



Fork sensors WF, WFnext

WF5-40B416



Model Name > **WF5-40B416**
Part No. > **6028451**



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: | 5 mm |
| Fork depth: | 42 mm |
| Label detection: | ✓ |
| Light source: | LED |
| Type of light: | Infrared light |
| Adjustment: | Teach-in |
| Output function: | Light/darkswitching, selectable via button |
| Housing design (light emission): | Fork shaped |
| Minimum detectable object (MDO): | 0.2 mm |

Mechanics/electronics

| | |
|-------------------------------------|---|
| Residual ripple ¹⁾ : | < 10 % |
| Power consumption ²⁾ : | 40 mA |
| Switching frequency ³⁾ : | 10 kHz |
| Response time ⁴⁾ : | 100 µs |
| Stability of response time: | ± 20 µs |
| Output type: | NPN: HIGH = approx. VS / LOW ≤ 2 V PNP: HIGH = VS- ≤ 2 V / LOW approx. 0 V |

| | |
|------------------------------------|---|
| Switching mode: | PNP/NPN |
| Output current I _{max.} : | 100 mA |
| Initialization time: | 100 ms |
| Electrical connection: | Connector M8, 4-pin |
| Protection class ⁵⁾ : | 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 ⁶⁾ |
| Housing material: | Aluminum, Metal |
| Supply voltage: | 10 V DC ... 30 V DC ⁷⁾ |
| Ambient light immunity: | Sunlight: ≤ 10,000 klx |
| Fieldbus interface: | - |

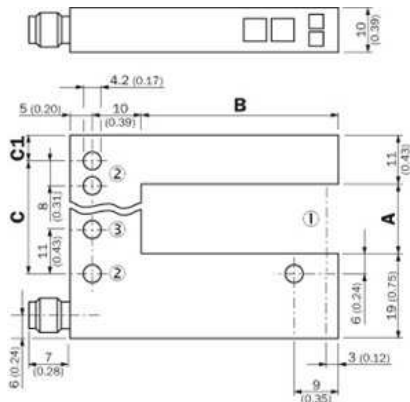
1) May not exceed or fall short of V_S tolerances ²⁾ Without load ³⁾ With light/dark ratio 1:1 ⁴⁾ Signal transit time with resistive load ⁵⁾ Reference voltage DC 50 V ⁶⁾
 Depending on fork width ⁷⁾ Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A

Ambient data

| | |
|--------------------------------|---------------------------------|
| Shock load: | According to EN 60068-2-27 |
| UL File No.: | NRKH.E191603 |
| Ambient temperature operation: | -20 °C ... +60 °C ¹⁾ |
| Ambient storage temperature: | -30 °C ... +80 °C |

¹⁾ Do not bend below 0 °C

Dimensional drawing

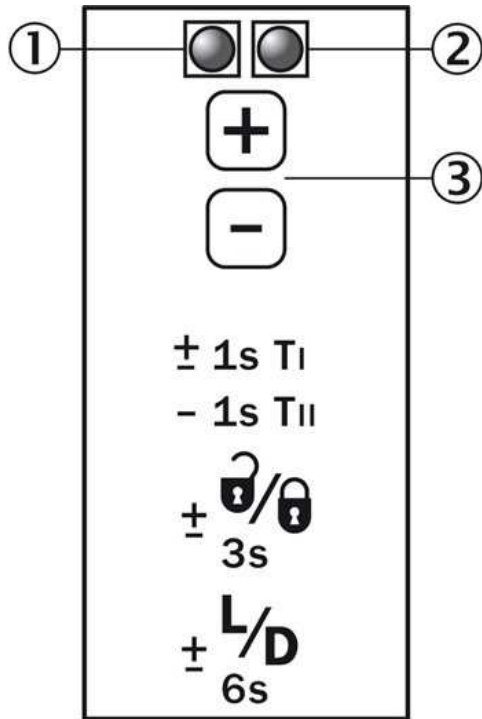


Dimensions in mm (inch)

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

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

Adjustments

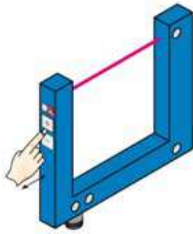


- |1| Function signal indicator (yellow), switching output
- |2| Function indicator (red)
- |3| "+"/"-" buttons and function button

Bedienhinweis

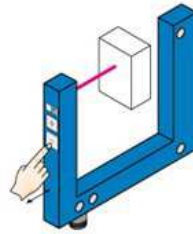
The switching threshold is set automatically. Fine adjustment is possible using the "+"/"-" buttons.

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.

± $\frac{Q}{3s}$ Press both the "+" and "-" buttons together (3 seconds) to lock the device and prevent unintentional actuation.

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

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