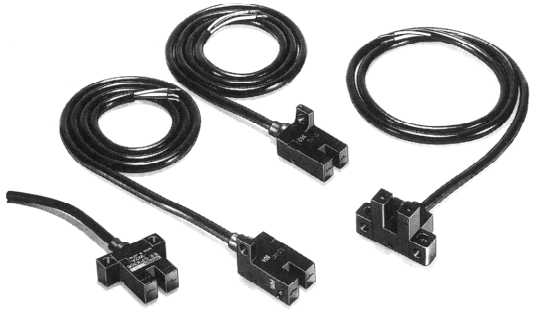
OMRON

Photomicrosensor

EE-SPX-W

Photomicrosensor with Built-in Amplifier and Attached Cable Reduces External Light Interference

- Easy-to-use photomicrosensor with cable attached.
- Light modulation effectively reduces external light interference.
- Wide operating voltage range: 5 to 24 VDC.
- Optical axis monitoring with a LIGHT-ON indicator.
- Incorporating dust-proof slit.



Ordering Information

Appearance	Sensing method	Sensing distance (channel-type)	Output configuration	Model	Weight
	Transmissive type (channel-type)	3.6 mm	Light-OFF	EE-SPX302-W2A	Approx. 18.5 g (including lead wires)
			Light-ON	EE-SPX402-W2A	
		3.6 mm	Light-OFF	EE-SPX304-W2A	
			Light-ON	EE-SPX404-W2A	
		3.6 mm	Light-OFF	EE-SPX306-W2A	
			Light-ON	EE-SPX406-W2A	
		5 mm	Light-OFF	EE-SPX305-W2A	
			Light-ON	EE-SPX405-W2A	

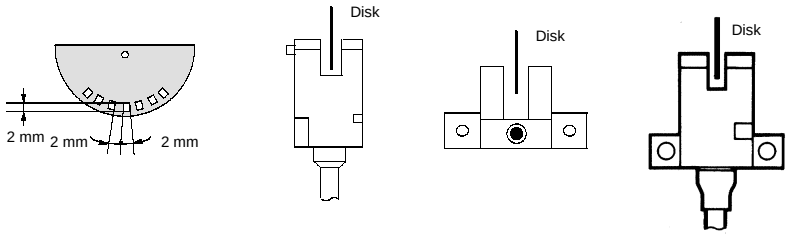
Specifications

■ Ratings

Item	EE-SPX302-W2A, EE-SPX304-W2A, EE-SPX306-W2A, EE-SPX402-W2A, EE-SPX404-W2A, EE-SPX406-W2A	EE-SPX305-W2A, EE-SPX405-W2A
Supply voltage	5 to 24 VDC ±10%, ripple (p-p): 5% max.	
Current consumption	Average: 15 mA max.; Peak: 50 mA max.	
Standard reference object	Opaque: 0.5 × 1 mm^2 min.	Opaque: 0.8 × 2 mm min.
Sensing distance	3.6 mm (channel width)	5 mm (channel width)
Differential distance	0.05 mm max.	
Control output	At 5 to 24 VDC: 80-mA load current (I_C) with a residual voltage of 1.0 V max. 10-mA load current (I_C) with a residual voltage of 0.4 V max.	
Indicator (see note 1)	Light indicator (red)	
Response frequency (see note 2)	500 Hz	
Connecting method	Cable length: 1 m long cable (attached)	
Light source	GaAs infrared LED (pulse lighting) with a wavelength of 940 nm	
Receiver	Si photodiode with a sensing wavelength of 850 nm max.	

Note: 1. The indicator is made of a GaP red LED (peak emission wavelength: 700 nm).

2. The response frequency was measured by detecting the following rotating disks.

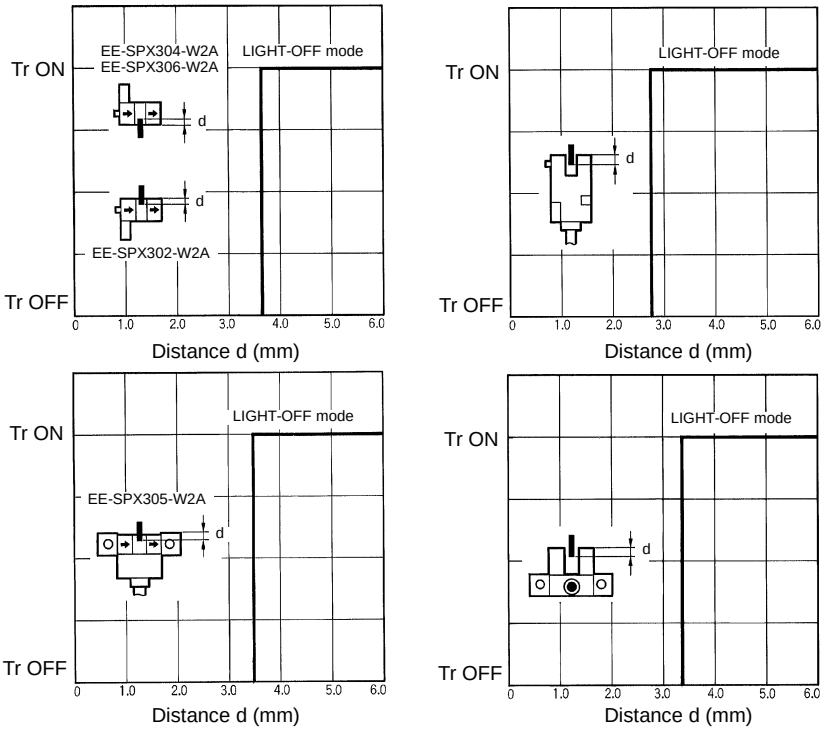


■ Characteristics

Ambient illumination		Incandescent light: 3,000 ℓx max.
Enclosure ratings		IEC IP50 (except terminals)
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 hrs each in X, Y, and Z directions
Shock resistance		Destruction: 500 m/s^2 (approx. 50G) for 3 times each in X, Y, and Z directions
Cable		2 m max. (including attached cable, AWG22 min.)
Material	**Case**	Polycarbonate (PC)
	Holder	

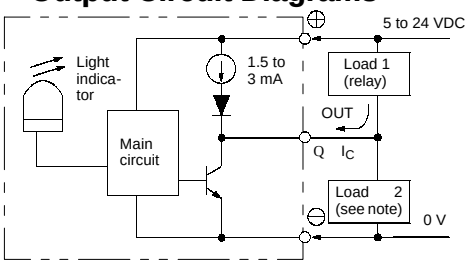
Engineering Data

Sensing Position Characteristics (Typical)



Operation

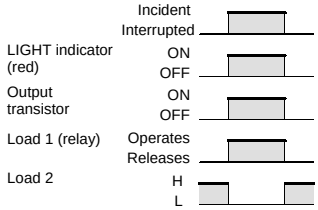
■ Output Circuit Diagrams



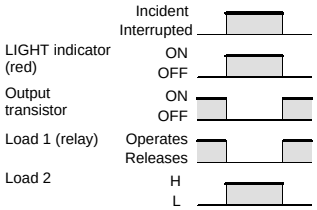
Note: Voltage output (when the sensor is connected to a transistor circuit).

■ Timing Chart

Light ON



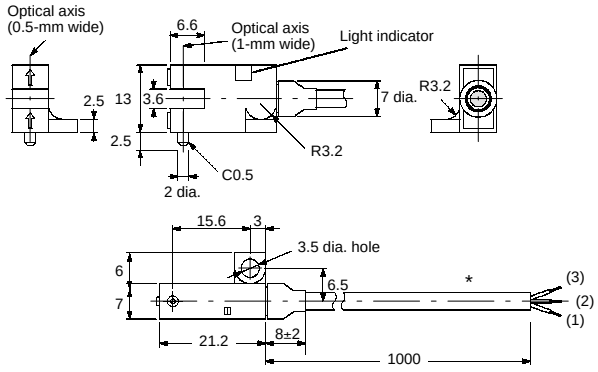
Light OFF



Dimensions

Note: All units are in millimeters unless otherwise indicated.

EE-SPX302-W2A
EE-SPX402-W2A

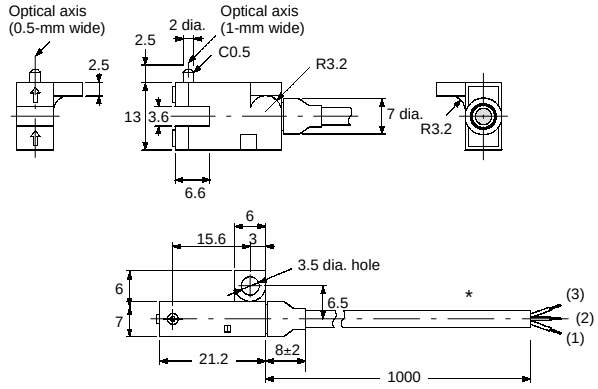


* Three-conductor, thirteen, 0.12-wire cable (1-m long, 3.5 dia.)

Terminal Arrangement

(1) Blue	GND
(2) Black	OUT PUT
(3) Brown	V_{CC}

EE-SPX304-W2A
EE-SPX404-W2A

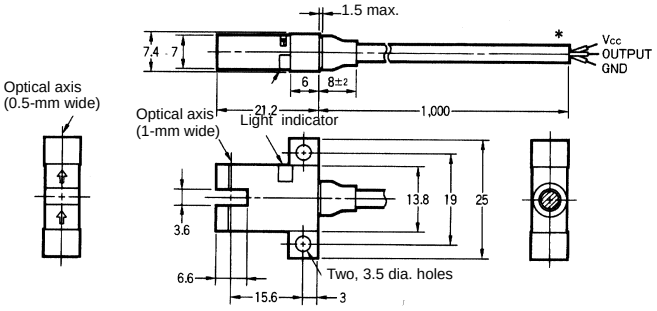


* Three-conductor, thirteen, 0.12-wire cable (1-m long, 3.5 dia.)

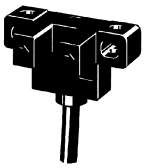
Terminal Arrangement

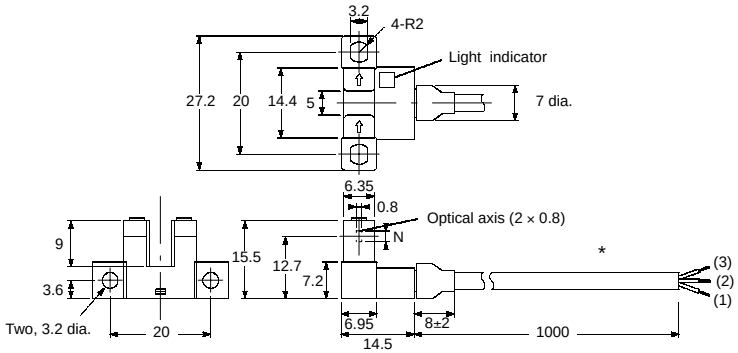
(1) Blue	GND
(2) Black	OUT PUT
(3) Brown	V_{CC}

EE-SPX306-W2A
EE-SPX406-W2A



EE-SPX305-W2A
EE-SPX405-W2A





Terminal Arrangement

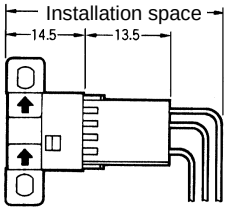
(1) Blue	GND
(2) Black	OUT PUT
(3) Brown	V_{CC}

* Three-conductor, thirteen, 0.12-wire cable (2-m long, 3.5 dia.)

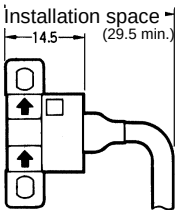
Reduced Installation Space

The total installation space, including the cable is less than that of the Connector-type Sensors.

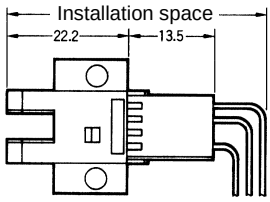
EE-SX671 + EE-1010



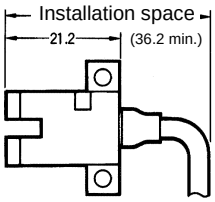
EE-SPX305-W2A



EE-SX670 + EE-1010



EE-SPX306-W2A



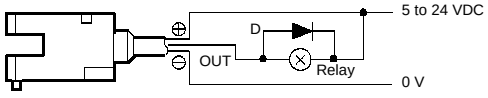
Precautions

Refer to page NO TAG, *Precautions* in *Technical Information*, for general precautions.

Wiring

Avoid disconnecting from the photomicrosensor when power is supplied to the photomicrosensor or the photomicrosensor could be damaged.

Wire as shown by the following illustration to connect a small inductive load (a relay for example) to the photomicrosensor. A diode must be connected parallel to the relay to absorb the reverse voltage.



ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.