

Proximity Inductive Sensors Extended Range, Nickel-Plated Brass Housing Types ICB, M12 - Extra short body version

CARLO GAVAZZI



- Sensing distance: 4 to 8 mm
- Flush or non-flush types
- Extra short 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 versions
- According to IEC 60947-5-2
- Laser engraved on front cap, permanently legible
- Extended temperature range of $-25^{\circ}\text{C} \dots +80^{\circ}\text{C}$
- CSA certified for Hazardous Locations



Product Description

A family of inductive proximity switches in industrial standard nickel-plated brass housings. They are characterized by extremely high performance in a very small design, to satisfy the most

demanding applications, also where the space available for the sensor is limited and extended sensing range is requested. Output is open collector NPN or PNP transistors.

Ordering Key

ICB12S23F04NO

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

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	4 mm ¹⁾	ICB12S23F04NO	ICB12S23F04PO	ICB12S23F04NC	ICB12S23F04PC
Cable	Short	8 mm ²⁾	ICB12S23N08NO	ICB12S23N08PO	ICB12S23N08NC	ICB12S23N08PC

¹⁾ For flush mounting in metal

²⁾ For non-flush mounting in metal

Specifications

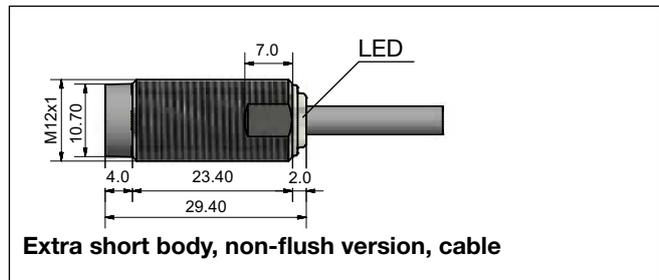
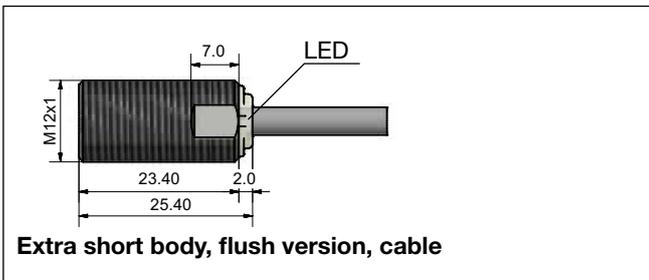
Rated operational voltage (U_b)	10 to 36 VDC (ripple incl.)	Effective operating distance (S_r)	$0.9 \times S_n \leq S_r \leq 1.1 \times S_n$
Ripple	$\leq 10\%$	Usable operating distance (S_u)	$0.9 \times S_r \leq S_u \leq 1.1 \times S_r$
Output current (I_o)	≤ 200 mA	Repeat accuracy (R)	$\leq 10\%$
OFF-state current (I_r)	≤ 50 μA	Differential travel (H) (Hysteresis)	1 to 20% of sensing dist.
No load supply current (I_o)	≤ 15 mA	Ambient temperature	Operating: -25° to $+80^{\circ}\text{C}$ (-13° to $+176^{\circ}\text{F}$) Storage: -25° to $+80^{\circ}\text{C}$ (-13° to $+176^{\circ}\text{F}$)
Voltage drop (U_d)	Max. 2.5 VDC @ 200 mA	Shock and vibration	IEC 60947-5-2/7.4
Protection	Reverse polarity, short-circuit, transients	Housing material	Body: Nickel-plated brass Front: Grey thermoplastic polyester
Voltage transient	1 kV/0.5 J	Connection	Cable: $\varnothing 4.1 \times 2$ m, 3×0.25 mm ² , grey PVC, oil proof
Power ON delay (t_v)	≤ 40 ms	Degree of protection	IP 67
Max. operating frequency (f)	≤ 2000 Hz	Weight (cable/nuts included)	Max. 70 g
Indication for output ON	Activated LED, yellow		
NO version	Target present		
NC version	Target not present		
Indication for short circuit/ overload	LED blinking (f = 2 Hz)		
Assured operating sensing distance (S_a)	$0 \leq S_a \leq 0.81 \times S_n$		



Specifications (cont.)

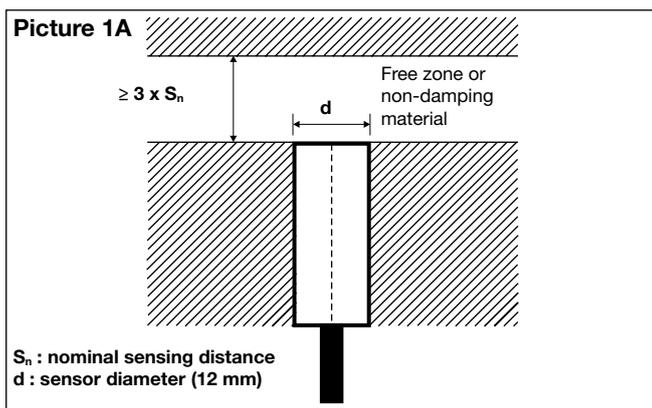
Dimensions	See diagrams below		Approvals (cont.)	CCC is not required for products with a maximum operating voltage of ≤ 36 V
Tightening torque Distance from sensing face from 0 mm to 4 mm > 4 mm	10 Nm 15 Nm		EMC protection IEC 61000-4-2 (ESD)	According to IEC 60947-5-2 8 KV air discharge, 4 KV contact discharge 3 V/m 2 kV 3 V 30 A/m
Approvals	cULus	(UL508)	IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-6 IEC 61000-4-8	
	cCSAus	As Process Control Equipment for Hazardous Locations. - Class I, Division 2, Groups A, B, C and D. - T5, Enclosure Type 4. Ambient temperature Ta: -25° to +60°C	MTTF_d	816 years @ 50°C (122°F)

Dimensions (mm)

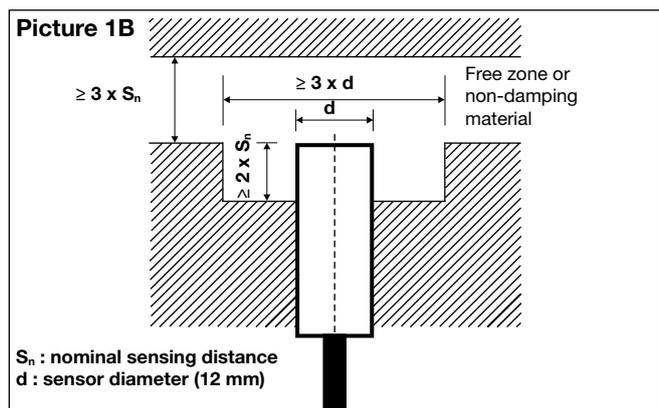


Installation

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

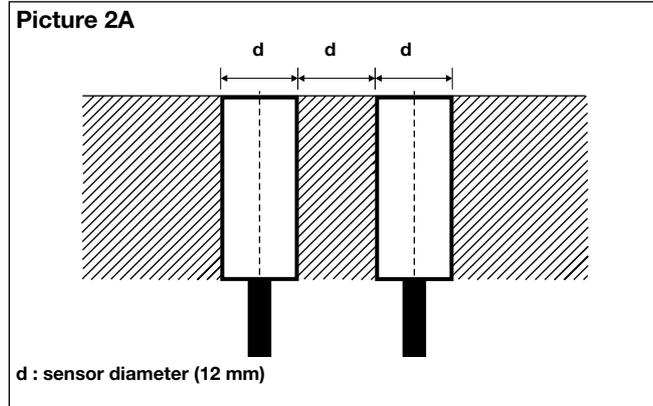


Non-flush sensor, when installed in damping material, must be according to Picture 1B.

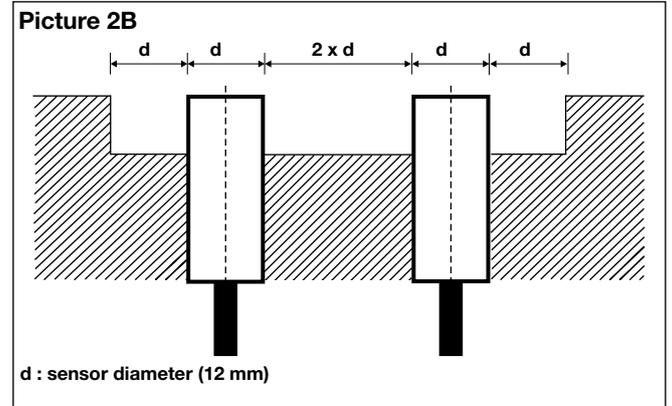


Installation (cont.)

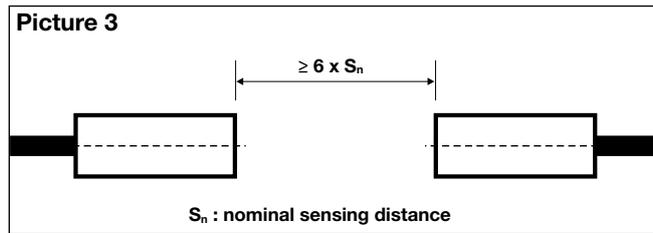
Flush sensors, when installed together in damping material, must be according to Picture 2A.



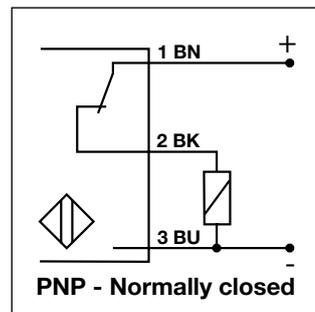
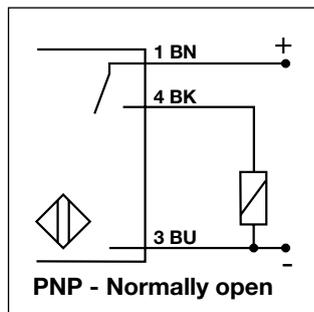
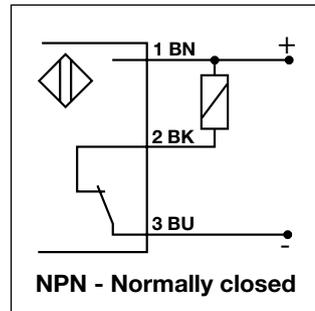
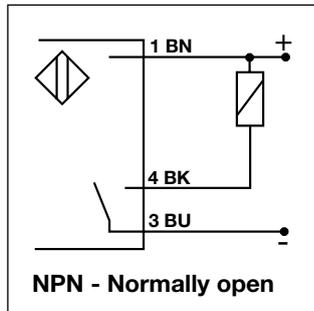
Non-flush sensors, when installed together in damping material, must be according to Picture 2B.



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



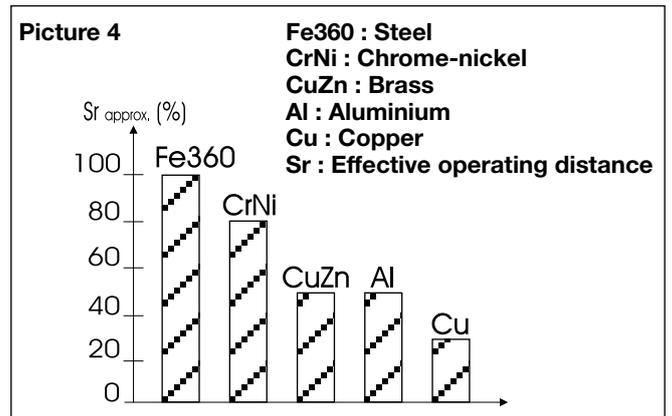
Wiring Diagram



Reduction Factors

The rated operating distance is reduced by the use of inductive 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