



Description of functions and interfaces

IF200 with Analog and PNP Output
Inductive Sensor

EN-US

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1 About this document

1.1 Purpose and scope of application

This document enables safe and efficient sensor parameterization using various interfaces. The manual describes the available functions to support installation and software use via the interfaces.

The illustrations are examples only. Deviations are at the discretion of Baumer at all times. The manual is a supplementary document to the existing product documentation.

1.2 Applicable documents

- Download at www.baumer.com:
 - Data sheet
 - EU conformity declaration
- As a product insert:
 - General information insert (11042373)

1.3 Labels in this manual

Identifier	Usage	Example
<i>Dialog element</i>	Indicates dialog elements.	Click the OK button.
<i>Unique name</i>	Indicates the names of products, files, etc.	<i>Internet Explorer</i> is not supported in any version.
Code	Indicates entries.	Enter the following IP address: 192.168.0.250

1.4 Warnings in this manual

Warnings draw attention to potential personal injury or material damage. The warnings in this manual indicate different hazard levels:

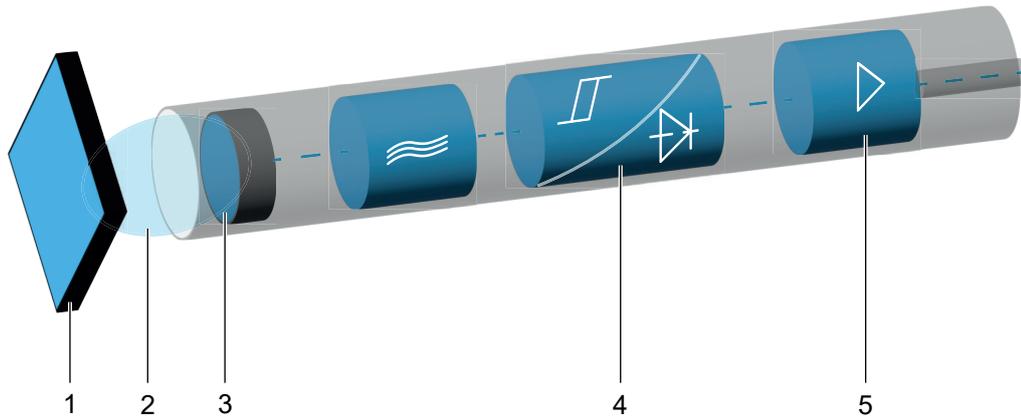
Symbol	Warning term	Explanation
	DANGER	Indicates an imminent potential danger with high risk of death or serious personal injury if not being avoided.
	WARNING	Indicates potential danger with medium risk of death or (serious) personal injury if not being avoided.
	CAUTION	Indicates a danger with low risk, which could lead to light or medium injury if not avoided.
	NOTE	Indicates a warning of material damage.
	INFO	Indicates practical information and tips that enable optimal use of the devices.

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Overview

2.1

General functionality



III. 1: Inductive sensor: Function principle (schematic representation)

1	Damping object	2	Measurement field
3	Active surface	4	Trigger stage signal converter
5	Output amplifier		

Using an oscillating circuit, the oscillator generates an electromagnetic alternating field emitting from the active sensor surface. Any metal object approaching the front will induce eddy currents draining energy from the oscillator. The level change at the oscillator output switches the output stage of digital sensors via Schmitt trigger. In measuring sensors, the level change will influence the analog output signal in relation to the object distance.

3 Interfaces

3.1 qTeach

Some sensor functions enable parameterization via the Baumer *qTeach* feature. For parameterization using *qTeach*, simply touch the teaching field market at the sensor with a ferromagnetic tool.

During the parameterization operation, the sensor-integrated LED provides you with visual feedback.



INFO

Parameterization via teach is accessible for the first 5 minutes after sensor power on. This time having expired, *qTeach* is disabled. If *qTeach* is enabled within these first 5 minutes, *qTeach* will remain enabled for another 5 minutes.

Also see about this

 [qTeach®](#) [▶ 12]

4 Functions

4.1 Factory settings

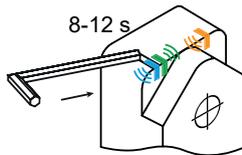
The *Reset* function will restore the factory settings. Default will be restored in the entire user settings.

Teach access (Level 4): Factory settings



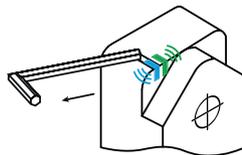
INFO

All LEDs light up for 1s when touching the teach field at the sensor with a ferromagnetic tool (tool has been recognized).



Touch the teach field marked at sensor with a ferromagnetic tool and hold for 8 s.

- The blue, green and yellow LEDs are flashing slowly (1 Hz).



Withdraw the tool from the teaching field.

- Teaching operation successful: Sensor restores the factory settings. The LEDs are off for an instant and the sensor continues in standard operation (LED green continuous, other LEDs illuminate according to switching state).
- Teaching operation not successful: All LEDs are flashing fast for 8 s (8 Hz).

4.2 Switching points

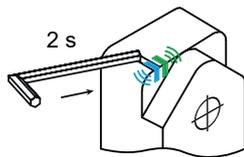
They define distance (switching points) at which the switching output is to be activated.



INFO

All LEDs light up for 1s when touching the teach field at the sensor with a ferromagnetic tool (tool has been recognized).

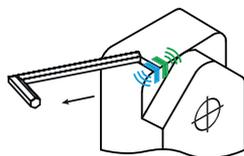
Teach access (Level 1): Analog measuring field



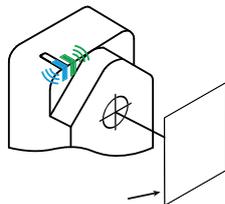
Touch the sensor's teach field with a ferromagnetic tool and hold for 2s. Once the sensor has recognized the tool all LEDs light up. After 2 seconds, the blue and green LEDs start flashing.



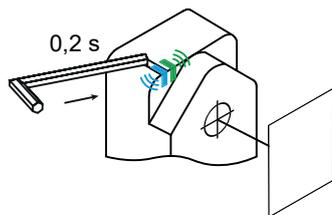
- Blue and green are LEDs flashing.



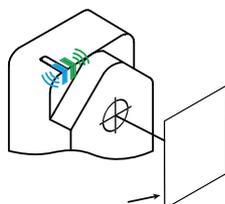
Withdraw the tool from the teaching field.



Place the object to be measured on the position to be defined as start of measuring range.



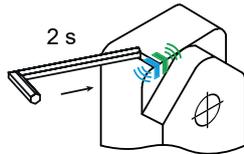
Briefly touch the teach field with the tool.



Place the object to be measured at the position to be defined as end of measuring range.

- Teaching operation successful: Sensor restores the factory settings. The LEDs are off for an instant and the sensor continues in standard operation (LED green continuous, other LEDs illuminate according to switching state).
- Teaching operation not successful: All LEDs are flashing quickly for 8 s (8 Hz).

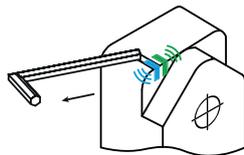
Teach access (Level 2): Window-Teach



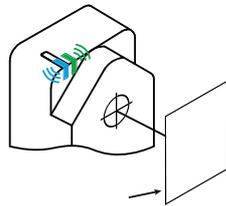
Touch the sensor's teach field with a ferromagnetic tool and hold for 4s. Once the sensor has recognized the tool all LEDs light up. After 2 seconds, the blue and green LEDs start flashing.



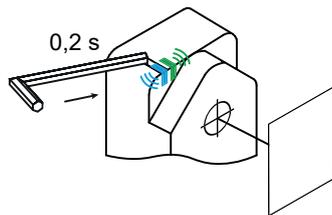
- Blue and green are LEDs flashing.



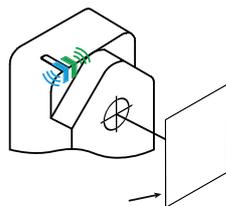
Withdraw the tool from the teaching field.



Place the object to be measured at the position you like to define as SP1.



Briefly touch the teach field with the tool.



Place the object to be measured at the position you like to define as SP2.

- Teaching operation successful: Sensor restores the factory settings. The LEDs are off for an instant and the sensor continues in standard operation (LED green continuous, other LEDs illuminate according to switching state).
- Teaching operation not successful: All LEDs are flashing quickly for 8 s (8 Hz).

Also see about this

[Switching logic \[10\]](#)

4.3 Switching logic

Function *Switching logic* is for changing the switching output logic from normally open (NO, Normal) to normally closed (NC, Inverted).

Normal



- The output is on High when the object is within defined the limits.
- The output is Low when no object is present or the object is outside the defined limits.

Inverted



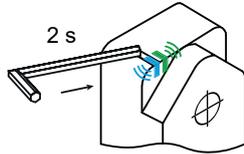
- The output is on High when no object is present or the object is outside the defined limits.
- The output is on Low when the object is within the range defined limits.

Teaching access: switching logic



INFO

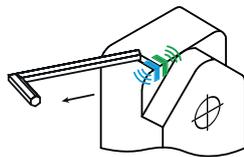
All LEDs light up for 1s when touching the teach field at the sensor with a ferromagnetic tool (tool has been recognized).



Touch the sensor's teach field with a ferromagnetic tool and hold for 6s. Once the sensor has recognized the tool all LEDs light up. After 2 seconds, the blue and green LEDs start flashing.



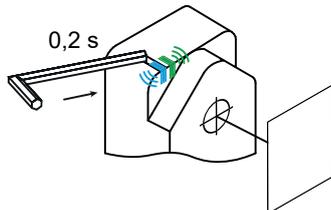
- Blue and green are LEDs flashing.



Withdraw the tool from the teaching field.

The LEDs indicate the set switching logic:

- LED green continuous: Switching logic NC (normally closed)
- LED amber continuous: Switching logic NO (normally open)



To change the switching logic, briefly touch the teach field with the tool.

Wait for 4 seconds to have the setting adopted.

- The teaching operation was successful: the LEDs are off for an instant while the sensor continues in standard operation (LED green continuous, other LEDs illuminate according switching state).
- Teaching operation not successful: All LEDs are flashing quickly for 8 s (8 Hz).

4.4 LED indicator

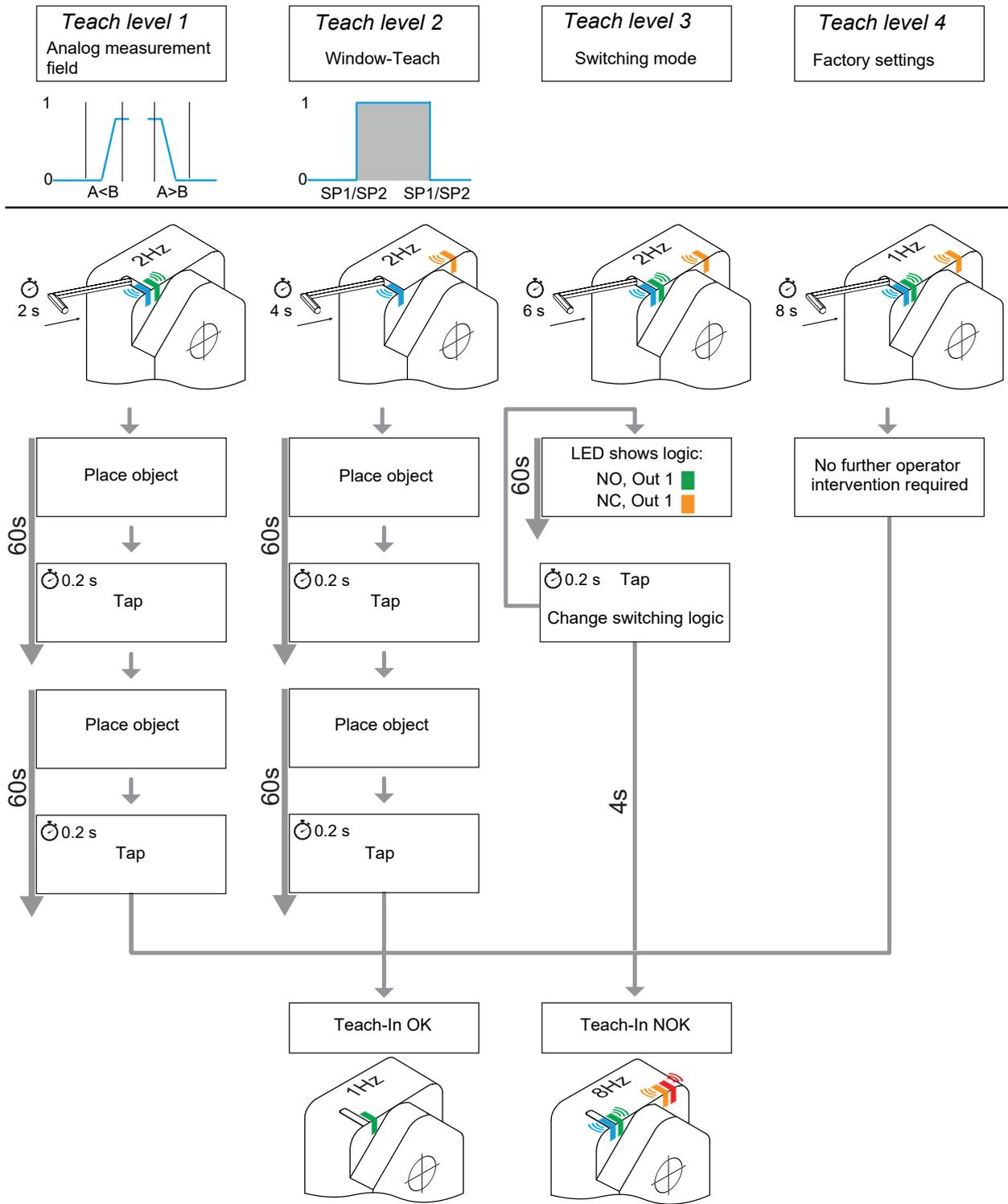
Standard behavior of LED indicators:

Function	Green	Yellow
Power on	continuous	–
Short circuit	flashing	–
Output 1 active	–	continuous

5 Annex

5.1 qTeach®

5.1.1 Teach level overview



- LED is constantly on
- LED is flashing at the specified frequency
- Ferromagnetic object
- 0.2 s Touch the sensor's teach field with a ferromagnetic tool and hold for the specified time

