



NO: PX-055 **PRODUCT:** E2E Small Diameter Proxes
DATE: February 2014 **TYPE:** Discontinuation Notice

Legacy E2E Small Diameter Proximity Sensors Discontinued March 2015; Replace with E2E-C0□/E2E-S05 Series

Effective date: March 31, 2015

Product Discontinuation

Model E2E-CR6□ series
 Model E2E-CR8□ series
 Model E2E-C1□ series
 Model E2E-X1□ series



Recommended Replacement

Model E2E-C03□ series
 Model E2E-C04□ series
 Model E2E-C04□ series
 Model E2E-S05□ series



Reasons for Discontinuation: Users now expect a longer sensing distance, faster response frequency and extensive circuit protection from miniature proximity sensors. The new E2E-C0 series offers improved performance, expanded circuit protection and a standard size operation indicator.

Circuit protection was expanded from power supply reverse polarity protection and a surge suppressor with the addition of output reverse polarity protection and load short-circuit protection.

Operation indicator size and color has been standardized to a round spot with yellow lamp for easy monitoring and compliance with European standard EN60947-5-2. The red indicator is now yellow.

The unthreaded cylindrical, 5.4 mm diameter E2E-C1 models have been replaced with the smaller, 4 mm unthreaded cylindrical E2E-C04 model that offers a longer sensing distance.

Refer to the following pages for a detailed comparison.

Affected Parts

Product discontinuation	Recommended replacement
E2E-C1B1 2M	E2E-C04S12-WC-B1 2M
E2E-C1B1 5M	E2E-C04S12-MC-B1
E2E-C1B2 2M	E2E-C04S12-WC-B2 2M
E2E-C1C1 10M	E2E-C04S12-MC-C1
E2E-C1C1 2M	E2E-C04S12-WC-C1 2M
E2E-C1C1 5M	E2E-C04S12-MC-C1
E2E-C1C1-4 0.6M	No recommended replacement
E2E-C1C1-R 2M	E2E-C04S12-MC-C1
E2E-C1C1-R 5M	E2E-C04S12-MC-C1
E2E-C1C2 2M	E2E-C04S12-WC-C2 2M
E2E-C1C2 5M	E2E-C04S12-MC-C2
E2E-C1C2-4 0.6M	No recommended replacement
E2E-C1C2-R 2M	E2E-C04S12-MC-C2
E2E-CR6B1 2M	E2E-C03SR8-WC-B1 2M
E2E-CR6B2 2M	E2E-C03SR8-WC-B2 2M
E2E-CR6B2-1 1M	E2E-C04S12-WC-B1 2M
E2E-CR6B2-2 1M	No recommended replacement
E2E-CR6C1 2M	E2E-C03SR8-WC-C1 2M
E2E-CR6C2 2M	E2E-C03SR8-WC-C2 2M

Product discontinuation	Recommended replacement
E2E-CR8B1 0.5M	E2E-C04S12-WC-B1 2M
E2E-CR8B1 2M	E2E-C04S12-WC-B1 2M
E2E-CR8B1 5M	E2E-C04S12-MC-B1
E2E-CR8B1-10 2M	E2E-C04S12-WC-B1 2M
E2E-CR8B1-11 0.042M	E2E-C04S12-WC-B1 2M
E2E-CR8B1-12 0.042M	E2E-C04S12-WC-B1 2M
E2E-CR8B1-12 2M	E2E-C04S12-WC-B1 2M
E2E-CR8B1-M5	E2E-C04S12-MC-B1
E2E-CR8B1-R 5M	E2E-C04S12-MC-B1
E2E-CR8B2 2M	E2E-C04S12-WC-B2 2M
E2E-CR8B2 5M	E2E-C04S12-MC-B2
E2E-CR8B2-M5	E2E-C04S12-MC-B2
E2E-CR8B2-R 2M	E2E-C04S12-MC-B2
E2E-CR8C1 10M	E2E-C04S12-MC-C1
E2E-CR8C1 2M	E2E-C04S12-WC-C1 2M
E2E-CR8C1 5M	E2E-C04S12-MC-C1
E2E-CR8C1-10 2M	E2E-C04S12-WC-C1 2M
E2E-CR8C1-2 2M	E2E-C04S12-MC-C1
E2E-CR8C1-M5	E2E-C04S12-MC-C1
E2E-CR8C1-R 2M	E2E-C04S12-MC-C1
E2E-CR8C1-R 5M	E2E-C04S12-MC-C1
E2E-CR8C2 2M	E2E-C04S12-WC-C2 2M
E2E-CR8C2 5M	E2E-C04S12-MC-C2
E2E-CR8C2-R 2M	E2E-C04S12-MC-C2
E2E-X1B1 0.4M	E2E-S05S12-WC-B1 2M
E2E-X1B1 0.8M	E2E-S05S12-WC-B1 2M
E2E-X1B1 2M	E2E-S05S12-WC-B1 2M
E2E-X1B1 5M	E2E-S05S12-MC-B1
E2E-X1B1-9-N 2M	E2E-S05S12-WC-B1 2M
E2E-X1B1-G1 2M	E2E-S05S12-WC-B1 2M
E2E-X1B1-M1J 0.3M	E2E-S05S12-CJ-B1 0.3M
E2E-X1B1-M5	E2E-S05S12-MC-B1
E2E-X1B1-R 2M	E2E-S05S12-MC-B1
E2E-X1B1-R 5M	E2E-S05S12-MC-B1
E2E-X1B2 2M	E2E-S05S12-WC-B2 2M
E2E-X1B2 5M	E2E-S05S12-MC-B2
E2E-X1B2-M1J 0.3M	E2E-S05S12-CJ-B2 0.3M
E2E-X1B2-M5	E2E-S05S12-MC-B2
E2E-X1C1 10M	E2E-S05S12-MC-C1
E2E-X1C1 2M	E2E-S05S12-WC-C1 2M
E2E-X1C1 5M	E2E-S05S12-MC-C1
E2E-X1C1-3 2M	E2E-S05S12-WC-C1 2M
E2E-X1C1-G1 2M	E2E-S05S12-WC-C1 2M
E2E-X1C1-M5	E2E-S05S12-MC-C1
E2E-X1C1-R 2M	E2E-S05S12-MC-C1
E2E-X1C1-R 5M	E2E-S05S12-MC-C1
E2E-X1C2 2M	E2E-S05S12-WC-C2 2M
E2E-X1C2 5M	E2E-S05S12-MC-C2
E2E-X1C2-9-N 2M	E2E-S05S12-WC-C2 2M
E2E-X1C2-M5	E2E-S05S12-MC-C2
E2E-X1C2-R 2M	E2E-S05S12-MC-C2
E2E-X1C2-R-N 5M	E2E-S05S12-MC-C2

Changes

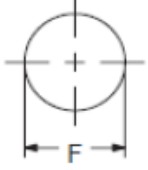
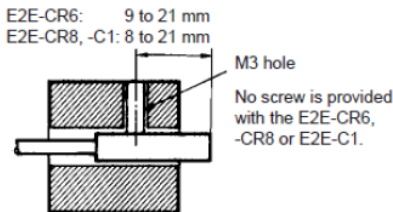
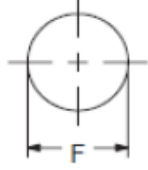
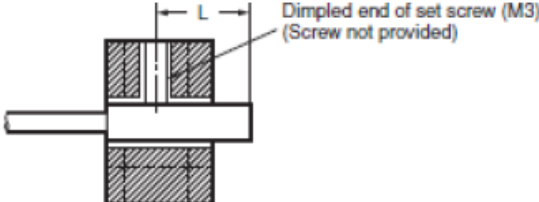
Body color

Product discontinuation	Recommended replacement
Model E2E-CR6□/-CR8□/-C1□/-X1□ series	Model E2E-C03□/-C04□/□S05□ series
Case: Silver	Case: Silver
Detecting surface: Light Gray	Detecting surface: Black

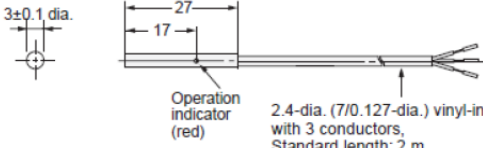
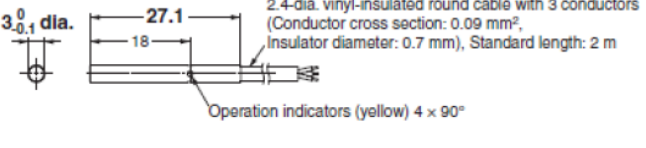
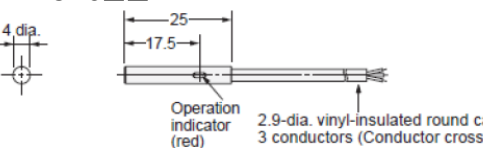
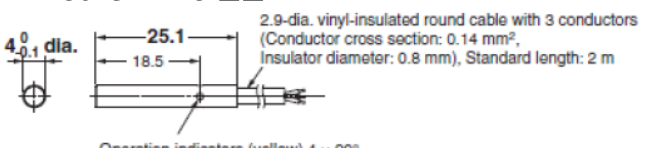
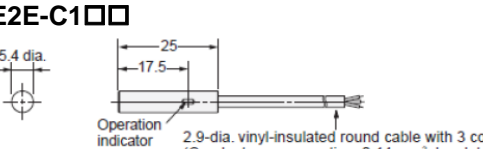
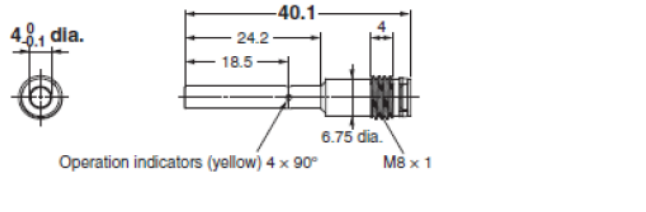
Wiring diagrams

Product discontinuation	Recommended replacement
Model E2E-CR6□/-CR8□/-C1□/-X1□ series E2E-C/X□□□ NPN Open-collector Output <p>* E2E-CR6□ has no 100-Ω resistance.</p>	Model E2E-C03□/-C04□/□S05□ series E2E-C/S□□□-□□-□□ NPN Output
E2E-CR8C□-M5/E2E-X1C□-M5 	Connector pin arrangement <p>M8</p>
E2E-C/X□□□ PNP Open-collector Output <p>* E2E-CR6□ has no 100-Ω resistance.</p>	E2E-C/S□□□-□□-□□ PNP Output
E2E-CR8B□-M5/E2E-X1B□-M5 	Connector pin arrangement <p>M8</p>

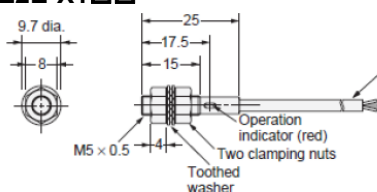
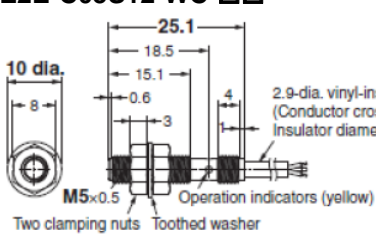
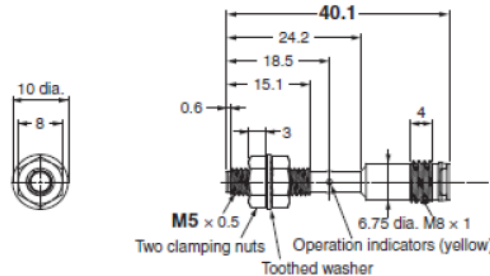
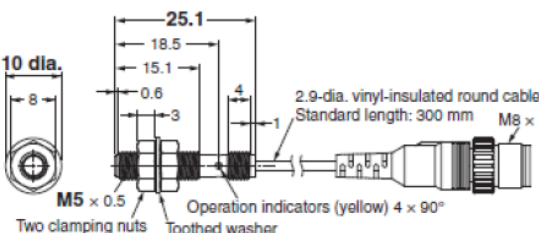
Mounting dimensions

Product discontinuation	Recommended replacement																																																	
Model E2E-CR6□/-CR8□/-C1□/-X1□ series Mounting hole dimensions  <table border="1"> <thead> <tr> <th>Dimensions</th> <th>3 dia.</th> <th>4 dia.</th> <th>M5</th> <th>5.4 dia.</th> </tr> </thead> <tbody> <tr> <td>F (mm)</td> <td>3.3^{+0.3}/₀ dia.</td> <td>4.2^{+0.5}/₀ dia.</td> <td>5.5^{+0.5}/₀ dia.</td> <td>5.7^{+0.5}/₀ dia.</td> </tr> </tbody> </table> Mounting unthreaded cylindrical models (E2E-C□) Refer to the following to mount the E2E-CR6, -CR8 and E2E-C1 non-screw models.  Tighten the screw to a torque of 0.2 N·m maximum to secure the E2E-CR6, -CR8 and a torque of 0.4 N·m maximum to secure the E2E-C1.	Dimensions	3 dia.	4 dia.	M5	5.4 dia.	F (mm)	3.3 ^{+0.3} / ₀ dia.	4.2 ^{+0.5} / ₀ dia.	5.5 ^{+0.5} / ₀ dia.	5.7 ^{+0.5} / ₀ dia.	Model E2E-C03□/-C04□/□/□ series Mounting hole dimensions  <table border="1"> <thead> <tr> <th>Dimension</th> <th>3 dia.</th> <th>4 dia.</th> <th>6.5 dia.</th> <th>M4</th> <th>M5</th> </tr> </thead> <tbody> <tr> <td>F (mm)</td> <td>3.3^{+0.5}/₀</td> <td>4.2^{+0.5}/₀</td> <td>7^{+0.5}/₀</td> <td>4.5^{+0.5}/₀</td> <td>5.5^{+0.5}/₀</td> </tr> </tbody> </table> Mounting unthreaded cylindrical models (E2E-C□)  Tighten the set screw to the torque indicated in the table. <table border="1"> <thead> <tr> <th rowspan="2">Item</th> <th colspan="2">Size</th> <th colspan="2">4 dia.</th> <th colspan="2">6.5 dia.</th> </tr> <tr> <th>Shielded</th> <th>Unshielded</th> <th>Shielded</th> <th>Unshielded</th> <th>Shielded</th> <th>Unshielded</th> </tr> </thead> <tbody> <tr> <td>L *</td> <td>9 to 21 mm</td> <td>15 to 27 mm</td> <td>8 to 21 mm</td> <td>14 to 27 mm</td> <td colspan="2">12 to 26 mm</td> </tr> <tr> <td>Torque</td> <td colspan="4">0.2 N·m max.</td> <td colspan="2">0.4 N·m max.</td> </tr> </tbody> </table> * Excluding the operation indicator area.	Dimension	3 dia.	4 dia.	6.5 dia.	M4	M5	F (mm)	3.3 ^{+0.5} / ₀	4.2 ^{+0.5} / ₀	7 ^{+0.5} / ₀	4.5 ^{+0.5} / ₀	5.5 ^{+0.5} / ₀	Item	Size		4 dia.		6.5 dia.		Shielded	Unshielded	Shielded	Unshielded	Shielded	Unshielded	L *	9 to 21 mm	15 to 27 mm	8 to 21 mm	14 to 27 mm	12 to 26 mm		Torque	0.2 N·m max.				0.4 N·m max.	
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Torque	0.2 N·m max.				0.4 N·m max.																																													

Overall Dimensions

Product discontinuation	Recommended replacement
Model E2E-CR6□/-CR8□/-C1□/-X1□ series E2E-CR6□□  2.4-dia. (7/0.127-dia.) vinyl-insulated round cable with 3 conductors, Standard length: 2 m	Model E2E-C03□/-C04□/□/□ series E2E-C03SR8-WC-□□  2.4-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.09 mm ² , Insulator diameter: 0.7 mm), Standard length: 2 m
E2E-CR8□□  2.9-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.14 mm ² , Insulator diameter: 0.9 mm), Standard length: 2 m Robotics cable Models: 2.9-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.15 mm ² , Insulator diameter: 1.05 mm), Standard length: 2 m The cable can be extended up to 100 m (separate metal conduit).	E2E-C04S12-WC-□□  2.9-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.14 mm ² , Insulator diameter: 0.8 mm), Standard length: 2 m
E2E-C1□□  2.9-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.14 mm ² , Insulator diameter: 0.9 mm), Standard length: 2 m Robotics cable Models: 2.9-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.15 mm ² , Insulator diameter: 1.05 mm), Standard length: 2 m The cable can be extended up to 100 m (separate metal conduit).	E2E-C04S12-MC-□□  Operation indicators (yellow) 4 x 90°

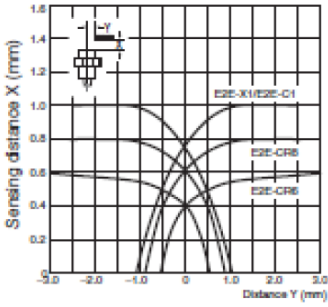
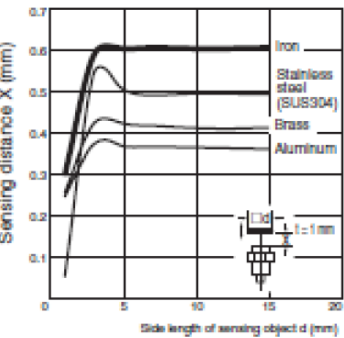
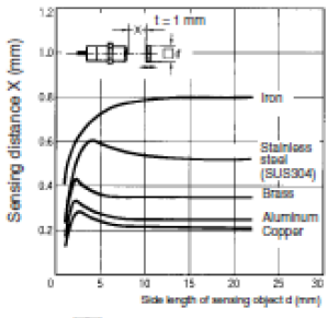
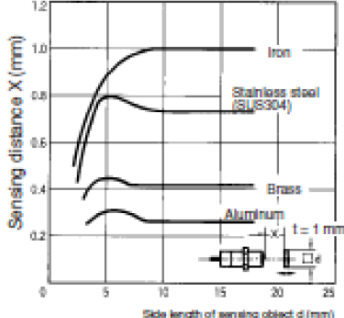
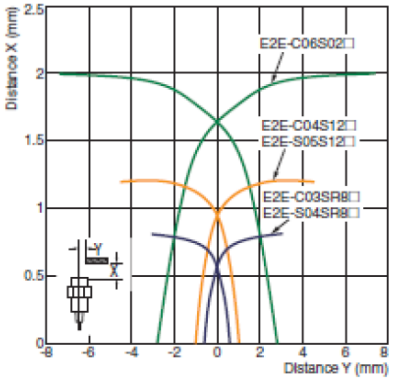
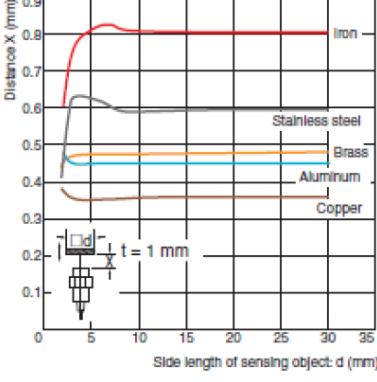
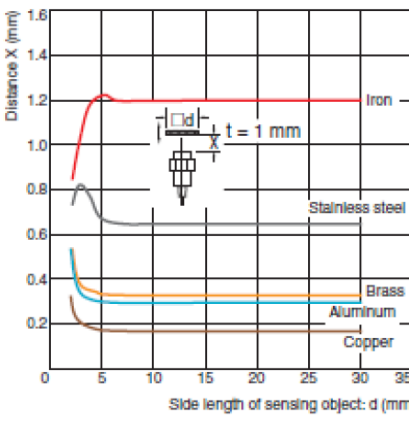
Overall Dimensions continued

Product discontinuation	Recommended replacement
<p>E2E-X1□□</p>  <p>2.9-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.14 mm², Insulator diameter: 0.9 mm), Standard length: 2 m Robotics cable Models: 2.9-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.15 mm², Insulator diameter: 1.05 mm), Standard length: 2 m The cable can be extended up to 100 m (separate metal conduit).</p>	<p>E2E-C05S12-WC-□□</p>  <p>2.9-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.14 mm², Insulator diameter: 0.8 mm), Standard length: 2 m</p>
	<p>E2E-C05S12-MC-□□</p>  <p>6.75 dia. M8 x 1</p>
	<p>E2E-C05S12-CJ-□□</p>  <p>2.9-dia. vinyl-insulated round cable, Standard length: 300 mm M8 x 1</p>

Characteristics

Item		Product discontinuation Model E2E-CR6□/-CR8□/-C1□/-X□ series				Recommended replacement Model E2E-C03□/-C04□/ S05□ series			
Size Type	3 dia.	4 dia.	M5	5.4 dia.	3 dia.	4 dia.	M5		
	Shielded				Shielded				
Item	-CR6C□/B□	-CR8C□/B□	-X1C□/B□	-C1C□/B□	-CR03S□	-C04S□	-S05S□		
Sensing distance	0.6mm±15%	0.8mm±15%	1mm±15%		0.8mm±10%	1.2mm±10%			
Setting distance	0 to 0.4mm	0 to 0.5mm	0 to 0.7mm		0 to 0.56mm	0 to 0.84mm			
Differential travel	15% max. of sensing distance				15% max. of sensing distance				
Sensing object	Ferrous metals (The sensing distance decreases with non-ferrous metal, refer to Engineering Data)				Ferrous metals (The sensing distance decreases with non-ferrous metal, refer to Engineering Data)				
Standard sensing object	Iron:3x3x1mm	Iron:5x5x1mm			Iron:3x3x1mm	Iron:4x4x1mm			
Response speed	2kHz	3kHz			5kHz	4kHz			
Power supply voltage (operating voltage range)	12 to 24 VDC (10 to 30VDC), ripple(p-p):10%max.				10 to 30 VDC(including 10% ripple (p-p))				
Current consumption	10mA max.	17mA max.			10mA max.				
Control output	Load current	Open-collector output 80mA max.(at 30VDC max.)	Open-collector output 100mA max.(at 30VDC max.)		50mAmax.	100mA max.			
	Residual voltage	1V max. (Load current 80mA, Cable length 2m)	2V max. (Load current 100mA, Cable length 2m)		2V max.				
Indicator	Operation indicator (red LED)				Operation indicator : Yellow (complete with European standard EN60947-5-2) Light during output.				
Operation mode (with sensing object approaching)	C1/-B1 Models: NO C2/-B2 Models: NC For details, refer to Timing Charts.				B1/B2:PNP open collector, C1/C2:NPN open collector B1/C1 models: NO, B2/C2 models: NC				
Protection circuits	Power supply reverse polarity protection, surge suppressor				Output reverse polarity protection, Power source circuit reverse polarity protection, Surge suppressor, Load short-circuit protection				
Ambient temperature	Operating/Storage: -25°C to 70°C (with no icing or condensation)				Operating/Storage: -25°C to 70°C (with no icing or condensation)				
Ambient humidity	Operating/Storage: 35% to 95%RH				Operating/Storage: 35% to 95%RH(with no condensation)				
Temperature influence	±15% max. of sensing distance at 23°C in the temperature range of -25°C to 70°C				±15% max. of sensing distance at 23°C in the temperature range of -25°C to 70°C				
Voltage influence	±5% max. of sensing distance in the rated voltage range ±10%	±2.5% max. of sensing distance in the rated voltage range ±15%			±2.5% max. of sensing distance at rated voltage in the rated voltage ±15% range				
Insulation resistance	50 MΩ min. (at 500VDC) between current-carrying parts and case				50 MΩ min. (at 500VDC) between current-carrying parts and case				
Dielectric strength	500VAC at 50/60Hz 1 min. between current-carrying parts and case				500VAC at 50/60Hz 1 min. between current-carrying parts and case				
Vibration resistance	10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X,Y, and Z directions				Destruction: 10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X,Y, and Z directions				
Shock resistance	500 m/s ² 10 times each in X,Y, and Z directions				Destruction: 500 m/s ² 10 times each in X,Y, and Z directions				
Degree of protection	IEC 60529 IP66	IEC 60529 IP67 (Pre-wired models: in-house standard for oil resistance (former JEM standard equivalent to IP67g))			IEC 60529 IP67 , in-house standards : oil-resistant				
Connection method	Pre-wire models (Standard length 2m)	Pre-wire models (Standard length 2m), connector models			Pre-wire models M8 Pre-wired connector models	Pre-wire models M8 Pre-wired connector models M8 connector models			
Weight (packed state)	Pre-wired models	Approx. 60g				Approx. 25g	Approx. 35g	Approx.35g	
	Connector models	---	Approx. 60g	Approx. 60g	Approx. 60g	---	Approx. 10g	Approx. 15g	
Material	Case	Stainless steel (SUS303)		Brass-nickel plated		SUS303(EN1.4305)			
	Sensing surface	Heat-resistant ABS				Heat-resistant ABS			
	Clamping nuts	---		Brass-nickel plated		No		SUS430(EN1.4016)	
	Toothed washer	---		Iron-zinc plated		No		SUS303(EN1.4305)	
Accessories	Instruction manual				Instruction manual, Model label				

Operation Ratings

Product discontinuation Model E2E-CR6□/-CR8□/-C1□/-X□ series	Recommended replacement Model E2E-C03□/-C04□/□S05□ series
<p>Operating Range (Typical)</p> <p>E2E-C□C□VB□ E2E-X□C□VB□</p>  <p>Sensing Distance vs. Sensing Object (Typical)</p> <p>E2E-CR6□□</p>  <p>E2E-CR8□□</p>  <p>E2E-X1□□ E2E-C1□□</p> 	<p>Sensing Area</p> <p>Shielded Models E2E-C/S□S□</p>  <p>Influence of Sensing Object Size and Material</p> <p>Shielded Models E2E-C03SR8□/□E2E-S04SR8□</p>  <p>E2E-C04S12□/□E2E-S05S12□</p> 

Specifications and prices in this product news are as of the issue date and are subject to change without notice. Only main changes in specifications are described in this document. Please be sure to read the relevant catalogs, datasheets, product specifications, instructions, and manuals for precautions and necessary information when using products.