

Compact Photoelectric Sensor with Built-in Amplifier

## E3Z-B86



Image

Retro-reflective without M.S.R. function, Sensing distance When using the E39-R1S: 80 to 500 mm, Light-ON/Dark-ON selectable, PNP, M8 connector models, Red LED (660 nm)

<b>Sensing method</b>	Retro-reflective without M.S.R. function
<b>Sensing distance</b>	When using the E39-R1S: 80 to 500 mm
<b>Light source</b>	Red LED (660 nm)
<b>Connection method</b>	M8 connector models

### Ratings/Performance

As of April 20, 2022

<b>Shape</b>	Square type
<b>Sensing method</b>	Retro-reflective without M.S.R. function
<b>Sensing distance</b>	When using the E39-R1S: 80 to 500 mm
<b>Standard sensing object</b>	Opaque: 75 mm dia. min. Glass tube (15 mm dia. thickness: 1.1 mm length: 50 mm, transmission factor 92% or less in wave length 660 nm)
<b>Light source</b>	Red LED (660 nm)
<b>Power supply voltage</b>	12 to 24 VDC±10% ripple (p-p) 10% max.
<b>Current consumption</b>	30 mA max.
<b>Control output</b>	PNP open collector 26.4 VDC max. 100 mA max. Residual voltage: 1 V max. (Load current Less than 10 mA) Residual voltage: 2 V max. (Load current 10 to 100 mA)
<b>Operation mode</b>	Light-ON/Dark-ON selectable
<b>Protective circuit</b>	Output short-circuit protection, Output reverse polarity protection, Power supply reverse polarity protection
<b>Response time</b>	Operate or reset: 1 ms max.
<b>Sensitivity setting</b>	Single-turn adjustment
<b>Ambient illuminance</b>	Incandescent lamp: 3,000 lx max. Sunlight: 10,000 lx max.
<b>Ambient temperature range (Operating)</b>	-25 to 55 °C (with no icing)
<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
<b>Connection method</b>	M8 connector models
<b>Indicator</b>	Operation indicator (orange), Stability indicator (green)
<b>Weight</b>	Package: Approx. 20 g
<b>Accessories</b>	Instruction manual
<b>Material</b>	Case: Polybutylene terephthalate (PBT) Lens: Denatured Polyarylate

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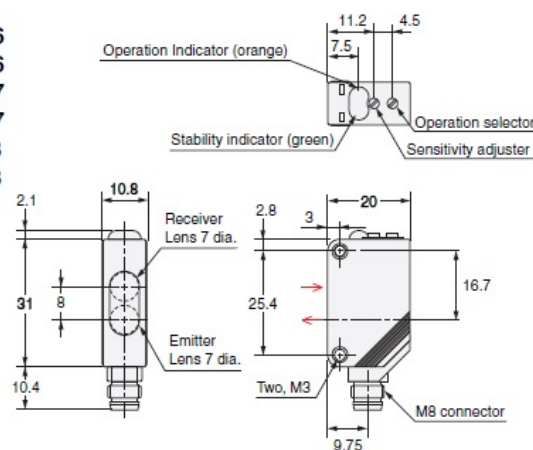
## Dimensions

As of April 20, 2022

### Retro-reflective Models

#### Connector Models

<b>E3Z-R66</b>	<b>E3Z-B66</b>
<b>E3Z-R86</b>	<b>E3Z-B86</b>
<b>E3Z-D66</b>	<b>E3Z-B67</b>
<b>E3Z-D86</b>	<b>E3Z-B87</b>
<b>E3Z-D67</b>	<b>E3Z-L68</b>
<b>E3Z-D87</b>	<b>E3Z-L88</b>
<b>E3Z-L66</b>	
<b>E3Z-L86</b>	



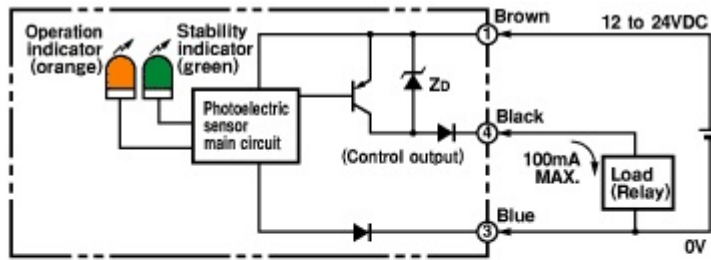
Terminal No.	Specifications
1	+V
2	---
3	0V
4	Output

Note: The lens for the E3Z-D□1/D□6/L□□/B□□ is red. The lens for the E3Z-D□2/D□7 is black.

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Output circuit diagram

As of April 20, 2022



M8 Connector Pin Arrangement



Note. Receiver: Pin ② is not used.

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Timing chart

As of April 20, 2022

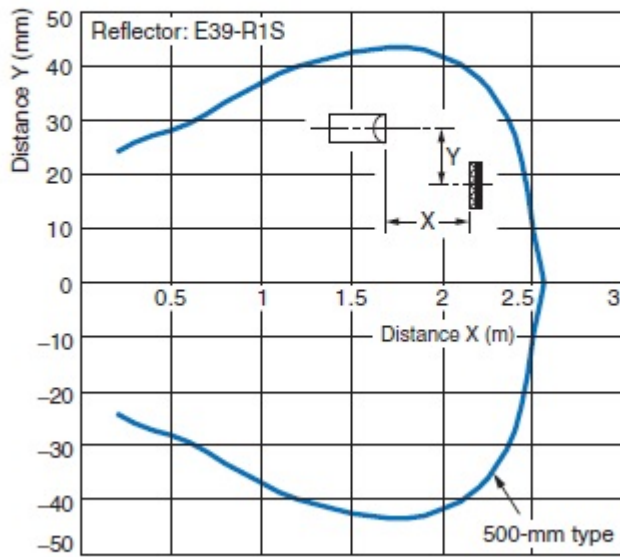
Operation mode	Timing chart	Mode switch
Light ON	Incident light No Incident light	L side (LIGHT ON)
	Operation Indicator (orange) ON OFF	
	Output transistor ON OFF	
	Load (Relay) Operate Reset	
	(Between blue(③) and black(④))	
Dark ON	Incident light No Incident light	D side (DARK ON)
	Operation Indicator (orange) ON OFF	
	Output transistor ON OFF	
	Load (Relay) Operate Reset	
	(Between blue(③) and black(④))	

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Parallel operating range

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## E3Z-B□1/B□6 + E39-R1S Reflector (Order Separately)



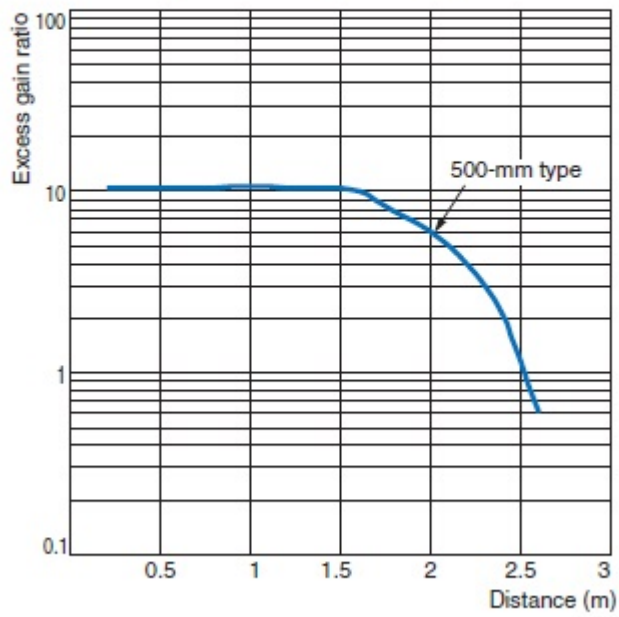
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Setting distance

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Excess gain ratio vs. setting distance

# E3Z-B□1/B□6 + E39-R1S Reflector (Order Separately)



As of April 20, 2022