

Proximity Inductive Sensors DC Metal Face Types IA, M8, M12, M18 and M30

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- Sensing distance: 1 to 15 mm
- Flush and non-flush types
- Long and short housing
- Rated operational voltage: 10 - 30 VDC
- Output: DC 100 mA, NPN or PNP
- Normally open, Normally closed
- Output indication: by yellow LED
- Protection: reverse polarity, short circuit, transients
- Cable and plug versions

Product Description

A family of metal face inductive proximity switches in industrial standard stainless steel housings (M8, M12, M18 and M30 types). Output indication: by yellow LED. Outputs are open collector NPN or PNP transistors. Available with cable and M8 or M12 plug. These sensors stand up to

abrasion and impact caused by flying metal chips, grit and misaligned or vibrating targets. In addition, the stainless steel body resists against corrosion and chemical attack, by offering a higher level of protection for more reliable operation and longer life in harsh environments.

Ordering Key

IA08FLF01NOM5



Type Selection M8, M12 and M18

| Housing diameter | Connection | Housing style | Rated operating distance S_n | Ordering no. NPN Normally open | Ordering no. PNP Normally open | Ordering no. NPN Normally closed | Ordering no. PNP Normally closed |
|------------------|------------|---------------|--------------------------------|--------------------------------|--------------------------------|----------------------------------|----------------------------------|
| M8 | Cable | Short | 1 mm ¹⁾ | IA 08 FSF 01 NO | IA 08 FSF 01 PO | IA 08 FSF 01 NC | IA 08 FSF 01 PC |
| M8 | Plug | Short | 1 mm ¹⁾ | IA 08 FSF 01 NOM5 | IA 08 FSF 01 POM5 | IA 08 FSF 01 NCM5 | IA 08 FSF 01 PCM5 |
| M8 | Cable | Long | 1 mm ¹⁾ | IA 08 FLF 01 NO | IA 08 FLF 01 PO | IA 08 FLF 01 NC | IA 08 FLF 01 PC |
| M8 | Plug | Long | 1 mm ¹⁾ | IA 08 FLF 01 NOM5 | IA 08 FLF 01 POM5 | IA 08 FLF 01 NCM5 | IA 08 FLF 01 PCM5 |
| M8 | Cable | Short | 2 mm ²⁾ | IA 08 FSN 02 NO | IA 08 FSN 02 PO | IA 08 FSN 02 NC | IA 08 FSN 02 PC |
| M8 | Plug | Short | 2 mm ²⁾ | IA 08 FSN 02 NOM5 | IA 08 FSN 02 POM5 | IA 08 FSN 02 NCM5 | IA 08 FSN 02 PCM5 |
| M8 | Cable | Long | 2 mm ²⁾ | IA 08 FLN 02 NO | IA 08 FLN 02 PO | IA 08 FLN 02 NC | IA 08 FLN 02 PC |
| M8 | Plug | Long | 2 mm ²⁾ | IA 08 FLN 02 NOM5 | IA 08 FLN 02 POM5 | IA 08 FLN 02 NCM5 | IA 08 FLN 02 PCM5 |
| M12 | Cable | Short | 2 mm ¹⁾ | IA 12 FSF 02 NO | IA 12 FSF 02 PO | IA 12 FSF 02 NC | IA 12 FSF 02 PC |
| M12 | Plug | Short | 2 mm ¹⁾ | IA 12 FSF 02 NOM1 | IA 12 FSF 02 POM1 | IA 12 FSF 02 NCM1 | IA 12 FSF 02 PCM1 |
| M12 | Cable | Long | 2 mm ¹⁾ | IA 12 FLF 02 NO | IA 12 FLF 02 PO | IA 12 FLF 02 NC | IA 12 FLF 02 PC |
| M12 | Plug | Long | 2 mm ¹⁾ | IA 12 FLF 02 NOM1 | IA 12 FLF 02 POM1 | IA 12 FLF 02 NCM1 | IA 12 FLF 02 PCM1 |
| M12 | Cable | Short | 4 mm ²⁾ | IA 12 FSN 04 NO | IA 12 FSN 04 PO | IA 12 FSN 04 NC | IA 12 FSN 04 PC |
| M12 | Plug | Short | 4 mm ²⁾ | IA 12 FSN 04 NOM1 | IA 12 FSN 04 POM1 | IA 12 FSN 04 NCM1 | IA 12 FSN 04 PCM1 |
| M12 | Cable | Long | 4 mm ²⁾ | IA 12 FLN 04 NO | IA 12 FLN 04 PO | IA 12 FLN 04 NC | IA 12 FLN 04 PC |
| M12 | Plug | Long | 4 mm ²⁾ | IA 12 FLN 04 NOM1 | IA 12 FLN 04 POM1 | IA 12 FLN 04 NCM1 | IA 12 FLN 04 PCM1 |
| M18 | Cable | Short | 5 mm ¹⁾ | IA 18 FSF 05 NO | IA 18 FSF 05 PO | IA 18 FSF 05 NC | IA 18 FSF 05 PC |
| M18 | Plug | Short | 5 mm ¹⁾ | IA 18 FSF 05 NOM1 | IA 18 FSF 05 POM1 | IA 18 FSF 05 NCM1 | IA 18 FSF 05 PCM1 |
| M18 | Cable | Long | 5 mm ¹⁾ | IA 18 FLF 05 NO | IA 18 FLF 05 PO | IA 18 FLF 05 NC | IA 18 FLF 05 PC |
| M18 | Plug | Long | 5 mm ¹⁾ | IA 18 FLF 05 NOM1 | IA 18 FLF 05 POM1 | IA 18 FLF 05 NCM1 | IA 18 FLF 05 PCM1 |
| M18 | Cable | Short | 8 mm ²⁾ | IA 18 FSN 08 NO | IA 18 FSN 08 PO | IA 18 FSN 08 NC | IA 18 FSN 08 PC |
| M18 | Plug | Short | 8 mm ²⁾ | IA 18 FSN 08 NOM1 | IA 18 FSN 08 POM1 | IA 18 FSN 08 NCM1 | IA 18 FSN 08 PCM1 |
| M18 | Cable | Long | 8 mm ²⁾ | IA 18 FLN 08 NO | IA 18 FLN 08 PO | IA 18 FLN 08 NC | IA 18 FLN 08 PC |
| M18 | Plug | Long | 8 mm ²⁾ | IA 18 FLN 08 NOM1 | IA 18 FLN 08 POM1 | IA 18 FLN 08 NCM1 | IA 18 FLN 08 PCM1 |

¹⁾ For flush mounting in metal ²⁾ For non-flush mounting in metal

Type Selection M30

| Housing diameter | Connection | Housing style | Rated operating distance S_n | Ordering no. NPN Normally open | Ordering no. PNP Normally open | Ordering no. NPN Normally closed | Ordering no. PNP Normally closed |
|------------------|------------|---------------|--------------------------------|--------------------------------|--------------------------------|----------------------------------|----------------------------------|
| M30 | Cable | Short | 10 mm ¹⁾ | IA 30 FSF 10 NO | IA 30 FSF 10 PO | IA 30 FSF 10 NC | IA 30 FSF 10 PC |
| M30 | Plug | Short | 10 mm ¹⁾ | IA 30 FSF 10 NOM1 | IA 30 FSF 10 POM1 | IA 30 FSF 10 NCM1 | IA 30 FSF 10 PCM1 |
| M30 | Cable | Long | 10 mm ¹⁾ | IA 30 FLF 10 NO | IA 30 FLF 10 PO | IA 30 FLF 10 NC | IA 30 FLF 10 PC |
| M30 | Plug | Long | 10 mm ¹⁾ | IA 30 FLF 10 NOM1 | IA 30 FLF 10 POM1 | IA 30 FLF 10 NCM1 | IA 30 FLF 10 PCM1 |
| M30 | Cable | Short | 15 mm ²⁾ | IA 30 FSN 15 NO | IA 30 FSN 15 PO | IA 30 FSN 15 NC | IA 30 FSN 15 PC |
| M30 | Plug | Short | 15 mm ²⁾ | IA 30 FSN 15 NOM1 | IA 30 FSN 15 POM1 | IA 30 FSN 15 NCM1 | IA 30 FSN 15 PCM1 |
| M30 | Cable | Long | 15 mm ²⁾ | IA 30 FLN 15 NO | IA 30 FLN 15 PO | IA 30 FLN 15 NC | IA 30 FLN 15 PC |
| M30 | Plug | Long | 15 mm ²⁾ | IA 30 FLN 15 NOM1 | IA 30 FLN 15 POM1 | IA 30 FLN 15 NCM1 | IA 30 FLN 15 PCM1 |

1) For flush mounting in metal 2) For non-flush mounting in metal

Specifications

| | | | | |
|--|--|-----------------------------|----------------------|---|
| Rated operational voltage (U_B) | 10 to 30 VDC | Housing material | Body, Front | Stainless steel AISI 304 |
| Ripple | < 10% | | Backpart | |
| Output current (I_a) | ≤ 100 mA @ 50°C | Connection | Plug | PA-66 |
| No load supply current (I_o) | IA08, IA12Fx, IA18Fx, IA30Fx < 10 mA IA12FxN, IA18FxN, IA30FxN < 20 mA | | Cable | PVC |
| Voltage drop (U_d) | IA08 < 1.5 V IA12, IA18, IA30 < 2.0 V | IA12, IA18 | Nuts | Stainless steel |
| Protection | Reverse polarity, short-circuit, transients | | IA30 | |
| Voltage transient | 1 kV | Plug | | |
| Power ON delay (t_v) | < 10 ms | | IA08 | |
| Operating frequency (f) | IA08Fx 500 Hz IA12Fx 2000 Hz IA12FxF 1000 Hz IA18Fx 2000 Hz IA18FxF 1000 Hz IA18FxFxM1 1000 Hz IA18FxFxM1 500 Hz IA30FSF 2000 Hz IA30FSN 1000 Hz IA30FLF 300 Hz IA30FLN 150 Hz IA30FxFxM1 2000 Hz IA30FxFxM1 1000 Hz | IA12, IA18, IA30 | Cables for plug (-1) | M8 x 1 M12 x 1 CONH1A/CONH1O series |
| Indication for output ON | LED, yellow | Degree of protection | | IP 67 |
| Operating sensing distance (S_a) | $0 \leq S_a \leq 0.81 \times S_n$ | Weight | IA08FSFxx | 33 g |
| Effective operating distance (S_r) | $0.9 \times S_n \leq S_r \leq 1.1 \times S_n$ | IA08FSFxxM5 | IA08FLFxx | 33 g |
| Usable operating distance (S_u) | $0.9 \times S_r \leq S_u \leq 1.1 \times S_r$ | IA08FLFxxM5 | IA08FLFxxM5 | 18 g |
| Repeated accuracy (R) | ≤ 5% | IA08FSNxx | IA08FSNxx | 32 g |
| Differential travel (H) (Hysteresis) | 1 to 20% of sensing dist. | IA08FSNxxM5 | IA08FSNxxM5 | 32 g |
| Ambient temperature | | IA08FLNxx | IA08FLNxx | 32 g |
| Operating | -25° to +70°C (-13° to +158°F) | IA08FLNxxM5 | IA08FLNxxM5 | 17 g |
| Storage | -25° to +70°C (-13° to +158°F) | IA12FSFxx | IA12FSFxx | 31 g |
| Humidity (non-condensing) | 35 to 95% RH | IA12FSFxxM1 | IA12FSFxxM1 | 40 g |
| | | IA12FLFxx | IA12FLFxx | 67 g |
| | | IA12FLFxxM1 | IA12FLFxxM1 | 153 g |
| | | IA12FSNxx | IA12FSNxx | 30 g |
| | | IA12FSNxxM1 | IA12FSNxxM1 | 38 g |
| | | IA12FLNxx | IA12FLNxx | 65 g |
| | | IA12FLNxxM1 | IA12FLNxxM1 | 144 g |
| | | IA18FSFxx | IA18FSFxx | 110 g |
| | | IA18FSFxxM1 | IA18FSFxxM1 | 74 g |
| | | IA18FLFxx | IA18FLFxx | 153 g |
| | | IA18FLFxxM1 | IA18FLFxxM1 | 94 g |
| | | IA18FSNxx | IA18FSNxx | 92 g |
| | | IA18FSNxxM1 | IA18FSNxxM1 | 70 g |
| | | IA18FLNxx | IA18FLNxx | 144 g |
| | | IA18FLNxxM1 | IA18FLNxxM1 | 91 g |

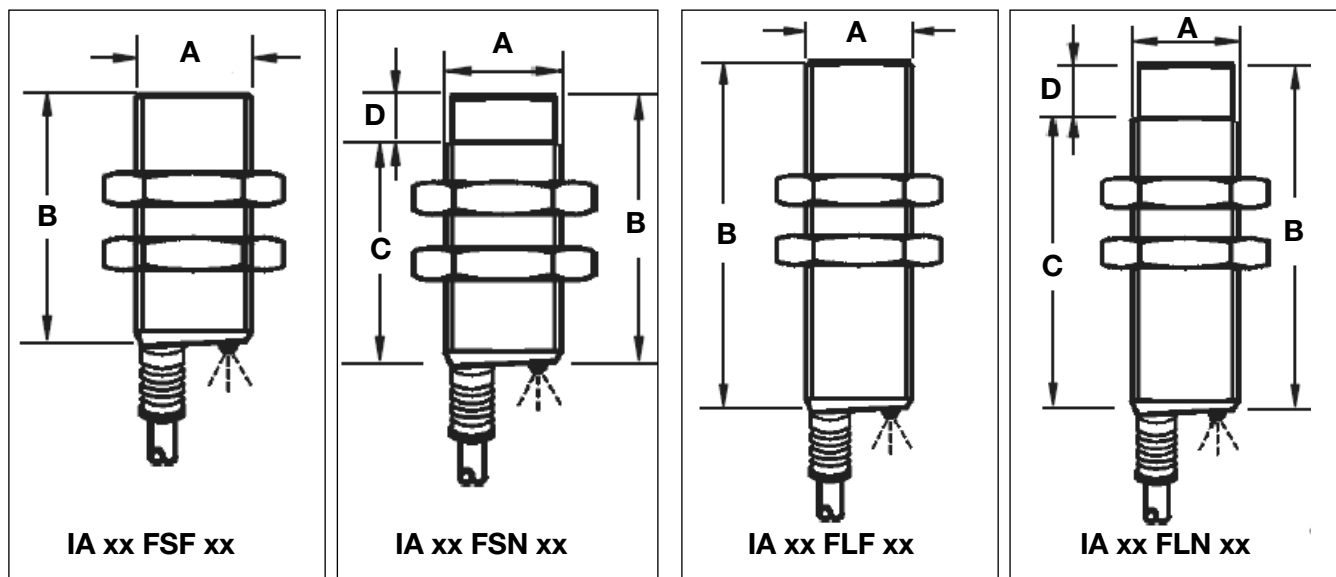
Specifications (cont.)

| | | | |
|-----------------------|-------|--------------------------|----------|
| Weight (cont.) | | Tightening torque | |
| IA30FSFxx | 146 g | IA08 | 4.5 Nm |
| IA30FSFxxM1 | 200 g | IA12 | 25.0 Nm |
| IA30FLFxx | 217 g | IA18 | 60.0 Nm |
| IA30FLFxxM1 | 187 g | IA30 | 230.0 Nm |
| IA30FSNxx | 138 g | CE-marking | Yes |
| IA30FSNxxM1 | 200 g | | |
| IA30FLNxx | 207 g | | |
| IA30FLNxxM1 | 179 g | | |

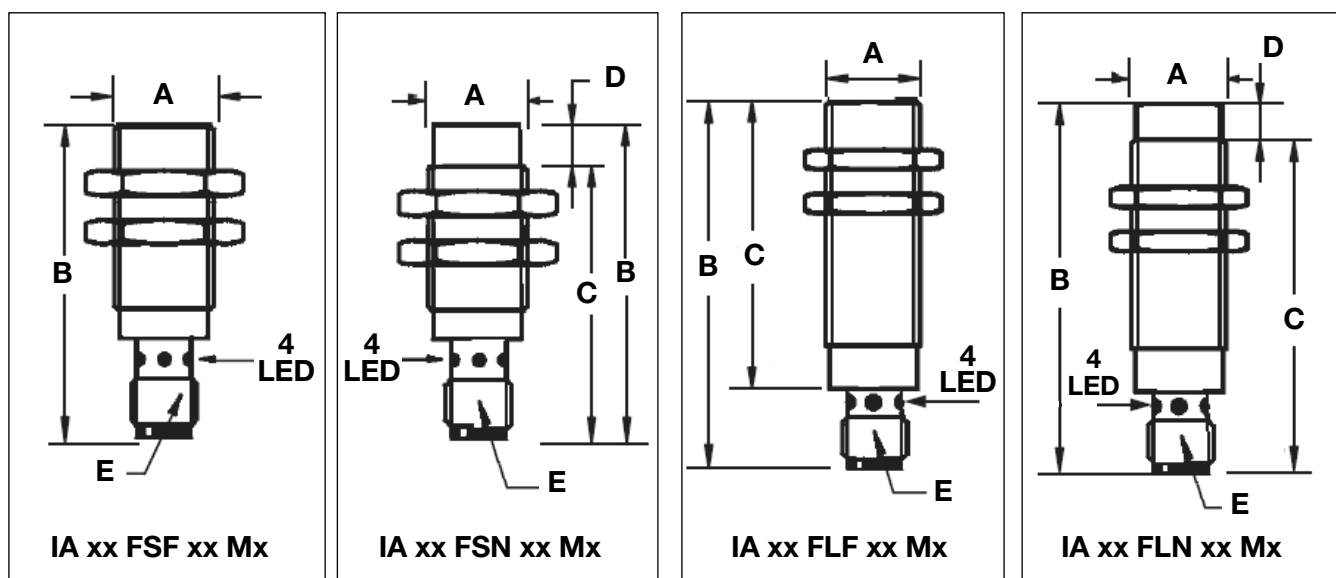
Dimensions

| Type | Description | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) |
|--------------------|----------------|-----------|--------|--------|--------|---------|
| IA 08 FSF 01 xx | M8 x 1 x 30 | M8 x 1 | 30 | - | - | - |
| IA 08 FSF 01 xx M5 | M8 x 1 x 45 | M8 x 1 | 45 | - | - | M8 x 1 |
| IA 08 FLF 01 xx | M8 x 1 x 45 | M8 x 1 | 45 | - | - | - |
| IA 08 FLF 01 xx M5 | M8 x 1 x 60 | M8 x 1 | 60 | 40 | - | M8 x 1 |
| IA 08 FSN 02 xx | M8 x 1 x 30 | M8 x 1 | 30 | 26 | 4 | - |
| IA 08 FSN 02 xx M5 | M8 x 1 x 45 | M8 x 1 | 45 | 41 | 4 | M8 x 1 |
| IA 08 FLN 02 xx | M8 x 1 x 45 | M8 x 1 | 45 | 41 | 4 | - |
| IA 08 FLN 02 xx M5 | M8 x 1 x 60 | M8 x 1 | 60 | 56 | 4 | M8 x 1 |
| IA 12 FSF 02 xx | M12 x 1 x 30 | M12 x 1 | 30 | - | - | - |
| IA 12 FSF 02 xx M1 | M12 x 1 x 50 | M12 x 1 | 50 | - | - | M12 x 1 |
| IA 12 FLF 02 xx | M12 x 1 x 50 | M12 x 1 | 50 | - | - | - |
| IA 12 FLF 02 xx M1 | M12 x 1 x 68 | M12 x 1 | 68 | 42 | - | M12 x 1 |
| IA 12 FSN 04 xx | M12 x 1 x 30 | M12 x 1 | 30 | 22 | 8 | - |
| IA 12 FSN 04 xx M1 | M12 x 1 x 50 | M12 x 1 | 50 | 42 | 8 | M12 x 1 |
| IA 12 FLN 04 xx | M12 x 1 x 50 | M12 x 1 | 50 | 42 | 8 | - |
| IA 12 FLN 04 xx M1 | M12 x 1 x 68 | M12 x 1 | 68 | 60 | 8 | M12 x 1 |
| IA 18 FSF 05 xx | M18 x 1 x 35 | M18 x 1 | 35 | - | - | - |
| IA 18 FSF 05 xx M1 | M18 x 1 x 48 | M18 x 1 | 48 | - | - | M12 x 1 |
| IA 18 FLF 05 xx | M18 x 1 x 55 | M18 x 1 | 55 | - | - | - |
| IA 18 FLF 05 xx M1 | M18 x 1 x 79 | M18 x 1 | 79 | 65 | - | M12 x 1 |
| IA 18 FSN 08 xx | M18 x 1 x 35 | M18 x 1 | 35 | 23 | 12 | - |
| IA 18 FSN 08 xx M1 | M18 x 1 x 48 | M18 x 1 | 48 | 36 | 12 | M12 x 1 |
| IA 18 FLN 08 xx | M18 x 1 x 55 | M18 x 1 | 55 | 43 | 12 | - |
| IA 18 FLN 08 xx M1 | M18 x 1 x 79 | M18 x 1 | 79 | 67 | 12 | M12 x 1 |
| IA 30 FSF 10 xx | M30 x 1.5 x 35 | M30 x 1.5 | 35 | - | - | - |
| IA 30 FSF 10 xx M1 | M30 x 1.5 x 48 | M30 x 1.5 | 48 | - | - | M12 x 1 |
| IA 30 FLF 10 xx | M30 x 1.5 x 55 | M30 x 1.5 | 55 | - | - | - |
| IA 30 FLF 10 xx M1 | M30 x 1.5 x 78 | M30 x 1.5 | 78 | - | - | M12 x 1 |
| IA 30 FSN 15 xx | M30 x 1.5 x 35 | M30 x 1.5 | 35 | 25 | 10 | - |
| IA 30 FSN 15 xx M1 | M30 x 1.5 x 48 | M30 x 1.5 | 48 | 38 | 10 | M12 x 1 |
| IA 30 FLN 15 xx | M30 x 1.5 x 55 | M30 x 1.5 | 55 | 45 | 10 | - |
| IA 30 FLN 15 xx M1 | M30 x 1.5 x 78 | M30 x 1.5 | 78 | 68 | 10 | M12 x 1 |

Dimensions: cable type



Dimensions: plug type



Wiring Diagrams

