

Stepping Motors

Accessories

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Overview,
Product
Series

FLEX
Compatible
Products

5-Phase
Stepping
Motor and
Driver
Packages

AC Input
RKII

AC Input
RK

DC Input
CRK

2-Phase
Stepping
Motor and
Driver
Packages

DC Input
CMK

Closed Loop
Motor and
Driver
Packages
αSTEP

AC Input
High-
Efficiency
AR

AC Input
High-
Efficiency
ARL

DC Input
High-
Efficiency
AR

Stepping
Motors

High Torque
2-Phase
PKP

2-Phase
PK

5-Phase
PK

Accessories

Accessories

Cables

Cables

Couplings

A good selection of cables provide convenient connection between a motor, driver and controller.



Mounting Brackets

Notes on Use of Flexible Cables

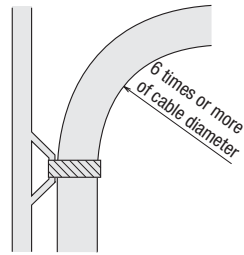
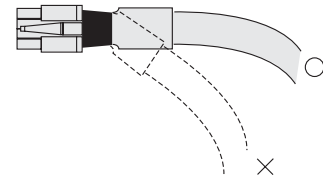
Clean Dampers

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

② For the bending radius, use at 6 times or more of the cable diameter.

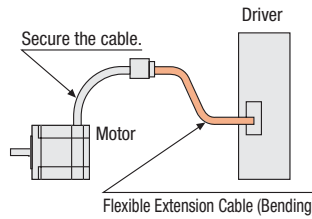
③ The cable from the motor and the accessory cable are not for bending. If the motor cable is to be bent, bend it at the flexible cable.

Control Module

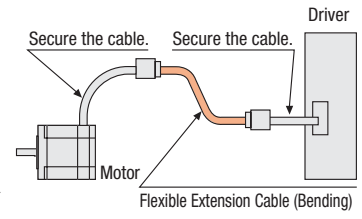


Data Setting Software

• Flexible Connection Cable



• Flexible Extension Cable



Battery Set

Connection Cables

Regeneration Unit

Oriental Motor evaluates the combination of the cables and products to confirm that the products meet the specifications.

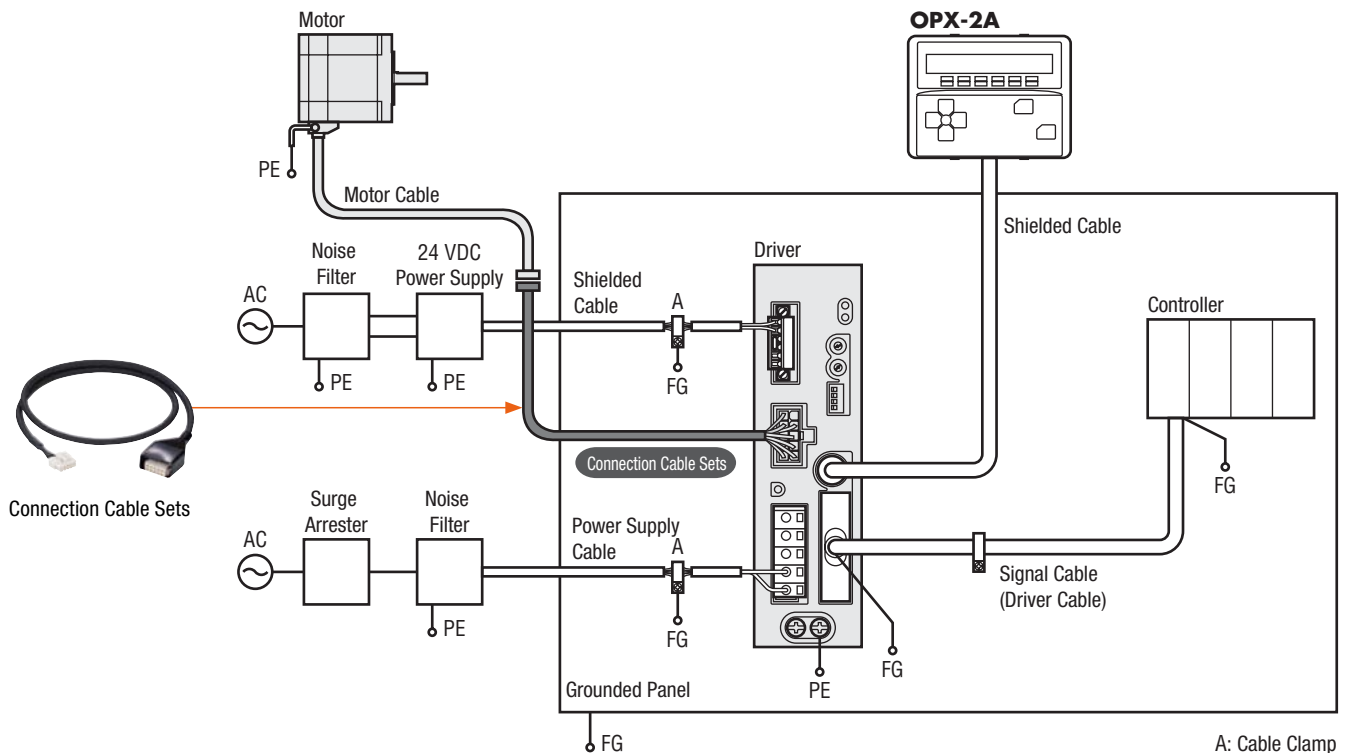
Also, our motors have the CE Marking affixed for optimal use.

As a part of the evaluation, we use the accessory cables for connection between the motor and driver as shown in the layout and wiring diagram shown below to evaluate the compliance with EMC Directive.

Please review the evaluated cables introduced in this section with the system configurations.

For details, refer to "Compliance with EMC Directive" in the operating manual.

EMC Test Layout and Wiring Diagram (For AR Series AC power supply input, pulse input type)



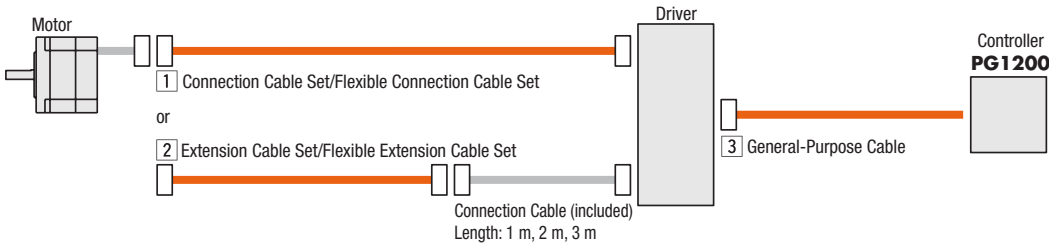
Cables for RKII Series

The **RKII** Series is available with a cable (1 m, 2 m or 3 m) for motor and driver, and also without a cable.

When the distance between the motor and driver is extended to 3 m or longer, a connection cable set or extension cable set must be used.

Use a flexible connection cable set or flexible extension cable set if the cable will be bent repeatedly.

Cable System Configuration



1 Connection Cable Sets RoHS Flexible Connection Cable Sets RoHS

Product Line

◇ Connection Cable Sets

• For Standard Type Motor



Cable for Motor

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

◇ Flexible Connection Cable Sets

• For Standard Type Motor

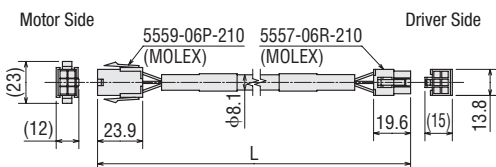


Cable for Motor

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

Dimensions (Unit mm)

◇ Cables for Motor



• For Electromagnetic Brake Type Motor



Cable for Motor

Cable for Electromagnetic Brake

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

• For Electromagnetic Brake Type Motor

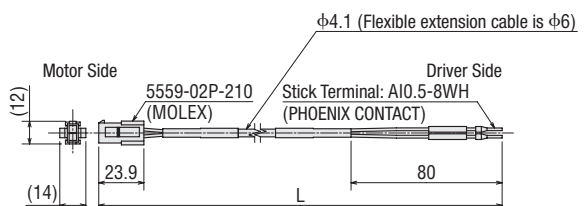


Cable for Motor

Cable for Electromagnetic Brake

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

◇ Cable for Electromagnetic Brake



2 Extension Cable Sets (RoHS)

Flexible Extension Cable Sets (RoHS)

Product Line

◇ Extension Cable Sets

- For Standard Type Motor



Cable for Motor

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

◇ Flexible Extension Cable Sets

- For Standard Type Motor

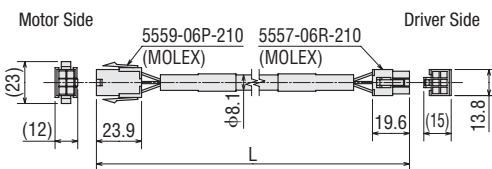


Cable for Motor

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

Dimensions (Unit mm)

◇ Cables for Motor



Note

- Keep the overall cable length at 20 m or less when using an extension cable set or a flexible extension cable set to connect with a cable included with the **RKII** Series.
- Notes on use of flexible extension cables → Page C-308

3 General-Purpose Cable (RoHS)

General-purpose multi-core cables provide convenient connection between a driver and programmable controller.

Note

- Note that as the length of the pulse line between the driver and controller increases, the maximum transmission frequency decreases.

Product Line

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

- For Electromagnetic Brake Type Motor



Cable for Motor

Cable for Electromagnetic Brake

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

- For Electromagnetic Brake Type Motor

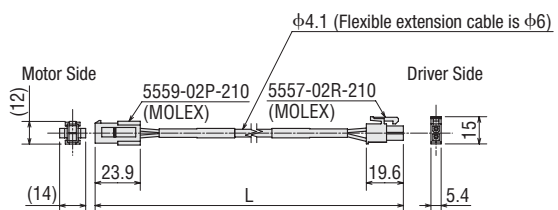


Cable for Motor

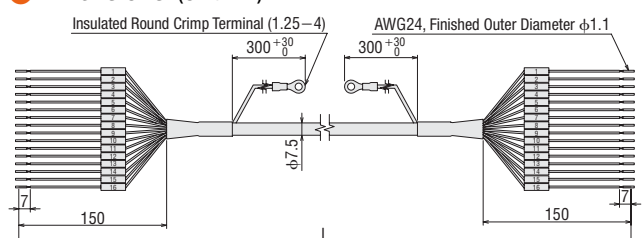
Cable for Electromagnetic Brake

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

◇ Cable for Electromagnetic Brake

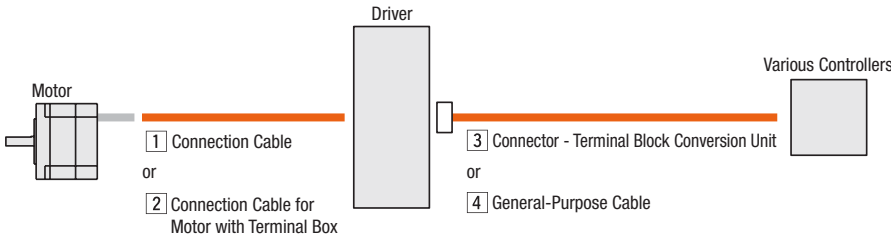


Dimensions (Unit mm)



Cables for RK Series

Cable System Configuration



1 Connection Cables (RoHS) Flexible Connection Cables (RoHS)

These cables are used to connect the motor and driver. Use a connection cable when the distance between the motor and driver is extended to 60 cm or longer. Flexible extension cables are to be used when bending of the cables is required and cables for electromagnetic brake type motors are added to the product lineup. A cable type which has a round crimp terminal suitable for connection to the **RK** Series driver at one end is also available.

Product Line

◇ Connection Cables

● For Standard Type Motor



Crimp Terminal Type	Crimp Terminal Not Used		
Type	Product Name	Length m	Number of Conductors
Crimp Terminal Type	CC010RK	1	5
	CC030RK	3	
	CC050RK	5	
	CC100RK	10	
	CC150RK	15	
	CC200RK	20	
Crimp Terminal Not Used	CC05PK5	5	5
	CC10PK5	10	
	CC20PK5	20	

- Size: AWG22 (0.3 mm²)
- Finished Outer Diameter: ϕ 7.2 mm
- Cable Rating: 105°C
- Outer Sheath: Oil-resistant and heat-resistant non-migrating vinyl

◇ Flexible Connection Cables

● For Standard Type Motor



Crimp Terminal Type	Crimp Terminal Not Used		
Type	Product Name	Length m	Number of Conductors
Crimp Terminal Type	CC010RKR	1	5
	CC030RKR	3	
	CC050RKR	5	
	CC100RKR	10	
	CC150RKR	15	
	CC200RKR	20	
Crimp Terminal Not Used	CC05PK5R	5	5
	CC10PK5R	10	
	CC20PK5R	20	

- Size: AWG22 (0.3 mm²)
- Finished Outer Diameter: ϕ 5.8 mm
- Cable Rating: 105°C
- Outer Sheath: Oil-resistant and heat-resistant non-migrating vinyl

● For Electromagnetic Brake Type Motor



Crimp Terminal Type	Crimp Terminal Not Used		
Type	Product Name	Length m	Number of Conductors
Crimp Terminal Type	CC010RKB	1	7
	CC030RKB	3	
	CC050RKB	5	
	CC100RKB	10	
	CC150RKB	15	
	CC200RKB	20	
Crimp Terminal Not Used	CC05PK5B	5	7
	CC10PK5B	10	
	CC20PK5B	20	

- Size: Motor Wire AWG22 (0.3 mm²)
Electromagnetic Brake Wire AWG20 (0.5 mm²)
- Finished Outer Diameter: ϕ 7 mm
- Cable Rating: 105°C
- Outer Sheath: Oil-resistant and heat-resistant non-migrating vinyl

● For Electromagnetic Brake Type Motor



Crimp Terminal Type	Crimp Terminal Not Used		
Type	Product Name	Length m	Number of Conductors
Crimp Terminal Type	CC010RKR	1	7
	CC030RKR	3	
	CC050RKR	5	
	CC100RKR	10	
	CC150RKR	15	
	CC200RKR	20	
Crimp Terminal Not Used	CC05PK5RB	5	7
	CC10PK5RB	10	
	CC20PK5RB	20	

- Size: Motor wire AWG22 (0.3 mm²)
Electromagnetic brake wire AWG21 (0.4 mm²)
- Finished Outer Diameter: ϕ 6.9 mm
- Cable Rating: 105°C
- Outer Sheath: Oil-resistant and heat-resistant non-migrating vinyl

Overview,
Product
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FLEX
Compatible
Products

5-Phase
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Motor and
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DC Input
CMK

Closed Loop
Motor and
Driver
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αSTEP

AC Input
High-
Efficiency
AR

AC Input
High-
Efficiency
ARL

DC Input
High-
Efficiency
AR

Stepping
Motors

High Torque
2-Phase
PKP

2-Phase
PK

5-Phase
PK

Accessories

2 Motor Cable for Terminal Box Type Motor (RoHS)

Cables

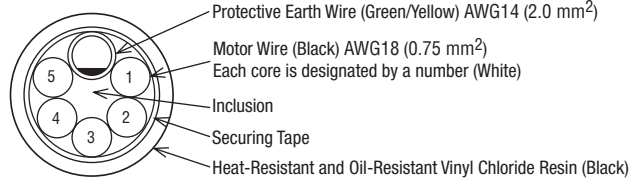


This cable is used to connect the motor with the terminal box and driver.
(The cable includes a protective earth wire.)
This cable can also be used with accessories besides the motor with terminal box.

Product Line

Product Name	Length m	Number of Conductors
CC03PKT	3	6

- Conductor Configuration: 6
- Size: Motor wire AWG18 (0.75 mm²), protective earth wire AWG14 (2.0 mm²)
- Finished Outer Diameter: ϕ 12 mm
- Cable Rating: 105°C 600 V
- Outer Sheath: Heat-resistant and oil-resistant vinyl chloride resin
- Applicable Standards: UL 758 (AWM) VW-1, UL Style 2586



3 Connector - Terminal Block Conversion Units (RoHS)

Data Setting Software

A conversion unit that connects a driver to a programmable controller and sensor using a terminal block.

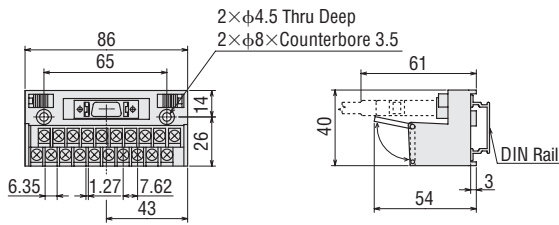


Battery Set

- A shielded cable is used. Easy-to-use ground wires are attached to both ends of the cable.
- Includes a signal name plate for easy, one-glance identification of driver signal names
- DIN-rail Installable
- Applicable Terminal: Opened Terminal
- Cable length: 1 m

Dimensions (Unit mm)

CAD B990

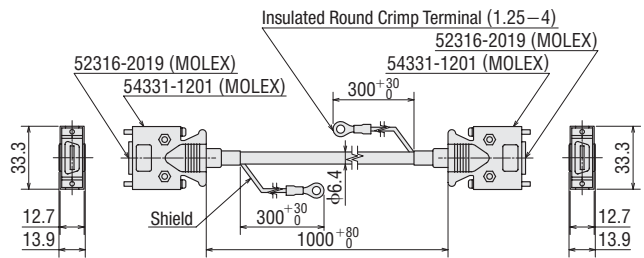


Terminal Block Pin No.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

Product Line

Product Line	Product Name	Applicable	Length m
20 Poles	CC20T10E	For CN1 (20 pins)	1



- Applicable Crimp Terminals
 - Terminal screw size: M3
 - Tightening Torque: 1.2 N·m
 - Minimum Applicable Lead Wire: AWG22 (0.3 mm²)

Note

- Round terminals cannot be used.

4 General-Purpose Cables RoHS

This shielded cable has a half-pitch connector at one end of the cable for easy connection to the driver.

At the other end, lead wires drawn up sequentially in 1.27 mm pitch are laminated, which is convenient for crimp connector.

The cable has easy-to-use ground wires at both ends.

Note

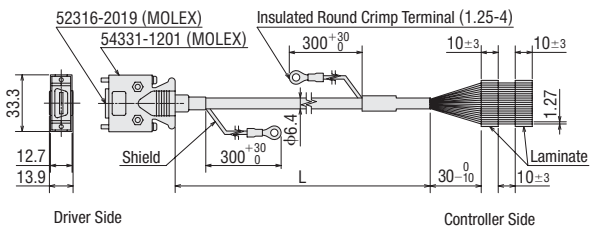
- Note that as the length of the pulse line between the driver and controller increases, the maximum transmission frequency decreases.
- Install a connector that matches the controller you are using to the other end of the cable.

Product Line

Product Name	Applicable	Length L (m)
CC20D1E	For CN1 (20 pins)	1
CC20D2E		2

Dimensions (Unit mm)

Conductor: AWG28 (0.08 mm²)



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CRK

2-Phase
Stepping
Motor and
Driver
Packages

DC Input
CMK

Closed Loop
Motor and
Driver
Packages
αSTEP

AC Input
High-
Efficiency
AR

AC Input
High-
Efficiency
ARL

DC Input
High-
Efficiency
AR

Stepping
Motors

High Torque
2-Phase
PKP

2-Phase
PK

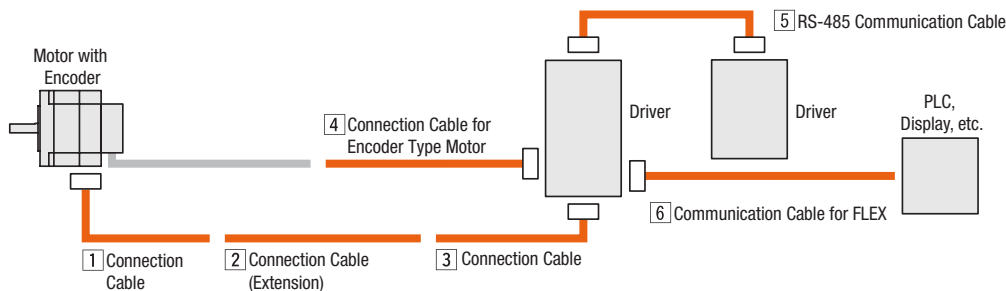
5-Phase
PK

Accessories

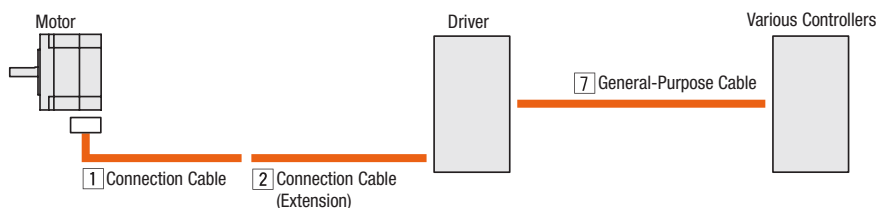
Cables for CRK Series

● Cable System Configuration

◇ Built-In Controller Type



◇ Pulse Input Type



1 Connection Cables (RoHS)



Lead wire type connection cables with a connector crimped, convenient for connector-coupled motors, are available. They eliminate the need for assembling the lead wire and connector. (Connection cable (0.6 m) is included with each connector-coupled motor and driver package.)

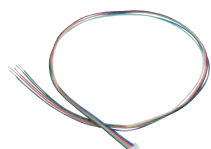
2 Connection Cables (Extension) (RoHS)



These connection cables are used to extend the wiring distance between the motor and driver.

Keep the wiring distance between the motor and driver at 10 m or less.

3 Connection Cables (RoHS)



This lead wire type cable with a connector crimped is used to connect the motor with a built-in controller type driver. (If you are purchasing a built-in controller type package or only a driver, a 0.6 m connection cable is included.)

● Product Line

Product Name	Applicable Motor	Length m	Conductor AWG
LC5N06A	PK513	0.6	24 (0.2 mm ²)
LC5N10A	PK523 PK524 PK525	1	
LC5N06B	PK544	0.6	22 (0.3 mm ²)
LC5N10B	PK546	1	
LC5N06C	PK564	0.6	
LC5N10C	PK566 PK569	1	

● The product names of the applicable motors are described with text by which the product name can be identified.

● Product Line

Product Name	Length m	Number of Conductors
CC05PK5	5	5
CC10PK5	10	

- Conductor Configuration: 5
- Size: AWG22 (0.3 mm²)
- Finished Outer Diameter: ϕ 7.2 mm
- Cable Rating: 105°C
- Outer Sheath: Oil-resistant and heat-resistant non-migrating vinyl

● Product Line

Product Name	Application	Length m	Conductor AWG
LC5N06B	Motor Connection	0.6	22 (0.3 mm ²)
LC5N10B		1	

4 Motor Cable for Encoder Type Motor (RoHS)



This lead wire type cable with a connector crimped is used to connect the encoder with built-in controller type driver. (If you are purchasing a built-in controller type package with encoder, a 0.6m connection cable is included.)

5 RS-485 Communication Cables (RoHS)

This cable is used to link drivers in multi-axis operations with the built-in controller type. It also connects the network converter to the driver.



Product Line

Product Name	Length L (m)
CC001-RS4	0.1
CC002-RS4	0.25

6 Communication Cables for FLEX (RoHS)

This cable is convenient to connect the FLEX-compatible products with various devices for performing Modbus control with RS-485. An end of the cable has separated wires with crimp terminal, suitable for connection with the PLC panel and various devices.

Product Line

Product Name	Length L (m)
CC02FLT	2
CC05FLT	5

7 General-Purpose Cables (RoHS)

General-purpose multi-core cables provide convenient connection between a pulse input type driver and programmable controller.

Note

Note that as the length of the pulse line between the driver and controller increases, the maximum transmission frequency decreases.

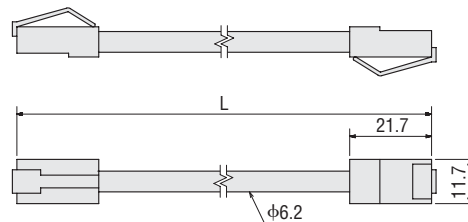
Product Line

Product Name	Length L (m)
CC10D005B-1	0.5
CC10D010B-1	1.0
CC10D015B-1	1.5
CC10D020B-1	2.0

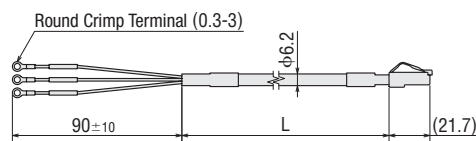
Product Line

Product Name	Application	Length m	Conductor AWG
LC09A-006	Encoder Connection	0.6	22 (0.3 mm ²)

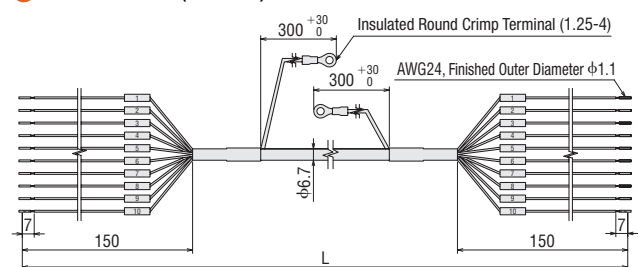
Dimensions (Unit mm)



Dimensions (Unit mm)



Dimensions (Unit mm)



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CRK

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Motor and
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Packages

DC Input
CMK

Closed Loop
Motor and
Driver
Packages
αSTEP

AC Input
High-
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AR

AC Input
High-
Efficiency
ARL

DC Input
High-
Efficiency
AR

Stepping
Motors

High Torque
2-Phase
PKP

2-Phase
PK

5-Phase
PK

Accessories

8 Motor Connector Sets RoHS

Cables

A set of connector housings and contacts for use with connector-coupled motors.

Product Line

Product Name	Applicable Product
CS5N30A	CRK513 CRK523 CRK524 CRK525
CS5N30B	CRK544 CRK546
CS5N30C	CRK564 CRK566 CRK569



This photograph shows **CS5N30B**.

- Each package contains enough housings and contacts for 30 motors. Please specify the number of packages when ordering.

Specifications

Product Name	Connector Housing	Contact	Applicable Crimp Tool	Manufacturer	Applicable Cable
CS5N30A	51065-0500	50212-8100	57176-5000	MOLEX	AWG30 to 24 (0.05 to 0.2 mm ²) Outer Sheath Diameter ϕ 1.4 mm or less Strip length: 1.3 to 1.8 mm
CS5N30B	51103-0500	50351-8100	57295-5000		AWG28 to 22 (0.08 to 0.3 mm ²) Outer Sheath Diameter ϕ 1.15 to 1.8 mm Strip length: 2.3 to 2.8 mm
CS5N30C	51144-0500	50539-8100	57189-5000		AWG24 to 18 (0.2 to 0.75 mm ²) Outer Sheath Diameter ϕ 1.4 to 3 mm Strip length: 3 to 3.5 mm

Note

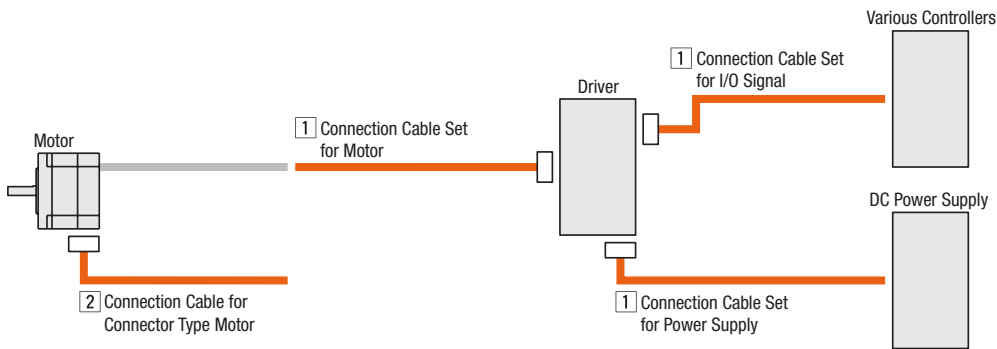
- The crimp tool is not included. Please provide separately.

Battery Set

Regeneration Unit

Cables for CMK Series

Cable System Configuration



1 Connection Cable Set (RoHS)



Lead wires with a connector for DC input drivers are available. These lead wires allow for easy connection of the motor, power supply and input signals. The connection cable set includes three lead wire/connector assemblies for motor, I/O signal and power supply.

2 Connection Cables (RoHS)



Lead wire type connection cables with a connector crimped, convenient for connector-coupled motors, are available. They eliminate the need for assembling the lead wire and connector. (Connection cable (0.6 m) is included with each connector-coupled motor and driver package.)

3 Motor Connector Sets (RoHS)

A set of connector housings and contacts for use with connector-coupled motors.

Product Line

Product Name	Applicable Product
CS2U30A	CMK223 CMK224 CMK225
CS2U30B	CMK233 CMK235 CMK244 CMK246

Each package contains enough housings and contacts for 30 motors. Please specify the number of packages when ordering.

Specifications

Product Name	Connector Housing	Contact	Applicable Crimp Tool	Manufacturer	Applicable Cable
CS2U30A	51065-0600	50212-8100	57176-5000	MOLEX	AWG30 to 24 (0.05 to 0.2 mm ²) Outer Sheath Diameter ϕ 1.4 mm or less Strip length: 1.3 to 1.8 mm
CS2U30B	51103-0600	50351-8100	57295-5000		AWG28 to 22 (0.08 to 0.3 mm ²) Outer Sheath Diameter ϕ 1.15 to 1.8 mm Strip length: 2.3 to 2.8 mm

Note

The crimp tool is not included. Please provide separately.

Product Line

Product Name	Applicable Drivers	Length m	Conductor AWG
LCS01CMK2	CMD2109P CMD2112P CMD2120P	0.6	22 (0.3 mm ²)

Product Line

Product Name	Applicable Motor	Length m	Conductor AWG
LC2U06A	PK223P PK224P PK225P	0.6	24 (0.2 mm ²)
LC2U10A		1	
LC2U06B	PK233P PK235P PK244P PK246P	0.6	
LC2U10B		1	
LC2U06C	PK264P PK266P PK268P	0.6	22 (0.3 mm ²)
LC2U10C		1	

The product names of the applicable motors are described with text by which the product name can be identified.



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AC Input
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AC Input
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Efficiency
ARL

DC Input
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AR

Stepping
Motors

High Torque
2-Phase
PKP

2-Phase
PK

5-Phase
PK

Accessories

Cables for AR Series AC Power Supply Input

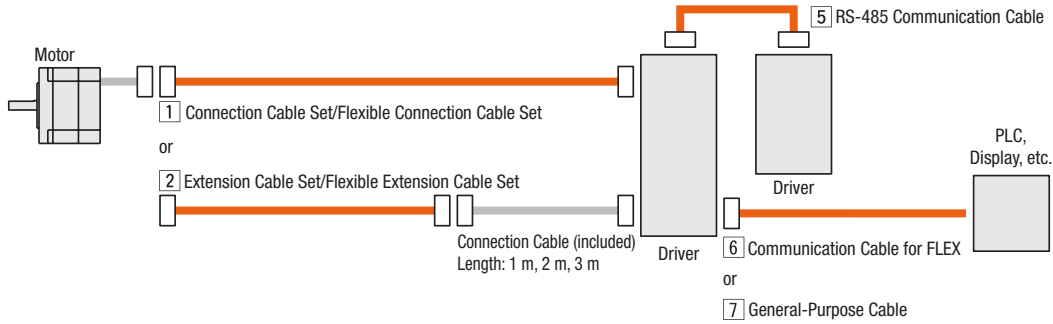
Cables

The **AR Series** comes with a 1 m, 2 m or 3 m cable for the connection between the motor and driver.
 When the distance between the motor and driver is extended to 3 m or longer, a connection cable set or extension cable set must be used.
 For electromagnetic brake type motors, a cable for the motor and another one for the electromagnetic brake come as a set.
 Use the flexible extension cable in applications where the cable is bent and flexed.

Couplings

Cable System Configuration

◇ Built-In Controller Type



Mounting Brackets

Clean Dampers

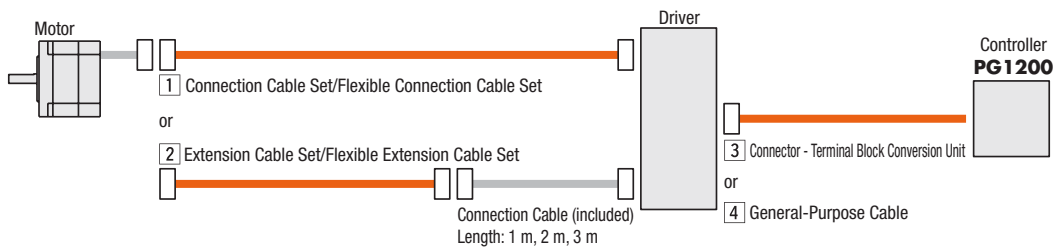
Control Module

Data Setting Software

Battery Set

Regeneration Unit

◇ Pulse Input Type



1 Connection Cable Sets (RoHS) Flexible Connection Cable Sets (RoHS)

● Product Line

◇ Connection Cable Sets

● For Standard Type Motor



Cable for Motor

Product Name	Length L (m)
CC050VAF	5
CC070VAF	7
CC100VAF	10
CC150VAF	15
CC200VAF	20
CC300VAF	30

● For Electromagnetic Brake Type Motor



Cable for Motor

Cable for Electromagnetic Brake

Product Name	Length L (m)
CC050VAFB	5
CC070VAFB	7
CC100VAFB	10
CC150VAFB	15
CC200VAFB	20
CC300VAFB	30

◇ Flexible Connection Cable Sets

● For Standard Type Motor



Cable for Motor

Product Name	Length L (m)
CC010VAR	1
CC020VAR	2
CC030VAR	3
CC050VAR	5
CC070VAR	7
CC100VAR	10
CC150VAR	15
CC200VAR	20
CC300VAR	30

● For Electromagnetic Brake Type Motor



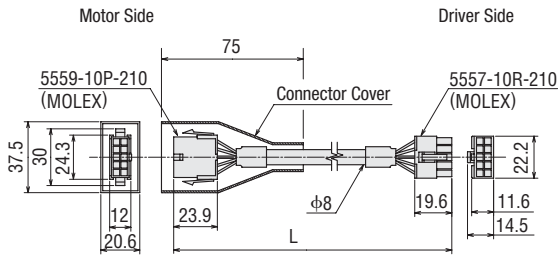
Cable for Motor

Cable for Electromagnetic Brake

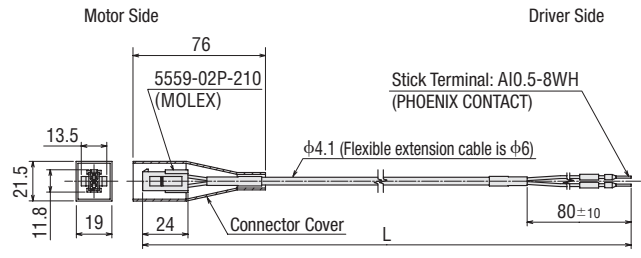
Product Name	Length L (m)
CC010VARB	1
CC020VARB	2
CC030VARB	3
CC050VARB	5
CC070VARB	7
CC100VARB	10
CC150VARB	15
CC200VARB	20
CC300VARB	30

● Dimensions (Unit mm)

◇ Cable for Motor



◇ Cable for Electromagnetic Brake



2 Extension Cable Sets (RoHS)
Flexible Extension Cable Sets (RoHS)

● Product Line

◇ Extension Cable Sets

● For Standard Type Motor



Cable for Motor

Product Name	Length L (m)
CC010VAFT	1
CC020VAFT	2
CC030VAFT	3
CC050VAFT	5
CC070VAFT	7
CC100VAFT	10
CC150VAFT	15
CC200VAFT	20

◇ Flexible Extension Cable Sets

● For Standard Type Motor

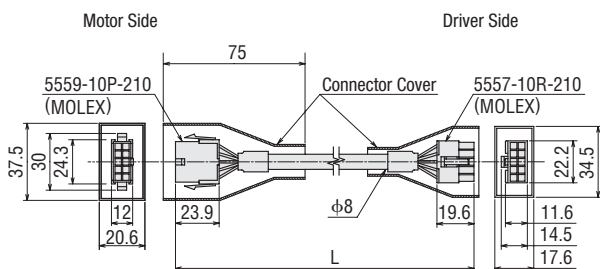


Cable for Motor

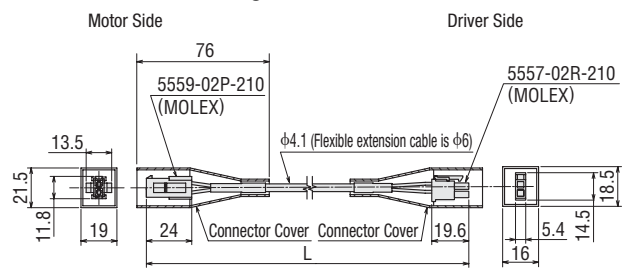
Product Name	Length L (m)
CC010VART	1
CC020VART	2
CC030VART	3
CC050VART	5
CC070VART	7
CC100VART	10
CC150VART	15
CC200VART	20

● Dimensions (Unit mm)

◇ Cable for Motor



◇ Cable for Electromagnetic Brake



Note

- Keep the overall cable length at 30 m or less when using an extension cable set or a flexible extension cable set to connect with a cable included with the AR Series.
- Notes on use of flexible extension cables → Page C-308

● For Electromagnetic Brake Type Motor



Cable for Motor

Cable for Electromagnetic Brake

Product Name	Length L (m)
CC010VAFBT	1
CC020VAFBT	2
CC030VAFBT	3
CC050VAFBT	5
CC070VAFBT	7
CC100VAFBT	10
CC150VAFBT	15
CC200VAFBT	20

● For Electromagnetic Brake Type Motor



Cable for Motor

Cable for Electromagnetic Brake

Product Name	Length L (m)
CC010VARBT	1
CC020VARBT	2
CC030VARBT	3
CC050VARBT	5
CC070VARBT	7
CC100VARBT	10
CC150VARBT	15
CC200VARBT	20

3 Connector - Terminal Block Conversion Unit (RoHS)

Cables

A conversion unit that connects a driver to a programmable controller and sensor using a terminal block.

Couplings



Mounting Brackets

- A shielded cable is used. Easy-to-use ground wires are attached to both ends of the cable.
- Includes a signal name plate for easy, one-glance identification of driver signal names

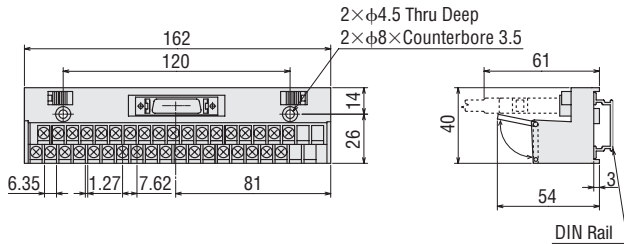
Clean Dampers

- DIN-rail Installable
- Applicable Terminal: Opened Terminal
- Cable length: 1 m

Control Module

Dimensions (Unit mm)

CAD B991

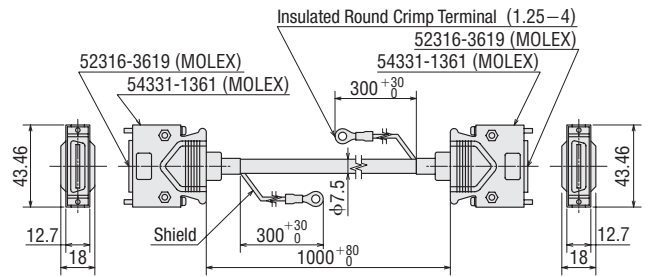


Terminal Block Pin No.

19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

Product Line

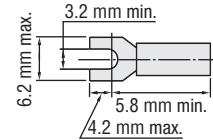
Product Line	Product Name	Applicable Drivers	Length L (m)
36 Poles	CC36T10E	Pulse Input For CN5 (36 pins)	1



- Applicable Crimp Terminals
- Terminal screw size: M3
- Tightening Torque: 1.2 N·m
- Minimum applicable lead wire: AWG22 (0.3 mm²)

Note

- Round terminals cannot be used.



4 General-Purpose Cables (RoHS)

This shielded cable has a half-pitch connector at one end of the cable for easy connection to the driver.

At the other end, lead wires drawn up sequentially in 1.27 mm pitch are laminated, which is convenient for crimp connector.

The cable has easy-to-use ground wires at both ends.

Note

- Note that as the length of the pulse line between the driver and controller increases, the maximum transmission frequency decreases.
- Install a connector that matches the controller you are using to the other end of the cable.

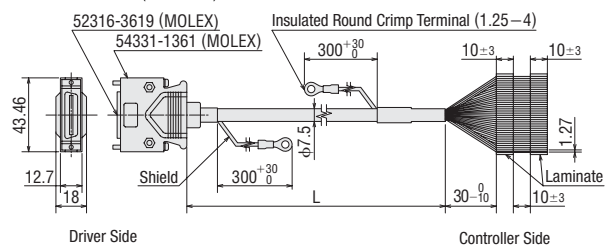
Product Line

Product Name	Applicable Drivers	Length L (m)
CC36D1E	For pulse input CN5 (36 pins)	1
CC36D2E		2



Dimensions (Unit mm)

Conductor: AWG28 (0.08 mm²)



5 RS-485 Communication Cable (RoHS)

This cable is used to link drivers in multi-axis operations with the built-in controller type. It also connects the network converter to the driver.



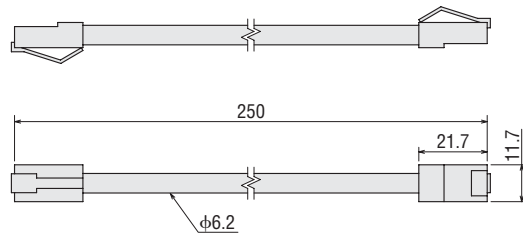
Product Line

Product Name
CC002-RS4

6 Communication Cables for FLEX (RoHS)

This cable is convenient for connecting FLEX-compatible products to various devices for performing Modbus control with RS-485. An end of the cable has separated wires with crimp terminal, suitable for connection with the PLC panel and various devices.

Dimensions (Unit mm)



Product Line

Product Name	Length L (m)
CC02FLT	2
CC05FLT	5

7 General-Purpose Cables (RoHS)

General-purpose multi-core cables provide convenient connection between a driver and programmable controller.

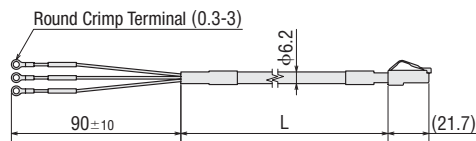
Note

- Note that as the length of the pulse line between the driver and controller increases, the maximum transmission frequency decreases.

Product Line

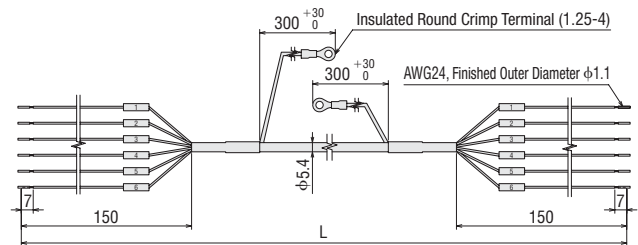
Product Name	Number of Conductors	Length L (m)
CC06D005B-1	6	0.5
CC06D010B-1		1.0
CC06D015B-1		1.5
CC06D020B-1	10	2.0
CC10D005B-1		0.5
CC10D010B-1		1.0
CC10D015B-1		1.5
CC10D020B-1	2.0	

Dimensions (Unit mm)

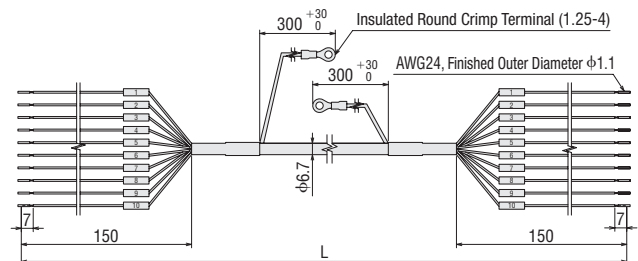


Dimensions (Unit mm)

CC06D□□□B-1



CC10D□□□B-1



Overview,
Product
Series

FLEX
Compatible
Products

5-Phase
Stepping
Motor and
Driver
Packages

AC Input
RKII

AC Input
RK

DC Input
CRK

2-Phase
Stepping
Motor and
Driver
Packages

DC Input
CMK

Closed Loop
Motor and
Driver
Packages
αSTEP

AC Input
High-
Efficiency
AR

AC Input
High-
Efficiency
ARL

DC Input
High-
Efficiency
AR

Stepping
Motors

High Torque
2-Phase
PKP

2-Phase
PK

5-Phase
PK

Accessories

Cables for AR Series DC Power Supply Input

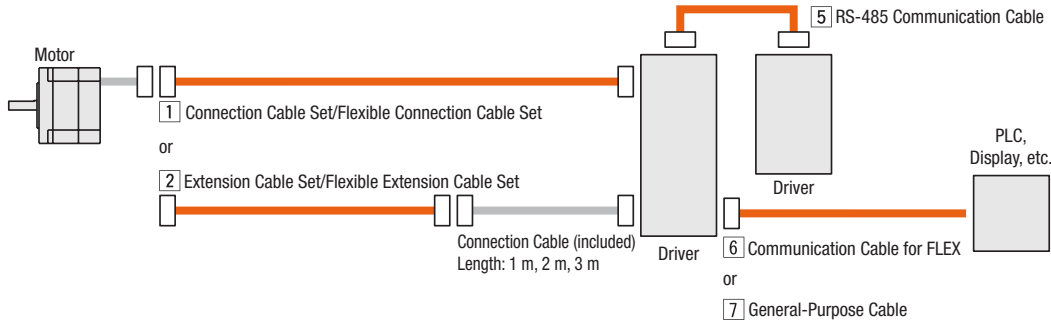
Cables

The **AR Series** comes with a 1 m, 2 m or 3 m cable for the connection between the motor and driver.
 When the distance between the motor and driver is extended to 3 m or longer, a connection cable set or extension cable set must be used.
 For electromagnetic brake type motors, a cable for the motor and another one for the electromagnetic brake come as a set.
 Use the flexible extension cable in applications where the cable is bent and flexed.

Couplings

Cable System Configuration

◇ Built-In Controller Type



Mounting Brackets

Clean Dampers

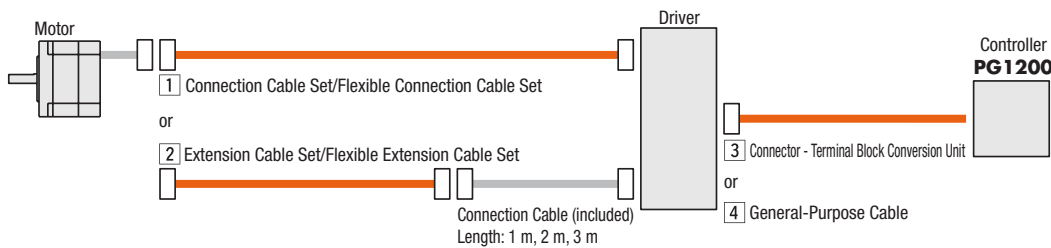
Control Module

Data Setting Software

Battery Set

Regeneration Unit

◇ Pulse Input Type



1 Connection Cable Sets (RoHS) Flexible Connection Cable Sets (RoHS)

● Product Line

◇ Connection Cable Sets

● For Standard Type Motor



Cables for Motor

Product Name	Length L (m)
CC050VA2F2	5
CC070VA2F2	7
CC100VA2F2	10
CC150VA2F2	15
CC200VA2F2	20
CC300VA2F2	30

● For Electromagnetic Brake Type Motor



Cables for Motor

Cable for Electromagnetic Brake

Product Name	Length L (m)
CC050VA2FB2	5
CC070VA2FB2	7
CC100VA2FB2	10
CC150VA2FB2	15
CC200VA2FB2	20
CC300VA2FB2	30

◇ Flexible Connection Cable Sets

● For Standard Type Motor



Cables for Motor

Product Name	Length L (m)
CC010VA2R2	1
CC020VA2R2	2
CC030VA2R2	3
CC050VA2R2	5
CC070VA2R2	7
CC100VA2R2	10
CC150VA2R2	15
CC200VA2R2	20
CC300VA2R2	30

● For Electromagnetic Brake Type Motor



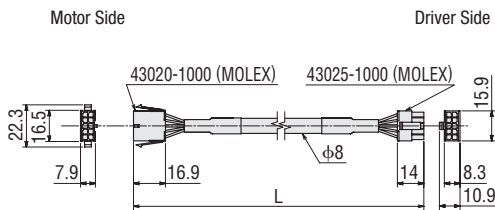
Cables for Motor

Cable for Electromagnetic Brake

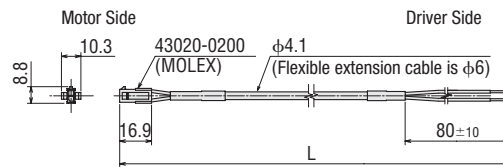
Product Name	Length L (m)
CC010VA2RB2	1
CC020VA2RB2	2
CC030VA2RB2	3
CC050VA2RB2	5
CC070VA2RB2	7
CC100VA2RB2	10
CC150VA2RB2	15
CC200VA2RB2	20
CC300VA2RB2	30

● Dimensions (Unit mm)

◇ Cable for Motor



◇ Cable for Electromagnetic Brake



2 Extension Cable Sets (RoHS) Flexible Extension Cable Sets (RoHS)

● Product Line

◇ Extension Cable Sets

● For Standard Type Motor



Cable for Motor

Product Name	Length L (m)
CC010VA2F2	1
CC020VA2F2	2
CC030VA2F2	3
CC050VA2F2	5
CC070VA2F2	7
CC100VA2F2	10
CC150VA2F2	15
CC200VA2F2	20

● For Electromagnetic Brake Type Motor



Cable for Motor



Cable for Electromagnetic Brake

Product Name	Length L (m)
CC010VA2FBT2	1
CC020VA2FBT2	2
CC030VA2FBT2	3
CC050VA2FBT2	5
CC070VA2FBT2	7
CC100VA2FBT2	10
CC150VA2FBT2	15
CC200VA2FBT2	20

◇ Flexible Extension Cable Sets

● For Standard Type Motor



Cable for Motor

Product Name	Length L (m)
CC010VA2R2	1
CC020VA2R2	2
CC030VA2R2	3
CC050VA2R2	5
CC070VA2R2	7
CC100VA2R2	10
CC150VA2R2	15
CC200VA2R2	20

● For Electromagnetic Brake Type Motor



Cable for Motor

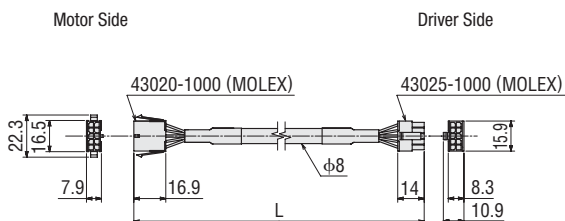


Cable for Electromagnetic Brake

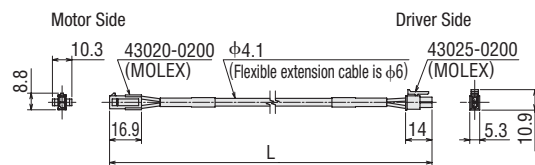
Product Name	Length L (m)
CC010VA2RBT2	1
CC020VA2RBT2	2
CC030VA2RBT2	3
CC050VA2RBT2	5
CC070VA2RBT2	7
CC100VA2RBT2	10
CC150VA2RBT2	15
CC200VA2RBT2	20

● Dimensions (Unit mm)

◇ Cable for Motor



◇ Cable for Electromagnetic Brake



[Note]

- Keep the overall cable length at 30m or less when using an extension cable set or a flexible extension cable set to connect with a cable included with the **AR** Series.
- Note on use of flexible extension cables → Page C-308

3 Connector - Terminal Block Conversion Unit (RoHS)

Cables

A conversion unit that connects a driver to a programmable controller and sensor using a terminal block.

Couplings



Mounting Brackets

- A shielded cable is used. Easy-to-use ground wires are attached to both ends of the cable.
- Includes a signal name plate for easy, one-glance identification of driver signal names

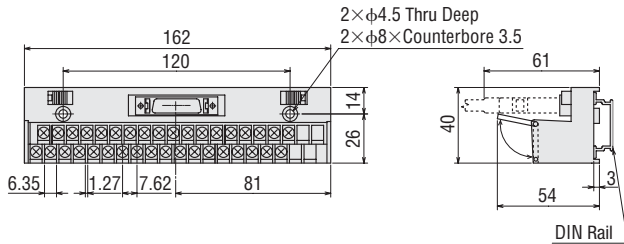
Clean Dampers

- DIN-rail Installable
- Applicable Terminal: Opened Terminal
- Cable length: 1 m

Control Module

Dimensions (Unit mm)

CAD B991

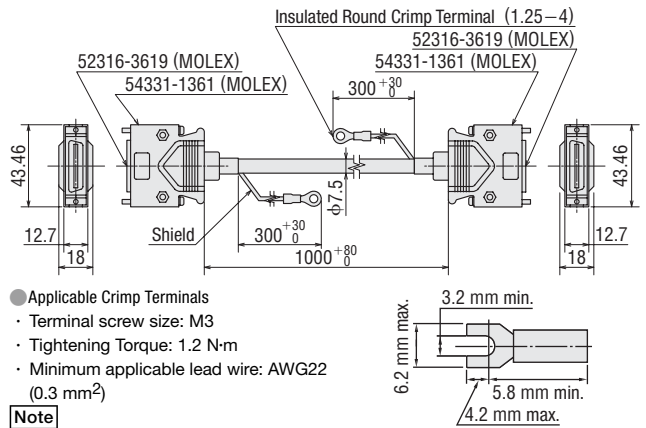


Terminal Block Pin No.

19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

Product Line

Product Line	Product Name	Applicable Drivers	Length L (m)
36 Poles	CC36T10E	Pulse Input For CN5 (36 pins)	1



- Applicable Crimp Terminals
- Terminal screw size: M3
- Tightening Torque: 1.2 N·m
- Minimum applicable lead wire: AWG22 (0.3 mm²)

Note

- Round terminals cannot be used.

4 General-Purpose Cables (RoHS)

This shielded cable has a half-pitch connector at one end of the cable for easy connecting to the driver.

At the other end, lead wires drawn up sequentially in 1.27 mm pitch are laminated, which is convenient for crimp connector.

The cable has easy-to-use ground wires at both ends.

Note

- Note that as the length of the pulse line between the driver and controller increases, the maximum transmission frequency decreases.
- Install a connector that matches the controller you are using to the other end of the cable.

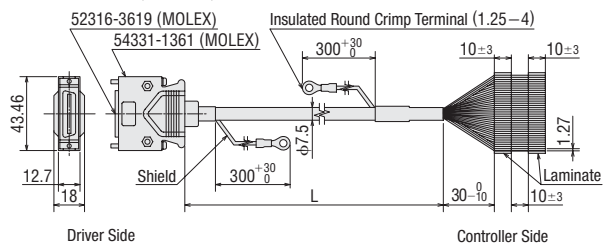
Product Line

Product Name	Applicable Drivers	Length L (m)
CC36D1E	For pulse input CN5 (36 pins)	1
CC36D2E		2



Dimensions (Unit mm)

Conductor: AWG28 (0.08 mm²)



5 RS-485 Communication Cables (RoHS)

This cable is used to link drivers in multi-axis operations with the built-in controller type. It also connects the network converter to the driver.



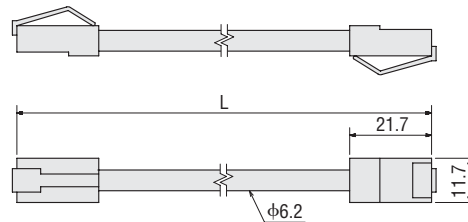
Product Line

Product Name	Length L (m)
CC001-RS4	0.1
CC002-RS4	0.25

6 Communication Cables for FLEX (RoHS)

This cable is convenient to connect the FLEX-compatible products with various devices for performing Modbus control with RS-485. An end of the cable consists of separate wires with crimp terminal, suitable for connection with the PLC panel and various devices.

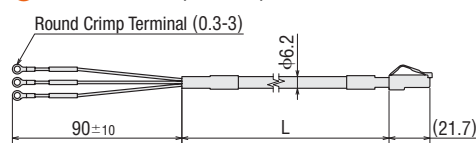
Dimensions (Unit mm)



Product Line

Product Name	Length L (m)
CC02FLT	2
CC05FLT	5

Dimensions (Unit mm)



7 General-Purpose Cables (RoHS)

General-purpose multi-core cables provide convenient connection between a driver and programmable controller.

Note

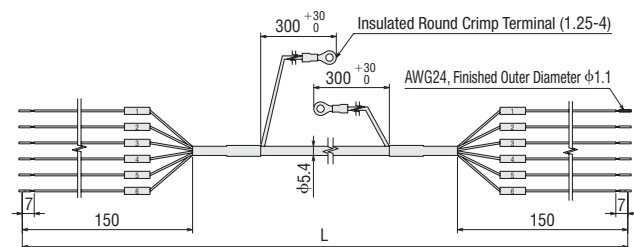
Note that as the length of the pulse line between the driver and controller increases, the maximum transmission frequency decreases.

Product Line

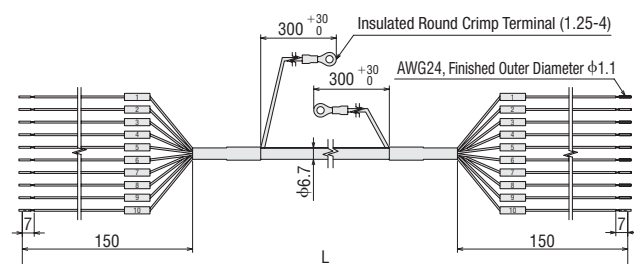
Product Name	Number of Conductors	Length L (m)
CC06D005B-1	6	0.5
CC06D010B-1		1.0
CC06D015B-1		1.5
CC06D020B-1	2.0	
CC10D005B-1	10	0.5
CC10D010B-1		1.0
CC10D015B-1		1.5
CC10D020B-1		2.0

Dimensions (Unit mm)

CC06D□□□B-1



CC10D□□□B-1



Overview,
Product
Series

FLEX
Compatible
Products

5-Phase
Stepping
Motor and
Driver
Packages

AC Input
RKII

AC Input
RK

DC Input
CRK

2-Phase
Stepping
Motor and
Driver
Packages

DC Input
CMK

Closed Loop
Motor and
Driver
Packages
αSTEP

AC Input
High-
Efficiency
AR

AC Input
High-
Efficiency
ARL

DC Input
High-
Efficiency
AR

Stepping
Motors

High Torque
2-Phase
PKP

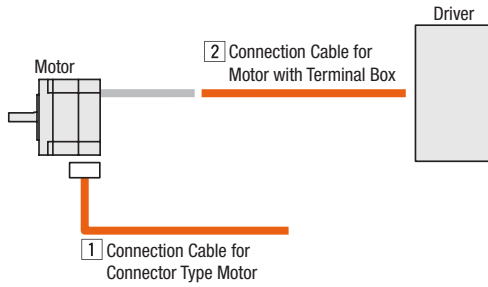
2-Phase
PK

5-Phase
PK

Accessories

Cables for 2-Phase Stepping Motors

Cable System Configuration



1 Connection Cables (RoHS)



Lead wire type connection cables with a connector crimped, convenient for connector-coupled motors, are available. They eliminate the need for assembling the lead wire and connector. (Connection cable (0.6 m) is included with each connector-coupled motor and driver package.)

Product Line

Product Name	Applicable Product	Length m	Conductor AWG
LC2U06A	PKP223U, PKP224U, PKP225U	0.6	24 (0.2 mm ²)
LC2U10A		1	
LC2U06B	PKP233U, PKP235U PKP243U, PKP244U PKP245U, PKP246U PKE243, PKE244, PKE245	0.6	
LC2U10B		1	
LC2U06C	PKP264U, PKP266U, PKP268U	0.6	22 (0.3 mm ²)
LC2U10C		1	
LC2B06A	PKP223D, PKP224D, PKP225D	0.6	24 (0.2 mm ²)
LC2B06B	PKP233D, PKP235D PKP243D, PKP244D PKP245D, PKP246D PKE243D, PKE244D, PKE245D	0.6	
LC2B06C		PKP264D, PKP266D, PKP268D	

The product names of the applicable motors are described with text by which the product name can be identified.

2 Motor Cable for Terminal Box Type Motor (RoHS)



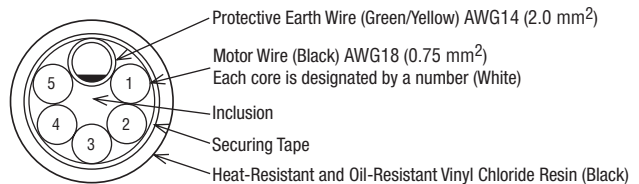
This cable is used to connect the motor with the terminal box and driver. (The cable includes a protective earth wire.)

This cable can also be used with accessories besides the motor with terminal box.

Product Line

Product Name	Length m	Number of Conductors
CC03PKT	3	6

- Conductor Configuration: 6
- Size: Motor wire AWG18 (0.75 mm²), protective earth wire AWG14 (2.0 mm²)
- Finished Outer Diameter: φ12 mm
- Cable Rating: 105°C 600 V
- Outer Sheath: Heat-resistant and oil-resistant vinyl chloride resin
- Applicable Standards: UL 758 (AWM) VW-1, UL Style 2586



3 Motor Connector Sets (RoHS)

A set of connector housings and contacts for use with connector-coupled motors.

Product Line

Product Name	Applicable Product
CS2U30A	PKP223, PKP224, PKP225
CS2U30B	PKP233, PKP235, PKP243 PKP244, PKP245, PKP246 PKE243, PKE244, PKE245

- Each package contains enough housings and contacts for 30 motors. Please specify the number of packages when ordering.



Specifications

Product Name	Connector Housing	Contact	Applicable Crimp Tool	Manufacturer	Applicable Cable
CS2U30A	51065-0600	50212-8100	57176-5000	MOLEX	AWG30 to 24 (0.05 to 0.2 mm ²) Outer Sheath Diameter φ1.4 mm or less Strip length: 1.3 to 1.8 mm
CS2U30B	51103-0600	50351-8100	57295-5000		AWG28 to 22 (0.08 to 0.3 mm ²) Outer Sheath Diameter φ1.15 to 1.8 mm Strip length: 2.3 to 2.8 mm

Note

- The crimp tool is not included. Please provide separately.

Flexible Couplings

A flexible coupling ideal for your motor is available. Once you have decided on a type and/or applications of motor/gear, you can select the recommended size of coupling easily. All motor shaft diameters of stepping motor packages are available (including geared motors).



Selecting a Coupling

Coupling Type	Motor Type	Standard, High-Torque High Speed High Resolution	TH Geared, PS Geared, Harmonic Geared, SH Geared	Application
MC Couplings		⊙	—	High positioning accuracy
MCS Couplings		○	⊙	High strength and high positioning accuracy

Types and Features of Couplings

MC Couplings

This is a slit-type one-piece coupling. Its high torsional rigidity and low inertia is ideal for applications where high-speed positioning and high response control are needed.

Features

- No backlash.
- Torsional rigidity is high and responsiveness is excellent.
- Low-inertia.
- Set screw type and clamp type are available.



MCS Couplings

This three-piece coupling adopts an aluminum alloy hub and a resin spider. The simple construction ensures that the high torque generated by a geared type can be transmitted reliably. The proper elasticity of the spider suppresses motor vibration. Technical reference → Page H-53

Features

- High strength (available for geared motor) has been achieved.
- A spider (Material: polyurethane) controls the vibration generated by the motor.
- No backlash.



Overview,
Product
Series

FLEX
Compatible
Products

5-Phase
Stepping
Motor and
Driver
Packages

AC Input
RKII

AC Input
RK

DC Input
CRK

2-Phase
Stepping
Motor and
Driver
Packages

DC Input
CMK

Closed Loop
Motor and
Driver
Packages
αSTEP

AC Input
High-
Efficiency
AR

AC Input
High-
Efficiency
ARL

DC Input
High-
Efficiency
AR

Stepping
Motors

High Torque
2-Phase
PKP

2-Phase
PK

5-Phase
PK

Accessories

MC Couplings RoHS

Cables

Couplings

Mounting Brackets

Clean Dampers

Control Module

Data Setting Software

Battery Set

Regeneration Unit



Set Screw Type



Clamp Type

Product Line

Set Screw Type

Product Name
MC12 □ S
MC16 □ S
MC20 □ S
MC25 □ S
MC32 □ S
MC40 □ S
MC50 □ S

Clamp Type

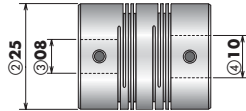
Product Name
MC12 □ C2
MC16 □ C2
MC20 □ C2
MC25 □ C2
MC32 □ C2
MC40 □ C2
MC50 □ C2

● 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 Coupling
②	Outer Diameter of Coupling
③	Inner Diameter d1 (Smaller side) (06A represents $\phi 6.35$ mm)
④	Inner Diameter d2 (Larger side) (06A represents $\phi 6.35$ mm)
⑤	Connection Method S :Set Screw Type C2 :Clamp 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.

Selecting a Coupling

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

Example) Package Name: **RKS566AC-1** Driven Shaft Diameter: $\phi 8$ Connection Method: Set Screw Type

1. The coupling type that matches **RKS566AC-1** from the coupling selection table is **MC25**.
2. The inner diameter of the coupling according to the motor shaft will be **10** ($\phi 10$), and will be **8** ($\phi 8$) according to the driven shaft diameter.
3. According to the coupling product name, smaller inner diameters come before larger ones and the connection method is the set screw type, thus the coupling product name will be **MC250810S**.

● When the inner diameter is $\phi 6.35$, the number is **06A**. For example, when the coupling type is **MC25**, the motor shaft diameter is **10** ($\phi 10$), and the driven shaft diameter is **06A** ($\phi 6.35$), the coupling product name will be **MC2506A10C2**.

Coupling Selection Table

● RKII Series, RK Series, CRK Series, 5-Phase Stepping Motors

Type	Applicable Product		Coupling Type	Motor Shaft Diameter	Driven Shaft Diameter mm											
	Frame Size	Product Name			03	04	05	06	06A	08	10	12	14	16		
					$\phi 3$	$\phi 4$	$\phi 5$	$\phi 6$	$\phi 6.35$	$\phi 8$	$\phi 10$	$\phi 12$	$\phi 14$	$\phi 16$		
High-Torque Type High-Resolution Type	20 mm	CRK513	MC12	04	$\phi 4$	○	◎	◎								
	28 mm	CRK523, CRK524, CRK525	MC12	05	$\phi 5$		◎	◎	○							
	42 mm	CRK544	MC16	05	$\phi 5$		○	○	◎		○					
		CRK546	MC20	05	$\phi 5$			○	◎		◎					
	60 mm	CRK564, CRK566	MC25	08	$\phi 8$				◎	◎	◎	○				
		CRK569	MC32	10	$\phi 10$					◎	◎	◎	◎	◎		
Standard Type Standard Type with Terminal Box	42 mm	RK543, RK544, RK545 CRK543, CRK544, CRK545 PK543, PK544, PK545	MC16	05	$\phi 5$		○	○	◎		○					
		RKS543, RKS544, RKS545	MC16	06	$\phi 6$		○	◎	○		○					
	60 mm	RK564, RK566, RK569 CRK564, CRK566, CRK569 PK564, PK566, PK569	MC25	08	$\phi 8$				◎	◎	◎	◎	○			
		RKS564, RKS566, RKS569	MC25	10	$\phi 10$				◎	◎	◎	◎	○			
	85 mm	RKS596 RK596, RK599 PK596, PK599	MC32	14	$\phi 14$							◎	◎	◎	○	
	RKS599, RK5913 RK5913 PK5913	MC40	14	$\phi 14$							◎	◎	◎	◎		

● The product names of the applicable ones are described with text by which the series name can be identified.

◎ Common for both the set screw type and clamp type
○ Only for set screw type

CMK Series, 2-Phase Stepping Motors

Type	Applicable Product		Coupling Type	Motor Shaft Diameter mm		Driven Shaft Diameter mm											
	Frame Size	Product Name				03	04	05	06	06A	08	10	12	14	16		
						φ3	φ4	φ5	φ6	φ6.35	φ8	φ10	φ12	φ14	φ16		
High-Torque Type	28 mm	CMK223, CMK224, CMK225	MC12	05	φ5		⊙	⊙	○								
	35 mm	CMK233, CMK235	MC12	05	φ5		⊙	⊙	○								
	42 mm	CMK244	MC16	05	φ5		○	○	⊙		○						
		CMK246	MC20	05	φ5			○	⊙		⊙						
	56.4 mm	CMK264	MC20	08	φ8			⊙	⊙	⊙	○						
		CMK266	MC25	08	φ8				⊙	⊙	⊙	○					
	60 mm	PK264, PK266	MC25	08	φ8				⊙	⊙	⊙	○					
PK267, PK269		MC32	08	φ8				⊙	⊙	⊙	○						
High-Torque and High-Efficiency Type	42 mm	PKE243	MC12	05	φ5		⊙	⊙	○								
		PKE244	MC16	05	φ5		○	○	⊙		○						
		PKE245	MC20	05	φ5			○	⊙		⊙						
High-Resolution Type	42 mm	CMK243, CMK244, CMK245 PK243, PK244, PK245	MC12	05	φ5		⊙	⊙	○								
	56.4 mm	CMK264, PK264	MC20	06A	φ6.35				⊙		○						
		CMK266, CMK268 PK266, PK268	MC25	06A	φ6.35				⊙		⊙						
Standard Type Standard Type with Terminal Box	20 mm	PKP213, PKP214	MC12	04	φ4	○	⊙	⊙									
	28 mm	PKP223, PKP224, PKP225	MC12	05	φ5		⊙	⊙	○								
	35 mm	PKP233, PKP235	MC12	05	φ5		⊙	⊙	○								
	42 mm	CMK243, CMK244 PKP243, PK243, PK244	MC12	05	φ5			⊙	⊙	○							
			MC16	05	φ5			○	○	⊙		○					
			MC20	05	φ5				○	⊙		⊙					
	50 mm	CMK256, PK256 CMK258, PK258	MC20	06A	φ6.35				⊙		○						
			MC25	06A	φ6.35					⊙		⊙					
	56.4 mm	CMK264, PK264 PKP264	MC20	06A	φ6.35				⊙		○						
			MC20	08	φ8				⊙	⊙	⊙	○					
			MC25	06A	φ6.35					⊙		⊙					
	85 mm	PKP266 PKP268	MC25	08	φ8				⊙	⊙	⊙	○					
			MC32	08	φ8					⊙	⊙	⊙	○				
MC32			14	φ14							⊙	⊙	⊙	○			
85 mm	PK299, PK2913	MC40	14	φ14							⊙	⊙	⊙	○			
		MC40	14	φ14								⊙	⊙	⊙	○		

● The product names of the applicable ones are described with text by which the series name can be identified.

⊙ Common for both the set screw type and clamp type

○ Only for set screw type

AR Series

Type	Applicable Product		Coupling Type	Motor Shaft Diameter mm		Driven Shaft Diameter mm										
	Frame Size	Product Name				04	05	06	06A	08	10	12	14	16		
						φ4	φ5	φ6	φ6.35	φ8	φ10	φ12	φ14	φ16		
Standard Type	28 mm	AR24, AR26	MC12	05	φ5	⊙	⊙	○								
	42 mm	AR46	MC16	06	φ6	○	⊙	○		○						
	60 mm	AR66	MC25	10	φ10			⊙	⊙	⊙	○					
		AR69	MC32	10	φ10				⊙	⊙	⊙	○				
	85 mm	AR98	MC32	14	φ14						⊙	⊙	⊙	○		
AR911		MC40	14	φ14							⊙	⊙	⊙	○		

● The product names of the applicable ones are described with text by which the series name can be identified.

⊙ Common for both the set screw type and clamp type

○ Only for set screw type

Low-Speed Synchronous Motors SMK Series

Type	Applicable Product		Coupling Type	Motor Shaft Diameter mm		Driven Shaft Diameter mm									
	Frame Size	Product Name				04	05	06	08	10	12	14	16		
						φ4	φ5	φ6	φ8	φ10	φ12	φ14	φ16		
Round Shaft Type	42 mm	SMK014	MC12	05	φ5	⊙	⊙	○							
	56.4 mm	SMK237	MC25	06A	φ6.35			⊙	⊙	○					
		SMK5100 SMK5160	MC32	14	φ14						⊙	⊙	⊙	○	

● The product names of the applicable ones are described with text by which the series name can be identified.

⊙ Common for both the set screw type and clamp type

○ Only for set screw type

Overview,
Product
Series

FLEX
Compatible
Products

5-Phase
Stepping
Motor and
Driver
Packages

AC Input
RKII

AC Input
RK

DC Input
CRK

2-Phase
Stepping
Motor and
Driver
Packages

DC Input
CMK

Closed Loop
Motor and
Driver
Packages

αSTEP

AC Input
High-
Efficiency
AR

AC Input
High-
Efficiency
ARL

DC Input
High-
Efficiency
AR

Stepping
Motors

High Torque
2-Phase
PKP

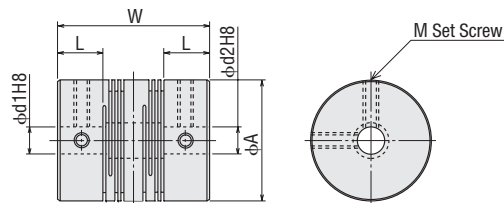
2-Phase
PK

5-Phase
PK

Accessories

Set Screw Type

Dimensions



Product Name	CAD
MC12□S	B499
MC16□S	B500
MC20□S	B501
MC25□S	B502
MC32□S	B503
MC40□S	B504
MC50□S	B505

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

Specifications

Product Name	Dimensions						Normal Torque [N·m]	Mass [g]	Inertia [kg·m ²]	Static Torsional Spring Constant [N·m/rad]	Permissible Eccentricity [mm]	Permissible Declination [°]	Permissible End Play [mm]											
	Outer Diameter φA [mm]	Length W [mm]	Shaft Hole Diameter d1H8 [mm]	Shaft Hole Diameter d2H8 [mm]	L [mm]	Screw Used M																		
MC120304S	12	18.5	3	4	5	M2.5	0.4	3.7	0.83×10 ⁻⁷	45	0.10	2	±0.3											
MC120404S			4	4																				
MC120405S			4	5																				
MC120505S			5	5																				
MC120506S			5	6																				
MC160405S	16	23	4	5	6.5	M3	0.5	8.1	3.3×10 ⁻⁷	80	0.10	2	±0.4											
MC160406S			4	6																				
MC160505S			5	5																				
MC160506S			5	6																				
MC160508S			5	8																				
MC160606S	16	23	6	6	6.5	M3	1.0	14	9×10 ⁻⁷	170	0.10	2	±0.4											
MC160608S			6	8																				
MC200505S			5	5																				
MC200506S			5	6																				
MC200508S			5	8																				
MC200606S	20	26	6	6	7.5	M3	1.0	14	9×10 ⁻⁷	170	0.10	2	±0.4											
MC200606AS			6	6.35																				
MC200608S			6	8																				
MC200610S			6	10																				
MC2006A08S			6.35	8																				
MC200808S			8	8																				
MC200810S			8	10																				
MC250506S			25	31										5	6	8.5	M4	2.0	27	26×10 ⁻⁷	380	0.15	2	±0.5
MC250606S														6	6									
MC250606AS														6	6.35									
MC250608S	6	8																						
MC250610S	6	10																						
MC2506A08S	6.35	8																						
MC2506A10S	6.35	10																						
MC250808S	8	8																						
MC250810S	8	10																						
MC250812S	8	12																						
MC251010S	10	10																						
MC251012S	10	12																						
MC320606AS	32	41			6	6.35	12	M4	4.0	60	96×10 ⁻⁷	500	0.15	2	±0.5									
MC320608S					6	8																		
MC3206A08S			6.35	8																				
MC3206A10S			6.35	10																				
MC320808S			8	8																				
MC320810S			8	10																				
MC320812S			8	12																				
MC321010S			10	10																				
MC321012S			10	12																				
MC321014S			10	14																				
MC321214S			12	14																				
MC321414S			14	14																				
MC321416S			14	16																				
MC401014S			40	56	10	14										17	M5	8.0	130	320×10 ⁻⁷	700	0.20	2	±0.5
MC401214S	12	14																						
MC401414S	14	14																						
MC401416S	14	16																						
MC501214S	50	71	12	14	21	M6	16.0	260	1000×10 ⁻⁷	1800	0.20	2	±0.5											
MC501414S			14	14																				
MC501416S			14	16																				
MC501418S			14	18																				

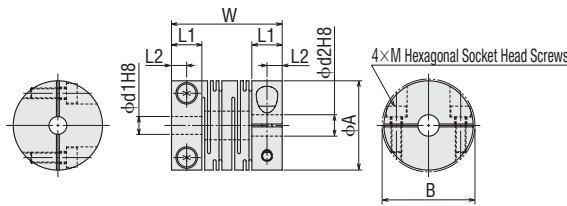
● The specifications above are the values when combined with Oriental Motor's stepping motor.

Clamp Type

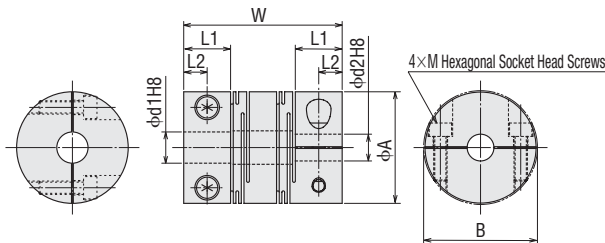


Dimensions

**MC12□C2, MC16□C2, MC20□C2,
MC25□C2, MC32□C2**



MC40□C2, MC50□C2



Product Name	CAD
MC12□C2	B506
MC16□C2	B507
MC20□C2	B508
MC25□C2	B509
MC32□C2	B510
MC40□C2	B511
MC50□C2	B512

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

Specifications

Product Name	Dimensions								Normal Torque [N·m]	Mass [g]	Inertia [kg·m ²]	Static Torsional Spring Constant [N·m/rad]	Permissible Eccentricity [mm]	Permissible Declination [°]	Permissible End Play [mm]
	Outer Diameter φA [mm]	Length W [mm]	Shaft Hole Diameter d1H8 [mm]	Shaft Hole Diameter d2H8 [mm]	L1 [mm]	L2 [mm]	B [mm]	Screw Used M							
MC120404C2	12	18.5	4	4	5	2.5	14.5	M2	0.4	3.6	0.78×10 ⁻⁷	45	0.10	2	±0.3
MC120405C2			4	5											
MC120505C2			5	5											
MC160506C2	16	23	5	6	6.5	3.25	17.5	M2.5	0.5	9.2	3.4×10 ⁻⁷	80	0.10	2	±0.4
MC200506C2			5	6											
MC200508C2	20	26	5	8	7.5	3.75	—	M2.5	1.0	16	9.1×10 ⁻⁷	170	0.10	2	±0.4
MC200606C2			6	6											
MC200606AC2			6	6.35											
MC200608C2			6	8											
MC2006A08C2			6.35	8											
MC200808C2			8	8											
MC250506C2			25	31											
MC250606C2	6	6													
MC250606AC2	6	6.35													
MC250608C2	6	8													
MC250610C2	6	10													
MC2506A08C2	6.35	8													
MC2506A10C2	6.35	10													
MC250808C2	8	8													
MC250810C2	8	10													
MC251010C2	10	10													
MC320606AC2	32	41	6	6.35	12	6	32.5	M4	4.0	64	97×10 ⁻⁷	500	0.15	2	±0.5
MC320608C2			6	8											
MC3206A08C2			6.35	8											
MC3206A10C2			6.35	10											
MC320808C2			8	8											
MC320810C2			8	10											
MC320812C2			8	12											
MC321010C2			10	10											
MC321012C2			10	12											
MC321014C2			10	14											
MC321214C2			12	14											
MC321414C2	14	14													
MC401014C2	40	56	10	14	17	8.5	41.5	M5	8.0	140	330×10 ⁻⁷	700	0.20	2	±0.5
MC401214C2			12	14											
MC401414C2			14	14											
MC401416C2			14	16											
MC501214C2	50	71	12	14	21	10.5	51	M6	16.0	270	1000×10 ⁻⁷	1800	0.20	2	±0.5
MC501414C2			14	14											
MC501416C2			14	16											
MC501418C2			14	18											

● The specifications above are the values when combined with Oriental Motor's stepping motor.

MCS Couplings RoHS



Product Line

Product Name
MCS14 <input type="checkbox"/>
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.

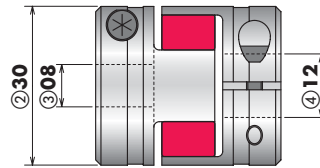
Product Number Code

MCS 30 08 12

① ② ③ ④

①	MCS Coupling
②	Outer Diameter of Coupling
③	Inner Diameter d1 (Smaller side) (F04 represents $\phi 6.35$ mm)
④	Inner Diameter d2 (Larger side) (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.



Selecting a Coupling

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

Example) Package Name: **AR46AC-PS10-1** Driven Shaft Diameter: $\phi 12$

1. The coupling type that matches **AR46AC-PS10-1** from the coupling selection table is **MCS30**.
2. The inner diameter of the coupling according to the motor shaft will be **10** ($\phi 10$), and will be **12** ($\phi 12$) according to the driven shaft diameter.
3. In the coupling product name, smaller inner diameters come before larger ones and thus the coupling product name will be **MCS301012**.

● When the inner diameter is $\phi 6.35$, the number is **F04**. For example, when the coupling type is **MCS30**, the motor shaft diameter is **10** ($\phi 10$), and the driven shaft diameter is **F04** ($\phi 6.35$), the coupling product name will be **MCS30F0410**.

Coupling Selection Table

● RK Series, CRK Series

Type	Applicable Product			Coupling Type	Motor Shaft Diameter mm	Driven Shaft Diameter mm																
	Frame Size	Product Name	Gear Ratio			04	05	06	F04	08	10	12	14	15	16	18	20	22	24	25		
						$\phi 4$	$\phi 5$	$\phi 6$	$\phi 6.35$	$\phi 8$	$\phi 10$	$\phi 12$	$\phi 14$	$\phi 15$	$\phi 16$	$\phi 18$	$\phi 20$	$\phi 22$	$\phi 24$	$\phi 25$		
TH Geared Type	28 mm	CRK523-T <input type="checkbox"/>	7.2, 10, 20, 30	MCS14	05	$\phi 5$	●	●	●													
	42 mm	RK543-T <input type="checkbox"/>	3.6, 7.2, 10	MCS20	06	$\phi 6$		●	●	●	●	●	●	●	●	●	●	●	●	●		
		CRK543-T <input type="checkbox"/>	20, 30	MCS30	06	$\phi 6$			●	●	●	●	●	●	●	●	●	●	●	●		
	60 mm	RK564-T <input type="checkbox"/>	3.6, 7.2	MCS30	08	$\phi 8$			●	●	●	●	●	●	●	●	●	●	●	●		
CRK564-T <input type="checkbox"/>		10, 20, 30	MCS40	08	$\phi 8$				●	●	●	●	●	●	●	●	●	●	●			
90 mm	RK596-T <input type="checkbox"/>	3.6, 7.2, 10, 20, 30	MCS55	12	$\phi 12$					●	●	●	●	●	●	●	●	●	●			
PS Geared Type	28 mm	CRK523-PS <input type="checkbox"/>	5, 7.2, 10	MCS20	08	$\phi 8$		●	●	●	●	●	●	●	●	●	●	●	●			
	42 mm	RK545-PS <input type="checkbox"/>	5	MCS20	10	$\phi 10$		●	●	●	●	●	●	●	●	●	●	●	●	●		
		CRK545-PS <input type="checkbox"/>	7.2, 10	MCS30	10	$\phi 10$			●	●	●	●	●	●	●	●	●	●	●	●		
		RK543-PS <input type="checkbox"/>	25, 36, 50	MCS40	10	$\phi 10$				●	●	●	●	●	●	●	●	●	●	●		
	60 mm	RK566-PS <input type="checkbox"/>	5	MCS40	12	$\phi 12$					●	●	●	●	●	●	●	●	●	●		
		CRK566-PS <input type="checkbox"/>	7.2, 10	MCS55	12	$\phi 12$						●	●	●	●	●	●	●	●	●		
90 mm	RK599-PS <input type="checkbox"/>	5	MCS55	18	$\phi 18$							●	●	●	●	●	●	●	●			
	CRK599-PS <input type="checkbox"/>	7.2, 10	MCS65	18	$\phi 18$								●	●	●	●	●	●	●			
	RK596-PS <input type="checkbox"/>	25, 36, 50	MCS65	18	$\phi 18$									●	●	●	●	●	●			
Harmonic Geared Type	20 mm	CRK513-H <input type="checkbox"/>	50, 100	MCS14	05	$\phi 5$	●	●	●													
	30 mm	CRK523-H <input type="checkbox"/>		MCS30	08	$\phi 8$			●	●	●	●	●	●	●	●	●	●	●	●		
	42 mm	RK543-H <input type="checkbox"/>		MCS40	10	$\phi 10$				●	●	●	●	●	●	●	●	●	●	●	●	
		CRK543-H <input type="checkbox"/>		MCS55	12	$\phi 12$						●	●	●	●	●	●	●	●	●	●	
	90 mm	RK596-H <input type="checkbox"/>		MCS65	18	$\phi 18$										●	●	●	●	●		

● A number indicating the gear ratio is specified in the box in the product name.
 ● The product names of the applicable ones are described with text by which the series name can be identified.

CMK Series, 2-Phase Stepping Motors

Applicable Product				Coupling Type	Motor Shaft Diameter mm	Driven Shaft Diameter mm															
Type	Frame Size	Product Name	Gear Ratio			04	05	06	F04	08	10	12	14	15	16	18	20	22	24		
						φ4	φ5	φ6	φ6.35	φ8	φ10	φ12	φ14	φ15	φ16	φ18	φ20	φ22	φ24		
SH Geared Type	28 mm	CMK223-SG□ PKP223-SG□	7.2, 9, 10 18, 36	MCS14	05	φ5	●	●	●												
	42 mm	CMK243-SG□ PKP243-SG□	3.6, 7.2	MCS14	05	φ5	●	●	●												
			9, 10, 18 36, 50, 100	MCS20	05	φ5		●	●	●	●	●									
	60 mm	CMK264-SG□ PKP264-SG□	3.6, 7.2, 9, 10	MCS30	08	φ8			●	●	●	●	●	●	●	●	●				
18, 36, 50, 100			MCS40	08	φ8			●	●	●	●	●	●	●	●	●	●				
90 mm	PK296-SG□	3.6, 7.2, 9	MCS40	12	φ12				●	●	●	●	●	●	●	●	●				
		10, 18, 36	MCS55	12	φ12						●	●	●	●	●	●	●	●			

- A number indicating the gear ratio is specified in the box □ in the product name.
- The product names of the applicable ones are described with text by which the series name can be identified.

AR Series

Applicable Product				Coupling Type	Motor Shaft Diameter mm	Driven Shaft Diameter mm															
Type	Frame Size	Product Name	Gear Ratio			04	05	06	F04	08	10	12	14	15	16	18	20	22	24	25	
						φ4	φ5	φ6	φ6.35	φ8	φ10	φ12	φ14	φ15	φ16	φ18	φ20	φ22	φ24	φ25	
TH Geared Type	28 mm	AR24-T□	7.2, 10 20, 30	MCS14	05	φ5	●	●	●												
	42 mm	AR46-T□	3.6, 7.2 10	MCS20	06	φ6		●	●	●	●	●									
			20, 30	MCS30	06	φ6			●	●	●	●	●	●	●						
	60 mm	AR66-T□	3.6, 7.2	MCS30	08	φ8			●	●	●	●	●	●							
10, 20, 30			MCS40	08	φ8				●	●	●	●	●	●	●	●	●				
90 mm	AR98-T□	3.6, 7.2, 10 20, 30	MCS55	12	φ12					●	●	●	●	●	●	●	●	●			
PS Geared Type	28 mm	AR24-PS□	5, 7.2, 10	MCS20	08	φ8		●	●	●	●	●	●	●							
	42 mm	AR46-PS□	5, 7.2, 10	MCS30	10	φ10			●	●	●	●	●	●	●	●	●				
			25, 36, 50	MCS40	10	φ10				●	●	●	●	●	●	●	●	●			
	60 mm	AR66-PS□	5, 7.2	MCS40	12	φ12				●	●	●	●	●	●	●	●	●			
10, 25 36, 50			MCS55	12	φ12						●	●	●	●	●	●	●	●			
90 mm	AR98-PS□	5, 7.2, 10 25, 36, 50	MCS65	18	φ18								●	●	●	●	●				
Harmonic Geared Type	30 mm	AR24-H□	50, 100	MCS30	08	φ8		●	●	●	●	●	●	●							
	42 mm	AR46-H□	50, 100	MCS40	10	φ10			●	●	●	●	●	●	●	●	●				
	60 mm	AR66-H□	50, 100	MCS55	12	φ12					●	●	●	●	●	●	●	●			
	90 mm	AR98-H□	50, 100	MCS65	18	φ18								●	●	●	●	●			

- A number indicating the gear ratio is specified in the box □ in the product name.
- The product names of the applicable ones are described with text by which the series name can be identified.

Low-Speed Synchronous Motors SMK Series (Geared Motor)

Applicable Product			Coupling Type	Motor Shaft Diameter mm	Driven Shaft Diameter mm						
Product Name	Gear Ratio				04	05	06	F04	08	10	
					φ4	φ5	φ6	φ6.35	φ8	φ10	
SMK0A-□	3, 3.6, 7.5 9, 15, 18 30, 36, 50		MCS14	05	φ5	●	●	●			
	60, 100, 120		MCS20	05	φ5		●	●	●	●	●

- A number indicating the gear ratio is specified in the box □ in the product name.
- The product names of the applicable ones are described with text by which the series name can be identified.

Brushless Motors

Applicable Product			Coupling Type	Motor Shaft Diameter mm	Driven Shaft Diameter mm									
Type	Product Name				5	6	F04	8	10	12	14	15	16	
					φ5	φ6	φ6.35	φ8	φ10	φ12	φ14	φ15	φ16	
Round Shaft Type	BX230		MCS20	8	φ8	●	●	●	●	●				
	BX460		MCS20	10	φ10	●	●	●	●	●				
	BX5120		MCS30	12	φ12		●	●	●	●	●			
	BX6200, BX6400		MCS30	14	φ14		●	●	●	●	●	●		●

- The product names of the applicable ones are described with text by which the series name can be identified.

Overview, Product Series

FLEX Compatible Products

5-Phase Stepping Motor and Driver Packages

AC Input RKI

AC Input RK

DC Input CRK

2-Phase Stepping Motor and Driver Packages

DC Input CMK

Closed Loop Motor and Driver Packages *αSTEP*

AC Input High-Efficiency AR

AC Input High-Efficiency ARL

DC Input High-Efficiency AR

Stepping Motors

High Torque 2-Phase PKP

2-Phase PK

5-Phase PK

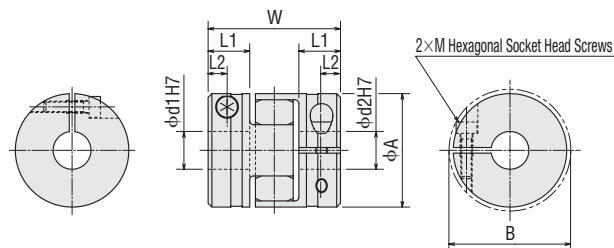
Accessories

Specifications

	Product Name	Dimensions								Normal Torque*	Mass	Inertia	Static Torsional Spring Constant	Permissible Eccentricity	Permissible Declination	Permissible End Play	
		Outer Diameter ϕA [mm]	Length W [mm]	Shaft Hole Diameter d1H7 [mm]	Shaft Hole Diameter d2H7 [mm]	L1 [mm]	L2 [mm]	B [mm]	Screw Used M								Key Slot Tolerance b/t [mm]
Cables																	
Couplings	MCS140404	14	22	4	4	7	3.5	16.5	M2	-	2.0 (0.5)	6.7	0.184×10^{-6}	22.9	0.06	0.9	$+0.6_0$
	MCS140405			4	5												
	MCS140406			4	6												
Mounting Brackets	MCS140505			5	5												
	MCS140506			5	6												
	MCS140606			6	6												
Clean Dampers	MCS200505	20	30	5	5	10	5	23.4	M2.5	-	5.0 (1.2)	19.8	1.059×10^{-6}	51.6	0.08	0.9	$+0.8_0$
	MCS200506			5	6												
	MCS2005F04			5	6.35												
	MCS200508			5	8												
	MCS200510			5	10												
Control Module	MCS200606			6	6												
	MCS2006F04			6	6.35												
	MCS200608			6	8												
	MCS200610			6	10												
Data Setting Software	MCS20F04F04			6.35	6.35												
	MCS20F0408			6.35	8												
	MCS20F0410			6.35	10												
	MCS200808			8	8												
Battery Set	MCS200810			8	10												
	MCS201010	10	10														
Regeneration Unit	MCS300606	30	35	6	6	11	5	32.2	M3	-	12.5 (3.0)	44.6	6.057×10^{-6}	171.9	0.09	0.9	$+1.0_0$
	MCS3006F04			6	6.35												
	MCS300608			6	8												
	MCS300610			6	10												
	MCS300612			6	12												
	MCS300614			6	14												
	MCS300615			6	15												
	MCS300616			6	16												
	MCS30F04F04			6.35	6.35												
	MCS30F0408			6.35	8												
	MCS30F0410			6.35	10												
	MCS300808			8	8												
	MCS300810			8	10												
	MCS300812			8	12												
	MCS300814			8	14												
	MCS300815			8	15												
	MCS300816			8	16												
	MCS301010			10	10												
	MCS301012			10	12												
	MCS301014			10	14												
	MCS301015			10	15												
	MCS301016			10	16												
	MCS301212			12	12												
	MCS301214			12	14												
	MCS301414	14	14														
	MCS301415	14	15														
	MCS301416	14	16														

*The normal torque indicated in () is an assumed value at a safety factor (4.2 times) selected according to the load.

Dimensions

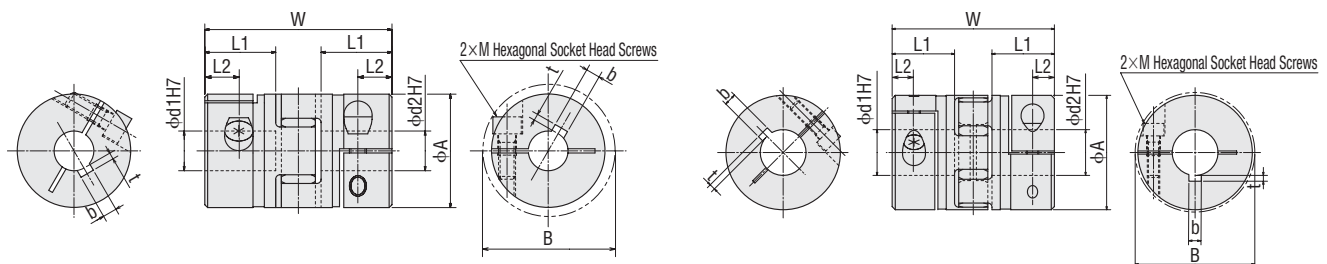


Product Name	CAD
MCS14□	B493
MCS20□	B494
MCS30□	B495

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

Product Name	Dimensions									Normal Torque*	Mass	Inertia	Static Torsional Spring Constant	Permissible Eccentricity	Permissible Declination	Permissible End Play
	Outer Diameter ϕA [mm]	Length W [mm]	Shaft Hole Diameter $\phi 1H7$ [mm]	Shaft Hole Diameter $\phi 2H7$ [mm]	L1 [mm]	L2 [mm]	B [mm]	Screw Used M	Key Slot Tolerance b/t [mm]							
MCS400808	40	66	8	8	25	12	46	M6		17.0 (4.0)	139	42.29×10^{-6}	859.5	0.06	0.9	$+1.2_0$
MCS400810			8	10												
MCS400812			8	12												
MCS400814			8	14												
MCS400815			8	15												
MCS400816			8	16												
MCS400818			8	18												
MCS400820			8	20												
MCS401010			10	10												
MCS401012			10	12												
MCS401014			10	14												
MCS401015			10	15												
MCS401016			10	16												
MCS401018			10	18												
MCS401020			10	20												
MCS401212			12	12												
MCS401214	12	14														
MCS401215	12	15														
MCS401216	12	16														
MCS401218	12	18														
MCS401220	12	20														
MCS551212	55	78	12	12	30	10.5	57	M6	$\phi 14$ b : 5 ± 0.015 t : $1^{+0.1}_0$	60.0 (14.3)	282	109.1×10^{-6}	2063	0.10	0.9	$+1.4_0$
MCS551214			12	14												
MCS551215			12	15												
MCS551216			12	16												
MCS551218			12	18												
MCS551220			12	20												
MCS551222			12	22												
MCS551224			12	24												
MCS551414			14	14												
MCS551415			14	15												
MCS551416			14	16												
MCS551418			14	18												
MCS551420			14	20												
MCS551422			14	22												
MCS551424			14	24												
MCS551518			15	18												
MCS551618	16	18														
MCS551818	18	18														
MCS551820	18	20														
MCS551822	18	22														
MCS551824	18	24														
MCS651618	65	90	16	18	35	11.5	73	M8		160.0 (38.1)	535	417.1×10^{-6}	3438	0.11	0.9	$+1.5_0$
MCS651818			18	18												
MCS651820			18	20												
MCS651822			18	22												
MCS651824			18	24												
MCS651825			18	25												
MCS652020			20	20												
MCS652022			20	22												
MCS652024	20	24														
MCS652025	20	25														

*The normal torque indicated in () is an assumed value at a safety factor (4.2 times) selected according to the load.



Product Name	CAD
MCS40 □	B496

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

Product Name	CAD
MCS55 □	B497
MCS65 □	B498

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

Motor Mounting Brackets RoHS

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



Product Line

● Standard Type, High-Torque Type, High-Speed Type, High-Resolution Type

Material: Aluminum Alloy Surface Treatment: Painting

Product Name	Applicable Product				
	5-Phase Stepping Motor and Driver Packages	2-Phase Stepping Motor and Driver Packages	Stepping Motor and Driver Packages <i>αSTEP</i>	Stepping Motors	Low-Speed Synchronous Motors SMK Series
PAFOP	RKS543, RKS544 RKS545 RK543, RK544 RK545	CMK243, CMK244 CMK245, CMK246	AR46	PKP243, PKP244 PKP245, PKP246 PKE243, PKE244 PKE245 PK243, PK244 PK245 PK543, PK544 PK545	SMK014
PALOP	CRK543, CRK544 CRK545, CRK546				
PAL2P-5	RKS564, RKS566 RKS569 RK564, RK566 RK569 CRK564, CRK566 CRK569	—	AR66, AR69	PK564, PK566 PK569	—
PAL2P-2	—	CMK264, CMK266 CMK268	—	PKP264, PKP266 PKP268 PK264, PK266 PK267, PK268 PK269	SMK237
PAL4P-5	RKS596, RKS599 RKS5913 RK596, RK599 RK5913	—	AR98, AR911	PK596, PK599 PK5913	—
PAL4P-2	—	—	—	PK296, PK299 PK2913	SMK5100 SMK5160

● The product names of the applicable ones are described with text by which the series name can be identified.

Note

● These products cannot be used for the geared type or gearheads.

Geared Type

Material **SOL**: Aluminum Alloy, **PLA**: SS400 Surface Treatment **SOL**: Painting, **PLA**: Electroless Nickel Plating

Product Name	Applicable Product			
	5-Phase Stepping Motor and Driver Packages	2-Phase Stepping Motor and Driver Packages	Stepping Motor and Driver Packages <i>αSTEP</i>	Stepping Motors
SOL0A	—	CMK243-SG□	—	PKP243-SG□ PK243-SG□
SOL0B	RK543-T□ CRK543-T□	—	AR46-T□	—
SOL2A	RK564-T□ CRK564-T□	CMK264-SG□	AR66-T□	PKP264-SG□ PK264-SG□
SOL5A	—	—	—	PK296-SG□
SOL5B	RK596-T□	—	AR98-T□	—
PLA60G	RK564-PS□ CRK564-PS□	—	AR66-PS□	—
PLA60H	RK564-H□ CRK564-H□	—	AR66-H□	—
PLA90G	RK599-PS□ RK596-PS□	—	AR98-PS□	—
PLA90H	RK596-H□	—	AR98-H□	—

● A number indicating the gear ratio is entered where the box □ is located within the product name.

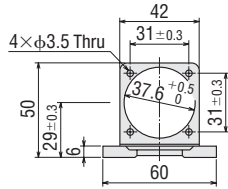
● The product names of the applicable ones are described with text by which the series name can be identified.

Dimensions (Unit mm)

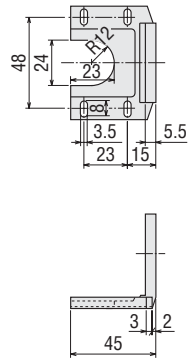
PALOP

Mass: 35 g

CAD B139



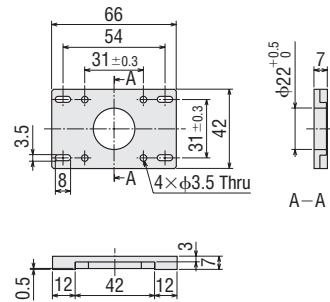
● Installation Screws: M3 Length 10 mm
4 pieces included



PAFOP

Mass: 30 g

CAD B140

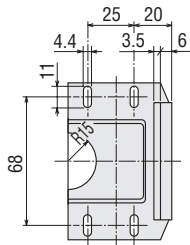


● Installation Screws: M3 Length 7 mm
4 pieces included

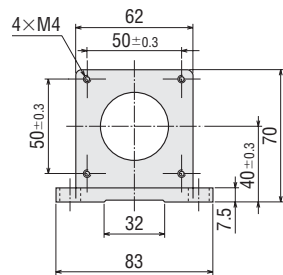
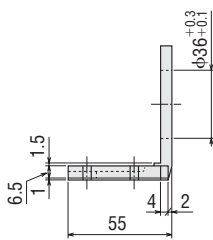
PAL2P-5

Mass: 110 g

CAD B143



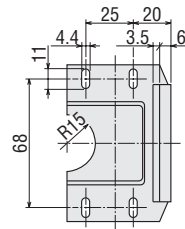
● Installation Screws: M4 Length 12 mm
4 pieces included



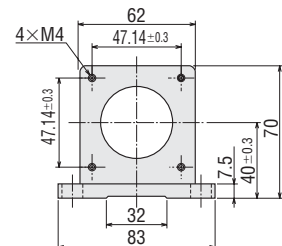
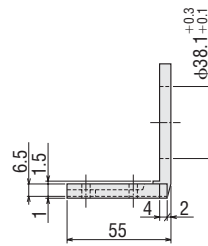
PAL2P-2

Mass: 110 g

CAD B144



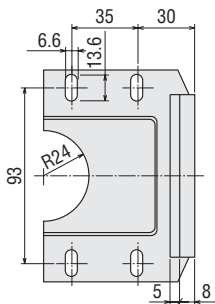
● Installation Screws: M4 Length 12 mm
4 pieces included



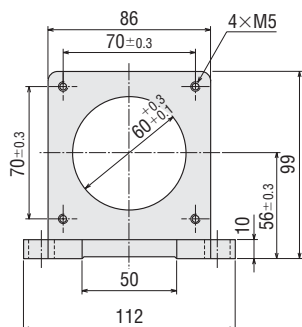
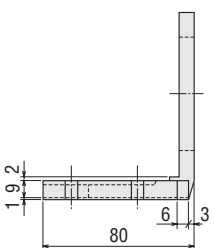
PAL4P-5

Mass: 250 g

CAD B145



● Installation Screws: M5 Length 16 mm
4 pieces included



Overview,
Product
Series

FLEX
Compatible
Products

5-Phase
Stepping
Motor and
Driver
Packages

AC Input
RKII

AC Input
RK

DC Input
CRK

2-Phase
Stepping
Motor and
Driver
Packages

DC Input
CMK

Closed Loop
Motor and
Driver
Packages
αSTEP

AC Input
High-
Efficiency
AR

AC Input
High-
Efficiency
ARL

DC Input
High-
Efficiency
AR

Stepping
Motors

High Torque
2-Phase
PKP

2-Phase
PK

5-Phase
PK

Accessories

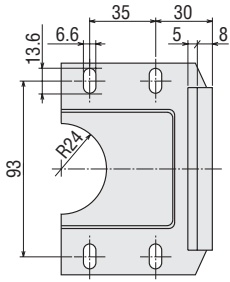
Dimensions (Unit mm)

Cables

PAL4P-2

Mass: 250 g

CAD B146



Couplings

Mounting Brackets

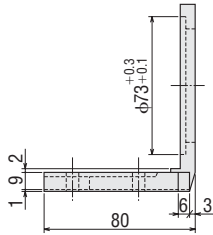
Clean Dampers

Control Module

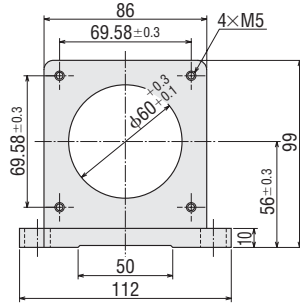
Data Setting Software

Battery Set

Regeneration Unit



● Installation Screws: M5 Length 16 mm
4 pieces included



SOLOA

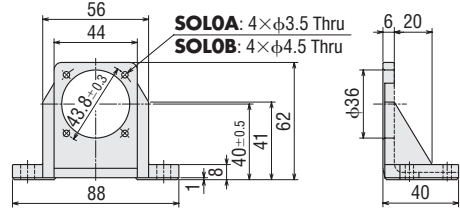
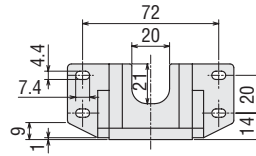
Mass: 85 g

CAD B266

SOLOB

Mass: 85 g

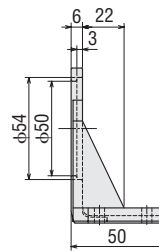
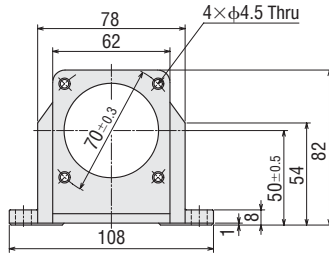
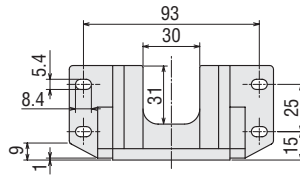
CAD B267



SOL2A

Mass: 120 g

CAD B268



● Installation Screws: M4 Length 12 mm
4 pieces included

SOL5A

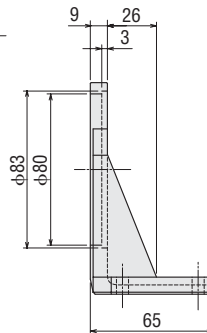
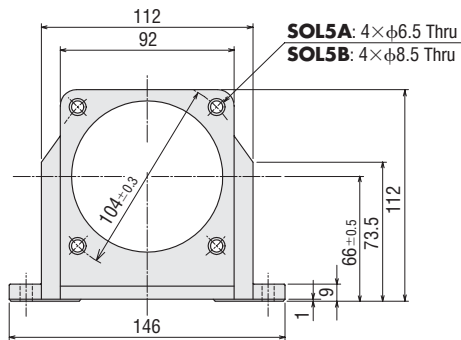
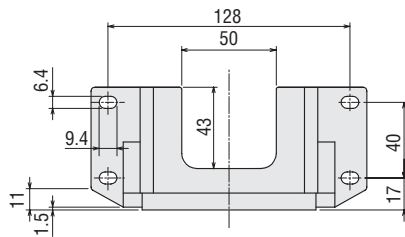
Mass: 270 g

CAD B270

SOL5B

Mass: 270 g

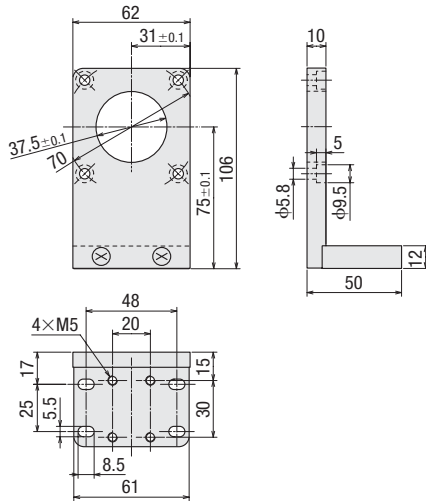
CAD B271



PLA60G

Mass: 0.7 kg

CAD B634

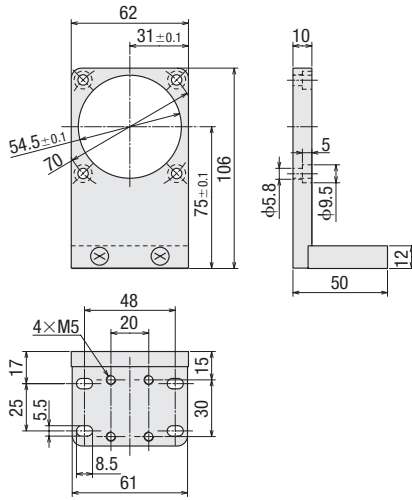


- Installation Screws: M5 Length 15 mm
4 pieces included

PLA60H

Mass: 0.7 kg

CAD B635

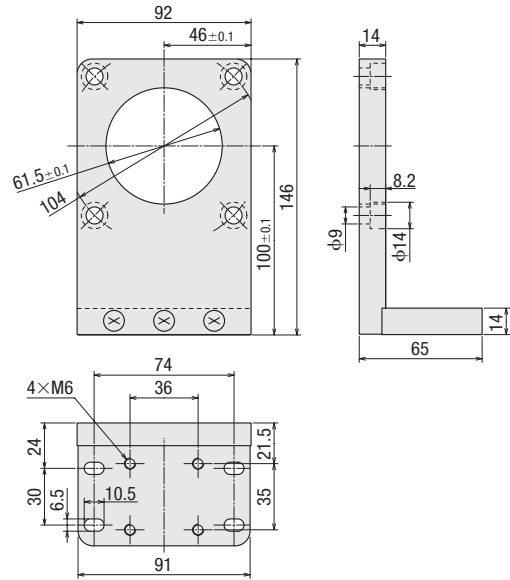


- Installation Screws: M5 Length 15 mm
4 pieces included

PLA90G

Mass: 1.6 kg

CAD B637

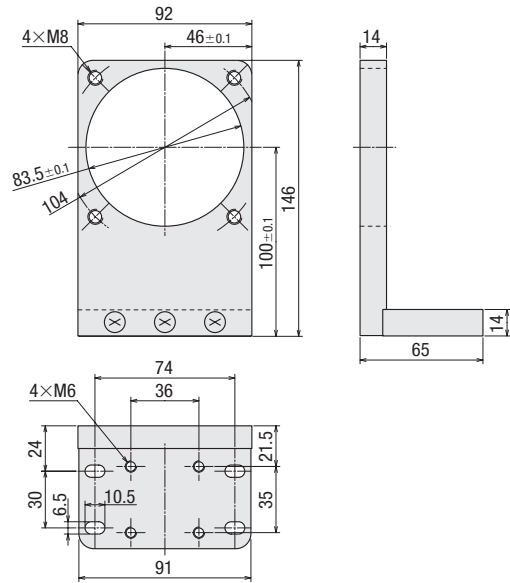


- Installation Screws: M8 Length 20 mm
4 pieces included

PLA90H

Mass: 1.6 kg

CAD B638



- Installation Screws: M8 Length 30 mm
4 pieces included (includes 4 washers)

Overview,
Product
Series

FLEX
Compatible
Products

5-Phase
Stepping
Motor and
Driver
Packages

AC Input
RKII

AC Input
RK

DC Input
CRK

2-Phase
Stepping
Motor and
Driver
Packages

DC Input
CMK

Closed Loop
Motor and
Driver
Packages
αSTEP

AC Input
High-
Efficiency
AR

AC Input
High-
Efficiency
ARL

DC Input
High-
Efficiency
AR

Stepping
Motors

High Torque
2-Phase
PKP

2-Phase
PK

5-Phase
PK

Accessories

Clean Dampers RoHS

Cables

Couplings

Mounting Brackets

Clean Dampers

Control Module

Data Setting Software

Battery Set

Regeneration Unit

Mechanical dampers suppress stepping motor vibration and improve high-speed performance. An inertia body and silicon gel are hermetically sealed in a plastic case.

Features

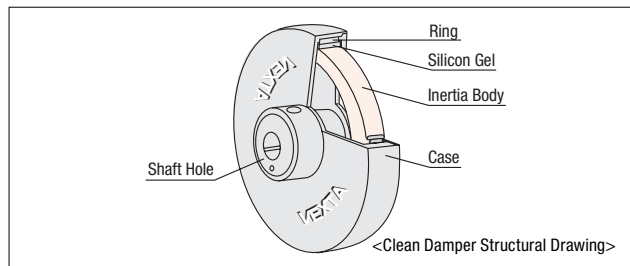
- **Excellent Vibration Absorption**
The doughnut-shaped internal inertia body and silicon gel absorb vibration. This feature enables a stable damping effect.
- **Cleanliness Support**
Since there is no frictional dust it can be used in environments where higher degrees of cleanliness are needed.
- **High Reliability**
- The damper holds up well in environmental resistance and changes little with age because the silicon gel and plastic case used are high heat-resistant.
- The machine part is sealed hermetically in a plastic case. This ensures safety and doesn't generate noise.
- This clean damper is an accessory for double shaft types. It can be used with various geared motors of double shaft type.

Product Line

Product Name
D4CL-5.0F
D6CL-6.3F
D6CL-8.0F
D9CL-14F



<Application Example>

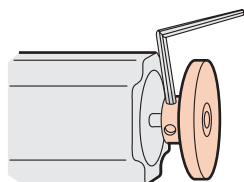


Specifications

Product Name	Inertia [kg·m ²]	Mass [g]
D4CL-5.0F	34×10 ⁻⁷	24
D6CL-6.3F	140×10 ⁻⁷	62
D6CL-8.0F	140×10 ⁻⁷	61
D9CL-14F	870×10 ⁻⁷	105

Operating Temperature Range: -20°C~+80°C

Installation Method of the Clean Damper



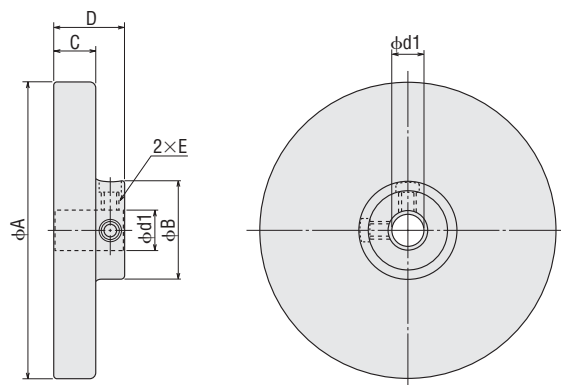
Point the installation screws of the clean damper toward the motor case, fasten to the shaft and tighten the damper's installation screws (two places) with a hexagonal wrench to secure it to the shaft.

Product Name	D4CL-5.0F	D6CL-6.3F	D6CL-8.0F	D9CL-14F
Tightening Torque N·m	0.4	1.5		

Note

- There are installation screws with hexagonal holes in two damper locations, so tighten them both before running the motor.
- The damper rotates at the same speed as the motor shaft, so do not touch the damper while the motor is running.

Dimensions (Unit mm)



Product Name	φd1	φA	φB	C	D	E	CAD
D4CL-5.0F	5 ^{+0.018} ₀	φ36±0.5	φ13±0.5	9±0.3	15±0.5	M3	B556
D6CL-6.3F	6.35 ^{+0.022} ₀	φ44.5±0.5	φ20±0.5	15±0.3	22±0.5	M4	B557
D6CL-8.0F	8 ^{+0.022} ₀						B558
D9CL-14F	14 ^{+0.027} ₀	φ79.5±0.5	φ26±0.5	11±0.3	19±0.5	M4	B559

Clean Damper Selection Table

● This clean damper is an accessory for double shaft types.

Product Name	Applicable Product					
	Standard AC Motors	Stepping Motors				
	Low-Speed Synchronous Motors	5-Phase Stepping Motor and Driver Packages	2-Phase Stepping Motor and Driver Packages	<i>αSTEP</i>	2-Phase Stepping Motors	5-Phase Stepping Motors
D4CL-5.0F	SMK014 SMK0A	RKS543 RKS544 RKS545 RK543 RK544 RK545 CRK523 CRK524 CRK525 CRK543 CRK544 CRK545 CRK546	CMK223 CMK224 CMK225 CMK233 CMK235 CMK243 CMK244 CMK245 CMK246	AR46	PKP223 PKP224 PKP225 PKP233 PKP235 PKP243 PKP244 PKP245 PKP246 PKE243 PKE244 PKE245 PK243 PK244 PK245	PK543 PK544 PK545
D6CL-6.3F	SMK237 SMK216	—	CMK256 CMK258 CMK264* CMK266* CMK268*	—	PK256 PK258 PK264* PK266* PK268*	—
D6CL-8.0F	—	RKS564 RKS566 RKS569 RK564 RK566 RK569 CRK564 CRK566 CRK569	CMK264 (High Torque) CMK266 (High Torque) CMK268 (High Torque)	AR66 AR69 AR98 AR911	PK264 (High Torque) PK266 (High Torque) PK267 (High Torque) PK268 (High Torque) PK269 (High Torque)	PK564 PK566 PK569
D9CL-14F	SMK5100 SMK5160 SMK550	RKS596 RKS599 RKS5913 RK596 RK599 RK5913	—	—	PK296 PK299 PK2913	PK596 PK599 PK5913

*Except for high-torque types.

● The product names of the applicable ones are described with text by which the product name can be identified.

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Driver
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RKII

AC Input
RK

DC Input
CRK

2-Phase
Stepping
Motor and
Driver
Packages

DC Input
CMK

Closed Loop
Motor and
Driver
Packages
αSTEP

AC Input
High-
Efficiency
AR

AC Input
High-
Efficiency
ARL

DC Input
High-
Efficiency
AR

Stepping
Motors

High Torque
2-Phase
PKP

2-Phase
PK

5-Phase
PK

Accessories

Control Module

Cables

Couplings

Mounting Brackets

Clean Dampers

Control Module

Data Setting Software

Battery Set

Regeneration Unit

OPX-2A RoHS

Features

This enables you to perform operations such as setting the driver's internal parameters and setting or changing the data. It can also be used for operations such as speed and I/O monitoring, and teaching.

- The settings and monitor contents vary depending on the applicable product.

Product Line

Product Name	Applicable Product
OPX-2A	AR Series CRK Series Built-In Controller Type

Specifications

Indication	LED
Cable Length	5 m
Operating Ambient Temperature	0 to +40°C (Non-freezing)



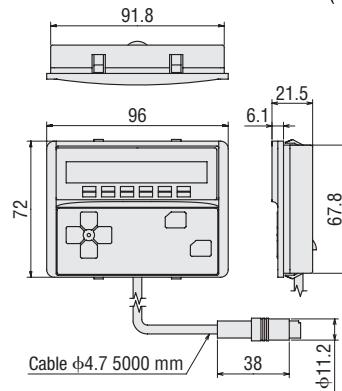
<Enlarged view>

Dimensions (Unit mm)

Control Module

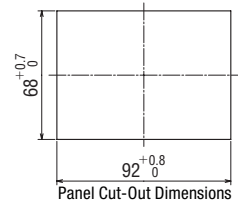
Mass: 0.25 kg

CAD B453



Installation Hole Dimensions

(Installation plate thickness 1 to 3 mm)



Data Setting Software Communication Cable

CC05IF-USB (RoHS)

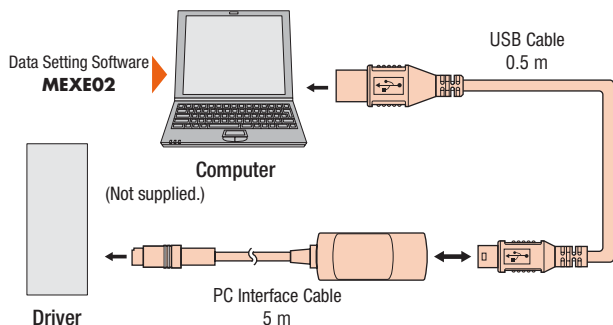
This communication cable is required for connecting to the computer on which the data setting software **MEXEO2** is installed. A 5 m PC interface cable and a 0.5 m USB cable are included.



Product Line

Product Name	Applicable Product
CC05IF-USB	AR Series CRK Series Built-In Controller Type

Computer and Driver Connection



Note

- To connect to a computer, you must install a dedicated device driver.

Data Setting Software MEXEO2

In addition to setting and editing the operating data and various parameters on a computer, you can perform teaching and monitoring I/O or operation speed waveform.

Data Setting Software can be downloaded from our website.

CD-ROMs are also available.

Visit our website, or contact the nearest Oriental Motor sales office.

Note

- The number of speed settings vary depending on the applicable product. Refer to our website.

Operating Environment

Operating System (OS)

For the following operating systems, be sure to apply Rollup1 that is provided by Microsoft. Check "Add or remove programs" to see if Rollup1 is installed.

- Microsoft Windows 2000 Professional Service Pack 4

For the following operating systems, only the 32 bit (x86) editions and 64 bit (x64) editions are supported.

- 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

*32 bit (x86) edition only

PC

Recommended CPU*1	Intel Core processor 2 GHz or faster (compatible with the OS)
Display	Video adapter and monitor with a minimum resolution of XGA (1024×768)
Recommended Memory*1	32 bit (x86) edition: 1 GB or more 64 bit (x64) edition: 2 GB or more
Hard Disk*2	Free disk space of at least 30 MB
USB Port	One USB1.1 port
Disk Device	CD-ROM drive (for installation)

*1 The system requirements for the OS must be met.

*2 **MEXEO2** requires Microsoft .NET Framework 2.0 Service Pack 2. If it is not installed, it will be installed automatically. An additional 500 MB of free space may be required.

Windows and Windows Vista are registered trademarks of Microsoft Corporation in the United States and other countries.

For the latest information of operating environment, check the Oriental Motor website.

Note

- Depending on your system environment, the required memory and hard disk may vary.

Overview,
Product
Series

FLEX
Compatible
Products

5-Phase
Stepping
Motor and
Driver
Packages

AC Input
RKII

AC Input
RK

DC Input
CRK

2-Phase
Stepping
Motor and
Driver
Packages

DC Input
CMK

Closed Loop
Motor and
Driver
Packages
QSTEP

AC Input
High-
Efficiency
AR

AC Input
High-
Efficiency
ARL

DC Input
High-
Efficiency
AR

Stepping
Motors

High Torque
2-Phase
PKP

2-Phase
PK

5-Phase
PK

Accessories

Battery Set RoHS

Cables

Couplings

Mounting Brackets

Clean Dampers

Control Module

Data Setting Software

Battery Set

Regeneration Unit

This battery is for constructing an absolute system on **AR** Series.
The battery can be attached with the dedicated battery holder (included).



Product Line

Product Name	Applicable Product
BAT01B	AR Series Built-In Controller Type

Specifications

Item	BAT01B
Battery Type	Sealed Nickel-Hydrogen Battery
Nominal Voltage	2.4 V
Rated Capacity	1900 mAh
Mass	100 g
Expected Life*1	Approx. 4 years
Charge Time*1	32 hrs.
Data Retention Period*1*2	Approx. 360 hours (Approx. 15 days)
Operating Ambient Temperature	0 to +40°C (Non-freezing)
Operating Ambient Humidity	45~85% (non-condensing)

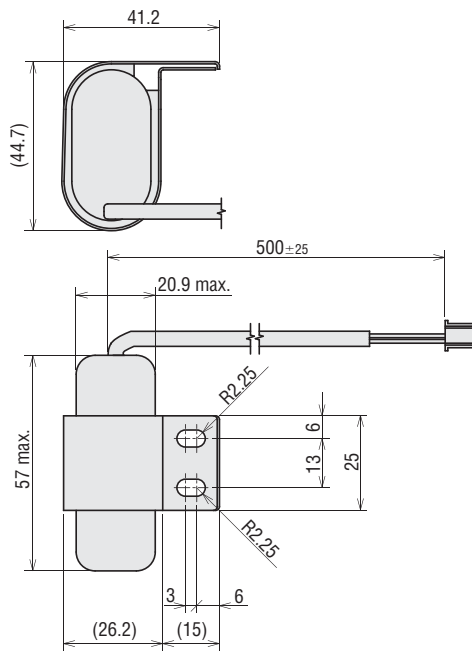
*1 At an ambient temperature of 20°C

*2 After the power is cut OFF with the battery fully charged

Dimensions (Unit mm)

Mass: 100 g

CAD B560



Regeneration Unit RoHS

During vertical drive (gravitational operation) or sudden start/stop in high inertia, an external force causes the motor to rotate and function as a power generator. If the regenerative power produced by the motor exceeds the driver's regenerative power absorption capacity, the motor may be damaged. In such a case, the regeneration unit is connected to the driver to convert regenerative energy into thermal energy for dissipation.

Product Line

Product Name	Applicable Product
RGB100	AR Series AC Power Supply Input

Specifications

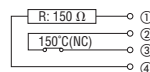
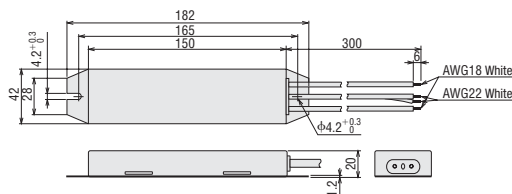
Product Name	RGB100
Continuous Regenerative Power	50 W
Resistance Value	150 Ω
Thermal Protector Operating Temperature	Open: 150±7°C Close: 145±12°C (Normally closed)
Thermal Protector Rated Electricity	120 VAC 4 A 30 VDC 4 A (Minimum current 5 mA)

● Attach the regeneration unit to a location that has the same heat radiation capability as an aluminum heat radiation plate that is 350×350 mm and 3 mm thick.

Dimensions (Unit mm)

Mass: 250 g

CAD C194



- ①-④ : AWG18×2
For regeneration current
Connect to RG Terminal.
- ②-③ : AWG22×2
Thermal protector output
Take measures to shut down the power supply on thermal protector contact when a malfunction is detected.



Overview,
Product
Series

FLEX
Compatible
Products

5-Phase
Stepping
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RKII

AC Input
RK

DC Input
CRK

2-Phase
Stepping
Motor and
Driver
Packages

DC Input
CMK

Closed Loop
Motor and
Driver
Packages
αSTEP

AC Input
High-
Efficiency
AR

AC Input
High-
Efficiency
ARL

DC Input
High-
Efficiency
AR

Stepping
Motors

High Torque
2-Phase
PKP

2-Phase
PK

5-Phase
PK

Accessories