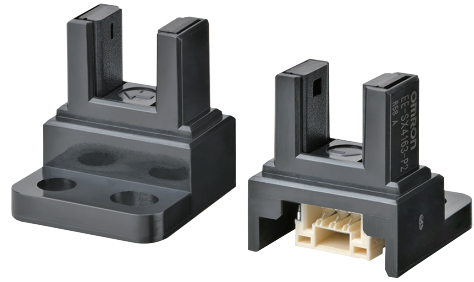


## Built-in Photomicrosensor Connector Type

- Mounted with M3 screws
- 5 VDC and 24 VDC power supply types are available
- Photo IC output (Dark-ON/Light-ON)
- Connector with secure lock compatible with JST GHR-03
- Equipped with a Zener diode, which increases noise immunity (for EE-SX3173/4173-P3-Z only)
- Connector with cable is also available (order separately)  
EE-5002 1M (Refer to page 7.)



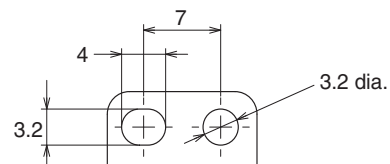
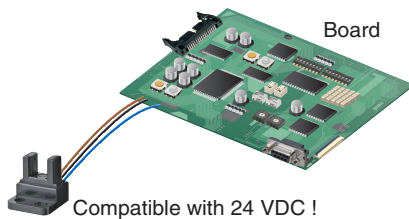
Be sure to read Safety Precautions on page 4.

## Features

### Models available

Power supply voltage: In addition to the conventional 5 VDC supply, model also available with 24 VDC supply best for large devices

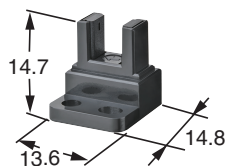
Mounting: New model available with M3 screws



### Downsizing

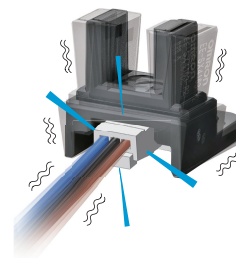
Smallest class in the industry \*: Downsizing of products with unique optical elements is realized

\* As of August 2018, according to research by our company



### Environment resistance

Connection: Equipped with connectors with locks for resistance against vibration and shock



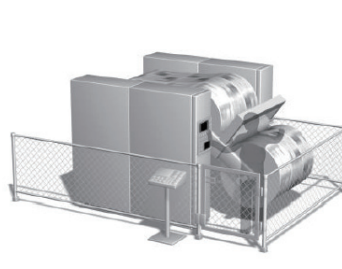
## Application Examples



Packaging Machine



Analysis and Measurement Equipment



Printing Equipment



ATM

## Model Number Structure

EE-SX□□□□-P□-□  
(1)(2)(3)(4)(5) (6) (7)

(1) Sensing method  
X: Transmissive

(2) Operating mode  
3: Dark-ON  
4: Light-ON

(3) Structure  
1: Standard structure

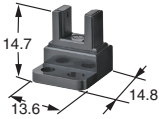
(4) Mounting screw size  
7: M3

(5) Appearance  
3: L-shaped mounting

(6) Power supply voltage  
2: 5 VDC  
3: 24 VDC

(7) Protection circuit  
Z: Available

## Ordering Information

| Appearance                                                                        | Sensing method           | Connecting method | Sensing distance                                                                                              | Aperture size H x W (mm)                          | Output type | Power supply voltage | Operating mode | Model          |
|-----------------------------------------------------------------------------------|--------------------------|-------------------|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-------------|----------------------|----------------|----------------|
|  | Transmissive (slot type) | Connector         |  <b>5 mm</b><br>(Slot width) | Emitter<br>1.4 × 1.4<br><br>Detector<br>1.4 × 0.5 | Photo IC    | 24 VDC               | Dark-ON        | EE-SX3173-P3-Z |
|                                                                                   |                          |                   |                                                                                                               |                                                   |             | 5 VDC                | Light-ON       | EE-SX4173-P3-Z |
|                                                                                   |                          |                   |                                                                                                               |                                                   |             |                      | Dark-ON        | EE-SX3173-P2   |
|                                                                                   |                          |                   |                                                                                                               |                                                   |             |                      | Light-ON       | EE-SX4173-P2   |

## Ratings, Characteristics and Exterior Specifications

### Absolute Maximum Ratings (Ta = 25°C)

| Item                           | Symbol           | Rated value                      |                              | Unit | Remarks |
|--------------------------------|------------------|----------------------------------|------------------------------|------|---------|
|                                |                  | EE-SX3173-P3-Z<br>EE-SX4173-P3-Z | EE-SX3173-P2<br>EE-SX4173-P2 |      |         |
| Power supply voltage           | V <sub>CC</sub>  | 26.4 DC                          | 5.5 DC                       | V    | ---     |
| Output voltage                 | V <sub>OUT</sub> | 26.4                             | 13.2                         | V    | ---     |
| Output current                 | I <sub>OUT</sub> | 16                               |                              | mA   | ---     |
| Permissible output dissipation | P <sub>OUT</sub> | 80                               |                              | mW   | Fig 1.  |
| Operating temperature          | T <sub>opr</sub> | -25 to +55                       |                              | °C   | *       |
| Storage temperature            | T <sub>stg</sub> | -30 to +80                       |                              | °C   | *       |
| Soldering temperature          | T <sub>sol</sub> | ---                              |                              | °C   | ---     |

\* Reduce the voltage and current, if necessary, by reference to the temperature rating chart (Fig. 1.), even if the temperature is within the specified range. The product should be used without freezing or condensation.

### Exterior Specifications

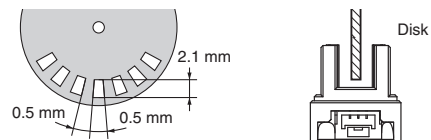
| Appearance        |                  | L-shaped mounting                                                |
|-------------------|------------------|------------------------------------------------------------------|
| Item              |                  | EE-SX3173-P3-Z<br>EE-SX4173-P3-Z<br>EE-SX3173-P2<br>EE-SX4173-P2 |
| Connecting method |                  | Connector                                                        |
| Weight            |                  | Approx. 1.5 g                                                    |
| Materials         | Case             | Polybutylene terephthalate (PBT)                                 |
|                   | Emitter/receiver | Polyphenylene sulfide (PPS) fiber                                |

### Electrical and Optical Characteristics (Ta = 25°C)

| Item                      | Symbol          | Value                                                                                                                                                   |                                           |
|---------------------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
|                           |                 | 24 VDC model                                                                                                                                            | 5 VDC model                               |
|                           |                 | Dark-ON<br>Light-ON                                                                                                                                     | EE-SX3173-P3-Z<br>EE-SX4173-P3-Z          |
| Power supply voltage      | V <sub>CC</sub> | 24 ±10%V<br>Ripple (p-p) 10%                                                                                                                            | 5 ±10%V<br>Ripple (p-p) 10%               |
| Current consumption       | I <sub>CC</sub> | 15 mA max.<br>(With and without incident)                                                                                                               | 25 mA max.<br>(With and without incident) |
| Low-level output voltage  | V <sub>OL</sub> | 0.3 V max. (I <sub>OUT</sub> = 16 mA)<br>(Dark-ON: Without incident,<br>Light-ON: With incident)                                                        |                                           |
| High-level output voltage | V <sub>OH</sub> | (V <sub>CC</sub> × 0.9 V min. (V <sub>OUT</sub> = V <sub>CC</sub> , R <sub>L</sub> = 47 kΩ))<br>(Dark-ON: With incident,<br>Light-ON: Without incident) |                                           |
| Sensing object            | ---             | 1.4 × 0.5 min. *1                                                                                                                                       |                                           |
| Response frequency        | f               | 3kHz min.<br>(V <sub>OUT</sub> = V <sub>CC</sub> , I <sub>OUT</sub> = 16 mA *2)                                                                         |                                           |
| Operating ambient light   | ---             | 1000 lx max. *3                                                                                                                                         |                                           |
| Peak emission wavelength  | λ <sub>P</sub>  | 855 nm                                                                                                                                                  | 940 nm                                    |

\*1. Objects that do not allow infrared light to pass through them.

\*2. The value of the response frequency is measured by rotating the disk as shown below.



\*3. When fluorescent light is used.