

Proximity Sensors Inductive Stainless Steel Housing Types IA, M12, M18 and M30, NAMUR

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- Stainless steel housing, cylindrical
- Diameter: M12, M18, M30
- Short or long versions
- Sensing distance: 2 to 15 mm
- Output: NAMUR EN 50 227
- Protection: Reverse polarity
- LED-indication
- 2 m cable or plug M12



Product Description

Proximity switch in M12, M18 and M30 stainless steel housing. Made in accordance with Euronorm EN 50 227 and EN 60 947-5-2. For thermoplastic housing refer to type IA 12C.... Amplifier relay SD.... is available.

Ordering Key

IA 12 ESF 02 UC M1

Type _____
Housing size _____
Housing type _____
Sensing function _____
Sensing distance _____
Output type _____
Plug _____

Type Selection

| Housing diameter | Body style | Connection | Rated operating distance (S _n) | Ordering no. Namur |
|------------------|------------|------------|--|--------------------|
| M12 | Short | Cable | 2 mm ¹⁾ | IA 12 ESF 02 UC |
| M12 | Short | Plug | 2 mm ¹⁾ | IA 12 ESF 02 UC M1 |
| M12 | Long | Cable | 2 mm ¹⁾ | IA 12 ELF 02 UC |
| M12 | Long | Plug | 2 mm ¹⁾ | IA 12 ELF 02 UC M1 |
| M12 | Short | Cable | 4 mm ²⁾ | IA 12 ESN 04 UC |
| M12 | Short | Plug | 4 mm ²⁾ | IA 12 ESN 04 UC M1 |
| M12 | Long | Cable | 4 mm ²⁾ | IA 12 ELN 04 UC |
| M12 | Long | Plug | 4 mm ²⁾ | IA 12 ELN 04 UC M1 |
| M18 | Short | Cable | 5 mm ¹⁾ | IA 18 ESF 05 UC |
| M18 | Short | Plug | 5 mm ¹⁾ | IA 18 ESF 05 UC M1 |
| M18 | Long | Cable | 5 mm ¹⁾ | IA 18 ELF 05 UC |
| M18 | Long | Plug | 5 mm ¹⁾ | IA 18 ELF 05 UC M1 |
| M18 | Short | Cable | 8 mm ²⁾ | IA 18 ESN 08 UC |
| M18 | Short | Plug | 8 mm ²⁾ | IA 18 ESN 08 UC M1 |
| M18 | Long | Cable | 8 mm ²⁾ | IA 18 ELN 08 UC |
| M18 | Long | Plug | 8 mm ²⁾ | IA 18 ELN 08 UC M1 |
| M30 | Short | Cable | 10 mm ¹⁾ | IA 30 ESF 10 UC |
| M30 | Short | Plug | 10 mm ¹⁾ | IA 30 ESF 10 UC M1 |
| M30 | Long | Cable | 10 mm ¹⁾ | IA 30 ELF 10 UC |
| M30 | Long | Plug | 10 mm ¹⁾ | IA 30 ELF 10 UC M1 |
| M30 | Short | Cable | 15 mm ²⁾ | IA 30 ESN 15 UC |
| M30 | Short | Plug | 15 mm ²⁾ | IA 30 ESN 15 UC M1 |
| M30 | Long | Cable | 15 mm ²⁾ | IA 30 ELN 15 UC |
| M30 | Long | Plug | 15 mm ²⁾ | IA 30 ELN 15 UC M1 |

¹⁾ For flush mounting in metal

²⁾ For non-flush mounting in metal



Specifications

| | | | |
|---|--|---|---|
| Rated operational volt. (U_e) (U_B) | 8.2 VDC 7 to 9 VDC (6 to 35 VDC, all specifications not observed in extended supply range) | Hysteresis (H) (Differential travel) | 1 to 15% of sensing distance |
| Self-inductance | $\leq 500\mu\text{H}$ | Effective operating dist. (S_r) | $0.9 \times S_n \leq S_r \leq 1.1 \times S_n$ |
| Self-capacitance | $\leq 120 \text{ nF}$ | Usable operating dist. (S) | $0.9 \times S_r \leq S_u \leq 1.1 \times S_r$ |
| No-load supply current (I_0) | Activated: $\leq 1 \text{ mA}$ Not activated: $\geq 2.2 \text{ mA}$ Max. 9.35 mA | Ambient temperature | Operating Storage |
| Protection | Reverse polarity | Degree of protection | IP 67 (Nema 1, 3, 4, 6, 13) |
| Transient voltage | $\leq 1 \text{ kV}/0.5 \text{ J}$ | Housing material | Body Front Back |
| EMC | Approved according to EN 50 080, EN 50 081 | Connection | Stainless Steel (1.4301) Grey thermoplastic polyester Black thermoplastic polyester |
| Power ON delay | $< 10 \text{ ms}$ | Cable | 2 m, 2 x 0.5 mm ² , grey PVC, oil proof M12 x 1 |
| Frequency of operating cycles (f) | IA12xxF02 1.400 Hz IA12xxN04 1.200 Hz IA18xxF05 500 Hz IA18xxN08 200 Hz IA30xxF10 300 Hz IA30xxF15 100 Hz | Plug Cables for plug (-1) | CONH1A series |
| Indication not activated | LED, yellow | Weight (cable excluded) | IA 12xx 20 g IA 18xxF05 26 g IA 18xxN08 30 g IA 30xxF10 75 g IA 30xxN15 80 g |
| Assured operating dist. (S_a) | $0 \leq S_a \leq 0.81 S_n$ | Tightening torque | IA 12 7.5 Nm IA 18 27.5 Nm IA 30 100 Nm |
| Repeat accuracy (R) | $\leq 5\%$ | Approvals | UL |
| | | CE-marking | Yes |

Dimensions

| Type | A | B Ø mm | C mm | D mm | E mm | F mm | SW mm |
|--------------------|----------------|-----------|---------|---------|---------|---------|----------|
| IA 12 ESF 02 UC | M12 x 1 x 30 | 10.7 | 30 | 11 | 5.0 | 4 | 17 |
| IA 12 ELF 02 UC | M12 x 1 x 50 | 10.7 | 50 | 11 | 5.0 | 4 | 17 |
| IA 12 ESF 02 UC M1 | M12 x 1 x 30 | 10.7 | 30 | 12.6 | 11.9 | 4 | 17 |
| IA 12 ELF 02 UC M1 | M12 x 1 x 50 | 10.7 | 50 | 12.6 | 11.9 | 4 | 17 |
| IA 12 ESN 04 UC | M12 x 1 x 30 | 10.7 | 34 | 11 | 5.0 | 4 | 17 |
| IA 12 ELN 04 UC | M12 x 1 x 50 | 10.7 | 54 | 11 | 5.0 | 4 | 17 |
| IA 12 ESN 04 UC M1 | M12 x 1 x 30 | 10.7 | 34 | 12.6 | 11.9 | 4 | 17 |
| IA 12 ELN 04 UC M1 | M12 x 1 x 50 | 10.7 | 54 | 12.6 | 11.9 | 4 | 17 |
| IA 18 ESF 05 UC | M18 x 1 x 30 | 16.7 | 30 | 11.6 | 15.4 | 4 | 24 |
| IA 18 ELF 05 UC | M18 x 1 x 50 | 16.7 | 50 | 11.6 | 15.4 | 4 | 24 |
| IA 18 ESF 05 UC M1 | M18 x 1 x 30 | 16.7 | 30 | 13.1 | 11.9 | 4 | 24 |
| IA 18 ELF 05 UC M1 | M18 x 1 x 50 | 16.7 | 50 | 13.1 | 11.9 | 4 | 24 |
| IA 18 ESN 08 UC | M18 x 1 x 30 | 16.7 | 38 | 11.6 | 15.4 | 4 | 24 |
| IA 18 ELN 08 UC | M18 x 1 x 50 | 16.7 | 58 | 11.6 | 15.4 | 4 | 24 |
| IA 18 ESN 08 UC M1 | M18 x 1 x 30 | 16.7 | 38 | 13.1 | 11.9 | 4 | 24 |
| IA 18 ELN 08 UC M1 | M18 x 1 x 50 | 16.7 | 58 | 13.1 | 11.9 | 4 | 24 |
| IA 30 ESF 10 UC | M30 x 1.5 x 30 | 28 | 30 | 13.6 | 15.4 | 5 | 36 |
| IA 30 ELF 10 UC | M30 x 1.5 x 50 | 28 | 50 | 13.6 | 15.4 | 5 | 36 |
| IA 30 ESF 10 UC M1 | M30 x 1.5 x 30 | 28 | 30 | 13.6 | 11.9 | 5 | 36 |
| IA 30 ELF 10 UC M1 | M30 x 1.5 x 50 | 28 | 50 | 13.6 | 11.9 | 5 | 36 |
| IA 30 ESN 15 UC | M30 x 1.5 x 30 | 28 | 42 | 13.6 | 15.4 | 5 | 36 |
| IA 30 ELN 15 UC | M30 x 1.5 x 50 | 28 | 62 | 13.6 | 15.4 | 5 | 36 |
| IA 30 ESN 15 UC M1 | M30 x 1.5 x 30 | 28 | 42 | 13.6 | 11.9 | 5 | 36 |
| IA 30 ELN 15 UC M1 | M30 x 1.5 x 50 | 28 | 62 | 13.6 | 11.9 | 5 | 36 |