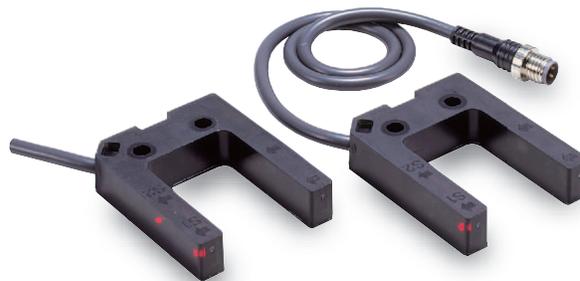


# E3Z-G

## Grooved Design Eliminates Optical Axis Adjustment

- One- and two-axis models available.
- Provides mutual interference prevention and EN standard compliance.



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



## 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)		1	E3Z-G61 2M *	E3Z-G81 2M
		Pre-wired Connector (M8, 4 pins)			E3Z-G61-M3J 0.3M	E3Z-G81-M3J 0.3M
		Pre-wired (2 m)		2	E3Z-G62 2M *	E3Z-G82 2M
		Pre-wired Connector (M8, 4 pins)			E3Z-G62-M3J 0.3M	E3Z-G82-M3J 0.3M

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).

\* The following table shows the model numbers of e-CON Pre-wired Connectors that are available. The Ratings and Specifications are the same as those for the E3Z-G61/G62.

No. of optical axes	Cable length	Model
1 axis	0.3 m	E3Z-G61-ECON 0.3M
	0.5 m	E3Z-G61-ECON 0.5M
	2 m	E3Z-G61-ECON 2M
2 axes	0.3 m	E3Z-G62-ECON 0.3M
	0.5 m	E3Z-G62-ECON 0.5M
	2 m	E3Z-G62-ECON 2M

## Accessories (Order Separately)

**Sensor I/O Connectors** (Refer to *Dimensions* on XS3.)

Cable specification	Appearance	Type of cable	Model
Standard cable	Straight	2 m	XS3F-M421-402-A
		5 m	XS3F-M421-405-A
	L-shape	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** (Refer to *Dimensions* on E39-L/F39-L/E39-S/E39-R)

Appearance	Model	Applicable model
	E39-L149	E3Z-G

## Ratings and Specifications

Number of optical axes		1	2
Item	Model		
	NPN output	E3Z-G61/E3Z-G61-M3J	E3Z-G62/E3Z-G62-M3J
	PNP output	E3Z-G81/E3Z-G81-M3J	E3Z-G82/E3Z-G82-M3J
<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

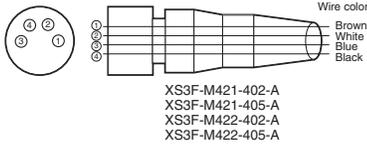
No. of optical axes/model	Operation mode	Timing charts	Operation selector	Output circuit
1 axis E3Z-G61 E3Z-G61-M3J	Light-ON	<p>Incident light ON, No incident light OFF, Operation indicator (orange) ON, Control output ON, Output transistor OFF, Load Operate ON, Reset OFF. (Between brown and black leads)</p>	L side (LIGHT ON)	<p>Connector Pin Arrangement:  e-CON Connector Pin Arrangement: </p>
	Dark-ON	<p>Incident light OFF, No incident light ON, Operation indicator (orange) OFF, Control output OFF, Output transistor ON, Load Operate OFF, Reset ON. (Between brown and black leads)</p>	D side (DARK ON)	<p>Connector Pin Arrangement:  e-CON Connector Pin Arrangement: </p>
2 axes E3Z-G62 E3Z-G62-M3J	Light-ON	<p>Incident light ON, No incident light OFF, Operation indicator (orange) ON, Control output ON, Output transistor OFF, Load Operate ON, Reset OFF. (Between brown and black (white) leads)</p>	L side (LIGHT ON)	<p>Connector Pin Arrangement:  e-CON Connector Pin Arrangement: </p>
	Dark-ON	<p>Incident light OFF, No incident light ON, Operation indicator (orange) OFF, Control output OFF, Output transistor ON, Load Operate OFF, Reset ON. (Between brown and black (white) leads)</p>	D side (DARK ON)	<p>Connector Pin Arrangement:  e-CON Connector Pin Arrangement: </p>

## PNP Output

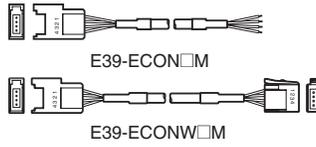
No. of optical axes/model	Operation mode	Timing charts	Operation selector	Output circuit
1 axis E3Z-G81 E3Z-G81-M3J	Light-ON	<p>Incident light ON, No incident light OFF, Operation indicator (orange) ON, Control output ON, Output transistor OFF, Load Operate ON, Reset OFF. (Between blue and black leads)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

Plugs (Sensor I/O Connectors)

M8 connector



e-CON 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.

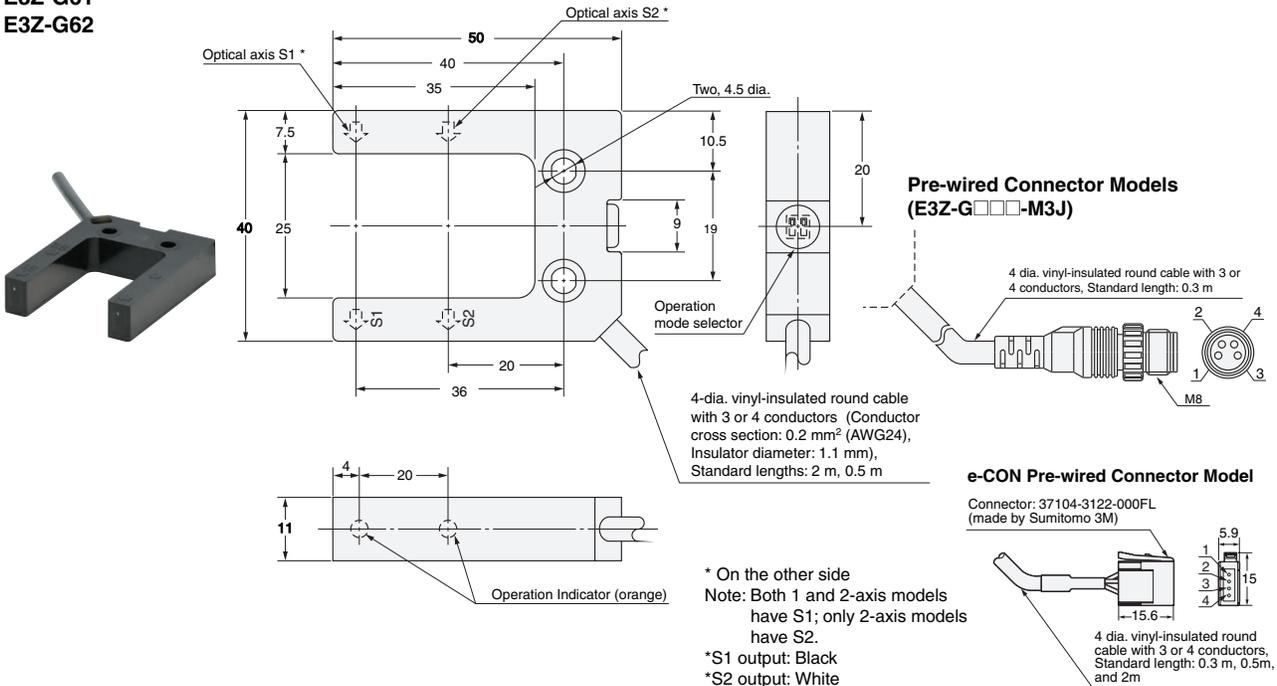
Dimensions

(Unit: mm)

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

Sensors

E3Z-G61  
E3Z-G62



\* On the other side  
Note: Both 1 and 2-axis models have S1; only 2-axis models have S2.  
\*S1 output: Black  
\*S2 output: White

Accessories (Order Separately)

Mounting Brackets

Refer to E39-L for details.

Sensor I/O Connectors

Refer to XS3F and E3Z (E39-ECON□) 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.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCTS ARE PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

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