Servo Motors

Accessories

Cables

1 Connection Cable Sets
Flexible Connection Cable Sets

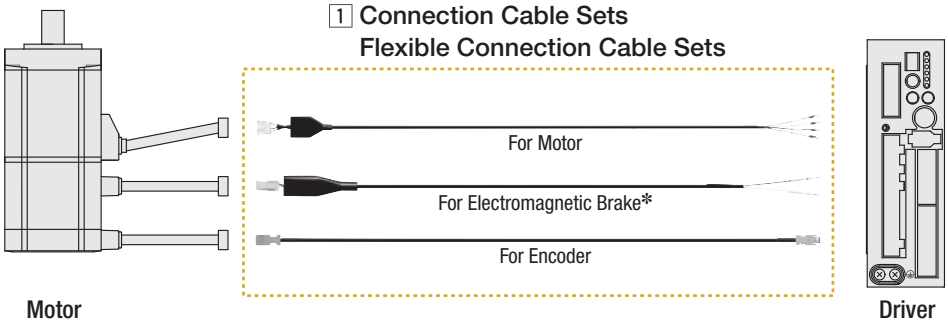
2 Extension Cable Sets
Flexible Extension Cable Sets

The **NX** Series comes with cables of 3 m (9.8 ft.) for the connection between the motor and driver.
When the distance between the motor and driver is extended longer than 3 m (9.8 ft.), a connection cable set or extension cable set must be used. Use a flexible extension cable if the cable will be bent repeatedly.

Cable System Configuration

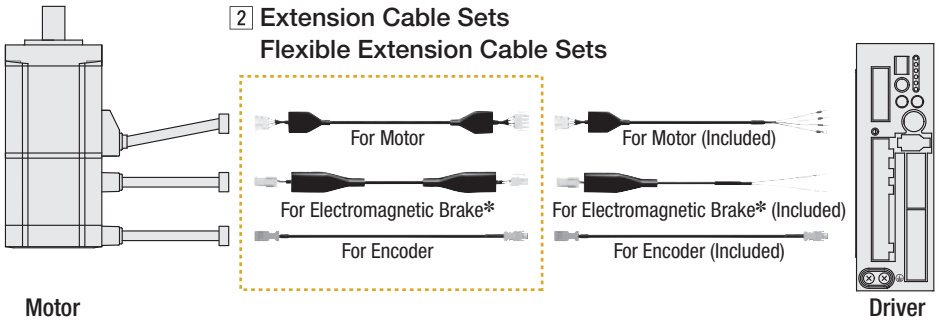
●When Connecting the Motor and Driver without Using the Included Cables

Use a connection cable set or use a flexible connection cable set if the cables will be bent.



●When Extending the Distance between the Motor and the Driver Using Included Cables

Use an extension cable set and connect it to the included cables, or use a flexible extension cable set added if the cables will be bent.



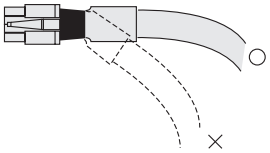
*Cables for electromagnetic brake are for use when using electromagnetic brake type motors.

Note

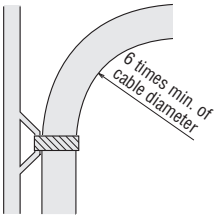
● Keep the overall cable length 20 m (65.6 ft.) max. when using an extension cable set or a flexible extension cable set to connect with cables included with the **NX** Series.

Note on Use of Flexible Cables

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

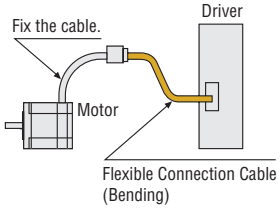


② For the bending radius, use 6 times min. of the cable diameter.

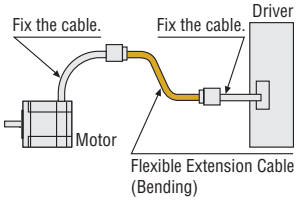


③ The connection cable is not for bending. If the cable is to be bent, bend it at the flexible connection cable.

• Flexible Connection Cable



• Flexible Extension Cable



1 Connection Cable Sets Flexible Connection Cable Sets

Product Line

●Connection Cable Sets

◇For Standard Type Motor

Cable for Motor　Cable for Encoder

Product Name	Length L m (ft.)	List Price
CC010VNF	1 (3.3)	$100.00
CC020VNF	2 (6.6)	$115.00
CC030VNF	3 (9.8)	$130.00
CC050VNF	5 (16.4)	$161.00
CC070VNF	7 (23)	$192.00
CC100VNF	10 (32.8)	$238.00
CC150VNF	15 (49.2)	$315.00
CC200VNF	20 (65.6)	$391.00

◇For Electromagnetic Brake Type Motor

Cable for Motor　Cable for Encoder　Cable for Electromagnetic Brake

Product Name	Length L m (ft.)	List Price
CC010VNFB	1 (3.3)	$120.00
CC020VNFB	2 (6.6)	$138.00
CC030VNFB	3 (9.8)	$156.00
CC050VNFB	5 (16.4)	$192.00
CC070VNFB	7 (23)	$228.00
CC100VNFB	10 (32.8)	$281.00
CC150VNFB	15 (49.2)	$371.00
CC200VNFB	20 (65.6)	$460.00

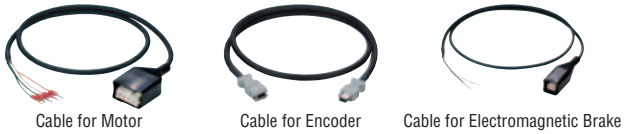
●Flexible Connection Cable Sets

◇For Standard Type Motor

Cable for Motor　Cable for Encoder

Product Name	Length L m (ft.)	List Price
CC010VNR	1 (3.3)	$107.00
CC020VNR	2 (6.6)	$130.00
CC030VNR	3 (9.8)	$153.00
CC050VNR	5 (16.4)	$200.00
CC070VNR	7 (23)	$246.00
CC100VNR	10 (32.8)	$315.00
CC150VNR	15 (49.2)	$430.00
CC200VNR	20 (65.6)	$545.00

◇For Electromagnetic Brake Type Motor

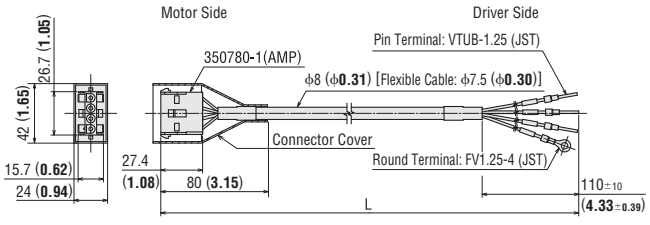


Cable for Motor　Cable for Encoder　Cable for Electromagnetic Brake

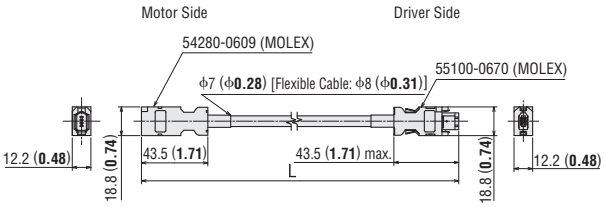
Product Name	Length L m (ft.)	List Price
CC010VNRB	1 (3.3)	$132.00
CC020VNRB	2 (6.6)	$161.00
CC030VNRB	3 (9.8)	$191.00
CC050VNRB	5 (16.4)	$249.00
CC070VNRB	7 (23)	$308.00
CC100VNRB	10 (32.8)	$397.00
CC150VNRB	15 (49.2)	$544.00
CC200VNRB	20 (65.6)	$691.00

Dimensions Unit = mm (in.)

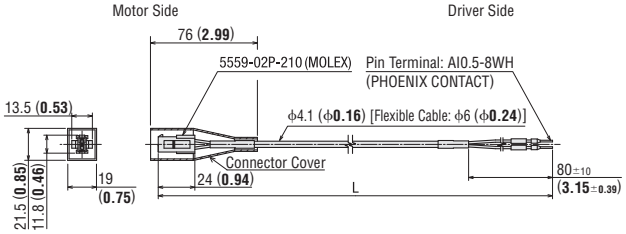
◇Cable for Motor



◇Cable for Encoder



◇Cable for Electromagnetic Brake

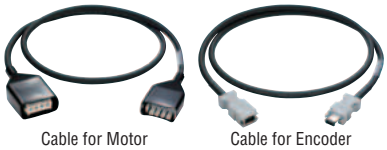


2 Extension Cable Sets Flexible Extension Cable Sets

Product Line

●Extension Cable Sets

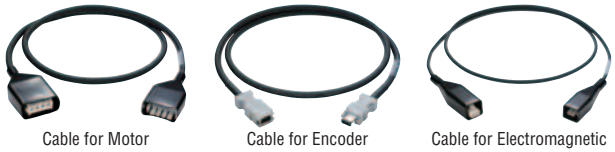
◇For Standard Type Motor



Cable for Motor　Cable for Encoder

Product Name	Length L m (ft.)	List Price
CC010VNFT	1 (3.3)	$106.00
CC020VNFT	2 (6.6)	$122.00
CC030VNFT	3 (9.8)	$137.00
CC050VNFT	5 (16.4)	$168.00
CC070VNFT	7 (23)	$198.00
CC100VNFT	10 (32.8)	$244.00
CC150VNFT	15 (49.2)	$321.00

◇For Electromagnetic Brake Type Motor



Cable for Motor　Cable for Encoder　Cable for Electromagnetic Brake

Product Name	Length L m (ft.)	List Price
CC010VNFBT	1 (3.3)	$132.00
CC020VNFBT	2 (6.6)	$150.00
CC030VNFBT	3 (9.8)	$168.00
CC050VNFBT	5 (16.4)	$203.00
CC070VNFBT	7 (23)	$239.00
CC100VNFBT	10 (32.8)	$293.00
CC150VNFBT	15 (49.2)	$382.00

●Flexible Extension Cable Sets

◇For Standard Type Motor

Cable for Motor　Cable for Encoder

Product Name	Length L m (ft.)	List Price
CC010VNRT	1 (3.3)	$114.00
CC020VNRT	2 (6.6)	$137.00
CC030VNRT	3 (9.8)	$160.00
CC050VNRT	5 (16.4)	$206.00
CC070VNRT	7 (23)	$252.00
CC100VNRT	10 (32.8)	$321.00
CC150VNRT	15 (49.2)	$436.00

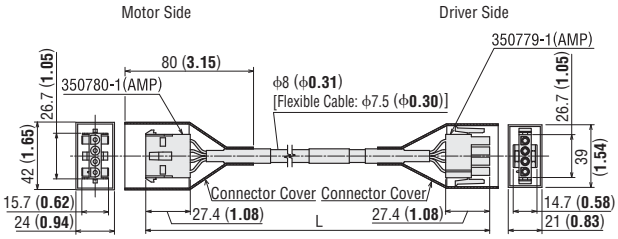
◇For Electromagnetic Brake Type Motor

Cable for Motor　Cable for Encoder　Cable for Electromagnetic Brake

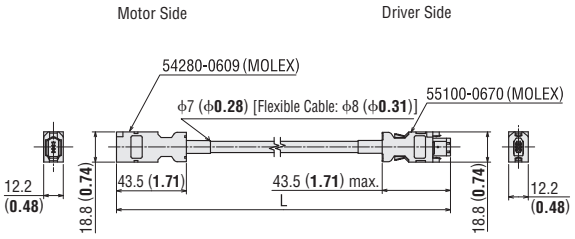
Product Name	Length L m (ft.)	List Price
CC010VNRBT	1 (3.3)	$143.00
CC020VNRBT	2 (6.6)	$173.00
CC030VNRBT	3 (9.8)	$202.00
CC050VNRBT	5 (16.4)	$261.00
CC070VNRBT	7 (23)	$320.00
CC100VNRBT	10 (32.8)	$408.00
CC150VNRBT	15 (49.2)	$555.00

Dimensions Unit = mm (in.)

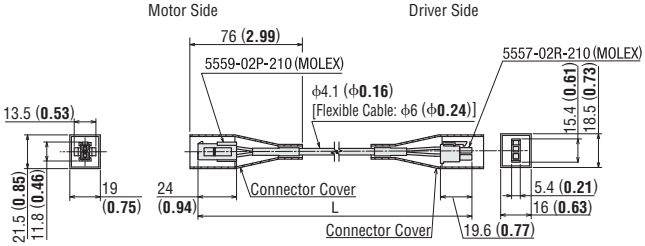
◇Cable for Motor



◇Cable for Encoder



◇Cable for Electromagnetic Brake



Note

● Keep the overall cable length 20 m (65.6 ft.) max. when using an extension cable set or a flexible extension cable set to connect with cables included with the **NX** Series.

Driver Cables

General-Purpose Cables

These shielded cables have a half-pitch connector at one end of the cable for easy connection to the driver.
At the other end, the laminated lead wires are arranged in the 1.27 mm (0.05 in.) pitch, which are convenient for crimp connectors.
Both ends of the cable are equipped with ground wires for easy grounding.
2 types are available: the straight type and right angle type.

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 connection type of the controller you are using to the other end of the cable.

Straight Type

Right Angle Type

Product Line

◇Straight Type

Product Name	Applicable Drivers	Length L m (ft.)	List Price
CC36D1E	For CN7 (36 pins)	1 (3.3)	$112.00
CC36D2E		2 (6.6)	$120.00

◇Right Angle Type

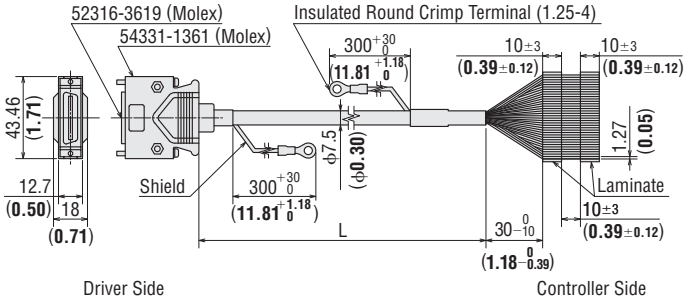
Product Name	Applicable Drivers	Length L m (ft.)	List Price
CC36D1AE	For CN7 (36 pins)	1 (3.3)	$112.00
CC36D2AE		2 (6.6)	$120.00

Dimensions Unit = mm (in.)

◇Straight Type

CC36D1E, CC36D2E

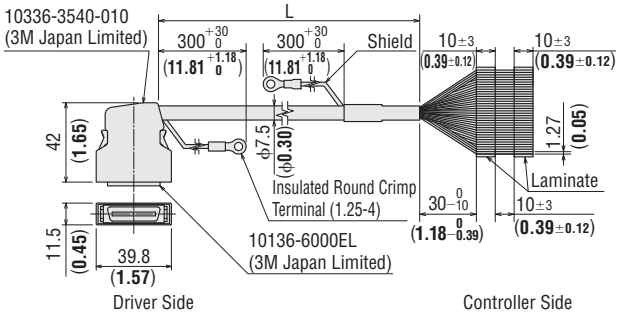
Conductor: AWG28



◇Right Angle Type

CC36D1AE, CC36D2AE

Conductor: AWG28



Connector – Terminal Block Conversion Units

These are conversion units that can connect a driver to a programmable controller or a sensor using a terminal block.

- A shielded cable is used. Easy grounding with ground wires at both ends of the cable.
- Includes a signal name plate for easy, one-glance identification of driver signal names.
- DIN rail installable
- Applicable terminal: Fork terminal
- Cable length: 1 m (3.3 ft.)

CC36T10E

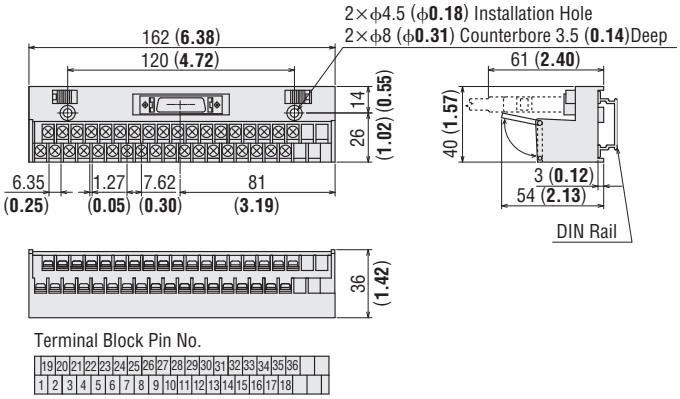
Product Line

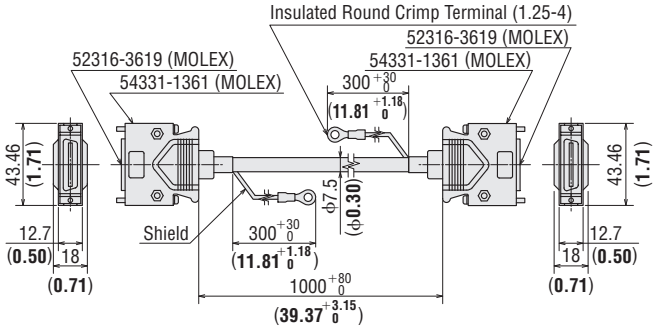
Product Line	Product Name	Applicable Drivers	Length L m (ft.)	List Price
36 Poles	**CC36T10E**	For CN7 (36 pins)	1 (3.3)	$284.00

Dimensions Unit = mm (in.)

CC36T10E

2D CAD B991





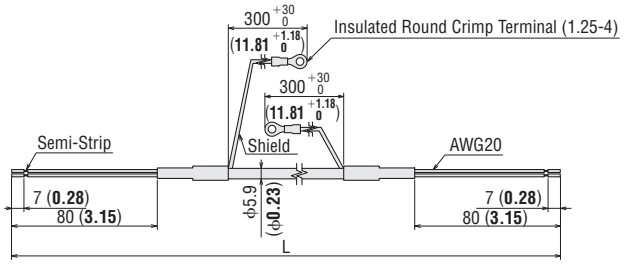
General-Purpose Cables for DC Power Supplies

This cable is used to link drivers and DC power supplies.

Product Line

Product Name	Length L (m) (ft.)	List Price
CC02D010-3	1 (3.3)	$12.00
CC02D020-3	2 (6.6)	$15.00
CC02D050-3	5 (16.4)	$23.00

Dimensions Unit = mm (in.)



Flexible Couplings
MCV Couplings

Features

- Compatible with servo motors, which support low resonance and high gain
- Anti-vibration rubber absorbs vibration generated by the motor
- High response
- Non-backlash
- Electrical insulation

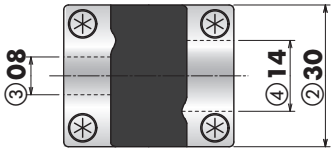
Product Number

MCV 30 08 14

① ② ③ ④

①	**MCV** Coupling
②	Outer Diameter Dimension 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.



Product Line

Product Name	List Price
MCV19□	$72.00
MCV25□	$79.00
MCV30□	$83.00
MCV34□	$91.00
MCV39□	$106.00

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

Selecting a Coupling

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

Example: Motor/Driver Package Name: **NX620AA-3** Driven shaft diameter: ϕ8 (ϕ0.3150 in.)

1. The coupling type that matches **NX620AA-3** from the coupling selection table is **MCV30**.
2. The inner diameter of the coupling according to the motor shaft diameter will be **14** [ϕ14 (ϕ0.5512 in.)], and will be **8** [ϕ8 (ϕ0.3150 in.)] 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 **MCV300814**.

- When the inner diameter is ϕ6.35 (ϕ0.2500 in.), the number is **06A**.

Coupling Selection Table

Applicable Products			Type	Motor Shaft Diameter mm (in.)		Driven Shaft Diameter mm (in.)								
Type	Frame Size mm (in.)	Product Name				**05** ϕ5 (ϕ0.1969)	**06** ϕ6 (ϕ0.2362)	**06A** ϕ6.35 (ϕ0.2500)	**08** ϕ8 (ϕ0.3150)	**10** ϕ10 (ϕ0.3937)	**12** ϕ12 (ϕ0.4724)	**14** ϕ14 (ϕ0.5512)	**15** ϕ15 (ϕ0.5906)	**16** ϕ16 (ϕ0.6299)
Standard Type	42 (1.65)	**NX45 NX410**	**MCV19**	**8**	ϕ8 (ϕ0.3150)	●	●		●					
	60 (2.36)	**NX620 NX640**	**MCV30**	**14**	ϕ14 (ϕ0.5512)				●	●	●	●	●	
	85 (3.35)	**NX975**	**MCV39**	**16**	ϕ16 (ϕ0.6299)					●	●	●	●	●

- The applicable products are listed such that the series name can be determined.

Specifications

Product Name	Dimensions					Normal Torque	Maximum Torque*1	Mass	Inertia*2	Static Torsion Spring Constant	Permissible Eccentricity	Permissible Declination	Permissible Endplay
	Outer Diameter	Length	Shaft Hole Diameter d1	Shaft Hole Diameter d2	Screw Used								
	mm (in.)	mm (in.)	mm (in.)	mm (in.)		N·m (lb-in)	N·m (lb-in)	g (oz.)	kg·m^2 (lb-in^2)	N·m/rad (lb-in/rad)	mm (in.)	deg	mm (in.)
MCV190508	19 (0.75)	26 (1.02)	5 (0.1969)	8 (0.3150)	M2	2.1 (18.5)	4.2 (37)	14 (0.49)	8.4×10^{-7} (0.046)	88 (770)	0.15 (0.0059)	1.5	±0.2 (±0.0079)
MCV190608			6 (0.2362)	8 (0.3150)									
MCV190808			8 (0.3150)	8 (0.3150)									
MCV250508	25 (0.98)	32 (1.26)	5 (0.1969)	8 (0.3150)	M2.5	4.0 (35)	8.0 (70)	28 (0.98)	30×10^{-7} (0.164)	170 (1500)	0.15 (0.0059)	1.5	±0.2 (±0.0079)
MCV250608			6 (0.2362)	8 (0.3150)									
MCV250610			6 (0.2362)	10 (0.3937)									
MCV2506A08			6.35 (0.2500)	8 (0.3150)									
MCV2506A10			6.35 (0.2500)	10 (0.3937)									
MCV250808			8 (0.3150)	8 (0.3150)									
MCV250810			8 (0.3150)	10 (0.3937)									
MCV250812			8 (0.3150)	12 (0.4724)									
MCV251010			10 (0.3937)	10 (0.3937)									
MCV251012			10 (0.3937)	12 (0.4724)									
MCV300808	30 (1.18)	36 (1.42)	8 (0.3150)	8 (0.3150)	M3	6.3 (55)	12.6 (111)	45 (1.59)	69×10^{-7} (0.38)	220 (1940)	0.20 (0.0079)	1.5	±0.3 (±0.0118)
MCV300810			8 (0.3150)	10 (0.3937)									
MCV300812			8 (0.3150)	12 (0.4724)									
MCV300814			8 (0.3150)	14 (0.5512)									
MCV300815			8 (0.3150)	15 (0.5906)									
MCV301010			10 (0.3937)	10 (0.3937)									
MCV301012			10 (0.3937)	12 (0.4724)									
MCV301014			10 (0.3937)	14 (0.5512)									
MCV301015			10 (0.3937)	15 (0.5906)									
MCV301214			12 (0.4724)	14 (0.5512)									
MCV301414			14 (0.5512)	14 (0.5512)									
MCV301415			14 (0.5512)	15 (0.5906)									
MCV340814	34 (1.34)	38 (1.50)	8 (0.3150)	14 (0.5512)	M3	8.0 (70)	16.0 (141)	65 (2.2)	130×10^{-7} (0.71)	390 (3400)	0.20 (0.0079)	1.5	±0.3 (±0.0118)
MCV341014			10 (0.3937)	14 (0.5512)									
MCV341214			12 (0.4724)	14 (0.5512)									
MCV341414			14 (0.5512)	14 (0.5512)									
MCV341415			14 (0.5512)	15 (0.5906)									
MCV341416			14 (0.5512)	16 (0.6299)									
MCV391014	39 (1.54)	48 (1.89)	10 (0.3937)	14 (0.5512)	M4	13.5 (119)	27.0 (230)	98 (3.4)	270×10^{-7} (1.48)	520 (4600)	0.20 (0.0079)	1.5	±0.3 (±0.0118)
MCV391016			10 (0.3937)	16 (0.6299)									
MCV391214			12 (0.4724)	14 (0.5512)									
MCV391216			12 (0.4724)	16 (0.6299)									
MCV391414			14 (0.5512)	14 (0.5512)									
MCV391415			14 (0.5512)	15 (0.5906)									
MCV391416			14 (0.5512)	16 (0.6299)									
MCV391516			15 (0.5906)	16 (0.6299)									
MCV391616			16 (0.6299)	16 (0.6299)									

*1 Take the maximum torque into consideration when the limited duty region of the AC servo motor is being used.
*2 The inertia is the value at the maximum shaft hole diameter.

Temperature Correction Factor

Operating Ambient Temperature	−20 to +30°C (−4 to +86°F)	+30 to +40°C (+86 to +104°F)	+40 to +50°C (+104 to +122°F)
Temperature Correction Factor	1.00	0.80	0.70

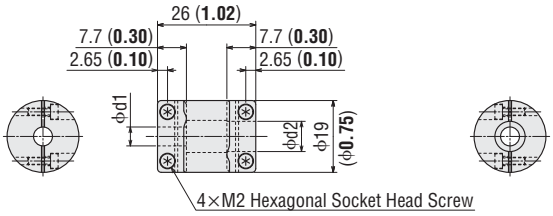
● If the operating ambient temperature exceeds 30°C (86°F), correct the maximum torque with the temperature correction factor.

Dimensions Unit = mm (in.)

MCV19

Mass: 14 g (0.49 oz.)

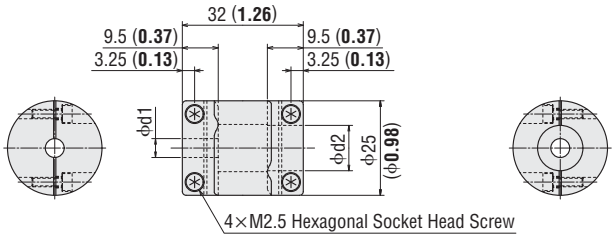
2D CAD B550 3D CAD



MCV25

Mass: 28 g (0.98 oz.)

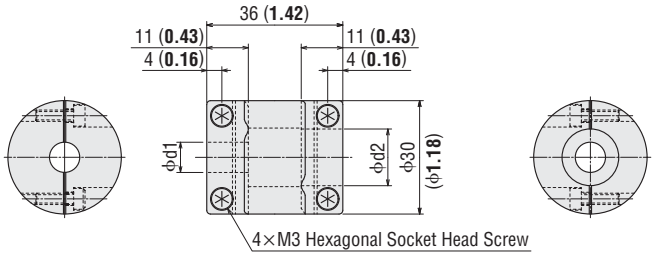
2D CAD B551 3D CAD



MCV30

Mass: 45 g (1.59 oz.)

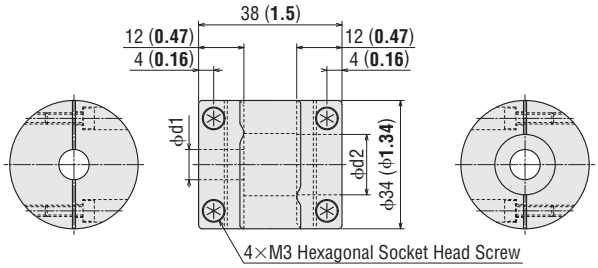
2D CAD B552 3D CAD



MCV34

Mass: 65 g (2.2 oz.)

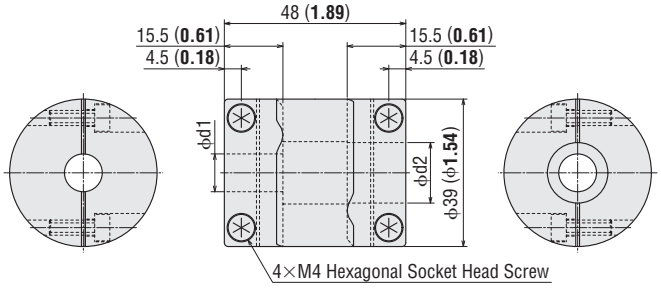
2D CAD B553 3D CAD



MCV39

Mass: 98 g (3.4 oz.)

2D CAD B554 3D CAD



Control Module

OPX-2A

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.

- Settings and monitoring contents vary depending on the applicable product.

Product Line

Product Name	List Price
OPX-2A	$300.00

Specifications

Indication	LED
Cable Length	5 m (16.4 ft.)
Operating Ambient Temperature	0 to +40°C (+32 to +104°F) (non-freezing)

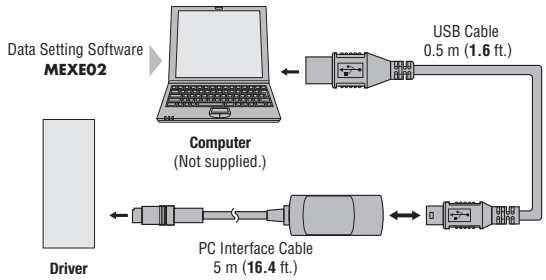
CC05IF-USB

This communication cable is required for connecting to the computer on which the data setting software **MEXE02** is installed. A 5 m (16.4 ft.) PC interface cable and 0.5 m (1.6 ft.) USB cable are included.

Product Line

Product Name	List Price
CC05IF-USB	$120.00

Computer and Driver Connection



Data Setting Software MEXE02

In addition to setting and editing the operating data and various parameters with a computer, you can perform teaching and monitor I/O and operating speed waveform with Data Setting Software.
The data setting software can be downloaded from the website. Please contact us for details.
http://www.orientalmotor.com.

Note

- The setting contents vary depending on the applicable product. For details, please see the Oriental Motor website.

Operating Environment

◇Operating System (OS)

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

- Microsoft Windows XP Service Pack 3*
- Microsoft Windows Vista Service Pack 2
- Microsoft Windows 7 Service Pack 1
- Microsoft Windows 8
- Microsoft Windows 8.1

*The 64-bit (x64) version runs with Service Pack 2.

◇Computer

Recommended CPU*1	Intel Core processor 2 GHz or faster (OS must be supported)
Display	High resolution video adapter and monitor with a minimum resolution of XGA (1024×768)
Recommended Memory*1	32-bit (x86) version: 1 GB or more 64-bit (x64) version: 2 GB or more
Hard Disk*2	At least 60 MB of free disk space
USB Port	One USB1.1 port
Disk Device	CD-ROM Drive (Used for installation)

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

*2 **MEXE02** requires Microsoft .NET Framework 4 Client Profile. It will be automatically installed if it is not already installed, so 1.5 GB of free space for the 64-bit (x64) version and 600 MB of free space for the 32-bit (x86) version may be required.

- Windows and Windows Vista are registered trademarks of Microsoft Corporation in the United States and other countries.
- Intel and Core are registered trademarks or trademarks of Intel Corporation in the United States and other countries.
- For the latest information on operating environment, refer to the Oriental Motor website.

Note

- The required memory and hard disk space may vary depending on the system environment.

Accessory Sets

When using analog I/O, purchase an accessory set.

Product Line

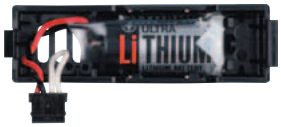
Product Name	List Price	Applicable
AS-SV2	$77.00	20-Pin Connector for CN6 × 1 Set, External Potentiometers × 2 Sets (Potentiometer × 2, Scale plate × 2, Insulation sheet × 2, Knob × 2, Shielded cable 1 m (3.3 ft.) × 2)
AS-SD1	$38.00	20-Pin Connector for CN6 × 1 set

AS-SV2

AS-SD1

Battery

This battery is for constructing an absolute system. Position information can be stored during power blackouts or if the driver's power supply is switched OFF.



With the battery installed on an **NX** Series driver

Product Line

Product Name	List Price
BAT01A	$61.00

Specifications

Battery Type	Thionyl Chloride Lithium Battery
Nominal Voltage	3.6 V
Rated Capacity	1700 mAh
Mass	25 g (0.88 oz.)
Expected Life	About 4 years*
Data Retention Period	2 years*
Operating Ambient Temperature	0 to +50°C (+32 to +122°F) (non-freezing)
Operating Ambient Humidity	85% or less (non-condensing)
Storage Temperature/ Transportation Temperature	+5 to +35°C (+41 to +95°F) (non-freezing)
Storage Humidity/ Transportation Humidity	70% or less (non-condensing)

*When the ambient temperature is 20°C (68°F)

Regeneration Units

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	List Price	Applicable Product Name
RGB100	$59.00	**NX45**, **NX410**, **NX65**, **NX610**, **NX620**, **NX920**
RGB200	$169.00	**NX640**, **NX940**, **NX975**

● The applicable products are listed such that the product name can be determined.

Specifications

Product Name	**RGB100**	**RGB200**
Continuous Power	50 W (1/15 HP)	200 W (1/4 HP)
Resistance Value	150 Ω	50 Ω
Thermal Protector Operating Temperature	Open: 150±7°C (302±13°F) Close: 145±12°C (293±22°F) (Normally closed)	Open: 175±5°C (347±9°F) Close: 115±15°C (239±27°F) (Normally closed)
Thermal Protector Rated Electricity	120 VAC, 4 A 30 VDC, 4 A (Min. current 5 mA)	227 VAC, 8 A 115 VAC, 22 A

● Install the regeneration unit in a location that has the same heat radiation capability as the heat sink [Material: aluminum, 350×350 mm (13.78×13.78 in.), 3 mm (0.12 in.) thick].