

# Broad Slot-type Photomicrosensor EE-SPX303/403

## Long sensing distance (13 mm) without external light interference.

- Easy adjustment and optical axis monitoring with a light indicator.
- Connection possible with Programmable Controllers (PLCs).
- Easy-to-wire connector assures ease of maintenance.
- Wide operating voltage range: 12 to 24 VDC



Refer to *Precautions* on page 53.

### Ordering Information

#### List of Models

Infrared light

| Appearance | Sensing method                | Sensing distance (slot width) |                    | Output type | Output configuration | Model     |
|------------|-------------------------------|-------------------------------|--------------------|-------------|----------------------|-----------|
|            | Through-beam type (with slot) |                               | 13 mm (slot width) | NPN output  | Dark-ON              | EE-SPX303 |
|            |                               |                               |                    |             | Light-ON             | EE-SPX403 |

#### Accessories (Order Separately)

| Type                         | Cable length          | Model     |
|------------------------------|-----------------------|-----------|
| Connector                    |                       | EE-1001   |
|                              |                       | EE-1009   |
|                              | 1 m                   | EE-1006   |
|                              |                       | EE-1010   |
|                              | 2 m                   | EE-1006   |
|                              |                       | EE-1010   |
| Connector with Robot Cable   | 1 m                   | EE-1010-R |
|                              | 2 m                   | EE-1010-R |
| NPN/PNP Conversion Connector | 0.46 m (total length) | EE-2002   |

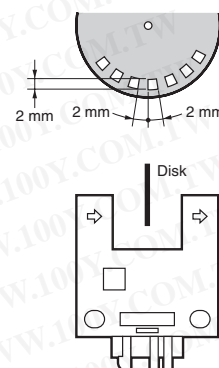
Refer to *Accessories* on page 97 for details.

勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

## Ratings/Characteristics

| Item                  | Models | EE-SPX303, EE-SPX403   |
|-----------------------|--------|--|
| Sensing distance      |        | 13 mm (slot width)   |
| Sensing object        |        | Opaque: 2.2 × 0.5 mm min.  |
| Differential distance |        | 0.05 mm max.   |
| Light source          |        | GaAs infrared LED (pulse lighting) with a peak wavelength of 940 nm  |
| Indicator *1          |        | Light indicator (red)  |
| Supply voltage        |        | 12 to 24 VDC ±10%, ripple (p-p): 5% max.   |
| Current consumption   |        | Average: 15 mA max., Peak: 50 mA max.  |
| Control output        |        | NPN voltage output:<br>Load power supply voltage: 12 to 24 VDC<br>Load current: 80 mA max.<br>80 mA load current with a residual voltage of 1.0 V max.<br>10 mA load current with a residual voltage of 0.4 V max. |
| Response frequency *2 |        | 100 Hz min.  |
| Ambient illumination  |        | 3,000 lx max. with incandescent light or sunlight on the surface of the receiver.  |
| Ambient temperature   |        | Operating: -10 to +55°C<br>Storage: -25 to +65°C   |
| Ambient humidity      |        | Operating: 5% to 85%<br>Storage: 5% to 95%   |
| Vibration resistance  |        | Destruction: 10 to 55 Hz, 1.5-mm double amplitude for 2 h each in X, Y, and Z directions   |
| Shock resistance      |        | Destruction: 500 m/s <sup>2</sup> for 3 times each in X, Y, and Z directions   |
| Enclosure rating      |        | IEC IP50   |
| Connecting method     |        | Special connector (soldering not possible)   |
| Weight                |        | Approx. 3 g  |
| Material              |        | Polycarbonate  |

\*1. The indicator is a GaP red LED (peak emission wavelength: 700 nm).  
\*2. The response frequency was measured by detecting the following rotating disk.

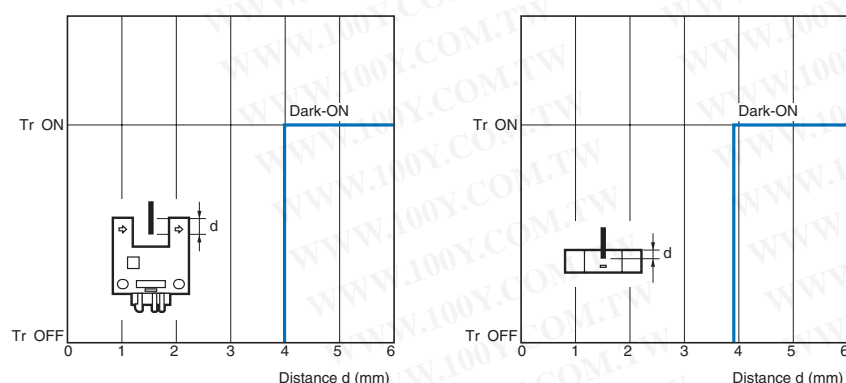


## Engineering Data

### Sensing Position Characteristics

(Typical)

EE-SPX303



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I/O Circuits

NPN Output

| Model     | Output configuration | Timing charts | Output circuit   |
|-----------|----------------------|---------------|--|
| EE-SPX403 | Light-ON             |               | <p>* Voltage output (when the sensor is connected to a transistor circuit)</p> |
| EE-SPX303 | Dark-ON              |               |  |

Precautions

Refer to *General Precautions* on page 23 to 28 for general precautions.

**Warning**

Do not use this product in sensing devices designed to provide human safety.

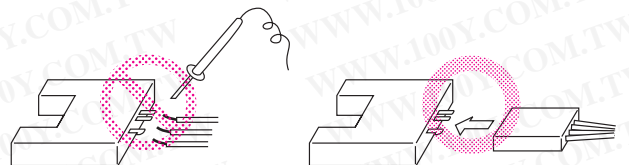


**Precautions for Correct Use**

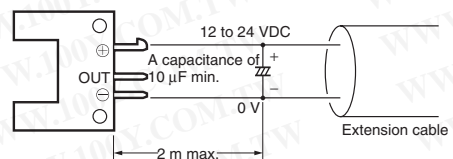
Make sure that this product is used within the rated ambient environment conditions.

● **Wiring**

- Connection is made using a connector. Do not solder to the pins (leads). The pins (leads) are soldered to the internal board of the Sensor. Therefore, direct soldering of the pins (leads) may result in an internal disconnection causing malfunction.



- When extending the cable, use an extension cable with conductors having a total cross-section area of 0.3 mm<sup>2</sup>. The total cable length must be 2 m maximum.
- To use a cable length longer than 2 m, attach a capacitor with a capacitance of approximately 10 μF to the wires as shown below. The distance between the terminal and the capacitor must be within 2 m. (Use a capacitor with a dielectric strength that is at least twice the Sensor's power supply voltage.)



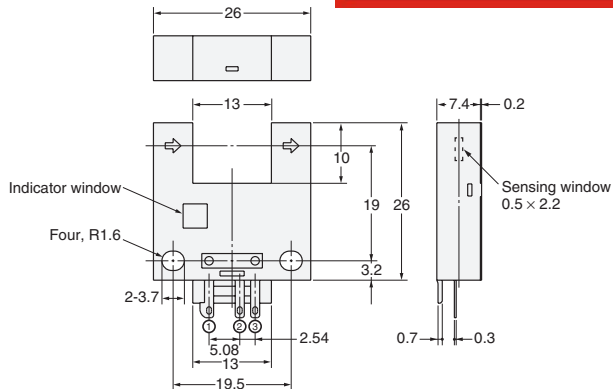
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OMRON

## Dimensions (Unit: mm)

EE-SPX303, EE-SPX403



Terminal Arrangement

|     |     |           |
|-----|-----|-----------|
| (1) | +   | Vcc       |
| (2) | OUT | OUTPUT    |
| (3) | -   | GND (0 V) |

## Accessories (Order Separately)

Refer to *Connectors* on page 97 for details on connectors.

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