



Fork sensors WF, WFnext

WF50-40B416



Model Name > **WF50-40B416**
Part No. > **6028454**



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:	50 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: -

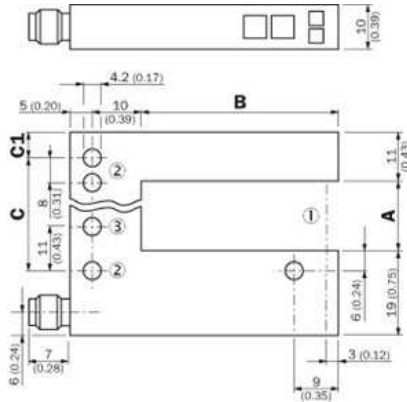
¹⁾ May not exceed or fall short of V_S tolerances ²⁾ Without load ³⁾ With light/dark ratio 1:1 ⁴⁾ Signal transit time with resistive load ⁵⁾ Reference voltage DC 50 V ⁶⁾
Depending on fork width ⁷⁾ Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A

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

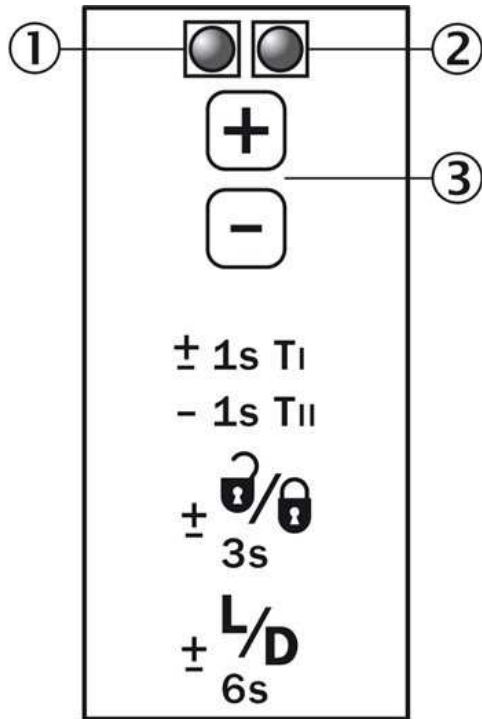


Dimensions in mm (inch)

	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

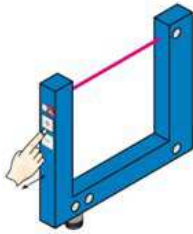


- |1| Function signal indicator (yellow), switching output
- |2| Function indicator (red)
- |3| "+"/"-" buttons and function button

Bedienhinweis

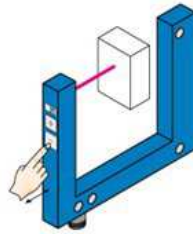
The switching threshold is set automatically. Fine adjustment is possible using the "+"/"-" buttons.

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.

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

$\pm \frac{L/D}{6s}$ 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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