

Proximity Inductive Sensors Extended Range, Nickel-Plated Brass Housing Types ICB, M12



- Sensing distance: 4 to 8 mm
- Flush and non-flush types
- Short and long body versions
- Rated operational voltage (U_b): 10 - 36 VDC
- Output: DC 200 mA, NPN or PNP
- Normally open, Normally closed
- LED indication for output ON
- Protection: reverse polarity, short circuit, transients
- Cable and M12 plug versions
- According to IEC 60947-5-2
- CSA certified for Hazardous Locations

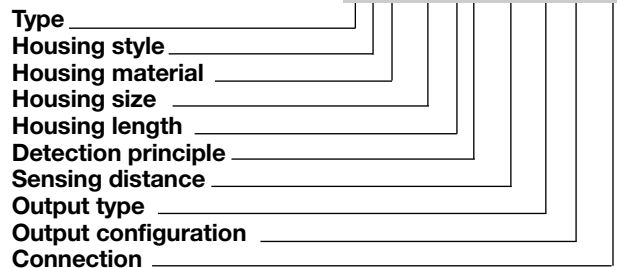
Product Description

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

ICB12SF04NOM1



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 | 4 mm ¹⁾ | ICB 12 SF 04 NO | ICB 12 SF 04 PO | ICB 12 SF 04 NC | ICB 12 SF 04 PC |
| Cable | Short | 8 mm ²⁾ | ICB 12 SN 08 NO | ICB 12 SN 08 PO | ICB 12 SN 08 NC | ICB 12 SN 08 PC |
| Plug | Short | 4 mm ¹⁾ | ICB 12 SF 04 NOM1 | ICB 12 SF 04 POM1 | ICB 12 SF 04 NCM1 | ICB 12 SF 04 PCM1 |
| Plug | Short | 8 mm ²⁾ | ICB 12 SN 08 NOM1 | ICB 12 SN 08 POM1 | ICB 12 SN 08 NCM1 | ICB 12 SN 08 PCM1 |
| Cable | Long | 4 mm ¹⁾ | ICB 12 LF 04 NO | ICB 12 LF 04 PO | ICB 12 LF 04 NC | ICB 12 LF 04 PC |
| Cable | Long | 8 mm ²⁾ | ICB 12 LN 08 NO | ICB 12 LN 08 PO | ICB 12 LN 08 NC | ICB 12 LN 08 PC |
| Plug | Long | 4 mm ¹⁾ | ICB 12 LF 04 NOM1 | ICB 12 LF 04 POM1 | ICB 12 LF 04 NCM1 | ICB 12 LF 04 PCM1 |
| Plug | Long | 8 mm ²⁾ | ICB 12 LN 08 NOM1 | ICB 12 LN 08 POM1 | ICB 12 LN 08 NCM1 | ICB 12 LN 08 PCM1 |

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 |
| 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_r) | ≤ 50 μA | Usable operating distance (S_u) | $0.9 \times S_r \leq S_u \leq 1.1 \times S_r$ |
| No load supply current (I_o) | ≤ 15 mA | Repeat accuracy (R) | ≤ 10% |
| 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 -25° to +70°C (-13° to +158°F) Storage -30° to +80°C (-22° to +176°F) |
| Voltage transient | 1 kV/0.5 J | Shock and vibration | IEC 60947-5-2/7.4 |
| Power ON delay (t_v) | 300 ms | Housing material | Body Nickel-plated brass Front Grey thermoplastic polyester |
| Operating frequency (f) | ≤ 2000 Hz | | |
| Indication for output ON | Activated LED, yellow | | |
| NO version | Target present | | |
| NC version | Target not present | | |

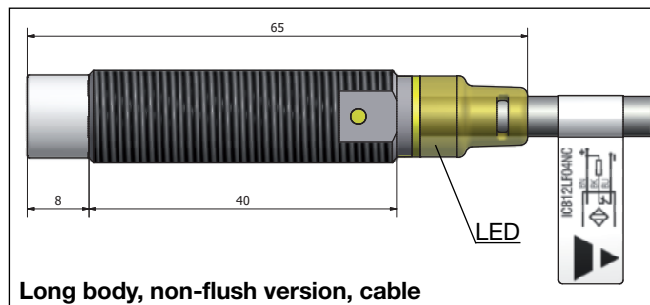
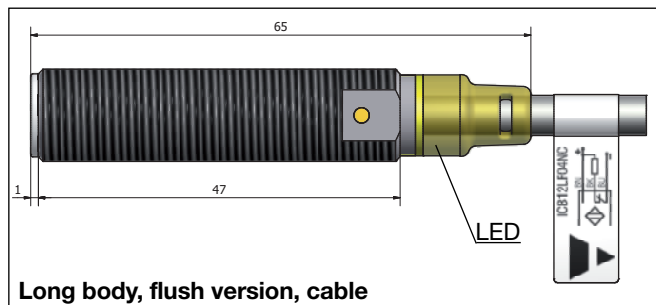
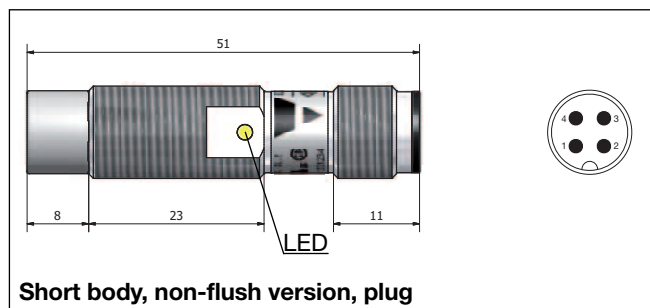
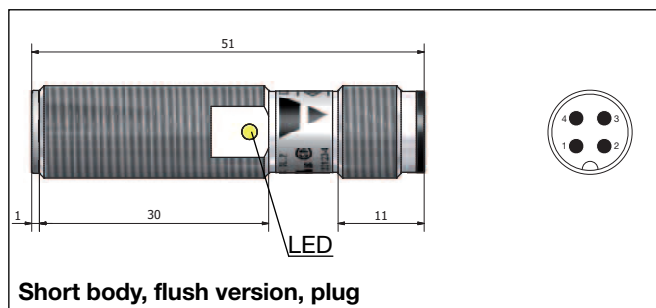
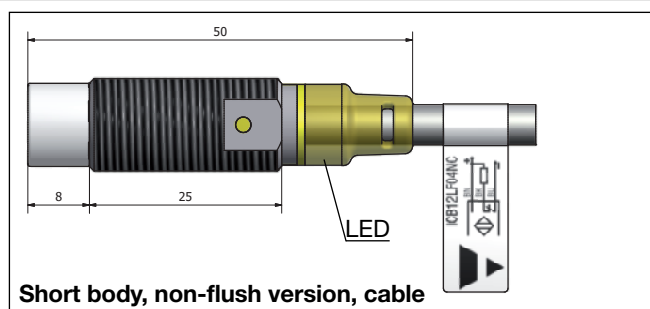
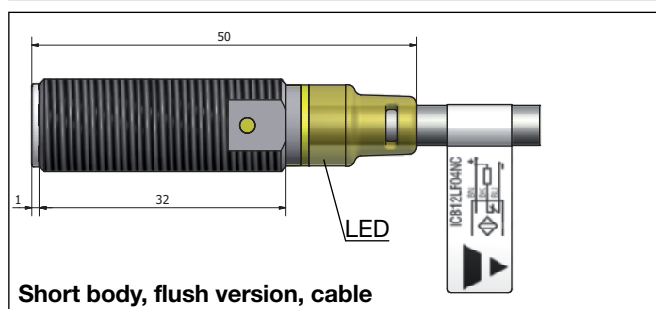


Specifications (cont.)

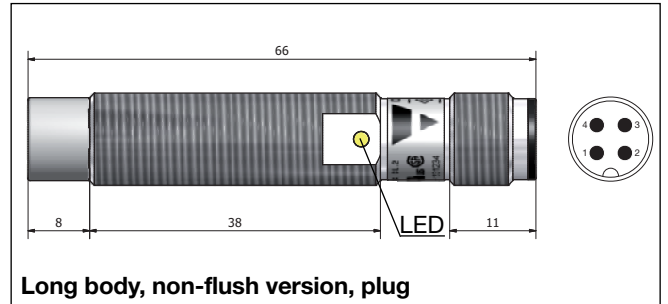
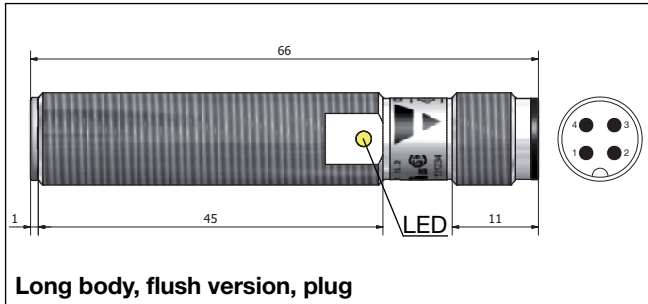
| | |
|--|---|
| Connection | |
| Cable | 2 m, 3 x 0.25 mm ² , grey PVC, oil proof M12 x 1 |
| Plug | |
| Degree of protection | IP 67 |
| Weight (cable/nuts included) | |
| Cable | Max. 120 g |
| Plug | Max. 30 g |
| Dimensions | See diagrams below |
| Tightening torque | |
| Distance from sensing face from 2 mm to 5 mm | 4 Nm |
| > 5 mm | 10 Nm |
| Approvals | |
| UL (cRUus), CSA | As Industrial Control Equipment - Proximity Switches. Types 1, 4, 4X or 12. Max ambient temperature 40°C. |

| | |
|--------------------------|--|
| Approvals (cont.) | |
| cCSAus | As Process Control Equipment for Hazardous Locations. - Class I, Division 2, Groups A, B, C and D. - T5, Enclosure Type 4. Ambient temperature Ta: -25° to +60°C. |
| Note: | The terminal connector (version ...M1) was not evaluated. The suitability of the terminal connector should be determined in the end-use application. |
| CE-marking | Yes |
| EMC protection | According to IEC 60947-5-2 8 KV air discharge, 4 KV contact discharge 3 V/m 2 kV 3 V 30 A/m |
| IEC 61000-4-2 (ESD) | |
| IEC 61000-4-3 | |
| IEC 61000-4-4 | |
| IEC 61000-4-6 | |
| IEC 61000-4-8 | |

Dimensions

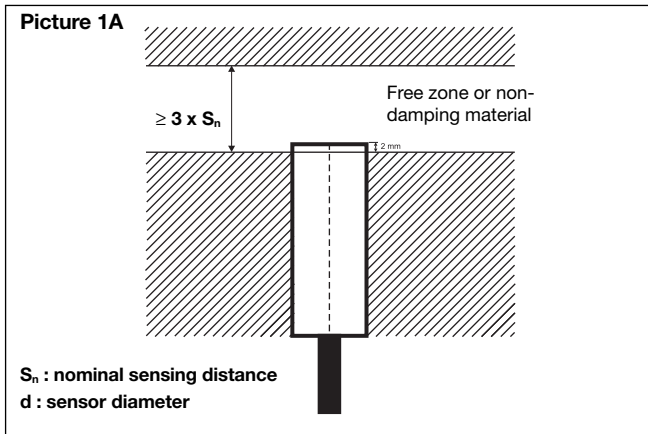


Dimensions (cont.)

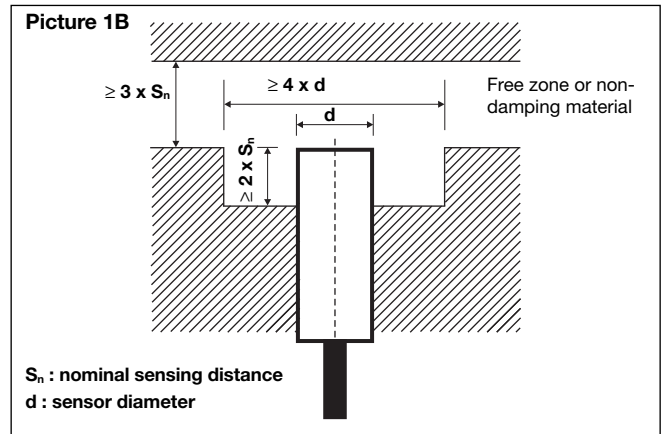


Installation

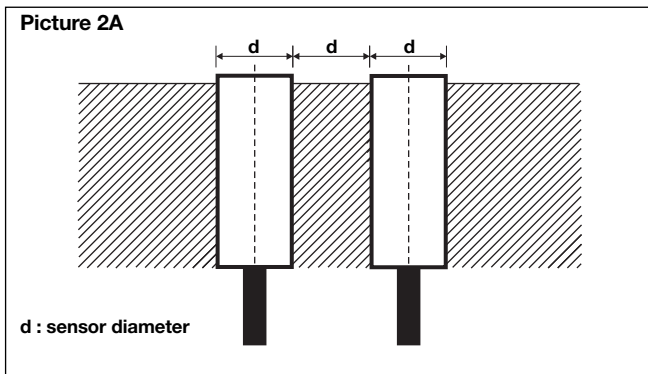
Flush sensor, when installed in damping material, must be according to Picture 1A.



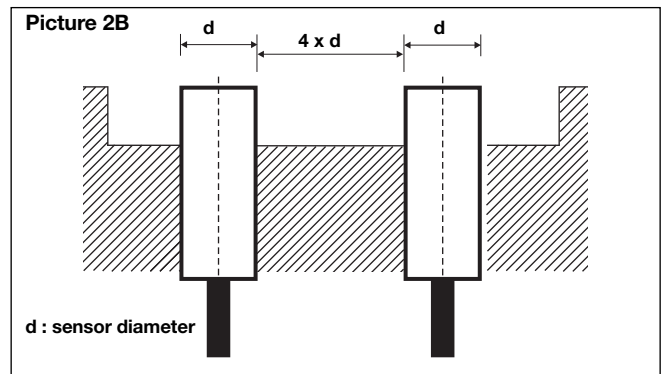
Non-flush sensor, when installed in damping material, must be according to Picture 1B.



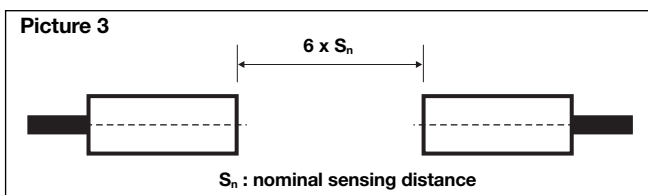
Flush sensors, when installed together in damping material, must be according to Picture 2A.



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

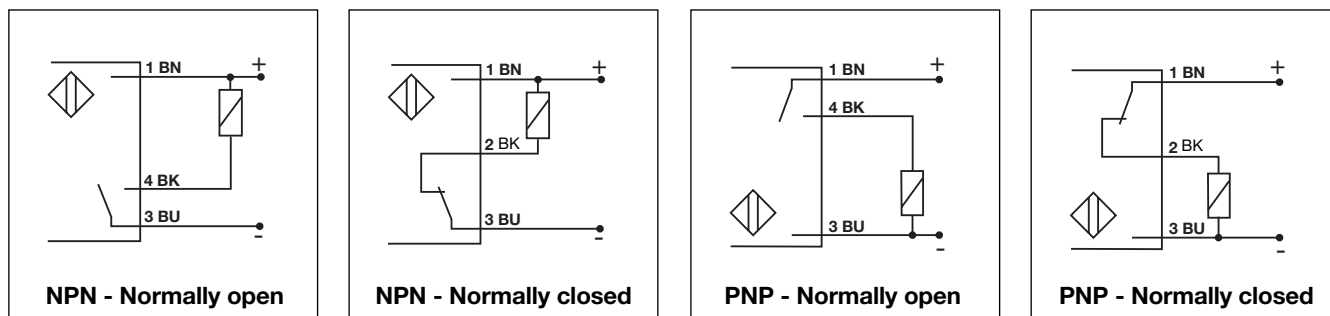


For sensors installed opposite each other, a minimum space of $6 \times S_n$ (the nominal sensing distance) must be observed (See Picture 3).





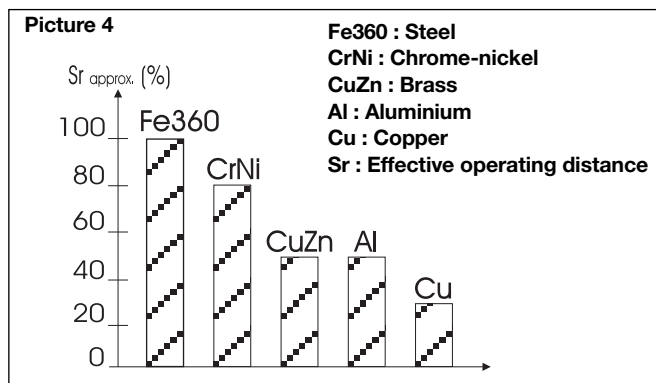
Wiring Diagrams



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 stright connector, 2m cable | CONM13NF-S2 |
| 3-wire stright connector, 5m 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