

E2E-C□C/B□ and E2E-X1C/B□ DC 3-Wire Models

| Size | | 3 dia. | 4 dia. | M5 | 5.4 dia. |
|--|------------------|---|---|---------------------|------------|
| Shielded | | Shielded | | | |
| Item | Model | E2E-CR6C/B□ | E2E-CR8C/B□ | E2E-X1C/B□ | E2E-C1C/B□ |
| Sensing distance | | 0.6 mm ±15% | 0.8 mm ±15% | 1 mm ±15% | |
| Set distance | | 0 to 0.4 mm | 0 to 0.5 mm | 0 to 0.7 mm | |
| Differential travel | | 15% max. of sensing distance | | | |
| Detectable object | | Ferrous metal (The sensing distance decreases with non-ferrous metal. Refer to <i>Engineering Data</i> on page 14.) | | | |
| Standard sensing object | | Iron, 3 × 3 × 1 mm | Iron, 5 × 5 × 1 mm | | |
| Response frequency * | | 2 kHz | 3 kHz | | |
| Power supply voltage (operating voltage range) | | 12 to 24 VDC (10 to 30 VDC), ripple (p-p): 10% max. | | | |
| Current consumption | | 10 mA max. | 17 mA max. | | |
| Control output | Load current | Open-collector output, 80 mA max. (30 VDC max.) | Open-collector output, 100 mA max. (30 VDC max.) | | |
| | Residual voltage | 1 V max. (Load current: 80 mA, Cable length: 2 m) | 2 V max. (Load current: 100 mA, Cable length: 2 m) | | |
| Indicators | | Operation indicator (red) | | | |
| Operation mode (with sensing object approaching) | | C1/B1 Models: NO Refer to the timing charts under <i>I/O Circuit Diagrams</i> on page 17 for details. C2 Models: NC | | | |
| Protection circuits | | Reverse polarity protection, Surge suppressor | | | |
| Ambient temperature range | | Operating/Storage: -25 to 70°C (with no icing or condensation) | | | |
| Ambient humidity range | | Operating/Storage: 35% to 95% | | | |
| Temperature influence | | ±15% max. of sensing distance at 23°C in the temperature range of -25 to 70°C | | | |
| Voltage influence | | ±5% max. of sensing distance at rated voltage in the rated voltage ±10% range | ±2.5% max. of sensing distance at rated voltage in the rated voltage ±15% range | | |
| Insulation resistance | | 50 MΩ min. (at 500 VDC) between current-carrying parts and case | | | |
| Dielectric strength | | 500 VAC, 50/60 Hz for 1 min between current-carrying parts and case | | | |
| Vibration resistance | | Destruction: 10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions | | | |
| Shock resistance | | Destruction: 500 m/s ² 10 times each in X, Y, and Z directions | | | |
| Degree of protection | | IEC 60529 IP66 | IEC 60529 IP67, in-house standards: oil-resistant | | |
| Connection method | | Pre-wired Models (Standard cable length: 2 m) | | | |
| Weight (packed state) | | Approx. 60 g | | | |
| Materials | Case | Stainless steel (SUS303) | | Nickel-plated brass | |
| | Sensing surface | Heat-resistant ABS | | | |
| | Clamping nuts | Nickel-plated brass (E2E-X1C/B□ only) | | | |
| | Toothed washer | Zinc-plated iron (E2E-X1C/B□ only) | | | |
| Accessories | | Instruction manual | | | |

* The response frequency is an average value. Measurement conditions are as follows: standard sensing object, a distance of twice the standard sensing object, and a set distance of half the sensing distance.

E2E-X□Y□ AC 2-Wire Models

| Item | Size Shielded Model | M8 | | M12 | | M18 | | M30 | |
|---|---------------------------------|--|----------------------|---|-------------------------|-------------------------|----------------------|---------------|-------------------------|
| | | Shielded | Unshielded | Shielded | Unshielded | Shielded | Unshielded | Shielded | Unshielded |
| | | E2E-X1R5Y□ | E2E-X2MY□ | E2E-X2Y□ | E2E-X5MY□ | E2E-X5Y□ | E2E-X10MY□ | E2E-X10Y□ | E2E-X18MY□ |
| Sensing distance | | 1.5 mm ±10% | 2 mm ±10% | | 5 mm ±10% | | 10 mm ±10% | | 18 mm ±10% |
| Set distance | | 0 to 1.2 mm | 0 to 1.6 mm | | 0 to 4 mm | | 0 to 8 mm | | 0 to 14 mm |
| Differential travel | | 10% max. of sensing distance | | | | | | | |
| Detectable object | | Ferrous metal (The sensing distance decreases with non-ferrous metal. Refer to <i>Engineering Data</i> on page 14.) | | | | | | | |
| Standard sensing object | | Iron, 8 × 8 × 1 mm | Iron, 12 × 12 × 1 mm | | Iron, 15 × 15 × 1 mm | Iron, 18 × 18 × 1 mm | Iron, 30 × 30 × 1 mm | | Iron, 54 × 54 × 1 mm |
| Response frequency | | 25 Hz | | | | | | | |
| Power supply voltage (operating voltage range)¹ | | 24 to 240 VAC (20 to 264 VAC), 50/60 Hz | | | | | | | |
| Leakage current | | 1.7 mA max. | | | | | | | |
| Control output | Load current² | 5 to 100 mA | | 5 to 200 mA | | 5 to 300 mA | | | |
| | Residual voltage | Refer to <i>Engineering Data</i> on page 15. | | | | | | | |
| Indicators | | Operation indicator (red) | | | | | | | |
| Operation mode (with sensing object approaching) | | Y1 Models: NO Y2 Models: NC Refer to the timing charts under <i>I/O Circuit Diagrams</i> on page 18 for details. | | | | | | | |
| Protection circuits | | Surge suppressor | | | | | | | |
| Ambient temperature range^{1,2} | | Operating/Storage: -25 to 70°C (with no icing or condensation) | | Operating/Storage: -40 to 85°C (with no icing or condensation) | | | | | |
| Ambient humidity range | | Operating/storage: 35% to 95% (with no condensation) | | | | | | | |
| Temperature influence | | ±10% max. of sensing distance at 23°C in the temperature range of -25 to 70°C | | ±15% max. of sensing distance at 23°C in the temperature range of -40 to 85°C, ±10% max. of sensing distance at 23°C in the temperature range of -25 to 70°C | | | | | |
| Voltage influence | | ±1% max. of sensing distance at rated voltage in the rated voltage ±15% range | | | | | | | |
| Insulation resistance | | 50 MΩ min. (at 500 VDC) between current-carrying parts and case | | | | | | | |
| Dielectric strength | | 4,000 VAC (M8 Models: 2,000 VAC), 50/60 Hz for 1 min between current-carrying parts and case | | | | | | | |
| Vibration resistance | | Destruction: 10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions | | | | | | | |
| Shock resistance | | Destruction: 500 m/s ² 10 times each in X, Y, and Z directions | | Destruction: 1,000 m/s ² 10 times each in X, Y, and Z directions | | | | | |
| Degree of protection | | Pre-wired Models : IEC 60529 IP67, in-house standards: oil-resistant Connector Models : IEC 60529 IP67 | | | | | | | |
| Connection method | | Pre-wired Models (Standard cable length: 2 m) and Connector Models | | | | | | | |
| Weight | Pre-wired Models Model | Approx. 60 g | | Approx. 70 g | | Approx. 130 g | | Approx. 175 g | |
| | Connector Models | Approx. 15 g | | Approx. 25 g | | Approx. 40 g | | Approx. 90 g | |
| Materials | Case | Stainless steel (SUS303) | | Nickel-plated brass | | | | | |
| | Sensing surface | PBT | | | | | | | |
| | Clamping nuts | Nickel-plated brass | | | | | | | |
| | Toothed washer | Zinc-plated iron | | | | | | | |
| Accessories | | Instruction manual | | | | | | | |

*1. When supplying 24 VAC to any of the above models, make sure that the operating ambient temperature range is at least -25°C.

*2. When using an M18 or M30 Connector Model at an ambient temperature between 70 and 85°C, make sure that the Sensor has a control output (load current) of 5 to 200 mA max.