

# E2B PROXIMITY SENSORS

Enjoy innovation and reliability today

» Time and cost savings

» Perfect fit for standard environments

» New LITE inductive sensor



# Quality, reliability and value-for-money

*We asked our customers: “What do you – as a proximity sensor user - really want in a sensor?”*

*Some people wanted reliability in extreme conditions. But most simply wanted reliable performance in standard industrial environments. These people also wanted attractive pricing, without compromising quality. So we put to work our 50-year heritage in proximity sensors: a heritage that has seen 200 million Omron proximity sensors shipped to satisfied customers across the globe. We put this heritage to work as well as our understanding of customer needs. The result is the new E2B sensor range: designed to give you quality, reliability and value-for-money.*

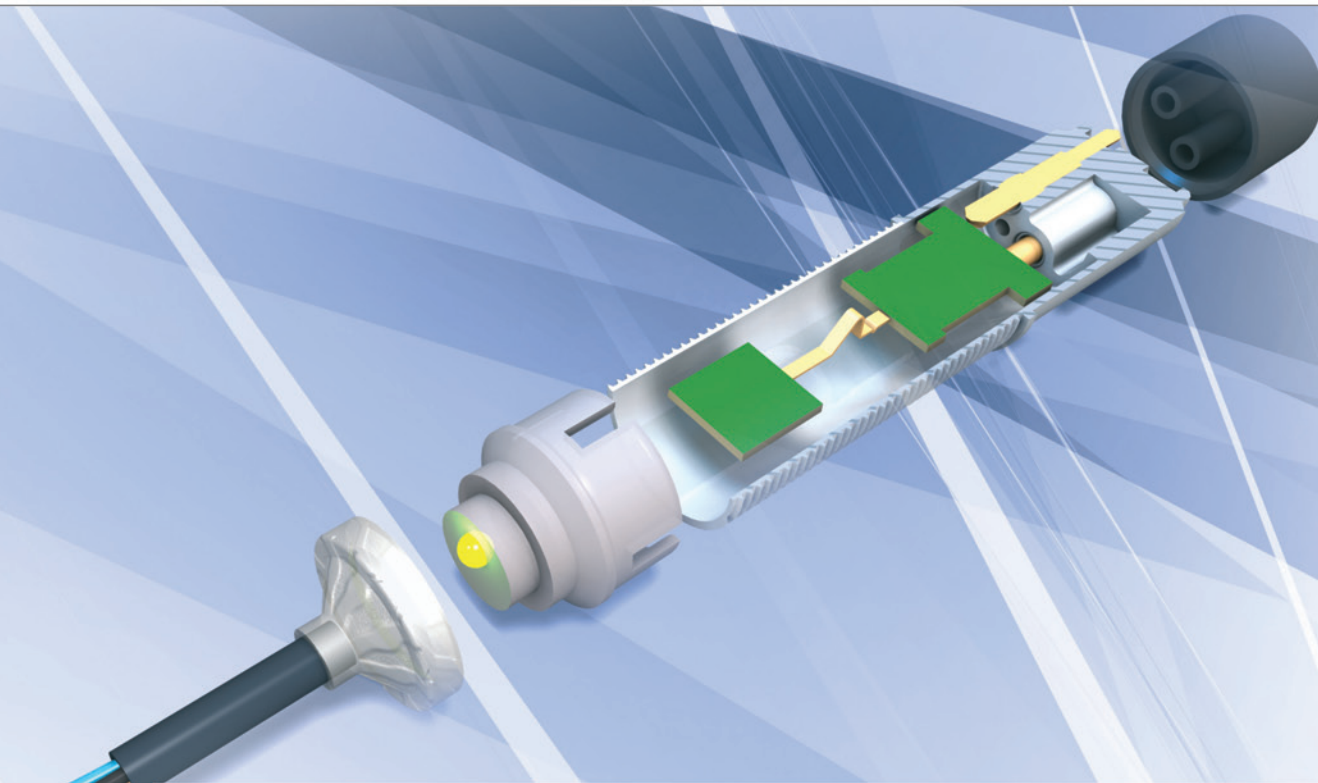
## **Reliability = innovation and affordability**

Thanks to the simple construction and Omron’s innovative “hot melt” production process, the E2B sensors embody two seemingly contradictory characteristics: value-for-money and high reliability.

- The all-round indicator can be seen from any direction, this simplifies installation and servicing.
- The laser printed part number also makes them easy to specify for replacement during maintenance.







### Perfect fit for standard environments

The new E2B proximity sensors promise the perfect fit to your particular needs. With such a wide choice in the standard range of models in the E2B family, you can choose the one that exactly meets your needs. For example, we have four standard sizes: M8, M12, M18 and M30, shielded and unshielded. There's also a choice of short and long bodies, two connecting methods and four output types. With this range to choose from, you're certain to find the perfect fit.



### Save time and costs with easy selection

For standard conditions you can easily select E2B sensors from the available range, because they have a simple part number code that's clearly visible. The E2B range will also save you time and money during maintenance, thanks to the in-built LED, you can see at a glance which need replacing. All of this means you have a fast and easy choice for your standard PROX applications needs.



### New LITE inductive sensor

The new Omron E2B proximity sensors represent the "LITE" option in our overall proximity sensor product portfolio. This is the most cost-effective product but without any compromise in quality or reliability. That's because these sensors are manufactured using the same production technology as other Omron proximity sensors, with highly reliable components and quality materials. This makes the E2B range ideal for standard industrial environments.

# The ideal solution for standard industrial environments

## Pay only for what you need

Most industrial applications are conducted in a standard environment – in a normal temperature range, without extremes such as high oil- or water-pressure, or strong electromagnetic fields, or constant high mechanical stresses. This makes E2B the ideal solution for the vast majority of applications. It's perfectly reliable for normal conditions. What's more, you get just what you need without paying for unnecessary extreme robustness. For example, in the machine-tool industry, E2B sensors are ideal for detecting tool positions or line encoders. For packaging machines they can be used for detecting the positions of welded or pressed elements.

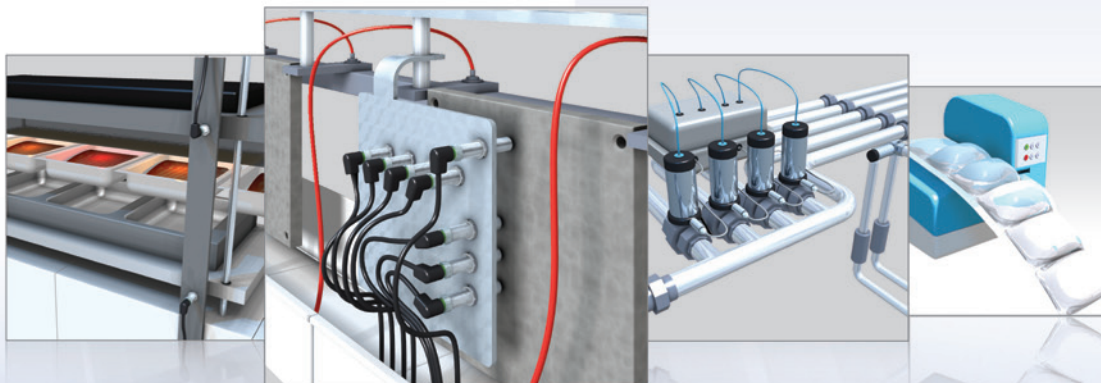





## Who can take advantage?

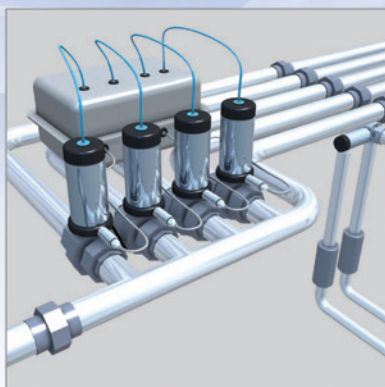
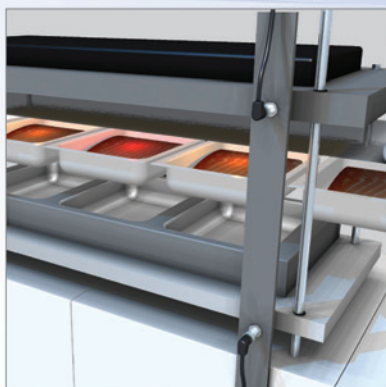
- Packaging machine manufacturers
- Machine-tool industry
- Access control system producers
- Conveyor system manufacturers
- Automotive industry
- Materials handling industry
- And more.

## Driven by the Omron 361° Approach

The Omron range of proximity sensors is driven by our 361° Approach - the new product development strategy designed to give you a complete, full circle of options without any gaps. But with an added extra degree of confidence that comes with doing business with Omron. That's why it has an extra 1°.



	E2B 	E2A 	μPROX E2E 
Feature	Attractive price with general performance	Highly robust and suitable for outdoor use. This is an install-and-forget solution. It has a longer lifetime and more features.	Special model in compact size for tough tasks with smallest housing space and for precision detection
Oil/water resistance	Good	Very Good	Very Good (Stainless steel housing)
IP	IP67	IP69K	IP67
Temperature	-25 to 70°C	-40 to 70°C	-25 to 70°C
Line-up and Customization	Only standard M8, M12, M18, M30 sizes and connector or pre-wired connection	In addition to standard 3-wire models, line-up of 2-wire models and AC types. NO+NC. Customization for special customer's needs	Line-up of non-shielded types and pig-tail out-put connection



## And for the more extreme needs

### Omron E2B proximity sensors

- Vibration shock resistance: IEC 60947-5-2 (10 - 55 Hz)
- Operating temperature: -25°C to 70°C
- Water resistance: IP67

### Omron E2A proximity sensors

- Vibration shock resistance: IEC 60947-5-2 (10 – 55 Hz)
- Hammer shock resistant (10 – 2,000 Hz)
- Operating temperature: -40°C to 85°C
- Water resistance: IP67 + IP69K

### Omron μPROX E2E proximity

- Miniature size: 3, 4, 6.5 mm and M4, M5 diameters
- High frequency of 5 kHz: suitable for high-speed counting
- All sizes are also in non-shielded types



Ordering Information

Double sensing distance, DC 3-wire models

Size		Sensing distance	Connection	Body material	Body length	Output	Operation mode NO	Operation mode NC
M8	Shielded	2 mm	Pre-wired	Stainless steel	Short	PNP	E2B-S08KS02-WP-B1 2M OMS	E2B-S08KS02-WP-B2 2M OMS
						NPN	E2B-S08KS02-WP-C1 2M OMS	E2B-S08KS02-WP-C2 2M OMS
					Long	PNP	E2B-S08LS02-WP-B1 2M OMS	E2B-S08LS02-WP-B2 2M OMS
						NPN	E2B-S08LS02-WP-C1 2M OMS	E2B-S08LS02-WP-C2 2M OMS
			M8 Connector (3-pin)		Short	PNP	E2B-S08KS02-MC-B1 OMS	E2B-S08KS02-MC-B2 OMS
						NPN	E2B-S08KS02-MC-C1 OMS	E2B-S08KS02-MC-C2 OMS
					Long	PNP	E2B-S08LS02-MC-B1 OMS	E2B-S08LS02-MC-B2 OMS
						NPN	E2B-S08LS02-MC-C1 OMS	E2B-S08LS02-MC-C2 OMS
	Non-Shielded	4 mm	Pre-wired		Short	PNP	E2B-S08KN04-WP-B1 2M OMS	E2B-S08KN04-WP-B2 2M OMS
						NPN	E2B-S08KN04-WP-C1 2M OMS	E2B-S08KN04-WP-C2 2M OMS
					Long	PNP	E2B-S08LN04-WP-B1 2M OMS	E2B-S08LN04-WP-B2 2M OMS
						NPN	E2B-S08LN04-WP-C1 2M OMS	E2B-S08LN04-WP-C2 2M OMS
			M8 Connector (3-pin)		Short	PNP	E2B-S08KN04-MC-B1 OMS	E2B-S08KN04-MC-B2 OMS
						NPN	E2B-S08KN04-MC-C1 OMS	E2B-S08KN04-MC-C2 OMS
					Long	PNP	E2B-S08LN04-MC-B1 OMS	E2B-S08LN04-MC-B2 OMS
						NPN	E2B-S08LN04-MC-C1 OMS	E2B-S08LN04-MC-C2 OMS
M12	Shielded	4 mm	Pre-wired	Brass	Short	PNP	E2B-M12KS04-WP-B1 2M OMS	E2B-M12KS04-WP-B2 2M OMS
						NPN	E2B-M12KS04-WP-C1 2M OMS	E2B-M12KS04-WP-C2 2M OMS
					Long	PNP	E2B-M12LS04-WP-B1 2M OMS	E2B-M12LS04-WP-B2 2M OMS
						NPN	E2B-M12LS04-WP-C1 2M OMS	E2B-M12LS04-WP-C2 2M OMS
			M12 Connector (4-pin)		Short	PNP	E2B-M12KS04-M1-B1 OMS	E2B-M12KS04-M1-B2 OMS
						NPN	E2B-M12KS04-M1-C1 OMS	E2B-M12KS04-M1-C2 OMS
					Long	PNP	E2B-M12LS04-M1-B1 OMS	E2B-M12LS04-M1-B2 OMS
						NPN	E2B-M12LS04-M1-C1 OMS	E2B-M12LS04-M1-C2 OMS
	Non-Shielded	8 mm	Pre-wired		Short	PNP	E2B-M12KN08-WP-B1 2M OMS	E2B-M12KN08-WP-B2 2M OMS
						NPN	E2B-M12KN08-WP-C1 2M OMS	E2B-M12KN08-WP-C2 2M OMS
					Long	PNP	E2B-M12LN08-WP-B1 2M OMS	E2B-M12LN08-WP-B2 2M OMS
						NPN	E2B-M12LN08-WP-C1 2M OMS	E2B-M12LN08-WP-C2 2M OMS
			M12 Connector (4-pin)		Short	PNP	E2B-M12KN08-M1-B1 OMS	E2B-M12KN08-M1-B2 OMS
						NPN	E2B-M12KN08-M1-C1 OMS	E2B-M12KN08-M1-C2 OMS
					Long	PNP	E2B-M12LN08-M1-B1 OMS	E2B-M12LN08-M1-B2 OMS
						NPN	E2B-M12LN08-M1-C1 OMS	E2B-M12LN08-M1-C2 OMS
M18	Shielded	8 mm	Pre-wired	Brass	Short	PNP	E2B-M18KS08-WP-B1 2M OMS	E2B-M18KS08-WP-B2 2M OMS
						NPN	E2B-M18KS08-WP-C1 2M OMS	E2B-M18KS08-WP-C2 2M OMS
					Long	PNP	E2B-M18LS08-WP-B1 2M OMS	E2B-M18LS08-WP-B2 2M OMS
						NPN	E2B-M18LS08-WP-C1 2M OMS	E2B-M18LS08-WP-C2 2M OMS
			M12 Connector (4-pin)		Short	PNP	E2B-M18KS08-M1-B1 OMS	E2B-M18KS08-M1-B2 OMS
						NPN	E2B-M18KS08-M1-C1 OMS	E2B-M18KS08-M1-C2 OMS
					Long	PNP	E2B-M18LS08-M1-B1 OMS	E2B-M18LS08-M1-B2 OMS
						NPN	E2B-M18LS08-M1-C1 OMS	E2B-M18LS08-M1-C2 OMS
	Non-Shielded	16 mm	Pre-wired		Short	PNP	E2B-M18KN16-WP-B1 2M OMS	E2B-M18KN16-WP-B2 2M OMS
						NPN	E2B-M18KN16-WP-C1 2M OMS	E2B-M18KN16-WP-C2 2M OMS
					Long	PNP	E2B-M18LN16-WP-B1 2M OMS	E2B-M18LN16-WP-B2 2M OMS
						NPN	E2B-M18LN16-WP-C1 2M OMS	E2B-M18LN16-WP-C2 2M OMS
			M12 Connector (4-pin)		Short	PNP	E2B-M18KN16-M1-B1 OMS	E2B-M18KN16-M1-B2 OMS
						NPN	E2B-M18KN16-M1-C1 OMS	E2B-M18KN16-M1-C2 OMS
					Long	PNP	E2B-M18LN16-M1-B1 OMS	E2B-M18LN16-M1-B2 OMS
						NPN	E2B-M18LN16-M1-C1 OMS	E2B-M18LN16-M1-C2 OMS
M30	Shielded	15 mm	Pre-wired	Brass	Short	PNP	E2B-M30KS15-WP-B1 2M OMS	E2B-M30KS15-WP-B2 2M OMS
						NPN	E2B-M30KS15-WP-C1 2M OMS	E2B-M30KS15-WP-C2 2M OMS
					Long	PNP	E2B-M30LS15-WP-B1 2M OMS	E2B-M30LS15-WP-B2 2M OMS
						NPN	E2B-M30LS15-WP-C1 2M OMS	E2B-M30LS15-WP-C2 2M OMS
			M12 Connector (4-pin)		Short	PNP	E2B-M30KS15-M1-B1 OMS	E2B-M30KS15-M1-B2 OMS
						NPN	E2B-M30KS15-M1-C1 OMS	E2B-M30KS15-M1-C2 OMS
					Long	PNP	E2B-M30LS15-M1-B1 OMS	E2B-M30LS15-M1-B2 OMS
						NPN	E2B-M30LS15-M1-C1 OMS	E2B-M30LS15-M1-C2 OMS
	Non-Shielded	30 mm	Pre-wired		Long	PNP	E2B-M30LN30-WP-B1 2M OMS	E2B-M30LN30-WP-B2 2M OMS
						NPN	E2B-M30LN30-WP-C1 2M OMS	E2B-M30LN30-WP-C2 2M OMS
					Long	PNP	E2B-M30LN30-M1-B1 OMS	E2B-M30LN30-M1-B2 OMS
						NPN	E2B-M30LN30-M1-C1 OMS	E2B-M30LN30-M1-C2 OMS

\*1. Material specifications for stainless steel housing case: 1.4305 (W.-No.), SUS 303 (AISI), 2346 (SS).

## Specifications






### Double sensing distance, DC 3-wire models

Size Type	M8		M12		M18		M30	
	Schielded	Non-schielded	Schielded	Non-schielded	Schielded	Non-schielded	Schielded	Non-schielded
Sensing distance	2 mm	4 mm	4 mm	8 mm	8 mm	16 mm	15 mm	30 mm
Differential travel	10% max. of sensing distance							
Target	Ferrous metal (The sensing distance decreases with non-ferrous metal.)							
Response frequency (See note 1.)	1,500 Hz	1,000 Hz	1,000 Hz	800 Hz	500 Hz	400 Hz	250 Hz	100 Hz
Power supply voltage (operating voltage range)	12 to 24 VDC. Ripple (p-p): 10% max. (10 to 32 VDC)							
Current consumption (DC 3-wire)	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.)							
Indicator	Round visible LED indicator for cable type sensors.							
Operation mode	B1/-C1 models: NO; B2/-C2 models: NC							
Protection circuit	Output reverse polarity protection, Power source circuit reverse polarity protection,							
Ambient air temperature	Operating & Storage: -25 to 70°C (with no icing or condensation)							
Ambient humidity	Operating and Storage: 35% to 95%							
Voltage influence	±1% max. of sensing distance in rated voltage range ±15%							
Insulation resistance	50 MΩ min. (at 500 VDC) between current carry parts and case							
Dielectric strength	1,000 VAC at 50/60 Hz for 1 min between current carry 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	M8: 500 m/s <sup>2</sup> , 10 times each in X, Y and Z directions M12-M30: 1,000 m/s <sup>2</sup> , 10 times each in X, Y and Z directions							
Standards and listing	IP67 after IEC 60529 EMC after EN60947-5-2							
Connection method	(1) Pre-wired models (standard is dia 4.0 mm PVC with length = 2 m, 5 m) (2) Connector models (Head M8: M8-3pin, Head M12-M30: M12-4Pin)							
Material	Case	Stainless steel		Brass-nickel plated		Brass-nickel plated or stainless steel		
	Sensing surface	PBT						
	Cable	Standard cable is PVC dia 4 mm						

**Note 1.** The response frequency is an average value. Measurement conditions are as follows: standard target, a distance of twice the standard target distance between targets, and a setting distance of half the sensing distance.

## Accessories (Order separately)

### Sensors cables

Size	Shape	Type	Features	Material		Order codes	
				Nut	Cable	Straight	Angled
M8				Brass (CuZn)	PVC 2 m	XS3F-LM8PVC3S2M	XS3F-LM8PVC3A2M
	PVC 5 m				XS3F-LM8PVC3S5M	XS3F-LM8PVC3A5M	
M12					PVC 2 m	XS2F-LM12PVC4S2M	XS2F-LM12PVC4A2M
	PVC 5 m				XS2F-LM12PVC4S5M	XS2F-LM12PVC4A5M	

