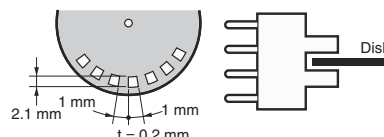


Ratings and Specifications

Item	Type		Standard	L-shaped	T-shaped, slot center 7 mm	Close-mounting		T-shaped, slot center 10 mm	F-shaped	R-shaped	
	NPN models	Connector models	EE-SX670 EE-SX670A EE-SX470	EE-SX671 EE-SX671A EE-SX471	EE-SX672 EE-SX672A EE-SX472	EE-SX673 EE-SX673A EE-SX473	EE-SX674 EE-SX674A EE-SX474	EE-SX675	EE-SX676	EE-SX677	
		Pre-wired models	EE-SX670- WR	EE-SX671- WR	EE-SX672- WR	EE-SX673- WR	EE-SX674- WR	EE-SX675- WR	EE-SX676- WR	EE-SX677- WR	
	PNP models	Connector models	EE-SX670P EE-SX670R	EE-SX671P EE-SX671R	EE-SX672P EE-SX672R	EE-SX673P EE-SX673R	EE-SX674P EE-SX674R	EE-SX675P	EE-SX676P	EE-SX677P	
		Pre-wired models	EE-SX670P- WR	EE-SX671P- WR	EE-SX672P- WR	EE-SX673P- WR	EE-SX674P- WR	EE-SX675P- WR	EE-SX676P- WR	EE-SX677P- WR	
Sensing distance			5 mm (slot width)								
Sensing object			Opaque: 2 × 0.8 mm min.								
Differential distance			0.025 mm								
Light source			Infrared LED with a peak wavelength of 940 nm								
Indicator *1			Light indicator (red) (turns ON when light is interrupted for models with A or R suffix)								
Supply voltage			5 to 24 VDC ±10%, ripple (p-p): 10% max.								
Current consumption			12 mA max. (Connector models, L terminal open), 35 mA max. (NPN pre-wired models), 30 mA max. (PNP pre-wired models)								
Control output			NPN open collector: 5 to 24 VDC, 100 mA max. 100 mA load current with a residual voltage of 0.8 V max. 40 mA load current with a residual voltage of 0.4 V max. OFF current (leakage current): 0.5 mA max. PNP open collector: 5 to 24 VDC, 50 mA max. 50 mA load current with a residual voltage of 1.3 V max. OFF current (leakage current): 0.5 mA max.								
Protection circuits			Load short circuit protection (Connector models), No circuit protection (Pre-wired models)								
Response frequency *2			1 kHz min. (3 kHz average)								
Ambient illumination			1,000 lx max. with fluorescent light on the surface of the receiver.								
Ambient temperature range			Operating: -25 to +55°C, Storage: -30 to +80°C (with no icing or condensation)								
Ambient humidity range			Operating: 5% to 85%, Storage: 5% to 95% (with no icing or condensation)								
Vibration resistance			Destruction: 20 to 2,000 Hz (peak acceleration: 100 m/s ²) 1.5-mm double amplitude for 2 h (4-min periods) each in X, Y, and Z directions								
Shock resistance			Destruction: 500 m/s ² for 3 times each in X, Y, and Z directions								
Degree of protection			IEC60529 IP50								
Connecting method			Connector Models (direct soldering possible), Pre-wired Models (Standard cable length: 1 m), Models with Connectors (Standard cable length: 0.1 m)								
Weight	Connector models		Approx. 3.1 g	Approx. 3 g	Approx. 2.4 g	Approx. 2.3 g	Approx. 3 g	Approx. 2.7 g	Approx. 2.2 g	Approx. 2.2 g	
	Pre-wired models		Approx. 18.9 g	Approx. 17.3 g	Approx. 17.8 g	Approx. 16.8 g	Approx. 17.1 g	Approx. 18.3 g	Approx. 16.9 g	Approx. 16.9 g	
Material	Case		Polybutylene phthalate (PBT)								
	Cover		Polycarbonate								
	Emitter/receiver										

*1. The indicator is a GaP red LED (peak wavelength: 690 nm).

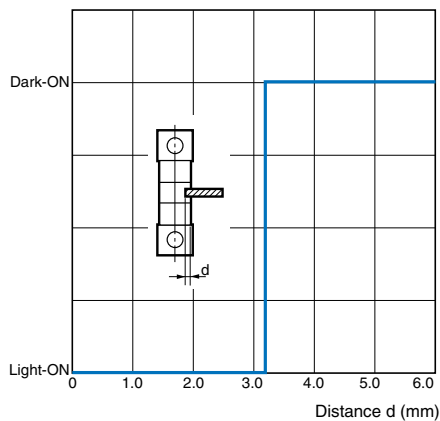
*2. The response frequency was measured by detecting the rotating disk shown at the right.



Engineering Data (Reference Value)

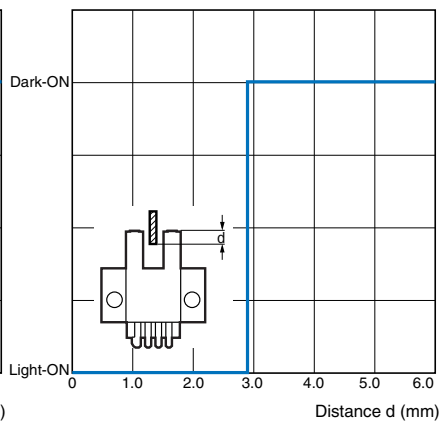
Sensing Position Characteristics

EE-SX47□/67□



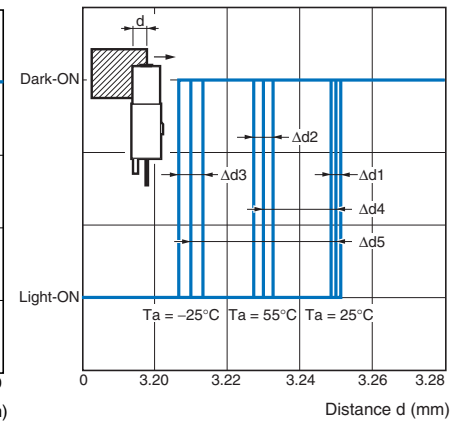
Sensing Position Characteristics

EE-SX47□/67□



Repeated Sensing Position Characteristics

EE-SX47□/67□



$V_{CC} = 12\text{ V}$, No. of repetitions: 20, $\Delta d_1 = 0.002\text{ mm}$, $\Delta d_2 = 0.004\text{ mm}$, $\Delta d_3 = 0.005\text{ mm}$, $\Delta d_4 = 0.02\text{ mm}$, $\Delta d_5 = 0.04\text{ mm}$

Note: The data applies to dark status. Operation may be affected by external light interference or light coming through the sensing object.

I/O Circuit Diagrams

NPN Output

Model	Output configuration	Timing charts	Terminal connections	Output circuit
EE-SX67□ EE-SX67□-WR	Light-ON	Incident Interrupted Light indicator (red) ON OFF Output transistor ON OFF Load (e.g., relay) Operates Releases	Short-circuited between ① terminal and positive ⊕ terminal	EE-SX67□ EE-SX67□A
	Dark-ON	Incident Interrupted Light indicator (red) ON OFF Output transistor ON OFF Load (e.g., relay) Operates Releases	Open between ① terminal and positive ⊕ terminal *1 *2	
EE-SX670A EE-SX671A EE-SX672A EE-SX673A EE-SX674A	Light-ON	Incident Interrupted Light indicator (red) ON OFF Output transistor ON OFF Load (e.g., relay) Operates Releases	Short-circuited between ① terminal and positive ⊕ terminal	EE-SX67□-WR
	Dark-ON	Incident Interrupted Light indicator (red) ON OFF Output transistor ON OFF Load (e.g., relay) Operates Releases	Open between ① terminal and positive ⊕ terminal *1 *2	
EE-SX470 EE-SX471 EE-SX472 EE-SX473 EE-SX474	Light-ON	Incident Interrupted Light indicator (red) ON OFF Output transistor ON OFF Load (relay) Operates Releases	---	

*1. Do not connect the L terminal to 0 V when using dark-ON operation.

*2. If you do not use the L terminal wire ((2) pink) when you use a Connector with Cable for an EE-1006 or EE-1010-series Photomicrosensor, noise may affect the Photomicrosensor. To prevent the effects of noise, cut the unused L terminal wire at the base of the connector and wrap it with insulating tape to prevent it from coming in contact with other terminals.