

Brushless Motors/AC Speed Control Motors

Accessories

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Accessories

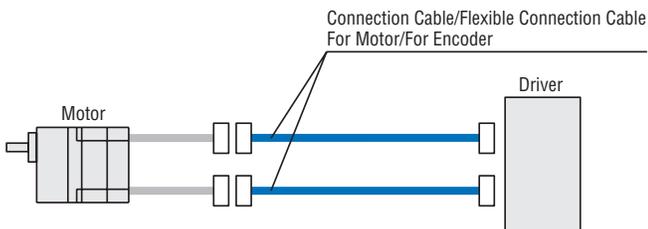
Introduction	
BX	Brushless Motors
BLF	
BLE	
BLU	
BLH	DC Input
BLV	
BHF	AC Speed Control Motors
FE100/ FE200	
ES01/ ES02	
US	
Accessories	
Installation	

Cables

■ Connection Cables for BX Series (RoHS)

These cables are used to extend the wiring distance between the motor and driver. The maximum extension length is 20.4 m (66.9 ft.). Use the flexible connection cable in applications where the cable is bent and flexed. All connection cables and flexible connection cables come as a set of motor and encoder cables.

● Cable System Configuration



● Product Line

◇ Connection Cables (CC_SBF)



Model	Length L [m (ft.)]
CC01SBF	1 (3.3)
CC02SBF	2 (6.6)
CC03SBF	3 (9.8)
CC05SBF	5 (16.4)
CC07SBF	7 (23.0)
CC10SBF	10 (32.8)
CC15SBF	15 (49.2)
CC20SBF	20 (65.6)

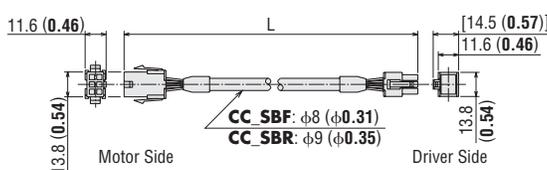
◇ Flexible Connection Cables (CC_SBR)



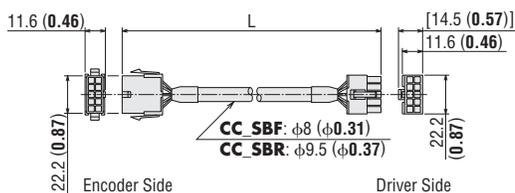
Model	Length L [m (ft.)]
CC01SBR	1 (3.3)
CC02SBR	2 (6.6)
CC03SBR	3 (9.8)
CC05SBR	5 (16.4)
CC07SBR	7 (23.0)
CC10SBR	10 (32.8)
CC15SBR	15 (49.2)
CC20SBR	20 (65.6)

● Dimensions Unit = mm (in.)

◇ For Motor

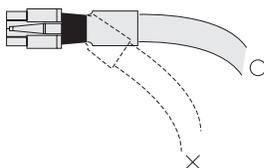


◇ For Encoder

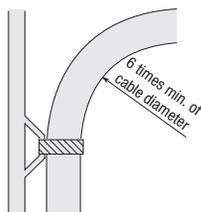


■ Notes on Use of Flexible Connection Cables

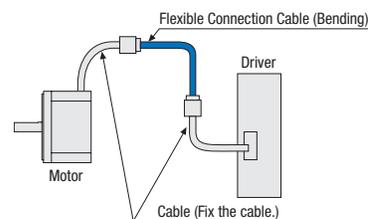
① Do not allow the cable to bend at the cable connector.



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



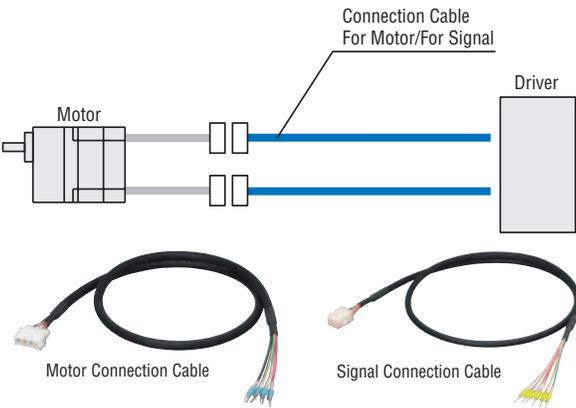
③ Connection cables are not flexible. If regularly bending of the cable is required, use the flexible cable only (sold separately).



Connection Cables for BLF Series RoHS

These cables are used to extend the wiring distance between the motor and driver. The maximum extension length is 20.4 m (66.9 ft.).

● Cable System Configuration



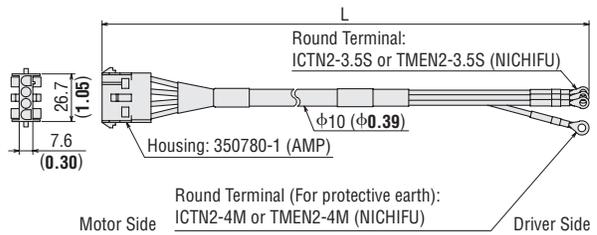
● Product Line

The cable set consists of two cables including a motor connection cable and a signal connection cable.

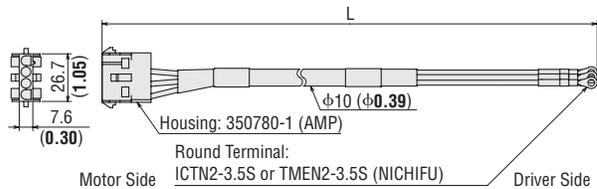
Model	Length L [m (ft.)]
CC01BLF	1 (3.3)
CC02BLF	2 (6.6)
CC03BLF	3 (9.8)
CC05BLF	5 (16.4)
CC07BLF	7 (23.0)
CC10BLF	10 (32.8)
CC15BLF	15 (49.2)
CC20BLF	20 (65.6)

● Dimensions Unit = mm (in.)

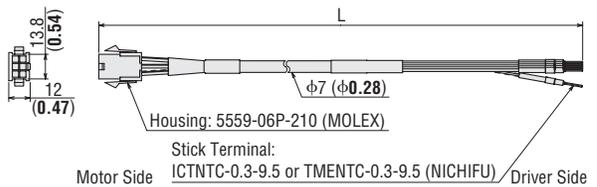
◇ Motor Connection Cable L: 1 to 7 m (3.3 to 23.0 ft.)



◇ Motor Connection Cable L: 10 to 20 m (32.8 to 65.6 ft.)



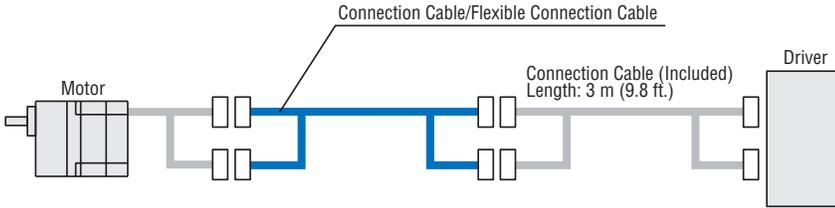
◇ Signal Connection Cable



Connection Cables for BLE Series (RoHS)

The **BLE** series is available with or without a 3 m (9.8 ft.) connection cable for motor and driver connection. When the distance between the motor and the driver is extended, the accessory (sold separately) connection cable must be used. Use the accessory (sold separately) flexible connection cable in applications where the cable is bent and flexed.

Cable System Configuration



Standard Type

Connection Cables (CC_BLE)

Model	Length L [m (ft.)]
CC01BLE	1 (3.3)
CC02BLE	2 (6.6)
CC03BLE	3 (9.8)
CC05BLE	5 (16.4)
CC07BLE	7 (23.0)
CC10BLE	10 (32.8)
CC15BLE	15 (49.2)
CC20BLE	20 (65.6)

Flexible Connection Cables (CC_BLER)

Model	Length L [m (ft.)]
CC01BLER	1 (3.3)
CC02BLER	2 (6.6)
CC03BLER	3 (9.8)
CC05BLER	5 (16.4)
CC07BLER	7 (23.0)
CC10BLER	10 (32.8)
CC15BLER	15 (49.2)
CC20BLER	20 (65.6)



Connection Cables



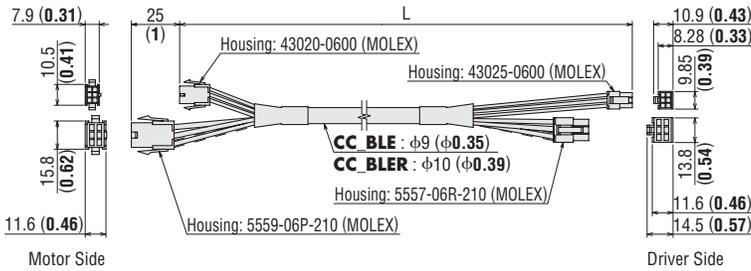
Flexible Connection Cables

Notes on use of flexible connection cables → Page D-226

Note

When connecting the connection cable, keep the overall length of the cable at 20 m (65.6 ft.) or less (maximum 3 cables).

Dimensions Unit = mm (in.)



With Electromagnetic Brake Type

Connection Cables (CC_BLEM)

Model	Length L [m (ft.)]
CC01BLEM	1 (3.3)
CC02BLEM	2 (6.6)
CC03BLEM	3 (9.8)
CC05BLEM	5 (16.4)
CC07BLEM	7 (23.0)
CC10BLEM	10 (32.8)
CC15BLEM	15 (49.2)
CC20BLEM	20 (65.6)

Flexible Connection Cables (CC_BLEMR)

Model	Length L [m (ft.)]
CC01BLEMR	1 (3.3)
CC02BLEMR	2 (6.6)
CC03BLEMR	3 (9.8)
CC05BLEMR	5 (16.4)
CC07BLEMR	7 (23.0)
CC10BLEMR	10 (32.8)
CC15BLEMR	15 (49.2)
CC20BLEMR	20 (65.6)



Connection Cables



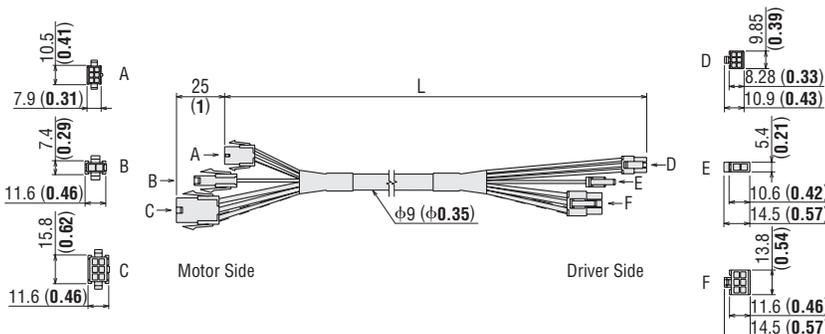
Flexible Connection Cables

Notes on use of flexible connection cables → Page D-226

Note

When connecting the connection cable, keep the overall length of the cable at 20 m (65.6 ft.) or less (maximum 3 cables).

Dimensions Unit = mm (in.)



Code	Housing Model	Manufacturer
A	43020-0600	MOLEX
B	5559-02P-210	MOLEX
C	5559-06P-210	MOLEX
D	43025-0600	MOLEX
E	5557-02R-210	MOLEX
F	5557-06R-210	MOLEX

Connection Cables for BLU Series (RoHS)

These cables are used to extend the wiring distance between the motor and driver. The maximum extension length is 10.5 m (34.4 ft.). Use the flexible connection cable in applications where the cable is bent and flexed.

1 Connection Cables

● Product Line (CC_AXU)



Model	Length L [m (ft.)]
CC01AXU	1 (3.3)
CC02AXU	2 (6.6)
CC03AXU	3 (9.8)
CC05AXU	5 (16.4)
CC10AXU	10 (32.8)

2 Flexible Connection Cables

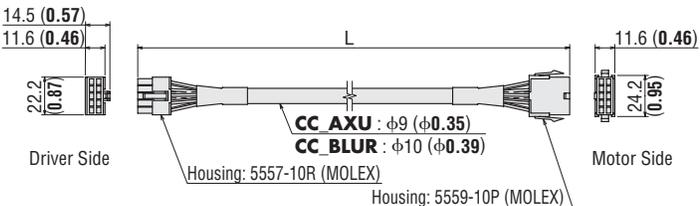
● Product Line (CC_BLUR)



Model	Length L [m (ft.)]
CC01BLUR	1 (3.3)
CC02BLUR	2 (6.6)
CC03BLUR	3 (9.8)
CC05BLUR	5 (16.4)
CC10BLUR	10 (32.8)

● Notes on use of flexible connection cables → Page D-226

● Dimensions Unit = mm (in.)



Connection Cables for BLH Series (RoHS)

These cables are used to extend the wiring distance between the motor and driver. The maximum extension length is 2 m (6.6 ft.). Use the flexible connection cable in applications where the cable is bent and flexed.

1 Connection Cables

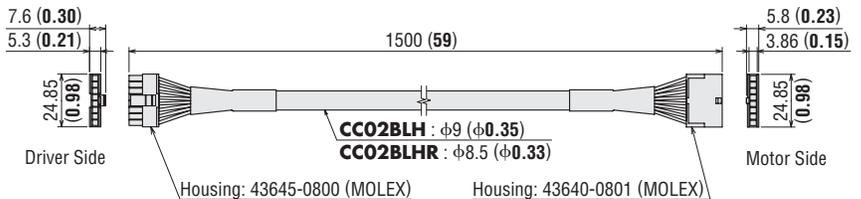
● Product Line



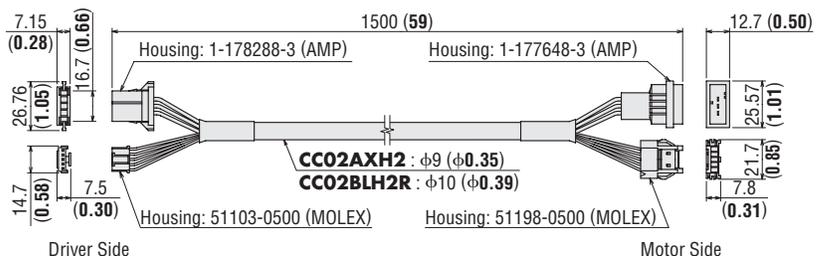
Applicable Products	Model
BLH015 BLH230 BLH450	CC02BLH
BLH5100	CC02AXH2

● Dimensions Unit = mm (in.)

◇ BLH015/BLH230/BLH450



◇ BLH5100



2 Flexible Connection Cables

● Product Line



Applicable Products	Model
BLH015 BLH230 BLH450	CC02BLHR
BLH5100	CC02BLH2R

● Notes on use of flexible connection cables → Page D-226

Regeneration Units RoHS

During vertical drive (gravitational operation) and when starting and stopping large inertia loads rapidly, external forces cause the motor to rotate and function as a power generator. When that occurs, if the regenerative power exceeds the capacity of the driver to absorb, failure may result. In such cases, the regeneration unit is connected to the driver and the regenerative power is released as heat energy.

Product Line

Model	Applicable Products
EPRC-400P	BX230, BX460, BX5120
	BLE Series
	BHF Series
RGB100	BX6200, BX6400



Specifications

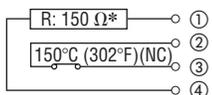
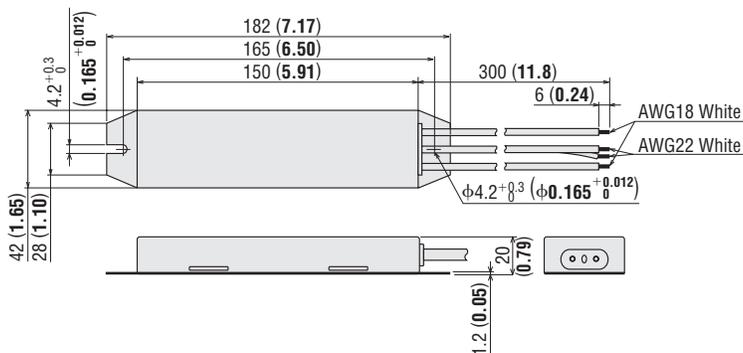
Model	EPRC-400P	RGB100
Continuous Regenerative Power	100 W (1/8 HP)	100 W (1/8 HP)
Resistance Value	400 Ω	150 Ω
Thermostat Operating Temperature	Open: 150 ± 7°C (302 ± 13°F) Close: 145 ± 12°C (293 ± 22°F) (Normally closed)	Open: 150 ± 7°C (302 ± 13°F) Close: 145 ± 12°C (293 ± 22°F) (Normally closed)
Thermostat Electrical Rating	120 VAC 4 A 30 VDC 4 A (Minimum current 5 mA)	120 VAC 4 A 30 VDC 4 A (Minimum current 5 mA)

● Install the regeneration unit in the place which has the same heat radiation capability as heat radiation plate [Material: Aluminum 350 mm×350 mm (13.8 in.×13.8 in.), 3 mm (0.12 in.) thick].

Dimensions Unit = mm (in.)

Mass: 250 g (8.8 oz.)

DXF C194



- ①-④ : AWG18×2
For regeneration current
Connect to RG Terminal
- ②-③ : AWG22×2
Thermostat for signals
BHF Series ...Connect to I-COM and
TP terminal of speed controller

* **EPRC-400P** = 400 Ω
RGB100 = 150 Ω

Remote-Control Kit RoHS

The remote-control kit is useful if you want to detach the digital operator from the driver and install it on the frame of the equipment, etc., for remote operation.

The kit includes a connection cable for digital operator/driver connection [2 or 5 m (6.6 or 16.4 ft.)] and a rubber gasket.

Product Line

Model	Length [m (ft.)]	Applicable Products
BLFHS-02	2 (6.6)	BLF Series
BLFHS-05	5 (16.4)	



Example of use



Data Setting Software RoHS

In addition to setting and editing operating data and parameters, a computer can monitor the I/O and operating speed waveform.

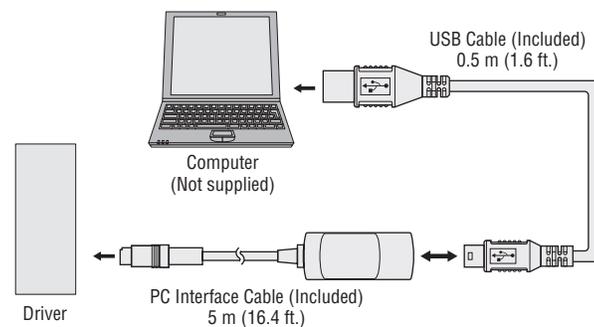
●The settings and monitoring content differ depending on the applicable product.

Product Line

Model	Applicable Products
MEXE02	BLE Series



Connection between Computer and Driver



Specifications (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	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.

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

Control Modules

OPX-1A (RoHS)

Features

- Can be used as a monitor for speed, alarm codes and more.
- The speed can be set digitally.
- The speed control range and other characteristics are improved.
- More functions can be added including positioning operation and torque limiting.

Product Line

Model	Applicable Products
OPX-1A	BX Series

● With communication cable [2 m (6.6 ft.)]

Specifications

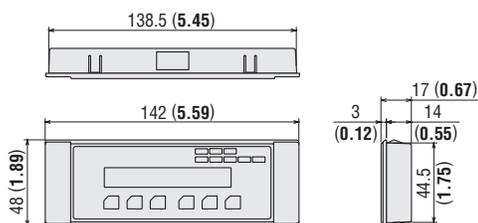
Display	LED
Cable Length	2 m (6.6 ft.)
Ambient Temperature	0~+50°C (+32~+122°F) (non-freezing)

Dimensions Unit = mm (in.)

◇ Control Module

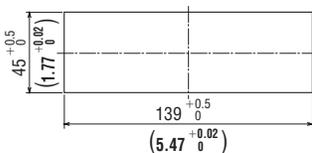
Mass: 0.07 kg (0.154 lb.)

DXF C142



◇ Panel Cut-Out

[Thickness of the mounting plate: 1 to 3 mm (0.04 to 0.12 in.)]



Panel Cut-Out Dimensions



OPX-2A (RoHS)

Features

The driver internal parameter settings and data settings can be changed.
May be used as a speed or I/O monitor.

● The settings and monitor content differ depending on the applicable product.

Product Line

Model	Applicable Products
OPX-2A	BLE Series BLV Series

Specifications

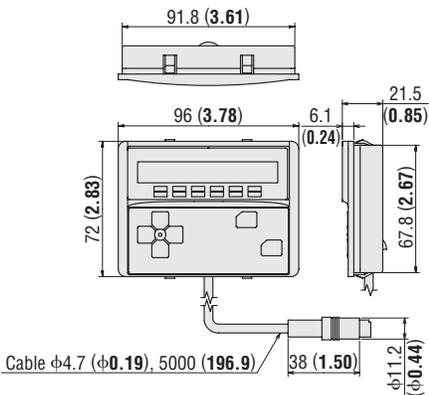
Display	LED
Cable Length	5 m (16.4 ft.)
Ambient Temperature	0~+40°C (+32~+104°F) (non-freezing)

Dimensions Unit = mm (in.)

◇ Control Module

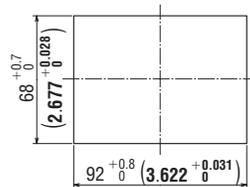
Mass: 0.25 kg (0.55 lb.)

DXF B453



◇ Panel Cut-Out

[Thickness of the mounting plate: 1 to 3 mm (0.04 to 0.12 in.)]



Panel Cut-Out Dimensions



Motor Speed Indicator

SDM496 (RoHS)

This is the speed indicator for speed control motor models.

Features

- The gear ratio is set with the digital switch of the body, and the output shaft speed of the motor and gearhead can be indicated digitally.
- If the surface installation socket (**EP11PF**, sold separately) is used, attachment to the DIN Rail is possible.
- This is not a standard certified product.



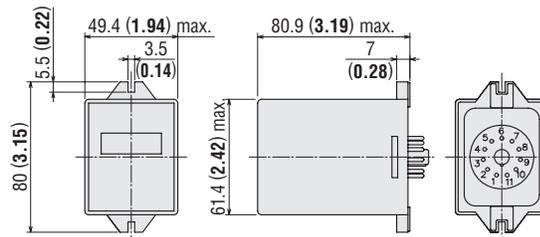
Product Line

Model	Applicable Products
SDM496	BLE Series
	BLU Series
	BLH Series
	ES01/ES02
	BHF Series

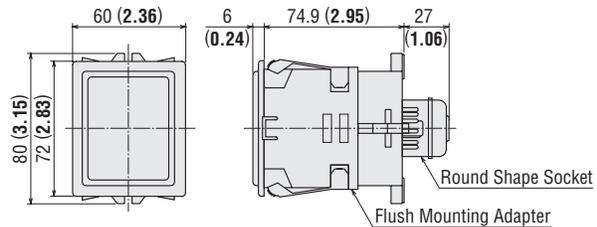
The following items are included in each product.
 Motor Speed Indicator, Adapter for Recessed Mounting,
 Round Shape Socket, Unit Seal, Operating Manual

Dimensions Unit = mm (in.)

Mass: 200 g (7.1 oz.) **DXF** A100



Dimensions with Adapter Attached Unit = mm (in.)

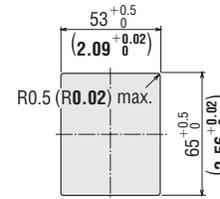


Specifications

Power Supply Voltage (VAC)	Single-Phase 100~240
Permissible Voltage Range	-15~+10%
Rated Frequency (Hz)	50/60
Rated Input Current (A)	0.1
Display	Four Digits
Set Gear Ratio	96 Types
Ambient Temperature	0~+40°C (+32~+104°F)

Panel Cut-Out

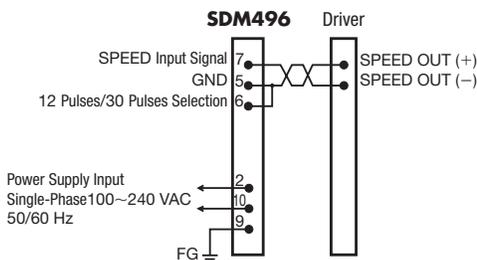
[Thickness of the mounting plate: 1 to 3.2 mm (0.04 to 0.13 in.)]



Example of Connection

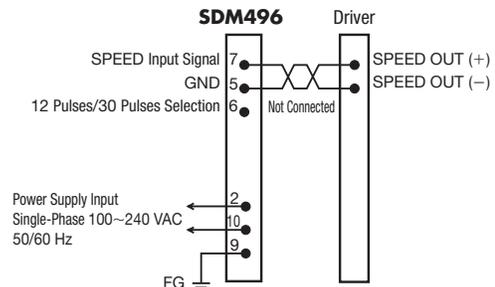
BLE Series

(30 pulses/rotation)

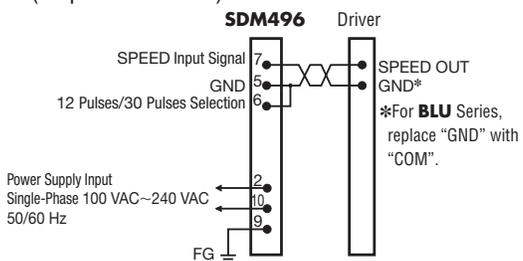


BLE Series - FBLII Compatibility Mode

(12 pulses/rotation)



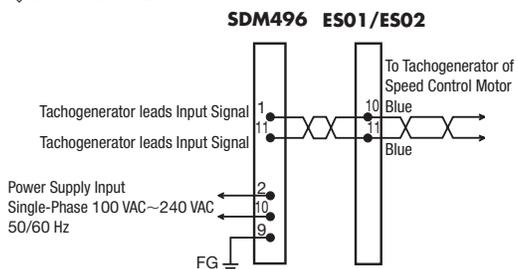
◇ BLU Series, BLH Series (30 pulses/rotation)



Note

● The **BLU** series can use only sink logic. Source logic cannot be used.

◇ ES01/ES02



■ Flush Mounting Socket for Mounting DIN Rail (RoHS)

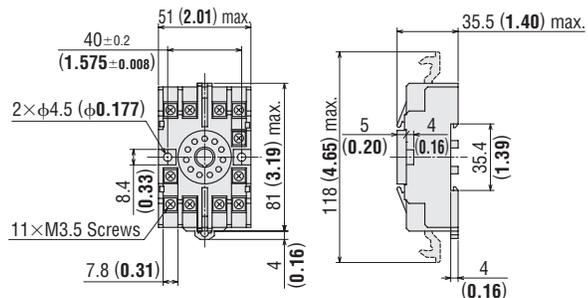
Use when installing the motor speed indicator on a DIN Rail.

● Product Line

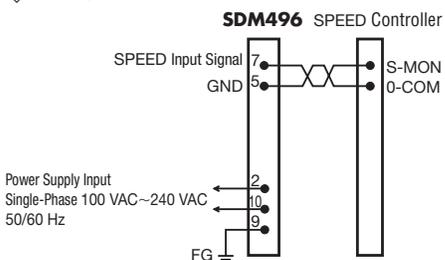
Model	Applicable Products
EP11PF	Motor Speed Indicator SDM496

● Dimensions Unit = mm (in.)

Mass: 75 g (2.6 oz.)



◇ BHF Series



Example of use

DIN Rail Mounting Plates

This is a DIN Rail installation plate for the driver and speed controller.

- Made of plastic, it is lightweight.
- DIN Rail attachment and removal are easy.

■ PADP01 (RoHS)

● Product Line

Materials: Resin

Model	Applicable Products
PADP01	BHF Series

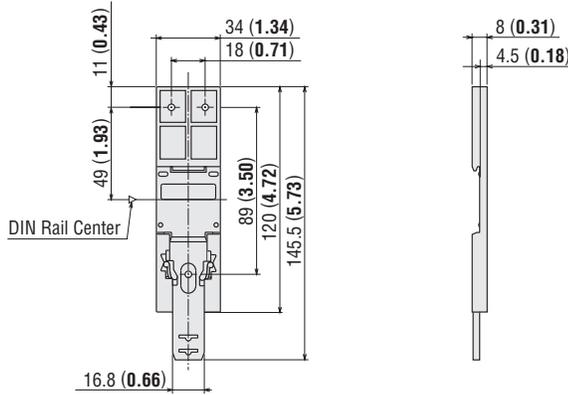
● Dimensions Unit = mm (in.)

Mass: 20 g (0.71 oz.)

DXF A1019

● Screws (Included)

M3 Length 8 mm (0.31 in.) ... 3 pieces



■ PADP03 (RoHS)

● Product Line

Materials: Resin

Model	Applicable Products
PADP03	BX Series BLE Series

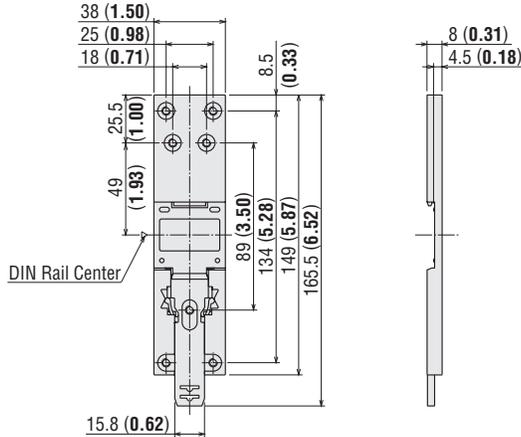
● Dimensions Unit = mm (in.)

Mass: 30 g (1.06 oz.)

DXF A1020

● Screws (Included)

M3 Length 8 mm (0.31 in.) ... 4 pieces



Front Cover RoHS

A clear cover placed over the front panel of speed controller **FE100/FE200**.
 This cover prevents accidental contact with the speed potentiometer and resulting shift in the set speed.
 The front cover is not waterproof.

Product Line

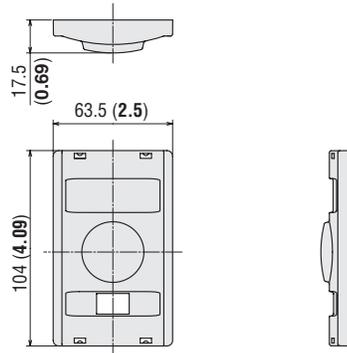
Model	Applicable Products
PAFC01	FE100 FE200



Example of use

Dimensions Unit = mm (in.)

Mass: 10 g (0.35 oz.)



Motor/Gearhead Mounting Brackets RoHS

Dedicated mounting brackets for attaching and securing a motor and gearhead. They are a high-strength type, which can be used with high powered motors and gearheads. These brackets come with tapped holes. To mount the motor and gearhead, simply fasten with the screws provided to the gearhead. To mount the motor alone, mounting screws must be purchased separately.



■ Product Line

→ Page C-264

■ Dimensions

→ Page C-266

Flexible Couplings RoHS

These products are clamp type couplings to connect a motor or gearhead shaft to the shaft of the equipment. Once the motor or gearhead is determined, the proper coupling can be selected.



■ Applicable Products

→ Page C-270

■ Specifications

→ Page C-271

■ Dimensions

→ Page C-272