

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

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- 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
- 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

ICB30SF15NOM1

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

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	15 mm ¹⁾	ICB30SF15NO	ICB30SF15PO	ICB30SF15NC	ICB30SF15PC
Cable	Short	22 mm ²⁾	ICB30SN22NO	ICB30SN22PO	ICB30SN22NC	ICB30SN22PC
Plug	Short	15 mm ¹⁾	ICB30SF15NOM1	ICB30SF15POM1	ICB30SF15NCM1	ICB30SF15PCM1
Plug	Short	22 mm ²⁾	ICB30SN22NOM1	ICB30SN22POM1	ICB30SN22NCM1	ICB30SN22PCM1
Cable	Long	15 mm ¹⁾	ICB30LF15NO	ICB30LF15PO	ICB30LF15NC	ICB30LF15PC
Cable	Long	22 mm ²⁾	ICB30LN22NO	ICB30LN22PO	ICB30LN22NC	ICB30LN22PC
Plug	Long	15 mm ¹⁾	ICB30LF15NOM1	ICB30LF15POM1	ICB30LF15NCM1	ICB30LF15PCM1
Plug	Long	22 mm ²⁾	ICB30LN22NOM1	ICB30LN22POM1	ICB30LN22NCM1	ICB30LN22PCM1

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 -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 cap Grey thermoplastic polyester
Operating frequency (f)	≤ 1000 Hz		
Indication for output ON	Activated LED, yellow		
NO version	Target present		
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.)

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

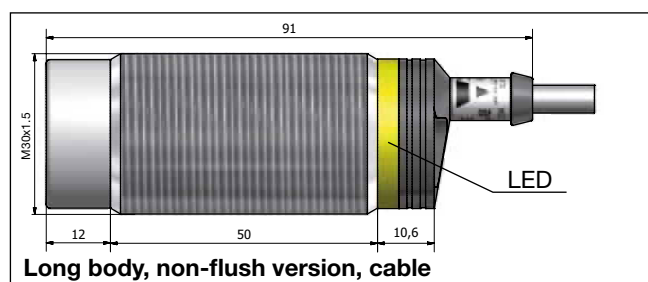
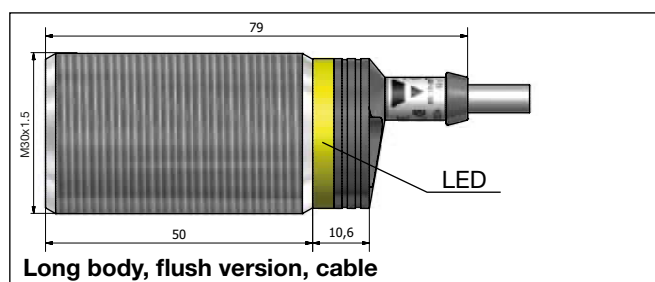
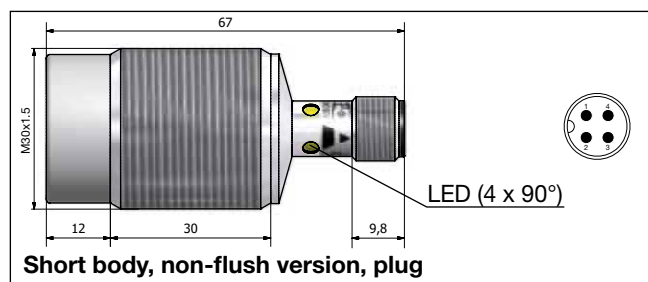
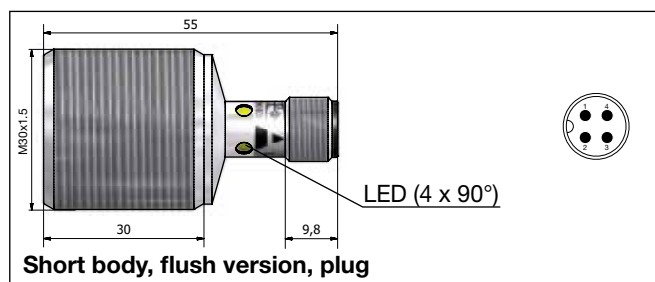
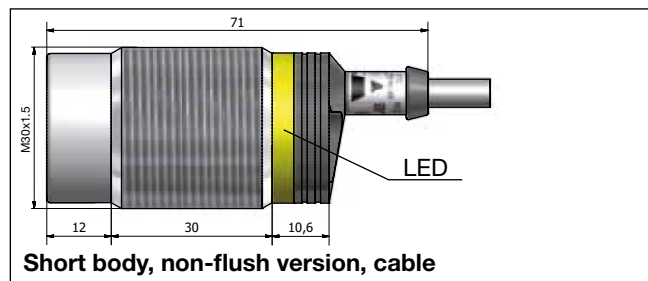
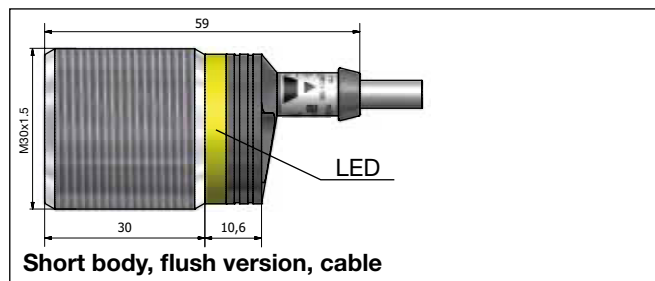
IEC 61000-4-8

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

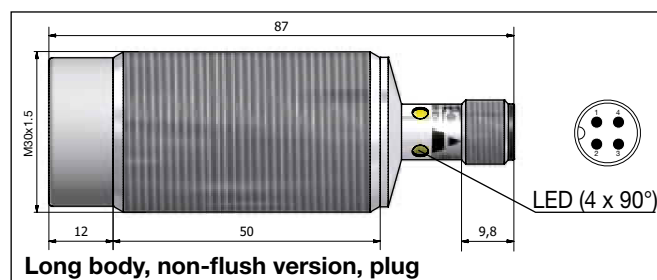
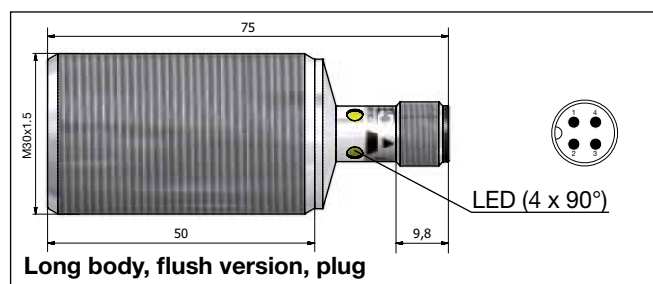
MTTF_d

850 years @ 50°C (122°F)

Dimensions (mm)

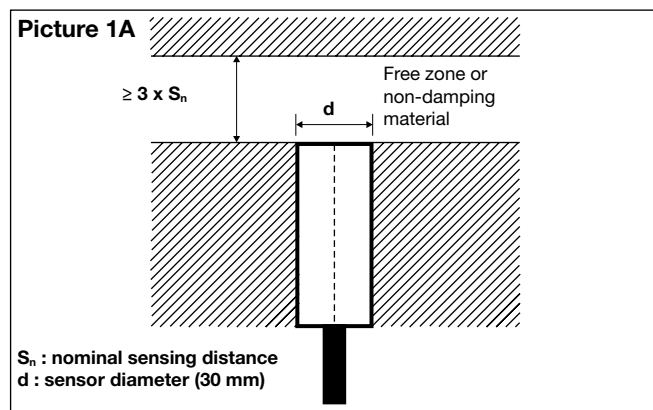


Dimensions (mm) (cont.)

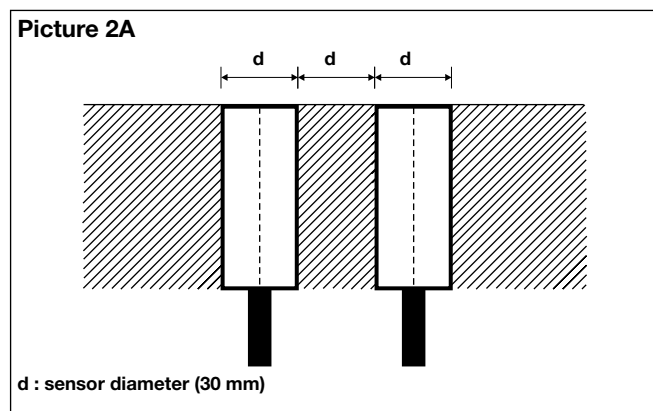


Installation

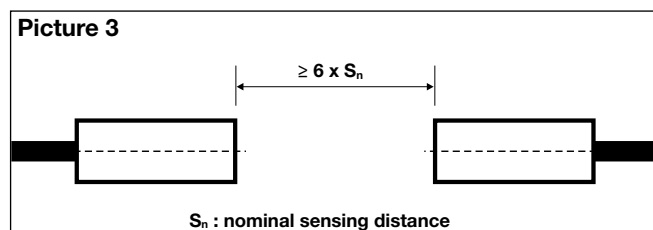
Flush sensor, when installed in damping material, must be according to Picture 1A.



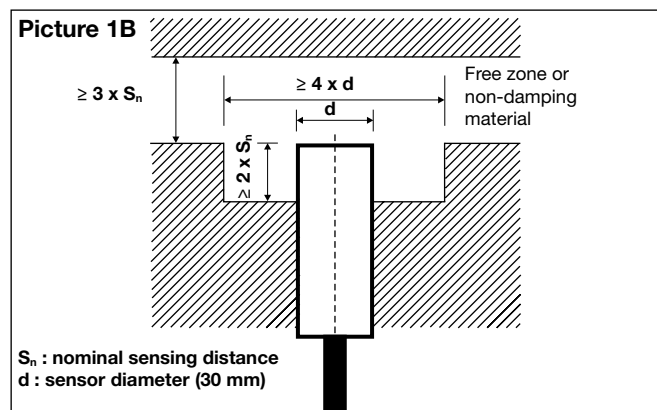
Flush sensors, when installed together in damping material, must be according to Picture 2A.



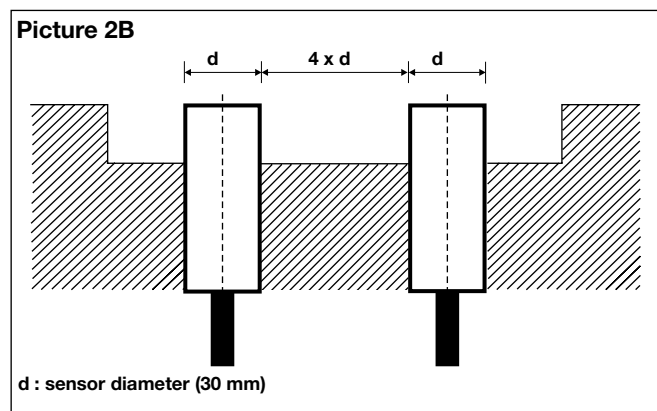
For sensors installed opposite each other, a minimum space of $6 \times S_n$ (the nominal sensing distance) must be observed (See Picture 3).



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

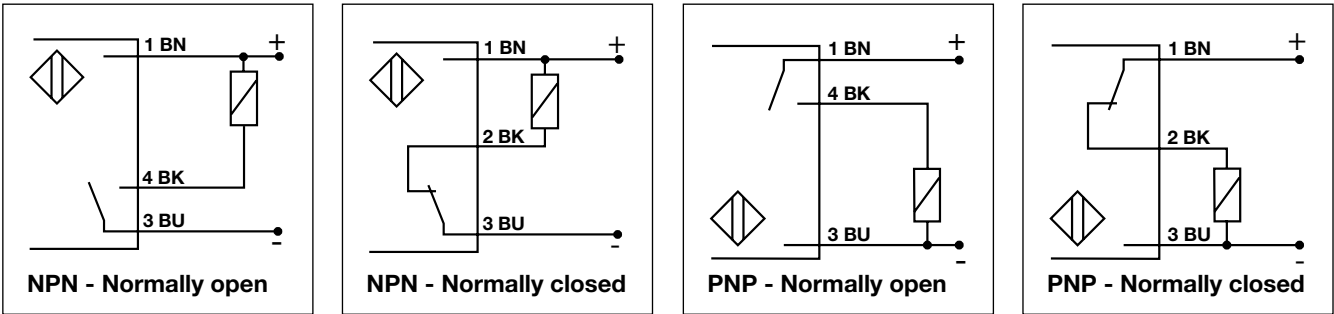


Non-flush sensors, when installed together in damping material, must be according to Picture 2B.





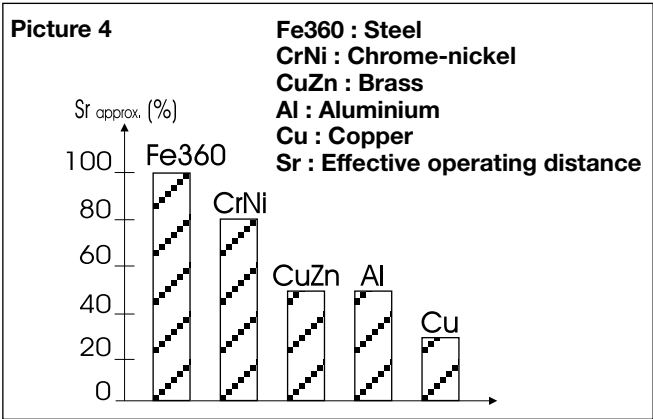
Wiring Diagram



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