

## Ratings and Specifications

## PREMIUM Model

E2E NEXT Series (Quadruple/Triple distance model)  
DC 3-wire  
Shielded

Types Size Item Model	Quadruple distance model				Triple distance model				
	M8	M12	M18	M30	M8	M12	M18	M30	
	E2E-X4□8	E2E-X9□12	E2E-X14□18	E2E-X23□30	E2E-X3□8	E2E-X6□12	E2E-X12□18	E2E-X22□30	
<b>Sensing distance</b>	4 mm±10%	9 mm±10%	14 mm±10%	23 mm±10%	3 mm±10%	6 mm±10%	12 mm±10%	22 mm±10%	
<b>Setting distance</b>	0 to 3 mm	0 to 6.8 mm	0 to 10.6 mm	0 to 17.6 mm	0 to 2.4 mm	0 to 4.8 mm	0 to 9.6 mm	0 to 16.8 mm	
<b>Differential travel</b>	15% max. of sensing distance								
<b>Detectable object</b>	Ferrous metals (For non-ferrous metals, refer to the <i>Engineering Data</i> on page 48.)								
<b>Standard sensing object</b>	Iron, 12 × 12 × 1 mm	Iron, 27 × 27 × 1 mm	Iron, 42 × 42 × 1 mm	Iron, 69 × 69 × 1 mm	Iron, 9 × 9 × 1 mm	Iron, 18 × 18 × 1 mm	Iron, 36 × 36 × 1 mm	Iron, 66 × 66 × 1 mm	
<b>Response frequency *1</b>	700 Hz	700 Hz	350 Hz	200 Hz	1,000 Hz	800 Hz	500 Hz	200 Hz	
<b>Power supply voltage</b>	10 to 30 VDC (including 10% ripple (p-p)), Class 2								
<b>Current consumption</b>	1-output models: 16 mA max.					1-output models: 16 mA max., 2-output models: 20 mA max.			
<b>Output configuration</b>	B□ Models: PNP open collector, C□ Models: NPN open collector								
<b>Operation mode (with sensing object approaching)</b>	1-output models (B1, C1): NO (Normally open), 1-output models (B2, C2): NC (Normally closed)					1-output models (B1, C1): NO (Normally open), 1-output models (B2, C2): NC (Normally closed), 2-output models (B3, C3): NO+NC (Normally open, Normally closed)			
<b>Control output</b>	<b>Load current</b>	1-output models: 10 to 30 VDC, Class 2, 50 mA max.			1-output models: 10 to 30 VDC, Class 2, 100 mA max.	1-output models: 10 to 30 VDC, Class 2, 100 mA max., 2-output models: 10 to 30 VDC, Class 2, 50 mA max.			
	<b>Residual voltage</b>	1-output models: 2 V max. (Load current: 50 mA, Cable length: 2 m)			1-output models: 2 V max. (Load current: 100 mA, Cable length: 2 m)	1-output models: 2 V max. (Load current: 100 mA, Cable length: 2 m), 2-output models: 2 V max. (Load current: 50 mA, Cable length: 2 m)			
<b>Indicator *2</b>	In the Standard I/O mode (SIO mode): Operation indicator (orange, lit) and communication indicator (green, not lit) In the IO-Link communication mode (COM mode): Operation indicator (orange, lit) and communication indicator (green, blinking at 1 s intervals)								
<b>Protection circuits</b>	Power supply reverse polarity protection, Surge suppressor, Output short-circuit protection, Output reverse polarity protection								
<b>Ambient temperature range</b>	Operating: -25 to 60°C Storage: -25 to 70°C (with no icing or condensation)	Operating/Storage: -25 to 70°C (with no icing or condensation)							
<b>Ambient humidity range</b>	Operating/Storage: 35% to 95% (with no condensation)								
<b>Temperature influence</b>	-15% to 25% max. of sensing distance at 23°C in the temperature range of -25 to 60°C	±15% max. of sensing distance at 23°C in the temperature range of -25 to 70°C			±10% max. of sensing distance at 23°C in the temperature range of -25 to 70°C				
<b>Voltage influence</b>	±1% max. of sensing distance at rated voltage in the rated voltage ±15% range								
<b>Insulation resistance</b>	50 MΩ min. (at 500 VDC) between current-carrying parts and case								
<b>Dielectric strength</b>	1,000 VAC, 50/60 Hz for 1 minute between current-carrying parts and case								
<b>Vibration resistance (destruction)</b>	10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions								
<b>Shock resistance (destruction)</b>	500 m/s <sup>2</sup> 10 times each in X, Y, and Z directions	1,000 m/s <sup>2</sup> 10 times each in X, Y, and Z directions			500 m/s <sup>2</sup> 10 times each in X, Y, and Z directions	1,000 m/s <sup>2</sup> 10 times each in X, Y, and Z directions			
<b>Degree of protection</b>	Pre-wired Models, Pre-wired Connector Models: IEC 60529: IP67, ISO 20653 (old standard: DIN 40050 PART9): IP69K, JIS C 0920 Annex 1: IP67G, Passed OMRON's Oil-resistant Component Evaluation Standards *3 (Cutting oil type: specified in JIS K 2241: 2000; Temperature: 35°C max.) Connector Models: IEC 60529: IP67, ISO 20653 (old standard: DIN 40050 PART9): IP69K								
<b>Connection method</b>	Pre-wired Models (Standard cable length: 2 m), Pre-wired Connector Models (Standard cable length: 0.3 m) and Connector Models (M12 Connector, M8 (4-pin) Connector and M8 (3-pin) Connector)								
<b>Weight *4 (packed state)</b>	<b>Pre-wired</b>	Approx. 85 g	Approx. 95 g	Approx. 180 g	Approx. 260 g	Approx. 85 g	Approx. 95 g	Approx. 180 g	Approx. 260 g
	<b>M12 Pre-wired Smartclick Connector</b>	Approx. 55 g	Approx. 70 g	Approx. 115 g	Approx. 200 g	Approx. 55 g	Approx. 70 g	Approx. 115 g	Approx. 200 g
	<b>Connector</b>	Approx. 40 g *5	Approx. 55 g	Approx. 95 g	Approx. 180 g	Approx. 40 g *5	Approx. 55 g	Approx. 95 g	Approx. 180 g

# E2E/E2EQ NEXT Series

Item	Types Size	Quadruple distance model				Triple distance model			
		M8	M12	M18	M30	M8	M12	M18	M30
	Model	E2E-X4□8	E2E-X9□12	E2E-X14□18	E2E-X23□30	E2E-X3□8	E2E-X6□12	E2E-X12□18	E2E-X22□30
Materials	Case	Nickel-plated brass							
	Sensing surface	Polybutylene terephthalat (PBT)							
	Clamping nuts	Nickel-plated brass							
	Toothed washers	Zinc-plated iron							
	Cable	Vinyl chloride (PVC)							
Main IO-Link functions*2		Operation mode switching between NO and NC, self diagnosis enabling, excessive proximity judgment distance selecting, timer function of the control output and timer time selecting, instability output (IO-Link mode) ON delay timer time selecting function, monitor output, operating hours read-out, readout of the sensor internal temperature, and initial reset							
IO-Link Communication specifications*2	IO-Link specification	Ver 1.1							
	Baud rate	COM2 (38.4 kbps), COM3 (230.4 kbps)							
	Data length	PD size: 2 bytes, OD size: 1 byte (M-sequence type: TYPE_2_2)							
	Minimum cycle time	COM2: 2.3 ms, COM3: 0.4 ms							
Accessories		Instruction manual, Clamping nuts, Toothed washer							

\*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. IO-Link is not supported for NC-type PNP outputs or all types of NPN outputs.

\*3. The Oil-resistant Component Evaluation Standards are OMRON's own durability evaluation standards.

2-year oil resistance indicates the median value of the product design and the oil-resistance performance criterion result (=Typical value).  
The Pre-wired Connector Model verifies 2 years of oil resistance when mating with Round Oil-resistant Connectors XS5 NEXT series correctly.  
The degree of protection is not satisfied with the part where cable wires are uncovered for the Pre-wired Models.

\*4. Weight of the standard body-sized model.

\*5. Both M8 connectors and M12 connectors are available.

PREMIUM Model

E2E NEXT Series (Quadruple/Triple distance model)  
DC 3-wire  
Unshielded

Types Size Model	Quadruple distance model				Triple distance model				
	M8	M12	M18	M30	M8	M12	M18	M30	
Item	E2E-X8M□8	E2E-X16M□12	E2E-X30M□18	E2E-X50M□30	E2E-X6M□8	E2E-X10M□12	E2E-X20M□18	E2E-X40M□30	
<b>Sensing distance</b>	8 mm±10%	16 mm±10%	30 mm±10%	50 mm±10%	6 mm±10%	10 mm±10%	20 mm±10%	40 mm±10%	
<b>Setting distance</b>	0 to 6 mm	0 to 12.2 mm	0 to 23 mm	0 to 38.2 mm	0 to 4.8 mm	0 to 8 mm	0 to 16 mm	0 to 32 mm	
<b>Differential travel</b>	15% max. of sensing distance								
<b>Detectable object</b>	Ferrous metals (For non-ferrous metals, refer to the <i>Engineering Data</i> on page 48.)								
<b>Standard sensing object</b>	Iron, 24 × 24 × 1 mm	Iron, 48 × 48 × 1 mm	Iron, 90 × 90 × 1 mm	Iron, 150 × 150 × 1 mm	Iron, 18 × 18 × 1 mm	Iron, 30 × 30 × 1 mm	Iron, 60 × 60 × 1 mm	Iron, 120 × 120 × 1 mm	
<b>Response frequency *1</b>	500 Hz	400 Hz	200 Hz	100 Hz	800 Hz	400 Hz	200 Hz	100 Hz	
<b>Power supply voltage</b>	10 to 30 VDC (including 10% ripple (p-p)), Class 2								
<b>Current consumption</b>	1-output models: 16 mA max.					1-output models: 16 mA max., 2-output models: 20 mA max.			
<b>Output configuration</b>	B□ Models: PNP open collector C□ Models: NPN open collector								
<b>Operation mode (with sensing object approaching)</b>	1-output models (B1, C1): NO (Normally open), 1-output models (B2, C2): NC (Normally closed)				1-output models (B1, C1): NO (Normally open), 1-output models (B2, C2): NC (Normally closed), 2-output models (B3, C3): NO+NC (Normally open, Normally closed)				
<b>Control output</b>	<b>Load current</b>	1-output models: 10 to 30 VDC, Class 2, 50 mA max.			1-output models: 10 to 30 VDC, Class 2, 100 mA max.		1-output models: 10 to 30 VDC, Class 2, 100 mA max., 2-output models: 10 to 30 VDC, Class 2, 50 mA max.		
	<b>Residual voltage</b>	1-output models: 2 V max. (Load current: 50 mA, Cable length: 2 m)			1-output models: 2 V max. (Load current: 100 mA, Cable length: 2 m)		1-output models: 2 V max. (Load current: 100 mA, Cable length: 2 m), 2-output models: 2 V max. (Load current: 50 mA, Cable length: 2 m)		
<b>Indicator *2</b>	In the Standard I/O mode (SIO mode): Operation indicator (orange, lit) and communication indicator (green, not lit) In the IO-Link communication mode (COM mode): Operation indicator (orange, lit) and communication indicator (green, blinking at 1 s intervals)								
<b>Protection circuits</b>	Power supply reverse polarity protection, Surge suppressor, Output short-circuit protection, Output reverse polarity protection								
<b>Ambient temperature range</b>	Operating/Storage: -25 to 70°C (with no icing or condensation)								
<b>Ambient humidity range</b>	Operating/Storage: 35% to 95% (with no condensation)								
<b>Temperature influence</b>	±15% max. of sensing distance at 23°C in the temperature range of -25 to 70°C				±10% max. of sensing distance at 23°C in the temperature range of -25 to 70°C				
<b>Voltage influence</b>	±1% max. of sensing distance at rated voltage in the rated voltage ±15% range								
<b>Insulation resistance</b>	50 MΩ min. (at 500 VDC) between current-carrying parts and case								
<b>Dielectric strength</b>	1,000 VAC, 50/60 Hz for 1 minute between current-carrying parts and case								
<b>Vibration resistance (destruction)</b>	10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions								
<b>Shock resistance (destruction)</b>	500 m/s <sup>2</sup> 10 times each in X, Y, and Z directions		1,000 m/s <sup>2</sup> 10 times each in X, Y, and Z directions			500 m/s <sup>2</sup> 10 times each in X, Y, and Z directions		1,000 m/s <sup>2</sup> 10 times each in X, Y, and Z directions	
<b>Degree of protection</b>	Pre-wired Models, Pre-wired Connector Models: IEC 60529:IP67, ISO 20653 (old standard: DIN 40050 PART9): IP69K, JIS C 0920 Annex 1: IP67G, Passed OMRON's Oil-resistant Component Evaluation Standards *3 (Cutting oil type: specified in JIS K 2241: 2000; Temperature: 35°C max.) Connector Models: IEC 60529: IP67, ISO 20653 (old standard: DIN 40050 PART9): IP69K								
<b>Connection method</b>	Pre-wired Models (Standard cable length: 2 m), Pre-wired Connector Models (Standard cable length: 0.3 m) and Connector Models (M12 Connector, M8 (4-pin) Connector and M8 (3-pin) Connector)								
<b>Weight *4 (packed state)</b>	<b>Pre-wired</b>	Approx. 85 g	Approx. 95 g	Approx. 190 g	Approx. 310 g	Approx. 85 g	Approx. 95 g	Approx. 190 g	Approx. 280 g
	<b>M12 Pre-wired Smartclick Connector</b>	Approx. 55 g	Approx. 70 g	Approx. 125 g	Approx. 250 g	Approx. 55 g	Approx. 70 g	Approx. 125 g	Approx. 220 g
	<b>Connector</b>	Approx. 40 g *5	Approx. 55 g	Approx. 105 g	Approx. 230 g	Approx. 40 g *5	Approx. 55 g	Approx. 105 g	Approx. 200 g

# E2E/E2EQ NEXT Series

Types Size		Quadruple distance model				Triple distance model			
		M8	M12	M18	M30	M8	M12	M18	M30
Item	Model	E2E-X8M□8	E2E-X16M□12	E2E-X30M□18	E2E-X50M□30	E2E-X6M□8	E2E-X10M□12	E2E-X20M□18	E2E-X40M□30
Materials	Case	Stainless (SUS303)	Nickel-plated brass			Stainless (SUS303)	Nickel-plated brass		
	Sensing surface	Polybutylene terephthalat (PBT)							
	Clamping nuts	Nickel-plated brass							
	Toothed washers	Zinc-plated iron							
	Cable	Vinyl chloride (PVC)							
Main IO-Link functions*2		Operation mode switching between NO and NC, self diagnosis enabling, excessive proximity judgment distance selecting, timer function of the control output and timer time selecting, instability output (IO-Link mode) ON delay timer time selecting function, monitor output, operating hours read-out, readout of the sensor internal temperature, and initial reset							
IO-Link Communication specifications*2	IO-Link specification	Ver1.1							
	Baud rate	COM2 (38.4 kbps), COM3 (230.4 kbps)							
	Data length	PD size: 2 bytes, OD size: 1 byte (M-sequence type: TYPE_2_2)							
	Minimum cycle time	COM2: 2.3 ms, COM3: 0.4 ms							
Accessories		Instruction manual, Clamping nuts, Toothed washer							

\*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. IO-Link is not supported for NC-type PNP outputs or all types of NPN outputs.

\*3. The Oil-resistant Component Evaluation Standards are OMRON's own durability evaluation standards. 2-year oil resistance indicates the median value of the product design and the oil-resistance performance criterion result (=Typical value). Actual performance can be expected to decline after two years on average from shipment. The Pre-wired Connector Model verifies 2 years of oil resistance when mating with Round Oil-resistant Connectors XS5 NEXT series correctly. The degree of protection is not satisfied with the part where cable wires are uncovered for the Pre-wired Models.

\*4. Weight of the standard body-sized model.

\*5. Both M8 connectors and M12 connectors are available.

**PREMIUM Model**

**E2EQ NEXT Series (Spatter-resistant Triple distance model)**  
**DC 3-wire**  
**Shielded**

Item	Types Size Model	Triple distance Models			
		M8	M12	M18	M30
		E2EQ-X3□8	E2EQ-X6□12	E2EQ-X12□18	E2EQ-X22□30
<b>Sensing distance</b>		3 mm±10%	6 mm±10%	12 mm±10%	22 mm±10%
<b>Setting distance</b>		0 to 2.4 mm	0 to 4.8 mm	0 to 9.6 mm	0 to 16.8 mm
<b>Differential travel</b>		15% max. of sensing distance			
<b>Detectable object</b>		Ferrous metals (For non-ferrous metals, refer to the <i>Engineering Data</i> on page 48.)			
<b>Standard sensing object</b>		Iron, 9 × 9 × 1 mm	Iron, 18 × 18 × 1 mm	Iron, 36 × 36 × 1 mm	Iron, 66 × 66 × 1 mm
<b>Response frequency *1</b>		1,000 Hz	800 Hz	500 Hz	200 Hz
<b>Power supply voltage</b>		10 to 30 VDC (including 10% ripple (p-p)), Class 2			
<b>Current consumption</b>		1-output models: 16 mA max.	1-output models: 16 mA max. 2-output models: 20 mA max.		
<b>Output configuration</b>		B□ Models: PNP open collector, C□ Models: NPN open collector			
<b>Operation mode (with sensing object approaching)</b>		1-output models (B1, C1): NO (Normally open), 1-output models (B2, C2): NC (Normally closed)	1-output models (B1, C1): NO (Normally open), 1-output models (B2, C2): NC (Normally closed), 2-output models (B3, C3): NO+NC (Normally open, Normally closed)		
<b>Control output</b>	<b>Load current</b>	1-output models: 10 to 30 VDC, Class 2, 100 mA max.	1-output models: 10 to 30 VDC, Class 2, 100 mA max., 2-output models: 10 to 30 VDC, Class 2, 50 mA max.		
	<b>Residual voltage</b>	1-output models: 2 V max. (Load current: 100 mA, Cable length: 2 m)	1-output models: 2 V max. (Load current: 100 mA, Cable length: 2 m), 2-output models: 2 V max. (Load current: 50 mA, Cable length: 2 m)		
<b>Indicator *2</b>		In the Standard I/O mode (SIO mode): Operation indicator (orange, lit) and communication indicator (green, not lit) In the IO-Link communication mode (COM mode): Operation indicator (orange, lit) and communication indicator (green, blinking at 1 s intervals)			
<b>Protection circuits</b>		Power supply reverse polarity protection, Surge suppressor, Output short-circuit protection, Output reverse polarity protection			
<b>Ambient temperature range</b>		Operating/Storage: -25 to 70°C (with no icing or condensation)			
<b>Ambient humidity range</b>		Operating/Storage: 35% to 95% (with no condensation)			
<b>Temperature influence</b>		±10% max. of sensing distance at 23°C in the temperature range of -25 to 70°C			
<b>Voltage influence</b>		±1% max. of sensing distance at rated voltage in the rated voltage ±15% range			
<b>Insulation resistance</b>		50 MΩ min. (at 500 VDC) between current-carrying parts and case			
<b>Dielectric strength</b>		1,000 VAC, 50/60 Hz for 1 minute between current-carrying parts and case			
<b>Vibration resistance (destruction)</b>		10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions			
<b>Shock resistance (destruction)</b>		500 m/s <sup>2</sup> 10 times each in X, Y, and Z directions	1,000 m/s <sup>2</sup> 10 times each in X, Y, and Z directions		
<b>Degree of protection</b>		Pre-wired Models, Pre-wired Connector Models: IEC 60529: IP67, JIS C 0920 Annex 1: IP67 Connector Models: IEC 60529: IP67			
<b>Connection method</b>		Pre-wired Models (Standard cable length: 2 m) and Pre-wired Connector Models (Standard cable length: 0.3 m), M12 Connector Models			
<b>Weight *3 (packed state)</b>	<b>Pre-wired Models</b>	Approx. 85 g	Approx. 95 g	Approx. 180 g	Approx. 260 g
	<b>M12 Pre-wired Smartclick Connector</b>	Approx. 55 g	Approx. 70 g	Approx. 115 g	Approx. 200 g
	<b>Connector</b>	Approx. 40 g	Approx. 55 g	Approx. 95 g	Approx. 180 g
<b>Materials</b>	<b>Case</b>	Fluororesin coating (Base material: brass)			
	<b>Sensing surface</b>	Fluorine resin			
	<b>Clamping nuts</b>	Fluororesin coating (Base material: brass)			
	<b>Toothed washers</b>	Zinc-plated iron			
	<b>Cable</b>	Vinyl chloride (PVC)			
<b>Main IO-Link functions *2</b>		Operation mode switching between NO and NC, self diagnosis enabling, excessive proximity judgment distance selecting, timer function of the control output and timer time selecting, instability output (IO-Link mode) ON delay timer time selecting function, monitor output, operating hours read-out, readout of the sensor internal temperature, and initial reset			
<b>IO-Link Communication specifications *2</b>	<b>IO-Link specification</b>	Ver 1.1			
	<b>Baud rate</b>	COM2 (38.4 kbps), COM3 (230.4 kbps)			
	<b>Data length</b>	PD size: 2 bytes, OD size: 1 byte (M-sequence type: TYPE_2_2)			
	<b>Minimum cycle time</b>	COM2: 2.3 ms, COM3: 0.4 ms			
<b>Accessories</b>		Instruction manual, Clamping nuts, Toothed washer			

\*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. IO-Link is not supported for NC-type PNP outputs or all types of NPN outputs.

\*3. Weight of the standard body-sized model.

# E2E/E2EQ NEXT Series

## BASIC Model

### E2E NEXT Series (Double/Single distance model)

#### DC 3-wire

#### Shielded

Item	Types Size Model	Double distance				Single distance			
		M8	M12	M18	M30	M8	M12	M18	M30
		E2E-X2□8	E2E-X4□12	E2E-X8□18	E2E-X15□30	E2E-X1R5□8	E2E-X2□12	E2E-X5□18	E2E-X10□30
<b>Sensing distance</b>		2 mm±10%	4 mm±10%	8 mm±10%	15 mm±10%	1.5 mm±10%	2 mm±10%	5 mm±10%	10 mm±10%
<b>Setting distance</b>		0 to 1.6 mm	0 to 3.2 mm	0 to 6.4 mm	0 to 12 mm	0 to 1.2 mm	0 to 1.6 mm	0 to 4 mm	0 to 8 mm
<b>Differential travel</b>		15% max. of sensing distance				10% max. of sensing distance			
<b>Detectable object</b>		Ferrous metals (For non-ferrous metals, refer to the <i>Engineering Data</i> on page 48.)							
<b>Standard sensing object</b>		Iron, 8 × 8 × 1 mm	Iron, 12 × 12 × 1 mm	Iron, 24 × 24 × 1 mm	Iron, 45 × 45 × 1 mm	Iron, 8 × 8 × 1 mm	Iron, 12 × 12 × 1 mm	Iron, 18 × 18 × 1 mm	Iron, 30 × 30 × 1 mm
<b>Response frequency *1</b>		1,500 Hz	1,000 Hz	500 Hz	250 Hz	2,000 Hz	1,500 Hz	600 Hz	400 Hz
<b>Power supply voltage</b>		10 to 30 VDC (including 10% ripple (p-p)), Class 2							
<b>Current consumption</b>		1-output models: 16 mA max. 2-output models: 20 mA max.							
<b>Output configuration</b>		B□ Models: PNP open collector C□ Models: NPN open collector							
<b>Operation mode (with sensing object approaching)</b>		1-output models (B1, C1): NO (Normally open), 1-output models (B2, C2): NC (Normally closed), 2-output models (B3, C3): NO+NC (Normally open, Normally closed) *3							
<b>Control output</b>	<b>Load current</b>	1-output models: 10 to 30 VDC, Class 2, 200 mA max., (-40 to 70°C), 100 mA max., (70 to 85°C) 2-output models: 10 to 30 VDC, Class 2, 50 mA max.	1-output models: 10 to 30 VDC, Class 2, 200 mA max., 2-output models: 10 to 30 VDC, Class 2, 100 mA max.			1-output models: 10 to 30 VDC, Class 2, 200 mA max., (-40 to 70°C), 100 mA max., (70 to 85°C) 2-output models: 10 to 30 VDC, Class 2, 50 mA max.	1-output models: 10 to 30 VDC, Class 2, 200 mA max., 2-output models: 10 to 30 VDC, Class 2, 100 mA max.		
	<b>Residual voltage</b>	1-output models: 2 V max. (Load current: 200 mA, Cable length: 2 m), 2-output models: 2 V max. (Load current: 50 mA, Cable length: 2 m)	1-output models: 2 V max. (Load current: 200 mA, Cable length: 2 m), 2-output models: 2 V max. (Load current: 100 mA, Cable length: 2 m)			1-output models: 2 V max. (Load current: 200 mA, Cable length: 2 m), 2-output models: 2 V max. (Load current: 50 mA, Cable length: 2 m)	1-output models: 2 V max. (Load current: 200 mA, Cable length: 2 m), 2-output models: 2 V max. (Load current: 100 mA, Cable length: 2 m)		
<b>Indicator *2</b>		In the Standard I/O mode (SIO mode): Operation indicator (orange, lit) and communication indicator (green, not lit) In the IO-Link communication mode (COM mode): Operation indicator (orange, lit) and communication indicator (green, blinking at 1 s intervals)							
<b>Protection circuits</b>		Power supply reverse polarity protection, Surge suppressor, Output short-circuit protection, Output reverse polarity protection							
<b>Ambient temperature range</b>		Operating/Storage: -40 to 85°C (with no icing or condensation) <b>Note:</b> The UL temperature rating for M12 Pre-wired Connector Models is -25 to 70°C.							
<b>Ambient humidity range</b>		Operating/Storage: 35% to 95% (with no condensation)							
<b>Temperature influence</b>		±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							
<b>Voltage influence</b>		±1% max. of sensing distance at rated voltage in the rated voltage ±15% range							
<b>Insulation resistance</b>		50 MΩ min. (at 500 VDC) between current-carrying parts and case							
<b>Dielectric strength</b>		1,000 VAC, 50/60 Hz for 1 minute between current-carrying parts and case							
<b>Vibration resistance (destruction)</b>		10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions							
<b>Shock resistance (destruction)</b>		500 m/s <sup>2</sup> 10 times each in X, Y, and Z directions	1,000 m/s <sup>2</sup> 10 times each in X, Y, and Z directions			500 m/s <sup>2</sup> 10 times each in X, Y, and Z directions	1,000 m/s <sup>2</sup> 10 times each in X, Y, and Z directions		
<b>Degree of protection</b>		Pre-wired Models, Pre-wired Connector Models: IEC 60529:IP67, ISO 20653 (old standard: DIN 40050 PART9): IP69K, JIS C 0920 Annex 1: IP67G, Passed OMRON's Oil-resistant Component Evaluation Standards *4 (Cutting oil type: specified in JIS K 2241:2000; Temperature: 35°C max.) Connector Models: IEC 60529: IP67, ISO 20653 (old standard: DIN 40050 PART9): IP69K							
<b>Connection method</b>		Pre-wired Models (Standard cable length: 2 m), Pre-wired Connector Models (Standard cable length: 0.3 m) and Connector Models (M12 Connector, M8 (4-pin) Connector and M8 (3-pin) Connector)							
<b>Weight *5 (packed state)</b>	<b>Pre-wired</b>	Approx. 85 g	Approx. 95 g	Approx. 170 g	Approx. 240 g	Approx. 85 g	Approx. 95 g	Approx. 170 g	Approx. 240 g
	<b>M12 Pre-wired Smartclick Connector</b>	Approx. 55 g	Approx. 70 g	Approx. 105 g	Approx. 170 g	Approx. 55 g	Approx. 70 g	Approx. 105 g	Approx. 170 g
	<b>Connector</b>	Approx. 40 g *6	Approx. 55 g	Approx. 85 g	Approx. 160 g	Approx. 40 g *6	Approx. 55 g	Approx. 85 g	Approx. 160 g

Item	Types Size Model	Double distance				Single distance			
		M8	M12	M18	M30	M8	M12	M18	M30
		E2E-X2□8	E2E-X4□12	E2E-X8□18	E2E-X15□30	E2E-X1R5□8	E2E-X2□12	E2E-X5□18	E2E-X10□30
Materials	Case	Stainless (SUS303)	Nickel-plated brass			Stainless (SUS303)	Nickel-plated brass		
	Sensing surface	Polybutylene terephthalat (PBT)							
	Clamping nuts	Nickel-plated brass							
	Toothed washers	Zinc-plated iron							
	Cable	Vinyl chloride (PVC)							
Main IO-Link functions *2		Operation mode switching between NO and NC, self diagnosis enabling, excessive proximity judgment distance selecting, timer function of the control output and timer time selecting, instability output (IO-Link mode) ON delay timer time selecting function, monitor output, operating hours read-out, readout of the sensor internal temperature, and initial reset							
IO-Link Communication specifications *2	IO-Link specification	Ver1.1							
	Baud rate	COM2 (38.4 kbps), COM3 (230.4 kbps)							
	Data length	PD size: 2 bytes, OD size: 1 byte (M-sequence type: TYPE_2_2)							
	Minimum cycle time	COM2: 2.3 ms, COM3: 0.4 ms							
Accessories		Instruction manual, Clamping nuts, Toothed washer							

- \*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. IO-Link is not supported for NC-type PNP outputs or all types of NPN outputs.
- \*3. Dual-output specification for the M8-size models is only applicable to long-size M12 Connector models.
- \*4. The Oil-resistant Component Evaluation Standards are OMRON's own durability evaluation standards. 2-year oil resistance indicates the median value of the product design and the oil-resistance performance criterion result (=Typical value). Actual performance can be expected to decline after two years on average from shipment. The Pre-wired Connector Model verifies 2 years of oil resistance when mating with Round Oil-resistant Connectors XS5 NEXT series correctly. The degree of protection is not satisfied with the part where cable wires are uncovered for the Pre-wired Models.
- \*5. Weight of the standard body-sized model.
- \*6. Both M8 connectors and M12 connectors are available.

# E2E/E2EQ NEXT Series

## BASIC Model

### E2E NEXT Series (Double/Single distance model)

#### DC 3-wire

#### Unshielded

Item	Types Size Model	Double distance model				Single distance model			
		M8	M12	M18	M30	M8	M12	M18	M30
		E2E-X4M□8	E2E-X8M□12	E2E-X16M□18	E2E-X30M□30	E2E-X2M□8	E2E-X5M□12	E2E-X10M□18	E2E-X18M□30
<b>Sensing distance</b>		4 mm±10%	8 mm±10%	16 mm±10%	30 mm±10%	2 mm±10%	5 mm±10%	10 mm±10%	18 mm±10%
<b>Setting distance</b>		0 to 3.2 mm	0 to 6.4 mm	0 to 12.8 mm	0 to 24 mm	0 to 1.6 mm	0 to 4 mm	0 to 8 mm	0 to 14.4 mm
<b>Differential travel</b>		15% max. of sensing distance				10% max. of sensing distance			
<b>Detectable object</b>		Ferrous metals (For non-ferrous metals, refer to the <i>Engineering Data</i> on page 48.)							
<b>Standard sensing object</b>		Iron, 12 × 12 × 1 mm	Iron, 24 × 24 × 1 mm	Iron, 48 × 48 × 1 mm	Iron, 90 × 90 × 1 mm	Iron, 8 × 8 × 1 mm	Iron, 15 × 15 × 1 mm	Iron, 30 × 30 × 1 mm	Iron, 54 × 54 × 1 mm
<b>Response frequency *1</b>		1,000 Hz	800 Hz	400 Hz	100 Hz	1,000 Hz	800 Hz	400 Hz	100 Hz
<b>Power supply voltage</b>		10 to 30 VDC (including 10% ripple (p-p)), Class 2							
<b>Current consumption</b>		1-output models: 16 mA max. 2-output models: 20 mA max.							
<b>Output configuration</b>		B□ Models: PNP open collector C□ Models: NPN open collector							
<b>Operation mode (with sensing object approaching)</b>		1-output models (B1, C1): NO (Normally open), 1-output models (B2, C3): NC (Normally closed) 2-output models (B3, C3): NO+NC (Normally open, Normally closed) *3							
<b>Control output</b>	<b>Load current</b>	1-output models: 10 to 30 VDC, Class 2, 200 mA max., (-40 to 70°C), 100 mA max., (70 to 85°C) 2-output models: 10 to 30 VDC, Class 2, 50 mA max.	1-output models: 10 to 30 VDC, Class 2, 200 mA max., 2-output models: 10 to 30 VDC, Class 2, 100 mA max.			1-output models: 10 to 30 VDC, Class 2, 200 mA max., (-40 to 70°C), 100 mA max., (70 to 85°C) 2-output models: 10 to 30 VDC, Class 2, 50 mA max.	1-output models: 10 to 30 VDC, Class 2, 200 mA max., 2-output models: 10 to 30 VDC, Class 2, 100 mA max.		
	<b>Residual voltage</b>	1-output models: 2 V max. (Load current: 200 mA, Cable length: 2 m), 2-output models: 2 V max. (Load current: 50 mA, Cable length: 2 m)	1-output models: 2 V max. (Load current: 200 mA, Cable length: 2 m), 2-output models: 2 V max. (Load current: 100 mA, Cable length: 2 m)			1-output models: 2 V max. (Load current: 200 mA, Cable length: 2 m), 2-output models: 2 V max. (Load current: 50 mA, Cable length: 2 m)	1-output models: 2 V max. (under load current of 200 mA with cable length of 2 m), 2-output models: 2 V max. (under load current of 100 mA with cable length of 2 m)		
<b>Indicator *2</b>		In the Standard I/O mode (SIO mode): Operation indicator (orange, lit) and communication indicator (green, not lit) In the IO-Link communication mode (COM mode): Operation indicator (orange, lit) and communication indicator (green, blinking at 1 s intervals)							
<b>Protection circuits</b>		Power supply reverse polarity protection, Surge suppressor, Output short-circuit protection, Output reverse polarity protection							
<b>Ambient temperature range</b>		Operating/Storage: -40 to 85°C (with no icing or condensation) <b>Note:</b> The UL temperature rating for M12 Pre-wired Connector Models is -25 to 70°C.							
<b>Ambient humidity range</b>		Operating/Storage: 35% to 95% (with no condensation)							
<b>Temperature influence</b>		±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							
<b>Voltage influence</b>		±1% max. of sensing distance at rated voltage in the rated voltage ±15% range							
<b>Insulation resistance</b>		50 MΩ min. (at 500 VDC) between current-carrying parts and case							
<b>Dielectric strength</b>		1,000 VAC, 50/60 Hz for 1 minute between current-carrying parts and case							
<b>Vibration resistance (destruction)</b>		10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions							
<b>Shock resistance (destruction)</b>		500 m/s <sup>2</sup> 10 times each in X, Y, and Z directions	1,000 m/s <sup>2</sup> 10 times each in X, Y, and Z directions			500 m/s <sup>2</sup> 10 times each in X, Y, and Z directions	1,000 m/s <sup>2</sup> 10 times each in X, Y, and Z directions		
<b>Degree of protection</b>		Pre-wired Models, Pre-wired Connector Models: IEC 60529:IP67, ISO 20653 (old standard: DIN 40050 PART9): IP69K, JIS C 0920 Annex 1: IP67G, Passed OMRON's Oil-resistant Component Evaluation Standards *4 (Cutting oil type: specified in JIS K 2241:2000; Temperature: 35°C max.) Connector Models: IEC 60529:IP67, ISO 20653 (old standard: DIN 40050 PART9): IP69K							
<b>Connection method</b>		Pre-wired Models (Standard cable length: 2 m), Pre-wired Connector Models (Standard cable length: 0.3 m) and Models (M12 Connector, M8 (4-pin) Connector and M8 (3-pin) Connector)							
<b>Weight *5 (packed state)</b>	<b>Pre-wired</b>	Approx. 85 g	Approx. 95 g	Approx. 170 g	Approx. 280 g	Approx. 85 g	Approx. 95 g	Approx. 170 g	Approx. 240 g
	<b>M12 Pre-wired Smartclick Connector</b>	Approx. 55 g	Approx. 70 g	Approx. 105 g	Approx. 220 g	Approx. 55 g	Approx. 70 g	Approx. 105 g	Approx. 170 g
	<b>Connector</b>	Approx. 40 g *6	Approx. 55 g	Approx. 85 g	Approx. 200 g	Approx. 40 g *6	Approx. 55 g	Approx. 85 g	Approx. 160 g

Item	Types Size Model	Double distance model				Single distance model			
		M8	M12	M18	M30	M8	M12	M18	M30
		E2E-X4M□8	E2E-X8M□12	E2E-X16M□18	E2E-X30M□30	E2E-X2M□8	E2E-X5M□12	E2E-X10M□18	E2E-X18M□30
Materials	Case	Stainless (SUS303)	Nickel-plated brass			Stainless (SUS303)	Nickel-plated brass		
	Sensing surface	Polybutylene terephthalat (PBT)							
	Clamping nuts	Nickel-plated brass							
	Toothed washers	Zinc-plated iron							
	Cable	Vinyl chloride (PVC)							
Main IO-Link functions *2		Operation mode switching between NO and NC, self diagnosis enabling, excessive proximity judgment distance selecting, timer function of the control output and timer time selecting, instability output (IO-Link mode) ON delay timer time selecting function, monitor output, operating hours read-out, readout of the sensor internal temperature, and initial reset							
IO-Link Communication specifications *2	IO-Link specification	Ver 1.1							
	Baud rate	COM2 (38.4 kbps), COM3 (230.4 kbps)							
	Data length	PD size: 2 bytes, OD size: 1 byte (M-sequence type: TYPE_2_2)							
	Minimum cycle time	COM2: 2.3 ms, COM3: 0.4 ms							
Accessories		Instruction manual, Clamping nuts, Toothed washer							

- \*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. IO-Link is not supported for NC-type PNP outputs or all types of NPN outputs.
- \*3. Dual-output specification for the M8-size models is only applicable to long-size M12 Connector models.
- \*4. The Oil-resistant Component Evaluation Standards are OMRON's own durability evaluation standards. 2-year oil resistance indicates the median value of the product design and the oil-resistance performance criterion result (=Typical value). Actual performance can be expected to decline after two years on average from shipment. The Pre-wired Connector Model verifies 2 years of oil resistance when mating with Round Oil-resistant Connectors XS5 NEXT series correctly. The degree of protection is not satisfied with the part where cable wires are uncovered for the Pre-wired Models.
- \*5. Weight of the standard body-sized model.
- \*6. Both M8 connectors and M12 connectors are available.

# E2E/E2EQ NEXT Series

## BASIC Model

### E2E Q NEXT Series (Spatter-resistant Double distance/Single distance model) DC 3-Wire Models Shielded

Item	Types Size Model	Double distance				Single distance			
		M8	M12	M18	M30	M8	M12	M18	M30
		E2EQ-X2□8	E2EQ-X4□12	E2EQ-X8□18	E2EQ-X15□30	E2EQ-X1R5□8	E2EQ-X2□12	E2EQ-X5□18	E2EQ-X10□30
<b>Sensing distance</b>		2 mm±10%	4 mm±10%	8 mm±10%	15 mm±10%	1.5 mm±10%	2 mm±10%	5 mm±10%	10 mm±10%
<b>Setting distance</b>		0 to 1.6 mm	0 to 3.2 mm	0 to 6.4 mm	0 to 12 mm	0 to 1.2 mm	0 to 1.6 mm	0 to 4 mm	0 to 8 mm
<b>Differential travel</b>		15% max. of sensing distance				10% max. of sensing distance			
<b>Detectable object</b>		Ferrous metals (For non-ferrous metals, refer to the <i>Engineering Data</i> on page 48.)							
<b>Standard sensing object</b>		Iron, 8 × 8 × 1 mm	Iron, 12 × 12 × 1 mm	Iron, 24 × 24 × 1 mm	Iron, 45 × 45 × 1 mm	Iron, 8 × 8 × 1 mm	Iron, 12 × 12 × 1 mm	Iron, 18 × 18 × 1 mm	Iron, 30 × 30 × 1 mm
<b>Response frequency *1</b>		1,500 Hz	1,000 Hz	500 Hz	250 Hz	2,000 Hz	1,500 Hz	600 Hz	400 Hz
<b>Power supply voltage</b>		10 to 30 VDC (including 10% ripple (p-p)), Class 2							
<b>Current consumption</b>		1-output models: 16 mA max. 2-output models: 20 mA max.							
<b>Output configuration</b>		B□ Models: PNP open collector, C□ Models: NPN open collector							
<b>Operation mode (with sensing object approaching)</b>		1-output models (B1, C1): NO (Normally open), 1-output models (B2, C2): NC (Normally closed) 2-output models (B3, C3): NO+NC (Normally open, Normally closed)							
<b>Control output</b>	<b>Load current</b>	1-output models: 10 to 30 VDC, Class 2, 200 mA max., (-40 to 70°C), 100 mA max., (70 to 85°C) 2-output models: 10 to 30 VDC, Class 2, 50 mA max.	1-output models: 10 to 30 VDC, Class 2, 200 mA max., 2-output models: 10 to 30 VDC, Class 2, 100 mA max.			1-output models: 10 to 30 VDC, Class 2, 200 mA max., (-40 to 70°C), 100 mA max., (70 to 85°C) 2-output models: 10 to 30 VDC, Class 2, 50 mA max.	1-output models: 10 to 30 VDC, Class 2, 200 mA max., 2-output models: 10 to 30 VDC, Class 2, 100 mA max.		
	<b>Residual voltage</b>	1-output models: 2 V max. (Load current: 200 mA, Cable length: 2 m), 2-output models: 2 V max. (Load current: 50 mA, Cable length: 2 m)	1-output models: 2 V max. (Load current: 200 mA, Cable length: 2 m), 2-output models: 2 V max. (Load current: 100 mA, Cable length: 2 m)			1-output models: 2 V max. (Load current: 200 mA, Cable length: 2 m), 2-output models: 2 V max. (Load current: 50 mA, Cable length: 2 m)	1-output models: 2 V max. (Load current: 200 mA, Cable length: 2 m), 2-output models: 2 V max. (Load current: 100 mA, Cable length: 2 m)		
<b>Indicator *2</b>		In the Standard I/O mode (SIO mode): Operation indicator (orange, lit) and communication indicator (green, not lit) In the IO-Link communication mode (COM mode): Operation indicator (orange, lit) and communication indicator (green, blinking at 1 s intervals)							
<b>Protection circuits</b>		Power supply reverse polarity protection, Surge suppressor, Output short-circuit protection, Output reverse polarity protection							
<b>Ambient temperature range</b>		Operating/Storage: -40 to 85°C (with no icing or condensation) <b>Note:</b> The UL temperature rating for M12 Pre-wired Connector Models is -25 to 70°C.							
<b>Ambient humidity range</b>		Operating/Storage: 35% to 95% (with no condensation)							
<b>Temperature influence</b>		±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							
<b>Voltage influence</b>		±1% max. of sensing distance at rated voltage in the rated voltage ±15% range							
<b>Insulation resistance</b>		50 MΩ min. (at 500 VDC) between current-carrying parts and case							
<b>Dielectric strength</b>		1,000 VAC, 50/60 Hz for 1 minute between current-carrying parts and case							
<b>Vibration resistance (destruction)</b>		10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions							
<b>Shock resistance (destruction)</b>		500 m/s <sup>2</sup> 10 times each in X, Y, and Z directions	1,000 m/s <sup>2</sup> 10 times each in X, Y, and Z directions			500 m/s <sup>2</sup> 10 times each in X, Y, and Z directions	1,000 m/s <sup>2</sup> 10 times each in X, Y, and Z directions		
<b>Degree of protection</b>		Pre-wired Models, Pre-wired Connector Models: IEC 60529:IP67, JIS C 0920 Annex 1: IP67G Connector Models: IEC 60529 IP67							
<b>Connection method</b>		Pre-wired Models (Standard cable length: 2 m) and Pre-wired Connector Models (Standard cable length: 0.3 m), M12 Connector Models							
<b>Weight *3 (packed state)</b>	<b>Pre-wired</b>	Approx. 85 g	Approx. 95 g	Approx. 170 g	Approx. 240 g	Approx. 85 g	Approx. 95 g	Approx. 170 g	Approx. 240 g
	<b>M12 Pre-wired Smartclick Connector</b>	Approx. 55 g	Approx. 70 g	Approx. 105 g	Approx. 170 g	Approx. 55 g	Approx. 70 g	Approx. 105 g	Approx. 170 g
	<b>Connector</b>	Approx. 40 g	Approx. 55 g	Approx. 85 g	Approx. 160 g	Approx. 40 g	Approx. 55 g	Approx. 85 g	Approx. 160 g

Item	Types Size Model	Double distance				Single distance			
		M8	M12	M18	M30	M8	M12	M18	M30
		E2EQ-X2□8	E2EQ-X4□12	E2EQ-X8□18	E2EQ-X15□30	E2EQ-X1R5□8	E2EQ-X2□12	E2EQ-X5□18	E2EQ-X10□30
Materials	Case	Fluororesin coating (Base material: SUS303)	Fluororesin coating (Base material: brass)			Fluororesin coating (Base material: SUS303)	Fluororesin coating (Base material: brass)		
	Sensing surface	Fluorine resin							
	Clamping nuts	Fluororesin coating (Base material: brass)							
	Toothed washers	Zinc-plated iron							
	Cable	Vinyl chloride (PVC)							
Main IO-Link functions *2		Operation mode switching between NO and NC, self diagnosis enabling, excessive proximity judgment distance selecting, timer function of the control output and timer time selecting, instability output (IO-Link mode) ON delay timer time selecting function, monitor output, operating hours read-out, readout of the sensor internal temperature, and initial reset							
IO-Link Communication specifications *2	IO-Link specification	Ver1.1							
	Baud rate	COM2 (38.4 kbps), COM3 (230.4 kbps)							
	Data length	PD size: 2 bytes, OD size: 1 byte (M-sequence type: TYPE_2_2)							
	Minimum cycle time	COM2: 2.3 ms, COM3: 0.4 ms							
Accessories		Instruction manual, Clamping nuts, Toothed washer							

\*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. IO-Link is not supported for NC-type PNP outputs or all types of NPN outputs.

\*3. Weight of the standard body-sized model.