

All Metal Sensing Inductive Prox

E2EV

One Sensor Detects All Kinds of Metal at Equal Distance

- Ideal for use on conveyors with work pieces of different metals
- Detects aluminum and copper at the same distance as iron and stainless steel
- Offers up to three times the detection distance for aluminum compared to conventional inductive sensors
- Shielded for flush mounting in metal
- Prewired with 2 meters (6.56 ft) of cable



Ordering Information

■ SENSORS

| Sensing head | Detecting distance | Output | | | |
|--------------|--------------------|------------|------------|------------|------------|
| | | NPN-NO | NPN-NC | PNP-NO | PNP-NC |
| M12 | 2 mm (0.08 in) | E2EV-X2C1 | E2EV-X2C2 | E2EV-X2B1 | E2EV-X2B2 |
| M18 | 5 mm (0.20 in) | E2EV-X5C1 | E2EV-X5C2 | E2EV-X5B1 | E2EV-X5B2 |
| M30 | 10 mm (0.39 in) | E2EV-X10C1 | E2EV-X10C2 | E2EV-X10B1 | E2EV-X10B2 |

■ ACCESSORIES

| Description | | Part number |
|--|-----------------------|-------------|
| Mounting brackets | Fits M12 size sensors | Y92E-B12 |
| | Fits M18 size sensors | Y92E-B18 |
| | Fits M30 size sensors | Y92E-B30 |
| Protective covers for shielded sensors | Fits M12 size sensors | Y92E-E12-2 |
| | Fits M18 size sensors | Y92E-E18-2 |
| | Fits M30 size sensors | Y92E-E30-2 |

■ REPLACEMENT PARTS

| Description | | Part number |
|--|---|-------------|
| Mounting hardware including one pair of metal nuts and washers | Fits M12 size sensors (supplied with each sensor) | M12-MHWS |
| | Fits M18 size sensors (supplied with each sensor) | M18-MHWS |
| | Fits M30 size sensors (supplied with each sensor) | M30-MHWS |

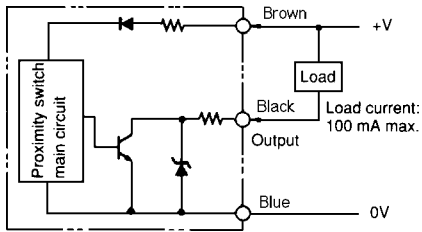
Specifications

| | | | | |
|--|----------------|---|--|--|
| Part number | | E2EV-X2□□ | E2EV-X5□□ | E2EV-X10□□ |
| Sensor type | | Inductive | | |
| Body | Size | M12 | M18 | M30 |
| | Type | Shielded | | |
| Supply voltage | | 10 to 30 VDC, max. ripple 10% peak-to-peak | | |
| Current consumption | | 15 mA max. | | |
| Detectable object type | | Ferrous and non-ferrous metals | | |
| Effective detecting distance (with standard target) | | 2 mm ±10% (0.08 in) | 5 mm ±10% (0.20 in) | 10 mm ±10% (0.39 in) |
| Usable detecting range (with standard target) | | 0 to 1.4 mm (0 to 0.06 in) | 0 to 3.5 mm (0 to 0.14 in) | 0 to 7 mm (0 to 0.28 in) |
| Standard target size aluminum, L x W x H) | | 12 x 12 x 1 mm (0.47 x 0.47 x 0.04 in) | 18 x 18 x 1 mm (0.71 x 0.71 x 0.04 in) | 30 x 30 x 1 mm (1.18 x 1.18 x 0.04 in) |
| Differential travel | | 10% max. of effective detecting distance | | |
| Control output | DC solid-state | Type | NPN-NO (E2EV-X□C1) NPN-NC (E2EV-X□C2) PNP-NO (E2EV-X□B1) PNP-NC (E2EV-X□B2) | |
| | | Max. load | 100 mA max. | |
| | | Max. on-state voltage drop | 2 VDC (See graph in Engineering Data section) | |
| Response frequency | | 150 Hz | 70 Hz | 70 Hz |
| Circuit protection | | Output short circuit, surge voltage, reverse polarity | | |
| Indicators | | Target present (red LED) | | |
| Materials | Housing | Nickel-plated brass | | |
| | Sensing face | ABS | | |
| Mounting | | Two M12 nuts included. Bracket Y92E-B12 optional. | Two M18 nuts included. Bracket Y92E-B18 optional. | Two M30 nuts included. Bracket Y92E-B30 optional. |
| Connections | Prewired | 3-conductor cable, 2 m (6.56 ft) length | | |
| Weight | | 120 g (4.23 oz.) | 140 g (5.5 oz.) | 190 g (7.5 oz.) |
| Enclosure ratings | UL | — | | |
| | NEMA | 1, 3, 4, 6, 12, 13 | | |
| | IEC 144 | IP67 | | |
| Approvals | UL | — | | |
| | CSA | — | | |
| Ambient operating temperature | | -10° to 55°C (14° to 131°F) | | |
| Vibration | | 10 to 55 Hz, 1.5 mm (0.06 in) double amplitude for 2 hours each in X, Y, and Z directions | | |
| Shock | | Approx. 100 G's, 10 times each in X, Y, and Z directions | | |

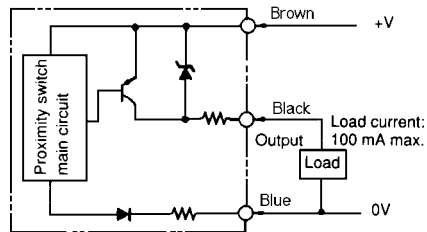
Operation

OUTPUT CIRCUIT DIAGRAMS AND CONNECTIONS

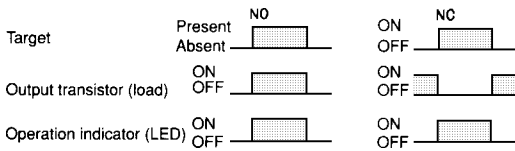
NPN Output Type



PNP Output Type



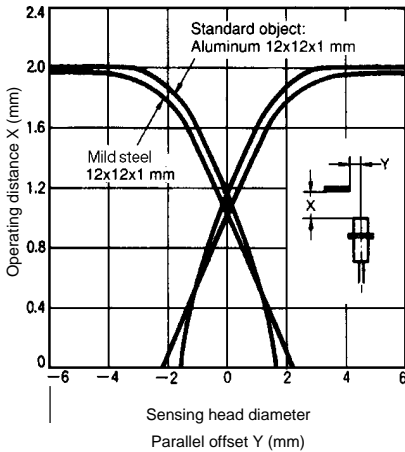
TIMING CHARTS



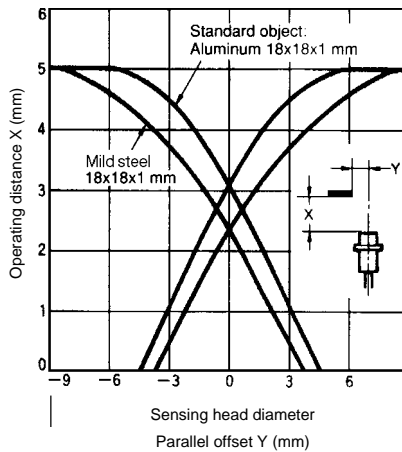
Engineering Data

OPERATING RANGE

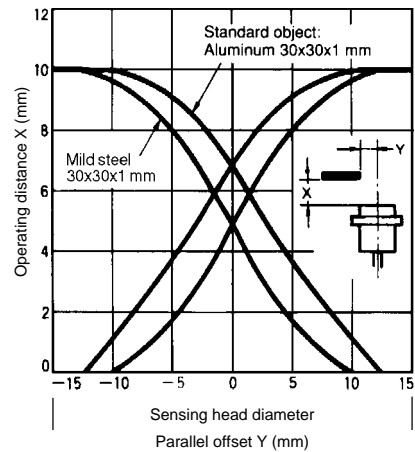
E2EV-X2



E2EV-X5

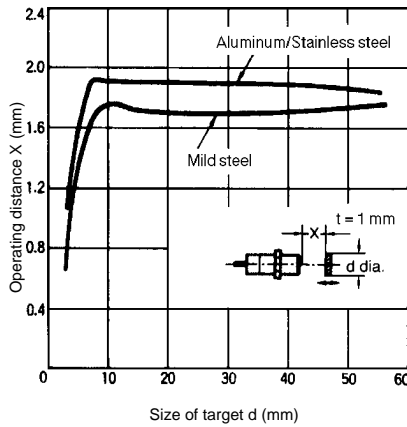


E2EV-X10

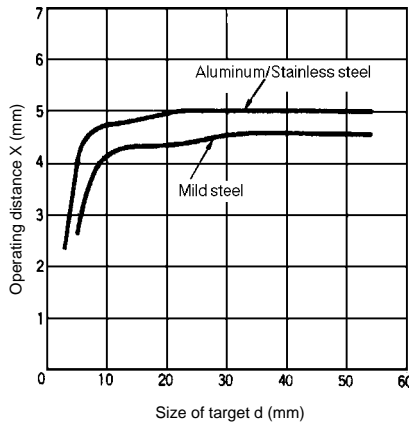


■ SENSING DISTANCE vs. SIZE AND MATERIAL OF TARGET

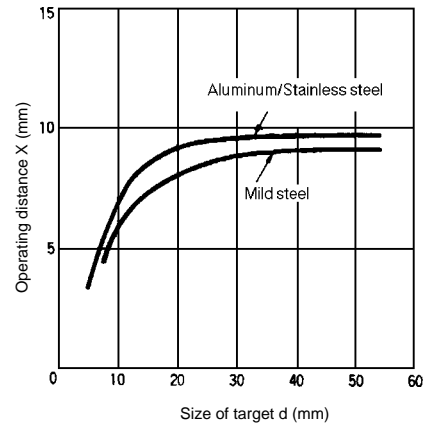
E2EV-X2□□



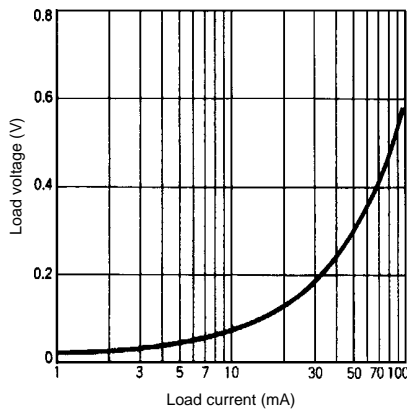
E2EV-X5□□



E2EV-X10□□



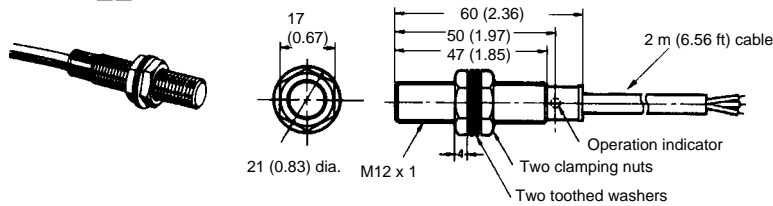
■ ON-STATE VOLTAGE DROP



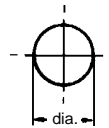
Dimensions

Unit: mm (inch)

E2EV-X2□□

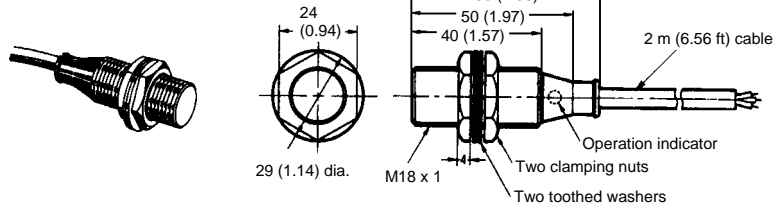


Mounting holes

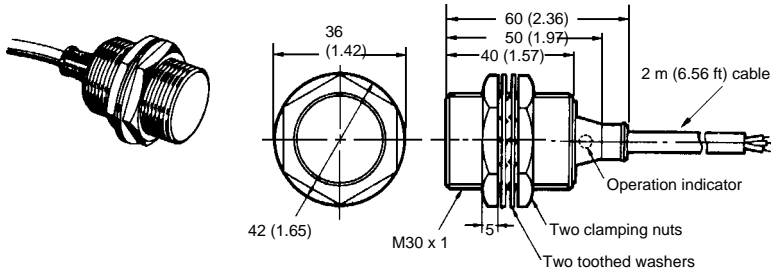


| Model | Diameter |
|------------|-------------------|
| E2EV-X2□□ | 12.5 mm (0.49 in) |
| E2EV-X5□□ | 18.5 mm (0.73 in) |
| E2EV-X10□□ | 30.5 mm (1.20 in) |

E2EV-X5□□



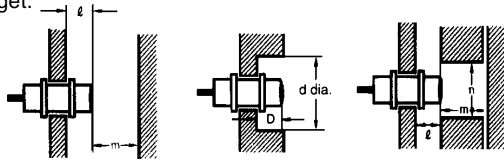
E2EV-X10□□



Precautions

■ EFFECTS OF SURROUNDING METALS

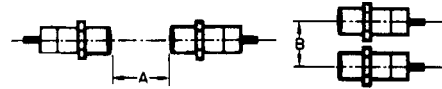
When mounting a proximity sensor flush with a metallic panel, provide the minimum distance shown. This prevents the sensor from being affected by metallic objects other than the target.



| Model | E2EV-X2□□ | E2EV-X5□□ | E2EV-X10□□ |
|-------|-----------------|-----------------|-----------------|
| l | 0 | 0 | 0 |
| d | 12 mm (0.47 in) | 18 mm (0.71 in) | 30 mm (1.18 in) |
| D | 0 | 0 | 0 |
| m | 8 mm (0.31 in) | 20 mm (0.79 in) | 40 mm (1.57 in) |
| n | 18 mm (0.71 in) | 27 mm (1.06 in) | 45 mm (1.77 in) |

■ MUTUAL INTERFERENCE

To prevent mutual interference between two sensors mounted opposite or parallel to each other, be sure to space the two sensors at a distance greater than that shown here.



| Model | A | B |
|------------|------------------|-----------------|
| E2EV-X2□□ | 30 mm (1.18 in) | 20 mm (0.79 in) |
| E2EV-X5□□ | 50 mm (1.97 in) | 35 mm (1.38 in) |
| E2EV-X10□□ | 100 mm (3.94 in) | 70 mm (2.76 in) |

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