

Proximity Inductive Sensors

Extended range, Nickel-Plated Brass Housing

Types ICB, M30

CARLO GAVAZZI



- Sensing distance: 15 to 22 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

ICB30SF15NOM1

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

Type Selection

Connection	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⁾	ICB 30 SF 15 NO	ICB 30 SF 15 PO	ICB 30 SF 15 NC	ICB 30 SF 15 PC
Cable	Short	22 mm ²⁾	ICB 30 SN 22 NO	ICB 30 SN 22 PO	ICB 30 SN 22 NC	ICB 30 SN 22 PC
Plug	Short	15 mm ¹⁾	ICB 30 SF 15 NOM1	ICB 30 SF 15 POM1	ICB 30 SF 15 NCM1	ICB 30 SF 15 PCM1
Plug	Short	22 mm ²⁾	ICB 30 SN 22 NOM1	ICB 30 SN 22 POM1	ICB 30 SN 22 NCM1	ICB 30 SN 22 PCM1
Cable	Long	15 mm ¹⁾	ICB 30 LF 15 NO	ICB 30 LF 15 PO	ICB 30 LF 15 NC	ICB 30 LF 15 PC
Cable	Long	22 mm ²⁾	ICB 30 LN 22 NO	ICB 30 LN 22 PO	ICB 30 LN 22 NC	ICB 30 LN 22 PC
Plug	Long	15 mm ¹⁾	ICB 30 LF 15 NOM1	ICB 30 LF 15 POM1	ICB 30 LF 15 NCM1	ICB 30 LF 15 PCM1
Plug	Long	22 mm ²⁾	ICB 30 LN 22 NOM1	ICB 30 LN 22 POM1	ICB 30 LN 22 NCM1	ICB 30 LN 22 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)	$0.85 \times S_r \leq S_u \leq 1.1 \times S_r$
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	
Dielectric impulse voltage withstand	1 kV/0.5 J	Operating	-25° to +70°C (-13° to +158°F)
Power ON delay (t_o)	300 ms	Storage	-30° to +80°C (-22° to +176°F)
Operating frequency (f)	≤ 1000 Hz	Shock and vibration	IEC 60947-5-2/7.4
Indication for output ON		Housing material	
NO version	Activated LED, yellow	Body	Nickel-plated brass
NC version	Target present Target not present	Front	Grey thermoplastic polyester

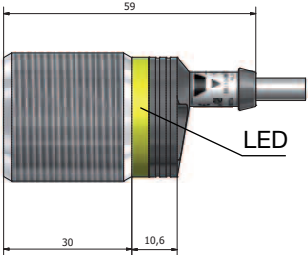
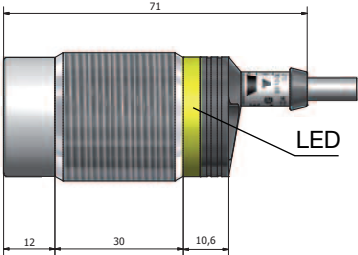
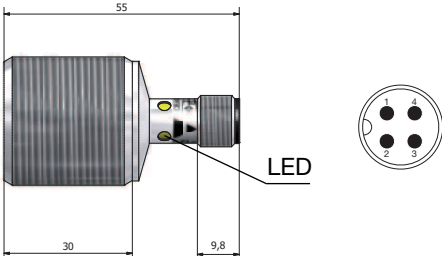
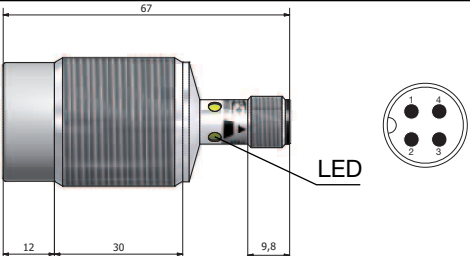
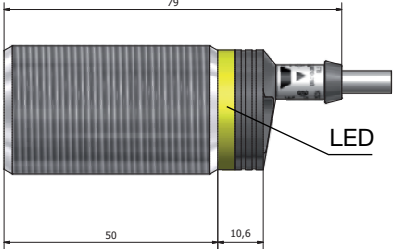
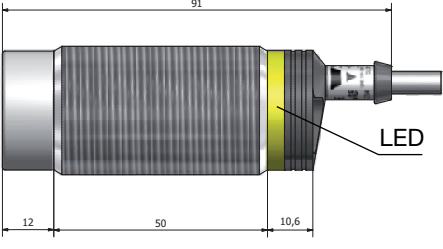


Specifications (cont.)

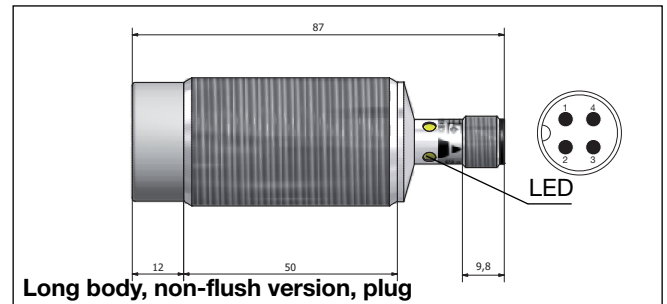
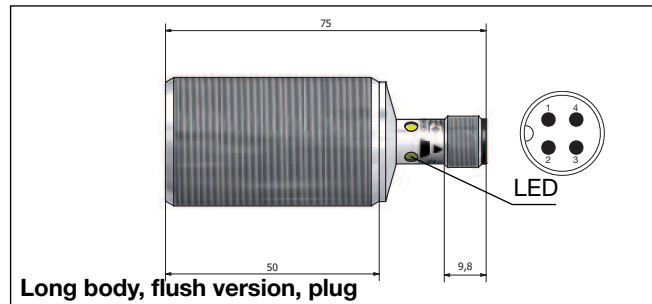
Connection		Approvals (cont.)	cCSAus	As Process Control Equipment for Hazardous Locations. - Class I, Division 2, Groups A, B, C and D. - Class I, Zone 1, AEx/Ex d IIB+H2, T5, Enclosure Type 4. Ambient temperature Ta: -25° to +60°C. Note: AEx for USA, Ex for Canada
Cable	2 m, 3 x 0.3 mm², grey PVC, oil proof M12 x 1			
Plug				
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.		

CE-marking		Yes
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

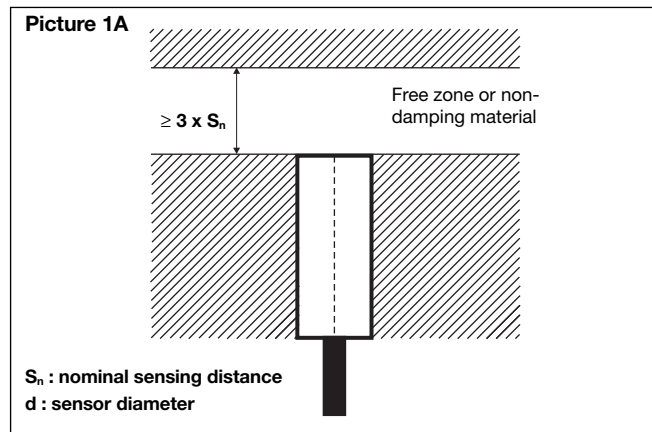
 Short body, flush version, cable	 Short body, non-flush version, cable
 Short body, flush version, plug	 Short body, non-flush version, plug
 Long body, flush version, cable	 Long body, non-flush version, cable

Dimensions

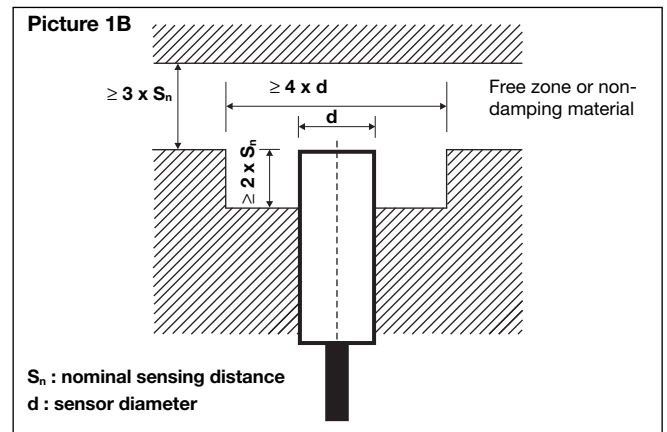


Installation

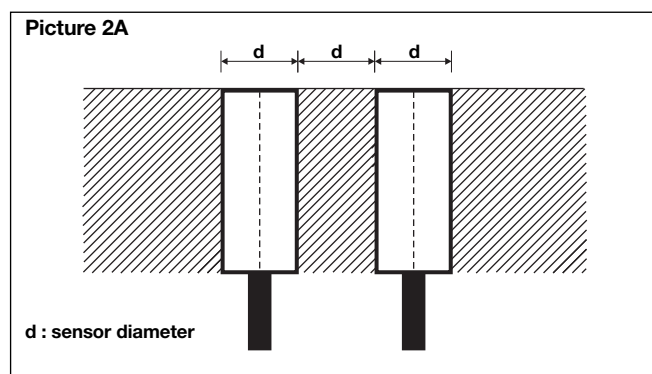
Flush sensor, when installed in damping material, must be according to Picture 1A.



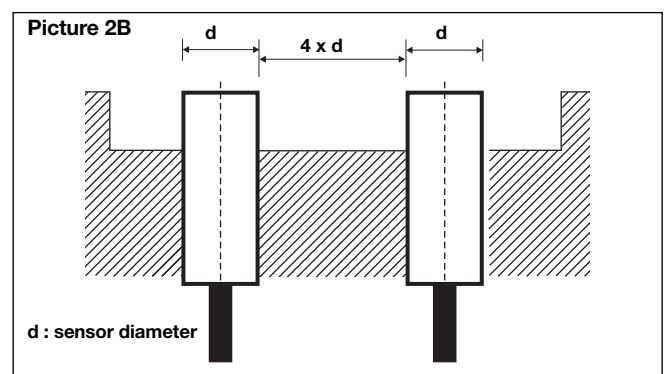
Non-flush sensor, when installed in damping material, must be according to Picture 1B.



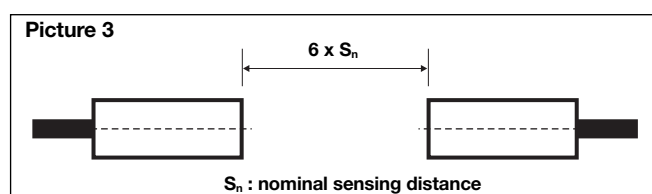
Flush sensors, when installed together in damping material, must be according to Picture 2A.



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

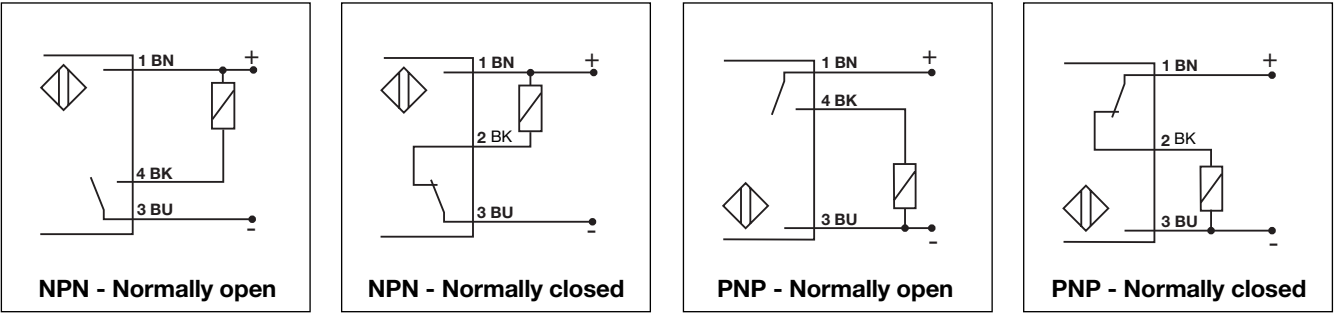


For sensors installed opposite each other, a minimum space of $6 \times S_n$ (the nominal sensing distance) must be observed (See Picture 3).





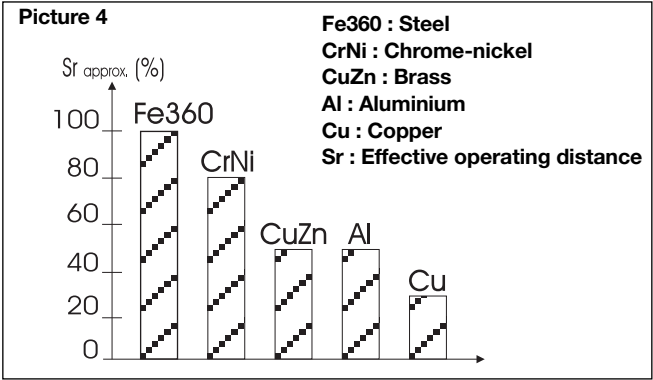
Wiring Diagrams



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