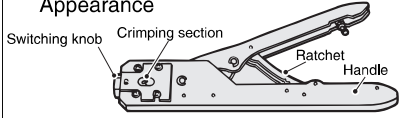


Accessories (Order Separately)

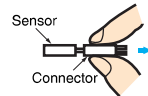
Ordering Information

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	1 m	EE-1001	
		EE-1001-1	L terminal and positive (+) terminal are already short-circuited.
		EE-1009 *1	
		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	EE-1010-R 1M *1	
		EE-1010-R 1M*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-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	

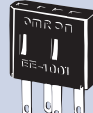
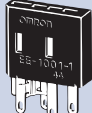
Applicable Sensor models EE-SX91□□-C1J-R (Pre-wired Connector)			
Item	Cable length	Model	Remarks
Connector with Cable	2 m	EE-1016-R	The robot cable is standard for all models.

Applicable Sensor models EE-SX67□□-C1J-R (Pre-wired Connector)			
Item	Cable length	Model	Remarks
Connector with Cable	2 m	EE-1016-R-1	The robot cable is standard for all models.

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	1 m	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.

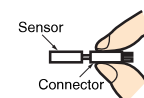
Ratings and Specifications

Item	Product	Connector *1	Connector with Cable *1	Connector with Robot Cable *1	Connector	Connector (short-circuited between positive (+) and L terminals) *2	Connector with Cable
	Model	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 *3		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		---	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 (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.

*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.



Product		Connector	Connector with Cable	Connector with Cable	Connector with Cable	Connector with Robot Cable	Connector with Robot Cable	
Model		EE-1002	EE-1003	EE-1013	EE-1017	EE-1017-R	EE-1016-R	EE-1016-R-1
Appearance								
Item								
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.	1.5 N min.		15 N min.	
Cable length		---	1 m		1 m, 3 m		2 m	
Ambient humidity		-10 to +75°C	-10 to +60°C	-10 to +55°C	-10 to +60°C		-25 to +85°C	
Material	Housing	Nylon						
	Contact	Phosphor bronze (solder plating)						
Applicable Photomicrosensors		EE-SPX301/401, EE-SPY30□/40□, EE-SPZ301□/401□		EE-SPX74□/84□	EE-SX97□C1, EE-SX97□P-C1		EE-SX91□-C1J-R (Pre-wired Connector)	EE-SX67□-C1J-R (Pre-wired Connector)

(Unit: mm)

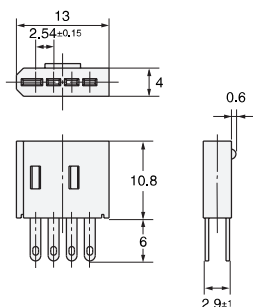
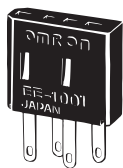
Dimensions

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

Photomicrosensor Connectors and Connector Hold-down Clips

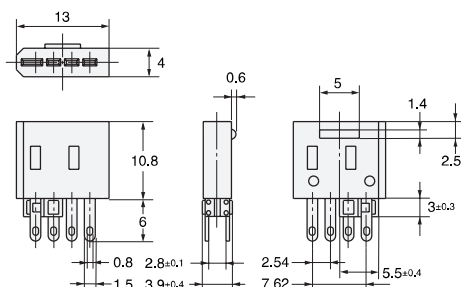
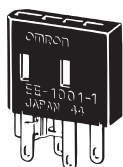
Connector

EE-1001



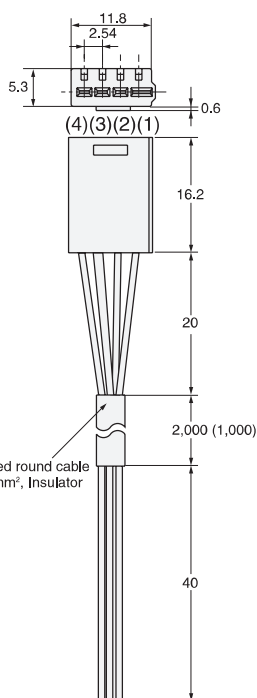
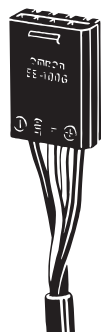
Connector (short-circuited between positive (+) and L terminals)

EE-1001-1



Connector with Cable

EE-1006 2M (EE-1006 1M)

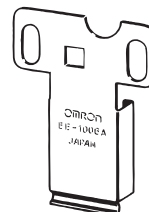


Terminal Arrangement

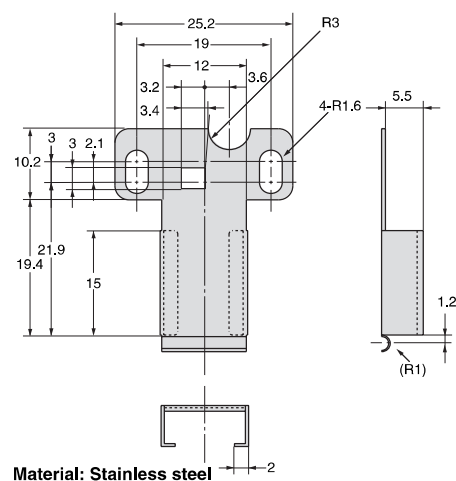
(1)	⊕	Brown
(2)	L	Pink
(3)	OUT	Black
(4)	⊖	Blue

Connector Hold-down Clip

EE-1006A



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



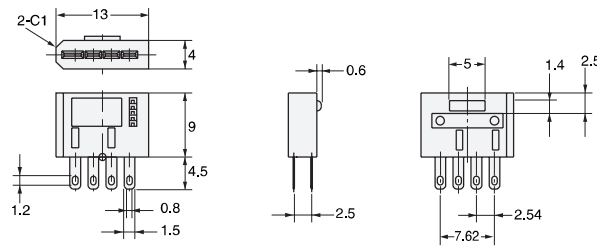
Applicable Photomicrosensors	EE-SX67□ (A,P,R) (Connector Models only), EE-SX47□, EE-SY67□, EE-SPY31□/41□, EE-SPX303N/403N, EE-SPW311/411
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For EE-SX670□, 470□, EE-SY671, and 672 only.

Photomicrosensor Connectors

Connectors

EE-1009

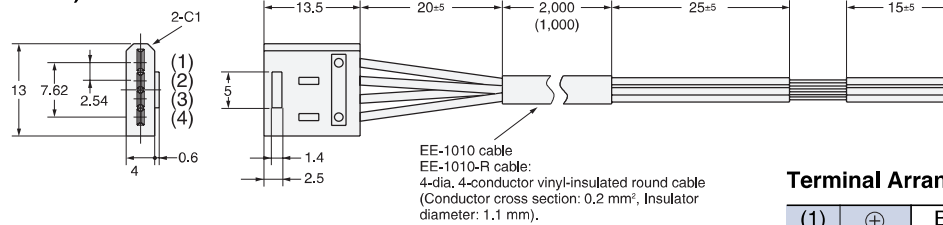


Connector with Cable

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

Connector with Robot Cable

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



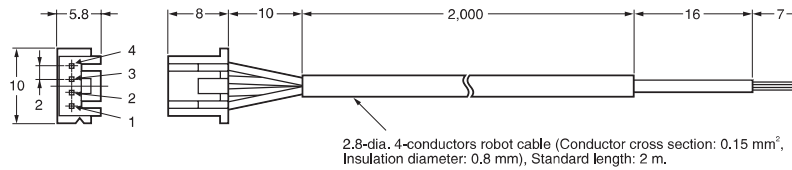
Terminal Arrangement

(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
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Connector with Robot Cable

EE-1016-R



Terminal Arrangement

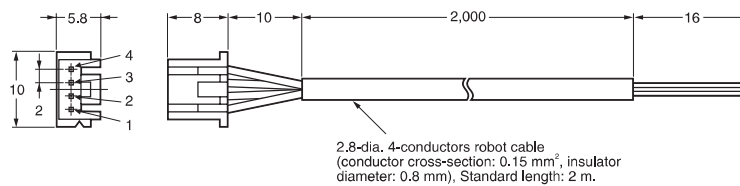
(1)	⊕	Brown
(2)	OUT2	White
(3)	⊖	Blue
(4)	OUT1	Black

Applicable Photo-microsensors

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

Connector with Cable (Connection with Robot Cable)

EE-1016-R-1



Terminal Arrangement

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

Applicable Photo-microsensors

EE-SX67□-C1J-R
EE-SX67□P-C1J-R

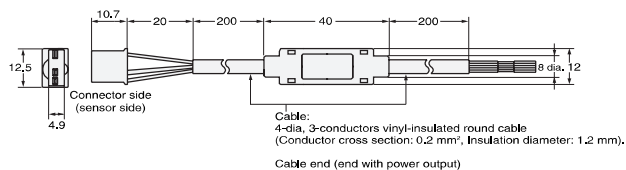
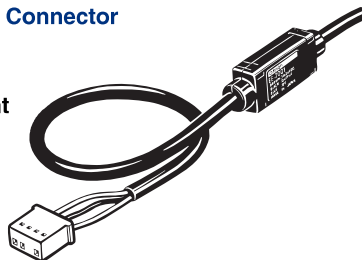
NPN to PNP Transistor Output Conversion Connectors

NPN/PNP Conversion Connector

EE-2001

Terminal Arrangement

(1)	⊕	Brown
(2)	OUT	Black
(3)	⊖	Blue



Applicable Photomicrosensors

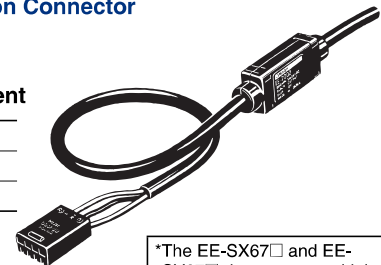
EE-SPX301/401, EE-SPY30□/40□,
EE-SPZ301□/401□

NPN/PNP Conversion Connector

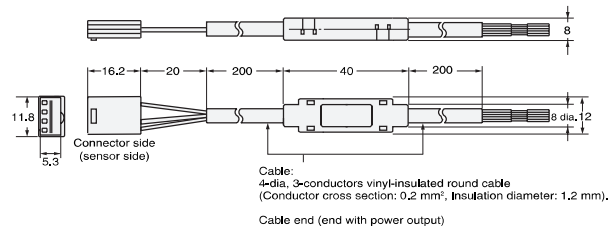
EE-2002 *

Terminal Arrangement

(1)	⊕	Brown
(2)	OUT	Black
(3)	⊖	Blue



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



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

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