

**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-G81	E3Z-G61-M3J E3Z-G81-M3J	E3Z-G62 E3Z-G82	E3Z-G62-M3J 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		
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

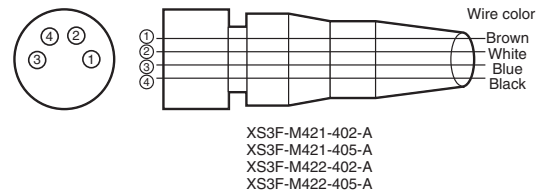
■ Output Circuits (NPN Output)

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)	
	Dark ON		DARK ON (D/ON)	<p>Connecting Pin Arrangement</p> <p>Note: Pin 2 is not used.</p>
2 axes E3Z-G62 E3Z-G62-M3J	Light ON		LIGHT ON (L/ON)	
	Dark ON		DARK ON (D/ON)	<p>Connector Pin Arrangement</p>

■ 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	Incident Interrupted Operation indicator (orange) ON OFF Output transistor ON OFF Load Operate (relay) Reset (Between brown and black)	LIGHT ON (L/ON)	<p>Connector Pin Arrangement</p> <p>Note: Pin 2 is not used.</p>
	Dark ON	Incident Interrupted Operation indicator (orange) ON OFF Output transistor ON OFF Load Operate (relay) Reset (Between brown and black)	DARK ON (D/ON)	<p>Connector Pin Arrangement</p> <p>Note: Pin 2 is not used.</p>
2 axes E3Z-G82 E3Z-G82-M3J	Light ON	Incident Interrupted Operation indicator (orange) ON OFF Output transistor ON OFF Load Operate (relay) Reset (Between brown and black)	LIGHT ON (L/ON)	<p>Connector Pin Arrangement</p>
	Dark ON	Incident Interrupted Operation indicator (orange) ON OFF Output transistor ON OFF Load Operate (relay) Reset (Between brown and black)	DARK ON (D/ON)	<p>Connector Pin Arrangement</p>

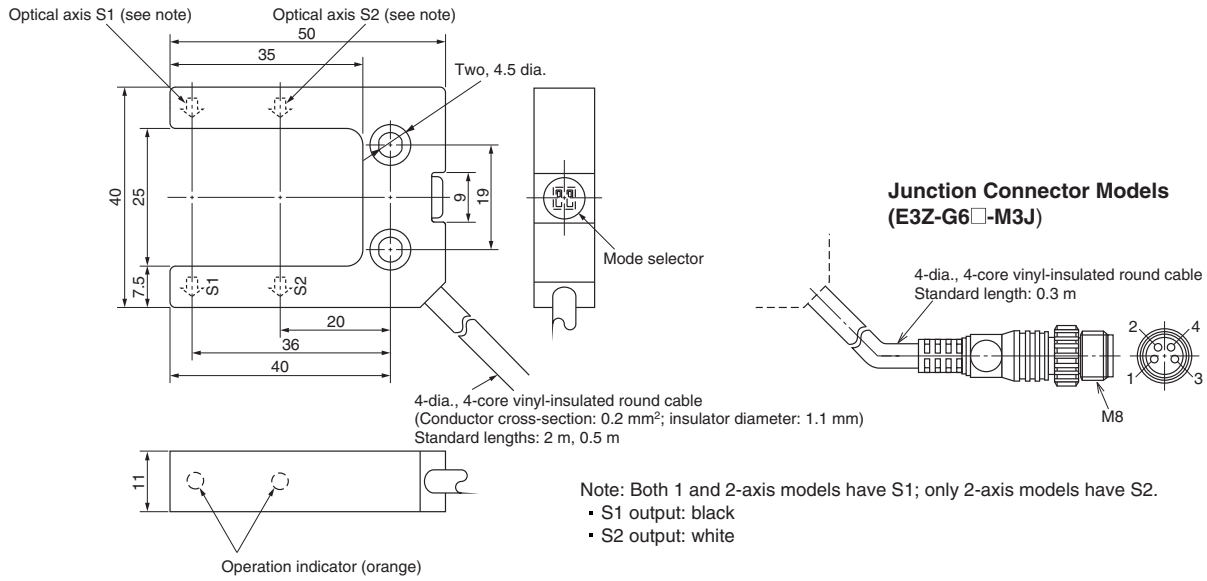
Structure of Sensor I/O Connector



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.**

OMRON Corporation

Industrial Automation Company

Industrial Sensors Division
 Sensing Devices and Components Division H.Q.
 Shiokoji Horikawa, Shimogyo-ku
 Kyoto, 600-8530 Japan
 Tel: (81)75-344-7068/Fax: (81)75-344-7107

Printed in Japan
 0501-1M (A)