Cylindrical Proximity Sensor

E2B

Perfect fit for standard environments

- Embody two seemingly contradictory characteristics: value-for-money and high reliability
- All 372 Models
- Four different sizes: M8, M12, M18 and M30
- Single and double sensing distances, Shielded and unshielded
- A choice of short and long bodies, two connecting methods and four output types
- Operating temperature: –25ºC to 70ºC
- Water resistance: IP67
- With an all-round 360º visible indicator

⚠ Refer to *Safety Precautions* on page 20.

For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

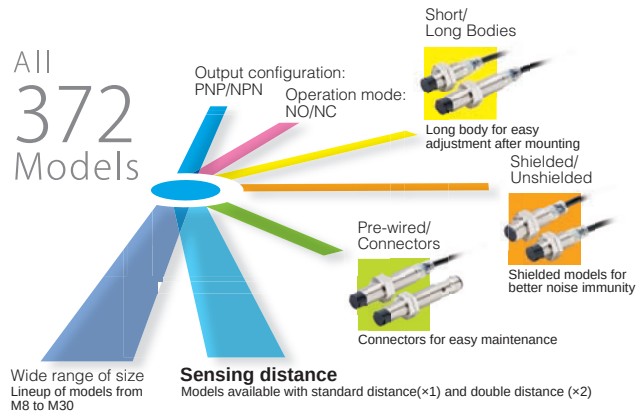
Features

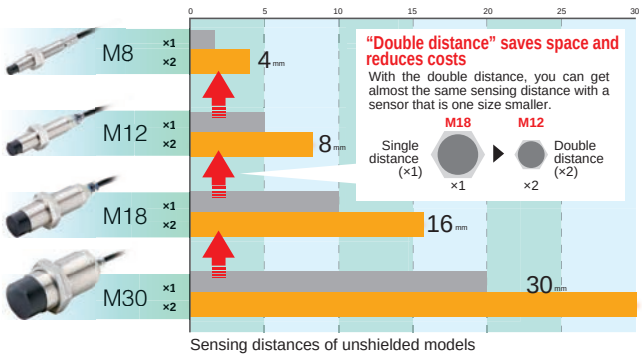
Wide Variation

"Double Distance" Close at Hand

Perfect Fit to Your Application Needs

With no less than 372 models in the family.
You can choose the one that exactly meets your needs.
E2B series can save cost & your time via single source.





Sensing distances of unshielded models

Reliable Performance

360-degree indication

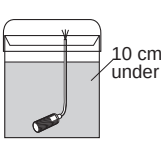
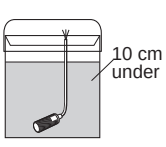
Easy visibility for 360º even in dark locations so you can mount the sensor in any direction.

* The 360-degree indication is only for Pre-wired Models of M12, M18, and M30.
* The other models (Pre-wired Models of M8 and all the Connector Models) have 4 LEDs at 90-degree intervals, which realize clear visibility from a 360-degree angle.

Oil-mist environment resistant!

IP67

We have performed not only a specified test for rating the degree of protection (IP67) for catalogs, but also tests with oil mist which appears onsite. Simulation tests has been performed with attachment of high concentration of oil mist.

Degree of Protection	E2B	E2E (M8/M12/M18/ M30 size)	Small Dia E2E (3 dia./4 dia./ 6.5 dia/M4/M5)
Water resistance	IP67	IP67 IP69K *1	IP67
Oil resistance	In oil-mist of soluble cutting oil diluted, 250 hours, the temperature of atmosphere is 23ºC 	Soaked in oil (soluble type and insoluble) 500 hours, temperature of oil 50ºC 	Soaked in insoluble oil 250 hours, temperature of oil 50ºC 

*1. There are so many kinds of E2E, not all IP69K rated. In detailed part#, please contact your OMRON representative.

Ordering Information

Size			Sensing distance	Connecting method (See note 1.)	Body length	Output configuration	Operation mode NO	Operation mode NC
M8 (Stainless steel) (See note 2.)	Single	Shielded	1.5 mm	Pre-wired	Short	PNP	E2B-S08KS01-WP-B1 2M	E2B-S08KS01-WP-B2 2M
						NPN	E2B-S08KS01-WP-C1 2M	E2B-S08KS01-WP-C2 2M
					Long	PNP	E2B-S08LS01-WP-B1 2M	E2B-S08LS01-WP-B2 2M
						NPN	E2B-S08LS01-WP-C1 2M	E2B-S08LS01-WP-C2 2M
				M8 Connector (3-pin)	Short	PNP	E2B-S08KS01-MC-B1	E2B-S08KS01-MC-B2
						NPN	E2B-S08KS01-MC-C1	E2B-S08KS01-MC-C2
					Long	PNP	E2B-S08LS01-MC-B1	E2B-S08LS01-MC-B2
						NPN	E2B-S08LS01-MC-C1	E2B-S08LS01-MC-C2
		Unshielded	2 mm	Pre-wired	Short	PNP	E2B-S08KN02-WP-B1 2M	E2B-S08KN02-WP-B2 2M
						NPN	E2B-S08KN02-WP-C1 2M	E2B-S08KN02-WP-C2 2M
					Long	PNP	E2B-S08LN02-WP-B1 2M	E2B-S08LN02-WP-B2 2M
						NPN	E2B-S08LN02-WP-C1 2M	E2B-S08LN02-WP-C2 2M
				M8 Connector (3-pin)	Short	PNP	E2B-S08KN02-MC-B1	E2B-S08KN02-MC-B2
						NPN	E2B-S08KN02-MC-C1	E2B-S08KN02-MC-C2
					Long	PNP	E2B-S08LN02-MC-B1	E2B-S08LN02-MC-B2
						NPN	E2B-S08LN02-MC-C1	E2B-S08LN02-MC-C2
	Double	Shielded	2 mm	Pre-wired	Short	PNP	E2B-S08KS02-WP-B1 2M	E2B-S08KS02-WP-B2 2M
						NPN	E2B-S08KS02-WP-C1 2M	E2B-S08KS02-WP-C2 2M
					Long	PNP	E2B-S08LS02-WP-B1 2M	E2B-S08LS02-WP-B2 2M
						NPN	E2B-S08LS02-WP-C1 2M	E2B-S08LS02-WP-C2 2M
				M8 Connector (3-pin)	Short	PNP	E2B-S08KS02-MC-B1	E2B-S08KS02-MC-B2
						NPN	E2B-S08KS02-MC-C1	E2B-S08KS02-MC-C2
					Long	PNP	E2B-S08LS02-MC-B1	E2B-S08LS02-MC-B2
						NPN	E2B-S08LS02-MC-C1	E2B-S08LS02-MC-C2
		Unshielded	4 mm	Pre-wired	Short	PNP	E2B-S08KN04-WP-B1 2M	E2B-S08KN04-WP-B2 2M
						NPN	E2B-S08KN04-WP-C1 2M	E2B-S08KN04-WP-C2 2M
					Long	PNP	E2B-S08LN04-WP-B1 2M	E2B-S08LN04-WP-B2 2M
						NPN	E2B-S08LN04-WP-C1 2M	E2B-S08LN04-WP-C2 2M
				M8 Connector (3-pin)	Short	PNP	E2B-S08KN04-MC-B1	E2B-S08KN04-MC-B2
						NPN	E2B-S08KN04-MC-C1	E2B-S08KN04-MC-C2
					Long	PNP	E2B-S08LN04-MC-B1	E2B-S08LN04-MC-B2
						NPN	E2B-S08LN04-MC-C1	E2B-S08LN04-MC-C2

Note: 1. Pre-wired Models are available in the cable lengths of 2 m and 5 m.
2. Material specifications for stainless steel housing case: 1.4305 (W.-No.), SUS 303 (AISI), 2346 (SS).

Size			Sensing distance	Connecting method (See note 1.)	Body length	Output configuration	Operation mode NO	Operation mode NC
M12 (Brass)	Single	Shielded	2 mm	Pre-wired	Short	PNP	E2B-M12KS02-WP-B1 2M	E2B-M12KS02-WP-B2 2M
						NPN	E2B-M12KS02-WP-C1 2M	E2B-M12KS02-WP-C2 2M
					Long	PNP	E2B-M12LS02-WP-B1 2M	E2B-M12LS02-WP-B2 2M
						NPN	E2B-M12LS02-WP-C1 2M	E2B-M12LS02-WP-C2 2M
				M12 Connector	Short	PNP	E2B-M12KS02-M1-B1	E2B-M12KS02-M1-B2
						NPN	E2B-M12KS02-M1-C1	E2B-M12KS02-M1-C2
					Long	PNP	E2B-M12LS02-M1-B1	E2B-M12LS02-M1-B2
						NPN	E2B-M12LS02-M1-C1	E2B-M12LS02-M1-C2
		Unshielded	5 mm	Pre-wired	Short	PNP	E2B-M12KN05-WP-B1 2M	E2B-M12KN05-WP-B2 2M
						NPN	E2B-M12KN05-WP-C1 2M	E2B-M12KN05-WP-C2 2M
					Long	PNP	E2B-M12LN05-WP-B1 2M	E2B-M12LN05-WP-B2 2M
						NPN	E2B-M12LN05-WP-C1 2M	E2B-M12LN05-WP-C2 2M
				M12 Connector	Short	PNP	E2B-M12KN05-M1-B1	E2B-M12KN05-M1-B2
						NPN	E2B-M12KN05-M1-C1	E2B-M12KN05-M1-C2
					Long	PNP	E2B-M12LN05-M1-B1	E2B-M12LN05-M1-B2
						NPN	E2B-M12LN05-M1-C1	E2B-M12LN05-M1-C2
	Double	Shielded (See note 2.)	4 mm	Pre-wired	Short	PNP	E2B-M12KS04-WP-B1 2M	E2B-M12KS04-WP-B2 2M
						NPN	E2B-M12KS04-WP-C1 2M	E2B-M12KS04-WP-C2 2M
					Long	PNP	E2B-M12LS04-WP-B1 2M	E2B-M12LS04-WP-B2 2M
						NPN	E2B-M12LS04-WP-C1 2M	E2B-M12LS04-WP-C2 2M
				M12 Connector	Short	PNP	E2B-M12KS04-M1-B1	E2B-M12KS04-M1-B2
						NPN	E2B-M12KS04-M1-C1	E2B-M12KS04-M1-C2
					Long	PNP	E2B-M12LS04-M1-B1	E2B-M12LS04-M1-B2
						NPN	E2B-M12LS04-M1-C1	E2B-M12LS04-M1-C2
		Unshielded	8 mm	Pre-wired	Short	PNP	E2B-M12KN08-WP-B1 2M	E2B-M12KN08-WP-B2 2M
						NPN	E2B-M12KN08-WP-C1 2M	E2B-M12KN08-WP-C2 2M
					Long	PNP	E2B-M12LN08-WP-B1 2M	E2B-M12LN08-WP-B2 2M
						NPN	E2B-M12LN08-WP-C1 2M	E2B-M12LN08-WP-C2 2M
				M12 Connector	Short	PNP	E2B-M12KN08-M1-B1	E2B-M12KN08-M1-B2
						NPN	E2B-M12KN08-M1-C1	E2B-M12KN08-M1-C2
					Long	PNP	E2B-M12LN08-M1-B1	E2B-M12LN08-M1-B2
						NPN	E2B-M12LN08-M1-C1	E2B-M12LN08-M1-C2

Note: 1. Pre-wired Models are available in the cable lengths of 2 m and 5 m.
2. There are restrictions that apply to Shielded sensors.
Please refer to “Effects of Surrounding Metal” on page 20.

Size			Sensing distance	Connecting method (See note 1.)	Body length	Output configuration	Operation mode NO	Operation mode NC
M18 (Brass)	Single	Shielded	5 mm	Pre-wired	Short	PNP	E2B-M18KS05-WP-B1 2M	E2B-M18KS05-WP-B2 2M
						NPN	E2B-M18KS05-WP-C1 2M	E2B-M18KS05-WP-C2 2M
					Long	PNP	E2B-M18LS05-WP-B1 2M	E2B-M18LS05-WP-B2 2M
						NPN	E2B-M18LS05-WP-C1 2M	E2B-M18LS05-WP-C2 2M
				M12 Connector	Short	PNP	E2B-M18KS05-M1-B1	E2B-M18KS05-M1-B2
						NPN	E2B-M18KS05-M1-C1	E2B-M18KS05-M1-C2
					Long	PNP	E2B-M18LS05-M1-B1	E2B-M18LS05-M1-B2
						NPN	E2B-M18LS05-M1-C1	E2B-M18LS05-M1-C2
		Unshielded	10 mm	Pre-wired	Short	PNP	E2B-M18KN10-WP-B1 2M	E2B-M18KN10-WP-B2 2M
						NPN	E2B-M18KN10-WP-C1 2M	E2B-M18KN10-WP-C2 2M
					Long	PNP	E2B-M18LN10-WP-B1 2M	E2B-M18LN10-WP-B2 2M
						NPN	E2B-M18LN10-WP-C1 2M	E2B-M18LN10-WP-C2 2M
				M12 Connector	Short	PNP	E2B-M18KN10-M1-B1	E2B-M18KN10-M1-B2
						NPN	E2B-M18KN10-M1-C1	E2B-M18KN10-M1-C2
					Long	PNP	E2B-M18LN10-M1-B1	E2B-M18LN10-M1-B2
						NPN	E2B-M18LN10-M1-C1	E2B-M18LN10-M1-C2
	Double	Shielded (See note 2.)	8 mm	Pre-wired	Short	PNP	E2B-M18KS08-WP-B1 2M	E2B-M18KS08-WP-B2 2M
						NPN	E2B-M18KS08-WP-C1 2M	E2B-M18KS08-WP-C2 2M
					Long	PNP	E2B-M18LS08-WP-B1 2M	E2B-M18LS08-WP-B2 2M
						NPN	E2B-M18LS08-WP-C1 2M	E2B-M18LS08-WP-C2 2M
				M12 Connector	Short	PNP	E2B-M18KS08-M1-B1	E2B-M18KS08-M1-B2
						NPN	E2B-M18KS08-M1-C1	E2B-M18KS08-M1-C2
					Long	PNP	E2B-M18LS08-M1-B1	E2B-M18LS08-M1-B2
						NPN	E2B-M18LS08-M1-C1	E2B-M18LS08-M1-C2
		Unshielded	16 mm	Pre-wired	Short	PNP	E2B-M18KN16-WP-B1 2M	E2B-M18KN16-WP-B2 2M
						NPN	E2B-M18KN16-WP-C1 2M	E2B-M18KN16-WP-C2 2M
					Long	PNP	E2B-M18LN16-WP-B1 2M	E2B-M18LN16-WP-B2 2M
						NPN	E2B-M18LN16-WP-C1 2M	E2B-M18LN16-WP-C2 2M
				M12 Connector	Short	PNP	E2B-M18KN16-M1-B1	E2B-M18KN16-M1-B2
						NPN	E2B-M18KN16-M1-C1	E2B-M18KN16-M1-C2
					Long	PNP	E2B-M18LN16-M1-B1	E2B-M18LN16-M1-B2
						NPN	E2B-M18LN16-M1-C1	E2B-M18LN16-M1-C2

Note: 1. Pre-wired Models are available in the cable lengths of 2 m and 5 m.
2. There are restrictions that apply to Shielded sensors.
Please refer to “Effects of Surrounding Metal” on page 20.

Size			Sensing distance	Connecting method (See note 1.)	Body length	Output configuration	Operation mode NO	Operation mode NC
M30 (Brass)	Single	Shielded	10 mm	Pre-wired	Short	PNP	E2B-M30KS10-WP-B1 2M	E2B-M30KS10-WP-B2 2M
						NPN	E2B-M30KS10-WP-C1 2M	E2B-M30KS10-WP-C2 2M
					Long	PNP	E2B-M30LS10-WP-B1 2M	E2B-M30LS10-WP-B2 2M
						NPN	E2B-M30LS10-WP-C1 2M	E2B-M30LS10-WP-C2 2M
				M12 Connector	Short	PNP	E2B-M30KS10-M1-B1	E2B-M30KS10-M1-B2
						NPN	E2B-M30KS10-M1-C1	E2B-M30KS10-M1-C2
					Long	PNP	E2B-M30LS10-M1-B1	E2B-M30LS10-M1-B2
						NPN	E2B-M30LS10-M1-C1	E2B-M30LS10-M1-C2
		Unshielded	20 mm	Pre-wired	Short	PNP	E2B-M30KN20-WP-B1 2M	E2B-M30KN20-WP-B2 2M
						NPN	E2B-M30KN20-WP-C1 2M	E2B-M30KN20-WP-C2 2M
					Long	PNP	E2B-M30LN20-WP-B1 2M	E2B-M30LN20-WP-B2 2M
						NPN	E2B-M30LN20-WP-C1 2M	E2B-M30LN20-WP-C2 2M
				M12 Connector	Short	PNP	E2B-M30KN20-M1-B1	E2B-M30KN20-M1-B2
						NPN	E2B-M30KN20-M1-C1	E2B-M30KN20-M1-C2
					Long	PNP	E2B-M30LN20-M1-B1	E2B-M30LN20-M1-B2
						NPN	E2B-M30LN20-M1-C1	E2B-M30LN20-M1-C2
	Double	Shielded (See note 2.)	15 mm	Pre-wired	Short	PNP	E2B-M30KS15-WP-B1 2M	E2B-M30KS15-WP-B2 2M
						NPN	E2B-M30KS15-WP-C1 2M	E2B-M30KS15-WP-C2 2M
					Long	PNP	E2B-M30LS15-WP-B1 2M	E2B-M30LS15-WP-B2 2M
						NPN	E2B-M30LS15-WP-C1 2M	E2B-M30LS15-WP-C2 2M
				M12 Connector	Short	PNP	E2B-M30KS15-M1-B1	E2B-M30KS15-M1-B2
						NPN	E2B-M30KS15-M1-C1	E2B-M30KS15-M1-C2
					Long	PNP	E2B-M30LS15-M1-B1	E2B-M30LS15-M1-B2
						NPN	E2B-M30LS15-M1-C1	E2B-M30LS15-M1-C2
		Unshielded	30 mm	Pre-wired	Long	PNP	E2B-M30LN30-WP-B1 2M	E2B-M30LN30-WP-B2 2M
						NPN	E2B-M30LN30-WP-C1 2M	E2B-M30LN30-WP-C2 2M
				M12 Connector	Long	PNP	E2B-M30LN30-M1-B1	E2B-M30LN30-M1-B2
						NPN	E2B-M30LN30-M1-C1	E2B-M30LN30-M1-C2

Note: 1. Pre-wired Models are available in the cable lengths of 2 m and 5 m.
2. There are restrictions that apply to Shielded sensors.
Please refer to “Effects of Surrounding Metal” on page 20.

Accessories (Order Separately)

Sensor I/O Connectors

Size	Cable	Shape	Cores	Cable length (m)	Model
M8 (3-pin)	PVC	Straight	3	2	**XS3F-M8PVC3S2M**
				5	**XS3F-M8PVC3S5M**
		Right-angle		2	**XS3F-M8PVC3A2M**
				5	**XS3F-M8PVC3A5M**
	PVC Robot	Straight		2	**XS3F-M321-302-R**
				5	**XS3F-M321-305-R**
		Right-angle		2	**XS3F-M322-302-R**
				5	**XS3F-M322-305-R**
M12 (4-pin)	PVC	Straight	4	2	**XS2F-M12PVC4S2M**
				5	**XS2F-M12PVC4S5M**
		Right-angle		2	**XS2F-M12PVC4A2M**
				5	**XS2F-M12PVC4A5M**
	PVC Robot	Straight		2	**XS2F-D421-D80-F**
				5	**XS2F-D421-G80-F**
		Right-angle		2	**XS2F-D422-D80-F**
				5	**XS2F-D422-G80-F**

Model Number Legend

E2B-□□□□□-□-□□ □
1 2 3 4 5 6 7 8 9 10

Example: E2B-M12LS04-M1-B1 **M12, Brass, Long body, Shielded, Sn = 4 mm, M12 connector, PNP, NO**
E2B-S08KN02-WP-C2 5M **M8, stainless steel, Short body, Unshielded, Sn = 2 mm, Pre-wired PVC cable, NPN, NC, Cable length = 5 m**

1. Basic name
E2B

2. Housing shape and material
M: Cylindrical, metric threaded, brass
S: Cylindrical, metric threaded, stainless steel

3. Housing size
08: 8 mm
12: 12 mm
18: 18 mm
30: 30 mm

4. Barrel length
K: Short body
L: Long body

5. Shield
S: Shielded
N: Unshielded

6. Sensing distance
Numeral: Sensing distance:
01 = 1.5 mm, 02 = 2 mm, 04 = 4 mm, 05 = 5 mm,
08 = 8 mm, 10 = 10 mm, 15 = 15 mm, 16 = 16 mm,
20 = 20 mm, 30 = 30 mm

7. Kind of connection
WZ: Pre-wired, PVC, dia 4 mm
Conductor cross section : 0.3 mm^2
Insulator diameter : 1.3 mm
(See note 1.)
WP: Pre-wired, PVC, dia 4 mm
Conductor cross section : 0.141 mm^2
Insulator diameter : 0.85 mm
M1: M12 connector
MC: M8 connector (3 pin)
(See note 2.)

8. Power source and output
B: PNP
C: NPN

9. Operation mode
1: NO (Normally open)
2: NC (Normally closed)

10. Cable length
Blank: Connector type
Numeral: Cable length (2M and 5M are available.)

Note: 1. Only M12, M18, M30 type.
2. "WP", "M1" and "MC" are listed products of UL.

Ratings and Specifications

Item		Size	M8			
		Sensing distance	Single		Double	
		Type	Shielded	Unshielded	Shielded	Unshielded
		Model	E2B-S08□S01	E2B-S08□N02	E2B-S08□S02	E2B-S08□N04
Sensing distance			1.5 mm ± 10%	2 mm ± 10%	2 mm ± 10%	4 mm ± 10%
Setting distance			0 to 1.2 mm	0 to 1.6 mm	0 to 1.6 mm	0 to 3.2 mm
Differential travel			10% max. of sensing distance			
Detectable object			Ferrous metal (The sensing distance decreases with non-ferrous metal.)			
Standard sensing object (mild steel ST37)			8 × 8 × 1 mm	8 × 8 × 1 mm	8 × 8 × 1 mm	12 × 12 × 1 mm
Response frequency (See note 1.)			2,000 Hz	1,000 Hz	1,500 Hz	1,000 Hz
Power supply voltage			10 to 30 VDC. (including 10% ripple (p-p))			
Current consumption			10 mA max.			
Output type			-B models: PNP open collector -C models: NPN open collector			
Control output	Load current (See note 2.)		200 mA max. (30 VDC max.)			
	Residual voltage		2 V max. (under load current of 200 mA with cable length of 2 m)			
Indicator			Operation indicator (Yellow LED)			
Operation mode (with sensing object approaching)			-B1/-C1 models: NO -B2/-C2 models: NC			
Protection circuit			Output reverse polarity protection, Power source circuit reverse polarity protection, Surge suppressor, Short-circuit protection			
Ambient air temperature			Operation and storage : -25 to 70ºC (with no icing or condensation)			
Temperature influence (See note 2.)			±10% max. of sensing distance at 23ºC within temperature range of -10 to 55ºC ±15% max. of sensing distance at 23ºC within temperature range of -25 to 70ºC			
Ambient humidity			Operation and Storage: 35 to 95%			
Voltage influence			±1% max. of sensing distance in 24 VDC ±15%			
Insulation resistance			50 MΩ min. (at 500 VDC) between current-carrying parts and case			
Dielectric strength			1,000 VAC at 50/60 Hz for 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			
Shock resistance			500 m/s^2, 10 times each in X, Y and Z directions			
Standard and listings			(1) IP67 (IEC60529) (2) EMC (EN60947-5-2)			
Connecting method			Pre-wired models (standard is 4 mm dia. PVC cable with length = 2 m, 5 m). Connector models (M8-3pin)			
Weight (packaged)	Pre-wired model		Short body: Approx. 65 g, Long body: Approx. 65 g			
	Connector model		Short body: Approx. 20 g, Long body: Approx. 20 g			
Material	Case		Stainless steel (1.4305 (W.-No.), SUS 303 (AISI), 2346 (SS).)			
	Sensing surface		PBT			
	Cable		Standard cable is 4 mm dia. PVC.			
	Clamping nut		Brass-nickel plated			
	Toothed washer		Zinc-plated iron			

Note: 1. The response frequency is an average value. Measurement conditions are as follows: standard sensing object, a distance of twice the standard sensing object between sensing objects, and a setting distance of half the sensing distance.
2. When using any model of M8 size at an ambient temperature between -25ºC and 60ºC, use a load current of 200mA max., at an ambient temperature between 60ºC and 70ºC, use a load current of 100 mA max.

Item		Size	M12			
		Sensing distance	Single		Double	
		Type	Shielded	Unshielded	Shielded	Unshielded
		Model	E2B-M12□S02	E2B-M12□N05	E2B-M12□S04	E2B-M12□N08
Sensing distance			2 mm ± 10%	5 mm ± 10%	4 mm ± 10%	8 mm ± 10%
Setting distance			0 to 1.6 mm	0 to 4 mm	0 to 3.2 mm	0 to 6.4 mm
Differential travel			10% max. of sensing distance			
Detectable object			Ferrous metal (The sensing distance decreases with non-ferrous metal.)			
Standard sensing object (mild steel ST37)			12 × 12 × 1 mm	15 × 15 × 1 mm	12 × 12 × 1 mm	24 × 24 × 1 mm
Response frequency (See note 1.)			1,500 Hz	800 Hz	1,000 Hz	800 Hz
Power supply voltage			10 to 30 VDC. (including 10% ripple (p-p))			
Current consumption			10 mA max.			
Output type			-B models: PNP open collector -C models: NPN open collector			
Control output	Load current		200 mA max. (30 VDC max.)			
	Residual voltage		2 V max. (under load current of 200 mA with cable length of 2 m)			
Indicator			Operation indicator (Yellow LED)			
Operation mode (with sensing object approaching)			-B1/-C1 models: NO -B2/-C2 models: NC			
Protection circuit			Output reverse polarity protection, Power source circuit reverse polarity protection, Surge suppressor, Short-circuit protection			
Ambient air temperature			Operation and storage : -25 to 70ºC (with no icing or condensation)			
Temperature influence			±10% max. of sensing distance at 23ºC within temperature range of -10 to 55ºC ±15% max. of sensing distance at 23ºC within temperature range of -25 to 70ºC			
Ambient humidity			Operation and Storage: 35 to 95%			
Voltage influence			±1% max. of sensing distance in 24 VDC ±15%			
Insulation resistance			50 MΩ min. (at 500 VDC) between current-carrying parts and case			
Dielectric strength			1,000 VAC at 50/60 Hz for 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			
Shock resistance			1,000 m/s^2, 10 times each in X, Y and Z directions			
Standard and listings			(1) IP67 (IEC60529) (2) EMC (EN60947-5-2)			
Connecting method			Pre-wired models (standard is 4 mm dia. PVC cable with length = 2 m, 5 m). Connector models (M12-4pin)			
Weight (packaged)	Pre-wired model		Short body: Approx. 75 g, Long body: Approx. 80 g (See note 2.)			
	Connector model		Short body: Approx. 35 g, Long body: Approx. 40 g			
Material	Case		Brass-nickel plated			
	Sensing surface		PBT			
	Cable		Standard cable is 4 mm dia. PVC.			
	Clamping nut		Brass-nickel plated			
	Toothed washer		Zinc-plated iron			

Note: 1. The response frequency is an average value. Measurement conditions are as follows: standard sensing object, a distance of twice the standard sensing object between sensing objects, and a setting distance of half the sensing distance.
2. In case of 'WP' cable type.

Item		Size	M18			
		Sensing distance	Single		Double	
		Type	Shielded	Unshielded	Shielded	Unshielded
		Model	E2B-M18□S05	E2B-M18□N10	E2B-M18□S08	E2B-M18□N16
Sensing distance			5 mm ± 10%	10 mm ± 10%	8 mm ± 10%	16 mm ± 10%
Setting distance			0 to 4 mm	0 to 8 mm	0 to 6.4 mm	0 to 12.8 mm
Differential travel			10% max. of sensing distance			
Detectable object			Ferrous metal (The sensing distance decreases with non-ferrous metal.)			
Standard sensing object (mild steel ST37)			18 × 18 × 1 mm	30 × 30 × 1 mm	24 × 24 × 1 mm	48 × 48 × 1 mm
Response frequency (See note 1.)			600 Hz	400 Hz	500 Hz	400 Hz
Power supply voltage			10 to 30 VDC. (including 10% ripple (p-p))			
Current consumption			10 mA max.			
Output type			-B models: PNP open collector -C models: NPN open collector			
Control output	Load current		200 mA max. (30 VDC max.)			
	Residual voltage		2 V max. (under load current of 200 mA with cable length of 2 m)			
Indicator			Operation indicator (Yellow LED)			
Operation mode (with sensing object approaching)			-B1/-C1 models: NO -B2/-C2 models: NC			
Protection circuit			Output reverse polarity protection, Power source circuit reverse polarity protection, Surge suppressor, Short-circuit protection			
Ambient air temperature			Operation and storage : -25 to 70ºC (with no icing or condensation)			
Temperature influence			±10% max. of sensing distance at 23ºC within temperature range of -10 to 55ºC ±15% max. of sensing distance at 23ºC within temperature range of -25 to 70ºC			
Ambient humidity			Operation and Storage: 35 to 95%			
Voltage influence			±1% max. of sensing distance in 24 VDC ±15%			
Insulation resistance			50 MΩ min. (at 500 VDC) between current-carrying parts and case			
Dielectric strength			1,000 VAC at 50/60 Hz for 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			
Shock resistance			1,000 m/s^2, 10 times each in X, Y and Z directions			
Standard and listings			(1) IP67 (IEC60529) (2) EMC (EN60947-5-2)			
Connecting method			Pre-wired models (standard is 4 mm dia. PVC cable with length = 2 m, 5 m). Connector models (M12-4pin)			
Weight (packaged)	Pre-wired model		Short body: Approx. 95 g, Long body: Approx. 110 g (See note 2.)			
	Connector model		Short body: Approx. 60 g, Long body: Approx. 80 g			
Material	Case		Brass-nickel plated			
	Sensing surface		PBT			
	Cable		Standard cable is 4 mm dia. PVC.			
	Clamping nut		Brass-nickel plated			
	Toothed washer		Zinc-plated iron			

Note: 1. The response frequency is an average value. Measurement conditions are as follows: standard sensing object, a distance of twice the standard sensing object between sensing objects, and a setting distance of half the sensing distance.
2. In case of 'WP' cable type.

Item		Size	M30			
		Sensing distance	Single		Double	
		Type	Shielded	Unshielded	Shielded	Unshielded
		Model	E2B-M30□S10	E2B-M30□N20	E2B-M30□S15	E2B-M30□N30
Sensing distance			10 mm ± 10%	20 mm ± 10%	15 mm ± 10%	30 mm ± 10%
Setting distance			0 to 8 mm	0 to 16 mm	0 to 11.25 mm	0 to 22.5 mm
Differential travel			10% max. of sensing distance			
Detectable object			Ferrous metal (The sensing distance decreases with non-ferrous metal.)			
Standard sensing object (mild steel ST37)			30 × 30 × 1 mm	60 × 60 × 1 mm	45 × 45 × 1 mm	90 × 90 × 1 mm
Response frequency (See note 1.)			400 Hz	100 Hz	250 Hz	100 Hz
Power supply voltage			10 to 30 VDC. (including 10% ripple (p-p))			
Current consumption			10 mA max.			
Output type			-B models: PNP open collector -C models: NPN open collector			
Control output	Load current		200 mA max. (30 VDC max.)			
	Residual voltage		2 V max. (under load current of 200 mA with cable length of 2 m)			
Indicator			Operation indicator (Yellow LED)			
Operation mode (with sensing object approaching)			-B1/-C1 models: NO -B2/-C2 models: NC			
Protection circuit			Output reverse polarity protection, Power source circuit reverse polarity protection, Surge suppressor, Short-circuit protection			
Ambient air temperature			Operation and storage : -25 to 70ºC (with no icing or condensation)			
Temperature influence			±10% max. of sensing distance at 23ºC within temperature range of -10 to 55ºC ±15% max. of sensing distance at 23ºC within temperature range of -25 to 70ºC			
Ambient humidity			Operation and Storage: 35 to 95%			
Voltage influence			±1% max. of sensing distance in 24 VDC ±15%			
Insulation resistance			50 MΩ min. (at 500 VDC) between current-carrying parts and case			
Dielectric strength			1,000 VAC at 50/60 Hz for 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			
Shock resistance			1,000 m/s^2, 10 times each in X, Y and Z directions			
Standard and listings			(1) IP67 (IEC60529) (2) EMC (EN60947-5-2)			
Connecting method			Pre-wired models (standard is 4 mm dia. PVC cable with length = 2 m, 5 m). Connector models (M12-4pin)			
Weight (packaged)	Pre-wired model		Short body: Approx. 160 g, Long body: Approx. 210 g (See note 2.)			
	Connector model		Short body: Approx. 140 g, Long body: Approx. 160 g			
Material	Case		Brass-nickel plated			
	Sensing surface		PBT			
	Cable		Standard cable is 4 mm dia. PVC.			
	Clamping nut		Brass-nickel plated			
	Toothed washer		Zinc-plated iron			

Note: 1. The response frequency is an average value. Measurement conditions are as follows: standard sensing object, a distance of twice the standard sensing object between sensing objects, and a setting distance of half the sensing distance.
2. In case of 'WP' cable type.