

dif. reflection - retro-reflective sensors

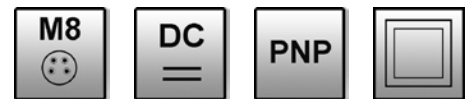
dimensions 43 x 14.8 x 32.5mm

operating distance 800mm

- ✓ robust plastic housing, compact design
- ✓ Teach in-based setting
- ✓ LED display for fine adjustment
- ✓ reduction in the level of reciprocal optical interference
- ✓ connection with 4-pin M8-connector



new: works like a retro-reflective sensor - but without a reflector



Technical data

version	object recognition
background position (Sde)	50 ... 800mm
detection range (Sa)	96% of Sde
operating voltage UB	10 ... 30V DC
current consumption (w/o load)	≤ 35mA
output current (max. load)	≤ 100mA
output signal	push-pull, no/nc
voltage drop (max. load)	≤ 2V DC
reaction- /decay time	≤ 1.8msec
sampling frequency	≤ 270Hz
short-circuit protection	+
reverse polarity protection	+
display (signal)	green LED
display (status) / setting control	red LED
transmitting element	red LED, 660nm, pulsed
light spot size	Ø 15mm at 800mm
housing material	plastic (ASA-MABS)
front screen material	PMMA
system of protection	IP67 (EN 60529)
operating temperature	-30°C ... +60°C
connection	M8-connector, 4-pin
max. tightening torque	0.8Nm

description:

These completely new through-beam sensors work according to the principle established with the retro-reflective sensor. With these devices however, no retro-reflector is used. Any flat surface can be used as a reflector, e.g. the wall of a piece of machinery.

This is 'taught in' as a background item, via the Teach-In line (white wire, PIN 2). Each object that is located between the sensor and background position is detected. This induces a change to the signal at the switch output. The system is highly nonsensitive to soiling, however the background should not change whilst the device is running.

the teach-in procedure relating to through-beam sensor operation:

1. Aim the sensor towards the background and/or the machinery part.
2. Connect the Teach-In line (white, PIN 2) to + UB for longer than 2 seconds (however less than 5 seconds). The red LED flashes.
3. Connect the Teach-In line again to +UB for a short period.
4. If the sensor is intended to work as a make contact (output switched if an object is detected), then connect the Teach-In line again for a short period with +UB. Otherwise the device works as a break contact.
5. The Teach-In process is completed as soon as the red LED is lit for 2 seconds.
6. If the sensor is `taught in' outside of its detection range, a warning signal will be displayed (rapid flashing of the red LED). The device is then set at its maximum operate distance.

teach-in of the ON – / OFF position (2-point Teach-In)

1. Aim the sensor towards the background and/or the machinery part.
 2. Connect the Teach-In line (white, PIN 2) to + UB for longer than 5 seconds with +UB. The red LED flashes rapidly.
 3. Connect the Teach-In line again to +UB for a short period.
 4. Place the object between the sensor and the background and connect the Teach-In line to +UB again for a short period.
 5. The device works as a make contact (output switched if an object is detected). If points 3 and 4 are swapped around, the device works as a break contact.
- If the sensor is `taught in' outside its detection range, or the margin between the teach positions is too narrow for a secure operation, a warning signal will be displayed (rapid flashing of the red LED). The sensor will then retain its previous setting.

alignment mark

Connect the teach-line to +UB for more than 10 seconds. The red LED flashes rapidly. Break the connection. If the red LED goes out now, this means that no signal is being picked up by the receiver. A LED that flashes slowly means that there is a weak signal. A LED that flashes fast means that there is a strong signal. If the LED is illuminated permanently, then the alignment is ideal. In order to return to the normal mode, connect the Teach-In line for a short period with +UB.

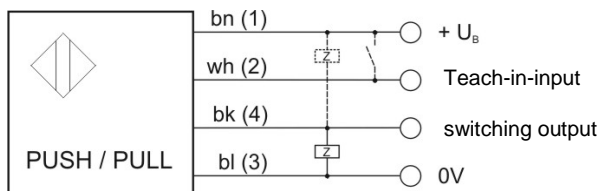
soiling indicator

If the sensor has been `taught in' as a make contact, the red LED flashes if the sensor is soiled.

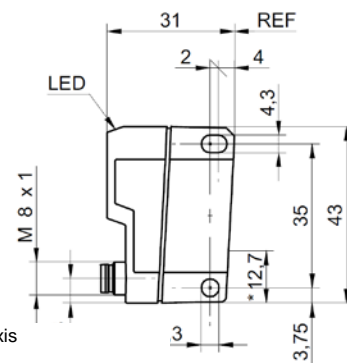
notes: The above status information applies to a „plus switching“ (pnp) connection.
For a „minus switching“ (npn) connection the status information has to be inverted.
Under normal operations, the Teach-In line must be grounded (0V)!

electric connection

dimension drawing



wire colors: bn = brown (1), wh = white (2), bu = blue (4), bk = black (4)



article-no.: **ON430570**

suitable cable socket: e.g. **VK200375**

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