

Photoelectric Sensor

E3JK

Small General-purpose Photoelectric Sensor with Built-in Power Supply

- Built-in amplifier accepts wide supply voltage range.
- Slim, space-saving construction measures only 50 x 50 x 17.4 mm.
- Relay outputs with long life expectancy and high switching capacity (3 A, 250 VAC).
- Polarized retroreflective type available for glossy or shiny object detection.



Ordering Information

Relay Output Types

Item		Through-beam (separate)	Retroreflective			Diffuse reflective
Model	Light-ON mode	E3JK-5M1	E3JK-R2M1	E3JK-R4M1	E3JK-R3M1-01	E3JK-DS30M1
	Dark-ON mode	E3JK-5M2	E3JK-R2M2	E3JK-R4M2	E3JK-R3M2-01	E3JK-DS30M2
Polarized light beam		---	Yes	No		---
Sensing distance		5 m	2.5 m	4 m	3 m	30 cm

DC Solid-state Output Types

Item		Through-beam (separate)	Retroreflective		Diffuse reflective
Model	Sink current to negative common	E3JK-5S3	E3JK-R2S3	E3JK-R4S3	E3JK-DS30S3
	Source current to positive common	---	E3JK-R2R3	---	---
Polarized light beam		---	Yes	No	---
Sensing distance		5 m	2.5 m	4 m	30 cm

Transistor Output Types

Item		Retroreflective
Model	Light-ON mode	E3JK-R2H1-G
	Dark-ON mode	E3JK-R2H2-G
Polarized light beam		Yes
Sensing distance		2.5 m

Specifications

■ Ratings/Characteristics

Amplifier Units

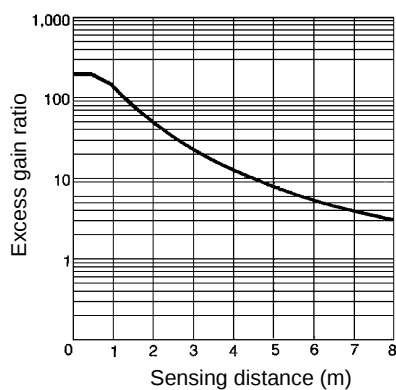
Item		E3JK-5 j j	E3JK-R2 j j	E3JK-R4 j j	E3JK-R3 j j	E3JK-DS30 j j	E3JK-R2H j -G
Power supply voltage		12 to 240 VDC ±10%, 24 to 240 VAC ±10%, 50/60 Hz			24 VDC/AC ±10%, ripple (p-p): 10% max., 50/60 Hz	12 to 240 VDC ±10%, 24 to 240 VAC ±10%, 50/60 Hz	10 to 30 VDC, ripple (p-p): 10% max.
Current consumption		3 W max.	2 W max.		1.5 W max.	2 W max.	40 mA max.
Sensing distance		5 m	2.5 m (see note 1), 3 m (see note 2)	4 m (see note 1), 5 m (see note 2)	3 m (see note 1), 4 m (see note 2)	30 cm	2.5 m (see note 1)
Differential travel		---				20% max.	---
Control output	Relay output	3 A max. at 250 VAC (cosφ = 1), 10 mA min. at 5 VDC					Transistor output: open collector (NPN/PNP): 100 mA at 30 VDC; Voltage drop: 1 V max.
	DC solid-state	100 mA at 48 VDC; leakage current: 0.1 mA max.					
Response time (ON, OFF)		30 ms max.					3 ms max.
Sensitivity		Fixed				Adjustable	Fixed
Operation mode		Light-ON or Dark-ON					
Indicators		Light (red)					
Enclosure rating		IEC IP64, NEMA 1, 2, 12					
Material		Plastic					
Light source		Infrared LED	Red LED			Infrared LED	Red LED
Ambient temperature		Operating: -25°C to 55°C (with no icing)					

Note: 1. With reflector E39-R1
2. With reflector E39-R2

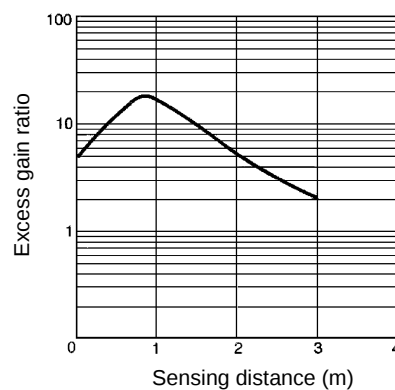
Engineering Data

Excess Gain Ratio

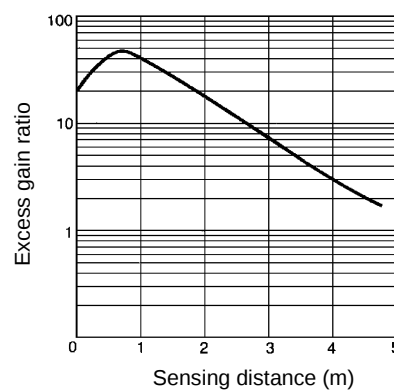
E3JK-5 j j



E3JK-R2 j j

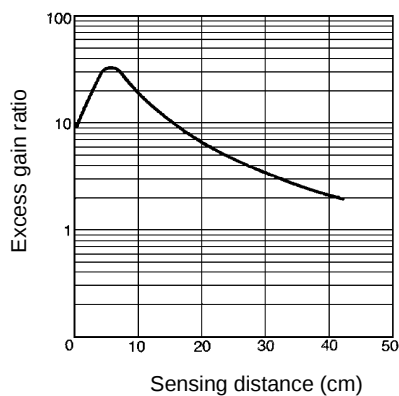


E3JK-R4 j j

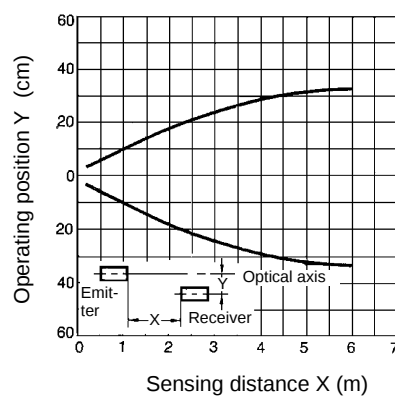


Operating Range

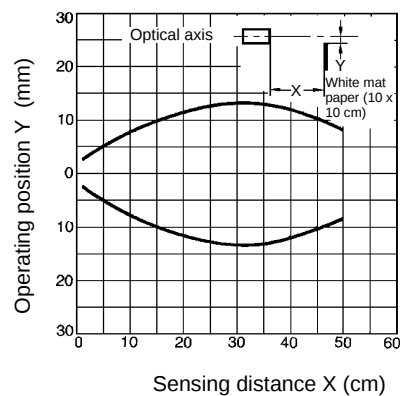
E3JK-DS30 j j



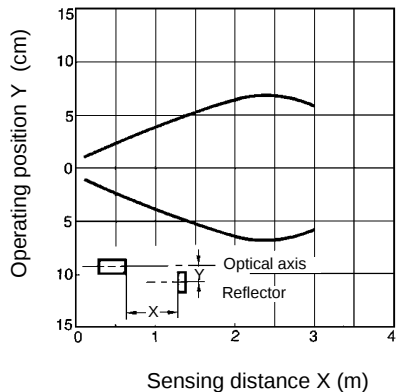
E3JK-5 j j



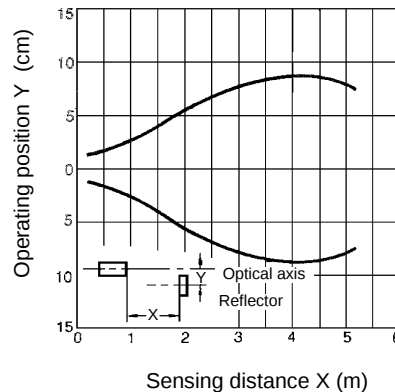
E3JK-DS30 j j



E3JK-R2 j j

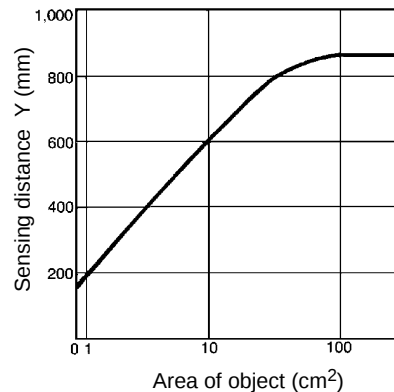


E3JK-R4 j j



Sensitivity

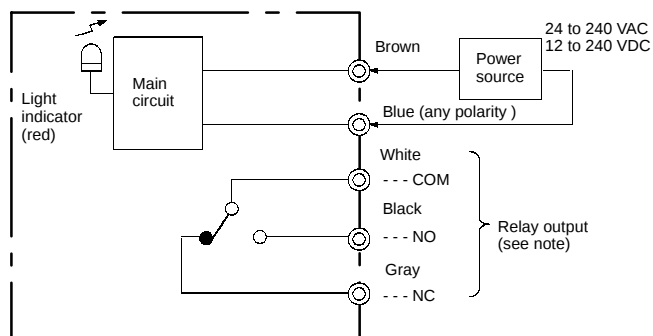
E3JK-DS30 j j



Operation

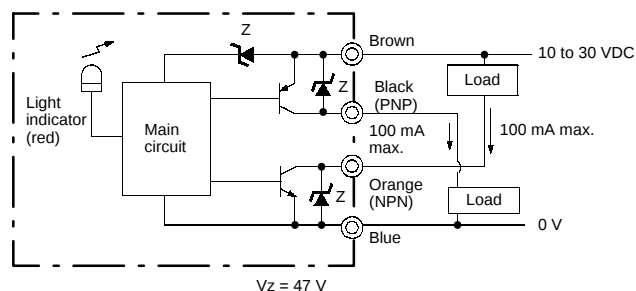
■ Output Circuits

Relay Output Types



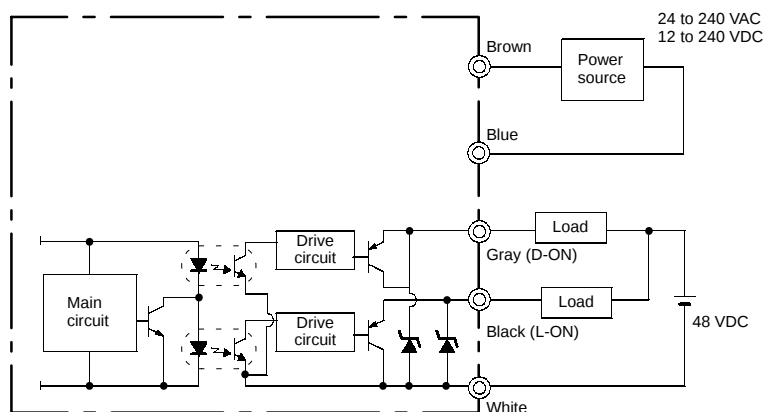
Note: Not provided to the emitter of the E3JK-5M j .

Transistor Output Types

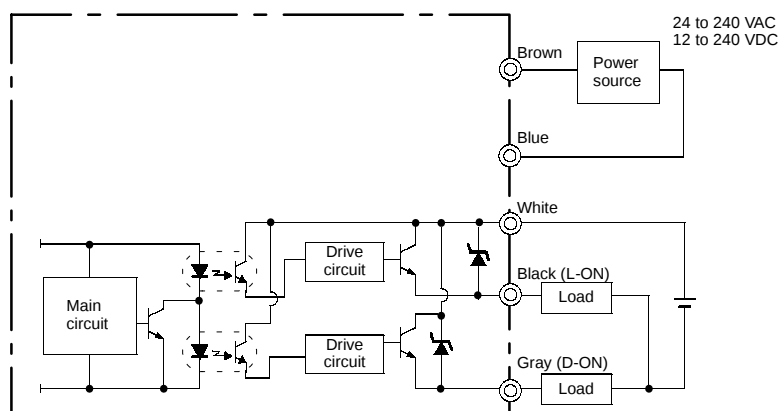


DC Solid-state Output Types

Negative Common

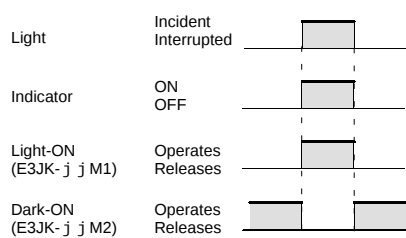


Positive Common

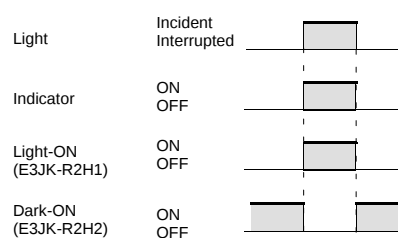


■ Timing Chart

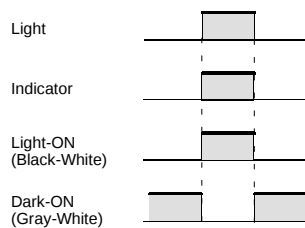
Relay Output Types



Transistor Output Types



DC Solid-state Output Types



Dimensions

Note: All units are in millimeters unless otherwise indicated.

E3JK-5 j j

Weight: approx. 360 g

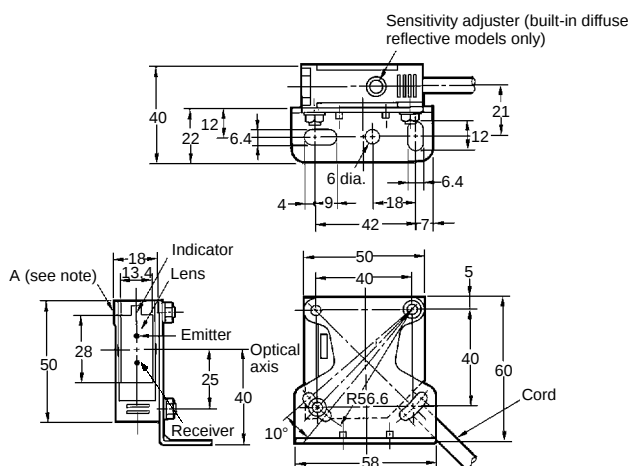
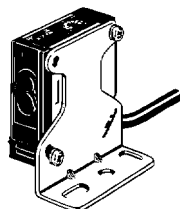
E3JK-R2 j j

E3JK-R3 j j

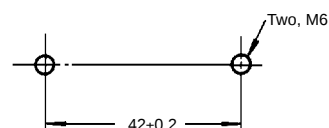
E3JK-R4 j j

E3JK-DS30 j j

Weight: approx. 190 g



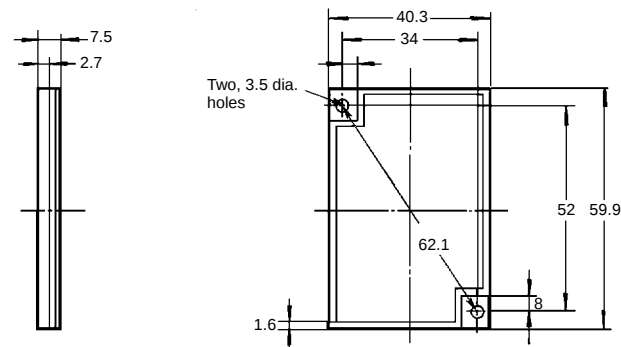
Mounting Holes



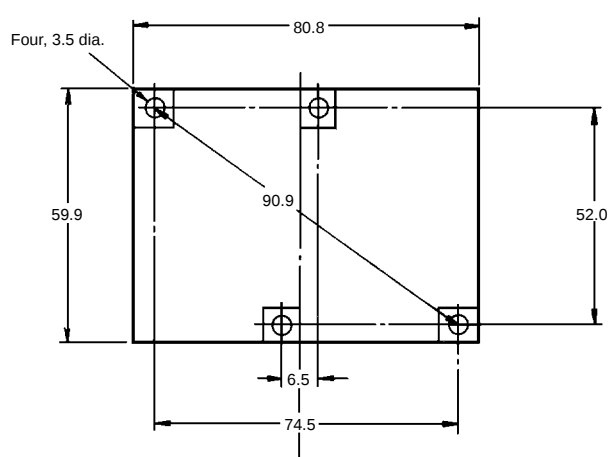
Note: The mounting bracket (provided with two M4 x 20 screws) can be connected to side A.

Reflectors

E39-R1 (Supplied with Retroreflective Types)



E39-R2 (Order Separately)



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. E027-E1-7B In the interest of product improvement, specifications are subject to change without notice.

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