

Plug-in Base, Long Range Sensor

E3B2

Plug-in Terminal for Easy Maintenance and Installation

- Universal AC/DC supply voltage
- Replace sensing head without rewiring
- Detect shiny objects with polarized retroreflective type
- Long-range diffuse reflective sensors detect dark objects at long distances
- Built-in ON- and OFF-delay timers available
- Switch selectable light-on/dark-on operation
- Mutual interference protection
- Ready-to-use: includes 3 A relay, mounting bracket and reflector for retroreflective types



Ordering Information

■ SENSORS

Method of detection			Retroreflective		Diffuse reflective	Long-range diffuse
Light source			Polarized IR	Non-polarized IR	Non-polarized IR	
Sensing distance			5 m (16.40 ft)	7 m (22.97 ft)	2 m (6.56 ft)	3 m (9.84 ft)
Part number	Without timers		E3B2-R5M4-US	E3B2-R7M4-US	E3B2-D2M4-US	E3B2-D2M4-US-N
	ON- and OFF-delay timers	(0.5 to 20 s)	E3B2-R5M4D-US	E3B2-R7M4D-US	E3B2-D2M4D-US	—
		(0.05 to 5 s)	E3B2-R5M4D-US-3	—	E3B2-D2M4D-US-3	E3B2-D2M4-US-N-3

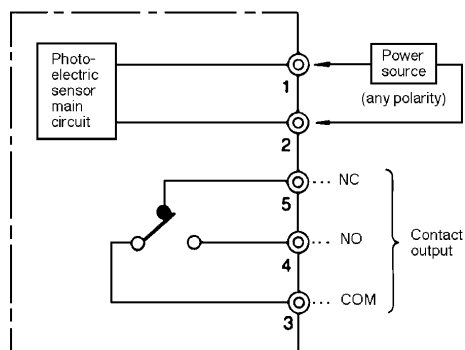
■ REPLACEMENT PARTS

Description	Part number
Reflector (supplied with retroreflective sensor)	E39-R2
Mounting bracket (supplied with each sensor)	E39-L35

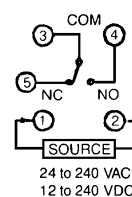
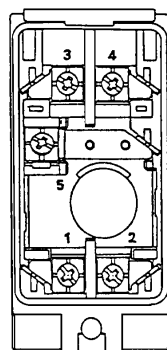
Specifications

Part number			E3B2-R5M4□-US-□	E3B2-R7M4□-US	E3B2-D2M4□-US-□	E3B2-D2M4□-US-N-□
Method of detection			Retroreflective		Diffuse reflective	Long-range diffuse
Supply voltage			24 to 240 VAC, 50/60 Hz; 12 to 240 VDC			
Power consumption	AC operation	2 VA max.				
	DC operation	1.5 W max.				
Sensing distance		5 m (16.40 ft) with E39-R2 reflector (included)	7 m (22.97 ft) with E39-R2 reflector (included)	2 m (6.56 ft) with 30x30 cm (11.8x11.8 in) 90% reflectance white mat paper	3 m (9.84 ft) with 30 x 30 cm (11.8 x 11.8 in) 90% reflectance white mat paper	
Light source		Pulse modulated infrared LED, polarized	Pulse modulated infrared LED			
Detectable object type		Shiny and opaque materials, 80 mm (3.15 in) minimum dimension	Opaque materials, 80 mm (3.15 in) minimum dimension	Opaque and transparent materials		
Operation mode		Light-ON/Dark-ON, switch selectable				
Sensitivity		Adjustable				
Mutual interference protection		Provided				
Control output	Relay	Type	SPDT (Form 1C)			
		Max. load	3 A, 250 VAC, (p.f.=1)			
		Min. load	10 mA, 5 VDC			
Response time	On	Without timer	30 ms max. (E3B2-□□M4-US-□)			
		With timer	0.5 to 20 seconds, adjustable (E3B2-□□M4D-US); 0.05 to 0.5 sec (E3B2-□□M4D-US-□-3)			
	Off	Without timer	30 ms max. (E3B2-□□M4-US-□)			
		With timer	0.5 to 20 seconds, adjustable (E3B2-□□M4D-US); 0.05 to 0.5 sec (E3B2-□□M4D-US-□-3)			
Timing functions		Type	Independent ON-delay and OFF-delay (E3B2-□□M4D-US)			
		Range	0.5 to 20 seconds			
Circuit protection	Output short-circuit		Not provided			
	DC power supply reverse polarity		Provided			
Indicators		Light incident (red LED), output stability (green LED), and output operation (yellow LED)				
Materials	Lens cover		Plastic, polycarbonate			
	Body/receptacle		Plastic, polymethylmethacrylate (PMMA)			
	Access cover		Plastic, polycarbonate			
Mounting		Side surface with two through holes or bottom surface with two threaded metal inserts; bracket E39-L35 and hardware included				
Connections	Conduit		1/2-14 NPT			
	Wire		Plated steel screw terminals			
Weight		230 g (8.1 oz)			200 g (7.1 oz)	
Enclosure ratings	UL		1			
	NEMA		1, 3, 4, 12, 13			
	IEC 144		IP66			
Approvals	UL		Listed, 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)			

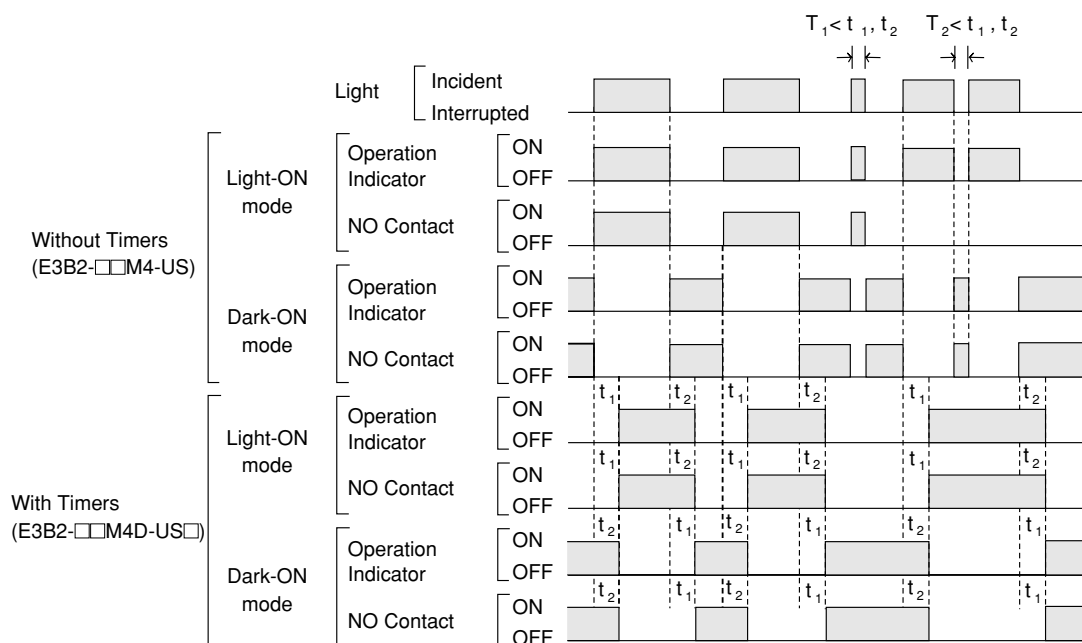
■ OUTPUT CIRCUIT DIAGRAM



■ CONNECTIONS



■ TIMING CHART

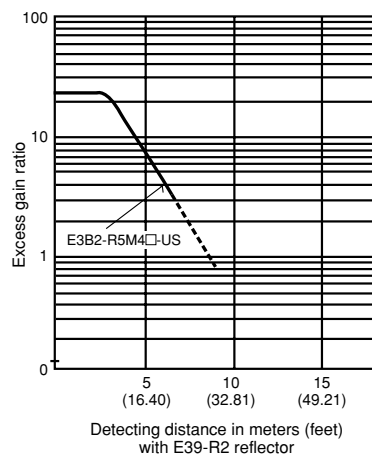


t_1 : ON-delay 0.5 to 20 s (E3B2-□□M4D-US) or 0.05 to 0.5 s (E3B2-□□M4D-US-3)
 t_2 : OFF-delay 0.5 to 20 s (E3B2-□□M4D-US) or 0.05 to 0.5 s (E3B2-□□M4D-US-3)

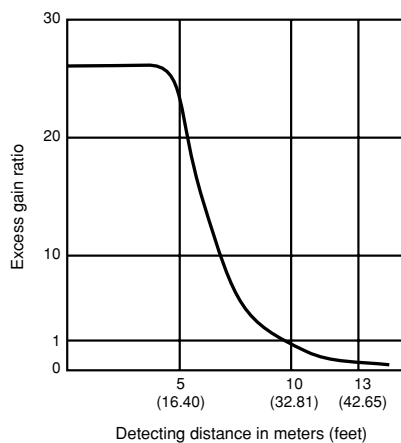
Engineering Data

■ EXCESS GAIN RATIO

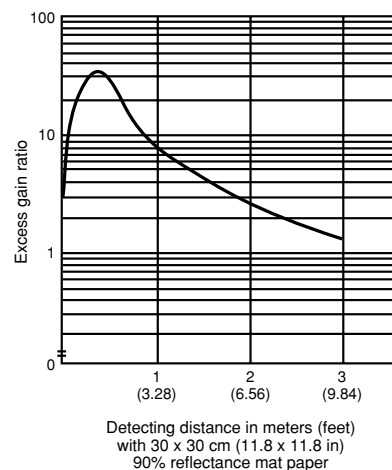
E3B2-R5M4□-US-□



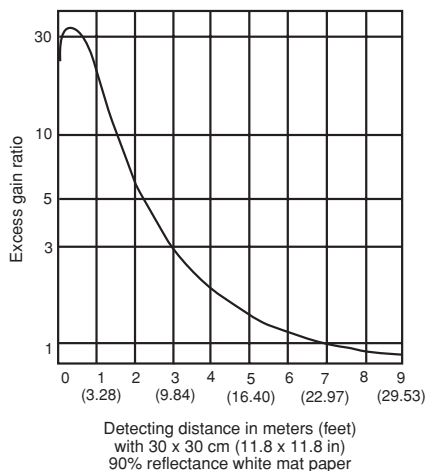
E3B2-R7M4□-US



E3B2-D2M4□US-□

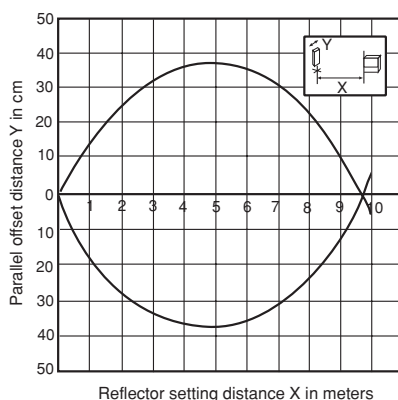


E3B2-D2M4□-US-N-□

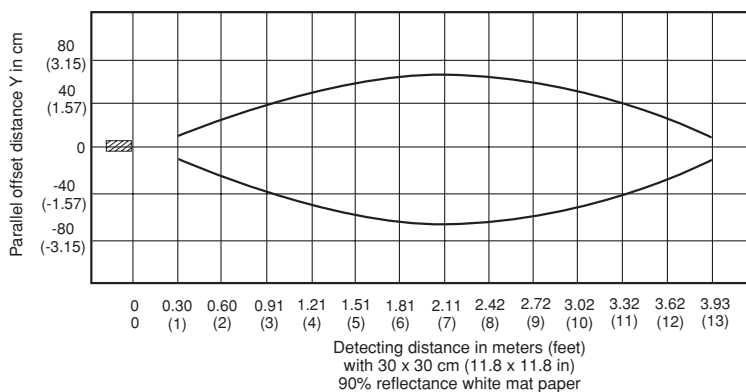


■ OPERATING RANGE

E3B2-R5M4□-US-□

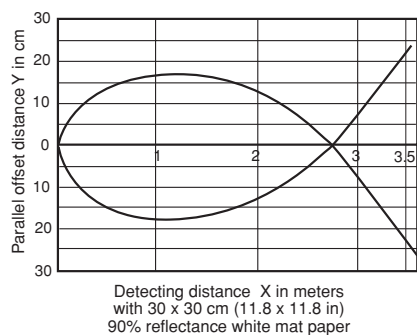


E3B2-D2M4□-US-N-□



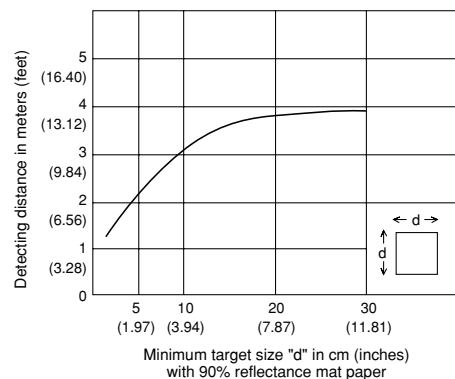
Operating Range continued

E3B2-D2M4□-US-□



■ DETECTING DISTANCE VS. MINIMUM TARGET SIZE (at maximum sensitivity)

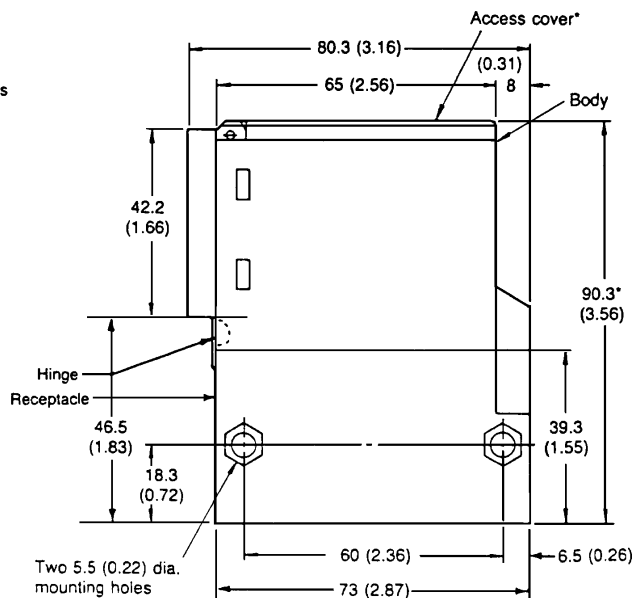
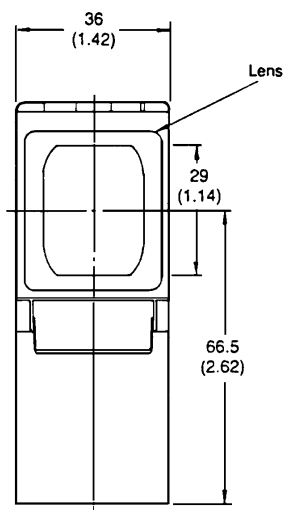
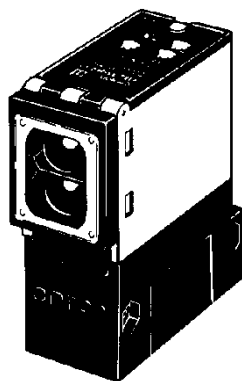
E3B2-D2M4□-US



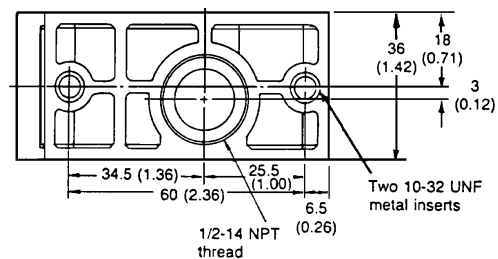
Dimensions

Unit: mm (inch)

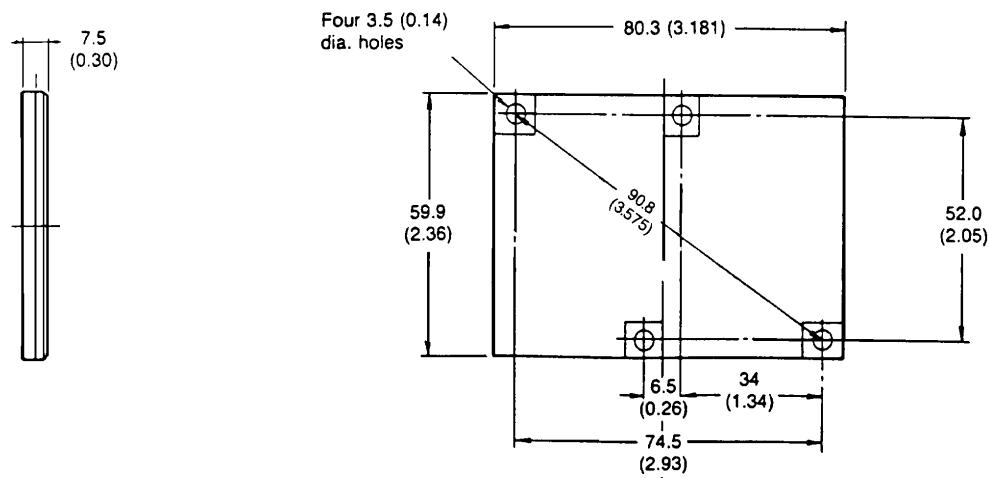
■ SENSOR



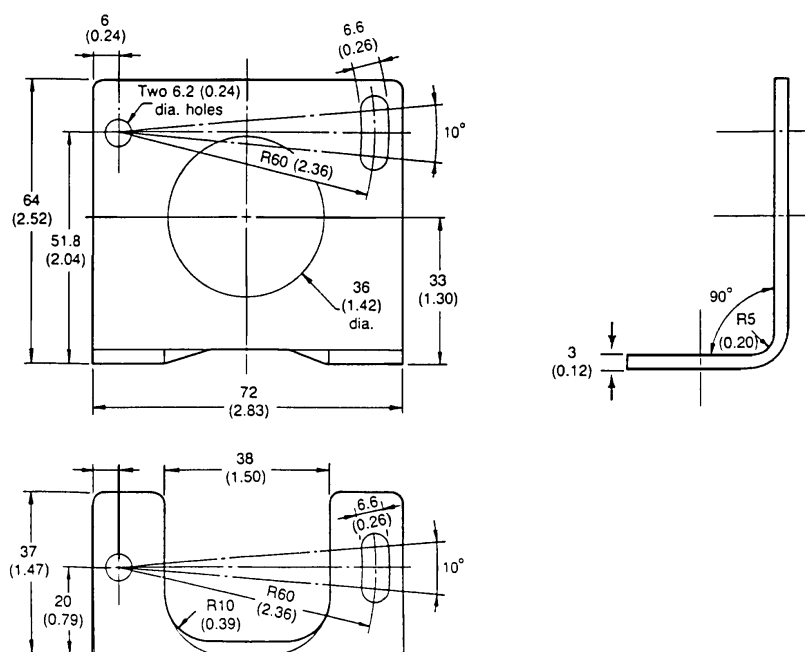
*Allow for a total height of 150 mm (5.91 inches) to open access cover.



■ E39-R2 REFLECTOR (included)



■ E39-L35 MOUNTING BRACKET (included)



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