

# ICB, M18 short or long body versions



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



## Benefits

- Sensing distance: 5 mm
- Flush type
- 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
- Higher resistance to magnetic field
- 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  F 05

Enter the code entering the corresponding option instead of

Code	Option	Description
ICB	-	Proximity inductive sensors, nickel-plated brass housing
18	-	Housing size
<input type="checkbox"/>	S	Housing length: short
	L	Housing length: long
F	-	Detection principle: flush mounting
05	-	Sensing distance: 5mm
<input type="checkbox"/>	N	Output type: NPN
	P	Output type: PNP
<input type="checkbox"/>	O	Output configuration: normally open
	C	Output configuration: normally closed
<input type="checkbox"/>		Connection: cable
	M1	Connection: plug

**Selection guide**

Con- nec- tion	Body style	Rated operating distance S <sub>n</sub>	Ordering no. NPN, Normally open	Ordering no. PNP, Normally open	Ordering no. NPN, Normally closed	Ordering no. PNP, Normally closed
Cable	Short	5 mm	ICB18SF05NO	ICB18SF05PO	ICB18SF05NC	ICB18SF05PC
Plug	Short	5 mm	ICB18SF05NOM1	ICB18SF05POM1	ICB18SF05NCM1	ICB18SF05PCM1
Cable	Long	5 mm	ICB18LF05NO	ICB18LF05PO	ICB18LF05NC	ICB18LF05PC
Plug	Long	5 mm	ICB18LF05NOM1	ICB18LF05POM1	ICB18LF05NCM1	ICB18LF05PCM1

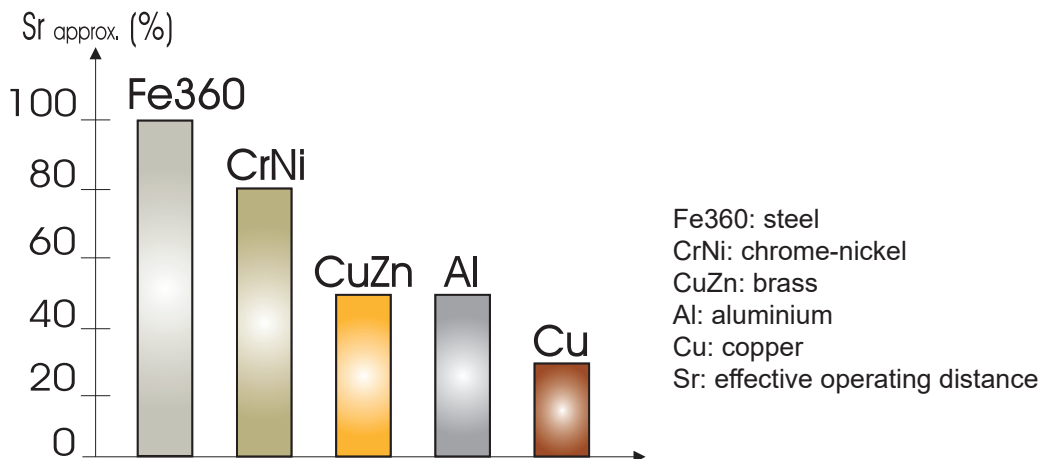
## Sensing

**Detection**

<b>Assured operating sensing distance (S<sub>a</sub>)</b>	$0 \leq S_a \leq 0.81 \times S_n$
<b>Effective operating distance (S<sub>r</sub>)</b>	$0.9 \times S_n \leq S_r \leq 1.1 \times S_n$
<b>Usable operating distance (S<sub>u</sub>)</b>	$0.9 \times S_r \leq S_u \leq 1.1 \times S_r$
<b>Differential travel (H) (Hysteresis)</b>	1 to 20% of sensing dist.

**Correction factors**

The specific operating distance S<sub>n</sub> 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**

<b>Repeat accuracy (R)</b>	≤ 10%
----------------------------	-------

## Features

### Power Supply

Rated operational voltage ( $U_b$ )	10 to 36 VDC (ripple incl.)
Ripple ( $U_{rpp}$ )	$\leq 10\%$
No load supply current ( $I_o$ )	$\leq 15$ mA
Power ON delay ( $t_o$ )	$\leq 300$ ms

### Outputs

Output current ( $I_o$ )	$\leq 200$ mA @ 50°C ( $\leq 150$ mA @ 50-70°C)
OFF-state current ( $I_o$ )	$\leq 50$ $\mu$ A
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)	$\leq 1500$ Hz
------------------------------	----------------

### Indication

Indication for output ON NO version NC version	Activated LED, yellow Target present Target not present
Indication for short circuit/ overload	LED blinking

### 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

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
Material	Body: nickel-plated brass Front: grey thermoplastic polyester
Tightening torque	Distance from sensing face From 1 mm to 3 mm: 15 Nm > 3 mm: 25 Nm

## Electrical connection

Cable	2 m, 3 x 0.25 mm <sup>2</sup> , grey PVC, oil proof
Plug	M12 x 1

## Connection Diagrams

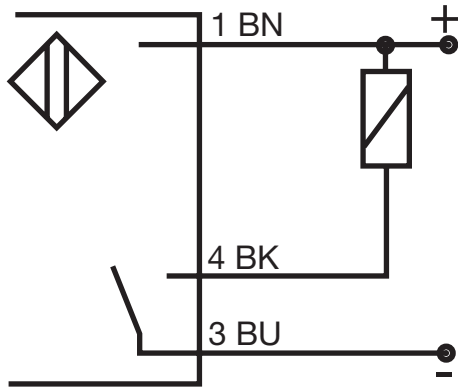


Fig. 2 NPN - Normally open

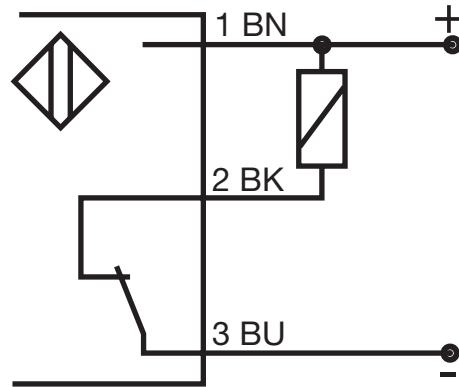


Fig. 3 NPN - Normally closed

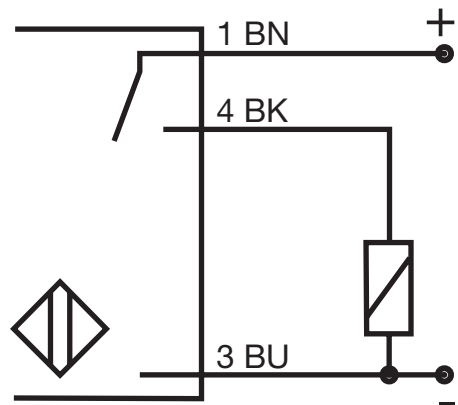


Fig. 4 PNP - Normally open

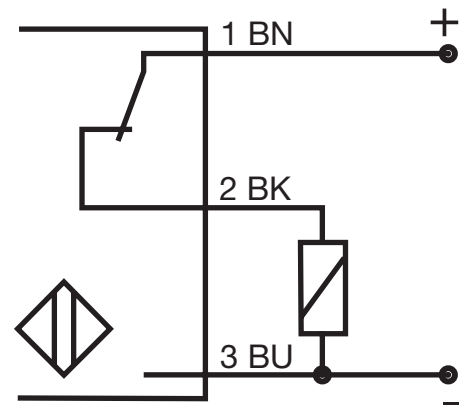
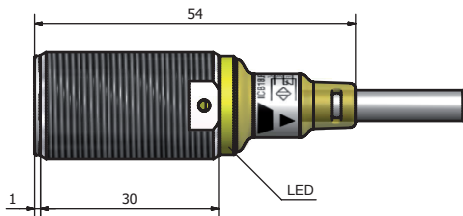


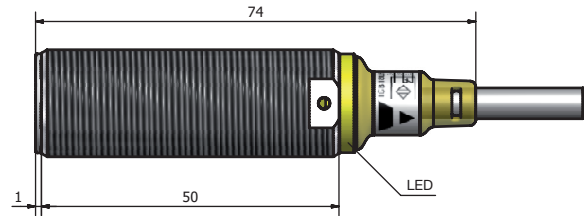
Fig. 5 PNP - Normally closed

Colour code		
<b>BN:</b> brown	<b>BK:</b> black	<b>BU:</b> blue

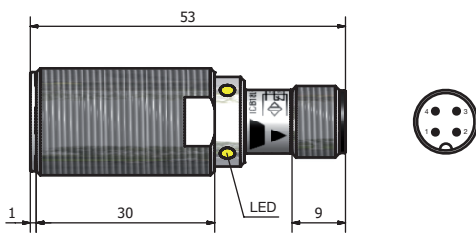
## Dimensions [mm]



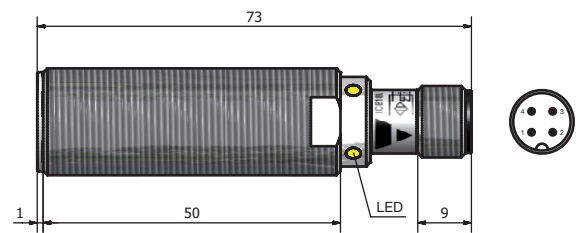
**Fig. 6** Short body, flush version, cable



**Fig. 7** Long body, flush version, cable

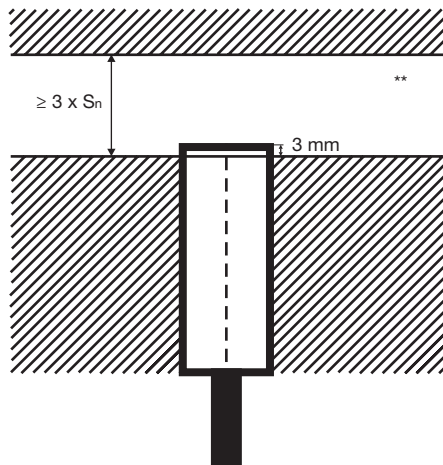


**Fig. 8** Short body, flush version, plug

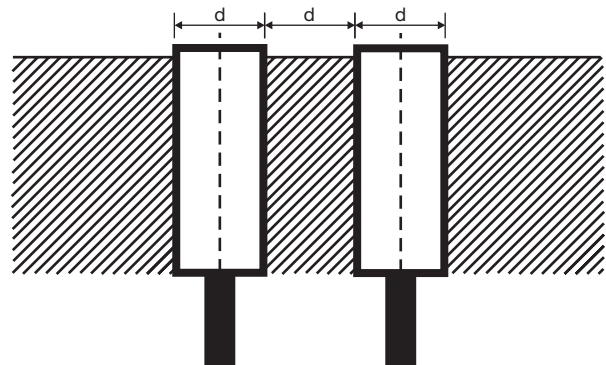


**Fig. 9** Long body, flush version, plug

## Installation



**Fig. 10** Flush sensor, when installed in damping material

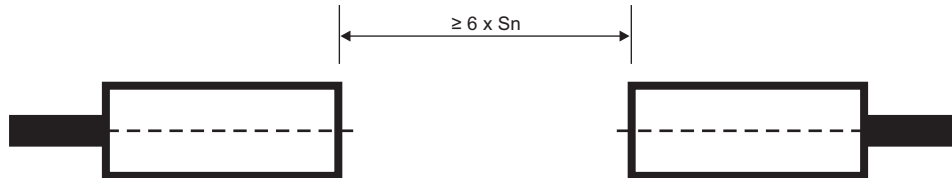


**Fig. 11** Flush sensors, when installed together in damping material

\*\* Free zone or non-damping material

$S_n$ : nominal sensing distance  
 d: sensor diameter: 18 mm

**Sensors installed opposite each other**



**Fig. 12** 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.



COPYRIGHT ©2019  
Content subject to change. Download the PDF: [www.productselection.net](http://www.productselection.net)