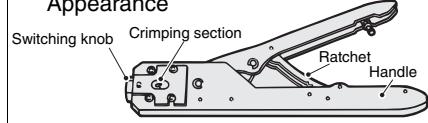


## Accessories (Order Separately)

### Ordering Information

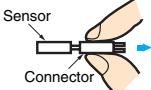
#### Connectors and Connector Hold-down Clips

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	
Connector with Cable	1 m	EE-1006	4 conductors
		EE-1010 *1	
	2 m	EE-1006	4 conductors
		EE-1006D	3 conductors
		EE-1006L	2 conductors
		EE-1010 *1	
Connector with Robot Cable	1 m	EE-1010-R *1	
	2 m	EE-1010-R *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	<p>Appearance</p>  <p>Switching knob      Crimping section      Ratchet Handle</p>

\*1. EE-1009- or EE-1010-series Connectors have a built-in 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-SPX74□/84□

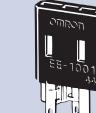
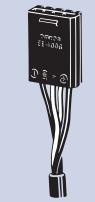
Item	Cable length	Model	Remarks
Connector with Cable	1 m	EE-1013	

#### Applicable Sensor models

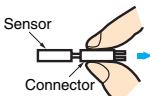
EE-SPX301/401, EE-SPY30□/40□, EE-SPZ301□/401□

Item	Cable length	Model	Remarks
Connector	Connector with Cable	EE-1002	
		EE-1003	
NPN/PNP Conversion Connector	0.46 m (total length)	EE-2001	
Connector Hold-down Clip		EE-1003A	For EE-1003 only.

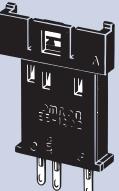
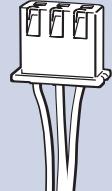
## Ratings and Specifications

Item	Product Model	Connector *1	Connector with Cable *1	Connector with Robot Cable *1	Connector	Connector (short-circuited between positive (+) and L terminals) *2	Connector with Cable		
		EE-1009	EE-1010	EE-1010-R	EE-1001	EE-1001-1	EE-1006		
Appearance									
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	50 times min.				---				
Insertion strength	No. of poles × 6 N max.				50 N max.				
Surplus strength (housing holding strength)	No. of poles × 0.4 N max.				---		20 N max.		
Standard cable length	---	2 m			---		2 m		
Lock strength	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 (solder plating)							
Applicable Photomicrosensors	EE-SX67□ (A,P,R) (Connector Models only), EE-SX47□, EE-SY67□, EE-SPY31□/41□, EE-SPX303N/403N, EE-SPW311/411								

\*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.



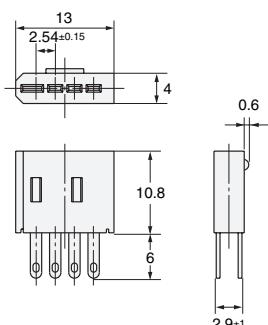
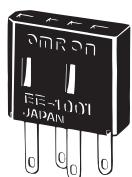
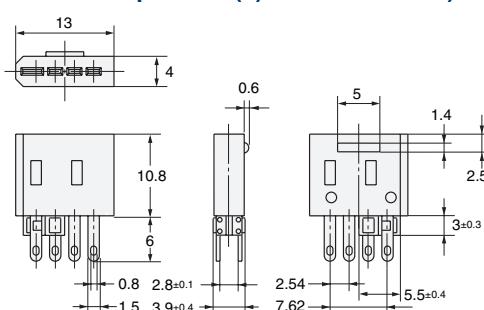
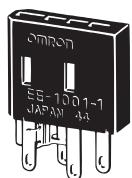
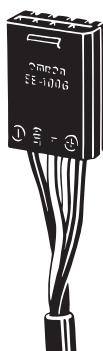
\*2. EE-SX67□ and EE-SY67□ are the best used in the light-ON state.

Item	Product Model	Connector	Connector with Cable	Connector with Cable
		EE-1002	EE-1003	EE-1013
Appearance				
Contact resistance	10 mΩ max. (at 10 mADC and 1 ADC)		20 mΩ max. (at minute current of 1 kHz and 500 VDC)	
Insertion strength	20 N max.		23.5 N max.	40 N max.
Surplus strength (housing holding strength)	15 N max. (initial) 10 N max. (ten times)		3.5 N max.	10 N max.
Cable length	---		1 m	
Ambient humidity	−10 to +75°C		−10 to +60°C	−10 to +55°C
Material	Housing	Nylon		
	Contact	Phosphor bronze (solder plating)		
Applicable Photomicrosensors	EE-SPX301/401, EE-SPY30□/40□, EE-SPZ301□/401□			EE-SPX74□/84□

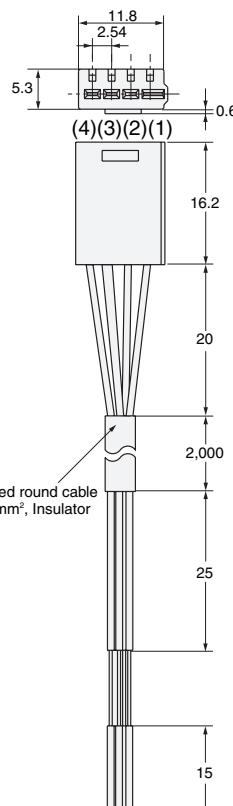
(Unit: mm)

**Dimensions**

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

**Photomicrosensor Connectors and Connector Hold-down Clips****Connector****EE-1001****Connector (short-circuited between positive (+) and L terminals)****EE-1001-1****Connector with Cable****EE-1006**

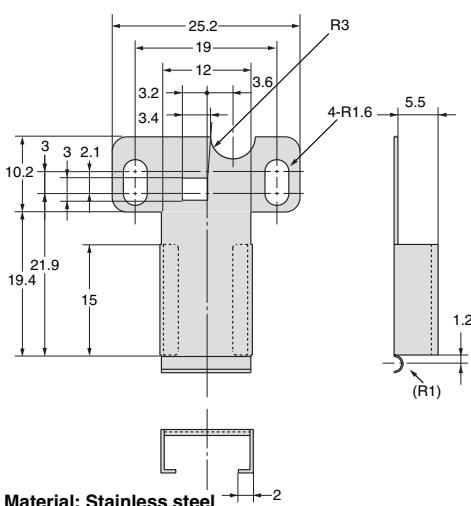
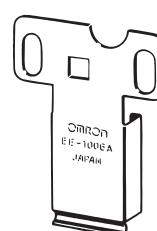
Cable:  
4-dia. 4-conductor vinyl-insulated round cable  
(Conductor cross section: 0.2 mm<sup>2</sup>, Insulator diameter: 1.1 mm).

**Terminal Arrangement**

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

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

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

**Applicable Photomicrosensors**

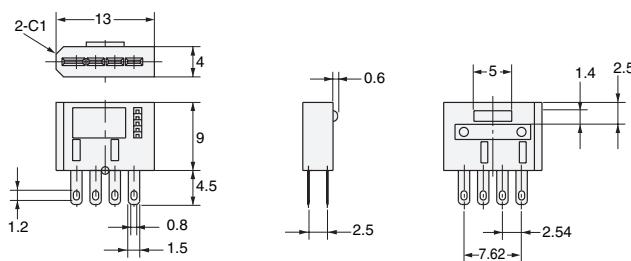
EE-SX67□ (A,P,R) (Connector Models only), EE-SX47□, EE-SY67□, EE-SPY31□/41□, EE-SPX303/403, EE-SPW311/411

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

## Photomicrosensor Connectors

### Connectors

#### EE-1009

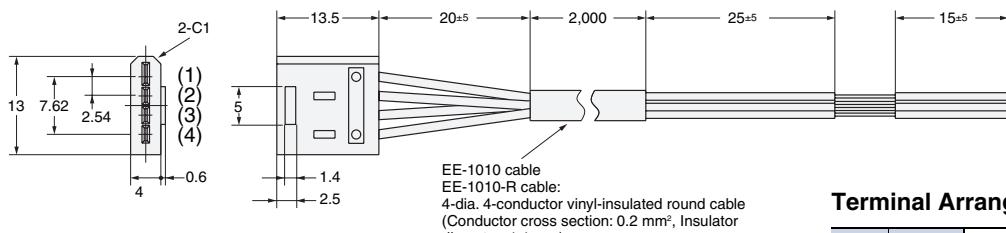


### Connector with Cable

#### EE-1010

### Connector with Robot Cable

#### EE-1010-R



### Terminal Arrangement

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

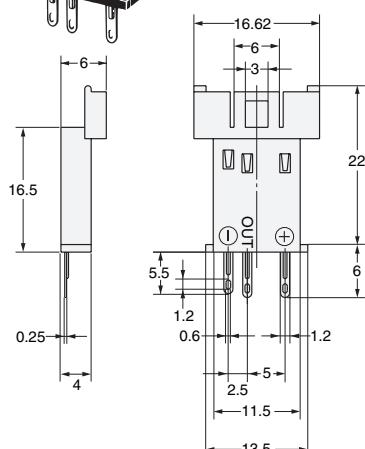
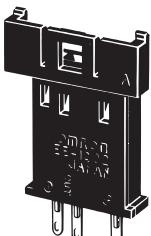
### Applicable Photomicrosensors

EE-SX67□ (A,P,R) (Connector Models only), EE-SX47□, EE-SY67□, EE-SPY31□/41□  
EE-SPX303/403, EE-SPW311/411

## Photomicrosensor Connectors and Connector Hold-down Clips

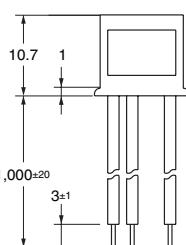
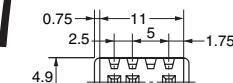
### Connector

EE-1002



### Connector with Cable

EE-1003

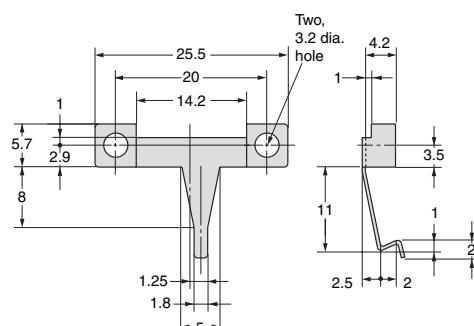


Cable:  
1.61-dia. 1-conductor vinyl-insulated round cable  
(Conductor cross section: 0.33 mm<sup>2</sup>).

### Connector Hold-down Clips

(For EE-1003 only)

EE-1003A

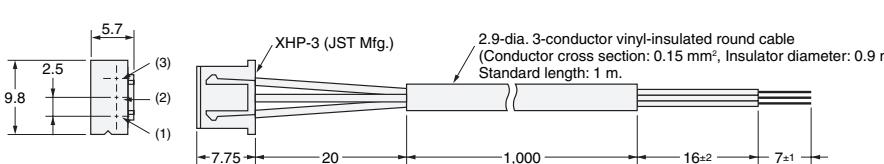
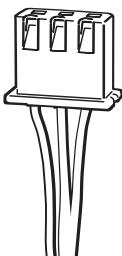


Applicable Photomicrosensors

EE-SPX301/401, EE-SPY30□/40□, EE-SPZ301□/401□

### Connector with Cable

EE-1013

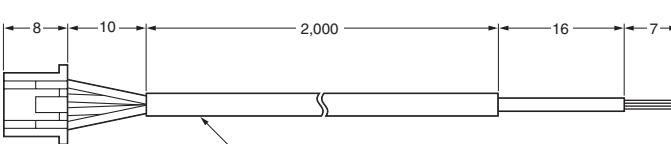
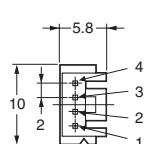


Applicable Photomicrosensors

EE-SPX74□/84□

### Connector with Robot Cable

EE-1016-R



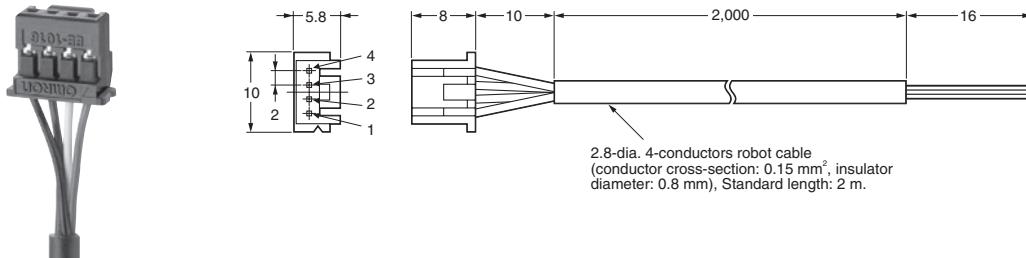
2.8-dia. 4-conductors robot cable (Conductor cross section: 0.15 mm<sup>2</sup>, Insulation diameter: 0.8 mm), Standard length: 2 m.

Applicable Photomicrosensors

EE-SX91□-C1J-R (Models with Junction Connectors)

## Connector with Cable (Connection with Robot Cable)

EE-1016-R-1



Applicable Photomicrosensors

EE-SX67□-C1J-R  
EE-SX67□P-C1J-R

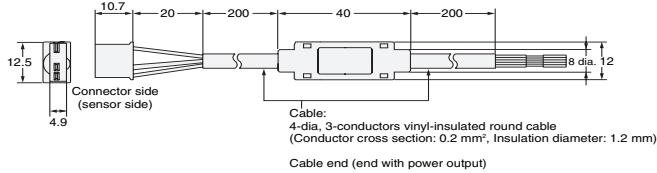
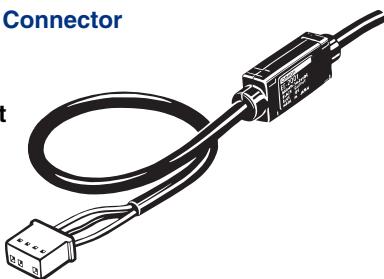
## NPN to PNP Transistor Output Conversion Connectors

NPN/PNP Conversion Connector

EE-2001

### Terminal Arrangement

(1)	⊕	Brown
(2)	OUT	Black
(3)	⊖	Blue

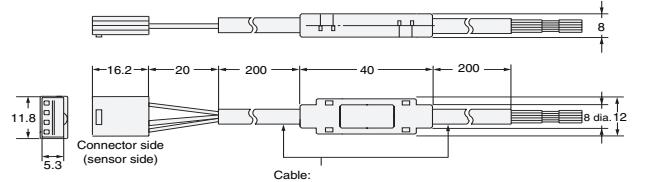
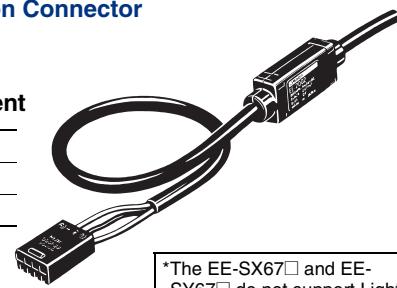


NPN/PNP Conversion Connector

EE-2002 \*

### Terminal Arrangement

(1)	⊕	Brown
(2)	OUT	Black
(3)	⊖	Blue



Applicable Photomicrosensors

EE-SPX301/401, EE-SPY30□/40□,  
EE-SPZ301□/401□

EE-SX67□ (A,P,R) (Connector Models only), EE-SX47□,  
EE-SY67□, EE-SPY31□/41□,  
EE-SPX303/403, EE-SPW311/411

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