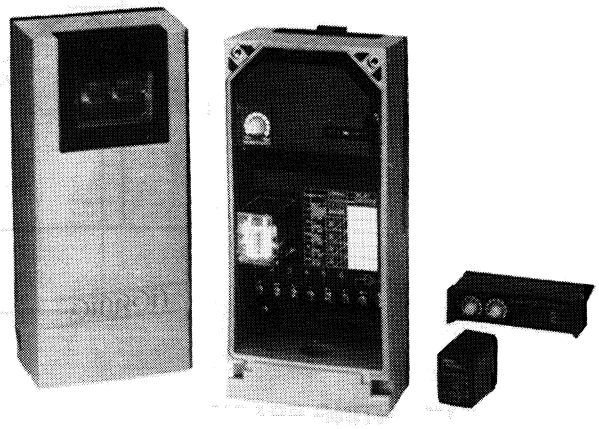
OMRON

Long-Range AC/DC Photoelectric Sensor — E3K

Heavy-Duty Reflective Sensors Offer Long Sensing Distance

- Universal AC/DC supply voltage
- DPDT 10 A relay output standard
- Easy-to-wire terminal strip
- Plug-in replaceable outputs
- Light-ON/Dark-ON operation, switch selectable
- Mutual interference protection
- Timer modules available



Ordering Information

■ SENSOR

Method of detection	Retroreflective	Diffuse reflective
Sensing distance	10 m (32.8 ft)	2 m (6.56 ft)
Part number	**E3K-R10K4**	**E3K-D2K4**

■ ACCESSORIES

Description		Part number
Timer modules	Selectable ON-delay, OFF-delay or one-shot delay; 0.05 to 2 seconds or 0.5 to 20 seconds	**E39-T1**
	Dual ON- and OFF-delays; 0.05 to 2 seconds or 0.5 to 20 seconds	**E39-T2**
	Delayed one-shot; 0.05 to 2 seconds or 0.5 to 20 seconds	**E39-T3**
Reflector adapter for stud-mounting E39-R1 reflector		**E39-L7**

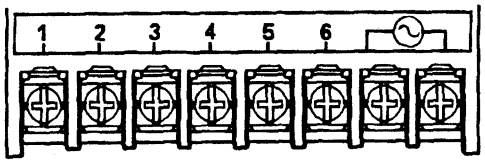
■ REPLACEMENT PARTS

Description	Part number
Relay output module, DPDT, 10 A at 240 VAC max. load (supplied with each sensor)	**LY2-DC12**
Reflector (supplied with each sensor)	**E39-R1**
Mounting bracket (supplied with each sensor)	**E39-L37**

Specifications

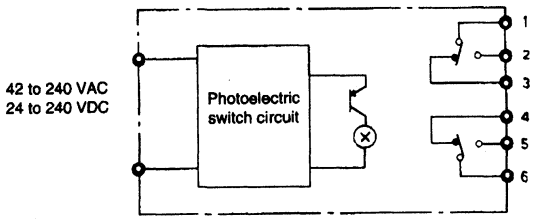
Part number			E3K-R10K4	E3K-D2K4
Method of detection			Retroreflective	Diffuse reflective
Supply voltage			42 to 240 VAC, 50/60 Hz; 24 to 240 VDC	
Power consumption			10 VA max.	
Sensing distance			10 m (32.8 ft) with E39-R1 reflector included 12.2 m (40 ft) with 3 inch dia. reflector	2 m (6.56 ft) with 30 x 30 cm (11.8 x 11.8 in) 90% reflectance white mat paper
Light source			Pulse modulated infrared LED (950 nm)	
Detectable object type			Opaque materials	Opaque and translucent materials
Operation mode			Light-ON/Dark-ON, switch selectable	
Sensitivity			Adjustable potentiometer	
Mutual interference protection			Provided	
Control output	Relay	Type	DPDT	
		Max. load	10 A, 240 VAC	
		Min. load	1 mA, 5 VDC	
Response time	On	Relay output	30 ms max.	
	Off	Relay output	30 ms max.	
Timing functions			See "Accessories" in Ordering Information	
Circuit protection	Output short-circuit		Not provided	
	DC power supply reverse polarity		Yes	
Indicators			Light Incident (red LED), Output Stability (green LED), Output Operation (yellow LED)	
Materials		Lens	Plastic	
		Case	Plastic	
Mounting			Bottom surface with three threaded metal inserts; Bracket (E39-L37) and hardware included	
Connections		Conduit	3/4-14 NPT	
		Wire	Plated steel screw terminals	
Weight			Without timer module: approx. 650 g (22.9 oz.) With timer module: approx. 690 g (24.3 oz.)	
Enclosure ratings		NEMA	1, 4, 4X, 12 and 13	
		IEC 144	IP67	
Approvals		UL	Listed, File number E41515	
		CSA	Certified, File Number LR 45951	
Ambient temperature		Operating	-25° to 55°C (-13° to 131°F)	
		Storage	-30° to 70°C (-22° to 158°F)	

■ TERMINAL ARRANGEMENT



■ OUTPUT CIRCUIT DIAGRAMS

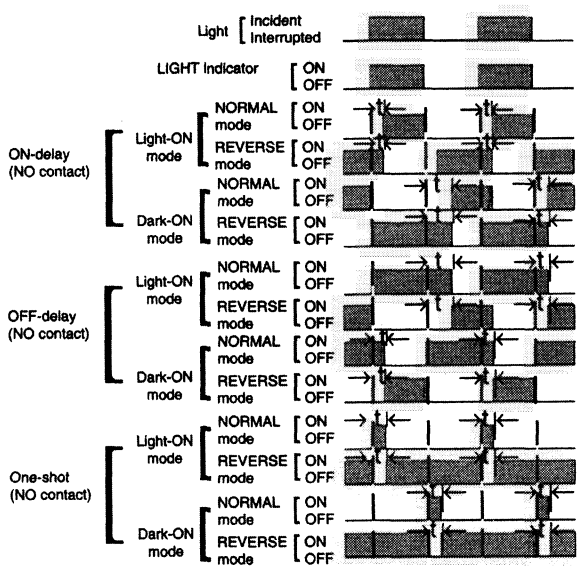
Relay output type



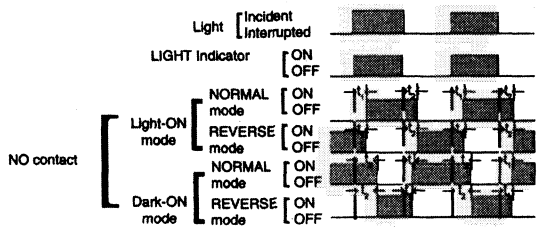
■ TIMING CHARTS

Each timer module is equipped with a NORMAL/REVERSE mode selector switch that provides greater flexibility in controlling the contact output state. In contrast to the Light-ON/Dark-ON mode selector switch that inverts the output state *before* the timing functions, the NORMAL/REVERSE mode selector switch inverts the output state *after* the timing functions. In the NORMAL mode, the contact output state coincides directly with the set times on the timer module. In the REVERSE mode, the contact output state is the same as an inverted NORMAL mode output state.

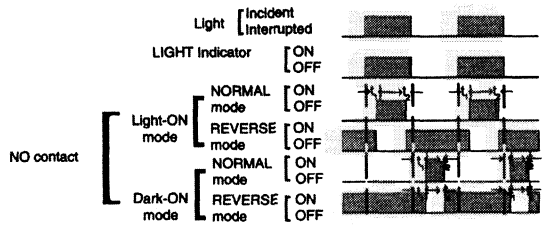
E39-T1 ON-delay/OFF-delay/one-shot delay timer



E39-T2 ON + OFF delay timer



E39-T2 ON + OFF delay timer

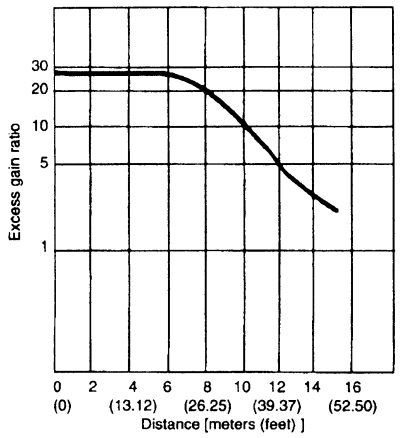


NOTE: t = 0.05 to 2 seconds or 0.5 to 20 seconds, switch selectable
t_1 = Delay time: 0.05 to 2 seconds or 0.5 to 20 seconds, switch selectable
t_2 = One-shot time: 0.05 to 2 seconds or 0.5 to 20 seconds, switch selectable

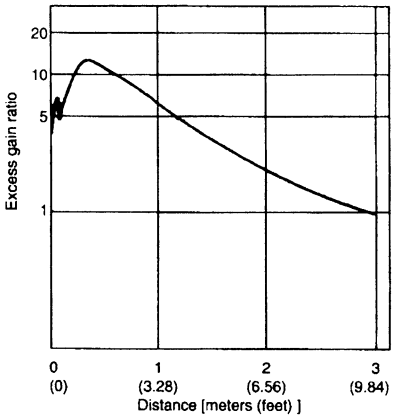
Engineering Data

■ EXCESS GAIN RATIO

E3K-R10K4

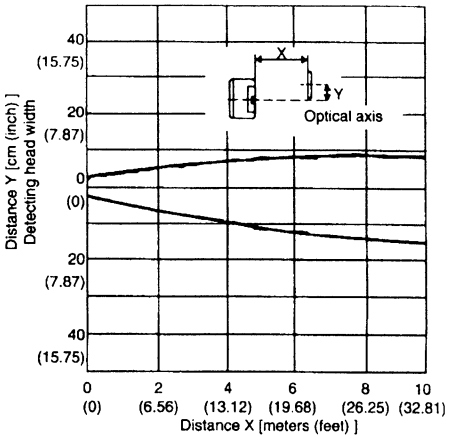


E3K-D2K4



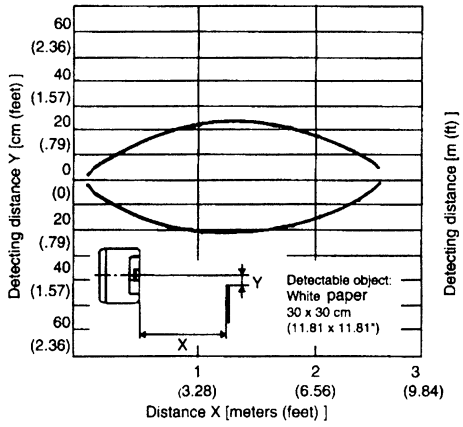
■ REFLECTOR SETTINGS RANGE

E3K-R10K4



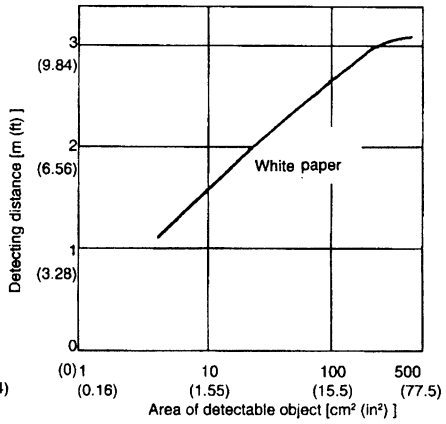
■ OPERATING RANGE

E3K-D2K4



■ DETECTING DISTANCE VS. MINIMUM TARGET SIZE (AT MAXIMUM SENSITIVITY)

E3K-D2K4

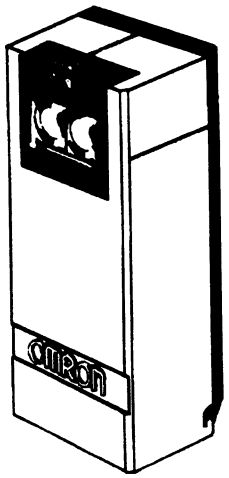


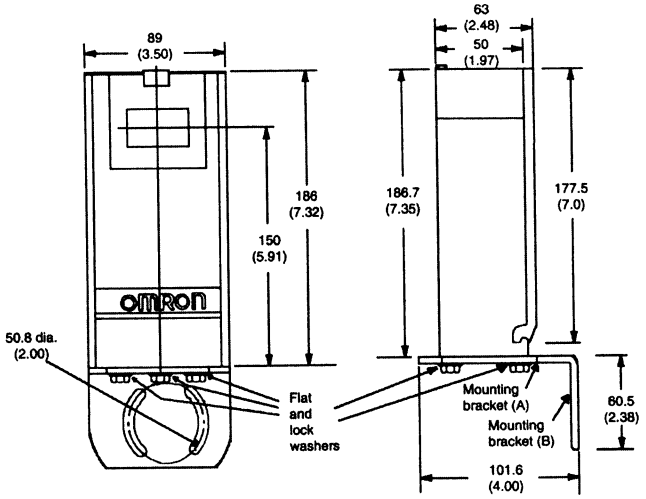
Dimensions

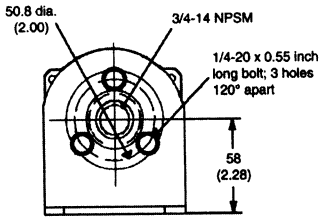
Unit: mm (inch)

■ SENSORS

E3K-□□□

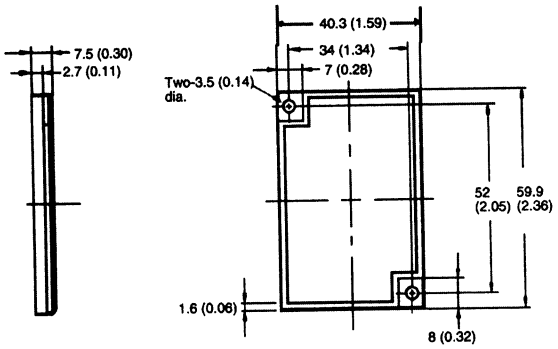




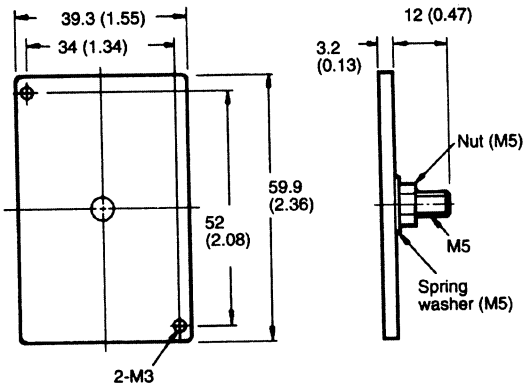


■ ACCESSORIES

E39-R1 Reflector



E39-L7 Reflector Adapter



NOTE: DIMENSIONS SHOWN ARE IN MILLIMETERS. To convert millimeters to inches divide by 25.4.

Cat. No. CEDSAX4 11/01 Specifications subject to change without notice. Printed in U.S.A.