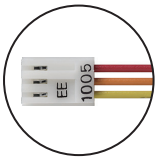
Photomicrosensor (Transmissive)

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)

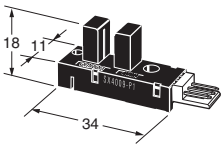




⚠ **Be sure to read *Safety Precautions* on Page 2.**

Ordering Information

Photomicrosensor

Appearance	Sensing method	Connecting method	Sensing distance	Aperture size (H × 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 × 0.5	Photo IC	**EE-SX3009-P1** (Dark-ON) **EE-SX4009-P1** (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_{CC}	10	V
Output voltage	V_{OUT}	28	V
Output current	I_{OUT}	16	mA
Permissible output dissipation	P_{OUT}	250*	mW
Operating temperature	T_{opr}	-25 to 75	°C
Storage temperature	T_{stg}	-40 to 85	°C

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

Exterior Specifications

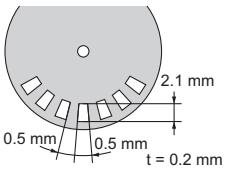
Connecting method	Weight (g)	Material	
		Case	Bottom plate
Connector	3	Polycarbonate	Polycarbonate

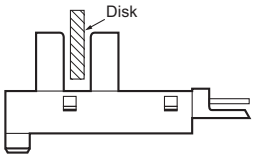
Electrical and Optical Characteristics

(Ta = 25°C, Vcc = 5 V±10%)

Item	Sym-bol	Value			Unit	Condition
		MIN.	TYP.	MAX.		
Current consumption	I_{CC}	—	—	30	mA	With and without incident
Low-level output voltage	V_{OL}	—	—	0.3	V	I_{OUT} = 16 mA Without incident: EE-SX3009-P1 With incident: EE-SX4009-P1
High-level output voltage	V_{OH}	(V_{CC} × 0.9)	—	—	V	V_{OUT} = V_{CC} With incident: EE-SX3009-P1 Without incident: EE-SX4009-P1 R_L = 47 kΩ
Response frequency	f	3	—	—	kHz	V_{OUT} = V_{CC} R_L = 47 kΩ*

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





Downloaded from Arrow.com.

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

Fig 1. Output Allowable Dissipation vs. Ambient Temperature Characteristics

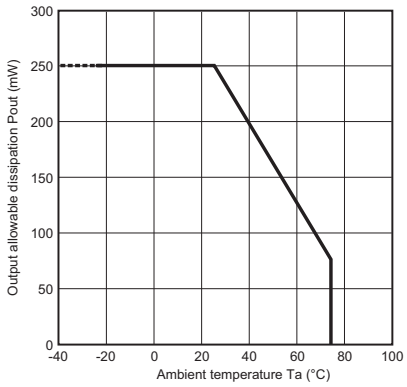
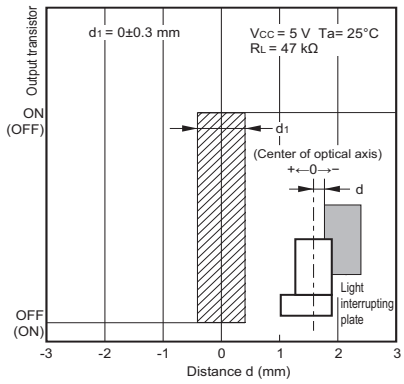


Fig 2. Sensing Position Characteristics (Typical)



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 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.

Precautions for Correct Use

Do not use the product in atmospheres or environments that exceed product ratings.

Dispose of this product as industrial waste.

Downloaded from Arrow.com.

Dimensions and Internal Circuit

(Unit: mm)

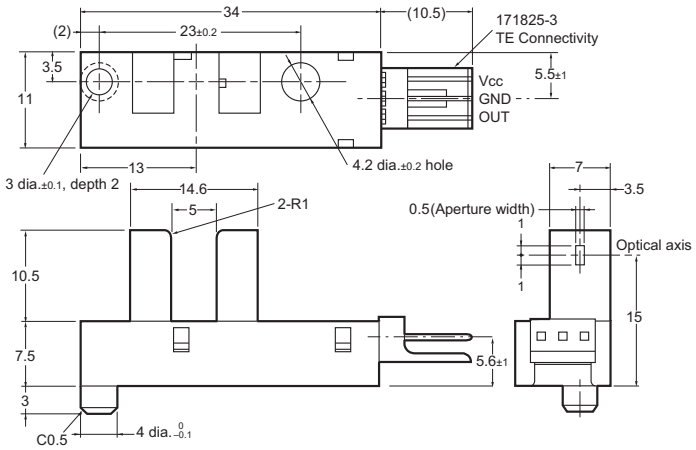
Photomicrosensor

EE-SX3009-P1
EE-SX4009-P1



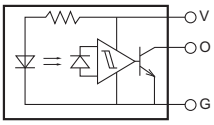
Aperture size (H × W)

Emitter	Detector
2.4 × 0.5	2.4 × 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



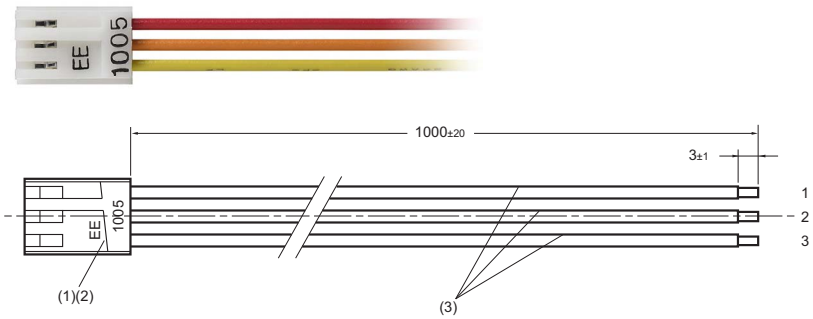
Terminal No.	Name
V	Power supply (Vcc)
O	Output (OUT)
G	Ground (GND)

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

Downloaded from Arrow.com.

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

OMRON Corporation
Device & Module Solutions Company

Regional Contact

Americas
https://components.omron.com/us

Europe
https://components.omron.com/eu

Asia-Pacific
https://components.omron.com/ap

China
https://components.omron.com.cn

Korea
https://components.omron.com/kr

Japan
https://components.omron.com/jp

© OMRON Corporation 2018-2022 All Rights Reserved.
In the interest of product improvement, specifications are subject to change without notice.

Cat. No. E541-E1-02
1122 (0318)

Downloaded from Arrow.com.