

ICB, M18 short or long body versions



Proximity inductive sensors, extended range, nickel-plated brass housing



Benefits

- Sensing distance: 8 to 14 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
- CSA certified for Hazardous Locations

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.

References

Order code



ICB18



Enter the code entering the corresponding option instead of ☐

Code	Option	Description
ICB	-	Proximity inductive sensors, nickel-plated brass housing
18	-	Housing size
☐	S	Housing length: short
☐	L	Housing length: long
☐	30	Thread length: 30mm
☐	50	Thread length: 50mm
☐	F	Detection principle: flush mounting
☐	N	Detection principle: non-flush mounting
☐	08	Sensing distance: 8mm
☐	14	Sensing distance: 14mm
☐	N	Output type: NPN
☐	P	Output type: PNP
☐	O	Output configuration: normally open
☐	C	Output configuration: normally closed
☐		Connection: cable
☐	M1	Connection: plug

Selection guide

Con- nec- 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	8 mm ¹⁾	ICB18S30F08NO	ICB18S30F08PO	ICB18S30F08NC	ICB18S30F08PC
Cable	Short	14 mm ²⁾	ICB18S30N14NO	ICB18S30N14PO	ICB18S30N14NC	ICB18S30N14PC
Plug	Short	8 mm ¹⁾	ICB18S30F08NOM1	ICB18S30F08POM1	ICB18S30F08NCM1	ICB18S30F08PCM1
Plug	Short	14 mm ²⁾	ICB18S30N14NOM1	ICB18S30N14POM1	ICB18S30N14NCM1	ICB18S30N14PCM1
Cable	Long	8 mm ¹⁾	ICB18L50F08NO	ICB18L50F08PO	ICB18L50F08NC	ICB18L50F08PC
Cable	Long	14 mm ²⁾	ICB18L50N14NO	ICB18L50N14PO	ICB18L50N14NC	ICB18L50N14PC
Plug	Long	8 mm ¹⁾	ICB18L50F08NOM1	ICB18L50F08POM1	ICB18L50F08NCM1	ICB18L50F08PCM1
Plug	Long	14 mm ²⁾	ICB18L50N14NOM1	ICB18L50N14POM1	ICB18L50N14NCM1	ICB18L50N14PCM1

¹⁾ For flush mounting in metal

²⁾ For non-flush mounting in metal

Sensing

Detection

Assured operating sensing distance (S _a)	$0 \leq S_a \leq 0.81 \times S_n$
Effective operating distance (S _r)	$0.9 \times S_n \leq S_r \leq 1.1 \times S_n$
Usable operating distance (S _u)	$0.9 \times S_r \leq S_u \leq 1.1 \times S_r$
Differential travel (H) (Hysteresis)	1 to 20% of sensing dist.

Correction factors

The specific operating distance S_n refers to defined measuring conditions. The following data have to be considered as general guidelines.

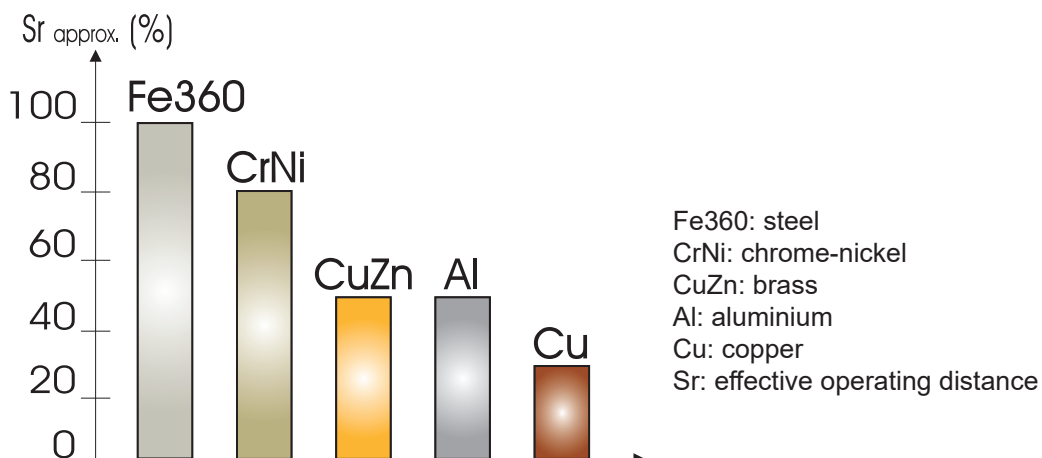


Fig. 1 The rated operating distance is reduced by the use of metals and alloys other than Fe360. The most important reduction factors for inductive proximity sensors are shown in the figure.

Accuracy

Repeat accuracy (R)	≤ 10%
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Features

Power Supply

Rated operational voltage (U_b)	10 to 36 VDC (ripple incl.)
Ripple (U_{rip})	≤ 10%
No load supply current (I_o)	≤ 15 mA
Power ON delay (t_v)	≤ 20 ms

Outputs

Output current (I_o)	≤ 200 mA @ 50°C (≤ 150 mA @ 50-70°C)
OFF-state current (I_i)	≤ 50 µA
Voltage drop (U_d)	Max. 2.5 VDC @ 200 mA
Protection	Reverse polarity, short-circuit, transients
Voltage transient	1 kV/0.5 J

Response times

Max. operating frequency (f)	≤ 1500 Hz
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Indication

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)

Environmental

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
Degree of protection	IP67

Compatibility and conformity

EMC protection - According to IEC 60947-5-2	
Electrostatic discharge (ESD)	IEC 61000-4-2 8 kV air discharge, 4 kV contact discharge
Radiated radio frequency	IEC 61000-4-3 3 V/m
Burst immunity	IEC 61000-4-4 2 kV
Conducted radio frequency	IEC 61000-4-6 3 V
Power frequency magnetic fields	IEC 61000-4-8 30 A/m
MTTF _d	850 years @ 50°C (122°F)
Approvals	  
	CCC is not required for products rated ≤ 36 V

Mechanical data

Weight (cable/nuts included)	
Cable	Max. 150 g
Plug	Max. 70 g
Mounting	Flush or non-flush mountable
Material	Body: nickel-plated brass Front: grey thermoplastic polyester
Tightening torque	Non-flush version: 25 Nm Flush version: From 0 mm to 7 mm: 20 Nm > 7 mm: 25 Nm

Electrical connection

Cable	Ø 4.1 x 2 m, 3 x 0.25 mm², grey PVC, oil proof
Plug	M12 x 1



Connection Diagrams

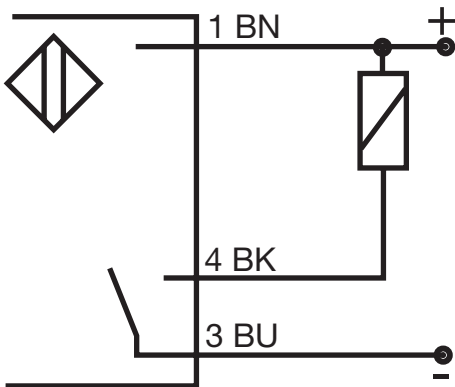


Fig. 2 NPN - Normally open

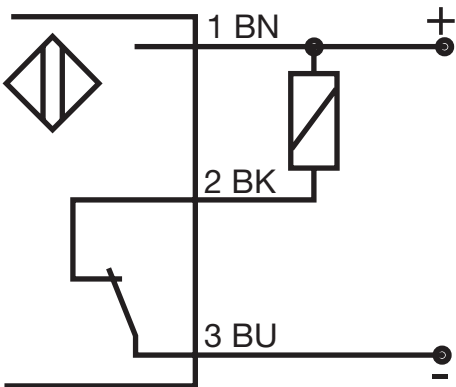


Fig. 3 NPN - Normally closed

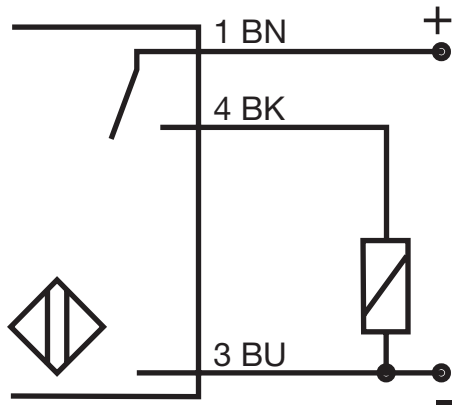


Fig. 4 PNP - Normally open

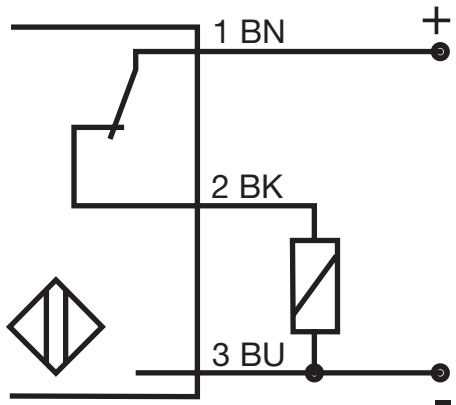


Fig. 5 PNP - Normally closed

Colour code		
BN: brown	BK: black	BU: blue

Dimensions [mm]

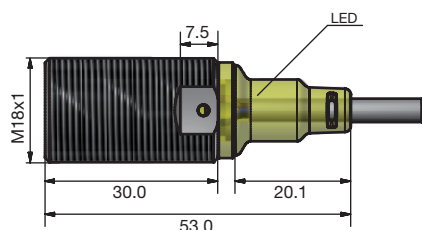


Fig. 6 Short body, flush version, cable

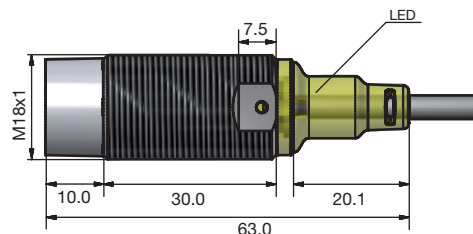


Fig. 7 Short body, non-flush version, cable

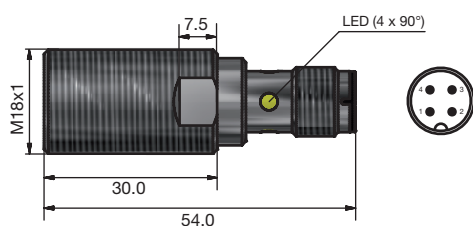


Fig. 8 Short body, flush version, plug

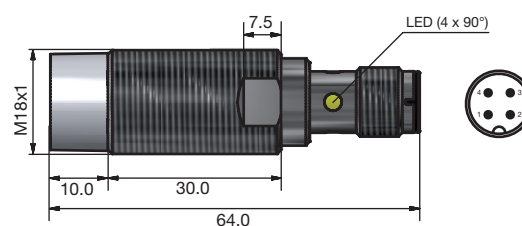


Fig. 9 Short body, non-flush version, plug

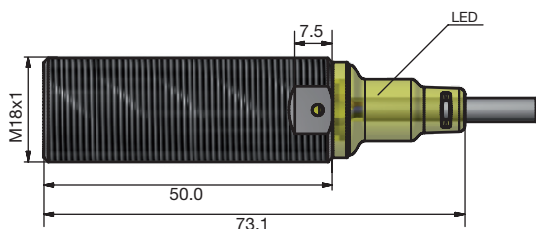


Fig. 10 Long body, flush version, cable

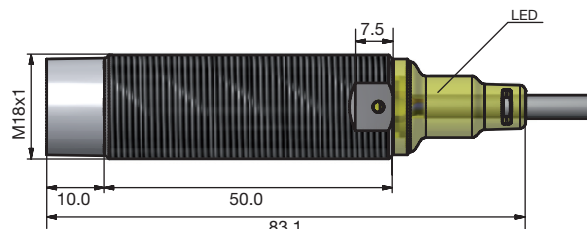


Fig. 11 Long body, non-flush version, cable

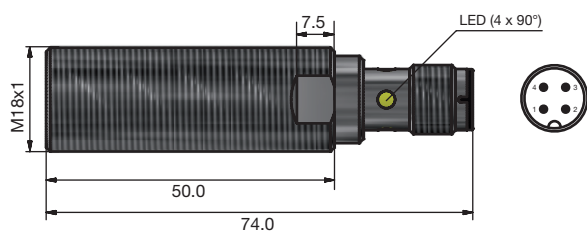


Fig. 12 Long body, flush version, plug

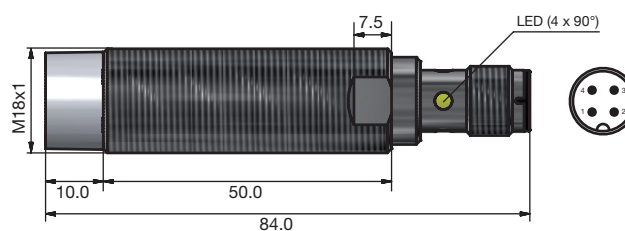


Fig. 13 Long body, non-flush version, plug

Installation

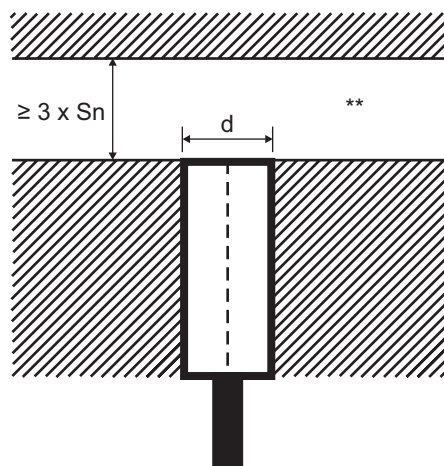


Fig. 14 Flush sensor, when installed in damping material

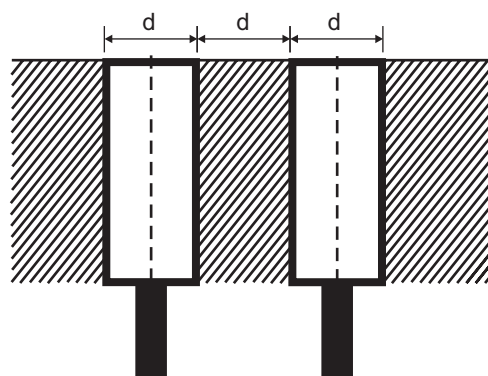


Fig. 15 Flush sensors, when installed together in damping material

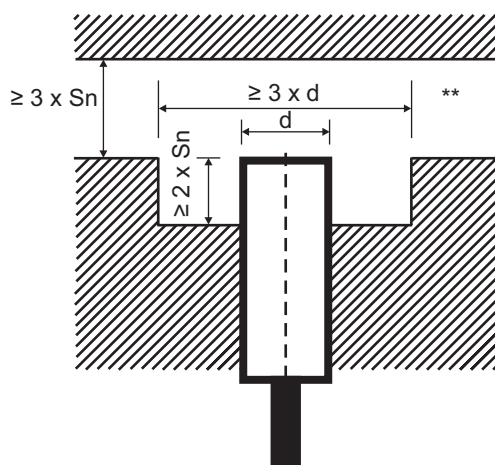


Fig. 16 Non-flush sensor, when installed in damping material

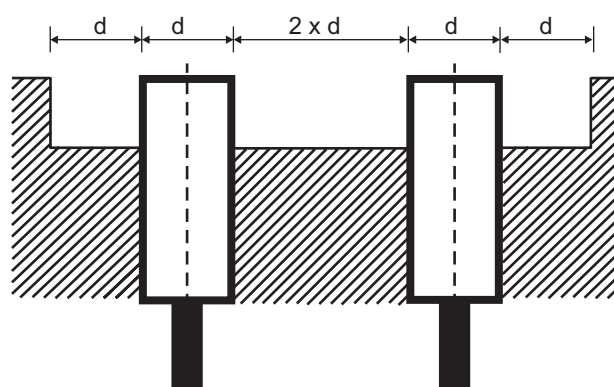


Fig. 17 Non-flush sensors, when installed together in damping material

** Free zone or non-damping material

S_n : nominal sensing distance

d: sensor diameter: 18 mm

Sensors installed opposite each other

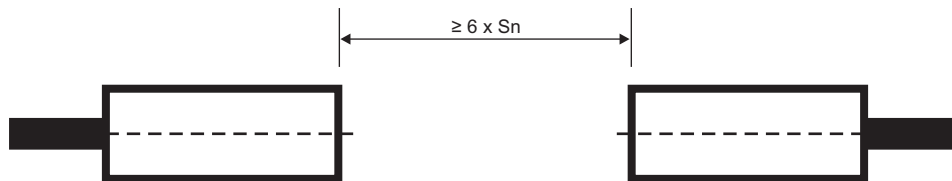


Fig. 18 For sensors installed opposite each other, a minimum space of $6 \times S_n$ (the nominal sensing distance) must be observed

Delivery contents and compatible components

Delivery contents

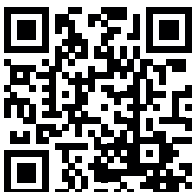
- Inductive proximity switch
- 2 nuts
- Packaging: plastic bag

CARLO GAVAZZI compatible components

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.



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