



### Mounting and adjustment

- The laser contrast reader can be directly installed using the through holes provided for M4 screws or with the mounting bracket AO000082.
- Optimum working distance: the receiver is not much sensitive to distance variations, suitable for sensing small objects or color transitions of marks.
- For sensing shiny surfaces it is recommended to tilt the sensor about 5 to 20° in one direction (see arrow on the left of the dimensional drawing) compared to the target surface. If the target surface is shiny and rough, then an even larger tilt might be necessary.
- For sensing object edges the objects should approach the laser beam laterally (see arrow\*\* in the dimensional drawing). For sensing color marks this is not necessary.
- The sensor works without functional reserve when the alignment-aid / soiling display LED is flashing. Either the sensor is not aligned to the object, the front window is soiled or the object doesn't reflect enough light.
- Regular cleaning of the front window is necessary, especially when sensing small differences in reflectivity between target and background. Use a clean (!), soft and dry cloth for cleaning. In case of severe soiling, the use of pure alcohol is recommended.

### Teach-in process with teach-in button

1. To start teach-in mode: press the button 2 sec. until the yellow LED starts flashing.
2. Adjust the sensor to the first position and press the button shortly.
3. Adjust the sensor to the second position and press the button shortly.

### Teach-in process via teach-in wire (WH, Pin 2)

1. To start teach-in mode: connect the teach-in wire 2 sec. to +U<sub>B</sub> (BN, Pin 1) until the output (BK, Pin 4) switches to +U<sub>B</sub>.
2. Adjust the sensor to the first position and connect the teach-in wire shortly with +U<sub>B</sub> (BN, Pin 1).
3. Adjust the sensor to the second position and connect the teach-in wire shortly with +U<sub>B</sub> (BN, Pin1).

### Teach-in feedback

LED is on for 2 sec. / output (BK, Pin 4) switches for 2 sec. to 0V.

- The teach-in process was successful.

LED is flashing rapidly for 2 sec. (20 Hz) / output (BK, Pin 4) switches for 2 sec. to +U<sub>B</sub>.

- The difference between the two taught positions is too small for a safe application.
- The sensor was taught beyond its sensing range. The teach-in process has to be repeated within 60sec, otherwise the sensor returns to the operating mode with the prior settings.

### Note

Regardless of the sequence of the positions (dark-on or light-on), during the teach-process the output switches always to +U<sub>B</sub> when detecting the light-on position.

Due to laser safety reasons the sensor's power supply has to be switches off when the machine or entire plant is switched off!

 <p><b>CAUTION</b> LASER RADIATION DO NOT STARE INTO BEAM LASERDIODE Wavelength: 630 - 680 nm Max. Output: &lt; 1 mW Class 2 LASER Product</p>	<p><b>Achtung Laser-Strahlung</b></p> <p>nicht in den Strahl blicken</p> <p>Laserdiode</p> <p>Wellenlänge 630-680nm max. Ausgangsleistung &lt; 1mW</p> <p>Laser-Klasse 2</p>
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