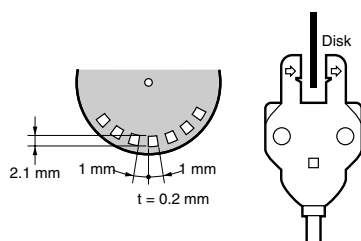


Ratings and Specifications

Item	Type	Standard	L-shaped	T-shaped
	NPN models	EE-SX770/EE-SX870 EE-SX770A/EE-SX870A	EE-SX771/EE-SX871 EE-SX771A/EE-SX871A	EE-SX772/EE-SX872 EE-SX772A/EE-SX872A
	PNP models	EE-SX770P/EE-SX870P EE-SX770R/EE-SX870R	EE-SX771P/EE-SX871P EE-SX771R/EE-SX871R	EE-SX772P/EE-SX872P EE-SX772R/EE-SX872R
Sensing distance	5 mm (slot width)			
Sensing object	Opaque: 2 × 0.8 mm min.			
Differential distance	0.025 mm			
Light source	GaAs infrared LED with a peak wavelength of 940 nm			
Indicator	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	35 mA max. (NPN models), 30 mA max. (PNP 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.			
Response frequency *	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)			
Ambient humidity range	Operating: 5% to 85% Storage: 5% to 95% (with no 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 IP60			
Connecting method	Pre-wired (standard cable length: 2 m)			
Weight (packaged)	Approx. 20 g			
Material	Case: Polybutylene phthalate (PBT)			

* The response frequency was measured by detecting the following rotating disk.



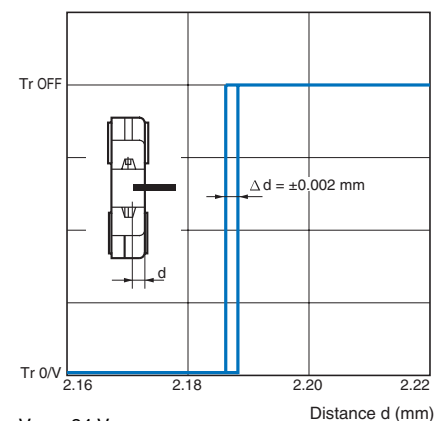
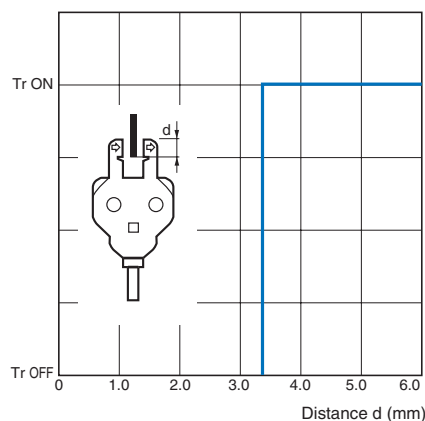
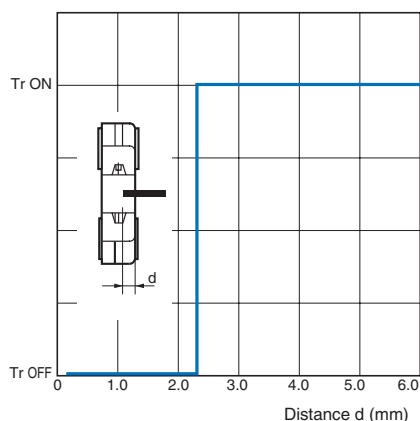
Engineering Data (Reference Value)

Sensing Position Characteristics

Sensing Position Characteristics

Repeated Sensing Position Characteristics

EE-SX770



Vcc = 24 V

No. of repetitions: 20, Ta = 25°C

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	Output circuit
EE-SX770 EE-SX771 EE-SX772	Dark-ON	Incident Interrupted Light indicator (red) ON OFF Output transistor ON OFF Load (e.g., relay) Operates Releases	
EE-SX870 EE-SX871 EE-SX872	Light-ON	Incident Interrupted Light indicator (red) ON OFF Output transistor ON OFF Load (e.g., relay) Operates Releases	
EE-SX770A EE-SX771A EE-SX772A	Dark-ON	Incident Interrupted Light indicator (red) ON OFF Output transistor ON OFF Load (e.g., relay) Operates Releases	
EE-SX870A EE-SX871A EE-SX872A	Light-ON	Incident Interrupted Light indicator (red) ON OFF Output transistor ON OFF Load (e.g., relay) Operates Releases	

PNP Output

Model	Output configuration	Timing chart	Output circuit
EE-SX770P EE-SX771P EE-SX772P	Dark-ON	<div><div>Incident</div><div>Interrupted</div><div>Light indicator (red) ON OFF</div><div>Output transistor ON OFF</div><div>Load (e.g., relay) Operates Releases</div></div>	
EE-SX870P EE-SX871P EE-SX872P	Light-ON	<div><div>Incident</div><div>Interrupted</div><div>Light indicator (red) ON OFF</div><div>Output transistor ON OFF</div><div>Load (e.g., relay) Operates Releases</div></div>	
EE-SX770R EE-SX771R EE-SX772R	Dark-ON	<div><div>Incident</div><div>Interrupted</div><div>Light indicator (red) ON OFF</div><div>Output transistor ON OFF</div><div>Load (e.g., relay) Operates Releases</div></div>	
EE-SX870R EE-SX871R EE-SX872R	Light-ON	<div><div>Incident</div><div>Interrupted</div><div>Light indicator (red) ON OFF</div><div>Output transistor ON OFF</div><div>Load (e.g., relay) Operates Releases</div></div>	

Safety Precautions

Refer to *Warranty and Limitations of Liability*.

**WARNING**

This product is not designed or rated for ensuring safety of persons either directly or indirectly. Do not use it for such purposes.



Precautions for Correct Use

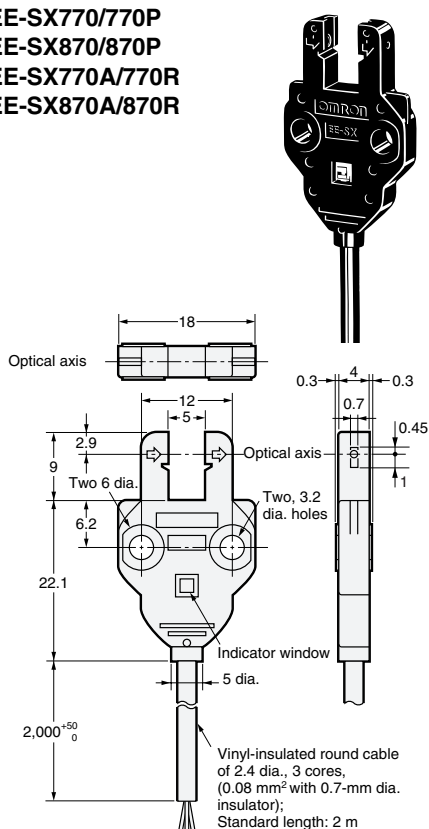
Make sure that this product is used within the rated ambient environment conditions.

Dimensions

Tolerance class IT16 applies to dimensions in this datasheet unless otherwise specified.

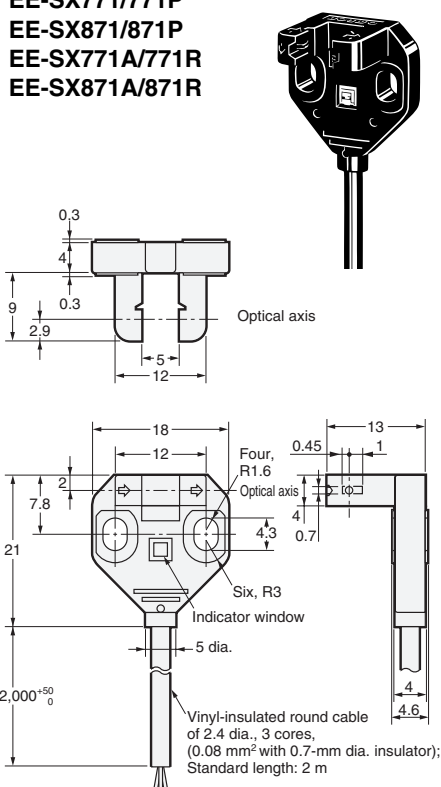
Standard

EE-SX770/770P
EE-SX870/870P
EE-SX770A/770R
EE-SX870A/870R



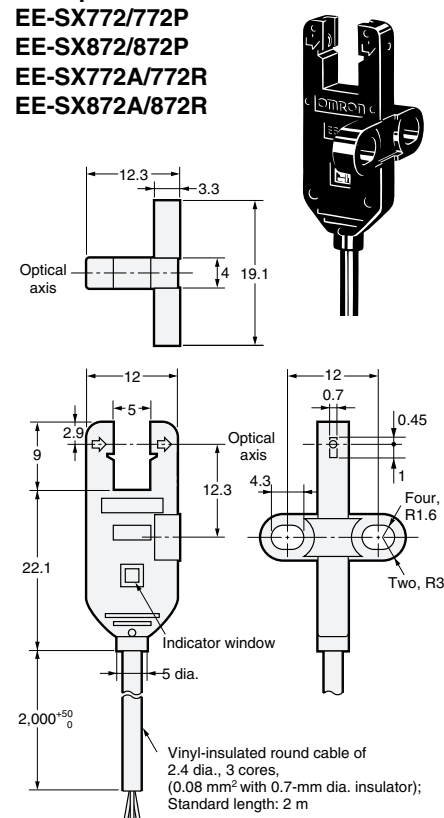
L-shaped

EE-SX771/771P
EE-SX871/871P
EE-SX771A/771R
EE-SX871A/871R



T-shaped

EE-SX772/772P
EE-SX872/872P
EE-SX772A/772R
EE-SX872A/872R



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