

Stepping Motors

Accessories

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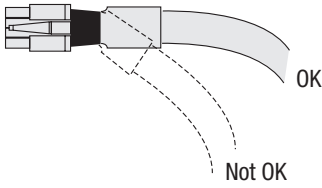
Accessories

Introduction			
0.36°/Geared AC Input Motor & Driver AR	0.72°/Geared RK		
0.36°/Geared AR	0.36°/0.72°/ Geared CRK	1.8°/Geared RBK	0.9°/1.8°/Geared CMK
DC Input Motor & Driver	1.8°/Geared High-Torque Motor Only PKP	0.9°/1.8°/Geared PK	Controllers SG8030JY
Accessories			

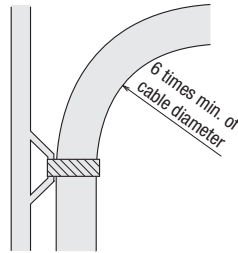
Cables

Notes on Use of a Flexible Cable

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

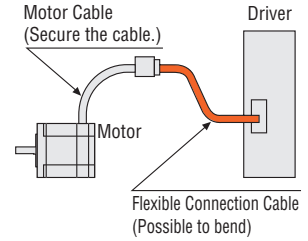


② For the bending radius, use at six times or more of the cable diameter.

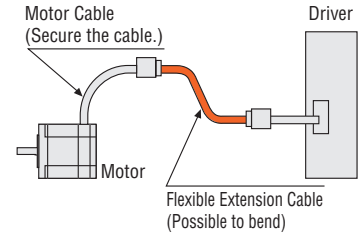


③ Connection cables are not flexible. If regularly bending of the cable is required, use the flexible cable only (sold separately).

Flexible Connection Cable



Flexible Extension Cable



Cables for AR Series AC Input Type

The **AR** Series comes with a 3 m cable for connection between the motor and driver.

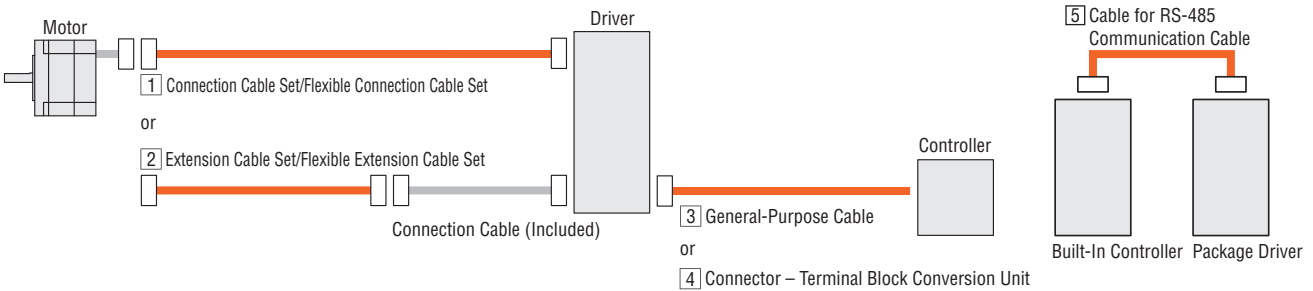
When it is necessary to have a connection of a different length between motor and driver, a motor cable or extension cable must be used.

The cable for electromagnetic brake motor comes as a set of motor and electromagnetic brake cable.

Use a flexible motor cable if the cable will be flexed repeatedly.

Keep the overall cable length 30 m or less when using an extension cable to connect with a cable included with the **AR** Series.

System Configuration of Cables



1 Connection Cable Set (RoHS) Flexible Connection Cable Set (RoHS)

● Product Line

◇ Connection Cable Set

● For Standard Motors



Cable for Motor

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

◇ Flexible Connection Cable Set

● For Standard Motors

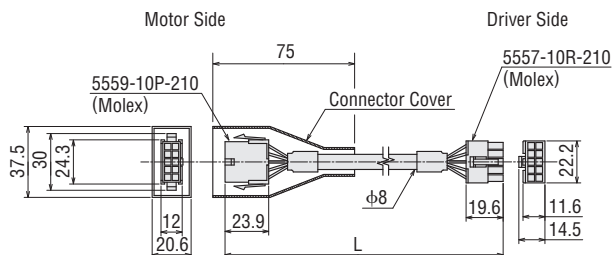


Cable for Motor

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

● Dimensions (Unit = mm)

◇ Cable for Motor



● For Electromagnetic Brake 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

● For Electromagnetic Brake Motor



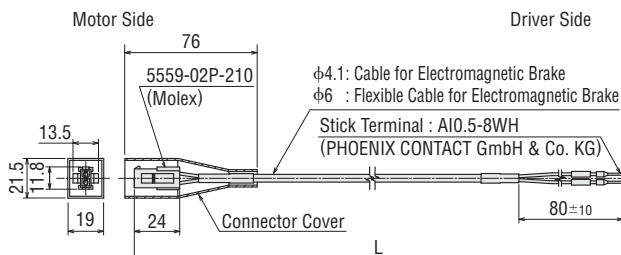
Cable for Motor



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

◇ Cable for Electromagnetic Brake



2 Extension Cable Set (RoHS)

Flexible Extension Cable Set (RoHS)

● Product Line

- ◇ Extension Cable Set
- For Standard Motors



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 Set

- For Standard Motors

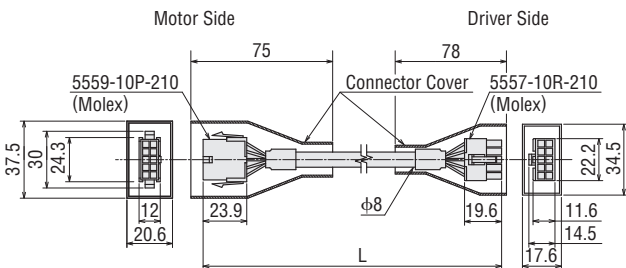


Cable for Motor

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



- For Electromagnetic Brake 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 Motor

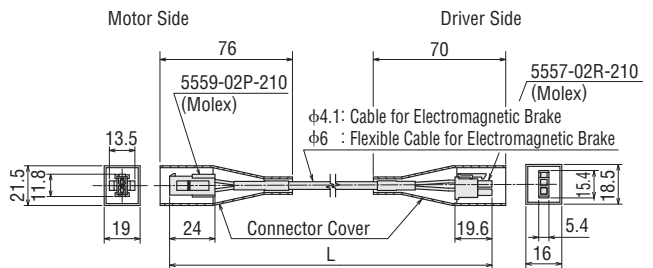


Cable for Motor

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

- ◇ Cable for Electromagnetic Brake



Note

- Keep the total cable length below 30 m when connecting a cable included in the **AR** Series and an extension cable.
- Notes on Use of a Flexible Cable → Page A-342

3 General-Purpose Cable (RoHS)



This is a shielded cable equipped with a half-pitch connector at one end of the cable that snaps onto the driver.

The other end is laminated lead wires aligned in order at a pitch of 1.27 mm, which is convenient for insulation displacement connectors.

Note

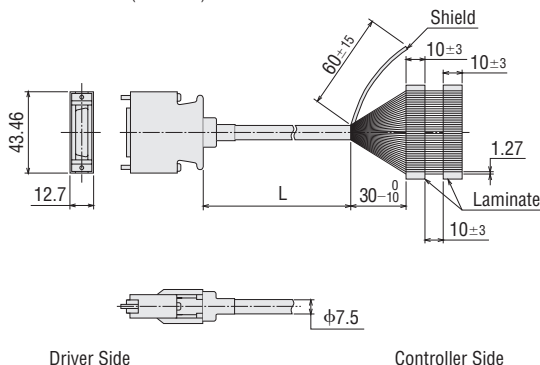
- Note that as the length of the pulse signal line between the driver and controller increases, the maximum transmission frequency decreases.
- Install a connector that matches the controller you are using to the other end of the cable.

Product Line

Product Name	Applicable Connector	Length L (m)
CC36D1-1	Pulse Input Package	1
CC36D2-1	CN5 (36 pins)	2

Dimensions (Unit = mm)

Conductor: AWG28 (0.08 mm²)



4 Connector – Terminal Block Conversion Unit (RoHS)



CC36T1

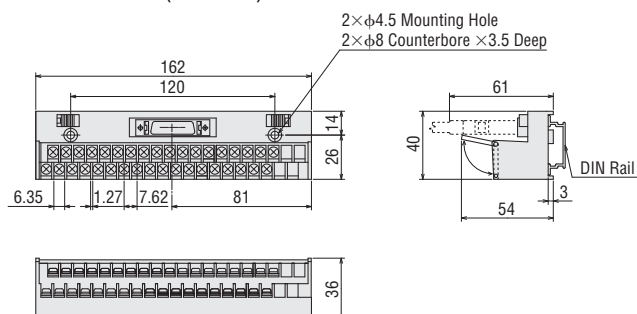
A terminal block conversion unit connects a driver to a host controller.

- With a signal name plate for easy, one-glance identification of driver signal names
- DIN-rail mountable
- Application Crimp Terminal: Fork Terminal
- Cable length: 1 m

Product Line

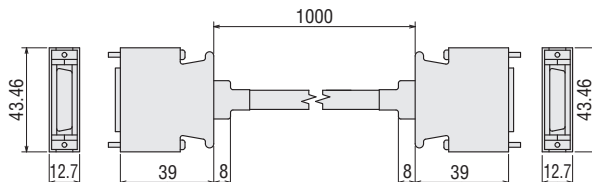
Product Name	Applicable Connector	Length (m)
CC36T1	Pulse Input Package CN5 (36 pins)	1

Dimensions (Unit = mm)



Terminal Block Pin Configuration

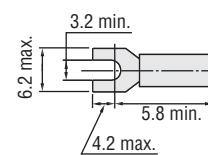
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18



- Recommended Crimp Terminals
- Terminal screw size: M3
- Tightening torque: 1.2 N·m
- Applicable minimum lead wire: AWG22 (0.3 mm²)

Note

- Round terminals cannot be used.



5 Cable for RS-485 Communication (RoHS)

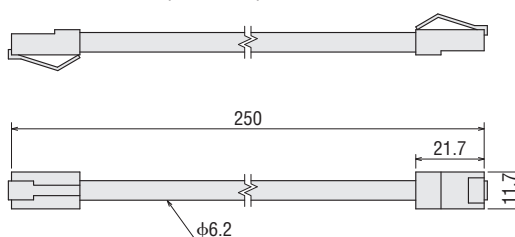


This cable is used to link drivers when a built-in controller type is being operated in a multi-drop manner.

Product Line

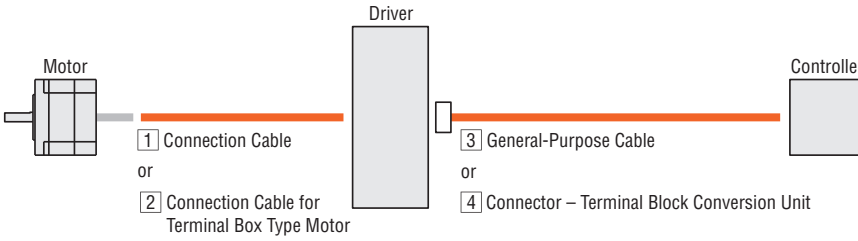
Product Name	Applicable Products
CC002-RS4	Built-In Controller Package

Dimensions (Unit = mm)



Cables for RK Series

System Configuration of Cables



1 Connection Cables (RoHS)



These extension cables are used between **RK** Series motors and dedicated drivers. They come in three lengths: 5 m, 10 m and 20 m.

2 Connection Cable for Terminal Box Type Motor (RoHS)



This is a cable for connection between the terminal box type motor and driver (with protective earth wire). This cable can also be used with other than the motor with terminal box.

Product Line

Product Name	Length (m)	Conductors
CC05PK5	5	5
CC10PK5	10	
CC20PK5	20	

- Conductor configuration: 5
- Conductor size: AWG22 (0.3 mm²)
- Finished outer diameter: ϕ 7.2 mm
- Cable rating: 105°C
- Outer casing: Oil-resistant, heat-resistant, non-migrating vinyl

Product Line

Product Name	Length (m)	Conductors
CC03PKT	3	6

- Conductor configuration: 6
- Conductor 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 casing: Heat-resistant, oil-resistant vinyl chloride resin
- Applicable standards: UL 758 (AWM) VW-1, UL Style 2586



3 General-Purpose Cable (RoHS)



This shielded cable has a half pitch connector at one end for connecting to the **RK** Series driver. The other end is laminated lead wires aligned in order at a pitch of 1.27 mm, which is convenient for insulation displacement connectors.

Note

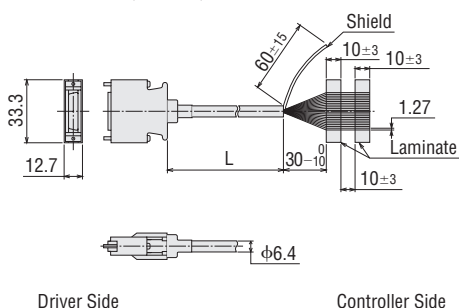
- Note that as the length of the pulse signal line increases, the maximum transmission frequency decreases.
Technical reference → Page G-46
- Install a connector that matches the controller you are using to the other end of the cable.

Product Line

Product Name	Applicable Connector	Length L (m)
CC20D1-1	CN1 (20 pins)	1
CC20D2-1		2

Dimensions (Unit = mm)

Conductor: AWG28 (0.08 mm²)



4 Connector – Terminal Block Conversion Unit (RoHS)

This is a conversion unit that connects a driver to a host controller using a terminal block.



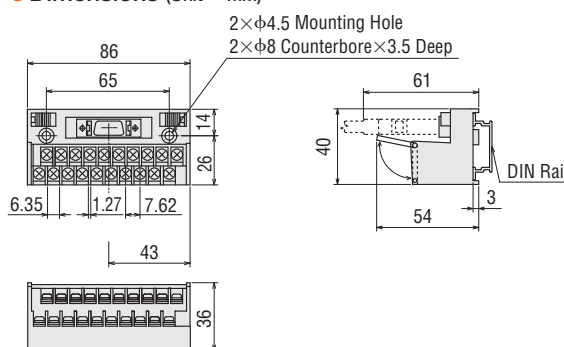
CC20T1

- Comes with a signal name plate for easy, one-glance identification of driver signal names.
- DIN rail mountable
- Application Crimp Terminal: Fork Terminal
- Cable length: 1 m

Product Line

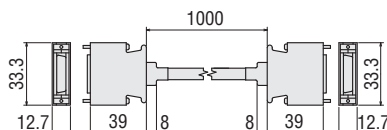
Product Name	Applicable Connector	Length (m)
CC20T1	CN1 (20 pins)	1

Dimensions (Unit = mm)



Terminal Block Pin Configuration

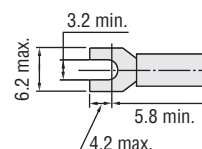
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10



- Recommended Crimp Terminals
- Terminal screw size: M3
- Tightening torque: 1.2 N·m
- Applicable minimum lead wire: AWG22 (0.3 mm²)

Note

- Round terminals are not available.



Cables for AR Series DC Input Type

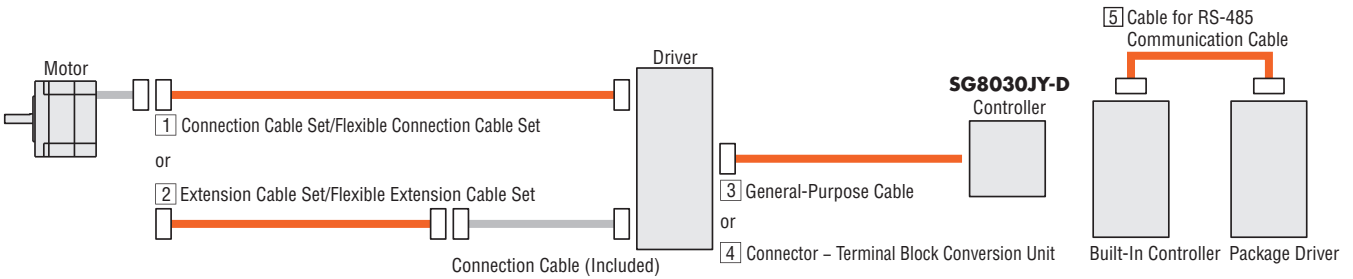
The **AR** Series comes with a 3 m cable for connection between the motor and driver.

When it is necessary to have a connection of a different length between motor and driver, a motor cable or extension cable must be used. The cable for the electromagnetic brake motor comes as a set of the motor and electromagnetic brake cable.

Use a flexible motor cable if the cable will be flexed repeatedly.

Keep the overall cable length 30 m or less when using an extension cable to connect with a cable included with the **AR** Series.

System Configuration of Cables



1 Connection Cable Set (RoHS) Flexible Connection Cable Set (RoHS)

Product Line

◇ Connection Cable Set (For **AR24, AR26**)

• For Standard Motor



Cable for Motor

Connection Cable Set

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

Flexible Connection Cable Set

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

◇ Connection Cable Set (For **AR46, AR66, AR69, AR98, AR911**)

• For Standard Motor



Cable for Motor

Connection Cable Set

Product Name	Length L (m)
CC050VAF2	5
CC070VAF2	7
CC100VAF2	10
CC150VAF2	15
CC200VAF2	20
CC300VAF2	30

Flexible Connection Cable Set

Product Name	Length L (m)
CC010VAR2	1
CC020VAR2	2
CC030VAR2	3
CC050VAR2	5
CC070VAR2	7
CC100VAR2	10
CC150VAR2	15
CC200VAR2	20
CC300VAR2	30

• For Electromagnetic Brake Motor



Cable for Motor



Cable for Electromagnetic Brake

Connection Cable Set

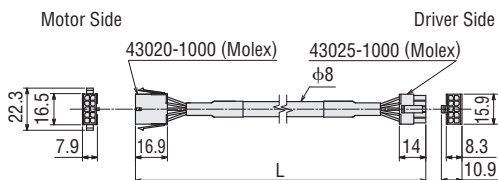
Product Name	Length L (m)
CC050VAFB2	5
CC070VAFB2	7
CC100VAFB2	10
CC150VAFB2	15
CC200VAFB2	20
CC300VAFB2	30

Flexible Connection Cable Set

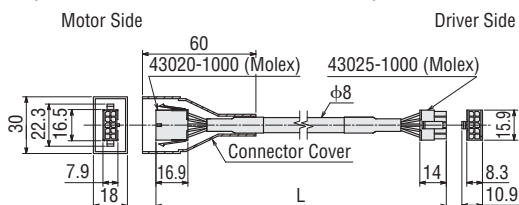
Product Name	Length L (m)
CC010VARB2	1
CC020VARB2	2
CC030VARB2	3
CC050VARB2	5
CC070VARB2	7
CC100VARB2	10
CC150VARB2	15
CC200VARB2	20
CC300VARB2	30

● Dimensions (Unit = mm)

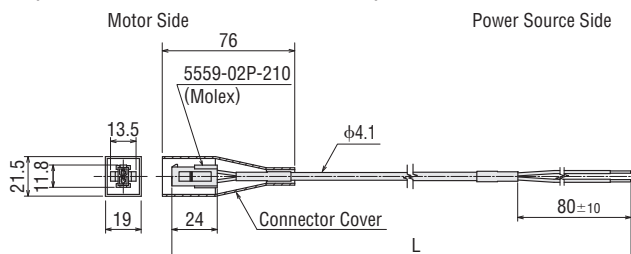
◇ Cable for Motor (For AR24, AR26)



◇ Cable for Motor (For AR46, AR66, AR69, AR98)



◇ Cable for Electromagnetic Brake (For AR46, AR66, AR69, AR98)



2 Extension Cable Set (RoHS) Flexible Extension Cable Set (RoHS)

● Product Line

◇ Extension Cable Set (For AR24, AR26)

- For Standard Motor



Cable for Motor

Extension Cable Set

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

Flexible Extension Cable Set

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

◇ Extension Cable Set (For AR46, AR66, AR69, AR98)

- For Standard Motor



Cable for Motor

Extension Cable Set

Product Name	Length L (m)
CC010VAFT2	1
CC020VAFT2	2
CC030VAFT2	3
CC050VAFT2	5
CC070VAFT2	7
CC100VAFT2	10
CC150VAFT2	15
CC200VAFT2	20

Flexible Extension Cable Set

Product Name	Length L (m)
CC010VART2	1
CC020VART2	2
CC030VART2	3
CC050VART2	5
CC070VART2	7
CC100VART2	10
CC150VART2	15
CC200VART2	20

- For Electromagnetic Brake Motor



Cable for Motor



Cable for Electromagnetic Brake

Extension Cable Set

Product Name	Length L (m)
CC010VAFBT2	1
CC020VAFBT2	2
CC030VAFBT2	3
CC050VAFBT2	5
CC070VAFBT2	7
CC100VAFBT2	10
CC150VAFBT2	15
CC200VAFBT2	20

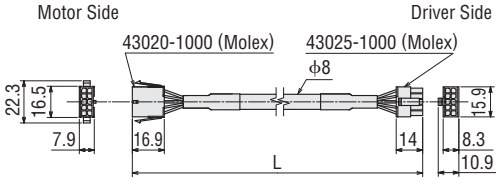
Flexible Extension Cable Set

Product Name	Length L (m)
CC010VARBT2	1
CC020VARBT2	2
CC030VARBT2	3
CC050VARBT2	5
CC070VARBT2	7
CC100VARBT2	10
CC150VARBT2	15
CC200VARBT2	20

Cables

● Dimensions (Unit = mm)

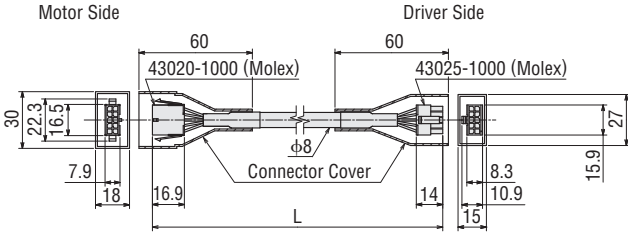
◇ Cable for Motor
(For AR24, AR26)



Couplings

Mounting Brackets

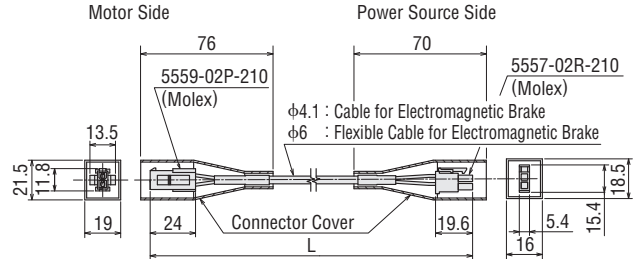
◇ Cable for Motor
(For AR46, AR66, AR69, AR98)



Regeneration Unit

Clean Damper

◇ Cable for Electromagnetic Brake
(For AR46, AR66, AR69, AR98)



Note

- Keep the total cable length below 30 m when connecting a cable included in the AR Series and an extension cable or a flexible extension cable.
- Notes on Use of a Flexible Cable → Page A-342

3 General-Purpose Cable (RoHS)



This is a shielded cable equipped with a half-pitch connector at one end of the cable that snaps onto the driver.

The other end is laminated lead wires aligned in order at a pitch of 1.27 mm, which is convenient for insulation displacement connectors.

Note

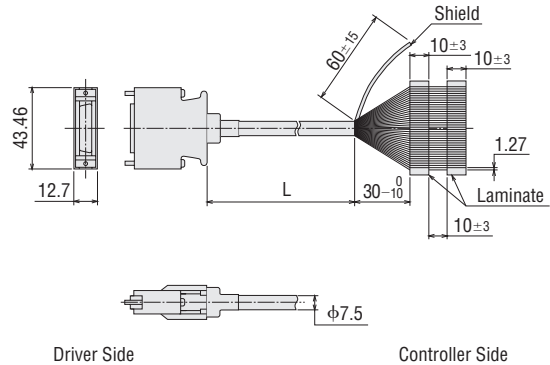
- Note that as the length of the pulse signal line between the driver and controller increases, the maximum transmission frequency decreases.
- Install a connector that matches the controller you are using to the other end of the cable.

● Product Line

Product Name	Applicable Connector	Length L (m)
CC36D1-1	Pulse Input Package	1
CC36D2-1	CN5 (36 pins)	2

● Dimensions (Unit = mm)

Conductor: AWG28 (0.08 mm²)



4 Connector – Terminal Block Conversion Unit (RoHS)



CC36T1

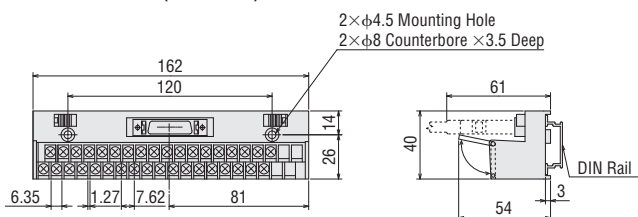
This is a conversion unit that connects a driver to a host controller using a terminal block.

- Comes with a signal name plate for easy, one-glance identification of driver signal names
- DIN-rail mountable
- Application Crimp Terminal: Fork Terminal
- Cable length: 1 m

● Product Line

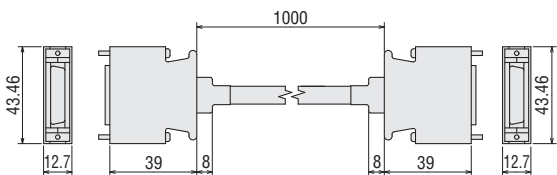
Product Name	Applicable Connector	Length (m)
CC36T1	Pulse Input Package CN5 (36 pins)	1

● Dimensions (Unit = mm)



Terminal Block Pin Configuration

1	9	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	

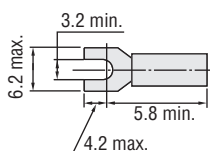


● Recommended Crimp Terminals

- Terminal screw size: M3
- Tightening torque: 1.2 N·m
- Applicable minimum lead wire: AWG22 (0.3 mm²)

Note

- Round terminals cannot be used.



5 Cables for RS-485 Communication (RoHS)

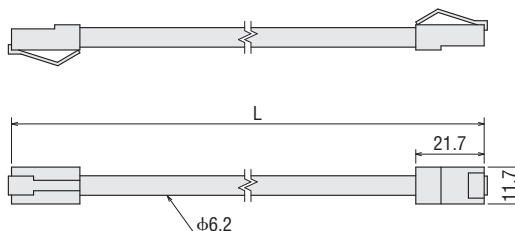


These cables are used to link drivers when a built-in controller type is being operated in a multi-drop manner.

● Product Line

Product Name	Applicable Products	Length L (m)
CC001-RS4	Built-In Controller Package	0.1
CC002-RS4		0.25

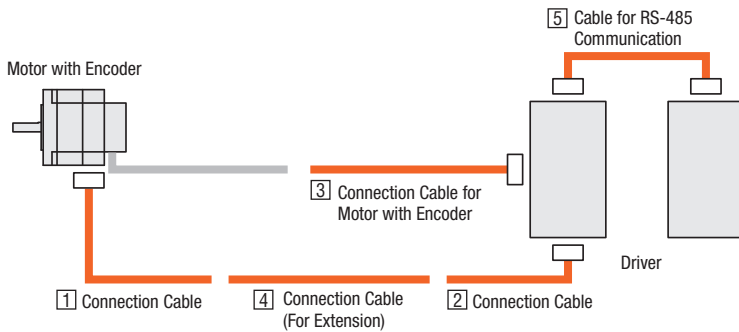
● Dimensions (Unit = mm)



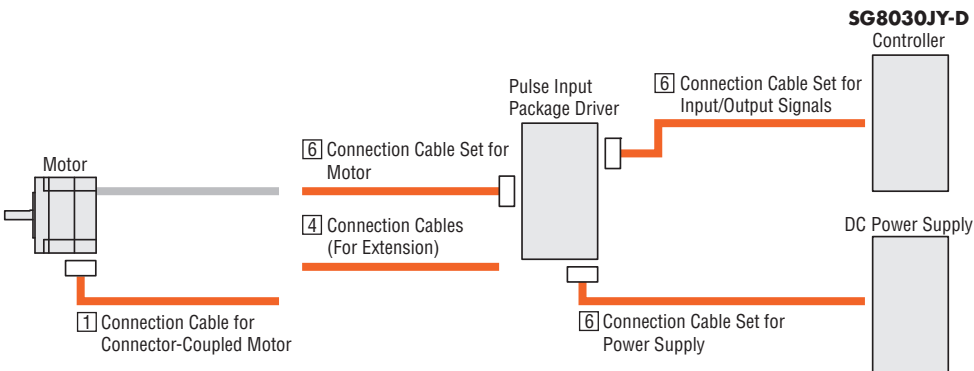
Cables for CRK Series

System Configuration of Cables

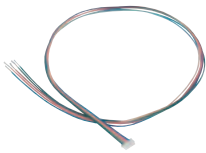
◇ Built-In Controller Package



◇ Pulse Input Package

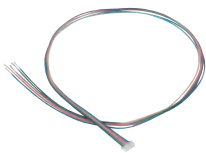


1 Connection Cables (RoHS)



This lead wire type connection cable with a conveniently crimped connector is for connecting connector-coupled motors, and for connecting motors and drivers. (A connection cable of 0.6 m is included with the connector-coupled motor and driver package.)

2 Connection Cables (RoHS)



This lead wire type connection cable with a conveniently crimped connector is for connecting motors and drivers. (If you are purchasing a package or a driver for maintenance purposes, a connection cable of 0.6 m is included.)

● Product Line

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

●The applicable motor products are listed such that the model can be determined.

● Product Line

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

●The applicable motor products are listed such that the model can be determined.

3 Connection Cable for Motor with Encoder (RoHS)



This lead wire type connection cable is available for use with the appropriate connector-coupled motors. (A connection cable of 0.6 m is included with the connector-coupled motor and driver packages.)

4 Connection Cables (For Extension) (RoHS)



These connection cables are used between **CRK** Series motors and dedicated drivers. Keep the total cable length below 10 m.

5 Cables for RS-485 Communication (RoHS)



These cables are used to link drivers when a built-in controller type is being operated in a multi-drop manner.

6 Connection Cable Set (RoHS)



Lead wires with a connector are available as an accessory for DC input drivers. These lead wires allow for easy connection of the motor, power supply and input/output signals without crimping. The connection cable set includes three connection cables (for motor, power supply and input/output signals).

Product Line

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

Product Line

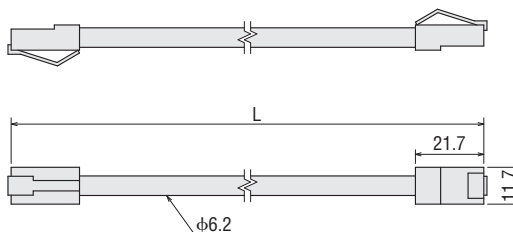
Product Name	Length (m)	Conductors
CC05PK5	5	5
CC10PK5	10	

- Conductor configuration: 5
- Conductor size: AWG22 (0.3 mm²)
- Finished outer diameter: ϕ 7.2 mm
- Cable rating: 105 °C
- Outer casing: Oil-resistant, heat-resistant, non-migrating vinyl

Product Line

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

Dimensions (Unit = mm)



Product Line

Product Name	Applicable Driver	Length (m)	AWG
LCS04SD5	CRD5103P CRD5107P CRD5107HP CRD5114P	0.6	22 (0.3 mm ²)

7 Motor Connector Sets (RoHS)



This photograph shows **CS5N30B**.

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

Each package contains enough housings and contacts for 30 motors.

● Product Line

Product Name	Applicable Motor Products
CS5N30A	PK513
	PK523
	PK524
	PK525
CS5N30B	PK544
	PK546
CS5N30C	PK564
	PK566
	PK569

● The applicable motor products are listed such that the model can be determined.

● Specifications

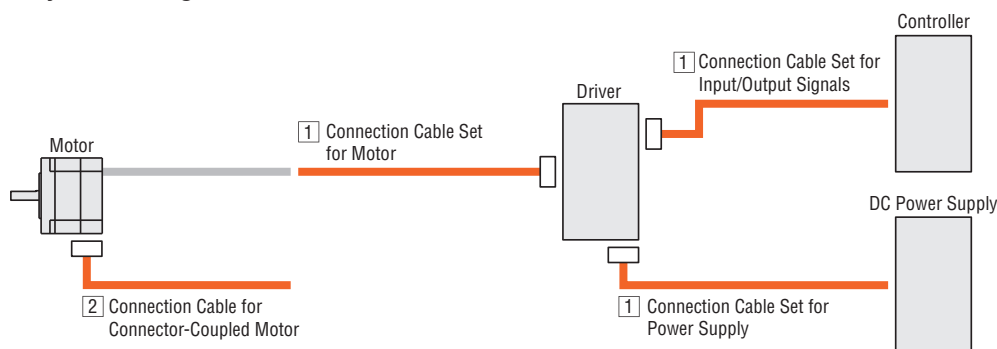
Product Name	Connector Housing	Contact	Applicable Crimp Tool	Manufacturer	Applicable Cables
CS5N30A	51065-0500	50212-8100	57176-5000	Molex	AWG30~24 (0.05~0.2 mm ²) Outer sheath diameter is less than ϕ 1.4 mm Strip length is 1.3~1.8 mm
CS5N30B	51103-0500	50351-8100	57295-5000		AWG28~22 (0.08~0.3 mm ²) Outer sheath diameter is ϕ 1.15~1.8 mm Strip length is 2.3~2.8 mm
CS5N30C	51144-0500	50539-8100	57189-5000		AWG24~18 (0.2~0.75 mm ²) Outer sheath diameter is ϕ 1.4~3 mm Strip length is 3~3.5 mm

Note

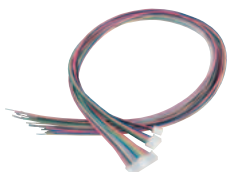
● The crimp tool is not included. Please provide separately.

Cables for CMK Series

System Configuration of Cables

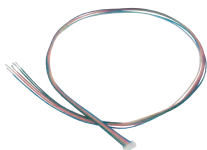


1 Connection Cable Set (RoHS)



As an accessory for DC input drivers, lead wires with a connector are available. These lead wires allow for easy connection of the motor, power supply and input/output signals without crimping. The connection cable set includes three connection cables (for motor, power supply and input/output signals).

2 Connection Cables (RoHS)



These lead wires with connector assemblies are available for use with the appropriate connector-coupled motors. (A connection cable of 0.6 m is included with the connector-coupled motor and driver packages.)

3 Motor Connector Sets (RoHS)



A set of connector housings and contacts for use with connector-coupled motors. Each package contains enough housings and contacts for 30 motors.

Specifications

Product Name	Connector Housing	Contact	Applicable Crimp Tool	Manufacturer	Applicable Cables
CS2U30A	51065-0600	50212-8100	57176-5000	Molex	AWG30~24 (0.05~0.2 mm ²) Outer sheath diameter is less than ϕ 1.4 mm Strip length is 1.3~1.8 mm
CS2U30B	51103-0600	50351-8100	57295-5000		AWG28~22 (0.08~0.3 mm ²) Outer sheath diameter is ϕ 1.15~1.8 mm Strip length is 2.3~2.8 mm

Note

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

Product Line

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

Product Line

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

●The applicable motor products are listed such that the model can be determined.

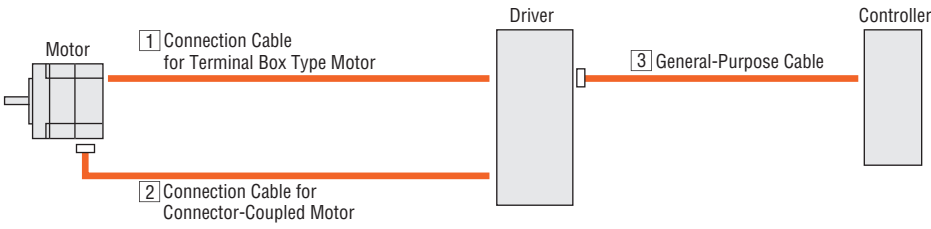
Product Line

Product Name	Applicable Motor Products
CS2U30A	PK223P
	PK224P
	PK225P
CS2U30B	PK233P
	PK235P
	PK244P
	PK246P

●The applicable motor products are listed such that the model can be determined.

Cables for RBK Series

System Configuration of Cables



1 Connection Cable for Terminal Box Type Motor (RoHS)

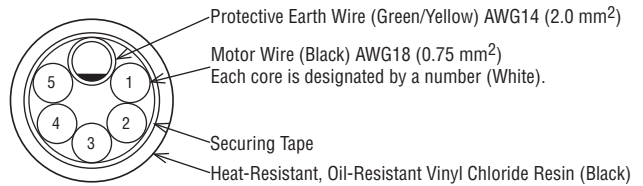


A cable for connection between the terminal box type motor and driver (with protective earth wire)

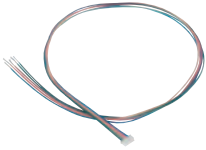
Product Line

Product Name	Length (m)	Conductors
CC03PKT	3	6

- Conductor configuration: 6
- Conductor 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 casing: Heat-resistant, oil-resistant vinyl chloride resin
- Applicable standards: UL 758 (AWM) VW-1, UL Style 2586



2 Connection Cables (RoHS)



These lead wires with connector assemblies are available for use with the appropriate connector-coupled motors. (A motor lead wire/connector assembly of 0.6 m is included with the connector-coupled motor and driver packages.)

Product Line

Product Name	Applicable Motor	Length (m)	AWG
LC2B06A	PK223P PK224P PK225P	0.6	24 (0.2 mm ²)
LC2B06B	PK233P PK235P PK244P PK246P	0.6	
LC2B06C	PK264P PK266P PK268P	0.6	22 (0.3 mm ²)

● The applicable motor products are listed such that the model can be determined.

3 Motor Connector Sets (RoHS)



A set of connector housings and contacts for use with connector-coupled motors. Each package contains enough housings and contacts for 30 motors.

Specifications

Product Name	Connector Housing	Contact	Applicable Crimp Tool	Manufacturer	Applicable Cables
CS2U30A	51065-0600	50212-8100	57176-5000	Molex	AWG30~24 (0.05~0.2 mm ²) Outer sheath diameter is less than φ1.4 mm Strip length is 1.3~1.8 mm
CS2U30B	51103-0600	50351-8100	57295-5000		AWG28~22 (0.08~0.3 mm ²) Outer sheath diameter is φ1.15~1.8 mm Strip length is 2.3~2.8 mm

Note

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

Product Line

Product Name	Applicable Motor Products
CS2U30A	PK223P PK224P PK225P
CS2U30B	PK233P PK235P PK244P PK246P

● The applicable motor products are listed such that the model can be determined.

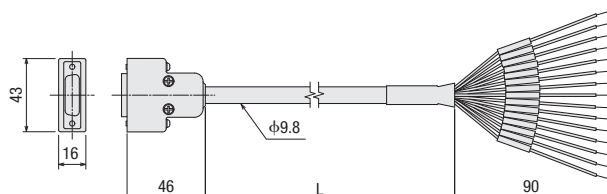
4 General-Purpose Cables RoHS



These are dedicated 15-conductor cables for connecting the I/O signal connector and programmable controller. They are high-quality, noise-blocking, double-shielded cables.

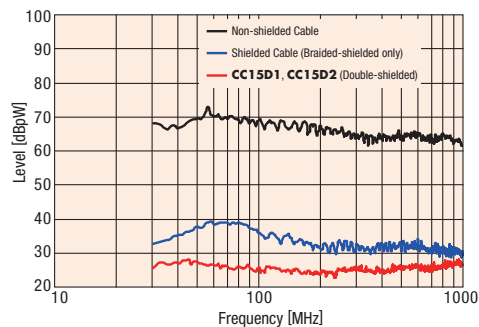
Product Name	Length L (m)
CC15D1	1
CC15D2	2

● Dimensions (Unit = mm)



● Noise-Blocking Property

The figure below shows the noise effects on a signal line. As you can see, the noise-blocking effect is high with signal lines that have a low level value. Oriental Motor driver cables come with double-shielding that includes aluminum foil-shielding and braided-shielding, which provides excellent noise-blocking characteristics.



Cables

Couplings

Mounting Brackets

Regeneration Unit

Clean Dampers

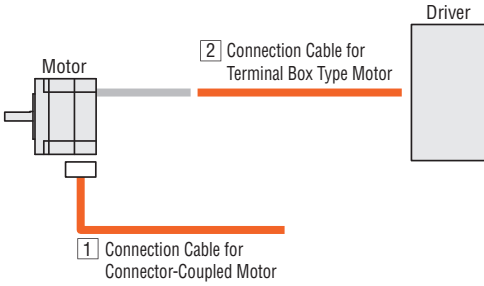
DIN Rail Mounting Plate

Control Module

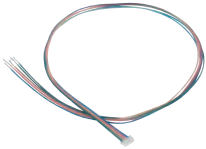
Data Setting Software

Cables for 2-Phase Stepping Motor

System Configuration of Cables



1 Connection Cables (RoHS)



These lead wires with connector assemblies are available for use with the appropriate connector-coupled motors. (A motor lead wire/connector assembly of 0.6 m is included with the connector-coupled motor and driver packages.)

Product Line

Product Name	Applicable Product	Length (m)	AWG	
LC2U06A	PKP223U, PKP224U, PKP225U	0.6	24 (0.2 mm ²)	
LC2U10A		1		
LC2U06B	PKP233U, PKP235U PKP243U, PKP244U, PKP245U, PKP246U	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	0.6		
				PKE243D, PKE244D, PKE245D
LC2B06C	PKP264D, PKP266D, PKP268D	0.6	22 (0.3 mm ²)	

● The applicable motor products are listed such that the model can be determined.

2 Connection Cable for Terminal Box Type Motor (RoHS)



A cable for connection between the terminal box type motor and driver (with protective earth wire).

Product Line

Product Name	Length (m)	Conductors
CC03PKT	3	6

- Conductor configuration: 6
- Conductor 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 casing: Heat-resistant, 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. Each package contains enough housings and contacts for 30 motors.

Specifications

Product Name	Connector Housing	Contact	Applicable Crimp Tool	Manufacturer	Applicable Cables
CS2U30A	51065-0600	50212-8100	57176-5000	Molex	AWG30~24 (0.05~0.2 mm ²) Outer sheath diameter is less than φ1.4 mm Strip length is 1.3~1.8 mm
CS2U30B	51103-0600	50351-8100	57295-5000		AWG28~22 (0.08~0.3 mm ²) Outer sheath diameter is φ1.15~1.8 mm Strip length is 2.3~2.8 mm

Note

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

Product Line

Product Name	Applicable Products
CS2U30A	PKP223 PKP224 PKP225
CS2U30B	PKP233 PKP235 PKP243 PKP244 PKP245 PKP246

Cables for 5-Phase Stepping Motor

The cable that is used depends on the drivers that are being combined. Refer to the following pages for more information.

If **RK** series drivers are being combined → Page A-346

If **CRK** series drivers are being combined → Page A-352

Flexible Couplings RoHS

MCS Couplings

Features

- No backlash
- High strength (usable for geared motor) is now available
- A spider (material: polyurethane) controls the vibration generated by the motor



Product Number Code

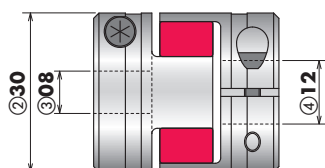
MCS 30 08 12

① ② ③ ④

①	MCS Coupling
②	Outer Diameter of Coupling
③	Inner Diameter d1 (Smaller inner diameter)
④	Inner Diameter d2 (Larger inner diameter)

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

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



Selecting a Coupling

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

Example: Product Name: AR46AC-N10-3 Driven Shaft Diameter: ϕ 12 mm

1. The coupling type that matches **AR46AC-N10-3** from the coupling selection table is **MCS30**.
2. The inner diameter of the coupling according to the motor shaft will be **08** (ϕ 8 mm), and will be **12** (ϕ 12 mm) according to the driven shaft diameter.
3. In the coupling product name, smaller inner diameters come before larger ones, thus the coupling product name will be **MCS300812**.

● When the inner diameter is ϕ 6.35 mm, the number is **06A**.

Product Line

Product Name	Coupling Outer Diameter mm
MCS14 □	ϕ 14
MCS20 □	ϕ 20
MCS30 □	ϕ 30
MCS40 □	ϕ 40
MCS55 □	ϕ 55
MCS65 □	ϕ 65

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

Introduction

0.36°/Geared
AR
AC Input Motor & Driver0.36°/Geared
AR
AC Input Motor & Driver0.36°/0.72°/
Geared
CRK
DC Input Motor & Driver1.8°/Geared
RRK
DC Input Motor & Driver0.9°/1.8°/Geared
CMK
DC Input Motor & Driver0.72°
PK
Motor Only1.8°/Geared
High-Torque
PKP
Motor Only0.9°/1.8°/Geared
PK
Motor OnlyControllers
SG80301Y

Accessories

Coupling Selection Table

AR Series

		Applicable Product			Coupling Type	Motor Shaft Diameter		Driven Shaft Diameter mm														
Type	Motor Frame Size mm	Product Name	Gear Ratio	mm		mm	04	05	06	06A	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		
Standard Type	28	AR24 AR26	-	MCS14	05	φ5	●	●	●													
	42	AR46	-	MCS14	06	φ6	●	●	●													
	60	AR66 AR69	-	MCS30	10	φ10			●	●	●	●	●	●	●							
	85	AR98 AR911	-	MCS30	14	φ14			●	●	●	●	●	●	●							
TH Geared Type	28	AR24-T□	7.2, 10, 20, 30	MCS14	05	φ5	●	●	●													
	42	AR46-T□	3.6, 7.2, 10	MCS20	06	φ6		●	●	●	●											
			20, 30	MCS30	06	φ6			●	●	●	●	●	●	●	●						
	60	AR66-T□	3.6, 7.2	MCS30	08	φ8			●	●	●	●	●	●	●	●						
			10, 20, 30	MCS40	08	φ8					●	●	●	●	●	●	●	●	●			
90	AR98-T□	3.6, 7.2, 10, 20, 30	MCS55	12	φ12						●	●	●	●	●	●	●	●	●	●	●	
PS Geared Type	28	AR24-PS□	5, 7.2, 10	MCS20	08	φ8		●	●	●	●	●										
	42	AR46-PS□	5, 7.2, 10	MCS30	10	φ10			●	●	●	●	●	●	●							
			25, 36, 50	MCS40	10	φ10					●	●	●	●	●	●	●	●				
	60	AR66-PS□	5, 7.2	MCS40	12	φ12					●	●	●	●	●	●	●	●				
			10, 25, 36, 50	MCS55	12	φ12						●	●	●	●	●	●	●	●	●	●	
90	AR98-PS□	5, 7.2, 10, 25, 36, 50	MCS65	18	φ18									●	●	●	●	●	●	●	●	
PN Geared Type	28	AR24-N□	5, 7.2, 10	MCS20	08	φ8		●	●	●	●	●										
	42	AR46-N□	5, 7.2, 10	MCS30	10	φ10			●	●	●	●	●	●	●							
			5, 7.2	MCS40	12	φ12					●	●	●	●	●	●	●	●				
	60	AR66-N□	10, 25, 36, 50	MCS55	12	φ12						●	●	●	●	●	●	●	●	●	●	
5, 7.2, 10, 25, 36, 50			MCS65	18	φ18									●	●	●	●	●	●	●		
Harmonic Geared Type	30	AR24-H□	50, 100	MCS30	08	φ8			●	●	●	●	●	●	●							
	42	AR46-H□	50, 100	MCS40	10	φ10				●	●	●	●	●	●	●	●	●				
	60	AR66-H□	50, 100	MCS55	12	φ12						●	●	●	●	●	●	●	●	●	●	
	90	AR98-H□	50, 100	MCS65	18	φ18									●	●	●	●	●	●	●	

● A number indicating the gear ratio is entered where the box □ is located.
 ● The applicable motor products are listed such that the model can be determined.

● **RK Series, CRK Series, Motor Only PK Series**

Type	Applicable Product			Coupling Type	Motor Shaft Diameter mm	Driven Shaft Diameter mm															
	Motor Frame Size mm	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	
High-Resolution Type	28	CRK523 CRK524 CRK525	-	MCS14	05	φ5	●	●	●												
	42	CRK544 CRK546	-	MCS14	05	φ5	●	●	●												
	60	CRK564 CRK566	-	MCS30	08	φ8		●	●	●	●	●									
CRK569		MCS30		10	φ10			●	●	●	●	●									
High-Torque Type	20	CRK513	-	MCS14	04	φ4	●	●	●												
	28	CRK523 CRK525	-	MCS14	05	φ5	●	●	●												
	42	CRK544 CRK546	-	MCS14	05	φ5	●	●	●												
Standard Type	42	CRK543 CRK544 CRK545 PK543 PK544 PK545	-	MCS14	05	φ5	●	●	●												
	60	RK564 RK564T RK566 RK566T CRK564 CRK566 PK564 PK566	-	MCS20	08	φ8		●	●	●	●	●									
		RK569 RK569T CRK569 PK569		MCS30	08	φ8		●	●	●	●	●									
	85	RK596 RK596T PK596	-	MCS30	14	φ14					●	●	●	●							
		RK599 RK599T RK5913 RK5913T PK599 PK5913		MCS55	14	φ14						●	●	●	●						

Introduction

0.36°/Geared
AC Input Motor & Driver
AR
0.72°/Geared
RK

0.36°/Geared
AR
0.36°/0.72°/
Geared
CRK

0.36°/0.72°/
Geared
CRK
1.8°/Geared
RBK

0.9°/1.8°/Geared
CMK

0.72°
PK

1.8°/Geared
High-Torque
PKP
Motor Only

0.9°/1.8°/Geared
PK

Controllers
SG8030JY

Accessories

- Cables
- Couplings
- Mounting Brackets
- Regeneration Unit
- Clean Dampers
- DIN Rail Mounting Plate
- Control Module
- Data Setting Software

Applicable Product				Coupling Type	Motor Shaft Diameter		Driven Shaft Diameter mm														
Type	Motor Frame Size mm	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	CRK523-T□	7.2, 10, 20, 30	MCS14	05	φ5	●	●	●												
	42	CRK543-T□	3.6, 7.2, 10	MCS20	06	φ6		●	●	●	●	●									
			20, 30	MCS30	06	φ6			●	●	●	●	●	●	●						
	60	RK564-T□ CRK564-T□	3.6, 7.2	MCS30	08	φ8			●	●	●	●	●	●	●						
			10, 20, 30	MCS40	08	φ8					●	●	●	●	●	●	●	●			
90	RK596-T□	3.6, 7.2, 10, 20, 30	MCS55	12	φ12							●	●	●	●	●	●	●	●	●	
PS Geared Type	28	CRK523-PS□	5, 7.2, 10	MCS20	08	φ8		●	●	●	●	●									
	42	CRK545-PS□ CRK543-PS□	5	MCS20	10	φ10		●	●	●	●	●									
			7.2, 10	MCS30	10	φ10			●	●	●	●	●	●	●	●	●				
	60	RK566-PS□ CRK566-PS□	25, 36, 50	MCS40	10	φ10					●	●	●	●	●	●	●	●	●		
			5	MCS40	12	φ12					●	●	●	●	●	●	●	●	●	●	
	90	RK599-PS□ RK596-PS□	7.2, 10	MCS55	12	φ12					●	●	●	●	●	●	●	●	●	●	●
			25, 36, 50	MCS55	12	φ12						●	●	●	●	●	●	●	●	●	●
			5	MCS65	18	φ18							●	●	●	●	●	●	●	●	
PN Geared Type	28	CRK523-N□	5, 7.2, 10	MCS20	08	φ8		●	●	●	●	●									
	42	CRK544-N□	5	MCS20	10	φ10		●	●	●	●	●									
			7.2, 10	MCS30	10	φ10			●	●	●	●	●	●	●	●					
	60	RK566-N□ CRK566-N□ RK564-N□ CRK564-N□	5	MCS40	12	φ12					●	●	●	●	●	●	●	●	●	●	
			7.2, 10	MCS55	12	φ12						●	●	●	●	●	●	●	●	●	●
			25, 36, 50	MCS55	12	φ12							●	●	●	●	●	●	●	●	●
	90	RK599-N□ RK596-N□	5	MCS55	18	φ18							●	●	●	●	●	●	●	●	●
7.2, 10			MCS65	18	φ18									●	●	●	●	●	●	●	
25, 36, 50			MCS65	18	φ18										●	●	●	●	●	●	
Harmonic Geared Type	20	CRK513-H□	50, 100	MCS14	05	φ5	●	●	●												
	30	CRK523-H□	50, 100	MCS30	08	φ8			●	●	●	●	●	●	●						
	42	CRK543-H□	50, 100	MCS40	10	φ10				●	●	●	●	●	●	●	●				
	60	RK564-H□ CRK564-H□	50, 100	MCS55	12	φ12						●	●	●	●	●	●	●	●	●	
	90	RK596-H□	50, 100	MCS65	18	φ18										●	●	●	●	●	●

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

● **RBK Series, CMK Series, Motor Only PKP Series/PK Series**

Type	Applicable Product			Coupling Type	Motor Shaft Diameter		Driven Shaft Diameter mm																
	Motor Frame Size mm	Product Name	Gear Ratio				04	05	06	F04	08	10	12	14	15	16	18	20	22	24	25		
																						φ4	φ5
High-Resolution Type	42	CMK243 CMK244 CMK245 PK243 PK244 PK245	-	MCS14	05	φ5	●	●	●														
		CMK264 CMK266 PK264 PK266					-	MCS20	F04	φ6.35		●	●	●	●	●							
	CMK268 PK268	MCS30			●	●		●			●												
High-Torque Type High-Torque, High-Efficiency Type	28	RBK223 RBK224 RBK225 CMK223 CMK224 CMK225 PKP223 PKP224 PKP225	-	MCS14	05	φ5	●	●	●														
		RBK233 RBK235 CMK233 CMK235 PKP233 PKP235					-	MCS14	05	φ5	●	●	●										
	RBK244 CMK244 PKP243 PKP244 PKE243 PKE244	-	MCS14	05	φ5	●		●			●												
	RBK246 CMK246 PKP245 PKP246 PKE245		MCS20			05	φ5		●	●	●	●	●										
	56.4	RBK264 CMK264 PKP264	-	MCS20	08			φ8		●	●	●	●	●									
		RBK266 RBK268 CMK266 CMK268 PKP266 PKP268		MCS30		08	φ8				●	●	●	●	●	●	●						
	60	PK264J	-	MCS20	08			φ8		●	●	●	●	●									
PK266J PK267J		MCS30		08		φ8				●	●	●	●	●	●								
PK269J		MCS40					08		φ8				●	●	●	●	●	●	●				

Introduction

0.36°/Geared
AC Input Motor & Driver
AR
0.72°/Geared
RK

0.36°/Geared
AR

0.36°/0.72°/Geared
DC Input Motor & Driver
CRK
1.8°/Geared
RBK

0.9°/1.8°/Geared
CMK

0.72°
PK

1.8°/Geared
High-Torque
Motor Only
PKP

0.9°/1.8°/Geared
PK

Controllers
SG80301Y

Accessories

Accessories

Cables

Couplings

Mounting Brackets

Regeneration Unit

Clean Dampers

DIN Rail Mounting Plate

Control Module

Data Setting Software

		Applicable Product			Coupling Type	Motor Shaft Diameter mm		Driven Shaft Diameter mm															
Type	Motor Frame Size mm	Product Name	Gear Ratio	MCS				F04	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
Standard Type	42	CMK243 CMK244 PK243 PK244 PK245	-	MCS14	05	φ5	●	●	●														
		CMK256 CMK258 PK256 PK258					-	MCS20	F04	φ6.35		●	●	●	●	●							
	Terminal Box Type	56.4	RBK264 RBK266 CMK264 CMK266 PK264 PK266	-	MCS20	F04					φ6.35		●	●	●	●	●						
			RBK268 CMK268 PK268				MCS30			●		●	●	●									
	85	RBK296 PK296	-	MCS30	14	φ14			●		●	●	●	●	●	●							
RBK299 RBK2913 PK299 PK2913		-					MCS55	14	φ14						●	●	●	●	●	●	●	●	●
SH Geared Type	28		CMK223P-SG□ PKP223-SG□	7.2, 9, 10, 18, 36	MCS14	05				φ5	●	●	●										
		CMK243-SG□ PKP243-SG□ PK243-SG□	3.6, 7.2, 9, 10, 18, 36	MCS20			05	φ5			●	●	●	●	●								
	60	CMK264-SG□ PKP264-SG□ PK264-SG□	3.6, 7.2, 9, 10, 18, 36		MCS30	08			φ8			●	●	●	●	●	●	●	●				
					MCS40	08	φ8				●	●	●	●	●	●	●	●					
TH Geared Type	42	CMK243-T□	3.6, 7.2, 10	MCS20	06	φ6		●	●	●	●	●											
			20, 30	MCS30	06	φ6			●	●	●	●	●	●	●	●							
	60	CMK264-T□	3.6, 7.2, 10, 20, 30	MCS30	08	φ8			●	●	●	●	●	●	●	●	●						
			10, 20, 30	MCS40	08	φ8				●	●	●	●	●	●	●	●						
PS Geared Type	28	RBK223P-PS□ PK223P-PS□	5, 10	MCS20	08	φ8		●	●	●	●	●											
PL Geared Type	42	RBK244P-P□ PK244P-P□	5	MCS20	08	φ8		●	●	●	●	●											
		RBK244P-P□ PK244P-P□	10				MCS30	08	φ8			●	●	●	●	●	●						
		RBK244P-P□ PK244P-P□	36							MCS40	08	φ8			●	●	●	●	●	●	●	●	
	60	RBK264P-P□ RBK266P-P□ PK264P-P□ PK266P-P□	5	MCS40	12	φ12					●	●	●	●	●	●	●	●					
		RBK264P-P□ RBK266P-P□ PK264P-P□ PK266P-P□	10, 36				MCS55	12	φ12						●	●	●	●	●	●	●	●	

● Enter the gear ratio in the box □ within the product name.

Specifications

Product Name	Dimensions					Normal Torque*	Mass	Inertia	Static Torsion 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	Key Slot Tolerance b/t mm							
MCS140404	14	22	4	4	-	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								
MCS140505			5	5								
MCS140506			5	6								
MCS140606			6	6								
MCS200505	20	30	5	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								
MCS200606			6	6								
MCS2006F04			6	6.35								
MCS200608			6	8								
MCS200610			6	10								
MCS20F04F04			6.35	6.35								
MCS20F0408			6.35	8								
MCS20F0410			6.35	10								
MCS200808			8	8								
MCS200810			8	10								
MCS201010			10	10								
MCS300606			30	35								
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										

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

Introduction

0.36°/Geared
AR
AC Input Motor & Driver

0.36°/Geared
AR
AC Input Motor & Driver

0.36°/0.72°/
Geared
CRK
DC Input Motor & Driver

1.8°/Geared
RRK
DC Input Motor & Driver

0.9°/1.8°/Geared
CMK
DC Input Motor & Driver

0.72°
PK
Motor Only

1.8°/Geared
High-Torque
PKP
Motor Only

0.9°/1.8°/Geared
PK
Motor Only

Controllers
SG80301Y

Accessories

- Cables
- Couplings
- Mounting Brackets
- Regeneration Unit
- Clean Dampers
- DIN Rail Mounting Plate
- Control Module
- Data Setting Software

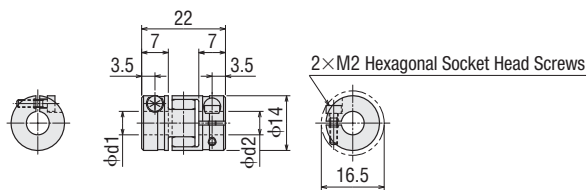
Product Name	Dimensions					Normal Torque*	Mass	Inertia	Static Torsion Spring Constant	Permissible Eccentricity	Permissible Declination	Permissible End Play	
	Outer Diameter ϕA mm	Length W mm	Shaft Hole Diameter d1H7 mm	Shaft Hole Diameter d2H7 mm	Key Slot Tolerance b/t mm								
MCS400808	40	66	8	8		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	$\phi 8$								b: 2 ± 0.0125 t: $1^{+0.1}_0$
MCS401214			12	14									
MCS401215			12	15	$\phi 10$								b: 3 ± 0.0125 t: $1.4^{+0.1}_0$
MCS401216			12	16									
MCS401218			12	18	$\phi 12$								b: 4 ± 0.015 t: $1.8^{+0.1}_0$
MCS401220	12	20											
MCS551212	55	78	12	12	$\phi 14$	b: 5 ± 0.015 t: $2.3^{+0.1}_0$	282	109.1×10^{-6}	2063	0.10	0.9	$+1.4_0$	
MCS551214			12	14									
MCS551215			12	15	$\phi 15$	b: 5 ± 0.015 t: $2.3^{+0.1}_0$							
MCS551216			12	16									
MCS551218			12	18	$\phi 16$	b: 5 ± 0.015 t: $2.3^{+0.1}_0$							
MCS551220			12	20									
MCS551222			12	22	$\phi 18$	b: 6 ± 0.015 t: $2.8^{+0.1}_0$							
MCS551224			12	24									
MCS551414			14	14	$\phi 20$	b: 6 ± 0.015 t: $2.8^{+0.1}_0$							
MCS551415			14	15									
MCS551416			14	16	$\phi 22$	b: 6 ± 0.015 t: $2.8^{+0.1}_0$							
MCS551418			14	18									
MCS551420			14	20	$\phi 24$	b: 8 ± 0.018 t: $3.3^{+0.2}_0$							
MCS551422			14	22									
MCS551424			14	24	$\phi 25$	b: 8 ± 0.018 t: $3.3^{+0.2}_0$							
MCS551518			15	18									
MCS551618			16	18									
MCS551818			18	18									
MCS551820			18	20									
MCS551822			18	22									
MCS551824	18	24											
MCS651618	65	90	16	18		160 (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									

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

Dimensions (Unit = mm)

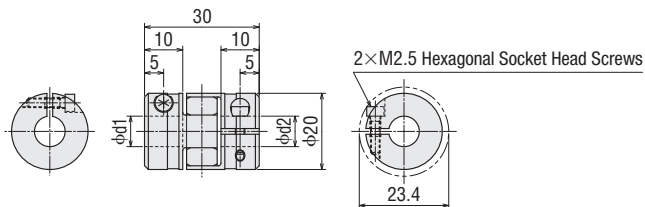
MCS14

Mass: 6.7 g



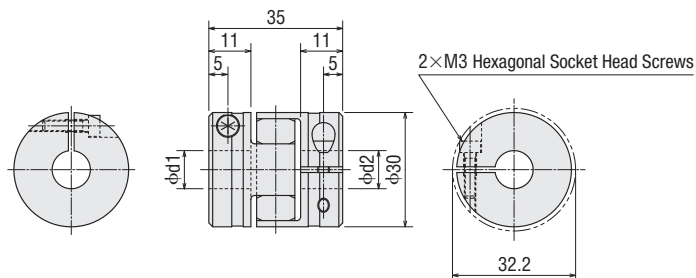
MCS20

Mass: 19.8 g



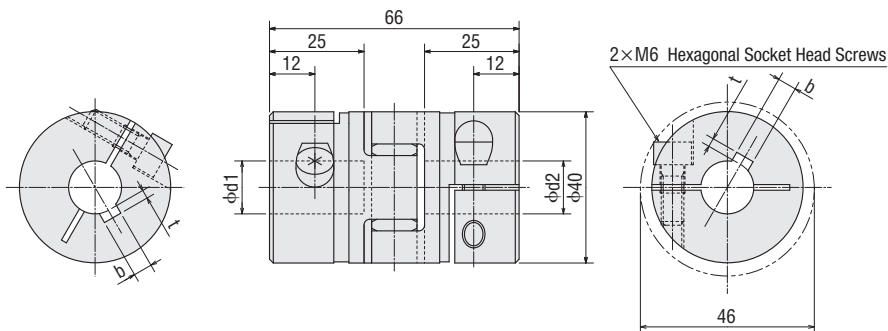
MCS30

Mass: 44.6 g



MCS40

Mass: 139 g



Introduction

0.36°/Geared
AR
AC Input Motor & Driver

0.72°/Geared
RK

0.36°/Geared
AR

0.36°/0.72°/
Geared
CRK
DC Input Motor & Driver

1.8°/Geared
RBK

0.9°/1.8°/Geared
CMK

0.72°
PK

1.8°/Geared
High-Torque
PKP
Motor Only

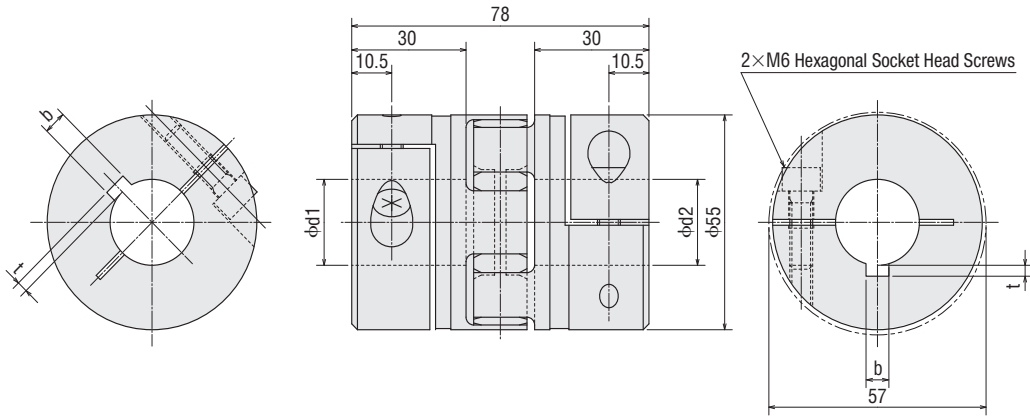
0.9°/1.8°/Geared
PK

Controllers
SG8030JY

Accessories

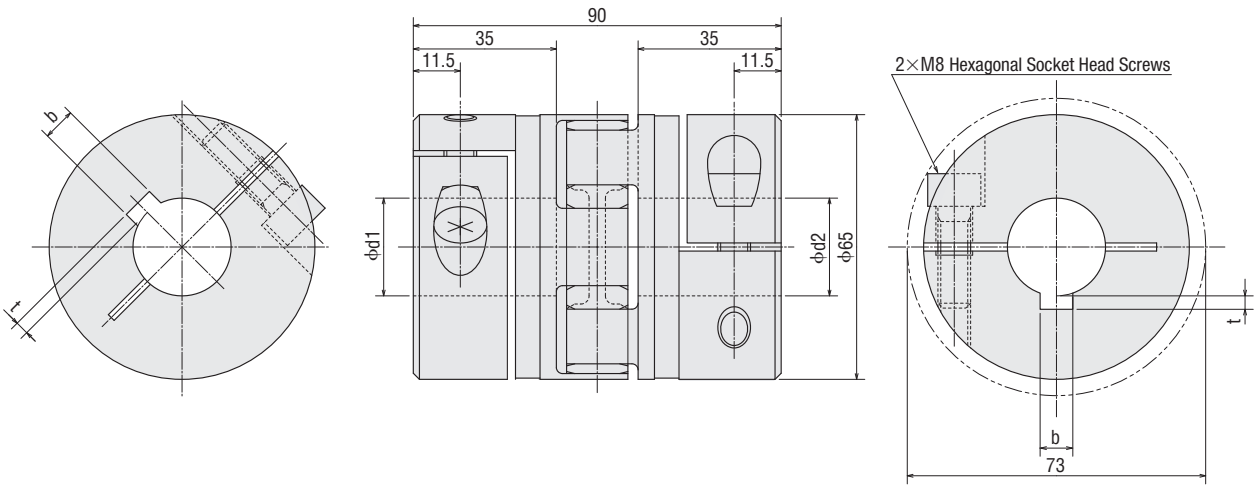
MCS55

Mass: 282 g



MCS65

Mass: 535 g



Cables

Couplings

Mounting Brackets

Regeneration Unit

Clean Dampers

DIN Rail Mounting Plate

Control Module

Data Setting Software

Motor Mounting Brackets RoHS

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



Product Line

Standard Type, High-Torque Type

Material: Aluminum alloy

Product Name	Applicable Product					
	α STEP AR Series (AC and DC Input)	RK Series	CRK Series	RBK Series	CMK Series	Motor Only PKP Series, PK Series
PAFOP						
PALOP	AR46	RK543 RK544 RK545	CRK543 CRK544 CRK545 CRK546	RBK244 RBK246	CMK243 CMK244 CMK245 CMK246	PK543 PK544 PK545 PK546 PKP243, PK243 PKP244, PK244 PKP245, PK245 PKP246 PKE243 PKE244 PKE245
PAL2P-5	AR66 AR69	RK564 RK566 RK569	CRK564 CRK566 CRK569	–	–	PK564 PK566 PK569
PAL2P-2	–	–	–	RBK264 RBK266 RBK268	CMK264 CMK266 CMK268	PK264 PK266 PK268 PK264J PK266J PK267J PK269J
PAL4P-5	AR98 AR911	RK596 RK599 RK5913	–	–	–	PK596 PK599 PK5913
PAL4P-2	–	–	–	RBK296 RBK299 RBK2913	–	PK296 PK299 PK2913

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

Note

- They cannot be used with geared stepping motors.

Geared Type

Material: Aluminum alloy

Product Name	Applicable Product					
	α STEP AR Series (AC and DC Input)	RK Series	CRK Series	RBK Series	CMK Series	Motor Only PKP Series, PK Series
SOLOA	–	–	–	–	CMK243-SG □	PKP243-SG □ PK243-SG □
SOLOB	AR46-T □	RK543-T □	CRK543-T □	RBK244-P □	CMK243-T □	PK543-T □ PK244-P □
SOL2A	AR66-T □	RK564-T □	CRK564-T □	–	CMK264-SG □ CMK264-T □	PK564-T □ PKP264-SG □ PK264-SG □
SOL5A	–	–	–	–	–	PK296-SG □
SOL5B	AR98-T □	RK596-T □	–	–	–	PK596-T □ PK296-SG □
PLA60E	AR66-T □	RK564-T □	CRK564-T □	–	CMK264-T □	PK564-T □
PLA60G	AR66-PS □ AR66-N □	RK564-PS □ RK566-PS □ RK564-N □ RK566-N □	CRK564-PS □ CRK566-PS □ CRK564-N □ CRK566-N □	–	–	PK564-PS □ PK566-PS □ PK564-N □ PK566-N □ PK264-P □ PK266-P □
PLA60H	AR66-H □	RK564-H □	CRK564-H □	–	–	PK564-H □
PLA90E	AR98-T □	RK596-T □	–	–	–	PK596-T □
PLA90G	AR98-PS □ AR98-N □	RK596-PS □ RK599-PS □ RK596-N □ RK599-N □	–	–	–	PK596-PS □ PK599-PS □ PK596-N □ PK599-N □
PLA90H	AR98-H □	RK596-H □	–	–	–	PK596-H □

- A number indicating the gear ratio is entered where the box □ is located.

Cables

Couplings

Mounting Brackets

Regeneration Unit

Clean Dampers

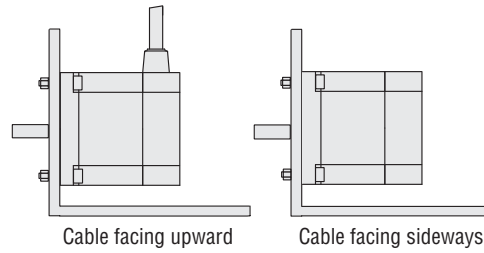
DIN Rail Mounting Plate

Control Module

Data Setting Software

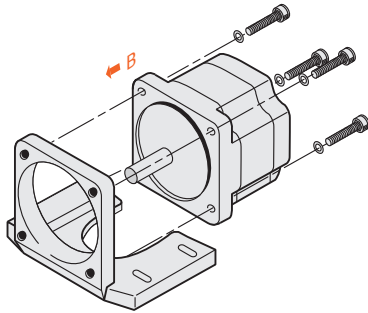
Motor Installation Direction

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



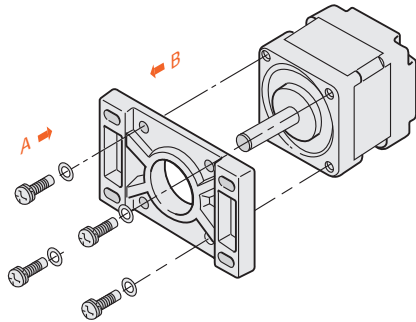
Mounting the Motor

1 PAL2P-5, PAL2P-2, PAL4P-5, PAL4P-2



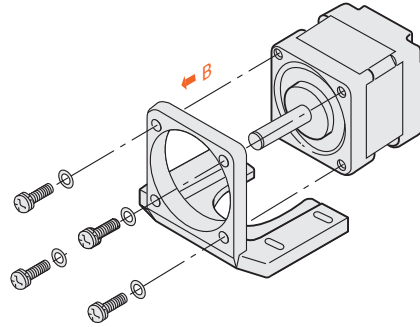
- ① Use the screws provided to secure the motor to the mounting bracket.
- ② Attach the motor from the direction shown by the arrow (B).

3 PAFOP



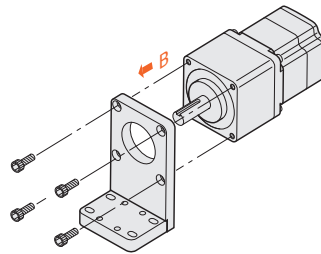
- ① Use the screws provided to secure the motor to the mounting bracket.
- ② Attach motor from the direction shown by either arrow (A) or arrow (B).

2 PAL0P, SOLOA, SOLOB, SOL2A, SOL5B



- ① Use the screws provided to secure the motor to the mounting bracket.
(No screws are supplied for **SOLOA**, **SOLOB**, **SOL2A** and **SOL5B**. Provide appropriate screws separately.)
- ② Attach the motor from the direction shown by the arrow (B).

4 PLA60E, PLA60G, PLA60H, PLA90E, PLA90G, PLA90H*

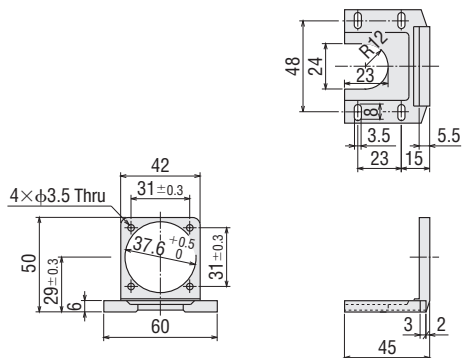


- ① Use the screws provided to secure the motor to the mounting bracket.
- ② Attach the motor from the direction shown by the arrow (B).
*For **PLA90H**, the screws must be attached from the direction shown by the arrow (B).

Dimensions (Unit = mm)

PALOP

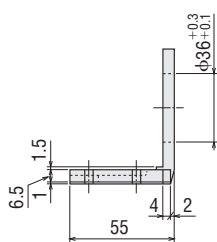
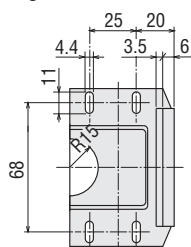
Mass: 35 g



● Mounting Screws: M3 Length 10 mm
4 pieces included

PAL2P-5

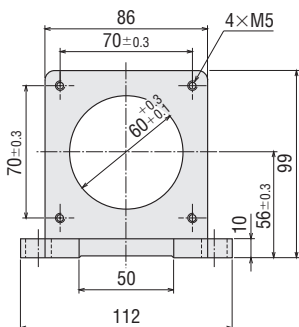
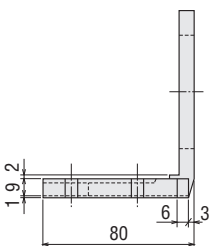
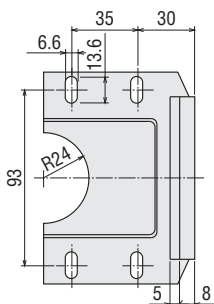
Mass: 110 g



● Mounting Screws: M4 Length 12 mm
4 pieces included

PAL4P-5

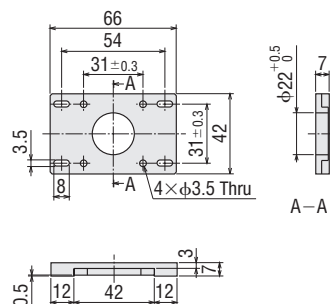
Mass: 250 g



● Mounting Screws: M5 Length 16 mm
4 pieces included

PAFOP

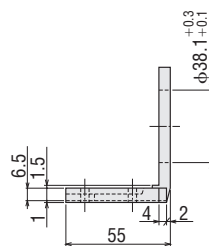
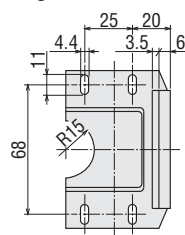
Mass: 30 g



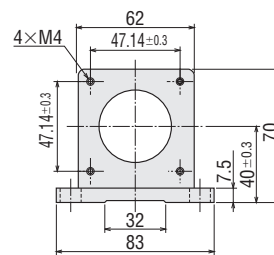
● Mounting Screws: M3 Length 7 mm
4 pieces included

PAL2P-2

Mass: 110 g



● Mounting Screws: M4 Length 12 mm
4 pieces included



Cables

Couplings

Mounting Brackets

Regeneration Unit

Clean Dampers

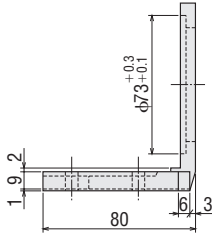
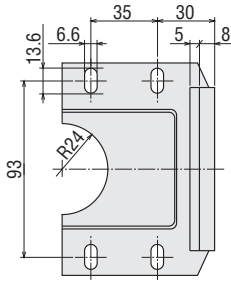
DIN Rail Mounting Plate

Control Module

Data Setting Software

PAL4P-2

Mass: 250 g



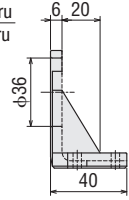
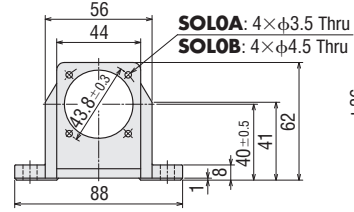
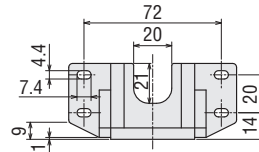
● Mounting Screws: M5 Length 16 mm
4 pieces included

SOLOA

Mass: 85 g

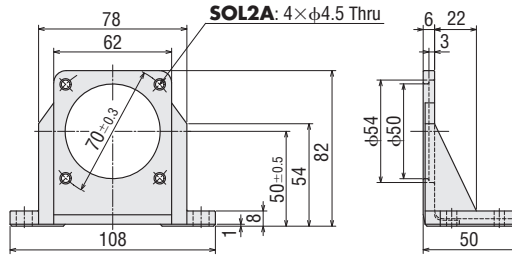
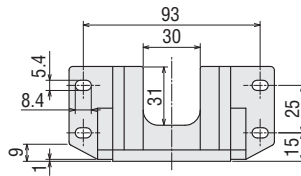
SOLOB

Mass: 85 g



SOL2A

Mass: 120 g



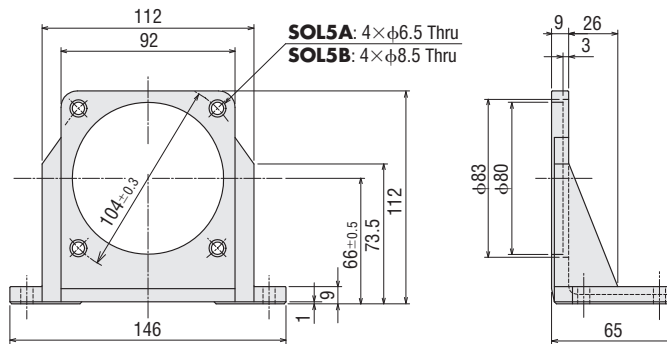
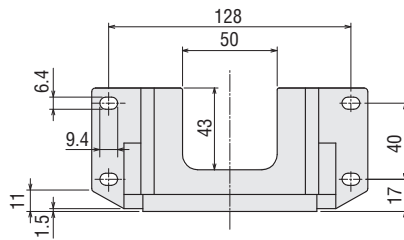
● Mounting Screws: **SOL2A** M4 Length 12 mm
4 pieces included

SOL5A

Mass: 270 g

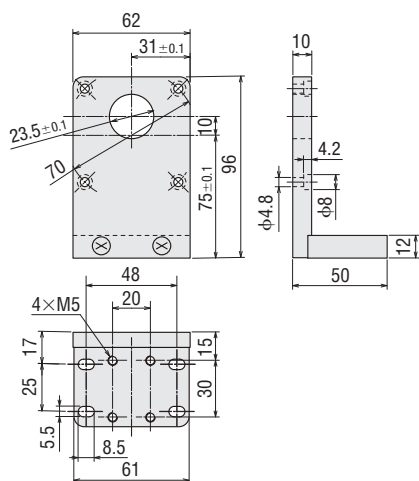
SOL5B

Mass: 270 g



PLA60E

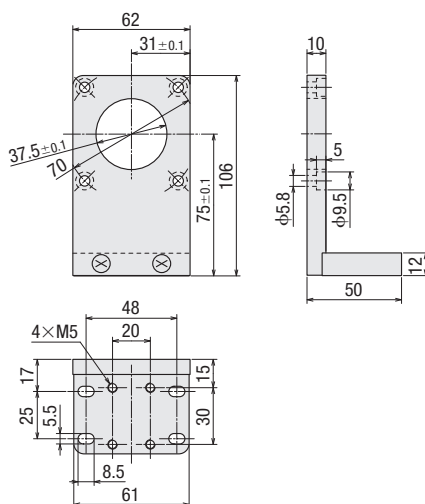
Mass: 0.7 kg



- Mounting Screws: M5 Length 15 mm
4 pieces included

PLA60G

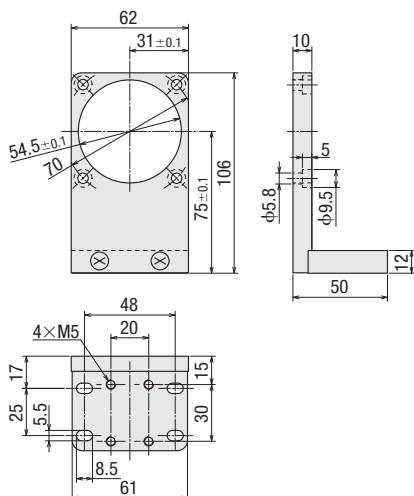
Mass: 0.7 kg



- Mounting Screws: M5 Length 15 mm
4 pieces included

PLA60H

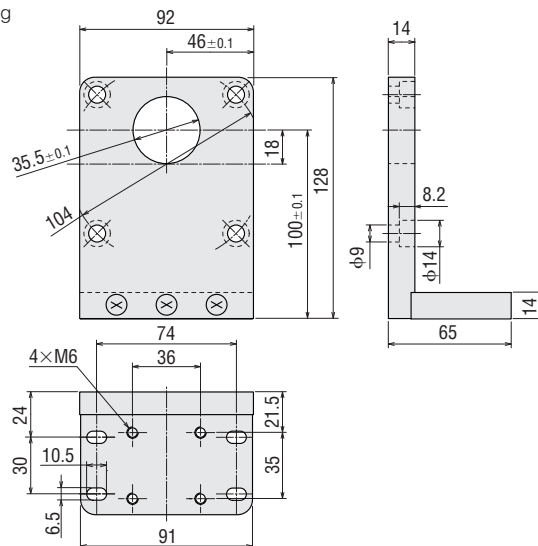
Mass: 0.7 kg



- Mounting Screws: M5 Length 15 mm
4 pieces included

PLA90E

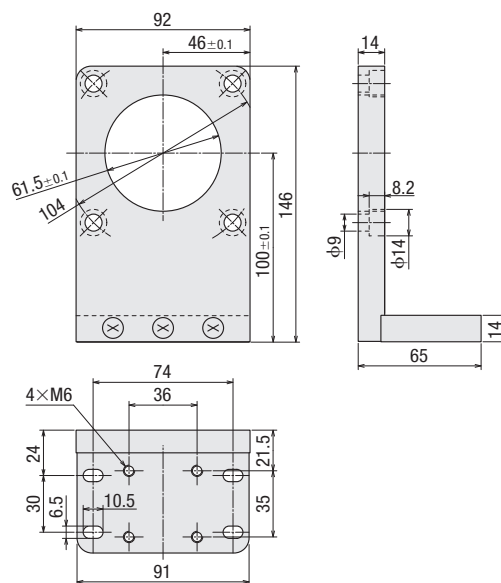
Mass: 1.6 kg



- Mounting Screws: M8 Length 20 mm
4 pieces included

PLA90G

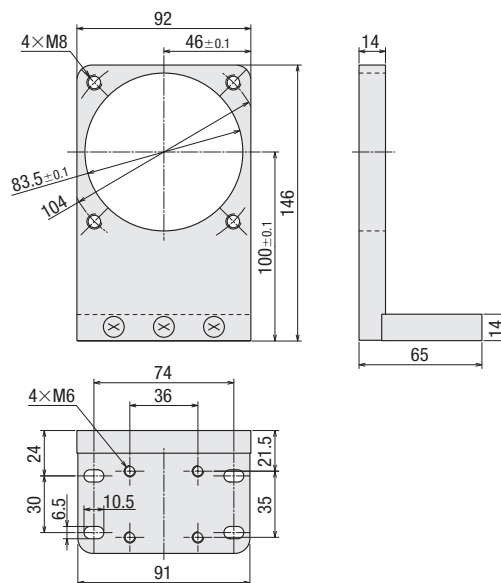
Mass: 1.6 kg



- Mounting Screws: M8 Length 20 mm
4 pieces included

PLA90H

Mass: 1.6 kg



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

Introduction
0.36°/Geared AR AC Input Motor & Driver
0.72°/Geared RK
0.36°/Geared AR DC Input Motor & Driver
0.36°/0.72°/ Geared CRK
1.8°/Geared RK DC Input Motor & Driver
0.9°/1.8°/Geared CMK
0.72° PK
1.8°/Geared High-Torque PKP Motor Only
0.9°/1.8°/Geared PK
Controllers SG8030JY
Accessories

Cables

Couplings

Mounting Brackets

Regeneration Unit

Clean Dampers

DIN Rail Mounting Plate

Control Module

Data Setting Software

Regeneration Unit RoHS

Sometimes the regenerative power generated by the motor exceeds the driver's regenerative power absorption capacity.

In such a case, a regeneration unit is connected to the driver to release the regenerative power.



Conditions under which a regeneration unit may be required:

- When using for vertical operation
- During acceleration and deceleration time when an inertial load is installed

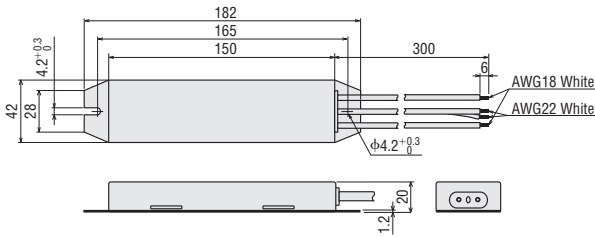
Product Line

Product Name	Applicable Product
RGB100	AR Series Built-In Controller Package

Dimensions (Unit = mm)

RGB100

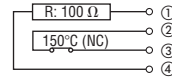
Mass: 0.25 kg



Specifications

Product Name	RGB100
Continuous Power	100 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 (Min.current 5 mA)

- Install the regeneration unit in a location that has the same heat radiation capability as the heat sink (Material: aluminum, 350×350 mm, 3 mm thick).



- ①-④ : AWG18 (0.75 mm²)×2
For regeneration current
Connect to RG Terminal
- ②-③ : AWG22 (0.3 mm²)×2
This is the thermostat output.
When an abnormality has been detected, cut off the power supply side with the thermostat contact.

Clean Dampers RoHS

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

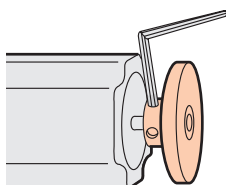
Features

- Excellent Vibration Absorption
The doughnut-shaped internal inertia body and silicon gel absorb vibration. This feature enables a stable damping effect.
- Cleanness Support
Since there is no frictional dust it can be used in environments where higher degrees of cleanness 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.

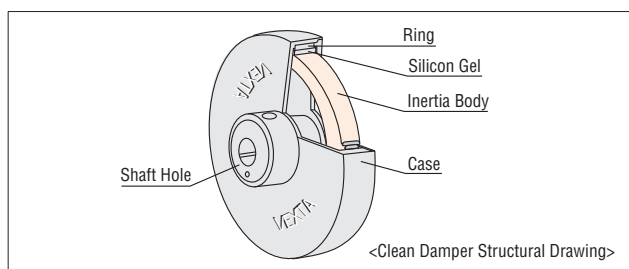
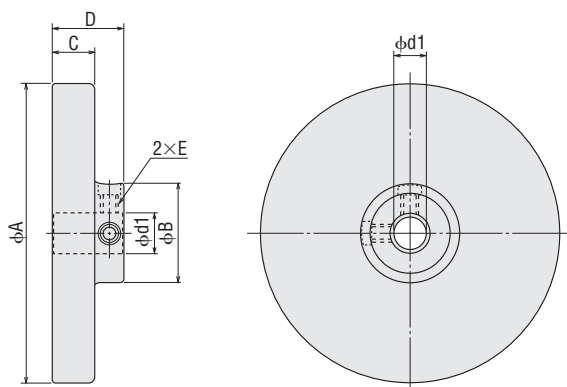
Product Line

Product Name	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

Installation Method of the Clean Damper



Dimensions (Unit = mm)



Point the mounting screws of the clean damper toward the motor case, fasten to the shaft and tighten the damper's mounting 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 mounting 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.

Product Name	φd1	φA	φB	C	D	E
D4CL-5.0F	$5^{+0.018}_0$	$\phi 36 \pm 0.5$	$\phi 13 \pm 0.5$	9 ± 0.3	15 ± 0.5	M3
D6CL-6.3F	$6.35^{+0.022}_0$	$\phi 44.5 \pm 0.5$	$\phi 20 \pm 0.5$	15 ± 0.3	22 ± 0.5	M4
D6CL-8.0F	$8^{+0.022}_0$		$\phi 79.5 \pm 0.5$	$\phi 26 \pm 0.5$	11 ± 0.3	19 ± 0.5

Clean Damper Selection Table

	Product Name	Inertia kg·m ²	Mass g	Applicable Product			
				<i>α</i> STEP AR Series (AC and DC Input)	RK Series, CRK Series	RBK Series, CMK Series	Motor Only PKP Series, PK Series
Cables	D4CL-5.0F	34×10 ⁻⁷	24	AR46	RK543 RK544 RK545 CRK523 CRK524 CRK525 CRK543 CRK544 CRK545 CRK546	RBK223 RBK224 RBK225 RBK233 RBK235 RBK244 RBK246 CMK223 CMK224 CMK225 CMK233 CMK235 CMK243 CMK244 CMK245 CMK246	PKP223 PKP224 PKP225 PKP233 PKP235 PKP243 PKP244 PKP245 PKP246 PKE243 PKE244 PKE245 PK243 PK244 PK245 PK523 PK524 PK525 PK543 PK544 PK545 PK546
Couplings							
Mounting Brackets							
Regeneration Unit							
Clean Dampers							
DIN Rail Mounting Plate	D6CL-6.3F	140×10 ⁻⁷	62	-	-	RBK264 RBK266 RBK268 CMK256 CMK258 CMK264 CMK266 CMK268	PK256 PK258 PK264 PK266 PK268
Control Module	D6CL-8.0F	140×10 ⁻⁷	61	AR66 AR69 AR98 AR911	RK564 RK566 RK569 CRK564 CRK566 CRK569	RBK264P RBK266P RBK268P	PKP264 PKP266 PKP268 PK264J PK266J PK267J PK269J PK564 PK566 PK569
Data Setting Software	D9CL-14F	870×10 ⁻⁷	105	-	RK596 RK599 RK5913	RBK296 RBK299 RBK2913	PK296 PK299 PK2913 PK596 PK599 PK5913

Operating Temperature Range: -20~+80°C

DIN Rail Mounting Plate RoHS

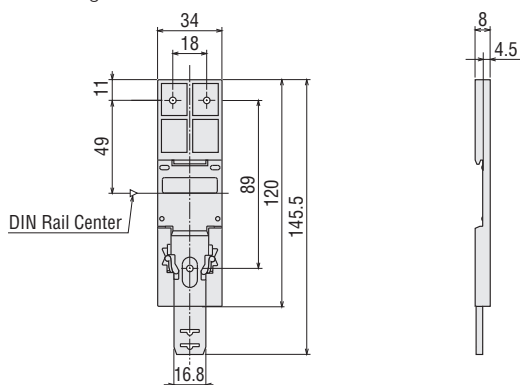
This mounting plate is convenient for installing the drivers of **RBK** Series on DIN rails with ease.

Product Line

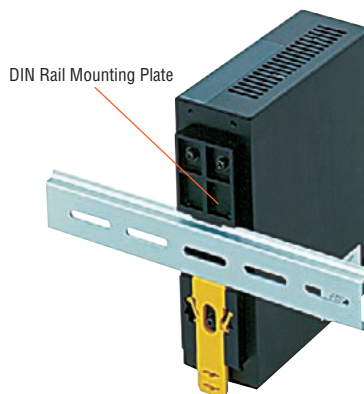
Product Name	Applicable Product
PADP01	RBK Series Driver

Dimensions (Unit = mm)

Mass: 20 g



- Screws (Included)
M3P0.5 Length 8 mm ... 3 pieces



Introduction

0.36°/Geared
AR
AC Input Motor & Driver

0.72°/Geared
RK

0.36°/Geared
AR

0.36°/0.72°/
Geared
CRK
DC Input Motor & Driver

1.8°/Geared
RBK
Motor Only

0.9°/1.8°/Geared
CMK

0.72°
PK

1.8°/Geared
High-Torque
PKP
Motor Only

0.9°/1.8°/Geared
PK

Controllers
SG80301Y

Accessories

Control Module RoHS

Cables

Couplings

Mounting Brackets

Regeneration Unit

Clean Dampers

DIN Rail Mounting Plate

Control Module

Data Setting Software

Features

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

- The settings and monitoring details depend on the applicable products.



Product Line

Product Name	Applicable Product
OPX-2A	AR Series (AC input and DC input) CRK Series Built-In Controller Package

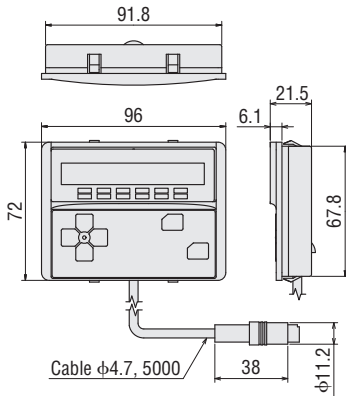
Specifications

Display	LED
Cable Length	5 m
Ambient Temperature	0~+40°C (non-condensing)

Dimensions (Unit = mm)

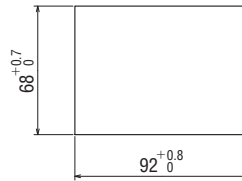
Control Module

Mass: 0.25 kg



Panel Cut-Out for Control Module

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



Data Setting Software RoHS

Operation data and various parameters can be established and edited on the computer, as well as I/O and operating speed waveforms monitored.

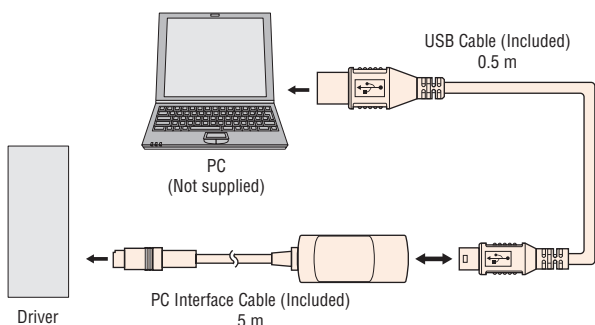
● The settings and monitoring details depend on the applicable products.



Product Line

Product Name	Applicable Product
MEXE02	AR Series (AC input and DC input) CRK Series Built-In Controller Package

Connection between Computer and Driver



Operating Environment

Operating Systems	The OS supports 32-bit (x86) and 64-bit (x64) versions only. Windows 2000 Professional Service Pack 4 or later*1 Windows XP Home Edition Service Pack 3 or later Windows XP Professional Service Pack 2 Windows XP Professional Service Pack 3*2 or later Windows Vista Home Basic Service Pack 2 or later Windows Vista Home Premium Service Pack 2 or later Windows Vista Business Service Pack 2 or later Windows Vista Ultimate Service Pack 2 or later Windows Vista Enterprise Service Pack 2 or later Windows 7 Starter Service Pack 1 or later Windows 7 Home Premium Service Pack 1 or later Windows 7 Professional Service Pack 1 or later Windows 7 Ultimate Service Pack 1 or later Windows 7 Enterprise Service Pack 1 or later
CPU*3	Intel Core Processor 2 GHz or more (The OS must be supported.)
Memory*3	32-bit (x86) version: 1 GB or more 64-bit (x64) version: 2 GB or more
Hard Disk*4	Available disk space of 30 MB or more
Disk Device	CD-ROM drive
Serial Interface	USB 1.1 1 port

*1 Rollup 1 must be applied.

*2 Service Pack 3 supports 32-bit (x86) version only

*3 The OS operating conditions must be satisfied.

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

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