

Grooved-type Photoelectric Sensor

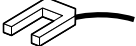
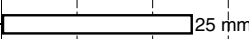
E3Z-G

- Grooved design eliminates the need for optical axis adjustment.
- Two-axis models also available.
- Ideal for detection and positioning for cranes and conveyor systems in automated warehouses.



Ordering Information

■ Sensor Unit

Sensing method	Appearance	Connection method	Sensing distance	Number of optical axes	Model	
					NPN output	PNP output
Through-beam		Pre-wired (0.5/2 m)		1	E3Z-G61	E3Z-G81
		Junction connector			E3Z-G61-M3J	E3Z-G81-M3J
		Pre-wired (0.5/2 m)		2	E3Z-G62	E3Z-G82
		Junction connector			E3Z-G62-M3J	E3Z-G82-M3J

Note: 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-G61 0.5M).

■ Accessories (Order Separately)

Sensor I/O Connector

Cable specifications	Appearance	Type of cable		Model
Standard cable	Straight 	2 m	Four-core cable	XS3F-M421-402-A
		5 m		XS3F-M421-405-A
	L-shape 	2 m		XS3F-M422-402-A
		5 m		XS3F-M422-405-A

Specifications

■ Ratings/Characteristics

Item	Sensing method	Through beam (grooved type)			
	Number of optical axes	1		2	
	NPN output	E3Z-G61	E3Z-G61-M3J	E3Z-G62	E3Z-G62-M3J
	PNP output	E3Z-G81	E3Z-G81-M3J	E3Z-G82	E3Z-G82-M3J
Sensing distance		25 mm (distance between arms of groove)			
Light source (wave length)		Infrared LED (940 nm)			
Power supply voltage		12 to 24 VDC±10% including 10% (p-p) max. ripple			
Current consumption		25 mA max.		40 mA max.	
Control output		Load power supply voltage: 26.4 VDC max. Load current: 100 mA max. (Residual voltage: 1 V max.) L-ON/D-ON selectable (With 2-axis models, L-ON or D-ON can be selected for each axis.)			
Circuit protection		Protection from reversed power supply connection, output short-circuits, and mutual interference.			
Response time		Operation or reset: 1 ms max.			

Item	Sensing method Number of optical axes NPN output PNP output	Through beam (grooved type)			
		1		2	
		E3Z-G61	E3Z-G61-M3J	E3Z-G62	E3Z-G62-M3J
		E3Z-G81	E3Z-G81-M3J	E3Z-G82	E3Z-G82-M3J
Ambient illumination (receiver side)		Incandescent lamp: 3,000 lux max. Sunlight: 10,000 lux max.			
Ambient temperature		Operating: -25 to 55°C/Storage: -40 to 70°C (with no icing or condensation)			
Ambient humidity		Operating: 35% to 85%/Storage: 35% to 95% (with no condensation)			
Insulation resistance		20 MΩ min. at 500 VDC between lead wires and case			
Dielectric strength		1,000 VAC, 50/60 Hz for 1 min between lead wires and case			
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 3 times each in X, Y, and Z directions			
Enclosure rating		IP64 (IEC60529)			
Connection method		Pre-wired cable (length: 2 m or 0.5 m)	Junction connector	Pre-wired cable (length: 2 m or 0.5 m)	Junction connector
Indicator		Operation indicator (orange)			
Weight (packed state)		Pre-wired models (with 2-m cable): 65 g Models with junction connectors: 30 g			
Material		ABS			
Accessories		Instruction sheet			

Operation

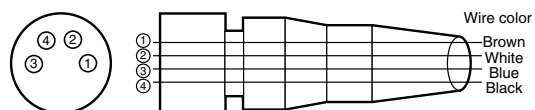
■ Output Circuits (NPN Output)

No. of optical axes/model	Output transistor status	Timing chart	Mode selector	Output circuit
1 axis E3Z-G61 E3Z-G61-M3J	Light ON		LIGHT ON (L/ON)	Connecting Pin Arrangement Note: Pin 2 is not used.
	Dark ON		DARK ON (D/ON)	
2 axes E3Z-G62 E3Z-G62-M3J	Light ON		LIGHT ON (L/ON)	Connector Pin Arrangement
	Dark ON		DARK ON (D/ON)	

■ Output Circuits (PNP Output)

No. of optical axes/model	Output transistor status	Timing chart	Mode selector	Output circuit
1 axis E3Z-G81 E3Z-G81-M3J	Light ON		LIGHT ON (L/ON)	Connector Pin Arrangement Note: Pin 2 is not used.
	Dark ON		DARK ON (D/ON)	
2 axes E3Z-G82 E3Z-G82-M3J	Light ON		LIGHT ON (L/ON)	Connector Pin Arrangement
	Dark ON		DARK ON (D/ON)	

Structure of Sensor I/O Connector

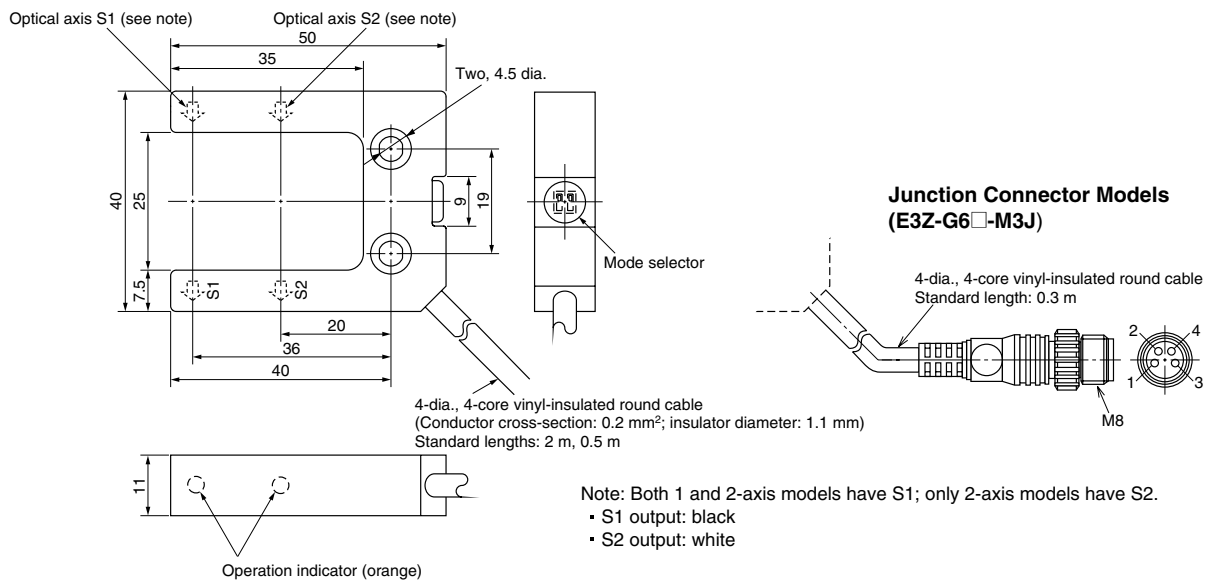


XS3F-M421-402-A
XS3F-M421-405-A
XS3F-M422-402-A
XS3F-M422-405-A

Classification	Wire color	Connector pin number	Use	
			1-axis models	2-axis models
DC	Brown	1	Power supply (+V)	
	White	2	---	Output 2 (S2)
	Blue	3	Power supply (0 V)	
	Black	4	Output	Output 1 (S1)

Note: Pin 2 of 1-axis models is not used.

Dimensions



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. E320-E1-1

In the interest of product improvement, specifications are subject to change without notice.

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