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

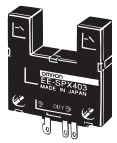
CE

⚠ 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)

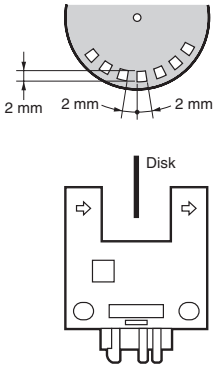
Type		Cable length	Model
Connector			**EE-1001**
			EE-1009
	Connector with Cable	1 m	**EE-1006**
			EE-1010
		2 m	**EE-1006**
			EE-1010
	Connector with Robot Cable	1 m	**EE-1010-R**
		2 m	**EE-1010-R**
NPN/PNP Conversion Connector		0.46 m (total length)	**EE-2002**

Refer to *Accessories* on page 97 for details.

Ratings/Characteristics

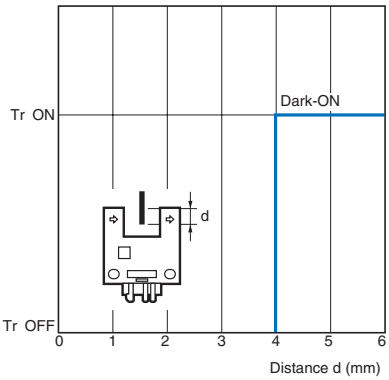
Item / Models	EE-SPX303, EE-SPX403
Sensing distance	13 mm (slot width)
Sensing object	Opaque: 2.2 × 0.5 mm min.
Differential distance	0.05 mm max.
Light source	GaAs infrared LED (pulse lighting) with a peak wavelength of 940 nm
Indicator *1	Light indicator (red)
Supply voltage	12 to 24 VDC ±10%, ripple (p-p): 5% max.
Current consumption	Average: 15 mA max., Peak: 50 mA max.
Control output	NPN voltage output: Load power supply voltage: 12 to 24 VDC Load current: 80 mA max. 80 mA load current with a residual voltage of 1.0 V max. 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 Storage: −25 to +65°C
Ambient humidity	Operating: 5% to 85% 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/s² 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

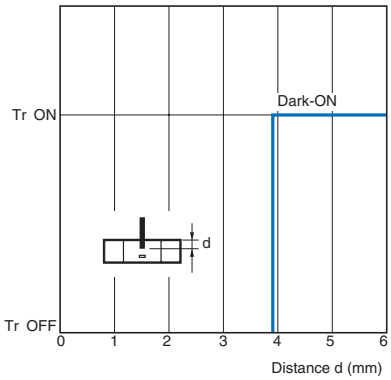
*1. The indicator is a GaP red LED (peak emission wavelength: 700 nm).
*2. The response frequency was measured by detecting the following rotating disk.



Engineering Data

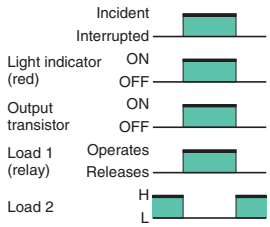
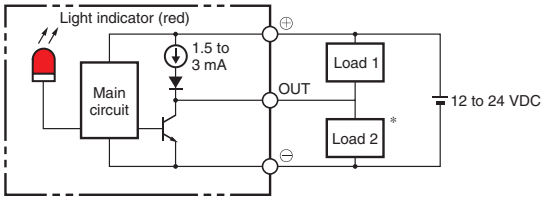
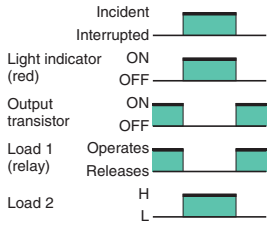
Sensing Position Characteristics (Typical)
EE-SPX303





I/O Circuits

NPN Output

Model	Output configuration	Timing charts	Output circuit
EE-SPX403	Light-ON		
EE-SPX303	Dark-ON		

* Voltage output (when the sensor is connected to a transistor circuit)

Precautions

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

⚠ Warning

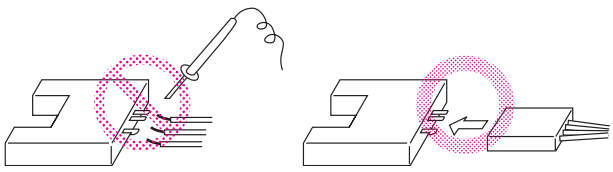
Do not use this product in sensing devices designed to provide human safety.

Precautions for Correct Use

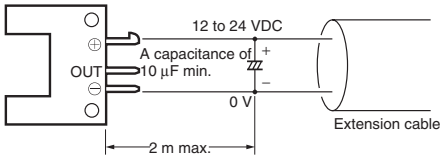
Make sure that this product is used within the rated ambient environment conditions.

● 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.

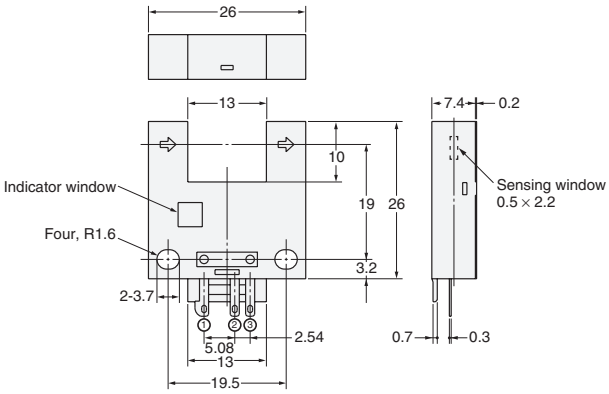


- When extending the cable, use an extension cable with conductors having a total cross-section area of 0.3 mm^2. The total cable length must be 2 m maximum.
- To use a cable length longer than 2 m, attach a capacitor with a capacitance of approximately 10 μF to the wires as shown below. The distance 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.)



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.