Photomicrosensor (Actuator Mounted)

EE-SA401-P12

Actuator mounted connector models

- Photo IC output (Light-ON)
- Compatible connector: TE Connectivity EI-series Connector
- Directly connectable to C-MOS

⚠ **Be sure to read *Safety Precautions* on page 3.**

Ordering Information

Photomicrosensor

Appearance	Sensing method	Connecting method	Sensing distance	Aperture size (H × W) (mm)	Output type	Model
	Transmissive (slot type)	Connector	3 mm (Slot width)	Both emitting side and receiving side 2.7×0.5	Photo IC	**EE-SA401-P12** (Light-ON)

Ratings, Characteristics and Exterior Specifications

Absolute Maximum Ratings (Ta = 25ºC)

Item	Symbol	Rated value	Unit
Power supply voltage	V_{CC}	7	V
Output voltage	V_{OUT}	28	V
Output current	I_{OUT}	16	mA
Permissible output dissipation	P_{OUT}	250 ✻	mW
Operating temperature	T_{opr}	-20 to +75	°C
Storage temperature	T_{stg}	-30 to +85	°C

✻ Refer to the temperature rating chart if the ambient temperature exceeds 25°C.
The product should be used without freezing or condensation.

Exterior Specifications

Connecting method	Weight	Material	
		Case	Back cover and hook
Connector	2.7	Polycarbonate	Polyamide

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

Item	Symbol	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, With incident
High-level output voltage	V_{OH}	(V_{CC}×0.9)	—	—	V	V_{OUT} = V_{CC}, without incident 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.

Engineering Data (Reference value)

Fig 1. Output Allowable Dissipation vs. Ambient Temperature Characteristics

Recommended Mounting Holes / Mounting and Dismounting Method

- Attachable plate thickness is 0.8 to 1.6 mm
- Open mounting holes with dimensions as indicated in the mounting hole drawing.
- Insertion force is about 3 to 5 kg. Do not insert all at once. Mounting can be accomplished easily by first inserting partially in two mounting holes and then applying force.
- Removal is possible from either the top side or bottom side (examples of both are shown).

<From top side>

- Press the removal hook with a flat-blade screwdriver and pry up.

<From bottom side>

- Attach as shown below, and push up while squeezing the tab with your fingers.

- The optimum way of opening mounting holes is by press punching. When mounting on the burr side of the punched mounting plate, or when mounting on a mounting plate with holes cut by wire cutting, a stronger insertion force is necessary, and insertion may be difficult in some cases (an insertion force of 5 to 6 kg may be necessary).
- If there are large burrs on the punched mounting plate, the locking mechanism may not engage completely. Press the mounting tabs with your finger as shown below to verify that the lock is completely engaged.

Reference actuator design drawing

Note: 1. Make sure that the portions marked with dotted lines have no burrs.
2. The material of the actuator must be selected by considering the infrared permeability of the actuator.

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.

Dimensions and Internal Circuit

(Unit: mm)

Photomicrosensor

EE-SA401-P12

Aperture size (H × W)

Emitter	Detector
2.7 × 0.5	2.7 × 0.5

Recommended compatible connector: Connector manufactured by TE Connectivity

171826-3 (crimp type)

Internal Circuit

Terminal No.	Name
Vcc	Power supply
VOUT	Output voltage
GND	Ground

Unless otherwise specified, the tolerances are as shown below.

Dimensions	Tolerance
3 mm max.	±0.2
3 < mm ≤ 6	±0.24
6 < mm ≤ 10	±0.29
10 < mm ≤ 18	±0.35
18 < mm ≤ 30	±0.42

- Application examples provided in this document are for reference only. In actual applications, confirm equipment functions and safety before using the product.
- Consult your OMRON representative before using the product under conditions which are not described in the manual or applying the product to nuclear control systems, railroad systems, aviation systems, vehicles, combustion systems, medical equipment, amusement machines, safety equipment, and other systems or equipment that may have a serious influence on lives and property if used improperly. Make sure that the ratings and performance characteristics of the product provide a margin of safety for the system or equipment, and be sure to provide the system or equipment with double safety mechanisms.

Note: Do not use this document to operate the Unit.

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