

ICB

Технические характеристики

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Ижевск (3412)26-03-58	Набережные Челны (8552)20-53-41	Севастополь (8692)22-31-93	Череповец (8202)49-02-64
Иркутск (395)279-98-46	Нижний Новгород (831)429-08-12	Симферополь (3652)67-13-56	Ярославль (4852)69-52-93
Россия (495)268-04-70	Киргизия (996)312-96-26-47	Казахстан (7172)727-132	

ICB, M12 short or long body versions



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



Benefits

- Sensing distance: 2 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

ICB12 F 02

Enter the code entering the corresponding option instead of

Code	Option	Description
ICB	-	Proximity inductive sensors, nickel-plated brass housing
12	-	Housing size
<input type="checkbox"/>	S	Housing length: short
	L	Housing length: long
F	-	Detection principle: flush mounting
02	-	Sensing distance: 2mm
<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 _n	Ordering no. NPN, Normally open	Ordering no. PNP, Normally open	Ordering no. NPN, Normally closed	Ordering no. PNP, Normally closed
Cable	Short	2 mm	ICB12SF02NO	ICB12SF02PO	ICB12SF02NC	ICB12SF02PC
Plug	Short	2 mm	ICB12SF02NOM1	ICB12SF02POM1	ICB12SF02NCM1	ICB12SF02PCM1
Cable	Long	2 mm	ICB12LF02NO	ICB12LF02PO	ICB12LF02NC	ICB12LF02PC
Plug	Long	2 mm	ICB12LF02NOM1	ICB12LF02POM1	ICB12LF02NCM1	ICB12LF02PCM1

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.

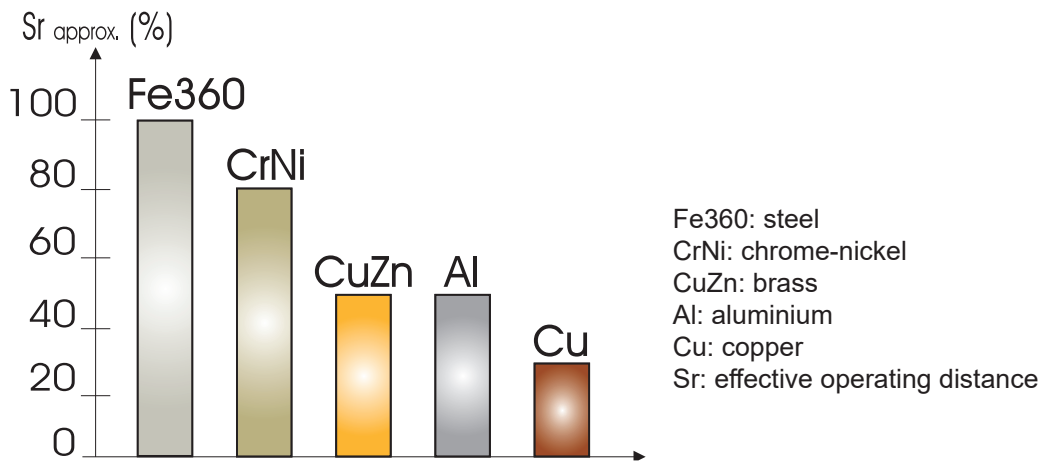


Fig. 1 The rated operating distance is reduced by the use of metals and alloys other than Fe360. The most important reduction factors for inductive proximity sensors are shown in the figure.

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})	$\leq 10\%$
No load supply current (I_o)	≤ 15 mA
Power ON delay (t_o)	≤ 300 ms

▶ Outputs

Output current (I_o)	≤ 200 mA @ 50°C (≤ 150 mA @ 50-70°C)
OFF-state current (I_o)	≤ 50 μ 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)	≤ 2000 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

▶ 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

ICB, M12 short or long body versions



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. 120 g
Plug	Max. 30 g
Mounting	Flush
Material	Body: nickel-plated brass Front: grey thermoplastic polyester
Tightening torque	Distance from sensing face From 2 mm to 5 mm: 4 Nm > 5 mm: 10 Nm

Electrical connection

Cable	2 m, 3 x 0.25 mm ² , grey PVC, oil proof
Plug	M12 x 1

Connection Diagrams

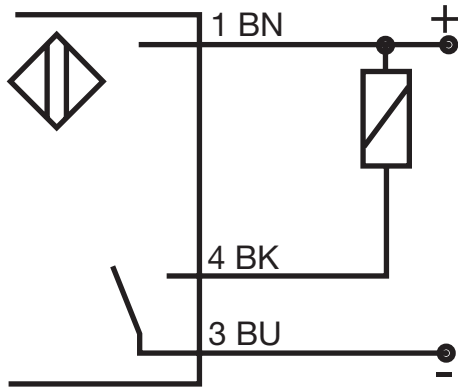


Fig. 2 NPN - Normally open

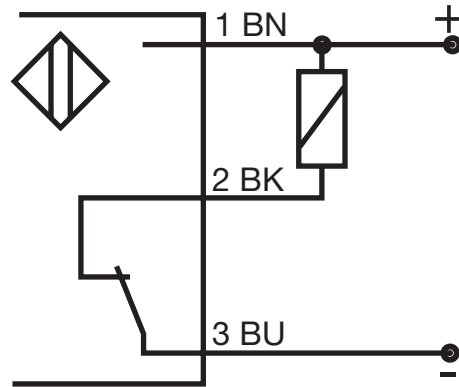


Fig. 3 NPN - Normally closed

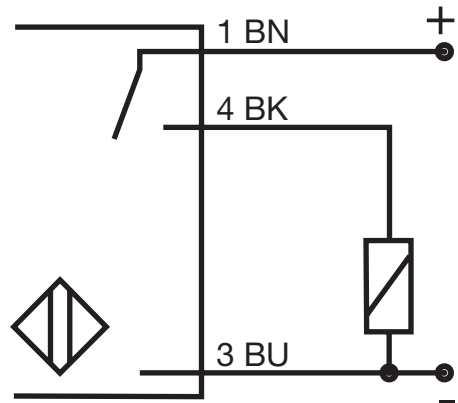


Fig. 4 PNP - Normally open

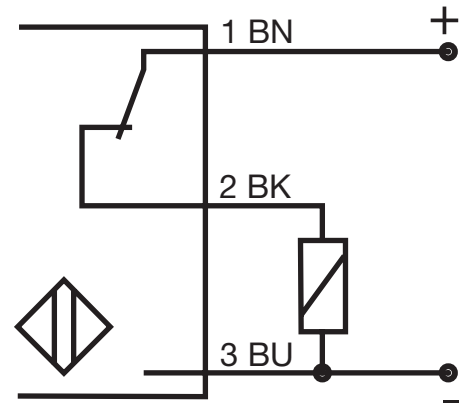


Fig. 5 PNP - Normally closed

Colour code		
BN: brown	BK: black	BU: blue

Dimensions [mm]

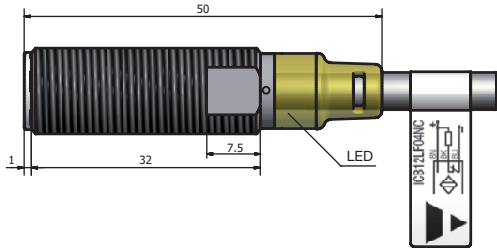


Fig. 6 Short body, flush version, cable

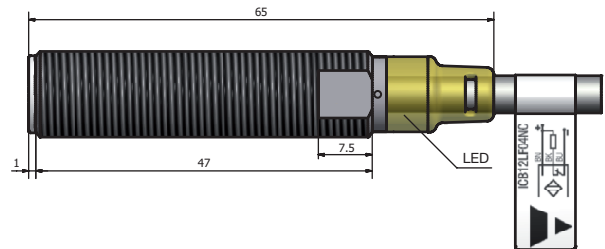


Fig. 7 Long body, flush version, cable

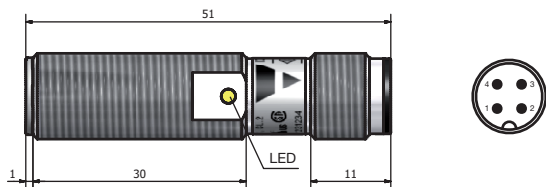


Fig. 8 Short body, flush version, plug

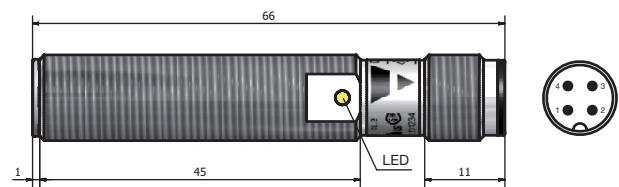


Fig. 9 Long body, flush version, plug

Installation

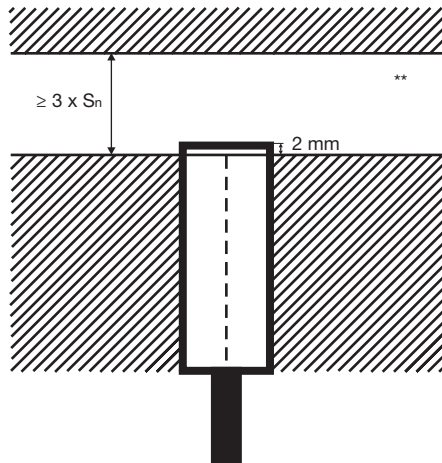


Fig. 10 Flush sensor, when installed in damping material

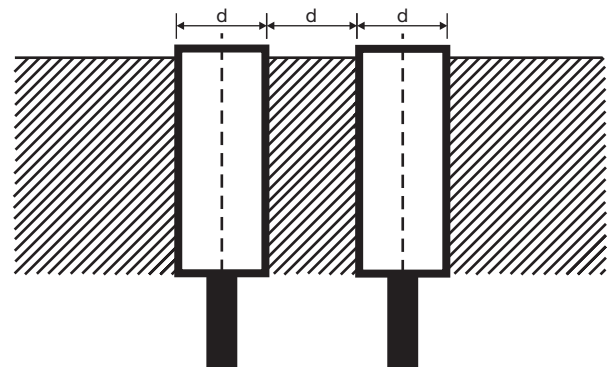


Fig. 11 Flush sensors, when installed together in damping material

** Free zone or non-damping material

S_n : nominal sensing distance

d: sensor diameter: 12 mm

Sensors installed opposite each other

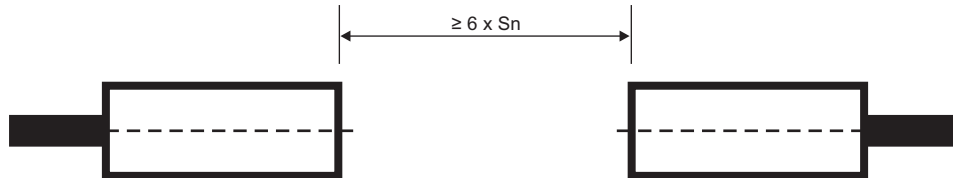


Fig. 12 For sensors installed opposite each other, a minimum space of $6 \times S_n$ (the nominal sensing distance) must be observed

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

ICB, M12 short or long body versions



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



Benefits

- Sensing distance: 4 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
- 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

ICB12 F 04

Enter the code entering the corresponding option instead of

Code	Option	Description
ICB	-	Proximity inductive sensors, nickel-plated brass housing
12	-	Housing size
<input type="checkbox"/>	S	Housing length: short
	L	Housing length: long
F	-	Detection principle: flush mounting
04	-	Sensing distance: 4mm
<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 _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	ICB12SF04NO	ICB12SF04PO	ICB12SF04NC	ICB12SF04PC
Plug	Short	4 mm	ICB12SF04NOM1	ICB12SF04POM1	ICB12SF04NCM1	ICB12SF04PCM1
Cable	Long	4 mm	ICB12LF04NO	ICB12LF04PO	ICB12LF04NC	ICB12LF04PC
Plug	Long	4 mm	ICB12LF04NOM1	ICB12LF04POM1	ICB12LF04NCM1	ICB12LF04PCM1

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.

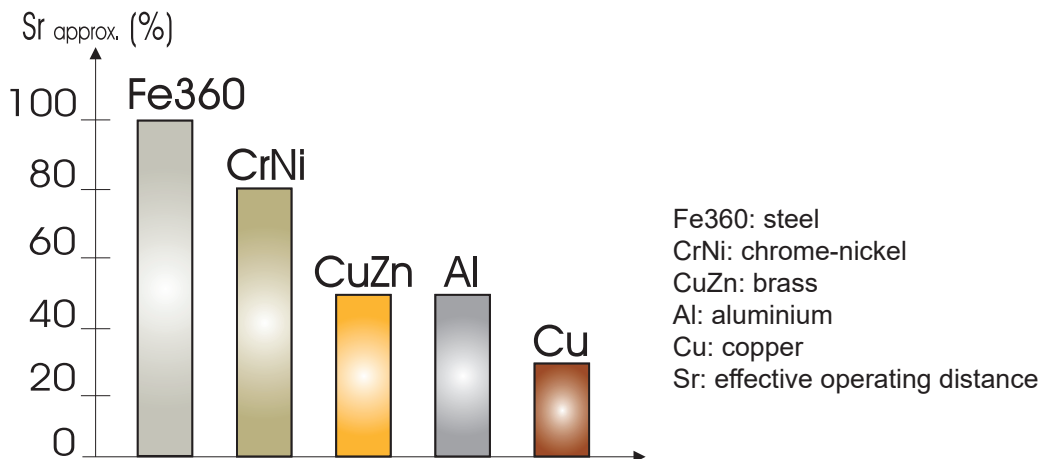


Fig. 1 The rated operating distance is reduced by the use of metals and alloys other than Fe360. The most important reduction factors for inductive proximity sensors are shown in the figure.

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})	$\leq 10\%$
No load supply current (I_o)	≤ 15 mA
Power ON delay (t_o)	≤ 300 ms

▶ Outputs

Output current (I_o)	≤ 200 mA @ 50°C (≤ 150 mA @ 50-70°C)
OFF-state current (I_o)	≤ 50 μ 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)	≤ 2000 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

▶ 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

ICB, M12 short or long body versions



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. 120 g
Plug	Max. 30 g
Mounting	Flush
Material	Body: nickel-plated brass Front: grey thermoplastic polyester
Tightening torque	Distance from sensing face From 2 mm to 5 mm: 4 Nm > 5 mm: 10 Nm

Electrical connection

Cable	2 m, 3 x 0.25 mm ² , grey PVC, oil proof
Plug	M12 x 1

Connection Diagrams

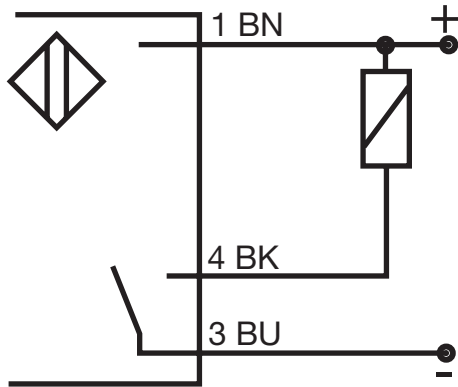


Fig. 2 NPN - Normally open

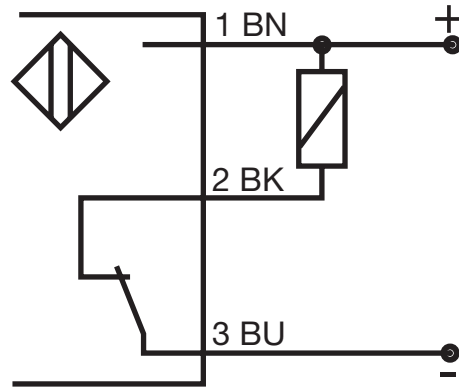


Fig. 3 NPN - Normally closed

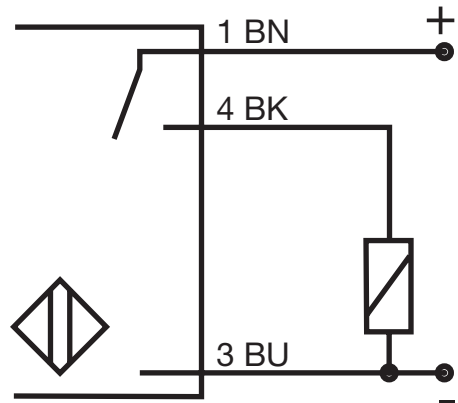


Fig. 4 PNP - Normally open

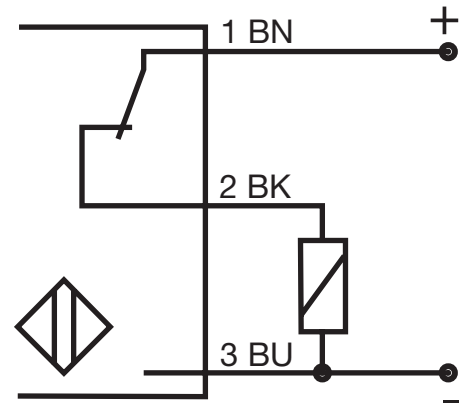


Fig. 5 PNP - Normally closed

Colour code		
BN: brown	BK: black	BU: blue

Dimensions [mm]

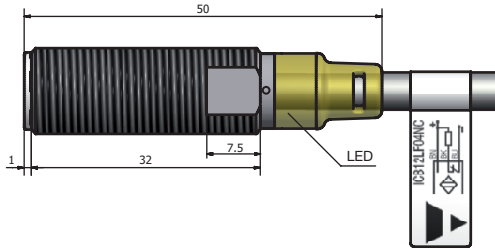


Fig. 6 Short body, flush version, cable

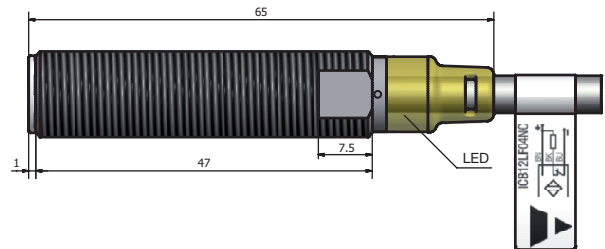


Fig. 7 Long body, flush version, cable

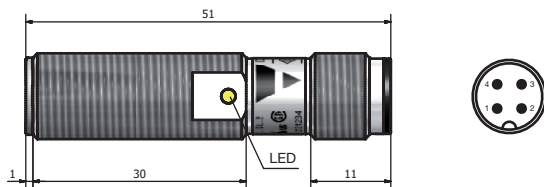


Fig. 8 Short body, flush version, plug

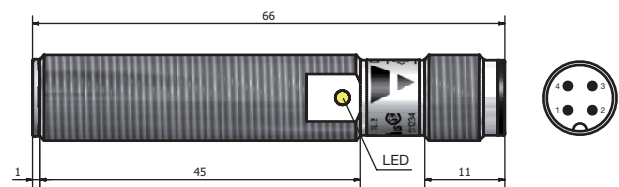


Fig. 9 Long body, flush version, plug

Installation

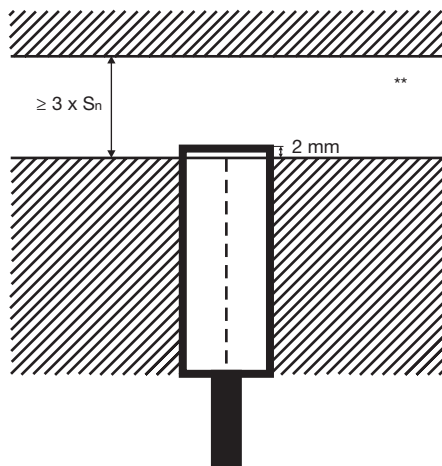


Fig. 10 Flush sensor, when installed in damping material

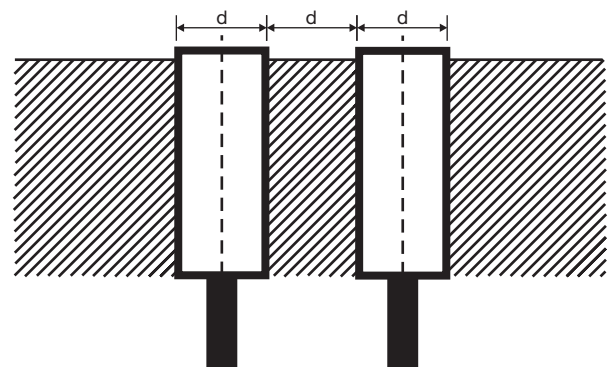


Fig. 11 Flush sensors, when installed together in damping material

** Free zone or non-damping material

S_n : nominal sensing distance

d: sensor diameter: 12 mm

Sensors installed opposite each other

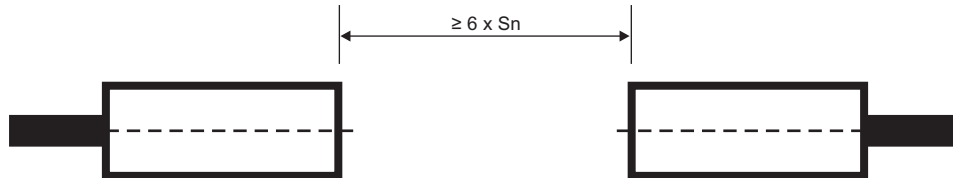


Fig. 12 For sensors installed opposite each other, a minimum space of $6 \times S_n$ (the nominal sensing distance) must be observed

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

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
<input type="checkbox"/>	L	Housing length: long
F	-	Detection principle: flush mounting
05	-	Sensing distance: 5mm
<input type="checkbox"/>	N	Output type: NPN
<input type="checkbox"/>	P	Output type: PNP
<input type="checkbox"/>	O	Output configuration: normally open
<input type="checkbox"/>	C	Output configuration: normally closed
<input type="checkbox"/>		Connection: cable
<input type="checkbox"/>	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	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

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.

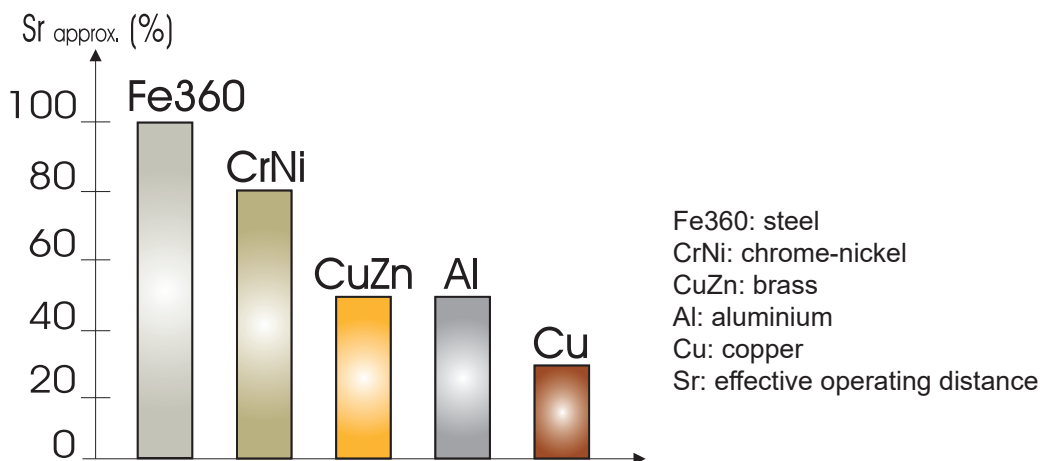


Fig. 1 The rated operating distance is reduced by the use of metals and alloys other than Fe360. The most important reduction factors for inductive proximity sensors are shown in the figure.

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_{rpp})	$\leq 10\%$
No load supply current (I_o)	≤ 15 mA
Power ON delay (t_o)	≤ 300 ms

Outputs

Output current (I_o)	≤ 200 mA @ 50°C (≤ 150 mA @ 50-70°C)
OFF-state current (I_o)	≤ 50 μ 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)	≤ 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

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

ICB, M18 short or long body versions



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 ² , grey PVC, oil proof
Plug	M12 x 1

Connection Diagrams

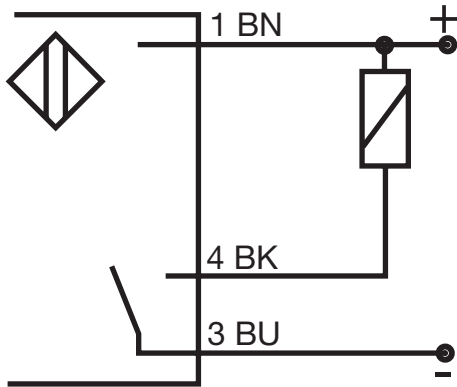


Fig. 2 NPN - Normally open

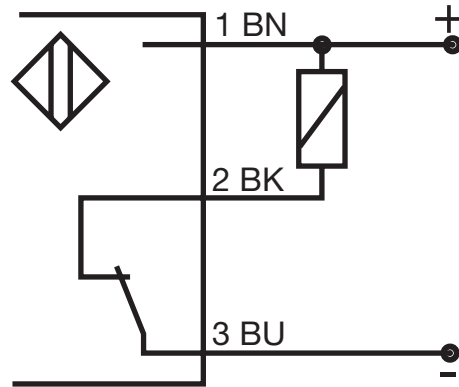


Fig. 3 NPN - Normally closed

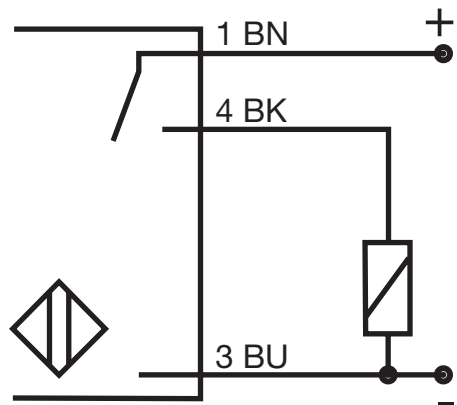


Fig. 4 PNP - Normally open

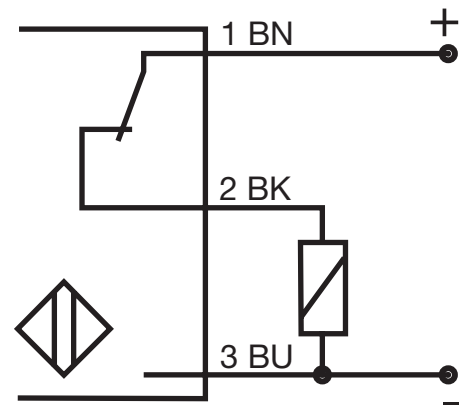


Fig. 5 PNP - Normally closed

Colour code		
BN: brown	BK: black	BU: blue

Dimensions [mm]

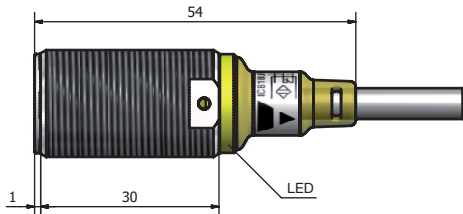


Fig. 6 Short body, flush version, cable

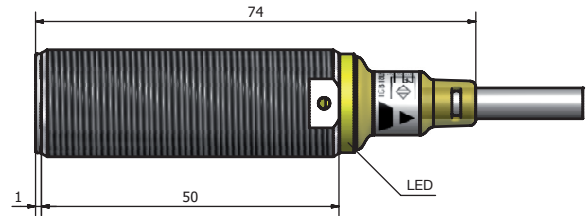


Fig. 7 Long body, flush version, cable

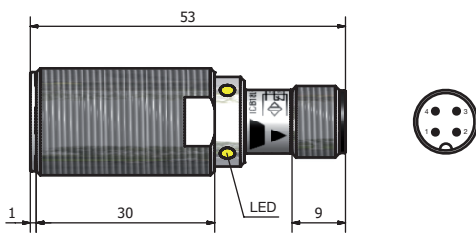


Fig. 8 Short body, flush version, plug

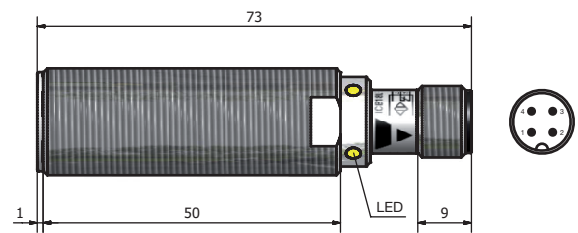


Fig. 9 Long body, flush version, plug

Installation

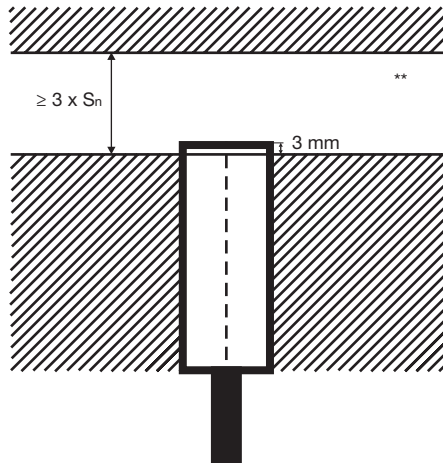


Fig. 10 Flush sensor, when installed in damping material

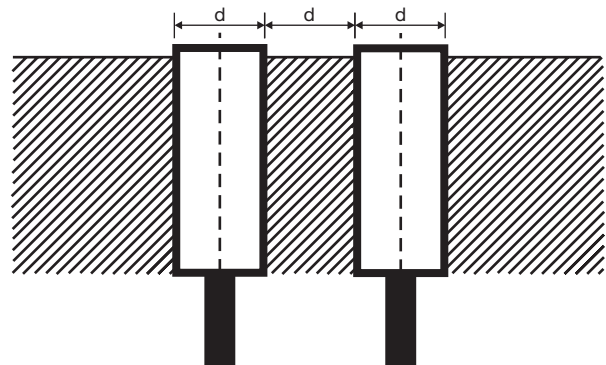


Fig. 11 Flush sensors, when installed together in damping material

** Free zone or non-damping material

S_n : nominal sensing distance

d: sensor diameter: 18 mm

Sensors installed opposite each other

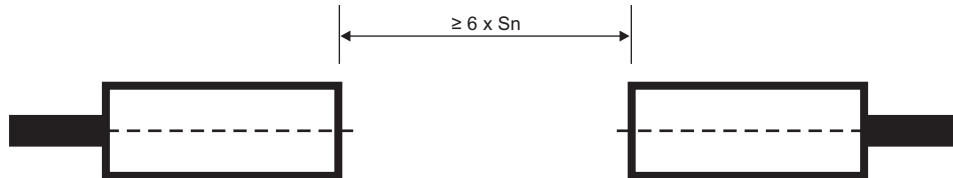


Fig. 12 For sensors installed opposite each other, a minimum space of $6 \times S_n$ (the nominal sensing distance) must be observed

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

ICB, M18 short or long body versions



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



Benefits

- Sensing distance: 8 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
- 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 08

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
<input type="checkbox"/>	L	Housing length: long
F	-	Detection principle: flush mounting
08	-	Sensing distance: 8mm
<input type="checkbox"/>	N	Output type: NPN
<input type="checkbox"/>	P	Output type: PNP
<input type="checkbox"/>	O	Output configuration: normally open
<input type="checkbox"/>	C	Output configuration: normally closed
<input type="checkbox"/>		Connection: cable
<input type="checkbox"/>	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	ICB18SF08NO	ICB18SF08PO	ICB18SF08NC	ICB18SF08PC
Plug	Short	8 mm	ICB18SF08NOM1	ICB18SF08POM1	ICB18SF08NCM1	ICB18SF08PCM1
Cable	Long	8 mm	ICB18LF08NO	ICB18LF08PO	ICB18LF08NC	ICB18LF08PC
Plug	Long	8 mm	ICB18LF08NOM1	ICB18LF08POM1	ICB18LF08NCM1	ICB18LF08PCM1

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.

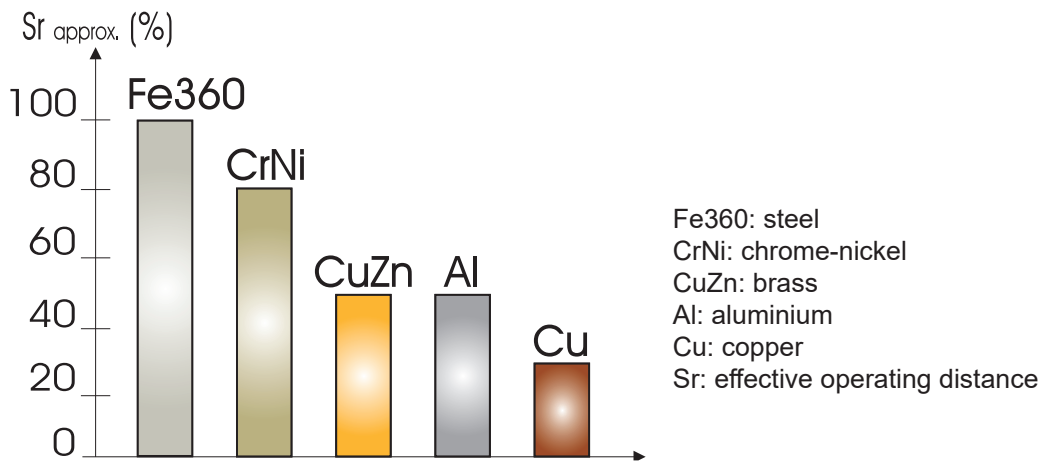


Fig. 1 The rated operating distance is reduced by the use of metals and alloys other than Fe360. The most important reduction factors for inductive proximity sensors are shown in the figure.

Accuracy

Repeat accuracy (R)	≤ 10%
---------------------	-------

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)	≤ 15 mA
Power ON delay (t_o)	≤ 300 ms

Outputs

Output current (I_o)	≤ 200 mA @ 50°C (≤ 150 mA @ 50-70°C)
OFF-state current (I_o)	≤ 50 μ 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)	≤ 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

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

ICB, M18 short or long body versions



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 ² , grey PVC, oil proof
Plug	M12 x 1

Connection Diagrams

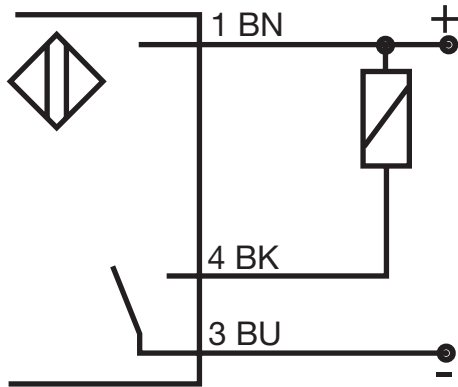


Fig. 2 NPN - Normally open

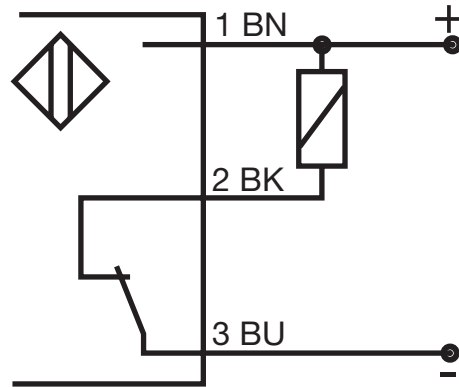


Fig. 3 NPN - Normally closed

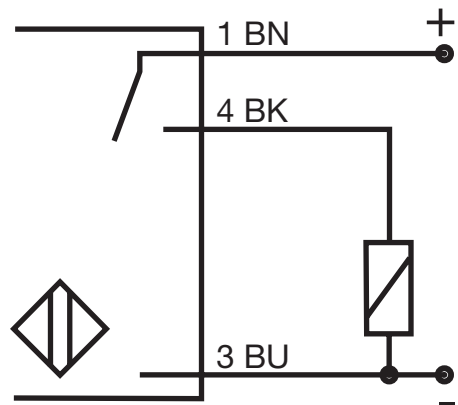


Fig. 4 PNP - Normally open

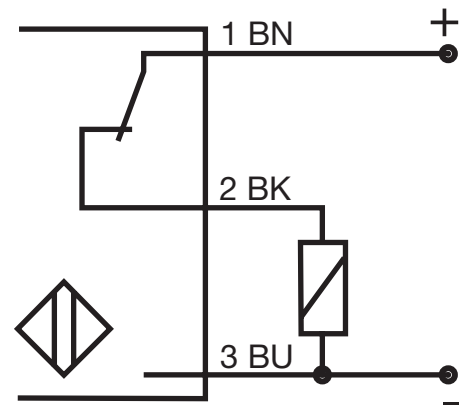


Fig. 5 PNP - Normally closed

Colour code		
BN: brown	BK: black	BU: blue

Dimensions [mm]

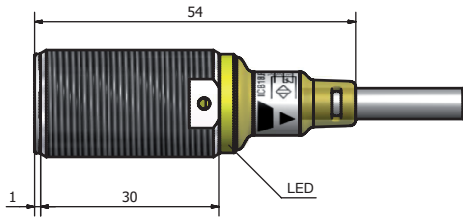


Fig. 6 Short body, flush version, cable

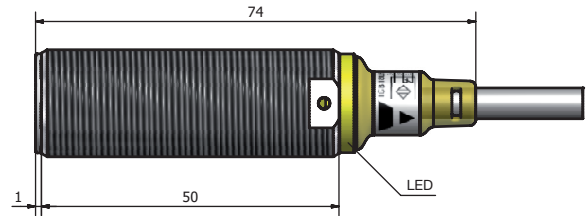


Fig. 7 Long body, flush version, cable

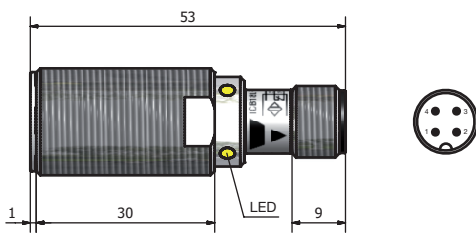


Fig. 8 Short body, flush version, plug

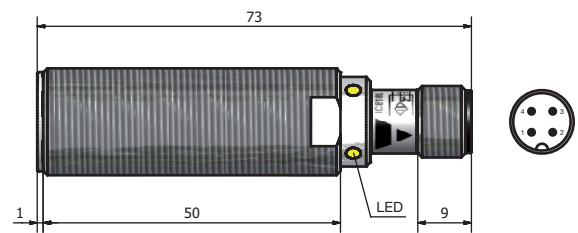


Fig. 9 Long body, flush version, plug

Installation

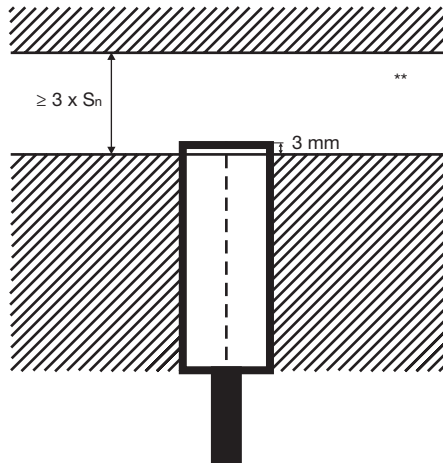


Fig. 10 Flush sensor, when installed in damping material

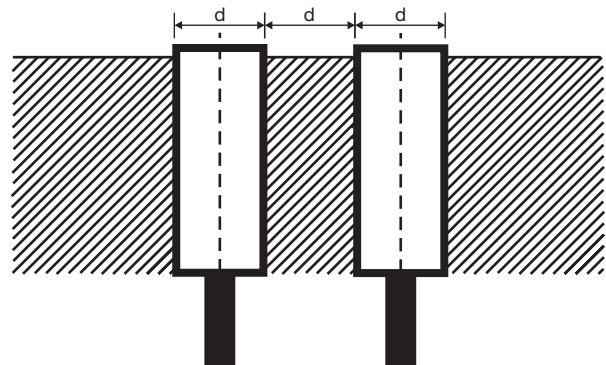


Fig. 11 Flush sensors, when installed together in damping material

** Free zone or non-damping material

S_n : nominal sensing distance

d: sensor diameter: 18 mm

Sensors installed opposite each other

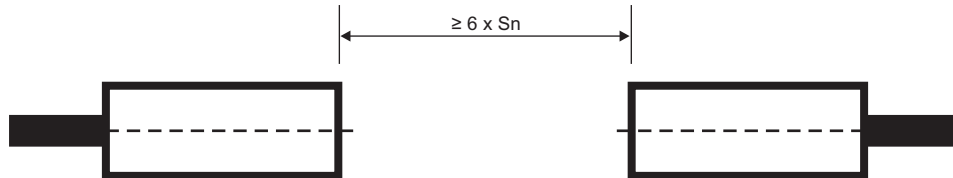


Fig. 12 For sensors installed opposite each other, a minimum space of $6 \times S_n$ (the nominal sensing distance) must be observed

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

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

CARLO GAVAZZI



- Sensing distance: 10 to 15 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
- CSA certified for Hazardous Locations



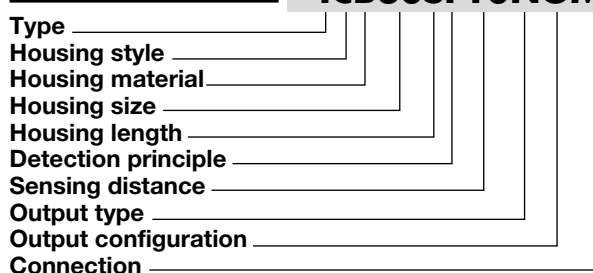
Product Description

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

ICB30SF10NOM1



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	10 mm ¹⁾	ICB30SF10NO	ICB30SF10PO	ICB30SF10NC	ICB30SF10PC
Cable	Short	15 mm ²⁾	ICB30SN15NO	ICB30SN15PO	ICB30SN15NC	ICB30SN15PC
Plug	Short	10 mm ¹⁾	ICB30SF10NOM1	ICB30SF10POM1	ICB30SF10NCM1	ICB30SF10PCM1
Plug	Short	15 mm ²⁾	ICB30SN15NOM1	ICB30SN15POM1	ICB30SN15NCM1	ICB30SN15PCM1
Cable	Long	10 mm ¹⁾	ICB30LF10NO	ICB30LF10PO	ICB30LF10NC	ICB30LF10PC
Cable	Long	15 mm ²⁾	ICB30LN15NO	ICB30LN15PO	ICB30LN15NC	ICB30LN15PC
Plug	Long	10 mm ¹⁾	ICB30LF10NOM1	ICB30LF10POM1	ICB30LF10NCM1	ICB30LF10PCM1
Plug	Long	15 mm ²⁾	ICB30LN15NOM1	ICB30LN15POM1	ICB30LN15NCM1	ICB30LN15PCM1

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.)	Indication for short circuit/ overload	LED blinking (f = 2 Hz)
Ripple	≤ 10%	Assured operating sensing distance (S_a)	$0 \leq S_a \leq 0.81 \times S_n$
Output current (I_a)	≤ 200 mA @ 50°C (≤ 150 mA @ 50-70°C)	Effective operating distance (S_r)	$0.9 \times S_n \leq S_r \leq 1.1 \times S_n$
OFF-state current (I_r)	≤ 50 μA	Usable operating distance (S_u)	$0.85 \times S_r \leq S_u \leq 1.1 \times S_r$
No load supply current (I_o)	≤ 15 mA	Repeat accuracy (R)	≤ 5%
Voltage drop (U_d)	Max. 2.5 VDC @ 200 mA	Differential travel (H) (Hysteresis)	1 to 20% of sensing dist.
Protection	Reverse polarity, short-circuit, transients	Ambient temperature	Operating -25° to +70°C (-13° to +158°F) Storage -30° to +80°C (-22° to +176°F)
Voltage transient	1 kV/0.5 J	Shock and vibration	IEC 60947-5-2/7.4
Power ON delay (t_v)	300 ms	Housing material	Body Nickel-plated brass Front cap Grey thermoplastic polyester
Operating frequency (f)	≤ 1000 Hz		
Indication for output ON	Activated LED, yellow		
NO version	Target present		
NC version	Target not present		



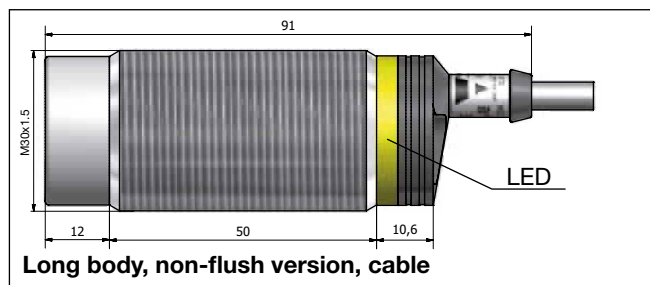
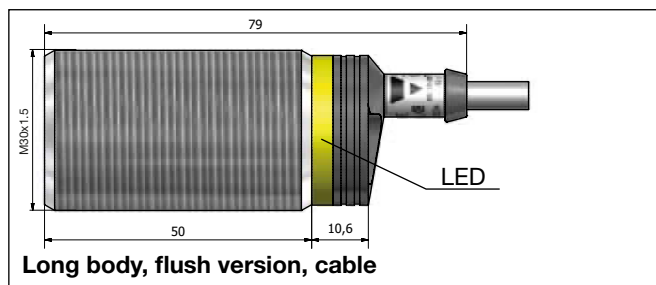
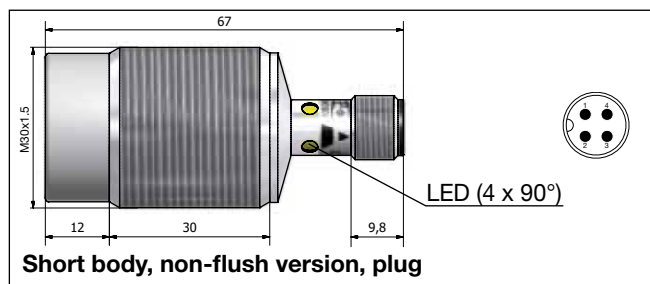
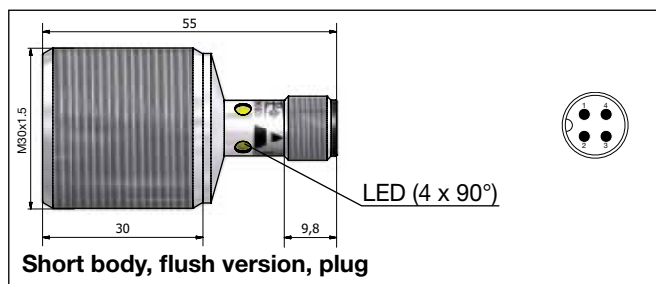
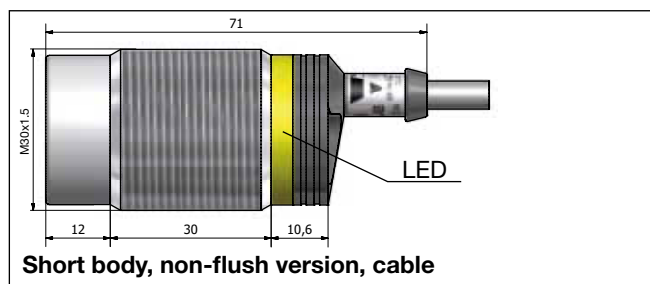
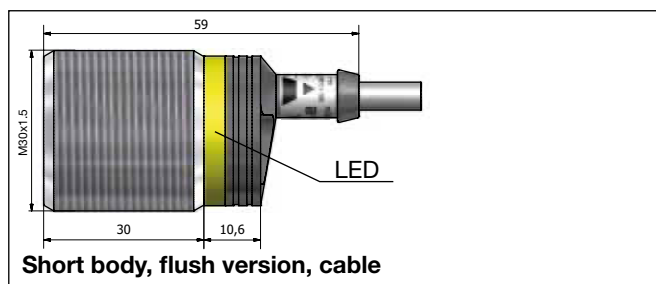
Specifications (cont.)

Connection	
Cable	Ø5.2 x 2 m, 3 x 0.34 mm ² , grey PVC, oil proof
Plug	M12 x 1
Degree of protection	IP 67
Weight (cable/nuts included)	
ICB30 S	Max. 185 g
ICB30 L	Max. 195 g
Dimensions	See diagrams below
Tightening torque	25 Nm
Approvals	
UL (RU), CSA	As Industrial Control Equipment - Proximity Switches. Types 1, 4, 4X or 12. Max ambient temperature 40°C.

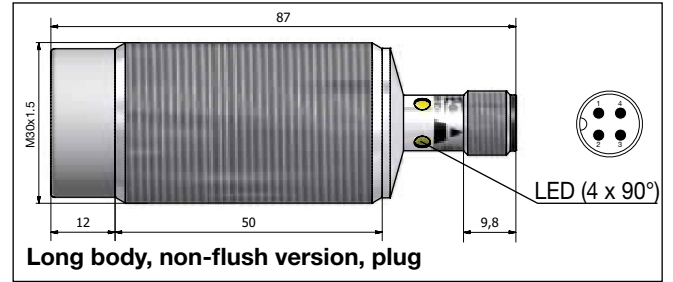
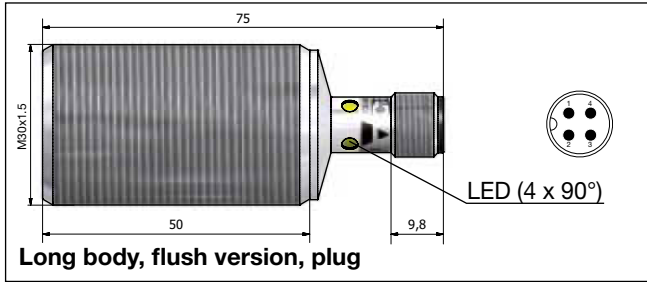
Approvals (cont.)

cCSAus	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	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	850 years @ 50°C (122°F)

Dimensions (mm)

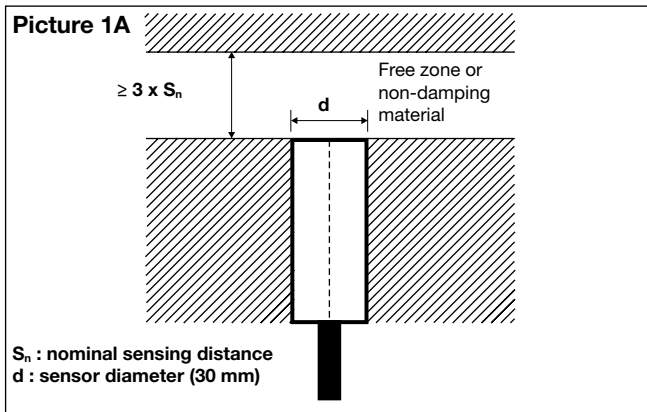


Dimensions (mm) (cont.)

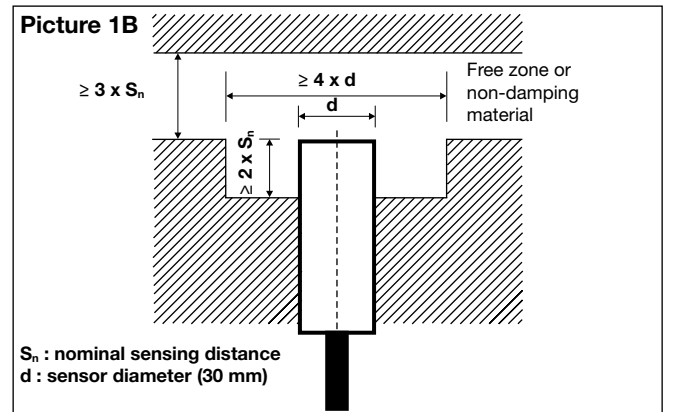


Installation

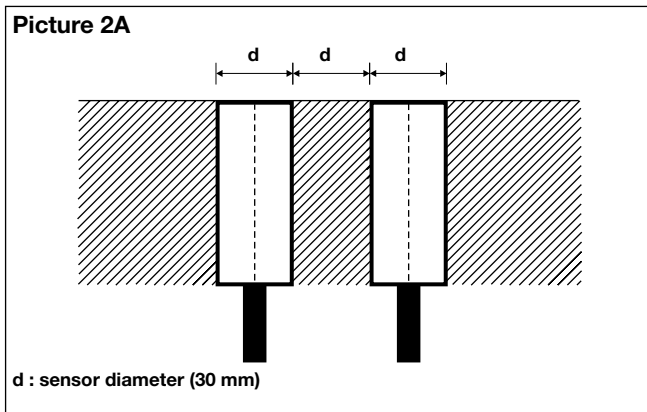
Flush sensor, when installed in damping material, must be according to Picture 1A.



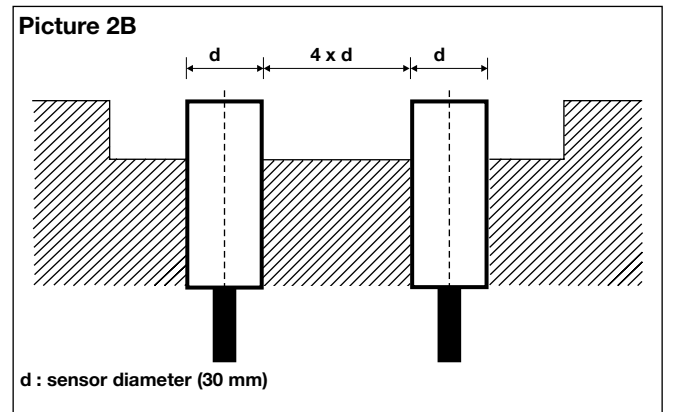
Non-flush sensor, when installed in damping material, must be according to Picture 1B.



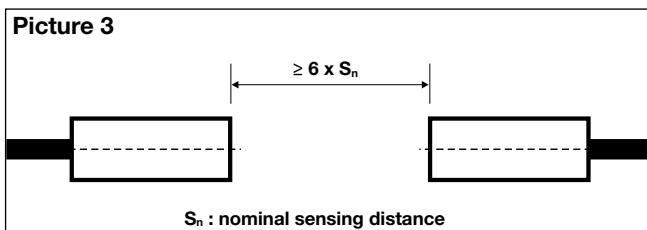
Flush sensors, when installed together in damping material, must be according to Picture 2A.



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

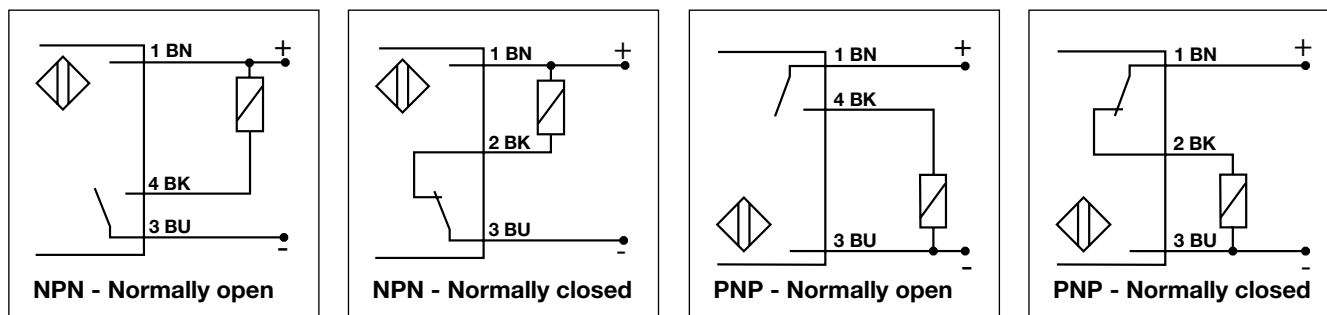


For sensors installed opposite each other, a minimum space of $6 \times S_n$ (the nominal sensing distance) must be observed (See Picture 3).





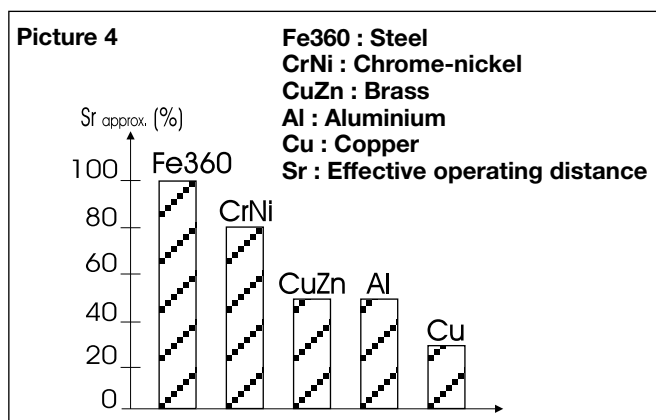
Wiring Diagram



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.



Accessories for Plug Versions

3-wire angled connector, 2 m cable	CONM13NF-A2
3-wire angled connector, 5 m cable	CONM13NF-A5
3-wire angled connector, 10 m cable	CONM13NF-A10
3-wire straight connector, 2 m cable	CONM13NF-S2
3-wire straight connector, 5 m cable	CONM13NF-S5

For any additional information or different options, please refer to the "General Accessories" datasheets.

Delivery Contents

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

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
- Protection: reverse polarity, short circuit, transients
- Cable or M12 plug versions
- According to IEC 60947-5-2
- CSA certified for Hazardous Locations



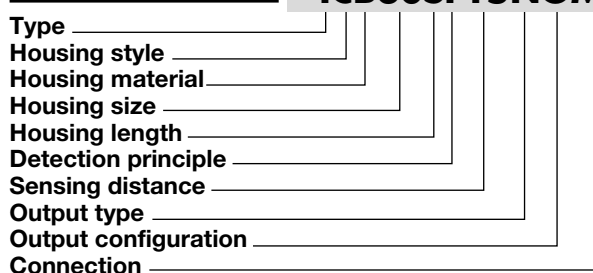
Product Description

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

ICB30SF15NOM1



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	15 mm ¹⁾	ICB30SF15NO	ICB30SF15PO	ICB30SF15NC	ICB30SF15PC
Cable	Short	22 mm ²⁾	ICB30SN22NO	ICB30SN22PO	ICB30SN22NC	ICB30SN22PC
Plug	Short	15 mm ¹⁾	ICB30SF15NOM1	ICB30SF15POM1	ICB30SF15NCM1	ICB30SF15PCM1
Plug	Short	22 mm ²⁾	ICB30SN22NOM1	ICB30SN22POM1	ICB30SN22NCM1	ICB30SN22PCM1
Cable	Long	15 mm ¹⁾	ICB30LF15NO	ICB30LF15PO	ICB30LF15NC	ICB30LF15PC
Cable	Long	22 mm ²⁾	ICB30LN22NO	ICB30LN22PO	ICB30LN22NC	ICB30LN22PC
Plug	Long	15 mm ¹⁾	ICB30LF15NOM1	ICB30LF15POM1	ICB30LF15NCM1	ICB30LF15PCM1
Plug	Long	22 mm ²⁾	ICB30LN22NOM1	ICB30LN22POM1	ICB30LN22NCM1	ICB30LN22PCM1

¹⁾ For flush mounting in metal

²⁾ For non-flush mounting in metal

Specifications

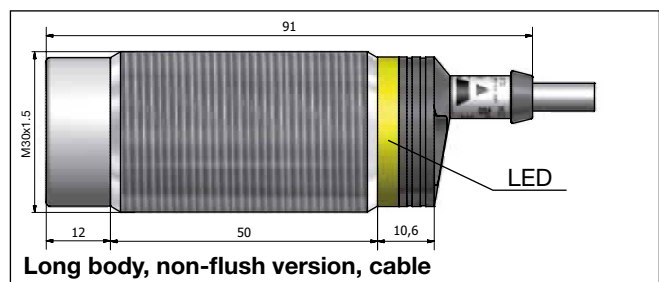
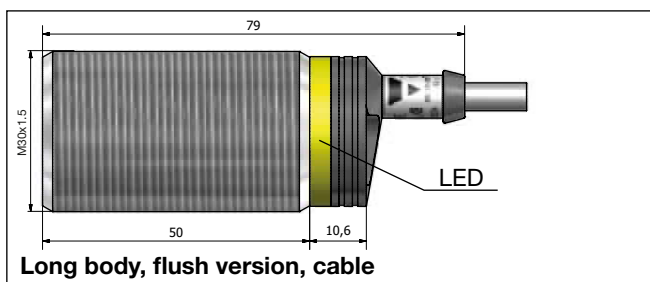
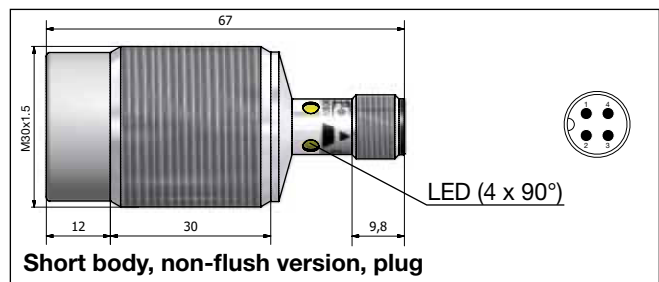
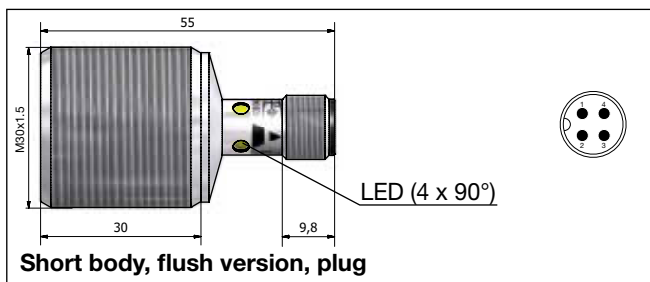
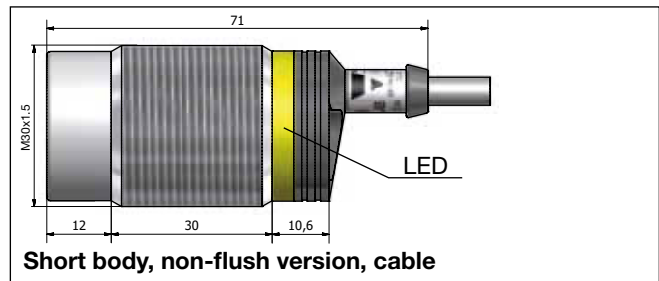
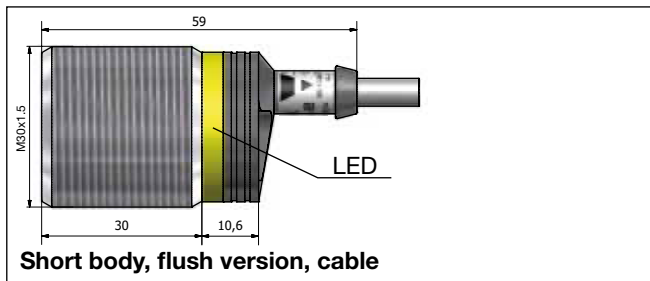
Rated operational voltage (U_b)	10 to 36 VDC (ripple incl.)	Indication for short circuit/ overload	LED blinking ($f = 2$ Hz)
Ripple	$\leq 10\%$	Assured operating sensing distance (S_a)	$0 \leq S_a \leq 0.81 \times S_n$
Output current (I_a)	≤ 200 mA @ 50°C (≤ 150 mA @ 50-70°C)	Effective operating distance (S_r)	$0.9 \times S_n \leq S_r \leq 1.1 \times S_n$
OFF-state current (I_r)	≤ 50 μ A	Usable operating distance (S_u)	$0.85 \times S_r \leq S_u \leq 1.1 \times S_r$
No load supply current (I_o)	≤ 15 mA	Repeat accuracy (R)	$\leq 5\%$
Voltage drop (U_d)	Max. 2.5 VDC @ 200 mA	Differential travel (H) (Hysteresis)	1 to 20% of sensing dist.
Protection	Reverse polarity, short-circuit, transients	Ambient temperature	Operating -25° to +70°C (-13° to +158°F) Storage -30° to +80°C (-22° to +176°F)
Voltage transient	1 kV/0.5 J	Shock and vibration	IEC 60947-5-2/7.4
Power ON delay (t_v)	300 ms	Housing material	Body Nickel-plated brass Front cap Grey thermoplastic polyester
Operating frequency (f)	≤ 1000 Hz		
Indication for output ON	Activated LED, yellow		
NO version	Target present		
NC version	Target not present		

Specifications (cont.)

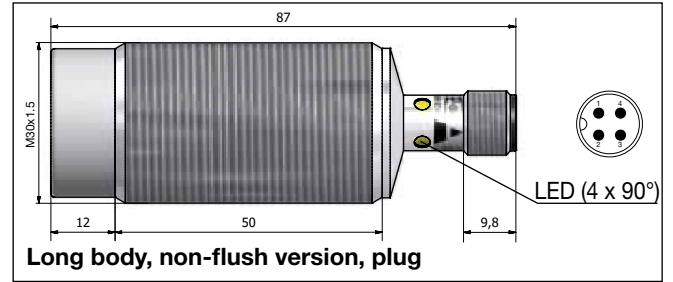
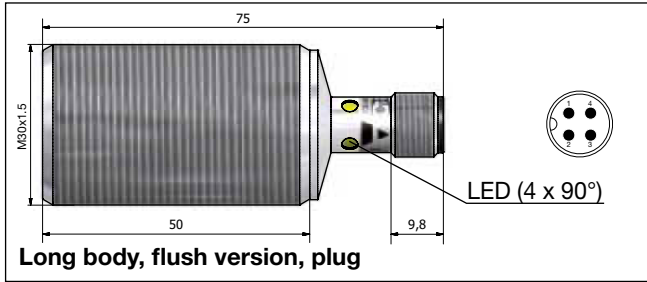
Connection Cable	Ø5.2 x 2 m, 3 x 0.34 mm ² , grey PVC, oil proof
Plug	M12 x 1
Degree of protection	IP 67
Weight (cable/nuts included)	
ICB30 S	Max. 185 g
ICB30 L	Max. 195 g
Dimensions	See diagrams below
Tightening torque	25 Nm
Approvals	
UL (RU), CSA	As Industrial Control Equipment - Proximity Switches. Types 1, 4, 4X or 12. Max ambient temperature 40°C.

Approvals (cont.)	
cCSAus	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	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	850 years @ 50°C (122°F)

Dimensions (mm)

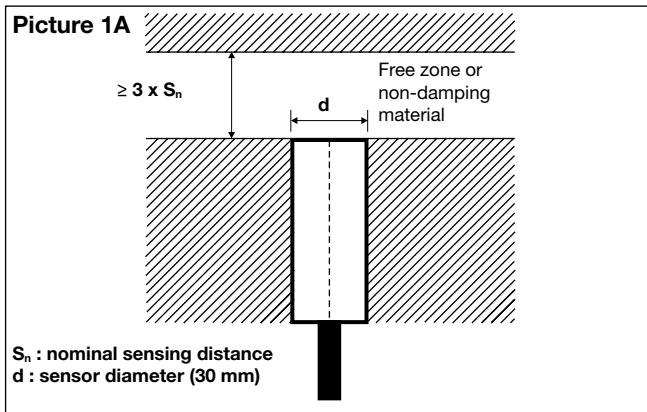


Dimensions (mm) (cont.)

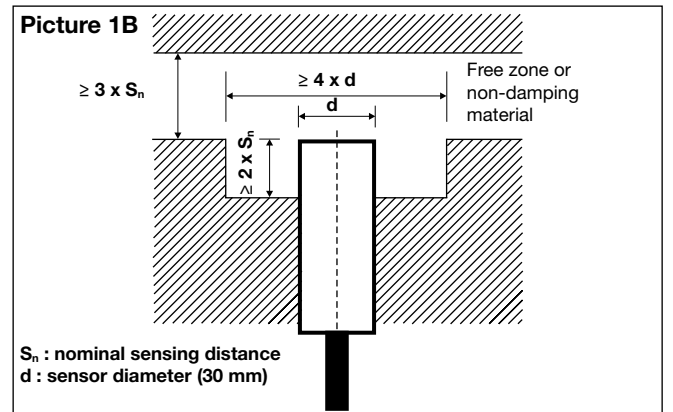


Installation

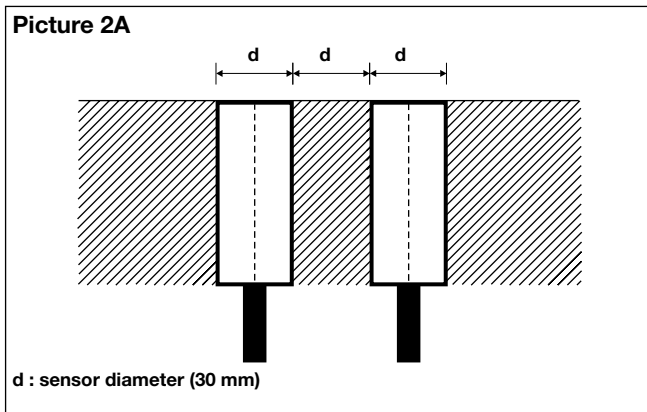
Flush sensor, when installed in damping material, must be according to Picture 1A.



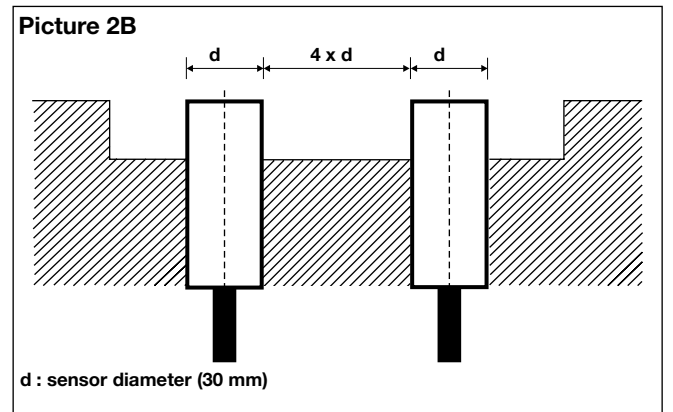
Non-flush sensor, when installed in damping material, must be according to Picture 1B.



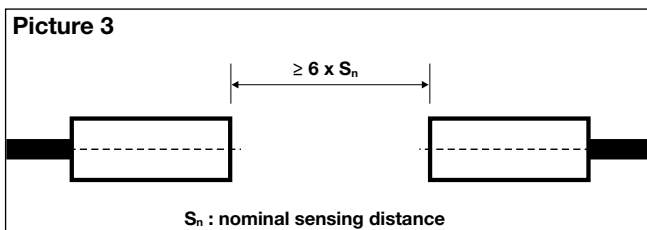
Flush sensors, when installed together in damping material, must be according to Picture 2A.



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

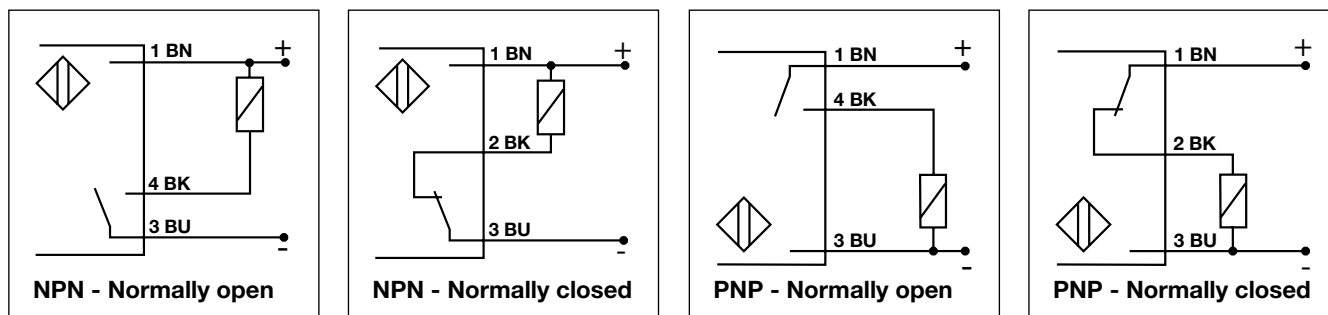


For sensors installed opposite each other, a minimum space of $6 \times S_n$ (the nominal sensing distance) must be observed (See Picture 3).





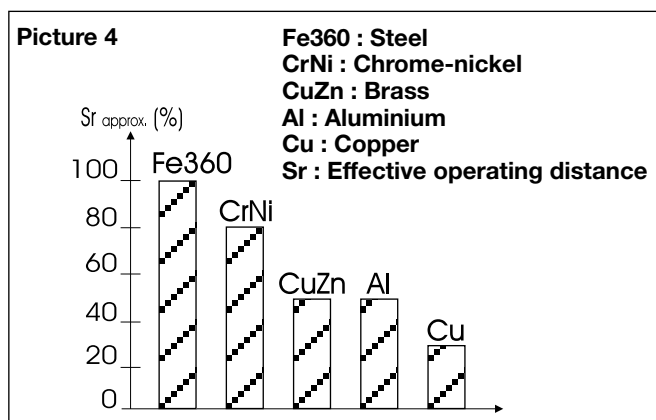
Wiring Diagram



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.



Accessories for Plug Versions

3-wire angled connector, 2 m cable	CONM13NF-A2
3-wire angled connector, 5 m cable	CONM13NF-A5
3-wire angled connector, 10 m cable	CONM13NF-A10
3-wire straight connector, 2 m cable	CONM13NF-S2
3-wire straight connector, 5 m cable	CONM13NF-S5

For any additional information or different options, please refer to the "General Accessories" datasheets.

Delivery Contents

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

По вопросам продаж и поддержки обращайтесь:

Алматы (7273)495-231	Казань (843)206-01-48	Новокузнецк (3843)20-46-81	Смоленск (4812)29-41-54
Архангельск (8182)63-90-72	Калининград (4012)72-03-81	Новосибирск (383)227-86-73	Сочи (862)225-72-31
Астрахань (8512)99-46-04	Калуга (4842)92-23-67	Омск (3812)21-46-40	Ставрополь (8652)20-65-13
Барнаул (3852)73-04-60	Кемерово (3842)65-04-62	Орел (4862)44-53-42	Сургут (3462)77-98-35
Белгород (4722)40-23-64	Киров (8332)68-02-04	Оренбург (3532)37-68-04	Тверь (4822)63-31-35
Брянск (4832)59-03-52	Краснодар (861)203-40-90	Пенза (8412)22-31-16	Томск (3822)98-41-53
Владивосток (423)249-28-31	Красноярск (391)204-63-61	Пермь (342)205-81-47	Тула (4872)74-02-29
Волгоград (844)278-03-48	Курск (4712)77-13-04	Ростов-на-Дону (863)308-18-15	Тюмень (3452)66-21-18
Вологда (8172)26-41-59	Липецк (4742)52-20-81	Рязань (4912)46-61-64	Ульяновск (8422)24-23-59
Воронеж (473)204-51-73	Магнитогорск (3519)55-03-13	Самара (846)206-03-16	Уфа (347)229-48-12
Екатеринбург (343)384-55-89	Москва (495)268-04-70	Санкт-Петербург (812)309-46-40	Хабаровск (4212)92-98-04
Иваново (4932)77-34-06	Мурманск (8152)59-64-93	Саратов (845)249-38-78	Челябинск (351)202-03-61
Ижевск (3412)26-03-58	Набережные Челны (8552)20-53-41	Севастополь (8692)22-31-93	Череповец (8202)49-02-64
Иркутск (395)279-98-46	Нижний Новгород (831)429-08-12	Симферополь (3652)67-13-56	Ярославль (4852)69-52-93
Россия (495)268-04-70	Киргизия (996)312-96-26-47	Казахстан (7172)727-132	

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