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





- 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



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	ICB1	253	OFC	2N	OM	1
Type					Ī	Ī
Housing style						
Housing material						
Housing size]				
Housing length ———						
Thread length			J			
Detection principle —						
Sensing distance						
Output type						
Output configuration —						
Connection						

Type Selection

Connec- tion	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⁾	ICB12S30F02N0	ICB12S30F02P0	ICB12S30F02NC	ICB12S30F02PC
Cable	Short	4 mm 2)	ICB12S30N04N0	ICB12S30N04P0	ICB12S30N04NC	ICB12S30N04PC
Plug	Short	2 mm 1)	ICB12S30F02N0M1	ICB12S30F02P0M1	ICB12S30F02NCM1	ICB12S30F02PCM1
Plug	Short	4 mm 2)	ICB12S30N04N0M1	ICB12S30N04P0M1	ICB12S30N04NCM1	ICB12S30N04PCM1
Cable	Long	2 mm 1)	ICB12L50F02N0	ICB12L50F02P0	ICB12L50F02NC	ICB12L50F02PC
Cable	Long	4 mm 2)	ICB12L50N04N0	ICB12L50N04P0	ICB12L50N04NC	ICB12L50N04PC
Plug	Long	2 mm 1)	ICB12L50F02N0M1	ICB12L50F02P0M1	ICB12L50F02NCM1	ICB12L50F02PCM1
Plug	Long	4 mm 2)	ICB12L50N04N0M1	ICB12L50N04P0M1	ICB12L50N04NCM1	ICB12L50N04PCM1

¹⁾ For flush mounting in metal

Specifications

Rated operational voltage (U _b)	10 to 36 VDC (ripple incl.)
Ripple	≤ 10%
Output current (I _e)	≤ 200 mA @ 50°C (≤ 150 mA @ 50-70°C)
OFF-state current (I _r)	≤ 50 µA
No load supply current (I₀)	≤ 15 mA
Voltage drop (U₃)	Max. 2.5 VDC @ 200 mA
Protection	Reverse polarity, short-circuit, transients
Voltage transient	1 kV/0.5 J
Power ON delay (t _v)	300 ms
Operating frequency (f)	≤ 2000 Hz
Indication for output ON NO version NC version	Activated LED, yellow Target present Target not present

Indication for short circuit/ overload	LED blinking (f = 2 Hz)
Assured operating sensing distance (S _a)	$0 \leq S_a \leq 0.81 \ x \ S_n$
Effective operating distance (S _r)	$0.9 \times S_n \le S_r \le 1.1 \times S_n$
Usable operating distance (S _u)	$0.9 \times S_r \le S_u \le 1.1 \times S_r$
Repeat accuracy (R)	≤ 10%
Differential travel (H) (Hysteresis)	1 to 20% of sensing dist.
Ambient temperature Operating Storage	-25° to +70°C (-13° to +158°F) -30° to +80°C (-22° to +176°F)
Shock and vibration	IEC 60947-5-2/7.4

 $^{^{\}rm 2)}\,\mbox{For non-flush mounting in metal}$

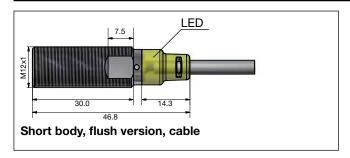


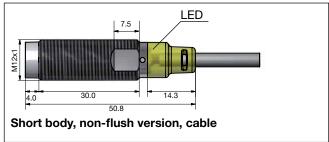
Specifications (cont.)

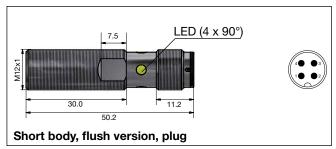
Housing material	
Body	Nickel-plated brass
Front	Grey thermoplastic polyester
Connection	
Cable	Ø4.1 x 2 m, 3 x 0.25 mm ² ,
	grey PVC, oil proof
Plug	M12 x 1
Degree of protection	IP 67
Weight (cable/nuts included)	
Cable	Max. 120 g
Plug	Max. 30 g
Dimensions	See diagrams below

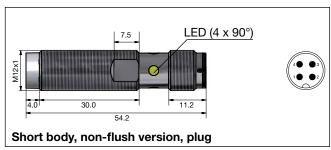
Tightening torque	10 Nm
Approvals	cULus (UL508)
	CCC is not required for products with a maximum operating voltage of \leq 36 V
EMC protection	According to IEC 60947-5-2
IEC 61000-4-2 (ESD)	8 KV air discharge,
	4 KV contact discharge
IEC 61000-4-3	3 V/m
IEC 61000-4-4	2 kV
IEC 61000-4-6	3 V
IEC 61000-4-8	30 A/m

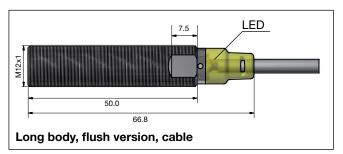
Dimensions (mm)

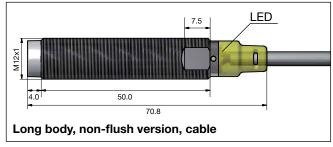


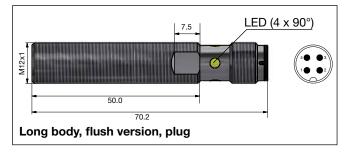


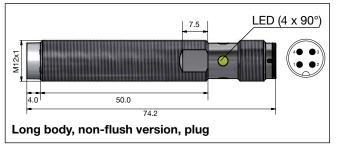








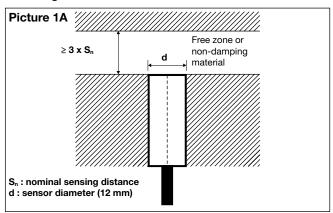




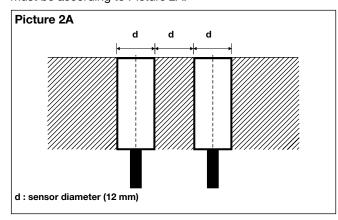


Installation

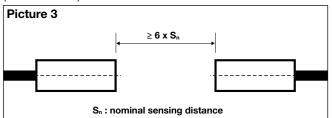
Flush sensor, when installed in damping material, must be according to Picture 1A.



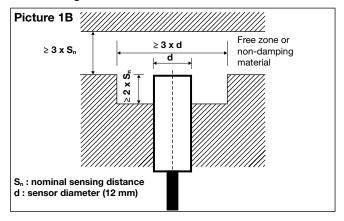
Flush sensors, when installed together in damping material, must be according to Picture 2A.



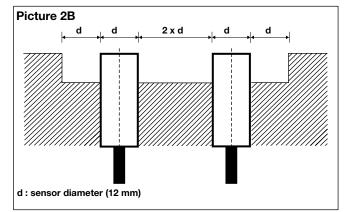
For sensors installed opposite each other, a minimum space of $6 \times S_n$ (the nominal sensing distance) must be observed (See Picture 3).



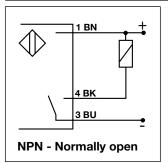
Non-flush sensor, when installed in damping material, must be according to Picture 1B.

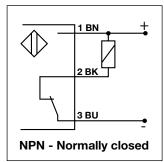


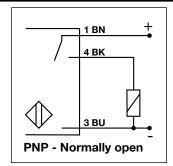
Non-flush sensors, when installed together in damping material, must be according to Picture 2B.

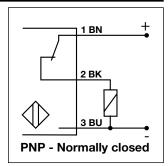


Wiring Diagram





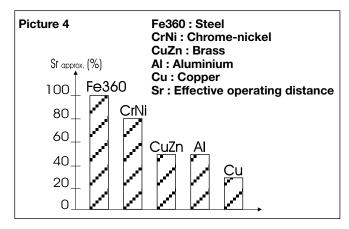




Reduction Factors

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