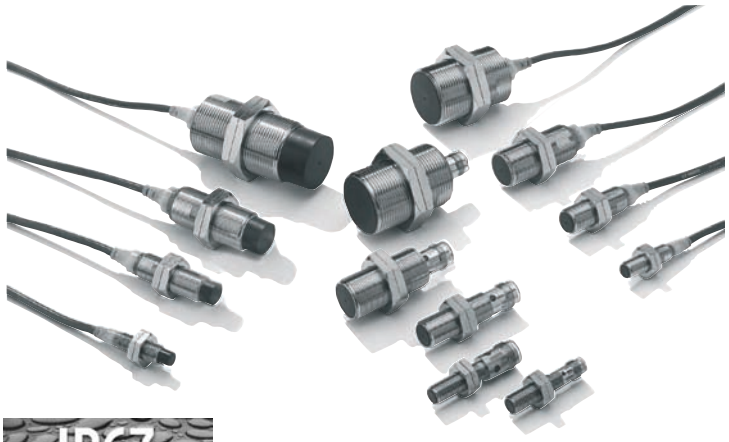
OMRON

Cylindrical Inductive Proximity Sensor

E2A Single Sensing Distance

High quality for extra long life in daily use

- wide portfolio range through modular concept
- designed and tested for extra long life
- IP67 and IP69k for highest protection in wet environments
- continuously high quality level through specialized manufacturing process
- DC 3-wire and DC 2-wire models
- Normally open (NO), normally closed (NC) and antivalent (NO+NC) models
- Stainless steel and brass housings
- Pre-wired versions with different cable materials and diameters, M8 and M12 connector types, pre-wired types with cable end connectors



CE

Ordering Information

DC 3-wire models (NO + NC: DC 4-wire) *2

Size		Sensing distance	Connection	Body material	Thread length (overall length)	Output configuration	Operation mode NO	Operation mode NC
M8	Shielded	1.5 mm	Pre-wired	Stainless steel*1	27 (40)	PNP	E2A-S08KS01-WP-B1 2M	E2A-S08KS01-WP-B2 2M
						NPN	E2A-S08KS01-WP-C1 2M	E2A-S08KS01-WP-C2 2M
					49 (62)	PNP	E2A-S08LS01-WP-B1 2M	E2A-S08LS01-WP-B2 2M
						NPN	E2A-S08LS01-WP-C1 2M	E2A-S08LS01-WP-C2 2M
			M12 connector		27 (43)	PNP	E2A-S08KS01-M1-B1	E2A-S08KS01-M1-B2
						NPN	E2A-S08KS01-M1-C1	E2A-S08KS01-M1-C2
					49 (65)	PNP	E2A-S08LS01-M1-B1	E2A-S08LS01-M1-B2
						NPN	E2A-S08LS01-M1-C1	E2A-S08LS01-M1-C2
			M8 connector (3-pin)		27 (39)	PNP	E2A-S08KS01-M5-B1	E2A-S08KS01-M5-B2
						NPN	E2A-S08KS01-M5-C1	E2A-S08KS01-M5-C2
					49 (61)	PNP	E2A-S08LS01-M5-B1	E2A-S08LS01-M5-B2
						NPN	E2A-S08LS01-M5-C1	E2A-S08LS01-M5-C2
			M8 connector (4-pin)		27 (39)	PNP	E2A-S08KS01-M3-B1	E2A-S08KS01-M3-B2
						NPN	E2A-S08KS01-M3-C1	E2A-S08KS01-M3-C2
					49 (61)	PNP	E2A-S08LS01-M3-B1	E2A-S08LS01-M3-B2
						NPN	E2A-S08LS01-M3-C1	E2A-S08LS01-M3-C2
	Non-shielded	2.0 mm	Pre-wired		27 (40)	PNP	E2A-S08KN02-WP-B1 2M	E2A-S08KN02-WP-B2 2M
						NPN	E2A-S08KN02-WP-C1 2M	E2A-S08KN02-WP-C2 2M
					49 (62)	PNP	E2A-S08LN02-WP-B1 2M	E2A-S08LN02-WP-B2 2M
						NPN	E2A-S08LN02-WP-C1 2M	E2A-S08LN02-WP-C2 2M
			M12 connector		27 (43)	PNP	E2A-S08KN02-M1-B1	E2A-S08KN02-M1-B2
						NPN	E2A-S08KN02-M1-C1	E2A-S08KN02-M1-C2
					49 (65)	PNP	E2A-S08LN02-M1-B1	E2A-S08LN02-M1-B2
						NPN	E2A-S08LN02-M1-C1	E2A-S08LN02-M1-C2
			M8 connector (3-pin)		27 (39)	PNP	E2A-S08KN02-M5-B1	E2A-S08KN02-M5-B2
						NPN	E2A-S08KN02-M5-C1	E2A-S08KN02-M5-C2
					49 (61)	PNP	E2A-S08LN02-M5-B1	E2A-S08LN02-M5-B2
						NPN	E2A-S08LN02-M5-C1	E2A-S08LN02-M5-C2
			M8 connector (4 pin)		27 (39)	PNP	E2A-S08KN02-M3-B1	E2A-S08KN02-M3-B2
						NPN	E2A-S08KN02-M3-C1	E2A-S08KN02-M3-C2
					49 (61)	PNP	E2A-S08LN02-M3-B1	E2A-S08LN02-M3-B2
						NPN	E2A-S08LN02-M3-C1	E2A-S08LN02-M3-C2

Size		Sensing distance	Connection	Body material	Thread length (overall length)	Output configuration	Operation mode NO	Operation mode NC	Operation mode NO + NC
M12	Shielded	2.0 mm	Pre-wired	Brass*3	34 (50)	PNP	E2A-M12KS02-WP-B1 2M	E2A-M12KS02-WP-B2 2M	E2A-M12KS02-WP-B3 2M
						NPN	E2A-M12KS02-WP-C1 2M	E2A-M12KS02-WP-C2 2M	E2A-M12KS02-WP-C3 2M
					56 (72)	PNP	E2A-M12LS02-WP-B1 2M	E2A-M12LS02-WP-B2 2M	E2A-M12LS02-WP-B3 2M
						NPN	E2A-M12LS02-WP-C1 2M	E2A-M12LS02-WP-C2 2M	E2A-M12LS02-WP-C3 2M
			M12 connector	Brass*3	34 (48)	PNP	E2A-M12KS02-M1-B1	E2A-M12KS02-M1-B2	E2A-M12KS02-M1-B3
						NPN	E2A-M12KS02-M1-C1	E2A-M12KS02-M1-C2	E2A-M12KS02-M1-C3
					56 (70)	PNP	E2A-M12LS02-M1-B1	E2A-M12LS02-M1-B2	E2A-M12LS02-M1-B3
						NPN	E2A-M12LS02-M1-C1	E2A-M12LS02-M1-C2	E2A-M12LS02-M1-C3
			M8 connector (3-pin)	Brass*3	34 (48)	PNP	E2A-M12KS02-M5-B1	E2A-M12KS02-M5-B2	n.a.
						NPN	E2A-M12KS02-M5-C1	E2A-M12KS02-M5-C2	n.a.
					56 (70)	PNP	E2A-M12LS02-M5-B1	E2A-M12LS02-M5-B2	n.a.
						NPN	E2A-M12LS02-M5-C1	E2A-M12LS02-M5-C2	n.a.
			M8 connector (4-pin)	Brass*3	34 (48)	PNP	E2A-M12KS02-M3-B1	E2A-M12KS02-M3-B2	n.a.
						NPN	E2A-M12KS02-M3-C1	E2A-M12KS02-M3-C2	n.a.
					56 (70)	PNP	E2A-M12LS02-M3-B1	E2A-M12LS02-M3-B2	n.a.
						NPN	E2A-M12LS02-M3-C1	E2A-M12LS02-M3-C2	n.a.
	Non-shielded	5.0 mm	Pre-wired	Brass*3	34 (50)	PNP	E2A-M12KN05-WP-B1 2M	E2A-M12KN05-WP-B2 2M	E2A-M12KN05-WP-B3 2M
						NPN	E2A-M12KN05-WP-C1 2M	E2A-M12KN05-WP-C2 2M	E2A-M12KN05-WP-C3 2M
					56 (72)	PNP	E2A-M12LN05-WP-B1 2M	E2A-M12LN05-WP-B2 2M	E2A-M12LN05-WP-B3 2M
						NPN	E2A-M12LN05-WP-C1 2M	E2A-M12LN05-WP-C2 2M	E2A-M12LN05-WP-C3 2M
			M12 connector	Brass*3	34 (48)	PNP	E2A-M12KN05-M1-B1	E2A-M12KN05-M1-B2	E2A-M12KN05-M1-B3
						NPN	E2A-M12KN05-M1-C1	E2A-M12KN05-M1-C2	E2A-M12KS05-M1-C3
					56 (70)	PNP	E2A-M12LN05-M1-B1	E2A-M12LN05-M1-B2	E2A-M12LS05-M1-B3
						NPN	E2A-M12LN05-M1-C1	E2A-M12LN05-M1-C2	E2A-M12LS05-M1-C3
			M8 connector (3-pin)	Brass*3	34 (48)	PNP	E2A-M12KN05-M5-B1	E2A-M12KN05-M5-B2	n.a.
						NPN	E2A-M12KN05-M5-C1	E2A-M12KN05-M5-C2	n.a.
					56 (70)	PNP	E2A-M12LN05-M5-B1	E2A-M12LN05-M5-B2	n.a.
						NPN	E2A-M12LN05-M5-C1	E2A-M12LN05-M5-C2	n.a.
			M8 connector (4-pin)	Brass*3	34 (48)	PNP	E2A-M12KN05-M3-B1	E2A-M12KN05-M3-B2	n.a.
						NPN	E2A-M12KN05-M3-C1	E2A-M12KN05-M3-C2	n.a.
					56 (70)	PNP	E2A-M12LN05-M3-B1	E2A-M12LN05-M3-B2	n.a.
						NPN	E2A-M12LN05-M3-C1	E2A-M12LN05-M3-C2	n.a.
M18	Shielded	5.0 mm	Pre-wired	Brass*3	39 (59)	PNP	E2A-M18KS05-WP-B1 2M	E2A-M18KS05-WP-B2 2M	E2A-M18KS05-WP-B3 2M
						NPN	E2A-M18KS05-WP-C1 2M	E2A-M18KS05-WP-C2 2M	E2A-M18KS05-WP-C3 2M
					61 (81)	PNP	E2A-M18LS05-WP-B1 2M	E2A-M18LS05-WP-B2 2M	E2A-M18LS05-WP-B3 2M
						NPN	E2A-M18LS05-WP-C1 2M	E2A-M18LS05-WP-C2 2M	E2A-M18LS05-WP-C3 2M
			M12 connector	Brass*3	39 (53)	PNP	E2A-M18KS05-M1-B1	E2A-M18KS05-M1-B2	E2A-M18KS05-M1-B3
						NPN	E2A-M18KS05-M1-C1	E2A-M18KS05-M1-C2	E2A-M18KS05-M1-C3
					61 (75)	PNP	E2A-M18LS05-M1-B1	E2A-M18LS05-M1-B2	E2A-M18LS05-M1-B3
						NPN	E2A-M18LS05-M1-C1	E2A-M18LS05-M1-C2	E2A-M18LS05-M1-C3
			M8 connector (3-pin)	Brass*3	39 (53)	PNP	E2A-M18KS05-M5-B1	E2A-M18KS05-M5-B2	n.a.
						NPN	E2A-M18KS05-M5-C1	E2A-M18KS05-M5-C2	n.a.
					61 (75)	PNP	E2A-M18LS05-M5-B1	E2A-M18LS05-M5-B2	n.a.
						NPN	E2A-M18LS05-M5-C1	E2A-M18LS05-M5-C2	n.a.
			M8 connector (4-pin)	Brass*3	39 (53)	PNP	E2A-M18KS05-M3-B1	E2A-M18KS05-M3-B2	n.a.
						NPN	E2A-M18KS05-M3-C1	E2A-M18KS05-M3-C2	n.a.
					61 (75)	PNP	E2A-M18LS05-M3-B1	E2A-M18LS05-M3-B2	n.a.
						NPN	E2A-M18LS05-M3-C1	E2A-M18LS05-M3-C2	n.a.
	Non-shielded	10.0 mm	Pre-wired	Brass*3	39 (59)	PNP	E2A-M18KN10-WP-B1 2M	E2A-M18KN10-WP-B2 2M	E2A-M18KN10-WP-B3 2M
						NPN	E2A-M18KN10-WP-C1 2M	E2A-M18KN10-WP-C2 2M	E2A-M18KN10-WP-C3 2M
					61 (81)	PNP	E2A-M18LN10-WP-B1 2M	E2A-M18LN10-WP-B2 2M	E2A-M18LN10-WP-B3 2M
						NPN	E2A-M18LN10-WP-C1 2M	E2A-M18LN10-WP-C2 2M	E2A-M18LN10-WP-C3 2M
			M12 connector	Brass*3	39 (53)	PNP	E2A-M18KN10-M1-B1	E2A-M18KN10-M1-B2	E2A-M18KN10-M1-B3
						NPN	E2A-M18KN10-M1-C1	E2A-M18KN10-M1-C2	E2A-M18KS10-M1-C3
					61 (75)	PNP	E2A-M18LN10-M1-B1	E2A-M18LN10-M1-B2	E2A-M18LS10-M1-B3
						NPN	E2A-M18LN10-M1-C1	E2A-M18LN10-M1-C2	E2A-M18LS10-M1-C3
			M8 connector (3-pin)	Brass*3	39 (53)	PNP	E2A-M18KN10-M5-B1	E2A-M18KN10-M5-B2	n.a.
						NPN	E2A-M18KN10-M5-C1	E2A-M18KN10-M5-C2	n.a.
					61 (75)	PNP	E2A-M18LN10-M5-B1	E2A-M18LN10-M5-B2	n.a.
						NPN	E2A-M18LN10-M5-C1	E2A-M18LN10-M5-C2	n.a.
			M8 connector (4-pin)	Brass*3	39 (53)	PNP	E2A-M18KN10-M3-B1	E2A-M18KN10-M3-B2	n.a.
						NPN	E2A-M18KN10-M3-C1	E2A-M18KN10-M3-C2	n.a.
					61 (75)	PNP	E2A-M18LN10-M3-B1	E2A-M18LN10-M3-B2	n.a.
						NPN	E2A-M18LN10-M3-C1	E2A-M18LN10-M3-C2	n.a.

Size		Sensing distance	Connection	Body material	Thread length (overall length)	Output configuration	Operation mode NO	Operation mode NC	Operation mode NO + NC
M30	Shielded	10.0 mm	Pre-wired	Brass*3	44 (64)	PNP	E2A-M30KS10-WP-B1 2M	E2A-M30KS10-WP-B2 2M	E2A-M30KS10-WP-B3 2M
						NPN	E2A-M30KS10-WP-C1 2M	E2A-M30KS10-WP-C2 2M	E2A-M30KS10-WP-C3 2M
					66 (86)	PNP	E2A-M30LS10-WP-B1 2M	E2A-M30LS10-WP-B2 2M	E2A-M30LS10-WP-B3 2M
						NPN	E2A-M30LS10-WP-C1 2M	E2A-M30LS10-WP-C2 2M	E2A-M30LS10-WP-C3 2M
			M12 connector	Brass*3	44 (58)	PNP	E2A-M30KS10-M1-B1	E2A-M30KS10-M1-B2	E2A-M30KS10-M1-B3
						NPN	E2A-M30KS10-M1-C1	E2A-M30KS10-M1-C2	E2A-M30KS10-M1-C3
					66 (80)	PNP	E2A-M30LS10-M1-B1	E2A-M30LS10-M1-B2	E2A-M30LS10-M1-B3
						NPN	E2A-M30LS10-M1-C1	E2A-M30LS10-M1-C2	E2A-M30LS10-M1-C3
			M8 connector (3-pin)	Brass*3	44 (58)	PNP	E2A-M30KS10-M5-B1	E2A-M30KS10-M5-B2	n.a.
						NPN	E2A-M30KS10-M5-C1	E2A-M30KS10-M5-C2	n.a.
					66 (80)	PNP	E2A-M30LS10-M5-B1	E2A-M30LS10-M5-B2	n.a.
						NPN	E2A-M30LS10-M5-C1	E2A-M30LS10-M5-C2	n.a.
			M8 connector (4-pin)	Brass*3	44 (58)	PNP	E2A-M30KS10-M3-B1	E2A-M30KS10-M3-B2	n.a.
						NPN	E2A-M30KS10-M3-C1	E2A-M30KS10-M3-C2	n.a.
					66 (80)	PNP	E2A-M30LS10-M3-B1	E2A-M30LS10-M3-B2	n.a.
						NPN	E2A-M30LS10-M3-C1	E2A-M30LS10-M3-C2	n.a.
	Non-shielded	18.0 mm	Pre-wired	Brass*3	44 (64) (See note.)	PNP	E2A-M30KN18-WP-B1 2M	E2A-M30KN18-WP-B2 2M	E2A-M30KN18-WP-B3 2M
						NPN	E2A-M30KN18-WP-C1 2M	E2A-M30KN18-WP-C2 2M	E2A-M30KN18-WP-C3 2M
					66 (86)	PNP	E2A-M30LN18-WP-B1 2M	E2A-M30LN18-WP-B2 2M	E2A-M30LN18-WP-B3 2M
						NPN	E2A-M30LN18-WP-C1 2M	E2A-M30LN18-WP-C2 2M	E2A-M30LN18-WP-C3 2M
			M12 connector	Brass*3	44 (58) (See note.)	PNP	E2A-M30KN18-M1-B1	E2A-M30KN18-M1-B2	E2A-M30KN18-M1-B3
						NPN	E2A-M30KN18-M1-C1	E2A-M30KN18-M1-C2	E2A-M30KN18-M1-C3
					66 (80)	PNP	E2A-M30LN18-M1-B1	E2A-M30LN18-M1-B2	E2A-M30LN18-M1-B3
						NPN	E2A-M30LN18-M1-C1	E2A-M30LN18-M1-C2	E2A-M30LN18-M1-C3
			M8 connector (3-pin)	Brass*3	44 (58) (See note.)	PNP	E2A-M30KN18-M5-B1	E2A-M30KN18-M5-B2	n.a.
						NPN	E2A-M30KN18-M5-C1	E2A-M30KN18-M5-C2	n.a.
					66 (80)	PNP	E2A-M30LN18-M5-B1	E2A-M30LN18-M5-B2	n.a.
						NPN	E2A-M30LN18-M5-C1	E2A-M30LN18-M5-C2	n.a.
			M8 connector (4-pin)	Brass*3	44 (58) (See note.)	PNP	E2A-M30KN18-M3-B1	E2A-M30KN18-M3-B2	n.a.
						NPN	E2A-M30KN18-M3-C1	E2A-M30KN18-M3-C2	n.a.
					66 (80)	PNP	E2A-M30LN18-M3-B1	E2A-M30LN18-M3-B2	n.a.
						NPN	E2A-M30LN18-M3-C1	E2A-M30LN18-M3-C2	n.a.

*1. Material specifications for stainless steel housing case: 1.4305 (W.-No.), SUS 303 (AISI), 2346 (SS). Please contact your OMRON representative for other stainless steel materials.
*2. Please contact your OMRON representative for DC 2-wire models.
*3. Stainless steel models are also available. Please contact your OMRON representative.
Note: M30 non-shielded Models with double sensing distance and short barrels cannot be mounted due to the necessary separation distance from the surrounding metal. Standard sensing models are thus available.

Connectivity

The E2A sensors are available with the following connectors and cable materials:

Pre-wired models

Standard cable lengths are 2m and 5m.
For other cable lengths please contact your OMRON representative.

Standard cable material: PVC (dia 4mm) -WP

Other available cable materials and sizes:

- PVC (dia 6mm) -WS
- PUR/PVC – PUR jacket (dia 4mm) -WA
- PUR/PVC – PUR jacket (dia 6mm) -WB
- PVC robotic cable (dia 4mm) -WR

Pre-wired models with cable end connectors

All pre-wired models can be fitted with cable and connectors.

Standard cable end connectors:

- M12 M1J
- M8 (4 pin) M3J
- M8 (3 pin) M5J

Other cable end connectors are available on request.

Connector models

Standard connectors: M12, M8 (4 or 3 pin) -M1, -M3, -M5

Model Number Legend

E2A□-□□□□□-□-□□-□□

1 2 3 4 5 6 7 8 9 10 11 12

Example: E2A-M12LS04-M1-B1 Standard, M12, long barrel, shielded, Sn=4 mm, M12 connector, PNP-NO
E2A-S08KN04-WP-B1 5M Standard, M8 stainless steel, short barrel, non-shielded, Sn=4 mm, pre-wired PVC cable, PNP-NO, cable length=5 m

1. Basic name

E2A

2. Sensing technology

Blank: Standard double distance

3. Housing shape and material

M: Cylindrical, metric threaded, brass

S: Cylindrical, metric threaded, stainless steel

4. Housing size

08: 8 mm

12: 12 mm

18: 18 mm

30: 30 mm

5. Barrel length

K: Standard length

L: Long body

6. Shield

S: Shielded

N: Non-shielded

7. Sensing distance

Numeral: Sensing distance: e.g. 02=2 mm, 16=16 mm

8. Kind of connection

WP: pre-wired, PVC, dia 4mm (standard)

WS: pre-wired, PVC, dia 6mm

WR: pre-wired, PVC, robotic cable, dia 4mm

WA: pre-wired, PUR/PVC (PUR jacket), dia 4mm

WB: pre-wired, PUR/PVC (PUR jacket), dia 6mm

M1: M12 connector (4 pin) *

M3: M8 connector (4 pin)

M5: M8 connector (3 pin)

M1J pre-wired with M12 cable end connector (4 pin)

M3J pre-wired with M8 cable end connector (4 pin)

M5J pre-wired with M8 cable end connector (3 pin)

9. Power source and output

B: DC, 3-wire, PNP open collector

C: DC, 3-wire, NPN open collector

D: DC, 2-wire

E: DC, 3-wire, NPN voltage output

F: DC, 3-wire, PNP voltage output

10. Operation mode

1: Normally open (NO)

2: Normally closed (NC)

3: Antivalent (NO+NC)

11. Specials (e.g., cable material, oscillating frequency)

12. Cable length

Blank: Connector type

Numeral: Cable length

Note: *In case of DC 2-wire models the M12 connector identifier is '-M1G'

Specifications

DC 3-wire Models / DC 4-wire (NO+NC)

Size		M8		M12	
Type		Shielded	Non-shielded	Shielded	Non-shielded
Item		**E2A-S08□S01-□□-B1** **E2A-S08□S01-□□-C1**	**E2A-S08□N02-□□-B1** **E2A-S08□N02-□□-C1**	**E2A-M12□S02-□□-B□** **E2A-M12□S02-□□-C□** **E2A-S12□S02-□□-B□** **E2A-S12□S02-□□-C□**	**E2A-M12□N05-□□-B□** **E2A-M12□N05-□□-C□** **E2A-S12□N05-□□-B□** **E2A-S12□N05-□□-C□**
Sensing distance		1.5 mm ±10%	2 mm ±10%	2 mm ±10%	5 mm ±10%
Setting distance		0 to 1.2 mm	0 to 1.6 mm	0 to 1.6 mm	0 to 4 mm
Differential travel		10% max. of sensing distance			
Target		Ferrous metal (The sensing distance decreases with non-ferrous metal.)			
Standard target (mild steel ST37)		8×8×1 mm	8×8×1 mm	12×12×1 mm	15×15×1 mm
Response frequency (See note 1.)		2,000 Hz	1,000 Hz	1,500 Hz	800 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 (See note 2.)	200 mA max. (32 VDC max.)			
	Residual voltage	2 V max. (under load current of 200 mA with cable length of 2 m)			
Indicator		Operation indicator (Yellow LED)			
Operation mode (with sensing object approaching)		-B1/-C1 models: NO -B2/-C2 models: NC -B3/ -C3 models: NO+NC For details, refer to the timing charts. (See note 4.)			
Protection circuit		Power source circuit reverse polarity protection, Surge suppressor, Short-circuit protection		Output reverse polarity protection, Power source circuit reverse polarity protection, Surge suppressor, Short-circuit protection	
Ambient air temperature		Operating: -40°C to 70°C, Storage: -40°C to 85°C (with no icing or condensation)			
Temperature influence (See note 2.)		±10% max. of sensing distance at 23°C within temperature range of -25°C to 70°C ±15% max. of sensing distance at 23°C within temperature range of -40°C to 70°C			
Ambient humidity		Operating: 35% to 95%, 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		500 m/s^2, 10 times each in X, Y and Z directions		1,000 m/s^2, 10 times each in X, Y and Z directions	
Standard and listings		IP67 after IEC 60529 IP69k after DIN 40050 EMC after EN60947-5-2 UL (CSA) E196555 (See note 3.)			
Connection method		Pre-wired models (standard is dia 4mm PVC cable with length = 2m). Please see chapter 'Connectivity' for details on different cable materials and lenghts and M8 or M12 connectors.			
Weight (packaged)	Pre-wired model	Approx. 65 g		Approx. 85 g	
	Connector model	M12 connector models: Approx. 20 g M8 connector models: Approx. 15 g		Approx. 35 g	
Material	Case	Stainless steel		Brass-nickel plated or stainless steel	
	Sensing surface	PBT			
	Cable	Standard cable is PVC dia 4mm. For other cable materials or diameters please refer to chapter 'Connectivity'			
	Clamping nut	Brass-nickel plated		Brass-nickel plated for brass models stainless steel for steel models	

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.

2. When using any model at an ambient temperature between -40°C and -25°C and a power voltage between 30 and 32 VDC, use a load current of 100 mA max.,

3. UL (CSA) [E196555]: Use class 2 circuit only.

4. -B3/ -C3 NO+NC models are available in M12, M18 and M30 housings with M12 connectors, pre-wired and with cable end connectors.

DC 3-wire Models / DC 4-wire (NO+NC)

Size		M18		M30		
Type		Shielded	Non-shielded	Shielded	Non-shielded	Non-shielded
	Item	E2A-M18□S05-□□-B□ E2A-M18□S05-□□-C□ E2A-S18□S05-□□-B□ E2A-S18□S05-□□-C□	E2A-M18□N10-□□-B□ E2A-M18□N10-□□-C□ E2A-S18□N10-□□-B□ E2A-S18□N10-□□-C□	E2A-M30□S10-□□-B□ E2A-M30□S10-□□-C□ E2A-S30□S10-□□-B□ E2A-S30□S10-□□-C□	E2A-M30KN18-□□-B□ E2A-M30KN18-□□-C□ E2A-S30KN18-□□-B□ E2A-S30KN18-□□-C□	E2A-M30LN18-□□-B□ E2A-M30LN18-□□-C□ E2A-S30LN18-□□-B□ E2A-S30LN18-□□-C□
Sensing distance		5 mm±10%	10 mm±10%	10 mm±10%	18 mm±10%	18 mm±10%
Setting distance		0 to 4 mm	0 to 8 mm	0 to 8 mm	0 to 14.5 mm	0 to 14.5 mm
Differential travel		10% max. of sensing distance				
Target		Ferrous metal (The sensing distance decreases with non-ferrous metal.)				
Standard target (mild steel ST37)		18×18×1 mm	30×30×1 mm	30×30×1 mm	54×54×1 mm	54×54×1 mm
Response frequency (See note 1.)		600 Hz	400 Hz	400 Hz	100 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 (See note 2.)	200 mA max. (32 VDC max.)				
	Residual voltage	2 V max. (under load current of 200 mA with cable length of 2 m)				
Indicator		Operation indicator (Yellow LED)				
Operation mode (with sensing object approaching)		-B1/-C1 models: NO -B2/-C2 models: NC -B3/ -C3 models: NO+NC For details, refer to the timing charts.				
Protection circuit		Output reverse polarity protection, Power source circuit reverse polarity protection, Surge suppressor, Short-circuit protection				
Ambient air temperature		Operating: -40°C to 70°C, Storage: -40°C to 85°C (with no icing or condensation)				
Temperature influence (See note 2.)		±10% max. of sensing distance at 23°C within temperature range of -25°C to 70°C ±15% max. of sensing distance at 23°C within temperature range of -40°C to 70°C				
Ambient humidity		Operating: 35% to 95%, 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		1,000 m/s^2, 10 times each in X, Y and Z directions				
Standard and listings		IP67 after IEC 60529 IP69k after DIN 40050 EMC after EN60947-5-2 UL (CSA) E196555 (See note 3.)				
Connection method		Pre-wired models (standard is dia 4mm PVC cable with length = 2m). Please see chapter 'Connectivity' for details on different cable materials and lenghts and M8 or M12 connectors.				
Weight (packaged)	Pre-wired model	Approx. 160 g		Approx. 280 g	Approx. 280 g	Approx. 370 g
	Connector model	Approx. 70 g		Approx. 200 g	Approx. 200 g	Approx. 260 g
Material	Case	Brass-nickel plated or stainless steel				
	Sensing surface	PBT				
	Cable	Standard cable is PVC dia 4mm. For other cable materials or diameters please refer to chapter 'Connectivity'				
	Clamping nut	brass-nickel plated for brass models stainless steel for steel models				

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.

2. When using any model at an ambient temperature between -40°C and -25°C and a power voltage between 30 and 32 VDC, use a load current of 100 mA max.

3. UL (CSA) [E196555]: Use class 2 circuit only.

DC 2-wire Models

Size		M8		M12	
Type		Shielded	Non-shielded	Shielded	Non-shielded
	Item	E2A-S08□S01-D□	E2A-S08□N02-D□	E2A-M12□S02-D□ E2A-S12□S02-D□	E2A-M12□N05-D□ E2A-S12□N05-D□
Sensing distance		1.5 mm ±10%	2 mm ±10%	2 mm ±10%	5 mm ±10%
Setting distance		0 to 1.2 mm	0 to 1.6 mm	0 to 1.6 mm	0 to 4 mm
Differential travel		10% max. of sensing distance			
Target		Ferrous metal (The sensing distance decreases with non-ferrous metal.)			
Standard target		8×8×1 mm	8×8×1 mm	12×12×1 mm	15×15×1 mm
Response frequency (See note 1.)		2,000 Hz	1,000 Hz	1,500 Hz	800 Hz
Power supply voltage (operating voltage range)		12 to 24 VDC. Ripple (p-p): 10% max. (10 to 32 VDC)			
Leakage current		0.8 mA max.			
Output type		DC 2 wire type			
Control output	Load current (See note 2.)	3 to 100 mA			
	Residual voltage	3 V max. (under load current of 100 mA with cable length of 2 m)			
Indicator (see timing chart)		NO type: Operation indicator (Yellow), Setting indicator (Red) NC type: Operation indicator (Yellow)			
Operation mode		-D1 models: NO -D2 models: NC			
Protection circuit		Surget suppressor, Short circuit protection			
Ambient temperature		Operating: -40°C to 70°C, Storage: -40°C to 85°C (with no icing or condensation)			
Temperature influence		±10% max. of sensing distance at 23°C within temperature range of -25°C to 70°C ±15% max. of sensing distance at 23°C within temperature range of -40°C to 70°C			
Ambient humidity		Operating: 35% to 95%, 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		500 m/s^2, 10 times each in X, Y and Z directions		1,000 m/s^2, 10 times each in X, Y and Z directions	
Standard and listings		IP67 after IEC 60529 IP69k after DIN 40050 EMC after EN60947-5-2 UL (CSA) E196555 (see note 3.)			
Connection method		Pre-wired models (standard is dia 4mm PVC cable with length = 2m). Please see chapter 'Connectivity' for details on different cable materials and lenghts and M8 or M12 connectors.			
Weight (packaged)	Pre-wired model	Approx. 65 g		Approx. 85 g	
	Connector model	M12 connector models: Approx. 20 g M8 connector models: Approx. 15 g		Approx. 35 g	
Material	Case	Stainless steel		Brass-nickel plated or stainless steel	
	Sensing surface	PBT			
	Cable	Standard cable is PVC dia 4mm. For other cable materials or diameters please refer to chapter 'Connectivity'			
	Clamping nut	Brass-nickel plated		Brass-nickel plated for brass models stainless steel for steel models	

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.

2. When using any model at an ambient temperature between -40°C and -25°C and a power voltage between 30 and 32 VDC, use a load current of 50 mA max.

3. UL (CSA) [E196555]: Use class 2 circuit only.

DC 2-wire Models

Size		M18		M30	
Type		Shielded	Non-shielded	Shielded	Non-shielded
Item		E2A-M18□S05-D□ E2A-S18□S05-D□	E2A-M18□N10-D□ E2A-S18□N10-D□	E2A-M30□S10-D□ E2A-S30□S10-D□	E2A-M30□N18-D□ E2A-S30□N18-D□
Sensing distance		5 mm ± 10%	10 mm ± 10%	10 mm ± 10%	18 m ± 10%
Setting distance		0 to 4 mm	0 to 8 mm	0 to 8 mm	0 to 14.5 mm
Differential travel		10% max. of sensing distance			
Target		Ferrous metal (The sensing distance decreases with non-ferrous metal.)			
Standard target		18x18x1 mm	30x30x1 mm	30x30x1 mm	54x54x1mm
Response frequency (See note 1.)		600 Hz	400 Hz	400 Hz	100 Hz
Power supply voltage (operating voltage range)		12 to 24 VDC. Ripple (p-p): 10% max. (10 to 32 VDC)			
Leakage current		0.8 mA max.			
Output type		DC 2 wire type			
Control output	Load current (See note 2.)	3 to 100 mA			
	Residual voltage	3 V max. (under load current of 100 mA with cable length of 2 m)			
Indicator (see timing chart)		NO type: Operation indicator (Yellow), Setting indicator (Red) NC type: Operation indicator (Yellow)			
Operation mode		-D1 models: NO -D2 models: NC			
Protection circuit		Surget suppressor, Short circuit protection			
Ambient temperature		Operating: -40°C to 70°C, Storage: -40°C to 85°C (with no icing or condensation)			
Temperature influence		±10% max. of sensing distance at 23°C within temperature range of -25°C to 70°C ±15% max. of sensing distance at 23°C within temperature range of -40°C to 70°C			
Ambient humidity		Operating: 35% to 95%, 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		500 m/s^2, 10 times each in X, Y and Z directions			
Standard and listings		IP67 after IEC 60529 IP69k after DIN 40050 EMC after EN60947-5-2 UL (CSA) E196555 (see note 3.)			
Connection method		Pre-wired models (standard is dia 4mm PVC cable with length = 2m). Please see chapter 'Connectivity' for details on different cable materials and lenghts and M8 or M12 connectors.			
Weight (packaged)	Pre-wired model	Approx. 160 g		Approx. 280 g	short body: 280 g long body: 370 g
	Connector model	Approx. 70 g		Approx. 200 g	short body: 200 g long body: 260 g
Material	Case	Brass-nickel plated or stainless steel			
	Sensing surface	PBT			
	Cable	Standard cable is PVC dia 4mm. For other cable materials or diameters please refer to chapter 'Connectivity'			
	Clamping nut	brass-nickel plated for brass models stainless steel for steel models			

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.

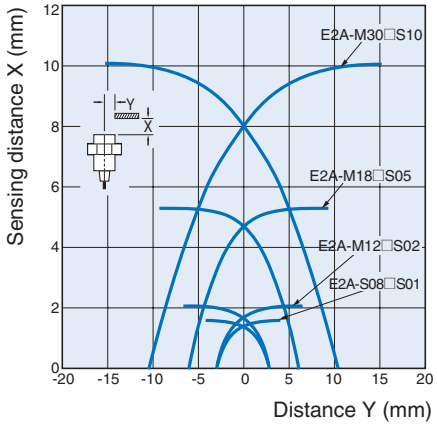
2. When using any model at an ambient temperature between -40°C and -25°C and a power voltage between 30 and 32 VDC, use a load current of 50 mA max.

3. UL (CSA) [E196555]: Use class 2 circuit only.

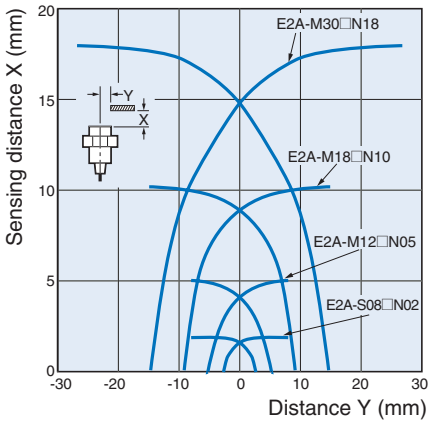
Engineering Data

Operating Range (Typical)

Shielded Models



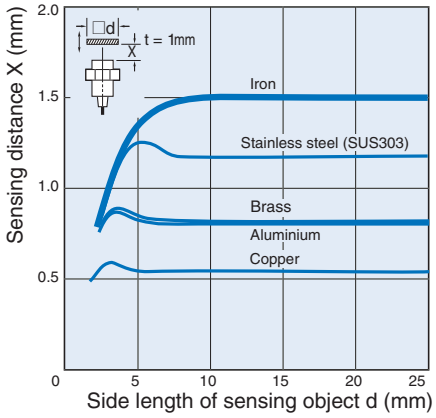
Non-shielded Models



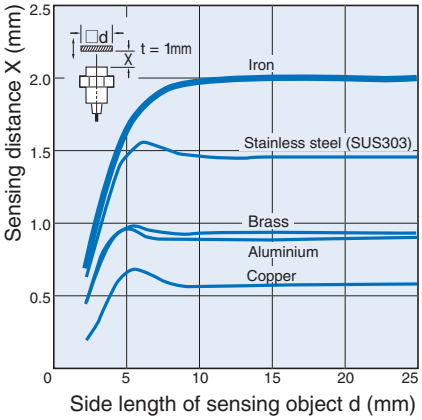
Influence of Sensing Object Size and Materials

Shielded Models

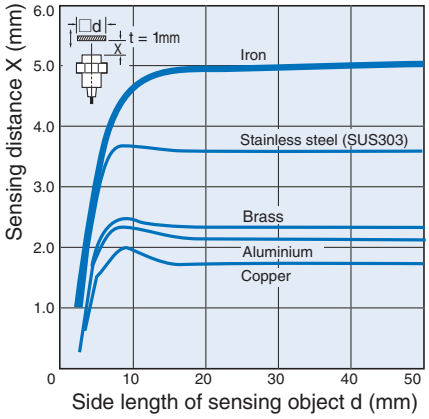
E2A-S08□S01



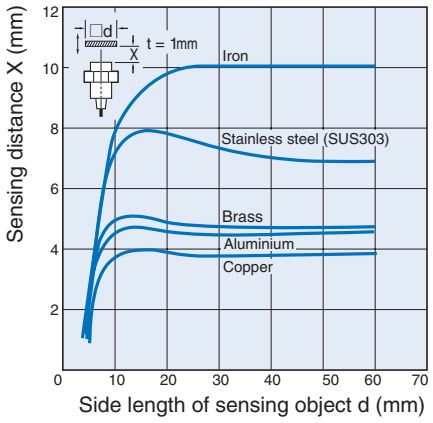
E2A-M12□S02/ E2A-S12□S02



E2A-M18□S05/E2A-S18□S05

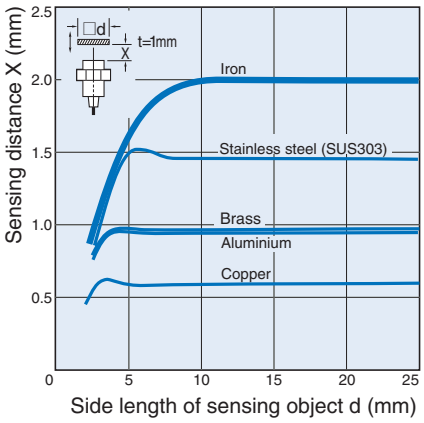


E2A-M30□S10/ E2A-S30□S10

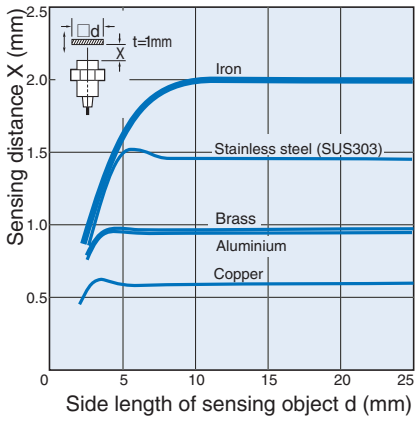


Non-shielded Models

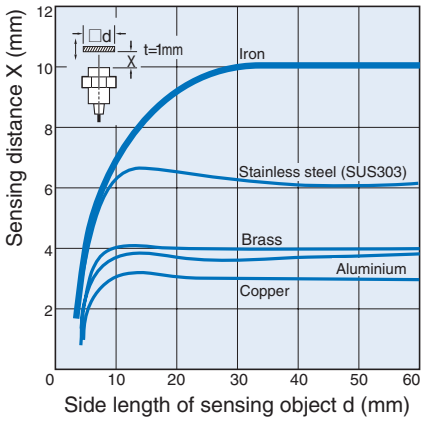
E2A-S08□N02



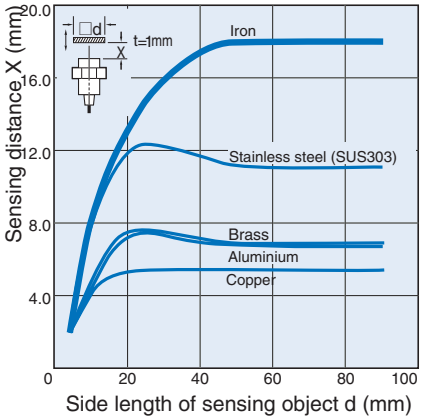
E2A-M12□N05/E2A-S12□N05



E2A-M18□N10/E2A-S18□N10



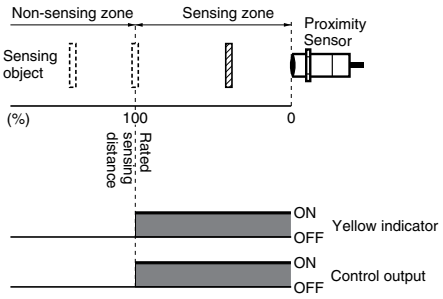
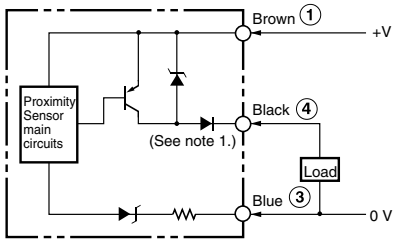
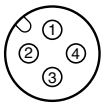
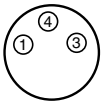
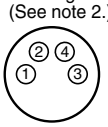
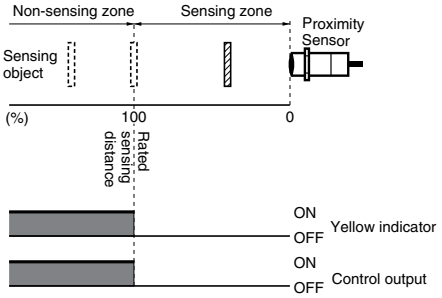
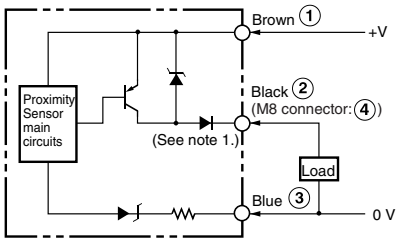
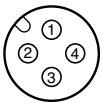
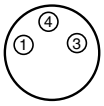
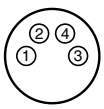
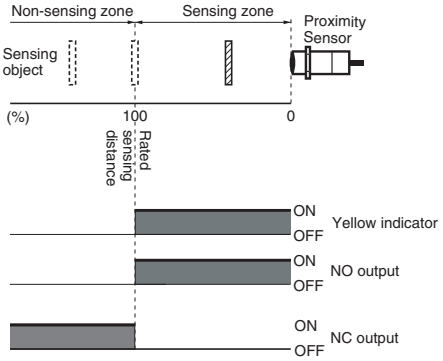
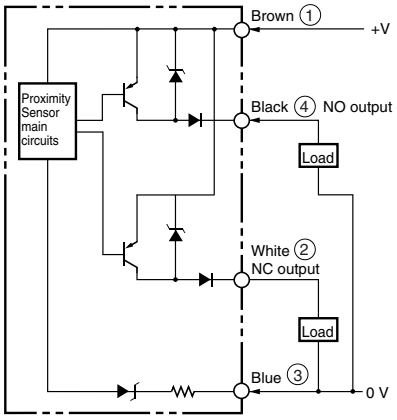
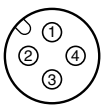
E2A-M30□N18/E2A-S30□N18



Operation

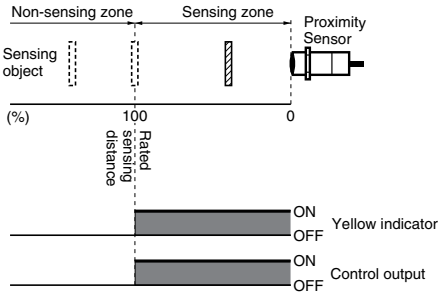
DC 3-wire models

PNP Output

Operation mode	Model	Timing chart	Output circuit
NO	E2A-□-□-B1		 **Note 1:** With M8 connector models, there is no output reverse polarity protection diode. M12 Connector Pin Arrangement (See note 2.)  M8 connector (3 pin) Pin Arrangement  M8 Connector (4 pin) Pin Arrangement (See note 2.)  **Note 2:** Terminal 2 of the M12 connector is not used.
NC	E2A-□-□-B2		 **Note 1:** With M8 connector models, there is no output reverse polarity protection diode. M12 Connector Pin Arrangement (See note 2.)  M8 connector (3 pin) Pin Arrangement  M8 Connector (4 pin) Pin Arrangement (See note 2.)  **Note 2:** Terminal 4 of the M12 connector is not used.
NO + NC	E2A-□-□-B3		 M12 Connector Pin Arrangement 

DC 3-wire models

NPN Output

<table>
<tr><th>Operation mode</th><th>Model</th><th>Timing chart</th><th>Output circuit</th></tr>
<tr>
<td>NO</td>
<td>E2A-□-□-C1</td>
<td> 
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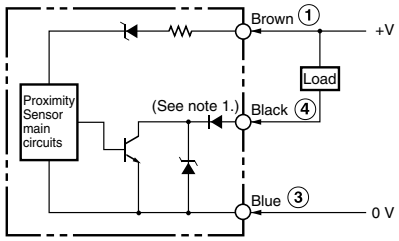
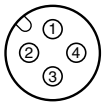
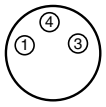
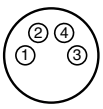
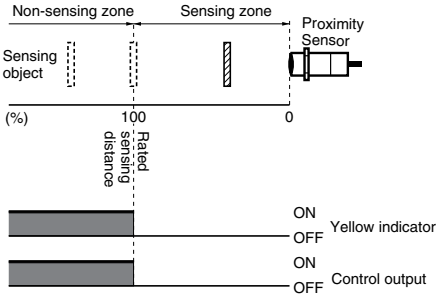
<td> 

Note 1: With M8 connector models, there is no output reverse polarity protection diode.
M12 Connector Pin Arrangement (See note 2.)


M8 connector (3 pin) Pin Arrangement


M8 Connector (4 pin) Pin Arrangement (See note 2.)


Note 2: Terminal 2 of the M12 connector is not used.</td>
</tr>
<tr>
<td>NC</td>
<td>E2A-□-□-C2</td>
<td> 
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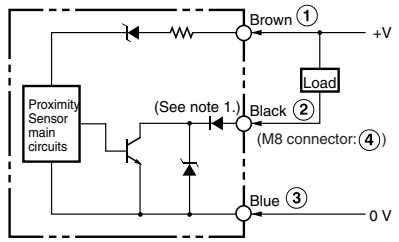
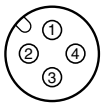
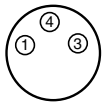
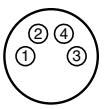
<td> 

Note 1: With M8 connector models, there is no output reverse polarity protection diode.
M12 Connector Pin Arrangement (See note 2.)


M8 connector (3 pin) Pin Arrangement


M8 Connector (4 pin) Pin Arrangement (See note 2.)


Note 2: Terminal 4 of the M12 connector is not used.</td>
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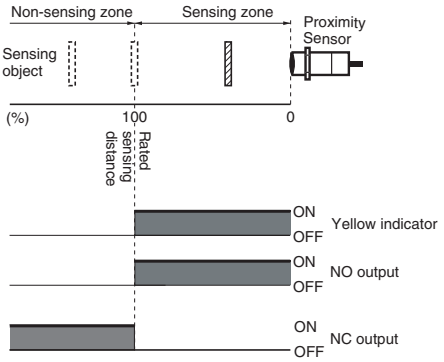
<tr>
<td>NO + NC</td>
<td>E2A-□-□-C3</td>
<td> 
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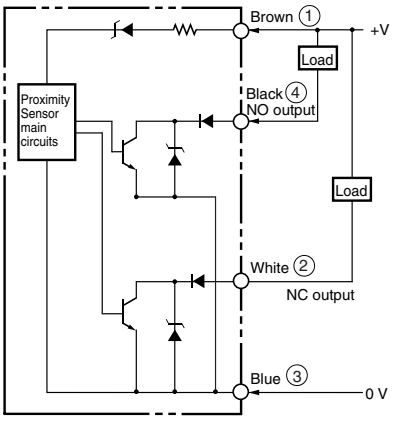
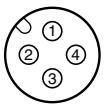
<td> 

M12 Connector Pin Arrangement

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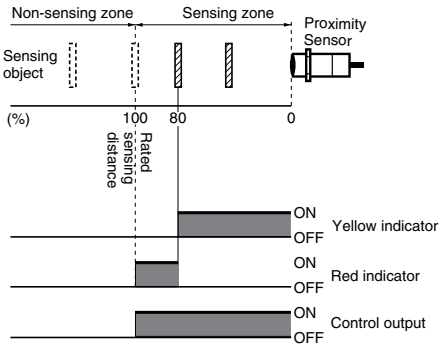
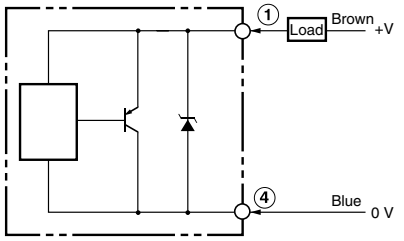
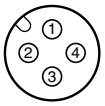
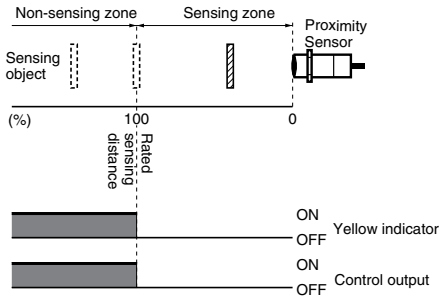
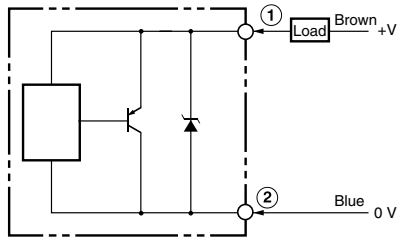
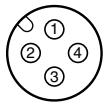
</table>

DC 2-wire models

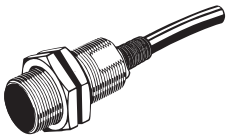
Output Circuit Diagrams (Operation)

Operation mode	Model	Timing chart	Output circuit
NO	E2A-□-**D**1		 Load can be connected to +V or 0V side. M12 Connector Pin Arrangement 
NC	E2A-□-**D**2		 Load can be connected to +V or 0V side. M12 Connector Pin Arrangement 

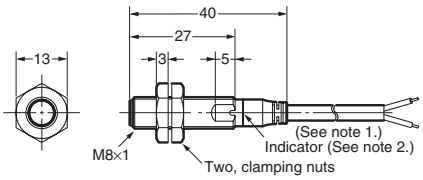
Dimensions

Note: All units are in millimeters unless otherwise indicated.

Pre-wired Models (Shielded)

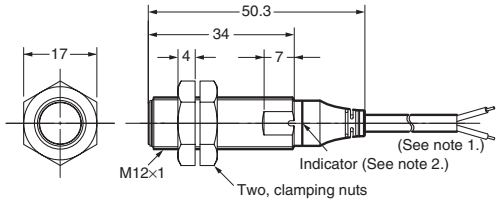


E2A-S08KS01-WP-□□



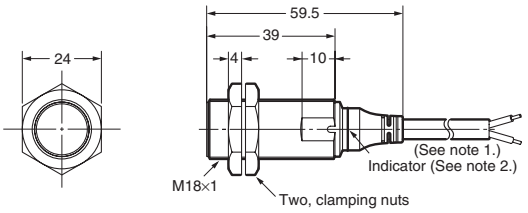
Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

E2A-M12KS02-WP-□□/E2A-S12KS02-WP-□



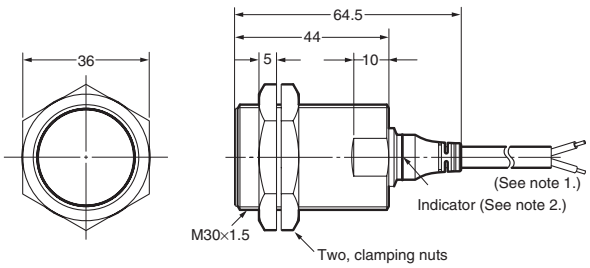
Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)
3. for NO+NC (-B3 / -C3) models the total length is 4 mm longer

E2A-M18KS05-WP□□/E2A-S18KS05-WP-□



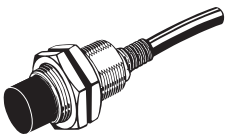
Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

E2A-M30KS10-WP-□□/E2A-S30KS10-WP-□

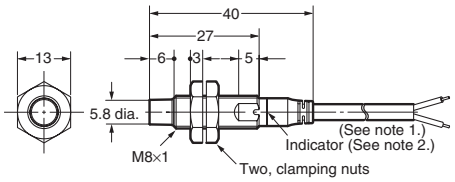


Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

Pre-wired Models (Non-shielded)

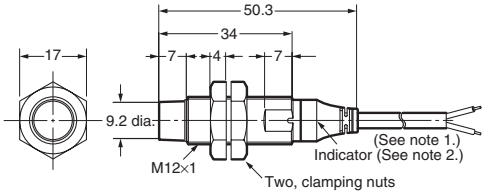


E2A-S08KN02-WP-□□



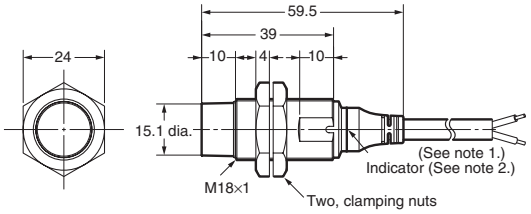
Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

E2A-M12KN05-WP-□□/E2A-S12KN05-WP-□



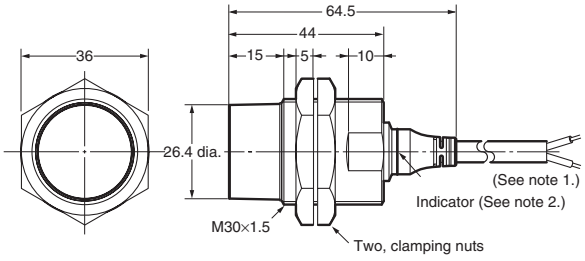
Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)
3. for NO+NC (-B3 / -C3) models the total length is 4 mm longer

E2A-M18KN10-WP-□□/E2A-S18KN10-WP-□



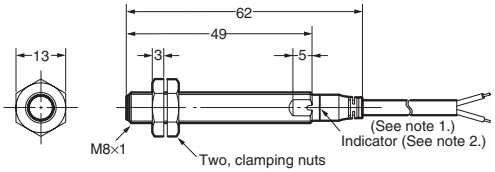
Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

E2A-M30KN18-WP-□□/E2A-S30KN18-WP-□



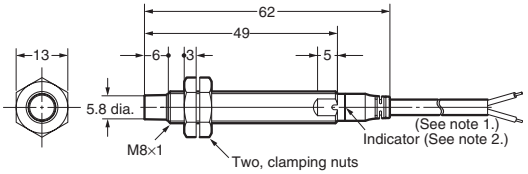
Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

E2A-S08LS01-WP-□□



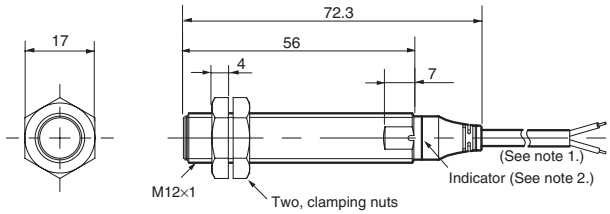
Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

E2A-S08LN02-WP-□□



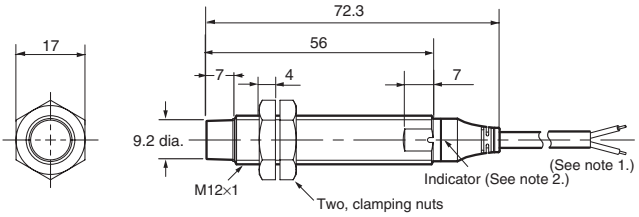
Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

E2A-M12LS02-WP-□□/E2A-S12LS02-WP-□



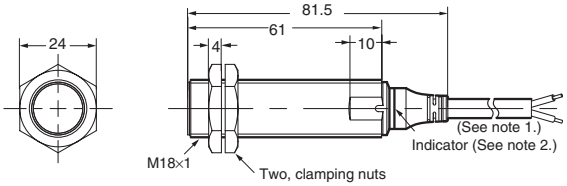
Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

E2A-M12LN05-WP-□□/E2A-S12LN05-WP-□



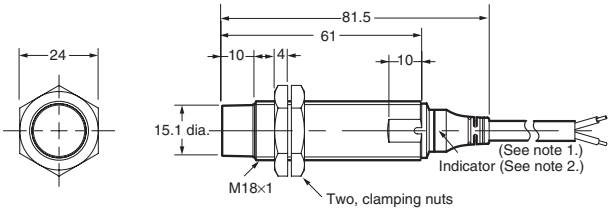
Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

E2A-M18LS05-WP-□□/E2A-S18LS05-WP-□



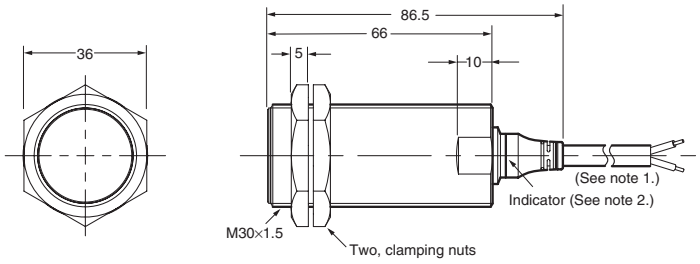
Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

E2A-M18LN10-WP-□□/E2A-S18LN10-WP-□



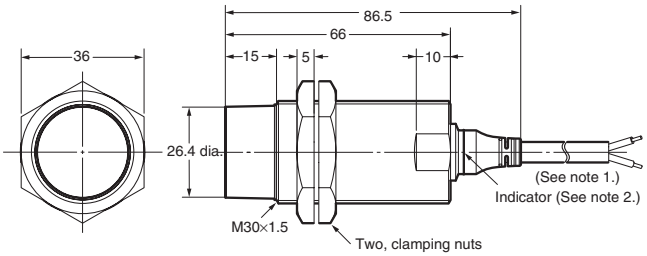
Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

E2A-M30LS10-WP-□□/E2A-S30LS10-WP-□



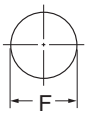
Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

E2A-M30LN18-WP-□□/E2A-S30LN18-WP-□



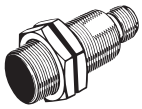
Note 1. 4-dia. vinyl-insulated round cable with 3 conductors (conductor cross section: 0.3 mm²; insulator diameter: 1.3 mm); standard length: 2 m
2. Operation indicator (yellow)

Mounting Hole Cutout Dimensions

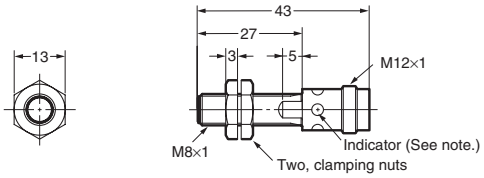


External diameter of Proximity Sensor	Dimension F (mm)
M8	8.5 dia. $^{+0.5}_{0}$
M12	12.5 dia. $^{+0.5}_{0}$
M18	18.5 dia. $^{+0.5}_{0}$
M30	30.5 dia. $^{+0.5}_{0}$

M12 Connector Models (Shielded)

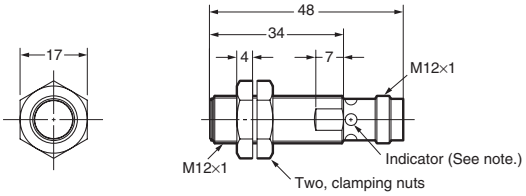


E2A-S08KS01-M1-□□



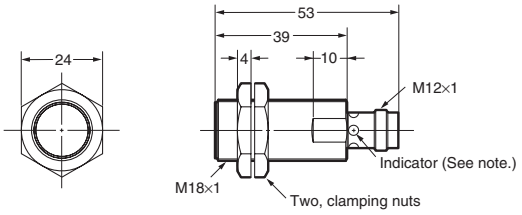
Note: Operation indicator (yellow LED, 4×90°)

E2A-M12KS02-M1-□□/E2A-S12KS02-M1-□



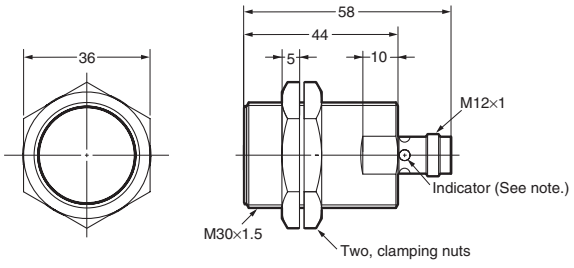
Note 1: Operation indicator (yellow LED, 4×90°)
Note 2: for NO+NC (-B3 / -C3) models the total length is 4 mm longer

E2A-M18KS05-M1-□□/E2A-S18KS05-M1-□



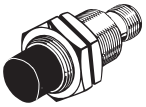
Note: Operation indicator (yellow LED, 4×90°)

E2A-M30KS10-M1-□□/E2A-S30KS10-M1-□

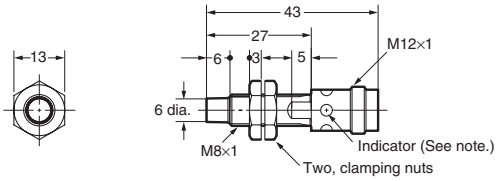


Note: Operation indicator (yellow LED, 4×90°)

M12 Connector Models (Non-shielded)

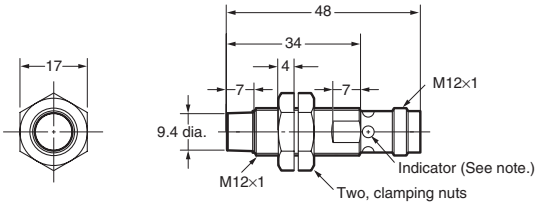


E2A-S08KN02-M1-□□



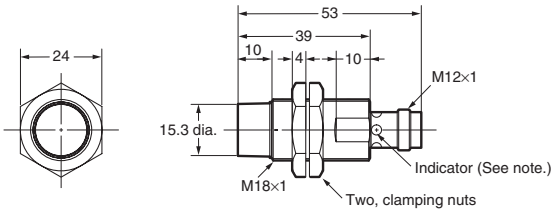
Note: Operation indicator (yellow LED, 4×90°)

E2A-M12KN05-M1-□□/E2A-S12KN05-M1-□



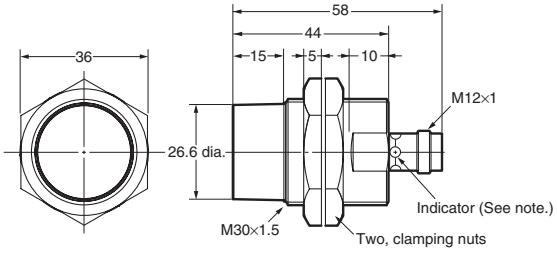
Note 1: Operation indicator (yellow LED, 4×90°)
Note 2: for NO+NC (-B3 / -C3) models the total length is 4 mm longer

E2A-M18KN10-M1-□□/E2A-S18KN10-M1-□



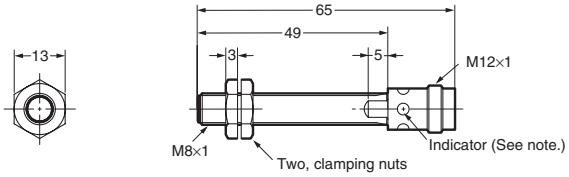
Note: Operation indicator (yellow LED, 4×90°)

E2A-M30KN18-M1-□□/E2A-S30KN18-M1-□



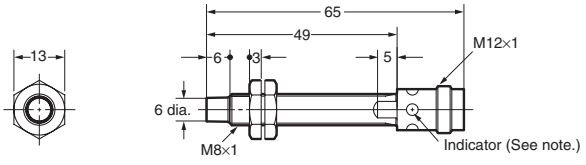
Note: Operation indicator (yellow LED, 4×90°)

E2A-S08LS01-M1-□□



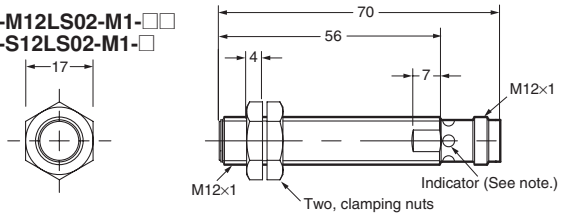
Note: Operation indicator (yellow LED, 4×90°)

E2A-S08LN02-M1-□□



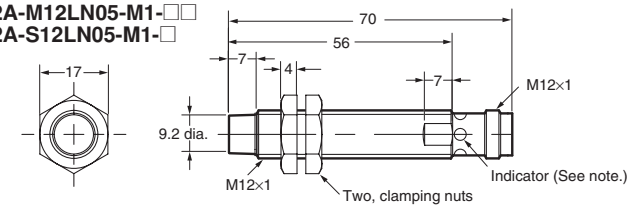
Note: Operation indicator (yellow LED, 4×90°)

E2A-M12LS02-M1-□□
E2A-S12LS02-M1-□



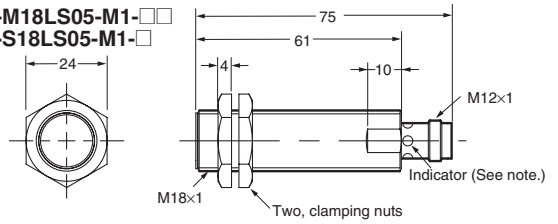
Note: Operation indicator (yellow LED, 4×90°)

E2A-M12LN05-M1-□□
E2A-S12LN05-M1-□



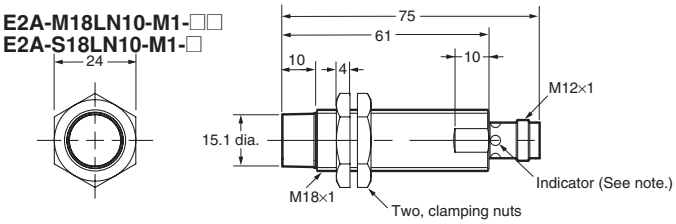
Note: Operation indicator (yellow LED, 4×90°)

E2A-M18LS05-M1-□□
E2A-S18LS05-M1-□



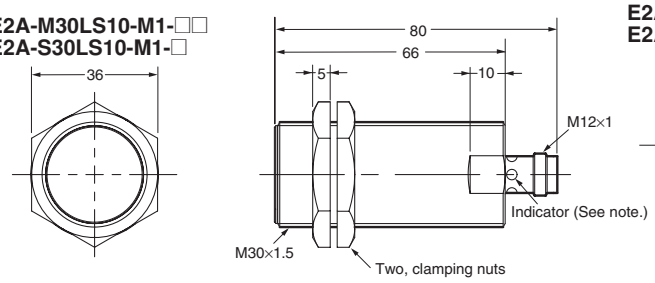
Note: Operation indicator (yellow LED, 4×90°)

E2A-M18LN10-M1-□□
E2A-S18LN10-M1-□



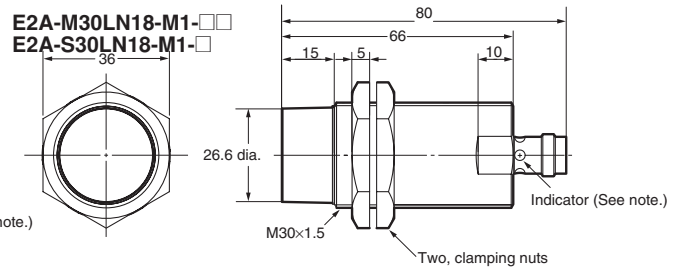
Note: Operation indicator (yellow LED, 4×90°)

E2A-M30LS10-M1-□□
E2A-S30LS10-M1-□



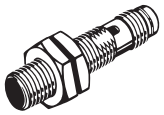
Note: Operation indicator (yellow LED, 4×90°)

E2A-M30LN18-M1-□□
E2A-S30LN18-M1-□

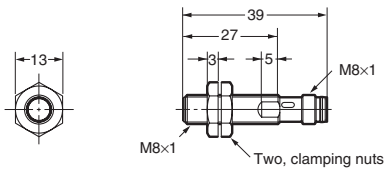


Note: Operation indicator (yellow LED, 4×90°)

M8 Connector Models (Shielded)

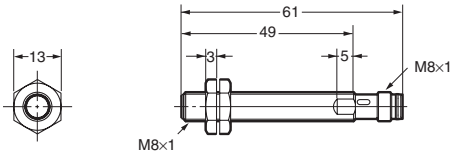


E2A-S08KS01-M5-□□/E2A-S08KS01-M3-□



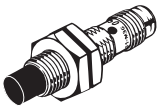
Note: Operation indicator (yellow LED, 4×90°)

E2A-S08LS01-M5-□□/E2A-S08LS01-M3-□

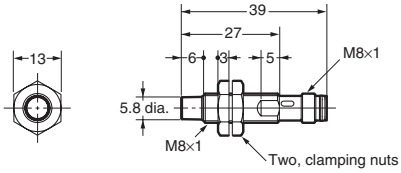


Note: Operation indicator (yellow LED, 4×90°)

M8 Connector Models (Non-shielded)

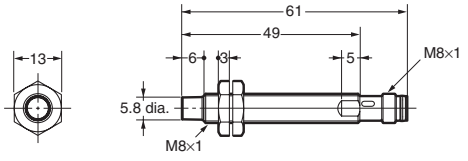


E2A-S08KN02-M5-□□/E2A-S08KN02-M3-□



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

E2A-S08LN02-M5-□□/E2A-S08LN02-M3-□



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

Note: Please contact your OMRON sales representative for dimension drawings not listed here.

Precautions

Safety Precautions

Power Supply

Do not impose an excessive voltage on the E2A, otherwise it may be damaged. Do not impose AC current (100 to 240 VAC) on any DC model, otherwise it may be damaged.

Load Short-circuit

Do not short-circuit the load, or the E2A may be damaged.

The E2A's short-circuit protection function will be valid if the polarity of the supply voltage imposed is correct and within the rated voltage range.

Wiring

Be sure to wire the E2A and load correctly, otherwise it may be damaged.

Connection with No Load

Be sure to insert loads when wiring. Make sure to connect a proper load to the E2A in operation, otherwise it may damage internal elements.

Do not expose the product to flammable or explosive gases.

Do not disassemble, repair, or modify the product.

Correct Use

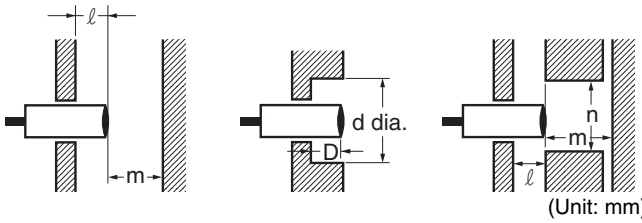
Designing

Power Reset Time

The Proximity Sensor is ready to operate within 100 ms (160ms for NO+NC -B3 / -C3 types) after power is supplied. If power supplies are connected to the Proximity Sensor and load respectively, be sure to supply power to the Proximity Sensor before supplying power to the load.

Effects of Surrounding Metal

When mounting the E2A within a metal panel, ensure that the clearances given in the following table are maintained.



(Unit: mm)

Type	Dimension	M8	M12	M18	M30
Shielded	l	0	0	0 (See note 1.)	0 (See note 2.)
	m	4.5	8	20	40
	d	5	12	18	30
	D	0	0	0	0
	n	12	18	27	45
Non-shielded	l	6	15	22	30
	m	8	20	40	70
	d	24	40	55	90
	D	6	15	22	30
	n	24	36	54	90

Note **1.** In the case of using the supplied nuts.
If true flash mounting is necessary, apply a free zone of 1.5 mm.

2. In the case of using the supplied nuts.
If true flush mounting is necessary, apply a free zone of 4 mm.

Power OFF

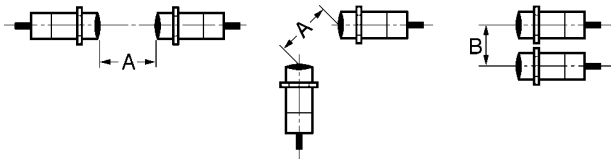
The Proximity Sensor may output a pulse signal when it is turned OFF. Therefore, it is recommended that the load be turned OFF before turning OFF the Proximity Sensor.

Power Supply Transformer

When using a DC power supply, make sure that the DC power supply has an insulated transformer. Do not use a DC power supply with an auto-transformer.

Mutual Interference

When installing two or more Sensors face-to-face or side-by-side, ensure that the minimum distances given in the following table are maintained.



(Unit: mm)

Type	Dimension	M8	M12	M18	M30
Shielded	A	20	30	50	100
	B	15	20	35	70
Non-shielded	A	80	120	200	300
	B	60	100	110	200

Wiring

High-tension Lines

Wiring through Metal Conduit**:**
If there is a power or high-tension line near the cable of the Proximity Sensor, wire the cable through an independent metal conduit to prevent against Proximity Sensor damage or malfunctioning.

Cable Extension

Standard cable length is less than 200 m.

The tractive force is 50 N.

Mounting

The Proximity Sensor must not be subjected to excessive shock with a hammer when it is installed, otherwise the Proximity Sensor may be damaged or lose its water-resistivity.

Do not tighten the nut with excessive force. A washer must be used with the nut.

Type		Torque
M8	Stainless steel type	9 Nm
	Brass type	4 Nm
M12		30 Nm
M18		70 Nm
M30		180 Nm

Maintenance and Inspection

Periodically perform the following checks to ensure stable operation of the Proximity Sensor over a long period of time.

1. Check for mounting position, dislocation, looseness, or distortion of the Proximity Sensor and sensing objects.
2. Check for loose wiring and connections, improper contacts, and line breakage.
3. Check for attachment or accumulation of metal powder or dust.
4. Check for abnormal temperature conditions and other environmental conditions.
5. Check for proper lighting of indicators (for models with a set indicator.)

Never disassemble or repair the Sensor.

Environment

Water Resistivity

The Proximity Sensors are tested intensively on water resistance, but in order to ensure maximum performance and life expectancy avoid immersion in water and provide protection from rain or snow.

Operating Environment

Ensure storage and operation of the Proximity Sensor within the given specifications.

Inrush Current

A load that has a large inrush current (e.g., a lamp or motor) will damage the Proximity Sensor, in which case connect the load to the Proximity Sensor through a relay.

<SUITABILITY FOR USE>

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of the products in the customer's application or use of the products.

Take all necessary steps to determine the suitability of the product for the systems, machines, and equipment with which it will be used.

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Product specifications and accessories may be changed at any time based on improvements and other reasons. Consult with your OMRON representative at any time to confirm actual specifications of purchased product.

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- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
- Systems, machines, and equipment that could present a risk to life or property.

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NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

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