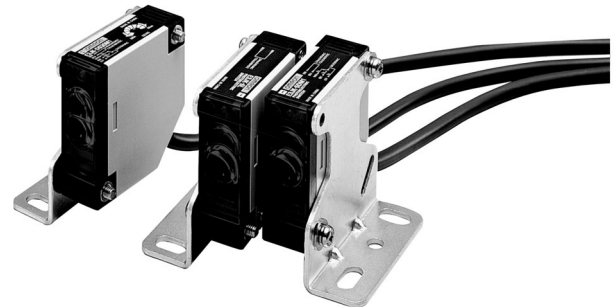


Small General-purpose Photoelectric Sensor with Built-in Power Supply

- 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

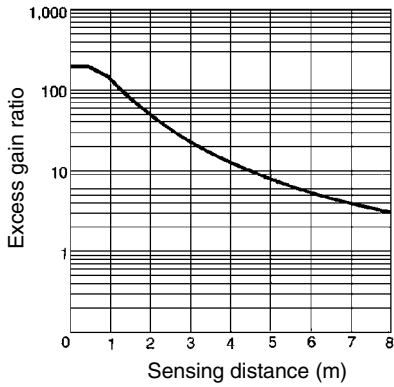
Item		E3JK-5□□	E3JK-R2□□	E3JK-R4□□	E3JK-DS30□□	E3JK-R2H□-G
Power supply voltage		12 to 240 VDC ±10%, 24 to 240 VAC ±10%, 50/60 Hz			12 to 240 VDC ±10%, 24 to 240 VAC ±10%, 50/60 Hz	10 to 30 VDC, ripple (p-p): 10% max.
Current consumption		3 W max.	2 W max.		2 W max.	40 mA max.
Sensing distance		5 m	2.5 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

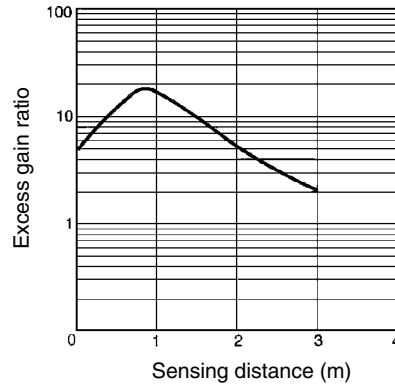
Engineering Data

Excess Gain Ratio

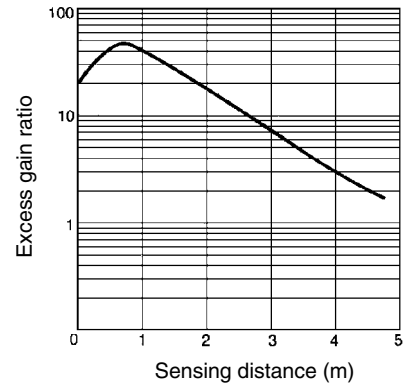
E3JK-5□□



E3JK-R2□□

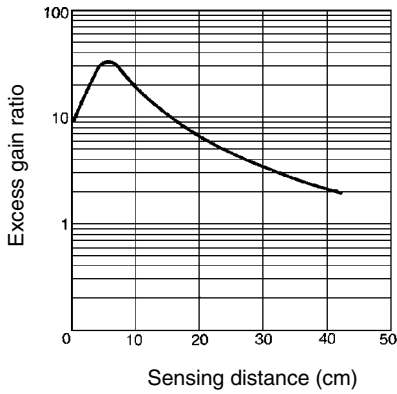


E3JK-R4□□

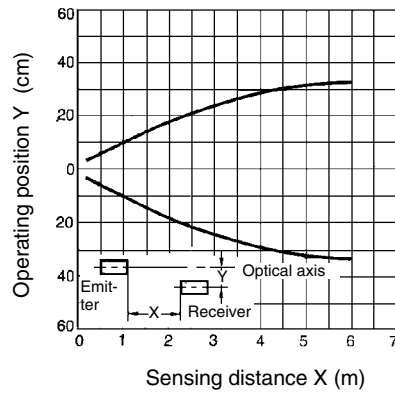


Operating Range

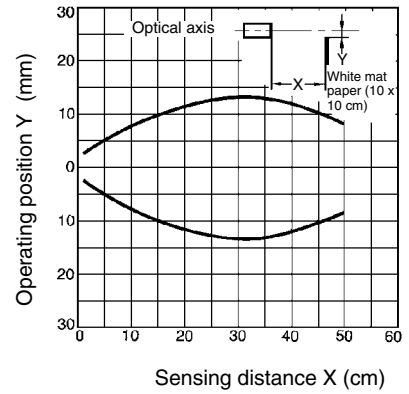
E3JK-DS30□□



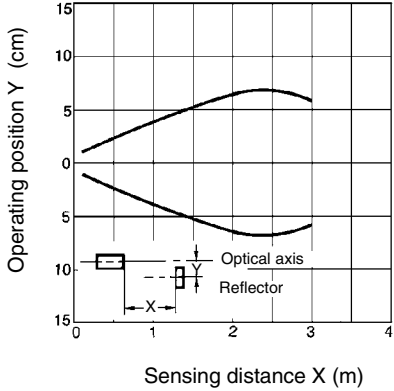
E3JK-5□□



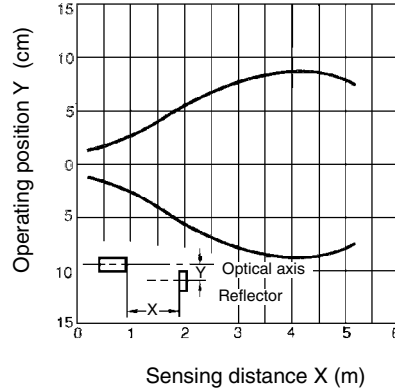
E3JK-DS30□□



E3JK-R2□□

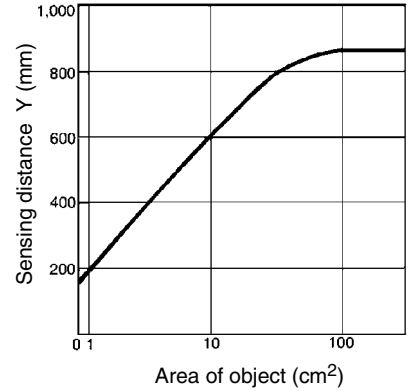


E3JK-R4□□



Sensitivity

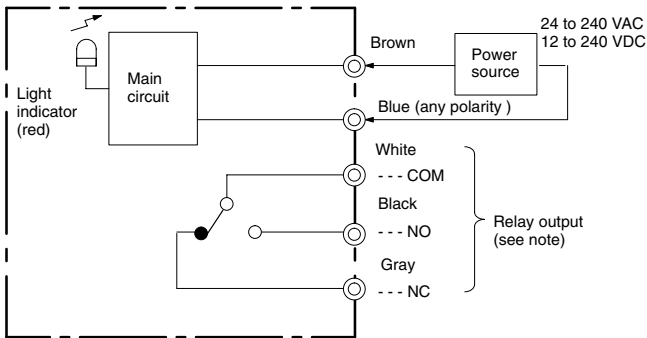
E3JK-DS30□□



Operation

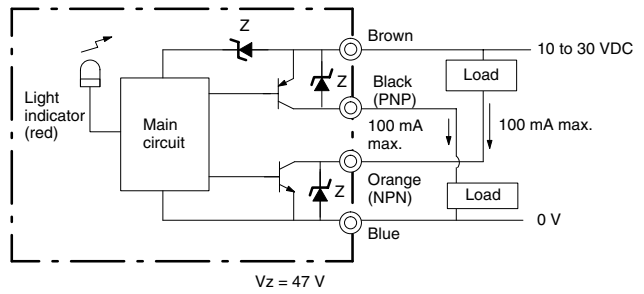
Output Circuits

Relay Output Types



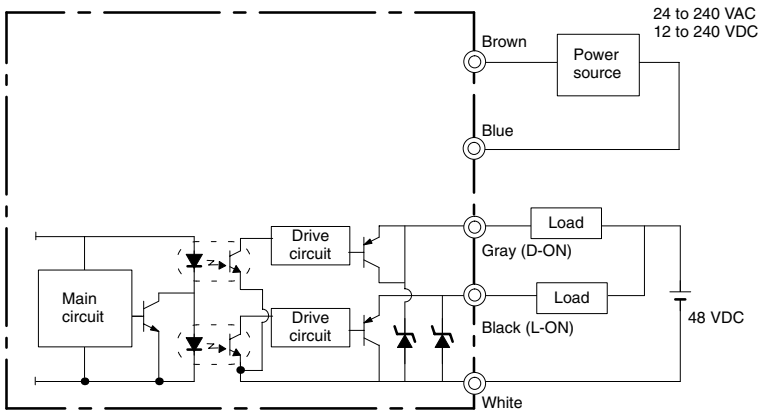
Note: Not provided to the emitter of the E3JK-5M□.

Transistor Output Types

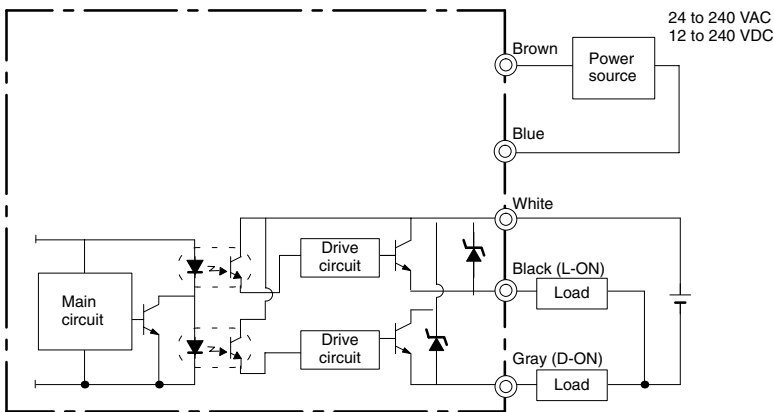


DC Solid-state Output Types

Negative Common

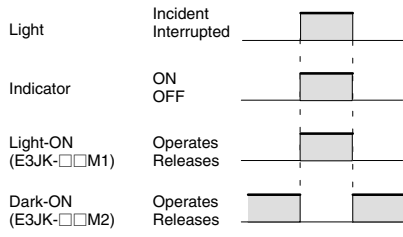


Positive Common

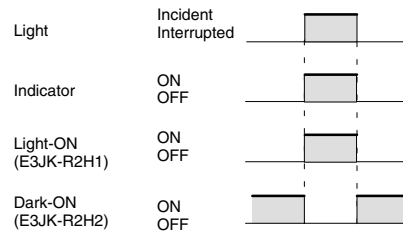


■ Timing Chart

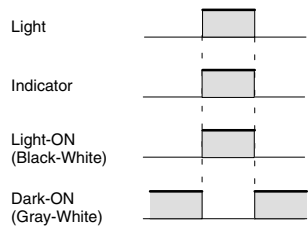
Relay Output Types



Transistor Output Types



DC Solid-state Output Types



Dimensions

Note: All units are in millimeters unless otherwise indicated.

E3JK-5□□

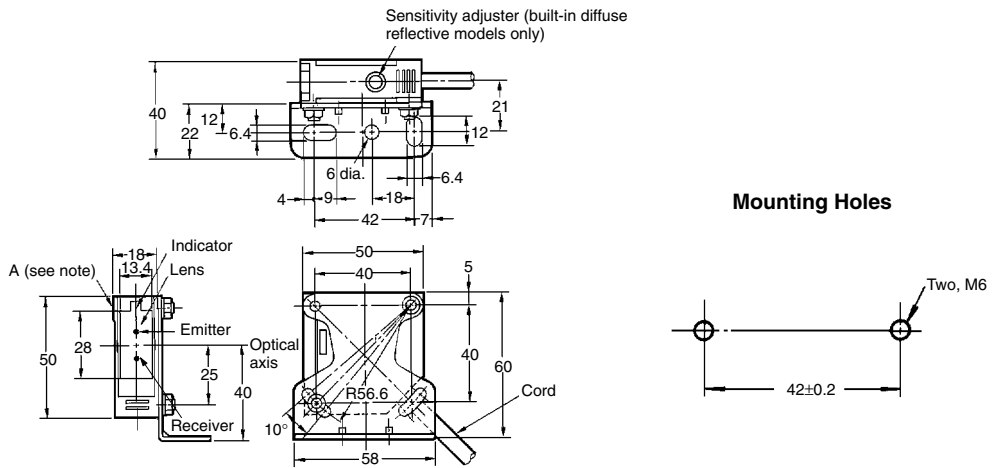
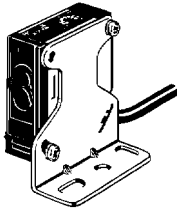
Weight: approx. 360 g

E3JK-R2□□

E3JK-R4□□

E3JK-DS30□□

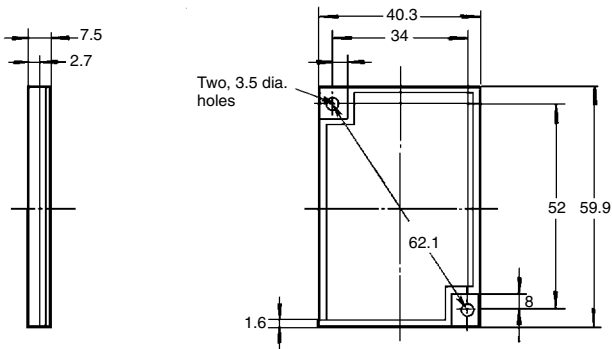
Weight: approx. 190 g



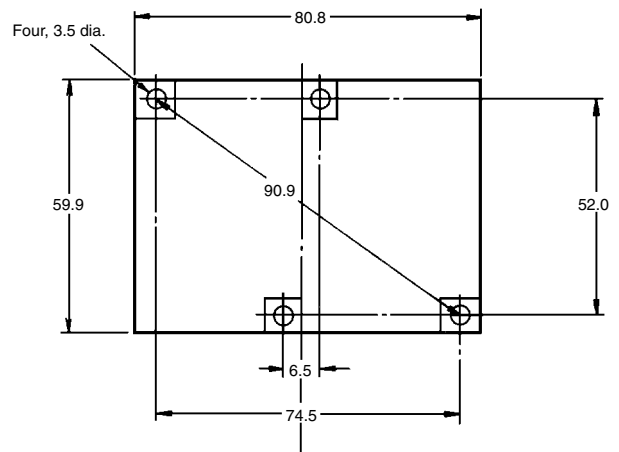
Note: The mounting bracket (provided with two M4 x 20 screws) can be connected to side A.

Reflectors

E39-R1 (Supplied with Retroreflective Types)



E39-R2 (Order Separately)



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.

OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, REGARDING NON-INFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR PARTICULAR PURPOSE OF THE PRODUCTS. ANY BUYER OR USER ACKNOWLEDGES THAT THE BUYER OR USER ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. OMRON DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED.

LIMITATIONS OF LIABILITY

OMRON SHALL NOT BE RESPONSIBLE FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED ON CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY.

In no event shall responsibility of OMRON for any act exceed the individual price of the product on which liability is asserted.

IN NO EVENT SHALL OMRON BE RESPONSIBLE FOR WARRANTY, REPAIR, OR OTHER CLAIMS REGARDING THE PRODUCTS UNLESS OMRON'S ANALYSIS CONFIRMS THAT THE PRODUCTS WERE PROPERLY HANDLED, STORED, INSTALLED, AND MAINTAINED AND NOT SUBJECT TO CONTAMINATION, ABUSE, MISUSE, OR INAPPROPRIATE MODIFICATION OR REPAIR.

SUITABILITY FOR USE

THE PRODUCTS CONTAINED IN THIS DOCUMENT ARE NOT SAFETY RATED. THEY ARE NOT DESIGNED OR RATED FOR ENSURING SAFETY OF PERSONS, AND SHOULD NOT BE RELIED UPON AS A SAFETY COMPONENT OR PROTECTIVE DEVICE FOR SUCH PURPOSES. Please refer to separate catalogs for OMRON's safety rated products.

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of products in the customer's application or use of the product.

At the customer's request, OMRON will provide applicable third party certification documents identifying ratings and limitations of use that apply to the products. This information by itself is not sufficient for a complete determination of the suitability of the products in combination with the end product, machine, system, or other application or use.

The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses listed may be suitable for the products:

- Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this document.
- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
- 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 PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

PERFORMANCE DATA

Performance data given in this document is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of OMRON's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the OMRON Warranty and Limitations of Liability.

CHANGE IN SPECIFICATIONS

Product specifications and accessories may be changed at any time based on improvements and other reasons.

It is our practice to change model numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the product may be changed without any notice. When in doubt, special model numbers may be assigned to fix or establish key specifications for your application on your request. Please consult with your OMRON representative at any time to confirm actual specifications of purchased products.

DIMENSIONS AND WEIGHTS

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

ERRORS AND OMISSIONS

The information in this document has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical, or proofreading errors, or omissions.

PROGRAMMABLE PRODUCTS

OMRON shall not be responsible for the user's programming of a programmable product, or any consequence thereof.

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-E1-09

In the interest of product improvement, specifications are subject to change without notice.

OMRON Corporation
Industrial Automation Company

Sensing Devices Division H.Q.
Industrial Sensors Division

Shiokoji Horikawa, Shimogyo-ku,
Kyoto, 600-8530 Japan

Tel: (81)75-344-7022/Fax: (81)75-344-7107

Printed in Japan

0805-0.1M (0997) (M)