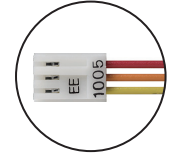


# Photomicrosensor (Transmissive)

# EE-SX3009-P1/EE-SX4009-P1/ EE-1005

## Slot/Screw-fixed Type (Slot Width: 5 mm)

- Photo IC output (Two types available: Dark-ON (EE-SX3009-P1)/ Light-ON (EE-SX4009-P1))
- Mounting can be performed through use of one screw together with a boss.
- Featuring enhanced maintainability through use of an all-purpose EI connector manufactured by TE Connectivity.
- Connector with cable(Order Separately) is available. EE-1005 (see page 3)



Be sure to read *Safety Precautions* on Page 2.

## Ordering Information

### Photomicrosensor

Appearance	Sensing method	Connecting method	Sensing distance	Aperture size (H x W) (mm)	Output type	Model	Minimum packing unit (Unit: pcs)
	Transmissive (slot type)	Connector	5 mm (Slot width)	Both emitting side and detecting side 2.4 x 0.5	Photo IC	<b>EE-SX3009-P1</b> (Dark-ON) <b>EE-SX4009-P1</b> (Light-ON)	1

Note: Order in multiples of minimum packing unit.

## Ratings, Characteristics and Exterior Specifications

### Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Rated value	Unit
Power supply voltage	V <sub>CC</sub>	10	V
Output voltage	V <sub>OUT</sub>	28	V
Output current	I <sub>OUT</sub>	16	mA
Permissible output dissipation	P <sub>OUT</sub>	250*	mW
Operating temperature	T <sub>opr</sub>	-25 to 75	°C
Storage temperature	T <sub>stg</sub>	-40 to 85	°C

\* Refer to the temperature rating chart if the ambient temperature exceeds 25°C.

### Exterior Specifications

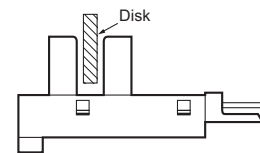
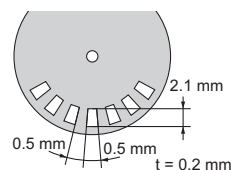
Connecting method	Weight (g)	Material	
		Case	Bottom plate
Connector	3	Polycarbonate	Polycarbonate

### Electrical and Optical Characteristics

(Ta = 25°C, V<sub>CC</sub> = 5 V±10%)

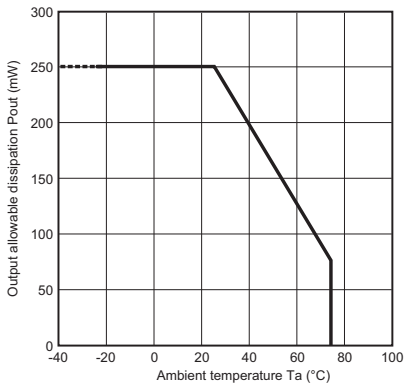
Item	Symbol	Value			Unit	Condition
		MIN.	TYP.	MAX.		
Current consumption	I <sub>CC</sub>	—	—	30	mA	With and without incident
Low-level output voltage	V <sub>OL</sub>	—	—	0.3	V	I <sub>OUT</sub> = 16 mA Without incident: EE-SX3009-P1 With incident: EE-SX4009-P1
High-level output voltage	V <sub>OH</sub>	(V <sub>CC</sub> × 0.9)	—	—	V	V <sub>OUT</sub> = V <sub>CC</sub> With incident: EE-SX3009-P1 Without incident: EE-SX4009-P1 R <sub>L</sub> = 47 kΩ
Response frequency	f	3	—	—	kHz	V <sub>OUT</sub> = V <sub>CC</sub> R <sub>L</sub> = 47 kΩ*

\* The value of the response frequency is measured by rotating the disk as shown below.

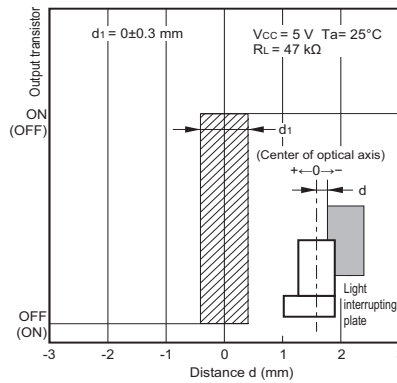


**Engineering Data (Reference Value)** Note: Values in parentheses are for EE-SX4009-P1

**Fig 1. Output Allowable Dissipation vs. Ambient Temperature Characteristics**



**Fig 2. Sensing Position Characteristics (Typical)**



**Safety Precautions**

To ensure safe operation, be sure to read and follow the Instruction Manual provided with the Sensor.

**⚠ CAUTION**

This product is not designed or rated for ensuring safety of persons either directly or indirectly. Do not use it for such purposes.

**Precautions for Correct Use**

Do not use the product in atmospheres or environments that exceed product ratings. Dispose of this product as industrial waste.

**Precautions for Safe Use**

**Do not use the product with a voltage or current that exceeds the rated range.**  
Applying a voltage or current that is higher than the rated range may result in explosion or fire.

**Do not miswire such as the polarity of the power supply voltage.**  
Otherwise the product may be damaged or it may burn.

**Do not short-circuit the load.**  
Otherwise explosion or burning may occur.

**This product does not resist water. Do not use the product in places where water or oil may be sprayed onto the product.**

Dimensions and Internal Circuit

(Unit: mm)

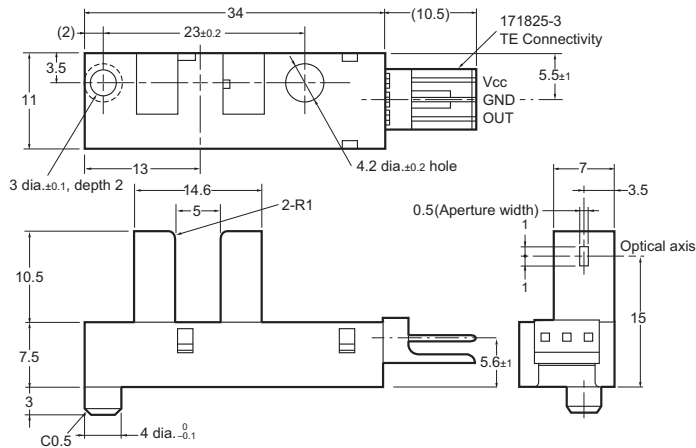
Photomicrosensor

EE-SX3009-P1  
EE-SX4009-P1



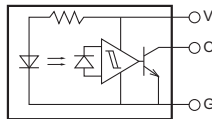
Aperture size (H x W)

Emitter	Detector
2.4 x 0.5	2.4 x 0.5



Recommended compatible connector: Connector manufactured by TE Connectivity 171822-3 (crimp type)  
172142-3 (crimp type)  
Connector manufactured by OMRON EE-1005 (with harness)

Internal circuit



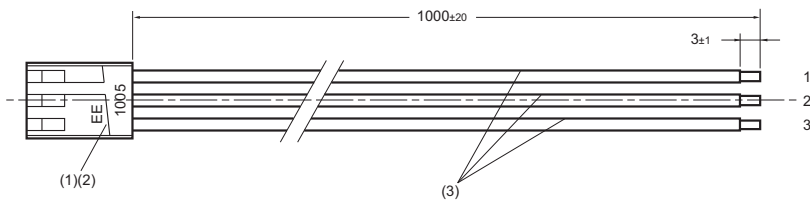
Terminal No.	Name
V	Power supply (Vcc)
O	Output (OUT)
G	Ground (GND)

Unless otherwise specified, the tolerances are as shown below.

Dimensions	Tolerance
4 mm max.	±0.2
4 < mm ≤ 16	±0.3
16 < mm ≤ 63	±0.5

Compatible Connector

EE-1005



No.	Product name	Model/ Specification	Quantity	Manufacturer
(1)	Receptacle housing	171822-3	1	TE Connectivity
(2)	Receptacle contact	170262-1	3	TE Connectivity
(3)	Lead wire	UL1007 AWG24	3	—

Wiring

Connector circuit No.	Lead wire color	Output when connected with EE-SX4009-P1
1	Red	Vcc
2	Orange	GND
3	Yellow	OUT

Please check each region's Terms & Conditions by region website.

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