



IO-Link inductive proximity sensors

Sensors

IBS/ICS series

IO-Link inductive miniature proximity sensors

The IBS and ICS series offer the ideal solution for industrial automation equipment in applications where space is limited, including tool selection, textile machines, and control of micro-mechanisms.

The advanced electronics is enclosed in a compact, robust stainless steel housing. The extended sensing range, together with the integrated short-circuit, reverse polarity and transients protection makes this sensor extremely reliable. The whole range is also available with IO-Link communication.

The IBS04 and ICS05 are also characterized by a very high switching frequency up to 6 kHz for applications where fast detection is a must.



Highly accurate sensing performance in a compact design

The IBS and ICS series are among the smallest inductive sensors with on-board IO-Link communication available on the market. Each device can be easily configured by setting the internal parameters via an IO-Link master.

The range includes

- $\varnothing 4$, M5 and M8 stainless steel housings
- Sensing distance from 0.8 mm up to 4 mm
- Flush or non-flush versions
- M8-plug or cable versions
- Advanced diagnostic functions with indication of short-circuit and overload

Fully configurable via IO-Link v1.1

- Configurable output: NO, NC, PNP, NPN, push-pull
- Adjustable switching distance: 62% (50% for ICS08), and 100% of the maximum sensing distance
- Adjustable hysteresis: standard and extended
- Single point, two-point or window mode
- Timer functions: Turn On delay and Turn Off delay
- Temperature alarms

Rotational speed monitoring

By setting the sensor in frequency detection and window mode it is possible to check overspeed and underspeed conditions of a cycling mechanism.

RPM counter

The divider function allows the user to set how many activations are needed to change the output.

By setting this value equal to the number of teeth of a gear, the inductive sensor becomes an RPM counter.

Easy mechanical customization to specific OEM requests

Different cable lengths and materials, customized labelling and pig-tail solutions with special cables and connectors are possible on request.



ICB series

IO-Link inductive proximity sensors



Proximity sensors play a leading role in Industry 4.0 since they are positioned down to the application level. Carlo Gavazzi has taken the decision to have IO-Link as a standard in all sensor platforms.

IO-link has been recognized as the official standard interface for sensors and actuators in industrial automation applications such as packaging, materials handling and machine tools.

It allows easy exchange of process data, remote configurations and events on the simple and inexpensive 3-wire cabling, without needing to change the existing architecture.

The ICB series can be completely configured to enable new functionalities such as the divider and speed control functions.

Every sensor is now fully configurable and allows thousands of configurations in one single device.



A complete range from M12 to M30

The ICB series is a complete range of high performance inductive sensors for contactless and wear free detection of metallic objects in industrial automation with an IO-Link interface.

The range includes

- M12, M18 and M30 long or short barrel nickel-plated brass housings
- Sensing distance from 4 mm up to 22 mm
- Flush or non-flush
- M12-plug or 2 metre cable
- Dual LED user interface for advanced diagnostics

Fully configurable via IO-Link v1.1

- Configurable output: NO, NC, PNP, NPN, push-pull
- Adjustable switching distance: 33%, 50%, 75% and 100% of the maximum S_n
- Adjustable hysteresis: standard and extended
- Single point, two-point or window mode
- Timer functions: Turn On delay and Turn Off delay
- Temperature alarms

Rotational speed monitoring

By setting the sensor in frequency detection and window mode it is possible to check overspeed and underspeed conditions of a cycling mechanism.

RPM counter

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Easy mechanical customization to specific OEM requests

Different cable lengths and materials, customized labelling and pig-tail solutions with special cables and connectors are possible on request.



IBS/ICS series

IO-Link inductive miniature proximity sensors

IBS 04 series (3-wire DC)			ICS 05 series (3-wire DC)	
Housing dimension	Ø4		M5	
Material	Stainless steel housing			
Rated operational voltage	10-30 VDC			
Switching frequency	≤ 6000 Hz	≤ 4500 Hz	≤ 6000 Hz	≤ 4500 Hz
Rated operating distance	0.8 mm	1.3 mm	0.8 mm	1.3 mm
Installation type	Flush			
Barrel	Short			

IO-Link types

Cable	Configurable	IBS04SF15A2IO	ICS05S23F15A2IO
M8 - Plug	Configurable	IBS04SF15M5IO	ICS05S23F15M5IO

Standard types

Cable	NPN	NO	IBS04SF08A2NO	IBS04SF15A2NO	ICS05S23F08A2NO	ICS05S23F15A2NO
		NC	IBS04SF08A2NC	IBS04SF15A2NC	ICS05S23F08A2NC	ICS05S23F15A2NC
	PNP	NO	IBS04SF08A2PO	IBS04SF15A2PO	ICS05S23F08A2PO	ICS05S23F15A2PO
		NC	IBS04SF08A2PC	IBS04SF15A2PC	ICS05S23F08A2PC	ICS05S23F15A2PC
M8 - Plug	NPN	NO	IBS04SF08M5NO	IBS04SF15M5NO	ICS05S23F08M5NO	ICS05S23F15M5NO
		NC	IBS04SF08M5NC	IBS04SF15M5NC	ICS05S23F08M5NC	ICS05S23F15M5NC
	PNP	NO	IBS04SF08M5PO	IBS04SF15M5PO	ICS05S23F08M5PO	ICS05S23F15M5PO
		NC	IBS04SF08M5PC	IBS04SF15M5PC	ICS05S23F08M5PC	ICS05S23F15M5PC

ICS 08 series (3-wire DC)

Housing dimension	M8			
Material	Stainless steel housing			
Rated operational voltage	10-30 VDC			
Switching frequency	≤ 2000 Hz			
Rated operating distance	2 mm		4 mm	
Installation type	Flush		Non-flush	
Barrel	Short	Long	Short	Long

IO-Link types

Cable	Configurable	ICS08S30F20A2IO	ICS08L45F20A2IO	ICS08S30N40A2IO	ICS08L45N40A2IO
M8 - Plug	Configurable	ICS08S30F20M5IO	ICS08L45F20M5IO	ICS08S30N40M5IO	ICS08L45N40M5IO

Standard types

Cable	NPN	NO	ICS08S30F20A2NO	ICS08L45F20A2NO	ICS08S30N40A2NO	ICS08L45N40A2NO
		NC	ICS08S30F20A2NC	ICS08L45F20A2NC	ICS08S30N40A2NC	ICS08L45N40A2NC
	PNP	NO	ICS08S30F20A2PO	ICS08L45F20A2PO	ICS08S30N40A2PO	ICS08L45N40A2PO
		NC	ICS08S30F20A2PC	ICS08L45F20A2PC	ICS08S30N40A2PC	ICS08L45N40A2PC
M8 - Plug	NPN	NO	ICS08S30F20M5NO	ICS08L45F20M5NO	ICS08S30N40M5NO	ICS08L45N40M5NO
		NC	ICS08S30F20M5NC	ICS08L45F20M5NC	ICS08S30N40M5NC	ICS08L45N40M5NC
	PNP	NO	ICS08S30F20M5PO	ICS08L45F20M5PO	ICS08S30N40M5PO	ICS08L45N40M5PO
		NC	ICS08S30F20M5PC	ICS08L45F20M5PC	ICS08S30N40M5PC	ICS08L45N40M5PC



Information for IO-Link types:

Rated operating distance can be set to 62% (50% for ICS08) or 100% of the maximum sensing distance. Electrical outputs can be configured as PNP/NPN/Push-pull, normally open or normally closed.

ICB series

IO-Link inductive proximity sensors



ICB12 series (3-wire DC)

Housing dimension	M12			
Material	Nickel-plated brass housing			
Rated operational voltage	10-36 VDC			
Switching frequency	≤ 2000 Hz			
Rated operating distance	4mm		8mm	
Installation type	Flush		Non-flush	
Barrel	Short	Long	Short	Long

IO-Link types

Cable	Configurable	ICB12S30F04A2IO	ICB12L50F04A2IO	ICB12S30N08A2IO	ICB12L50N08A2IO
M12 - Plug	Configurable	ICB12S30F04M1IO	ICB12L50F04M1IO	ICB12S30N08M1IO	ICB12L50N08M1IO

ICB18 series (3-wire DC)

Housing dimension	M18			
Material	Nickel-plated brass housing			
Rated operational voltage	10-36 VDC			
Switching frequency	≤ 1500 Hz			
Rated operating distance	8mm		14mm	
Installation type	Flush		Non-flush	
Barrel	Short	Long	Short	Long

IO-Link types

Cable	Configurable	ICB18S30F08A2IO	ICB18L50F08A2IO	ICB18S30N14A2IO	ICB18L50N14A2IO
M12 - Plug	Configurable	ICB18S30F08M1IO	ICB18L50F08M1IO	ICB18S30N14M1IO	ICB18L50N14M1IO

ICB30 series (3-wire DC)

Housing dimension	M30			
Material	Nickel-plated brass housing			
Rated operational voltage	10-36 VDC			
Switching frequency	≤ 1000 Hz			
Rated operating distance	15mm		22mm	
Installation type	Flush		Non-flush	
Barrel	Short	Long	Short	Long

IO-Link types

Cable	Configurable	ICB30S30F15A2IO	ICB30L50F15A2IO	ICB30S30N22A2IO	ICB30L50N22A2IO
M12 - Plug	Configurable	ICB30S30F15M1IO	ICB30L50F15M1IO	ICB30S30N22M1IO	ICB30L50N22M1IO



Information for IO-Link types:

Rated operating distance can be set to 33%, 50%, 75% or 100% of the maximum sensing distance. Electrical outputs can be configured as PNP/NPN/Push-pull, normally open or normally closed.

IBS/ICS/ICB series

IO-Link inductive proximity sensors

Timer functions:

- Turn ON delay
- Turn OFF delay
- Turn ON and OFF delay



Adjustable settings:

- Sensing distance
- Hysteresis



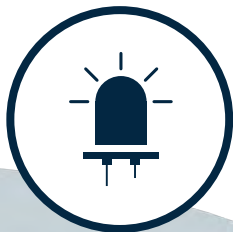
Switchpoint mode:

- Single point
- Two point
- Window



RPM counter





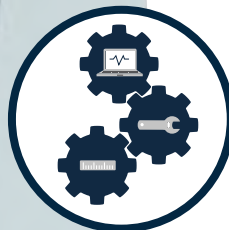
LED indication:

- Short circuit
- Overload
- Temperature alarm



Diagnostic functions:

- Underrun and overrun temperature events
- Frequency monitoring



Configurable output:

- NO, NC
- PNP, NPN
- Push-pull



Plug & play:

Automatic device reconfiguration
in case of sensor replacement

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