

# Proximity Inductive Sensors Extended Range, Nickel-Plated Brass Housing Types ICB, M30

CARLO GAVAZZI



- Sensing distance: 15 to 22 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, short-circuit and overload
- 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



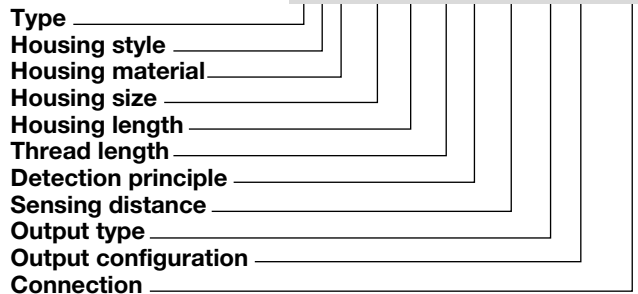
## Product Description

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

**ICB30S30F15NOM1**



## 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	15 mm <sup>1)</sup>	ICB30S30F15NO	ICB30S30F15PO	ICB30S30F15NC	ICB30S30F15PC
Cable	Short	22 mm <sup>2)</sup>	ICB30S30N22NO	ICB30S30N22PO	ICB30S30N22NC	ICB30S30N22PC
Plug	Short	15 mm <sup>1)</sup>	ICB30S30F15NOM1	ICB30S30F15POM1	ICB30S30F15NCM1	ICB30S30F15PCM1
Plug	Short	22 mm <sup>2)</sup>	ICB30S30N22NOM1	ICB30S30N22POM1	ICB30S30N22NCM1	ICB30S30N22PCM1
Cable	Long	15 mm <sup>1)</sup>	ICB30L50F15NO	ICB30L50F15PO	ICB30L50F15NC	ICB30L50F15PC
Cable	Long	22 mm <sup>2)</sup>	ICB30L50N22NO	ICB30L50N22PO	ICB30L50N22NC	ICB30L50N22PC
Plug	Long	15 mm <sup>1)</sup>	ICB30L50F15NOM1	ICB30L50F15POM1	ICB30L50F15NCM1	ICB30L50F15PCM1
Plug	Long	22 mm <sup>2)</sup>	ICB30L50N22NOM1	ICB30L50N22POM1	ICB30L50N22NCM1	ICB30L50N22PCM1

<sup>1)</sup> For flush mounting in metal

<sup>2)</sup> For non-flush mounting in metal

## Specifications

<b>Rated operational voltage (<math>U_b</math>)</b>	10 to 36 VDC (ripple incl.)	<b>Indication for output ON</b>	Activated LED, yellow NO version Target present NC version Target not present
<b>Ripple</b>	$\leq 10\%$	<b>Indication for short circuit/ overload</b>	LED blinking (f = 2 Hz)
<b>Output current (<math>I_a</math>)</b>	$\leq 200$ mA @ 50°C ( $\leq 150$ mA @ 50-70°C)	<b>Assured operating sensing distance (<math>S_a</math>)</b>	$0 \leq S_a \leq 0.81 \times S_n$
<b>OFF-state current (<math>I_i</math>)</b>	$\leq 50$ $\mu$ A	<b>Effective operating distance (<math>S_r</math>)</b>	$0.9 \times S_n \leq S_r \leq 1.1 \times S_n$
<b>No load supply current (<math>I_o</math>)</b>	$\leq 15$ mA	<b>Usable operating distance (<math>S_u</math>)</b>	$0.85 \times S_r \leq S_u \leq 1.1 \times S_r$
<b>Voltage drop (<math>U_d</math>)</b>	Max. 2.5 VDC @ 200 mA	<b>Repeat accuracy (R)</b>	$\leq 5\%$
<b>Protection</b>	Reverse polarity, short-circuit, transients	<b>Differential travel (H)</b> (Hysteresis)	1 to 20% of sensing dist.
<b>Voltage transient</b>	1 kV/0.5 J		
<b>Power ON delay (<math>t_v</math>)</b>	300 ms		
<b>Operating frequency (f)</b>	$\leq 1000$ Hz		

## Specifications (cont.)

<b>Ambient temperature</b>	
Operating	
Cable	-25° to +70°C (-13° to +158°F)
Plug	-40° to +70°C (-40° to +158°F)
Storage	-40° to +80°C (-40° to +176°F)
<b>Shock and vibration</b>	IEC 60947-5-2/7.4
<b>Housing material</b>	
Body	Nickel-plated brass
Front cap	Grey thermoplastic polyester
<b>Connection</b>	
Cable	Ø5.2 x 2 m, 3 x 0.34 mm <sup>2</sup> , grey PVC, oil proof
Plug	M12 x 1
<b>Degree of protection</b>	IP 67
<b>Weight (cable/nuts included)</b>	
ICB30 S	Max. 185 g
ICB30 L	Max. 195 g
<b>Dimensions</b>	See diagrams below
<b>Tightening torque</b>	25 Nm
<b>Approvals</b>	cULus (UL508)

## Approvals (cont.)

**cCSAus**

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

As Process Control Equipment for Hazardous Locations.

- Class I, Division 2, Groups A, B, C and D.
- T5 up to 150 mA, T4A for a load current > 150 mA and up to 200 mA, Enclosure Type 4.

Ambient temperature  
Ta: -25° to +60°C.

CCC is not required for products with a maximum operating voltage of ≤ 36 V

## EMC protection

IEC 61000-4-2 (ESD)

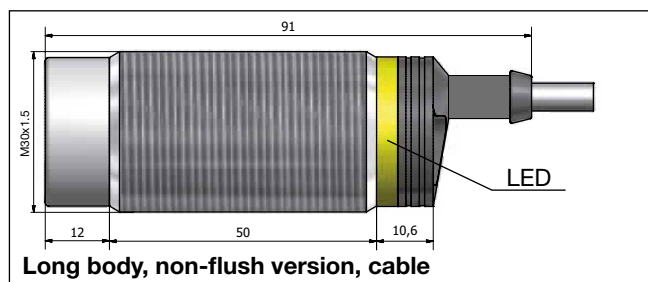
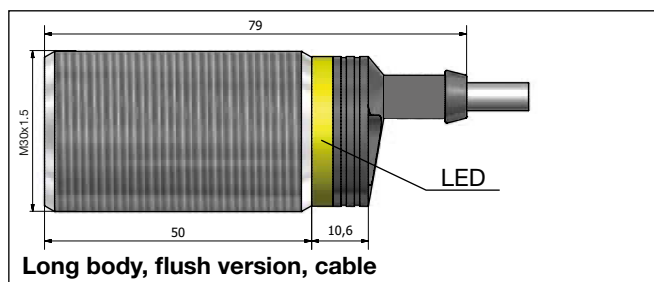
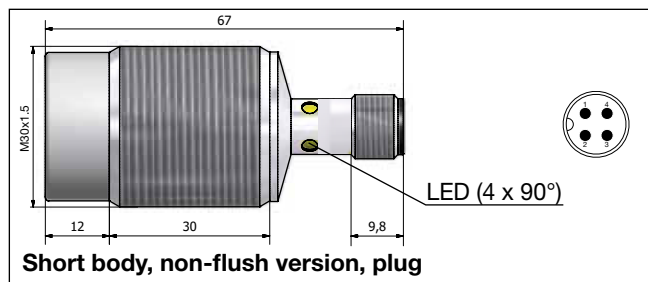
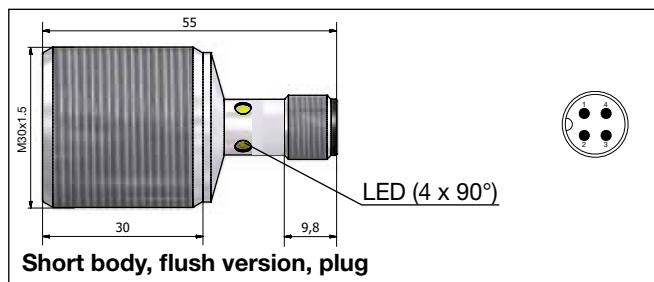
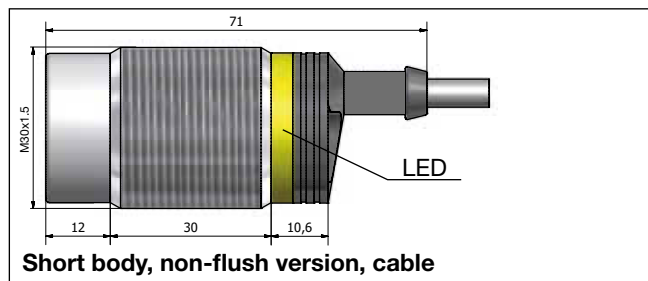
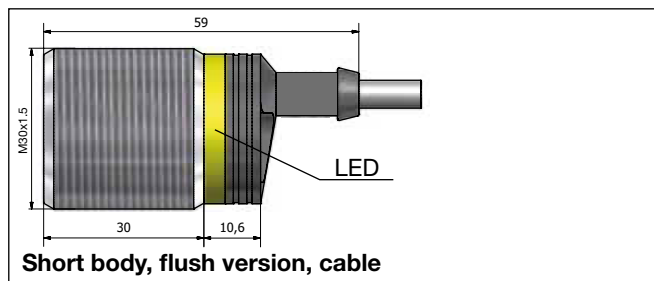
IEC 61000-4-3  
IEC 61000-4-4  
IEC 61000-4-6  
IEC 61000-4-8

According to IEC 60947-5-2  
8 kV air discharge,  
4 kV contact discharge  
12 V/m  
4 kV  
10 V  
30 A/m

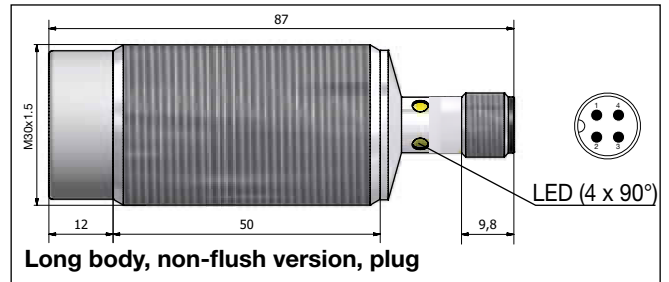
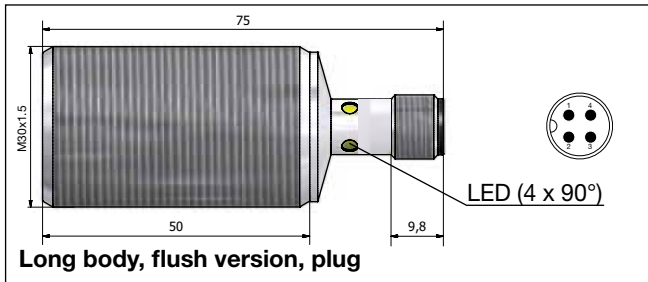
## MTTF<sub>d</sub>

850 years @ 50°C (122°F)

## Dimensions (mm)

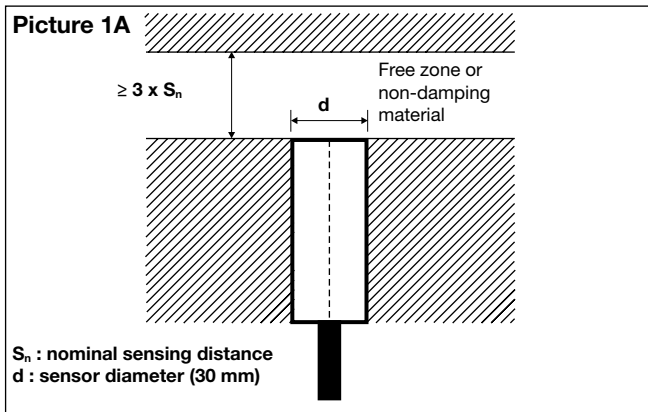


## Dimensions (mm) (cont.)

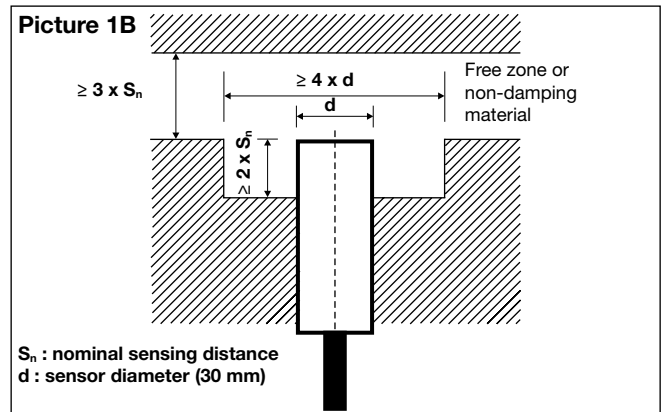


## Installation

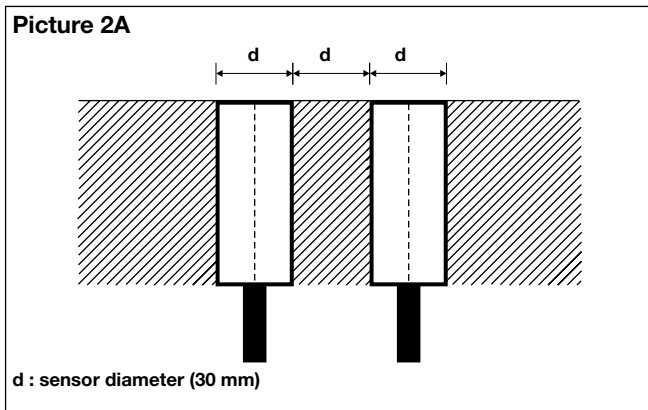
Flush sensor, when installed in damping material, must be according to Picture 1A.



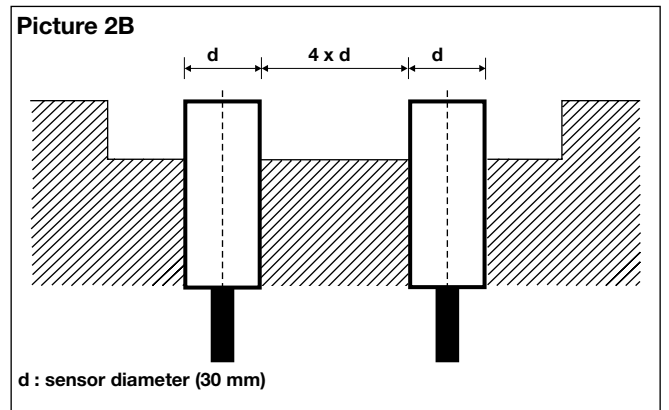
Non-flush sensor, when installed in damping material, must be according to Picture 1B.



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).

