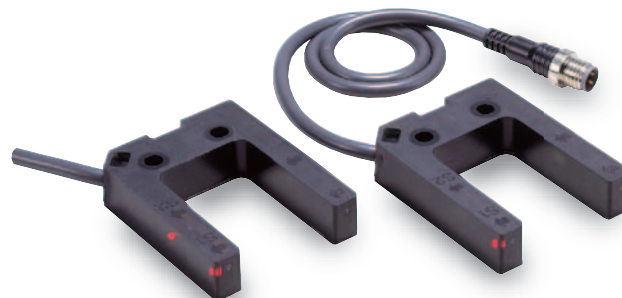


# E3Z-G

## Photoelectric Sensor with Grooved Design and Easy Settings



- Groove-type Sensor with groove width of 25 mm.
- Models are available with one or two light axes.
- Models are available with M8 pre-wired connectors.



Be sure to read *Safety Precautions* on page 4.

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 4.)

Infrared light

Sensing method	Appearance	Connection method	Sensing distance	No. of optical axes	Model	
					NPN output	PNP output
Through-beam		Pre-wired (2 m)	25 mm	1	E3Z-G61 2M *1 *2	E3Z-G81 2M *1 *2
		Pre-wired Connector (M8, 4 pins)			E3Z-G61-M3J 0.3M	E3Z-G81-M3J 0.3M
		Pre-wired (2 m)		2	E3Z-G62 2M *1	E3Z-G82 2M *1
		Pre-wired Connector (M8, 4 pins)			E3Z-G62-M3J 0.3M	E3Z-G82-M3J 0.3M

\*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-G61-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-G61-M1TJ 0.3M). The cable is 0.3 m long.

## Accessories (Order Separately)

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

(Models with Pre-wired 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 cable		2 m	XS3F-M421-402-A
		5 m	XS3F-M421-405-A
		2 m	XS3F-M422-402-A
		5 m	XS3F-M422-405-A

Note: Refer to *Introduction to Sensor I/O Connectors* for details.

### Protective Bracket

A Protective Bracket is not provided with the Sensor. Order a Protective Bracket separately if required. (Refer to *Dimensions* on E39-L/E39-S/E39-R)

Appearance	Model	Applicable model
	E39-L149	E3Z-G

## Ratings and Specifications

Number of optical axes		1	2
Item	Model	E3Z-G61/E3Z-G61-M3J	E3Z-G62/E3Z-G62-M3J
	NPN output		
		E3Z-G81/E3Z-G81-M3J	E3Z-G82/E3Z-G82-M3J
		PNP output	
<b>Sensing distance (distance between arms of groove)</b>		25 mm	
<b>Standard sensing object</b>		Opaque, 1.5-mm dia. min.	
<b>Light source (wavelength)</b>		Infrared LED (940 nm)	
<b>Power supply voltage</b>		12 to 24 VDC±10%, ripple (p-p): 10% max.	
<b>Current consumption</b>		25 mA max.	40 mA max.
<b>Control output</b>		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 selectable	
<b>Protection circuits</b>		Reversed power supply polarity protection, Output short-circuit protection, and Mutual interference prevention	
<b>Response time</b>		Operate or reset: 1 ms max.	
<b>Ambient illumination (Receiver side)</b>		Incandescent lamp: 3,000 lx max. Sunlight: 10,000 lx max.	
<b>Ambient temperature range</b>		Operating: -25 to 55°C, Storage: -40 to 70°C (with no icing or condensation)	
<b>Ambient humidity range</b>		Operating: 35% to 85%, Storage: 35% to 95% (with no condensation)	
<b>Insulation resistance</b>		20 MΩ min. at 500 VDC between lead wires and case	
<b>Dielectric strength</b>		1,000 VAC, 50/60 Hz for 1 min between lead wires and case	
<b>Vibration resistance</b>		Destruction: 10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions	
<b>Shock resistance</b>		Destruction: 500 m/s <sup>2</sup> 3 times each in X, Y, and Z directions	
<b>Degree of protection</b>		IP64 (IEC 60529)	
<b>Connection method</b>		Pre-wired cable (standard length: 2 m and 0.5 m)/Pre-wired Connector (standard length: 300 mm)	
<b>Indicator</b>		Operation indicator (orange)	
<b>Weight (packed state)</b>	<b>Pre-wired (with 2-m cable)</b>	Approx. 65 g	
	<b>Pre-wired Connectors</b>	Approx. 30 g	
<b>Material</b>	<b>Case</b>	ABS (Acrylonitril Butadiene Styrene)	
<b>Accessories</b>		Instruction manual	

I/O Circuit Diagrams

NPN Output

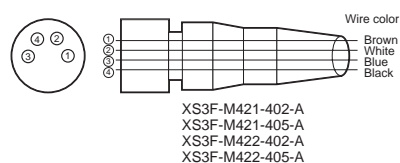
No. of optical axes/model	Operation mode	Timing charts	Operation selector	Output circuit
1 axis E3Z-G61 E3Z-G61-M3J	Light-ON	<p>Incident light ON, No incident light OFF, Operation indicator (orange) ON, Control output ON, Output transistor OFF, Load Operate (e.g., relay) Reset. (Between brown ① and black ④ leads)</p>	L side (LIGHT ON)	<p>Connector Pin Arrangement</p> <p>Pin 2 is not used.</p>
	Dark-ON	<p>Incident light OFF, No incident light ON, Operation indicator (orange) OFF, Control output ON, Output transistor OFF, Load Operate (e.g., relay) Reset. (Between brown ① and black ④ leads)</p>	D side (DARK ON)	<p>Connector Pin Arrangement</p> <p>Pin 2 is not used.</p>
2 axes E3Z-G62 E3Z-G62-M3J	Light-ON	<p>Incident light ON, No incident light OFF, Operation indicator (orange) OFF, Control output ON, Output transistor OFF, Load Operate (e.g., relay) Reset. (Between brown ① and black ④ (white ②) leads)</p>	L side (LIGHT ON)	<p>Connector Pin Arrangement</p> <p>Pin 2 is not used.</p>
	Dark-ON	<p>Incident light OFF, No incident light ON, Operation indicator (orange) OFF, Control output ON, Output transistor OFF, Load Operate (e.g., relay) Reset. (Between brown ① and black ④ (white ②) leads)</p>	D side (DARK ON)	<p>Connector Pin Arrangement</p> <p>Pin 2 is not used.</p>

PNP Output

No. of optical axes/model	Operation mode	Timing charts	Operation selector	Output circuit
1 axis E3Z-G81 E3Z-G81-M3J	Light-ON	<p>Incident light ON, No incident light OFF, Operation indicator (orange) OFF, Control output ON, Output transistor OFF, Load Operate (e.g., relay) Reset. (Between blue ③ and black ④ leads)</p>	L side (LIGHT ON)	<p>Connector Pin Arrangement</p> <p>Pin 2 is not used.</p>
	Dark-ON	<p>Incident light OFF, No incident light ON, Operation indicator (orange) OFF, Control output ON, Output transistor OFF, Load Operate (e.g., relay) Reset. (Between blue ③ and black ④ leads)</p>	D side (DARK ON)	<p>Connector Pin Arrangement</p> <p>Pin 2 is not used.</p>
2 axes E3Z-G82 E3Z-G82-M3J	Light-ON	<p>Incident light ON, No incident light OFF, Operation indicator (orange) OFF, Control output ON, Output transistor OFF, Load Operate (e.g., relay) Reset. (Between blue ③ and black ④ (white ②) leads)</p>	L side (LIGHT ON)	<p>Connector Pin Arrangement</p> <p>Pin 2 is not used.</p>
	Dark-ON	<p>Incident light OFF, No incident light ON, Operation indicator (orange) OFF, Control output ON, Output transistor OFF, Load Operate (e.g., relay) Reset. (Between blue ③ and black ④ (white ②) leads)</p>	D side (DARK ON)	<p>Connector Pin Arrangement</p> <p>Pin 2 is not used.</p>

## Plugs (Sensor I/O Connectors)

### M8 connector



### Pin arrangement

Classification	Wire color	Connector pin No.	Application	
			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.

## Safety Precautions

Refer to *Warranty and Limitations of Liability*.

### ⚠ WARNING

This product is not designed or rated for ensuring safety of persons either directly or indirectly. Do not use it for such purposes.



### Precautions for Correct Use

- Do not use the product in atmospheres or environments that exceed product ratings.
- The degree of protection for this Product is IP64 (IEC). The degree of protection for other models in the E3Z Series is IP67.

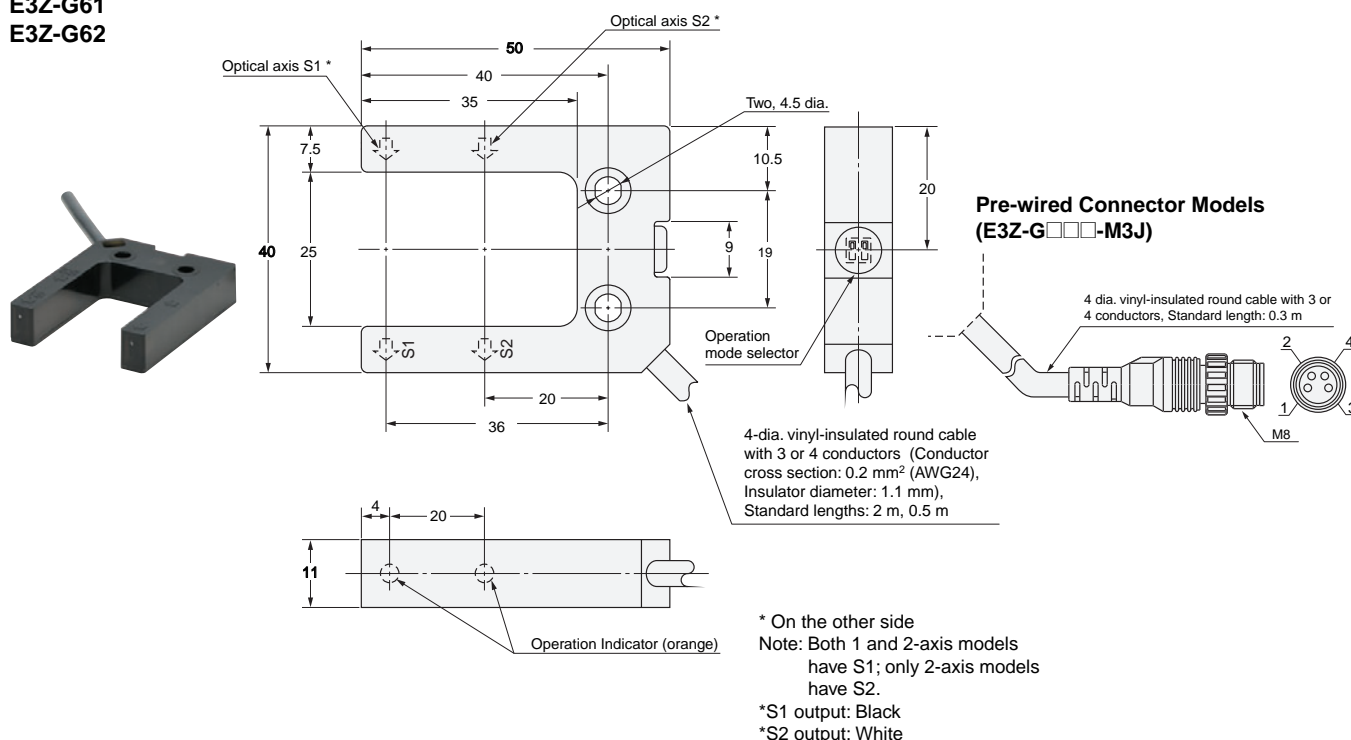
## Dimensions

(Unit: mm)

Tolerance class IT16 applies to dimensions in this datasheet unless otherwise specified.

## Sensors

E3Z-G61  
E3Z-G62



## Accessories (Order Separately)

### Mounting Brackets

Refer to E39-L for details.

### Sensor I/O Connectors

Refer to XS3F for details.

## Read and Understand This Catalog

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- Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

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