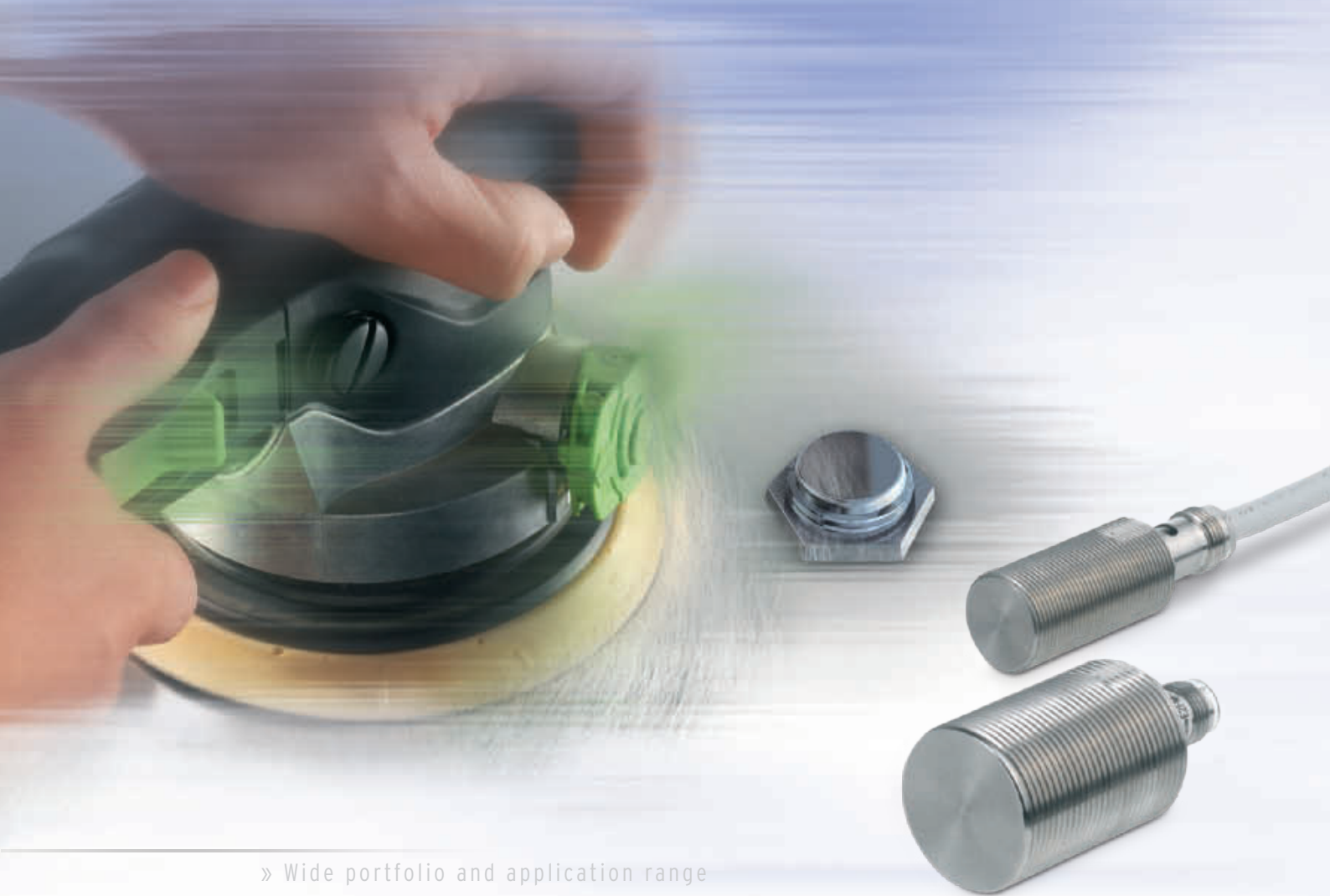


E2 INDUCTIVE SENSORS

When failure is not an option



» Wide portfolio and application range

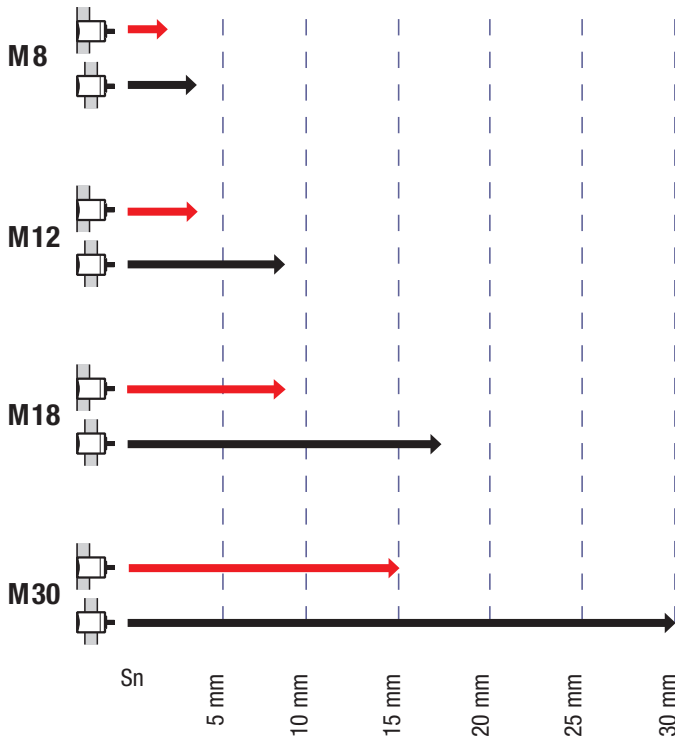
» **Highest reliability**

» Designed for operational stability and long lifetime

INDUCTIVE SENSORS





For machines that Never Stop

Our inductive sensors are designed and tested to ensure a long service life and achieve maximum machine availability even in the harshest environments.












Cylindrical brass housing, DC 3-wire and antivalent (DC 4-wire)


E2A	see page 4
------------	----------------------------

-  Highest water resistance
-  Highest electromagnetic noise immunity (e.g. from inverters)
-  Antivalent output for cable breakage detection
-  Wide connection range

SPECIAL APPLICATIONS

e1 certified	Enhanced oil resistance	DC 2-wire	Detergent resistant	Metal chip immune
				
E2AU	E2E	E2A DC 2 wire	E2EH	E2FM
30 V/m electromagnetic noise immunity certified	Tested oil resistance on commonly used lubricants	Residual voltage for cable breakage detection	Stainless steel housing	Full metal housing
				
see page 8	see page 9	see page 6	see page 10	see page 11

miniature housing:

E2EC	E2E small diameter	E2S
		
see page 14	see page 15	see page 16

compact square housing:

TL-W

see page 17

longer distance:

E2Q5	E2A3
	
see page 18	see page 7

SPECIAL APPLICATIONS

Chemical resistant



E2FQ

Fluoro plastic (PTFE) housing



see page 12

Precision Positioning



E2C-EDA

Typically 1 mm detection precision

see page 13

All material detection



E2K-C

Capacitive detection up to 25 mm distance

contact your OMRON representative



Extended sensing range inductive sensor in cylindrical brass housing

The high quality and the long-life design of the E2A extended sensing distance provide the best value performance ratio for standard applications

- Extended (double) sensing distance
- IP67 and IP69k for highest water protection
- DC 3-wire (NO, NC), DC 4-wire (NO+NC)
- Wide installation and connectivity range through modular concept

Ordering information

Pre-wired

(For different cable materials and lengths, special housing length or special connectors, please refer to complete datasheet.)

Size	Sensing distance		Sensing distance	Thread length (overall length)	Output configuration	Order code (for pre-wired types with 2m cable length)		
	NO	NC				Operation mode NO	Operation mode NC	Operation mode NO + NC
M8	■	–	2.0 mm	27 (40) mm	PNP ^{*1}	E2A-S08KS02-WP-B1 2M	E2A-S08KS02-WP-B2 2M	E2A-S08LS02-WP-B3 2M ^{*2}
	–	■	4.0 mm	21 (40) mm	PNP ^{*1}	E2A-S08KN04-WP-B1 2M	E2A-S08KN04-WP-B2 2M	E2A-S08LN04-WP-B3 2M ^{*2}
M12	■	–	4.0 mm	34 (50) mm	PNP ^{*1}	E2A-M12KS04-WP-B1 2M	E2A-M12KS04-WP-B2 2M	E2A-M12KS04-WP-B3 2M
	–	■	8.0 mm	27 (50) mm	PNP ^{*1}	E2A-M12KN08-WP-B1 2M	E2A-M12KN08-WP-B2 2M	E2A-M12KN08-WP-B3 2M
M18	■	–	8.0 mm	39 (59) mm	PNP ^{*1}	E2A-M18KS08-WP-B1 2M	E2A-M18KS08-WP-B2 2M	E2A-M18KS08-WP-B3 2M
	–	■	16.0 mm	29 (59) mm	PNP ^{*1}	E2A-M18KN16-WP-B1 2M	E2A-M18KN16-WP-B2 2M	E2A-M18KN16-WP-B3 2M
M30	■	–	15.0 mm	44 (64) mm	PNP ^{*1}	E2A-M30KS15-WP-B1 2M	E2A-M30KS15-WP-B2 2M	E2A-M30KS15-WP-B3 2M
	–	■	20.0 mm ^{*3}	29 (64) mm	PNP ^{*1}	E2A-M30KN20-WP-B1 2M	E2A-M30KN20-WP-B2 2M	E2A-M30KN20-WP-B3 2M

Connector versions (M12)

Size	Sensing distance		Sensing distance	Thread length (overall length)	Output configuration	Order code (for M12 connector types)		
	NO	NC				Operation mode NO	Operation mode NC	Operation mode NO + NC
M8	■	–	2.0 mm	27 (43) mm	PNP ^{*1}	E2A-S08KS02-M1-B1	E2A-S08KS02-M1-B2	E2A-S08LS02-M1-B3 ^{*2}
	–	■	4.0 mm	21 (43) mm	PNP ^{*1}	E2A-S08KN04-M1-B1	E2A-S08KN04-M1-B2	E2A-S08LN04-M1-B3 ^{*2}
M12	■	–	4.0 mm	24 (48) mm	PNP ^{*1}	E2A-M12KS04-M1-B1	E2A-M12KS04-M1-B2	E2A-M12KS04-M1-B3
	–	■	8.0 mm	27 (48) mm	PNP ^{*1}	E2A-M12KN08-M1-B1	E2A-M12KN08-M1-B2	E2A-M12KN08-M1-B3
M18	■	–	8.0 mm	39 (53) mm	PNP ^{*1}	E2A-M18KS08-M1-B1	E2A-M18KS08-M1-B2	E2A-M18KS08-M1-B3
	–	■	16.0 mm	29 (53) mm	PNP ^{*1}	E2A-M18KN16-M1-B1	E2A-M18KN16-M1-B2	E2A-M18KN16-M1-B3
M30	■	–	15.0 mm	44 (58) mm	PNP ^{*1}	E2A-M30KS15-M1-B1	E2A-M30KS15-M1-B2	E2A-M30KS15-M1-B3
	–	■	20.0 mm ^{*3}	29 (58) mm	PNP ^{*1}	E2A-M30KN20-M1-B1	E2A-M30KN20-M1-B2	E2A-M30KN20-M1-B3

^{*1} NPN models are also available.

^{*2} Longer housing models.

^{*3} Models with longer sensing distances of 30 mm and 35 mm are available.

M8 connectors and different cables? Go to www.industrial.omron.eu/E2A

For cable connectors see page 19

General purpose

Food, Beverage and Pharma

Automotive

Semiconductor

Material handling

Accessories

Specifications

(Exemplary for shielded versions. Sensing distance is double for non-shielded version)

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 circuit	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°C to 70°C, storage: -40°C 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 ^{*1}	
	Sensing surface	PBT		

^{*1} All models are also available in stainless steel housing. For ordering replace E2A-M_ by E2A-S_ e.g. E2A-S18KS08-WP-B1 2M.



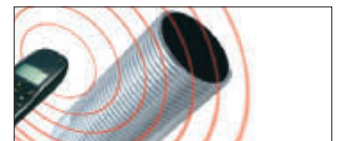
High water resistance



Cable breakage protection



High mechanical resistance



High electro-magnetic noise immunity



High resistance against temperature change



High vibration resistance

M8 connectors and different cables? Go to www.industrial.omron.eu/E2A

For cable connectors see page 19

General purpose	Food, Beverage and Pharma	Automotive	Semiconductor	Material handling	Accessories
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DC 2-wire inductive sensor in cylindrical brass housing

The DC 2-wire models of the E2A family are easy to install and allow the detection of cable breakage.

- Extended (double) sensing distance
- IP67 and IP69k for highest protection in wet environments
- DC 2-wire

Ordering information

Pre-wired

(For different cable materials and lengths, special housing length or special connectors, please refer to complete datasheet.)

Size			Sensing distance	Thread length (overall length)	Order code (for pre-wired types with 2m cable length)	
					Operation mode NO	Operation mode NC
M8	■	–	2.0 mm	27 (40) mm ^{*1}	E2A-S08KS02-WP-D1 2M	E2A-S08KS02-WP-D2 2M
	–	■	4.0 mm	21 (40) mm ^{*1}	E2A-S08KN04-WP-D1 2M	E2A-S08KN04-WP-D2 2M
M12	■	–	4.0 mm	34 (50) mm ^{*1}	E2A-M12KS04-WP-D1 2M	E2A-M12KS04-WP-D2 2M
	–	■	8.0 mm	27 (50) mm ^{*1}	E2A-M12KN08-WP-D1 2M	E2A-M12KN08-WP-D2 2M
M18	■	–	8.0 mm	39 (59) mm ^{*1}	E2A-M18KS08-WP-D1 2M	E2A-M18KS08-WP-D2 2M
	–	■	16.0 mm	29 (59) mm ^{*1}	E2A-M18KN16-WP-D1 2M	E2A-M18KN16-WP-D2 2M
M30	■	–	15.0 mm	44 (64) mm ^{*1}	E2A-M30KS15-WP-D1 2M	E2A-M30KS15-WP-D2 2M
	–	■	20.0 mm	29 (64) mm ^{*1}	E2A-M30KN20-WP-D1 2M	E2A-M30KN20-WP-D2 2M

Connector versions (M12)

Size			Sensing distance	Thread length (overall length)	Order code (for M12 connector types)	
					Operation mode NO	Operation mode NC
M8	■	–	2.0 mm	27 (43) mm ^{*1}	E2A-S08KS02-M1G-D1	E2A-S08KS02-M1G-D2
	–	■	4.0 mm	21 (43) mm ^{*1}	E2A-S08KN04-M1G-D1	E2A-S08KN04-M1G-D2
M12	■	–	4.0 mm	34 (48) mm ^{*1}	E2A-M12KS04-M1G-D1	E2A-M12KS04-M1G-D2
	–	■	8.0 mm	27 (48) mm ^{*1}	E2A-M12KN08-M1G-D1	E2A-M12KN08-M1G-D2
M18	■	–	8.0 mm	39 (53) mm ^{*1}	E2A-M18KS08-M1G-D1	E2A-M18KS08-M1G-D2
	–	■	16.0 mm	29 (53) mm ^{*1}	E2A-M18KN16-M1G-D1	E2A-M18KN16-M1G-D2
M30	■	–	15.0 mm	44 (58) mm ^{*1}	E2A-M30KS15-M1G-D1	E2A-M30KS15-M1G-D2
	–	■	20.0 mm	29 (58) mm ^{*1}	E2A-M30KN20-M1G-D1	E2A-M30KN20-M1G-D2

*1 Longer housing models are available.

Specifications

(Exemplary for shielded versions. Sensing distance is double for non-shielded version)

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 circuit	Surge suppressor, short-circuit protection			
Ambient temperature	Operating: –40 °C to 70 °C, storage: –40 °C 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		

M8 connectors and different cables? Go to www.industrial.omron.eu/E2A

For cable connectors see page 19

General purpose	Food, Beverage and Pharma	Automotive	Semiconductor	Material handling	Accessories
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Long (triple) distance inductive sensor in cylindrical brass housing

The E2A3 family features an optimised sensing performance to achieve triple sensing distance for quasi flush mounting requirements.

- Triple distance for enhanced sensor protection from mechanical damage
- IP67 and IP69k

Ordering information

Pre-wired

(For different cable materials and lengths, special housing length or special connectors, please refer to complete datasheet.)

Size	Sensing distance		Sensing distance	Thread length (overall length)	Output configuration	Order code (for pre-wired types with 2m cable length)	
	Operation mode: NO	Operation mode: NC					
M8	■	–	3.0 mm	27 (40) mm	PNP	E2A3-S08KS03-WP-B1 2M	E2A3-S08KS03-WP-B2 2M
	■	–				E2A3-S08KS03-WP-C1 2M	E2A3-S08KS03-WP-C2 2M
M12	■	–	6.0 mm	34 (50) mm	PNP	E2A3-M12KS06-WP-B1 2M	E2A3-M12KS06-WP-B2 2M
	■	–				E2A3-M12KS06-WP-C1 2M	E2A3-M12KS06-WP-C2 2M
M18	■	–	11.0 mm	39 (60) mm	PNP	E2A3-M18KS11-WP-B1 2M	E2A3-M18KS11-WP-B2 2M
	■	–				E2A3-M18KS11-WP-C1 2M	E2A3-M18KS11-WP-C2 2M
M30	■	–	20.0 mm	44 (65) mm	PNP	E2A3-M30KS20-WP-B1 2M	E2A3-M30KS20-WP-B2 2M
	■	–				E2A3-M30KS20-WP-C1 2M	E2A3-M30KS20-WP-C2 2M

Connector versions (M12)

Size	Sensing distance		Sensing distance	Connection	Thread length (overall length)	Output configuration	Order code (for M12 connector types)	
	Operation mode: NO	Operation mode: NC						
M8	■	–	3.0 mm	M12 Connector	27 (44) mm	PNP	E2A3-S08KS03-M1-B1	E2A3-S08KS03-M1-B2
	■	–					E2A3-S08KS03-M1-C1	E2A3-S08KS03-M1-C2
M12	■	–	6.0 mm	M12 Connector	34 (49) mm	PNP	E2A3-M12KS06-M1-B1	E2A3-M12KS06-M1-B2
	■	–					E2A3-M12KS06-M1-C1	E2A3-M12KS06-M1-C2
M18	■	–	11.0 mm	M12 Connector	39 (54) mm	PNP	E2A3-M18KS11-M1-B1	E2A3-M18KS11-M1-B2
	■	–					E2A3-M18KS11-M1-C1	E2A3-M18KS11-M1-C2
M30	■	–	20.0 mm	M12 Connector	44 (59) mm	PNP	E2A3-M30KS20-M1-B1	E2A3-M30KS20-M1-B2
	■	–					E2A3-M30KS20-M1-C1	E2A3-M30KS20-M1-C2

Specifications

Item	M8	M12	M18	M30
	E2A3-S08KS03	E2A3-M12KS06-	E2A3-M18KS11	E2A3-M30KS20
Sensing distance	3 mm ±10%	6 mm ±10%	11 mm ±10%	20 mm ±10%
Response frequency	700 Hz	350 Hz	250 Hz	80 Hz
Power supply voltage (operating voltage)	12 to 24 VDC. Ripple (p-p): 10% max. (10 to 32 VDC)			
Protective circuit	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: -25 to 70°C, storage: -25 to 70°C			
Degree of protection	IP67 after IEC 60529; IP69K after DIN 40050 part 9			
Material	Case	Stainless steel		Brass-nickel plated
	Sensing surface	PBT		

For longer sensing distance see E2Q5					For cable connectors see page 19
General purpose	Food, Beverage and Pharma	Automotive	Semiconductor	Material handling	Accessories





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)
- Cable breakage protection

Ordering information

Pre-wired

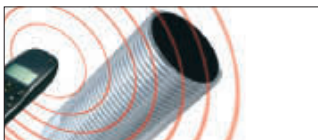
Size			Sensing distance	Output configuration	Order code (for pre-wired with 2m cable length) Operation mode: NO
M12	■	-	4.0 mm	PNP	E2AU-M12KS04-WP-B1 2M
				PNP	E2AU-M12LS04-WP-B1 2M
M18	■	-	8.0 mm	PNP	E2AU-M18KS08-WP-B1 2M
				PNP	E2AU-M18LS08-WP-B1 2M
M30	■	-	15.0 mm	PNP	E2AU-M30KS15-WP-B1 2M
				PNP	E2AU-M30LS15-WP-B1 2M

Connector versions (M12)

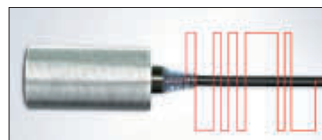
Size			Sensing distance	Output configuration	Order code (for M12 connector types) Operation mode: NO
M12	■	-	4.0 mm	PNP	E2AU-M12KS04-M1-B1
				PNP	E2AU-M12LS04-M1-B1
M18	■	-	8.0 mm	PNP	E2AU-M18KS08-M1-B1
				PNP	E2AU-M18LS08-M1-B1
M30	■	-	15.0 mm	PNP	E2AU-M30KS15-M1-B1
				PNP	E2AU-M30LS15-M1-B1

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 circuit	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		



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



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

e1

e1 type approval after 2005/83/EC





Oil resistant inductive sensor in cylindrical brass housing

The standard E2E family 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 cable length)	
				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 cable length 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 circuit	Surge suppressor, output short-circuit protection (for control and diagnostic output)			
Ambient temperature	Operating: -25 °C to 70 °C, storage: -40 °C 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		





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

Ordering information

Pre-wired

Size			Sensing distance	Output configuration	Order code (for pre-wired types with 2 m cable length)	
					Operation mode NO	Operation mode NC
M12	■	-	3 mm	PNP	E2EH-X3B1 2M	E2EH-X3B2 2M
				NPN	E2EH-X3C1 2M	E2EH-X3C2 2M
				DC 2-wire	E2EH-X3D1 2M	E2EH-X3D2 2M
M18	■	-	7 mm	PNP	E2EH-X7B1 2M	E2EH-X7B2 2M
				NPN	E2EH-X7C1 2M	E2EH-X7C2 2M
				DC 2-wire	E2EH-X7D1 2M	E2EH-X7D2 2M
M30	■	-	12 mm	PNP	E2EH-X12B1 2M	E2EH-X12B2 2M
				NPN	E2EH-X12C1 2M	E2EH-X12C2 2M
				DC 2-wire	E2EH-X12D1 2M	E2EH-X12D2 2M

Connector versions (M12)

Size			Sensing distance	Output	Order code (for M12 connector types)	
					Operation mode NO	Operation mode NC
M12	■	-	3 mm	PNP	E2EH-X3B1-M1	E2EH-X3B2-M1
				NPN	E2EH-X3C1-M1	E2EH-X3C2-M1
				DC 2-wire	E2EH-X3D1-M1G	E2EH-X3D2-M1G
M18	■	-	7 mm	PNP	E2EH-X7B1-M1	E2EH-X7B2-M1
				NPN	E2EH-X7C1-M1	E2EH-X7C2-M1
				DC 2-wire	E2EH-X7D1-M1G	E2EH-X7D2-M1G
M30	■	-	12 mm	PNP	E2EH-X12B1-M1	E2EH-X12B2-M1
				NPN	E2EH-X12C1-M1	E2EH-X12C2-M1
				DC 2-wire	E2EH-X12D1-M1G	E2EH-X12D2-M1G

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 circuit	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		
Materials	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.



120°C

Enhanced temperature resistance



Enhanced detergent resistance

For heat resistant cable connectors see page 19

General purpose

Food, Beverage and Pharma

Automotive

Semiconductor

Material handling

Accessories



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	Output configuration	Order code (for pre-wired types with 30 cm cable length and M12 plug) Operation mode NO
M8	■	—	1.5 mm	DC 2-wire with polarity (pins 1-4)	E2FM-X1R5D1-M1GJ
M12			2 mm		E2FM-X2D1-M1GJ
M18			5 mm		E2FM-X5D1-M1GJ
M30			10 mm		E2FM-X10D1-M1GJ

DC 3-wire, M12 Connector versions

Size			Sensing distance	Output configuration	Order code (for M12 connector types) Operation mode NO
M8	■	—	1.5 mm	DC 3-wire, PNP	E2FM-X1R5B1-M1
M12			2 mm		E2FM-X2B1-M1
M18			5 mm		E2FM-X5B1-M1
M30			10 mm		E2FM-X10B1-M1

Specifications

(Exemplary for DC 2-wire)

Item	M8 E2FM-X1R5D1	M12 E2FM-X2D1	M18 E2FM-X5D1	M30 E2FM-X10D1
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	Surge suppressor, output short-circuit protection			
Ambient temperature range	Operating/Storage: -25°C to +70°C (with no icing or condensation)			
Degree of protection	IEC60529 IP67, IP69k after DIN 40050 part 9			
Materials	Case	Stainless steel (SUS303)		
	Sensing surface	Stainless steel (SUS303)		
	Cable	PVC (flame retardant)		



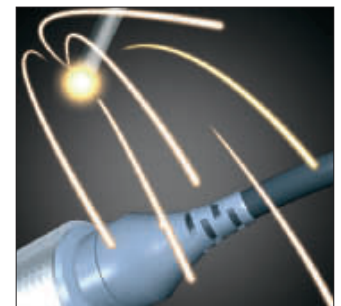
E2FM extra strong sensing face



Conventional metal face product



No interference by small metal chips on sensing surface



Cable resistant to welding spatter

For spatter proof cable connectors see page 19

General purpose	Food, Beverage and Pharma	Automotive	Semiconductor	Material handling	Accessories
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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

Ordering information

DC 2-wire (pre-wired)

Size			Sensing distance	Output configuration	Order code (for pre-wired types with 2 m cable length) Operation mode NO
M12	■	—	2 mm	DC 2-wire with polarity	E2FQ-X2D1
M18			5 mm		E2FQ-X5D1
M30			10 mm		E2FQ-X10D1

DC 3-wire (pre-wired)

Size			Sensing distance	Output configuration	Order code (for pre-wired types with 2 m cable length) Operation mode NO
M12	■	—	2 mm	PNP	E2FQ-X2F1
				NPN	E2FQ-X2E1
M18			5 mm	PNP	E2FQ-X5F1
				NPN	E2FQ-X5E1
M30			10 mm	PNP	E2FQ-X10F1
				NPN	E2FQ-X10E1

Specifications

Item	M12 E2FQ-X2_	M18 E2FQ-X5_	M30 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 circuit	D1 models: surge suppressor E1, F1 models: power supply, reverse polarity protection, short circuit protection, surge suppressor		
Ambient temperature	Operating/Storage: -25 to 70°C (with no icing or condensation)		
Degree of protection	IEC60529 IP67		
Material	Case	PTFE	
	Sensing surface	PTFE	



High chemical resistance



High precision positioning inductive proximity sensor with separate amplifier

The separate amplifier inductive sensor family E2C-EDA offers high precision distance positioning and detection. The teach-in function allows simple installation, and with the window function (2 outputs) production tolerance checks can easily be set up and modified.

- Typically several hundred µm detection precision
- Precision distance teaching
- Window function (2 outputs) for production tolerance checks

Ordering information

Sensor heads

Appearance				Sensing distance	Repeat accuracy	Order code
Cylindrical	3 dia.×18	■	-	0.6 mm	1 µm	E2C-EDR6-F
	5.4 dia.×18			1 mm	1 µm	E2C-ED01 ^{*1}
	8 dia.×22			2 mm	2 µm	E2C-ED02 ^{*1}
Screw	M10×22			2 mm	2 µm	E2C-EM02 ^{*1}
Flat	30×14×4.8			5 mm	2 µm	E2C-EV05 ^{*1}
Screw	M18×46.3	-	■	7 mm	5 µm	E2C-EM07M ^{*1}
Screw (heat resistant)	M12×22	■	-	2 mm	2 µm	E2C-EM02H

^{*1} For models with cut-to-length cables add '-F' for example E2C-ED01-F
For models with protective stainless steel spiral tubes add '-S' for example E2C-ED01-S

Amplifier units with cables

Item	Functions	Order code	
		NPN output	PNP output
Twin-output models	Area output, open circuit detection, differential operation	E2C-EDA11	E2C-EDA41
External-input models	Remote setting, differential operation	E2C-EDA21	E2C-EDA51

Amplifier units with connectors^{*1}

Item	Functions	Order code	
		NPN output	PNP output
Twin-output models	Area output, open circuit detection, differential operation	E2C-EDA6	E2C-EDA8
External-input models	Remote setting, differential operation	E2C-EDA7	E2C-EDA9

^{*1} Order fitting connector (E3X-CN21_) separately from accessories.

Specifications

Sensor heads

Item	3 dia.	5.4 dia.	8 dia.	M10	M18	30×14×4.8 mm	M12	
	E2C-EDR6-F	E2C-ED01(-_)	E2C-ED02(-_)	E2C-EM02(-_)	E2C-EM07(-_)	E2C-EV05(-_)	E2C-EM02H	
Sensing distance	0.6 mm	1 mm	2 mm		7 mm	5 mm	2 mm	
Ambient temperature	Operating/Storage: -10°C to 60°C (with no icing or condensation)						Operating / storage: -10°C to 200°C	
Degree of protection	IEC60529 IP67						IEC60529 IP60	
Material	Case	Brass	Stainless steel	Brass		Zinc	Brass	
	Sensing surface	Heat-resistant ABS						PEEK

Higher precision and measurement see ZX-E in 'Quality control & Inspection guide'					For fiber amplifier connectors see page 19
General purpose	Food, Beverage and Pharma	Automotive	Semiconductor	Material handling	Accessories



Miniature short head inductive sensor for demanding mounting conditions with remote amplifier

The E2EC family features the smallest sensor heads for reliable sensing in areas where mounting space is crucial. The miniature sizes of the sensing heads are achieved by separating the sensing part from the amplifier. In contrast to standard separate amplifier models the E2EC family simplifies the installation as the amplifier is built into the cable.

- 3 mm diameter sensing head for smallest spaces
- 18 mm long ultra short M12 size housing
- Full metal housing model for highest resistance in demanding environments

Ordering information

Standard (plastic sensing surface) DC 2-wire

Size	Order code (pre-wired types with 2 m cable length) ^{*1}	
	Operation mode NO	Operation mode NC
3-mm dia.	■	—
5.4-mm dia.	■	—
8-mm dia.	■	—
M12	■	—

^{*1} Cable length from sensor head to remote amplifier is 0.4 m

High protection (all metal face) DC 3-wire and DC 2-wire

Size	Order code (pre-wired types with 2 m cable length) ^{*1}	
	DC 3-wire Operation mode NO	DC 2-wire Operation mode NO
8-mm dia.	■	—

^{*1} Cable length from sensor head to remote amplifier is 0.4 m

^{*2} The remote amplifier is equipped with a M12 plug with 30 cm cable. Cable length from sensor head to remote amplifier is 0.5 m

Specifications

Item	dia 3	dia 5.4	dia 8		M12
	E2EC-CR8D_	E2EC-C1R5D_	E2EC-MC E2EC-QC	E2EC-C3D_	E2EC-X4D_
Sensing distance	0.8 mm ±15%	1.5 mm ±10%	2 mm ±10%	3 mm ±10%	4 mm ±10%
Response frequency	1.5 kHz		100 Hz	1 kHz	
Power supply voltage (Operating voltage)	12 to 24 VDC (10 to 30 VDC) ripple (p-p): 10% max.				
Protective circuit	Surge absorber, short-circuit protection				
Degree of protection	IEC60529 IP67				
Material	Case	Brass	Stainless steel (SUS303)	Brass	
	Sensing surface	ABS	Stainless steel (SUS303)	ABS	

For miniature sizes with built-in amplifier see E2E small diameter

For miniature sizes with separate amplifiers see E2C

General purpose	Food, Beverage and Pharma	Automotive	Semiconductor	Material handling	Accessories
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

Miniature inductive sensor in cylindrical metal housing

The E2E Small Diameter line with housing sizes from dia 3 mm to dia 5.4 mm is part of the E2E family and is the ideal solution where space is crucial. The metal housing provides high mechanical protection.



- Miniature housing sizes from dia 3 mm to dia 5.4 mm
- Stainless steel or brass housing
- 3 kHz switching frequency

Ordering information

Pre-wired

Size			Sensing distance	Housing material	Output configuration	Order code (for pre-wired types with 2 m cable length)	
						Operation mode NO	Operation mode NC
dia 3 mm	■	—	0.6 mm	Stainless steel	PNP	E2E-CR6B1	E2E-CR6B2
dia 4 mm	■	—	0.8 mm		NPN	E2E-CR6C1	E2E-CR6C2
				PNP	E2E-CR8B1	E2E-CR8B2	
M5	■	—	1 mm	brass	NPN	E2E-CR8C1	E2E-CR8C2
dia 5.4 mm					PNP	E2E-X1B1	E2E-X1B2
					NPN	E2E-X1C1	E2E-X1C2
					PNP	E2E-C1B1	E2E-C1B2
					NPN	E2E-C1C1	E2E-C1C2

Connector versions (M8, 3-pin)

Size			Sensing distance	Housing material	Output configuration	Order code (for M8 3-pin connector types)	
						Operation mode NO	Operation mode NC
dia 4 mm	■	—	0.8 mm	Stainless steel	PNP	E2E-CR8B1-M5	E2E-CR8B2-M5
					NPN	E2E-CR8C1-M5	E2E-CR8C2-M5
M5	■	—	1 mm	brass	PNP	E2E-X1B1-M5	E2E-X1B2-M5
					NPN	E2E-X1C1-M5	E2E-X1C2-M5

Specifications

Item	3 dia.	4 dia.	M5	5.4 dia.
	E2E-CR6_	E2E-CR8C_/B_	E2E-X1C_/B_	E2E-C1C_/B_
Sensing distance	0.6 mm ±15%	0.8 mm ±15%	1 mm ±15%	
Response frequency	2 kHz	3 kHz		
Power supply voltage (operating voltage)	12 to 24 VDC (10 to 30 VDC), ripple (p-p): 10% max.			
Protective circuit	Power supply reverse polarity protection, surge suppressor			
Ambient temperature	Operating/Storage: -25 °C to 70 °C (with no icing or condensation)			
Degree of protection	IEC 60529 IP67			
Material	Case	Stainless steel (SUS303)		Brass-nickel plated
	Sensing surface	Heat-resistant ABS		

Smaller size and longer sensing distance see E2EC

For cable connectors see page 19

General purpose	Food, Beverage and Pharma	Automotive	Semiconductor	Material handling	Accessories
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Miniature square inductive sensor in plastic housing

The E2S family features miniature block style plastic housings for simple mounting on flat surfaces. The durable plastic housing with front or side facing sensing surfaces, provide best value-performance ratio for machine part movement detection.

- Miniature housing with long sensing ranges
- Front and side facing sensing faces
- Models with simple one-screw mounting
- IP67

Ordering information

DC 2-wire models

Size in mm (HxWxD)			Sensing distance	Sensing face		Order code (pre-wired types with 1 m cable length)	
						Operation mode NO	Operation mode NC
19x6x6	–	■	1.6 mm	■	–	E2S-W11 1M	E2S-W12 1M
23x8x8	–	■	2.5 mm	–	■	E2S-Q11 1M	E2S-Q12 1M
				■	–	E2S-W21 1M	E2S-W22 1M
				–	■	E2S-Q21 1M	E2S-Q22 1M

DC 3-wire models

Size in mm (HxWxD)			Sensing distance	Sensing face		Output specifications	Order code (pre-wired types with 1 m cable length)	
							Operation mode NO	Operation mode NC
19x6x6	–	■	1.6 mm	■	–	NPN	E2S-W13 1M	E2S-W14 1M
27x8x8	–	■	2.5 mm	–	■		E2S-Q13 1M	E2S-Q14 1M
				■	–		E2S-W23 1M	E2S-W24 1M
				–	■		E2S-Q23 1M	E2S-Q24 1M
19x6x6			1.6 mm	■	–	PNP	E2S-W15 1M	E2S-W16 1M
23x8x8			2.5 mm	–	■		E2S-Q15 1M	E2S-Q16 1M
				■	–		E2S-W25 1M	E2S-W26 1M
				–	■		E2S-Q25 1M	E2S-Q26 1M

Specifications

DC 2-wire models

Item	E2S-W11 E2S-W12	E2S-Q11 E2S-Q12	E2S-W21 E2S-W22	E2S-Q21 E2S-Q22
Sensing distance	1.6 mm ±10%		2.5 mm ±15%	
Response frequency	1 kHz min.			
Power supply voltage (operating voltage)	12 to 24 VDC (10 to 30 VDC), ripple (p-p): 10% max.			
Protective circuit	Surge suppressor; power supply reverse polarity protection			

DC 3-wire models

Item	E2S-W13 E2S-W14	E2S-Q13 E2S-Q14	E2S-W23 E2S-W24	E2S-Q23 E2S-Q24	E2S-W15 E2S-W16	E2S-Q15 E2S-Q16	E2S-W25 E2S-W26	E2S-Q25 E2S-Q26
Sensing distance	1.6 mm ±10%		2.5 mm ±15%		1.6 mm ±10%		2.5 mm ±15%	
Response frequency	1 kHz min.							
Power supply voltage (operating voltage)	12 to 24 VDC (10 to 30 VDC), ripple (p-p): 10% max.							
Protective circuit	Surge suppressor; power supply reverse polarity protection							
Ambient temperature	Operating: -25 to 70°C, storage: -40 to 85°C (with no icing or condensation)							
Degree of protection	IEC60529 IP67							
Material	Case	Polyarylate						

General purpose	Food, Beverage and Pharma	Automotive	Semiconductor	Material handling	Accessories
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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 2-wire models

Size in mm (HxWxD)	Sensing distance		Order code (for pre-wired types with 2 m cable length)		
	Operation mode NO	Operation mode NC	Order code	Order code	
31x18x10	—	■	5 mm	TL-W5MD1	TL-W5MD2

DC 3-wire models

Size in mm (HxWxD)	Sensing distance		Order code (for pre-wired types with 2m cable length)				
	PNP-NO	PNP-NC	NPN-NO	NPN-NC	Order code	Order code	
25x8x5	—	■	1.5 mm	TL-W1R5MB1	—	TL-W1R5MC1	—
22x8x6	—	■	3 mm	TL-W3MB1	TL-W3MB2	TL-W3MC1	TL-W3MC2
31x18x10	—	■	5 mm	TL-W5MB1	TL-W5MB2	TL-W5MC1	TL-W5MC2
53x40x23	—	■	20 mm	—	—	TL-W20ME1	TL-W20ME2
31x18x10	■	—	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	0.5 kHz	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.
Protective circuit	Surge absorber; short-circuit protection		Surge suppressor; power supply reverse polarity protection			
Ambient temperature	Operating/Storage: -25 to 70°C (with no icing or condensation)					
Degree of protection	IEC60529 IP67					
Material	Case	Heat-resistant ABS resin			Diecast aluminum	Heat-resistant ABS resin
	Sensing surface	Heat-resistant ABS resin				

General purpose	Food, Beverage and Pharma	Automotive	Semiconductor	Material handling	Accessories
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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 versions (M12)

Size in mm (HxWxD)			Sensing distance	Sensing face	Output configuration	Order code (for M12 connector types)	
						Operation mode NO	Operation mode NO + NC
67x40x40	■	-	20 mm	Changeable	NPN	E2Q5-N20E1-M1	E2Q5-N20E3-M1
			40 mm		PNP	E2Q5-N20F1-M1	E2Q5-N20F3-M1
	-	■			40 mm	NPN	E2Q5-N40ME1-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 (operating voltage)	10 to 30 VDC	
Protective circuit	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

For cable connectors see page 19

General purpose

Food, Beverage and Pharma

Automotive

Semiconductor

Material handling

Accessories

Cable connectors

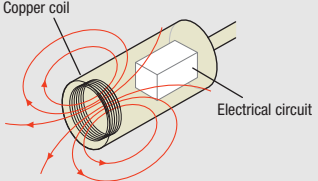
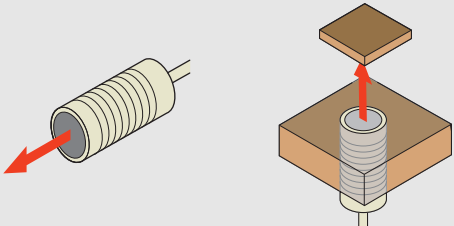
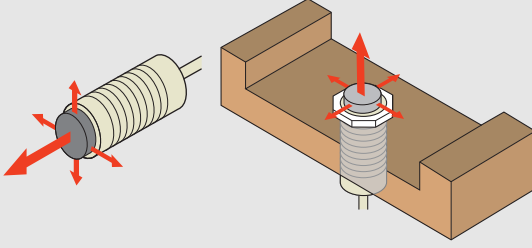
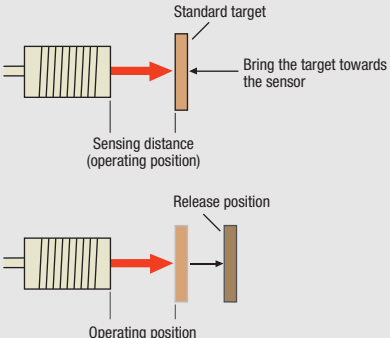
Size	Shape	Type	Features	Material		Order code	
				Nut	Cable		
M8		General purpose (screw)	• 3 pin (LED optionally)	Brass (CuZn)	PVC 2 m	XS3F-M8PVC3S2M	XS3F-M8PVC3A2M
			• 4pin		PUR 2 m		
		Detergent resistant	4 pin	Stainless steel (SUS316L)	PVC 2 m	Y92E-S08PVC4S2M-L	Y92E-S08PVC4A2M-L
M12		General purpose (screw)	• 3 wire (LED optionally)	Brass (CuZn)	PVC 2 m	XS2F-M12PVC3S2M	XS2F-M12PVC3A2M
			• 4 wire		PUR 2 m		
		Robotic	4 pin	Brass (CuZn)	Robotic PVC 2m	XS3F-M421-402-R	XS3F-M422-402-R
M12		General purpose (screw)	• 4 wire	Brass (CuZn)	PVC 2 m	XS2F-M12PVC4S2M	XS2F-M12PVC4A2M
			• 5 wire		PUR 2 m		
		Detergent resistant	4 wire	Stainless steel (SUS316L)	PVC 2 m	Y92E-S12PVC4S2M-L	Y92E-S12PVC4A2M-L
M12		105°C Heat resistant	4 wire	Stainless steel (SUS316L)	Heat resistant PVC 2 m	XS2F-E421-D80-E	XS2F-E422-D80-E
			Twist & click		4 wire	Nickel plated Zinc	PVC 2 m
		Robotic	4 wire	Brass (CuZn)	Robotic PVC 2M	XS2F-D421-D80-R	XS2F-D422-D80-R
Fiber amplifier (E3X) connector		Fiber amplifier connectors	Special fiber connector - 4 wire	PBT	PVC 2 m	E3X-CN21	
			Special fiber connector + M8 plug	Plug: Zinc diecast	PVC 30 cm with M8 4-pin plug	E3X-CN21-M3J-2 0.3M	
		Special fiber connector + M12 plug			PVC 30 cm with M12 4-pin plug	E3X-CN21-M1J 0.3M	
Photo-micro-sensor (EE-SX) connector		Cable connector	standard cable	Nylon	PVC 2m	EE-1017 2M	
			robotic cable				EE-1017-R 2M
M8/M12		Confectionable	Plugs and connectors for self assembly	Brass	n.a.	XS2G, XS2C ^{*1} Y92E_conf	
M12		Field I/O boxes	Direct wiring or Devicement communication	-		XW3B, XW3D, DRT2 ^{*1}	
M8/M12		T-connectors, covers, accessories and extended wiring portfolio	n.a.	-		XS2R, XS3R, XY2F, .. ^{*1}	

*1 Refer to complete accessory datasheet E26E for details.

For more information see E26E accessory datasheet on www.industrial.omron.eu

General purpose	Food, Beverage and Pharma	Automotive	Semiconductor	Material handling	Accessories
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Inductive proximity switch

Item		
<p>Principle of operation</p>		<p>An inductive proximity sensor consists of a coil wound around a ferrite core at the sensing head. A high frequency is applied to this, generating an oscillating electromagnetic field around it. This is monitored by internal circuitry.</p> <p>When a metallic object travels toward the field, electric currents are created in the object (eddy currents). As the target approaches the sensing face these increase in size.</p> <p>These currents cause a transformer like effect, as a result the energy in the detecting coil lessens and the oscillations reduce. As the object moves in closer the oscillation finally stops.</p> <p>The monitoring circuitry detects the stopping of the oscillations and then switches the output on. The object has now been detected.</p> <p>Because the operating principle uses an electromagnetic field, proximity sensors excel over the likes of photoelectric sensors in environmental resistance. The likes of water, oil or dirt generally have no influence on the operation of the sensor making the use on machine tools etc. common place.</p>
<p>Shielded sensors (flush mounting)</p>		<p>Shielded sensors are made with a shielding plate around the ferrite core. This has the effect of limiting the electromagnetic field to the front of the head. The sensor can be mounted flush in metal surfaces. This gives the advantage of mechanical protection, along with sensing directly adjacent to the sensing face. This limits the sensing range, but the sensor can be mounted with ease with surrounding metals taking no effect.</p>
<p>Unshielded sensors (non-flush mounting)</p>		<p>Unlike the shielded sensor there is no shielding around the ferrite core. This gives a greater sensing range than the equivalent diameter shielded proximity sensor. For the same diameter the range is generally doubled.</p> <p>As the field extends to the side of the proximity switch it can be influenced by metals in this area. Thus it cannot be flush mounted and requires more distance to other proximity sensors or metal parts.</p>
<p>Sensing distance</p>		<p>The sensing distances quoted in the specifications for the proximity sensors are based on a standard target. This target (known as a standard object) is a square plate of mild steel 1 mm thick, a primarily ferrous object.</p> <p>When the target reaches the point where the sensor operates, this is the sensing distance.</p> <p>The sensor will release (i.e. turn off) at a point lightly further from the sensing face (hysteresis).</p>

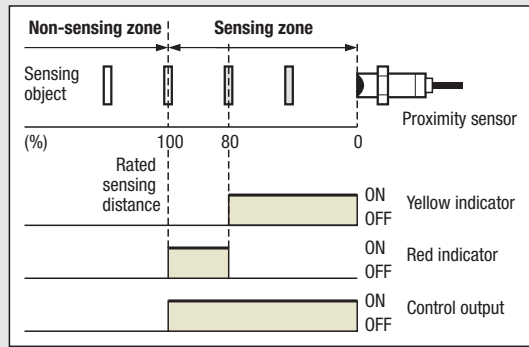
Item

Output and Connection

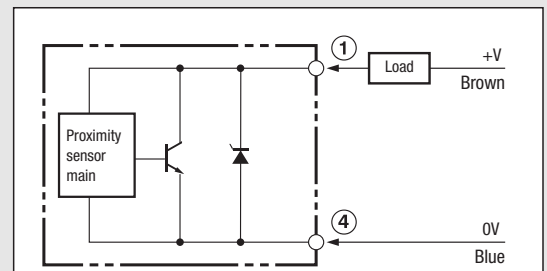
For the output mode NO (normally open) the control output is OFF if no object is present.

DC 2-wire

Timing chart for NO (normally open)



Output circuit



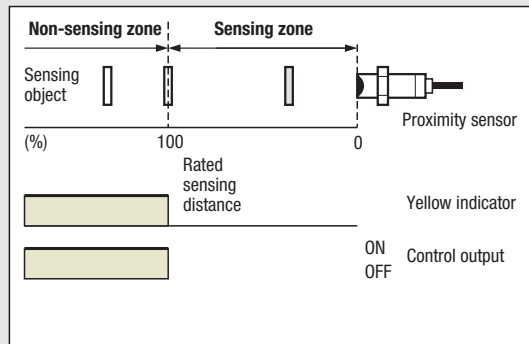
M12 Connector Pin Arrangement



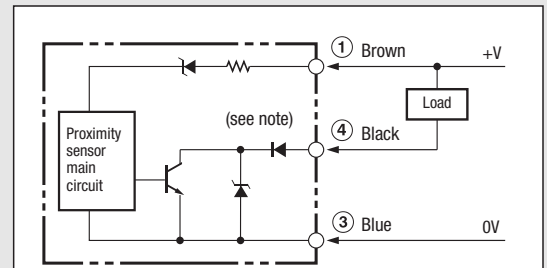
For the output mode NC (normally closed) the control output is ON if no object is present.

DC 3-wire

Timing chart for NC (normally closed)



Output circuit (example for NPN)



Note: With M8 connector models, there is no output reverse polarity protection diode.

M12 Connector (see note)



M8 Connector (3 Pin)



M8 Connector (4 Pin)

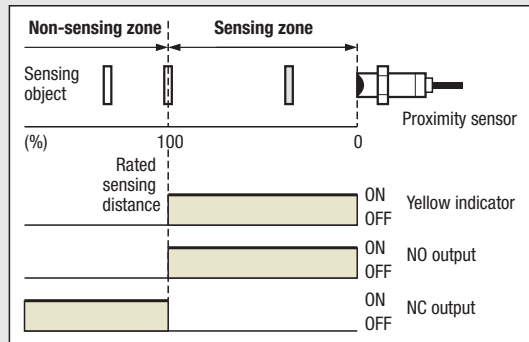


Note: Terminal 2 of the M12 connector is not used.

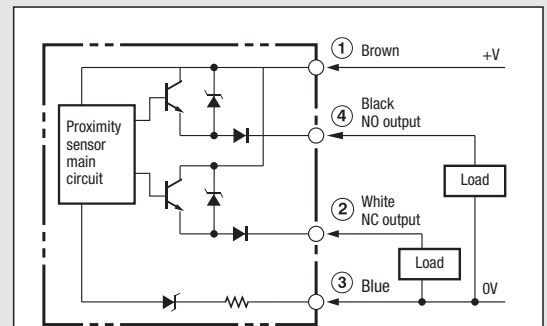
For the output mode NO+NC (antivalent) the NO output is OFF and the NC output is ON if no object is present.

DC 4-wire

Timing chart for NO+NC (antivalent)



Output circuit (example for PNP)

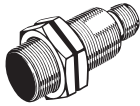


M12 Connector Pin Arrangement

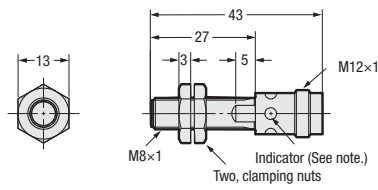


Inductive sensors

Models: E2A, E2AU, E2A DC 2-wire

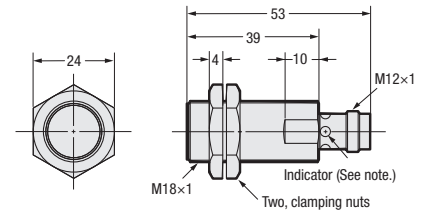


E2A-S08KS02-M1-__



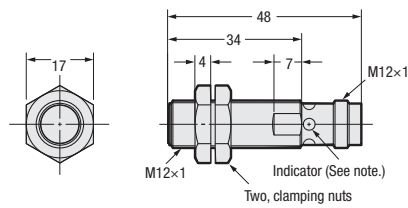
Note: Operation indicator (yellow LED, 4×90°)

E2A-M18KS08-M1-__ /E2A-S18KS08-M1-__



Note: Operation indicator (yellow LED, 4×90°)

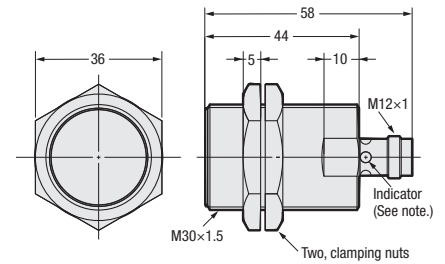
E2A-M12KS04-M1-__ /E2A-S12KS04-M1-__



Note 1: Operation indicator (yellow LED, 4×90°)

Note 2: for NO+NC (-B3 /-C3) models the total length is 4 mm longer

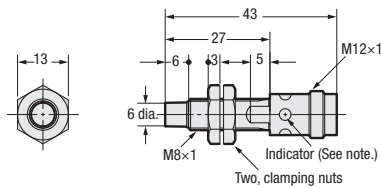
E2A-M30KS15-M1-__ /E2A-S30KS15-M1-__



Note: Operation indicator (yellow LED, 4×90°)

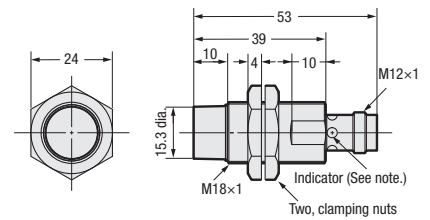


E2A-S08KN04-M1-__



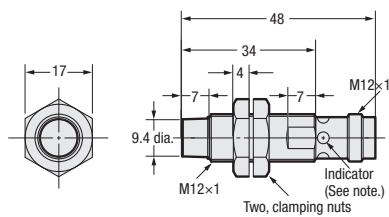
Note: Operation indicator (yellow LED, 4×90°)

E2A-M18KN16-M1-__ /E2A-S18KN16-M1-__



Note: Operation indicator (yellow LED, 4×90°)

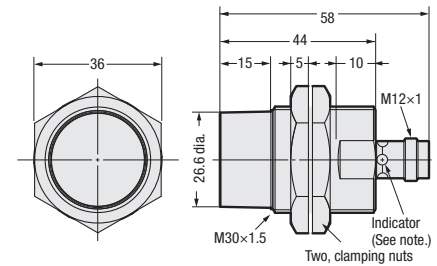
E2A-M12KN08-M1-__ /E2A-S12KN08-M1-__



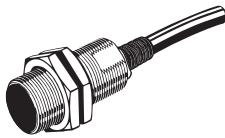
Note 1: Operation indicator (yellow LED, 4×90°)

Note 2: for NO+NC (-B3 /-C3) models the total length is 4 mm longer

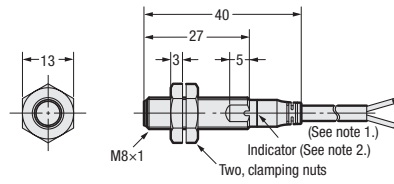
E2A-M30KN20-M1-__ /E2A-S30KN20-M1-__



Note: Operation indicator (yellow LED, 4×90°)

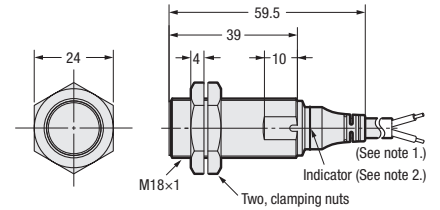


E2A-S08KS02-WP-__



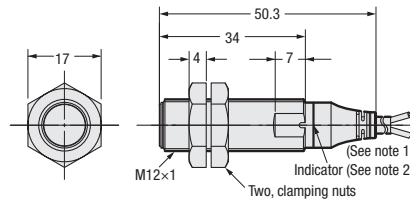
- Note 1.** 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
Note 2. Operation indicator (yellow)

E2A-M18KS08-WP-__ /E2A-S18KS08-WP-__



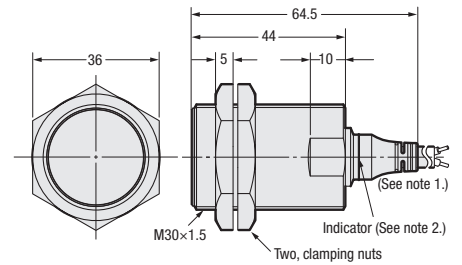
- Note 1.** 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
Note 2. Operation indicator (yellow)

E2A-M12KS04-WP-__ /E2A-S12KS04-WP-__



- Note 1.** 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
Note 2. Operation indicator (yellow)
Note 3. for NO+NC (-B3 /-C3) models the total length is 4 mm longer

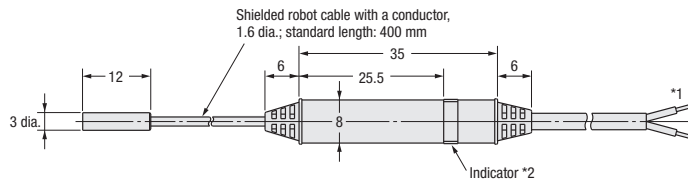
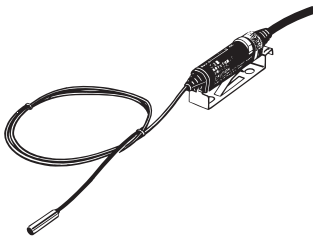
E2A-M30KS15-WP-__ /E2A-S30KS15-WP-__



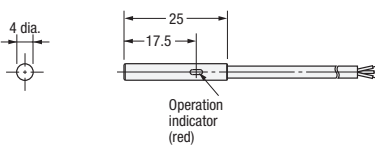
- Note 1.** 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
Note 2. Operation indicator (yellow)

Models: E2EC, E2E Small diameter

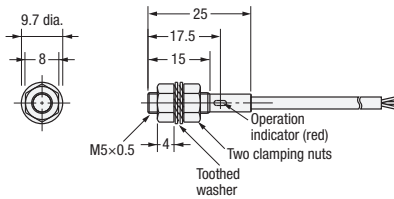
E2EC-CR8D_



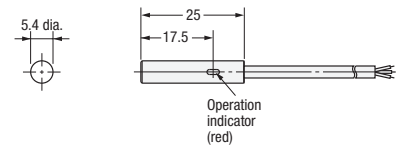
E2E-CR8_



E2E-X1_



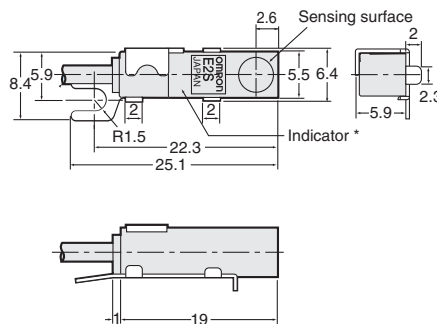
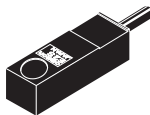
E2E-C1_



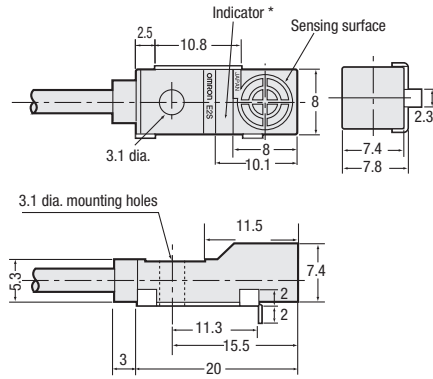
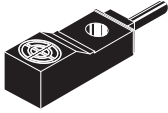
(Examples: pre-wired versions, please note that minor variations of the dimensions are possible for different models e.g. for connector models)

Models: E2S

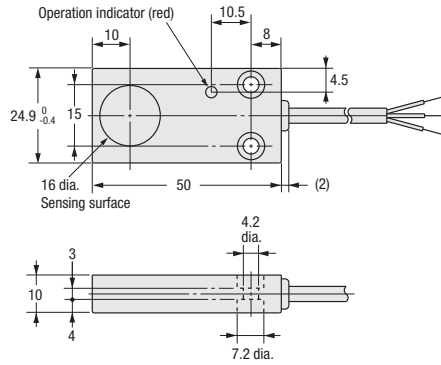
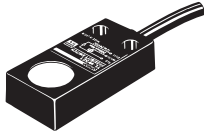
E2S-W1_



E2S-W2_



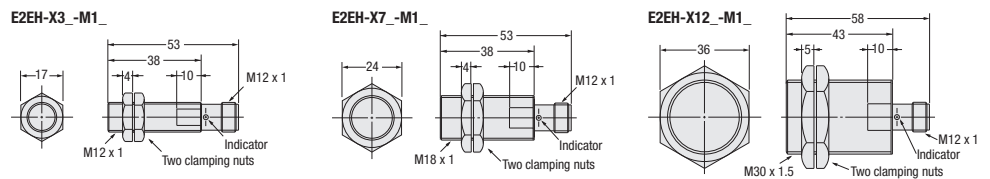
TL-W5E_ TL-W5F_



(Example: E2S-W and TL-W5 (sensing face on side) - for other models (e.g. front facing models) please see complete datasheet for details)

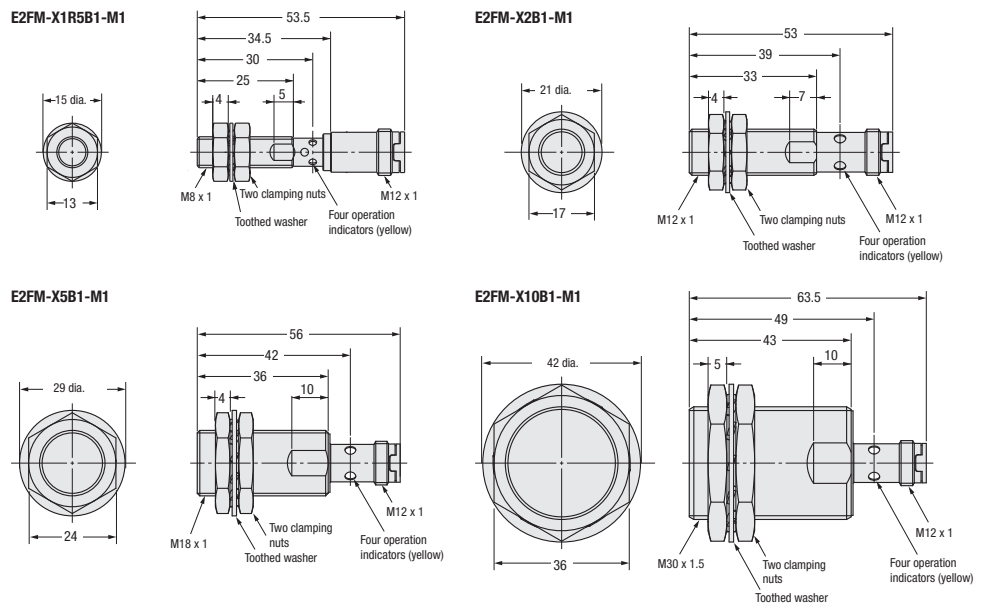
Models: E2EH

E2EH-X_-M1_



Models: E2FM

E2FM-X_B1-M1



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