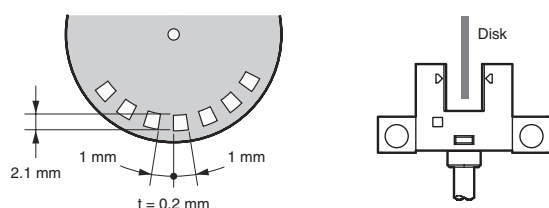


Ratings and Specifications

Item	Type		Standard	L-shaped	F-shaped	R-shaped	U-shaped
	NPN output	Pre-wired models	EE-SX950-□	EE-SX951-□	EE-SX952-□	EE-SX953-□	EE-SX954-□
		Pre-wired connector models	EE-SX950-C1J-R	EE-SX951-C1J-R	EE-SX952-C1J-R	EE-SX953-C1J-R	EE-SX954-C1J-R
PNP output	Pre-wired models		EE-SX950P-□	EE-SX951P-□	EE-SX952P-□	EE-SX953P-□	EE-SX954P-□
Sensing distance			5 mm (slot width)				
Standard sensing object			Opaque: 1.8 × 0.8 mm min.				
Differential travel			0.025 mm max. *1				
Light source (wave length)			Infrared LED (940 nm)				
Indicator			Light indicator (red LED)				
Power supply voltage			5 to 24 VDC ±10%, ripple (p-p): 10% max.				
Current consumption			15 mA max.				
Control output			Load power supply voltage: 5 to 24 VDC Load current: 50 mA max. OFF current: 0.5 mA max. 50 mA load current with a residual voltage of 0.7 V max. 5 mA load current with a residual voltage of 0.4 V max.				
Protection circuit			Load short-circuit protection				
Response frequency			1 kHz min. (3 kHz average) *2				
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 or condensation)				
Ambient humidity range			Operating: 5% to 85% Storage: 5% to 95% (with no icing or condensation)				
Vibration resistance (destruction)			10 to 2,000 Hz (peak acceleration: 150m/s ²) with a 0.75-mm single amplitude for 2.5 h (15-min periods, 10 cycles) 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 IP50				
Connection method			Pre-wired models (standard length: 1 m), Pre-wired connector models (standard length: 0.3 m)				
Weight (packed state)	Pre-wired models		Approx. 15 g				
	Pre-wired connector models		Approx. 7 g				
Materials	Case/cover		Polybutylene terephthalate (PBT)				
	Emitter/receiver		Polycarbonate (PC)				

*1. The differential travel is the value when a sensing object is moved in a lateral direction to the slot.

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



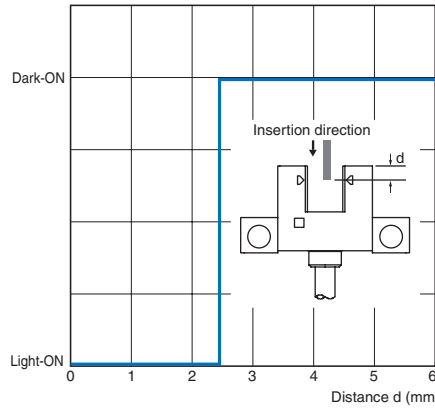
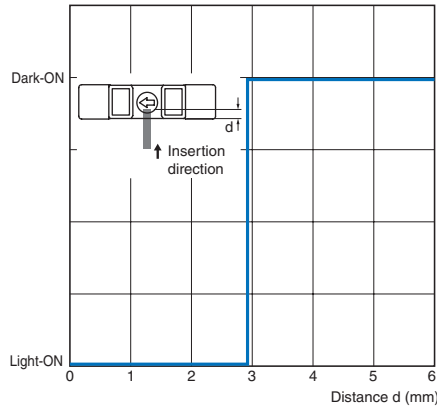
Applicable Connector

Item	Product Model	Connector with Robot Cable
	Appearance	EE-1016-R
Contact resistance	25 mΩ max. (at 10 mA DC and 20 mV max.)	
Insertion strength	20 N max.	
Surplus strength (housing holding strength)	15 N min.	
Cable length	2 m	
Ambient temperature range	-25 to 85°C	
Materials	Housing	Nylon
	Contact	Phosphor bronze

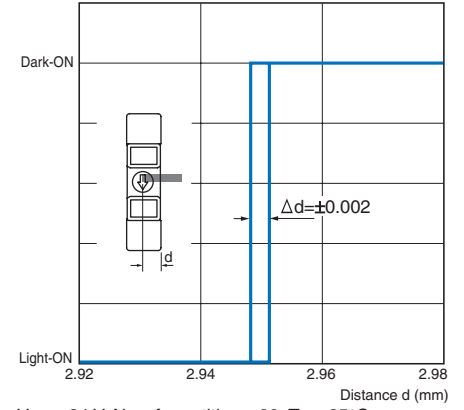
EE-SX95

Engineering Data (Reference Value)

Sensing Position Characteristics



Repeated Sensing Position Characteristics



Vcc = 24 V, No. of repetitions: 20, Ta = 25°C
(Differential travel = 0.025 mm max.)

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

Output type	Model	Output transistor operation status	Timing charts	Output circuit
NPN output	EE-SX950-□ EE-SX951-□ EE-SX952-□ EE-SX953-□ EE-SX954-□ EE-SX950-C1J-R EE-SX951-C1J-R EE-SX952-C1J-R EE-SX953-C1J-R EE-SX954-C1J-R	OUT1: Light-ON OUT2: Dark-ON	<p>Incident light</p> <p>No incident light</p> <p>Light indicator ON (red)</p> <p>Output 1 ON</p> <p>transistor OFF</p> <p>Load 1 Operate (e.g., relay) Reset</p> <p>Output 2 ON</p> <p>transistor OFF</p> <p>Load 2 Operate (e.g., relay) Reset</p>	<p>Connector pin arrangement for models with connectors</p>
	PNP output			EE-SX950P-□ EE-SX951P-□ EE-SX952P-□ EE-SX953P-□ EE-SX954P-□