

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

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- Sensing distance: 2 to 4 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
- Laser engraved on front cap, permanently legible
- CSA certified for Hazardous Locations

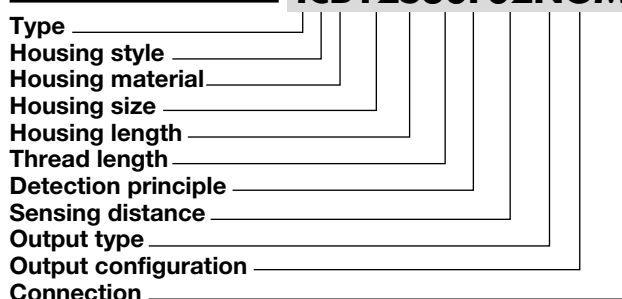


Product Description

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 **ICB12S30F02NOM1**



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⁾	ICB12S30F02NO	ICB12S30F02PO	ICB12S30F02NC	ICB12S30F02PC
Cable	Short	4 mm ²⁾	ICB12S30N04NO	ICB12S30N04PO	ICB12S30N04NC	ICB12S30N04PC
Plug	Short	2 mm ¹⁾	ICB12S30F02NOM1	ICB12S30F02POM1	ICB12S30F02NCM1	ICB12S30F02PCM1
Plug	Short	4 mm ²⁾	ICB12S30N04NOM1	ICB12S30N04POM1	ICB12S30N04NCM1	ICB12S30N04PCM1
Cable	Long	2 mm ¹⁾	ICB12L50F02NO	ICB12L50F02PO	ICB12L50F02NC	ICB12L50F02PC
Cable	Long	4 mm ²⁾	ICB12L50N04NO	ICB12L50N04PO	ICB12L50N04NC	ICB12L50N04PC
Plug	Long	2 mm ¹⁾	ICB12L50F02NOM1	ICB12L50F02POM1	ICB12L50F02NCM1	ICB12L50F02PCM1
Plug	Long	4 mm ²⁾	ICB12L50N04NOM1	ICB12L50N04POM1	ICB12L50N04NCM1	ICB12L50N04PCM1

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)	$0.9 \times S_r \leq S_u \leq 1.1 \times S_r$
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_o)	≤ 20 ms		
Operating frequency (f)	≤ 2000 Hz		
Indication for output ON	Activated LED, yellow		
NO version	Target present		
NC version	Target not present		



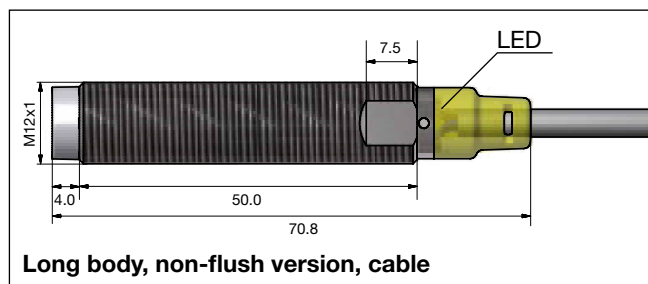
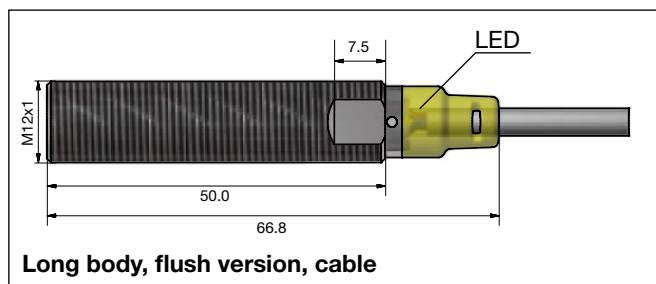
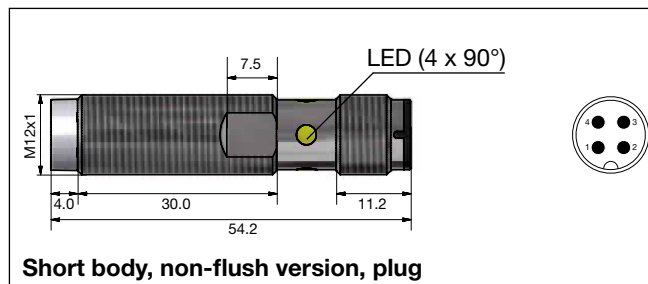
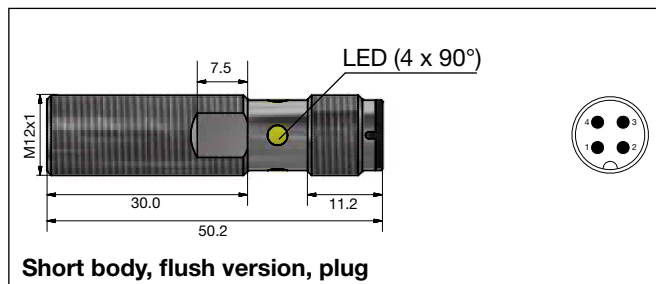
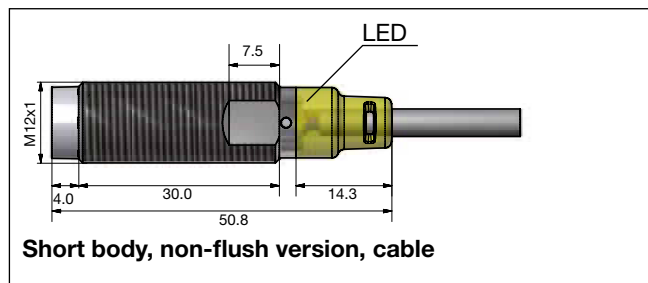
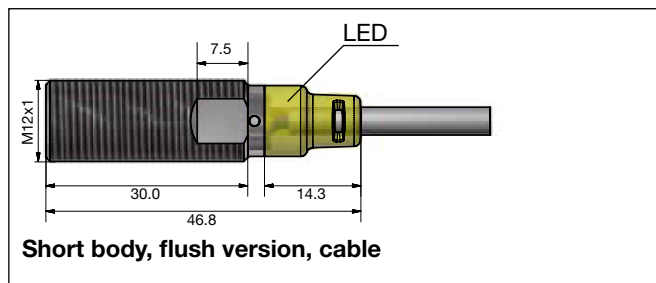
Specifications (cont.)

Housing material	
Body	Nickel-plated brass
Front	Grey thermoplastic polyester
Connection	
Cable	Ø4.1 x 2 m, 3 x 0.25 mm ² , grey PVC, oil proof
Plug	M12 x 1
Degree of protection	IP 67
Weight (cable/nuts included)	
Cable	Max. 120 g
Plug	Max. 30 g
Dimensions	See diagrams below
Tightening torque	10 Nm
Approvals	<p>cULus (UL508)</p> <p>cCSAus As Process Control Equipment for Hazardous Locations.</p> <ul style="list-style-type: none"> - Class I, Division 2, Groups A, B, C and D. - T5, Enclosure Type 4. <p>Ambient temperature Ta: -25° to +60°C</p>

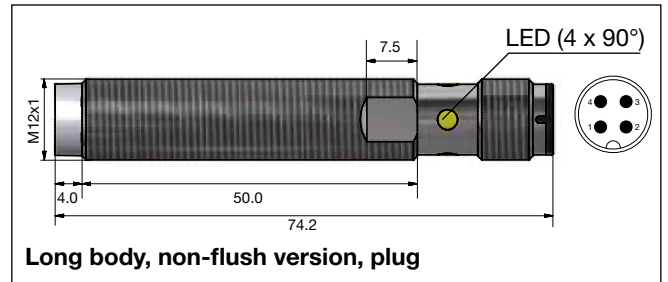
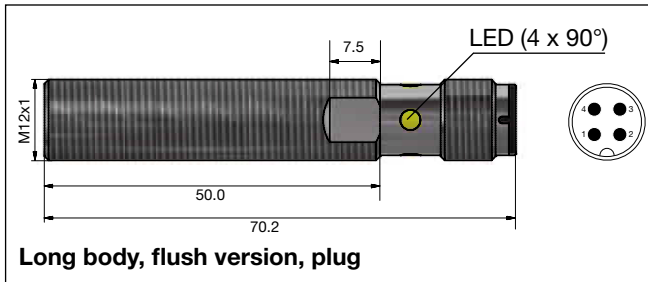
Note: The terminal connector (version ...M1) was not evaluated. The suitability of the terminal connector should be determined in the end-use application.

Approvals (cont.)	CCC is not required for products with a maximum operating voltage of ≤ 36 V
EMC protection	According to IEC 60947-5-2
IEC 61000-4-2 (ESD)	8 KV air discharge, 4 KV contact discharge
IEC 61000-4-3	3 V/m
IEC 61000-4-4	2 kV
IEC 61000-4-6	3 V
IEC 61000-4-8	30 A/m
MTTF_d	750 years @ 50°C (122°F)

Dimensions (mm)

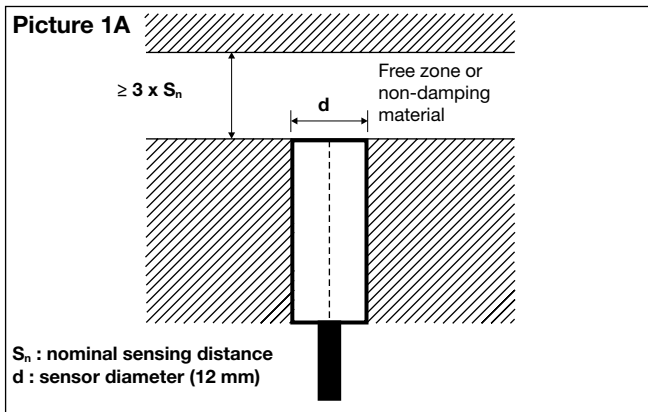


Dimensions (mm) (cont.)

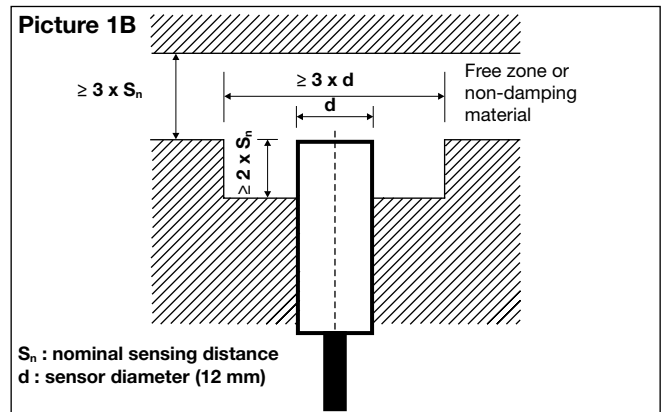


Installation

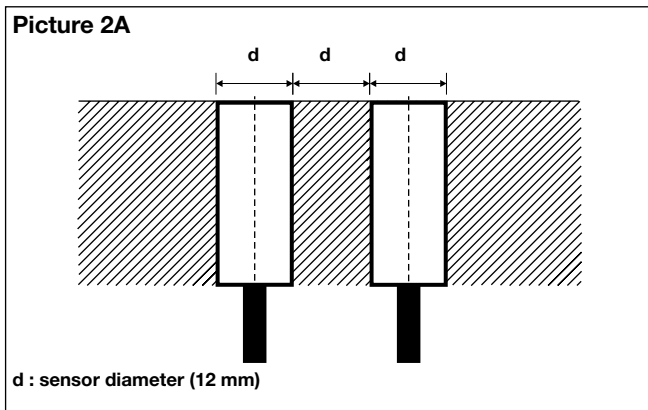
Flush sensor, when installed in damping material, must be according to Picture 1A.



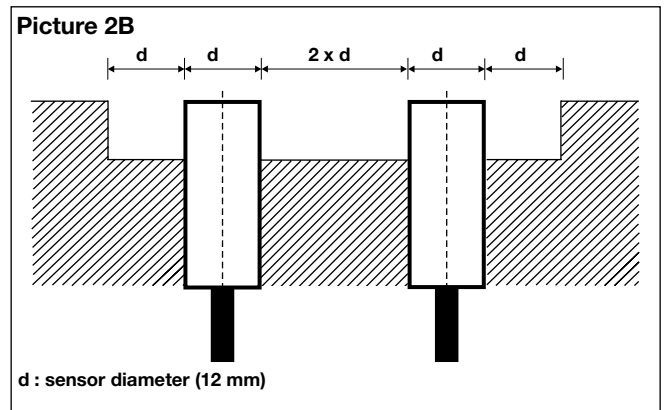
Non-flush sensor, when installed in damping material, must be according to Picture 1B.



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).

