

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.



<READ AND UNDERSTAND THIS CATALOG>

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.



Ordering Information

Relay Output Types

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

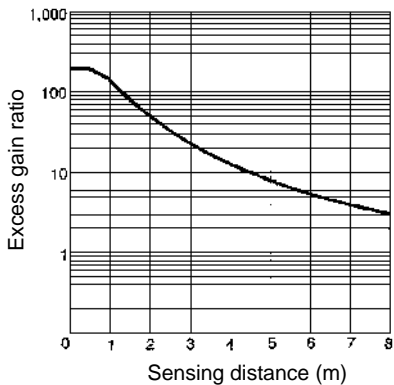
Item		E3JK-5□□	E3JK-R2□□	E3JK-R4□□	E3JK-DS30□□	E3JK-R2H□-G
Power supply voltage		12 to 240 VDC ±10%, 24 to 240 VAC ±10%, 50/60 Hz			12 to 240 VDC ±10%, 24 to 240 VAC ±10%, 50/60 Hz	10 to 30 VDC, ripple (p-p): 10% max.
Current consumption		3 W max.	2 W max.		2 W max.	40 mA max.
Sensing distance		5 m	2.5 m (see note 1), 3 m (see note 2)	4 m (see note 1), 5 m (see note 2)	30 cm	2.5 m (see note 1)
Hysteresis		---			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)	Relay output	30 ms max.				3 ms max.
	DC solid-state	10 ms max.	5 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

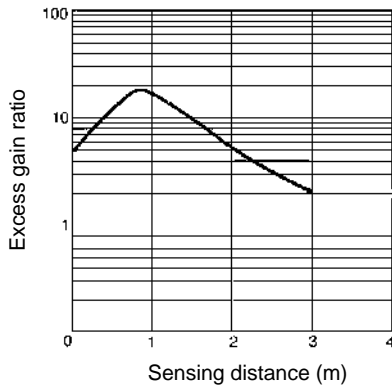
Engineering Data

Excess Gain Ratio

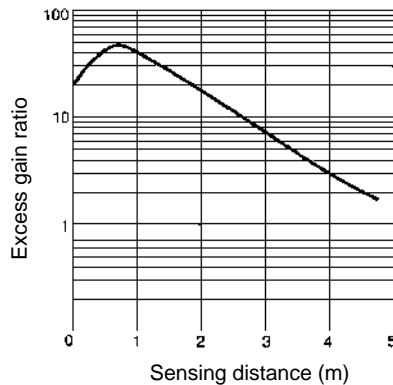
E3JK-5□□



E3JK-R2□□

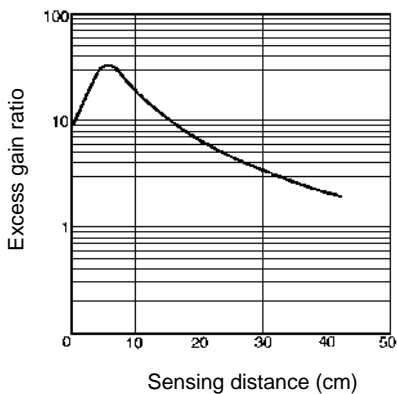


E3JK-R4□□

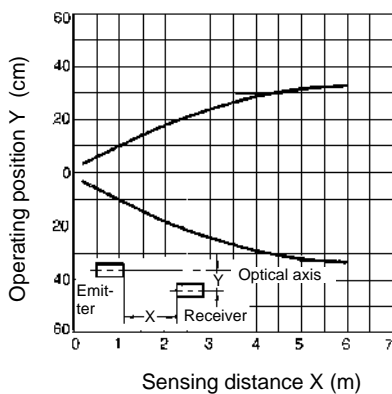


Operating Range

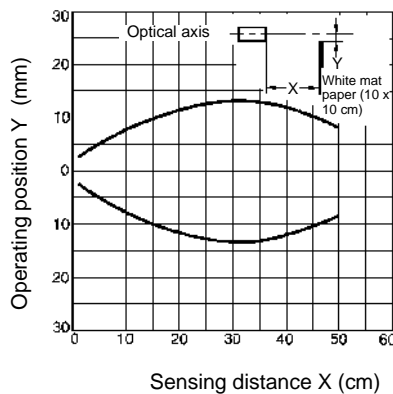
E3JK-DS30□□



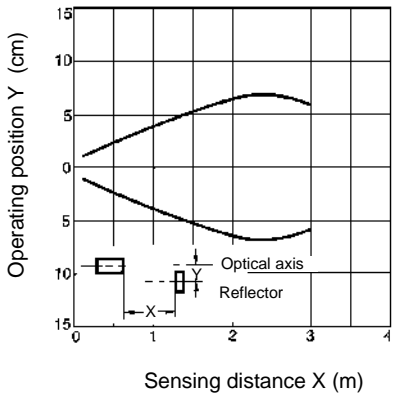
E3JK-5□□



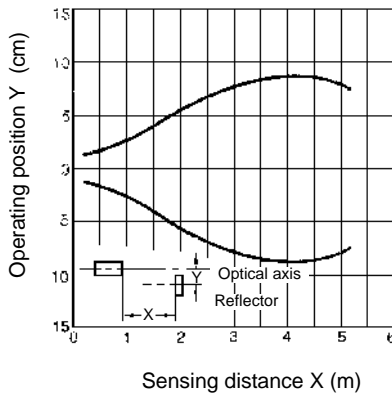
E3JK-DS30□□



E3JK-R2□□

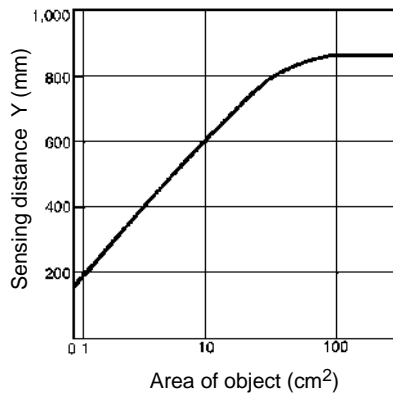


E3JK-R4□□



Sensitivity

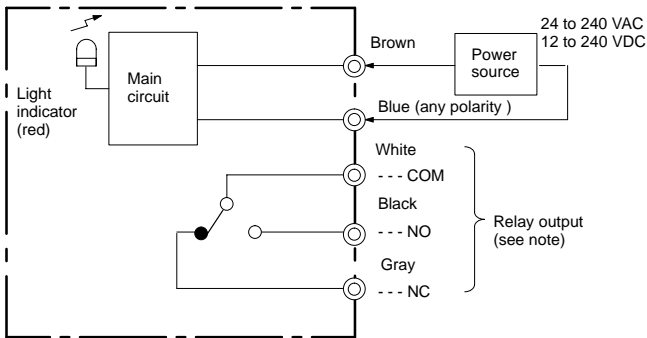
E3JK-DS30□□



Operation

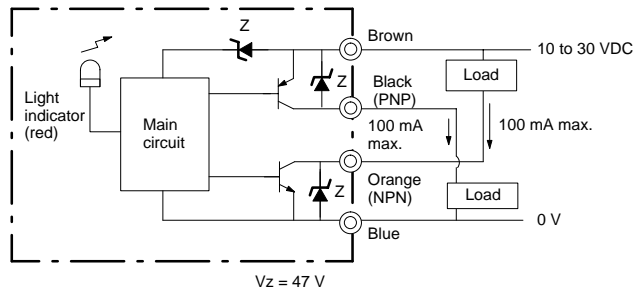
Output Circuits

Relay Output Types



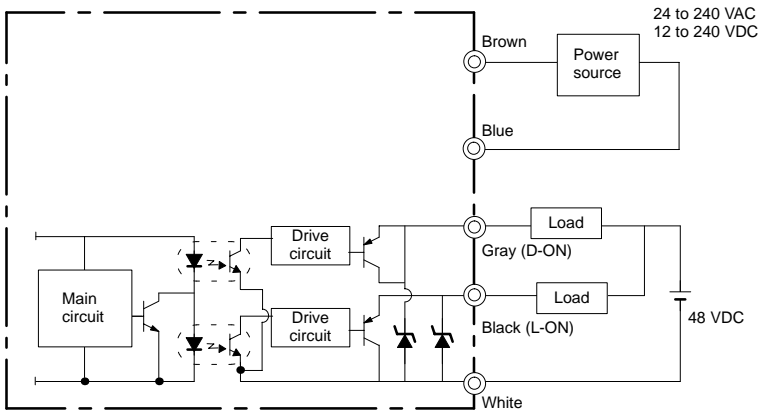
Note: Not provided to the emitter of the E3JK-5M□.

Transistor Output Types

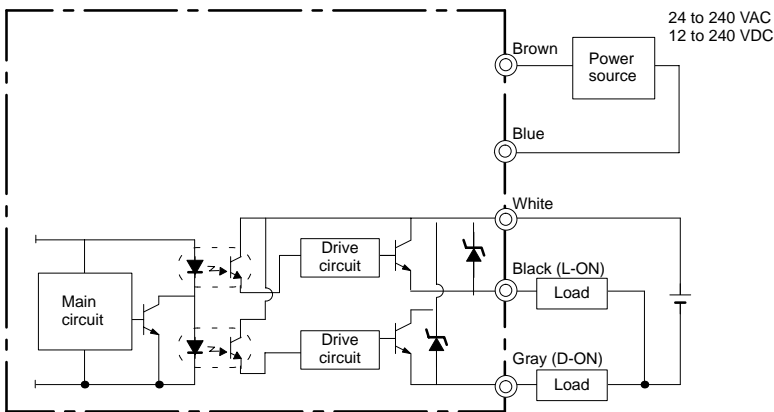


DC Solid-state Output Types

Negative Common

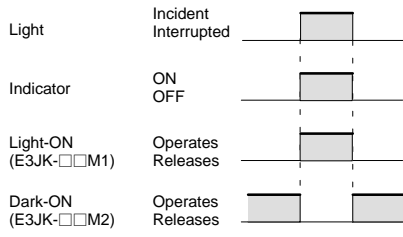


Positive Common

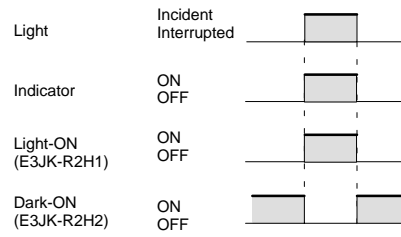


■ Timing Chart

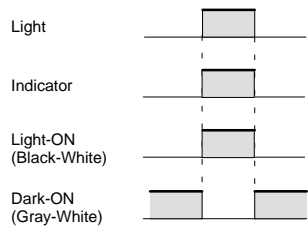
Relay Output Types



Transistor Output Types



DC Solid-state Output Types



Dimensions

Note: All units are in millimeters unless otherwise indicated.

E3JK-5□□

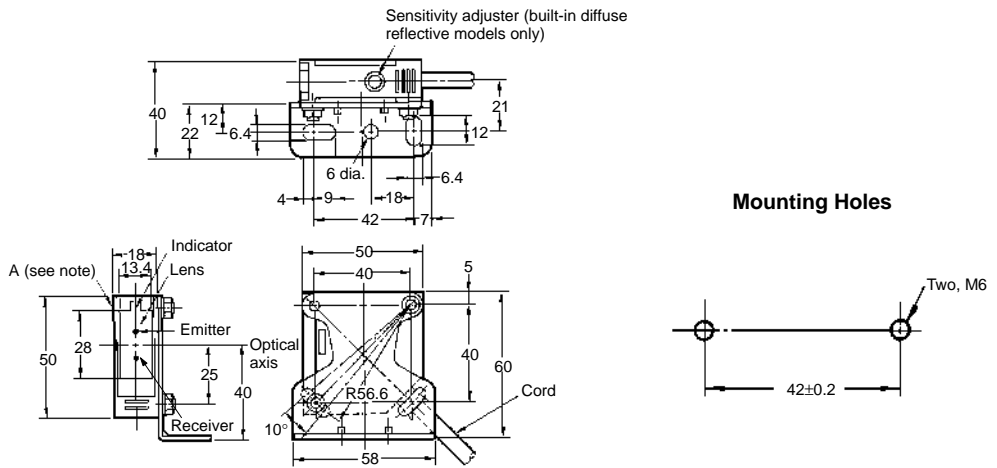
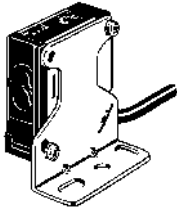
Weight: approx. 360 g

E3JK-R2□□

E3JK-R4□□

E3JK-DS30□□

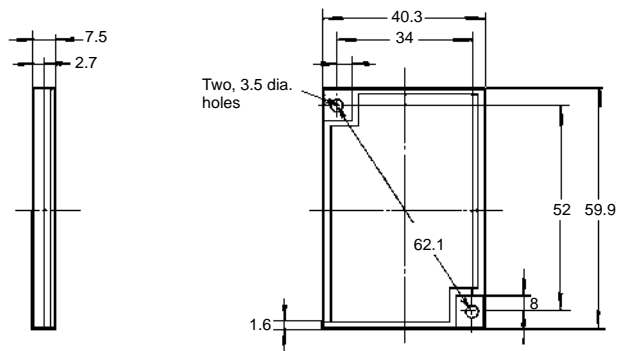
Weight: approx. 190 g



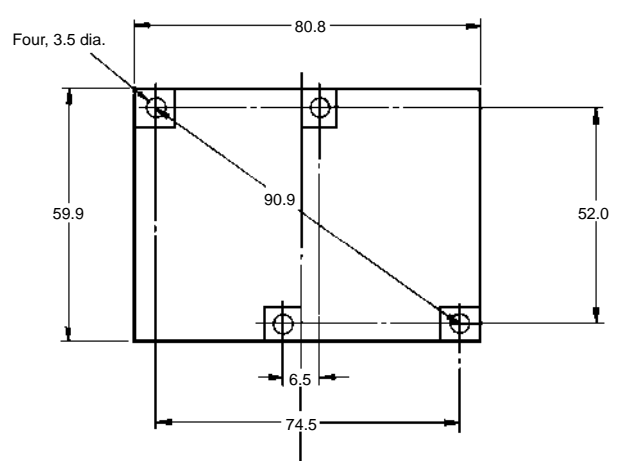
Note: The mounting bracket (provided with two M4 x 20 screws) can be connected to side A.

Reflectors

E39-R1 (Supplied with Retroreflective Types)



E39-R2 (Order Separately)



Warranties, Limitations of Liability

■ WARRANTY

OMRON's exclusive warranty is that the products are free from defects in materials and workmanship for a period of one year (or other period if specified) from date of sale by OMRON.

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Know and observe all prohibitions of use applicable to this product.

NEVER USE THE PRODUCT 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 PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

Disclaimers

■ CHANGE IN SPECIFICATIONS

Product specifications and accessories may be changed at any time based on improvements and other reasons. Consult with your OMRON representative at any time to confirm actual specifications of purchased product.

■ DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

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-E1-08 **In the interest of product improvement, specifications are subject to change without notice.**

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