

Photoelectric Sensor with Built-in Amplifier (Through-beam Type with Red LED)

E3Z-TA

**Visual Beams Allow Visual Confirmation
of the Detection Spot, Making
Installation and Maintenance Easier**

- Mutual interference protection filter included in line-up.
- Sensors can be used in parallel.



CE

Ordering Information

■ Standard Models

Sensing method	Appearance	Connection method	Sensing distance	Model	
				NPN output	PNP output
Through-beam		Pre-wired (0.5/2 m)		E3Z-T61A	E3Z-T81A
		Connector		E3Z-T66A	E3Z-T86A

■ Accessories (Order Separately)

Slit

Slit width	Sensing distance (typical)	Minimum sensing object (typical)	Model	Quantity
0.5 mm dia.	35 mm	0.2 mm dia.	E39-S65A	One for each of the emitter and receiver
1 mm dia.	150 mm	0.4 mm dia.	E39-S65B	
2 mm dia.	550 mm	0.7 mm dia.	E39-S65C	
0.5×10 mm	700 mm	0.2 mm dia.	E39-S65D	
1×10 mm	1.5 m	0.5 mm dia.	E39-S65E	
2×10 mm	3.5 m	0.8 mm dia.	E39-S65F	

Mutual Interference Protection Filter

Sensing distance	Dimensions	Model	Quantity	Remarks
3 m		E39-E11	Two filters each for the emitter and receiver (four in total)	The arrow indicates the direction of polarized light. Mutual interference can be prevented by altering the direction of polarized light from or to adjacent emitters and receivers.

Specifications

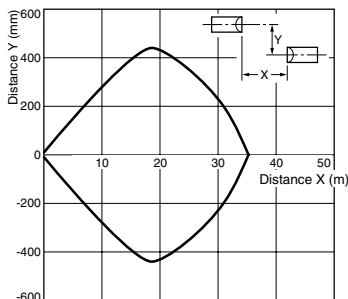
■ Ratings/Characteristics

Item	Sensing method NPN output PNP output	Through-beam
		E3Z-T61A/T66A
		E3Z-T81A/T86A
Sensing distance		10 m
Standard sensing object		Opaque: 12-mm dia. min.
Directional angle		Both emitter and receiver: 3 to 5°
Light source (wave length)		Red LED (700 nm)
Power supply voltage		12 to 24 VDC $\pm$ 10% including 10% (p-p) max. ripple
Current consumption		Emitter: 15 mA Receiver: 20 mA
Control output		Load power supply voltage: 26.4 VDC max. Load current: 100 mA max. (Residual voltage: 1 V max.) Open collector output (NPN or PNP depending on model) L-ON/D-ON selectable
Circuit protection		Protection from load short-circuit and reversed power supply connection
Response time		Operation 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°C to 55°C/Storage: -40°C to 70°C (with no icing or condensation)
Ambient humidity		Operating: 35% to 85%/Storage: 35% to 95% (with no condensation)
Insulation resistance		20 M Ω min. at 500 VDC
Dielectric strength		1,000 VAC, 50/60 Hz for 1 min
Vibration resistance		10 to 55 Hz, 1.5-mm double amplitude or 300 m/s ² for 2 hours each in X, Y, and Z directions
Shock resistance		Destruction: 500 m/s ² 3 times each in X, Y, and Z directions
Degree of protection		IP67 (IEC60529)
Connection method		Pre-wired cable (length: 2 m or 500 mm)/M8 connector
Indicator		Operation indicator (orange) Stability indicator (green) Emitter has power indicator (orange) only.
Weight (packed state)	Pre-wired cable (2 m)	Approx. 120 g
	Connector	Approx. 30 g
Material	Case	PBT (polybutylene terephthalate)
	Lens	Methacrylate resin
Accessories		Instruction manual (The Reflector or Mounting Bracket is not provided with any of the above models.)

Engineering Data

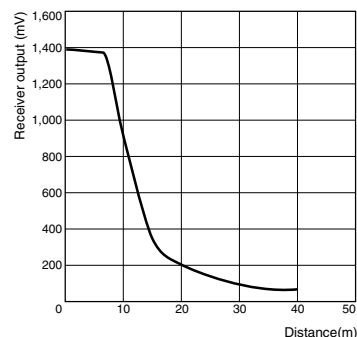
■ Parallel Operating Range (Typical)

E3Z-T□A



■ Receiver Output vs. Distance (Typical)

E3Z-T□A



Operation

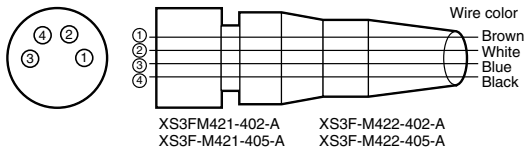
■ NPN Output

Model	E3Z-T61A/E3Z-T66A	
Output transistor status	Light ON	Dark ON
Timing chart		
Mode selector	Light ON (L/ON)	Dark ON (D/ON)
Output circuit	Connector Pin Arrangement Pin 2 is open.	

■ PNP Output

Model	E3Z-T81A/T86A	
Output transistor status	Light ON	Dark ON
Timing chart		
Mode selector	Light ON (L/ON)	Dark ON (D/ON)
Output circuit	Connector Pin Arrangement Pin 2 is open.	

Structure of Sensor I/O Connector



Classification	Wire color	Connector pin No.	Use
DC	Brown	①	Power supply (+V)
	White	②	---
	Blue	③	Power supply (0 V)
	Black	④	Output

Note: Pin 2 is not used.

Dimensions

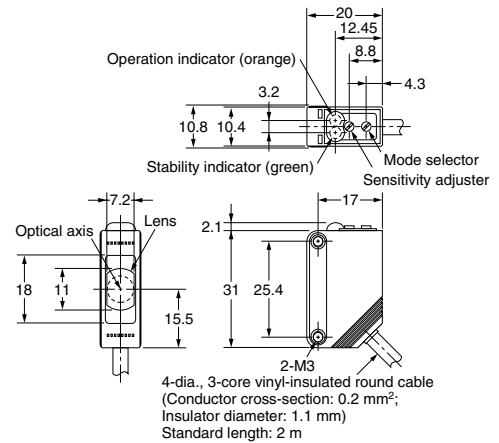
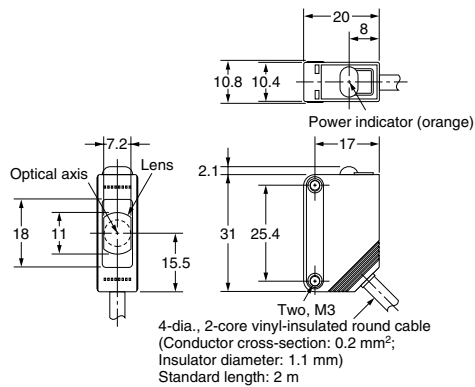
Note: All units are in millimeters unless otherwise indicated.

■ Sensors

Pre-wired Through-beam Models

E3Z-T61A

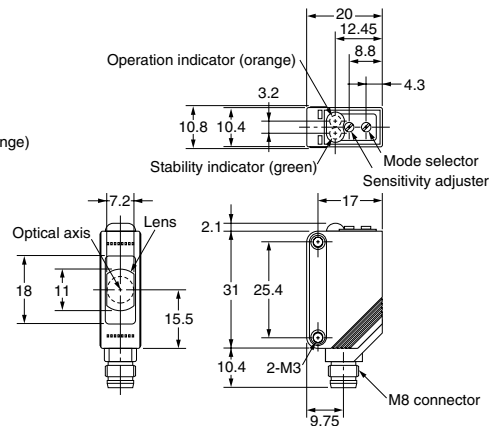
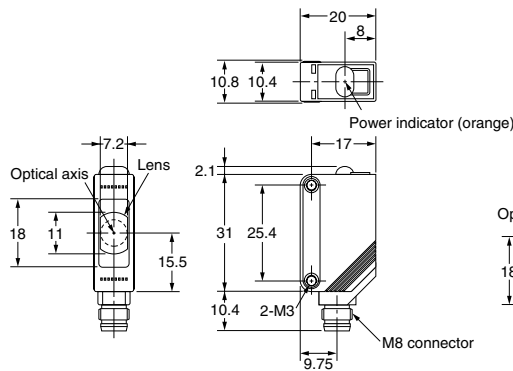
E3Z-T81A



Through-beam Models with Connector

E3Z-T66A

E3Z-T86A



ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Cat. No. E319-E1-1A In the interest of product improvement, specifications are subject to change without notice.

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