

Built-in Amplifier Photoelectric Sensor (Medium Size)

# E3S-AR11 2M



Image

**Medium Photoelectric Sensor With Built-in Amplifier, Retro-reflective with M.S.R. function, Horizontal, Sensing distance: 2 m (Using the E39-R1 Reflector), NPN, Pre-wired model, 2 m**

<b>Sensing method</b>	Retro-reflective with M.S.R. function
<b>Sensing distance</b>	When using the E39-R1: 0.1 to 2 m
<b>Light source</b>	Red LED (660 nm)
<b>Connection method</b>	Pre-wired models

Ratings/Performance

As of July 25, 2024

<b>Shape</b>	Square type
<b>Sensing method</b>	Retro-reflective with M.S.R. function
<b>Sensing distance</b>	When using the E39-R1: 0.1 to 2 m
<b>Standard sensing object</b>	Opaque: 75 mm dia. min.
<b>Directional angle</b>	3 to 10 °
<b>Light source</b>	Red LED (660 nm)
<b>Power supply voltage</b>	10 to 30 VDC ripple (p-p) 10% included
<b>Current consumption</b>	30 mA max.
<b>Control output</b>	NPN open collector 30 VDC max. 100 mA max. Residual voltage: 1 V max.
<b>Operation mode</b>	Light-ON/Dark-ON selectable
<b>Protective circuit</b>	Output short-circuit protection, Power supply reverse polarity protection
<b>Response time</b>	Operate or reset: 0.5 ms max.
<b>Sensitivity setting</b>	2-turn endless adjustment (with indicator)
<b>Ambient illuminance</b>	Incandescent lamp: 5,000 lx max. Sunlight: 10,000 lx max.
<b>Ambient temperature range (Operating)</b>	-25 to 55 °C (with no freezing or condensation)
<b>Ambient temperature range (Storage)</b>	-40 to 70 °C (with no freezing or condensation)
<b>Ambient humidity range (Operating)</b>	35 to 85 % (with no condensation)
<b>Ambient humidity range (Storage)</b>	35 to 95 % (with no condensation)
<b>Insulation resistance</b>	20 MΩ min. (500 VDC megger)

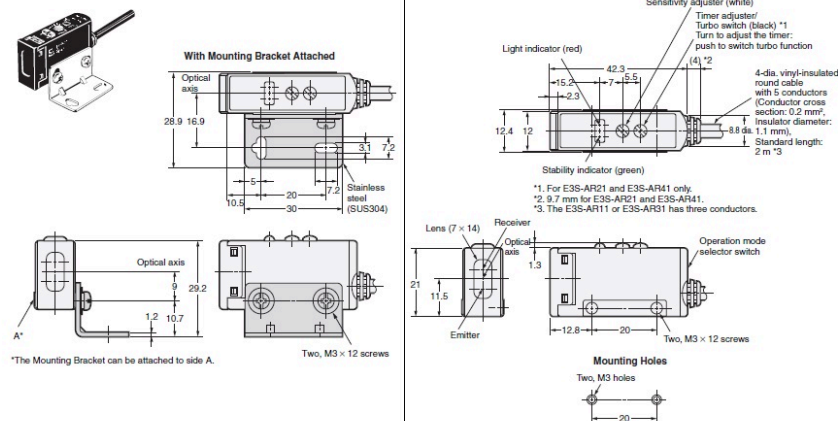
<b>Dielectric strength</b>	1000 VAC 50/60 Hz 1 min
<b>Vibration resistance</b>	Destruction: 10 to 55 Hz, 1.5 mm double amplitude each in X, Y, and Z directions for 2 h
<b>Shock resistance</b>	Destruction: 500 m/s <sup>2</sup> 3 times each in X, Y and Z directions
<b>Degree of protection</b>	IEC: IP67 NEMA 4X (indoors only)
<b>Connection method</b>	Pre-wired models (Cable length 2 m)
<b>Indicator</b>	Light indicator (red), Stability indicator (green)
<b>Weight</b>	Package: Approx. 110 g
<b>Accessories</b>	Instruction manual, Mounting bracket, Sensitivity adjustment driver, Sensitivity adjusting knob, Reflector
<b>Material</b>	Case: Polybutylene terephthalate (PBT) Lens: Denatured Polyarylate Mounting Bracket: Stainless steel (SUS304)

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### Dimensions

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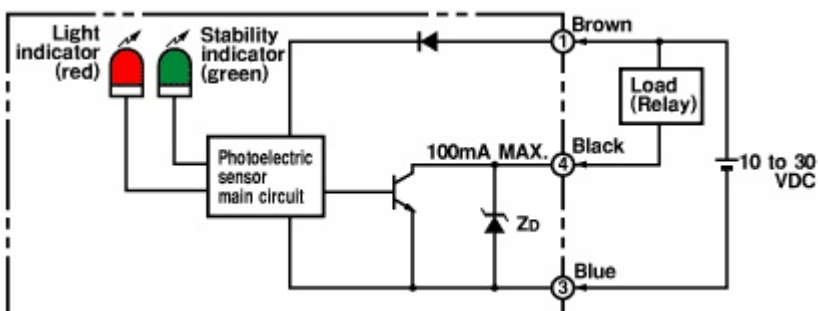
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








As of July 25, 2024

### Output circuit diagram

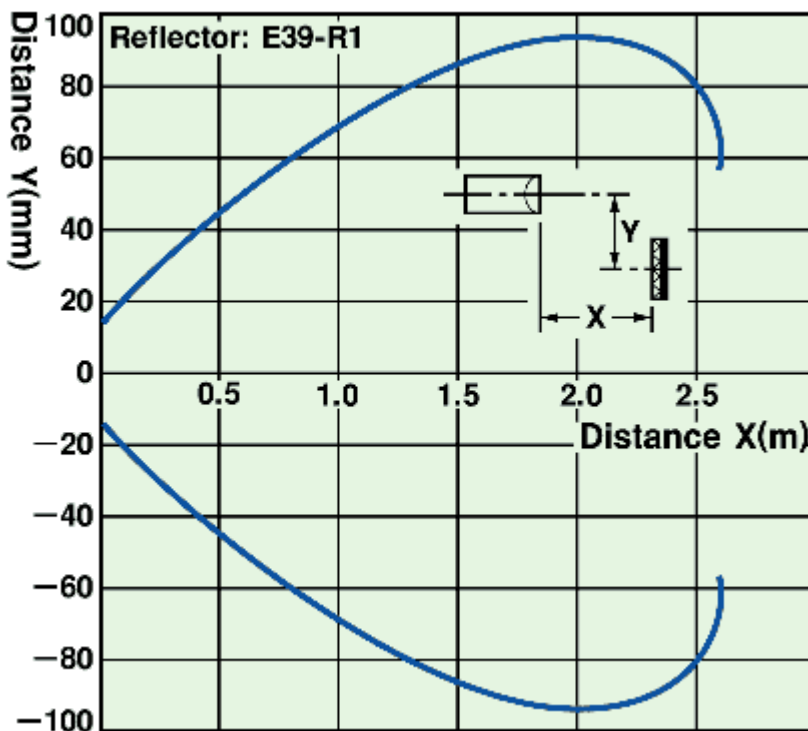
As of July 25, 2024



Timing chart

Operation mode	Timing chart	Mode switch
<b>Light ON</b>	<p>Incident light </p> <p>No incident light </p> <p>Light indicator (red) ON </p> <p>OFF </p> <p>Output transistor ON </p> <p>OFF </p> <p>Load (Relay) Operate </p> <p>Reset </p> <p>{Between brown(1) and black(4)}</p>	<b>L side (LIGHT ON)</b>
<b>Dark ON</b>	<p>Incident light </p> <p>No incident light </p> <p>Light indicator (red) ON </p> <p>OFF </p> <p>Output transistor ON </p> <p>OFF </p> <p>Load (Relay) Operate </p> <p>Reset </p> <p>{Between brown(1) and black(4)}</p>	<b>D side (DARK ON)</b>

Parallel operating range



Excess gain ratio vs. setting distance

