



Fork sensors WFL

WFL5-60B416



Model Name > [WFL5-60B416](#)
Part No. > [6036829](#)



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



CDRH

Features

Functional principle:	Optical detection principle
Fork width:	5 mm
Fork depth:	59 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 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⁾

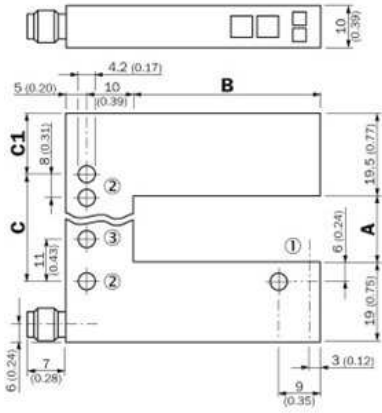
Depending on fork width ⁷⁾ Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A

Ambient data

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

¹⁾ Do not bend below 0 °C

Dimensional drawing

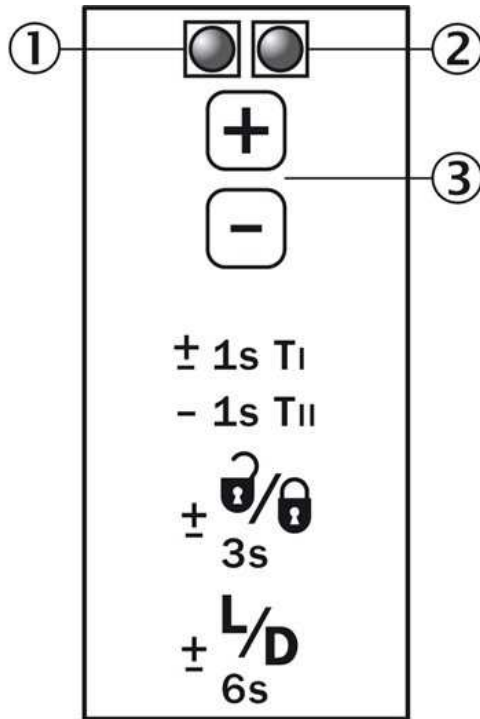


Dimensions in mm (inch)

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

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

Adjustments

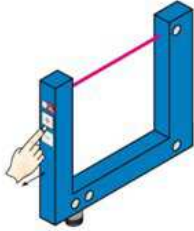


- |1| Function signal indicator (yellow), switching output
- |2| Function indicator (red)
- |3| "+" / "-" buttons and function button

Bedienhinweis

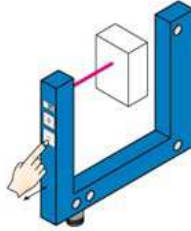
The switching threshold is set automatically. Fine adjustment is possible using the "+" / "-" buttons.

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.

$\pm \frac{Q}{\bar{Q}}$
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: \bar{Q} = light switching.

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