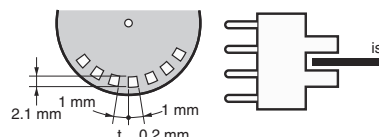


## Ratings and Specifications

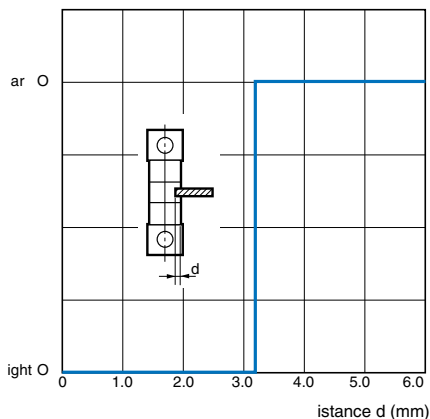
Item	Type		Standard	L-shaped	T-shaped, slot center 7 mm	Close-mounting		T-shaped, slot center 10 mm	F-shaped	R-shaped
		NPN models	Connector models EE-SX670 EE-SX670A EE-SX470	EE-SX671 EE-SX671A EE-SX471	EE-SX672 EE-SX672A EE-SX472	EE-SX673 EE-SX673A EE-SX473	EE-SX674 EE-SX674A EE-SX474	EE-SX675 EE-SX675- WR	EE-SX676 EE-SX676- WR	EE-SX677 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-SX675P- WR	EE-SX676P EE-SX676P- WR	EE-SX677P EE-SX677P- WR	
		Pre-wired models EE-SX670P- WR	EE-SX671P- WR	EE-SX672P- WR	EE-SX673P- WR	EE-SX674P- WR				
<b>Sensing distance</b>			5 mm (slot width)							
<b>Sensing object</b>			Opaque: 2 × 0.8 mm min.							
<b>Differential distance</b>			0.025 mm							
<b>Light source</b>			Infrared with a peak wavelength of 940 nm							
<b>Indicator 1</b>			Light indicator (red) (turns ON when light is interrupted for models with A or R suffix)							
<b>Supply voltage</b>			5 to 24 V, ripple (p-p): 10% max.							
<b>Current consumption</b>			12 mA max. (connector models, terminal open), 35 mA max. (pre-wired models), 30 mA max. (pre-wired models)							
<b>Control output</b>			open collector: 5 to 24 V, 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. open collector: 5 to 24 V, 50 mA max. 50 mA load current with a residual voltage of 1.3 V max. OFF current (leakage current): 0.5 mA max.							
<b>Protection circuits</b>			Load short circuit protection (connector models), no circuit protection (pre-wired models)							
<b>Response frequency 2</b>			1 min. (3 ms average)							
<b>Ambient illumination</b>			1,000 lx max. with fluorescent light on the surface of the receiver.							
<b>Ambient temperature range</b>			Operating: -25 to 55°, Storage: -30 to 80° (with no icing or condensation)							
<b>Ambient humidity range</b>			Operating: 5% to 85%, Storage: 5% to 95% (with no icing or condensation)							
<b>Vibration resistance</b>			Destruction: 20 to 2,000 Hz (peak acceleration: 100 m/s <sup>2</sup> ) 1.5 mm double amplitude for 2 h (4 min periods) each in X, Y, and Z directions							
<b>Shock resistance</b>			Destruction: 500 m/s <sup>2</sup> for 3 times each in X, Y, and Z directions							
<b>Degree of protection</b>			IP 60529   50							
<b>Connecting method</b>			Connector models (direct soldering possible), pre-wired models (Standard cable length: 1 m), models with connectors (Standard cable length: 0.1 m)							
<b>Weight</b>	<b>Connector models</b>	pprox. 3.1 g	pprox. 3 g	pprox. 2.4 g	pprox. 2.3 g	pprox. 3 g	pprox. 2.7 g	pprox. 2.2 g	pprox. 2.2 g	
	<b>Pre-wired models</b>	pprox. 18.9 g	pprox. 17.3 g	pprox. 17.8 g	pprox. 16.8 g	pprox. 17.1 g	pprox. 18.3 g	pprox. 16.9 g	pprox. 16.9 g	
<b>Material</b>	<b>Case</b>	Polybutylene phthalate (PBT)								
	<b>Cover</b>	Polycarbonate								
	<b>Emitter/receiver</b>	Polycarbonate								

- The indicator is a red LED (peak wavelength: 690 nm).
- The response frequency was measured by detecting the rotating disc shown at the right.

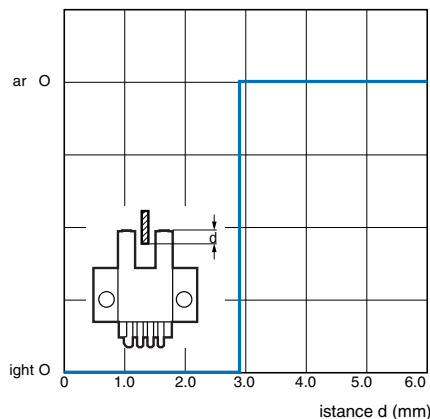


# Engineering Data (Reference Value)

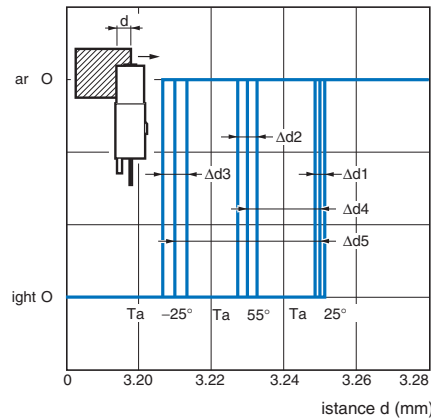
## Sensing Position Characteristics



## Sensing Position Characteristics



## Repeated Sensing Position Characteristics



Vcc = 12 V, No. of repetitions: 20,  $\Delta d1 = 0.002$  mm,  $\Delta d2 = 0.004$  mm,  $\Delta d3 = 0.005$  mm,  $\Delta d4 = 0.02$  mm,  $\Delta d5 = 0.04$  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		Short-circuited between ○ terminal and positive ⊕ terminal	<b>EE-SX67□ EE-SX67□A</b> <p>The terminal arrangement depends on the model. See the dimensional diagrams.</p>
	Dark-ON		Open between ○ terminal and positive ⊕ terminal *1 *2	
EE-SX670A EE-SX671A EE-SX672A EE-SX673A EE-SX674A	Light-ON		Short-circuited between ○ terminal and positive ⊕ terminal	<b>EE-SX67□-WR</b> <p>The terminal arrangement depends on the model. See the dimensional diagrams.</p>
	Dark-ON		Open between ○ terminal and positive ⊕ terminal *1 *2	
EE-SX470 EE-SX471 EE-SX472 EE-SX473 EE-SX474	Light-ON		---	

\*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.