

EE-SX872A Datasheet



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DiGi Electronics Part Number	EE-SX872A-DG
Manufacturer	Omron Automation and Safety
Manufacturer Product Number	EE-SX872A
Description	SENSOR OPTICAL 5MM MOD WIRE LEAD
Detailed Description	Optical Sensor Through-Beam 0.197" (5mm) Module, Wire Leads

This model EE-SX872A is available at DiGi Electronics.

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Purchase and inquiry

Manufacturer Product Number:

EE-SX872A

Series:

-

Sensing Distance:

0.197" (5mm)

Output Configuration:

NPN - Open Collector/Light-ON

Current - Supply:

35 mA

Response Time:

-

Package / Case:

Module, Wire Leads

Manufacturer:

Omron Automation and Safety

Product Status:

Active

Sensing Method:

Through-Beam

Mounting Type:

Chassis Mount, M3 Screw

Voltage - Supply:

5V ~ 24V

Operating Temperature:

-25°C ~ 55°C (TA)

Base Product Number:

EE-SX872

Environmental & Export classification

RoHS Status:

RoHS Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.49.8000

Moisture Sensitivity Level (MSL):

Not Applicable

ECCN:

EAR99

EE-SX77/87

CSM_EE-SX77_87_DS_E_7_9

Slim, Compact Photomicrosensor that is still easy to use.



- Compact, thin profile enables dense mounting.
- Indicator is visible from both sides.
- Wide operating voltage range: 5 to 24 VDC



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

Be sure to read *Safety Precautions* on page 4.

Ordering Information

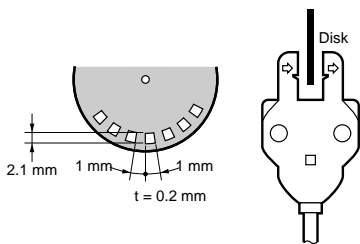
Pre-wired Models Infrared light

Appearance	Sensing method	Cable length	Sensing distance		Output configuration	Indicator mode	Model	
							NPN output	PNP output
Standard 	Through-beam type (with slot)	2 m	<input type="checkbox"/>	5 mm (slot width)	Dark-ON	Incident light	EE-SX770 2M	EE-SX770P 2M
						No incident light	EE-SX770A 2M	EE-SX770R 2M
					Light-ON	Incident light	EE-SX870 2M	EE-SX870P 2M
						No incident light	EE-SX870A 2M	EE-SX870R 2M
L-shaped 					Dark-ON	Incident light	EE-SX771 2M	EE-SX771P 2M
						No incident light	EE-SX771A 2M	EE-SX771R 2M
					Light-ON	Incident light	EE-SX871 2M	EE-SX871P 2M
						No incident light	EE-SX871A 2M	EE-SX871R 2M
T-shaped 	Dark-ON	Incident light	EE-SX772 2M	EE-SX772P 2M				
		No incident light	EE-SX772A 2M	EE-SX772R 2M				
	Light-ON	Incident light	EE-SX872 2M	EE-SX872P 2M				
		No incident light	EE-SX872A 2M	EE-SX872R 2M				

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
	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	12 mA max.			
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			
Response time	Light-ON: 20 μs max, Dark-ON: 100 μs max.			
Maximum response frequency *1	3 kHz max.			
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: 10 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 *2	IEC60529 IP64			
Connecting method	Pre-wired (standard cable length: 2 m)			
Weight (packaged)	Approx. 20 g			
Material	Case: Polybutylene phthalate (PBT)			
Conformity standards	UL Certification, CE Marking, ISO13849-1 (PLc, cat1) *2			

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

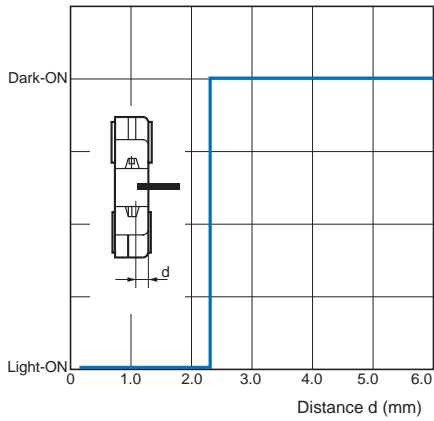


*2. Degree of protection IP64 when conforming to ISO13849-1 (PLc, cat1). Conforms to September 2023.

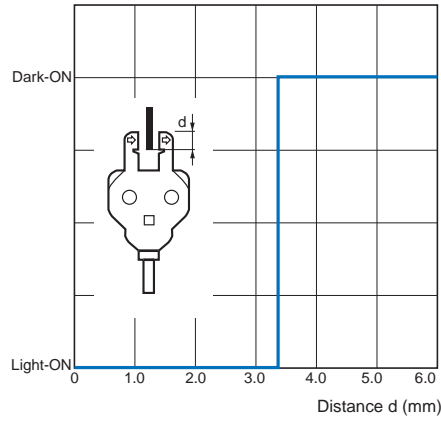
Refer to the Instruction Sheet and Information for ISO13849-1 Compliance on our website (www.fa.omron.co.jp/products/family/435/download/manual.html) for conformance to ISO 13849-1.

Engineering Data (Reference Value)

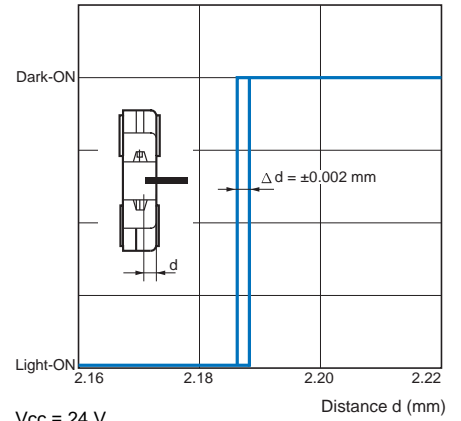
Sensing Position Characteristics



Sensing Position Characteristics



Repeated Sensing Position Characteristics



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		
EE-SX870 EE-SX871 EE-SX872	Light-ON		
EE-SX770A EE-SX771A EE-SX772A	Dark-ON		
EE-SX870A EE-SX871A EE-SX872A	Light-ON		

PNP Output

Model	Output configuration	Timing chart	Output circuit
EE-SX770P EE-SX771P EE-SX772P	Dark-ON		
EE-SX870P EE-SX871P EE-SX872P	Light-ON		
EE-SX770R EE-SX771R EE-SX772R	Dark-ON		
EE-SX870R EE-SX871R EE-SX872R	Light-ON		

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.

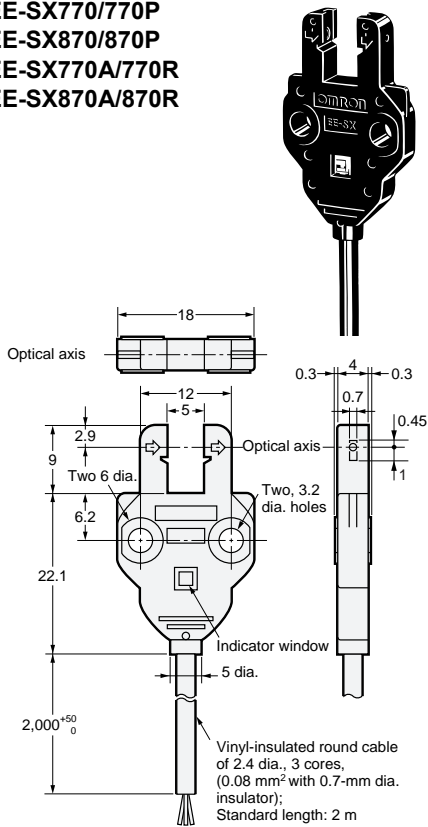
(Unit: mm)

Dimensions

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

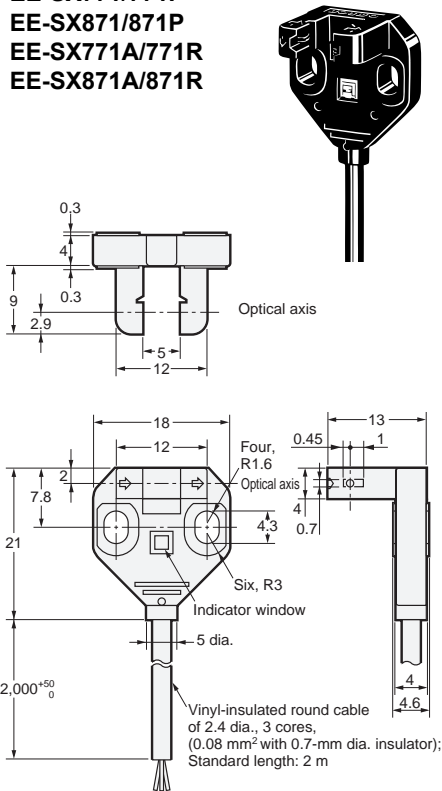
Standard

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



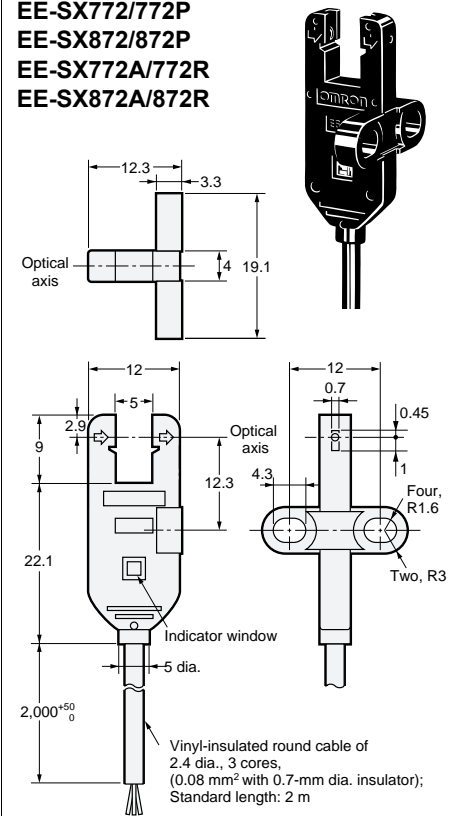
L-shaped

- 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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