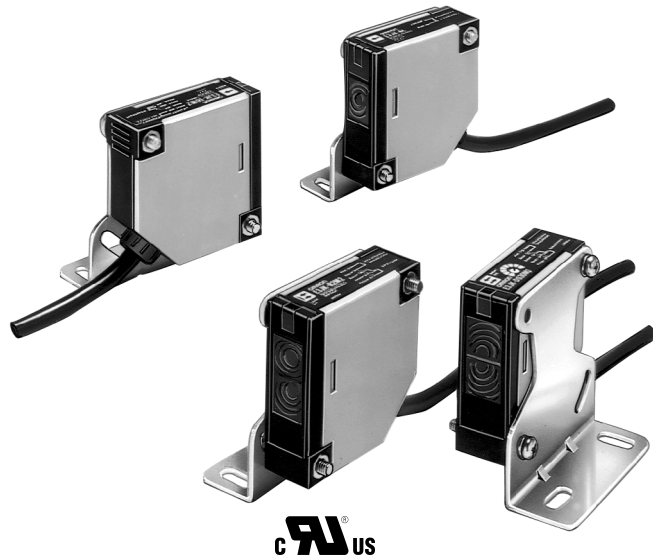


## Universal Voltage Cabled Photoelectric

## E3JK

### Small Cable Sensor with Complementary Outputs

- Universal AC/DC supply voltage
- Relay or NPN/PNP transistor output, light-on or dark-on operation
- Polarized retroreflective models to accurately detect shiny objects
- Cabled models with 2 m (6.56 ft) of cable



## Ordering Information

### ■ SENSORS

Method of detection		Through-beam		Diffuse reflective
Sensing distance		5 m (16.4 ft)		30 cm (11.81 in)
Output type		Relay	NPN	Relay
Part number	Light-ON operation	E3JK-5M1-US	E3JK-5S3 2M	E3JK-DS30M1-US
	Dark-ON operation	E3JK-5M2-US	—	E3JK-DS30M2-US

Method of detection		Polarized retroreflective		Retroreflective
Sensing distance		2.5 m (8.2 ft)		4 m (13.12 ft)
Output type		Relay	NPN/PNP transistor	Relay
Part number	Light-ON operation	E3JK-R2M1-US	E3JK-R2H1-G	E3JK-R4M1-US
	Dark-ON operation	E3JK-R2M2-US	E3JK-R2H2-G	E3JK-R4M2-US

### ■ ACCESSORIES

Description	Part number
Reflector adapter for stud-mounting E39-R1 reflector	E39-L7
Optional large reflector for increased sensing distance	E39-R2

### ■ REPLACEMENT PARTS

Description	Part number
Reflector (supplied with retroreflective sensors)	E39-R1
Mounting bracket (supplied with each sensor)	E39-L40

# Specifications

## ■ THROUGH-BEAM AND DIFFUSE REFLECTIVE TYPES

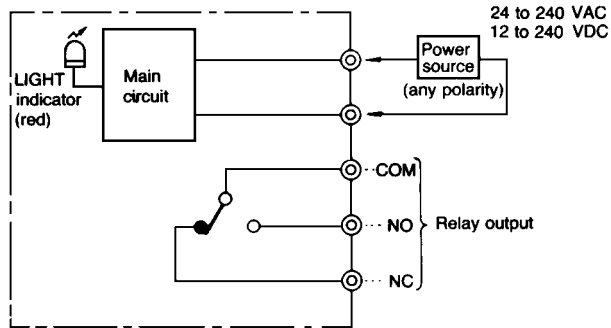
Part number		E3JK-5M□-US	E3JK-5S3 2M	E3JK-DS30M□-US	
Method of detection		Through-beam		Diffuse reflective	
Supply voltage		24 to 240 VAC, 50/60 Hz; 12 to 240 VDC			
Power consumption	AC operation	Emitter: 1.5 VA max.		2 VA max.	
		Receiver: 1.5 VA max.			
	DC operation	Emitter: 1.5 W max.		2 W max.	
		Receiver: 1.5 W max.			
Sensing distance		5 m (16.4 ft)	30 cm (11.8 in) with 10 x 10 cm (3.94 x 3.94 in) 90% reflectance white mat paper		
Light source		Pulse modulated infrared LED		Pulse modulated infrared LED	
Detectable object type		Opaque materials, 16 mm (0.63 in) minimum dimension		Opaque and translucent materials	
Operation mode		E3JK-□□□1-US: Light-ON E3JK-□□□2-US: Dark-ON			
Sensitivity		Fixed		Adjustable	
Mutual interference protection		Not provided			
Control output	Relay	Type	SPDT	—	SPDT
		Max. load	3 A, 250 VAC	—	3 A, 250 VAC
		Min. load	10 mA, 5 VDC	—	10 mA, 5 VDC
	DC solid state	Type	—	NPN	—
		Max. load	—	100 mA @ 30 VDC	—
		Max. on-state voltage drop	—	1 V	—
Response time	On	30 ms max.	3 ms	30 ms, 3 ms solid state	
	Off	30 ms max.	3 ms	30 ms, 3 ms solid state	
Circuit protection	Output short-circuit	Not provided			
	DC power supply reverse polarity	Provided			
Indicators		Emitter: Power On (red LED) Receiver: Light Incident (red LED)		Light Incident (red LED)	
Materials	Lens	Plastic			
	Case	Plastic			
	Cable sheath	Plastic			
Mounting		Side surface mount with two through holes; Bracket E39-L40 and hardware included			
Connections	Prewired	Emitter: 2-conductor cable, 2 m (6.56 ft) Receiver: 5-conductor cable, 2 m (6.56 ft)		5-conductor cable, 2 m (6.56 ft)	
Weight		Emitter: 140 g (5 oz.) Receiver: 140 g (5 oz.)		140 g (5 oz.)	
Enclosure ratings	NEMA	1, 2, 12			
	IEC 144	IP64			
Approvals	UL	Recognized, File Number E41515			
	CSA	Certified, File Number LR45951			
Ambient temperature	Operating	-25° to 55°C (-13° to 131°F)			
	Storage	-30° to 70°C (-22° to 158°F)			

## ■ RETROREFLECTIVE TYPES

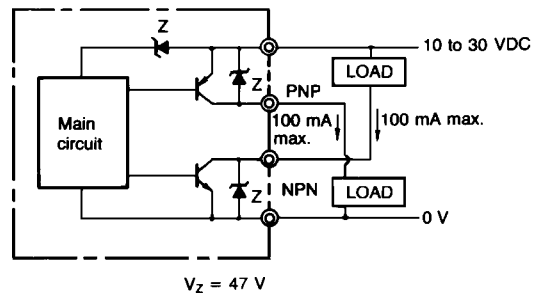
Part number		E3JK-R2□□-US	E3JK-R4M□-US	
Method of detection		Retroreflective		
Supply voltage		24 to 240 VAC, 50/60 Hz; 12 to 240 VDC		
Power consumption	AC operation	2 VA max.		
	DC operation	2 W max.		
Sensing distance		2.5 m (8.2 ft) with E39-R1 reflector (included) 3 m (9.8 ft) with E39-R2 optional reflector	4 m (13.1 ft) with E39-R1 reflector (included) 5 m (16.4 ft) with E39-R2 optional reflector	
Light source		Polarized, pulse modulated red LED	Pulse modulated red LED	
Detectable object type		Opaque materials and mirror surface materials 56 mm (2.2 in) minimum dimension	Opaque materials 56 mm (2.2 in) minimum dimension	
Operation mode		E3JK-□□□1-US: Light-ON E3JK-□□□2-US: Dark-ON		
Sensitivity		Fixed		
Mutual interference protection		Not provided		
Control output	Relay	Type	SPDT (E3JK-R□M□-US)	
		Max. load	3 A, 250 VAC	
		Min. load	10 mA, 5 VDC	
	DC solid-state	Type	NPN and PNP (E3JK-R2H□)	
		Max. load	100 mA at 300 VDC	
		Max. on-state voltage drop	1 VDC	
Response time	On	30 ms max. for relay; 3 ms max. for transistor		
	Off	30 ms max. for relay; 3 ms max. for transistor		
Circuit protection	Output short-circuit	Not provided		
	DC power supply reverse polarity	Provided		
Indicators		Light Incident (red LED)		
Materials	Lens	Plastic		
	Case	Plastic		
	Cable sheath	Plastic		
Mounting		Side surface mount with two through holes; Bracket E39-L40 and hardware included		
Connections	Prewired	5-conductor cable, 2 m (6.56 ft) length		
Weight		140 g (5 oz.)		
Enclosure ratings	NEMA	1, 2, 12		
	IEC 144	IP64		
Approvals	UL	Recognized, File Number E41515		
	CSA	Certified, File Number LR45951		
Ambient temperature	Operating	-25° to 55°C (-13° to 131°F)		
	Storage	-30° to 70°C (-22° to 158°F)		

■ OUTPUT CIRCUIT DIAGRAMS

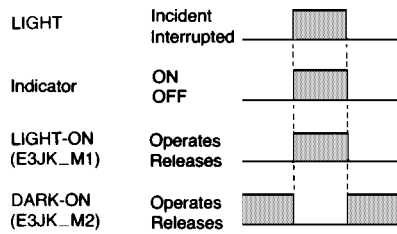
Relay output types E3JK-□□M□-US



Transistor output types E3JK-□□H□-US

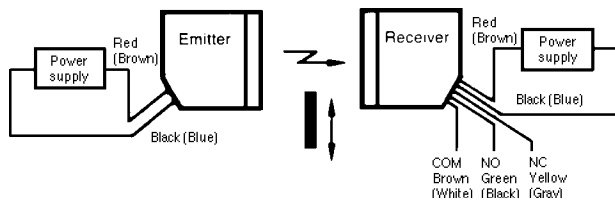


■ TIMING CHART

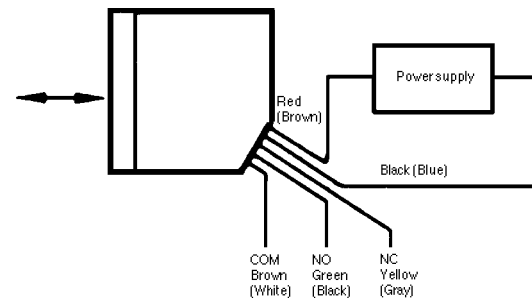


■ CONNECTIONS

Through-beam models



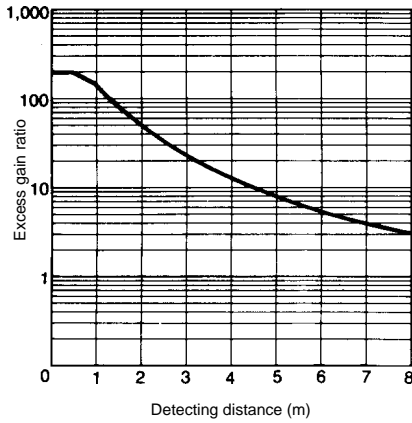
Diffuse and retroreflective models



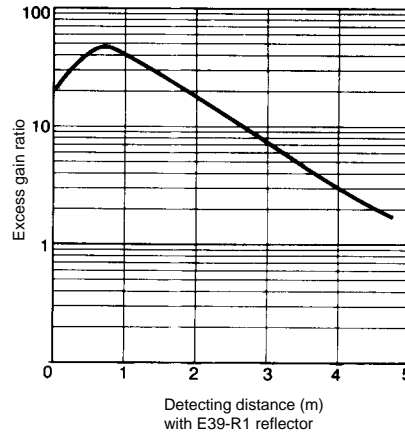
# Engineering Data

## ■ EXCESS GAIN RATIO

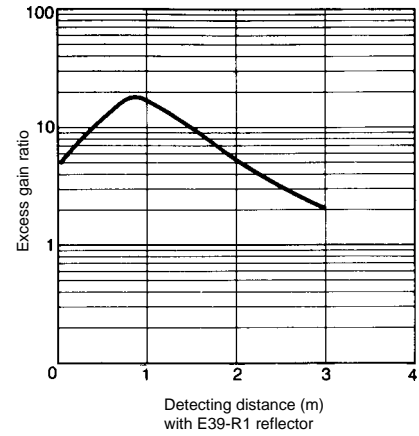
Through-beam type (E3JK-5M□-US)



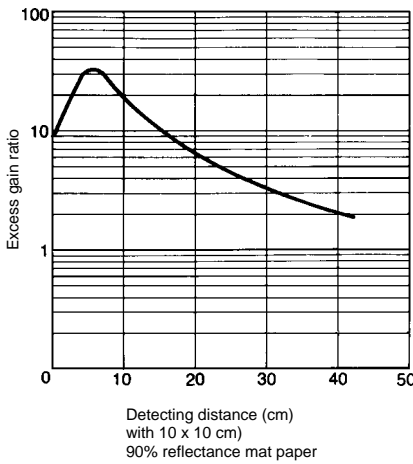
Retroreflective type (E3JK-R4M-US)



Retroreflective type with polarized light source (E3JK-R2M□)

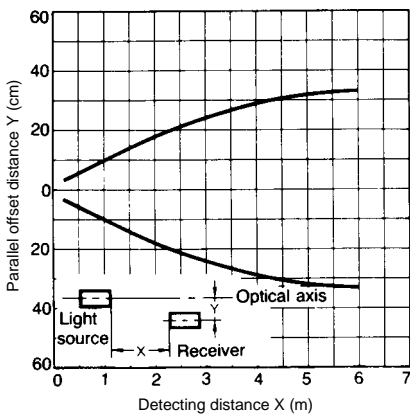


Diffuse reflective type (E3JK-DS30M□-US)

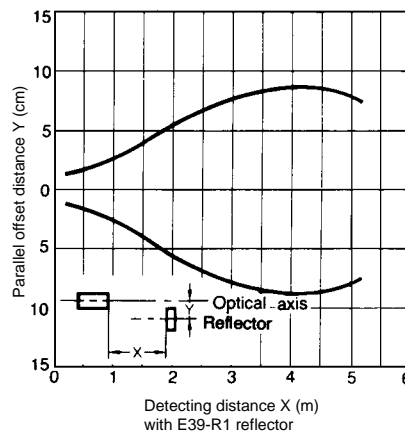


## ■ OPERATING RANGE

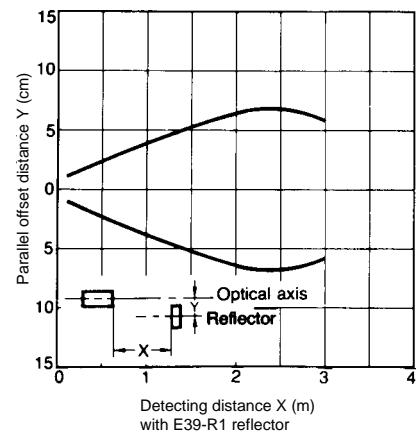
Through-beam type (E3JK-5M□-US)



Retroreflective type (E3JK-R4M□-US)

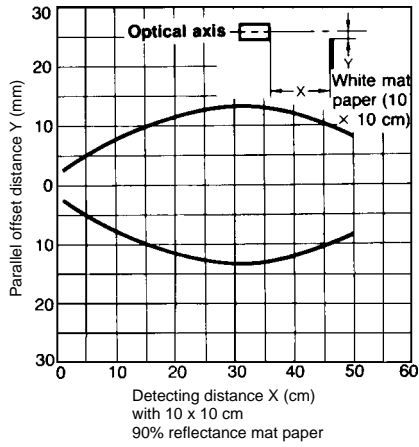


Retroreflective type with polarized light source (E3JK-R2M□)



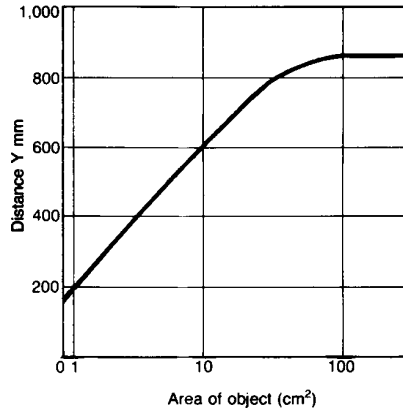
**OPERATING RANGE (continued)**

Diffuse reflective type  
(E3JK-DS30M□-US)



**SIZE OF TARGET vs. DETECTING DISTANCE (at maximum sensitivity)**

Diffuse reflective type  
(E3JK-DS30M□-US)

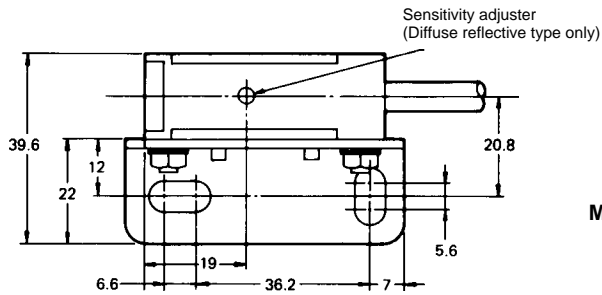
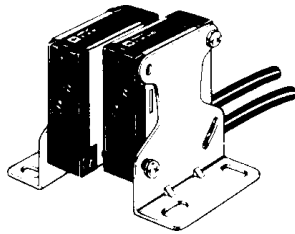


**Dimensions**

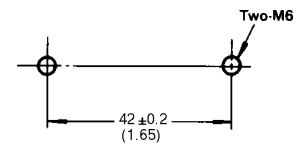
Unit: mm (inch)

**SENSORS**

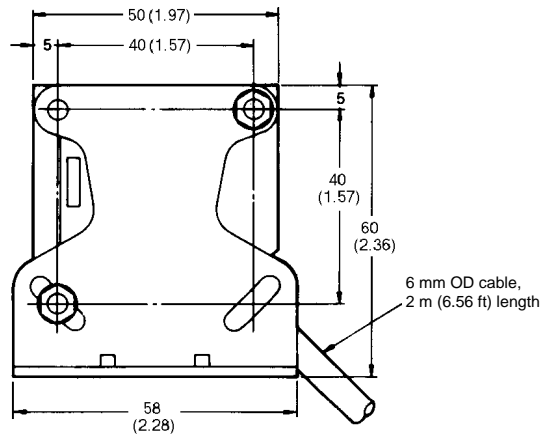
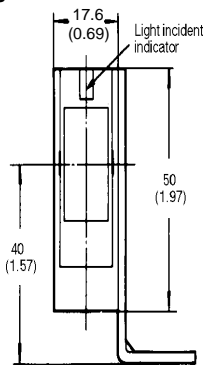
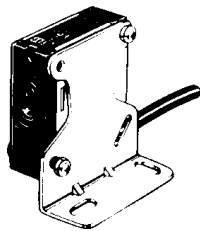
Through-beam type



Mounting holes

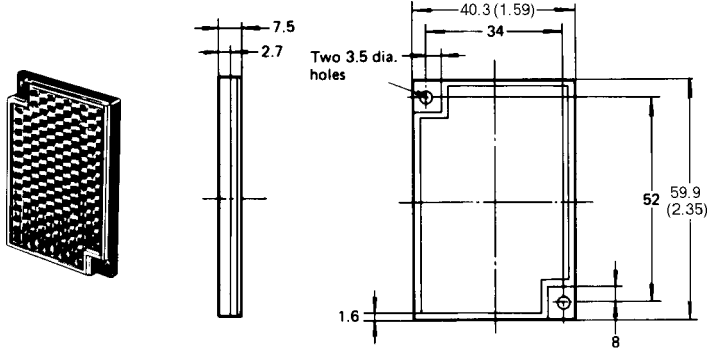


Retroreflective and  
Diffuse reflective types

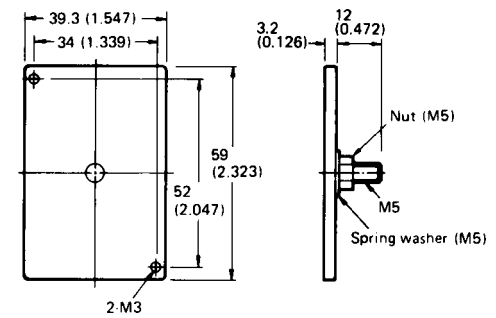


## REFLECTORS

**E39-R1 Reflector (included with retroreflective sensors)**



**E39-L7 Reflector Adapter for E39-R1 (optional)**



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