Grooved-type Photoelectric Sensor

E3S-GS3E4

CSM_E3S-GS3E4_DS_E_3_1

A Grooved-type Sensor That Doesn't Require Optical Axes Alignment

Be sure to read *Safety Precautions* on page 2.

Ordering Information

Grooved-type Photoelectric Sensor

Infrared light

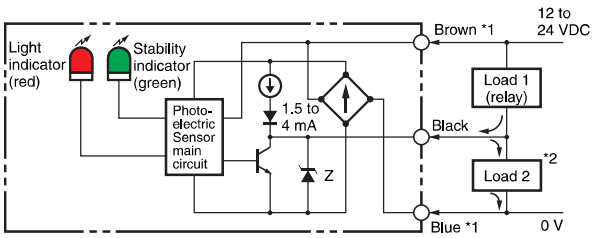
Sensing method	Appearance	Sensing distance	Model
Grooved-type		30 mm	**E3S-GS3E4 2M**

Ratings and Specifications

Item \ Sensing method		Grooved-type
Item \ Model		E3S-GS3E4
Sensing distance		30 mm
Standard sensing object		Opaque, 6-mm dia. min.
Minimum detectable object		3-mm dia. min. (black mark on transparent sheet)
Light source (wavelength)		Infrared LED (950 nm)
Power supply voltage		12 to 24 VDC ±10%, ripple (p-p): 10% max.
Current consumption		40 mA max.
Control output		Load power supply voltage: 24 VDC max., Load current: 80 mA max. (residual voltage: 2 V max.); NPN voltage output; Light-ON/Dark-ON mode selector
Protection circuits		Power supply reverse polarity, Output short-circuit protection
Response time		Operate or reset: 1 ms max.
Sensitivity adjustment		One-turn adjuster
Ambient illumination (Receiver side)		Incandescent lamp: 3,000 lx max. Sunlight: 10,000 lx max.
Ambient temperature		Operating: –25 to 55°C (with no icing or condensation) Storage: –40 to 70°C (with no icing or condensation)
Ambient humidity		Operating: 35% to 85% (with no condensation) Storage: 35% to 95% (with no condensation)
Insulation resistance		20 MΩ min. (at 500 VDC)
Dielectric strength		1,000 VAC at 50/60 Hz for 1 min
Vibration resistance (destruction)		10 to 55 Hz with a 1.5-mm double amplitude for 2 h 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		IEC IP67
Connection method		Pre-wired (standard length: 2 m)
Weight (packed state)		Approx. 330 g
Materials	**Case**	Zinc die-cast
	Lens	Polycarbonate
	Indicator window	Polycarbonate
Accessories		Adjustment screwdriver, Sensitivity adjuster, Instruction sheet

I/O Circuit Diagrams

NPN Output

Model	Operation mode	Timing charts	Connection method	Output circuit
E3S-GS3E4	Light ON	Incident light No incident light Light indicator (red) ON/OFF Output transistor ON/OFF Load 1 (e.g., relay) Operate/Reset (Between brown and black) Load 2 H/L (Between blue and black)	Brown cable: +V Blue cable: 0 V	
	Dark ON	Incident light No incident light Light indicator (red) ON/OFF Output transistor ON/OFF Load 1 (e.g., relay) Operate/Reset (Between blue and black) Load 2 H/L (Between brown and black)	Brown cable: 0 V Blue cable: +V	

*1. Invert the connection to switch between Light ON and Dark ON.
*2. Voltage output (When connecting a transistor circuit, etc.)

Safety Precautions

⚠ WARNING

This product is not designed or rated for ensuring safety of persons. Do not use it for such purpose.

Precautions for Correct Use

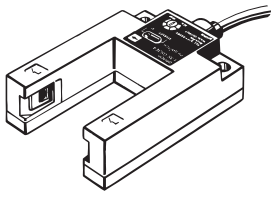
Do not use the product in atmospheres or environments that exceed product ratings.

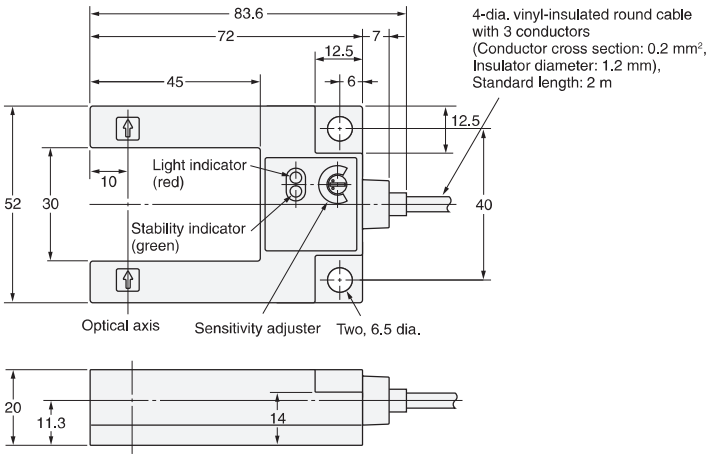
Dimensions

(Unit: mm)

Unless otherwise specified, the tolerance class IT16 is used for dimensions in this data sheet.

E3S-GS3E4





Mounting Holes