Photomicrosensor with Slim Cable (Non-modulated) EE-SX77/87

CSM_EE-SX77_87_DS_E_7_2

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

Ordering Information

Pre-wired Models	Infrared light
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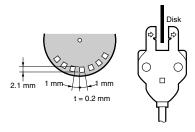
Appearance	Sensing method	Cable length	Sensing distance		Output	Indicator mode	Model	
			Selising	configuration			NPN output	PNP output
Standard					Dark-ON	Incident light	EE-SX770 2M	EE-SX770P 2M
44						No incident light	EE-SX770A 2M	EE-SX770R 2M
(1200m) (1200m) (1200m)					Light ON	Incident light	EE-SX870 2M	EE-SX870P 2M
				Light-ON Dark-ON	No incident light	EE-SX870A 2M	EE-SX870R 2M	
L-shaped					Dark-ON	Incident light	EE-SX771 2M	EE-SX771P 2M
Through-beam type (with slot)	Through-beam					No incident light	EE-SX771A 2M	EE-SX771R 2M
	2 m		(slot width)	*	Incident light	EE-SX871 2M	EE-SX871P 2M	
II					Light-ON	No incident light	EE-SX871A 2M	EE-SX871R 2M
T-shaped					Dark-ON	Incident light	EE-SX772 2M	EE-SX772P 2M
				Dark-ON	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

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Ratings and Specifications

	Туре	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			
Item	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 distan	ce	0.025 mm					
Light source		GaAs infrared LED with a peak wavel	ength of 940 nm				
Indicator		Light indicator (red) (turns ON when I	ight is interrupted for models with A or	R suffix)			
Supply voltage		5 to 24 VDC ±10%, ripple (p-p): 10%	max.				
Current consump	tion	35 mA max. (NPN models), 30 mA m	ax. (PNP models)				
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.			ıx.				
Response frequer	•	1 kHz min. (3 kHz average)					
Ambient illuminat	ion	1,000 lx max. with fluorescent light on the surface of the receiver					
Ambient temperat	ure 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 resistan	се	Destruction: 20 to 2,000 Hz (peak acceleration: 100 m/s²) 1.5-mm double amplitude for 2 h (4-min periods) each in X, Y, and Z directions					
Shock resistance		Destruction: 500 m/s² for 3 times each in X, Y, and Z directions					
Degree of protect	ion	IEC60529 IP60					
Connecting methor	od	Pre-wired (standard cable length: 2 m)					
Weight (packaged	I)	Approx. 20 g					
Material	Case: Polybutylene phthalate (PBT)						

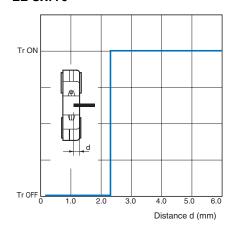
^{*} The response frequency was measured by detecting the following rotating disk.



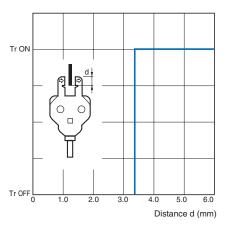
Engineering Data (Reference Value)

Sensing Position Characteristics

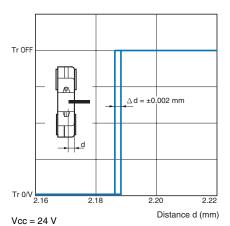
EE-SX770



Sensing Position Characteristics



Repeated Sensing Position . Characteristics



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	Light indicator (red) Load Main Brown (Vcc) Load Black (OUT) 5 to 24 VDC		
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	Circuit (control output) 100 mA max. Blue (GND)		
EE-SX770A EE-SX771A EE-SX772A	Dark-ON	Incident Interrupted Light indicator (red) ON OFF Output transistor ON Load (e.g., relay) Operates Releases	Light indicator (red) Brown (Vcc) Load Main Black (OUT)		
EE-SX870A EE-SX871A EE-SX872A	Light-ON	Light indicator (red) ON OFF Output transistor ON OFF Load (e.g., relay) Operates Releases	Sto 24 VDC (control output) (100 mA max.) Blue (GND)		

PNP Output

Model	Output configuration	Timing chart	Output circuit		
EE-SX770P EE-SX771P EE-SX772P	Dark-ON	Light indicator (red) ON OFF Output transistor ON OFF Load (e.g., relay) Operates Releases	Light indicator (red) Main Black (OUT) 5 to 24 VDC		
EE-SX870P EE-SX871P EE-SX872P	Light-ON	Incident Interrupted Light indicator (red) ON OFF Output transistor ON OFF Load (e.g., relay) Operates Releases	circuit Load Blue (GND)		
EE-SX770R EE-SX771R EE-SX772R	Dark-ON	Incident Interrupted Light indicator (red) ON OFF Output transistor ON OFF Load (e.g., relay) Operates Releases	Light indicator (red) Brown (Vcc) Black (OUT) 5 to 24 VDC		
EE-SX870R EE-SX871R EE-SX872R	Light-ON	Incident Interrupted Light indicator (red) ON OFF Output transistor ON OFF Load (e.g., relay) Operates Releases	circuit Load Blue (GND)		

Safety Precautions

Refer to Warranty and Limitations of Liability.



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



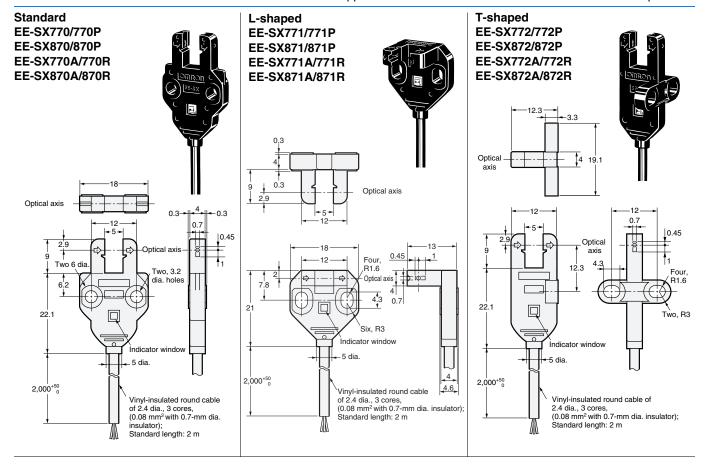
Precautions for Correct Use

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.



Read and Understand This Catalog

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments

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- Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this catalog.
- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
- Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

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Disclaimers

CHANGE IN SPECIFICATIONS

Product specifications and accessories may be changed at any time based on improvements and other reasons.

It is our practice to change model numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the products may be changed without any notice. When in doubt, special model numbers may be assigned to fix or establish key specifications for your application on your request. Please consult with your OMRON representative at any time to confirm actual specifications of purchased products.

DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

PERFORMANCE DATA

Performance data given in this catalog is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of OMRON's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the OMRON Warranty and Limitations of Liability.

ERRORS AND OMISSIONS

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In the interest of product improvement, specifications are subject to change without notice.

