



ICB series - Inductive proximity sensors

Sensors

ICB series

ICB series - The next generation

Inductive proximity sensors provide a reliable and cost effective solution for many applications in machinery and automation equipment. These robust sensors detect metal objects without physical contact, giving a wear-free solution in harsh environments.

Inductive sensors are not influenced by dust, oil, water, or vibrations. Operating at high switching frequencies, they feature high resolution, excellent repeatability and precision, and exceptional resistance to shocks.

What sets the ICB series apart is their onboard microprocessor that takes them into the world of digital technology, merging the benefits of sensing and data transmission.

Furthermore, compared to today's sensor technology, our innovative hot melt potting make these sensors the state-of-the-art sensor of choice.



Eco-friendly sensing

ICB series represents a complete family of high performance inductive sensors, built to the highest-quality standards and resulting from over 50 years' experience at Carlo Gavazzi in designing and producing proximity sensors.

- **The new range includes:**

- M12, M18 and M30 long or short barrel housings
- Sensing range from 2mm up to 22mm

- **All sensors come with:**

- Rugged nickel plated brass construction
- Excellent LED output state visibility
- Short-circuit, reverse polarity and transients protection

- **Several installation possibilities:**

- Flush and non-flush versions
- NPN or PNP, NO or NC output
- 2-meter oil resistant PVC cable or M12 disconnect plug

- **Approvals**

The ICB series bear the cULus certification and CE mark.

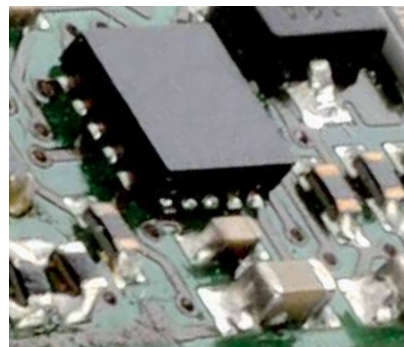
Main features

A new generation of microprocessor

All the ICB series sensors feature a new generation of microprocessor, that allows final calibration of the sensor at the end of the assembly process and provides:

- Temperature stability over the whole temperature range
- Increased EMC robustness
- Greater reliability and repeatability
- High precision and minimum deviation

- Possibility of customization such as programmable outputs and switching frequencies



Assured traceability and best application control

The traceability of the new ICB12 and ICB18 families is guaranteed by the permanently legible laser engraved part number and serial number on the plastic cap of the sensor.

The LED in the new ICB series sensors is clearly visible from any direction both in the cable and in the plug-disconnect versions.

In addition to the indication of the switching state, with the ICB sensors we

have introduced a new function for the LED. When it blinks with a frequency of 2Hz the LED indicates a short-circuit or overload condition, assuring the best application control.



Environmentally friendly potting material

In ICB12 and ICB18 families the new potting material provides an ecofriendly design and high performance.

This thermoplastic hotmelt filling is made from recycled corn by-product and allows:

- Reduced impact on the environment
- Higher resistance to mechanical stress and vibrations
- No risk of breaking electronic components

- Increased reliability and improved stability
- Longer sensor lifetime



ICB series

Inductive proximity sensors

Market Applications

Machine tool

CNC machines repeat precise sequences and are able to produce the most complex pieces.

Tool changing machines for example automatically change the specific tool. A drill machine has a variety of drill bits to make holes of several sizes.

Inductive sensors are used to check the tool position when changing the tool or to verify the component moved to the correct location.

ICB series represents a **suitable solution** thanks to:

- The improved performance with vibrations and shocks
- Reliable connection system between the cable and the barrel
- Very high resolution and quick response time

Achieved benefits:

- Optimized and fast setup
- Reliable and cost effective solution



Agriculture

Inductive sensors are mainly used for non contact detection of the position of a part on the machine or equipment itself.

Thanks to its excellent quality and to the complete product range, ICB series is particularly suitable for the agricultural and earth-moving sectors.

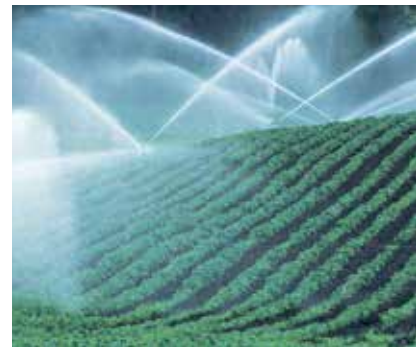
ICB series allows:

- Personalized solution with customizable termination options

- High durability and quality
- Resistance to extreme conditions, such as oily and dusty environment

Achieved benefits:

- Reduced installation costs
- Product reliability and durability
- Complete range to satisfy all application needs



Material handling systems

Material handling systems interconnect the different processes of production, from the raw material to the final product. In these systems it is mandatory to ensure the automatic and reliable flow of goods. Inductive sensors are critical to obtaining the higher productivity and quality from the automated process.

ICB series **is an ideal choice** very well thanks to:

- Microprocessor technology

- High precision and temperature stability

Achieved benefits:

- Precise fit with customized solutions
- Programmable sensing distance and frequency



ICB: a complete range for any application

Family	Diameter	Operating distance	Switching frequency	Type	Output	Connection
ICB12	M12	2 to 8 mm	up to 2000 Hz	Flush - Non Flush	NPN-PNP	Cable / Plug
ICB18	M18	5 to 14 mm	up to 1500 Hz	Flush - Non Flush	NPN-PNP	Cable / Plug
ICB30	M30	10 to 22 mm	up to 1000 Hz	Flush - Non Flush	NPN-PNP	Cable / Plug

ICB12 ICB18 ICB30



Operating distance

Family	Operating distance (mm.)										
	2	4	6	8	10	12	14	16	18	20	22
ICB12	2 mm										
	4 mm										
	8 mm										
ICB18	5 mm										
	8 mm										
	14 mm										
ICB30	10 mm										
	15 mm										
	22 mm										

Your sensor - your way

Carlo Gavazzi is committed to providing the right solution to our OEM customers and their demanding application requirements.

This means that we are ready to customize proximity sensors to meet these specific demands for almost any application.

ICB series

Inductive proximity sensors

The new generation of inductive proximity sensors: ICB series

ICB 12 S 30 F 04 N O M1

Housing size:

- 12** 12 Ø mm
- 18** 18 Ø mm
- 30** 30 Ø mm

Housing length:

- S** Short body
- L** Long body

Thread length:

- 30** 30 mm
- 50** 50 mm

Detection principle:

- F** Flush
- N** Non-flush

Connection:

- M1** M12 disconnect plug
- 2 m PVC oil resistant cable

Output configuration:

- O** Normally open
- C** Normally closed

Output type:

- N** NPN
- P** PNP

Sensing distance:

- 02** 2 mm
- ...
- ...
- 22** 22 mm

The ICB12 family

Housing dimension		M12 (3-wire DC)								
Material		Nickel-plated brass								
Rated operational voltage		10-36 VDC								
Switching frequency		≤ 2000 Hz								
Sensing range		Standard				Extended				
Rated operating distance		2 mm		4 mm		4 mm		8 mm		
Installation type		Flush		Non-flush		Flush		Non-flush		
Barrel		Short	Long	Short	Long	Short	Long	Short	Long	
Cable	NPN	NO	ICB12S30F02NO	ICB12L50F02NO	ICB12S30N04NO	ICB12L50N04NO	ICB12S30F04NO	ICB12L50F04NO	ICB12S30N08NO	ICB12L50N08NO
		NC	ICB12S30F02NC	ICB12L50F02NC	ICB12S30N04NC	ICB12L50N04NC	ICB12S30F04NC	ICB12L50F04NC	ICB12S30N08NC	ICB12L50N08NC
	PNP	NO	ICB12S30F02PO	ICB12L50F02PO	ICB12S30N04PO	ICB12L50N04PO	ICB12S30F04PO	ICB12L50F04PO	ICB12S30N08PO	ICB12L50N08PO
		NC	ICB12S30F02PC	ICB12L50F02PC	ICB12S30N04PC	ICB12L50N04PC	ICB12S30F04PC	ICB12L50F04PC	ICB12S30N08PC	ICB12L50N08PC
Plug	NPN	NO	ICB12S30F02NOM1	ICB12L50F02NOM1	ICB12S30N04NOM1	ICB12L50N04NOM1	ICB12S30F04NOM1	ICB12L50F04NOM1	ICB12S30N08NOM1	ICB12L50N08NOM1
		NC	ICB12S30F02NCM1	ICB12L50F02NCM1	ICB12S30N04NCM1	ICB12L50N04NCM1	ICB12S30F04NCM1	ICB12L50F04NCM1	ICB12S30N08NCM1	ICB12L50N08NCM1
	PNP	NO	ICB12S30F02POM1	ICB12L50F02POM1	ICB12S30N04POM1	ICB12L50N04POM1	ICB12S30F04POM1	ICB12L50F04POM1	ICB12S30N08POM1	ICB12L50N08POM1
		NC	ICB12S30F02PCM1	ICB12L50F02PCM1	ICB12S30N04PCM1	ICB12L50N04PCM1	ICB12S30F04PCM1	ICB12L50F04PCM1	ICB12S30N08PCM1	ICB12L50N08PCM1

The ICB18 family

Housing dimension		M18 (3-wire DC)								
Material		Nickel-plated brass								
Rated operational voltage		10-36 VDC								
Switching frequency		≤ 1500 Hz								
Sensing range		Standard				Extended				
Rated operating distance		5 mm		8 mm		8 mm		14 mm		
Installation type		Flush		Non-flush		Flush		Non-flush		
Barrel		Short	Long	Short	Long	Short	Long	Short	Long	
Cable	NPN	NO	ICB18S30F05NO	ICB18L50F05NO	ICB18S30N08NO	ICB18L50N08NO	ICB18S30F08NO	ICB18L50F08NO	ICB18S30N14NO	ICB18L50N14NO
		NC	ICB18S30F05NC	ICB18L50F05NC	ICB18S30N08NC	ICB18L50N08NC	ICB18S30F08NC	ICB18L50F08NC	ICB18S30N14NC	ICB18L50N14NC
	PNP	NO	ICB18S30F05PO	ICB18L50F05PO	ICB18S30N08PO	ICB18L50N08PO	ICB18S30F08PO	ICB18L50F08PO	ICB18S30N14PO	ICB18L50N14PO
		NC	ICB18S30F05PC	ICB18L50F05PC	ICB18S30N08PC	ICB18L50N08PC	ICB18S30F08PC	ICB18L50F08PC	ICB18S30N14PC	ICB18L50N14PC
Plug	NPN	NO	ICB18S30F05NOM1	ICB18L50F05NOM1	ICB18S30N08NOM1	ICB18L50N08NOM1	ICB18S30F08NOM1	ICB18L50F08NOM1	ICB18S30N14NOM1	ICB18L50N14NOM1
		NC	ICB18S30F05NCM1	ICB18L50F05NCM1	ICB18S30N08NCM1	ICB18L50N08NCM1	ICB18S30F08NCM1	ICB18L50F08NCM1	ICB18S30N14NCM1	ICB18L50N14NCM1
	PNP	NO	ICB18S30F05POM1	ICB18L50F05POM1	ICB18S30N08POM1	ICB18L50N08POM1	ICB18S30F08POM1	ICB18L50F08POM1	ICB18S30N14POM1	ICB18L50N14POM1
		NC	ICB18S30F05PCM1	ICB18L50F05PCM1	ICB18S30N08PCM1	ICB18L50N08PCM1	ICB18S30F08PCM1	ICB18L50F08PCM1	ICB18S30N14PCM1	ICB18L50N14PCM1

The ICB30 family

Housing dimension		M30 (3-wire DC)								
Material		Nickel-plated brass								
Rated operational voltage		10-36 VDC								
Switching frequency		≤ 1000 Hz								
Sensing range		Standard				Extended				
Rated operating distance		10 mm		15 mm		15 mm		22 mm		
Installation type		Flush		Non-flush		Flush		Non-flush		
Barrel		Short	Long	Short	Long	Short	Long	Short	Long	
Cable	NPN	NO	ICB30SF10NO	ICB30LF10NO	ICB30SN15NO	ICB30LN15NO	ICB30SF15NO	ICB30LF15NO	ICB30SN22NO	ICB30LN22NO
		NC	ICB30SF10NC	ICB30LF10NC	ICB30SN15NC	ICB30LN15NC	ICB30SF15NC	ICB30LF15NC	ICB30SN22NC	ICB30LN22NC
	PNP	NO	ICB30SF10PO	ICB30LF10PO	ICB30SN15PO	ICB30LN15PO	ICB30SF15PO	ICB30LF15PO	ICB30SN22PO	ICB30LN22PO
		NC	ICB30SF10PC	ICB30LF10PC	ICB30SN15PC	ICB30LN15PC	ICB30SF15PC	ICB30LF15PC	ICB30SN22PC	ICB30LN22PC
Plug	NPN	NO	ICB30SF10NOM1	ICB30LF10NOM1	ICB30SN15NOM1	ICB30LN15NOM1	ICB30SF15NOM1	ICB30LF15NOM1	ICB30SN22NOM1	ICB30LN22NOM1
		NC	ICB30SF10NCM1	ICB30LF10NCM1	ICB30SN15NCM1	ICB30LN15NCM1	ICB30SF15NCM1	ICB30LF15NCM1	ICB30SN22NCM1	ICB30LN22NCM1
	PNP	NO	ICB30SF10POM1	ICB30LF10POM1	ICB30SN15POM1	ICB30LN15POM1	ICB30SF15POM1	ICB30LF15POM1	ICB30SN22POM1	ICB30LN22POM1
		NC	ICB30SF10PCM1	ICB30LF10PCM1	ICB30SN15PCM1	ICB30LN15PCM1	ICB30SF15PCM1	ICB30LF15PCM1	ICB30SN22PCM1	ICB30LN22PCM1

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