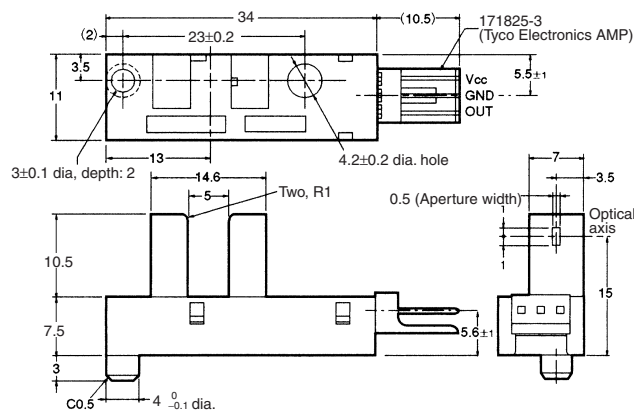


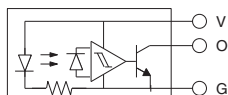
# Photomicrosensor (Transmissive) EE-SX3009-P1/-SX4009-P1

## ■ Dimensions

**Note:** All units are in millimeters unless otherwise indicated.



### Internal Circuit



Unless otherwise specified, the tolerances are as shown below.

Terminal No.	Name	Dimensions	Tolerance
V	Power supply (V <sub>CC</sub> )	4 mm max.	±0.2
O	Output (OUT)	4 < mm ≤ 16	±0.3
G	Ground (GND)	16 < mm ≤ 63	±0.5

Recommended Mating Connectors:  
 Tyco Electronics AMP 171822-3 (crimp connector)  
 172142-3 (crimp connector)  
 OMRON EE-1005 (with harness)

## ■ Features

- Screw-mounting model.
- High resolution with a 0.5-mm-wide sensing aperture.
- With a 5-mm-wide groove.
- Photo IC output signals directly connect with C-MOS and TTL.
- Connects to Tyco Electronics AMP's EI-series connectors.
- RoHS Compliant.

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

Item	Symbol	Rated value
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 (see note)
Ambient temperature	Operating	T <sub>opr</sub> -25°C to 75°C
	Storage	T <sub>stg</sub> -40°C to 85°C
Soldering temperature	T <sub>sol</sub>	---

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

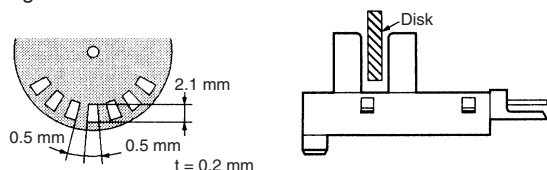
## ■ Ordering Information

Description	Model	
Photomicrosensor (transmissive)	Dark ON	EE-SX3009-P1
	Light ON	EE-SX4009-P1

## ■ Electrical and Optical Characteristics (Ta = 25°C, V<sub>CC</sub> = 5 V ±10%)

Item	Symbol	Value	Condition
Current consumption	I <sub>CC</sub>	30 mA max.	With and without incident
Low-level output voltage	V <sub>OL</sub>	0.3 V max.	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 min.	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 min.	V <sub>OUT</sub> = V <sub>CC</sub> , R <sub>L</sub> = 47 kΩ (see note)

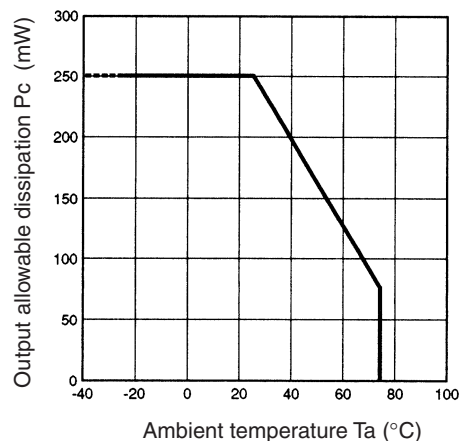
**Note:** The value of the response frequency is measured by rotating the disk as shown below.



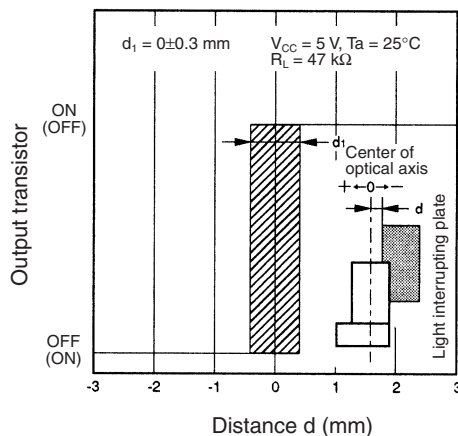
■ Engineering Data

Note: The values in the parentheses apply to the EE-SX4009-P1.

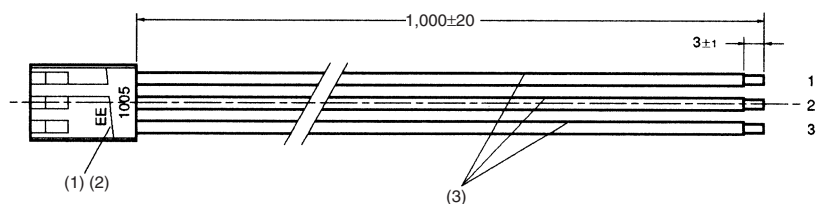
Output Allowable Dissipation vs. Ambient Temperature Characteristics



Sensing Position Characteristics (Typical)



EE-1005 Connector



Wiring

No.	Name	Model	Quantity	Maker
1	Receptacle housing	171822-3	1	Tyco Electronics AMP
2	Receptacle contact	170262-1	3	Tyco Electronics AMP
3	Lead wire	UL1007 AWG24	3	---

Connector circuit no.	Lead wire color	Output when connected to EE-SX4009-P1/EE-SX3009-P1
1	Red	V <sub>CC</sub>
2	Orange	GND
3	Yellow	OUT



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**ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.**  
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

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**OMRON ELECTRONIC  
COMPONENTS LLC**

55 E. Commerce Drive, Suite B  
Schaumburg, IL 60173

**847-882-2288**

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Global - <http://www.omron.com>

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10/10

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