network.

HIGH

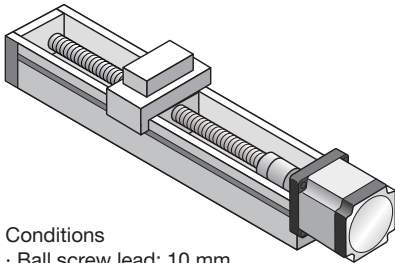
PERFORMANCE & RELIABILITY

Performance and function to enhance reliability.

High Accuracy

High Accurate Positioning

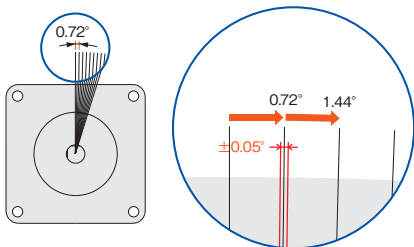
Positioning accuracy of the **RKII** Series is $\pm 0.05^\circ$ (± 3 arc min). When the **RKII** Series is used with a ball screw as shown in the below drawing, the stopping accuracy becomes $\pm 1.4 \mu\text{m}$. The accuracy of the normal ground ball screw is $\pm 10 \mu\text{m}$, thus the accuracy is high enough for positioning operation.



Conditions

- Ball screw lead: 10 mm
- Motor to be used: **RKII** series

Stopping Accuracy $\pm 1.4 \mu\text{m}$



Positioning Accuracy $\pm 0.05^\circ$

MERIT
High accuracy in positioning $\pm 0.05^\circ$.

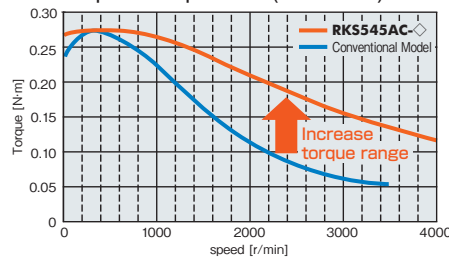
High Torque

Compact and High Torque

The **RKII** Series is compact but produces high torque. The torque of the 42 mm frame size model has increased 50%. This contributes to a reduction in positioning and equipment takt time. The series includes 60 mm and 85 mm framesize models to cover a wide torque range.

- Note that for 60 mm and 85 mm frame size models, the torque is equivalent to the conventional model.

● Torque Comparison (□ 42 mm)

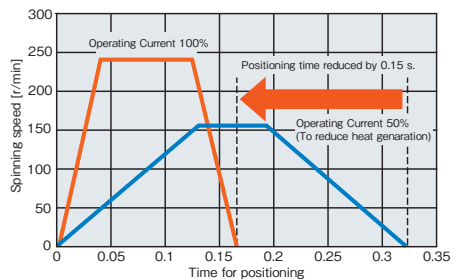


● Torque Comparison by Operating Current

In case of **RK5566AC**

● Comparison of Cycle Time (between deferent current of electricity)

In case of **RK5566AC**



Operating Conditions

- Moment of load inertia: 4×10^{-4} [kg·m²]
- Load torque: 0.2 [N·m]
- Traveling Amount: 180°
- Safeness rate: 2

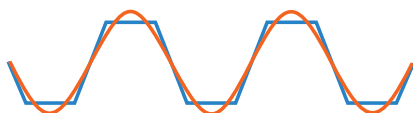
MERIT
Shorten time for positioning.

Low Vibration

Adopt full digital controlled driver

Fulltime micro step driver controlled by a full digital system improve its vibration characteristics much better than ever (first in 5-phase step motor). Current control is also done by a digital system, high spec CPU will perform arithmetic process. This model uses PWM control instead of PAM control, current in each phase became sinusoidal wave. In the result, vibration has been reduced drastically.

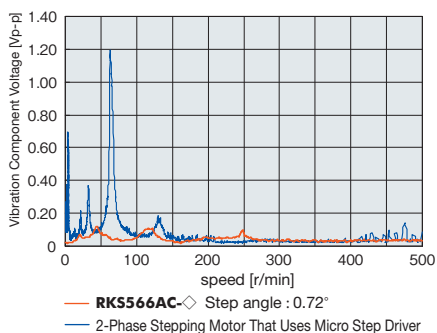
● Current Waveform in Motor (theoretical figure)



— RKII series: sinusoidal wave
— Conventional products: trapezoidal wave

Current in motor changed from trapezoidal wave to sinusoidal wave, which resulted in less vibration.

● Vibration Characteristics Comparison



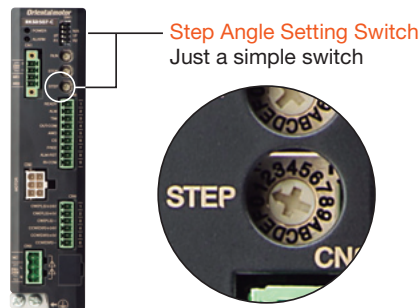
— RK5566AC ◁ Step angle : 0.72°
— 2-Phase Stepping Motor That Uses Micro Step Driver

MERIT
Vibration has been reduced drastically.

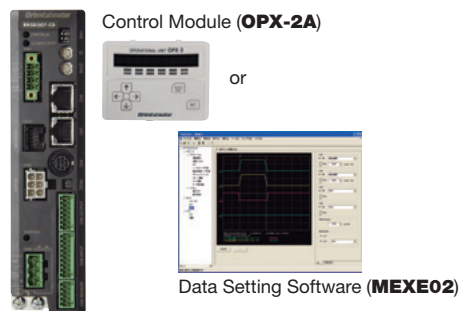
Resolution

Step angle can be set easily

For pulse input type, a wide variety (32 kinds) of step angles can be selected. The user can select depending on their machinery, as well as the data of step angle for two-phase stepping motor is installed. It can be set easily (only select by switch) without any specialized software or Control module.



For built-in controller type, can be set its value between 200 p/r - 200,000 p/r. Setting can be done by Control module, software or RS-485 communication.



MERIT
Optimal resolutions can be selected.

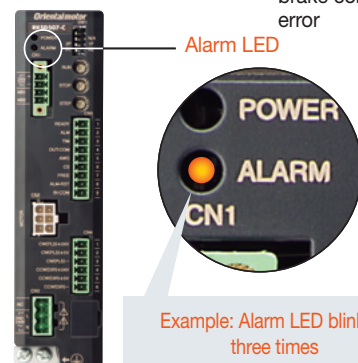
Protective Function

Various kinds of protection are installed

Protection function to take immediate measures is installed. Alarm LED will show detail of trouble, the user can specify it immediately from blink count.

(Example of alarm)

- Main circuit overheating
- Overvoltage
- Command pulse error
- Overcurrent
- Undervoltage
- Electrolytic capacitor error
- EEPROM error
- CPU error
- Automatic electromagnetic brake control error



Example: Alarm LED blinking three times

Overvoltage alarm



[Causes]


- Power supply voltage exceeded the permissible value.
- A large inertial load was stopped suddenly or lifted or lowered.

MERIT
Check troubles with protection function.

Lineup



● List of drivers and motors

| Driver Type | Motor Type | Frame Size | Electro-magnetic Brake | Power Input |
|--|--|-------------------------|------------------------|--|
| Built-in Controller Type   | Standard Type | 42 mm 60 mm 85 mm | ● | Single Phase 100-120 VAC Single Phase 200-240 VAC |
| | Standard Type with Encoder | 42 mm 60 mm 85 mm | — | |
| | TS Geared Type PS Geared Type Harmonic Geared Type | 42 mm 60 mm 90 mm | ● | |


| Driver Type | Motor Type | Frame Size | Electro-magnetic Brake | Power Input |
|---|--|-------------------------|------------------------|--|
| Pulse Input Type  | Standard Type | 42 mm 60 mm 85 mm | ● | Single Phase 100-120 VAC Single Phase 200-240 VAC |
| | TS Geared Type PS Geared Type Harmonic Geared Type | 42 mm 60 mm 90 mm | ● | |

● List of Standard Type, Geared Type and Features

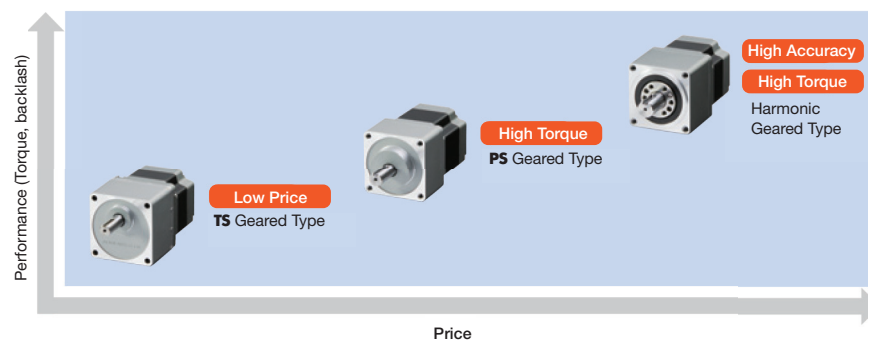
*We provide encoder installed model, but only for the built-in controller models.

| Type | Features | Permission Torque, Maximum Torque (N·m) | Backlash (arc min) | Basic Resolution (°/pulse) | Output Shaft Speed (r/min) |
|--|---|---|--------------------|----------------------------|----------------------------|
| Standard Type   with Encoder* | <ul style="list-style-type: none"> Basic model of the RKII series with Encoder For encoder installed model, functions for monitoring positioning data, detecting positioning gap are available. Resolution of encoder installed: 500 p/r. | Maximum holding torque 6.3 | — | 0.72 | 6000 |
| TS Geared Type (Spur Gear Mechanism) | <ul style="list-style-type: none"> High torque (Double of existing products) A wide variety of reduction gear ratios, high-speed operations Gear ratio types 3.6, 7.2, 10, 20, 30 | Permission torque, Maximum torque 25 45 | 10 | 0.024 | 833 |
| PS Geared Type (Planetary Gear Mechanism) | <ul style="list-style-type: none"> Less backlash (comparing with existing products) High permission torque, maximum torque A various reduction gear ratio lineup make easy to detect angle Center shaft Gear ratio types 5, 7.2, 10, 25, 36, 50 | Permission torque, Maximum torque 37 60 | 7 | 0.0144 | 600 |
| Harmonic Geared Type (Harmonic Drive) | <ul style="list-style-type: none"> Longer mechanical life (Double of existing products) Higher torque (1.3 times of existing products) High accuracy in positioning High permission torque, maximum torque High reduction ratio, high resolution Center shaft Gear ratio types 50, 100 | Permission torque, Maximum torque 52 107 | 0 | 0.0072 | 70 |

Note

- Above values can be referred to know the difference between each types. Such values can be changed depending on setting angle or reduction ratio.
- Harmonic drive and  are registered trademarks of Harmonic drive systems Inc or trademarks.

We also provide the geared motor (a kind of variation of Stepping motor). Geared motors also has various specification, the user can select the optimal one by considering about torque, accuracy (backlash) or price.



Features of New Lineup

NEW Standard Type with Encoder (Built-in controller type only)

Encoder installed model make it possible to monitor present position and detect the gap. It contributes to carry more reliability to machinery.



● Positioning monitor

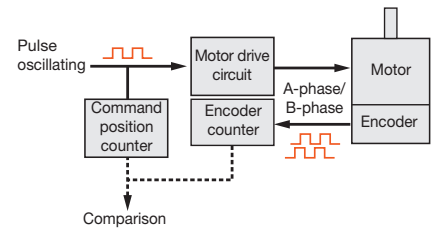
The user can detect position of the motor. For instance, comparing with command position, the user can confirm normal operation.

● Return-to-Home operation by using Z-phase signal

Z-phase signal can be utilized to home return operation. Using Z-phase signal, the home return point will be detected with higher accuracy than single use of the home return sensor.

● Detecting the gap

The encoder will compare command position and encoder-count, if deviation exceeds set value STEPOUT signal will be output. So that if acute change happened in current and cause gap in position, the user can figure it out. Alarm or warning sign for abnormality in deviation is also available.



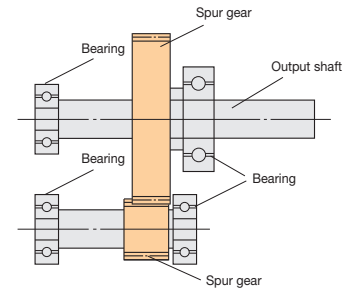
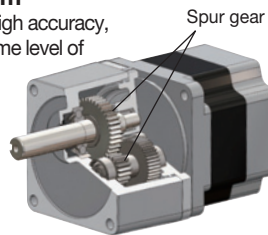
TS Geared Type

This type is made with simple spur gear design. The torque and speed have been improved while its affordable price, if compare with existing type.



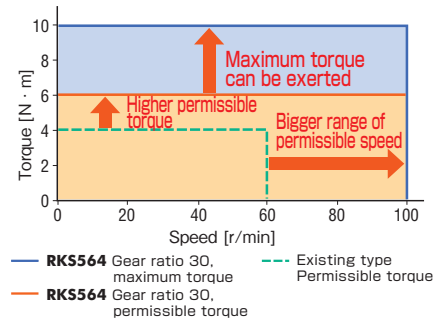
● Mechanism

Because of its high accuracy, this type has same level of accuracy with existing TH Gearhead even it does not have tapered gear.



● Torque and speed are improved (compare with existing type)

This type realizes the improvement of permissible torque, at the same time, it can exert its maximum torque. Not only these improvement, the rated input speed is increased to 3,000 r/min, and its permissible speed range of output shaft drastically (compare with existing type). The motor exerts higher torque and shortens time for positioning, because maximum torque range can be used acceleration/deceleration.



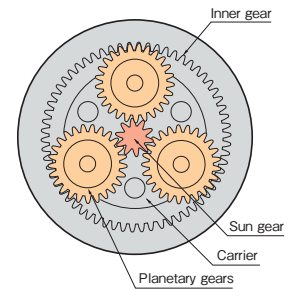
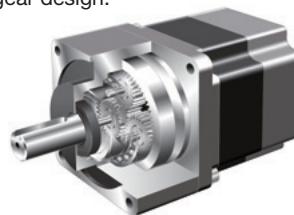
PS Geared Type

The PS gear mechanism is comprised primarily of a sun gear, planetary gears and an internal tooth gear. The planetary gears design realizes higher torque.



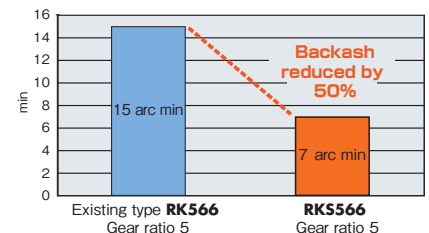
● Mechanism

There are some gears inside and they distribute torque, so that this design permit to use higher torque than spur gear design. As well as, this type uses high accuracy gear, it make backlash smaller if compare with spur gear design.



● Reduce backlash (Compare with existing type)

Optimal design of gears have reduced their backlash. (Except: □ 42 mm) It realize positioning with higher accuracy.



Harmonic Geared Type

This type newly adopted high torque harmonic gears. The mechanical life, permissible torque and maximum torque are improved (compare with conventional model).

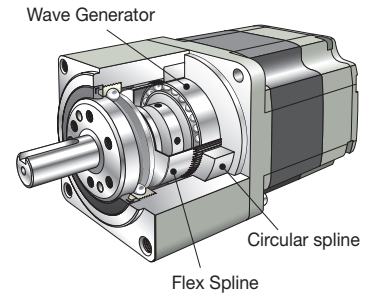


● Improved rated life time (Twice the length of conventional models)

The rated life time has been increased from 5,000 hours (conventional models) to 10,000 hours. (Except □ 42 mm)

[Condition for rated life time]
 Torque : Permissible torque
 Type of load : Uniform load
 Input speed : 1,500 r/min
 Radial load : Permissible radial load
 Axial load : Permissible axial load

● Structure



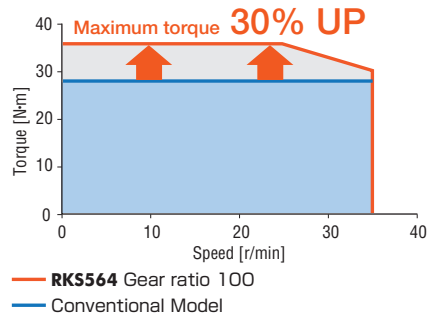
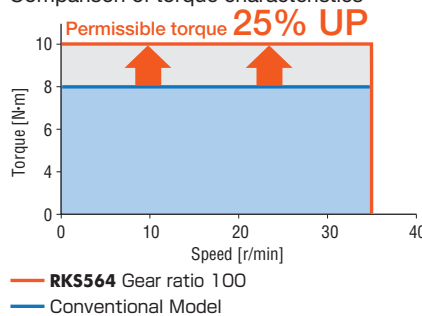
● High torque

If compares with the existing type, the permissible torque and maximum torque has been increased drastically. It makes the motor to drive more load while the size of motor is same as before.

Comparison of specification

| Products name | RKS564AC-HS100-◇ | conventional model |
|---------------------------|----------------------------------|--------------------|
| Permissible torque N·m | 10 | 8 |
| Maximum torque N·m | 36 | 28 |
| Gear ratio | 100 | |
| Lost motion (Load torque) | 0.7 arc min or less (± 0.39 N·m) | |

Comparison of torque characteristics

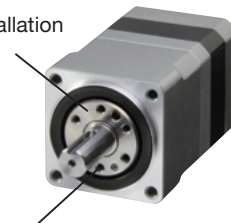


● Surface Installation of load is available

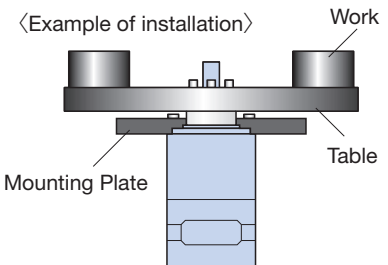
This type permits installation of load directly on the rotating surface integrated with the shaft. (Except: □ 90 mm)

Appearance and Installation

Example This surface rotates with the shaft



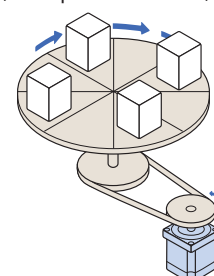
Tapped holes are provides on the rotating surface for load installation



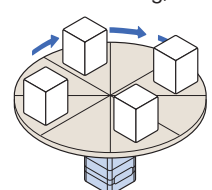
Application: Index Table

This type not only reduces the number of parts/processes, but also improves reliability. They are also suitable for operating loads that receive moment loads.

〈Example mechanism〉



〈Surface mounting〉





Advantage of geared motor

Using geared motors bring the user lots of advantages, such as speed reduction / high torque / high resolution etc.

The motor can drive a large inertial load

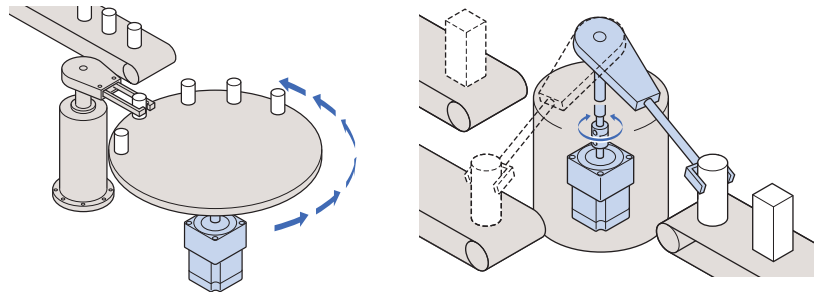
If compared with a standard motor, the geared motors can drive larger inertial load, because it's permissible load moment of inertia increases with the square of reduction ratio.

Comparison of load moment of inertia

| | Motor Type | Motor product name | Load moment of inertia (10 times of Rotor Inertia) | Diameter of inertial load (Thickness: 20 mm, material: Aluminum) | Speed range |
|---|--------------------------------------|------------------------|--|--|-----------------|
|  | Standard Type | RKS564AC -◇ | $1.6 \times 10^{-4} \text{ kg} \cdot \text{m}^2$ | 72 mm | 0 ~ 6,000 r/min |
|  | PS Geared Type (Gear ratio 5) | RKS566AC-PS5 -◇ | $40 \times 10^{-4} \text{ kg} \cdot \text{m}^2$ | 164 mm | 0 ~ 600 r/min |

Damping characteristic at starting/stopping will be improved.

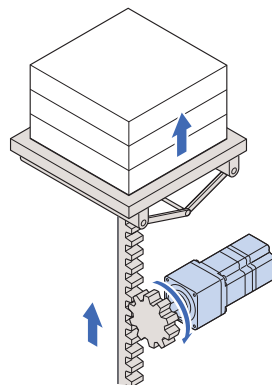
When the motor works under large inertial load or need to accelerate/decelerate in a short time, it is better to use the geared motor than the standard motor. Because it can reduce damping and it can also drive stably. So that the geared motor is suitable for work that requires to position a large load (i.e. index table, arm) in a short time.



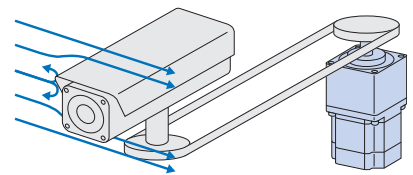
High stiffness, not twisting easily.

The geared motor has a high stiffness and it cannot be twisted easily, so that it do not profoundly affected by changes of load torque (compared with standard motor).

Application: Lifter
The geared motor can stop with high accuracy, if the user uses it with machinery that drives vertically such as a lifter, even its number of work or load changes.

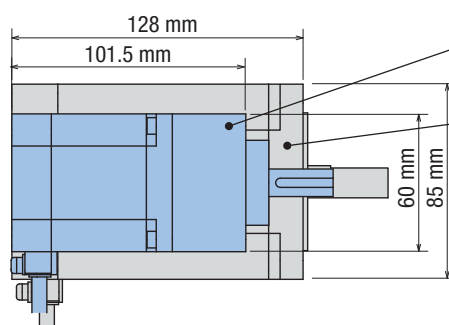


Application: Security Camera
The motor can stand stably even the camera is shaken by strong wind.



Downsizing

If comparing the standard motor and the geared one which have similar maximum holding torque, the setting angle of the geared motor is smaller than the other. This characteristic the motor downsizes both in quantity and volume. So that the geared motor is recommended, if equipment needs to be downsized or to save weight.



PS Geared Motor
RKS564AC-PS25-◇ Weight: 1.4 kg, TH=8 N·m

Standard Motor
RKS5913AC-◇ Weight: 4.1 kg, TH=6.3 N·m

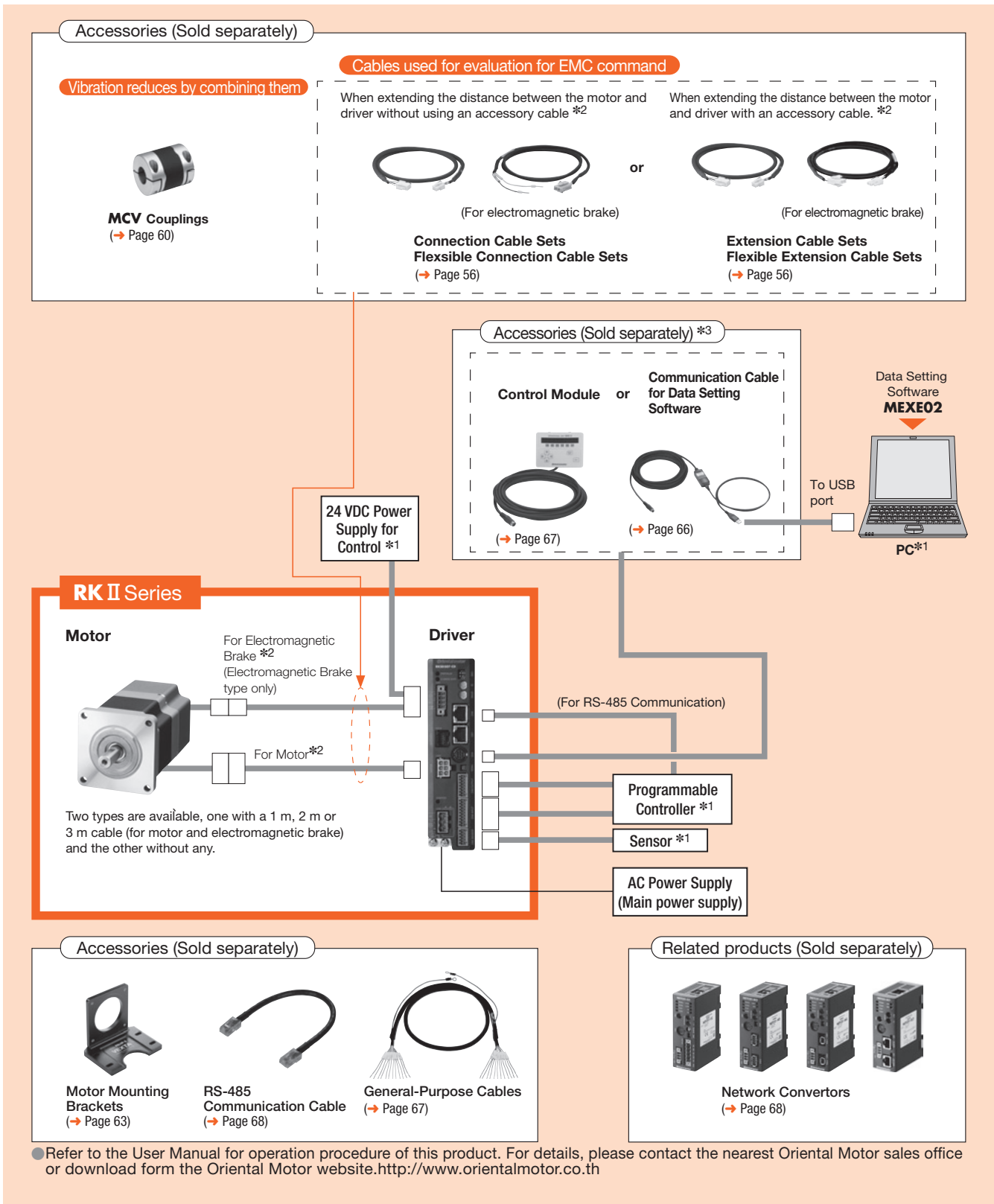
※ TH means "Holding torque"

System Configuration

Built-In Controller Package Standard Type with Electromagnetic Brake

An example of a system configuration when used with either I/O control or RS-485 communication.

- *1 Not supplied.
- *2 Only with the type supplied with a connection cable
- *3 To be provided as necessary



System Configuration Example

| | | | | |
|---------------------|---|------------------------|-------------------|-----------------------------|
| RK II series | + | Sold separately | | |
| | | Motor Mounting Bracket | Flexible Coupling | General-Purpose Cable (1 m) |
| RKS566MCD-3 | | PAL2P-5 | MCV251010 | CC16D010B-1 |

● The system configuration shown above is an example. Other combinations are available.

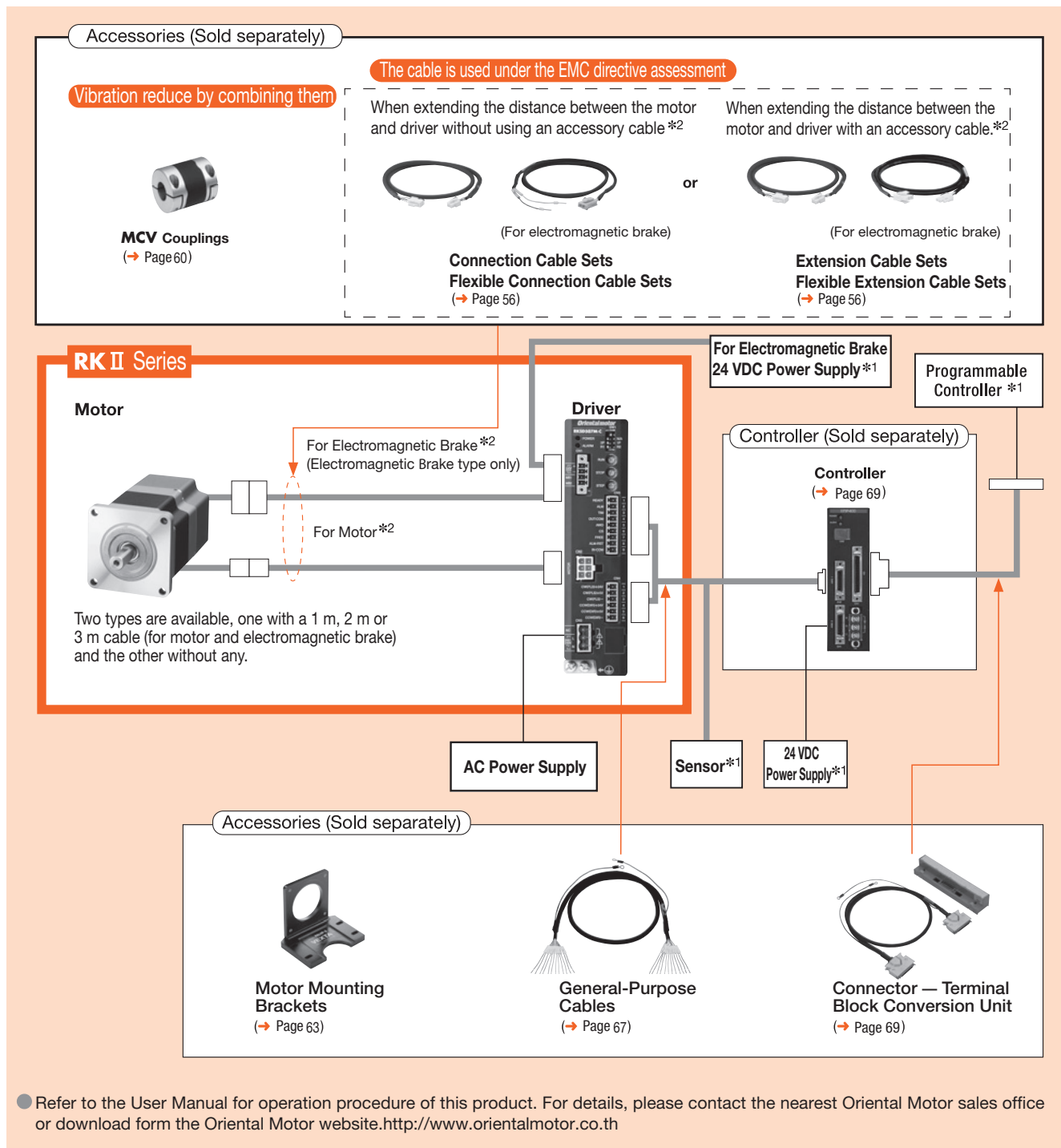
System Configuration

Pulse Input Type/Standard Type with Electromagnetic Brake

A single-axis system configuration with the controller **EMP400** Series.

*1 Not supplied

*2 Only the model includes connecting cable



System Configuration Example

| RK II Series | + | Sold Separately | | | | |
|------------------|---|-----------------|------------------------|-------------------|-----------------------------|--|
| | | Controller | Motor Mounting Bracket | Flexible Coupling | General-Purpose Cable (1 m) | Connector - Terminal Block Conversion Unit (1 m) |
| RK566MC-3 | | EMP401-1 | PAL2P-5 | MCV251010 | CC16D010B-1 | CC50T10E |

● The system configuration shown above is an example. Other combinations are available.

Product Number Code

RKS 5 6 4 R C D 2 - 3

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑪

RKS 5 6 4 M C D - HS 50 - 3

① ② ③ ④ ⑤ ⑥ ⑦ ⑨ ⑩ ⑪

| | | |
|---|----------------------|---|
| ① | Series Name | RKS : RK II series |
| ② | 5 : 5-Phase | |
| ③ | Motor Frame Size | 4 : 42 mm 6 : 60 mm 9 : 85 mm (Motor Frame Size for Geared Type 90 mm) |
| ④ | Motor Case Length | |
| ⑤ | Motor Type | A : Single shaft B : Double shaft R : Encoder Type M : Electromagnetic Brake Type |
| ⑥ | Power Supply Voltage | A : Single-Phase 100-120 VAC C : Single-Phase 200-240 VAC |
| ⑦ | Driver Type | D : Built-In Controller Type Blank : Pulse Input Type |
| ⑧ | Serial Number | |
| ⑨ | Gearhead Type | Blank : Standard Type TS : TS Geared Type PS : PS Geared Type HS : Harmonic Geared Type |
| ⑩ | Gear Ratio | |
| ⑪ | Connecting Cable | Numeric value : Cable length (included in package) 1 : 1 m 2 : 2 m 3 : 3 m Blank : Package without cable |

Product Line

Built-In Controller Type

Standard Type

| Product Name (Single Shaft) |
|---------------------------------------|
| RKS543A <input type="checkbox"/> D-◇ |
| RKS544A <input type="checkbox"/> D-◇ |
| RKS545A <input type="checkbox"/> D-◇ |
| RKS564A <input type="checkbox"/> D-◇ |
| RKS566A <input type="checkbox"/> D-◇ |
| RKS569A <input type="checkbox"/> D-◇ |
| RKS596A <input type="checkbox"/> D-◇ |
| RKS599A <input type="checkbox"/> D-◇ |
| RKS5913A <input type="checkbox"/> D-◇ |

| Product Name (Double Shaft) |
|---------------------------------------|
| RKS543B <input type="checkbox"/> D-◇ |
| RKS544B <input type="checkbox"/> D-◇ |
| RKS545B <input type="checkbox"/> D-◇ |
| RKS564B <input type="checkbox"/> D-◇ |
| RKS566B <input type="checkbox"/> D-◇ |
| RKS569B <input type="checkbox"/> D-◇ |
| RKS596B <input type="checkbox"/> D-◇ |
| RKS599B <input type="checkbox"/> D-◇ |
| RKS5913B <input type="checkbox"/> D-◇ |

Standard Type with Electromagnetic Brake

| Product Name |
|---------------------------------------|
| RKS543M <input type="checkbox"/> D-◇ |
| RKS544M <input type="checkbox"/> D-◇ |
| RKS545M <input type="checkbox"/> D-◇ |
| RKS564M <input type="checkbox"/> D-◇ |
| RKS566M <input type="checkbox"/> D-◇ |
| RKS569M <input type="checkbox"/> D-◇ |
| RKS596M <input type="checkbox"/> D-◇ |
| RKS599M <input type="checkbox"/> D-◇ |
| RKS5913M <input type="checkbox"/> D-◇ |

Standard Type with Encoder

| Product Name |
|--|
| RKS543R <input type="checkbox"/> D2-◇ |
| RKS544R <input type="checkbox"/> D2-◇ |
| RKS545R <input type="checkbox"/> D2-◇ |
| RKS564R <input type="checkbox"/> D2-◇ |
| RKS566R <input type="checkbox"/> D2-◇ |
| RKS569R <input type="checkbox"/> D2-◇ |
| RKS596R <input type="checkbox"/> D2-◇ |
| RKS599R <input type="checkbox"/> D2-◇ |
| RKS5913R <input type="checkbox"/> D2-◇ |

TS Geared Type

| Product Name (Single Shaft) |
|--|
| RKS543A <input type="checkbox"/> D-TS3.6-◇ |
| RKS543A <input type="checkbox"/> D-TS7.2-◇ |
| RKS543A <input type="checkbox"/> D-TS10-◇ |
| RKS543A <input type="checkbox"/> D-TS20-◇ |
| RKS543A <input type="checkbox"/> D-TS30-◇ |
| RKS564A <input type="checkbox"/> D-TS3.6-◇ |
| RKS564A <input type="checkbox"/> D-TS7.2-◇ |
| RKS564A <input type="checkbox"/> D-TS10-◇ |
| RKS564A <input type="checkbox"/> D-TS20-◇ |
| RKS564A <input type="checkbox"/> D-TS30-◇ |
| RKS596A <input type="checkbox"/> D-TS3.6-◇ |
| RKS596A <input type="checkbox"/> D-TS7.2-◇ |
| RKS596A <input type="checkbox"/> D-TS10-◇ |
| RKS596A <input type="checkbox"/> D-TS20-◇ |
| RKS596A <input type="checkbox"/> D-TS30-◇ |

| Product Name (Double Shaft) |
|--|
| RKS543B <input type="checkbox"/> D-TS3.6-◇ |
| RKS543B <input type="checkbox"/> D-TS7.2-◇ |
| RKS543B <input type="checkbox"/> D-TS10-◇ |
| RKS543B <input type="checkbox"/> D-TS20-◇ |
| RKS543B <input type="checkbox"/> D-TS30-◇ |
| RKS564B <input type="checkbox"/> D-TS3.6-◇ |
| RKS564B <input type="checkbox"/> D-TS7.2-◇ |
| RKS564B <input type="checkbox"/> D-TS10-◇ |
| RKS564B <input type="checkbox"/> D-TS20-◇ |
| RKS564B <input type="checkbox"/> D-TS30-◇ |
| RKS596B <input type="checkbox"/> D-TS3.6-◇ |
| RKS596B <input type="checkbox"/> D-TS7.2-◇ |
| RKS596B <input type="checkbox"/> D-TS10-◇ |
| RKS596B <input type="checkbox"/> D-TS20-◇ |
| RKS596B <input type="checkbox"/> D-TS30-◇ |

TS Geared Type with Electromagnetic Brake

| Product Name (Single Shaft) |
|--|
| RKS543M <input type="checkbox"/> D-TS3.6-◇ |
| RKS543M <input type="checkbox"/> D-TS7.2-◇ |
| RKS543M <input type="checkbox"/> D-TS10-◇ |
| RKS543M <input type="checkbox"/> D-TS20-◇ |
| RKS543M <input type="checkbox"/> D-TS30-◇ |
| RKS564M <input type="checkbox"/> D-TS3.6-◇ |
| RKS564M <input type="checkbox"/> D-TS7.2-◇ |
| RKS564M <input type="checkbox"/> D-TS10-◇ |
| RKS564M <input type="checkbox"/> D-TS20-◇ |
| RKS564M <input type="checkbox"/> D-TS30-◇ |
| RKS596M <input type="checkbox"/> D-TS3.6-◇ |
| RKS596M <input type="checkbox"/> D-TS7.2-◇ |
| RKS596M <input type="checkbox"/> D-TS10-◇ |
| RKS596M <input type="checkbox"/> D-TS20-◇ |
| RKS596M <input type="checkbox"/> D-TS30-◇ |

- Either **A** (single-phase 100-120 VAC) or **C** (single-phase 200-240 VAC) indicating the power supply input is entered where the box is located within the product name. A number indicating the desired length of **1** (1 m), **2** (2 m) or **3** (3 m) for the cable included with the product is entered where the box is located within the product name.
- Oriental Motor Corp. provide user's manual for this product. For more detail, please contact to our branch, sales office or the user can download it from our website. <http://www.orientalmotor.co.th>

Note

- The cable on the Electromagnetic Brake or Encoder cannot be connected to the driver directly. To connect to the driver, please purchase connection cable separately or choose the package come with the connection cable (The package includes a connection cable).

◇ **PS Geared type**

| Product Name (Single Shaft) |
|--|
| RKS545A <input type="checkbox"/> D-PS5-◇ |
| RKS545A <input type="checkbox"/> D-PS7.2-◇ |
| RKS545A <input type="checkbox"/> D-PS10-◇ |
| RKS543A <input type="checkbox"/> D-PS25-◇ |
| RKS543A <input type="checkbox"/> D-PS36-◇ |
| RKS543A <input type="checkbox"/> D-PS50-◇ |
| RKS566A <input type="checkbox"/> D-PS5-◇ |
| RKS566A <input type="checkbox"/> D-PS7.2-◇ |
| RKS566A <input type="checkbox"/> D-PS10-◇ |
| RKS564A <input type="checkbox"/> D-PS25-◇ |
| RKS564A <input type="checkbox"/> D-PS36-◇ |
| RKS564A <input type="checkbox"/> D-PS50-◇ |
| RKS599A <input type="checkbox"/> D-PS5-◇ |
| RKS599A <input type="checkbox"/> D-PS7.2-◇ |
| RKS599A <input type="checkbox"/> D-PS10-◇ |
| RKS596A <input type="checkbox"/> D-PS25-◇ |
| RKS596A <input type="checkbox"/> D-PS36-◇ |
| RKS596A <input type="checkbox"/> D-PS50-◇ |

| Product Name (Double Shaft) |
|--|
| RKS545B <input type="checkbox"/> D-PS5-◇ |
| RKS545B <input type="checkbox"/> D-PS7.2-◇ |
| RKS545B <input type="checkbox"/> D-PS10-◇ |
| RKS543B <input type="checkbox"/> D-PS25-◇ |
| RKS543B <input type="checkbox"/> D-PS36-◇ |
| RKS543B <input type="checkbox"/> D-PS50-◇ |
| RKS566B <input type="checkbox"/> D-PS5-◇ |
| RKS566B <input type="checkbox"/> D-PS7.2-◇ |
| RKS566B <input type="checkbox"/> D-PS10-◇ |
| RKS564B <input type="checkbox"/> D-PS25-◇ |
| RKS564B <input type="checkbox"/> D-PS36-◇ |
| RKS564B <input type="checkbox"/> D-PS50-◇ |
| RKS599B <input type="checkbox"/> D-PS5-◇ |
| RKS599B <input type="checkbox"/> D-PS7.2-◇ |
| RKS599B <input type="checkbox"/> D-PS10-◇ |
| RKS596B <input type="checkbox"/> D-PS25-◇ |
| RKS596B <input type="checkbox"/> D-PS36-◇ |
| RKS596B <input type="checkbox"/> D-PS50-◇ |

◇ **PS Geared type with Electromagnetic Brake**

| Product Name (Single Shaft) |
|--|
| RKS545M <input type="checkbox"/> D-PS5-◇ |
| RKS545M <input type="checkbox"/> D-PS7.2-◇ |
| RKS545M <input type="checkbox"/> D-PS10-◇ |
| RKS543M <input type="checkbox"/> D-PS25-◇ |
| RKS543M <input type="checkbox"/> D-PS36-◇ |
| RKS543M <input type="checkbox"/> D-PS50-◇ |
| RKS566M <input type="checkbox"/> D-PS5-◇ |
| RKS566M <input type="checkbox"/> D-PS7.2-◇ |
| RKS566M <input type="checkbox"/> D-PS10-◇ |
| RKS564M <input type="checkbox"/> D-PS25-◇ |
| RKS564M <input type="checkbox"/> D-PS36-◇ |
| RKS564M <input type="checkbox"/> D-PS50-◇ |
| RKS599M <input type="checkbox"/> D-PS5-◇ |
| RKS599M <input type="checkbox"/> D-PS7.2-◇ |
| RKS599M <input type="checkbox"/> D-PS10-◇ |
| RKS596M <input type="checkbox"/> D-PS25-◇ |
| RKS596M <input type="checkbox"/> D-PS36-◇ |
| RKS596M <input type="checkbox"/> D-PS50-◇ |

◇ **Harmonic Geared Type**

| Product Name (Single Shaft) |
|--|
| RKS543A <input type="checkbox"/> D-HS50-◇ |
| RKS543A <input type="checkbox"/> D-HS100-◇ |
| RKS564A <input type="checkbox"/> D-HS50-◇ |
| RKS564A <input type="checkbox"/> D-HS100-◇ |
| RKS596A <input type="checkbox"/> D-HS50-◇ |
| RKS596A <input type="checkbox"/> D-HS100-◇ |

| Product Name (Double Shaft) |
|--|
| RKS543B <input type="checkbox"/> D-HS50-◇ |
| RKS543B <input type="checkbox"/> D-HS100-◇ |
| RKS564B <input type="checkbox"/> D-HS50-◇ |
| RKS564B <input type="checkbox"/> D-HS100-◇ |
| RKS596B <input type="checkbox"/> D-HS50-◇ |
| RKS596B <input type="checkbox"/> D-HS100-◇ |

◇ **Harmonic Geared Type with Electromagnetic Brake**

| Product Name |
|--|
| RKS543M <input type="checkbox"/> D-HS50-◇ |
| RKS543M <input type="checkbox"/> D-HS100-◇ |
| RKS564M <input type="checkbox"/> D-HS50-◇ |
| RKS564M <input type="checkbox"/> D-HS100-◇ |
| RKS596M <input type="checkbox"/> D-HS50-◇ |
| RKS596M <input type="checkbox"/> D-HS100-◇ |

● **Pulse Input Type**

◇ **Standard Type**

| Product Name (Single Shaft) |
|--------------------------------------|
| RKS543A <input type="checkbox"/> -◇ |
| RKS544A <input type="checkbox"/> -◇ |
| RKS545A <input type="checkbox"/> -◇ |
| RKS564A <input type="checkbox"/> -◇ |
| RKS566A <input type="checkbox"/> -◇ |
| RKS569A <input type="checkbox"/> -◇ |
| RKS596A <input type="checkbox"/> -◇ |
| RKS599A <input type="checkbox"/> -◇ |
| RKS5913A <input type="checkbox"/> -◇ |

| Product Name (Double Shaft) |
|--------------------------------------|
| RKS543B <input type="checkbox"/> -◇ |
| RKS544B <input type="checkbox"/> -◇ |
| RKS545B <input type="checkbox"/> -◇ |
| RKS564B <input type="checkbox"/> -◇ |
| RKS566B <input type="checkbox"/> -◇ |
| RKS569B <input type="checkbox"/> -◇ |
| RKS596B <input type="checkbox"/> -◇ |
| RKS599B <input type="checkbox"/> -◇ |
| RKS5913B <input type="checkbox"/> -◇ |

◇ **Standard Type with Electromagnetic Brake**

| Product Name |
|--------------------------------------|
| RKS543M <input type="checkbox"/> -◇ |
| RKS544M <input type="checkbox"/> -◇ |
| RKS545M <input type="checkbox"/> -◇ |
| RKS564M <input type="checkbox"/> -◇ |
| RKS566M <input type="checkbox"/> -◇ |
| RKS569M <input type="checkbox"/> -◇ |
| RKS596M <input type="checkbox"/> -◇ |
| RKS599M <input type="checkbox"/> -◇ |
| RKS5913M <input type="checkbox"/> -◇ |

- Either **A** (single-phase 100-120 VAC) or **C** (single-phase 200-240 VAC) indicating the power supply input is entered where the box is located within the product name.
- A number indicating the desired length of **1** (1 m), **2** (2 m) or **3** (3 m) for the cable included with the product is entered where the box ◇ is located within the product name.
- Oriental Motor Corp. provide user's manual for this product. For more detail, please contact to our branch, sales office or the user can download it from our website. <http://www.orientalmotor.co.th>

Note

- The cable on the Electromagnetic Brake or Encoder cannot be connected to the driver directly. To connect to the driver, please purchase connection cable separately or choose the package come with the connection cable (The package includes a connection cable).

◇ TS Geared Type

| Product Name (Single Shaft) |
|--------------------------------|
| RKS543A- TS3.6 -◇ |
| RKS543A- TS7.2 -◇ |
| RKS543A- TS10 -◇ |
| RKS543A- TS20 -◇ |
| RKS543A- TS30 -◇ |
| RKS564A- TS3.6 -◇ |
| RKS564A- TS7.2 -◇ |
| RKS564A- TS10 -◇ |
| RKS564A- TS20 -◇ |
| RKS564A- TS30 -◇ |
| RKS596A- TS3.6 -◇ |
| RKS596A- TS7.2 -◇ |
| RKS596A- TS10 -◇ |
| RKS596A- TS20 -◇ |
| RKS596A- TS30 -◇ |

◇ TS Geared Type with Electromagnetic Brake

| Product Name (Single Shaft) |
|--------------------------------|
| RKS543M- TS3.6 -◇ |
| RKS543M- TS7.2 -◇ |
| RKS543M- TS10 -◇ |
| RKS543M- TS20 -◇ |
| RKS543M- TS30 -◇ |
| RKS564M- TS3.6 -◇ |
| RKS564M- TS7.2 -◇ |
| RKS564M- TS10 -◇ |
| RKS564M- TS20 -◇ |
| RKS564M- TS30 -◇ |
| RKS596M- TS3.6 -◇ |
| RKS596M- TS7.2 -◇ |
| RKS596M- TS10 -◇ |
| RKS596M- TS20 -◇ |
| RKS596M- TS30 -◇ |

◇ PS Geared Type

| Product Name (Single Shaft) |
|--------------------------------|
| RKS545A- PS5 -◇ |
| RKS545A- PS7.2 -◇ |
| RKS545A- PS10 -◇ |
| RKS543A- PS25 -◇ |
| RKS543A- PS36 -◇ |
| RKS543A- PS50 -◇ |
| RKS566A- PS5 -◇ |
| RKS566A- PS7.2 -◇ |
| RKS566A- PS10 -◇ |
| RKS564A- PS25 -◇ |
| RKS564A- PS36 -◇ |
| RKS564A- PS50 -◇ |
| RKS599A- PS5 -◇ |
| RKS599A- PS7.2 -◇ |
| RKS599A- PS10 -◇ |
| RKS596A- PS25 -◇ |
| RKS596A- PS36 -◇ |
| RKS596A- PS50 -◇ |

◇ PS Geared Type with Electromagnetic Brake

| Product Name (Double Shaft) |
|--------------------------------|
| RKS545B- PS5 -◇ |
| RKS545B- PS7.2 -◇ |
| RKS545B- PS10 -◇ |
| RKS543B- PS25 -◇ |
| RKS543B- PS36 -◇ |
| RKS543B- PS50 -◇ |
| RKS566B- PS5 -◇ |
| RKS566B- PS7.2 -◇ |
| RKS566B- PS10 -◇ |
| RKS564B- PS25 -◇ |
| RKS564B- PS36 -◇ |
| RKS564B- PS50 -◇ |
| RKS599B- PS5 -◇ |
| RKS599B- PS7.2 -◇ |
| RKS599B- PS10 -◇ |
| RKS596B- PS25 -◇ |
| RKS596B- PS36 -◇ |
| RKS596B- PS50 -◇ |

◇ PS Geared Type with Electromagnetic Brake

| Product Name (Single Shaft) |
|--------------------------------|
| RKS545M- PS5 -◇ |
| RKS545M- PS7.2 -◇ |
| RKS545M- PS10 -◇ |
| RKS543M- PS25 -◇ |
| RKS543M- PS36 -◇ |
| RKS543M- PS50 -◇ |
| RKS566M- PS5 -◇ |
| RKS566M- PS7.2 -◇ |
| RKS566M- PS10 -◇ |
| RKS564M- PS25 -◇ |
| RKS564M- PS36 -◇ |
| RKS564M- PS50 -◇ |
| RKS599M- PS5 -◇ |
| RKS599M- PS7.2 -◇ |
| RKS599M- PS10 -◇ |
| RKS596M- PS25 -◇ |
| RKS596M- PS36 -◇ |
| RKS596M- PS50 -◇ |

◇ Harmonic Geared Type

| Product Name (Single Shaft) |
|--------------------------------|
| RKS543A- HS50 -◇ |
| RKS543A- HS100 -◇ |
| RKS564A- HS50 -◇ |
| RKS564A- HS100 -◇ |
| RKS596A- HS50 -◇ |
| RKS596A- HS100 -◇ |

◇ Harmonic Geared Type with Electromagnetic Brake

| Product Name (Double Shaft) |
|--------------------------------|
| RKS543B- HS50 -◇ |
| RKS543B- HS100 -◇ |
| RKS564B- HS50 -◇ |
| RKS564B- HS100 -◇ |
| RKS596B- HS50 -◇ |
| RKS596B- HS100 -◇ |

◇ Harmonic Geared Type with Electromagnetic Brake

| Product Name |
|--------------------------|
| RKS543M- HS50 -◇ |
| RKS543M- HS100 -◇ |
| RKS564M- HS50 -◇ |
| RKS564M- HS100 -◇ |
| RKS596M- HS50 -◇ |
| RKS596M- HS100 -◇ |

- Either **A** (single-phase 100-120 VAC) or **C** (single-phase 200-240 VAC) indicating the power supply input is entered where the box **■** is located within the product name.
A number indicating the desired length of **1** (1 m), **2** (2 m) or **3** (3 m) for the cable included with the product is entered where the box **◇** is located within the product name.
- Oriental Motor Corp. provide user's manual for this product. For more detail, please contact to our branch, sales office or the user can download it from our website.
<http://www.orientalmotor.co.th>

Note

- The cable on the Electromagnetic Brake or Encoder cannot be connected to the driver directly. To connect to the driver, please purchase connection cable separately or choose the package come with the connection cable (The package includes a connection cable).

Standard Type Frame Size 42 mm, 60 mm

Standard Type with Electromagnetic Brake Frame Size 42 mm, 60 mm

Standard Type with Encoder Frame Size 42 mm, 60 mm

Specifications RoHS



| Product Name | Built-In Controller Type | | RKS543 | RKS544 | RKS545 | RKS564 | RKS566 | RKS569 |
|------------------------------------|--------------------------|--------------------------|---|---|---|--|--|--|
| | Pulse Input Type | | RKS543 | RKS544 | RKS545 | RKS564 | RKS566 | RKS569 |
| Maximum Holding Torque | N·m | | 0.14 | 0.21 | 0.27 | 0.52 | 0.96 | 1.77 |
| Holding Torque at Motor Standstill | Power ON | N·m | 0.07 | 0.10 | 0.13 | 0.26 | 0.48 | 0.88 |
| | Electromagnetic Brake | N·m | 0.07 | 0.10 | 0.13 | 0.26 | 0.48 | 0.88 |
| Rotor Inertia | J : kg·m ² | | 30×10 ⁻⁷ [45×10 ⁻⁷]*1 (31×10 ⁻⁷)*2 | 47×10 ⁻⁷ [62×10 ⁻⁷]*1 (48×10 ⁻⁷)*2 | 64×10 ⁻⁷ [79×10 ⁻⁷]*1 (65×10 ⁻⁷)*2 | 160×10 ⁻⁷ [320×10 ⁻⁷]*1 (160×10 ⁻⁷)*2 | 270×10 ⁻⁷ [430×10 ⁻⁷]*1 (270×10 ⁻⁷)*2 | 540×10 ⁻⁷ [700×10 ⁻⁷]*1 (540×10 ⁻⁷)*2 |
| | | Rated Current | A / Phase | 0.35 | | | 0.75 | |
| Basic Step Angle | | | 0.72° | | | | | |
| Power Supply Input | Voltage / Frequency | | Single-Phase 100-120 VAC, Single-Phase 200-240 VAC -15~+10% 50/60 Hz | | | | | |
| | Input Current | Single-Phase 100-120 VAC | 2.1 | 1.9 | 1.9 | 4.0 | 3.8 | 4.0 |
| | A | Single-Phase 200-240 VAC | 1.3 | 1.2 | 1.2 | 2.4 | 2.4 | 2.5 |
| Excitation Mode | | | Microstep | | | | | |
| Control Power Supply*3 | | | 24 VDC±5% 0.2 A | | | | | |
| Electromagnetic Brake*4 | Power Supply Input | | 24 VDC±5%*5 0.08 A | | | 24 VDC±5%*5 0.25 A | | |

Definition → Refer to page 22

● For Built-in Controller package, either **A** (single shaft), **B** (double shaft), **M** (electromagnetic brake) or **R** (encoder) indicating the configuration is entered where the box is located within the product name.

For Pulse Input package, either **A** (single shaft), **B** (double shaft) or **M** (electromagnetic brake) indicating the configuration is entered where the box is located within the product name.

Either **A** (Single-Phase 100-120 VAC) or **C** (Single-Phase 200-240 VAC) indicating the configuration is entered where is located within the product name.

For encoder type, **2** will be entered where is located within the product name.

A number indicating the desired length of **1** (1 m), **2** (2 m) or **3** (3 m) for the cable included with the product is entered where the box is located within the product name.

*1 The values inside the brackets [] represent the specification for the electromagnetic brake type.

*2 The values inside the brackets () represent the specification for the encoder type.

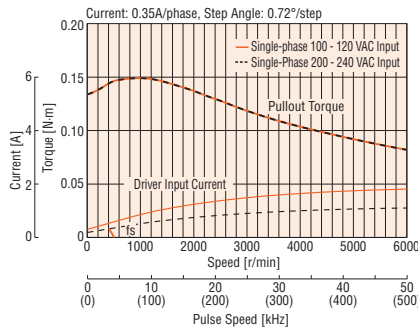
*3 For Built-in Controller package, the control power supply is required.

*4 For pulse input package, a separate power supply for electromagnetic brakes is required.

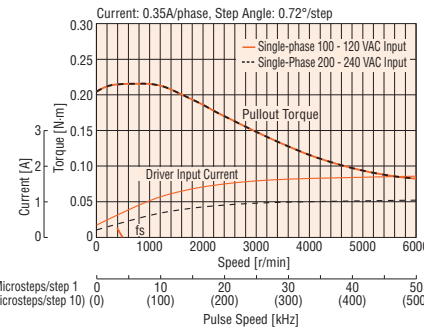
*5 If the wiring distance between the motor and driver is extended to 15 m or longer by using an accessory cable (sold separately), the 24 VDC±4% specification applies.

Speed -Torque Characteristics fs: Maximum Starting Frequency

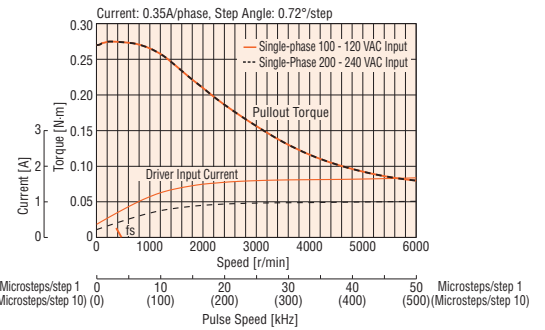
RKS543



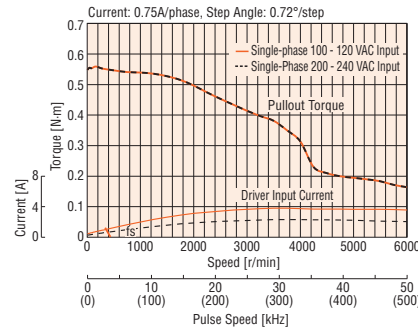
RKS544



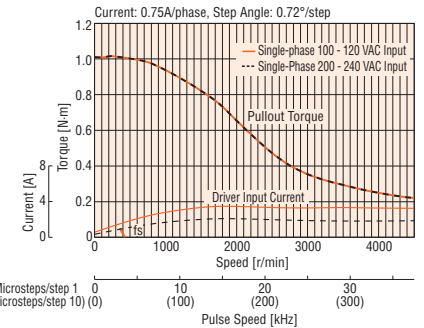
RKS545



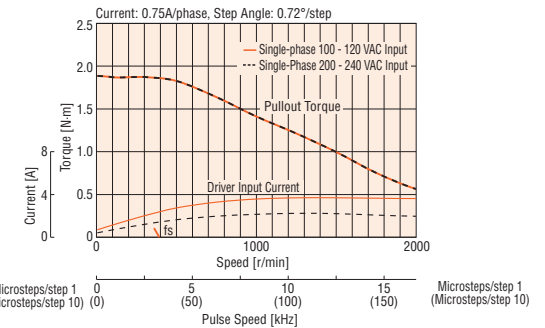
RKS564



RKS566



RKS569



Note

● Pay attention to heat dissipation from the motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

For the Encoder type, in order to protect encoder, be sure to keep the temperature of the motor case under 85°C.

Standard Type Frame Size 85 mm

Standard Type with Electromagnetic Brake Frame Size 85 mm

Standard Type with Encoder Frame Size 85 mm

Specifications RoHS



| Product Name | Built-In Controller Type Pulse Input Type | RKS596 <input type="checkbox"/> D <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | RKS599 <input type="checkbox"/> D <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | RKS5913 <input type="checkbox"/> D <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | |
|------------------------------------|--|---|---|--|------|
| | | RKS596 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | RKS599 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | RKS5913 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | |
| Maximum Holding Torque | N·m | 2.1 | 4.1 | 6.3 | |
| Holding Torque at Motor Standstill | Power ON | 1.05 | 2.05 | 3.15 | |
| | Electromagnetic Brake | 1.05 | 2.05 | 3.15 | |
| Rotor Inertia | J : kg·m ² | 1100×10 ⁻⁷ [2200×10 ⁻⁷]*1 (1100×10 ⁻⁷)*2 | 2200×10 ⁻⁷ [3300×10 ⁻⁷]*1 (2200×10 ⁻⁷)*2 | 3300×10 ⁻⁷ [4400×10 ⁻⁷]*1 (3300×10 ⁻⁷)*2 | |
| | | A / Phase | | | 0.75 |
| Basic Step Angle | 0.72° | | | | |
| Power Supply Input | Voltage / Frequency | | | | |
| | Single-Phase 100-120 VAC, Single-Phase 200-240 VAC -15~+10% 50/60 Hz | | | | |
| Excitation Mode | Input Current | Single-Phase 100-120 VAC | 3.6 | 3.5 | 3.5 |
| | A | Single-Phase 200-240 VAC | 2.1 | 2.2 | 2.2 |
| Control Power Supply*3 | Microstep | | | | |
| Electromagnetic Brake*4 | Power Supply Input | 24 VDC±5% 0.2 A | | | |
| | | 24 VDC±5%*5 0.24 A | | | |

Definition → Refer to the list in following box.

● For Built-in Controller package, either **A** (single shaft), **B** (double shaft), **M** (electromagnetic brake) or **R** (encoder) indicating the configuration is entered where the box is located within the product name.

For Pulse Input package, either **A** (single shaft), **B** (double shaft) or **M** (electromagnetic brake) indicating the configuration is entered where the box is located within the product name.

Either **A** (Single-Phase 100-120 VAC) or **C** (Single-Phase 200-240 VAC) indicating the configuration is entered where is located within the product name.

For encoder type, **2** will be entered where is located within the product name.

A number indicating the desired length of **1** (1 m), **2** (2 m) or **3** (3 m) for the cable included with the product is entered where the box is located within the product name.

*1 The values inside the brackets [] represent the specification for the electromagnetic brake type.

*2 The values inside the brackets () represent the specification for the encoder type.

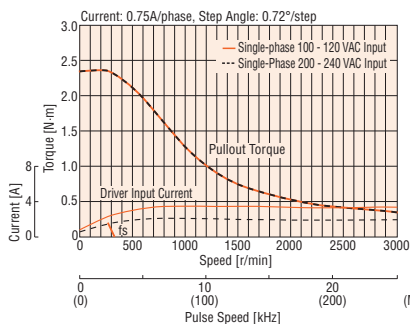
*3 For Built-in Controller package, the control power supply is required.

*4 For pulse input package, a separate power supply for electromagnetic brakes is required.

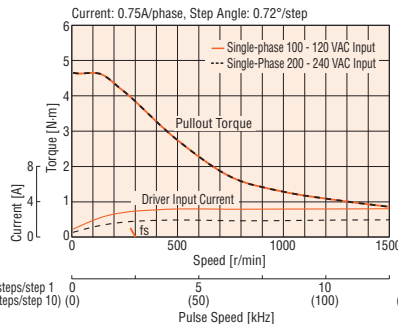
*5 If the wiring distance between the motor and driver is extended to 15 m or longer by using an accessory cable (sold separately), the 24 VDC±4% specification applies.

Speed -Torque Characteristics fs: Maximum Starting Frequency

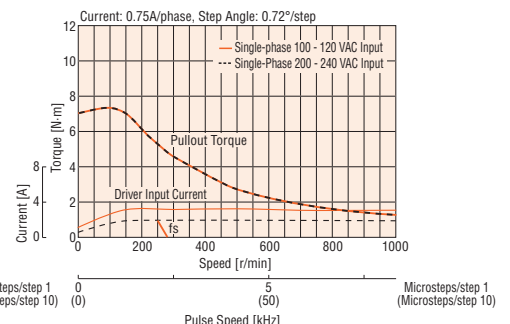
RKS596



RKS599



RKS5913



Note

● Pay attention to heat dissipation from the motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

For the Encoder type, in order to protect encoder, be sure to keep the temperature of the motor case under 85°C.

Definition

| | |
|------------------------------------|--|
| Maximum Holding Torque | : Maximum Holding Torque (holding power) while motor standstill (power supplied at the Rated Current). |
| Permissible Torque | : Maximum Torque load applied to Gear Output Shaft |
| Maximum Torque | : Maximum Torque load applied to Gear Output Shaft when up/reduce the speed (i.e.. start-up or shut-down of Load Inertia). |
| Holding Torque at Motor Standstill | Power ON : Holding Torque under Automatic Current Cutback function is operated. Electromagnetic Brake : Static friction torque generated by Electromagnetic Brake at motor standstill. (Power Off Activated Type Electromagnetic Brake) |

TS Geared Type Frame Size 42 mm

TS Geared Type with Electromagnetic Brake Frame Size 42 mm

Specifications (RoHS)



| Product Name | Built-In Controller Type Pulse Input Type | RKS543 <input type="checkbox"/> D-TS3.6- <input type="checkbox"/> | RKS543 <input type="checkbox"/> D-TS7.2- <input type="checkbox"/> | RKS543 <input type="checkbox"/> D-TS10- <input type="checkbox"/> | RKS543 <input type="checkbox"/> D-TS20- <input type="checkbox"/> | RKS543 <input type="checkbox"/> D-TS30- <input type="checkbox"/> |
|--|--|--|---|--|--|--|
| | | RKS543 <input type="checkbox"/> TS3.6- <input type="checkbox"/> | RKS543 <input type="checkbox"/> TS7.2- <input type="checkbox"/> | RKS543 <input type="checkbox"/> TS10- <input type="checkbox"/> | RKS543 <input type="checkbox"/> TS20- <input type="checkbox"/> | RKS543 <input type="checkbox"/> TS30- <input type="checkbox"/> |
| Maximum Holding Torque | N·m | 0.5 | 1 | 1.4 | 2 | 2.3 |
| Rotor Inertia | J : kg·m ² | 30×10^{-7} [45×10^{-7}]*1 | | | | |
| Rated Current | A / Phase | 0.35 | | | | |
| Basic Step Angle | | 0.2° | 0.1° | 0.072° | 0.036° | 0.024° |
| Gear Ratio | | 3.6 | 7.2 | 10 | 20 | 30 |
| Permissible Torque*2 | N·m | 0.65 | 1.2 | 1.7 | 2 | 2.3 |
| Maximum Torque*2 | N·m | 0.85 | 1.6 | 2 | 3 | 3 |
| Holding Torque at Power ON | N·m | 0.26 | 0.53 | 0.74 | 1.48 | 2.2 |
| Motor Standstill Electromagnetic Brake | N·m | 0.26 | 0.53 | 0.74 | 1.48 | 2.2 |
| Permissible Speed Range | r/min | 0~833 | 0~416 | 0~300 | 0~150 | 0~100 |
| Backlash | arc min | 45(0.75°) | 25(0.42°) | | 15(0.25°) | |
| Power Supply Input | Voltage / Frequency | Single-Phase 100-120 VAC, Single-Phase 200-240 VAC -15~+10% 50/60 Hz | | | | |
| Excitation Mode | Input | Single-Phase 100-120 VAC | | | | |
| | Current A | 2.1 | | | | |
| Control Power Supply*3 | Input | Single-Phase 200-240 VAC | | | | |
| | Current A | 1.3 | | | | |
| Excitation Mode | | Microstep | | | | |
| Control Power Supply*3 | | 24 VDC±5% 0.2 A | | | | |
| Electromagnetic Brake*4 | Power Supply Input | 24 VDC±5%*5 0.08 A | | | | |

Definition → Refer to page 22

● Either **A** (single shaft), **B** (double shaft) or **M** (electromagnetic brake) indicating the configuration is entered where the box is located within the product name.

Either **A** (Single-Phase 100-120 VAC) or **C** (Single-Phase 200-240 VAC) indicating the configuration is entered where is located within the product name.

A number indicating the desired length of **1** (1 m), **2** (2 m) or **3** (3 m) for the cable included with the product is entered where the box is located within the product name.

*1 The values inside the brackets [] represent the specification for the electromagnetic brake type.

*2 Permissible Torque and Maximum Torque shown above is value recorded at the Gear. Refer to Speed-Torque Specification graph for output torque of Geared Motor.

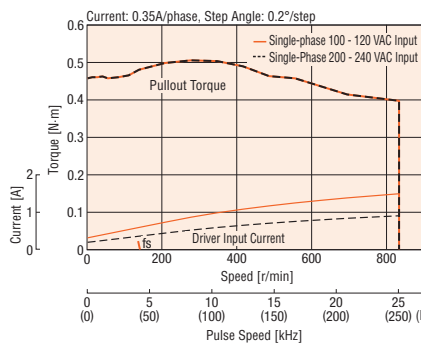
*3 For Built-in Controller package, the control power supply is required.

*4 For pulse input package, a separate power supply for electromagnetic brakes is required.

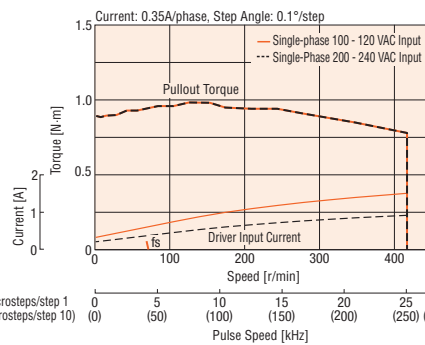
*5 If the wiring distance between the motor and driver is extended to 15 m or longer by using an accessory cable (sold separately), the 24 VDC±4% specification applies.

Speed -Torque Characteristics fs: Maximum Starting Frequency

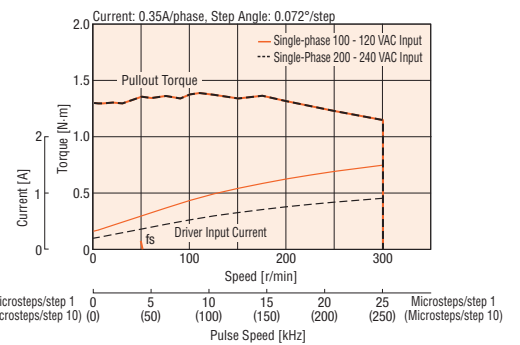
RKS543 Gear Ratio: 3.6



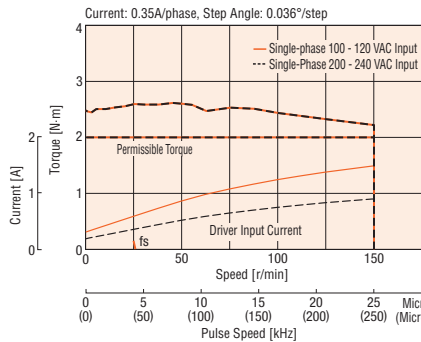
RKS543 Gear Ratio: 7.2



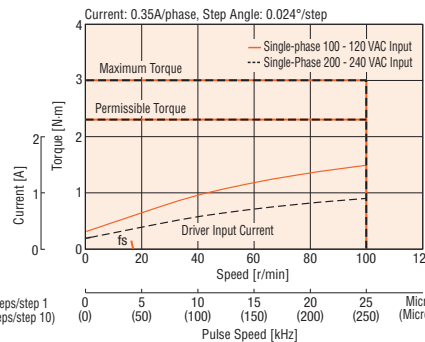
RKS543 Gear Ratio: 10



RKS543 Gear Ratio: 20



RKS543 Gear Ratio: 30



Note

● Pay attention to heat dissipation from the motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

TS Geared Type Frame Size 60 mm

TS Geared Type with Electromagnetic Brake Frame Size 60 mm

Specifications (RoHS)



| Product Name | Built-In Controller Type | | RKS564 □ D-TS3.6-◇ | RKS564 □ D-TS7.2-◇ | RKS564 □ D-TS10-◇ | RKS564 □ D-TS20-◇ | RKS564 □ D-TS30-◇ |
|--|--------------------------|--------------------------|--|--------------------|-------------------|-------------------|-------------------|
| | Pulse Input Type | | RKS564 □ -TS3.6-◇ | RKS564 □ -TS7.2-◇ | RKS564 □ -TS10-◇ | RKS564 □ -TS20-◇ | RKS564 □ -TS30-◇ |
| Maximum Holding Torque | N·m | | 1.8 | 3 | 4 | 5 | 6 |
| Rotor Inertia | J : kg·m ² | | 160×10 ⁻⁷ [320×10 ⁻⁷]*1 | | | | |
| Rated Current | A / Phase | | 0.75 | | | | |
| Basic Step Angle | | | 0.2° | 0.1° | 0.072° | 0.036° | 0.024° |
| Gear Ratio | | | 3.6 | 7.2 | 10 | 20 | 30 |
| Permissible Torque*2 | N·m | | 1.8 | 3 | 4 | 5 | 6 |
| Maximum Torque*2 | N·m | | 2.5 | 4.5 | 6 | 8 | 10 |
| Holding Torque at Power ON | N·m | | 1 | 2 | 2.9 | 5 | 6 |
| Motor Standstill Electromagnetic Brake | N·m | | 1 | 2 | 2.9 | 5 | 6 |
| Permissible Speed Range | r/min | | 0~833 | 0~416 | 0~300 | 0~150 | 0~100 |
| Backlash | arc min | | 35(0.59°) | 15(0.25°) | | 10(0.17°) | |
| Power Supply | Voltage / Frequency | | Single-Phase 100-120 VAC, Single-Phase 200-240 VAC -15~+10% 50/60 Hz | | | | |
| Input | Input | Single-Phase 100-120 VAC | 4.0 | | | | |
| | Current A | Single-Phase 200-240 VAC | 2.4 | | | | |
| Excitation Mode | | | Microstep | | | | |
| Control Power Supply*3 | | | 24 VDC±5% 0.2 A | | | | |
| Electromagnetic Brake*4 | Power Supply Input | | 24 VDC±5%*5 0.25 A | | | | |

Definition → Refer to page 22

● Either **A** (single shaft), **B** (double shaft) or **M** (electromagnetic brake) indicating the configuration is entered where the box □ is located within the product name.

Either **A** (Single-Phase 100-120 VAC) or **C** (Single-Phase 200-240 VAC) indicating the configuration is entered where ▢ is located within the product name.

A number indicating the desired length of **1** (1 m), **2** (2 m) or **3** (3 m) for the cable included with the product is entered where the box ◇ is located within the product name.

*1 The values inside the brackets [] represent the specification for the electromagnetic brake type.

*2 Permissible Torque and Maximum Torque shown above is value recorded at the Gear. Refer to Speed -Torque Specification graph for output torque of Geared Motor.

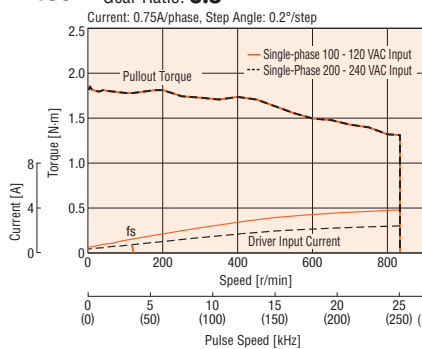
*3 For Built-in Controller package, the control power supply is required.

*4 For pulse input package, a separate power supply for electromagnetic brakes is required.

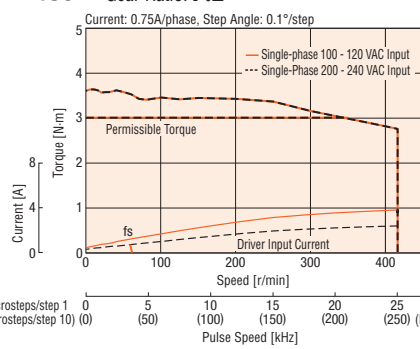
*5 If the wiring distance between the motor and driver is extended to 15 m or longer by using an accessory cable (sold separately), the 24 VDC±4% specification applies.

Speed -Torque Characteristics f_s : Maximum Starting Frequency

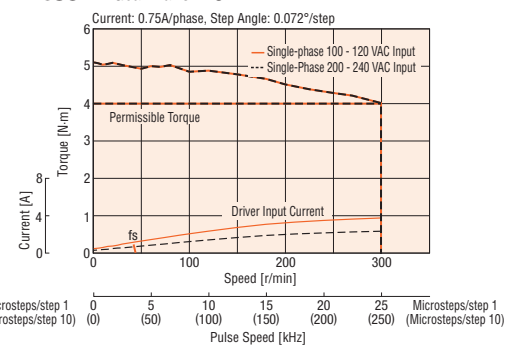
RKS564 Gear Ratio: 3.6



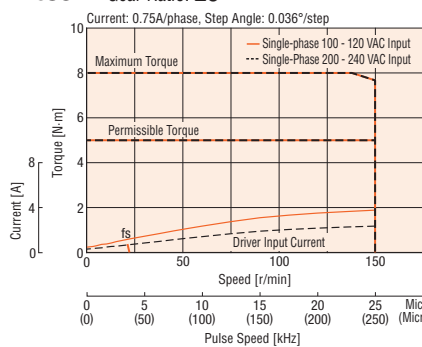
RKS564 Gear Ratio: 7.2



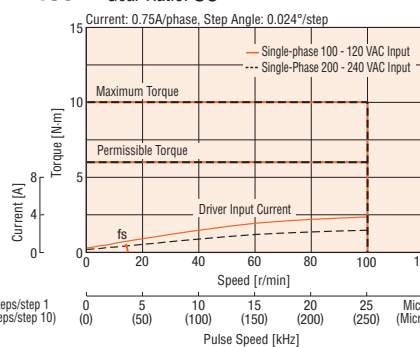
RKS564 Gear Ratio: 10



RKS564 Gear Ratio: 20



RKS564 Gear Ratio: 30



Note

● Pay attention to heat dissipation from the motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

TS Geared Type Frame Size 90 mm

TS Geared Type with Electromagnetic Brake Frame Size 90 mm

Specifications RoHS



| Product Name | Built-In Controller Type | | RKS596 <input type="checkbox"/> D-TS3.6-◇ | RKS596 <input type="checkbox"/> D-TS7.2-◇ | RKS596 <input type="checkbox"/> D-TS10-◇ | RKS596 <input type="checkbox"/> D-TS20-◇ | RKS596 <input type="checkbox"/> D-TS30-◇ |
|--|--------------------------|--------------------------|--|---|--|--|--|
| | Pulse Input Type | | RKS596 <input type="checkbox"/> -TS3.6-◇ | RKS596 <input type="checkbox"/> -TS7.2-◇ | RKS596 <input type="checkbox"/> -TS10-◇ | RKS596 <input type="checkbox"/> -TS20-◇ | RKS596 <input type="checkbox"/> -TS30-◇ |
| Maximum Holding Torque | N·m | | 6 | 10 | 14 | 20 | 25 |
| Rotor Inertia | J : kg·m ² | | 1100×10 ⁻⁷ [2200×10 ⁻⁷]*1 | | | | |
| Rated Current | A / Phase | | 0.75 | | | | |
| Basic Step Angle | | | 0.2° | 0.1° | 0.072° | 0.036° | 0.024° |
| Gear Ratio | | | 3.6 | 7.2 | 10 | 20 | 30 |
| Permissible Torque*2 | N·m | | 6 | 10 | 14 | 20 | 25 |
| Maximum Torque*2 | N·m | | 9 | 15 | 20 | 35 | 45 |
| Holding Torque at Power ON | N·m | | 6 | 9 | 7.4 | 18.5 | 25 |
| Motor Standstill Electromagnetic Brake | N·m | | 6 | 9 | 7.4 | 18.5 | 25 |
| Permissible Speed Range | r/min | | 0~833 | 0~416 | 0~300 | 0~150 | 0~100 |
| Backlash | arc min | | 25(0.42°) | 15(0.25°) | | 10(0.17°) | |
| Power Supply Input | Voltage / Frequency | | Single-Phase 100-120 VAC, Single-Phase 200-240 VAC -15~+10% 50/60 Hz | | | | |
| | Input Current A | Single-Phase 100-120 VAC | 3.6 | | | 4.9 | |
| Excitation Mode | Single-Phase 200-240 VAC | | 2.1 | | | 3.0 | |
| | Power Supply Input | | Microstep | | | | |
| Control Power Supply*3 | | | 24 VDC±5% 0.2 A | | | | |
| Electromagnetic Brake*4 | Power Supply Input | | 24 VDC±5%*5 0.42 A | | | | |

Definition → Refer to page 22

● Either **A** (single shaft), **B** (double shaft) or **M** (electromagnetic brake) indicating the configuration is entered where the box is located within the product name.

Either **A** (Single-Phase 100-120 VAC) or **C** (Single-Phase 200-240 VAC) indicating the configuration is entered where is located within the product name.

A number indicating the desired length of **1** (1 m), **2** (2 m) or **3** (3 m) for the cable included with the product is entered where the box is located within the product name.

*1 The values inside the brackets [] represent the specification for the electromagnetic brake type.

*2 Permissible Torque and Maximum Torque shown above is value recorded at the Gear. Refer to Speed -Torque Specification graph for output torque of Geared Motor.

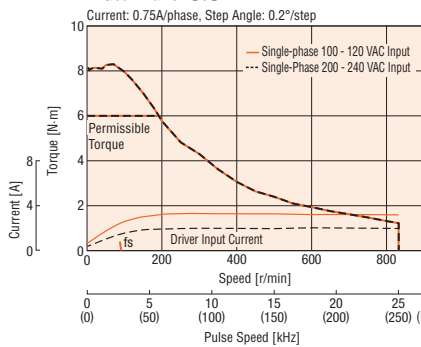
*3 For Built-in Controller package, the control power supply is required.

*4 For pulse input package, a separate power supply for electromagnetic brakes is required.

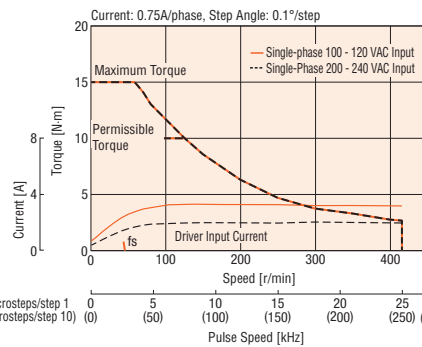
*5 If the wiring distance between the motor and driver is extended to 15 m or longer by using an accessory cable (sold separately), the 24 VDC±4% specification applies.

Speed -Torque Characteristics fs: Maximum Starting Frequency

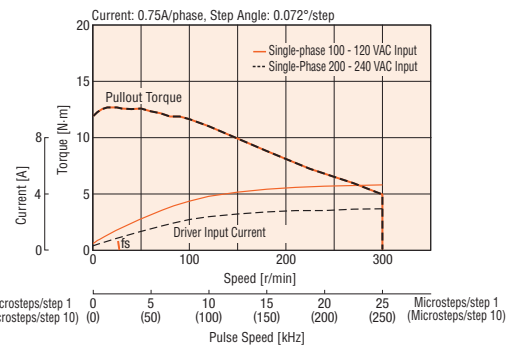
RKS596 Gear Ratio: 3.6



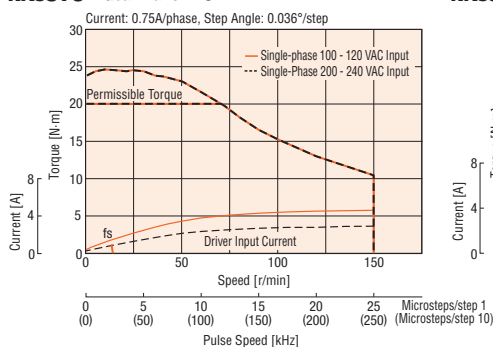
RKS596 Gear Ratio: 7.2



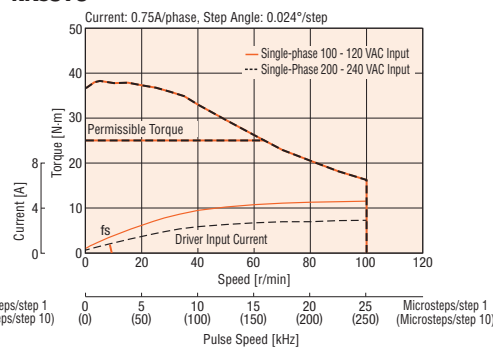
RKS596 Gear Ratio: 10



RKS596 Gear Ratio: 20



RKS596 Gear Ratio: 30



Note

● Pay attention to heat dissipation from the motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

PS Geared Type Frame Size 42 mm

PS Geared Type with Electromagnetic Brake Frame Size 42 mm

Specifications (RoHS)



| Product Name | Built-In Controller Type | | RKS545 | D-PS5 | RKS545 | D-PS7.2 | RKS545 | D-PS10 | RKS543 | D-PS25 | RKS543 | D-PS36 | RKS543 | D-PS50 | |
|--|--------------------------|--------------------------|--|-------|--------|---|--------|--------|--------|--------|---------|--------|--------|--------|---------|
| | Pulse Input Type | | RKS545 | PS5 | RKS545 | PS7.2 | RKS545 | PS10 | RKS543 | PS25 | RKS543 | PS36 | RKS543 | PS50 | |
| Maximum Holding Torque | N·m | | 1 | | 1.5 | | | 2.5 | | | 3 | | | | |
| Rotor Inertia | J : kg·m ² | | 64×10 ⁻⁷ [79×10 ⁻⁷]*1 | | | 30×10 ⁻⁷ [45×10 ⁻⁷]*1 | | | | | | | | | |
| Rated Current | A / Phase | | 0.35 | | | | | | | | | | | | |
| Basic Step Angle | | | 0.144° | | 0.1° | | | 0.072° | | | 0.0288° | | 0.02° | | 0.0144° |
| Gear Ratio | | | 5 | | 7.2 | | | 10 | | | 25 | | 36 | | 50 |
| Permissible Torque*2 | N·m | | 1 | | 1.5 | | | 2.5 | | | 3 | | | | |
| Maximum Torque*2 | N·m | | 1.5 | | 2 | | | 6 | | | | | | | |
| Holding Torque at Power ON | N·m | | 0.74 | | 1.07 | | | 1.49 | | | 1.85 | | 2.6 | | 3 |
| Motor Standstill Electromagnetic Brake | N·m | | 0.74 | | 1.07 | | | 1.49 | | | 1.85 | | 2.6 | | 3 |
| Permissible Speed Range | r/min | | 0~600 | | 0~416 | | | 0~300 | | | 0~120 | | 0~83 | | 0~60 |
| Backlash | arc min | | 25(0.42°) | | | | | | | | | | | | |
| Power Supply Input | Voltage / Frequency | | Single-Phase 100-120 VAC, Single-Phase 200-240 VAC -15~+10% 50/60 Hz | | | | | | | | | | | | |
| | Input Current A | Single-Phase 100-120 VAC | 1.9 | | | | | | 2.1 | | | | | | |
| Excitation Mode | Single-Phase 200-240 VAC | | 1.2 | | | | | | 1.3 | | | | | | |
| | | | Microstep | | | | | | | | | | | | |
| Control Power Supply*3 | | | 24 VDC±5% 0.2 A | | | | | | | | | | | | |
| Electromagnetic Brake*4 | Power Supply Input | | 24 VDC±5%*5 0.08 A | | | | | | | | | | | | |

Definition → Refer to page 22

● Either **A** (single shaft), **B** (double shaft) or **M** (electromagnetic brake) indicating the configuration is entered where the box □ is located within the product name.

Either **A** (Single-Phase 100-120 VAC) or **C** (Single-Phase 200-240 VAC) indicating the configuration is entered where □ is located within the product name.

A number indicating the desired length of **1** (1 m), **2** (2 m) or **3** (3 m) for the cable included with the product is entered where the box ◇ is located within the product name.

*1 The values inside the brackets [] represent the specification for the electromagnetic brake type.

*2 Permissible Torque and Maximum Torque shown above is value recorded at the Gear. Refer to Speed -Torque Specification graph for output torque of Geared Motor.

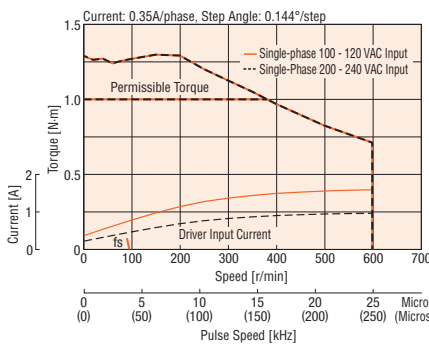
*3 For Built-in Controller package, the control power supply is required.

*4 For pulse input package, a separate power supply for electromagnetic brakes is required.

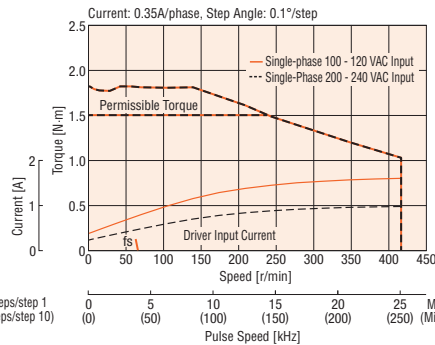
*5 If the wiring distance between the motor and driver is extended to 15 m or longer by using an accessory cable (sold separately), the 24 VDC±4% specification applies.

Speed -Torque Characteristics fs: Maximum Starting Frequency

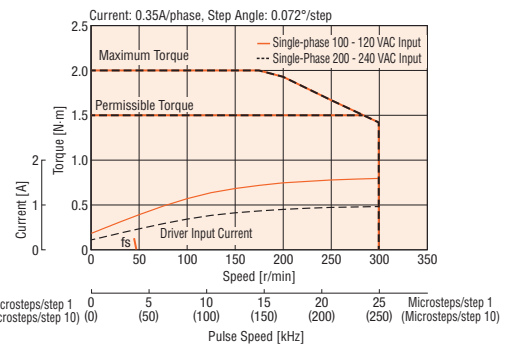
RKS545 Gear Ratio: 5



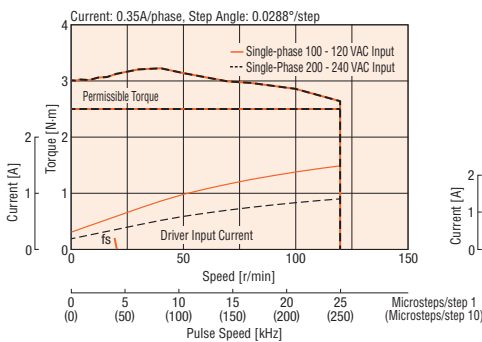
RKS545 Gear Ratio: 7.2



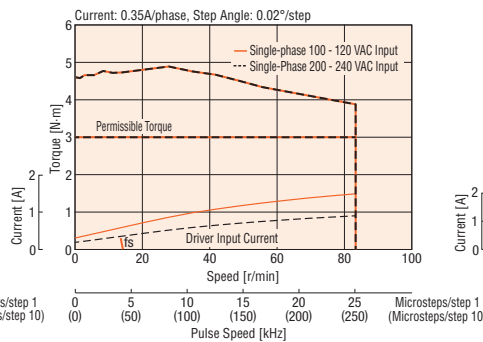
RKS545 Gear Ratio: 10



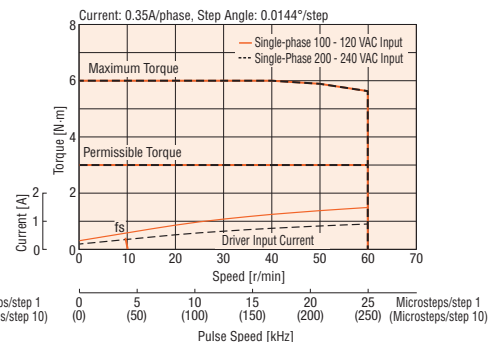
RKS543 Gear Ratio: 25



RKS543 Gear Ratio: 36



RKS543 Gear Ratio: 50



Note

● Pay attention to heat dissipation from the motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

PS Geared Type Frame Size 60 mm

PS Geared Type with Electromagnetic Brake Frame Size 60 mm

Specifications (RoHS)



| Product Name | Built-In Controller Type Pulse Input Type | RKS566 | RKS566 | RKS566 | RKS564 | RKS564 | RKS564 |
|--|--|--|-----------|----------|---|----------|----------|
| | | D-PS5-◇ | D-PS7.2-◇ | D-PS10-◇ | D-PS25-◇ | D-PS36-◇ | D-PS50-◇ |
| Maximum Holding Torque | N·m | 3.5 | 4 | 5 | 8 | | |
| Rotor Inertia | J : kg·m ² | 270×10 ⁻⁷ [430×10 ⁻⁷]*1 | | | 160×10 ⁻⁷ [320×10 ⁻⁷]*1 | | |
| Rated Current | A / Phase | 0.75 | | | | | |
| Basic Step Angle | | 0.144° | 0.1° | 0.072° | 0.0288° | 0.02° | 0.0144° |
| Gear Ratio | | 5 | 7.2 | 10 | 25 | 36 | 50 |
| Permissible Torque*2 | N·m | 3.5 | 4 | 5 | 8 | | |
| Maximum Torque*2 | N·m | 7 | 9 | 11 | 16 | 20 | |
| Holding Torque at Power ON | N·m | 2.7 | 3.9 | 5 | 7.2 | 8 | |
| Motor Standstill Electromagnetic Brake | N·m | 2.7 | 3.9 | 5 | 7.2 | 8 | |
| Permissible Speed Range | r/min | 0~600 | 0~416 | 0~300 | 0~120 | 0~83 | 0~60 |
| Backlash | arc min | 7(0.12°) | | | 9(0.15°) | | |
| Power Supply Voltage / Frequency | | Single-Phase 100-120 VAC, Single-Phase 200-240 VAC -15~+10% 50/60 Hz | | | | | |
| Power Supply Input | Input Single-Phase 100-120 VAC | 3.8 | | | 4.0 | | |
| | Current A Single-Phase 200-240 VAC | 2.4 | | | 2.4 | | |
| Excitation Mode | | Microstep | | | | | |
| Control Power Supply*3 | | 24 VDC±5% 0.2 A | | | | | |
| Electromagnetic Brake*4 | Power Supply Input | 24 VDC±5%*5 0.25 A | | | | | |

Definition → Refer to page 22

● Either **A** (single shaft), **B** (double shaft) or **M** (electromagnetic brake) indicating the configuration is entered where the box □ is located within the product name.

Either **A** (Single-Phase 100-120 VAC) or **C** (Single-Phase 200-240 VAC) indicating the configuration is entered where the box □ is located within the product name.

A number indicating the desired length of **1** (1 m), **2** (2 m) or **3** (3 m) for the cable included with the product is entered where the box ◇ is located within the product name.

*1 The values inside the brackets [] represent the specification for the electromagnetic brake type.

*2 Permissible Torque and Maximum Torque shown above is value recorded at the Gear. Refer to Speed -Torque Specification graph for output torque of Geared Motor.

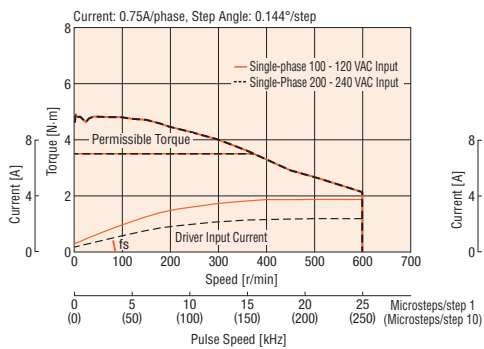
*3 For Built-in Controller package, the control power supply is required.

*4 For pulse input package, a separate power supply for electromagnetic brakes is required.

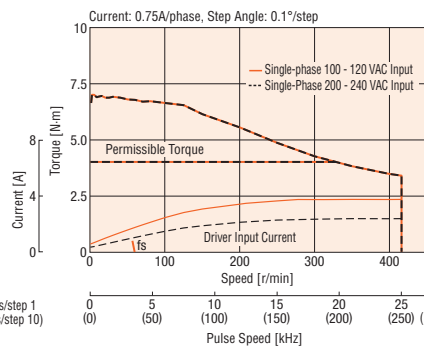
*5 If the wiring distance between the motor and driver is extended to 15 m or longer by using an accessory cable (sold separately), the 24 VDC±4% specification applies.

Speed -Torque Characteristics fs: Maximum Starting Frequency

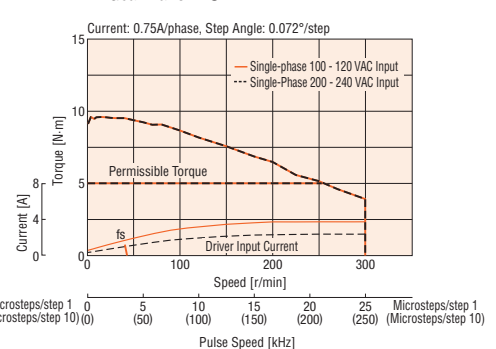
RKS566 Gear Ratio: **5**



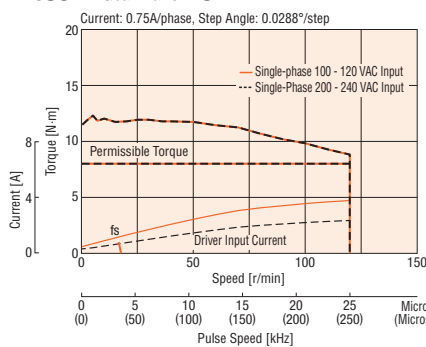
RKS566 Gear Ratio: **7.2**



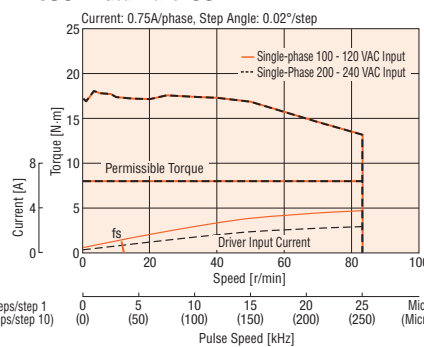
RKS566 Gear Ratio: **10**



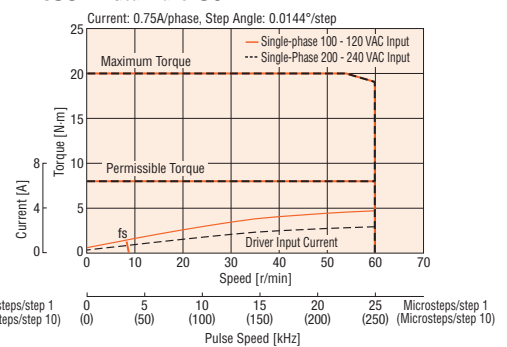
RKS564 Gear Ratio: **25**



RKS564 Gear Ratio: **36**



RKS564 Gear Ratio: **50**



Note

● Pay attention to heat dissipation from the motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

PS Geared Type Frame Size 90 mm

PS Geared Type with Electromagnetic Brake Frame Size 90 mm

Specifications RoHS



| Product Name | Built-In Controller Type | | RKS599 D-PS5-◇ | RKS599 D-PS7.2-◇ | RKS599 D-PS10-◇ | RKS596 D-PS25-◇ | RKS596 D-PS36-◇ | RKS596 D-PS50-◇ |
|--|--|---|--|--|---|---|---|---|
| | Pulse Input Type | | RKS599 -PS5-◇ | RKS599 -PS7.2-◇ | RKS599 -PS10-◇ | RKS596 -PS25-◇ | RKS596 -PS36-◇ | RKS596 -PS50-◇ |
| Maximum Holding Torque | N·m | 14 | 20 | 36 | 37 | | | |
| Rotor Inertia | J : kg·m ² | 2200×10 ⁻⁷ [3300×10 ⁻⁷]*1 | | | 1100×10 ⁻⁷ [2200×10 ⁻⁷]*1 | | | |
| Rated Current | A / Phase | 0.75 | | | | | | |
| Basic Step Angle | | 0.144° | 0.1° | 0.072° | 0.0288° | 0.02° | 0.0144° | |
| Gear Ratio | | 5 | 7.2 | 10 | 25 | 36 | 50 | |
| Permissible Torque*2 | N·m | 14 | 20 | 36 | 37 | | | |
| Maximum Torque*2 | N·m | 28 | 35 | 56 | 60 | | | |
| Holding Torque at Power ON | N·m | 12.5 | 18 | 20 | 18.5 | 26 | 37 | |
| Motor Standstill Electromagnetic Brake | N·m | 12.5 | 18 | 20 | 18.5 | 26 | 37 | |
| Permissible Speed Range | r/min | 0~300 | 0~208 | 0~150 | 0~120 | 0~83 | 0~60 | |
| Backlash | arc min | 7(0.12°) | | | 9(0.15°) | | | |
| Power Supply Voltage / Frequency | Single-Phase 100-120 VAC, Single-Phase 200-240 VAC -15~+10% 50/60 Hz | | | | | | | |
| Power Supply Input | Input | Single-Phase 100-120 VAC | | | Single-Phase 200-240 VAC | | | |
| | Current A | 3.5 | | | 4.9 | | | |
| Excitation Mode | | Microstep | | | | | | |
| Control Power Supply*3 | | 24 VDC±5% 0.2 A | | | | | | |
| Electromagnetic Brake*4 | Power Supply Input | 24 VDC±5%*5 0.42 A | | | | | | |

Definition → Refer to page 22

● Either **A** (single shaft), **B** (double shaft) or **M** (electromagnetic brake) indicating the configuration is entered where the box is located within the product name.

Either **A** (Single-Phase 100-120 VAC) or **C** (Single-Phase 200-240 VAC) indicating the configuration is entered where is located within the product name.

A number indicating the desired length of **1** (1 m), **2** (2 m) or **3** (3 m) for the cable included with the product is entered where the box ◇ is located within the product name.

*1 The values inside the brackets [] represent the specification for the electromagnetic brake type.

*2 Permissible Torque and Maximum Torque shown above is value recorded at the Gear. Refer to Speed -Torque Specification graph for output torque of Geared Motor.

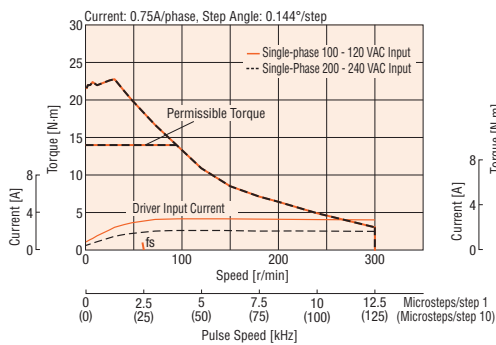
*3 For Built-in Controller package, the control power supply is required.

*4 For pulse input package, a separate power supply for electromagnetic brakes is required.

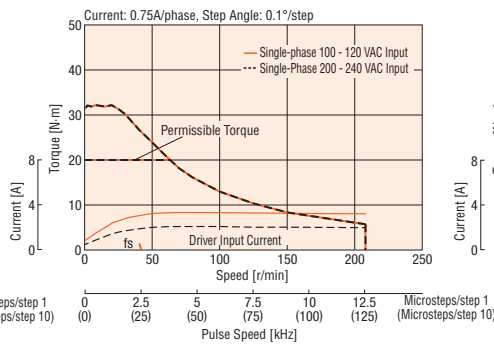
*5 If the wiring distance between the motor and driver is extended to 15 m or longer by using an accessory cable (sold separately), the 24 VDC±4% specification applies.

Speed -Torque Characteristics fs: Maximum Starting Frequency

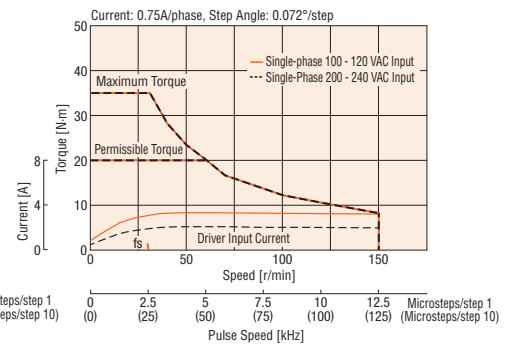
RKS599 Gear Ratio: 5



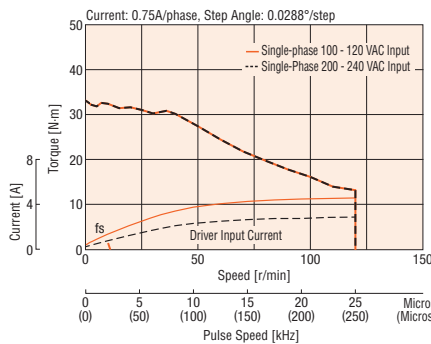
RKS599 Gear Ratio: 7.2



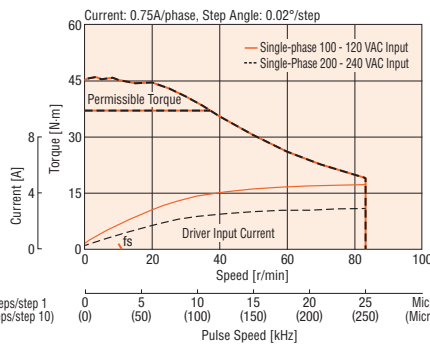
RKS599 Gear Ratio: 10



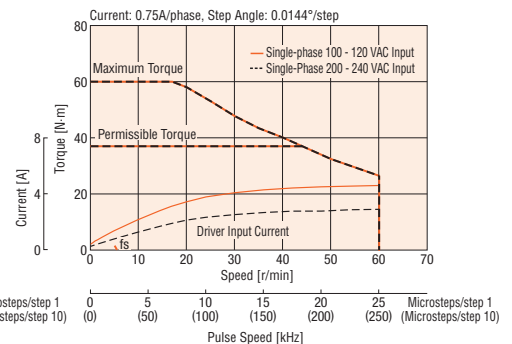
RKS596 Gear Ratio: 25



RKS596 Gear Ratio: 36



RKS596 Gear Ratio: 50



Note

● Pay attention to heat dissipation from the motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.

Harmonic Geared Type Frame Size 42 mm, 60 mm, 90 mm

Harmonic Geared Type with Electromagnetic Brake

Frame Size 42 mm, 60 mm, 90 mm

Specifications RoHS



| Product Name | Built-In Controller Type Pulse Input Type | RKS543 | D-HS50 | RKS543 | D-HS100 | RKS564 | D-HS50 | RKS564 | D-HS100 | RKS596 | D-HS50 | RKS596 | D-HS100 |
|--|--|--|--------|----------------------------|---------|---|--------|----------------------------|---------|---|--------|---------------------------|---------|
| | | | | | | | | | | | | | |
| Maximum Holding Torque | N·m | 3.5 | | 5 | | 7 | | 10 | | 33 | | 52 | |
| Rotor Inertia | J : kg·m ² | 47×10 ⁻⁷ [62×10 ⁻⁷]*1 | | | | 195×10 ⁻⁷ [355×10 ⁻⁷]*1 | | | | 1300×10 ⁻⁷ [2400×10 ⁻⁷]*1 | | | |
| Rated Current | A / Phase | 0.35 | | | | 0.75 | | | | | | | |
| Basic Step Angle | | 0.0144° | | 0.072° | | 0.0144° | | 0.0072° | | 0.0144° | | 0.0072° | |
| Gear Ratio | | 50 | | 100 | | 50 | | 100 | | 50 | | 100 | |
| Permissible Torque | N·m | 3.5 | | 5 | | 7 | | 10 | | 33 | | 52 | |
| Maximum Torque*2 | N·m | 8.3 | | 11 | | 23 | | 36 | | 73 | | 107 | |
| Holding Torque at Power ON | N·m | 3.5 | | 5 | | 7 | | 10 | | 33 | | 52 | |
| Motor Standstill Electromagnetic Brake | N·m | 3.5 | | 5 | | 7 | | 10 | | 33 | | 52 | |
| Permissible Speed Range | r/min | 0~70 | | 0~35 | | 0~70 | | 0~35 | | 0~70 | | 0~35 | |
| Lost Motion (Load Torque) | arc min | 1.5 maximum (±0.16 N·m) | | 1.5 maximum (±0.20 N·m) | | 0.7 maximum (±0.28 N·m) | | 0.7 maximum (±0.39 N·m) | | 0.7 maximum (±1.2 N·m) | | 0.7 maximum (±1.2 N·m) | |
| Power Supply Input | Voltage / Frequency | Single-Phase 100-120 VAC, Single-Phase 200-240 VAC -15~+10% 50/60 Hz | | | | | | | | | | | |
| Input | Input | 2.1 | | | | 4.0 | | | | 4.9 | | | |
| | Current A | 1.3 | | | | 2.4 | | | | 3.0 | | | |
| Excitation Mode | | Microstep | | | | | | | | | | | |
| Control Power Supply*3 | | 24 VDC±5% 0.2 A | | | | | | | | | | | |
| Electromagnetic Brake*4 | Power Supply Input | 24 VDC±5%*5 0.08 A | | | | 24 VDC±5%*5 0.25 A | | | | 24 VDC±5%*5 0.42 A | | | |

Definition → Refer to page 22

● Either **A** (single shaft), **B** (double shaft) or **M** (electromagnetic brake) indicating the configuration is entered where the box □ is located within the product name.
 Either **A** (Single-Phase 100-120 VAC) or **C** (Single-Phase 200-240 VAC) indicating the configuration is entered where □ is located within the product name.

A number indicating the desired length of **1** (1 m), **2** (2 m) or **3** (3 m) for the cable included with the product is entered where the box ◇ is located within the product name.

*1 The values inside the brackets [] represent the specification for the electromagnetic brake type.

*2 Maximum Torque shown above is value recorded at the Gear. Refer to Speed -Torque Specification graph for output torque of Geared Motor.

*3 For Built-in Controller package, the control power supply is required.

*4 For pulse input package, a separate power supply for electromagnetic brakes is required.

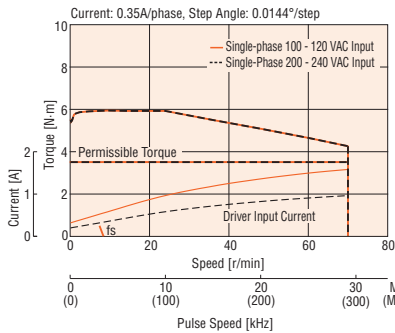
*5 If the wiring distance between the motor and driver is extended to 15 m or longer by using an accessory cable (sold separately), the 24 VDC±4% specification applies.

Note

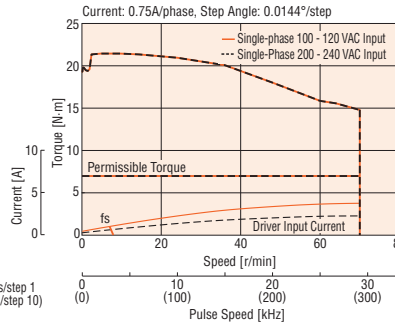
● The inertia represents a sum of the inertia of the harmonic gear converted to a motor shaft value, and the rotor inertia

Speed -Torque Characteristics f_s : Maximum Starting Frequency

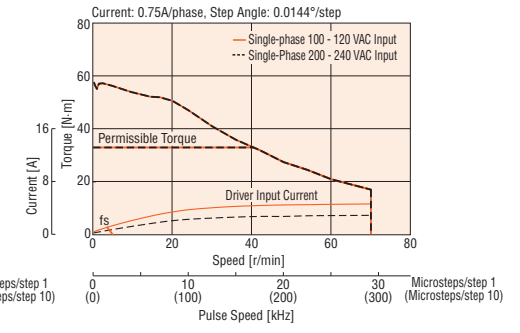
RKS543 Gear Ratio: 50



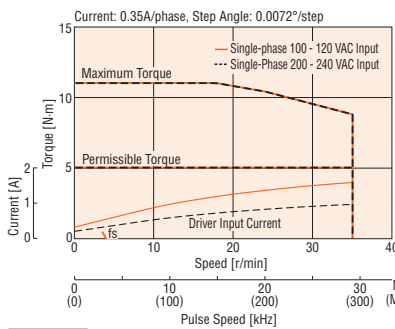
RKS564 Gear Ratio: 50



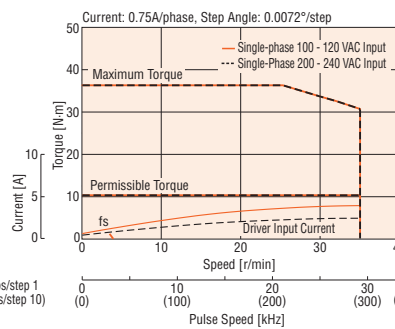
RKS596 Gear Ratio: 50



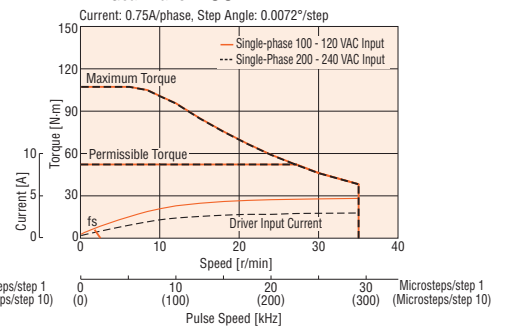
RKS543 Gear Ratio: 100



RKS564 Gear Ratio: 100



RKS596 Gear Ratio: 100



Note

- Pay attention to heat dissipation from the motor as there will be a considerable amount of heat under certain conditions. Be sure to keep the temperature of the motor case under 100°C.
- For the Harmonic Gear operation, be sure to keep the temperature of the gear case under 70°C to prevent deterioration of grease applied to the gear.

Driver Specification

| | Built-in Controller type | Pulse-input Type |
|-------------------------------------|---|--|
| Maximum Input Pulse Frequency | – | Line Driver Output from controller: 500kHz (at 50% duty) Open-collector Output from controller: 250kHz (at 50% duty) |
| Input Signal | Photocoupler input Input signal voltage : 11.4 VDC~26.4 VDC | Photocoupler, Open-collector output: 11.4 VDC~26.4 VDC (AWO, CS, FREE, ALM-RST) Photocoupler, Open-collector output: 3 VDC~5.25 VDC (CW (PLS) + 5 V, CCW (DIR) + 5 V) Photocoupler, Open-collector output: 21.6 VDC~26.4 VDC (CW (PLS) + 24 V, CCW (DIR) + 24 V) |
| Output Signal | Photocoupler · Open-collector output External use condition: 30 VDC maximum, 10 mA maximum | Photocoupler · Open-collector output External use condition: 30 VDC maximum, 10 mA maximum (READY, ALM, TIM) |
| Number of Positioning Program | 64 | – |
| Positioning Operation | One-shot operation, Linked operation, Linked operation 2, Sequential mode, Direct mode | – |
| Other operation | Continuous Operation, JOG Operation, Return-To-Home Operation, Test Operation | – |
| Control Module OPX-2A | ○ | – |
| Data Setting Software MEXE02 | ○ | – |

Built-In Controller Type RS-485 Communication Specifications

| | |
|-----------------------------|---|
| Protocol | Modbus protocol (Modbus RTU mode) |
| Electrical Characteristics | EIA-485 compliance Twisted-pair wire (TIA/EIA-568B CAT5e or greater recommended) is used up to a total extension length of 50 m. |
| Transmission/Reception Mode | Half-duplex communication Asynchronous mode (data: 8-bit, stop bit: 1-bit/2-bit, parity: none/odd/even) |
| Baud Rate | 9600 bps/19200 bps/38400 bps/57600 bps/115200 bps |
| Connection Type | Up to 31 units can be connected to one programmable controller (master equipment). |

General Specifications

| | Motor | Driver | |
|--|---|---|------------------|
| | | Built-In Controller Type | Pulse Input Type |
| Thermal Class | 130 (B) | – | |
| Insulation Resistance | 100 MΩ or more when 500 VDC megger is applied between the following places: · Case – Motor windings · Case – Electromagnetic brake windings*1 | 100 MΩ or more when 500 VDC megger is applied between the following places: · PE terminal – Power supply terminal · Signal I/O terminal – Power supply terminal | |
| Dielectric Strength | Sufficient to withstand the following for 1 minute: · Case – Motor windings 1.5 kVAC 50 Hz or 60 Hz · Case – Electromagnetic brake windings 1.5 kVAC 50 Hz or 60 Hz*1 | Sufficient to withstand the following for 1 minute: · PE terminal – Power supply terminal · PE terminal – Power supply terminal 1.8 kVAC 50 Hz or 60 Hz · Signal I/O terminal – Power supply terminal · Signal I/O terminal – Power supply terminal 1.9 kVAC 50 Hz or 60 Hz | |
| Operating Environment (In Operation) | Ambient Temperature | –10~+50°C (non-freezing): Standard Type, TS and PS Geared Type 0~+50°C (non-freezing): Package with Encoder 0~+40°C (non-freezing): Harmonic geared type | |
| | Ambient Humidity | 85% or less (non-condensing) | |
| | Atmosphere | No corrosive gases, dust. Avoid contact with water or oil. | |
| Temperature Rise | Temperature rise of the windings are 80°C or less. Measured at rated current, at standstill, five phases energized measured (by the resistance change method). | – | |
| Degree of Protection | IP20 | IP10 | IP20 |
| Stop Position Accuracy*3 | ±3 arc minutes (±0.05°) | | |
| Shaft Runout | 0.05 T.I.R (mm)*4 | – | |
| Radial Play*5 | 0.025 mm Max. (Load 5 N) | – | |
| Axial Play*6 | 0.075 mm Max. (Load 10 N) | – | |
| Concentricity for Shaft in the Mounting Pilot | 0.075 T.I.R (mm)*4 | – | |
| Perpendicularity for Shaft of the Mounting Surface | 0.075 T.I.R (mm)*4 | – | |

*1 Only for Built-in Controller Package

*2 When attaching a heat sink 200 mm x 200 mm x 2 mm, made from aluminum plate or higher.

*3 This value is measured at step angle 0.72°, under no load. (The value changes depends on the size of the load.)

*4 T.I.R. (Total Indicator Reading) : The total dial gauge reading when the measurement section is rotated one revolution centered on the reference axis center.

*5 Radial Play : Displacement in shaft position in the radial direction, when a 5 N load is applied in the vertical direction to the tip of the motor's shaft.

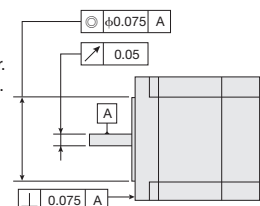
*6 Axial Play : Displacement in shaft position in the axial direction, when a 10 N load is applied to the motor's shaft in the axial direction.

Note

- Do not measure insulation resistance or perform the dielectric strength test while the motor and driver are connected.

Encoder Specifications

| | |
|---------------------|-------------|
| Resolution | 500 P/R |
| Output mode | Incremental |
| Output signal | 3 channels |
| Output Circuit type | Line Driver |



Permissible Radial Load and Permissible Axial Load

Unit=N

| Type | Frame Size | Model | Gear Ratio | Permissible Radial Load | | | | | Permissible Axial Load |
|----------------------|------------|----------------|---------------------|-------------------------------|------|------|------|------|------------------------|
| | | | | Distance from tip of shaft mm | | | | | |
| | | | | 0 | 5 | 10 | 15 | 20 | |
| Standard Type | 42 mm | RKS543 | - | 35 | 44 | 58 | 85 | - | 2.5 (3.9) [3.1] |
| | | RKS544 | | | | | | | 3.1 (4.5) [3.7] |
| | | RKS545 | | | | | | | 3.7 (5.1) [4.3] |
| | 60 mm | RKS564 | | 90 | 100 | 130 | 180 | 270 | 6.9 (9.8) [7.5] |
| | | RKS566 | | | | | | | 8.8 (11.8) [9.4] |
| | | RKS569 | | | | | | | 13.7 (16.7) [14.7] |
| | 85 mm | RKS596 | | 260 | 290 | 340 | 390 | 480 | 18.6 (26.5) [19.6] |
| | | RKS599 | | | | | | | 29.4 (37.3) [30.4] |
| | | RKS5913 | | | | | | | 40.2 (48.1) [41.2] |
| TS Geared Type | 42 mm | RKS543 | 3.6, 7.2, 10 | 20 | 30 | 40 | 50 | - | 15 |
| | | | 20, 30 | 40 | 50 | 60 | 70 | - | |
| | 60 mm | RKS564 | 3.6, 7.2, 10 | 120 | 135 | 150 | 165 | 180 | 40 |
| | | | 20, 30 | 170 | 185 | 200 | 215 | 230 | |
| | 90 mm | RKS596 | 3.6, 7.2, 10 | 300 | 325 | 350 | 375 | 400 | 150 |
| | | | 20, 30 | 400 | 450 | 500 | 550 | 600 | |
| PS Geared Type | 42 mm | RKS545 | 5, 7.2, 10 | 73 | 84 | 100 | 123 | - | 50 |
| | | | 25, 36, 50 | 109 | 127 | 150 | 184 | - | |
| | 60 mm | RKS566 | 5 | 200 | 220 | 250 | 280 | 320 | 100 |
| | | | 7.2, 10 | 250 | 270 | 300 | 340 | 390 | |
| | | | 25, 36, 50 | 330 | 360 | 400 | 450 | 520 | |
| | 90 mm | RKS599 | 5, 7.2, 10 | 480 | 540 | 600 | 680 | 790 | 300 |
| | | | 25 | 850 | 940 | 1050 | 1190 | 1380 | |
| | | | 36 | 930 | 1030 | 1150 | 1310 | 1520 | |
| | | | 50 | 1050 | 1160 | 1300 | 1480 | 1710 | |
| Harmonic Geared Type | 42 mm | RKS543 | 50, 100 | 180 | 220 | 270 | 360 | 510 | 220 |
| | 60 mm | RKS564 | | 320 | 370 | 440 | 550 | 720 | 450 |
| | 90 mm | RKS596 | | 1090 | 1150 | 1230 | 1310 | 1410 | 1300 |

● The values inside the brackets () represent the specification for the electromagnetic brake type.
 The values inside the brackets [] represent the specification for the encoder type.

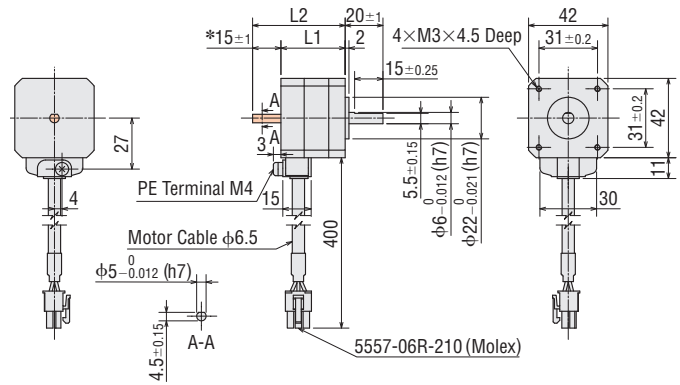
Dimensions (Unit = mm)

Motors

Standard Type

Frame Size 42 mm

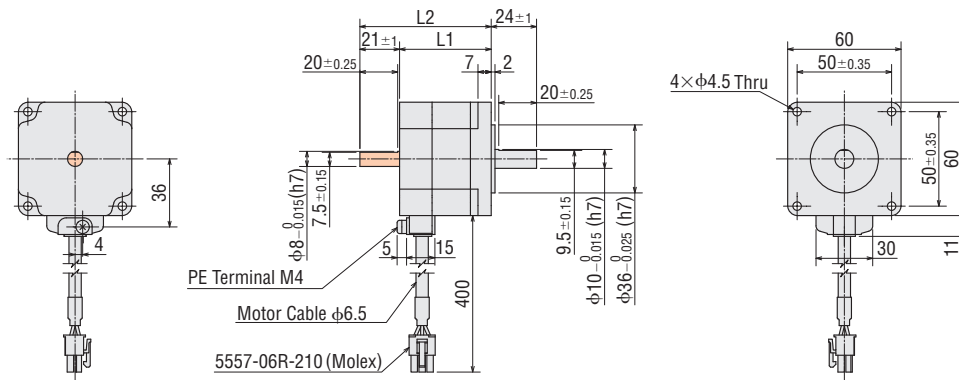
| Product Name | | Motor Product Name | L1 | L2 | Mass kg | CAD |
|-------------------------------|----------------|--------------------|----|----|---------|------|
| Built-In Controller | Pulse Input | | | | | |
| RKS543A RKS543A | RKS543A | PKE543AC | 34 | - | 0.26 | B996 |
| RKS543B RKS543B | RKS543B | PKE543BC | | 49 | | |
| RKS544A RKS544A | RKS544A | PKE544AC | 40 | - | 0.32 | B997 |
| RKS544B RKS544B | RKS544B | PKE544BC | | 55 | | |
| RKS545A RKS545A | RKS545A | PKE545AC | 46 | - | 0.38 | B998 |
| RKS545B RKS545B | RKS545B | PKE545BC | | 61 | | |



* Length of milling cut for double shaft type is 15±0.25.

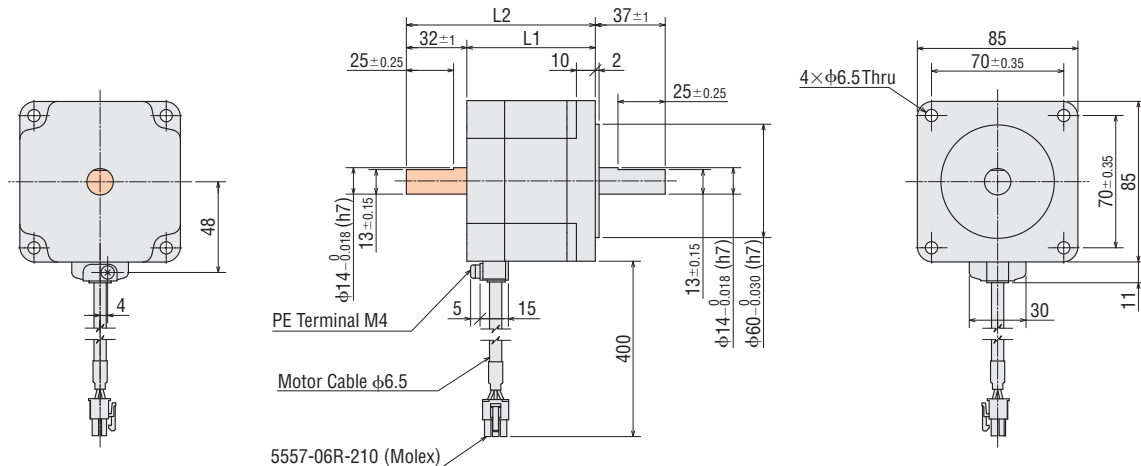
Frame Size 60 mm

| Product Name | | Motor Product Name | L1 | L2 | Mass kg | CAD |
|-------------------------------|----------------|--------------------|------|------|---------|-------|
| Built-In Controller | Pulse Input | | | | | |
| RKS564A RKS564A | RKS564A | PKE564AC | 48.5 | - | 0.7 | B999 |
| RKS564B RKS564B | RKS564B | PKE564BC | | 69.5 | | |
| RKS566A RKS566A | RKS566A | PKE566AC | 59.5 | - | 0.9 | B1000 |
| RKS566B RKS566B | RKS566B | PKE566BC | | 80.5 | | |
| RKS569A RKS569A | RKS569A | PKE569AC | 89 | - | 1.4 | B1001 |
| RKS569B RKS569B | RKS569B | PKE569BC | | 110 | | |



Frame Size 85 mm

| Product Name | | Motor Product Name | L1 | L2 | Mass kg | CAD |
|---------------------------------|-----------------|--------------------|-----|-----|---------|-------|
| Built-In Controller | Pulse Input | | | | | |
| RKS596A RKS596A | RKS596A | PKE596AC | 68 | - | 1.9 | B1002 |
| RKS596B RKS596B | RKS596B | PKE596BC | | 100 | | |
| RKS599A RKS599A | RKS599A | PKE599AC | 98 | - | 3.0 | B1003 |
| RKS599B RKS599B | RKS599B | PKE599BC | | 130 | | |
| RKS5913A RKS5913A | RKS5913A | PKE5913AC | 128 | - | 4.1 | B1004 |
| RKS5913B RKS5913B | RKS5913B | PKE5913BC | | 160 | | |

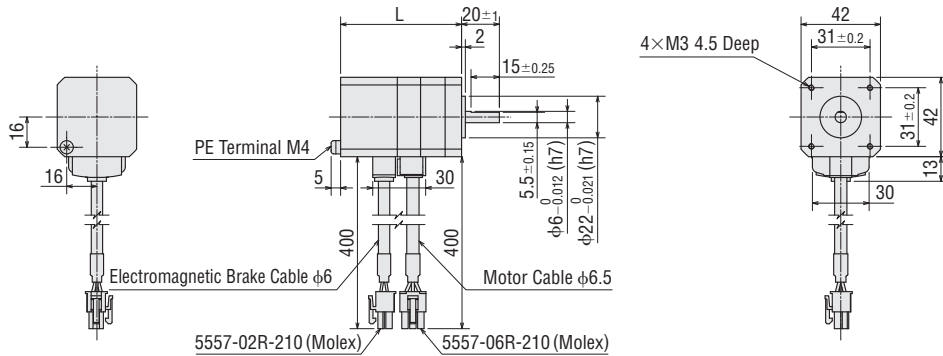


- Either **A** (Single-Phase 100-120 VAC) or **C** (Single-Phase 200-240 VAC) indicating the configuration is entered where is located within the product name.
- A number indicating the desired length of **1** (1 m), **2** (2 m) or **3** (3 m) for the cable included with the product is entered where the box is located within the product name.
- These dimensions are for double shaft models. For single shaft models, ignore the areas.

◇ Standard Type with Electromagnetic Brake

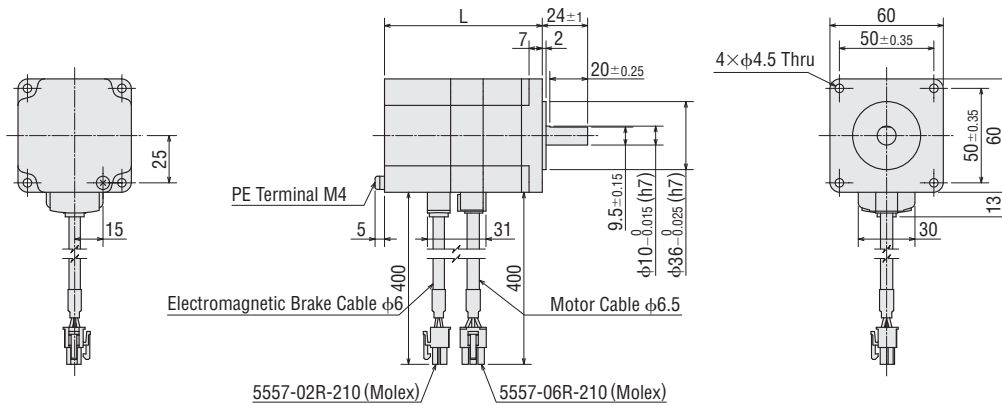
Frame Size 42 mm

| Product Name | | Motor Product Name | L | Mass kg | CAD |
|---------------------|------------------|--------------------|----|---------|-------|
| Built-In Controller | Pulse Input | | | | |
| RKS543M D-◇ | RKS543M ◇ | PKE543MC | 64 | 0.40 | B1005 |
| RKS544M D-◇ | RKS544M ◇ | PKE544MC | 70 | 0.46 | B1006 |
| RKS545M D-◇ | RKS545M ◇ | PKE545MC | 75 | 0.52 | B1007 |



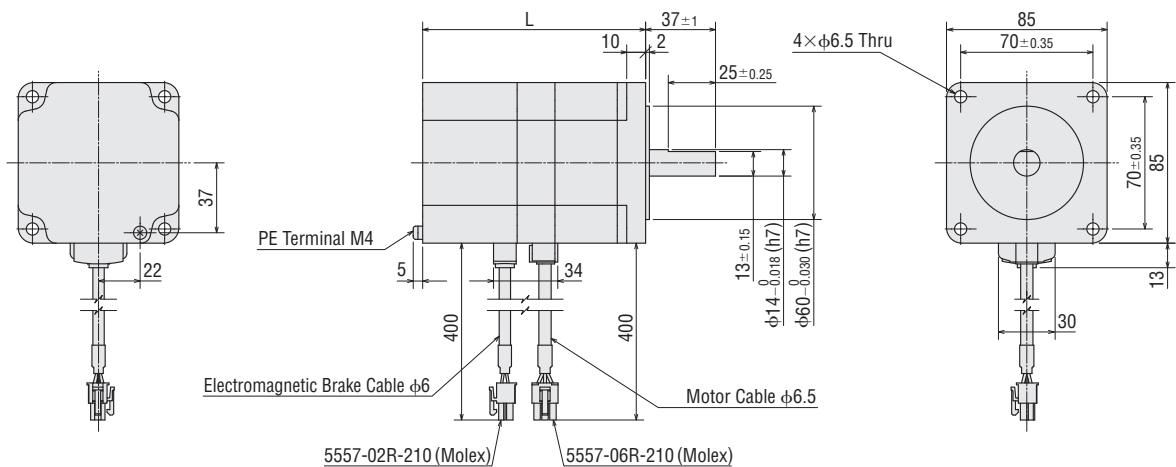
Frame Size 60 mm

| Product Name | | Motor Product Name | L | Mass kg | CAD |
|---------------------|------------------|--------------------|------|---------|-------|
| Built-In Controller | Pulse Input | | | | |
| RKS564M D-◇ | RKS564M ◇ | PKE564MC | 83.5 | 1.0 | B1008 |
| RKS566M D-◇ | RKS566M ◇ | PKE566MC | 94.5 | 1.2 | B1009 |
| RKS569M D-◇ | RKS569M ◇ | PKE569MC | 124 | 1.7 | B1010 |



Frame Size 85 mm

| Product Name | | Motor Product Name | L | Mass kg | CAD |
|---------------------|-------------------|--------------------|-----|---------|-------|
| Built-In Controller | Pulse Input | | | | |
| RKS596M D-◇ | RKS596M ◇ | PKE596MC | 118 | 2.7 | B1011 |
| RKS599M D-◇ | RKS599M ◇ | PKE599MC | 148 | 3.8 | B1012 |
| RKS5913M D-◇ | RKS5913M ◇ | PKE5913MC | 178 | 4.9 | B1013 |

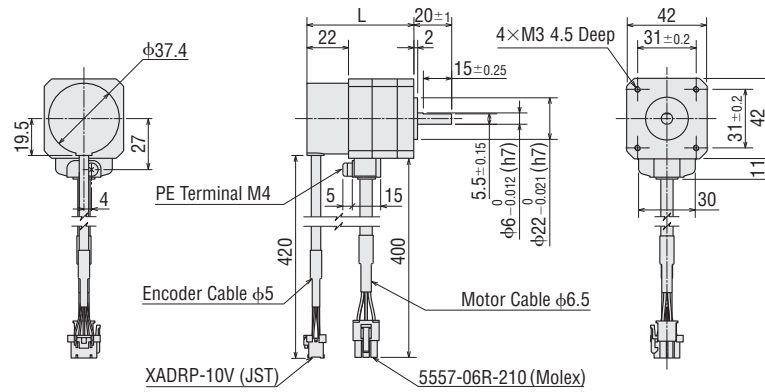


● Either **A** (Single-Phase 100-120 VAC) or **C** (Single-Phase 200-240 VAC) indicating the configuration is entered where is located within the product name.
 ● A number indicating the desired length of **1** (1 m), **2** (2 m) or **3** (3 m) for the cable included with the product is entered where the box ◇ is located within the product name.

◇ Standard Type with Encoder

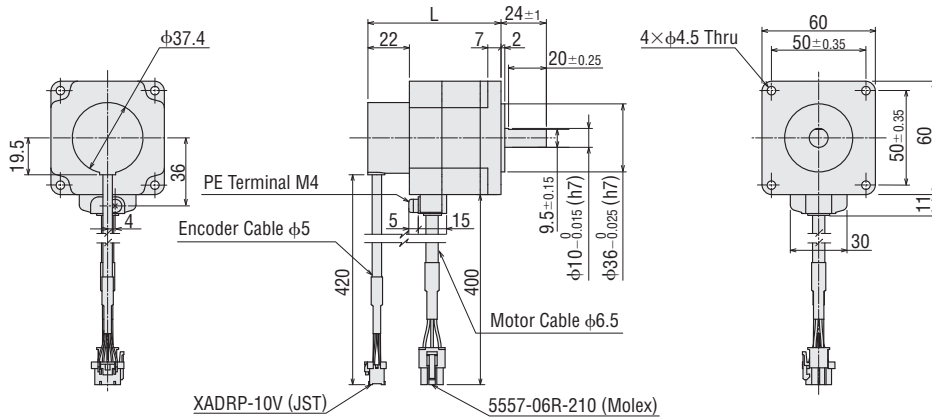
Frame Size 42 mm

| Product Name | Motor Product Name | L | Mass kg | CAD |
|-----------------------------|--------------------|----|---------|-------|
| RKS543R D2 -◇ | PKE543RC2 | 56 | 0.32 | B1083 |
| RKS544R D2 -◇ | PKE544RC2 | 62 | 0.38 | B1084 |
| RKS545R D2 -◇ | PKE545RC2 | 68 | 0.44 | B1085 |



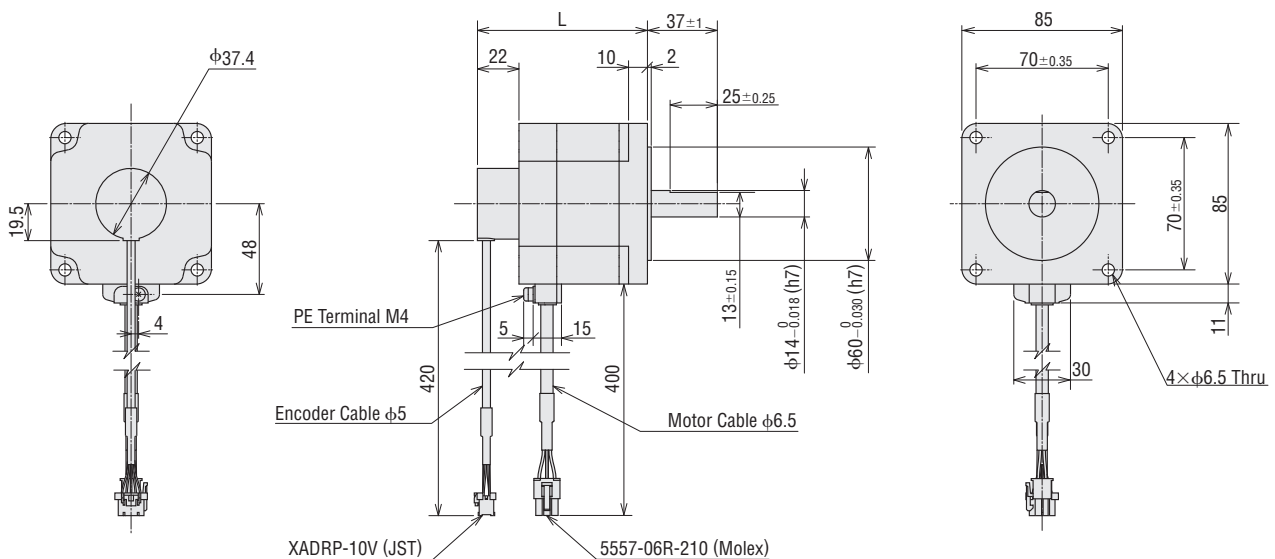
Frame Size 60 mm

| Product Name | Motor Product Name | L | Mass kg | CAD |
|-----------------------------|--------------------|------|---------|-------|
| RKS564R D2 -◇ | PKE564RC2 | 70.5 | 0.76 | B1086 |
| RKS566R D2 -◇ | PKE566RC2 | 81.5 | 0.96 | B1087 |
| RKS569R D2 -◇ | PKE569RC2 | 111 | 1.5 | B1088 |



Frame Size 85 mm

| Product Name | Motor Product Name | L | Mass kg | CAD |
|------------------------------|--------------------|-----|---------|-------|
| RKS596R D2 -◇ | PKE596RC2 | 90 | 2.0 | B1089 |
| RKS599R D2 -◇ | PKE599RC2 | 120 | 3.1 | B1090 |
| RKS5913R D2 -◇ | PKE5913RC2 | 150 | 4.2 | B1091 |

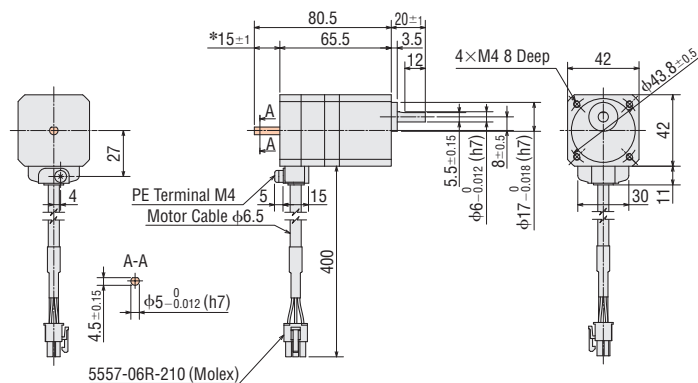


- Either **A** (Single-Phase 100-120 VAC) or **C** (Single-Phase 200-240 VAC) indicating the configuration is entered where **□** is located within the product name.
- A number indicating the desired length of **1** (1 m), **2** (2 m) or **3** (3 m) for the cable included with the product is entered where the box **◇** is located within the product name.

◇ TS Geared Type

Frame Size 42 mm

| Product Name | | Motor Product Name | Gear Ratio | Mass kg | CAD |
|--|---|--------------------------------------|-----------------------------|---------|-------|
| Built-In Controller | Pulse Input | | | | |
| RKS543A <input type="checkbox"/> D-TS <input type="checkbox"/> ◇ | RKS543A <input type="checkbox"/> -TS <input type="checkbox"/> ◇ | PKE543AC-TS <input type="checkbox"/> | 3.6, 7.2, 10, 20, 30 | 0.41 | B1051 |
| RKS543B <input type="checkbox"/> D-TS <input type="checkbox"/> ◇ | RKS543B <input type="checkbox"/> -TS <input type="checkbox"/> ◇ | PKE543BC-TS <input type="checkbox"/> | | | |

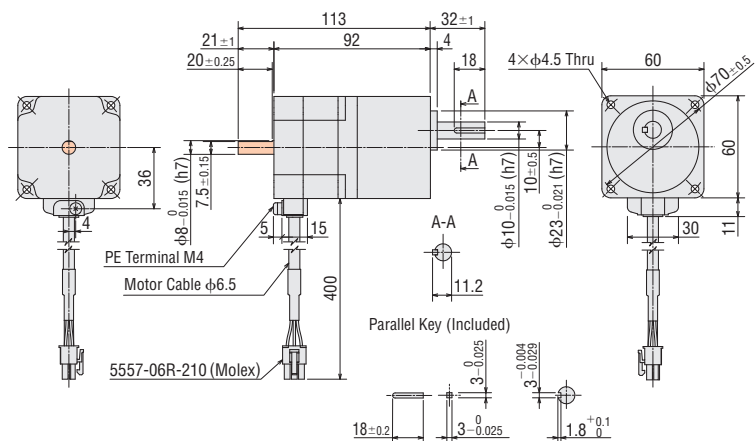


* Length of milling cut for double shaft type is 15±0.25.

Frame Size 60 mm

| Product Name | | Motor Product Name | Gear Ratio | Mass kg | CAD |
|--|---|--|-----------------------------|---------|-------|
| Built-In Controller | Pulse Input | | | | |
| RKS564A <input type="checkbox"/> D-TS <input type="checkbox"/> ◇ | RKS564A <input type="checkbox"/> -TS <input type="checkbox"/> ◇ | PKE564AC-TS <input type="checkbox"/> ◇ | 3.6, 7.2, 10, 20, 30 | 1.1 | B1052 |
| RKS564B <input type="checkbox"/> D-TS <input type="checkbox"/> ◇ | RKS564B <input type="checkbox"/> -TS <input type="checkbox"/> ◇ | PKE564BC-TS <input type="checkbox"/> ◇ | | | |

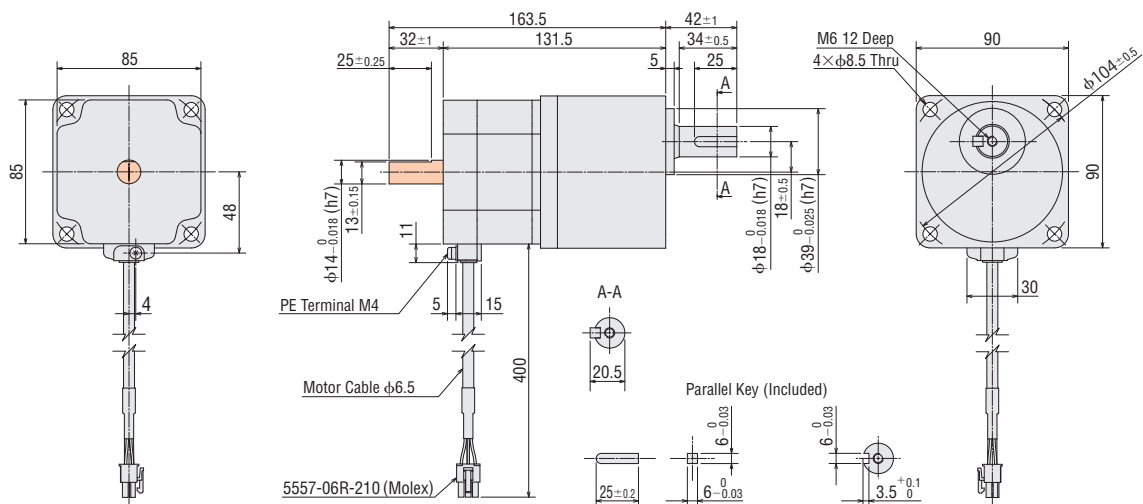
● Mounting Screw: M4×60 P0.7 (4 screws are included with the product)



Frame Size 90 mm

| Product Name | | Motor Product Name | Gear Ratio | Mass kg | CAD |
|--|---|--------------------------------------|-----------------------------|---------|-------|
| Built-In Controller | Pulse Input | | | | |
| RKS596A <input type="checkbox"/> D-TS <input type="checkbox"/> ◇ | RKS596A <input type="checkbox"/> -TS <input type="checkbox"/> ◇ | PKE596AC-TS <input type="checkbox"/> | 3.6, 7.2, 10, 20, 30 | 3.1 | B1053 |
| RKS596B <input type="checkbox"/> D-TS <input type="checkbox"/> ◇ | RKS596B <input type="checkbox"/> -TS <input type="checkbox"/> ◇ | PKE596BC-TS <input type="checkbox"/> | | | |

● Mounting Screw: M8×90 P1.25 (4 screws are included with the product)

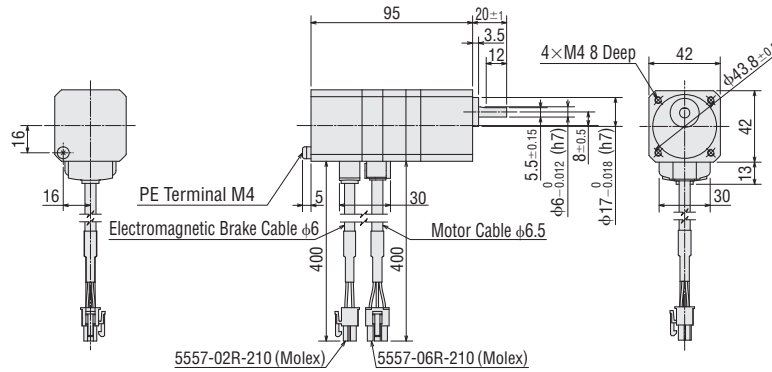


- Either **A** (Single-Phase 100-120 VAC) or **C** (Single-Phase 200-240 VAC) indicating the configuration is entered where is located within the product name.
- A value indicating the Gear Ratio is entered where the box is located within the product name.
- A number indicating the desired length of **1** (1 m), **2** (2 m) or **3** (3 m) for the cable included with the product is entered where the box is located within the product name.
- These dimensions are for double shaft models. For single shaft models, ignore the areas.

◇ **TS Geared Type with Electromagnetic Brake**

Frame Size 42 mm

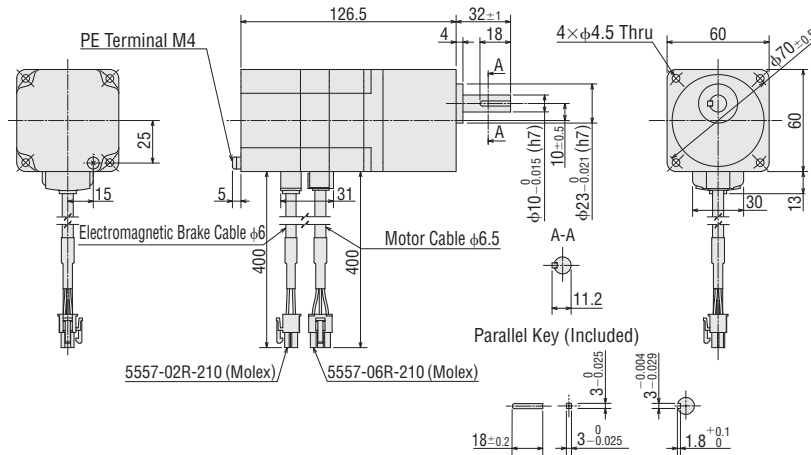
| Product Name | | Motor Product Name | Gear Ratio | Mass kg | CAD |
|--------------------------------|-------------------------------|--------------------|-----------------------------|---------|-------|
| Pulse Input | Built-In Controller | | | | |
| RKS543M □ D-TS ◇ | RKS543M □ -TS ◇ | PKE543MC-TS □ | 3.6, 7.2, 10, 20, 30 | 0.55 | B1054 |



Frame Size 60 mm

| Product Name | | Motor Product Name | Gear Ratio | Mass kg | CAD |
|--------------------------------|-------------------------------|--------------------|-----------------------------|---------|-------|
| Pulse Input | Built-In Controller | | | | |
| RKS564M □ D-TS ◇ | RKS564M □ -TS ◇ | PKE564MC-TS □ | 3.6, 7.2, 10, 20, 30 | 1.4 | B1055 |

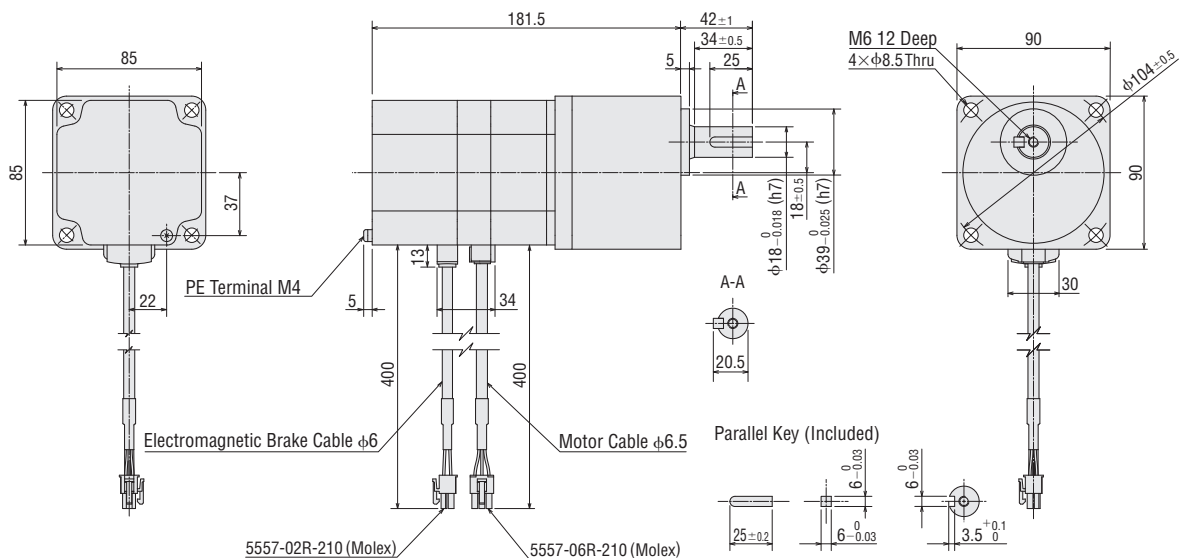
● Mounting Screw: M4×60 P0.7 (4 screws are included with the product)



Frame Size 90 mm

| Product Name | | Motor Product Name | Gear Ratio | Mass kg | CAD |
|--------------------------------|-------------------------------|--------------------|-----------------------------|---------|-------|
| Pulse Input | Built-In Controller | | | | |
| RKS596M □ D-TS ◇ | RKS596M □ -TS ◇ | PKE596MC-TS □ | 3.6, 7.2, 10, 20, 30 | 3.9 | B1056 |

● Mounting Screw: M8×90 P1.25 (4 screws are included with the product)

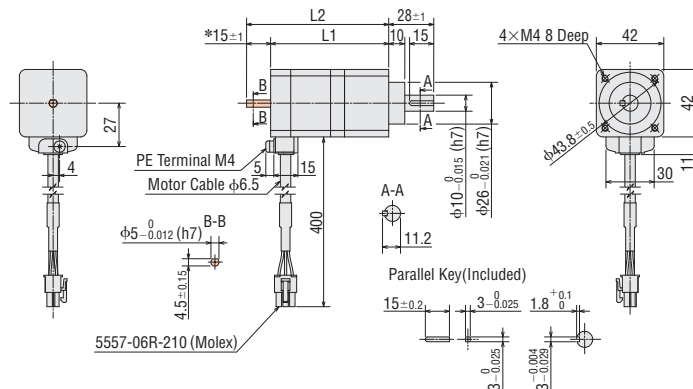


- Either **A** (Single-Phase 100-120 VAC) or **C** (Single-Phase 200-240 VAC) indicating the configuration is entered where □ is located within the product name.
- A value indicating the Gear Ratio is entered where the box □ is located within the product name.
- A number indicating the desired length of **1** (1 m), **2** (2 m) or **3** (3 m) for the cable included with the product is entered where the box ◇ is located within the product name.

◆ PS Geared Type

Frame Size 42 mm

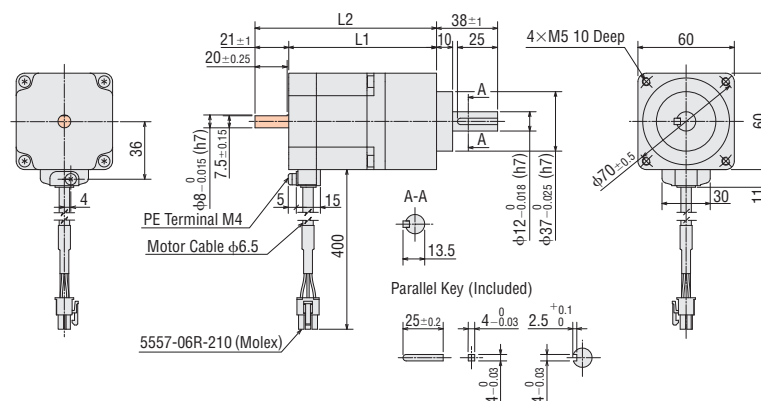
| Product Name | | Motor Product Name | Gear Ratio | L1 | L2 | Mass kg | CAD |
|---|--|---|-------------------|------|------|---------|-------|
| Built-In Controller | Pulse Input | | | | | | |
| RKS545A D-PS ◆ | RKS545A -PS ◆ | PKE545AC-PS □ | 5, 7.2, 10 | 73.5 | - | 0.58 | B1057 |
| RKS545B D-PS ◆ | RKS545B -PS ◆ | PKE545BC-PS □ | | | 88.5 | | |
| RKS543A D-PS ◆ | RKS543A -PS ◆ | PKE543AC-PS □ | 25, 36, 50 | 86 | - | 0.61 | B1058 |
| RKS543B D-PS ◆ | RKS543B -PS ◆ | PKE543BC-PS □ | | | 101 | | |



*Length of milling cut for double shaft type is 15±0.25.

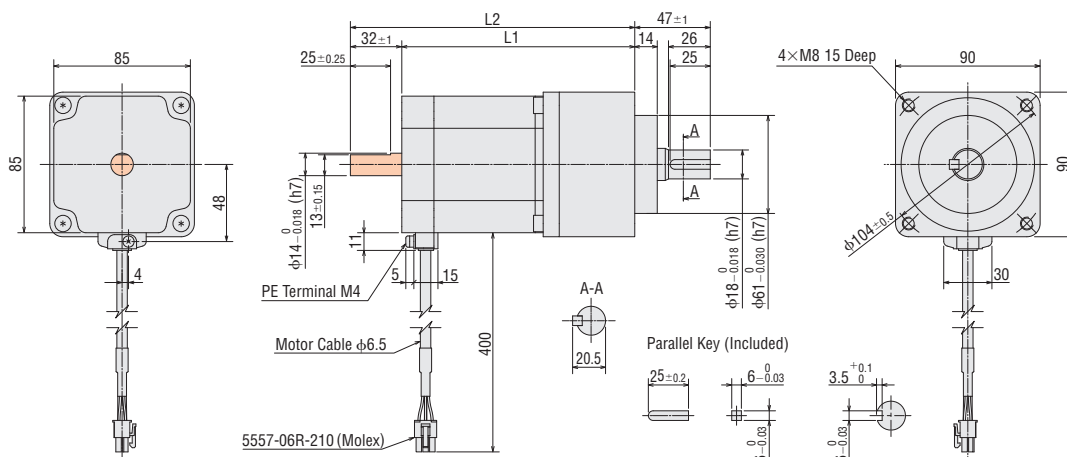
Frame Size 60 mm

| Product Name | | Motor Product Name | Gear Ratio | L1 | L2 | Mass kg | CAD |
|---|--|---|-------------------|-------|-------|---------|-------|
| Built-In Controller | Pulse Input | | | | | | |
| RKS566A D-PS ◆ | RKS566A -PS ◆ | PKE566AC-PS □ | 5, 7.2, 10 | 92 | - | 1.3 | B1059 |
| RKS566B D-PS ◆ | RKS566B -PS ◆ | PKE566BC-PS □ | | | 113 | | |
| RKS564A D-PS ◆ | RKS564A -PS ◆ | PKE564AC-PS □ | 25, 36, 50 | 101.5 | - | 1.4 | B1060 |
| RKS564B D-PS ◆ | RKS564B -PS ◆ | PKE564BC-PS □ | | | 122.5 | | |



Frame Size 90 mm

| Product Name | | Motor Product Name | Gear Ratio | L1 | L2 | Mass kg | CAD |
|---|--|---|-------------------|-------|-------|---------|-------|
| Built-In Controller | Pulse Input | | | | | | |
| RKS599A D-PS ◆ | RKS599A -PS ◆ | PKE599AC-PS □ | 5, 7.2, 10 | 145 | - | 4.4 | B1061 |
| RKS599B D-PS ◆ | RKS599B -PS ◆ | PKE599BC-PS □ | | | 177 | | |
| RKS596A D-PS ◆ | RKS596A -PS ◆ | PKE596AC-PS □ | 25, 36, 50 | 142.5 | - | 4.1 | B1062 |
| RKS596B D-PS ◆ | RKS596B -PS ◆ | PKE596BC-PS □ | | | 174.5 | | |

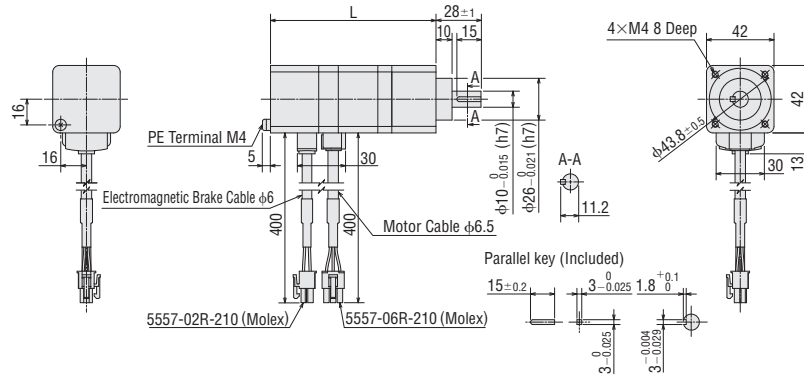


- Either **A** (Single-Phase 100-120 VAC) or **C** (Single-Phase 200-240 VAC) indicating the configuration is entered where □ is located within the product name.
- A value indicating the Gear Ratio is entered where the box □ is located within the product name.
- A number indicating the desired length of **1** (1 m), **2** (2 m) or **3** (3 m) for the cable included with the product is entered where the box ◆ is located within the product name.
- These dimensions are for double shaft models. For single shaft models, ignore the □ areas.

◆ **PS Geared Type with Electromagnetic Brake**

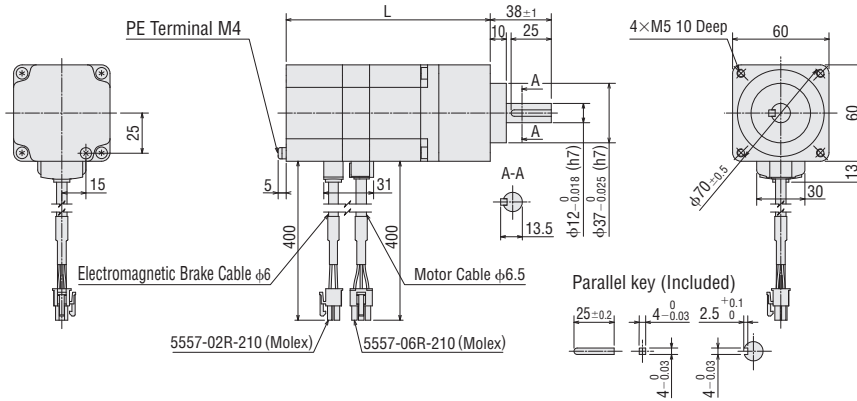
Frame Size 42 mm

| Product Name | | Motor Product Name | Gear Ratio | L | Mass kg | CAD |
|--|---|--------------------------------------|-------------------|-------|---------|-------|
| Built-In Controller | Pulse Input | | | | | |
| RKS545M <input type="checkbox"/> D-PS <input type="checkbox"/> ◆ | RKS545M <input type="checkbox"/> -PS <input type="checkbox"/> ◆ | PKE545MC-PS <input type="checkbox"/> | 5, 7.2, 10 | 103 | 0.72 | B1063 |
| RKS543M <input type="checkbox"/> D-PS <input type="checkbox"/> ◆ | RKS543M <input type="checkbox"/> -PS <input type="checkbox"/> ◆ | PKE543MC-PS <input type="checkbox"/> | 25, 36, 50 | 115.5 | 0.75 | B1064 |



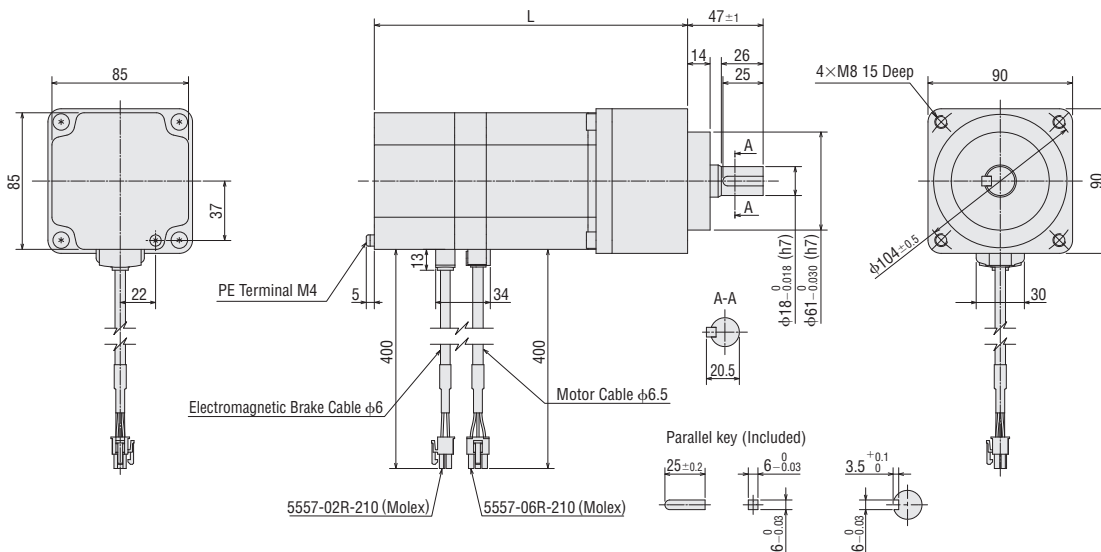
Frame Size 60 mm

| Product Name | | Motor Product Name | Gear Ratio | L | Mass kg | CAD |
|--|---|--------------------------------------|-------------------|-----|---------|-------|
| Built-In Controller | Pulse Input | | | | | |
| RKS566M <input type="checkbox"/> D-PS <input type="checkbox"/> ◆ | RKS566M <input type="checkbox"/> -PS <input type="checkbox"/> ◆ | PKE566MC-PS <input type="checkbox"/> | 5, 7.2, 10 | 127 | 1.6 | B1065 |
| RKS564M <input type="checkbox"/> D-PS <input type="checkbox"/> ◆ | RKS564M <input type="checkbox"/> -PS <input type="checkbox"/> ◆ | PKE564MC-PS <input type="checkbox"/> | 25, 36, 50 | 136 | 1.7 | B1066 |



Frame Size 90 mm

| Product Name | | Motor Product Name | Gear Ratio | L | Mass kg | CAD |
|--|---|--------------------------------------|-------------------|-----|---------|-------|
| Built-In Controller | Pulse Input | | | | | |
| RKS599M <input type="checkbox"/> D-PS <input type="checkbox"/> ◆ | RKS599M <input type="checkbox"/> -PS <input type="checkbox"/> ◆ | PKE599MC-PS <input type="checkbox"/> | 5, 7.2, 10 | 195 | 5.2 | B1067 |
| RKS596M <input type="checkbox"/> D-PS <input type="checkbox"/> ◆ | RKS596M <input type="checkbox"/> -PS <input type="checkbox"/> ◆ | PKE596MC-PS <input type="checkbox"/> | 25, 36, 50 | 192 | 4.9 | B1068 |

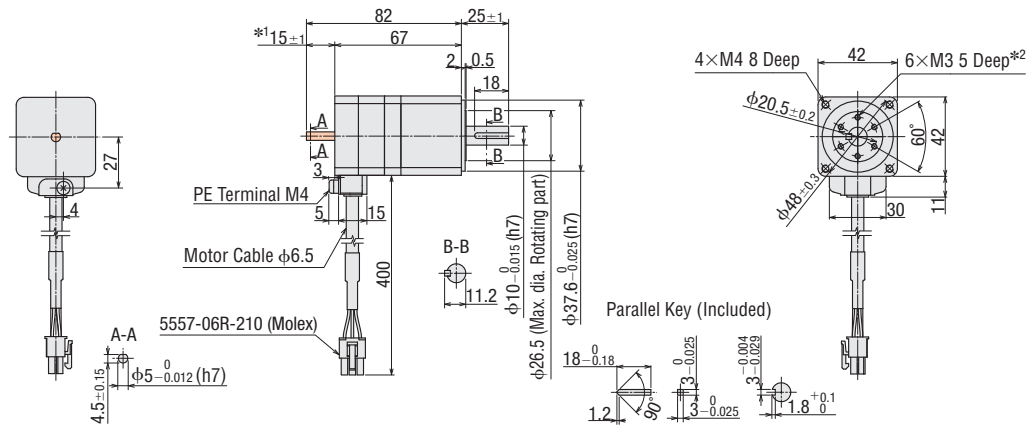


- Either **A** (Single-Phase 100-120 VAC) or **C** (Single-Phase 200-240 VAC) indicating the configuration is entered where is located within the product name.
- A value indicating the Gear Ratio is entered where the box is located within the product name.
- A number indicating the desired length of **1** (1 m), **2** (2 m) or **3** (3 m) for the cable included with the product is entered where the box is located within the product name.

◇ Harmonic Geared Type

Frame Size 42 mm

| Product Name | | Motor Product Name | Gear Ratio | Mass kg | CAD |
|--|---|--------------------------------------|----------------|---------|-------|
| Built-In Controller | Pulse Input | | | | |
| RKS543A <input type="checkbox"/> D-HS <input type="checkbox"/> ◇ | RKS543A <input type="checkbox"/> -HS <input type="checkbox"/> ◇ | PKE543AC-HS <input type="checkbox"/> | 50, 100 | 0.47 | B1033 |
| RKS543B <input type="checkbox"/> D-HS <input type="checkbox"/> ◇ | RKS543B <input type="checkbox"/> -HS <input type="checkbox"/> ◇ | PKE543BC-HS <input type="checkbox"/> | | | |

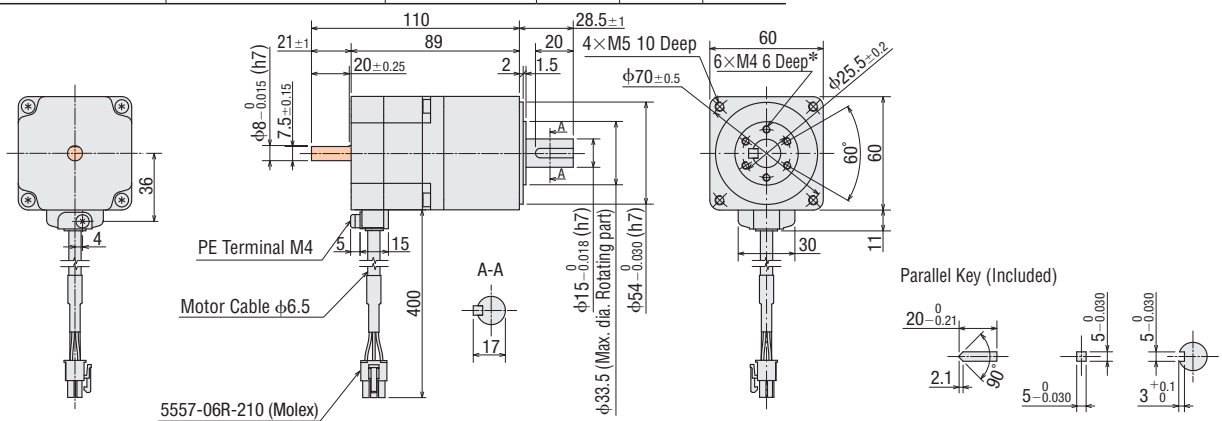


*1 Length of milling cut for double shaft type is 15±0.25.

*2 The position of the output shaft relative to the screw holes on the rotating part is arbitrary.

Frame Size 60 mm

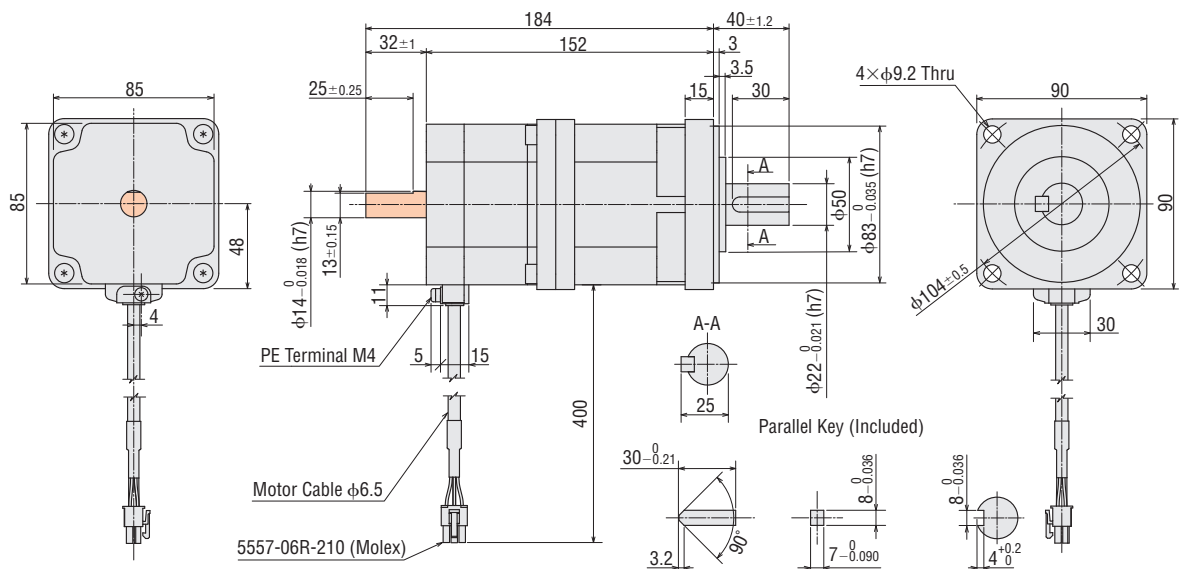
| Product Name | | Motor Product Name | Gear Ratio | Mass kg | CAD |
|--|---|--------------------------------------|----------------|---------|-------|
| Built-In Controller | Pulse Input | | | | |
| RKS564A <input type="checkbox"/> D-HS <input type="checkbox"/> ◇ | RKS564A <input type="checkbox"/> -HS <input type="checkbox"/> ◇ | PKE564AC-HS <input type="checkbox"/> | 50, 100 | 1.2 | B1034 |
| RKS564B <input type="checkbox"/> D-HS <input type="checkbox"/> ◇ | RKS564B <input type="checkbox"/> -HS <input type="checkbox"/> ◇ | PKE564BC-HS <input type="checkbox"/> | | | |



* The position of the output shaft relative to the screw holes on the rotating part is arbitrary.

Frame Size 90 mm

| Product Name | | Motor Product Name | Gear Ratio | Mass kg | CAD |
|--|---|--------------------------------------|----------------|---------|-------|
| Built-In Controller | Pulse Input | | | | |
| RKS596A <input type="checkbox"/> D-HS <input type="checkbox"/> ◇ | RKS596A <input type="checkbox"/> -HS <input type="checkbox"/> ◇ | PKE596AC-HS <input type="checkbox"/> | 50, 100 | 3.9 | B1035 |
| RKS596B <input type="checkbox"/> D-HS <input type="checkbox"/> ◇ | RKS596B <input type="checkbox"/> -HS <input type="checkbox"/> ◇ | PKE596BC-HS <input type="checkbox"/> | | | |



● Either **A** (Single-Phase 100-120 VAC) or **C** (Single-Phase 200-240 VAC) indicating the configuration is entered where is located within the product name.

● A value indicating the Gear Ratio is entered where the box is located within the product name.

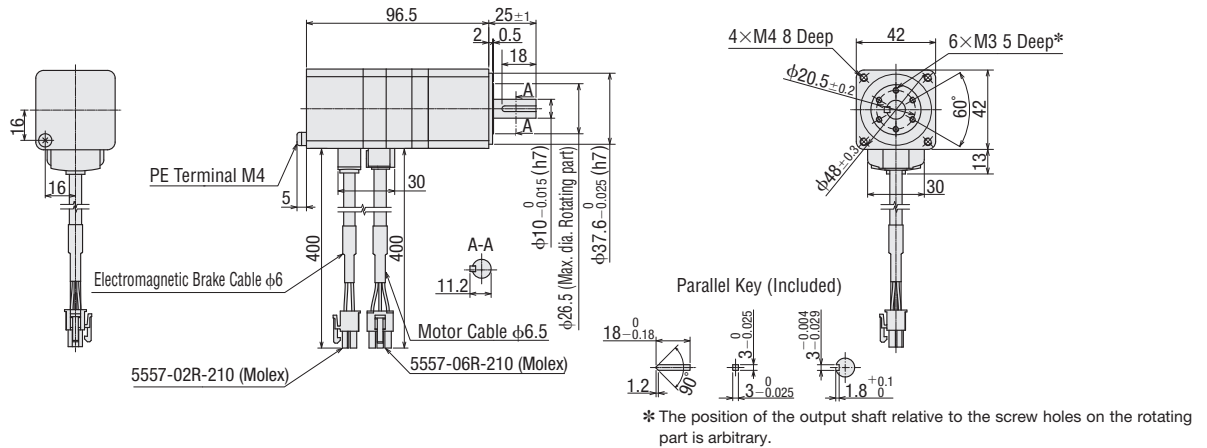
● A number indicating the desired length of **1** (1 m), **2** (2 m) or **3** (3 m) for the cable included with the product is entered where the box is located within the product name.

● These dimensions are for double shaft models. For single shaft models, ignore the areas.

◇ Harmonic Geared Type with Electromagnetic Brake

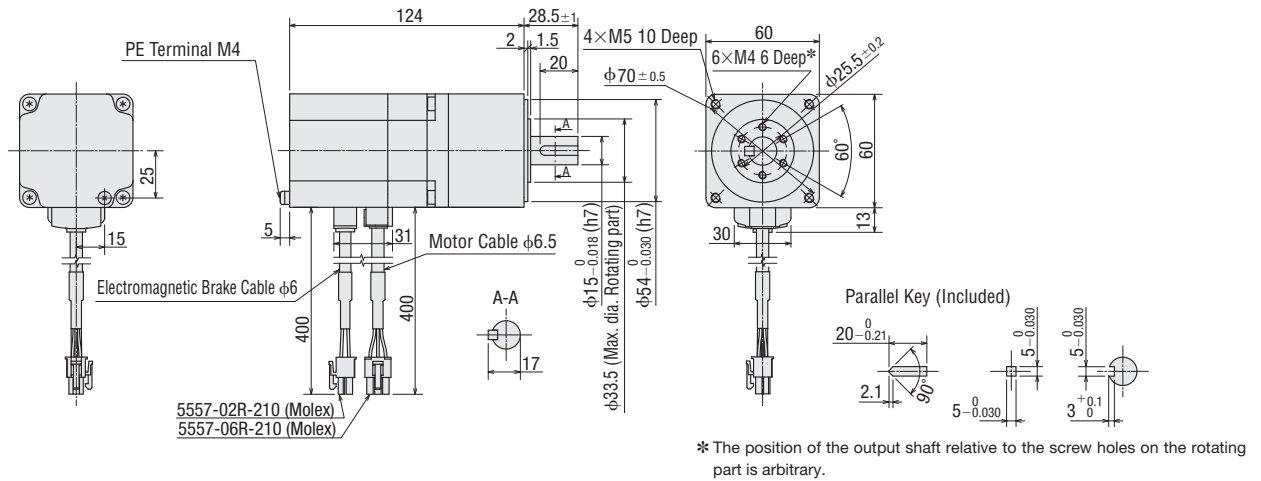
Frame Size 42 mm

| Product Name | | Motor Product Name | Gear Ratio | Mass kg | CAD |
|--------------------------------|-------------------------------|--------------------|----------------|---------|-------|
| Built-In Controller | Pulse Input | | | | |
| RKS543M D-HS □-◇ | RKS543M -HS □-◇ | PKE543MC-HS □ | 50, 100 | 0.61 | B1036 |



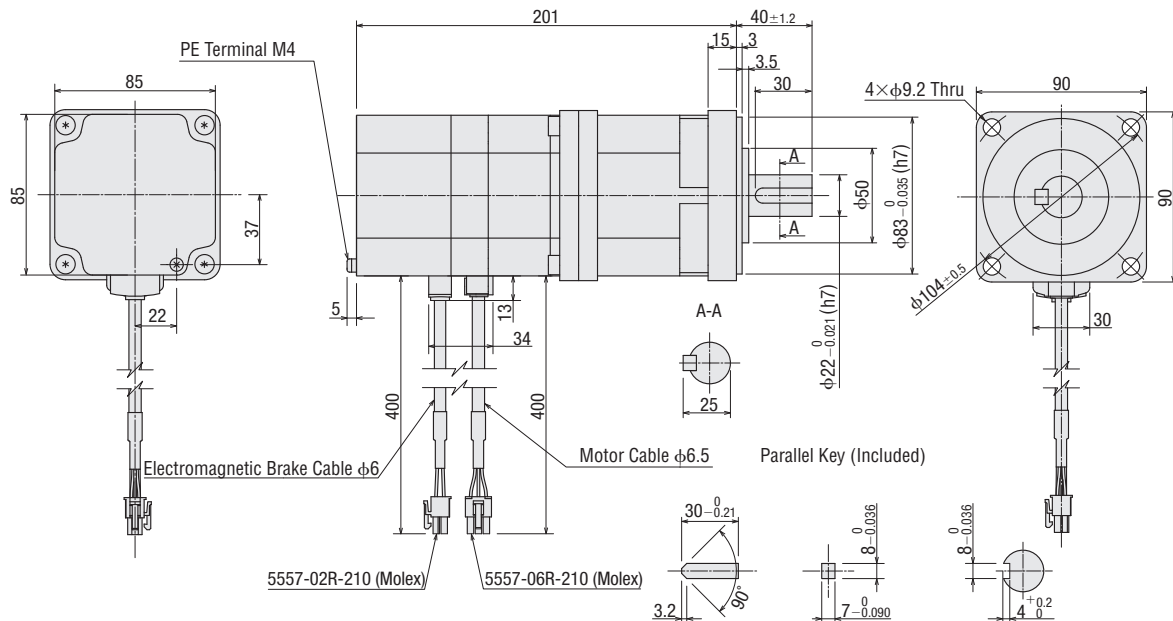
Frame Size 60 mm

| Product Name | | Motor Product Name | Gear Ratio | Mass kg | CAD |
|--------------------------------|-------------------------------|--------------------|----------------|---------|-------|
| Built-In Controller | Pulse Input | | | | |
| RKS564M D-HS □-◇ | RKS564M -HS □-◇ | PKE564MC-HS □ | 50, 100 | 1.5 | B1037 |



Frame Size 90 mm

| Product Name | | Motor Product Name | Gear Ratio | Mass kg | CAD |
|--------------------------------|-------------------------------|--------------------|----------------|---------|-------|
| Built-In Controller | Pulse Input | | | | |
| RKS596M D-HS □-◇ | RKS596M -HS □-◇ | PKE596MC-HS □ | 50, 100 | 4.8 | B1038 |



- Either **A** (Single-Phase 100-120 VAC) or **C** (Single-Phase 200-240 VAC) indicating the configuration is entered where □ is located within the product name.
- A value indicating the Gear Ratio is entered where the box □ is located within the product name.
- A number indicating the desired length of **1** (1 m), **2** (2 m) or **3** (3 m) for the cable included with the product is entered where the box ◇ is located within the product name.

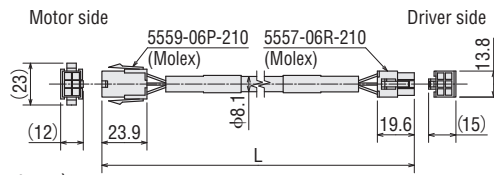
● Cable for Motor (Included), Cable for Electromagnetic Brake (Included), Cable for Encoder (Included)

◇ Only with the type supplied with a connection cable

Common to All Types

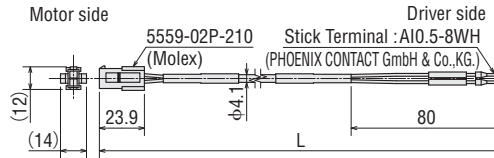
● Cable for Motor

| Cable Type | Length L (m) |
|---------------------|--------------|
| Cable for Motor 1 m | 1 |
| Cable for Motor 2 m | 2 |
| Cable for Motor 3 m | 3 |



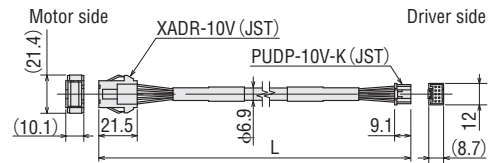
● Cable for Electromagnetic Brake (Only for electromagnetic brake type)

| Cable for Motor | Cable Type |
|---------------------|------------|
| Cable for Motor 1 m | 1 |
| Cable for Motor 2 m | 2 |
| Cable for Motor 3 m | 3 |



● Cable for Encoder (Only for encoder type)

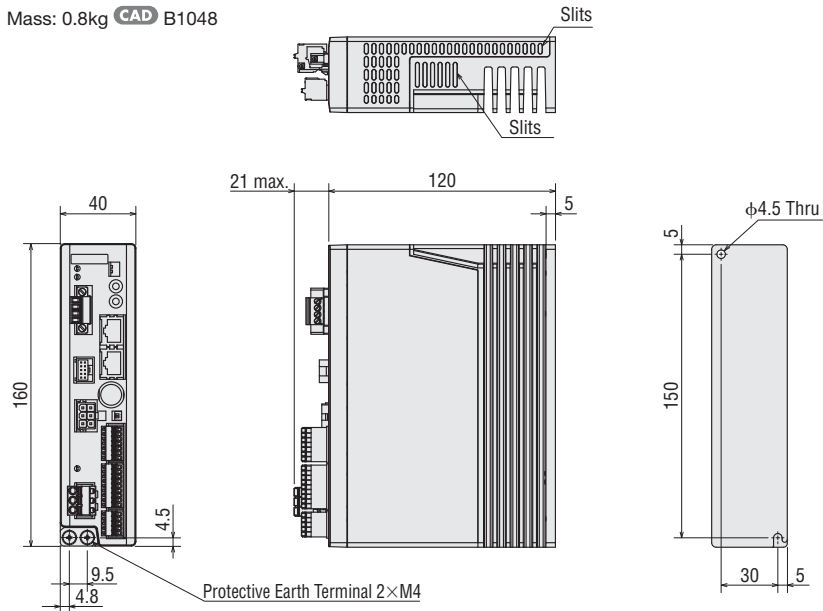
| Cable for Motor | Cable Type |
|---------------------|------------|
| Cable for Motor 1 m | 1 |
| Cable for Motor 2 m | 2 |
| Cable for Motor 3 m | 3 |



● Drivers

◇ Built-In Controller Type

Mass: 0.8kg CAD B1048

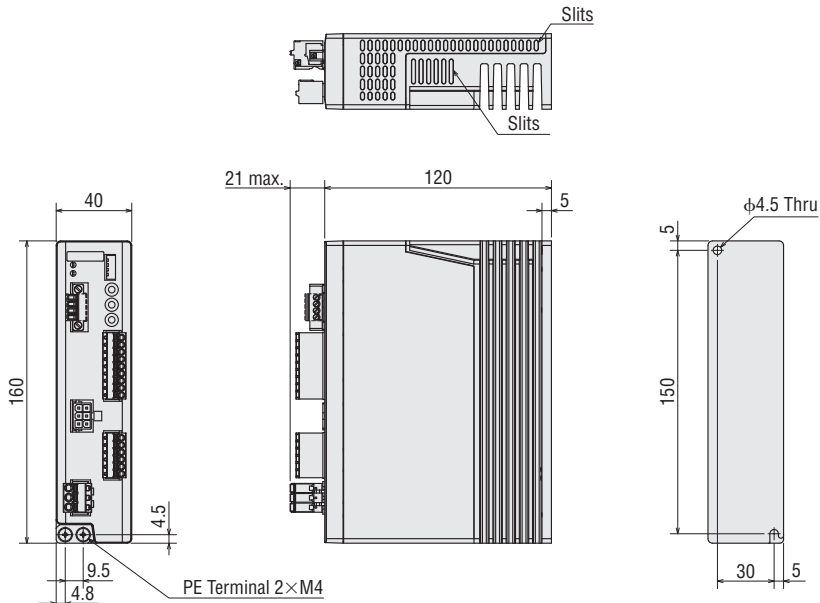


● Accessories

- Connector for Power Input Terminal (CN1)
Connector: MC1,5/4-STF-3,5 (PHOENIX CONTACT GmbH & Co.,KG.)
- Connector for Sensor Signal (CN5)
Connector: FK-MC0,5/5-ST-2,5 (PHOENIX CONTACT GmbH & Co.,KG.)
- Connector for Input Signal (CN8)
Connector: FK-MC0,5/9-ST-2,5 (PHOENIX CONTACT GmbH & Co.,KG.)
- Connector for Output Signal (CN9)
Connector: FK-MC0,5/7-ST-2,5 (PHOENIX CONTACT GmbH & Co.,KG.)
- Connector for Regeneration Unit/Main Power Supply (CN3)
Connector: FKCT2,5/3-ST-5,08 (PHOENIX CONTACT GmbH & Co.,KG.)

◇ Pulse Input Type

Mass: 0.8kg  Standard Type with Electromagnetic Brake: B1014, Standard Type: B1015

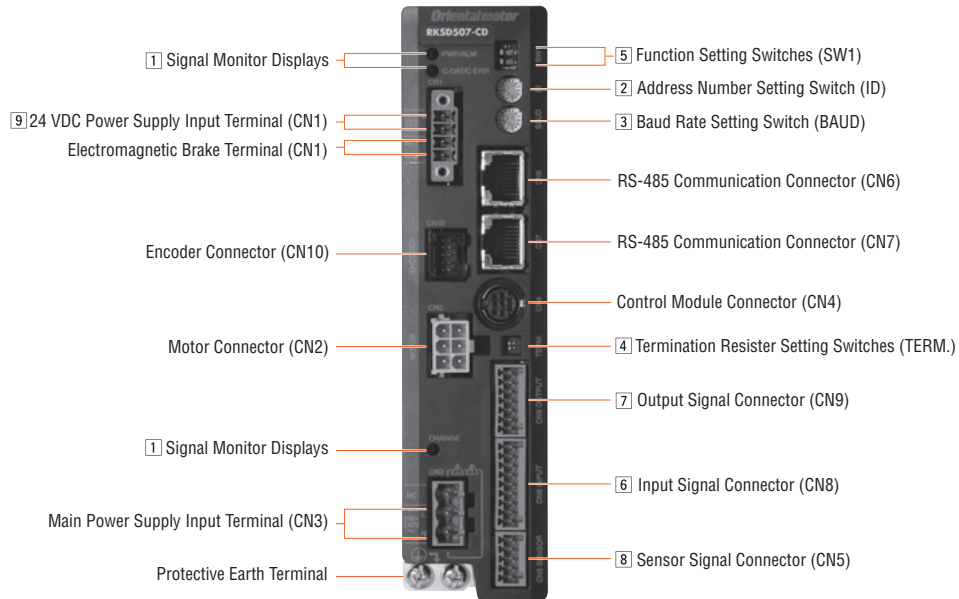


● Included

- I/O Signal Connector (CN5)
Connector:FK-MCP1,5/9-ST-3,81 (PHOENIX CONTACT GmbH & Co.,KG.)
- Pulse Input Connector (CN4)
Connector:FK-MCP1,5/6-ST-3,81 (PHOENIX CONTACT GmbH & Co.,KG.)
- Electromagnetic Brake Connection Terminal Connector (CN1)
Connector:MC1,5/4-STF-3,5 (PHOENIX CONTACT GmbH & Co.,KG.)
- Power Source Input Connector (CN3)
Connector:FKCT2,5/3-ST-5,08 (PHOENIX CONTACT GmbH & Co.,KG.)
- * Electromagnetic brake type only

Connection and Operation (Built-In Controller Type)

Names and Functions of Driver Parts



1 Signal Monitor Displays

◇ LED Indicators

| Indication | Color | Function | When Activated |
|------------|-------|--------------------------------|--|
| PWR | Green | Power Supply Indication | Lights when 24 VDC power is on. |
| ALM | Red | Alarm Indication | Blinks when protective functions are activated. |
| C-DAT | Green | Communication Indication | Lights when communication data is received or sent. |
| C-ERR | Red | Communication Error Indication | Lights when there is an error with communication data. |
| CHARGE | Red | Power On Indication | Lights when main power is supplied. |

2 Address Number Setting Switch (ID)

| Indication | Switch Name | Function |
|------------|-------------------------------|---|
| ID | Address Number Setting Switch | Set the address number for RS-485 communication (Factory Setting: 0). |

3 Baud Rate Setting Switch (BAUD)

| Indication | Switch Name | Function |
|------------|--------------------------|---|
| BAUD | Baud Rate Setting Switch | Set the baud rate for RS-485 communications (Factory Setting: 7). |

◇ Setting the Baud Rate for RS-484 Communications

| No. | Baud Rate (bps) |
|-----|---------------------------------------|
| 0 | 9600 |
| 1 | 19200 |
| 2 | 38400 |
| 3 | 57600 |
| 4 | 115200 |
| 5~6 | Not used |
| 7 | 625000 (Connect to Network Converter) |
| 8~F | Not used |

4 Termination Resistor Setting Switches (TERM.)

| Indication | No. | Function |
|------------|-----|---|
| TERM. | 1 | Set the termination resistor (120 Ω) for RS-485 communication (Factory setting: OFF). |
| | 2 | OFF : No termination resistor ON : Set the termination resistor |

* Please use the same settings for both No. 1 and No. 2.

5 Function Setting Switches (SW1)

| Indication | No. | Function |
|------------|-----|---|
| SW1 | 1 | Set the address number in combination with the address number setting switch (ID) (Factory setting: OFF). |
| | 2 | Set the protocol for RS-485 communication (Factory setting: OFF). |

◇ RS-485 Communication Protocol Setting

| No. | Destination | Connect to Network convertor | Modbus RTU Mode |
|-----|-------------|------------------------------|-----------------|
| | 2 | | OFF |

6 Input Signal Connector (CN8)

| Indication | Pin No. | Signal Name | Initial Value |
|------------|---------|-------------|---|
| CN8 | 1 | IN0 | HOME Perform the return-to-home operation. |
| | 2 | IN1 | START Perform the positioning operation. |
| | 3 | IN2 | M0 |
| | 4 | IN3 | M1 |
| | 5 | IN4 | M2 |
| | 6 | IN5 | FREE Stop motor excitation and release the electromagnetic brake. |
| | 7 | IN6 | STOP Stop the motor. |
| | 8 | IN7 | ALM-RST Reset the current alarm. |

* Assigned functions are set by means of the parameter settings. The above is the initial value. For details, refer to the User's Manual.

The following input signals can be assigned to input terminals IN0~7.

| Input Signal | | | | | | | | | |
|--------------|-----------|----------|--------------|--------|--------|---------|---------|--------|--|
| 0 : Not used | 5: SSTART | 10: MS2 | 17: AW0 | 32: R0 | 37: R5 | 42: R10 | 47: R15 | 52: M4 | |
| 1: FWD | 6: +JOG | 11: MS3 | 18: STOP | 33: R1 | 38: R6 | 43: R11 | 48: M0 | 53: M5 | |
| 2: RVS | 7: -JOG | 12: MS4 | 24: ALM-RST | 34: R2 | 39: R7 | 44: R12 | 49: M1 | | |
| 3: HOME | 8: MS0 | 13: MS5 | 25: P-PRESET | 35: R3 | 40: R8 | 45: R13 | 50: M2 | | |
| 4: START | 9: MS1 | 16: FREE | 27: HMI | 36: R4 | 41: R9 | 46: R14 | 51: M3 | | |

7 Output Signal Connector (CN9)

| Indication | Pin No. | Signal Name | Initial Value |
|------------|---------|-------------|--|
| CN9 | 1 | OUT0 | HOME-P Output when the motor is home. |
| | 2 | OUT1 | MOVE Output while the motor is under operation. |
| | 3 | OUT2 | AREA1 Output when the motor is in area 1. |
| | 4 | OUT3 | READY Output when driver operation preparations have finished. |
| | 5 | OUT4 | WNG The driver's warning status is output. |
| | 6 | OUT5 | ALM The driver's alarm status is output (Point B). |

* Assigned functions are set by means of the parameter settings. The above is the initial value. For details, refer to the User's Manual.

The following output signals can be assigned to output terminals OUT0~5.

| Input Signal | | | | | | | | | |
|--------------|-----------|------------|---------|----------|-------------|------------|-------------|---------|--|
| 0: Not used | 7: -JOG_R | 16: FREE_R | 36: R4 | 43: R11 | 50: M2_R | 63: SLIT_R | 73: AREA1 | 85: ZSG | |
| 1: FWD_R | 8: MS0_R | 17: AW0_R | 37: R5 | 44: R12 | 51: M3_R | 65: ALM | 74: AREA2 | 86: MBC | |
| 2: RVS_R | 9: MS1_R | 18: STOP_R | 38: R6 | 45: R13 | 52: M4_R | 66: WNG | 75: AREA3 | | |
| 3: HOME_R | 10: MS2_R | 32: R0 | 39: R7 | 46: R14 | 53: M5_R | 67: READY | 80: S-BSY | | |
| 4: START_R | 11: MS3_R | 33: R1 | 40: R8 | 47: R15 | 60: +LS_R | 68: MOVE | 82: MPS | | |
| 5: SSTART_R | 12: MS4_R | 34: R2 | 41: R9 | 48: M0_R | 61: -LS_R | 70: HOME-P | 83: STEPOUT | | |
| 6: +JOG_R | 13: MS5_R | 35: R3 | 42: R10 | 49: M1_R | 62: HOMES_R | 72: TIM | 84: OH | | |

8 Sensor Signal Connector (CN5)

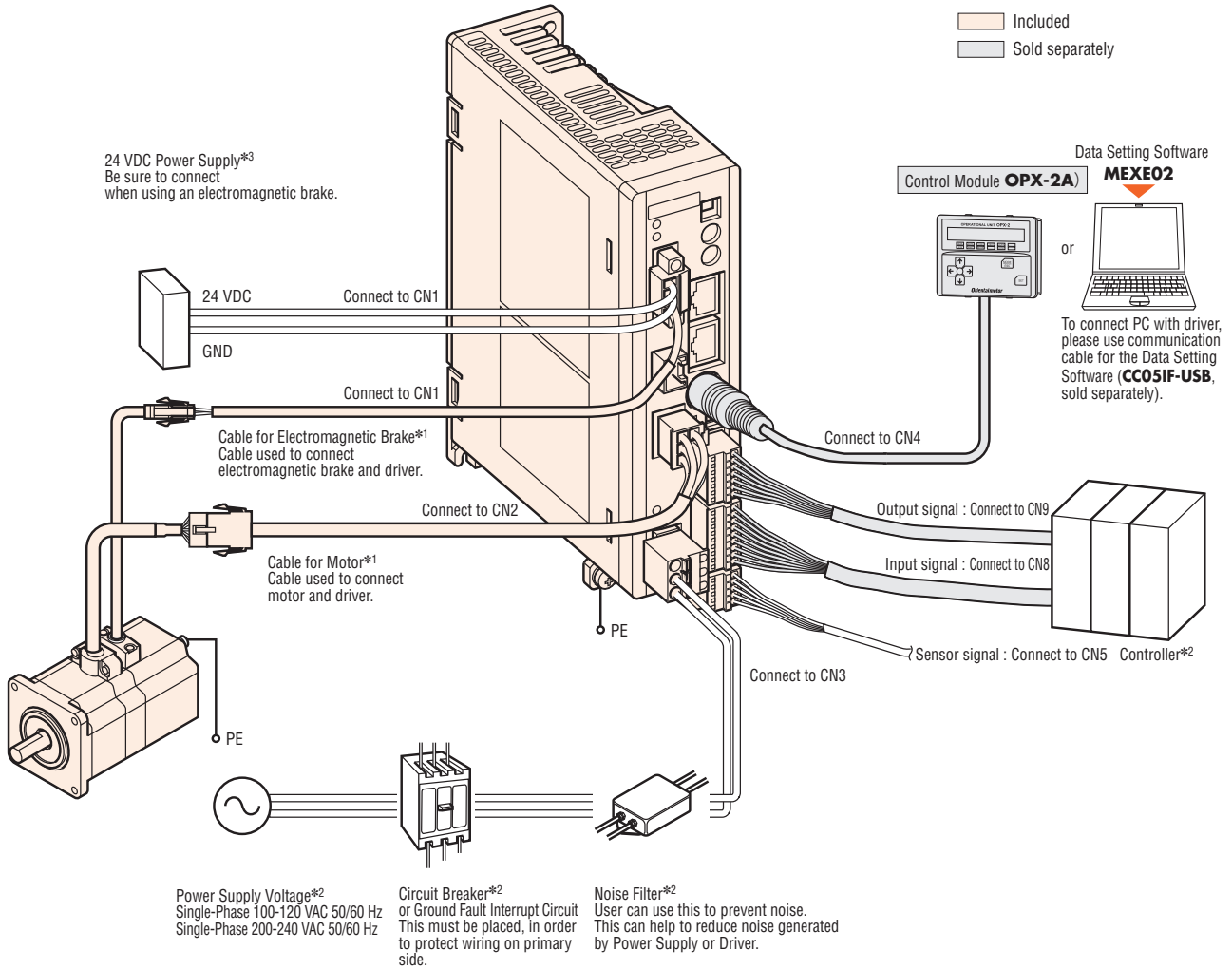
| Indication | Pin No. | Signal Name | Initial Value |
|------------|---------|-------------|------------------------------|
| CN5 | 1 | +LS | +Side Limit Sensor Input |
| | 2 | -LS | -Side Limit Sensor Input |
| | 3 | HOMES | Mechanical Home Sensor Input |
| | 4 | SLIT | Slit Sensor Input |
| | 5 | IN-COM2 | Common for Sensor |

9 24 VDC Input/Electromagnetic Brake Connection Terminal (CN1)

| Indication | I/O | Terminal Name | Content |
|------------|--------|--|---|
| 24V+ | Input | 24 VDC Power Input Terminal+ | The power supply for the driver's control circuit terminal. Always connect while operating. |
| 24V- | | 24 VDC Power Input Terminal- | |
| MB1 | Output | Electromagnetic Brake Connection Terminal- | Connect with the electromagnetic brake line of an electromagnetic brake type motor. |
| MB2 | | Electromagnetic Brake Connection Terminal+ | |

● Connection Diagram

◇ Connection to Peripheral Equipment



*1 The user can choose from Package with Cable (1 m, 2 m or 3 m) or Package without Cable.

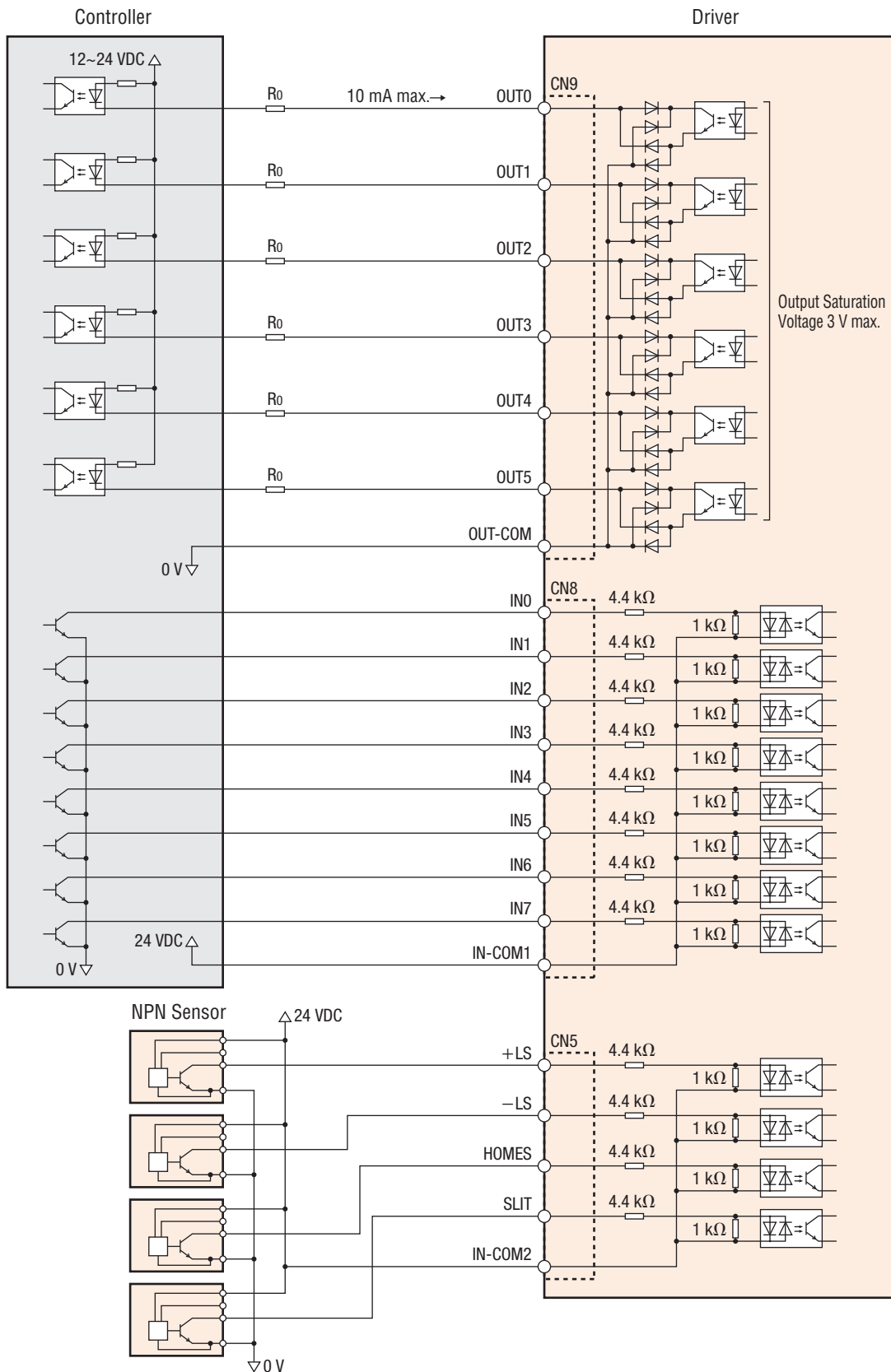
If the user needs a cable longer than 3 m or a flexible cable, please select an appropriate cable from the accessories (sold separately).
Keep the wiring distance between the motor and driver to 20 m max.

*2 Not Supplied.

*3 Not Supplied. If the wiring distance between the motor and driver is extended to 15 m or longer by using an accessory cable (sold separately), the 24 VDC±4% specification applies.

◇ Connecting to a Host Controller

● Connecting to a Current Sink Output Circuit

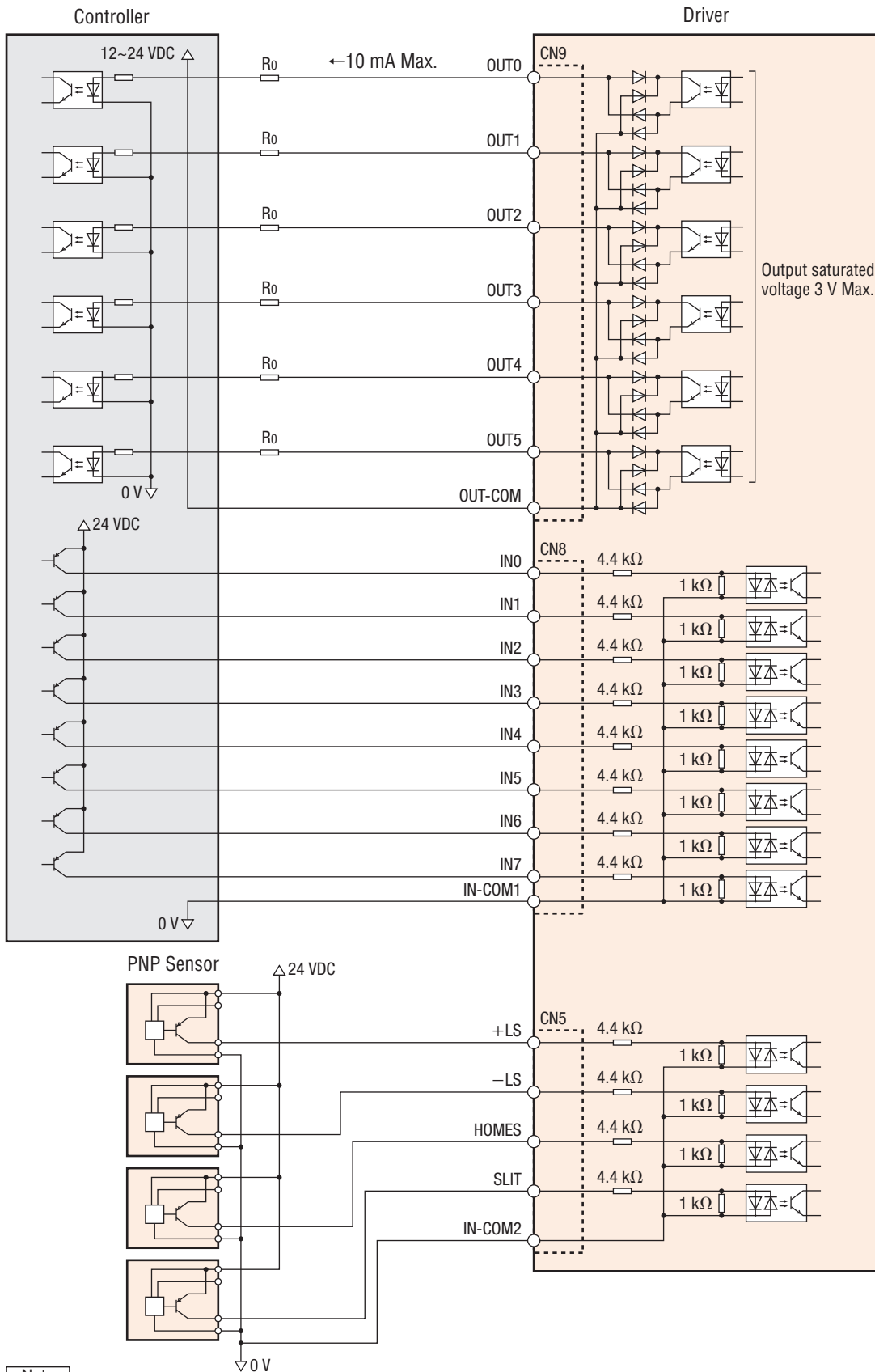


Note

- Use input signals at 24 VDC.
- Use output signals at 26.4 VDC/10 mA or less. If the current exceeds 10 mA, connect an external resistor R_o to adjust current value to less than 10 mA.
- The saturation voltage of the output signal is 3 VDC max.
- Provide a minimum distance of 100 mm between the signal lines and power lines (Power supply lines, motor lines).
Do not run the signal lines in the same duct as power lines nor bundle them with power lines.
- If noise generated by the motor cable or power supply cable causes a problem with the specific wiring or layout, attach shield the cable or ferrite core.

◇ Connecting to a Host Controller

● Connecting to a Current Source Output Circuit

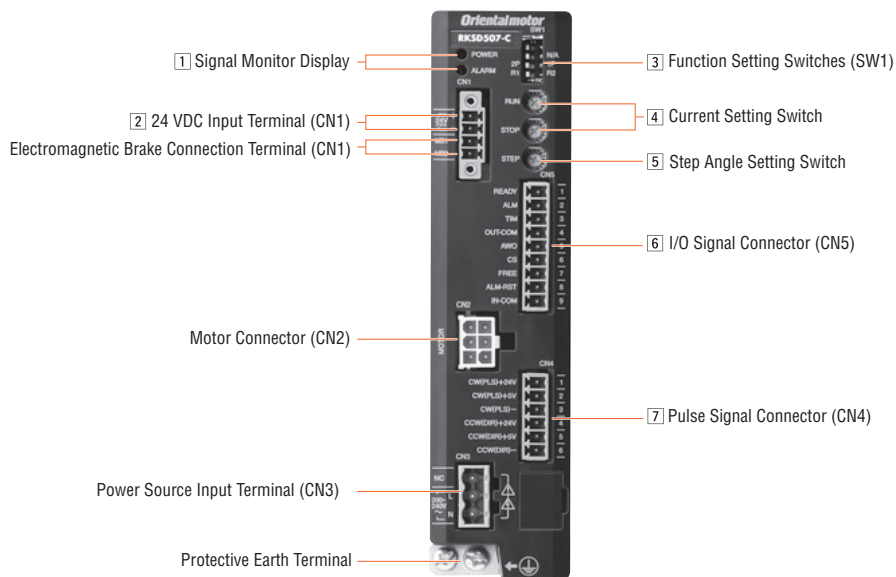


Note

- Use 24 VDC for the input signal.
- Use 26.4 VDC or less for the output signal, and 10 mA or less for the current. If the current exceeds 10 mA, connect an external resistor R_0 to reduce the current to less than 10 mA.
- Output saturated voltage should be less than 3 V.
- Signal lines should be kept at least 100 mm away from power lines (power supply lines and motor lines). Do not run the signal lines in the same duct or bundle them together.
- If noise generated by the motor cables or power supply cables causes a problem, try shielding the cables or using ferrite cores.

Connection and Operation (Pulse Input Type)

Names and Functions of Driver Parts



1 Signal Monitor Display

◇ LED Indicator

| Indication | Color | Function | Lighting Condition |
|------------|-------|-------------------------|--|
| POWER | Green | Power Supply Indication | When the main power supply is input |
| ALARM | Red | Alarm Indication | When protective functions are activated (Blink). |

◇ Alarm Contents

| Blink Count | Function | Operating Condition | ALM-RST Release by Input | Motor Excitation |
|-------------|--|--|--------------------------|------------------|
| 2 | Main circuit overheating | The internal temperature of the driver exceeds 85°C. | Yes | No holding |
| 3 | Overvoltage | The internal voltage of the driver exceeds the permissible value | No | |
| 4 | Command pulse abnormality | The value of the command pulse becomes abnormal | Yes | |
| 5 | Overcurrent | The motor, cable and driver output circuit shorted out | No | |
| 6 | Undervoltage | Power supply is instantaneously shut down Undervoltage | Yes | |
| 7 | Automatic control of electromagnetic brake abnormality | 24 VDC power supply is not connected The electromagnetic brake is not connected The electromagnetic brake is mis-wired | | |
| 9 | Electrolytic capacitor abnormality | The electrolytic capacitor of the main circuit is damaged. | No | |
| | EEPROM abnormality | The saved data of the driver is damaged. | | |
| Lighting | CPU abnormality | CPU malfunctions | | |

2 24 VDC Input Terminals/Electromagnetic Brake Connection Terminals

| Indication | I/O | Terminal Name | Content |
|------------|-------|---|---|
| 24 V+ | Input | 24 VDC Input Terminal + | Connects the 24 VDC power for electromagnetic brake. |
| 24 V- | Input | 24 VDC Input Terminal - | |
| MB1 | Input | Electromagnetic Brake Connection Terminal (Black) | Connect the electromagnetic brake wire of the motor with the electromagnetic brake. |
| MB2 | Input | Electromagnetic Brake Connection Terminal (White) | |

3 Function Setting Switch (SW1)

| Indication | No. | Function |
|------------|-----|---|
| R1/R2 | 1 | Sets up the step angle in combination with the step angle setting switch. |
| 2P/1P | 2 | Switches between 1-pulse input mode and 2-pulse input mode. [2P] for the 2-pulse input mode [1P] for the 1-pulse input mode |

4 Current Setting Switch

| Indication | Switch Name | Function |
|------------|----------------------------------|--|
| RUN | Operating Current Setting Switch | Sets the motor's operating current. The current value is set by the ratio of rated output current (%). |
| STOP | Stop Current Setting Switch | Sets the stopped current of the motor. The current value is set by the ratio of rated output current (%). |

5 Step Angle Setting Switch

| Indication | Function |
|------------|---|
| STEP | Sets up step angle of the motor in combination with the function setting switch (SW1) |

| Function Setting Switch: R1 | | | |
|--|------------------|----------------|-----------------|
| Step Angle Setting Switch (STEP) Scale | Resolution [P/R] | Step Angle [°] | Microsteps/Step |
| 0 | 500 | 0.72 | 1 |
| 1 | 1000 | 0.36 | 2 |
| 2 | 1250 | 0.288 | 2.5 |
| 3 | 2000 | 0.18 | 4 |
| 4 | 2500 | 0.144 | 5 |
| 5 | 4000 | 0.09 | 8 |
| 6 | 5000 | 0.072 | 10 |
| 7 | 10000 | 0.036 | 20 |
| 8 | 12500 | 0.0288 | 25 |
| 9 | 20000 | 0.018 | 40 |
| A | 25000 | 0.0144 | 50 |
| B | 40000 | 0.009 | 80 |
| C | 50000 | 0.0072 | 100 |
| D | 62500 | 0.00576 | 125 |
| E | 100000 | 0.0036 | 200 |
| F | 125000 | 0.00288 | 250 |

| Function Setting Switch: R2 | | | |
|--|------------------|----------------|-----------------|
| Step Angle Setting Switch (STEP) Scale | Resolution [P/R] | Step Angle [°] | Microsteps/Step |
| 0 | 200 | 1.8 | 0.4 |
| 1 | 400 | 0.9 | 0.8 |
| 2 | 600 | 0.6 | 1.2 |
| 3 | 800 | 0.45 | 1.6 |
| 4 | 1200 | 0.3 | 2.4 |
| 5 | 1600 | 0.225 | 3.2 |
| 6 | 3200 | 0.1125 | 6.4 |
| 7 | 6000 | 0.06 | 12 |
| 8 | 6400 | 0.05625 | 12.8 |
| 9 | 7200 | 0.05 | 14.4 |
| A | 8000 | 0.045 | 16 |
| B | 12000 | 0.03 | 24 |
| C | 12800 | 0.028125 | 25.6 |
| D | 16000 | 0.0225 | 32 |
| E | 25600 | 0.0140625 | 51.2 |
| F | 200000 | 0.0018 | 400 |

6 I/O Signal Connector (CN5)

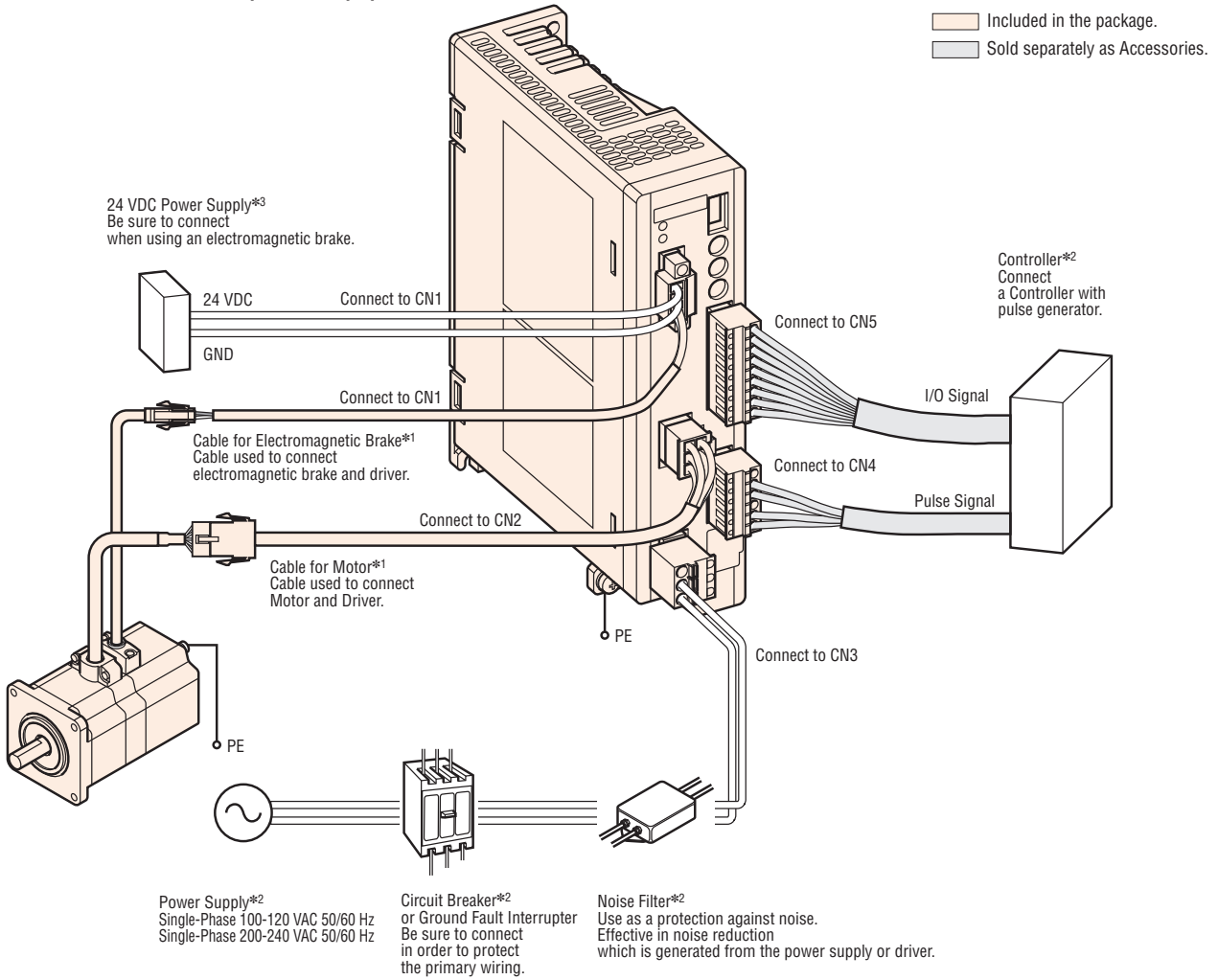
| Indication | I/O | Pin Number | Content |
|------------|--------|------------|---|
| READY | Output | 1 | Outputs when operation of the driver has been prepared. |
| ALM | | 2 | Output alarm status of the driver (B contact). |
| TIM | | 3 | Outputs when excitation state of the motor is at step "0" position. |
| OUT-COM | | 4 | Output common |
| AWO | Input | 5 | Stops excitation of the motor. |
| CS | | 6 | Switches the step angle. |
| FREE | | 7 | Stops excitation of the motor. With electromagnetic brake type, the electromagnetic brake is also released. |
| ALM-RST | | 8 | Resets the current alarm. |
| IN-COM | | 9 | Input common |

7 Pulse Signal Connector (CN4)

| Indication | Pin Number | Content |
|-----------------|------------|--|
| CW (PLS) +24 V | 1 | CW Pulse Input (Pulse Input) [+24 V] |
| CW (PLS) +5 V | 2 | CW Pulse Input (Pulse Input) [+5 V or line driver] |
| CW (PLS) - | 3 | |
| CCW (DIR) +24 V | 4 | CCW Pulse Input (Rotation Direction Input) [+24 V] |
| CCW (DIR) +5 V | 5 | CCW Pulse Input (Rotation Direction Input) [+5 V or line driver] |
| CCW (DIR) - | 6 | |

● Connection Diagram

◇ Connection with Peripheral Equipment



*1 There are 2 types available, one with the cable which connects the motor and driver (1 m, 2 m, 3 m) and the other without any.

If you need cables longer than 3 m or flexible extension cable, select from the accessories (Sold separately).

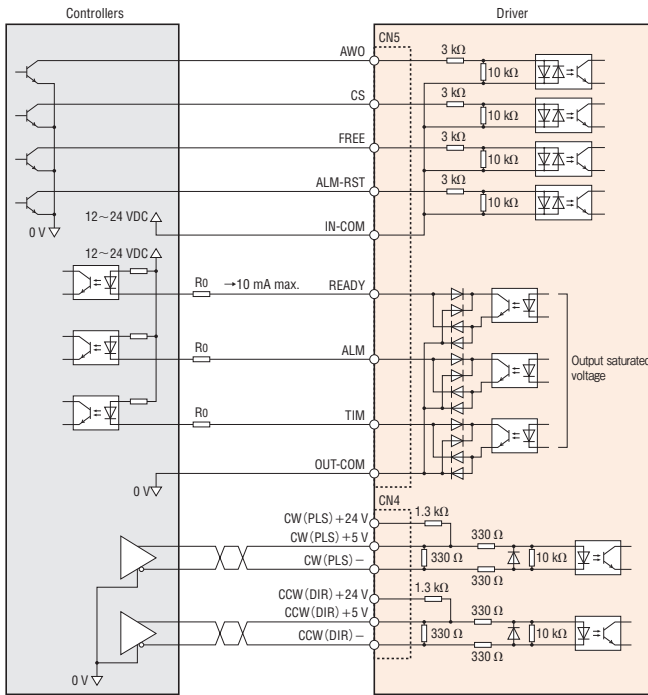
When wiring the motor and the motor, keep a maximum distance of 20 m.

*2 Not Supplied.

*3 Not Supplied. If the wiring distance between the motor and driver is extended to 15 m or longer by using an accessory cable (Sold separately), the 24 VDC±4% specification applies.

◇ Connection to Programmable Controller

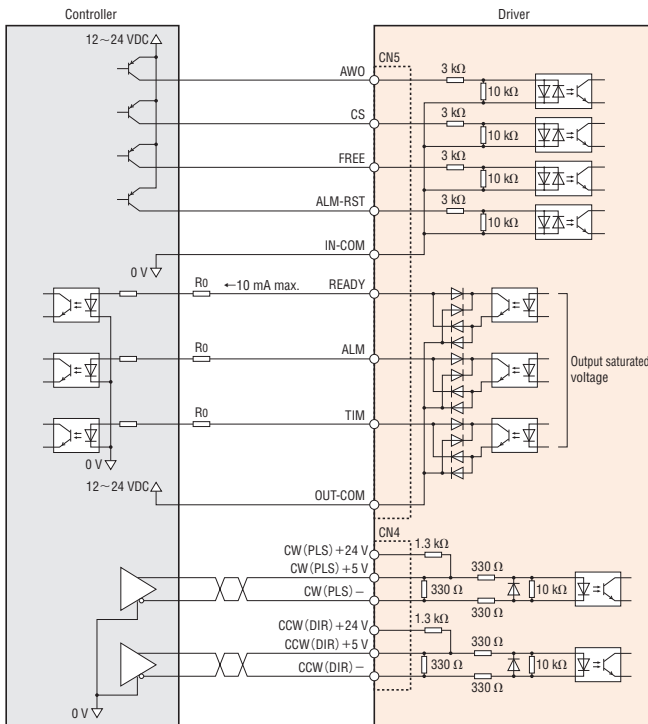
- Connection Diagram for Current Sink Output Circuit
When pulse input is Line Driver



Note

- Use input signal at 12~24 VDC.
- Use output signal at 12~24 VDC 10 mA max. When the current value exceeds 10 mA, connect the external resistor R₀ to keep 10 mA max.
- Output saturated voltage should be less than 3V.
- Provide a minimum distance of 100 mm between the signal lines and power lines (Power supply lines, motor lines).
Do not run the signal lines in the same duct as power lines or bundle them with power lines.
- If noise generated by the motor cable or power supply cable causes a problem with the specific wiring or layout, shield the cable or use ferrite cores.

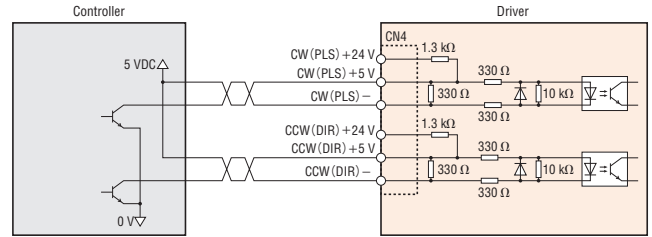
- Connecting Diagram for Current Source Output Circuit
When pulse input is Line Driver



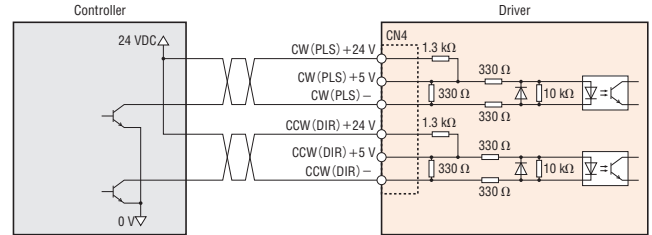
Note

- Use input signal at 12~24 VDC.
- Use output signal at 12~24 VDC 10 mA max. When the current value exceeds 10 mA, connect the external resistor R₀ to keep 10 mA max.
- Output saturated voltage should be less than 3V.
- Provide a minimum distance of 100 mm between the signal lines and power lines (Power supply lines, motor lines).
Do not run the signal lines in the same duct as power lines or bundle them with power lines.
- If noise generated by the motor cable or power supply cable causes a problem with the specific wiring or layout, shield the cable or use ferrite cores.

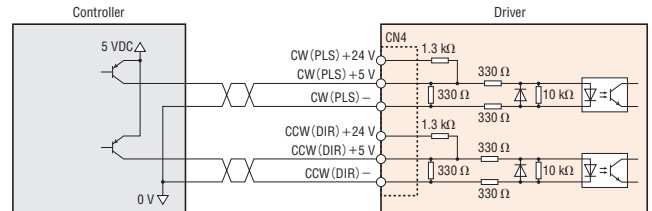
When pulse input is of 5 VDC type



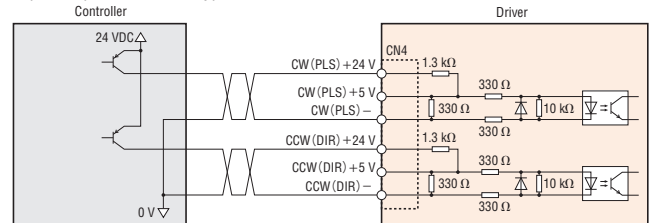
When pulse input is of 24 VDC type



When pulse input is of 5 VDC type



When pulse input is of 24 VDC type



Motor and Driver Combinations

Product names for motor and driver combinations are shown below.

Built-In Controller Type

| Type | Product Name | Motor Product Name | Driver Product Name |
|---|-------------------|--------------------|---------------------|
| Standard Type | RKS543□D-◇ | PKE543□C | RKSD503-□D |
| | RKS544□D-◇ | PKE544□C | |
| | RKS545□D-◇ | PKE545□C | |
| | RKS564□D-◇ | PKE564□C | RKSD507-□D |
| | RKS566□D-◇ | PKE566□C | |
| | RKS569□D-◇ | PKE569□C | |
| | RKS596□D-◇ | PKE596□C | |
| | RKS599□D-◇ | PKE599□C | |
| RKS5913□D-◇ | PKE5913□C | | |
| Standard Type with Electromagnetic Brake | RKS543M□D-◇ | PKE543MC | RKSD503-□D |
| | RKS544M□D-◇ | PKE544MC | |
| | RKS545M□D-◇ | PKE545MC | |
| | RKS564M□D-◇ | PKE564MC | RKSD507-□D |
| | RKS566M□D-◇ | PKE566MC | |
| | RKS569M□D-◇ | PKE569MC | |
| | RKS596M□D-◇ | PKE596MC | |
| | RKS599M□D-◇ | PKE599MC | |
| RKS5913M□D-◇ | PKE5913MC | | |
| Standard Type with Encoder | RKS543R□D2-◇ | PKE543RC2 | RKSD503-□D |
| | RKS544R□D2-◇ | PKE544RC2 | |
| | RKS545R□D2-◇ | PKE545RC2 | |
| | RKS564R□D2-◇ | PKE564RC2 | RKSD507-□D |
| | RKS566R□D2-◇ | PKE566RC2 | |
| | RKS569R□D2-◇ | PKE569RC2 | |
| | RKS596R□D2-◇ | PKE596RC2 | |
| | RKS599R□D2-◇ | PKE599RC2 | |
| RKS5913R□D2-◇ | PKE5913RC2 | | |
| TS Geared Type | RKS543□D-TS3.6-◇ | PKE543□C-TS3.6 | RKSD503-□D |
| | RKS543□D-TS7.2-◇ | PKE543□C-TS7.2 | |
| | RKS543□D-TS10-◇ | PKE543□C-TS10 | |
| | RKS543□D-TS20-◇ | PKE543□C-TS20 | |
| | RKS543□D-TS30-◇ | PKE543□C-TS30 | RKSD507-□D |
| | RKS564□D-TS3.6-◇ | PKE564□C-TS3.6 | |
| | RKS564□D-TS7.2-◇ | PKE564□C-TS7.2 | |
| | RKS564□D-TS10-◇ | PKE564□C-TS10 | |
| | RKS564□D-TS20-◇ | PKE564□C-TS20 | |
| | RKS564□D-TS30-◇ | PKE564□C-TS30 | |
| | RKS596□D-TS3.6-◇ | PKE596□C-TS3.6 | |
| | RKS596□D-TS7.2-◇ | PKE596□C-TS7.2 | |
| | RKS596□D-TS10-◇ | PKE596□C-TS10 | |
| | RKS596□D-TS20-◇ | PKE596□C-TS20 | |
| RKS596□D-TS30-◇ | PKE596□C-TS30 | | |
| TS Geared Type with Electromagnetic Brake | RKS543M□D-TS3.6-◇ | PKE543MC-TS3.6 | RKSD503-□D |
| | RKS543M□D-TS7.2-◇ | PKE543MC-TS7.2 | |
| | RKS543M□D-TS10-◇ | PKE543MC-TS10 | |
| | RKS543M□D-TS20-◇ | PKE543MC-TS20 | |
| | RKS543M□D-TS30-◇ | PKE543MC-TS30 | RKSD507-□D |
| | RKS564M□D-TS3.6-◇ | PKE564MC-TS3.6 | |
| | RKS564M□D-TS7.2-◇ | PKE564MC-TS7.2 | |
| | RKS564M□D-TS10-◇ | PKE564MC-TS10 | |
| | RKS564M□D-TS20-◇ | PKE564MC-TS20 | |
| | RKS564M□D-TS30-◇ | PKE564MC-TS30 | |
| | RKS596M□D-TS3.6-◇ | PKE596MC-TS3.6 | |
| | RKS596M□D-TS7.2-◇ | PKE596MC-TS7.2 | |
| | RKS596M□D-TS10-◇ | PKE596MC-TS10 | |
| | RKS596M□D-TS20-◇ | PKE596MC-TS20 | |
| RKS596M□D-TS30-◇ | PKE596MC-TS30 | | |

● Either **A** (Single shaft) or **B** (Double shaft) indicating the motor shaft configuration is entered where the box □ is located within the product name.

Either **A** (single-phase 100-120 VAC) or **C** (single-phase 200-240 VAC) indicating the power supply input is entered where the box □ is located within the product name.

A number indicating the desired length of **1** (1 m), **2** (2 m) or **3** (3 m) for the cable included with the product is entered where the box ◇ is located within the product name.

If the package do not include the cable, ◇ is not exists in the product name.

| Type | Product Name | Motor Product Name | Driver Product Name |
|---|--|---|-------------------------------------|
| PS Geared Type | RKS545 <input type="checkbox"/> D-PS5-◇ | PKE545 <input type="checkbox"/> C-PS5 | RKSD503- <input type="checkbox"/> D |
| | RKS545 <input type="checkbox"/> D-PS7.2-◇ | PKE545 <input type="checkbox"/> C-PS7.2 | |
| | RKS545 <input type="checkbox"/> D-PS10-◇ | PKE545 <input type="checkbox"/> C-PS10 | |
| | RKS543 <input type="checkbox"/> D-PS25-◇ | PKE543 <input type="checkbox"/> C-PS25 | |
| | RKS543 <input type="checkbox"/> D-PS36-◇ | PKE543 <input type="checkbox"/> C-PS36 | |
| | RKS543 <input type="checkbox"/> D-PS50-◇ | PKE543 <input type="checkbox"/> C-PS50 | |
| | RKS566 <input type="checkbox"/> D-PS5-◇ | PKE566 <input type="checkbox"/> C-PS5 | RKSD507- <input type="checkbox"/> D |
| | RKS566 <input type="checkbox"/> D-PS7.2-◇ | PKE566 <input type="checkbox"/> C-PS7.2 | |
| | RKS566 <input type="checkbox"/> D-PS10-◇ | PKE566 <input type="checkbox"/> C-PS10 | |
| | RKS564 <input type="checkbox"/> D-PS25-◇ | PKE564 <input type="checkbox"/> C-PS25 | |
| | RKS564 <input type="checkbox"/> D-PS36-◇ | PKE564 <input type="checkbox"/> C-PS36 | |
| | RKS564 <input type="checkbox"/> D-PS50-◇ | PKE564 <input type="checkbox"/> C-PS50 | |
| | RKS599 <input type="checkbox"/> D-PS5-◇ | PKE599 <input type="checkbox"/> C-PS5 | |
| | RKS599 <input type="checkbox"/> D-PS7.2-◇ | PKE599 <input type="checkbox"/> C-PS7.2 | |
| | RKS599 <input type="checkbox"/> D-PS10-◇ | PKE599 <input type="checkbox"/> C-PS10 | |
| | RKS596 <input type="checkbox"/> D-PS25-◇ | PKE596 <input type="checkbox"/> C-PS25 | |
| RKS596 <input type="checkbox"/> D-PS36-◇ | PKE596 <input type="checkbox"/> C-PS36 | | |
| RKS596 <input type="checkbox"/> D-PS50-◇ | PKE596 <input type="checkbox"/> C-PS50 | | |
| PS Geared Type with Electromagnetic Brake | RKS545M <input type="checkbox"/> D-PS5-◇ | PKE545MC-PS5 | RKSD503- <input type="checkbox"/> D |
| | RKS545M <input type="checkbox"/> D-PS7.2-◇ | PKE545MC-PS7.2 | |
| | RKS545M <input type="checkbox"/> D-PS10-◇ | PKE545MC-PS10 | |
| | RKS543M <input type="checkbox"/> D-PS25-◇ | PKE543MC-PS25 | |
| | RKS543M <input type="checkbox"/> D-PS36-◇ | PKE543MC-PS36 | |
| | RKS543M <input type="checkbox"/> D-PS50-◇ | PKE543MC-PS50 | |
| | RKS566M <input type="checkbox"/> D-PS5-◇ | PKE566MC-PS5 | RKSD507- <input type="checkbox"/> D |
| | RKS566M <input type="checkbox"/> D-PS7.2-◇ | PKE566MC-PS7.2 | |
| | RKS566M <input type="checkbox"/> D-PS10-◇ | PKE566MC-PS10 | |
| | RKS564M <input type="checkbox"/> D-PS25-◇ | PKE564MC-PS25 | |
| | RKS564M <input type="checkbox"/> D-PS36-◇ | PKE564MC-PS36 | |
| | RKS564M <input type="checkbox"/> D-PS50-◇ | PKE564MC-PS50 | |
| | RKS599M <input type="checkbox"/> D-PS5-◇ | PKE599MC-PS5 | |
| | RKS599M <input type="checkbox"/> D-PS7.2-◇ | PKE599MC-PS7.2 | |
| | RKS599M <input type="checkbox"/> D-PS10-◇ | PKE599MC-PS10 | |
| | RKS596M <input type="checkbox"/> D-PS25-◇ | PKE596MC-PS25 | |
| RKS596M <input type="checkbox"/> D-PS36-◇ | PKE596MC-PS36 | | |
| RKS596M <input type="checkbox"/> D-PS50-◇ | PKE596MC-PS50 | | |
| Harmonic Geared Type | RKS543 <input type="checkbox"/> D-HS50-◇ | PKE543 <input type="checkbox"/> C-HS50 | RKSD503- <input type="checkbox"/> D |
| | RKS543 <input type="checkbox"/> D-HS100-◇ | PKE543 <input type="checkbox"/> C-HS100 | RKSD507- <input type="checkbox"/> D |
| | RKS564 <input type="checkbox"/> D-HS50-◇ | PKE564 <input type="checkbox"/> C-HS50 | |
| | RKS564 <input type="checkbox"/> D-HS100-◇ | PKE564 <input type="checkbox"/> C-HS100 | |
| | RKS596 <input type="checkbox"/> D-HS50-◇ | PKE596 <input type="checkbox"/> C-HS50 | |
| RKS596 <input type="checkbox"/> D-HS100-◇ | PKE596 <input type="checkbox"/> C-HS100 | | |
| Harmonic Geared Type with Electromagnetic Brake | RKS543M <input type="checkbox"/> D-HS50-◇ | PKE543MC-HS50 | RKSD503- <input type="checkbox"/> D |
| | RKS543M <input type="checkbox"/> D-HS100-◇ | PKE543MC-HS100 | RKSD507- <input type="checkbox"/> D |
| | RKS564M <input type="checkbox"/> D-HS50-◇ | PKE564MC-HS50 | |
| | RKS564M <input type="checkbox"/> D-HS100-◇ | PKE564MC-HS100 | |
| | RKS596M <input type="checkbox"/> D-HS50-◇ | PKE596MC-HS50 | |
| RKS596M <input type="checkbox"/> D-HS100-◇ | PKE596MC-HS100 | | |

- Either **A** (Single shaft) or **B** (Double shaft) indicating the motor shaft configuration is entered where the box is located within the product name.
- Either **A** (single-phase 100-120 VAC) or **C** (single-phase 200-240 VAC) indicating the power supply input is entered where the box is located within the product name.
- A number indicating the desired length of **1** (1 m), **2** (2 m) or **3** (3 m) for the cable included with the product is entered where the box is located within the product name.
- If the package do not include the cable, ◇ is not exists in the product name.

Pulse Input Type

| Type | Product Name | Motor Product Name | Driver Product Name |
|---|------------------|--------------------|---------------------|
| Standard Type | RKS543□-◇ | PKE543□C | RKSD503-□ |
| | RKS544□-◇ | PKE544□C | |
| | RKS545□-◇ | PKE545□C | |
| | RKS564□-◇ | PKE564□C | RKSD507-□ |
| | RKS566□-◇ | PKE566□C | |
| | RKS569□-◇ | PKE569□C | |
| | RKS596□-◇ | PKE596□C | |
| | RKS599□-◇ | PKE599□C | |
| RKS5913□-◇ | PKE5913□C | | |
| Standard Type with Electromagnetic Brake | RKS543M□-◇ | PKE543MC | RKSD503M-□ |
| | RKS544M□-◇ | PKE544MC | |
| | RKS545M□-◇ | PKE545MC | |
| | RKS564M□-◇ | PKE564MC | RKSD507M-□ |
| | RKS566M□-◇ | PKE566MC | |
| | RKS569M□-◇ | PKE569MC | |
| | RKS596M□-◇ | PKE596MC | |
| | RKS599M□-◇ | PKE599MC | |
| RKS5913M□-◇ | PKE5913MC | | |
| TS Geared Type | RKS543□-TS3.6-◇ | PKE543□C-TS3.6 | RKSD503-□ |
| | RKS543□-TS7.2-◇ | PKE543□C-TS7.2 | |
| | RKS543□-TS10-◇ | PKE543□C-TS10 | |
| | RKS543□-TS20-◇ | PKE543□C-TS20 | |
| | RKS564□-TS3.6-◇ | PKE564□C-TS3.6 | RKSD507-□ |
| | RKS564□-TS7.2-◇ | PKE564□C-TS7.2 | |
| | RKS564□-TS10-◇ | PKE564□C-TS10 | |
| | RKS564□-TS20-◇ | PKE564□C-TS20 | |
| | RKS564□-TS30-◇ | PKE564□C-TS30 | |
| | RKS596□-TS3.6-◇ | PKE596□C-TS3.6 | |
| | RKS596□-TS7.2-◇ | PKE596□C-TS7.2 | |
| | RKS596□-TS10-◇ | PKE596□C-TS10 | |
| | RKS596□-TS20-◇ | PKE596□C-TS20 | |
| | RKS596□-TS30-◇ | PKE596□C-TS30 | |
| TS Geared Type with Electromagnetic Brake | RKS543M□-TS3.6-◇ | PKE543MC-TS3.6 | RKSD503M-□ |
| | RKS543M□-TS7.2-◇ | PKE543MC-TS7.2 | |
| | RKS543M□-TS10-◇ | PKE543MC-TS10 | |
| | RKS543M□-TS20-◇ | PKE543MC-TS20 | |
| | RKS543M□-TS30-◇ | PKE543MC-TS30 | RKSD507M-□ |
| | RKS564M□-TS3.6-◇ | PKE564MC-TS3.6 | |
| | RKS564M□-TS7.2-◇ | PKE564MC-TS7.2 | |
| | RKS564M□-TS10-◇ | PKE564MC-TS10 | |
| | RKS564M□-TS20-◇ | PKE564MC-TS20 | |
| | RKS564M□-TS30-◇ | PKE564MC-TS30 | |
| | RKS596M□-TS3.6-◇ | PKE596MC-TS3.6 | |
| | RKS596M□-TS7.2-◇ | PKE596MC-TS7.2 | |
| | RKS596M□-TS10-◇ | PKE596MC-TS10 | |
| | RKS596M□-TS20-◇ | PKE596MC-TS20 | |
| RKS596M□-TS30-◇ | PKE596MC-TS30 | | |

● Either **A** (Single shaft) or **B** (Double shaft) indicating the motor shaft configuration is entered where the box □ is located within the product name.
 Either **A** (single-phase 100-120 VAC) or **C** (single-phase 200-240 VAC) indicating the power supply input is entered where the box □ is located within the product name.
 A number indicating the desired length of **1** (1 m), **2** (2 m) or **3** (3 m) for the cable included with the product is entered where the box ◇ is located within the product name.
 If the package do not include the cable, ◇ is not exists in the product name.

| Type | Product Name | Motor Product Name | Driver Product Name | |
|---|---|--------------------|---------------------|------------|
| PS Geared Type | RKS545□-PS5-◇ | PKE545□C-PS5 | RKSD503-□ | |
| | RKS545□-PS7.2-◇ | PKE545□C-PS7.2 | | |
| | RKS545□-PS10-◇ | PKE545□C-PS10 | | |
| | RKS543□-PS25-◇ | PKE543□C-PS25 | | |
| | RKS543□-PS36-◇ | PKE543□C-PS36 | | |
| | RKS543□-PS50-◇ | PKE543□C-PS50 | | |
| | PS Geared Type | RKS566□-PS5-◇ | PKE566□C-PS5 | RKSD507-□ |
| | | RKS566□-PS7.2-◇ | PKE566□C-PS7.2 | |
| | | RKS566□-PS10-◇ | PKE566□C-PS10 | |
| | | RKS564□-PS25-◇ | PKE564□C-PS25 | |
| | | RKS564□-PS36-◇ | PKE564□C-PS36 | |
| | | RKS564□-PS50-◇ | PKE564□C-PS50 | |
| | | RKS599□-PS5-◇ | PKE599□C-PS5 | |
| | | RKS599□-PS7.2-◇ | PKE599□C-PS7.2 | |
| | | RKS599□-PS10-◇ | PKE599□C-PS10 | |
| | | RKS596□-PS25-◇ | PKE596□C-PS25 | |
| PS Geared Type with Electromagnetic Brake | RKS545M□-PS5-◇ | PKE545MC-PS5 | RKSD503M-□ | |
| | RKS545M□-PS7.2-◇ | PKE545MC-PS7.2 | | |
| | RKS545M□-PS10-◇ | PKE545MC-PS10 | | |
| | RKS543M□-PS25-◇ | PKE543MC-PS25 | | |
| | RKS543M□-PS36-◇ | PKE543MC-PS36 | | |
| | RKS543M□-PS50-◇ | PKE543MC-PS50 | | |
| | PS Geared Type with Electromagnetic Brake | RKS566M□-PS5-◇ | PKE566MC-PS5 | RKSD507M-□ |
| | | RKS566M□-PS7.2-◇ | PKE566MC-PS7.2 | |
| | | RKS566M□-PS10-◇ | PKE566MC-PS10 | |
| | | RKS564M□-PS25-◇ | PKE564MC-PS25 | |
| | | RKS564M□-PS36-◇ | PKE564MC-PS36 | |
| | | RKS564M□-PS50-◇ | PKE564MC-PS50 | |
| | | RKS599M□-PS5-◇ | PKE599MC-PS5 | |
| | | RKS599M□-PS7.2-◇ | PKE599MC-PS7.2 | |
| Harmonic Geared Type | RKS543□-HS50-◇ | PKE543□C-HS50 | RKSD503-□ | |
| | RKS543□-HS100-◇ | PKE543□C-HS100 | RKSD507-□ | |
| | RKS564□-HS50-◇ | PKE564□C-HS50 | | |
| | RKS564□-HS100-◇ | PKE564□C-HS100 | | |
| | RKS596□-HS50-◇ | PKE596□C-HS50 | | |
| | RKS596□-HS100-◇ | PKE596□C-HS100 | | |
| Harmonic Geared Type with Electromagnetic Brake | RKS543M□-HS50-◇ | PKE543MC-HS50 | RKSD503M-□ | |
| | RKS543M□-HS100-◇ | PKE543MC-HS100 | RKSD507M-□ | |
| | RKS564M□-HS50-◇ | PKE564MC-HS50 | | |
| | RKS564M□-HS100-◇ | PKE564MC-HS100 | | |
| | RKS596M□-HS50-◇ | PKE596MC-HS50 | | |
| RKS596M□-HS100-◇ | PKE596MC-HS100 | | | |

- Either **A** (Single shaft) or **B** (Double shaft) indicating the motor shaft configuration is entered where the box □ is located within the product name.
- Either **A** (single-phase 100-120 VAC) or **C** (single-phase 200-240 VAC) indicating the power supply input is entered where the box □ is located within the product name.
- A number indicating the desired length of **1** (1 m), **2** (2 m) or **3** (3 m) for the cable included with the product is entered where the box ◇ is located within the product name.
- If the package do not include the cable, ◇ is not exists in the product name.

Accessories (Sold Separately)

Connection Cable Sets (RoHS), Flexible Connection Cable Sets (RoHS) Extension Cable Sets (RoHS), Flexible Extension Cable Sets (RoHS)

Cable connects the Motor to Driver for **RKII** series, we provide both of “with cable package (1 m, 2 m or 3 m)” and “without cable package”, the user can choose either meet the requirement.

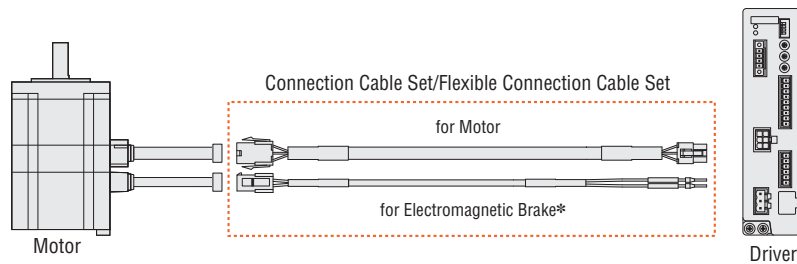
If the user need a cable longer than 3 m or flexible cable, please select an appropriate cable from among the accessories (sold separately).

Keep the wiring distance between the motor and driver to 20 m max.

System Configuration

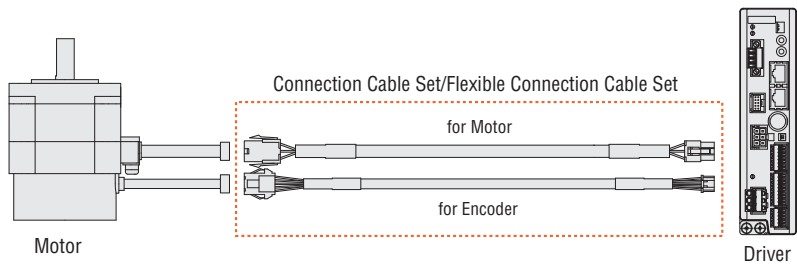
- Connect the motor and driver without using the cable which came with the product.
 - Use a connection cable set
 - Use a flexible cable set if the cable will be bend.

◇ For Standard Type or Standard Type with Electromagnetic Brake



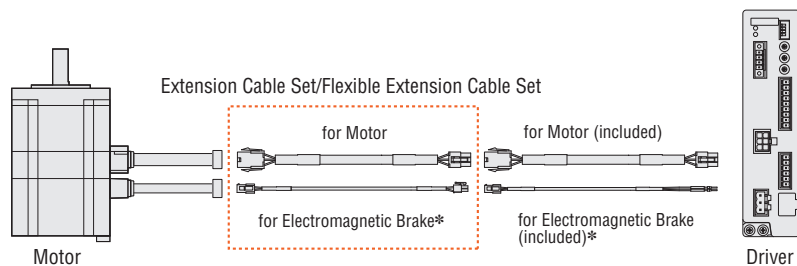
* Electromagnetic Brake Cable is required for the Motor with Electromagnetic Brake.

◇ For Motor with Encoder



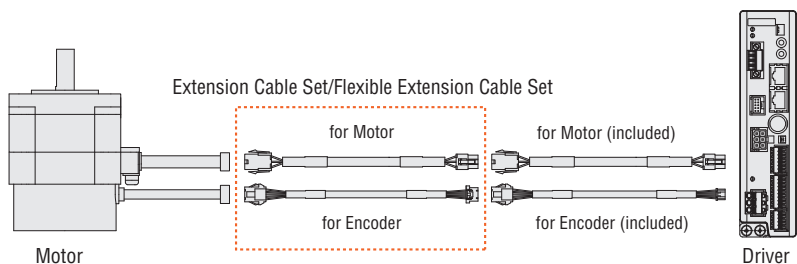
- Connect and extend the Motor and Driver by using cable included in package
 - Use the Extension Cable Set combination with the cable came with the product.
 - Use a flexible cable set if the cable will be bend.

◇ For Standard Type or Electromagnetic Brake Motor



* Electromagnetic Brake Cable is required for the Motor with Electromagnetic Brake.

◇ For Motor with Encoder



Note

- Keep the total cable length below 20 m when connecting a cable included in the **RKII** Series and an extension cable.
- The cable on the Electromagnetic Brake or Encoder cannot be connected to the driver directly. To connect to the driver, connection cable (accessory, sold separately) is needed. Otherwise please select the package which comes with the connection cable (The package includes connection cable).

Connection Cable Sets (RoHS), Flexible Connection Cable Sets (RoHS)

Product Line

Connection Cable Sets

For Standard Motor



Motor Cable

| Product Name | Length L (m) |
|--------------|--------------|
| CC010VPF | 1 |
| CC020VPF | 2 |
| CC030VPF | 3 |
| CC050VPF | 5 |
| CC070VPF | 7 |
| CC100VPF | 10 |
| CC150VPF | 15 |
| CC200VPF | 20 |

For Electromagnetic Brake Motor



Motor Cable



Electromagnetic Brake Cable

| Product Name | Length L (m) |
|--------------|--------------|
| CC010VPFB | 1 |
| CC020VPFB | 2 |
| CC030VPFB | 3 |
| CC050VPFB | 5 |
| CC070VPFB | 7 |
| CC100VPFB | 10 |
| CC150VPFB | 15 |
| CC200VPFB | 20 |

For Encoder Motor



Motor Cable



Encoder Cable

| Product Name | Length L (m) |
|--------------|--------------|
| CC010VPFE | 1 |
| CC020VPFE | 2 |
| CC030VPFE | 3 |
| CC050VPFE | 5 |
| CC070VPFE | 7 |
| CC100VPFE | 10 |
| CC150VPFE | 15 |
| CC200VPFE | 20 |

Flexible Connection Cable Sets

For Standard Motor



Motor Cable

| Product Name | Length L (m) |
|--------------|--------------|
| CC010VPR | 1 |
| CC020VPR | 2 |
| CC030VPR | 3 |
| CC050VPR | 5 |
| CC070VPR | 7 |
| CC100VPR | 10 |
| CC150VPR | 15 |
| CC200VPR | 20 |

For Electromagnetic Brake Motor



Motor Cable



Electromagnetic Brake Cable

| Product Name | Length L (m) |
|--------------|--------------|
| CC010VPRB | 1 |
| CC020VPRB | 2 |
| CC030VPRB | 3 |
| CC050VPRB | 5 |
| CC070VPRB | 7 |
| CC100VPRB | 10 |
| CC150VPRB | 15 |
| CC200VPRB | 20 |

For Encoder Motor



Motor Cable



Encoder Cable

| Product Name | Length L (m) |
|--------------|--------------|
| CC010VPRE | 1 |
| CC020VPRE | 2 |
| CC030VPRE | 3 |
| CC050VPRE | 5 |
| CC070VPRE | 7 |
| CC100VPRE | 10 |
| CC150VPRE | 15 |
| CC200VPRE | 20 |

Extension Cable Sets (RoHS), Flexible Extension Cable Sets (RoHS)

Product Line

Extension Cable Sets

For Standard Motor



Motor Cable

| Product Name | Length L (m) |
|--------------|--------------|
| CC010VPF | 1 |
| CC020VPF | 2 |
| CC030VPF | 3 |
| CC050VPF | 5 |
| CC070VPF | 7 |
| CC100VPF | 10 |
| CC150VPF | 15 |

For Electromagnetic Brake Motor



Motor Cable



Electromagnetic Brake Cable

| Product Name | Length L (m) |
|--------------|--------------|
| CC010VPFBT | 1 |
| CC020VPFBT | 2 |
| CC030VPFBT | 3 |
| CC050VPFBT | 5 |
| CC070VPFBT | 7 |
| CC100VPFBT | 10 |
| CC150VPFBT | 15 |

For Encoder Motor



Motor Cable



Encoder Cable

| Product Name | Length L (m) |
|--------------|--------------|
| CC010VPFET | 1 |
| CC020VPFET | 2 |
| CC030VPFET | 3 |
| CC050VPFET | 5 |
| CC070VPFET | 7 |
| CC100VPFET | 10 |
| CC150VPFET | 15 |

Flexible Extension Cable Sets

For Standard Motor



Motor Cable

| Product Name | Length L (m) |
|--------------|--------------|
| CC010VPR | 1 |
| CC020VPR | 2 |
| CC030VPR | 3 |
| CC050VPR | 5 |
| CC070VPR | 7 |
| CC100VPR | 10 |
| CC150VPR | 15 |

For Electromagnetic Brake Motor



Motor Cable



Electromagnetic Brake Cable

| Product Name | Length L (m) |
|--------------|--------------|
| CC010VPRBT | 1 |
| CC020VPRBT | 2 |
| CC030VPRBT | 3 |
| CC050VPRBT | 5 |
| CC070VPRBT | 7 |
| CC100VPRBT | 10 |
| CC150VPRBT | 15 |

For Encoder Motor



Motor Cable



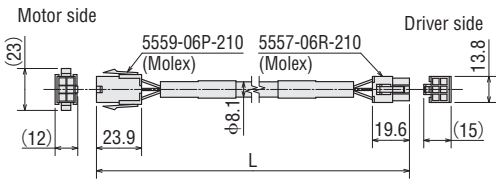
Encoder Cable

| Product Name | Length L (m) |
|--------------|--------------|
| CC010VPRET | 1 |
| CC020VPRET | 2 |
| CC030VPRET | 3 |
| CC050VPRET | 5 |
| CC070VPRET | 7 |
| CC100VPRET | 10 |
| CC150VPRET | 15 |

Dimensions Unit = mm (in.)

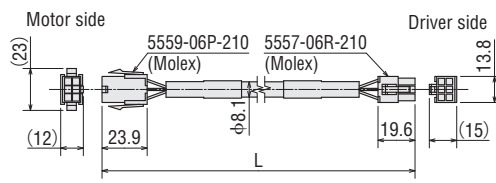
Connection Cable

Motor Cable

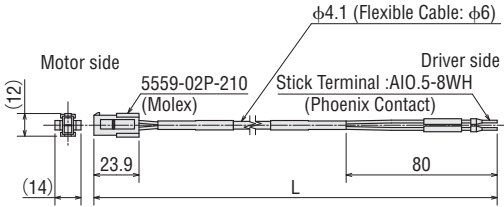


Extension Cable

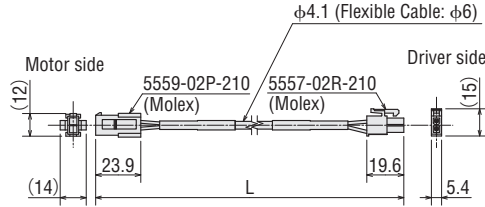
Motor Cable



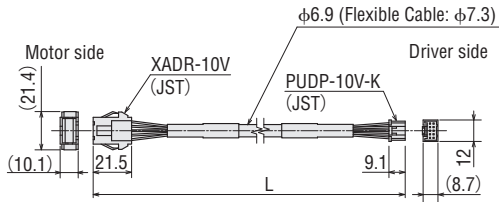
Electromagnetic Brake Cable



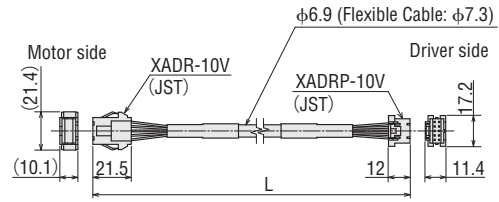
Electromagnetic Brake Cable



Encoder Cable

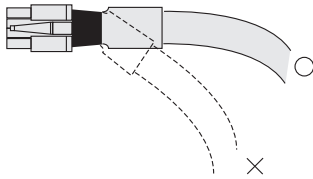


Encoder Cable

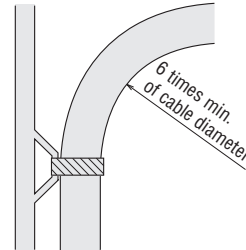


Notes on Use of a Flexible Cable

① Do not allow the cable to bend at the cable connector.

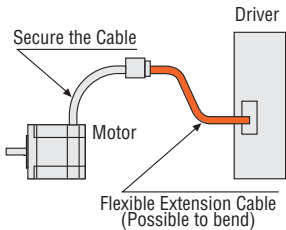


② For the bending radius, use at six times or more of the cable diameter.

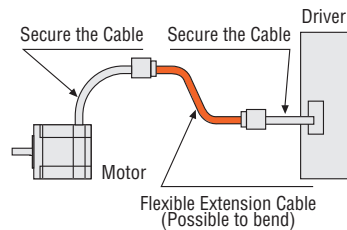


③ The cable wired from the motor or the cable comes as a set of the motor should not be bended. Use a flexible motor cable, if the cable will be bend.

Flexible Connection Cable



Flexible Extension Cable



Flexible Couplings

Flexible Couplings compatible for **RKII** series are available.
The user can select easily depending on size/purpose of the motor or gear.



Coupling Selection

| Coupling Type \ Motor Type | Motor Type | | | Purpose |
|----------------------------|---------------|--|--|--|
| | Standard Type | TS Geared Type PS Geared Type Harmonic Geared Type | | |
| MCV Coupling | ○ | — | | High accuracy positioning, control vibration |
| MC Coupling | ◎ | — | | High accuracy positioning |
| MCS Coupling | ○ | ◎ | | High strength and High accuracy positioning |

Models and characteristics of coupling

MCV Couplings

One piece contains antivibration rubber and aluminum base alloy.
High in torsional stiffness because it has same characteristics for both normal rotation and reverse rotation, suitable for high accuracy positioning operation for stepping motor.

◆ Features

- An antivibration rubber reduces the vibration generated at the motor.
- High response.
- No backlash.
- Electrical insulating properties.

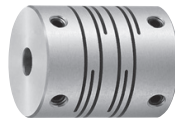


MC Couplings

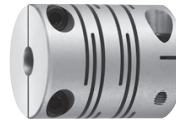
One piece slits-designed coupling.
Because of its high torsional stiffness and low inertia, the suitable for high-speed positioning operation and high-response control.

◆ Features

- No backlash.
- Low inertia.
- High torsional stiffness, high response.
- Two types - Set screw type and clamping type are available.



Set Screw Type



Clamping Type

MCS Couplings

This coupling has three pieces structure contains an Aluminum Hub, a spider (material: polyurethane).
The simple structure can transmit high-torque such as torque on geared type reliably.

◆ Features

- High strength (usable for geared motor) is now available.
- No backlash.
- Controls the vibration generated by the motor.



Selecting a Coupling

Standard Type

The following examples explain the procedures in selecting a coupling by driven shaft diameter and product name.

Example: Product Name: **RKS566AC-1** Driven Shaft Diameter: $\phi 8$ mm

1. The coupling type that matches **RKS566AC-1** from the coupling selection table is **MCV25** or **MC25**.
2. The inner diameter of the coupling according to the motor shaft will be **10** ($\phi 10$ mm), and will be **8** ($\phi 8$ mm) according to the driven shaft diameter.
3. In the coupling product name, smaller inner diameters come before larger ones, thus the coupling product name will be **MCV250810**, **MC250810S** (Set screw type) or **MC250810C2** (clamping Type).

- When the inner diameter is $\phi 6.35$ mm, the number is **06A**. For example, when the coupling type is **MCV25**, the motor shaft diameter is **10** ($\phi 10$ mm), and the driven shaft diameter is **06A** ($\phi 6.35$ mm), the coupling product name will be **MCV2506A10**.

TS Geared Type, PS Geared Type and Harmonic Geared Type

The following examples explain the procedures in selecting a coupling by driven shaft diameter and product name.

Example: Product Name: **RKS545AC-PS10-1** Driven Shaft Diameter: $\phi 12$ mm

1. The coupling type that matches **RKS545AC-PS10-1** from the coupling selection table is **MCS30**.
2. The inner diameter of the coupling according to the motor shaft will be **10** ($\phi 10$ mm), and will be **12** ($\phi 8$ mm) according to the driven shaft diameter.
3. In the coupling product name, smaller inner diameters come before larger ones, thus the coupling product name will be **MCS301012**.

- When the inner diameter is $\phi 6.35$ mm, the number is **F04**. For example, when the coupling type is **MCS30**, the motor shaft diameter is **06** ($\phi 6$ mm), and the driven shaft diameter is **F04** ($\phi 6.35$ mm), the coupling product name will be **MCS3006F04**.

MCV Couplings RoHS



Product Line

| |
|---------------------------------------|
| Product Name |
| MCV15 <input type="checkbox"/> |
| MCV19 <input type="checkbox"/> |
| MCV25 <input type="checkbox"/> |
| MCV30 <input type="checkbox"/> |

● A number indicating the coupling inner diameter is entered where the box is located within the product name.

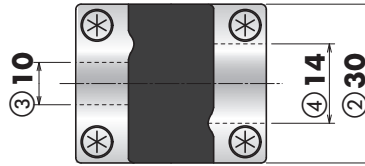
Product Number Code

MCV 30 10 14

① ② ③ ④

| | |
|---|--|
| ① | MCV Couplings |
| ② | Outer Diameter of Coupling |
| ③ | Inner Diameter d1 (smaller inner diameter) (06A represents $\phi 6.35$ mm) |
| ④ | Inner Diameter d2 (larger inner diameter) |

● For inner diameter d1, the smaller of the motor shaft diameter or the driven shaft diameter is entered.
 For inner diameter d2, the larger of the motor shaft diameter or the driven shaft diameter is entered.



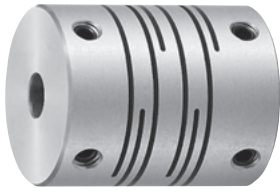
Coupling Selection Table

| Type | Frame Size | Product Name | Coupling Type | Motor Shaft Diameter mm | | Driven Shaft Diameter mm | | | | | | | | | |
|---------------|------------|--|---------------|-------------------------|-----------|--------------------------|----------|----------|-------------|----------|-----------|-----------|-----------|-----------|--|
| | | | | | | 04 | 05 | 06 | 06A | 08 | 10 | 12 | 14 | 15 | |
| | | | | | | $\phi 4$ | $\phi 5$ | $\phi 6$ | $\phi 6.35$ | $\phi 8$ | $\phi 10$ | $\phi 12$ | $\phi 14$ | $\phi 15$ | |
| Standard Type | 42 mm | RKS543 RKS544 RKS545 | MCV15 | 06 | $\phi 6$ | ● | ● | ● | | | | | | | |
| | 60 mm | RKS564 RKS566 RKS569 | MCV25 | 10 | $\phi 10$ | | | ● | ● | ● | ● | | | | |
| | 85 mm | RKS596 RKS599 RKS5913 | MCV30 | 14 | $\phi 14$ | | | | | ● | ● | ● | ● | ● | |

For more detail, refer to our website or contact to the customer center.

<http://www.orientalmotor.co.th/>

MC Couplings RoHS



Set screw type



Clamping Type

Product Line

● Set screw type

| Product Name |
|--------------|
| MC16□S |
| MC25□S |
| MC32□S |
| MC40□S |

● Clamping Type

| Product Name |
|--------------|
| MC16□C2 |
| MC25□C2 |
| MC32□C2 |
| MC40□C2 |

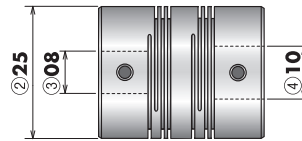
● A number indicating the coupling inner diameter is entered where the box □ is located within the product name.

Product Number Code

MC 25 08 10 S

① ② ③ ④ ⑤

| | |
|---|---|
| ① | MC Couplings |
| ② | Outer Diameter of Coupling |
| ③ | Inner Diameter d1 (smaller inner diameter) (06A represents φ6.35 mm) |
| ④ | Inner Diameter d2 (larger inner diameter) |
| ⑤ | Fastening method S : Set Screw Type C2 : Clamping Type |



● For inner diameter d1, the smaller of the motor shaft diameter or the driven shaft diameter is entered.
 For inner diameter d2, the larger of the motor shaft diameter or the driven shaft diameter is entered.

Coupling Selection Table

| Type | Frame Size | Product Name | Coupling Type | Motor Shaft Diameter mm | Driven Shaft Diameter mm | | | | | | | | | |
|---------------|------------|----------------------------|---------------|-------------------------|--------------------------|----|----|-------|----|-----|-----|-----|-----|---|
| | | | | | 04 | 05 | 06 | 06A | 08 | 10 | 12 | 14 | 15 | |
| | | | | | φ4 | φ5 | φ6 | φ6.35 | φ8 | φ10 | φ12 | φ14 | φ15 | |
| Standard Type | 42 mm | RKS543 RKS544 RKS545 | MC16 | 06 | φ6 | ○ | ◎ | ○ | | ○ | | | | |
| | 60 mm | RKS564 RKS566 RKS569 | MC25 | 10 | φ10 | | | ◎ | ◎ | ◎ | ○ | | | |
| | 85 mm | RKS596 | MC32 | 14 | φ14 | | | | | | ◎ | ◎ | ◎ | ○ |
| | | RKS599 RKS5913 | MC40 | 14 | φ14 | | | | | | ◎ | ◎ | ◎ | ◎ |

◎ Common for the Set Screw Type and the Clamping Type
 ○ Only for Set Screw Type

For more detail, refer to our website or contact to the customer center.

<http://www.orientalmotor.co.th/>

MCS Couplings (RoHS)



Product Line

| Product Name |
|---------------------------------------|
| MCS20 <input type="checkbox"/> |
| MCS30 <input type="checkbox"/> |
| MCS40 <input type="checkbox"/> |
| MCS55 <input type="checkbox"/> |
| MCS65 <input type="checkbox"/> |

● A number indicating the coupling inner diameter is entered where the box is located within the product name.

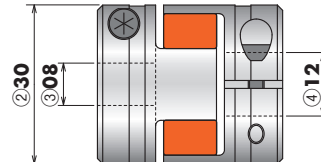
Product Number Code

MCS 30 08 12

- ① ② ③ ④

| | |
|---|--|
| ① | MCS Couplings |
| ② | Outer Diameter of Coupling |
| ③ | Inner Diameter d1 (smaller inner diameter) (F04 represents $\phi 6.35$ mm) |
| ④ | Inner Diameter d2 (larger inner diameter) (F04 represents $\phi 6.35$ mm) |

● For inner diameter d1, the smaller of the motor shaft diameter or the driven shaft diameter is entered.
 For inner diameter d2, the larger of the motor shaft diameter or the driven shaft diameter is entered.



Coupling Selection Table

| Type | Frame Size | Product Name | Gear Ratio | Coupling Type | Motor Shaft Diameter mm | | Driven Shaft Diameter mm | | | | | | | | | | | | | | | | | | | | |
|----------------------|------------|---------------|-----------------------------|---------------|-------------------------|-----------|--------------------------|----------|-------------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|---|---|---|---|---|---|---|
| | | | | | | | 05 | 06 | F04 | 08 | 10 | 12 | 14 | 15 | 16 | 18 | 20 | 22 | 24 | 25 | | | | | | | |
| | | | | | | | $\phi 5$ | $\phi 6$ | $\phi 6.35$ | $\phi 8$ | $\phi 10$ | $\phi 12$ | $\phi 14$ | $\phi 15$ | $\phi 16$ | $\phi 18$ | $\phi 20$ | $\phi 22$ | $\phi 24$ | $\phi 25$ | | | | | | | |
| TS Geared Type | 42 mm | RKS543 | 3.6, 7.2, 10, 20, 30 | MCS20 | 06 | $\phi 6$ | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | |
| | 60 mm | RKS564 | 3.6, 7.2, 10, 20, 30 | MCS30 | 10 | $\phi 10$ | | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | |
| | 90 mm | RKS596 | 3.6, 7.2, 10, 20, 30 | MCS55 | 18 | $\phi 14$ | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | |
| PS Geared Type | 42 mm | RKS545 | 5 | MCS20 | 10 | $\phi 10$ | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | |
| | | RKS543 | 25, 36, 50 | MCS30 | 10 | $\phi 10$ | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | |
| | 60 mm | RKS566 | 5 | MCS40 | 12 | $\phi 12$ | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| | | RKS564 | 25, 36, 50 | MCS55 | 12 | $\phi 12$ | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| | 90 mm | RKS599 | 5 | MCS55 | 18 | $\phi 18$ | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| | | RKS596 | 25, 36, 50 | MCS65 | 18 | $\phi 18$ | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Harmonic Geared Type | 42 mm | RKS543 | 50, 100 | MCS40 | 10 | $\phi 10$ | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | |

For more detail, refer to our website or contact to the customer center.

<http://www.orientalmotor.co.th/>

Motor Mounting Brackets RoHS

Mounting brackets are convenient for installation and securing a stepping motor and geared stepping motor.



Product Line

Standard Type

Material: Aluminum Alloy

| Product Name | Motor Frame Size | Applicable Product |
|----------------|------------------|--|
| PAFOP | 42 mm | RKS543 RKS544 RKS545 |
| PALOP | | |
| PAL2P-5 | 60 mm | RKS564 RKS566 RKS569 |
| PAL4P-5 | 85 mm | RKS596 RKS599 RKS5913 |

- The mounting bracket base is built with holes large enough to allow for alignment adjustments in the horizontal direction.
- These mounting brackets can be perfectly fitted to the pilot of the stepping motors. (Except for **PALOP**)

TS Geared Type

Material: Aluminum Alloy

| Product Name | Motor Frame Size | Applicable Product |
|---------------|------------------|--------------------|
| SOLOB | 42 mm | RKS543 |
| SOL2M4 | 60 mm | RKS564 |
| SOL5M8 | 90 mm | RKS596 |

PS Geared Type

Material: SS400

Surface Treatment: electroless nickel plating

| Product Name | Motor Frame Size | Applicable Product |
|---------------|------------------|--------------------------------|
| PLA60G | 60 mm | RKS564 RKS566 |
| PLA90G | 90 mm | RKS596 RKS599 |

- The mounting bracket base is built with holes large enough to allow for alignment adjustments in the horizontal direction.
- Motor Mounting Screws are included.

Harmonic Geared Type

Material: SS400

Surface Treatment: Electroless nickel plating

| Product Name | Motor Frame Size | Applicable Product |
|---------------|------------------|--------------------|
| PLA60H | 60 mm | RKS564 |
| PLA90H | 90 mm | RKS596 |

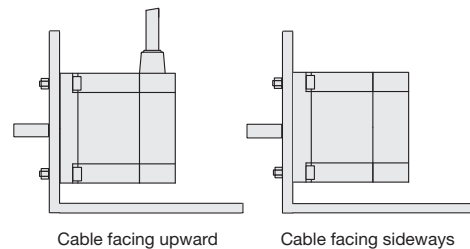
- Fixed portion on mounting bracket is slotting shaped, it make easy to adjust tension of belt after mounting the motor.
- Motor Mounting Screws are included.

The other shapes of mounting bracket are also available.
For more detail, please contact to our branch/ sales office or visit our website.
<http://www.orientalmotor.co.th/>

Motor Mounting Direction

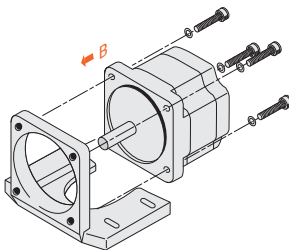
The motor cable comes out at right angles to the motor. Orient the motor so that the cable faces either upward or sideways.

- For **PLA60G, PLA90G, PLA60H, PLA90H**: The cable can face downward.



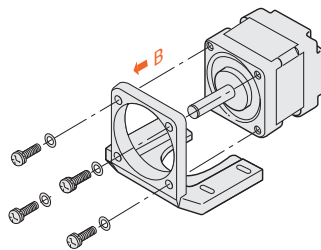
How to mount the motor

1 PAL2P-5, PAL4P-5, SOL2M4, SOL5M8



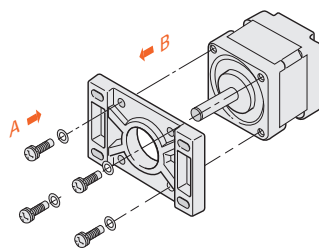
- ① Use the screws provided to secure the motor to the mounting bracket.
- ② Attach the motor from the direction shown by the arrow (B).

2 PALOP, SOLOB



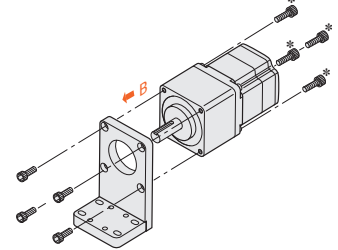
- ① Use the screws provided to secure the motor to the mounting bracket.
- ② Attach the motor from the direction shown by the arrow (B).

3 PAFOP



- ① Use the screws provided to secure the motor to the mounting bracket.
- ② Attach motor from the direction shown by either arrow (A) or arrow (B).

4 PLA60G, PLA90G, PLA60H, PLA90H



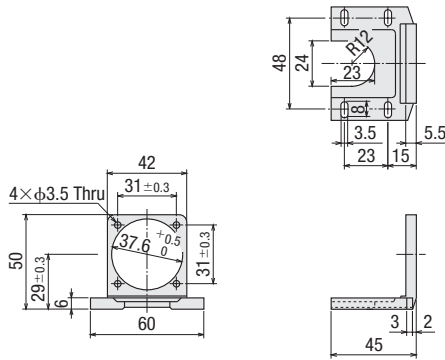
- ① Use the screws provided to secure the motor to the mounting bracket.
- ② Attach the motor from the direction shown by the arrow (B).

*Motor mounting hole on **PLA90H** is processed with tapping. Insert the screw from direction B.

Dimensions (Unit = mm)

PALOP

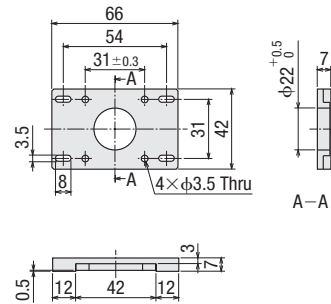
Mass : 35 g
CAD B139



● Mounting Screws : M3 Length 10 mm
 Included 4 pieces

PAFOP

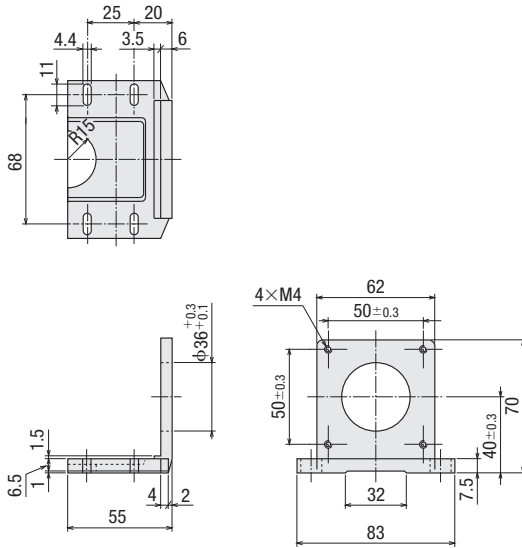
Mass : 30 g
CAD B140



● Mounting Screws : M3 Length 7 mm
 Included 4 pieces

PAL2P-5

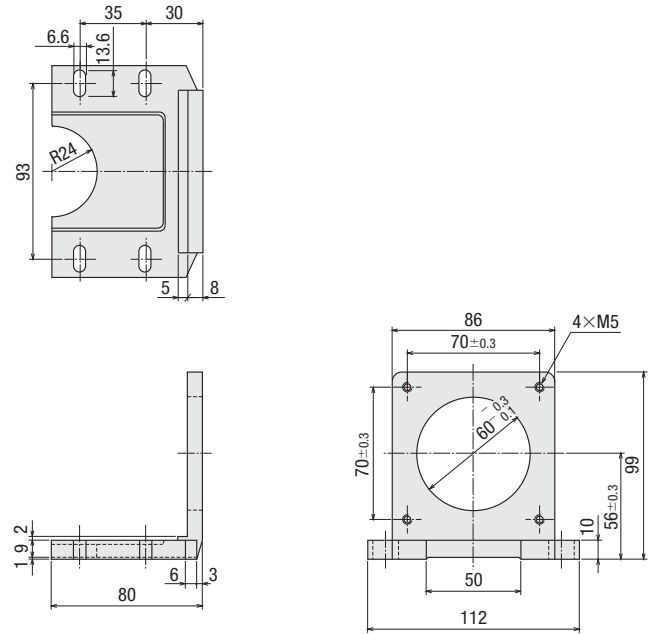
Mass : 110 g
CAD B143



● Mounting Screws : M4 Length 12 mm
 Included 4 pieces

PAL4P-5

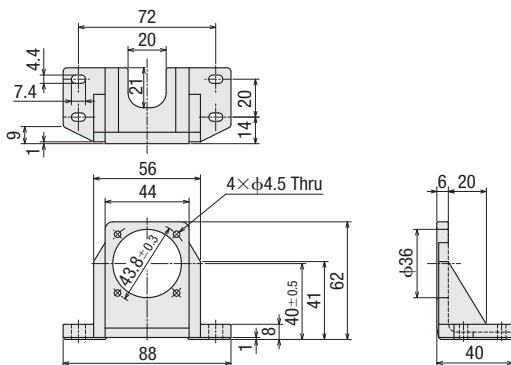
Mass : 250 g
CAD B145



● Mounting Screws : M5 Length 16 mm
 Included 4 pieces

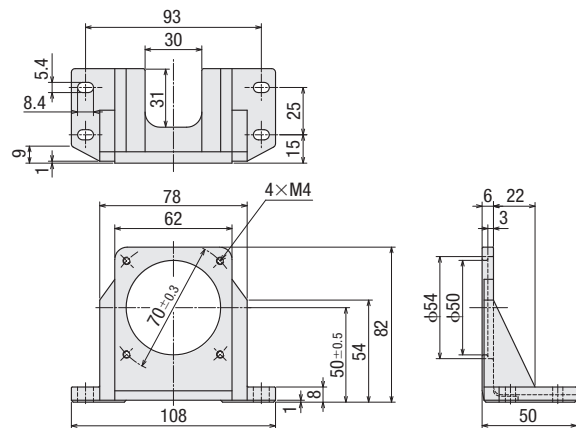
SOLOB

Mass : 85 g
CAD B267



SOL2M4

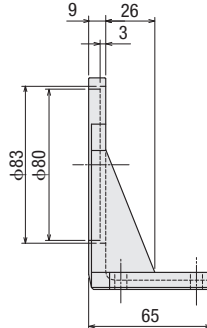
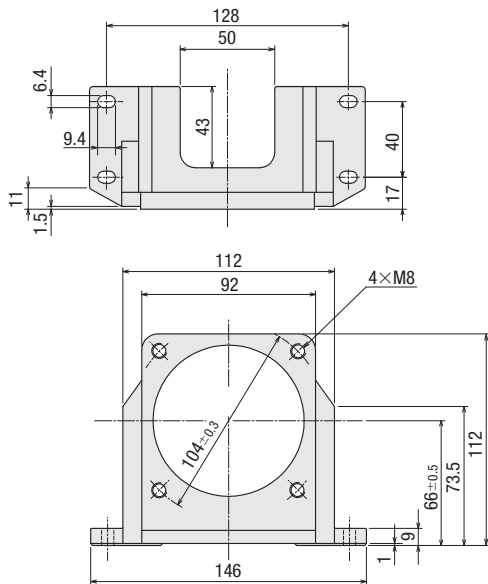
Mass : 135 g
CAD A321



SOL5M8

Mass : 270 g

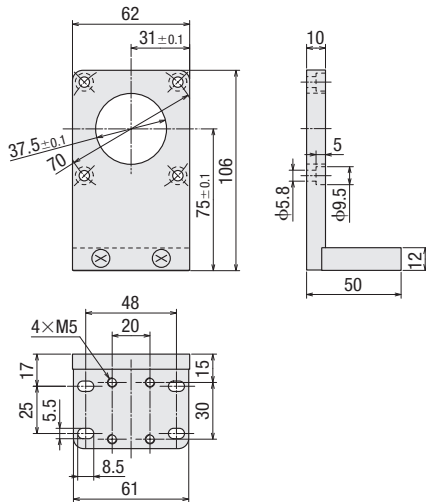
CAD A239



PLA60G

Mass : 0.7 kg

CAD B634

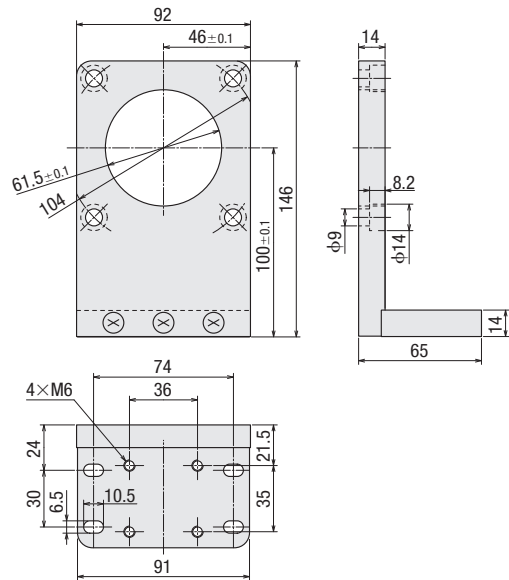


● Mounting Screws : M5 Length 15 mm
Included 4 pieces

PLA90G

Mass : 1.6 kg

CAD B637



● Mounting Screws : M8 Length 20 mm
Included 4 pieces

DIN rail mounting bracket RoHS

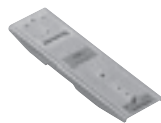
Use to mount the driver on DIN rail.

Product Line

Material: SPCC Surface Treatment: Trivalent Chromate

Product Name

MADP02



● DIN rail should be mounted on highly thermal conductive flat metal plate (comparable to 200 mm x 200 mm x 2 mm).
Be sure to keep the ambient temperature of the driver 0~+40°C.

Communication Cable for Data Setting Software (RoHS)

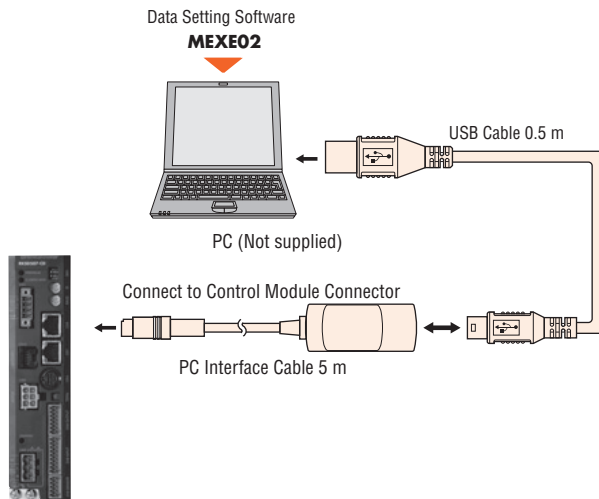
The cable to connect the PC with data setting software and driver installed.

Product Line

| Product Name | Applicable Product |
|-------------------|--------------------------|
| CC051F-USB | Built-in Controller Type |



Connection between Computer and Driver



Note

● To connect with PC, exclusive device driver should be installed.

Data Setting Software **MEXE02**

Data Setting Software can be downloaded from our website. Also we provide Data Setting Software with CD-ROM. For more detail, please contact our website or contact our branch/sales office. <http://www.orientalmotor.co.th/>

Operating Environment

Operating Systems

● Microsoft Windows 2000 Professional Service Pack 4 Rollup 1 provided by Microsoft Corp. must be applied. To confirm application of Rollup 1, please check it at "Add or Remove Programs."

For following OS, supports only 32-bit (x86) or 64-bit (x64) version.

- Microsoft Windows XP Home Edition Service Pack 3
- Microsoft Windows XP Professional Service Pack 2
- Microsoft Windows XP Professional Service Pack 3*
- Microsoft Windows Vista Home Basic Service Pack 2
- Microsoft Windows Vista Home Premium Service Pack 2
- Microsoft Windows Vista Business Service Pack 2
- Microsoft Windows Vista Ultimate Service Pack 2
- Microsoft Windows Vista Enterprise Service Pack 2
- Microsoft Windows 7 Starter Service Pack 1
- Microsoft Windows 7 Home Premium Service Pack 1
- Microsoft Windows 7 Professional Service Pack 1
- Microsoft Windows 7 Ultimate Service Pack 1
- Microsoft Windows 7 Enterprise Service Pack 1

* Supports 32-bit (x86) version only

Computer

| | |
|----------------------|--|
| Recommended CPU*1 | Intel Core Processor 2 GHz or more (The OS must be supported.) |
| Display | high resolution video adapter and monitor, XGA (1024x768) or more. |
| Recommended Memory*1 | 32-bit (x86) version: 1 GB or more 64-bit (x64) version: 2 GB or more |
| Hard Disk*2 | Available disk space of 30 MB or more |
| USB Port | USB 1.1 1 port |
| Disk Device | CD-ROM drive (use for installation of software) |

*1 The OS operating conditions must be satisfied.

*2 Microsoft .NET Framework 2.0 Service Pack 2 is required to use **MEXE02**. If it is not already installed, it will be installed automatically, in which case up to 500 MB of additional space is required.

● Windows and Windows Vista are registered trademark of Microsoft Corporation in the United States and other countries. Pentium is a trademark of Intel Corporation.

● Please refer to our website for the latest update of operating environment.

Note

● The required volume of memory or hard disk may vary depending on the system environment.

Control Module RoHS

The internal driver parameter settings and data settings can be established and changed. They can also be used for speed and I/O monitoring, teaching, and so on.



Product Line

| Product Name | Applicable Product |
|---------------|--------------------------|
| OPX-2A | Built-in Controller Type |

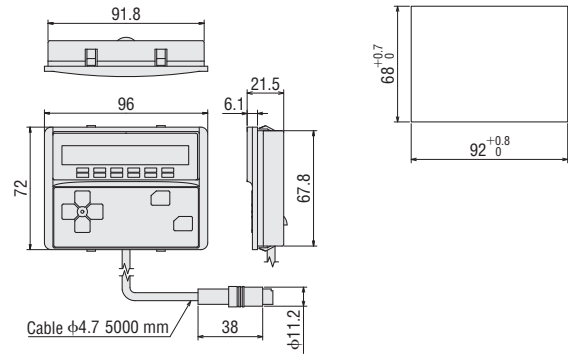
Dimensions (Unit = mm)

Control Module

Mass : 0.25 kg CAD B453

Panel Cut-Out for Control Module

(Thickness of the mounting plate: 1~ 3 mm)



Driver Cable

General-Purpose Cables RoHS

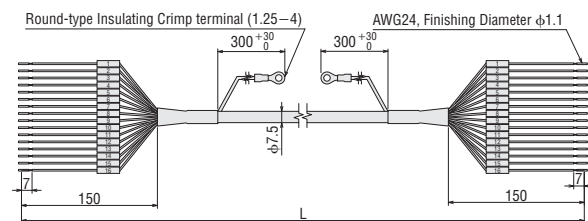


General-purpose multiconductor cable which is convenient for connection between the driver and the host controller.

Product Line

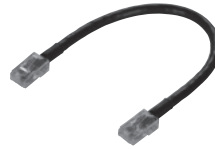
| Product Name | Length (m) |
|--------------------|------------|
| CC16D005B-1 | 0.5 |
| CC16D010B-1 | 1.0 |
| CC16D015B-1 | 1.5 |
| CC16D020B-1 | 2.0 |

Dimensions (Unit = mm)



RS-485 Communication Cable RoHS

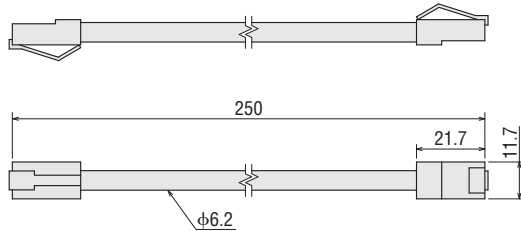
The cable to link drivers when the driver is being operated under multi-axis mode, it also connect the network converter and driver.



Product Line

| Product Name | Length (m) | Applicable Product |
|------------------|------------|--------------------------|
| CC002-RS4 | 0.25 | Built-in Controller Type |

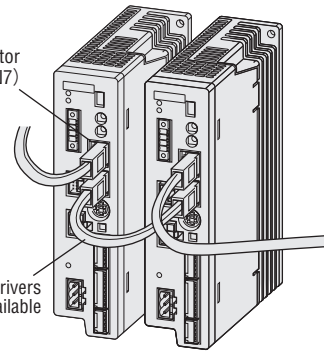
Dimensions (Unit = mm)



● Example of connection

RS-485 Communication Connector (CN6/CN7)

Link between drivers is available



Network Convertors RoHS

Network converter is a transducer from the host communication protocol to our unique RS-485 communication protocol. By using this network converter, our RS-485 compatible products can be controlled under host communication environment.

Product Line

| Network Type | Product Name |
|-------------------------------|-------------------|
| CC-Link Compatible | NETC01-CC |
| MECHATROLINK - II Compatible | NETC01-M2 |
| MECHATROLINK - III Compatible | NETC01-M3 |
| EtherCAT Compatible | NETC01-ECT |



NETC01-CC



NETC01-M2



NETC01-M3



NETC01-ECT