

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 | — |
| | | (0.05 to 5 s) | E3B2-R5M4D-US-3 | — | E3B2-D2M4D-US-3 |

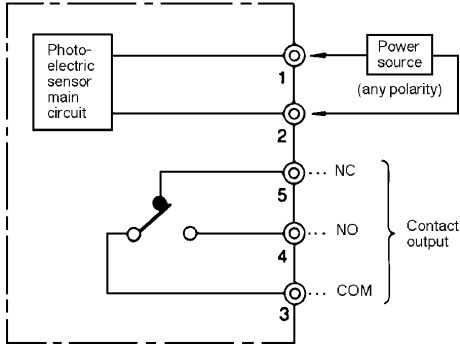
■ REPLACEMENT PARTS

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

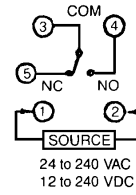
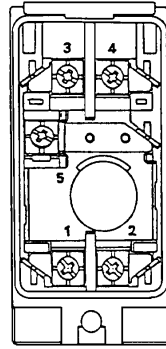
Specifications

| | | | | | |
|--------------------------------|----------------------------------|---|--|--|--|
| 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) | | | |

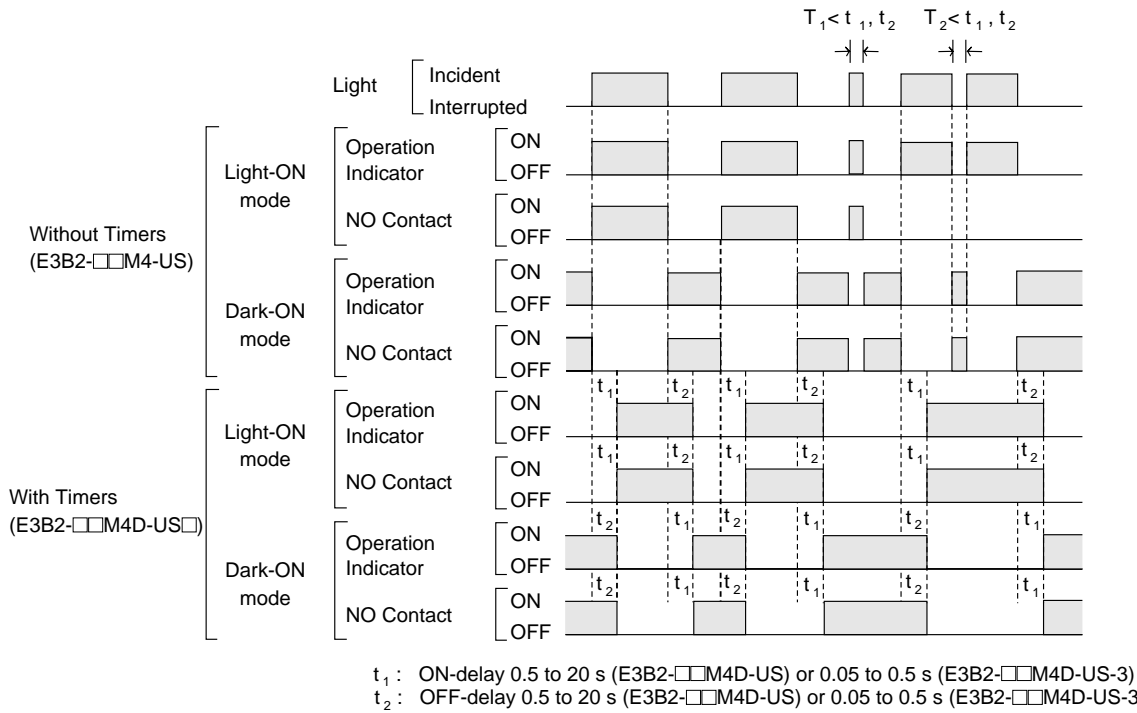
■ OUTPUT CIRCUIT DIAGRAM



■ CONNECTIONS



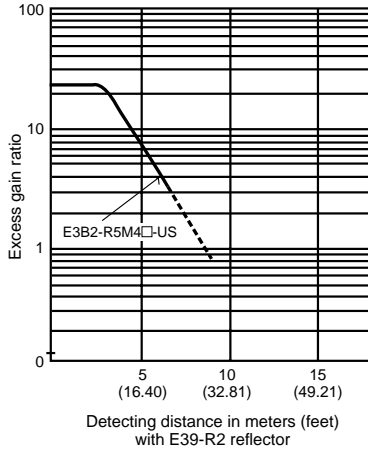
■ TIMING CHART



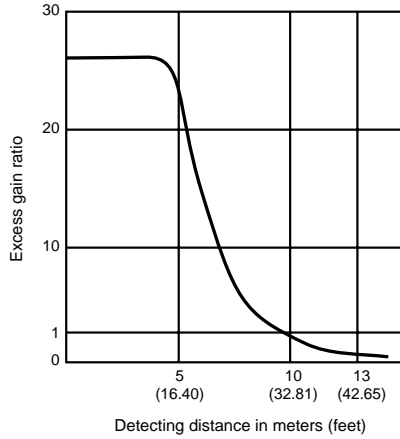
Engineering Data

■ EXCESS GAIN RATIO

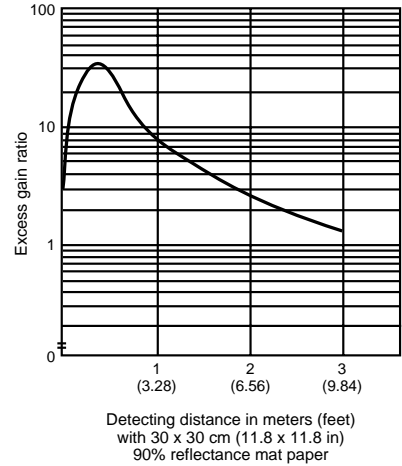
E3B2-R5M4□-US-□



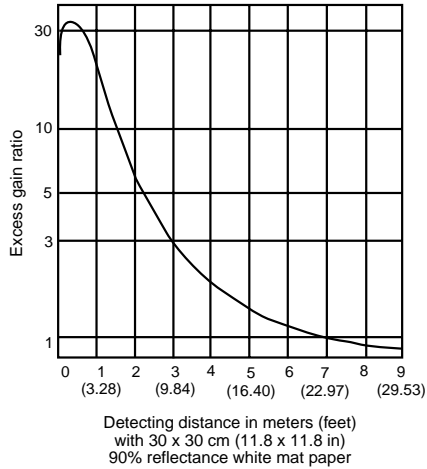
E3B2-R7M4□-US



E3B2-D2M4□US-□

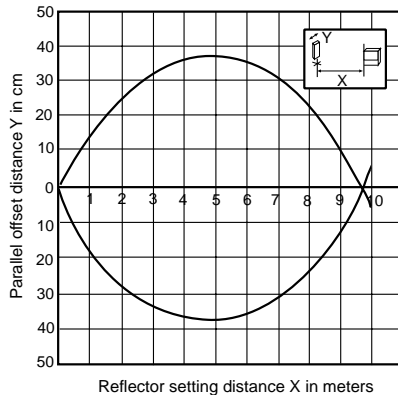


E3B2-D2M4□-US-N-□

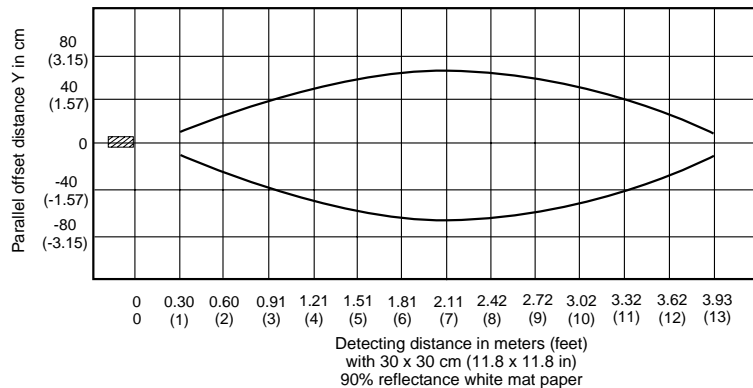


■ OPERATING RANGE

E3B2-R5M4□-US-□

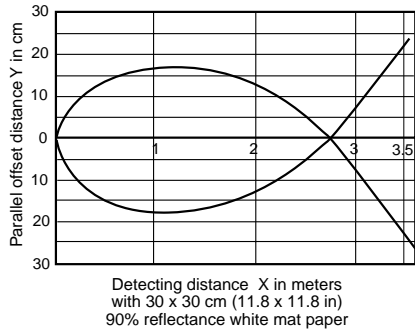


E3B2-D2M4□-US-N-□



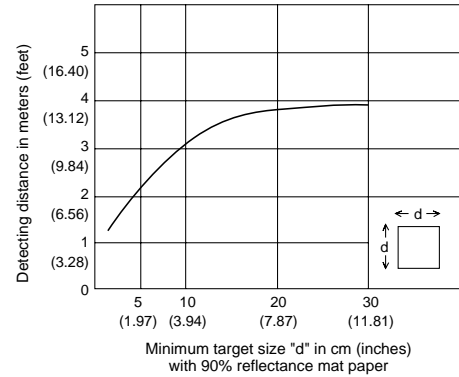
Operating Range continued

E3B2-D2M4□-US-□



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

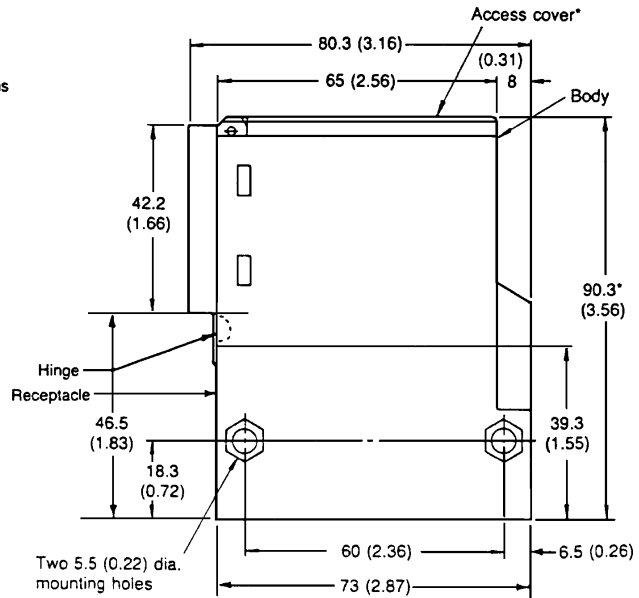
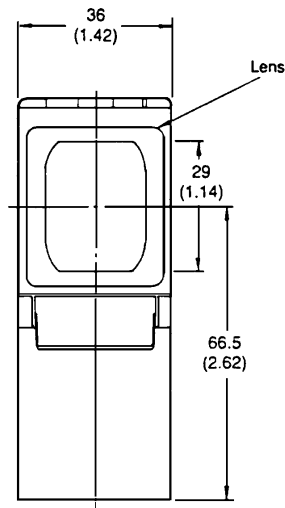
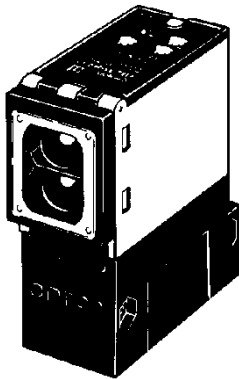
E3B2-D2M4□-US



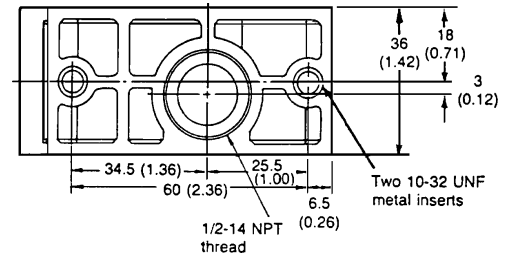
Dimensions

Unit: mm (inch)

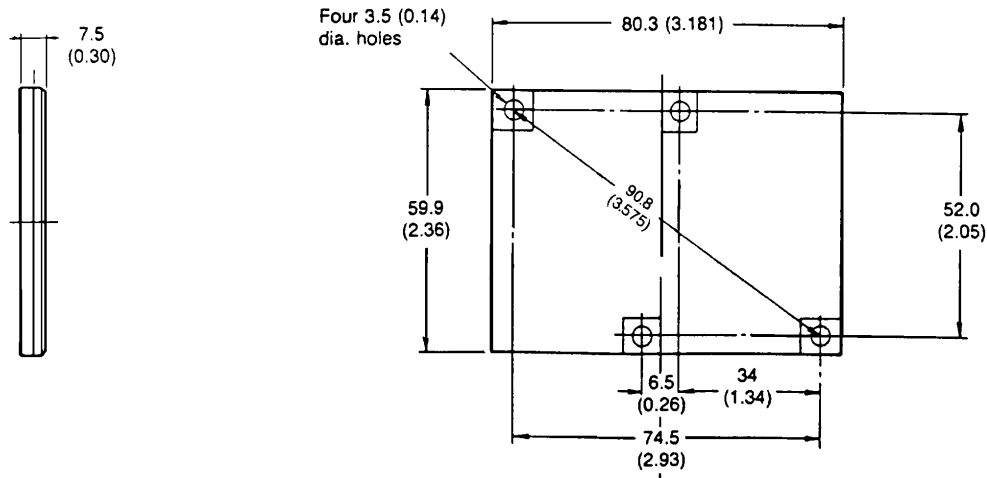
SENSOR



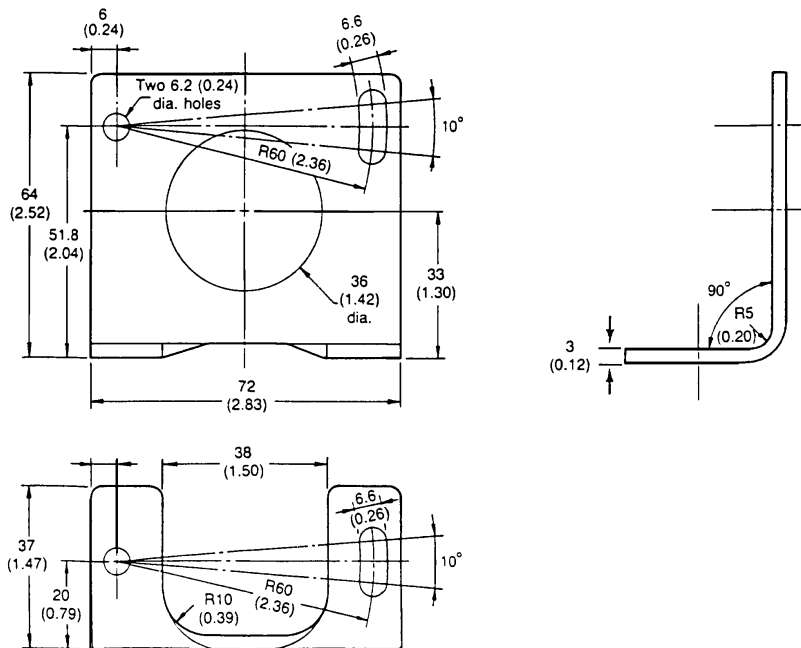
*Allow for a total height of 150 mm (5.91 inches) to open access cover.



■ E39-R2 REFLECTOR (included)



■ E39-L35 MOUNTING BRACKET (included)



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