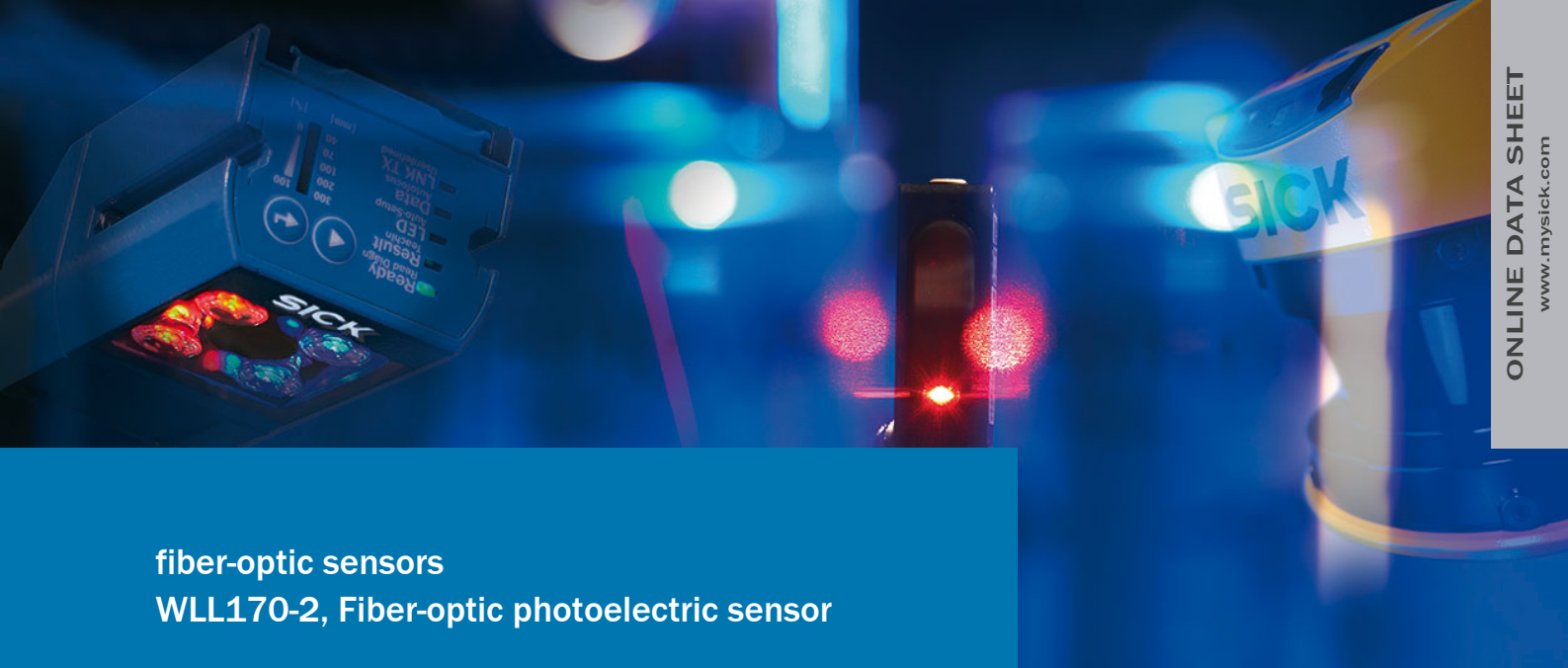




fiber-optic sensors  
WLL170-2, Fiber-optic photoelectric sensor

WLL170T-2P490



**Model Name** > [WLL170T-2P490](#)  
**Part No.** > [6033956](#)



*Illustration may differ*

#### At a glance

- Rapid response time (50 µs)
- Switching threshold adjustment via potentiometer, or teach-in via button or cable
- Four different teach-in modes
- Simple installation
- Red or green LED emitter

#### Your benefits

- Reliable, rapid process detection
- Low installation costs due to short commissioning time
- Flexible teach-in modes allow the sensor to be customized according to the specific application
- Emitted light ideal for color or contrast detection
- Easy programming via simple potentiometer and switch adjustment



#### Features

|                                   |                                                                                    |
|-----------------------------------|------------------------------------------------------------------------------------|
| Dimensions (W x H x D):           | 10.5 mm x 35.5 mm x 83.7 mm                                                        |
| Sensing range max.:               | 0 mm ... 1,600 mm, through-beam system <sup>1)</sup>                               |
| Sensing range:::                  | 9...4) 270 mm, through-beam system, 0 mm ... 35 mm, proximity system <sup>2)</sup> |
| Light source:                     | LED <sup>5)</sup>                                                                  |
| Type of light:                    | Green light                                                                        |
| Wave length:                      | 525 nm                                                                             |
| Sensitivity adjustment:           | Teach-in button<br>cable                                                           |
| Adjustment of operating distance: | Cable, Teach-in button                                                             |
| Teach-in:                         | Menu-controlled                                                                    |
| Time type:                        | Off-delayed                                                                        |
| Delay time:                       | Selectable by sliding switch: ≥40 ms                                               |
| Indication:                       | LED                                                                                |
| Sensor/detection principle:       | Fiber-optic photoelectric sensor                                                   |
| Angle of dispersion:              | Ca. 65 °                                                                           |
| Housing design (light emission):  | Rectangular                                                                        |

<sup>1)</sup> LL3-TB02 and tip adapter LL3-TA01 <sup>2)</sup> Objects to be sensed with 90% reflectivity (based on DIN 5033 white standard). Sensing range depends on fiber-optic cable

<sup>3)</sup> LL3DM01 <sup>4)</sup> LL3-TB01 <sup>5)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

## Mechanics/electronics

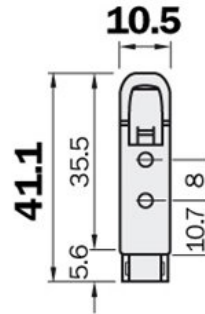
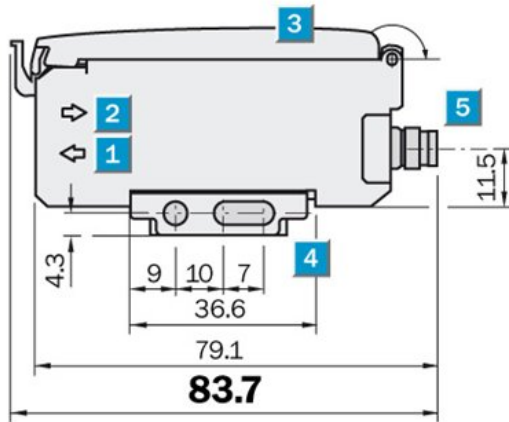
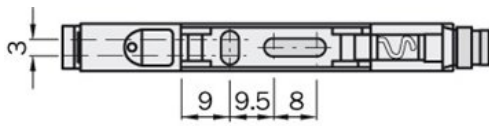
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|                                   |                                                                               |
|-----------------------------------|-------------------------------------------------------------------------------|
| Enclosure rating:                 | IP 66 <sup>1)</sup>                                                           |
| Supply voltage:                   | 10 V DC ... 30 V DC <sup>2)</sup>                                             |
| Ripple:                           | 10 % <sup>3)</sup>                                                            |
| Power consumption:                | ≤ 30 mA <sup>4)</sup>                                                         |
| Output type:                      | PNP, Light/dark-switching, selectable via light/dark selector, open collector |
| Output current I <sub>max</sub> : | ≤ 100 mA                                                                      |
| Response time:                    | ≤ 0.25 ms <sup>5)</sup>                                                       |
| Switching frequency:              | 2,000 Hz <sup>6)</sup>                                                        |
| Connection type:                  | Connector M8, 4-pin                                                           |
| Protection class:                 | III                                                                           |
| Circuit protection:::             | A, B, C, D <sup>7)</sup> <sup>8)</sup> <sup>9)</sup> <sup>10)</sup>           |
| Special device:                   | 0                                                                             |
| Housing material:                 | ABS                                                                           |
| Ambient operating temperature:    | -25 °C ... 55 °C                                                              |
| Ambient storage temperature:      | -40 °C ... 70 °C                                                              |
| UL File-No.:                      | UL No. NRKH.E300503 & cUL No. NRKH7.E300503                                   |

See LL3 fiber-optic data;

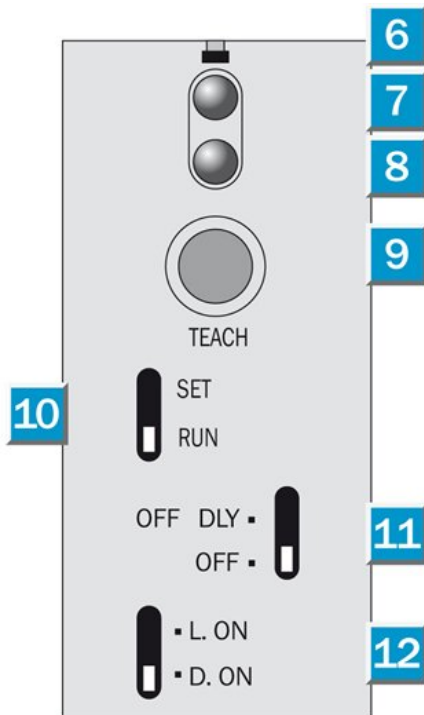
<sup>1)</sup> With correctly attached fibre-optic cable LL3 and closed protection hood <sup>2)</sup> Limit values <sup>3)</sup> May not exceed or fall short of V<sub>S</sub> tolerances <sup>4)</sup> Without load <sup>5)</sup> Signal transit time with resistive load <sup>6)</sup> With light/dark ratio 1:1 <sup>7)</sup> A = V<sub>S</sub> connections reverse-polarity protected <sup>8)</sup> B = inputs and output reverse-polarity protected <sup>9)</sup> C = interference suppression <sup>10)</sup> D = outputs overcurrent and short-circuit protected

## Dimensional drawing



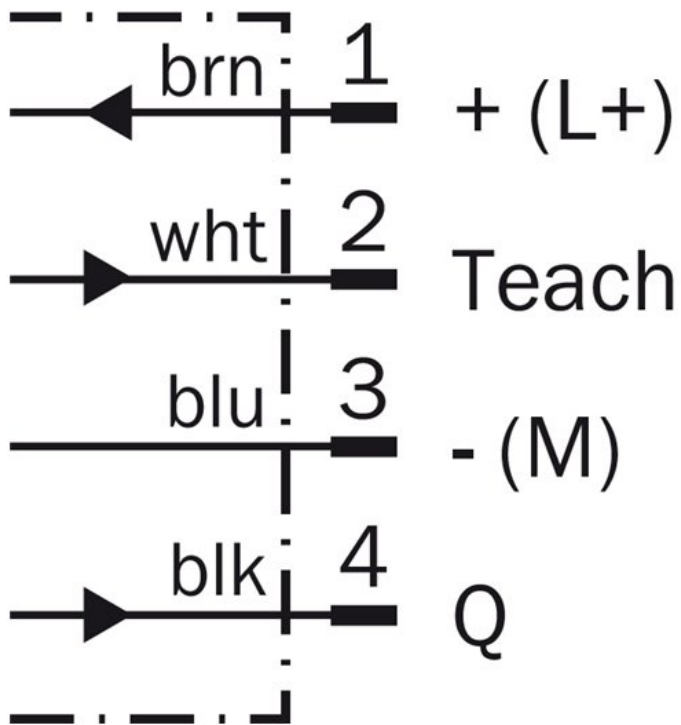
- |1| Sender LED, installation of LL3 fibre-optic cable (sender fibre)
- |2| Receiver, installation of LL3 fibre optic cable (receiver fibre)
- |3| Protective hood, can be raised at both ends
- |4| Mounting bracket, included
- |5| Connection

## Adjustments possible

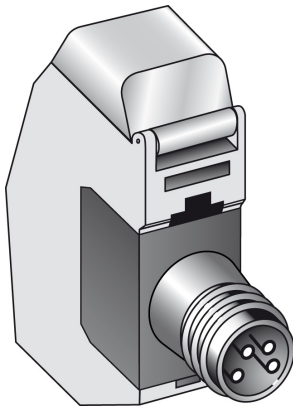


- |6| Indication of correct fibre-optic cable mounting
- |7| LED indicator orange: switching output active
- |8| LED signal strength indicator green, lights up, when light received < 0.9 or > 1.1 (switching threshold = 1)
- |9| Teach-in button
- |10| Operating mode selector switch: "SET" (Teach-in mode) / "RUN" (sensor mode)
- |11| L.ON/ d.ON selection switch: "OFF DLY" (on) / "OFF", 40 ms fixed
- |12| Selector switch: "L.ON" (light-switching) / "D.ON" (dark-switching)

## Connection diagram



## Connection type



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