



Illustration may differ



Ordering information

Type	Part no.
WFL5-40B416	6036822

Other models and accessories → www.sick.com/WFL

Detailed technical data

Features

Functional principle	Optical detection principle
Dimensions (W x H x D)	10 mm x 43.5 mm x 47 mm
Housing design (light emission)	Fork shaped
Fork width	5 mm
Fork depth	42 mm
Minimum detectable object (MDO)	0.05 mm
Light source	Laser, red
Laser class	I
Wave length	670 nm
Adjustment	Plus/minus button (Teach-in, sensitivity, light/dark switching)
Teach-in mode	2-point teach-in

Mechanics/electronics

Supply voltage	10 V DC ... 30 V DC ¹⁾
Ripple	< 10 % ²⁾
Current consumption	40 mA ³⁾
Switching frequency	10 kHz ⁴⁾
Response time	100 µs
Stability of response time	± 20 µs
Jitter	40 µs
Switching output	PNP/NPN

¹⁾ Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A.

²⁾ May not exceed or fall below U_V tolerances.

³⁾ Without load.

⁴⁾ With light/dark ratio 1:1.

⁵⁾ Reference voltage DC 50 V.

⁶⁾ Depending on fork width.

Switching output (voltage)	PNP: HIGH = $U_V \leq 2 \text{ V}$ / LOW approx. 0 V NPN: HIGH = approx. U_V / LOW $\leq 2 \text{ V}$
Switching mode	Light/dark switching
Output current I_{max}	100 mA
Initialization time	100 ms
Connection type	Male connector M8, 4-pin
Protection class	III ⁵⁾
Circuit protection	U_V connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
Enclosure rating	IP65
Weight	Approx. 36 g ... 160 g ⁶⁾
Tightening torque	Max. 3 Nm
Housing material	Metal, Aluminum

1) Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A.

2) May not exceed or fall below U_V tolerances.

3) Without load.

4) With light/dark ratio 1:1.

5) Reference voltage DC 50 V.

6) Depending on fork width.

Ambient data

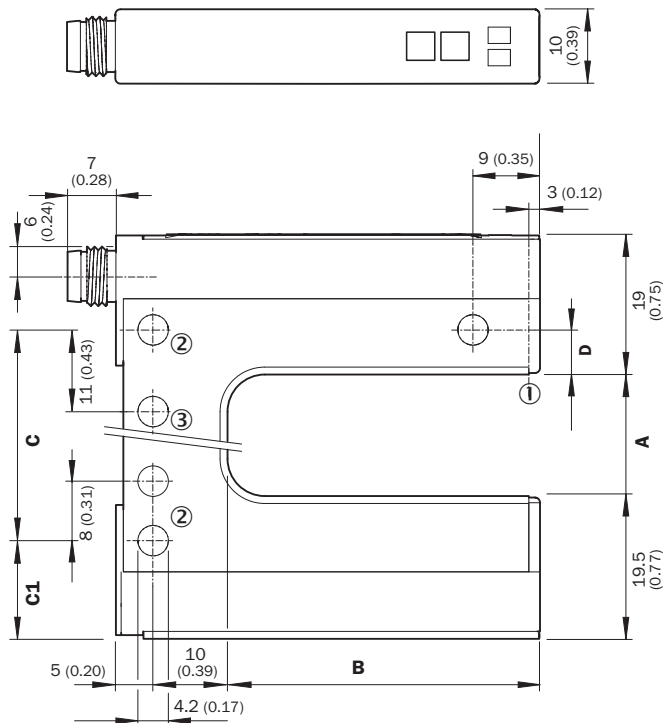
Ambient operating temperature	-20 °C ... +50 °C
Ambient temperature, storage	-30 °C ... +80 °C
Ambient light immunity	$\leq 10,000 \text{ lx}$
Shock load	According to EN 60068-2-27

Classifications

ECl@ss 5.0	27270909
ECl@ss 5.1.4	27270909
ECl@ss 6.0	27270909
ECl@ss 6.2	27270909
ECl@ss 7.0	27270909
ECl@ss 8.0	27270909
ECl@ss 8.1	27270909
ECl@ss 9.0	27270909
ECl@ss 10.0	27270909
ECl@ss 11.0	27270909
ETIM 5.0	EC002720
ETIM 6.0	EC002720
ETIM 7.0	EC002720
ETIM 8.0	EC002720
UNSPSC 16.0901	39121528

Dimensional drawing (Dimensions in mm (inch))

WFL - Plus/minus buttons



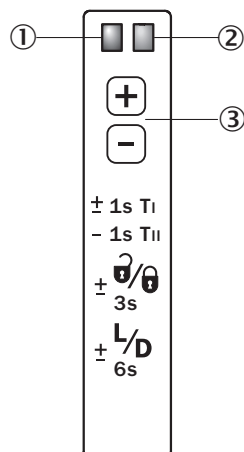
- ① Optical axis
- ② Mounting hole, \varnothing 4.2 mm
- ③ WFL50/80/120 only

Dimensions in mm (inch)

	A Fork width	B Fork depth	C	C1	D
WFL2	2 (0.08)	42/59/95 (1.65/2.32/3.74)	14 (0.55)	13.5 (0.53)	6 (0.24)
WFL5	5 (0.20)	42/59/95 (1.65/2.32/3.74)	14 (0.55)	15 (0.59)	4.5 (0.18)
WFL15	15 (0.59)	42/59/95 (1.65/2.32/3.74)	27 (1.06)	13.5 (0.53)	6 (0.24)
WFL30	30 (1.18)	42/59/95 (1.65/2.32/3.74)	42 (1.65)	13.5 (0.53)	6 (0.24)
WFL50	50 (1.97)	42/59/95 (1.65/2.32/3.74)	51 (2.01)	24.5 (0.96)	6 (0.24)
WFL80	80 (3.15)	42/59/95 (1.65/2.32/3.74)	81 (3.19)	24.5 (0.96)	6 (0.24)
WFL120	120 (4.72)	42/59/95 (1.65/2.32/3.74)	121 (4.76)	24.5 (0.96)	6 (0.24)

Adjustments

Adjustment: teach-in via plus/minus buttons (WFxx-B416)



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

Connection diagram

Cd-086



Concept of operation

Teach-in

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.

Recommended accessories

Other models and accessories → www.sick.com/WFL

	Brief description	Type	Part no.
Plug connectors and cables			
	Head A: female connector, M8, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF8U14-050VA3XLEAX	2095889
	Head A: male connector, M8, 4-pin, straight Cable: unshielded	STE-0804-G	6037323

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