E2E2-X□C□ DC 3-Wire Models

Item \ Size		M12		M18		M30	
Shielding		Shielded	Unshielded	Shielded	Unshielded	Shielded	Unshielded
Model		E2E2-X2C□	E2E2-X5MC□	E2E2-X5C□	E2E2-X10MC□	E2E2-X10C□	E2E2-X18MC□
Sensing distance		2 mm±10%	5 mm±10%	5 mm±10%	10 mm±10%	10 mm±10%	18 mm±10%
Set distance		0 to 1.6 mm	0 to 4 mm	0 to 4 mm	0 to 8 mm	0 to 8 mm	0 to 14 mm
Differential travel		10% max. of sensing distance					
Sensing object		Ferrous metal (The sensing distance decreases with non-ferrous metal. Refer to *Engineering Data* on page 5.)					
Standard sensing object		Iron, 12 × 12 × 1 mm	Iron, 15 × 15 × 1 mm	Iron, 18 × 18 × 1 mm	Iron, 30 × 30 × 1 mm	Iron, 30 × 30 × 1 mm	Iron, 54 × 54 × 1 mm
Response frequency *1		1.5 kHz	400 Hz	600 Hz	200 Hz	400 Hz	100 Hz
Power supply voltage (operating voltage range) *2		12 to 24 VDC (10 to 30 VDC), ripple (p-p): 10% max.					
Leakage current		13 mA max.					
Control output	Load current	NPN open-collector output, 200 mA max. (30 VDC max.)					
	Residual voltage	2 V max. (Load current: 200 mA, Cable length: 2 m)					
Indicators		Operation indicator (red)					
Operation mode (with sensing object approaching)		C1 Models: NO C2 Models: NC	Refer to the timing charts under *I/O Circuit Diagrams* on page 8 for details.				
Protection circuits		Reverse polarity protection, Surge absorber, Load short-circuit protection					
Ambient temperature		Operating/Storage: −40 to 85°C (with no icing or condensation)					
Ambient humidity		Operating/Storage: 35% to 95% (with no condensation)					
Temperature influence		±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		1,000 VAC, 50/60 Hz for 1 minute between current carry 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)		1,000 m/s^2 10 times each in X, Y, and Z directions					
Degree of protection		IEC IP67, in-house standard for oil resistance					
Connection method		Pre-wired Models (Standard cable length: 2 m) and Connector Models					
Weight (packed state)		Approx. 75 g		Approx. 160 g		Approx. 220 g	
Materials	Case	Brass					
	Sensing surface	PBT					
	Clamping nuts	Nickel-plated brass					
	Toothed washer	Zinc-plated iron					
Accessories		Instruction sheet					

*1. 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.
*2. A full-wave rectification power supply of 24 VDC ±20% (average value) can be used.

E2E2-X□Y□ AC 2-Wire Models

Item	Size	M12		M18		M30	
	Shielding	Shielded	Unshielded	Shielded	Unshielded	Shielded	Unshielded
	Model	E2E2-X2Y□	E2E2-X5MY□	E2E2-X5Y□	E2E2-X10MY□	E2E2-X10Y□	E2E2-X18MY□
Sensing distance		2 mm±10%	5 mm±10%	5 mm±10%	10 mm±10%	10 mm±10%	18 mm±10%
Set distance		0 to 1.6 mm	0 to 4 mm	0 to 4 mm	0 to 8 mm	0 to 8 mm	0 to 14 mm
Differential travel		10% max. of sensing distance					
Sensing object		Ferrous metal (The sensing distance decreases with non-ferrous metal. Refer to *Engineering Data* on page 5.)					
Standard sensing object		Iron, 12 × 12 × 1 mm	Iron, 15 × 15 × 1 mm	Iron, 18 × 18 × 1 mm	Iron, 30 × 30 × 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 current *2	5 to 200 mA		5 to 300 mA			
	Residual voltage	Refer to *Engineering Data* on page 5.					
Indicators		Operation indicator (red)					
Operation mode (with sensing object approaching)		Y1 Models: NO Y2 Models: NC	Refer to the timing charts under *I/O Circuit Diagrams* on page 8 for details.				
Ambient temperature *1, 2		Operating/Storage: –40 to 85°C (with no icing or condensation)					
Ambient humidity		Operating/Storage: 35% to 95% (with no condensation)					
Temperature influence		±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, 50/60 Hz for 1 minute between current carry 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)		1,000 m/s^2 10 times each in X, Y, and Z directions					
Degree of protection		IEC IP67, in-house standard for oil resistance					
Connection method		Pre-wired Models (Standard cable length: 2 m) and Connector Models					
Weight (packed state)		Approx. 65 g		Approx. 150 g		Approx. 210 g	
Materials	Case	Brass					
	Sensing surface	PBT					
	Clamping nuts	Nickel-plated brass					
	Toothed washer	Zinc-plated iron					
Accessories		Instruction sheet					

*1. When supplying 24 VAC to any of the above models, make sure that the operating ambient temperature range is at least –25°C to 85°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.