



## Fork sensors WF, WFnext

WF120-40B416



**Model Name** > [WF120-40B416](#)  
**Part No.** > [6028456](#)



*Illustration may differ*

#### At a glance

- Infrared light source
- Simple and accurate adjustment via teach-in or manually via "+"/"-" buttons
- Fast response time (max. 100 µs)
- 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

- Fast response time and fine resolution ensure reliable detection even at high speeds
- Infrared light source provides excellent ambient light immunity
- User friendly setting via teach-in or "+"/"-" button
- A wide range of different fork sizes enables flexible installation
- The aluminum housing meets all requirements for use in harsh industrial conditions



#### Features

|                       |  |
|-----------------------|--|
| Functional principle: | Optical detection principle                |
| Fork width:           | 120 mm                                     |
| Fork depth:           | 42 mm                                      |
| MDO <sup>1)</sup> :   | 0.2 mm                                     |
| Label detection:      | -  |
| Light source:         | LED, infrared                              |
| Adjustment:           | Teach-in                                   |
| Output function:      | Light/darkswitching, selectable via button |

<sup>1)</sup> Minimum detectable object

#### Mechanics/electronics

|                                      |                  |
|--------------------------------------|------------------|
| Supply voltage $V_s$ <sup>1)</sup> : | DC 10 V ... 30 V |
| Ripple <sup>2)</sup> :               | < 10 %           |
| Power consumption <sup>3)</sup> :    | 40 mA            |
| Switching frequency <sup>4)</sup> :  | 10 kHz           |
| Response time <sup>5)</sup> :        | 100 µs           |
| Stability of response time:          | ± 20 µs          |

Output type: NPN: HIGH = approx.  $V_S$  / LOW  $\leq 2$  V  
 PNP: HIGH =  $V_S - \leq 2$  V / LOW approx. 0 V

Switching mode: PNP/NPN

Output current  $I_{max.}$ : 100 mA

Initialization time: 100 ms

Connection type: Connector M8, 4-pin

Ambient light safety: Sunlight:  $\leq 10,000$  klx

Protection class <sup>6)</sup>: III

Circuit protection: VS connections reverse-polarity protected  
 Output Q short-circuit protected  
 Interference suppression

Enclosure rating: IP 65

Weight: Ca. 36 g ... 160 g <sup>7)</sup>

Housing material: Aluminum

<sup>1)</sup> Limit values, reverse-polarity protected, operation in short-circuit protected network, max. 8 A <sup>2)</sup> May not exceed or fall short of  $V_S$  tolerances <sup>3)</sup> Without load <sup>4)</sup>  
 With light/dark ratio 1:1 <sup>5)</sup> Signal transit time with resistive load <sup>6)</sup> Reference voltage DC 50 V <sup>7)</sup> Depending on fork width

### Ambient data

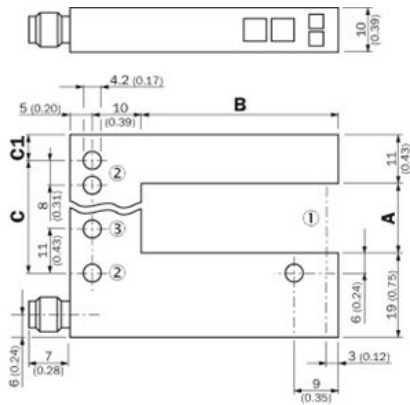
Ambient temperature <sup>1)</sup>: Operation: -20 ... 60 °C  
 Storage: -30 ... 80 °C

Shock load: According to EN 60068-2-27

UL File-No.: UL No. NRKH.E191603

<sup>1)</sup> Do not bend below 0 °C

### Dimensional drawing



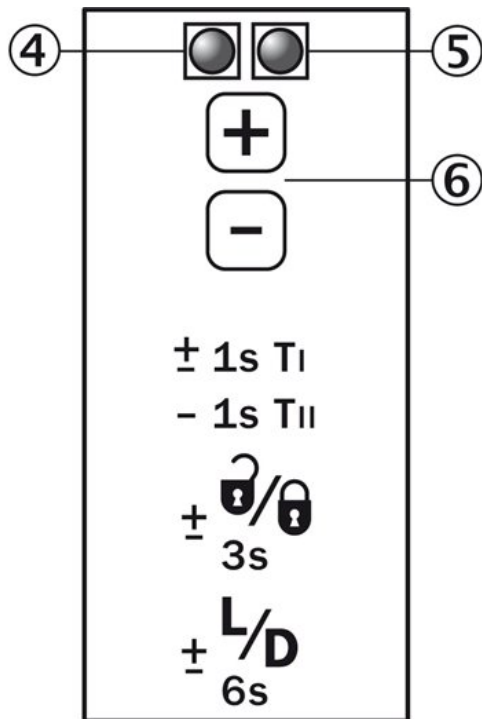
All dimensions in mm (inch)

Dimensions in mm (inch)

|       | A<br>Fork width | B<br>Fork depth              | C             | C1            |
|-------|-----------------|------------------------------|---------------|---------------|
| WF2   | 2<br>(0.08)     | 42/59/95<br>(1.65/2.32/3.74) | 14<br>(0.55)  | 5<br>(0.20)   |
| WF5   | 5<br>(0.20)     | 42/59/95<br>(1.65/2.32/3.74) | 14<br>(0.55)  | 6.5<br>(0.20) |
| WF15  | 15<br>(0.59)    | 42/59/95<br>(1.65/2.32/3.74) | 27<br>(1.06)  | 5<br>(0.20)   |
| WF30  | 30<br>(1.18)    | 42/59/95<br>(1.65/2.32/3.74) | 42<br>(1.65)  | 5<br>(0.20)   |
| WF50  | 50<br>(1.97)    | 42/59/95<br>(1.65/2.32/3.74) | 51<br>(2.01)  | 16<br>(0.63)  |
| WF80  | 80<br>(3.15)    | 42/59/95<br>(1.65/2.32/3.74) | 81<br>(3.19)  | 16<br>(0.63)  |
| WF120 | 120<br>(4.72)   | 42/59/95<br>(1.65/2.32/3.74) | 121<br>(4.76) | 16<br>(0.63)  |

- |1| Optical axis
- |2| Mounting hole,  $\varnothing$  4.2 mm
- |3| WF50/80/120 only

## Adjustments

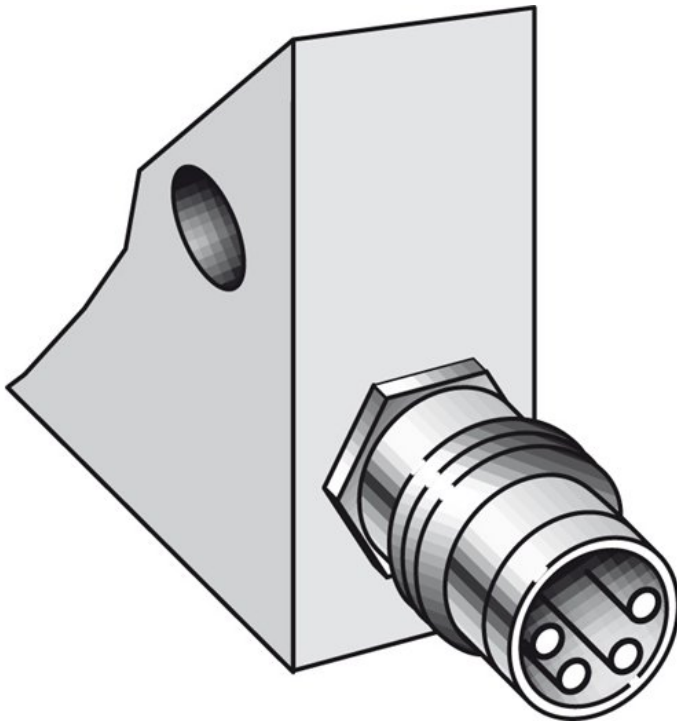


|4| Function signal indicator (yellow), switching output

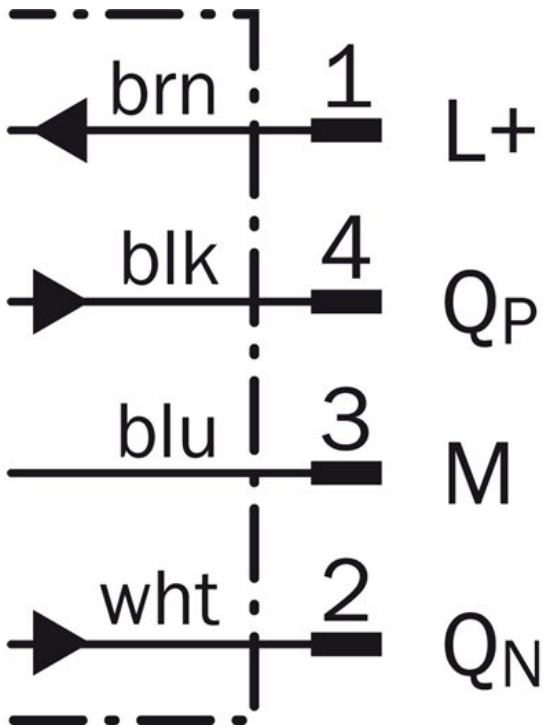
|5| Function indicator (red)

|6| "+" / "-" buttons and function button

## Connection type



Connection diagram



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