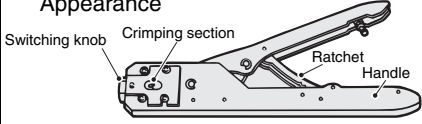


Accessories (Order Separately)

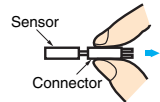
Ordering Information

Connectors and Connector Hold-down Clips

Applicable Sensor models EE-SX67□ (A, P, R), EE-SX47□, EE-SY67□, EE-SPY31□/41□, EE-SPX303N/403N, EE-SPW311/411			
Type	Cable length	Model	Remarks
Connector		EE-1001	
		EE-1001-1	L terminal and positive (+) terminal are already short-circuited.
		EE-1009 *1	
	1 m	EE-1006 1M	
		EE-1010 1M *1	
	2 m	EE-1006 2M	4 conductors
		EE-1006D	3 conductors
		EE-1006L	2 conductors
		EE-1010 2M *1	
	Connector with Robot Cable	1 m	EE-1010-R 1M *1
		2 m	EE-1010-R 2M*1
NPN/PNP Conversion Connector	0.46 m (total length)	EE-2002	
Connector Hold-down Clip		EE-1006A	For EE-1006, EE-SX670□, 470, EE-SY671, and 672 only.
Connector Parts *2	Case (housing)	EE-1006H	100 per carton
	Dispersion Pins	EE-1006C	500 per carton
	Special Crimping Tool	EE-1006T	Appearance 

*1. EE-1009- or EE-1010-series Connectors have a builtin locking mechanism to prevent cable disconnection when only the cable is pulled. To remove the Connector from the Sensor, grip the top and bottom of the Connector firmly and push into the Sensor once before pulling out. The locking mechanism prevents the Connector from being removed by pulling on the cable only and enables removal only when the Connector (housing) is pulled.

*2. The case (housing) and dispersion pins (for hand-crimping) for EE-1006 Connectors can be ordered separately. Use the EE-1006T Special Crimping Tool to prepare the Connector.






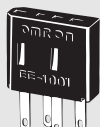
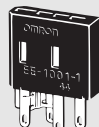

Applicable Sensor models EE-SX95□-C1J-R			
Item	Cable length	Model	Remarks
Connector with Robot Cable	2 m	EE-1016-R 2M	

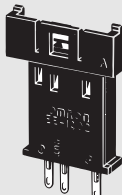




Applicable Sensor models EE-SX97□-C1, EE-SX97□P-C1			
Item	Cable length	Model	Remarks
Connector with Cable	1 m	EE-1017 1M	
	3 m	EE-1017 3M	
Connector with Robot Cable	1 m	EE-1017-R 1M	
	3 m	EE-1017-R 3M	

Applicable Sensor models EE-SPX74□/84□			
Item	Cable length	Model	Remarks
Connector with Cable	1 m	EE-1013 1M	

Applicable Sensor models EE-SPX301/401, EE-SPY30□/40□, EE-SPZ301-A/401-A			
Item	Cable length	Model	Remarks
Connector		EE-1002	
Connector with Cable	1 m	EE-1003	
NPN/PNP Conversion Connector	0.46 m (total length)	EE-2001	
Connector Hold-down Clip		EE-1003A	For EE-1003 only.

Ratings and Specifications

Product		Connector *1 *4	Connector with Cable *1	Connector with Robot Cable *1	Connector *4	Connector (short-circuited between positive (+) and L terminals) *2 *4	Connector with Cable
Model		EE-1009	EE-1010	EE-1010-R	EE-1001	EE-1001-1	EE-1006
Appearance							
Item							
Contact resistance		20 mΩ max. (at 20 mV max., 100 mA max.)			15 mΩ max. (at 100 VDC max.)		10 mΩ max. (100 VDC max.)
Insertion/removal durability *3		50 times min.			---		
Insertion strength		No. of poles × 6 N max.			68.6 N max.		50 N max.
Surplus strength (housing holding strength)		No. of poles × 0.4 N max.			---		20 N max.
Standard cable length		---		1 m, 2 m	---		1 m, 2 m
Lock strength *3		No. of poles × 29 N min.			---		
Ambient humidity		-10 to +60°C			-10 to +75°C		-10 to 60°C
Material	Housing	Polybutylene phthalate (PBT)					
	Contact	Phosphor bronze					
Applicable Photomicrosensors		EE-SX67□ (A,P,R) (Connector Models only), EE-SX47□, EE-SY67□, EE-SPY31□/41□, EE-SPX303N/403N, EE-SPW311/411					

Item	Product Model	Connector *4	Connector with Cable	Connector with Cable	Connector with Robot Cable	Connector with Cable	Connector with Robot Cable
		EE-1002	EE-1003	EE-1013	EE-1016-R	EE-1017	EE-1017-R
	Appearance						
Contact resistance		10 mΩ max. (at 10 mADC and 1 ADC)	20 mΩ max. (at minute current of 1 kHz and 500 VDC)		25 mΩ max. (at 10 mA DC and 20 mV max.)		
Insertion strength		20 N max.	23.5 N max.	40 N max.	20 N max.		
Surplus strength (housing holding strength)		15 N min. (initial) 10 N min. (ten times)	3.5 N min.	10 N min.	15 N min.	1.5 N min.	
Cable length		---	1 m		2 m	1 m, 3 m	
Ambient humidity		−10 to +75°C	−10 to +60°C	−10 to +55°C	−25 to +85°C	−10 to +60°C	
Material	Housing	Nylon					
	Contact	Phosphor bronze					
Applicable Photomicrosensors		EE-SPX301/401, EE-SPY30□/40□, EE-SPZ301-A/401-A		EE-SPX74□/84□	EE-SX95□-C1J-R	EE-SX97□C1, EE-SX97□P-C1	

*1. The Connector has a built-in locking mechanism. To remove the Connector from the Sensor, grip the top and bottom of the Connector housing, as shown in the following diagram, and then pull out the Connector.

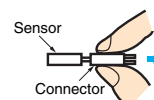
*2. EE-SX67□ and EE-SY67□ are the best used in the light-ON state.

*3. The insertion/removal durability and lock strength apply only to the lock mechanism.

They do not apply to the EE-1001, EE-1001-1, and EE-1006, which do not have lock mechanisms.

*4. Do not store the type EE-1009, EE-1001, EE-1001-1 and EE-1002 under the following conditions since their terminals may discolor.

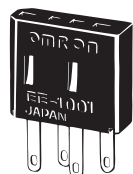
(1) In the place exposed to the direct sunlight, the high temperature or high humidity.



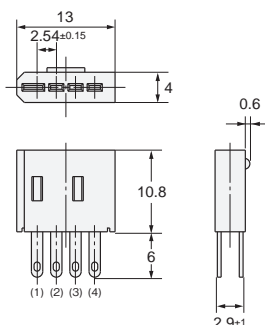
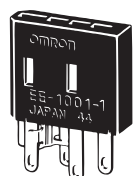
(Unit: mm)

Dimensions

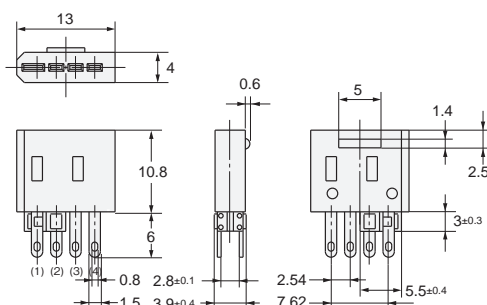
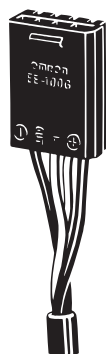
Tolerance class IT16 applies to dimensions in this datasheet unless otherwise specified.

Photomicrosensor Connectors and Connector Hold-down Clips**Connector****EE-1001****Terminal Arrangement**

(1)	+
(2)	L
(3)	OUT
(4)	-

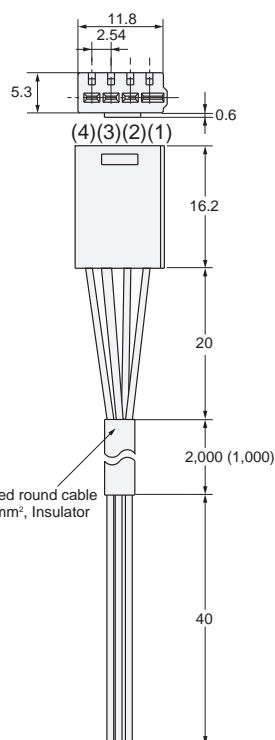
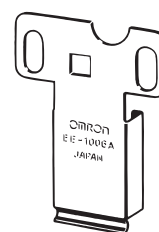
**Connector (short-circuited between positive (+) and L terminals)****EE-1001-1****Terminal Arrangement**

(1)	+
(2)	L
(3)	OUT
(4)	-

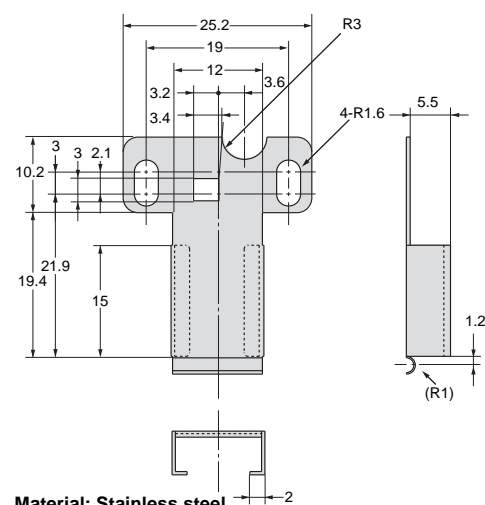
**Connector with Cable****EE-1006 2M (EE-1006 1M)****Terminal Arrangement**

(1)	+	Brown
(2)	L	Pink
(3)	OUT	Black
(4)	-	Blue

Cable:
4-dia. 4-conductor vinyl-insulated round cable
(Conductor cross section: 0.2 mm², Insulator
diameter: 1.1 mm).

**Connector Hold-down Clip****EE-1006A**

(Can be used only with EE-1006
Connectors for the
Photomicrosensors listed
below.)



Material: Stainless steel

Applicable Photomicrosensors EE-SX67□ (A,P,R) (Connector Models only), EE-SX47□, EE-SY67□, EE-SPY31□/41□, EE-SPX303N/403N, EE-SPW311/411

For EE-SX670□, 470□, EE-SY671, and 672 only.

Photomicrosensor Connectors

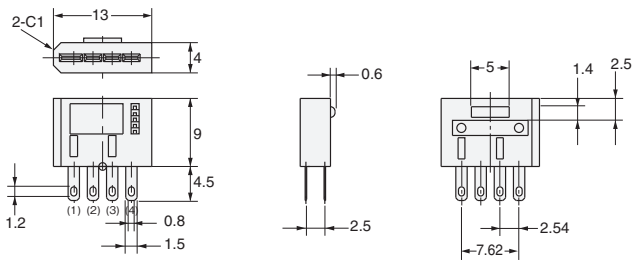
Connectors

EE-1009



Terminal Arrangement

(1)	⊕
(2)	L
(3)	OUT
(4)	⊖

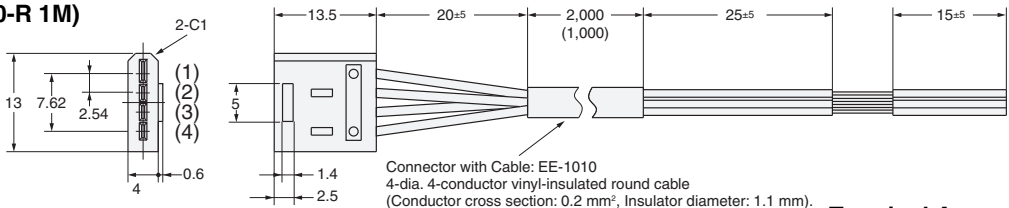


Connector with Cable

EE-1010 2M (EE-1010 1M)

Connector with Robot Cable

EE-1010-R 2M (EE-1010-R 1M)



Connector with Cable: EE-1010
4-dia. 4-conductor vinyl-insulated round cable
(Conductor cross section: 0.2 mm², Insulator diameter: 1.1 mm).
Connector with Robot Cable: EE-1010-R
4-dia. 4-conductor robot instrumentation cable
(Conductor cross section: 0.2 mm², Insulator diameter: 1.1 mm).

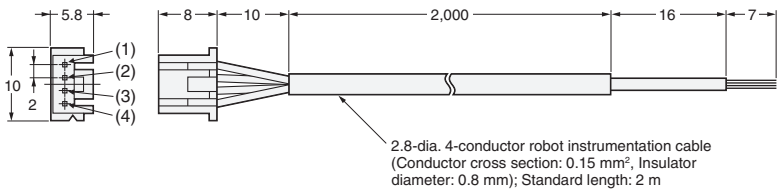
Terminal Arrangement

(1)	⊕	Brown
(2)	L	Pink
(3)	OUT	Black
(4)	⊖	Blue

Applicable Photomicrosensors	EE-SX67□ (A,P,R) (Connector Models only), EE-SX47□, EE-SY67□, EE-SPY31□/41□
	EE-SPX303N/403N, EE-SPW311/411

Connector with Robot Cable

EE-1016-R



2.8-dia. 4-conductor robot instrumentation cable
(Conductor cross section: 0.15 mm², Insulator diameter: 0.8 mm); Standard length: 2 m

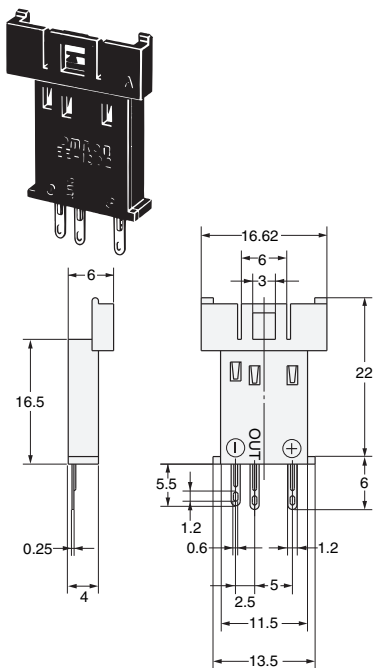
Terminal Arrangement

(1)	⊕	Brown
(2)	OUT2	White
(3)	⊖	Blue
(4)	OUT1	Black

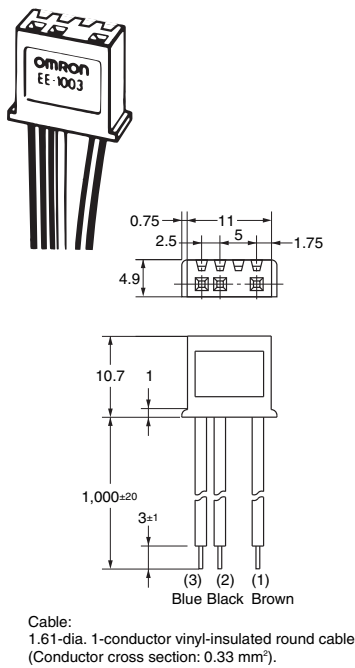
Applicable Photomicrosensors	EE-SX95□-C1J-R
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Photomicrosensor Connectors and Connector Hold-down Clips

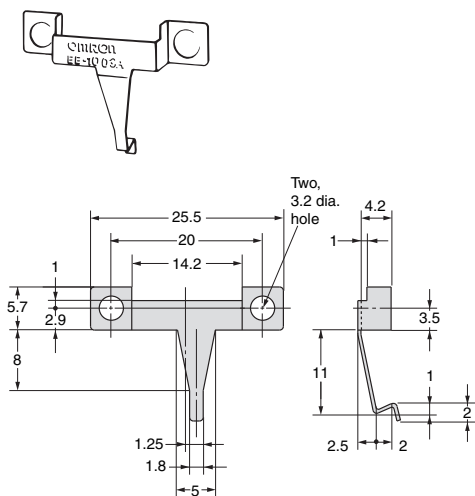
Connector
EE-1002



Connector with Cable
EE-1003

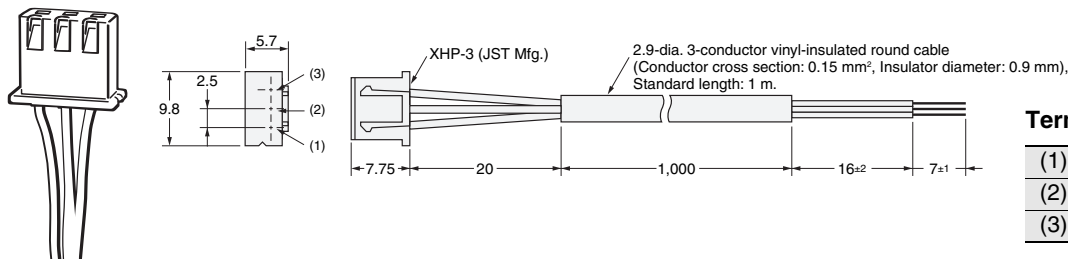


Connector Hold-down Clips
(For EE-1003 only)
EE-1003A



Applicable Photomicrosensors	EE-SPX301/401, EE-SPY30□/40□, EE-SPZ301-A/401-A
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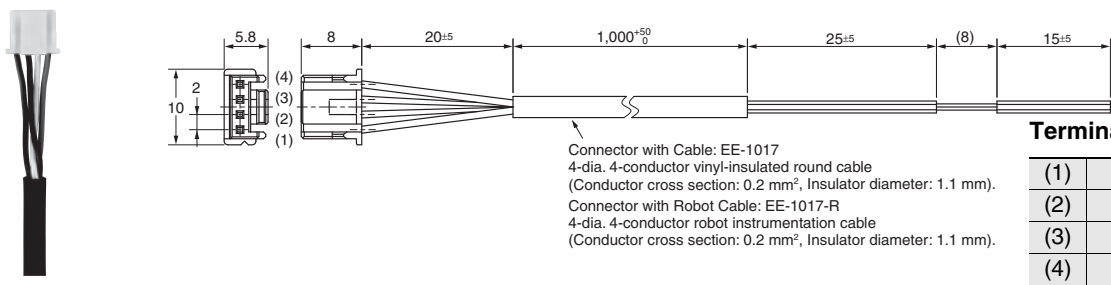
Connector with Cable
EE-1013



Terminal Arrangement		
(1)	Blue	GND(0V)
(2)	Black	OUTPUT
(3)	Brown	Vcc

Applicable Photomicrosensors	EE-SPX74□/84□
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Connector with Cable
EE-1017
Connector with Robot Cable
EE-1017-R



Terminal Arrangement		
(1)	⊕	Brown
(2)	1	Black
(3)	2	White
(4)	⊖	Blue

Applicable Photomicrosensors	EE-SX97□-C1, EE-SX97□P-C1
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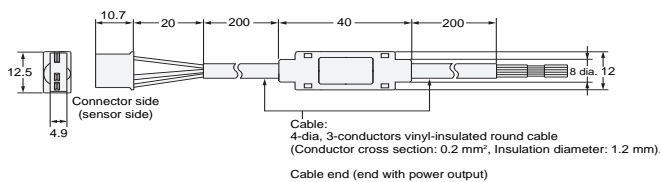
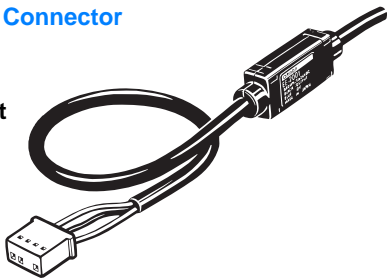
NPN to PNP Transistor Output Conversion Connectors

NPN/PNP Conversion Connector

EE-2001

Terminal Arrangement

(1)	⊕	Brown
(2)	OUT	Black
(3)	⊖	Blue

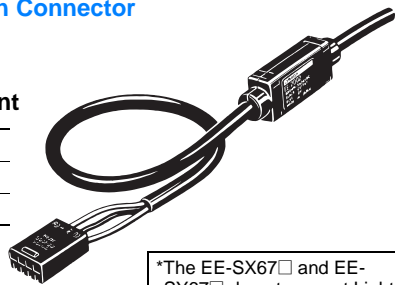


NPN/PNP Conversion Connector

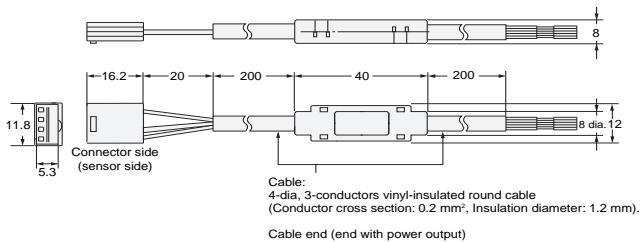
EE-2002 *

Terminal Arrangement

(1)	⊕	Brown
(2)	OUT	Black
(3)	⊖	Blue



*The EE-SX67□ and EE-SY67□ do not support Light-ON mode.



Applicable Photomicrosensors	EE-SPX301/401, EE-SPY30□/40□, EE-SPZ301-A/401-A	EE-SX67□/□A (Connector Models only), EE-SX47□, EE-SY67□, EE-SPY31□/41□, EE-SPX303N/403N, EE-SPW311/411
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