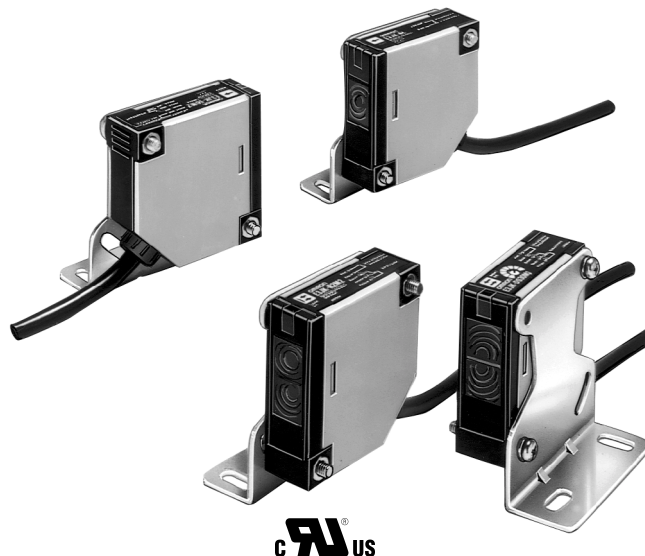


Universal Voltage Cabled Photoelectric

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

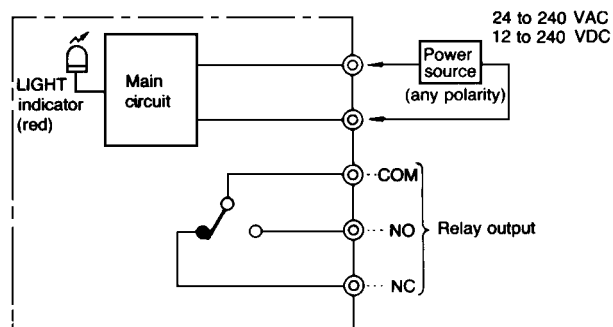
Part number			E3JK-5M□-US	E3JK-5S3 2M	E3JK-DS30M□-US
Method of detection			Through-beam		Diffuse reflective
Supply voltage			24 to 240 VAC, 50/60 Hz; 12 to 240 VDC		
Power consumption	AC operation		Emitter: 1.5 VA max.		2 VA max.
			Receiver: 1.5 VA max.		
	DC operation		Emitter: 1.5 W max.		2 W max.
			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

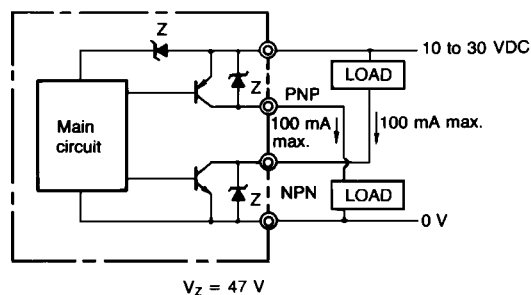
Part number		E3JK-R2□□-US	E3JK-R4M□-US
Method of detection		Retroreflective	
Supply voltage		24 to 240 VAC, 50/60 Hz; 12 to 240 VDC	
Power consumption	AC operation	2 VA max.	
	DC operation	2 W max.	
Sensing distance		2.5 m (8.2 ft) with E39-R1 reflector (included) 3 m (9.8 ft) with E39-R2 optional reflector	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

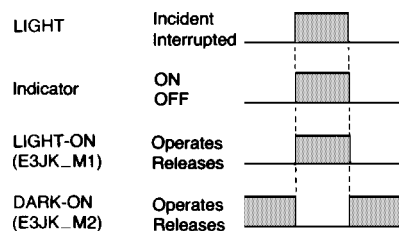
Relay output types E3JK-□□M□-US



Transistor output types E3JK-□□H□-US

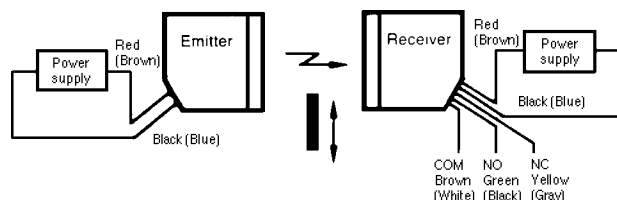


■ TIMING CHART

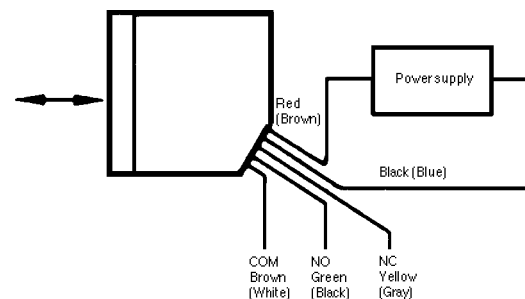


■ CONNECTIONS

Through-beam models



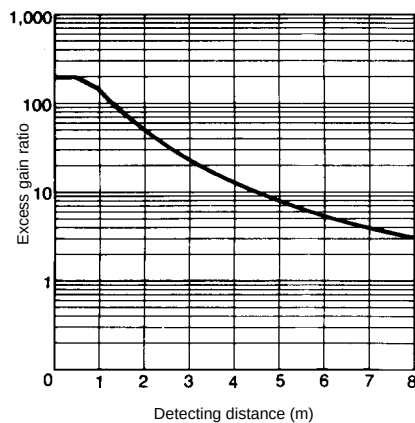
Diffuse and retroreflective models



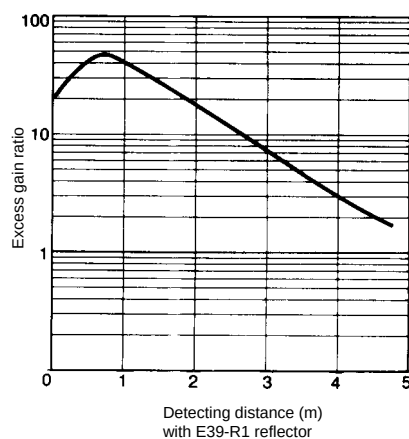
Engineering Data

■ EXCESS GAIN RATIO

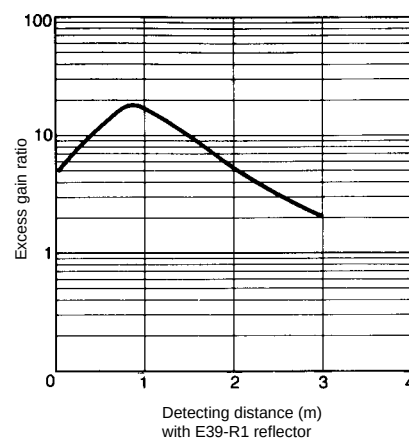
Through-beam type (E3JK-5M□-US)



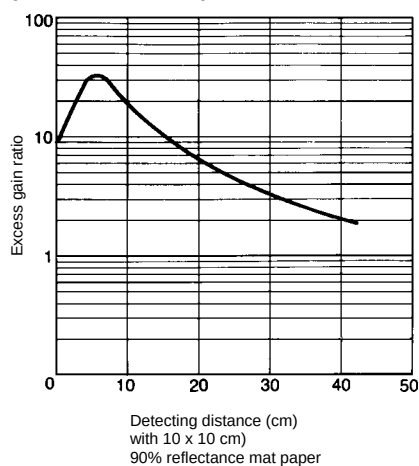
Retroreflective type (E3JK-R4M-US)



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

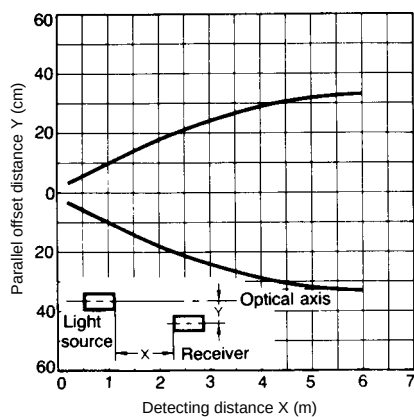


Diffuse reflective type (E3JK-DS30M□-US)

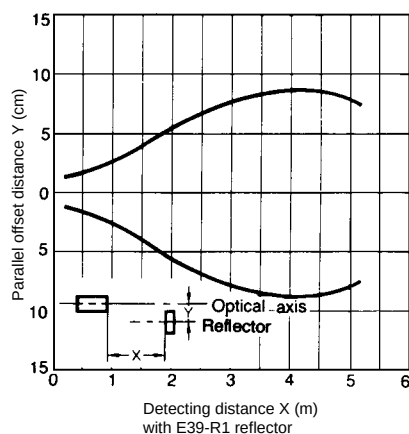


■ OPERATING RANGE

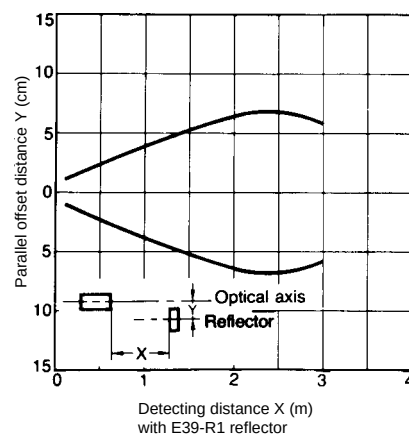
Through-beam type (E3JK-5M□-US)



Retroreflective type (E3JK-R4M□-US)

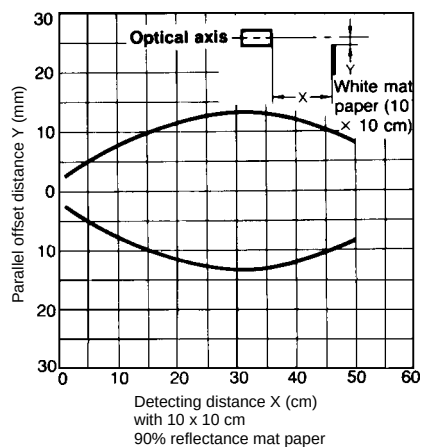


Retroreflective type with polarized light source (E3JK-R2M□)



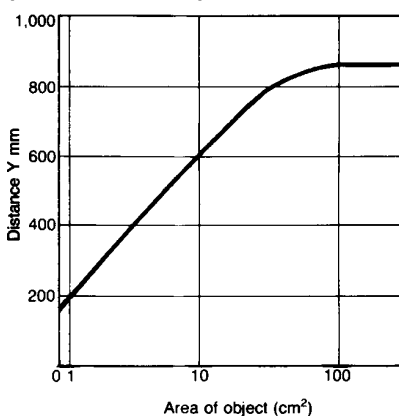
OPERATING RANGE (continued)

Diffuse reflective type
(E3JK-DS30M□-US)



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

Diffuse reflective type
(E3JK-DS30M□-US)

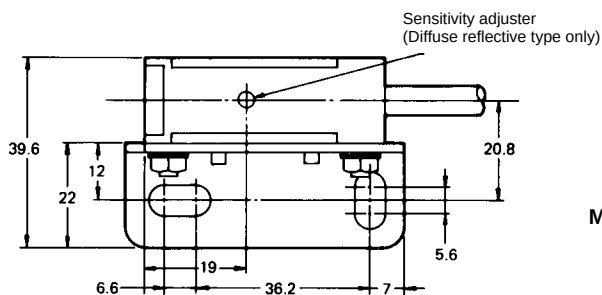
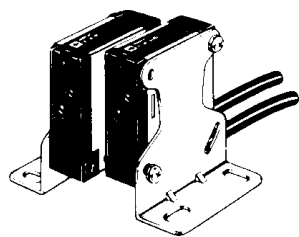


Dimensions

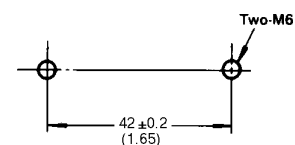
Unit: mm (inch)

■ SENSORS

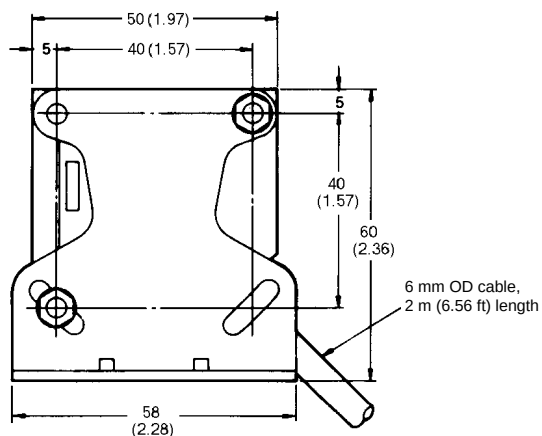
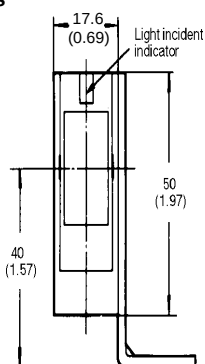
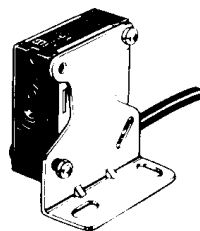
Through-beam type



Mounting holes

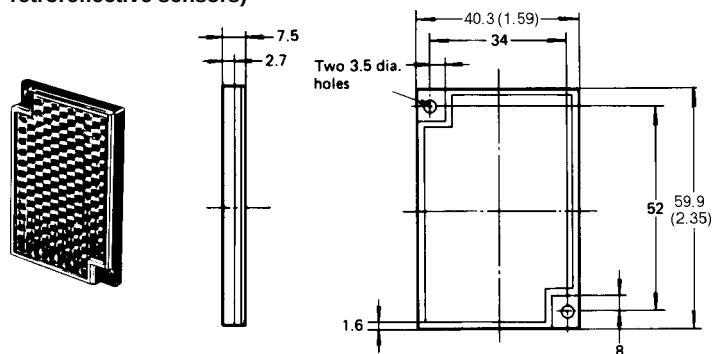


Retroreflective and
Diffuse reflective types

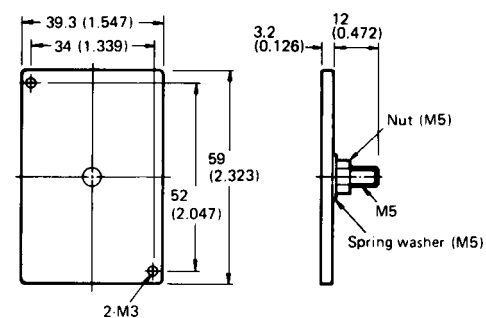


REFLECTORS

E39-R1 Reflector (included with retroreflective sensors)



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



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