

NO: LC-046 **PRODUCT:** E3FS Safety Sensor
DATE: May 2015 **TYPE:** Discontinuation Notice

E3FS Safety Sensors have been Discontinued

Effective Date: Due to limited sales, E3FS safety sensors have been discontinued.

Cautions on Applying Replacement:

Please refer the E3ZS datasheet or technical support for information on potential functional replacements.

Note: A safety rated sensor cannot be replaced with a non-safety rated sensor.



Affected Parts

Product Discontinuation	Recommended Replacement
E3FS-10B4 2M	E3ZS-T81A
E3FS-10B4-M1-M	No Recommended Replacement

Detail of Differences

Reference Documentation

Description	Media	Publication number
E3FS, E3ZS Single Beam Safety Sensor Data Sheet	PDF	F26I-E-01

Sensing Distance and Light Source

Product Discontinuation E3FS	Recommended Replacement E3ZS
E3FS-10B4 2M: 10 m E3FS-10B4-M1-M: 10 m Infrared Light	E3ZS-T81A: 3 m Red Light

Specifications

E3ZS/E3FS

Item	Model	E3ZS-T81A	E3FS-10B4 2M	E3FS-10B4-M1-M
Sensor type		Through-beam models		
Safety category		See Applicable standards.		
Standard sensing object		Opaque object: 18 mm in diameter or greater	Opaque object: 11 mm in diameter or greater	
Lens diameter		Diameter 6.7 mm / diameter 9 mm		
Sensing distance		0.2 to 3 m	0 to 10 m	
Response time (under stable light incident condition)		1.0 ms (E3ZS only)	2.0 ms (E3FS only)	
Startup waiting time		100 ms		
Power supply voltage (Vs)		12 to 24 VDC±10% (ripple p-p 10% max.) *1	24 VDC±10% (ripple p-p 10% max.) *1	
Current consumption (no load)		Emitter: 15 mA max. Receiver: 20 mA max.	Emitter: 50 mA max. Receiver: 25 mA max.	
Light source (emitted wavelength)		Red LED (660 nm)	Infrared LED (870 nm)	
Effective aperture angle (EAA)		±5° (at 3 m)		
Control output (OSSD)		PNP transistor output, load current: 100 mA max., Residual voltage: 1 V max., (when load current is less than 10 mA), Residual voltage: 2 V max. (when load current is between 10 mA and 100 mA) (except for voltage drop due to cable extension) *1	PNP transistor output, load current: 100 mA max., Residual voltage: 2 V max. (except for voltage drop due to cable extension) *1	
Output operation mode		Light-ON *2		
Input voltage		22.5 to 24 VDC: Emitter OFF (source current: 3 mA max.) Open or 0 to 2.5 V: Emitter ON (leakage current: 0.1 mA max.) *1	21.5 to 24 VDC: Emitter OFF (source current: 3 mA max.) Open or 0 to 2.5 V: Emitter ON (leakage current: 0.1 mA max.) *1	
Indicators		Emitter: Emitting (orange); Receiver: Operation (orange), Stable (green)	Emitter: Emitting (orange); Receiver: Output OFF (red), Output ON (green)	
Test functions		External test (light emission stop function by test input)		
Connection method		Pre-wired cable (2 m)	M12 connector	
Protective circuits		Power supply/output reverse connection protection, load short-circuit protection	Output reverse connection protection, load short-circuited protection	
Ambient temperature		Operating: -10 to 55°C Storage: -10 to 70°C (with no icing or condensation)	Operating: -20 to 55°C Storage: -30 to 70°C (with no icing or condensation)	
Ambient humidity		Operating: 35% to 85%, storage: 35% to 95% (with no icing or condensation)		
Ambient operating light intensity		Incandescent lamp: 3000 lx max (light intensity on the receiver surface). Sunlight: 10,000 lx max (light intensity on the receiver surface).		
Insulation resistance		20 MΩ min. (at 500 VDC)		
Dielectric strength		1000 VAC 50/60 Hz 1 min		
Degree of protection		IP67 (IEC standard)		
Vibration resistance	Operating limit	10 to 55 Hz, double amplitude: 0.7 mm, 50 min each in the X, Y, and Z directions		
	Malfunction	10 to 55 Hz, double amplitude: 1.5 mm, 2 h each in the X, Y, and Z directions		
Shock resistance	Operating limit	100 m/s ² , 1000 times in the X, Y, and Z directions		
	Malfunction	500 m/s ² , 3 times each in the X, Y, and Z directions		
Material		Case: Polybutylene terephthalate	Case: ABS	Case: Brass
Weight (packed state)		Approx. 120 g (for one set including 2-m cable)	Approx. 150 g (for one set including 2-m cable)	Approx. 125 g (for one set including only Sensor)
Accessories		Operation manual	Operation manual, nuts for mounting Emitter/Receiver (2 each)	
Applicable standards	Sensor only	IEC 60947-5-3 (PDF-D) EN ISO13849-1 (PLC/ Safety Category 1)		---
	Sensor connected to G9SP	IEC(EN)61496-1 Type2 ESPE *3 IEC(prEN)61496-2 Type2 AOPD *4 EN ISO13849-1 (PLC/Safety Category 2)		---
Switching element category (from IEC60947-5-3)		DC13 (control of electromagnetic load)	---	

*1. Connect the Sensor to an G9SP to use it as a safety device or as part of a safety system.

*2. Depending on the wiring, this may turn ON when light is interrupted.

For your safety, be sure to connect the pink receiver wire (mode selection input) to 24 VDC to turn ON when light is incident.

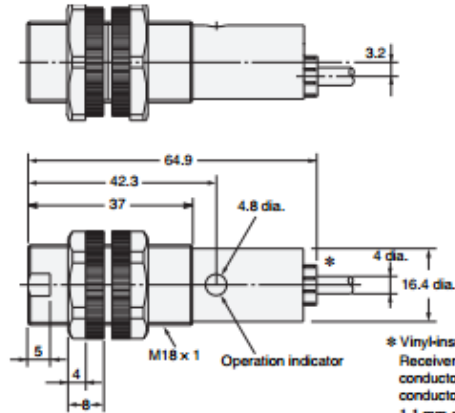
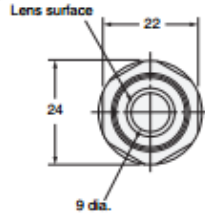
*3. Electro-Sensitive Protective Equipment

*4. Active Opto-electronic Protective Device

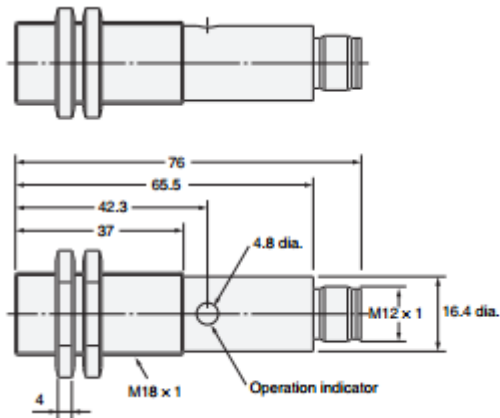
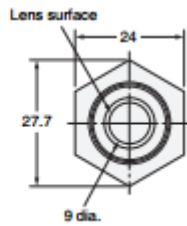
Dimensions

Product discontinuation

Pre-wired Cable with ABS Resin Case E3FS-10B4 2M

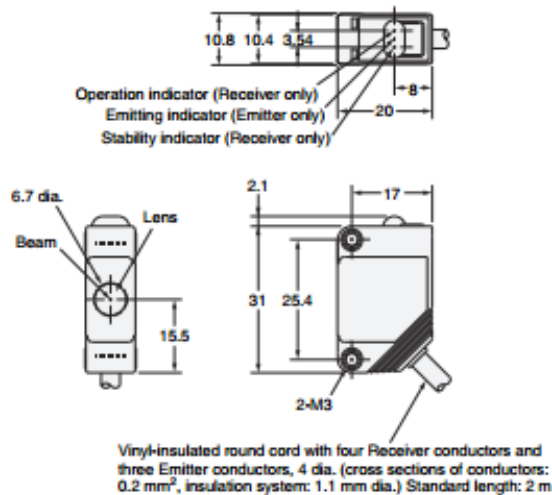


Connector with Metal Case E3FS-10B4-M1-M



Recommended replacement

Pre-wired Cable with ABS Resin Case E3ZS-T81A



Specifications in this product news are as of the issue date and are subject to change without notice. Only main changes in specifications are described in this document. Please be sure to read the relevant catalogs, datasheets, product specifications, instructions, and manuals for precautions and necessary information when using products.