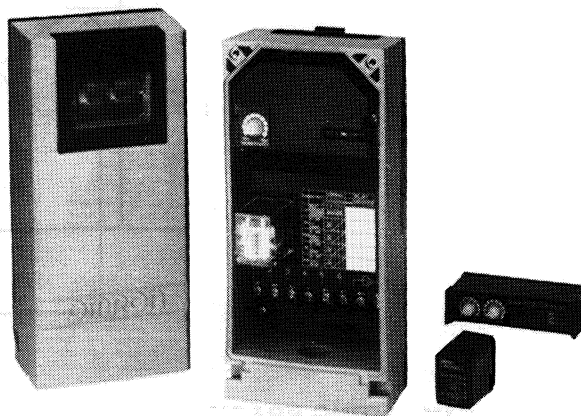


## Long-Range AC/DC Photoelectric Sensor

**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      |

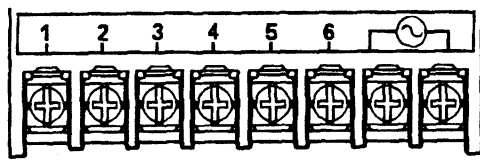
### ■ REPLACEMENT PARTS

| 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

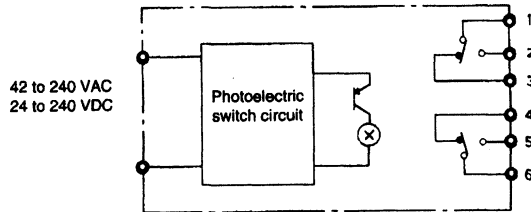
|                                |                                  |              |                                                                                               |                                                                                      |
|--------------------------------|----------------------------------|--------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| 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)<br>with E39-R1 reflector included<br>12.2 m (40 ft) with 3 inch dia. reflector | 2 m (6.56 ft)<br>with 30 x 30 cm (11.8 x 11.8 in) 90%<br>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.)<br>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

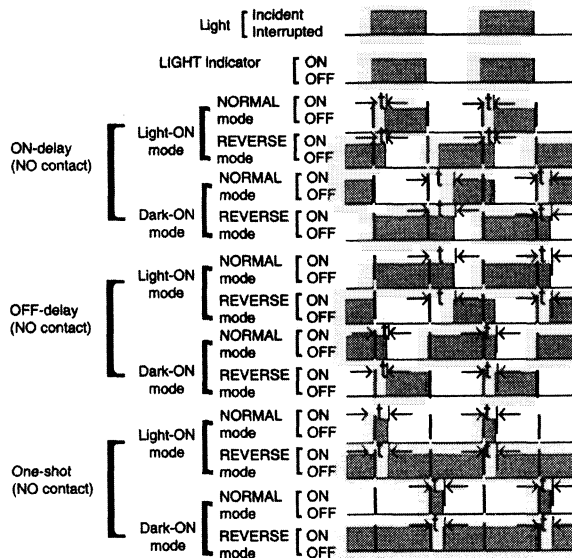


## ■ TIMING CHARTS

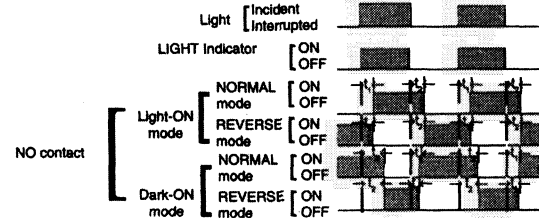
Each timer module is equipped with a NORMAL/REVERSE mode selector switch that provides greater flexibility in controlling the contact output state. In contrast to the Light-ON/Dark-ON mode selector switch that inverts the output state *before* the timing functions, the NORMAL/REVERSE mode selector switch

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.

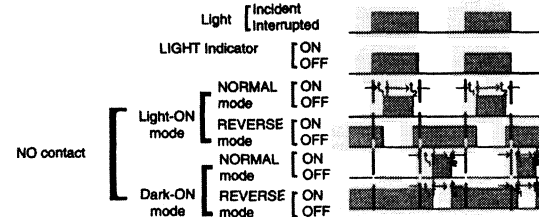
### E39-T1 ON-delay/OFF-delay/one-shot delay timer



### E39-T2 ON + OFF delay timer



### E39-T2 ON + OFF delay timer

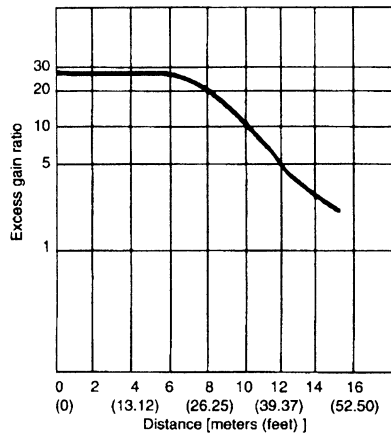


NOTE:  $t = 0.05$  to 2 seconds or 0.5 to 20 seconds, switch selectable  
 $t_1 =$  Delay time: 0.05 to 2 seconds or 0.5 to 20 seconds, switch selectable  
 $t_2 =$  One-shot time: 0.05 to 2 seconds or 0.5 to 20 seconds, switch selectable

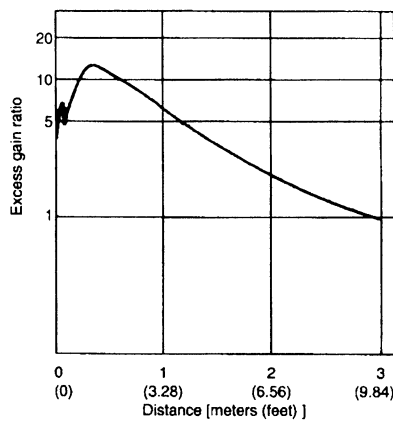
## Engineering Data

## ■ EXCESS GAIN RATIO

E3K-R10K4

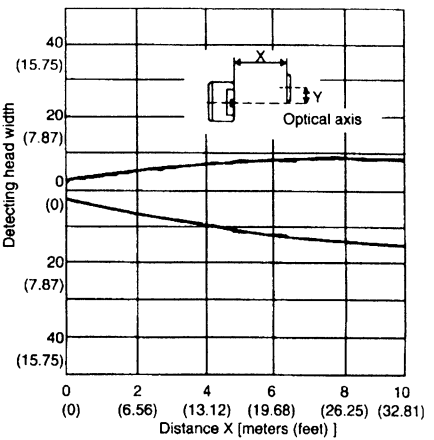


E3K-D2K4



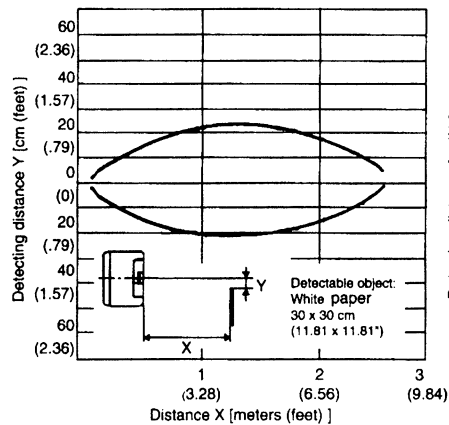
## ■ REFLECTOR SETTINGS RANGE

E3K-R10K4



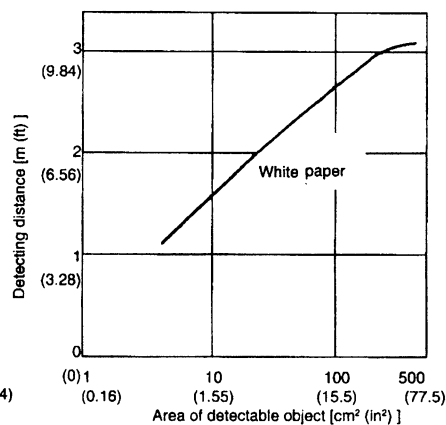
## ■ OPERATING RANGE

E3K-D2K4



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

E3K-D2K4



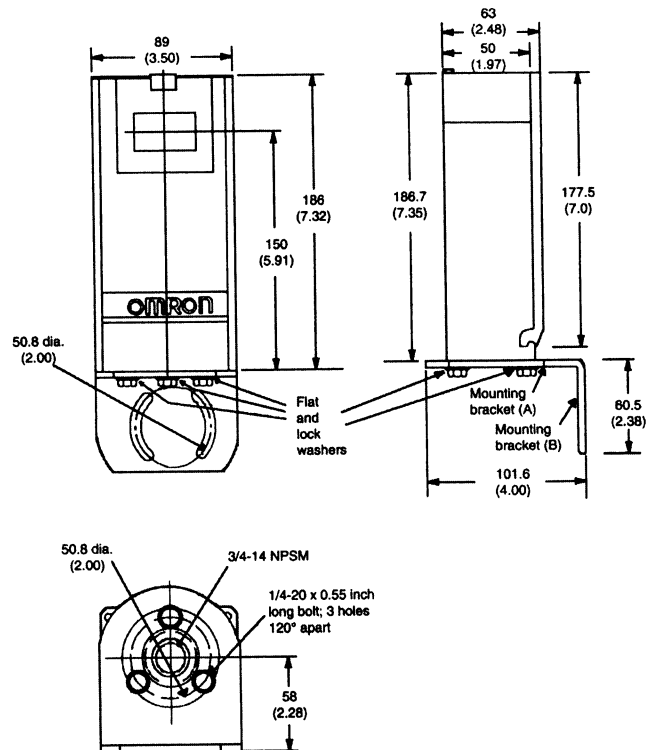
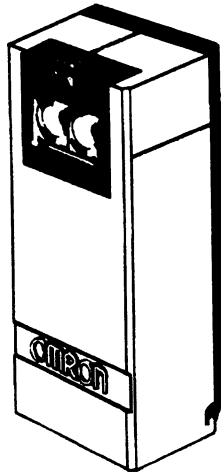
# Dimensions

Unit: mm (inch)

## SENSORS

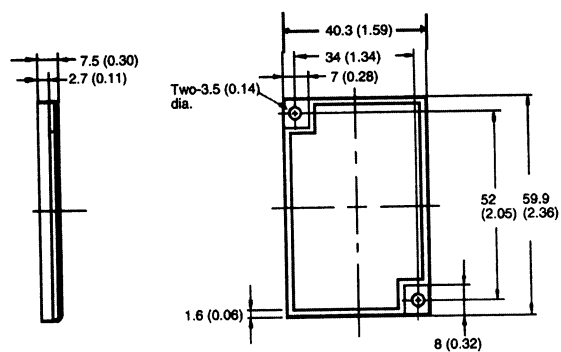
E3K-□□□

Photoelectric Sensors

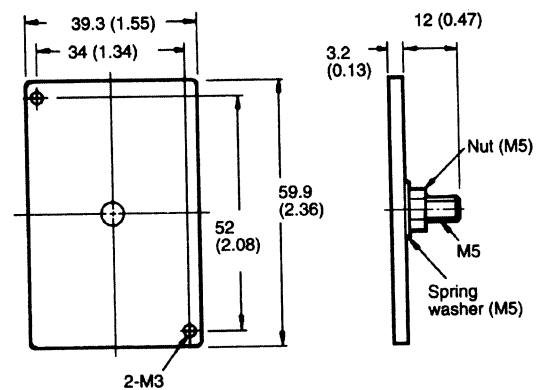


## ACCESSORIES

### E39-R1 Reflector



### E39-L7 Reflector Adapter



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

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