

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.

For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

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)	20 mm 40 mm 200 mm BGS (at min. setting) BGS (at max. setting) FGS (at min. setting) FGS (at max. setting) Incident light level threshold (fixed)	E3Z-LS61 2M *1	E3Z-LS81 2M *1
		Connector (M8, 4 pins)		E3Z-LS66	E3Z-LS86
		Pre-wired (2 m)	2 mm 20 mm 80 mm BGS (at min. setting) BGS (at max. setting)	E3Z-LS63 2M	E3Z-LS83 2M *2
		Connector (M8, 4 pins)		E3Z-LS68	E3Z-LS88

*1. M12 Standard Pre-wired Connector Models are also available.

When ordering, add "-M1J 0.3M" to the end of the model number (e.g., E3Z-LS61-M1J 0.3M).
The cable is 0.3 m long.

*2. M12 Pre-wired Smartclick Connector Models are also available.

When ordering, add "-M1TJ 0.3M" to the end of the model number (e.g., E3Z-LS83-M1TJ 0.3M).
The cable is 0.3 m long.

Accessories (Order Separately)

Mounting Brackets

Sensor I/O Connectors (Sockets on One Cable End)

(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 (25 × 25 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.)			