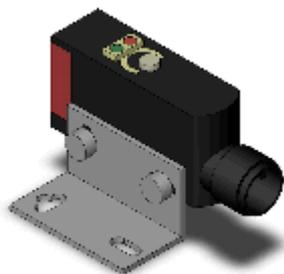


Transparent Object Detection Sensor

E3S-R17



Image

Retro-reflective without M.S.R. function, Sensing distance 100 to 300 mm, NPN output (Horizontal type), M12 connector models

Sensing method	Retro-reflective without M.S.R. function
Sensing distance	When using the E39-R1: 100 to 300 mm
Light source	Infrared LED (850 nm)
Connection method	M12 connector models

Ratings/Performance

As of March 28, 2023

Shape	Square type
Sensing method	Retro-reflective without M.S.R. function
Sensing distance	When using the E39-R1: 100 to 300 mm
Standard sensing object	Opaque: 75 mm dia. min. thickness: 0.7 mm, LCD glass plate Glass tube (10 mm dia. thickness: 1 mm length: 30 mm)
Directional angle	3 to 10 °
Light source	Infrared LED (850 nm)
Power supply voltage	10 to 30 VDC ripple (p-p) 10% included
Current consumption	30 mA max.
Control output	NPN open collector 30 VDC max. 100 mA max. Residual voltage: 1 V max.
Operation mode	Light-ON/Dark-ON selectable
Protective circuit	Output short-circuit protection, Power supply reverse polarity protection
Response time	Operate or reset: 1 ms max.
Sensitivity setting	2-turn endless adjustment
Ambient illuminance	Incandescent lamp: 5,000 lx max. Sunlight: 10,000 lx max.
Ambient temperature range (Operating)	0 to 40 °C (with no freezing or condensation)
Ambient temperature range (Storage)	-40 to 70 °C (with no freezing or condensation)
Ambient humidity range (Operating)	35 to 85 % (with no condensation)

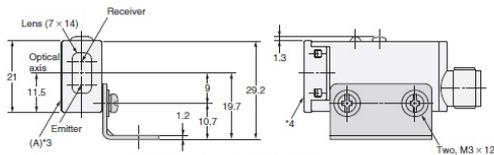
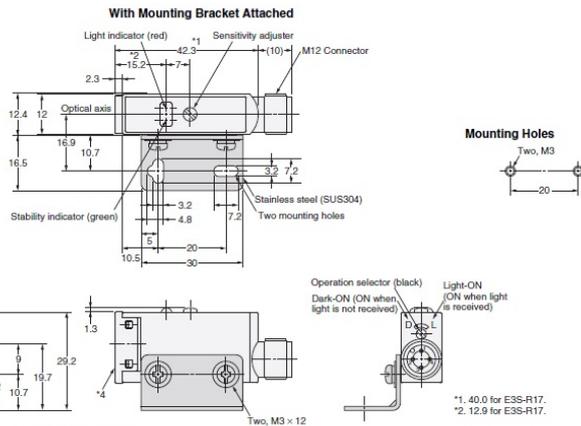
Ambient humidity range (Strage)	35 to 95 % (with no condensation)
Insulation resistance	20 MΩ min. (500 VDC megger)
Dielectric strength	1000 VAC 50/60 Hz 1 min
Vibration resistance	Destruction: 10 to 55 Hz, 1.5 mm double amplitude each in X, Y, and Z directions for 2 h
Shock resistance	Destruction: 500 m/s ² 3 times each in X, Y and Z directions
Degree of protection	IEC: IP67
Connection method	M12 connector models
Indicator	Light indicator (red), Stability indicator (green)
Weight	Package: Approx. 60 g
Accessories	Instruction manual, Mounting bracket (with screws), Close-mounting plate, Sensitivity adjustment driver, Reflector
Material	Case: Polybutylene terephthalate (PBT) Lens: Denatured Polyarylate Mounting Bracket: Stainless steel (SUS304)

As of March 28, 2023

Dimensions

As of March 28, 2023

Standard Connector Models
E3S-R16, E3S-R17
E3S-R36

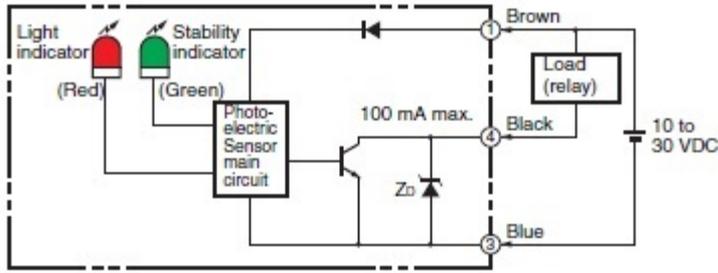


*3. The mounting bracket can be attached to this side.
*4. Not available on the E3S-R17.

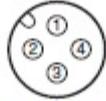
As of March 28, 2023

Output circuit diagram

As of March 28, 2023



Connector Pin Arrangement



Note: Pin 2 is not used.

As of March 28, 2023

Timing chart

As of March 28, 2023

Operation mode	Timing chart	Mode switch
Light ON	Incident light	L side (LIGHT ON)
	No incident light	
	Light indicator (red) ON	
	OFF	
	Output transistor ON	
Dark ON	Incident light	D side (DARK ON)
	No incident light	
	Light indicator (red) ON	
	OFF	
	Output transistor ON	

Load (Relay)
Operate
Reset
(Between brown(1) and black(4))

As of March 28, 2023