KBQC0100

Capacitive sensor

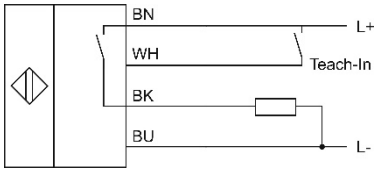
- / for positioning of objects
- / for filling level detction of liquids and bulk materials
- / plastic housing
- / easy mounting
- / short-circuit and reverse polarity protected
- / protection class IP68
- / cable connection

switching distance adjustable via teach-in

Technical data

dimensions	34 x 34 x 8mm
switching distance	0 … 10mm
operating voltage	10 … 30V DC
current consumption	< 15mA
switching frequency	≤ 2Hz
output circuit	NO
output current max.	200mA
voltage drop (max. load)	≤ 2.0V
LED-display	+
short-circuit protection	+
reverse polarity protection	+
ambient temperature	-25 … +70°C
protection class (EN 60529)	IP68
material (housing)	PA
connection	2m cable, PVC, 4x0.14mm²

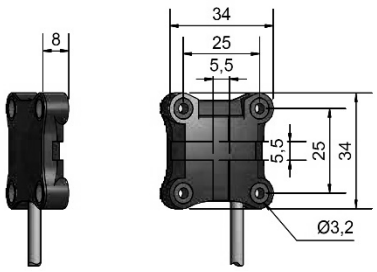
Connection



colors: BN = brown, WH = white, BU = blue, BK = black

functions: BN = L+, WH = teach-in, BU = L-, BK = PNP, NO

Dimensional drawing



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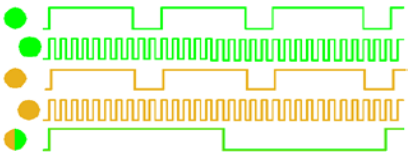
LED-display teach function



LED green	empty adjustment
LED green	empty adjustment initialization
LED yellow	full adjustment
LED yellow	full adjustment initialization
LED green/yellow	test

Note: After teaching, please make sure that the teach-wire remains unconnected.

1. Mounting

Mount and fix the device at the required position.

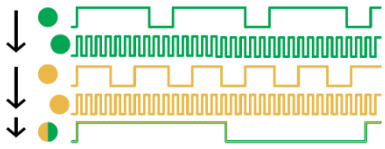
2. Connection

The connection is made according to the circuit diagram (see „connection“ page1). Please consider the technical specifications on the device and the data sheet.

3. Setting

The setting is performed via the the white wire.
To start the teach process, connect the white wire to L+.

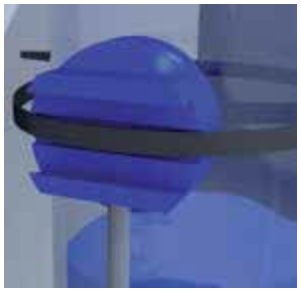
The following settings can sequentially be made:



- **empty adjustment**
- **empty adjustment initialization**
- **full adjustment**
- **full adjustment initialization**
- **test**

By releasing the connection between the white wire and L+ in the respective setting, the selected action is executed.
The switching output indicates the status of the LED.

3.1 Setting empty adjustment – active surface free



The empty adjustment is recommended, if the product is unknown while activating the sensor, but it has to be assured that no overfilling occurs. It is also recommended in case of empty state, after the sensor was in contact with the product and there are heavy deposits.

- connect the white wire with L+, until the LED blinks green and the output pulses correspondingly.
- release the teach-connection.
- during the initialization process, the LED is blinking green with a higher frequency, the switching output pulses correspondingly.

Attention:
During the adjustment, do not change the distance to the object being detected or the filling level!

The empty adjustment was succesfull, if the LED lights up permanently green. The sensor has now reached the largest permissible switching distance for the mounting conditions. The switching hysteresis is automatically calculated.

3.2 Setting full adjustment – active surface covered / object detection

The full adjustment is recommended, if the object to be detected is located within the scanning position in front of the sensor, or if you expect the material to deposit on the sensor.

- connect the white wire with L+, until the LED blinks yellow and the output pulses correspondingly.
- release the teach-connection.
- during the initialization process, the LED is blinking yellow with a higher frequency, the switching output pulses correspondingly.

Attention:
During the adjustment, do not change the distance to the object being detceted or the filling level!

The full adjustment was succesfull, if the LED lights up permanently yellow. The sensor is adjusted to the sensitivity that is neccessary for the product detection. The switching hysteresis is calculated automatically.

3.3 Test

In order to check the control unit (e.g. PLC) that is connected to the sensor, please use the test function.

- connect the white wire with L+, until the LED blinks green / yellow and the output pulses correspondingly.

You exit the test mode by disconnecting the white wire from L+. The sensor gets back to the condition that was programmed before.

SAFETY WARNINGS

Before initial operation, please make sure to follow all safety instructions that may be provided in the product information!

Never use these articles in applications where the safety of a person depends on their functionality.