

Proximity Inductive Sensors Standard Range, Nickel-Plated Brass Housing Types ICB, M30

CARLO GAVAZZI



- Sensing distance: 10 to 15 mm
- Flush or non-flush types
- Short or long body versions
- Rated operational voltage (U_b): 10 - 36 VDC
- Output: DC 200 mA, NPN or PNP
- Normally open or Normally closed
- LED indication for output ON
- Protection: reverse polarity, short circuit, transients
- Cable or M12 plug versions
- According to IEC 60947-5-2
- CSA certified for Hazardous Locations



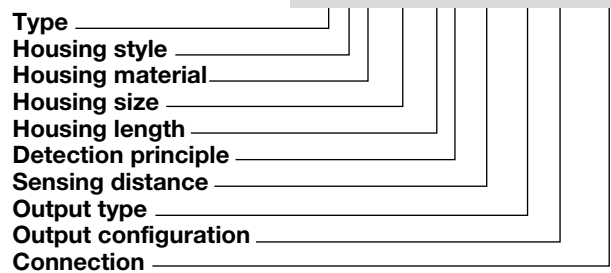
Product Description

A family of inductive proximity switches in industrial standard nickel-plated brass housings. They are able to handle applications where high sensing range is requested.

Output is open collector NPN or PNP transistors.

Ordering Key

ICB30SF10NOM1



Type Selection

| Conne- ction | Body 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 |
|-----------------|---------------|--------------------------------------|---------------------------------------|---------------------------------------|---|---|
| Cable | Short | 10 mm ¹⁾ | ICB30SF10NO | ICB30SF10PO | ICB30SF10NC | ICB30SF10PC |
| Cable | Short | 15 mm ²⁾ | ICB30SN15NO | ICB30SN15PO | ICB30SN15NC | ICB30SN15PC |
| Plug | Short | 10 mm ¹⁾ | ICB30SF10NOM1 | ICB30SF10POM1 | ICB30SF10NCM1 | ICB30SF10PCM1 |
| Plug | Short | 15 mm ²⁾ | ICB30SN15NOM1 | ICB30SN15POM1 | ICB30SN15NCM1 | ICB30SN15PCM1 |
| Cable | Long | 10 mm ¹⁾ | ICB30LF10NO | ICB30LF10PO | ICB30LF10NC | ICB30LF10PC |
| Cable | Long | 15 mm ²⁾ | ICB30LN15NO | ICB30LN15PO | ICB30LN15NC | ICB30LN15PC |
| Plug | Long | 10 mm ¹⁾ | ICB30LF10NOM1 | ICB30LF10POM1 | ICB30LF10NCM1 | ICB30LF10PCM1 |
| Plug | Long | 15 mm ²⁾ | ICB30LN15NOM1 | ICB30LN15POM1 | ICB30LN15NCM1 | ICB30LN15PCM1 |

¹⁾ For flush mounting in metal

²⁾ For non-flush mounting in metal

Specifications

| | | | |
|---|--|--|--|
| Rated operational voltage (U_b) | 10 to 36 VDC (ripple incl.) | Indication for short circuit/ overload | LED blinking (f = 2 Hz) |
| Ripple | ≤ 10% | Assured operating sensing distance (S_a) | $0 \leq S_a \leq 0.81 \times S_n$ |
| Output current (I_o) | ≤ 200 mA @ 50°C (≤ 150 mA @ 50-70°C) | Effective operating distance (S_r) | $0.9 \times S_n \leq S_r \leq 1.1 \times S_n$ |
| OFF-state current (I_i) | ≤ 50 μA | Usable operating distance (S_u) | $0.85 \times S_r \leq S_u \leq 1.1 \times S_r$ |
| No load supply current (I_o) | ≤ 15 mA | Repeat accuracy (R) | ≤ 5% |
| Voltage drop (U_d) | Max. 2.5 VDC @ 200 mA | Differential travel (H) (Hysteresis) | 1 to 20% of sensing dist. |
| Protection | Reverse polarity, short-circuit, transients | Ambient temperature | Operating Storage |
| Voltage transient | 1 kV/0.5 J | | -25° to +70°C (-13° to +158°F) -30° to +80°C (-22° to +176°F) |
| Power ON delay (t_v) | 300 ms | Shock and vibration | IEC 60947-5-2/7.4 |
| Operating frequency (f) | ≤ 1000 Hz | Housing material | |
| Indication for output ON | Activated LED, yellow | Body | Nickel-plated brass |
| NO version | Target present | Front cap | Grey thermoplastic polyester |
| NC version | Target not present | | |



Specifications (cont.)

| | |
|-------------------------------------|---|
| Connection Cable | Ø5.2 x 2 m, 3 x 0.34 mm ² , grey PVC, oil proof |
| Plug | M12 x 1 |
| Degree of protection | IP 67 |
| Weight (cable/nuts included) | |
| ICB30 S | Max. 185 g |
| ICB30 L | Max. 195 g |
| Dimensions | See diagrams below |
| Tightening torque | 25 Nm |
| Approvals | |
| UL (RU), CSA | As Industrial Control Equipment - Proximity Switches. Types 1, 4, 4X or 12. Max ambient temperature 40°C. |

Approvals (cont.)

Note: The terminal connector (version ...M1) was not evaluated. The suitability of the terminal connector should be determined in the end-use application.

cCSAus

As Process Control Equipment for Hazardous Locations.
- Class I, Division 2, Groups A, B, C and D.
- T5 up to 150 mA, T4A for a load current > 150 mA and up to 200 mA, Enclosure Type 4.
Ambient temperature Ta: -25° to +60°C.
CCC is not required for products with a maximum operating voltage of ≤ 36 V

EMC protection

IEC 61000-4-2 (ESD)

IEC 61000-4-3

IEC 61000-4-4

IEC 61000-4-6

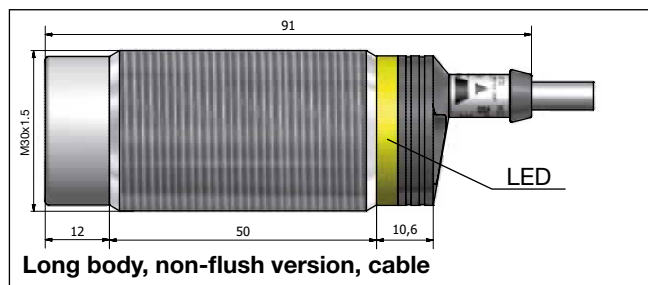
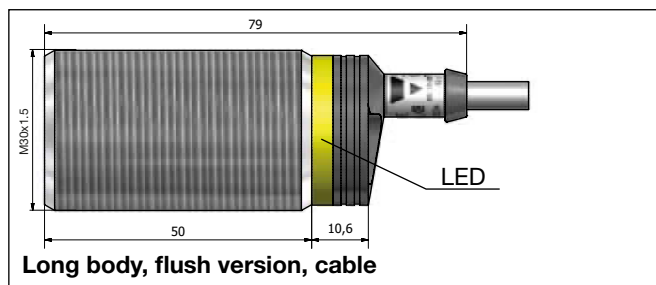
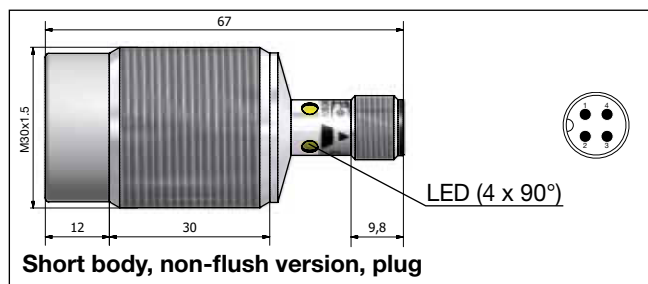
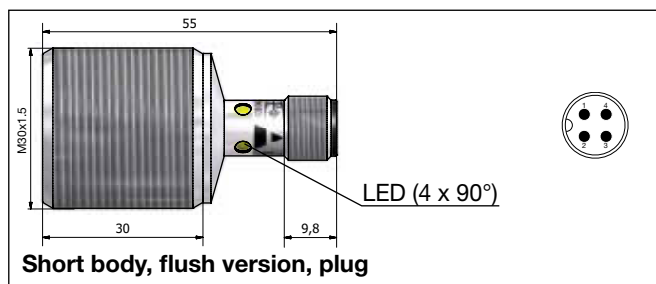
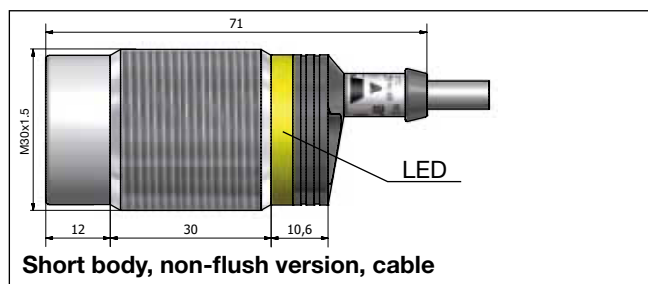
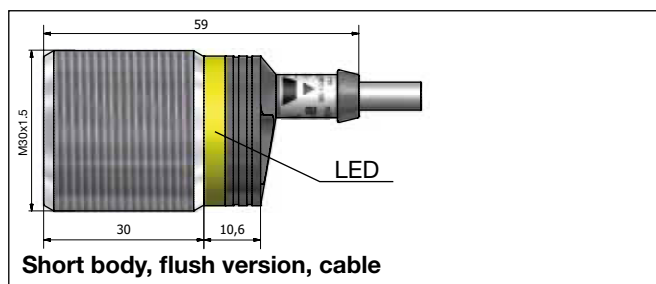
IEC 61000-4-8

According to IEC 60947-5-2
8 KV air discharge,
4 KV contact discharge
3 V/m
2 kV
3 V
30 A/m

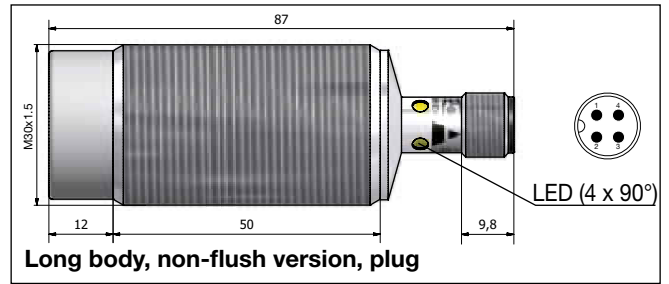
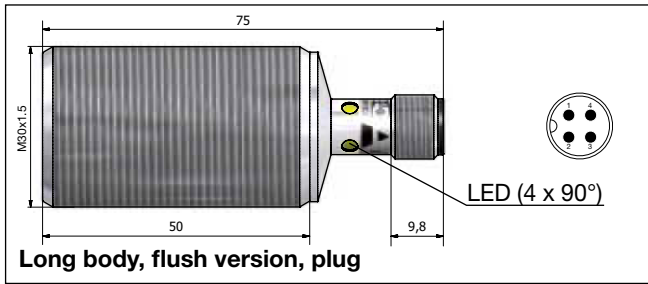
MTTF_d

850 years @ 50°C (122°F)

Dimensions (mm)

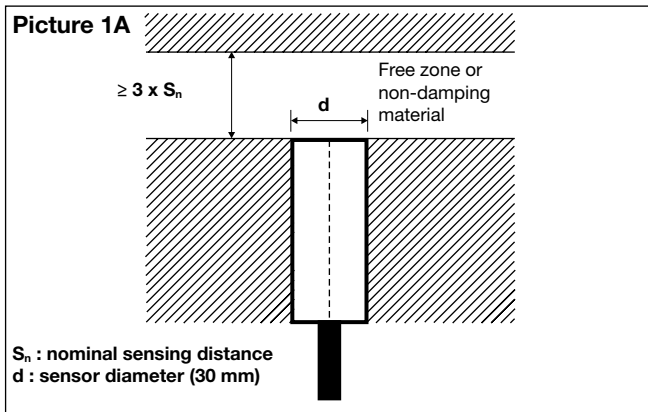


Dimensions (mm) (cont.)

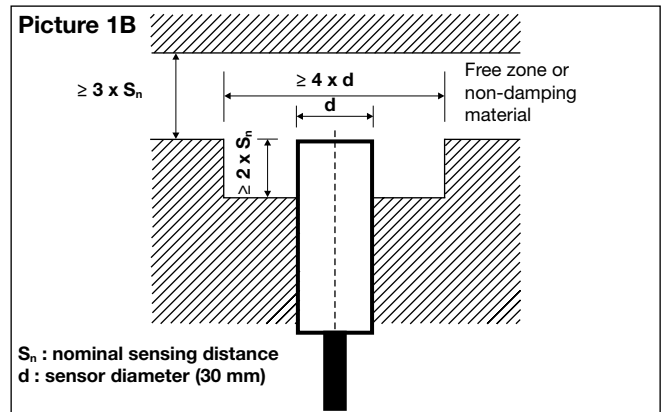


Installation

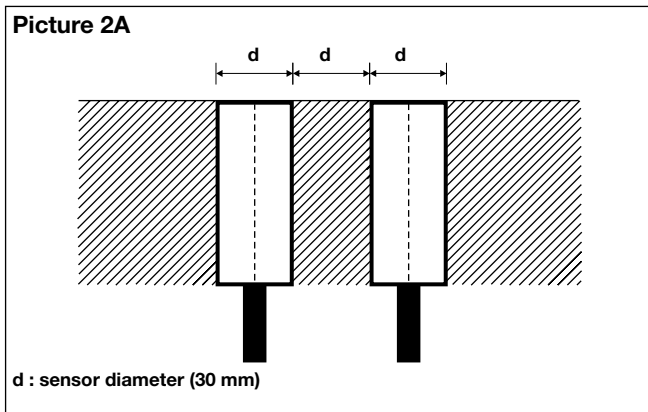
Flush sensor, when installed in damping material, must be according to Picture 1A.



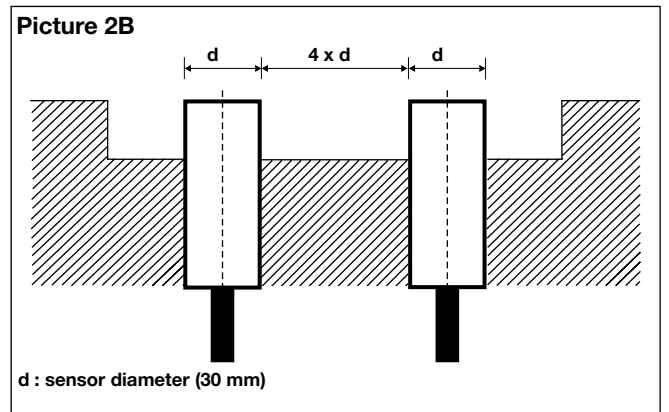
Non-flush sensor, when installed in damping material, must be according to Picture 1B.



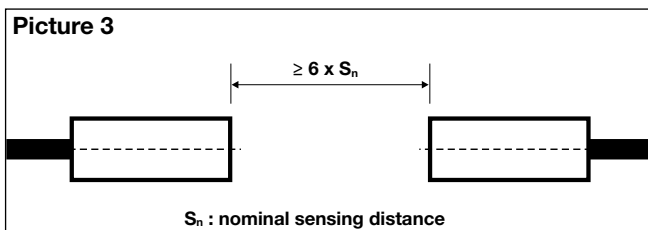
Flush sensors, when installed together in damping material, must be according to Picture 2A.



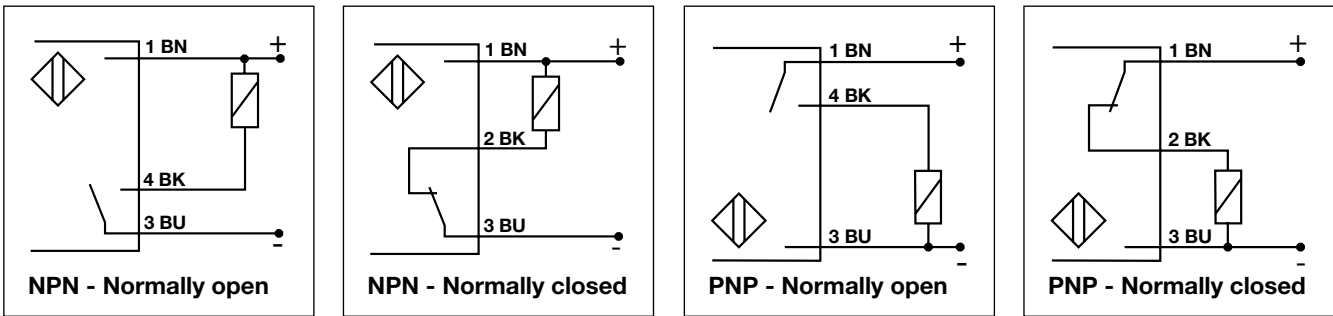
Non-flush sensors, when installed together in damping material, must be according to Picture 2B.



For sensors installed opposite each other, a minimum space of $6 \times S_n$ (the nominal sensing distance) must be observed (See Picture 3).



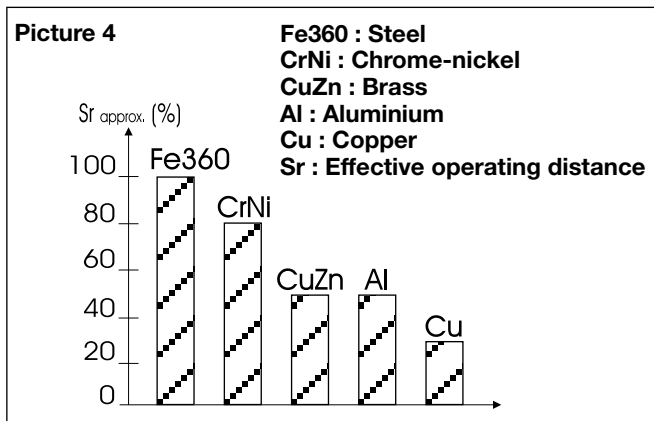
Wiring Diagram



Reduction Factors

The rated operating distance is reduced by the use of metals and alloys other than Fe360.

The most important reduction factors for inductive proximity sensors are shown in Picture 4.



Accessories for Plug Versions

| | |
|--------------------------------------|---------------------|
| 3-wire angled connector, 2 m cable | CONM13NF-A2 |
| 3-wire angled connector, 5 m cable | CONM13NF-A5 |
| 3-wire angled connector, 10 m cable | CONM13NF-A10 |
| 3-wire straight connector, 2 m cable | CONM13NF-S2 |
| 3-wire straight connector, 5 m cable | CONM13NF-S5 |

For any additional information or different options, please refer to the "General Accessories" datasheets.

Delivery Contents

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

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