



## Fork sensors WFL

WFL2-95B416



ONLINE DATA SHEET  
[www.mysick.com](http://www.mysick.com)

**Model Name** > [WFL2-95B416](#)  
**Part No.** > [6036835](#)



*Illustration may differ*

**At a glance**

- Very precise laser beam (Class 1 laser)
- Simple and accurate adjustment via teach-in
- Fast response time (max. 100 µs)
- Minimum detectable object size of 0.05 mm
- PNP and NPN switching output
- Light/dark switching function
- 21 different models with different fork widths and depths
- Rugged, IP 65 aluminum housing

**Your benefits**

- A highly precise laser beam ensures consistent measurement accuracy along the entire measuring range and reliable detection of the smallest objects
- A visible laser light spot enables easy alignment and fast adjustment
- Reliable and simple setting via teach-in ensures high process reliability
- A wide range of different fork sizes increases installation flexibility
- The aluminum housing meets all requirements for use in harsh industrial conditions



**Features**

|                                  |  |
|----------------------------------|--|
| Functional principle:            | Optical detection principle                |
| Fork width:                      | 2 mm                                       |
| Fork depth:                      | 95 mm                                      |
| Label detection:                 | -  |
| Light source:                    | Laser                                      |
| Type of light:                   | Visible red light                          |
| Adjustment:                      | Teach-in                                   |
| Output function:                 | Light/darkswitching, selectable via button |
| Housing design (light emission): | Fork shaped                                |
| Minimum detectable object (MDO): | 0.05 mm                                    |
| Wave length:                     | 670 nm                                     |
| Laser class:                     | I  |

**Mechanics/electronics**

|                                     |        |
|-------------------------------------|--------|
| Residual ripple <sup>1)</sup> :     | < 10 % |
| Power consumption <sup>2)</sup> :   | 40 mA  |
| Switching frequency <sup>3)</sup> : | 10 kHz |

|                                    |   |
|------------------------------------|---|
| Response time <sup>4)</sup> :      | 100 µs  |
| Stability of response time:        | ± 20 µs   |
| Output type:                       | NPN: HIGH = approx. VS / LOW ≤ 2 V<br>PNP: HIGH = VS- ≤ 2 V / LOW approx. 0 V                             |
| Switching mode:                    | PNP/NPN   |
| Output current I <sub>max.</sub> : | 100 mA  |
| Initialization time:               | 100 ms  |
| Electrical connection:             | Connector M8, 4-pin   |
| Protection class <sup>5)</sup> :   | III   |
| Circuit protection:                | VS connections reverse-polarity protected<br>Output Q short-circuit protected<br>Interference suppression |
| Enclosure rating:                  | IP 65   |
| Weight:                            | Ca. 36 g ... 160 g <sup>6)</sup>  |
| Housing material:                  | Aluminum, Metal   |
| Supply voltage:                    | 10 V DC ... 30 V DC <sup>7)</sup>   |
| Ambient light immunity:            | Sunlight: ≤ 10,000 klx  |
| Fieldbus interface:                | -   |

<sup>1)</sup> May not exceed or fall short of  $V_S$  tolerances <sup>2)</sup> Without load <sup>3)</sup> With light/dark ratio 1:1 <sup>4)</sup> Signal transit time with resistive load <sup>5)</sup> Reference voltage DC 50 V <sup>6)</sup>

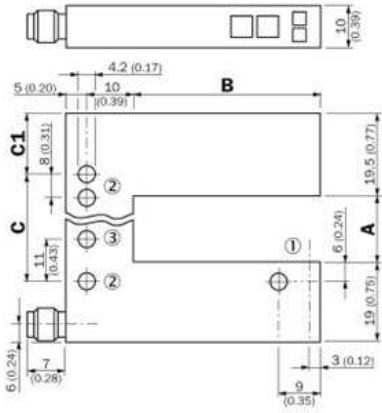
Depending on fork width <sup>7)</sup> Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A

#### Ambient data

|                                |  |
|--------------------------------|--|
| Shock load:                    | According to EN 60068-2-27                 |
| UL File No.:                   | NRKH.E191603 & NRKH7.E191603, CDRH-conform |
| Ambient temperature operation: | -20 °C ... +50 °C <sup>1)</sup>            |
| Ambient storage temperature:   | -30 °C ... +80 °C                          |

<sup>1)</sup> Do not bend below 0 °C

## Dimensional drawing

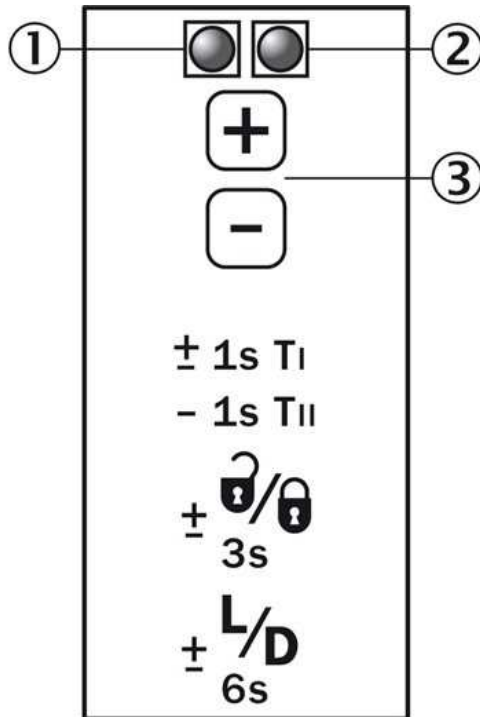


Dimensions in mm (inch)

|               | A<br>Fork width | B<br>Fork depth              | C             | C1             |
|---------------|-----------------|------------------------------|---------------|----------------|
| <b>WFL2</b>   | 2<br>(0.08)     | 42/59/95<br>(1.65/2.32/3.74) | 14<br>(0.55)  | 13.5<br>(0.53) |
| <b>WFL5</b>   | 5<br>(0.20)     | 42/59/95<br>(1.65/2.32/3.74) | 14<br>(0.55)  | 15<br>(0.59)   |
| <b>WFL15</b>  | 15<br>(0.59)    | 42/59/95<br>(1.65/2.32/3.74) | 27<br>(1.06)  | 13.5<br>(0.53) |
| <b>WFL30</b>  | 30<br>(1.18)    | 42/59/95<br>(1.65/2.32/3.74) | 42<br>(1.65)  | 13.5<br>(0.53) |
| <b>WFL50</b>  | 50<br>(1.97)    | 42/59/95<br>(1.65/2.32/3.74) | 51<br>(2.01)  | 24.5<br>(0.96) |
| <b>WFL80</b>  | 80<br>(3.15)    | 42/59/95<br>(1.65/2.32/3.74) | 81<br>(3.19)  | 24.5<br>(0.96) |
| <b>WFL120</b> | 120<br>(4.72)   | 42/59/95<br>(1.65/2.32/3.74) | 121<br>(4.76) | 24.5<br>(0.96) |

- |1| Optical axis
- |2| Mounting hole,  $\varnothing$  4.2 mm
- |3| WFL50/80/120 only

## Adjustments

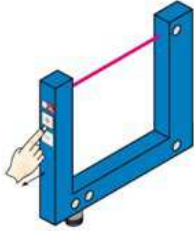


- |1| Function signal indicator (yellow), switching output
- |2| Function indicator (red)
- |3| "+"/"-" buttons and function button

## Bedienhinweis

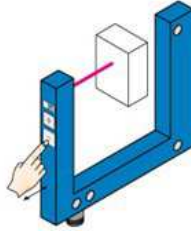
The switching threshold is set automatically. Fine adjustment is possible using the "+" / "-" buttons.

### 1. No object or substrate in the beam path



Press the "+" and "-" buttons together and hold for 1 second. The red function indicator flashes slowly.



### 2. Object or label in the beam path





Press the "-" button for 1 second. Red function indicator goes out.

### Notes

Material speed = 0 (machine at a standstill).

-  Once teach-in process is complete, the switching threshold can be adjusted at any time using the "+" or "-" button. To make minor adjustments, press the "+" or "-" button once.
-  To configure settings quickly, keep the "+" or "-" button pressed for longer.

 Press both the "+" and "-" buttons together (3 seconds) to lock the device and prevent unintentional actuation.

 Press both the "+" and "-" buttons together (6 seconds) to define the switching function (light/dark switching). Standard setting:  $\bar{Q}$  = light switching.

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