

Chip Immune Inductive Prox

E2EZ

Sensor Immune to Metal Chip Accumulation, Ideal for Machine Tool Applications

- Detects work piece properly even when aluminum or iron chips collect on the sensing head during drilling or cutting
- Housing resists water splash and oil contamination to IEC IP67 standards
- Oil-tight cable and operation indicator are standard
- Shielded for flush mounting in metal
- Prewired with 2 meters (6.56 ft) of cable



Ordering Information _____

■ SENSORS

| Sensing | Detecting | DC Output | | AC Output |
|---------|----------------|-----------|-----------|-----------|
| head | distance | NPN-NO | PNP-NO | NO |
| M18 | 4 mm (0.16 in) | E2EZ-X4C1 | E2EZ-X4B1 | E2EZ-X4Y1 |
| M30 | 8 mm (0.32 in) | E2EZ-X8C1 | E2EZ-X8B1 | E2EZ-X8Y1 |

■ ACCESSORIES

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

■ REPLACEMENT PARTS

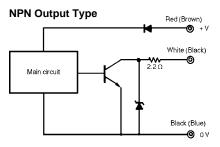
| Description | | Part number |
|---------------------------------|---|-------------|
| Mounting hardware including one | Fits M18 size sensors (supplied with each sensor) | M18-MHWS |
| pair of metal nuts and washers | Fits M30 size sensors (supplied with each sensor) | M30-MHWS |

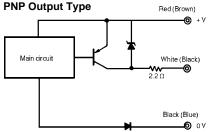
Specifications _____

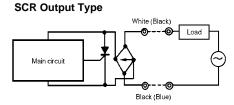
| Part number | | | E2EZ-X4□□ | E2EZ-X8□□ | |
|-------------------------------|--------------|--------------------------------|---|---|--|
| Sensor type | | | Inductive | · | |
| Body Size | | Size | M18 | M30 | |
| | | Туре | Shielded | · | |
| Supply voltage | | | 100 to 240 VAC, 50/60 Hz or 10 to 30 VDC, max. ripple 10% peak-to-peak | | |
| Current consumption | | ion | AC: 2 mA max. at 100 VAC, 3 mA max. at 200 VAC DC: 15 mA max. | | |
| Detectab | ole object | type | Ferrous metals | | |
| Effective | detecting | distance | 4 mm ±10% | 8 mm ±10% | |
| | ndard targ | | (0.16 in) | (0.32 in) | |
| | detecting r | • | 0 to 3.2 mm | 0 to 6.5 mm | |
| | ndard targ | | (0 to 0.13 in) | (0 to 0.26 in) | |
| | d target siz | | 30 x 30 x 1 mm | 54 x 54 x 1 mm | |
| Different | m (L x W) | (H) | (1.18 x 1.18 x 0.04 in) | (2.13 x 2.13 x 0.04 in) | |
| Control | AC | Typo | 20% max. of effective detecting distance | U | |
| | solid- | Type Max load | SCR-NO (E2EZ-X□Y1) | | |
| output | | Max. load | 10 to 200 mA | | |
| | state | Max. ON-state voltage drop | See graph in Engineering Data section | | |
| | | Max. OFF-state leakage current | See graph in Engineering Data section | | |
| | DC | Туре | NPN-NO (E2EZ-X□C1) | | |
| | solid- | | PNP-NO (E2EZ-X□B1) | | |
| | state | Max. load | 100 mA max. at 12 VDC, 200 mA max. at 24 VDC | | |
| | | Max. ON-state voltage drop | 2 VDC | | |
| Respons | se | AC | 5 Hz | 5 Hz | |
| frequenc | у | DC | 12 Hz | 8 Hz | |
| Circuit p | rotection | AC | Not provided | | |
| | | DC | Output short circuit, surge voltage, reverse polarity | | |
| Indicator | 'S | | Target present (red LED) | | |
| Materials | S | Housing | Nickel-plated brass | | |
| | | Sensing face | ABS | | |
| Mounting | g | | Two M18 nuts included. Bracket Y92E-B18 optional. | Two M30 nuts included. Bracket Y92E-B30 optional. | |
| Connect | ions | AC | 2-conductor cable, 2 m (6.56 ft) length | | |
| | | DC | 3-conductor cable, 2 m (6.56 ft) length | | |
| Weight | | | 170 g (6.0 oz.) | 270 g (9.5 oz.) | |
| Enclosure UL | | UL | | | |
| ratings | | NEMA | 1, 4X, 6, 12, 13 | | |
| ramigo | | IEC 144 | IP67 | | |
| Approva | ls | UL | _ | | |
| -F | - | CSA | _ | | |
| Ambient operating temperature | | - | 0° to 50°C (32° to 122°F) | | |
| Vibration | | , | 10 to 55 Hz, 1.5 mm (0.06 in) double amplitude for 2 hours each in X, Y, and Z directions | | |
| | | | Approx. 100 G's, 10 times 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

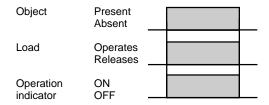






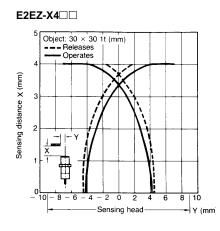
Note: IEC colors are shown in parentheses.

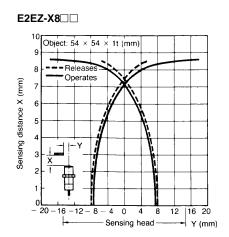
■ TIMING CHARTS



Engineering Data

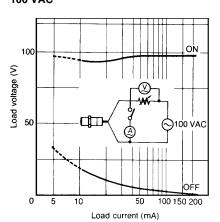
■ OPERATING RANGE



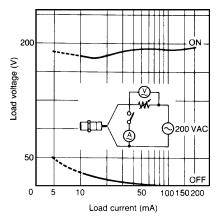


■ ELECTRICAL REQUIREMENTS FOR AC SENSORS (E2EZ-X□Y1)

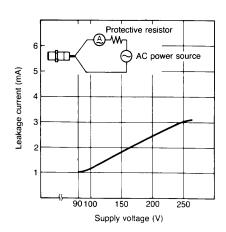
Residual Load Voltage Characteristics 100 VAC



200 VAC



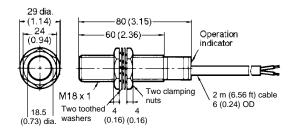
OFF-State Leakage Current



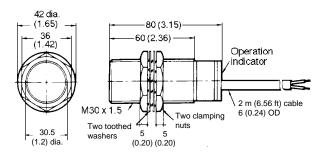
Dimensions

Unit: mm (inch)

E2EZ-X4□1



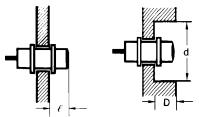
E2EZ-X8□1

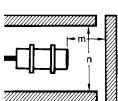


Precautions

■ 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.





For Iron

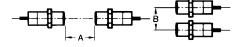
| Model | E2EZ-X4□□ | E2EZ-X8□□ |
|-------|-----------------|-----------------|
| 1 | 0 | 0 |
| d | 18 mm (0.71 in) | 30 mm (1.18 in) |
| D | 0 | 0 |
| m | 16 mm (0.63 in) | 32 mm (1.26 in) |
| n | 27 mm (1.06 in) | 45 mm (1.77 in) |

For Aluminum

| Model | E2EZ-X4□□ | E2EZ-X8□□ |
|-------|-----------------|-----------------|
| 1 | 5 mm (0.20 in) | 10 mm (0.39 in) |
| d | 40 mm (1.57 in) | 70 mm (2.76 in) |
| D | 5 mm (0.20 in) | 10 mm (0.39 in) |
| m | 16 mm (0.63 in) | 32 mm (1.26 in) |
| n | 54 mm (2.13 in) | 90 mm (3.54 in) |

■ MUTUAL INTERFERENCE

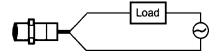
To prevent mutual interference between two sensors mounted opposite or parallel to each other, be sure to space the two sensors at a distance greater than that shown here.



| Model | E2EZ-X4□□ | E2EZ-X8□□ |
|-------|----------------|-----------------|
| Α | 4 cm (1.57 in) | 6 cm (2.36 in) |
| В | 5 cm (1.97 in) | 10 cm (3.94 in) |

■ CONNECTION TO AC POWER SOURCE

Be sure to connect the proximity sensor to the power source through a load. Direct connection may damage the sensor.



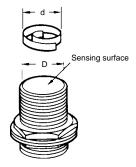
■ IMMUNITY AGAINST METAL CHIPS

Even if aluminum or iron chips collect on the sensing head, no signal is produced indicating the detection of metal chips. However, the detection signal may be produced under either of the following two conditions. If a signal is produced from metal chips on the sensing head, remove the chips from the sensing head.

Large Chips

If the size (d) of the chips collected on the sensing head is greater than or equal to 2/3 of the size (D) of the sensing surface.

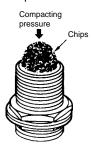
 $d \ge 2/3 \times D$



| Model | Sensing surface (D) |
|-----------|---------------------|
| E2EZ-X4□1 | 16 mm (0.63 in) |
| E2EZ-X8□1 | 28 mm (1.10 in) |

Compressed Chips

If chips are pressed against the sensing surface by an external force the sensor will detect the chips.





OMRON ELECTRONICS LLCOne East Commerce Drive
Schaumburg, IL 60173

1-800-55-OMRON

OMRON ON-LINE

Global - http://www.omron.com USA - http://www.omron.com/oei Canada - http://www.omron.com/oci OMRON CANADA, INC.

885 Milner Avenue Scarborough, Ontario M1B 5V8 **416-286-6465**