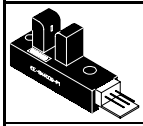
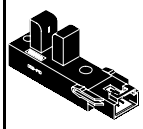
OMRON

EE-SX4009-P1/P10

Photo IC Output Photomicrosensors with AMP or Molex Connectors

- Photo IC receiver assures a high output of 16mA at 28 VDC and a high response speed of 3 kHz
- Directly compatible with TTL and CMOS
- Includes Schmitt trigger circuit
- Internal resistor included to protect the LED circuit
- Compatible with AMP (EE-SX4009-P1) or Molex (EE-SX4009-P10) connectors
- Easy screw-mount configuration

Ordering Information

Appearance	Sensing method	Slot width	Slot depth	Output configuration	Weight	Applicable mating connector	**Part number**
	Transmissive	5 mm	10.5 mm	Photo IC Light-ON	3.1 g	Omron EE-1005 AMP 171822-3 AMP 171880-3 AMP 172142-3	**EE-SX4009-P1**
					3.5 g	U.S. Molex 50-57-9403 15-47-4033 14-56-2036 (AWG 28) 14-56-2034 (AWG 26) 14-56-2032 (AWG 24) 14-56-7037 (AWG 22)	**EE-SX4009-P10**

Specifications

■ ABSOLUTE MAXIMUM RATINGS (T_A = 25°C)

Item		Symbol	Rated value
Supply voltage		V_{CC}	10 VDC
Output voltage		V_{OUT}	28 V
Output current		I_{OUT}	16 mA
Output power dissipation		P_{OUT}	250 mW
Ambient temperature	Operating	Topr	-20°C to +75°C (-4°F to 167°F)
	Storage	Tstg	-40°C to +85°C (-40°F to 185°F)

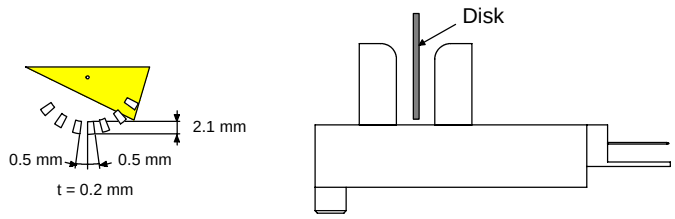
■ ELECTRICAL CHARACTERISTICS T_A = 25°C, V_{CC} = 5 V ±10%

Item	Symbol	Value	Condition
Consumption current	I_{CC}	30 mA max.	With or without incident light
Low level output voltage	V_{OL}	0.3 V max.	I_{OUT}= 16 mA without object
High level output voltage	V_{OH}	(VCC x 0.9) V min.	V_{OUT}=VCC, R_L=47 kΩ with object
Response frequency	*f*	3 kHz. min.	V_{OUT}=VCC, R_L=47 kΩ

■ RECOMMENDED OPERATING CONDITION (WITHIN THE RATED TEMPERATURE RANGE)

Item	Symbol	Recommended Value	Remarks
Supply voltage	V_{CC}	5 V ±10%	Refer to Engineering Data (Temperature Characteristics) and keep the output voltage and current as low as possible in the recommended range.
Output voltage	V_{OUT}	4.5 to 28 V	
Output current	I_{OUT}	16 mA max.	

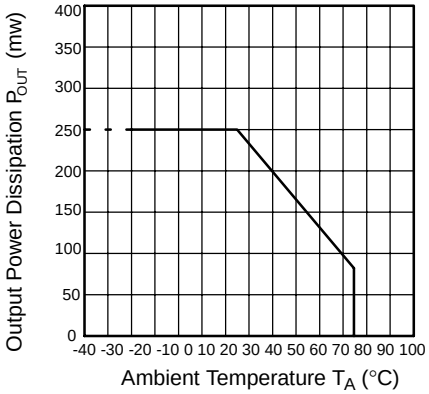
Note: The value of the response frequency is measured by rotating the disk as shown below.



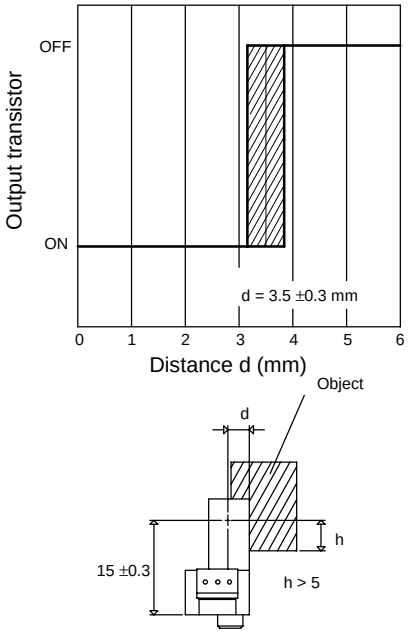
Engineering Data

Note: The operating conditions of the photomicrosensor must be within the absolute maximum rating ranges.

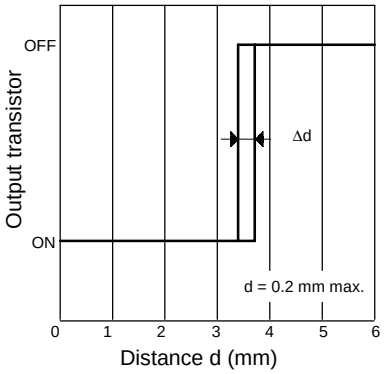
■ TEMPERATURE CHARACTERISTICS



■ SENSING POSITION CHARACTERISTICS

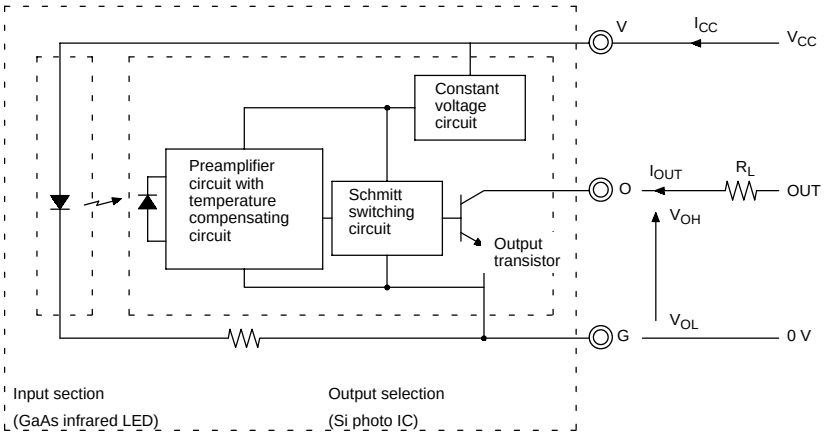


■ REPEATED SENSING POSITION CHARACTERISTICS

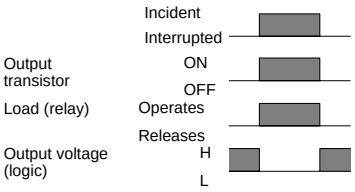


Operation

■ INTERNAL/EXTERNAL CIRCUIT DIAGRAM



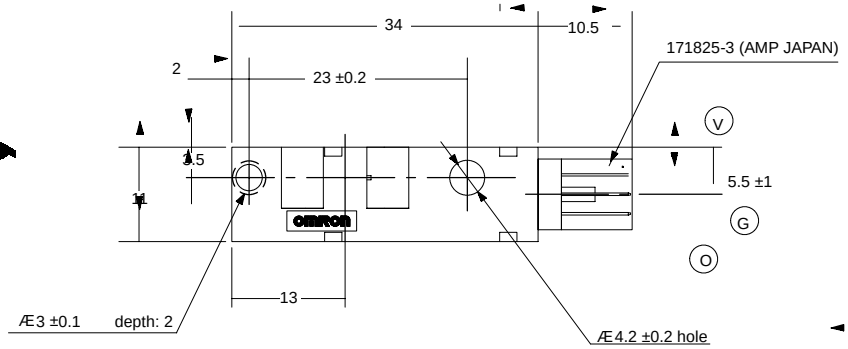
■ TIMING CHART

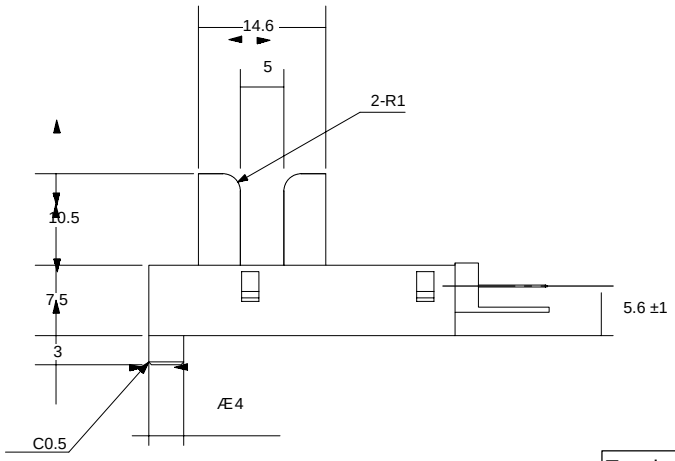


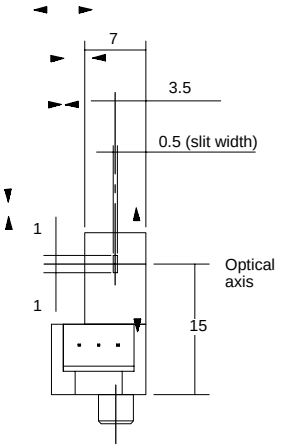
Dimensions

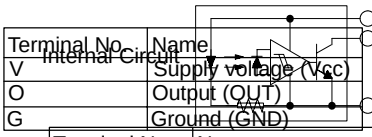
Unit: mm (inch)

EE-SX4009-P1





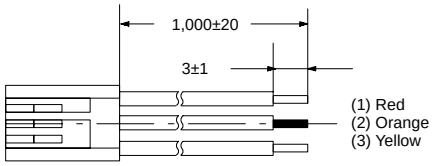




Terminal No.	Name
V	Supply voltage (Vcc)
O	Output (OUT)
G	Ground (GND)

Terminal No.	Name

EE-1005 CONNECTOR



Precautions

Refer to the Technical Information Section for general precautions.

NOTE: DIMENSIONS SHOWN ARE IN MILLIMETERS. To convert millimeters to inches divide by 25.4.

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