Perfetti per le tue esigenze

Sensori di prossimità induttivi

- Oltre 50 anni di esperienza
- Progettati per lavorare in tutte le condizioni ambientali
- Disponibilità in tutto il mondo

Il rilevamento di prossimità entra nella storia

La nascita dell' "interruttore perfetto"

In Giappone, con la diffusione dell'automazione aumentò anche la domanda di interruttori di precisione ad alte prestazioni, capaci di sopportare più di 100 milioni di cicli. Kazuma Tateisi, fondatore di Omron, era convinto che questa domanda potesse essere soddisfatta solo creando un interruttore senza contatto (statico) e sfidò i suoi ingegneri a svilupparne uno. Un team di sette giovani ricercatori, soprannominati "i Sette Samurai" dai loro colleghi, riuscì nell'impresa.

Sviluppato e lanciato nel 1960, il sensore (interruttore) di prossimità è da sempre uno dei prodotti principali di Omron, quelli che ci hanno portato a essere la prima azienda al mondo per volume di produzione. Ancora oggi continuiamo a sviluppare una NUOVA tecnologia dei sensori di prossimità, e la storia dei nostri sensori è anche la storia dei sensori di prossimità del mondo intero.

Tecnologia e vendite

1960
Primo sensore di PROSSIMITÀ del mondo

Anni 70
Sviluppo della famiglia TL

Anni 80
Famiglie E2C, E2F ed E2E per applicazioni speciali e primo sensore capacitivo E2K

Anni 90
Il cavo E2E DC2 si aggiudica il premio "Energy-Conserving Machinery" della JMF (Japan Machinery Federation)

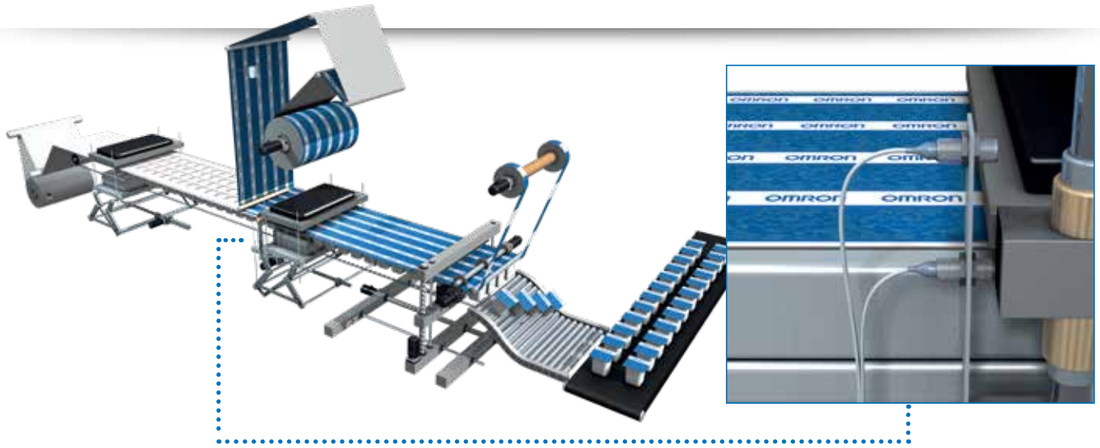
E2EM, E2ES - Superfici dei sensori in acciaio inox e a lunga distanza di rilevamento

Anni 2000
Nuovo concetto dell'assemblaggio del modulo E2A
Vendita annua di più di 1 milione di sensori in Europa

2015 2013
Nuova efficienza di costi per E2B, nuovo sensore di piccolo diametro mPROX E2E,

Nuovo sviluppo di E2A

Il progresso grazie all'innovazione tecnologica



I nostri sensori induttivi sono progettati e testati per garantire una lunga durata di vita anche nelle condizioni più critiche. Per la loro comprovata affidabilità sono tra i sensori più diffusi al mondo, capaci di affrontare le condizioni ambientali più difficili che possono verificarsi durante il loro impiego. Mettiamo in campo la nostra esperienza di 50 anni nel settore dei sensori di prossimità: un'esperienza che vanta oltre 200 milioni di pezzi venduti che hanno soddisfatto le esigenze di clienti in tutte le parti del mondo.

- Ampia gamma di prodotti e di applicazioni
- Massima affidabilità anche negli ambienti più difficili
- Progettati per la flessibilità - al miglior rapporto prezzo-prestazioni

		Cylindrical				
						
Model		E2A	E2A DC 2-wire/4-wire	E2A3	E2A-S	E2B
Type		Compact	Compact	Long distance	Compact	Compact
Material		Brass, SUS	Brass, SUS	Brass	Stainless steel	Stainless steel
Max. sensing distance	dia 3	–	–	–	–	–
	dia 4	–	–	–	–	–
	M5	–	–	–	–	–
	dia 6.5	–	–	–	–	–
	M8	2/4 mm	2/4 mm	3mm / –	2/4 mm	2/4 mm
	M12	4/8 mm	4/8 mm	6mm / –	4/8 mm	4/8 mm
	M18	8/16 mm	8/16 mm	11mm / –	8/16 mm	8/16 mm
	M30	15/30 mm	15/30 mm	20mm / –	15/20 mm	15/30 mm
	19 × 6 × 6	–	–	–	–	–
	22 × 8 × 6	–	–	–	–	–
	31 × 18 × 10	–	–	–	–	–
	53 × 40 × 23	–	–	–	–	–
	67 × 40 × 40	–	–	–	–	–
Mount.	Shielded	■	■	■	■	■
	Non-shielded	■	■	–	■	■
Oper. mode	NO	■	■	■	■	■
	NC	■	■	■	■	■
	NO + NC	–	■	–	–	–
Wiring	DC 2-wire	–	■	–	–	–
	DC 3-wire	■	–	■	■	■
	DC 4-wire	–	■	–	–	–
	AC 2-wire	–	□	–	–	–
Voltage	10 to 30 VDC	■	■	■	■	■
	12 to 240 VAC	–	□	–	–	–
IP rating	IP67	■	■	■	■	■
	IP69K	■	■	■	■	–
Page		9	–	–	11	15

Special models

Type	Vehicle usage certified	Detergent and heat resistant	Chemical resistant	Small diameter	
					
Model	E2AU	E2EH	E2FQ	µPROX E2E	E2EC*
Key features	• e1 type approval (according to automotive directive 2005/83/EC) • E1 (according to vehicle regulation	• stainless steel housing • 120°C heat resistance	• PTFE housing	• High frequency of 5 kHz: suitable for high-speed counting • All sizes are also available as non-shielded types	• Small diameter housing with short body length
dia 3	–	–	–	0.8 to 2 mm	0.6 mm
dia 4				1.2 to 3 mm	–
dia 6.5	–	–	–	2 to 4 mm	–
M5				1.2 to 3 mm	–
M8	–	–	–	–	–
M12	■	■	■	–	2 mm
M18	■	■	■	–	7 mm
M30	■	■	■	–	–
Page	13	19	19	17	–

		Square		
				
Model		TL-W	E2S*	E2Q5
Type		Compact	Miniature	Long distance
Material		ABS	Polyarylate	PBT
Max. sensing distance	dia 3	–	–	–
	dia 4	–	–	–
	M5	–	–	–
	dia 5.4	–	–	–
	M8	–	–	–
	M12	–	–	–
	M18	–	–	–
	M30	–	–	–
	19 × 6 × 6	–	1.6 mm	–
	22 × 8 × 6	3 mm	2.5 mm	–
	31 × 18 × 10	5 mm	–	–
	53 × 40 × 23	20 mm	–	–
	67 × 40 × 40	–	–	40 mm
Mount.	Shielded	■	–	■
	Non-shielded	■	■	■
Oper. mode	NO	■	■	■
	NC	■	■	–
	NO + NC	–	–	■
Wiring	DC 2-wire	■	■	–
	DC 3-wire	■	■	■
	DC 4-wire	–	–	■
	AC 2-wire	–	–	–
Voltage	10 to 30 VDC	■	■	■
	12 to 240 VAC	–	–	–
IP rating	IP67	■	■	■
	IP69K	–	–	■
Page		24	–	21

Special models

Type	Full metal face	Oil resistant	High precision positioning
			
Model	E2FM	E2E	E2C-EDA*
Key features	• immune to aluminium and cast iron chips on sensing surface • oil resistant	• tested oil resistance on commonly used lubricants	• distance teaching up to µm accuracy
dia 3	–	–	■
dia 4	–	–	–
dia 6.5	–	–	–
M5	–	–	–
M8	■	■	–
M12	■	■	■
M18	■	■	■
M30	■	■	–
Page	23	22	–

* The product is not represented in the brochure. For more information visit: industrial.omron.eu/e2ec
industrial.omron.eu/e2s
industrial.omron.eu/e2c

■ Standard □ Available – No/not available

Food and Beverage Industry
Processing control

Control positioning of valves in the processing systems of dairies or breweries.

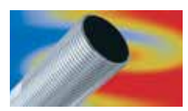
Control position feedback in the splitter box of the beverage production process.

High water resistance

High mechanical resistance

High electro-magnetic noise immunity

High vibration resistance



High resistance against temperature change

Cable breakage protection

Extended sensing range inductive sensor in cylindrical brass housing

The high quality and the long-life design of the E2A extended sensing distance provide high operational reliability, accurate performance and long sensor lifetime for a wide range of applications.

- Extended (double) sensing distance
- IP67 and IP69k for highest water protection
- DC 3-wire (NO, NC)
- Wide temperature range –40 to 70°C
- 200 mA max load current
- Wide installation and connectivity range through modular concept

Ordering information

Pre-wired

Size	■	■	Sensing distance	Thread length (overall length)	Output configuration	Order code (for pre-wired types with 2 m PVC cable)	
						Operation mode NO	Operation mode NC
M8	■	–	2.0 mm	27 (40) mm	PNP*1	E2A-S08KS02-WP-B1 2M*2	E2A-S08KS02-WP-B2 2M*2
	–	■	4.0 mm	21 (40) mm	PNP*1	E2A-S08KN04-WP-B1 2M*2	E2A-S08KN04-WP-B2 2M*2
M12	■	–	4.0 mm	34 (50) mm	PNP*1	E2A-M12KS04-WP-B1 2M	E2A-M12KS04-WP-B2 2M
	–	■	8.0 mm	27 (50) mm	PNP*1	E2A-M12KN08-WP-B1 2M	E2A-M12KN08-WP-B2 2M
M18	■	–	8.0 mm	39 (59) mm	PNP*1	E2A-M18KS08-WP-B1 2M	E2A-M18KS08-WP-B2 2M
	–	■	16.0 mm	29 (59) mm	PNP*1	E2A-M18KN16-WP-B1 2M	E2A-M18KN16-WP-B2 2M
M30	■	–	15.0 mm	44 (64) mm	PNP*1	E2A-M30KS15-WP-B1 2M	E2A-M30KS15-WP-B2 2M
	–	■	20.0 mm*3	29 (64) mm	PNP*1	E2A-M30KN20-WP-B1 2M	E2A-M30KN20-WP-B2 2M

Connector types (M12)

Size	■	■	Sensing distance	Thread length (overall length)	Output configuration	Order code (for M12 connector types)	
						Operation mode NO	Operation mode NC
M8	■	–	2.0 mm	27 (43) mm	PNP*1	E2A-S08KS02-M1-B1*2	E2A-S08KS02-M1-B2*2
	–	■	4.0 mm	21 (43) mm	PNP*1	E2A-S08KN04-M1-B1*2	E2A-S08KN04-M1-B2*2
M12	■	–	4.0 mm	24 (48) mm	PNP*1	E2A-M12KS04-M1-B1	E2A-M12KS04-M1-B2
	–	■	8.0 mm	27 (48) mm	PNP*1	E2A-M12KN08-M1-B1	E2A-M12KN08-M1-B2
M18	■	–	8.0 mm	39 (53) mm	PNP*1	E2A-M18KS08-M1-B1	E2A-M18KS08-M1-B2
	–	■	16.0 mm	29 (53) mm	PNP*1	E2A-M18KN16-M1-B1	E2A-M18KN16-M1-B2
M30	■	–	15.0 mm	44 (58) mm	PNP*1	E2A-M30KS15-M1-B1	E2A-M30KS15-M1-B2
	–	■	20.0 mm*3	29 (58) mm	PNP*1	E2A-M30KN20-M1-B1	E2A-M30KN20-M1-B2

*1 NPN models are available. For ordering replace "-B1" or "-B2" by "-C1" or "-C2".
*2 M8 sized housings are only available in stainless steel (SUS 303).
*3 Models with longer sensing distances of 30 mm and 35 mm are available.

Specifications

(Exemplary for shielded versions.)

Item		M8	M12	M18	M30
		E2A-S08KS	E2A-M12KS	E2A-M18KS	E2A-M30KS
Sensing distance		2 mm±10%	4 mm±10%	8 mm±10%	15 mm±10%
Response frequency		1,500 Hz	1,000 Hz	500 Hz	250 Hz
Power supply voltage (operating voltage)		12 to 24 VDC. Ripple (p-p): 10% max. (10 to 32 VDC)			
Protective circuits		Power supply reverse polarity protection, surge suppressor, short-circuit protection	Output reverse polarity protection, power supply reverse polarity protection, surge suppressor, short-circuit protection		
Ambient temperature	Operating	–40 to 70°C			
	Storage	–40 to 85°C (with no icing or condensation)			
Degree of protection		IP67 after IEC 60529; IP69K after DIN 40050 part 9			
Material	Case	Stainless steel	Brass-nickel plated		
	Sensing surface	PBT			

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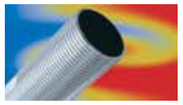
Automotive industry
Special application systems

Road Spreader. Proximity sensors control the rotor to ensure the correct speed for spreading of sand and reagents on the roads during wintertime. Extremely tough outdoor application conditions require the highest reliability of the sensors, housing and vibration-resistance of the sensor.

Car washing system. Proximity sensors control end positioning of the frame and also current position of wash brushes. The sensors should have a long life time to survive in high humidity and permanently changing external temperature.



High resistance against temperature change

High vibration resistance

Extended sensing range inductive sensor in cylindrical stainless steel housing

The performance and operational reliability of the E2A family is also available in stainless steel housing.

- stainless steel housing (SUS 303)

Ordering information

Pre-wired

Size	■	■	Sensing distance	Thread length (overall length)	Output configuration	Order code (for pre-wired types with 2 m PVC cable)	
						Operation mode NO	Operation mode NC
M8	■	–	2.0 mm	27 (40) mm	PNP*1	E2A-S08KS02-WP-B1 2M	E2A-S08KS02-WP-B2 2M
	–	■	4.0 mm	21 (40) mm	PNP*1	E2A-S08KN04-WP-B1 2M	E2A-S08KN04-WP-B2 2M
M12	■	–	4.0 mm	34 (50) mm	PNP*1	E2A-S12KS04-WP-B1 2M	E2A-S12KS04-WP-B2 2M
	–	■	8.0 mm	27 (50) mm	PNP*1	E2A-S12KN08-WP-B1 2M	E2A-S12KN08-WP-B2 2M
M18	■	–	8.0 mm	39 (59) mm	PNP*1	E2A-S18KS08-WP-B1 2M	E2A-S18KS08-WP-B2 2M
	–	■	16.0 mm	29 (59) mm	PNP*1	E2A-S18KN16-WP-B1 2M	E2A-S18KN16-WP-B2 2M
M30	■	–	15.0 mm	44 (64) mm	PNP*1	E2A-S30KS15-WP-B1 2M	E2A-S30KS15-WP-B2 2M
	–	■	20.0 mm*2	29 (64) mm	PNP*1	E2A-S30KN20-WP-B1 2M	E2A-S30KN20-WP-B2 2M

Connector types (M12)

Size	■	■	Sensing distance	Thread length (overall length)	Output configuration	Order code (for M12 connector types)	
						Operation mode NO	Operation mode NC
M8	■	–	2.0 mm	27 (43) mm	PNP*1	E2A-S08KS02-M1-B1	E2A-S08KS02-M1-B2
	–	■	4.0 mm	21 (43) mm	PNP*1	E2A-S08KN04-M1-B1	E2A-S08KN04-M1-B2
M12	■	–	4.0 mm	24 (48) mm	PNP*1	E2A-S12KS04-M1-B1	E2A-S12KS04-M1-B2
	–	■	8.0 mm	27 (48) mm	PNP*1	E2A-S12KN08-M1-B1	E2A-S12KN08-M1-B2
M18	■	–	8.0 mm	39 (53) mm	PNP*1	E2A-S18KS08-M1-B1	E2A-S18KS08-M1-B2
	–	■	16.0 mm	29 (53) mm	PNP*1	E2A-S18KN16-M1-B1	E2A-S18KN16-M1-B2
M30	■	–	15.0 mm	44 (58) mm	PNP*1	E2A-S30KS15-M1-B1	E2A-S30KS15-M1-B2
	–	■	20.0 mm*2	29 (58) mm	PNP*1	E2A-S30KN20-M1-B1	E2A-S30KN20-M1-B2

*1 NPN models are available. For ordering replace "-B1" or "-B2" by "-C1" or "-C2".
*2 Models with longer sensing distances of 30 mm and 35 mm are available.

Specifications

(Exemplary for shielded versions)

Item		M8	M12	M18	M30
		E2A-S08KS	E2A-M12KS	E2A-M18KS	E2A-M30KS
Sensing distance		2 mm±10%	4 mm±10%	8 mm±10%	15 mm±10%
Response frequency		1,500 Hz	1,000 Hz	500 Hz	250 Hz
Power supply voltage (operating voltage)		12 to 24 VDC. Ripple (p-p): 10% max. (10 to 32 VDC)			
Protective circuits		Power supply reverse polarity protection, surge suppressor, short-circuit protection	Output reverse polarity protection, power supply reverse polarity protection, surge suppressor, short-circuit protection		
Ambient temperature	Operating	–40 to 70°C			
	Storage	–40 to 85°C (with no icing or condensation)			
Degree of protection		IP67 after IEC 60529; IP69K after DIN 40050 part 9			
Material	Case	Stainless steel (SUS 303)			
	Sensing surface	PBT			

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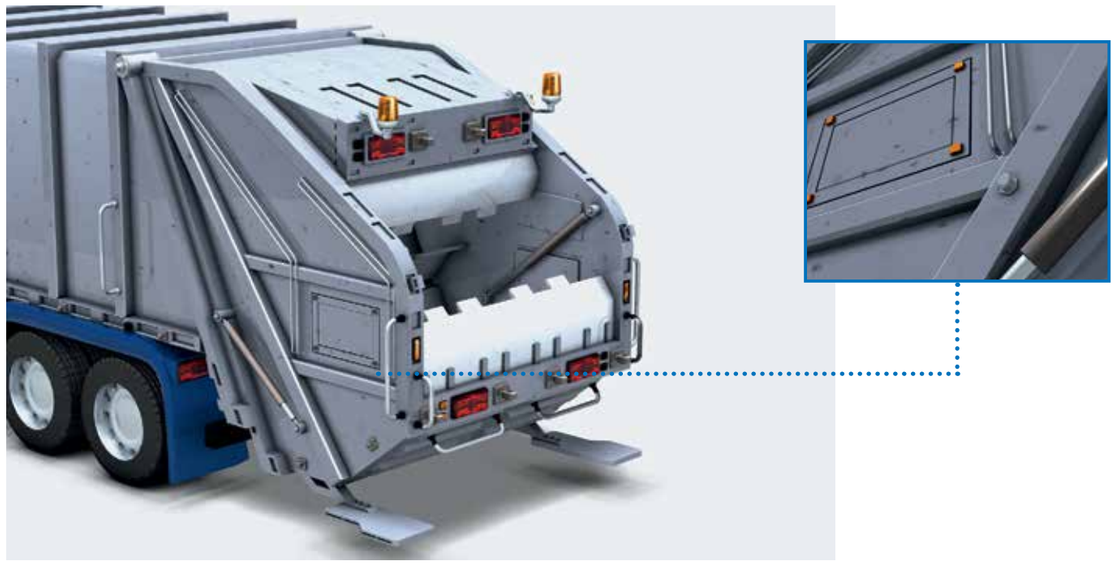
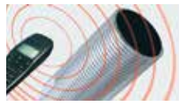
Utility vehicles



Garbage track. Intended specifically for demanding applications in moving machinery such as refuse-disposal trucks, earth-moving equipment and constriction and agricultural vehicles, E2AU sensors meet most severe regulatory standards for moving vehicles. These include e1 type approval (eMark) according to the European Automotive Directive 95/54/EC and electro-magnetic noise immunity up to 100 V/m according to ISO 11452-2.



High electro-magnetic noise immunity (fields and cable induced)

e1 type approval after 2005/83/EC

E1 type approval after ECE-R10

Inductive sensor for mobile usage in cylindrical brass housing

Designed and tested to keep your mobile machines moving.

- IP69k tested and certified for highest water resistance
- e1 type approval (according to Automotive Directive 2005/83/EC)
- E1 type approval (according to vehicle regulation ECE-R10)
- Cable or connector breakage protection

Ordering information

Pre-wired

Size			Sensing distance	Thread length (overall length)	Output configuration	Order code (for pre-wired types with 2 m PVC cable)*1	
						Operation mode: NO	Operation mode: NC
M12	■	–	4.0 mm	34 mm (50 mm)	PNP	E2AU-M12KS04-WP-B1 2M	E2AU-M12KS04-WP-B2 2M
				56 mm (72 mm)	PNP	E2AU-M12LS04-WP-B1 2M	E2AU-M12LS04-WP-B2 2M
M18	■	–	8.0 mm	39 mm (59 mm)	PNP	E2AU-M18KS08-WP-B1 2M	E2AU-M18KS08-WP-B2 2M
				61 mm (81 mm)	PNP	E2AU-M18LS08-WP-B1 2M	E2AU-M18LS08-WP-B2 2M
M30	■	–	15.0 mm	44 mm (64 mm)	PNP	E2AU-M30KS15-WP-B1 2M	E2AU-M30KS15-WP-B2 2M
				66 mm (86 mm)	PNP	E2AU-M30LS15-WP-B1 2M	E2AU-M30LS15-WP-B2 2M

*1 NPN types and pre-wired types with PUR cable are available. Contact your OMRON representative

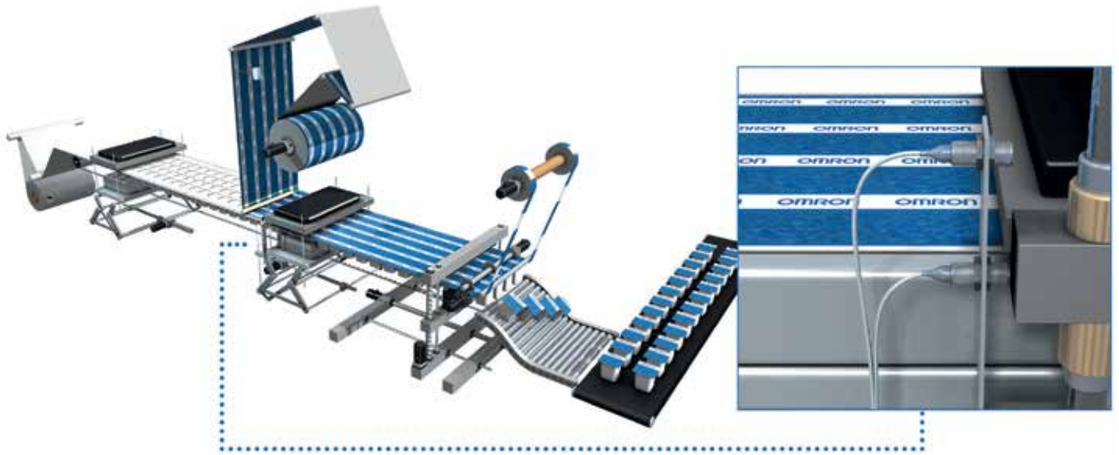
Connector types (M12)

Size			Sensing distance	Thread length (overall length)	Output configuration	Order code (for M12 connector types)	
						Operation mode: NO	Operation mode: NC
M12	■	–	4.0 mm	34 mm (48 mm)	PNP	E2AU-M12KS04-M1-B1	E2AU-M12KS04-M1-B2
				56 mm (70 mm)	PNP	E2AU-M12LS04-M1-B1	E2AU-M12LS04-M1-B2
M18	■	–	8.0 mm	39 mm (53 mm)	PNP	E2AU-M18KS08-M1-B1	E2AU-M18KS08-M1-B2
				61 mm (75 mm)	PNP	E2AU-M18LS08-M1-B1	E2AU-M18LS08-M1-B2
M30	■	–	15.0 mm	44 mm (58 mm)	PNP	E2AU-M30KS15-M1-B1	E2AU-M30KS15-M1-B2
				66 mm (80 mm)	PNP	E2AU-M30LS15-M1-B1	E2AU-M30LS15-M1-B2

Specifications

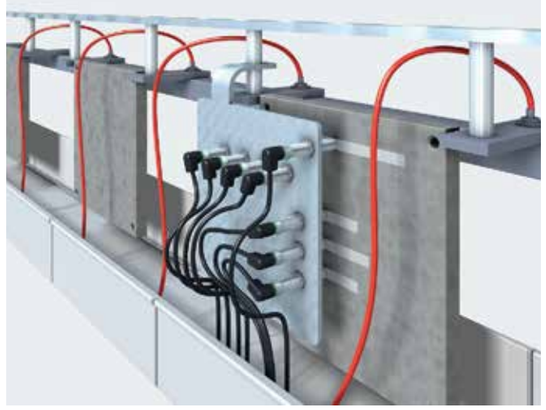
Item		M12	M18	M30
		E2AU-M12_	E2AU-M18_	E2AU-M30_
Sensing distance		4 mm±10%	8 mm±10%	15 mm±10%
Response frequency		1,000 Hz	500 Hz	250 Hz
Power supply voltage (operating voltage)		12 to 24 VDC. Ripple (p-p): 10% max. (10 to 32 VDC)		
Protective circuits		Output reverse polarity protection, power supply reverse polarity protection, surge suppressor, short-circuit protection		
Ambient temperature	Operating	–40 to 70°C		
	Storage	–40 to 85°C (with no icing or condensation)		
Degree of protection		IP67 after IEC 60529, IP69K after DIN 40050 part 9		
Material	Case	Brass-nickel plated		
	Sensing surface	PBT		

Food and Beverage Industry
Packaging



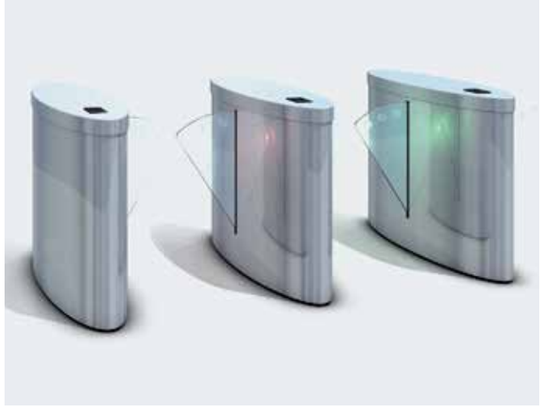
Control positioning of pressing elements in packaging machine for yogurts.

Machine tool



Liner encoder to control correct positioning in automatic bar feeders for single-spindle and multispindle lathes.

Access control



Control positioning of elements of turnstile for railway or underground stations.

High-visibility ring LED indicator

Laser printing part number

The ideal solution for standard industrial conditions

Thanks to the simple construction and Omron's innovative "hot melt" production process, the E2B sensors embody two characteristics: value-for-money and high reliability.

- All-round-visible indicator
- The laser printed part number
- Vibration shock resistance: IEC 60947-5-2 (10 to 55 Hz)
- Operating temperature: –25 to 70°C
- Water resistance: IP67

Ordering information

Pre-wired

Size	■	■	Sensing distance	Output configuration	Order code (for pre-wired types with 2 m PVC cable)	
					Operation mode NO	Operation mode NC
M8	■	–	2.0 mm	PNP*1	E2B-S08KS02-WP-B1 2M*2	E2B-S08KS02-WP-B2 2M*2
	–	■	4.0 mm	PNP*1	E2B-S08KN04-WP-B1 2M*2	E2B-S08KN04-WP-B2 2M*2
M12	■	–	4.0 mm	PNP*1	E2B-M12KS04-WP-B1 2M	E2B-M12KS04-WP-B2 2M
	–	■	8.0 mm	PNP*1	E2B-M12KN08-WP-B1 2M	E2B-M12KN08-WP-B2 2M
M18	■	–	8.0 mm	PNP*1	E2B-M18KS08-WP-B1 2M	E2B-M18KS08-WP-B2 2M
	–	■	16.0 mm	PNP*1	E2B-M18KN16-WP-B1 2M	E2B-M18KN16-WP-B2 2M
M30	■	–	15.0 mm	PNP*1	E2B-M30KS15-WP-B1 2M	E2B-M30KS15-WP-B2 2M
	–	■	30.0 mm	PNP*1	E2B-M30LN30-WP-B1 2M	E2B-M30LN30-WP-B2 2M

Connector types

Size	■	■	Sensing distance	Output configuration	Order code	
					Operation mode NO	Operation mode NC
M8	■	–	2.0 mm	PNP*1	E2B-S08KS02-MC-B1*2	E2B-S08KS02-MC-B2*2
	–	■	4.0 mm	PNP*1	E2B-S08KN04-MC-B1*2	E2B-S08KN04-MC-B2*2
M12	■	–	4.0 mm	PNP*1	E2B-M12KS04-M1-B1	E2B-M12KS04-M1-B2
	–	■	8.0 mm	PNP*1	E2B-M12KN08-M1-B1	E2B-M12KN08-M1-B2
M18	■	–	8.0 mm	PNP*1	E2B-M18KS08-M1-B1	E2B-M18KS08-M1-B2
	–	■	16.0 mm	PNP*1	E2B-M18KN16-M1-B1	E2B-M18KN16-M1-B2
M30	■	–	15.0 mm	PNP*1	E2B-M30KS15-M1-B1	E2B-M30KS15-M1-B2
	–	■	30.0 mm	PNP*1	E2A-M30LN30-M1-B1	E2B-M30LN30-M1-B2

*1 NPN models are available. For ordering replace "-B1" or "-B2" by "-C1" or "-C2".
*2 M8 sized housings are only available in stainless steel (SUS 303).

Refer to complete datasheet or contact your OMRON representative for the below optional features

Specifications

(Exemplary for shielded versions.)

Item		M8	M12	M18	M30
		E2B-S08KS	E2B-M12KS	E2B-M18KS	E2B-M30KS
Sensing distance		2 mm±10%	4 mm±10%	8 mm±10%	15 mm±10%
Response frequency		1,500 Hz	1,000 Hz	500 Hz	250 Hz
Power supply voltage (operating voltage)		12 to 24 VDC. Ripple (p-p): 10% max. (10 to 32 VDC)			
Protective circuits		Output reverse polarity protection, Power source circuit reverse polarity protection			
Ambient temperature	Operating and storage	–25 to 70°C			
Degree of protection		IP67 after IEC 60529			
Material	Case	Stainless steel	Brass-nickel plated		
	Sensing surface	PBT			

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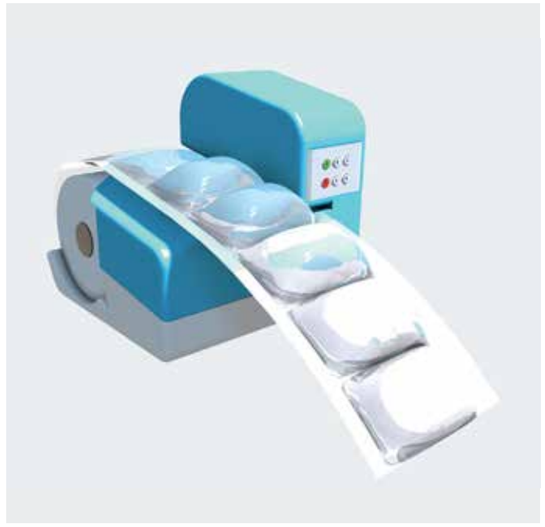
Machine tool

Control positioning of grabbing arms of robotic manipulators.

Packaging



Control positioning of welding elements in the compact packaging machines.

Lineup of global small-diameter types (3 dia., 4 dia., 6.5 dia., M4, M5)

Small diameter proximity sensors for high precision detection

Omron's latest inductive technology has now been applied to a new range of small diameter inductive sensors. The new µPROX E2E provides precision detection and allows installation in even the most confined spaces. The portfolio has been extended to include non-shielded types and versions with pig-tail connector leads.

- 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 available as non-shielded types
- IP67 water ingress protection
- Highly visible indicators for easy operation confirmation

Ordering information

Size			Sensing distance	Connection	Output configuration	Order code	
						Operation mode NO	Operation mode NC
dia 3 mm	■		0.8 mm	PW	PNP	E2E-C03SR8-WC-B1 2M OMS	E2E-C03SR8-WC-B2 2M OMS
					NPN	E2E-C03SR8-WC-C1 2M OMS	E2E-C03SR8-WC-C2 2M OMS
		■	2 mm	PW	PNP	E2E-C03N02-WC-B1 2M OMS	E2E-C03N02-WC-B2 2M OMS
					NPN	E2E-C03N02-WC-C1 2M OMS	E2E-C03N02-WC-C2 2M OMS
M4	■		0.8 mm	PW	PNP	E2E-S04SR8-WC-B1 2M OMS	E2E-S04SR8-WC-B2 2M OMS
					NPN	E2E-S04SR8-WC-C1 2M OMS	E2E-S04SR8-WC-C2 2M OMS
		■	2 mm	PW	PNP	E2E-S04N02-WC-B1 2M OMS	E2E-S04N02-WC-B2 2M OMS
					NPN	E2E-S04N02-WC-C1 2M OMS	E2E-S04N02-WC-C2 2M OMS
dia 4 mm	■		1.2 mm	PW	PNP	E2E-C04S12-WC-B1 2M OMS	E2E-C04S12-WC-B2 2M OMS
					NPN	E2E-C04S12-WC-C1 2M OMS	E2E-C04S12-WC-C2 2M OMS
		■	3 mm	PW	PNP	E2E-C04N03-WC-B1 2M OMS	E2E-C04N03-WC-B2 2M OMS
					NPN	E2E-C04N03-WC-C1 2M OMS	E2E-C04N03-WC-C2 2M OMS
M5	■		1.2 mm	PW	PNP	E2E-S05S12-WC-B1 2M OMS	E2E-S05S12-WC-B2 2M OMS
					NPN	E2E-S05S12-WC-C1 2M OMS	E2E-S05S12-WC-C2 2M OMS
		■	3 mm	PW	PNP	E2E-S05N03-WC-B1 2M OMS	E2E-S05N03-WC-B2 2M OMS
					NPN	E2E-S05N03-WC-C1 2M OMS	E2E-S05N03-WC-C2 2M OMS
dia 6.5 mm	■		2 mm	PW	PNP	E2E-C06S02-WC-B1 2M OMS	E2E-C06S02-WC-B2 2M OMS
					NPN	E2E-C06S02-WC-C1 2M OMS	E2E-C06S02-WC-C2 2M OMS
				M8(3P)	PNP	E2E-C06S02-MC-B1 OMS	E2E-C06S02-MC-B2 OMS
					NPN	E2E-C06S02-MC-C1 OMS	E2E-C06S02-MC-C2 OMS
		■	4 mm	PW	PNP	E2E-C06N04-WC-B1 2M OMS	E2E-C06N04-WC-B2 2M OMS
					NPN	E2E-C06N04-WC-C1 2M OMS	E2E-C06N04-WC-C2 2M OMS
				M8(3P)	PNP	E2E-C06N04-MC-B1 OMS	E2E-C06N04-MC-B2 OMS
					NPN	E2E-C06N04-MC-C1 OMS	E2E-C06N04-MC-C2 OMS

Specifications

Item		φ3/M4		Φ4/M5		Φ6.5	
		E2E-C03S/-S04S	E2E-C03N/-S04N	E2E-C04S/-S05S	E2E-C04N/-S05N	E2E-C06S	E2E-C06N
Sensing distance		0.8 mm±10%	2.0 mm±10%	1.2 mm±10%	3.0 mm±10%	2.0 mm±10%	4 mm±10.%
Setting distance		0 to 0.56mm	0 to 1.4mm	0 to 0.84mm	0 to 2.1mm	0 to 1.4mm	0 to 2.8mm
Response frequency		5 kHz	3 kHz	4 kHz	2 kHz	3 kHz	4 kHz
Supply voltage		10 to 30 VDC					
Current consumption		≤10 mA					
Max. control output		≤50 mA		≤100 mA		≤200 mA	
Residual output voltage		≤2 V					
Ambient temperature range		–25 to 70°C					
Ambient temperature fluctuation		≤15%					
Degree of protection		IEC 60529 IP67					
Material	Case	Stainless steel (SUS303)					
	Sensing surface	Heat-resistant ABS					

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Food and Beverage Industry
Beverage processing

Control positioning of valves of the mixers or heating systems.

Control positioning of metal elements in the mixing systems at conditions of direct contact with beverage or active chemicals.

120°C

e1 type approval after 2005/83/EC

Enhanced detergent resistance

Heat and detergent resistant inductive sensor in cylindrical stainless steel housing

The heat and detergent resistant inductive sensors allow reliable metal object or machine part detection in demanding environments such as food processing.

- Temperature resistant up to 120°C
- SUS316L housing with heat resistant plastic sensing face
- IP69k for highest water resistance
- ECOLAB tested and certified detergent resistance

Specifications

Item		M12	M18	M30
		E2EH-X3_ _	E2EH-X7_ _	E2EH-X12_ _
Sensing distance		3 mm±10%	7 mm±10%	12 mm±10%
Response frequency (average)		500 Hz	300 Hz	100 Hz
Power supply voltage (operating voltage range)		12 to 24 VDC, ripple (p-p): 10% max. (10 to 32 VDC) (24 VDC max. at 100°C or higher)		
Protective circuits		Surge suppression, short circuit protection, power supply reverse polarity protection, output reverse polarity protection		
Ambient temperature *1		DC 3-wire models: 0 to 100°C (0 to 120°C for 1,000 hours), DC 2-wire models: 0 to 100°C (0 to 110°C for 1,000 hours)		
Degree of protection		IEC 60529 IP67, IP69k after DIN 40050-9		
Material	Case, clamping nuts	Stainless steel (SUS316L)		
	Sensing surface	PBT (polybutylene terephthalate)		
	Cable	Heat-resistant PVC		

*1 Operation with power supplied for 1,000 h has been verified at 120°C for DC 3-wire models and at 110°C for DC 2-wire models. Do not bend the cable repeatedly at 100°C or higher.

Chemical resistant inductive sensor in cylindrical PTFE housing

The E2FQ features a full-body fluoro plastic housing for chemical resistance (e.g. against cleaning agents used in the semiconductor industry).

- Full body fluoro plastic housing for chemical resistance
- DC 2-wire and DC 3-wire models

Specifications

Item		M12	M18	M30
		E2FQ-X2_	E2FQ-X5_	E2FQ-X10_
Sensing distance		2 mm±10%	5 mm±10%	10 mm±10%
Response frequency		E1, F1 models: 1.5 kHz D1 models: 800 Hz	E1, F1 models: 600 Hz, D1 models: 500 Hz	E1, F1 models: 400 Hz, D1 models: 300 Hz
Power supply voltage (Operating voltage)		E1, F1 models: 12 to 24 VDC, ripple (p-p): 10% max., (10 to 30 VDC) D1 models: 12 to 24 VDC, ripple (p-p): 20% max., (10 to 36 VDC)		
Protective circuits		D1 models: surge suppressor E1, F1 models: power supply, reverse polarity protection, short circuit protection, surge suppressor		
Ambient temperature	Operating	–25 to 70°C (with no icing or condensation)		
	Storage			
Degree of protection		IEC60529 IP67		
Material	Case	PTFE		
	Sensing surface	PTFE		

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Inductive proximity sensor with gold-plated pins

Inductive proximity sensor E2A-4 was created and tested for applications in the harsh environment and at tough vibration conditions. Gold-plated contact pins provide increased protection against corrosion in high humidity and vibration.

- Gold-plated contact pins
- Connector type M8 and M12 models
- PNP/NPN NO

Ordering information

Size	Sensing distance	Connection	Body material	Thread length (overall length)	Output configuration	Operation mode	Order code
M8	2 mm	Connector M8 3 pin: gold-plated	Stainless steel	27 (40) mm	NPN	NO	E2A-S08KS02-M5-C1-4
				49 (62) mm			E2A-S08LS02-M5-C1-4
M12	4 mm	Connector M12 4 pin: gold-plated	Brass-nickel plated	34 (48) mm	PNP		E2A-M12KS04-M1-B1-4
	8 mm						E2A-M12KN08-M1-B1-4

Specifications

Size		M8		M12	
Model		E2A-S08KS02-M5-C1-4	E2A-S08LS02-M5-C1-4	E2A-M12KS04-M1-B1-4	E2A-M12KN08-M1-B1-4
Sensing distance (Standard target: mild steel ST37 8×8×1 mm)		2 mm±10%		4 mm±10%	8 mm±10%
Response frequency		1,500 Hz		1,000 Hz	800 Hz
Power supply voltage		10 to 32 VDC			
PIN		Bronze(C5441) / Gold-plated contacts			
Operating environment	Ambient air temperature	–40 to 70°C (with no icing or condensation)			
	Ambient air humidity	35% to 95% RH			
Degree of protection		IEC60529 IP67			
Materials Case		Stainless steel	Brass-nickel plated		
Sensing surface		PBT			

Mobile machines

Gold plated pins of E2A-4 intend to prevent erosion of contacts with cable connectors in high humidity and permanent vibration of the wood harvesting machine.

Windmill generators

Inductive proximity sensors control the rotation axis of the windmill generator. Gold plated pins provide maximum reliability of contacts and prevent erosion in high humidity and vibration even in off-shore applications.

Long distance inductive proximity sensor in plastic housing

The long sensing distance and simple installation on flat surfaces make the E2Q5 ideal for the detection of large metal objects for example in automotive assembly lines.

- M12 Plug-in connection
- Integrated short circuit and reverse polarity protection
- Sensing face positioning: Y-axis 15°, X-axis 90° increments

Ordering information

Connector types (M12)

Size in mm (H × W × D)			Sensing distance	Sensing face	Output configuration	Order code (for M12 connector types)	
						Operation mode NO	Operation mode NO + NC
67 × 40 × 40	■	–	20 mm	Changeable	NPN	E2Q5-N20E1-M1	E2Q5-N20E3- M1
					PNP	E2Q5-N20F1-M1	E2Q5-N20F3- M1
	–	■	40 mm		NPN	E2Q5-N40ME1-M1	E2Q5-N40ME3- M1
					PNP	E2Q5-N40MF1-M1	E2Q5-N40MF3- M1

Specifications

Item		E2Q5-N20__-M1	E2Q5-N40M_3-M1
Sensing distance		20 mm±10%	40 mm±10%
Response frequency		150 Hz	
Power supply voltage		10 to 30 VDC	
Protective circuits		Output reverse polarity protection, short-circuit protection	
Ambient temperature	Operating	–25 to 85°C	
Degree of protection		IEC 60529 IP 67; IP69k after DIN 40050 part 9	
Material	Case	PBT	
	Sensing face	PBT	

Agricultural industry

Control pallet positions of plants in green houses.

Oil resistant inductive sensor in cylindrical brass housing

The E2E-_-U offers tested oil resistance on commonly used oils in the automotive industry for reliable long-life operation in automotive assembly lines.

- Oil resistant PUR cable
- M8, M12, M18 and M30 standard sizes
- IP67g (water and oil resistance)

Ordering information

DC 2-wire (pre-wired)

Size			Sensing distance	Order code (for pre-wired types with 2 m PUR cable)	
				Operation mode NO	Operation mode NC
M8	■	–	2 mm	E2E-X2D1-U	E2E-X2D2-U
M12			3 mm	E2E-X3D1-U	E2E-X3D2-U
M18			7 mm	E2E-X7D1-U	E2E-X7D2-U
M30			10 mm	E2E-X10D1-U	E2E-X10D2-U

DC 2-wire (pre-wired with M12)

Size			Sensing distance	Order code (for pre-wired types with 30 cm PUR cable and M12 plug))	
				Operation mode NO	Operation mode NC
M8	■	–	2 mm	E2E-X2D1-M1TGJ-U 0.3M	E2E-X2D2-M1TGJ-U 0.3M
M12			3 mm	E2E-X3D1-M1TGJ-U 0.3M	E2E-X3D2-M1TGJ-U 0.3M
M18			7 mm	E2E-X7D1-M1TGJ-U 0.3M	E2E-X7D2-M1TGJ-U 0.3M
M30			10 mm	E2E-X10D1-M1TGJ-U 0.3M	E2E-X10D2-M1TGJ-U 0.3M

Specifications

Item		M8	M12	M18	M30
		E2E-X2D_	E2E-X3D_	E2E-X7D_	E2E-X10D_
Sensing distance		2 mm±10%	3 mm±10%	7 mm±10%	10 mm±10%
Response frequency		1.5 kHz	1.0 kHz	0.5 kHz	0.4 kHz
Power supply voltage (operating voltage)		12 to 24 VDC (10 to 30 VDC), ripple (p-p): 10% max.			
Protective circuits		Surge suppressor, output short-circuit protection (for control and diagnostic output)			
Ambient temperature	Operating	–25 to 70°C			
	Storage	–40 to 85°C (with no icing or condensation)			
Degree of protection		IEC 60529 IP67 (JEM standard IP67g (waterproof and oil-proof))			
Material	Case	Stainless steel (SUS303)	Brass-nickel plated		
	Sensing surface	PBT (polybutylene terephthalate)			
	Cable	PUR for jacket, PE			

Automotive and machine tool industry

Position monitoring systems of machine tool with direct oil contact.

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Inductive sensor in cylindrical full metal housing (case + sensing face)

The high durability stainless steel sensing face provides more than 20 times longer protection against mechanical damage than conventional sensors. The high mineral oil and coolant resistance and the immunity against small metal chips on the surface make this sensor ideal for metal cutting or drilling applications.

- Full body stainless steel housing for highest mechanical protection
- Low frequency modulation for metal chip immunity
- Flame retardant cable for high protection against welding spatter damage (pigtail models)

Ordering information

DC 2-wire (with M12 pigtail connector)

Size			Sensing distance	Order code*1 (for pre-wired types with 30 cm PVC cable and M12 plug)
M8	■	–	1.5 mm	E2FM-X1R5D1-M1TGJ
M12			2 mm	E2FM-X2D1-M1TGJ
M18			5 mm	E2FM-X5D1-M1TGJ
M30			10 mm	E2FM-X10D1-M1TGJ

DC 3-wire, M12 Connector types

Size			Sensing distance	Order code*1 (for M12 connector types)	
				PNP	NPN
M8	■	–	1.5 mm	E2FM-X1R5B1-M1	E2FM-X1R5C1-M1
M12			2 mm	E2FM-X2B1-M1	E2FM-X2C1-M1
M18			5 mm	E2FM-X5B1-M1	E2FM-X5C1-M1
M30			10 mm	E2FM-X10B1-M1	E2FM-X10C1-M1

*1 Output configuration normally open (NO)

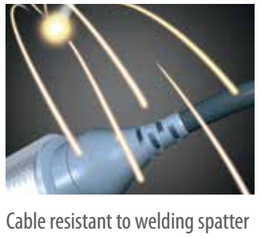
Specifications)

Item		M8	M12	M18	M30
		E2FM-X1R5	E2FM-X2	E2FM-X5	E2FM-X10
Sensing distance		1.5 mm±10%	2 mm±10%	5 mm±10%	10 mm±10%
Response frequency		200 Hz	100 Hz	100 Hz	50 Hz
Power supply voltage (operating voltage range)		12 to 24 VDC (10 to 30 VDC), ripple (p-p): 10% max.			
Protective circuits		E2FM-_D1: Surge suppressor, output short-circuit protection E2FM-_B1/C1: Output reverse polarity protection (not E2FM-X1R5B1-M1), power supply reverse polarity protection, surge suppressor, short-circuit protection			
Ambient temperature	Operating	–25 to 70°C (with no icing or condensation)			
	Storage				
Degree of protection		IEC60529 IP67, IP69k after DIN 40050 part 9			
Material	Case	Stainless steel (SUS303)			
	Sensing surface	Stainless steel (SUS303)			
	Cable	PVC (flame retardant)			

E2FM extra strong sensing face

Conventional metal face product

No interference by small metal chips on sensing surface



Cable resistant to welding spatter

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Flat shape inductive sensor in compact plastic housing

The TL-W family offers a wide range of block style inductive sensors for simple mounting on flat surfaces. With sensing distances from 1.5 mm to 20 mm the TL-W is the ideal solution for all standard applications.

- IP67
- DC 2-wire and DC 3-wire models
- Sensing distances from 1.5 mm to 20 mm
- Side facing sensing face

Ordering information

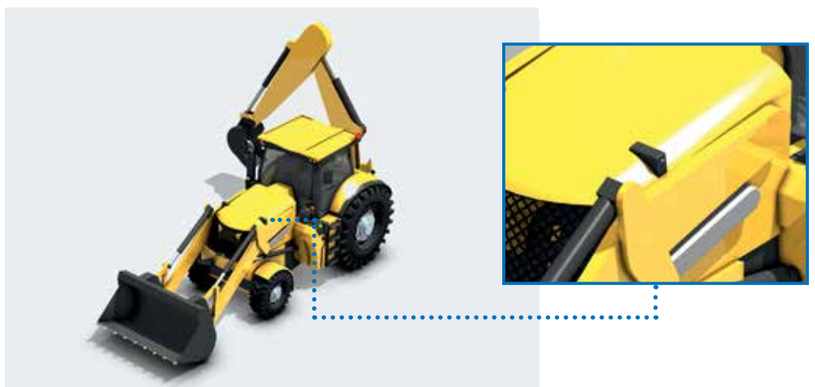
DC 3-wire

Size in mm (H × W × D)			Sensing distance	Order code (for pre-wired types with 2 m PVC cable)			
				PNP-NO	PNP-NC	NPN-NO	NPN-NC
25 × 8 × 5	–	■	1.5 mm	TL-W1R5MB1	–	TL-W1R5MC1	–
22 × 8 × 6			3 mm	TL-W3MB1	TL-W3MB2	TL-W3MC1	TL-W3MC2
31 × 18 × 10			5 mm	TL-W5MB1	TL-W5MB2	TL-W5MC1	TL-W5MC2
53 × 40 × 23			20 mm	–	–	TL-W20ME1	TL-W20ME2
31 × 18 × 10	■	–	5 mm	TL-W5F1	TL-W5F2	TL-W5E1	TL-W5E2

Specifications

Item		TL-W5MD_	TL-W1R5M_1	TL-W3M__	TL-W5M__	TL-W5E_/F_	TL-W20ME_
Sensing distance		5 mm±10%	1.5 mm±10%	3 mm±10%	5 mm±10%		20 mm±10%
Response frequency		500 Hz	1 kHz min.	600 Hz min.	500 Hz min.	300 Hz min.	40 Hz min.
Power supply voltage (operating voltage)		12 to 24 VDC (10 to 30 VDC) ripple (p-p): 10% max.				10 to 30 VDC with a ripple (p-p) of 20% max.	12 to 24 VDC (10 to 30 VDC) ripple (p-p): 10% max.
Ambient temperature	Operating	–25 to 70°C (with no icing or condensation)					
	Storage						
Degree of protection		IEC60529 IP67					
Material	Case	Heat-resistant ABS resin				Diecast aluminum	Heat-resistant ABS resin
	Sensing surface	Heat-resistant ABS resin					

Utility vehicles



The inductive proximity sensors detects the bucket of the excavator in the tip position.

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Size	Shape	Type	Features	Material		Order code	
				Nut	Cable		
M8		PRO	3 pin	Brass (CuZn)	PVC 2 m	XS3F-M8PVC3S2M-EU	XS3F-M8PVC3A2M-EU
					PUR 2 m	XS3F-M8PUR3S2M-EU	XS3F-M8PUR3A2M-EU
			4pin		PVC 2 m	XS3F-M8PVC4S2M-EU	XS3F-M8PVC4A2M-EU
					PUR 2 m	XS3F-M8PUR4S2M-EU	XS3F-M8PUR4A2M-EU
		LITE	3 pin	Brass (CuZn)	PVC 2 m	XS3F-LM8PVC3S2M	XS3F-LM8PVC3A2M
			4 pin			XS3F-LM8PVC4S2M	XS3F-LM8PVC4A2M
		PRO^{plus} Detergent resistant	4 pin	Stainless steel (SUS316L)	PVC 2 m	Y92E-S08PVC4S2M-L	Y92E-S08PVC4A2M-L
M12		PRO	3 wire	Brass (CuZn)	PVC 2 m	XS2F-M12PVC3S2M-EU	XS2F-M12PVC3A2M-EU
					PUR 2 m	XS2F-M12PUR3S2M-EU	XS2F-M12PUR3A2M-EU
			4 wire		PVC 2 m	XS2F-M12PVC4S2M-EU	XS2F-M12PVC4A2M-EU
					PUR 2 m	XS2F-M12PUR4S2M-EU	XS2F-M12PUR4A2M-EU
			5 wire		PVC 2 m	XS2F-M12PVC5S2M-EU	XS2F-M12PVC5A2M-EU
					PUR 2 m	XS2F-M12PUR5S2M-EU	XS2F-M12PUR5A2M-EU
		LITE	3 wire	Brass (CuZn)	PVC 2 m	XS2F-LM12PVC3S2M	XS2F-LM12PVC3A2M
			4 wire			XS2F-LM12PVC4S2M	XS2F-LM12PVC4A2M
		PRO^{plus} LED (power and output LED, PNP)	3 wire	Nickel plated brass	PVC 2 m	–	XS2F-M12PVC3A2MPLED
			4 wire			–	XS2F-M12PVC4A2MPLED
			3 wire		PUR 2 m	–	XS2F-M12PUR3A2MPLED
			4 wire			–	XS2F-M12PUR4A2MPLED
		PRO^{plus} Detergent resistant	4 wire	Stainless steel (SUS316L)	PVC 2 m	Y92E-S12PVC4S2M-L	Y92E-S12PVC4A2M-L
		IDC (Insulation Displacement Contact)	4 pins Plug	Brass	n.a.	XS5G-D418	–
			4 pins Socket			XS5C-D418	–

S8VK-G Single-phase

The standard book type power supply

The standard S8VK-G Pro line is our "install and forget" option, offering longer lifetime, higher protection and more features.The S8VK-G offers a wide product range (from 15 up to 480 W), in a very compact package. There are models available for 5, 12, 24 and 48 VDC output voltage. DC input (90 to 350 VDC) is also available through the whole range.

- Wide operating temperature range (–40 to 70°C) that guarantees stable operation
- Double set of DC output terminals (three for the negative) provide easy wiring
- High efficiency 90% to reduce the energy consumption
- Power boost functionality (120%) for the right start of the application
- Improved DIN-rail mounting clip provides a better resistance to vibrations and allows easy installation (using one hand to mount in a flash)

Ordering information

Type	Power ratings	Input voltage	Output voltage	Output current	Size (W × H × D) [mm]	Order code
Power supply Single-phase	15 W	100 to 240 VAC Allowable range: 85 to 264 VAC, 90 to 350 VDC, 2 phases less than 240 VAC	24 VDC	0.65 A	22.5 × 90 × 90	S8VK-G01524
	30 W			1.3 A	32 × 90 × 90	S8VK-G03024
	60 W			2.5 A	32 × 90 × 110	S8VK-G06024
	120 W			5 A	40 × 125 × 113	S8VK-G12024
	240 W			10 A	60 × 125 × 140	S8VK-G24024
	480 W			20 A	95 × 125 × 140	S8VK-G48024

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