

Distance-settable Sensor Unaffected by Workpiece Color and Background

- Distance-settable triangulation model unaffected by color.
- Simple positioning settings using a clear LED spot.
(E3Z-LS□3/LS□8)
- Detect minute steps.

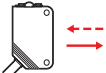
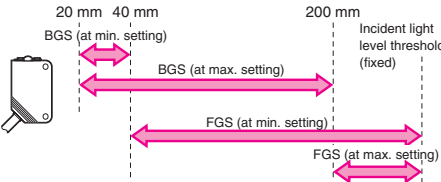
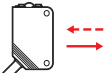
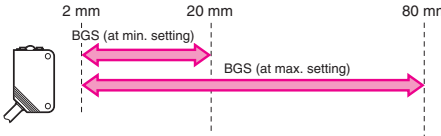


 Be sure to read *Safety Precautions* on page 8.

Ordering Information

Sensors (Refer to *Dimensions* on page 10.)

 Red light

Sensing method	Appearance	Connection method	Sensing distance (white paper)	Model	
				NPN output	PNP output
Distance-settable		Pre-wired (2 m) *1		E3Z-LS61 2M *2	E3Z-LS81 2M
		Connector (M8, 4 pins)		E3Z-LS66	E3Z-LS86
		Pre-wired (2 m) *1		E3Z-LS63 2M	E3Z-LS83 2M
		Connector (M8, 4 pins)		E3Z-LS68	E3Z-LS88

*1. Models with a 0.5-m cable are available. When ordering, specify the cable length by adding the code "0.5M" to the model number (e.g., E3Z-LS61 0.5M).

*2. The following table shows the model numbers of e-CON Pre-wired Connectors that are available. The Ratings and Specifications are the same as those for the E3Z-LS61.

Cable length	Model
0.3 m	E3Z-LS61-ECON 0.3M
0.5 m	E3Z-LS61-ECON 0.5M
2 m	E3Z-LS61-ECON 2M

Accessories (Order Separately)

Mounting Brackets

Sensor I/O Connectors

(Models for Connectors: A Connector is not provided with the Sensor. Be sure to order a Connector separately.) (Refer to *Dimensions* on XS3)

Cable specification	Appearance	Type of cable		Model
Standard M8 cable	Straight *1 	2 m	4-wire	XS3F-M421-402-A
		5 m		XS3F-M421-405-A
	L-shaped *1 *2 	2 m		XS3F-M422-402-A
		5 m		XS3F-M422-405-A

*1. The connector will not rotate after connecting.

*2. The cable is fixed at an angle of 180° from the sensor emitter/receiver surface.

Ratings and Specifications

Sensing method		Distance-settable			
Model	NPN output	E3Z-LS61	E3Z-LS66	E3Z-LS63	E3Z-LS68
Item	PNP output	E3Z-LS81	E3Z-LS86	E3Z-LS83	E3Z-LS88
Sensing distance	BGS	White or black paper (100 × 100 mm): 20 mm to set distance		2 mm to set distance (80 mm max.)	
	FGS	White paper (100 × 100 mm): Set distance to 200 mm min. Black paper (100 × 100 mm): Set distance to 160 mm min.		-----	
Setting range		White paper (100 × 100 mm): 40 to 200 mm Black paper (100 × 100 mm): 40 to 160 mm		White paper (100 × 100 mm): 20 to 80 mm	
Differential travel		10% of set distance max. (Refer to <i>Differential Travel vs. Sensing Distance</i> on page 4.)		2% of set distance max.	
Reflectivity characteristic (black/white error)		10% of set distance max.		5% of set distance max.	
Light source (wavelength)		Red LED (680 nm)		Red LED (650 nm)	
Power supply voltage		12 to 24 VDC ±10%, ripple (p-p): 10% max.			
Current consumption		30 mA max.			
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) Light-ON/Dark-ON switch selectable			
BGS/FGS selection		BGS: Open or connected to GND FGS: Connected to Vcc		BGS: Open or connected to GND	
Protection circuits		Reversed power supply polarity protection, Output short-circuit protection, Mutual interference prevention			
Response time		Operate or reset: 1 ms max.			
Distance setting		5-turn endless adjuster			
Ambient illumination (Receiver side)		Incandescent lamp: 3,000 lx max.; Sunlight: 10,000 lx max.			
Ambient temperature range		Operating: -25 to 55°C, Storage: -40 to 70°C (with no icing or condensation)			
Ambient humidity range		Operating: 35% to 85%, 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 minute			
Vibration resistance		Destruction: 10 to 55 Hz, 1.5-mm double amplitude for 2 hours 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		IP67 (IEC 60529)			
Connection method		Pre-wired (standard lengths: 2 m and 0.5 m)	Connector (M8, 4 pins)	Pre-wired (standard lengths: 2 m and 0.5 m)	Connector (M8, 4 pins)
Indicators		Operation indicator (orange), Stability indicator (green)			
Weight (packed state)		Pre-wired Sensors, 2 m: Approx. 65 g	Approx. 20 g	Pre-wired Sensors, 2 m: Approx. 65 g	Approx. 20 g
Material	Case	PBT (polybutylene terephthalate)			
	Lens	Modified polyarylate resin			
Accessories		Instruction manual (Mounting Brackets must be ordered separately.)			