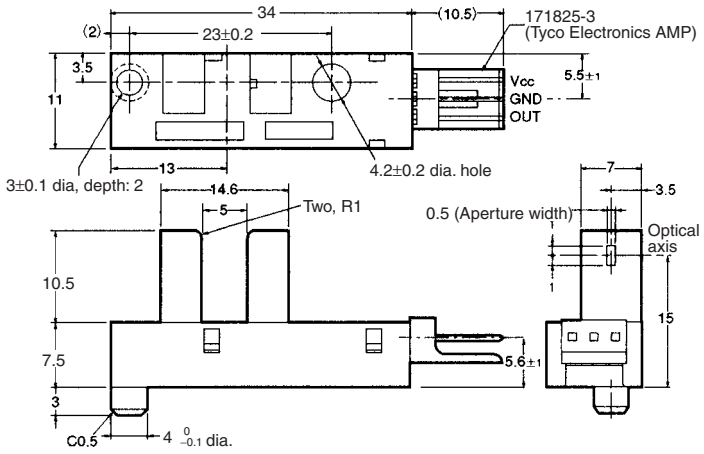
Photomicrosensor (Transmissive)
EE-SX3009-P1/-SX4009-P1

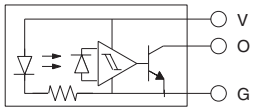
⚠ **Be sure to read *Precautions* on page 25.**

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.



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

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.

■ Absolute Maximum Ratings (Ta = 25°C)

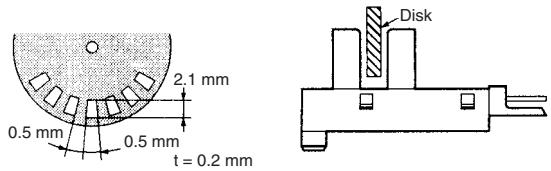
Item		Symbol	Rated value
Power supply voltage		V_{CC}	10 V
Output voltage		V_{OUT}	28 V
Output current		I_{OUT}	16 mA
Permissible output dissipation		P_{OUT}	250 mW (see note)
Ambient temperature	Operating	Topr	–25°C to 75°C
	Storage	Tstg	–40°C to 85°C
Soldering temperature		Tsol	---

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

■ Electrical and Optical Characteristics (Ta = 25°C, Vcc = 5 V ±10%)

Item	Symbol	Value	Condition
Current consumption	I_{CC}	30 mA max.	With and without incident
Low-level output voltage	V_{OL}	0.3 V max.	I_{OUT} = 16 mA Without incident (EE-SX3009-P1) With incident (EE-SX4009-P1)
High-level output voltage	V_{OH}	(V_{CC} x 0.9) V min.	V_{OUT} = V_{CC} With incident (EE-SX3009-P1) Without incident (EE-SX4009-P1), R_L = 47 kΩ
Response frequency	f	3 kHz min.	V_{OUT} = V_{CC}, R_L = 47 kΩ (see note)

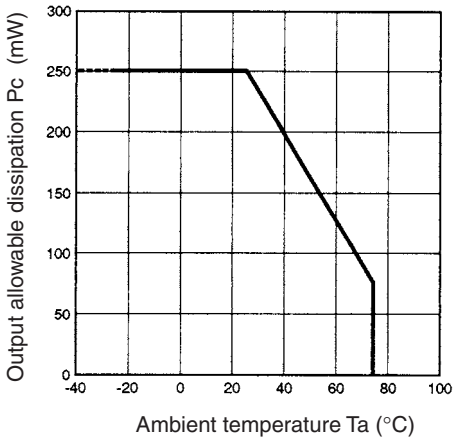
Note: The value of the response frequency is measured by rotating the disk as shown below.



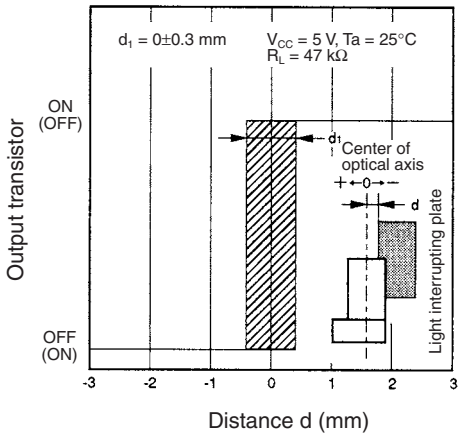
■ Engineering Data

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

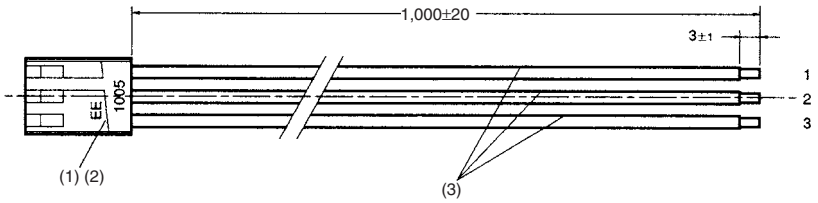
Output Allowable Dissipation vs. Ambient Temperature Characteristics



Sensing Position Characteristics (Typical)



EE-1005 Connector



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	---

Wiring

Connector circuit no.	Lead wire color	Output when connected to EE-SX4009-P1/EE-SX3009-P1
1	Red	V_{CC}
2	Orange	GND
3	Yellow	OUT