

Proximity Inductive Sensors Standard range, Nickel-Plated Brass Housing Types ICB, M12

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- Sensing distance: 2 to 4 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

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

ICB12SF02NOM1

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	2 mm ¹⁾	ICB 12 SF 02 NO	ICB 12 SF 02 PO	ICB 12 SF 02 NC	ICB 12 SF 02 PC
Cable	Short	4 mm ²⁾	ICB 12 SN 04 NO	ICB 12 SN 04 PO	ICB 12 SN 04 NC	ICB 12 SN 04 PC
Plug	Short	2 mm ¹⁾	ICB 12 SF 02 NOM1	ICB 12 SF 02 POM1	ICB 12 SF 02 NCM1	ICB 12 SF 02 PCM1
Plug	Short	4 mm ²⁾	ICB 12 SN 04 NOM1	ICB 12 SN 04 POM1	ICB 12 SN 04 NCM1	ICB 12 SN 04 PCM1
Cable	Long	2 mm ¹⁾	ICB 12 LF 02 NO	ICB 12 LF 02 PO	ICB 12 LF 02 NC	ICB 12 LF 02 PC
Cable	Long	4 mm ²⁾	ICB 12 LN 04 NO	ICB 12 LN 04 PO	ICB 12 LN 04 NC	ICB 12 LN 04 PC
Plug	Long	2 mm ¹⁾	ICB 12 LF 02 NOM1	ICB 12 LF 02 POM1	ICB 12 LF 02 NCM1	ICB 12 LF 02 PCM1
Plug	Long	4 mm ²⁾	ICB 12 LN 04 NOM1	ICB 12 LN 04 POM1	ICB 12 LN 04 NCM1	ICB 12 LN 04 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.)	Assured operating sensing distance (S_a)	$0 \leq S_a \leq 0.81 \times S_n$
Ripple	$\leq 10\%$	Effective operating distance (S_r)	$0.9 \times S_n \leq S_r \leq 1.1 \times S_n$
Output current (I_o)	≤ 200 mA @ 50°C (≤ 150 mA @ 50-70°C)	Usable operating distance (S_u)	$0.9 \times S_r \leq S_u \leq 1.1 \times S_r$
OFF-state current (I_i)	≤ 50 μ A	Repeat accuracy (R)	$\leq 10\%$
No load supply current (I_o)	≤ 15 mA	Differential travel (H) (Hysteresis)	1 to 20% of sensing dist.
Voltage drop (U_d)	Max. 2.5 VDC @ 200 mA	Ambient temperature Operating Storage	-25° to +70°C (-13° to +158°F) -30° to +80°C (-22° to +176°F)
Protection	Reverse polarity, short-circuit, transients	Housing material Body Front	Nickel-plated brass Grey thermoplastic polyester
Voltage transient	1 kV/0.5 J		
Power ON delay (t_v)	300 ms		
Operating frequency (f)	≤ 2000 Hz		
Indication for output ON	LED, yellow		

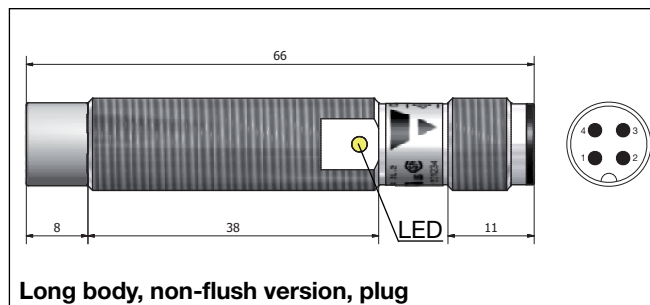
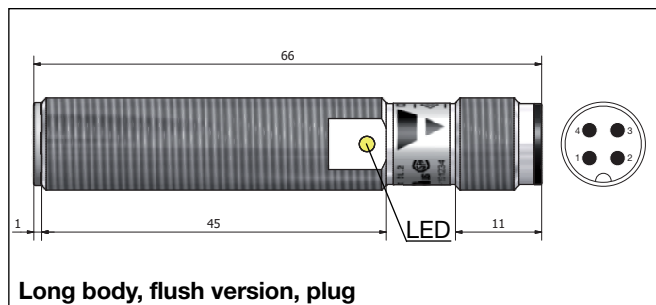
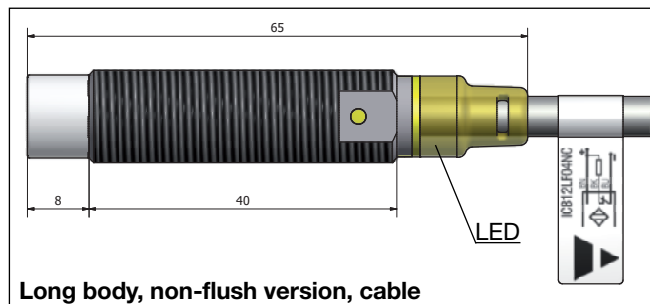
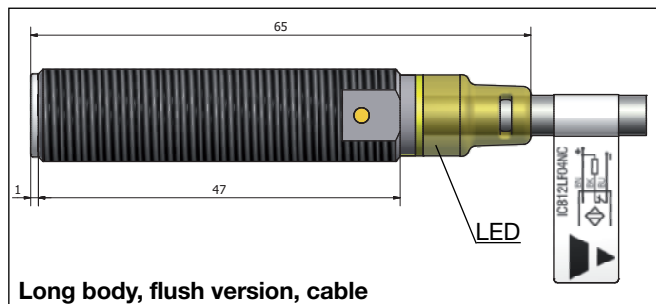
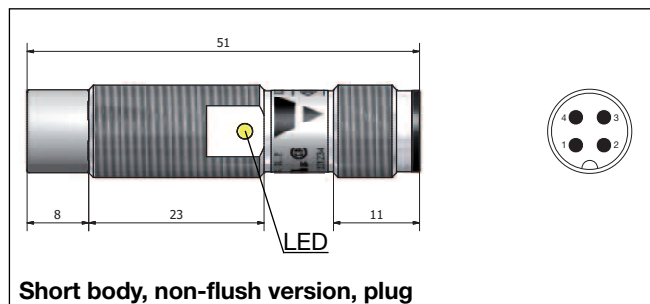
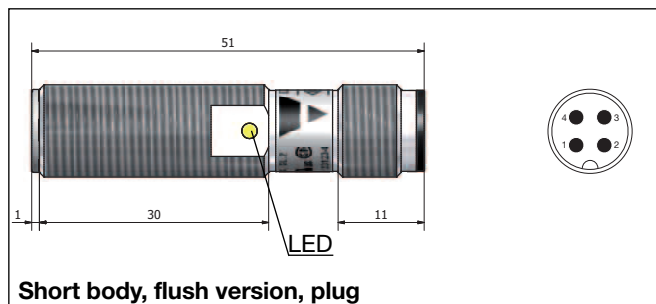
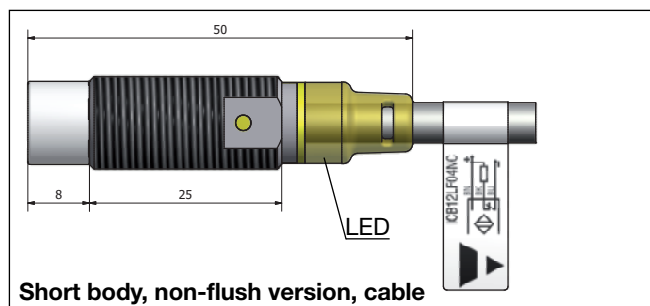
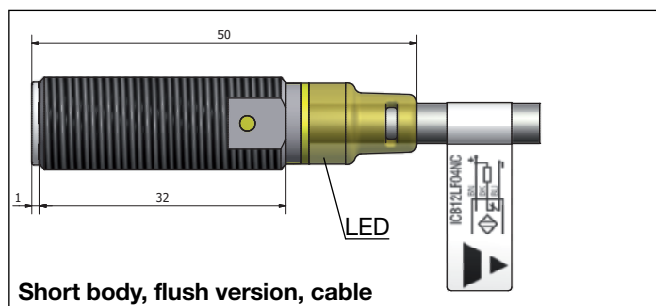


Specifications (cont.)

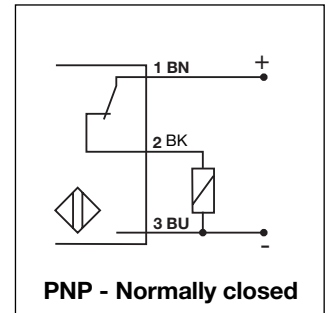
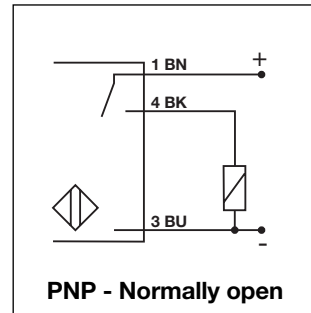
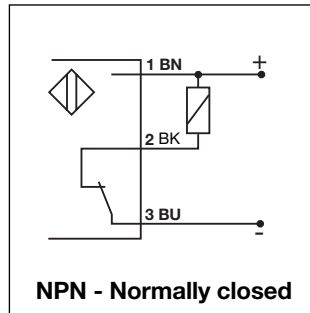
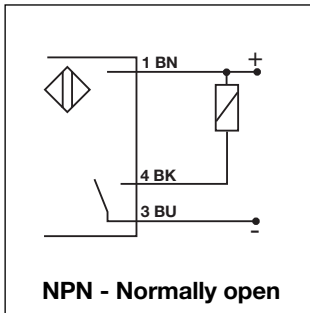
Connection	
Cable	2 m, 3 x 0.3 mm ² , grey PVC, oil proof M12 x 1
Plug	
Degree of protection	IP 67
Weight (cable/nuts included)	
Cable	Max. 120 g
Plug	Max. 30 g
Dimensions	See diagrams below
Tightening torque	20.0 Nm

Approvals	UL, CSA
CE-marking	Yes
EMC protection	According to IEC 60947-5-2
IEC 6100-4-2 (ESD)	8 KV air discharge, 4 KV contact discharge
IEC 6100-4-3	3 V/m
IEC 6100-4-4	2 kV
IEC 6100-4-6	3 V
IEC 6100-4-8	30 A/m

Dimensions

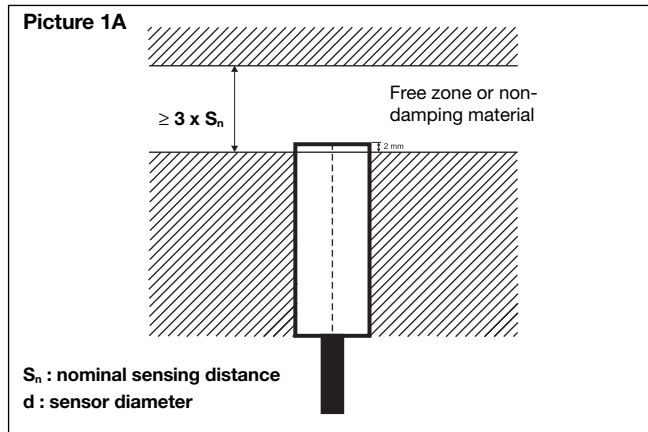


Wiring Diagrams

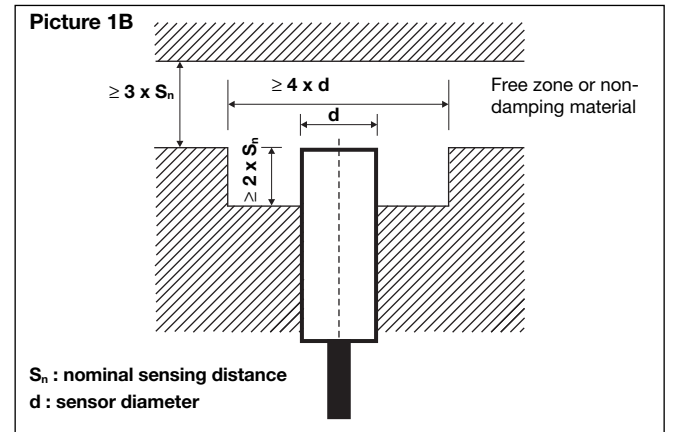


Installation

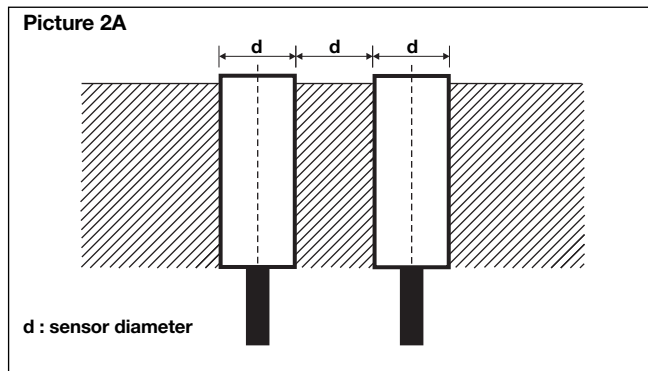
Flush sensor, when installed in damping material, must be according to Picture 1A.



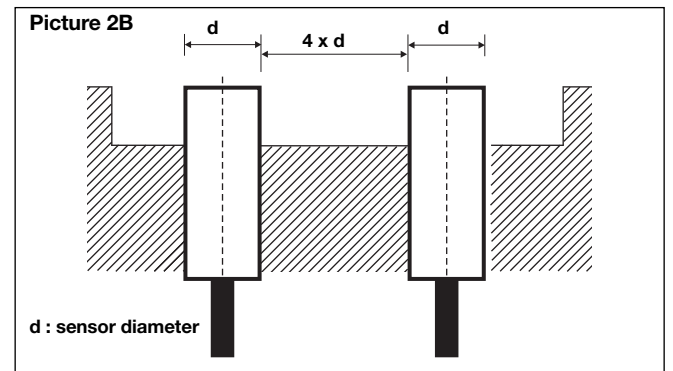
Non-flush sensor, when installed in damping material, must be according to Picture 1B.



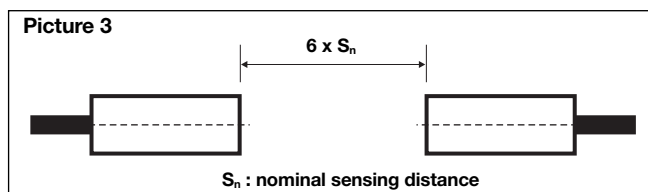
Flush sensors, when installed together in damping material, must be according to Picture 2A.



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).



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.

Delivery Contents

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

