


Grooved Design Eliminates the Need For Optical Axis Adjustment

- One or two axes models available
- Ideal for slowdown, then stop applications
- CE and UL approved
- Prewired or connector versions
- Separate outputs on two-axes models





Ordering Information

■ Sensor Unit

Sensing method	Appearance	Connection method	Sensing distance	Number of optical axes	Part number	
					NPN output	PNP output
Through-beam		Prewired (2 m)	25 mm	1	E3Z-G61	E3Z-G81
		Pigtail with M8 connector			E3Z-G61-M3J	E3Z-G81-M3J
		Prewired (2 m)		2	E3Z-G62	E3Z-G82
		Pigtail with M8 connector			E3Z-G62-M3J	E3Z-G82-M3J

■ Accessories (Order Separately)

Sensor I/O Connector

Cable specifications	Appearance	Type of cable		Part number
Standard cable	Straight 	2 m	Four-conductor cable	XS3F-M421-402-A
		5 m		XS3F-M421-405-A
	90° right angle 	2 m		XS3F-M422-402-A
		5 m		XS3F-M422-405-A

Specifications

■ Ratings/Characteristics

Photoelectric sensor type	Through beam (grooved type)			
No. of optical axes:	1 optical axis		2 optical axes	
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 (0.98 in) distance between arms of groove			
Light source (wave length)	Infrared LED (940 nm)			
Power supply voltage	12 to 24 VDC ±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 switch-selectable (With 2-axes models, L-ON or D-ON can be selected for each axis.)			
Circuit protection	Protection from reversed power supply connection, output short-circuit, and mutual interference.			
Response time	Operation or reset: 1 ms max.			
Minimum object size	1.2 mm dia.			
Repeatability	0.05 mm			
Excess gain	3 to 6 x			

Specifications table - continued from previous page.

Photoelectric sensor type	Through beam (grooved type)			
No. of optical axes:	1 optical axis		2 optical axes	
NPN output:	E3Z-G61	E3Z-G61-M3J	E3Z-G62	E3Z-G62-M3J
PNP output:	E3Z-G81	E3Z-G81-M3J	E3Z-G82	E3Z-G82-M3J
Switching frequency	500 Hz max.			
Ambient illumination (receiver side)	Incandescent lamp: 3,000 lux max. Sunlight: 10,000 lux max.			
Ambient temperature	Operating: -25°C to 55°C (-13 to 131°F) Storage: -40°C to 70°C (-40°F to 158°F) 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 minute between lead wires and case			
Vibration resistance	10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions			
Shock resistance	500 m/s ² 3 times each in X, Y, and Z directions			
Enclosure rating	IP64 (IEC60529)			
Approvals	CE, UL			
Connection method	Prewired cable length: 2 m	Pigtail with M8 connector	Prewired cable length: 2 m	Pigtail with M8 connector
Indicator	Operation indicator (orange)			
Weight (packed)	Prewired models (with 2-m cable): 65 g (2.29 oz) Models with junction connectors: 30 g (1.06 oz)			
Material	ABS housing			
Accessories	Instruction sheet			

Operation

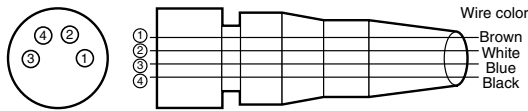
■ Output Circuits (NPN Output)

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

Structure of Sensor I/O Connector

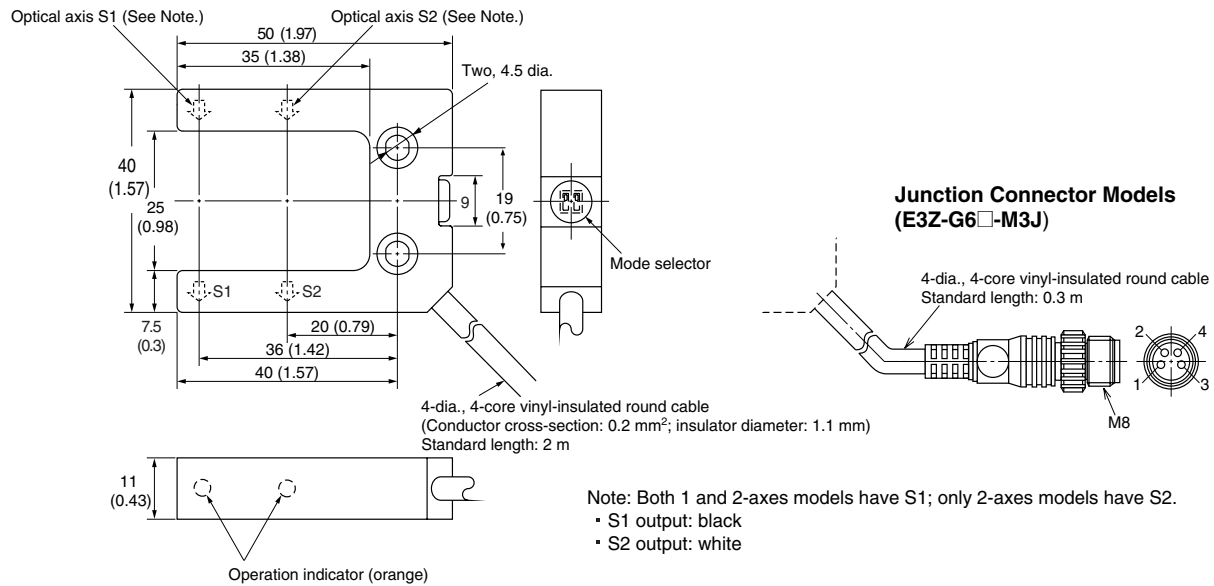


XS3F-M421-402-A
 XS3F-M421-405-A
 XS3F-M422-402-A
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Classification	Wire color	Connector pin number	Use	
			1-axis models	2-axes models
DC	Brown	1	Power supply (+V)	
	White	2	Not used	Output 2 (S2)
	Blue	3	Power supply (0 V)	
	Black	4	Output	Output 1 (S1)

Dimensions

■ Sensor



ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

OMRON

OMRON ELECTRONICS LLC

One East Commerce Drive
Schaumburg, IL 60173

1-800-55-OMRON

OMRON ON-LINE

Global - <http://www.omron.com>
USA - <http://www.omron.com/oei>
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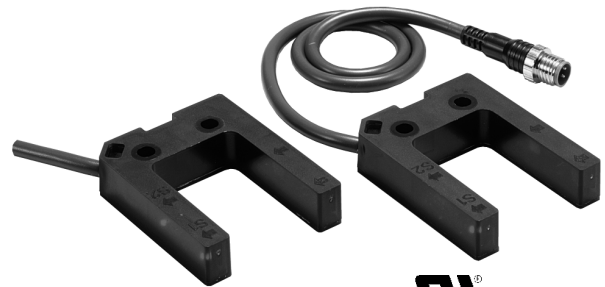
OMRON CANADA, INC.

885 Milner Avenue
Scarborough, Ontario M1B 5V8

416-286-6465


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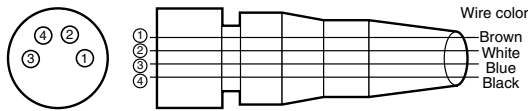
■ Output Circuits (NPN Output)

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)	<p style="text-align: center;">Connecting Pin Arrangement</p> <p style="text-align: center;">Note: Pin 2 is not used.</p>
	Dark ON		DARK ON (D/ON)	<p style="text-align: center;">Connector Pin Arrangement</p>
2 axes E3Z-G62 E3Z-G62-M3J	Light ON		LIGHT ON (L/ON)	<p style="text-align: center;">Connector Pin Arrangement</p>
	Dark ON		DARK ON (D/ON)	<p style="text-align: center;">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 (relay) Operate 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 (relay) Operate 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 (relay) Operate 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 (relay) Operate Reset (Between brown and black)	DARK ON (D/ON)	<p>Connector Pin Arrangement</p>

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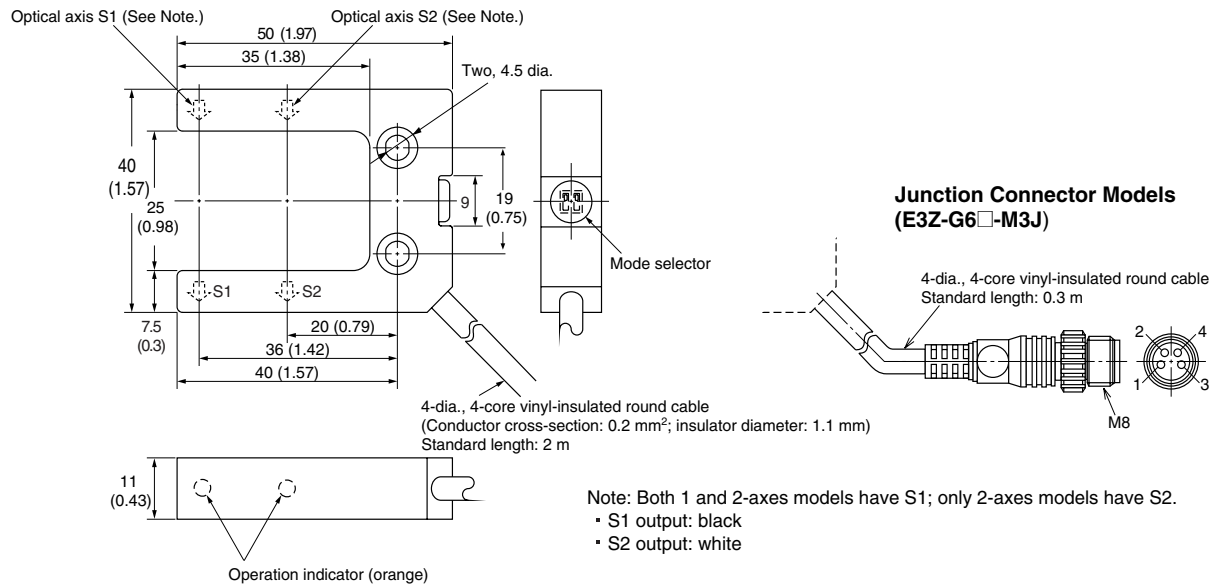


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OMRON ELECTRONICS LLC

One East Commerce Drive
Schaumburg, IL 60173

1-800-55-OMRON

OMRON ON-LINE

Global - <http://www.omron.com>
USA - <http://www.omron.com/oei>
Canada - <http://www.omron.com/oci>

OMRON CANADA, INC.

885 Milner Avenue
Scarborough, Ontario M1B 5V8
416-286-6465