

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

CARLO GAVAZZI



- Sensing distance: 15 to 22 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, short-circuit and overload
- Protection: reverse polarity, short circuit, transients
- Cable or M12 plug versions
- According to IEC 60947-5-2
- Laser engraved on front cap, permanently legible
- 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

ICB30S30F15NOM1

| | |
|----------------------|-------|
| Type | _____ |
| Housing style | _____ |
| Housing material | _____ |
| Housing size | _____ |
| Housing length | _____ |
| Thread length | _____ |
| Detection principle | _____ |
| Sensing distance | _____ |
| Output type | _____ |
| Output configuration | _____ |
| Connection | _____ |

Type Selection

| Connection | 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 | 15 mm ¹⁾ | ICB30S30F15NO | ICB30S30F15PO | ICB30S30F15NC | ICB30S30F15PC |
| Cable | Short | 22 mm ²⁾ | ICB30S30N22NO | ICB30S30N22PO | ICB30S30N22NC | ICB30S30N22PC |
| Plug | Short | 15 mm ¹⁾ | ICB30S30F15NOM1 | ICB30S30F15POM1 | ICB30S30F15NCM1 | ICB30S30F15PCM1 |
| Plug | Short | 22 mm ²⁾ | ICB30S30N22NOM1 | ICB30S30N22POM1 | ICB30S30N22NCM1 | ICB30S30N22PCM1 |
| Cable | Long | 15 mm ¹⁾ | ICB30L50F15NO | ICB30L50F15PO | ICB30L50F15NC | ICB30L50F15PC |
| Cable | Long | 22 mm ²⁾ | ICB30L50N22NO | ICB30L50N22PO | ICB30L50N22NC | ICB30L50N22PC |
| Plug | Long | 15 mm ¹⁾ | ICB30L50F15NOM1 | ICB30L50F15POM1 | ICB30L50F15NCM1 | ICB30L50F15PCM1 |
| Plug | Long | 22 mm ²⁾ | ICB30L50N22NOM1 | ICB30L50N22POM1 | ICB30L50N22NCM1 | ICB30L50N22PCM1 |

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 output ON | Activated LED, yellow |
| Ripple | ≤ 10% | NO version | Target present |
| Output current (I_a) | ≤ 200 mA @ 50°C (≤ 150 mA @ 50-70°C) | NC version | Target not present |
| OFF-state current (I_o) | ≤ 50 μA | Indication for short circuit/ overload | LED blinking (f = 2 Hz) |
| No load supply current (I_o) | ≤ 15 mA | Assured operating sensing distance (S_a) | $0 \leq S_a \leq 0.81 \times S_n$ |
| Voltage drop (U_d) | Max. 2.5 VDC @ 200 mA | Effective operating distance (S_r) | $0.9 \times S_n \leq S_r \leq 1.1 \times S_n$ |
| Protection | Reverse polarity, short-circuit, transients | Usable operating distance (S_u) | $0.85 \times S_r \leq S_u \leq 1.1 \times S_r$ |
| Voltage transient | 1 kV/0.5 J | Repeat accuracy (R) | ≤ 5% |
| Power ON delay (t_v) | 300 ms | Differential travel (H) (Hysteresis) | 1 to 20% of sensing dist. |
| Operating frequency (f) | ≤ 1000 Hz | | |

Specifications (cont.)

| | |
|-------------------------------------|--|
| Ambient temperature | |
| Operating | |
| Cable | -25° to +70°C (-13° to +158°F) |
| Plug | -40° to +70°C (-40° to +158°F) |
| Storage | -40° to +80°C (-40° to +176°F) |
| Shock and vibration | IEC 60947-5-2/7.4 |
| Housing material | |
| Body | Nickel-plated brass |
| Front cap | Grey thermoplastic polyester |
| 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 | cULus (UL508) |

Approvals (cont.)

cCSAus

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

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)

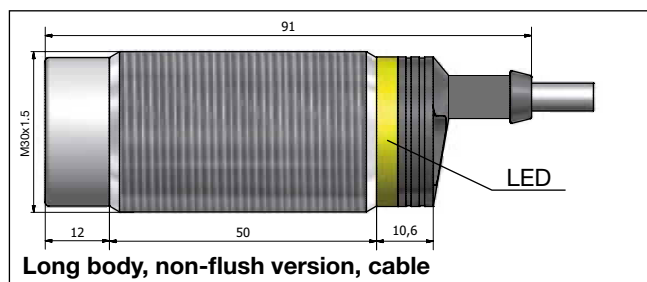
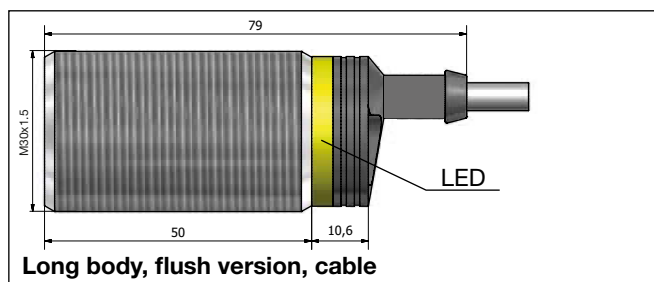
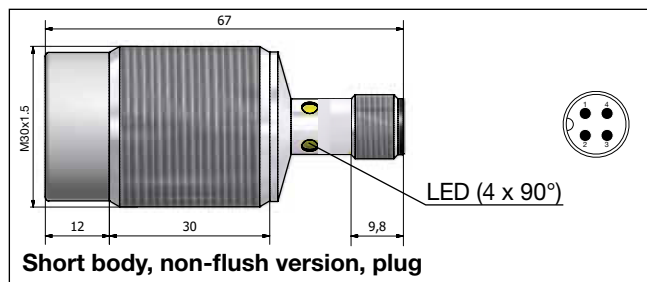
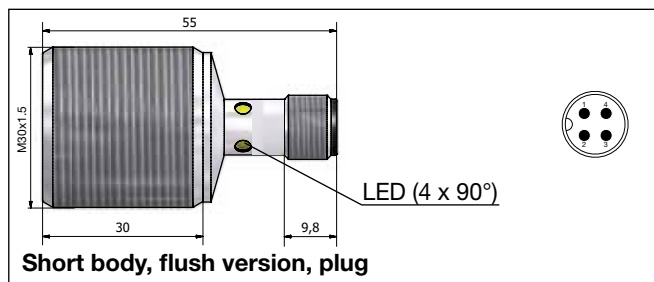
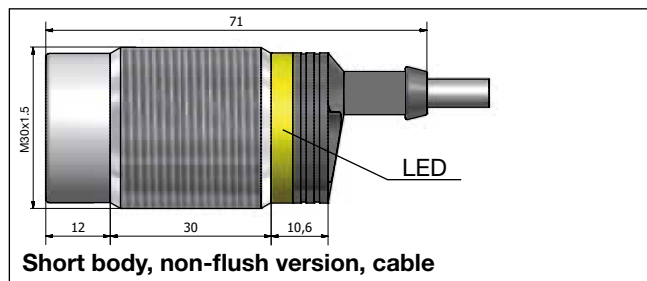
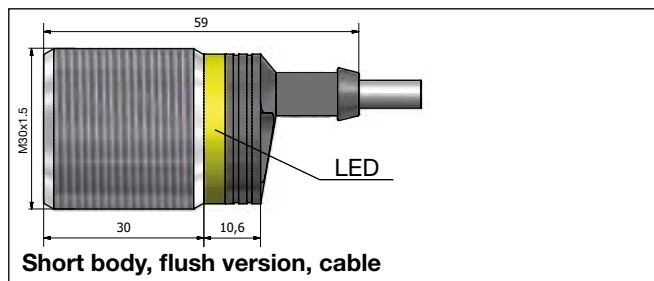
IEC 61000-4-3
IEC 61000-4-4
IEC 61000-4-6
IEC 61000-4-8

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

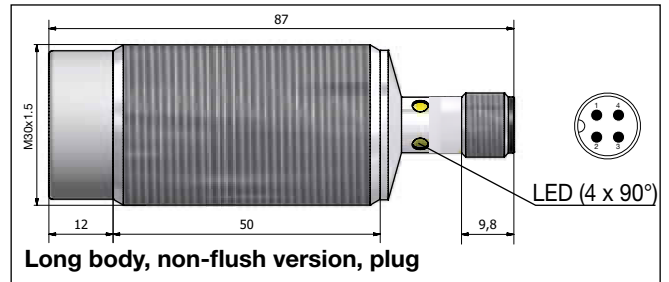
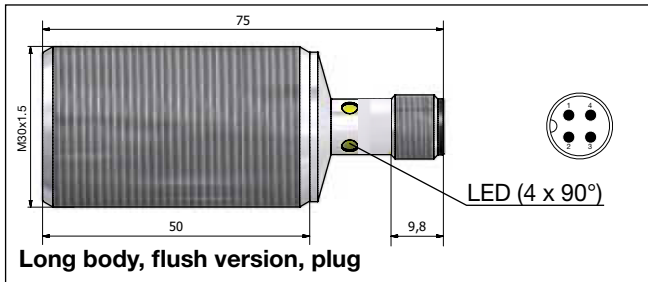
MTTF_d

850 years @ 50°C (122°F)

Dimensions (mm)

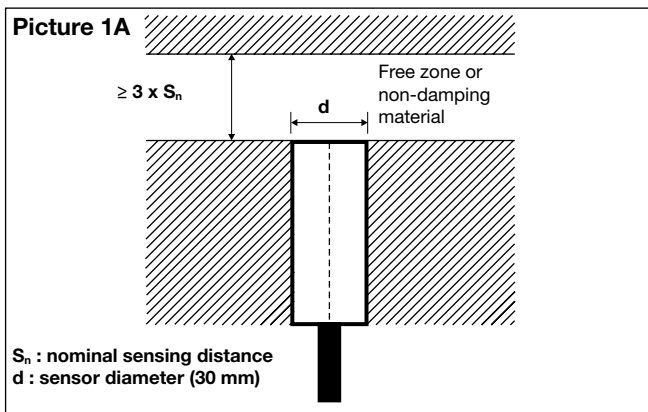


Dimensions (mm) (cont.)

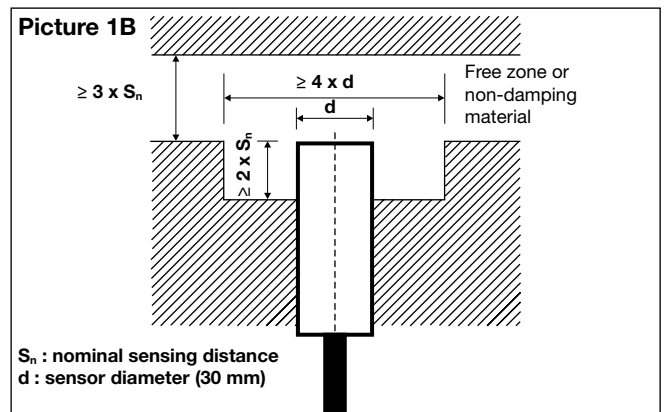


Installation

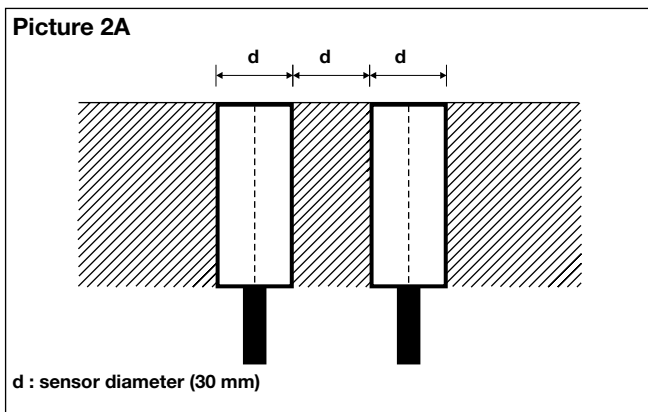
Flush sensor, when installed in damping material, must be according to Picture 1A.



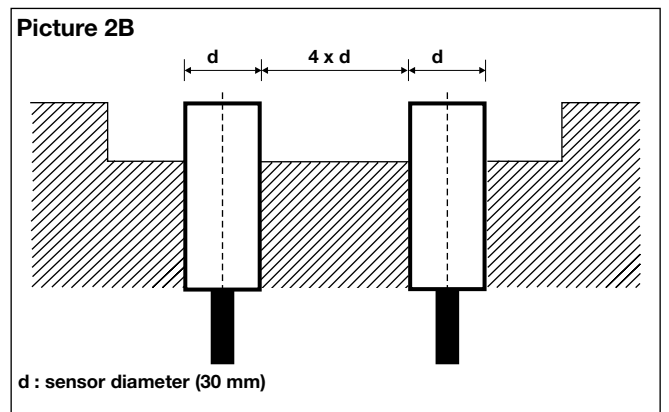
Non-flush sensor, when installed in damping material, must be according to Picture 1B.



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).

