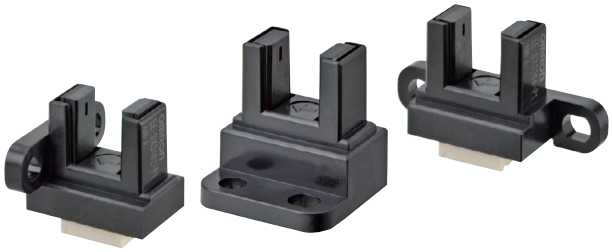
Photomicrosensor (Transmissive)

EE-SX3162/3163/3164-P
EE-SX4162/4163/4164-P

Slot / Connector Type

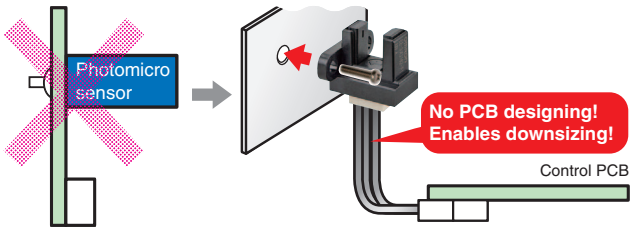
- Photo IC output (Dark-ON / Light ON)
- Connector with strong lock manufactured by JST. Mates with GHR-03.
- Mounted with M2 screws
- Models available for 5-V or 12-V power supply.
- Zener diode mounted for greater noise immunity (EE-SX3162-P1-Z and EE-SX4162-P1-Z only).



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

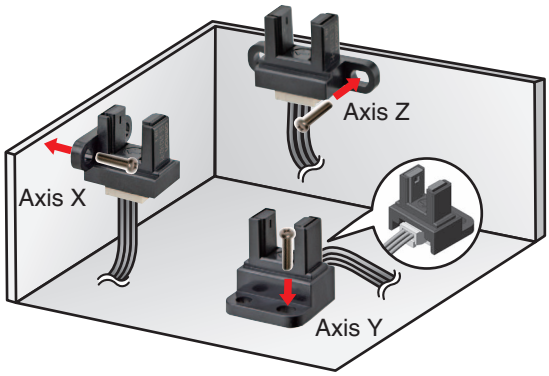
Features

Models with Connectors Eliminate the Need for a Separate PCB
All-in-One Structure Facilitates Downsizing



Models Available for Mounting on X, Y, and Z Axes

Models with connectors are available with different mounting directions.



Application

Office Automation Equipment (Copier, Printer)

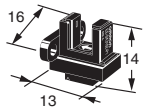
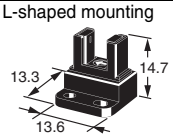
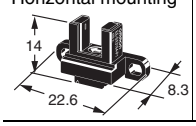
Amusement Equipment

Home Appliances (Air Cleaner)

Vending Machine, ATM

Ordering Information

Photomicrosensor

Appearance	Sensing method	Connecting method	Sensing distance	Aperture size (H × W) (mm)	Output type	Power supply voltage	Output configuration	Model
Side mounting 	Transmissive (slot type)	Connector	5 mm (Slot width)	Emitter 1.4 x 1.4 Detector 1.4 x 0.5	Photo IC	12 VDC	Dark-ON	**EE-SX3162-P1**
								EE-SX3162-P1-Z
							Light-ON	**EE-SX4162-P1**
								EE-SX4162-P1-Z
						5 VDC	Dark-ON	**EE-SX3162-P2**
							Light-ON	**EE-SX4162-P2**
L-shaped mounting 						12 VDC	Dark-ON	**EE-SX3163-P1**
							Light-ON	**EE-SX4163-P1**
						5 VDC	Dark-ON	**EE-SX3163-P2**
							Light-ON	**EE-SX4163-P2**
Horizontal mounting 						12 VDC	Dark-ON	**EE-SX3164-P1**
							Light-ON	**EE-SX4164-P1**
						5 VDC	Dark-ON	**EE-SX3164-P2**
							Light-ON	**EE-SX4164-P2**

Ratings, Characteristics and Exterior Specifications

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Rated value		Unit	Remarks
		EE-SX3162-P1 EE-SX3162-P1-Z EE-SX3163-P1 EE-SX3164-P1 EE-SX4162-P1 EE-SX4162-P1-Z EE-SX4163-P1 EE-SX4164-P1	EE-SX3162-P2 EE-SX3163-P2 EE-SX3164-P2 EE-SX4162-P2 EE-SX4163-P2 EE-SX4164-P2		
Power supply voltage	V_{CC}	13.2 DC	5.5 DC	V	—
Output voltage	V_{OUT}	13.2		V	—
Output current	I_{OUT}	16		mA	—
Permissible output dissipation	P_{OUT}	80		mW	—*
Operating temperature	T_{opr}	-20 to +85		°C	—*
Storage temperature	T_{stg}	-30 to +85		°C	—*

* Even if the specified conditions are met, perform derating of the voltage and current as required by the temperature rating diagram. Also, do not expose the product to freezing or condensation.

Exterior Specifications

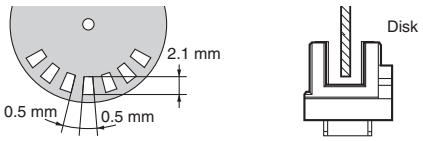
Appearance / Item		Side mounting	L-shaped mounting	Horizontal mounting
		EE-SX3162-P1 EE-SX3162-P1-Z EE-SX4162-P1 EE-SX4162-P1-Z EE-SX3162-P2 EE-SX4162-P2	EE-SX3163-P1 EE-SX4163-P1 EE-SX3163-P2 EE-SX4163-P2	EE-SX3164-P1 EE-SX4164-P1 EE-SX3164-P2 EE-SX4164-P2
Connecting method		Connector		
Weight		Approx. 1.2 g	Approx.1.4 g	Approx. 1.1 g
Material	Case	Polybutylene terephthalate (PBT)		
	Emitter and receiver sections	Polyphenylene sulfide (PPS)		

Electrical and Optical Characteristics

(Ta = 25°C)

Item	Symbol		Rated value	
			12 VDC model	5 VDC model
		Dark-ON	EE-SX3162-P1 EE-SX3162-P1-Z EE-SX3163-P1 EE-SX3164-P1	EE-SX3162-P2 EE-SX3163-P2 EE-SX3164-P2
		Light-ON	EE-SX4162-P1 EE-SX4162-P1-Z EE-SX4163-P1 EE-SX4164-P1	EE-SX4162-P2 EE-SX4163-P2 EE-SX4164-P2
Power supply voltage	V_{CC}		10.8 to 13.2VDC	4.5 to 5.5 VDC
Current consumption	I_{CC}		25 mA max. (With and without incident)	
Low-level output voltage	V_{OL}		0.3 V max. (I_{OUT}=16 mA) (Dark-ON: without incident, Light-ON: with incident)	
High-level output voltage	V_{OH}		(V_{CC}×0.9 V max. (V_{OUT}=V_{CC}, R_L=47 kΩ)) (Dark-ON: with incident, Light-ON: without incident)	
Response frequency	f		3 kHz min. (V_{OUT}=V_{CC}, I_{OUT}=16 mA *1)	
			1 kHz min. (V_{OUT}=V_{CC}, I_{OUT}=16 mA *1,*2)	

1. The value of the response frequency is measured by rotating the disk as shown below.



2. Only with models ending in -Z.

Engineering Data (Reference value)

Fig 1. Output Allowable Dissipation vs. Ambient Temperature Characteristics

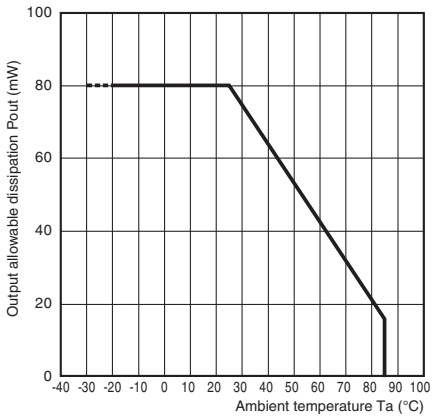


Fig 2. Sensing Position Characteristics (Typical)

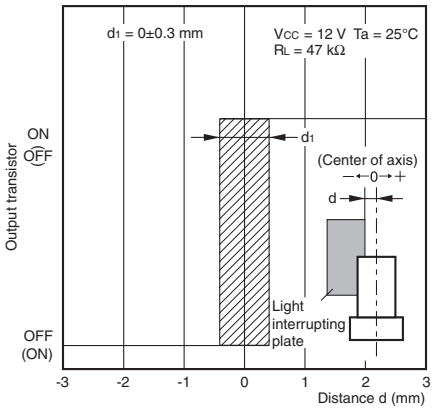
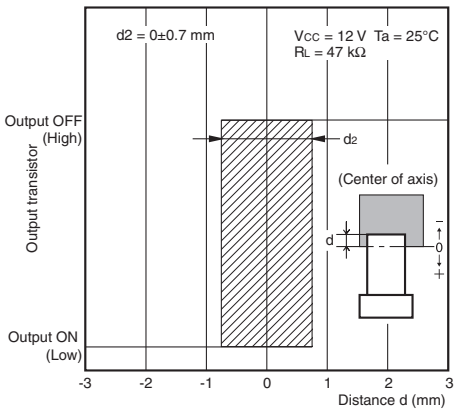



Fig 3. Sensing Position Characteristics (Typical)