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, the air core printed sensing coil and our innovative hot melt potting make these sensors the state-of-the-art sensor of choice.

The next way of 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
- LED output state indicator
- 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 has been UL certified and CE marked

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

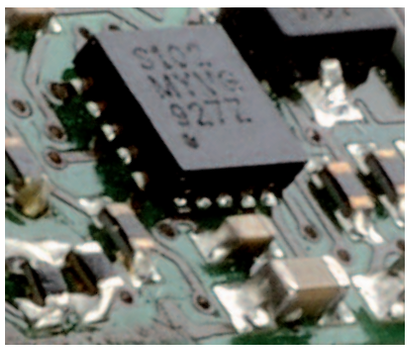
Carlo Gavazzi is committed to providing the right solution to our OEM customers and their demanding application requirements.
This means that we are ready to customize proximity sensors to meet these specific demands for almost any application.

ICB Series
Inductive Proximity Sensors

Main features

A new generation of microprocessors

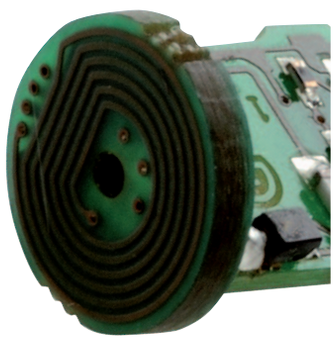
The ICB Series sensors feature a new generation of microprocessors, that allows final calibration of the sensor at the end of the assembly process and provides:
- Temperature stability over the whole temperature range
- Increased EMC robustness
- Greater reliability and repeatability
- High precision and minimum deviation
- Possibility of customization such as programmable outputs and switching frequencies



Innovative air-core sensing coil

In ICB12 and ICB18 families ferrites and coils have been replaced by an air core printed sensing coil.

This innovative solution allows:
- Higher mechanical stability
- Higher repeatability than standard coil plus ferrite
- More reliable production process thanks to the fixed geometry of the coil
- Improved resistance to vibration and impacts
- Higher immunity to magnetic fields and excellent EMC properties



Environmentally friendly potting material

The new potting material provides an eco-friendly 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

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 Series
Inductive Proximity Sensors

The new generation of inductive proximity sensors: ICB Series

ICB 12 S 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

Detection principle:
F Flush
N Non-flush

Sensing distance:
02 2mm
...
...
22 22 mm

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

The ICB12 family

Housing dimensions			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	ICB12SF02NO	ICB12LF02NO	ICB12SN04NO	ICB12LN04NO	ICB12SF04NO	ICB12LF04NO	ICB12SN08NO	ICB12LN08NO
		NC	ICB12SF02NC	ICB12LF02NC	ICB12SN04NC	ICB12LN04NC	ICB12SF04NC	ICB12LF04NC	ICB12SN08NC	ICB12LN08NC
	PNP	NO	ICB12SF02PO	ICB12LF02PO	ICB12SN04PO	ICB12LN04PO	ICB12SF04PO	ICB12LF04PO	ICB12SN08PO	ICB12LN08PO
		NC	ICB12SF02PC	ICB12LF02PC	ICB12SN04PC	ICB12LN04PC	ICB12SF04PC	ICB12LF04PC	ICB12SN08PC	ICB12LN08PC
Plug	NPN	NO	ICB12SF02NOM1	ICB12LF02NOM1	ICB12SN04NOM1	ICB12LN04NOM1	ICB12SF04NOM1	ICB12LF04NOM1	ICB12SN08NOM1	ICB12LN08NOM1
		NC	ICB12SF02NCM1	ICB12LF02NCM1	ICB12SN04NCM1	ICB12LN04NCM1	ICB12SF04NCM1	ICB12LF04NCM1	ICB12SN08NCM1	ICB12LN08NCM1
	PNP	NO	ICB12SF02POM1	ICB12LF02POM1	ICB12SN04POM1	ICB12LN04POM1	ICB12SF04POM1	ICB12LF04POM1	ICB12SN08POM1	ICB12LN08POM1
		NC	ICB12SF02PCM1	ICB12LF02PCM1	ICB12SN04PCM1	ICB12LN04PCM1	ICB12SF04PCM1	ICB12LF04PCM1	ICB12SN08PCM1	ICB12LN08PCM1

The ICB18 family

Housing dimensions			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	ICB18SF05NO	ICB18LF05NO	ICB18SN08NO	ICB18LN08NO	ICB18SF08NO	ICB18LF08NO	ICB18SN14NO	ICB18LN14NO
		NC	ICB18SF05NC	ICB18LF05NC	ICB18SN08NC	ICB18LN08NC	ICB18SF08NC	ICB18LF08NC	ICB18SN14NC	ICB18LN14NC
	PNP	NO	ICB18SF05PO	ICB18LF05PO	ICB18SN08PO	ICB18LN08PO	ICB18SF08PO	ICB18LF08PO	ICB18SN14PO	ICB18LN14PO
		NC	ICB18SF05PC	ICB18LF05PC	ICB18SN08PC	ICB18LN08PC	ICB18SF08PC	ICB18LF08PC	ICB18SN14PC	ICB18LN14PC
Plug	NPN	NO	ICB18SF05NOM1	ICB18LF05NOM1	ICB18SN08NOM1	ICB18LN08NOM1	ICB18SF08NOM1	ICB18LF08NOM1	ICB18SN14NOM1	ICB18LN14NOM1
		NC	ICB18SF05NCM1	ICB18LF05NCM1	ICB18SN08NCM1	ICB18LN08NCM1	ICB18SF08NCM1	ICB18LF08NCM1	ICB18SN14NCM1	ICB18LN14NCM1
	PNP	NO	ICB18SF05POM1	ICB18LF05POM1	ICB18SN08POM1	ICB18LN08POM1	ICB18SF08POM1	ICB18LF08POM1	ICB18SN14POM1	ICB18LN14POM1
		NC	ICB18SF05PCM1	ICB18LF05PCM1	ICB18SN08PCM1	ICB18LN08PCM1	ICB18SF08PCM1	ICB18LF08PCM1	ICB18SN14PCM1	ICB18LN14PCM1

The ICB30 family

Housing dimensions			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