

### Short Barrel 3-Wire Prox Sensors Meet IP67

- Thick nickel-plated brass barrel has wrench flats for easy installation
- Solid potted internal circuitry withstands shocks and water washdown to IP67
- High visibility indicator
- Miniature and standard sizes



## Ordering Information

WHEN ORDERING, PLEASE NOTE: Omron has added the suffix “-N” to standard size E2E part numbers for ordering purposes only; the suffix “-N” will not appear on the product.

### ■ PREWIRED MINIATURE SENSORS


Type	Size	Sensing distance	Output configuration	Part number	
				NO	NC
	4 mm dia.	0.8 mm	NPN	E2E-CR8C1	E2E-CR8C2
			PNP	E2E-CR8B1	E2E-CR8B2
	M5	1 mm	NPN	E2E-X1C1	E2E-X1C2
			PNP	E2E-X1B1	E2E-X1B2
	5.4 mm dia.	1 mm	NPN	E2E-C1C1	E2E-C1C2
			PNP	E2E-C1B1	E2E-C1B2

### ■ PREWIRED SHIELDED STANDARD SENSORS

Type	Size	Sensing distance	Output configuration	Part number	
				NO	NC
	M8	1.5 mm	NPN	E2E-X1R5E1-N	E2E-X1R5E2-N
			PNP	E2E-X1R5F1-N	E2E-X1R5F2-N
	M12	2 mm	NPN	E2E-X2E1-N	E2E-X2E2-N
			PNP	E2E-X2F1-N	E2E-X2F2-N
	M18	5 mm	NPN	E2E-X5E1-N	E2E-X5E2-N
			PNP	E2E-X5F1-N	E2E-X5F2-N
	M30	10 mm	NPN	E2E-X10E1-N	E2E-X10E2-N
			PNP	E2E-X10F1-N	E2E-X10F2-N



- Note: 1. A different oscillating frequency is available. Add a “5” to the part number (e.g., E2E-X5E15-N).  
 2. E2E sensors with robotic cable are available. Add a “-R” in the part number (e.g., E2E-X5E1-R-N).

## ■ PREWIRED UNSHIELDED STANDARD SENSORS

Type	Size	Sensing distance	Output configuration	Part number	
				NO	NC
	M8	2 mm	NPN	E2E-X2ME1-N	E2E-X2ME2-N
			PNP	E2E-X2MF1-N	E2E-X2MF2-N
	M12	5 mm	NPN	E2E-X5ME1-N	E2E-X5ME2-N
			PNP	E2E-X5MF1-N	E2E-X5MF2-N
	M18	10 mm	NPN	E2E-X10ME1-N	E2E-X10ME2-N
			PNP	E2E-X10MF1-N	E2E-X10MF2-N
	M30	18 mm	NPN	E2E-X18ME1-N	E2E-X18ME2-N
			PNP	E2E-X18MF1-N	E2E-X18MF2-N



Note: 1. A different oscillating frequency is available. Add a "5" to the part number (e.g., E2E-X5E15-N).  
 2. E2E sensors with robotic cable are available. Add a "R" in the part number (e.g., E2E-X5E1-R-N).

## ■ SENSORS WITH BUILT-IN M12 MICROCHANGE® CONNECTOR

Type	Size	Sensing distance	Output configuration	Part number	
				NO	NC
	M8	1.5 mm	NPN	E2E-X1R5E1-M1-N	E2E-X1R5E2-M1-N
			PNP	E2E-X1R5F1-M1-N	E2E-X1R5F2-M1-N
	M12	2 mm	NPN	E2E-X2E1-M1-N	E2E-X2E2-M1-N
			PNP	E2E-X2F1-M1-N	E2E-X2F2-M1-N
	M18	5 mm	NPN	E2E-X5E1-M1-N	E2E-X5E2-M1-N
			PNP	E2E-X5F1-M1-N	E2E-X5F2-M1-N
	M30	10 mm	NPN	E2E-X10E1-M1-N	E2E-X10E2-M1-N
			PNP	E2E-X10F1-M1-N	E2E-X10F2-M1-N
	M8	2 mm	NPN	E2E-X2ME1-M1-N	E2E-X2ME2-M1-N
			PNP	E2E-X2MF1-M1-N	E2E-X2MF2-M1-N
	M12	5 mm	NPN	E2E-X5ME1-M1-N	E2E-X5ME2-M1-N
			PNP	E2E-X5MF1-M1-N	E2E-X5MF2-M1-N
	M18	10 mm	NPN	E2E-X10ME1-M1-N	E2E-X10ME2-M1-N
			PNP	E2E-X10MF1-M1-N	E2E-X10MF2-M1-N
	M30	18 mm	NPN	E2E-X18ME1-M1-N	E2E-X18ME2-M1-N
			PNP	E2E-X18MF1-M1-N	E2E-X18MF2-M1-N

Note: Connector cordsets: For MicroChange® models, use OMRON Y96E-4□D□.

## ■ SENSORS WITH BUILT-IN M8 NANOCHANGE® CONNECTOR

Type	Size	Sensing distance	Output configuration	Part number	
				NO	NC
	M8	1.5 mm	NPN	E2E-X1R5E1-M3	E2E-X1R5E2-M3
			PNP	E2E-X1R5F1-M3	E2E-X1R5F2-M3
	M8	2 mm	NPN	E2E-X2ME1-M3	E2E-X2ME2-M3
			PNP	E2E-X2MF1-M3	E2E-X2MF2-M3

Note: Connector cordsets: For NanoChange® models, use OMRON X3SF-M42□-40□-R or Brad Harrison equivalent.

## ■ ACCESSORIES

Description		Part number
Mounting brackets	Fits M8 size sensors	<b>Y92E-B8</b>
	Fits M12 size sensors	<b>Y92E-B12</b>
	Fits M18 size sensors	<b>Y92E-B18</b>
	Fits M30 size sensors	<b>Y92E-B30</b>
Silicone rubber covers for shielded sensors	Fits M12 size sensors	<b>Y92E-E12-2</b>
	Fits M18 size sensors	<b>Y92E-E18-2</b>
	Fits M30 size sensors	<b>Y92E-E30-2</b>

## ■ REPLACEMENT PARTS

Description		Part number
Mounting hardware including one pair of metal nuts and one washer	Fits M5 size sensors	<b>M5-MHWS</b>
	Fits M8 size sensors	<b>M8-MHWS</b>
	Fits M12 size sensors	<b>M12-MHWS</b>
	Fits M18 size sensors	<b>M18-MHWS</b>
	Fits M30 size sensors	<b>M30-MHWS</b>

# Specifications

## ■ MINIATURE SENSORS

Part number		E2E-CR8□□	E2E-X1□□	E2E-C1□□
Size		4 mm (0.16 in) dia.	M5	5.5 mm (0.21 in) dia.
Type		Shielded		
Sensing distance		0.8 mm (0.03 in) ± 15%	1 mm (0.04 in) ± 15%	
Supply voltage		10 to 30 VDC, 10% max. permissible ripple peak to peak		
Current consumption		17 mA max.		
Sensing object		Magnetic metals		
Setting distance		0 to 0.5 mm (0 to 0.02 in)	0 to 7 mm (0 to 0.03 in)	
Standard object (mild steel, L x W x H)		5 x 5 x 1 mm (0.2 x 0.2 x 0.04 in)		8 x 8 x 1 mm (0.3 x 0.3 x 0.04 in)
Differential travel		15% max. of effective distance		
Response frequency		3 kHz		
Control output	Operation	C1 models: NPN-NO open collector C2 models: NPN-NC open collector B1 models: PNP-NO open collector B1 models: PNP-NC open collector		
	Max. load	100 mA switching capacity		
	Max. on-state voltage drop	2 VDC		
Circuit protection		DC power supply reverse polarity		
Indicators		Operation indicator (red LED)		
Ambient temperature	Operating	-25°C to 70°C (-13°F to 158°F) with no icing		
Ambient humidity	Operating	35% to 95%		
Vibration resistance		10 to 55 Hz, 1.5 mm (0.06 in) double amplitude		
Shock resistance		Approx. 50 G's		
Enclosure rating	UL	—		
	NEMA	1, 3, 4, 6, 12, 13		
	IEC 144	IP67		
Weight with cable		Approx. 30 g (1.1 oz.)		
Materials	Housing	Stainless steel	Nickel-plated brass	Nickel-plated brass
	Sensing face	Plastic PBT		
	Cable sheath	Polyvinyl chloride		

## ■ STANDARD SIZE SENSORS

Part number	E2E-X1R5 E□/F□-N	E2E-X2ME □/ F□-N	E2E-X2E□ / F□-N	E2E-X5ME □/F□-N	E2E-X5E□ / F□-N	E2E-X10M E□/F□-N	E2E-X10E □/ F□-N	E2E-X18M E□/ F□-N	
Size	M8		M12		M18		M30		
Type	Shielded	Unshielded	Shielded	Unshielded	Shielded	Unshielded	Shielded	Unshielded	
Sensing distance	1.5 mm (0.06 in) ±10%	2 mm (0.08 in) ±10%	2 mm (0.08 in) ±10%	5 mm (0.20 in) ±10%	5 mm (0.20 in) ±10%	10 mm (0.39 in) ±10%	10 mm (0.39 in) ±10%	18 mm (0.71 in) ±10%	
Supply voltage (operating voltage range) (See Note 1.)	12 to 24 VDC, ripple (p-p): 10% max., (10 to 40 VDC)								
Current consumption	13 mA max.								
Sensing object	Magnetic metals (refer to <i>Engineering Data</i> for non-magnetic metals)								
Setting distance	0 to 1.2 mm (0 to 0.05 in)	0 to 1.6 mm (0 to 0.06 in)	0 to 1.6 mm (0 to 0.06 in)	0 to 4.0 mm (0 to 0.16 in)	0 to 4.0 mm (0 to 0.16 in)	0 to 8.0 mm (0 to 0.31 in)	0 to 8.0 mm (0 to 0.31 in)	0 to 14.0 mm (0 to 0.55 in)	
Standard object (mild steel)	8 x 8 x 1 mm (0.31 x 0.31 x 0.04 in)	12 x 12 x 1 mm (0.47 x 0.47 x 0.04 in)	12 x 12 x 1 mm (0.47 x 0.47 x 0.04 in)	15 x 15 x 1 mm (0.59 x 0.59 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)	30 x 30 x 1 mm (1.18 x 1.18 x 0.04 in)	54 x 54 x 1 mm (2.13 x 2.13 x 0.04 in)	
Differential travel	10% max. of sensing distance								
Response frequency	2.0 kHz	0.8 kHz	1.5 kHz	0.4 kHz	0.6 kHz	0.2 kHz	0.4 kHz	0.1 kHz	
Operation (with sensing object approaching)	E1 models: Load ON E2 models: Load OFF								
Control output (switching capacity)	200 mA max.								
Circuit protection	Reverse connection protection, surge absorber, load short-circuit protection								
Indicator	Operation indicator (red LED)								
Ambient temperature (See Note 2.)	Operating: -40°C to 85°C (-40°F to 185°F) with no icing								
Ambient humidity	Operating: 35% to 95%								
Temperature influence	±15% max. of sensing distance at 23°C in temperature range of -40°C to 85°C (-40°F to 185°F) ±10% max. of sensing distance at 23°C in temperature range of -25°C to 70°C (-13°F to 158°F)								
Voltage influence	±1% max. of sensing distance in rated voltage range ±15%								
Residual voltage	2.0 V max. (under load current of 200 mA with cable length of 2 m)								
Insulation resistance	50 MΩ min. (at 500 VDC) between current carry parts and case								
Dielectric strength	1,000 VAC for 1 min. between current carry parts and case								
Vibration resistance	10 to 55 Hz, 1.5-mm double amplitude for 2 hrs each in X, Y, and Z axes								
Shock resistance	500 m/s <sup>2</sup> (approx. 50G) for 10 times each in X, Y, and Z axes		1,000 m/s <sup>2</sup> (approx. 50G) for 10 times each in X, Y, and Z axes 500 m/s <sup>2</sup> (approx. 50G) for E2E-X5M						
Enclosure rating	IEC	IP67							
	NEMA	1, 4, 6, 12, 13							
Weight	Pre-wired	Approx. 45 g		Approx. 120 g		Approx. 160 g		Approx. 270 g	
	Connector	---	Approx. 25 g			Approx. 45 g		Approx. 125 g	Approx. 124 g
Material	Body	Stainless steel		Brass					
	Sensing face	PBT							

- Note: 1. E2E models with an M18 or M30 connector operate at a non-smoothed, all-wave rectified, mean voltage range of 24 VDC ±20%.  
2. When using an E2E with an M8 connector at an ambient temperature range between 70°C and 85°C (158°F and 185°F), supply 10 to 30 VDC to the E2E and make sure that the E2E has a control output of 100 mA maximum.