

# Proximity Sensors Inductive Extended Range, Nickel-Plated Brass Housing Types IA, M18 and M30

CARLO GAVAZZI



- Sensing distance: 8 to 22 mm
- Flush and non-flush types
- Long and short body
- Rated operational voltage: 10 - 40 VDC
- Output: DC 200 mA, NPN or PNP
- Normally open / Normally closed function
- LED-indication
- Protection: reverse polarity, short circuit, transients
- Cable and plug versions

## Product Description

A family of Extended range inductive proximity switches in industrial standard nickel-plated brass housings. M18 and M30 types. They are able to handle applications

where high sensing range is requested. Output are open collector NPN or PNP transistors. Available with cable and M12 plug.

## Ordering Key

**IA18ASF08NOM1**

|                      |    |
|----------------------|----|
| Type                 | IA |
| Housing style        | 18 |
| Housing size         | A  |
| Housing material     | S  |
| Housing length       | F  |
| Detection principle  | 0  |
| Sensing distance     | 8  |
| Output type          | N  |
| Output configuration | M  |
| Connection type      | O  |

## Type Selection

| Housing diameter | Connection | Body style | Rated operating distance $S_n$ | Ordering no. NPN Normally open | Ordering no. PNP Normally open | Ordering no. PNP Normally closed |
|------------------|------------|------------|--------------------------------|--------------------------------|--------------------------------|----------------------------------|
| M18              | Cable      | Short      | 8 mm <sup>1)</sup>             | IA 18 DSF 08 NO                | IA 18 DSF 08 PO                |                                  |
| M18              | Plug       | Short      | 8 mm <sup>1)</sup>             | IA 18 ASF 08 NOM1              | IA 18 ASF 08 POM1              |                                  |
| M18              | Cable      | Short      | 14 mm <sup>2)</sup>            | IA 18 DSN 14 NO                | IA 18 DSN 14 PO                |                                  |
| M18              | Plug       | Short      | 14 mm <sup>2)</sup>            | IA 18 ASN 14 NOM1              | IA 18 ASN 14 POM1              |                                  |
| M30              | Cable      | Short      | 15 mm <sup>1)</sup>            | IA 30 DSF 15 NO                | IA 30 DSF 15 PO                | IA 30 DSF 15 PC                  |
| M30              | Plug       | Short      | 15 mm <sup>1)</sup>            | IA 30 ASF 15 NOM1              | IA 30 ASF 15 POM1              |                                  |
| M30              | Cable      | Short      | 22 mm <sup>2)</sup>            | IA 30 DSN 22 NO                | IA 30 DSN 22 PO                |                                  |
| M30              | Plug       | Short      | 22 mm <sup>2)</sup>            | IA 30 ASN 22 NOM1              | IA 30 ASN 22 POM1              |                                  |

<sup>1)</sup> For flush mounting in metal

<sup>2)</sup> For non-flush mounting in metal

## Specifications

|                                     |  |  |   |
|-------------------------------------|--|--|---|
| Rated operational voltage ( $U_b$ ) | 10 to 40 VDC (ripple incl.)                        | Operating frequency (f)                      | IA18 ..F 08 $\geq 1400$ Hz<br>IA18 ..N 14 $\geq 700$ Hz<br>IA30 ..F 15 $\geq 700$ Hz<br>IA30 ..N 22 $\geq 500$ Hz |
| Ripple                              | $\leq 10\%$  | Indication for output ON                     | LED, yellow   |
| Output current ( $I_e$ )            | $\leq 200$ mA @ 50°C<br>( $\leq 150$ mA @ 50-70°C) | Assured operating sensing distance ( $S_a$ ) | $0 \leq S_a \leq 0.81 \times S_n$   |
| No load supply current ( $I_o$ )    | IA 18 $\leq 10$ mA<br>IA 30 $\leq 10$ mA           | Effective operating distance ( $S_r$ )       | $0.9 \times S_n \leq S_r \leq 1.1 \times S_n$   |
| Voltage drop ( $U_d$ )              | Max. 2.5 VDC @ 200 mA                              | Usable operating distance ( $S_u$ )          | $0.85 \times S_r \leq S_u \leq 1.15 \times S_r$   |
| Protection                          | Reverse polarity, short-circuit, transients        | Repeat accuracy (R)                          | $\leq 5\%$  |
| Transient voltage                   | 1 kV/0.5 J   | Differential travel (H) (Hysteresis)         | 1 to 20% of sensing dist.   |
| Power ON delay ( $t_v$ )            | 50 ms  |  |   |

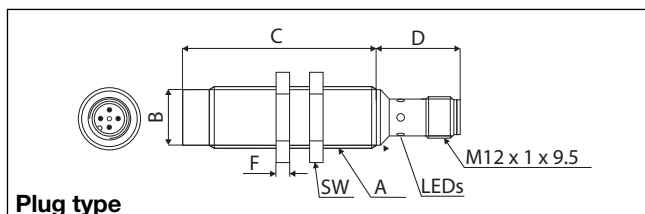
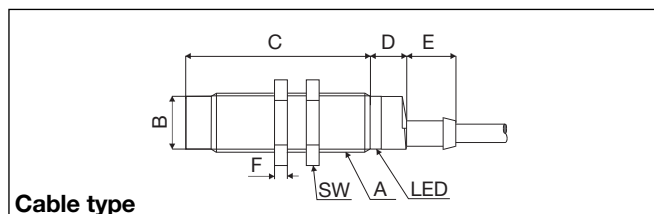


## Specifications (cont.)

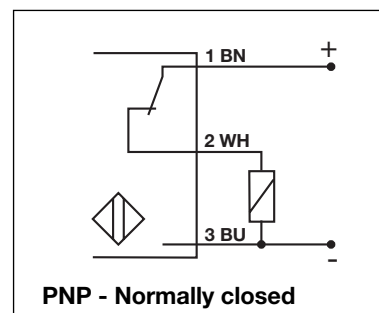
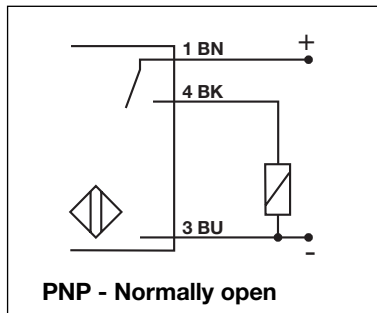
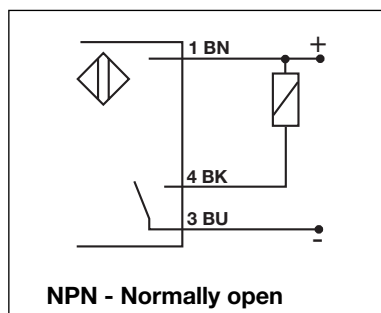
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|---|---|---|--------------------|
| <b>Ambient temperature</b><br>Operating<br>Storage                            | -25° to +70°C (-13° to +158°F)<br>-30° to +80°C (-22° to +176°F)                            | <b>Degree of protection</b>                                   | IP 67              |
| <b>Housing material</b><br>Body<br>Front<br>Backpart<br>Plug<br>Cable<br>Nuts | Nickel-plated brass<br>Grey thermoplastic polyester<br>NPB<br>PBTP (black polyester)<br>NPB | <b>Weight (cable/nuts included)</b><br>IA 18 .S.<br>IA 30 .S. | 120 g<br>185 g     |
| <b>Connection</b><br>Cable<br><br>Plug<br>Cables for plug (-1)                | 2 m, 3 x 0.3 mm <sup>2</sup> ,<br>grey PVC, oil proof<br>M12 x 1<br>CONM13NF series         | <b>Tightening torque</b><br>IA 18<br>IA 30                    | 27.5 Nm<br>50.0 Nm |
|   |   | <b>Approvals</b>  | UL, CSA            |
|   |   | <b>CE-marking</b>   | Yes                |

## Dimensions

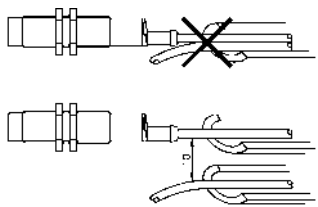
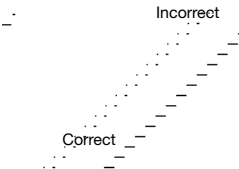
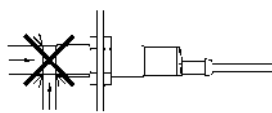
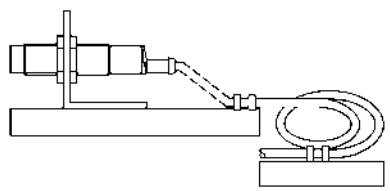
| Type               | A              | B<br>Ø mm | C<br>mm | D<br>mm | E<br>mm | F<br>mm | SW<br>mm |
|--------------------|----------------|-----------|---------|---------|---------|---------|----------|
| IA 18 DSF 08 .O    | M18 x 1 x 30   | 16.7      | 30      | 11.6    | 15.4    | 4       | 24       |
| IA 18 ASF 08 .O M1 | M18 x 1 x 30   | 16.7      | 30      | 25.0    |         | 4       | 24       |
| IA 18 DSN 14 .O    | M18 x 1 x 30   | 16.7      | 38      | 11.6    | 15.4    | 4       | 24       |
| IA 18 ASN 14 .O M1 | M18 x 1 x 30   | 16.7      | 38      | 25.0    |         | 4       | 24       |
| IA 30 DSF 15 xx    | M30 x 1.5 x 30 | 28        | 30      | 13.6    | 15.4    | 5       | 36       |
| IA 30 ASF 15 .O M1 | M30 x 1.5 x 30 | 28        | 30      | 25.0    |         | 5       | 36       |
| IA 30 DSN 22 .O    | M30 x 1.5 x 30 | 28        | 42      | 13.6    | 15.4    | 5       | 36       |
| IA 30 ASN 22 .O M1 | M30 x 1.5 x 30 | 28        | 42      | 25.0    |         | 5       | 36       |



## Wiring Diagrams



## Installation Hints

|   |   |  |  |
|---|---|--|--|
| <p>To avoid interference from inductive voltage/current peaks, separate the prox. switch power cables from any other power cables, e.g. motor, contactor or solenoid cables</p>  | <p>Relief of cable strain</p>  <p>The cable should not be pulled</p> | <p>Protection of the sensing face</p>  <p>A proximity switch should not serve as mechanical stop</p> | <p>Switch mounted on mobile carrier</p>  <p>Any repetitive flexing of the cable should be avoided</p> |
|---|---|--|--|

## Delivery Contents

- Inductive proximity switch IA..
- 2 nuts NPB
- Packaging: plastic bag

## Accessories

|                       |                       |
|-----------------------|-----------------------|
| <b>M 12 connector</b> |                       |
| CONM13NF-A2           | (90°, 2 m cable)      |
| CONM13NF-A5           | (90°, 5 m cable)      |
| CONM13NF-S2           | (straight, 2 m cable) |
| CONM13NF-S5           | (straight, 5 m cable) |