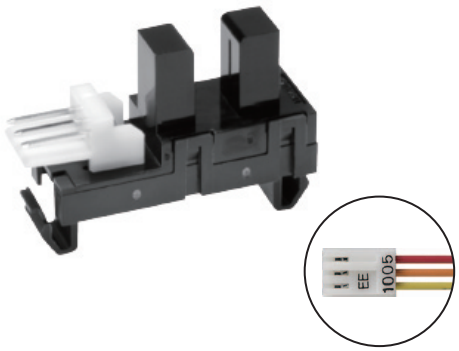
Photomicrosensor (Transmissive)

EE-SX460-P1/EE-1005

Slot/Snap-in Mounted Type (Slot Width: 5 mm)



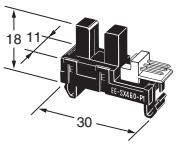
- Can be used with wide range of substrates and panels (t = 0.8 to 1.6 mm)
- Featuring enhanced maintainability thanks to a snap-in mounted structure in which mounting screws are unnecessary and through use of an all-purpose EI connector manufactured by TE Connectivity.
- Photo IC output (Light-ON)
- Directly connectable to C-MOS
- Connector with cable (Order Separately) is available. EE-1005 (see page 3)

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

RoHS Compliant

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 2.2 × 0.5	Photo IC	**EE-SX460-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}	-20 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

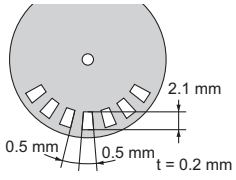
Connecting method	Weight (g)	Material	
		Case	Mounting tab
Connector	3	Polycarbonate	Polyamide

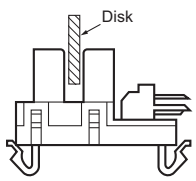
Electrical and Optical Characteristics

(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

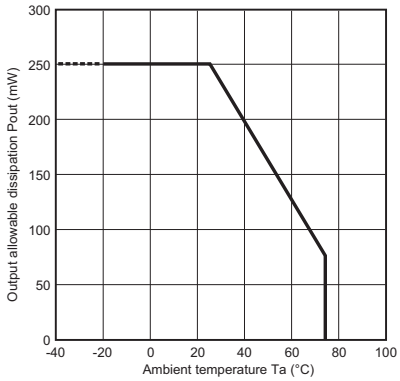


Fig 2. Sensing Position Characteristics (Typical)

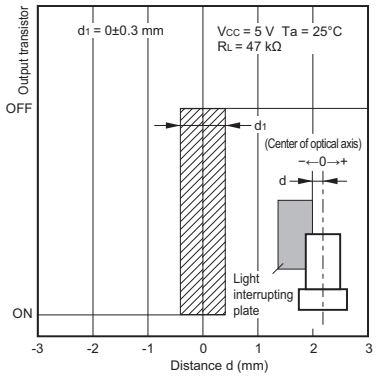
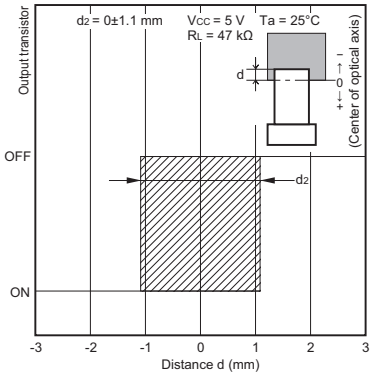
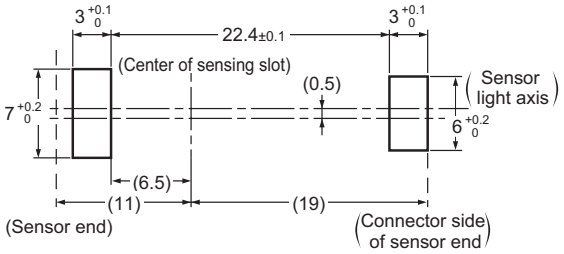


Fig 3. Sensing Position Characteristics (Typical)



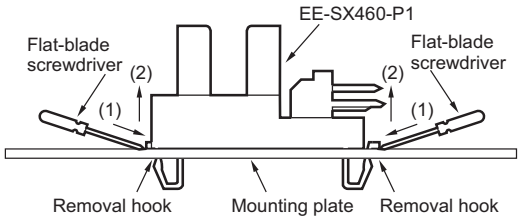
Recommended Mounting Holes/Mounting and Dismounting Method



- 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 approx. 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).

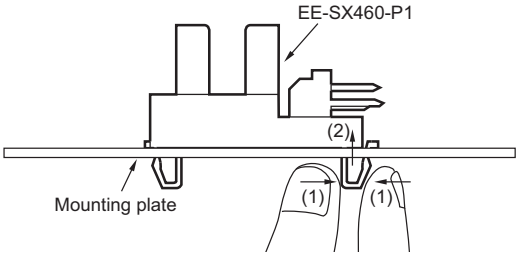
<From top side>

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

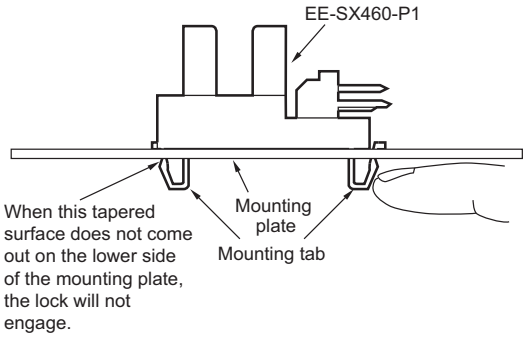


<From bottom side>

- 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.



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.

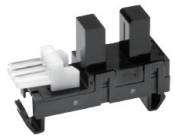
Dispose of this product as industrial waste.

Dimensions and Internal Circuit

(Unit: mm)

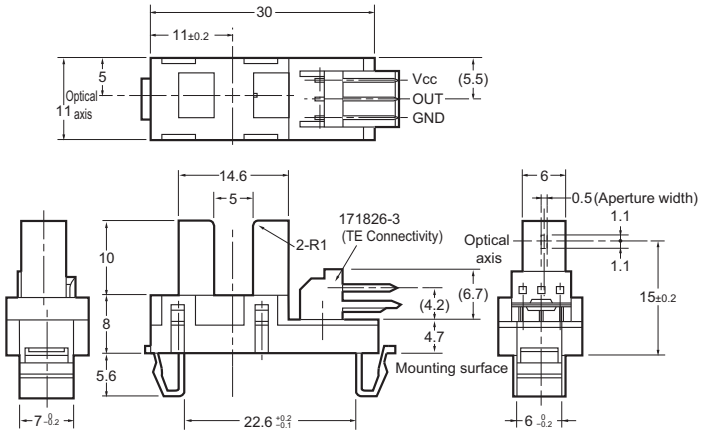
Photomicrosensor

EE-SX460-P1



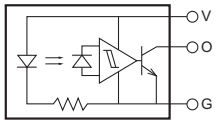
Aperture size (H × W)

Emitter	Detector
2.2 × 0.5	2.2 × 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



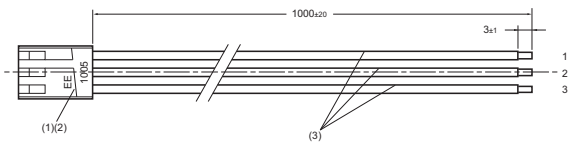
Terminal No.	Name
V	Power supply (Vcc)
O	Output (OUT)
G	Ground (GND)

Unless otherwise specified, the tolerances are as shown below.

Dimensions	Tolerance
3 mm max.	±0.3
3 < mm ≤ 6	±0.375
6 < mm ≤ 10	±0.45
10 < mm ≤ 18	±0.55
18 < mm ≤ 30	±0.65

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-SX460-P1
1	Red	Vcc
2	Orange	OUT
3	Yellow	GND

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