




e-CON Junction Connector Models *

Infrared light

Appearance	Sensing method	Sensing distance		Output configuration	Cable length	Model				
						NPN output				
Standard 	Through-beam type		5 mm (slot width)	Dark-ON	0.3 m	EE-SX770-ECON EE-SX770A-ECON				
					2 m	EE-SX770-ECON EE-SX770A-ECON				
				Light-ON	0.3 m	EE-SX870-ECON EE-SX870A-ECON				
					2 m	EE-SX870-ECON EE-SX870A-ECON				
				L-shaped 	Through-beam type		5 mm (slot width)	Dark-ON	0.3 m	EE-SX771-ECON EE-SX771A-ECON
									2 m	EE-SX771-ECON EE-SX771A-ECON
Light-ON	0.3 m	EE-SX871-ECON EE-SX871A-ECON								
	2 m	EE-SX871-ECON EE-SX871A-ECON								
T-shaped 	Through-beam type		5 mm (slot width)	Dark-ON	0.3 m	EE-SX772-ECON EE-SX772A-ECON				
					2 m	EE-SX772-ECON EE-SX772A-ECON				
				Light-ON	0.3 m	EE-SX872-ECON EE-SX872A-ECON				
					2 m	EE-SX872-ECON EE-SX872A-ECON				

* e-CON is a new industrial standard being promoted by manufacturers of FA devices and connectors.
 The E39-ECON□M (cable length: 2 m or 5 m) with an e-CON connector on one end, and the E39-ECONW□M (cable length: 0.5 m to 2 m in units of 0.1 m) with e-CON connectors on both ends are available.
 The □ symbol is used to indicate the cable length (e.g., E39-ECON2M).

Photomicro-sensors

Sensing Guide

Slot Type

Through-beam

Slot-type Reflective

Convergent Reflective

Optical Fiber

Application

Peripheral Devices

Other Information

EE-SX
77/87

EE-SX
47/67

EE-SPX
74/84

EE-SPX-W

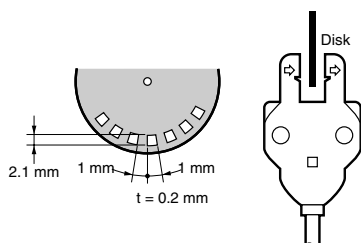
EE-SPX
303/403

EE-SX77/87

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. PNP open collector: 5 to 24 VDC, 50 mA max. 50 mA load current with a residual voltage of 1.3 V 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	Operating: -25 to +55°C Storage: -30 to +80°C (with no icing)			
Ambient humidity	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			
Enclosure rating	IEC 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.



Photomicro-sensors

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Other Information

EE-SX
77/87

EE-SX
47/67

EE-SPX
74/84

EE-SPX-W

EE-SPX
303/403

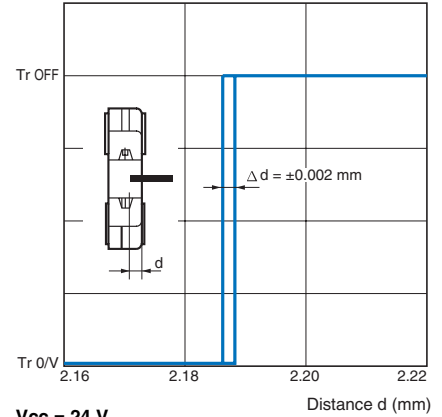
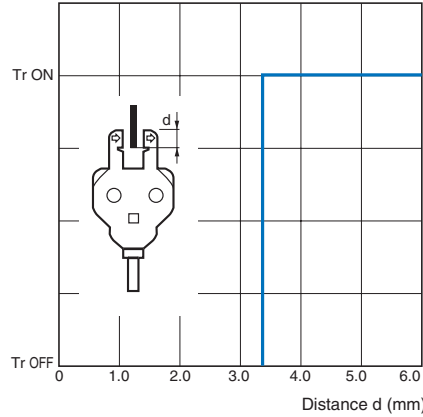
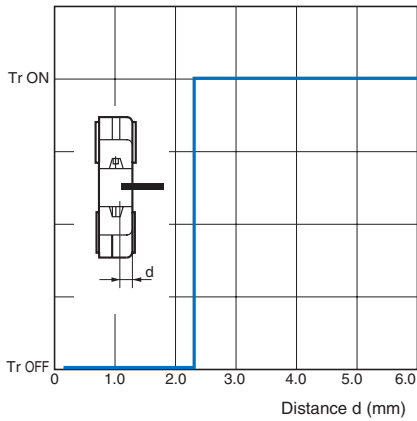
Engineering Data (Typical)

Sensing Position Characteristics

Sensing Position Characteristics

Repeated Sensing Position Characteristics

EE-SX770



V_{cc} = 24 V
No. of repetitions: 20, T_a = 25°C

Photomicro-sensors

I/O Circuits

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	<p>Connector pin arrangement for e-CON junction connector</p> <p>1 Brown (Vcc) 2 (not used) 3 Black (OUT) (control output) 100 mA max. 4 Blue (GND)</p> <p>Note: Pin 2 is not used.</p>
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	<p>Connector pin arrangement for e-CON junction connector</p> <p>1 Brown (Vcc) 2 (not used) 3 Black (OUT) (control output) 100 mA max. 4 Blue (GND)</p> <p>Note: Pin 2 is not used.</p>
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	<p>Connector pin arrangement for e-CON junction connector</p> <p>1 Brown (Vcc) 2 (not used) 3 Black (OUT) (control output) 100 mA max. 4 Blue (GND)</p> <p>Note: Pin 2 is not used.</p>
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	<p>Connector pin arrangement for e-CON junction connector</p> <p>1 Brown (Vcc) 2 (not used) 3 Black (OUT) (control output) 100 mA max. 4 Blue (GND)</p> <p>Note: Pin 2 is not used.</p>

Sensing Guide

Slot Type

Through-beam

Slot-type Reflective

Convergent Reflective

Optical Fiber

Application

Peripheral Devices

Other Information

EE-SX 77/87

EE-SX 47/67

EE-SPX 74/84

EE-SPX-W

EE-SPX 303/403

EE-SX77/87

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			

Photomicro-sensors

Sensing Guide

Slot Type

Through-beam

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Other Information

Applicable Connectors



E39-ECON□M



E39-ECONW□M

- *1. The E39-ECON□M (cable length: 2 m or 5 m) with an e-CON connector on one end, and the E39-ECONW□M with e-CON connectors on both ends (cable length: 0.5 m to 2 m in units of 0.1 m) are available.
- *2. The □ symbol is used to indicate the cable length (e.g., E39-ECON2M).

Shield color	Pin No.	Use
Brown	(1)	Power supply (+V)
White	(2)	---
Blue	(3)	Power supply (0 V)
Black	(4)	Output

Note: Pin 2 is not used.

Safety Precautions

Refer to **Warranty and Limitations of Liability** on page F-2.

WARNING

Do not use this product in sensing devices designed to provide human safety.



Precautions for Correct Use

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

EE-SX
77/87

EE-SX
47/67

EE-SPX
74/84

EE-SPX-W

EE-SPX
303/403

