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Proximity Inductive Sensors Increased Operating Distance, Nickel-Plated Brass Housing - Types ICB, M30

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- Sensing distance: 22 to 40 mm
- Quasi-flush or non-flush mountable
- 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
- Setup indicator
- 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 very long operating distance is requested.

Output is open collector NPN or PNP transistors.
Less machine downtime thanks to lower risk of mechanical damage.

Ordering Key

ICB30S35F22NOM1

- Type
- Housing style
- Housing material
- Housing size
- Housing length
- Thread 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	22 mm [1]	ICB30S35F22NO	ICB30S35F22PO	ICB30S35F22NC	ICB30S35F22PC
Cable	Short	40 mm [2]	ICB30S35N40NO	ICB30S35N40PO	ICB30S35N40NC	ICB30S35N40PC
Plug	Short	22 mm [1]	ICB30S35F22NOM1	ICB30S35F22POM1	ICB30S35F22NCM1	ICB30S35F22PCM1
Plug	Short	40 mm [2]	ICB30S35N40NOM1	ICB30S35N40POM1	ICB30S35N40NCM1	ICB30S35N40PCM1
Cable	Long	22 mm [1]	ICB30L50F22NO	ICB30L50F22PO	ICB30L50F22NC	ICB30L50F22PC
Cable	Long	40 mm [2]	ICB30L50N40NO	ICB30L50N40PO	ICB30L50N40NC	ICB30L50N40PC
Plug	Long	22 mm [1]	ICB30L50F22NOM1	ICB30L50F22POM1	ICB30L50F22NCM1	ICB30L50F22PCM1
Plug	Long	40mm [2]	ICB30L50N40NOM1	ICB30L50N40POM1	ICB30L50N40NCM1	ICB30L50N40PCM1

[1] For quasi-flush mounting in metal

[2] For non-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 (I_o)	≤ 15 mA
Voltage drop (U_d)	Max. 2.5 VDC @ 200 mA
Protection	Reverse polarity, short-circuit, transients
Voltage transient	1 kV/0.5 J
Power ON delay (t_v)	≤ 20 ms
Operating frequency (f)	≤ 100 Hz

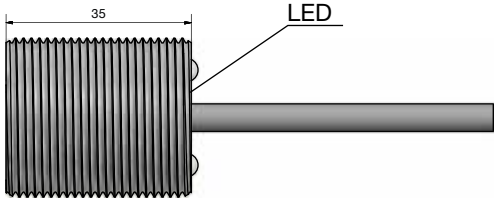
Indication for output ON NO version NC version	Activated LED, yellow Target present Target not present
Indication for short circuit/ overload	LED blinking (f = 2 Hz)
Assured operating sensing distance (S_a)	$0 \le S_a \le 0.81 \times S_n$
Effective operating distance (S_r)	$0.9 \times S_n \le S_r \le 1.1 \times S_n$
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.

Specifications (cont.)

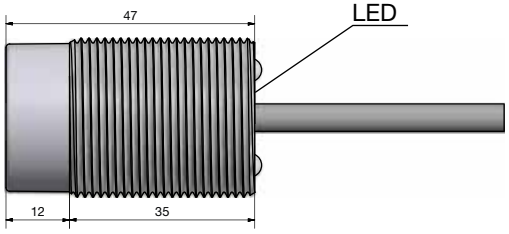
Ambient temperature	
Operating	-25° to +70°C (-13° to +158°F)
Storage	-30° to +80°C (-22° to +176°F)
Shock and vibration	IEC 60947-5-2/7.4
Housing material	
Body	Nickel-plated brass
Front	Grey thermoplastic polyester
Connection	
Cable	Ø5.2 x 2 m, 3 x 0.34 mm², grey PVC, oil proof
Plug	M12 x 1
Degree of protection	IP 67
Weight (cable/nuts included)	
Cable	Max. 220 g
Plug	Max. 160 g
Dimensions	See diagrams below
Tightening torque	25 Nm
Setup function	
NO version	
LED flashing (f=0.67 Hz)	$0.8\ S_n < S_r \leq S_n$
LED lights continuously	$0 \leq S_r \leq 0.8\ S_n$ (*)
NC version	
LED flashing (f=0.67 Hz)	$0.8\ S_n < S_r \leq S_n$
LED OFF	$0 \leq S_r \leq 0.8\ S_n$ (*)
	(*): safer installation

Approvals	**cULus**	(UL508)
Note: The terminal connector (version ...M1) was not evaluated. The suitability of the terminal connector should be determined in the end-use application.	**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 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
$MTTF_d$		700 years @ 50°C (122°F)

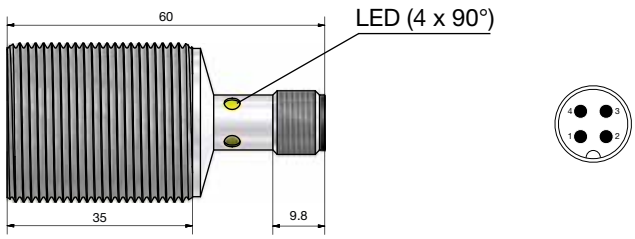
Dimensions (mm)



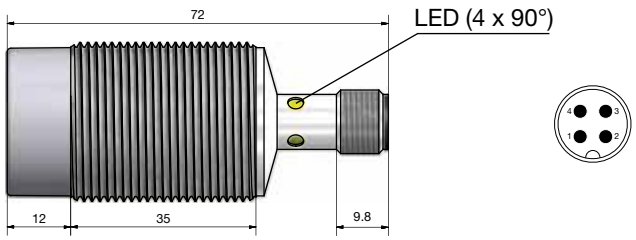
Short body, quasi-flush version, cable



Short body, non-flush version, cable



Short body, quasi-flush version, plug



Short body, non-flush version, plug

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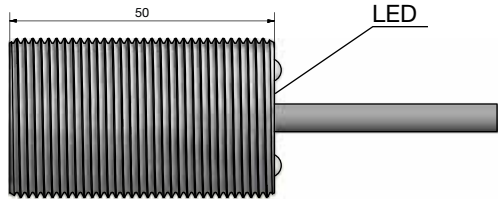
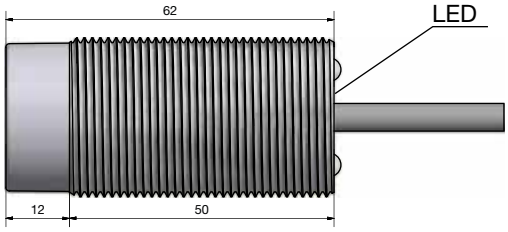
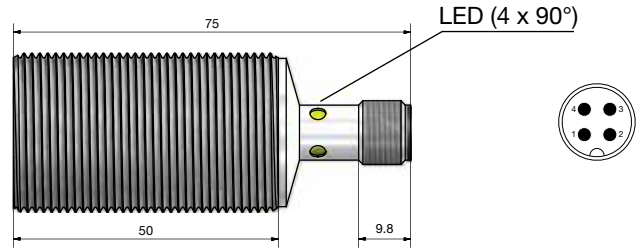
Dimensions (mm) (cont.)



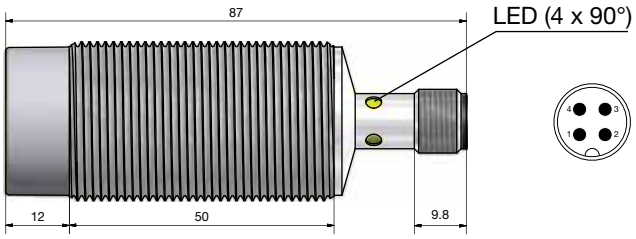
Long body, quasi-flush version, cable



Long body, non-flush version, cable



Long body, quasi-flush version, plug

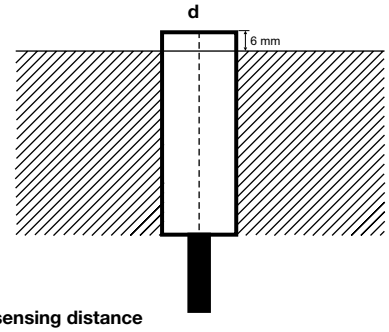


Long body, non-flush version, plug

Installation

Quasi-flush mountable proximity switches, when installed in damping material, must be according to Picture 1A.

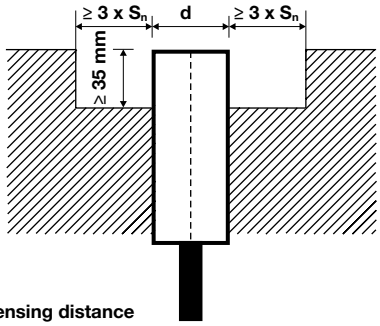
Picture 1A



S_n : nominal sensing distance
d : sensor diameter (30 mm)

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

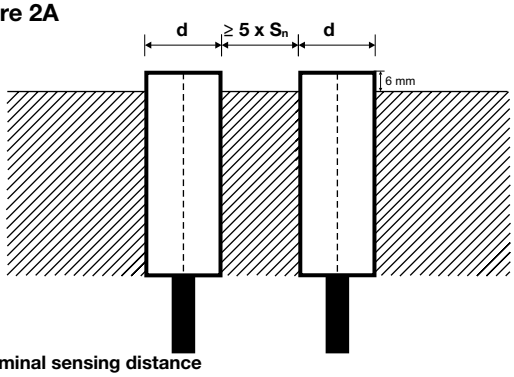
Picture 1B



S_n : nominal sensing distance
d : sensor diameter (30 mm)

Quasi-flush mountable proximity switches, when installed together in damping material, must be according to Picture 2A.

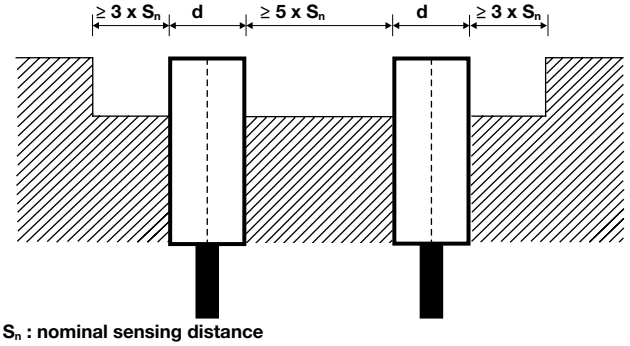
Picture 2A



S_n : nominal sensing distance
d : sensor diameter (30 mm)

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

Picture 2B

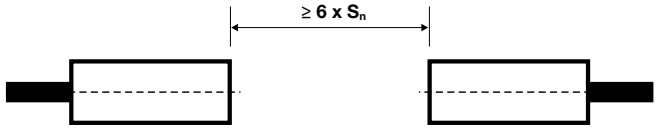


S_n : nominal sensing distance
d : sensor diameter (30 mm)

Installation (cont.)

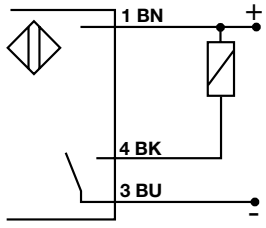
For sensors installed opposite each other, a minimum space of 6 x S_n (the nominal sensing distance) must be observed (See Picture 3).

Picture 3

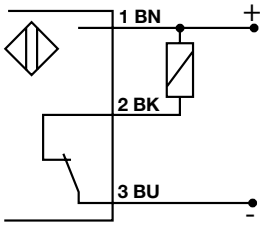


S_n : nominal sensing distance

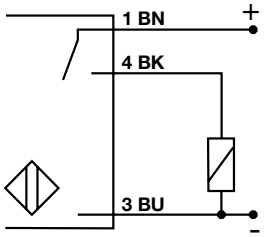
Wiring Diagram



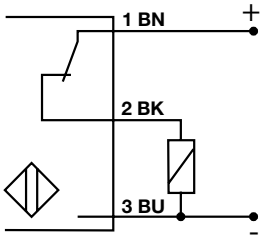
NPN - Normally open



NPN - Normally closed



PNP - Normally open



PNP - Normally closed

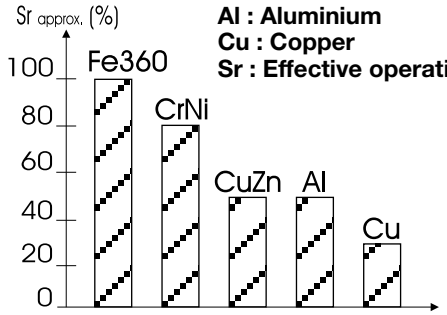
Reduction Factors

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.

Picture 4

Fe360 : Steel
CrNi : Chrome-nickel
CuZn : Brass
Al : Aluminium
Cu : Copper
Sr : Effective operating distance



Accessories for Plug Versions

	PVC	PUR
3-wire angled connector, 2 m cable	**CONB13NF-A2**	**CONB13NF-A2P**
3-wire angled connector, 5 m cable	**CONB13NF-A5**	**CONB13NF-A5P**
3-wire angled connector, 10 m cable	**CONB13NF-A10**	**CONB13NF-A10P**
3-wire angled connector, 15 m cable	**CONB13NF-A15**	**CONB13NF-A15P**
3-wire straight connector, 2 m cable	**CONB13NF-S2**	**CONB13NF-S2P**
3-wire straight connector, 5 m cable	**CONB13NF-S5**	**CONB13NF-S5P**
3-wire straight connector, 10 m cable	**CONB13NF-S10**	**CONB13NF-S10P**
3-wire straight connector, 15 m cable	**CONB13NF-S15**	**CONB13NF-S15P**

For any additional information or different options, please refer to the "General Accessories - Connector Cables -Type CONB1..." datasheets.

Delivery Contents

- Inductive proximity switch ICB.
- 2 nuts NPB
- 2 washers
- Packaging: plastic bag