WFL120-60B416

WFL

FORK SENSORS

SICK
Sensor Intelligence.

WFL120-60B416 | WFL

FORK SENSORS

Illustration may differ

Ordering information

Type	Part no.
WFL120-60B416	6036834

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 158.5 mm x 74 mm
Housing design (light emission)	Fork shaped
Fork width	120 mm
Fork depth	59 mm
Minimum detectable object (MDO)	0.05 mm
Light source	Laser, visible red light
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 = V_S- ≤ 2 V / LOW approx. 0 V
	NPN: HIGH = approx. V_S / LOW ≤ 2 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]
Housing material	Metal, Aluminum

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[3] Without load.

[4] With light/dark ratio 1:1.

[5] Reference voltage DC 50 V.

[6] Depending on fork width.

Communication interface

Communication interface	-

Ambient data

Ambient operating temperature	–20 °C … +50 °C [1]
Ambient storage temperature	–30 °C … +80 °C
Ambient light immunity	≤ 10,000 lx
Shock load	According to EN 60068-2-27

[1] Do not bend below 0 °C.

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
UNSPSC 16.0901	39121528

Dimensional drawing (Dimensions in mm (inch))

WFL - Plus/minus buttons
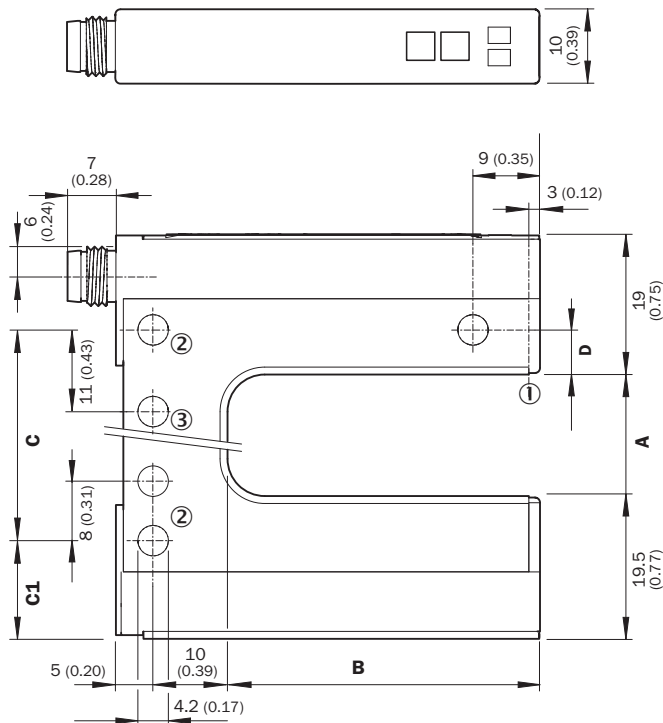
① Optical axis
② Mounting hole, Ø 4.2 mm
③ WFL50/80/120 only

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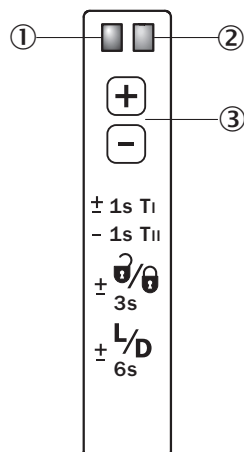
① Function signal indicator (yellow), switching output
② Function indicator (red)
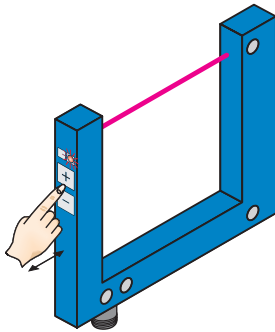③ "+"/"–" buttons and function button

Connection diagram

Cd-086

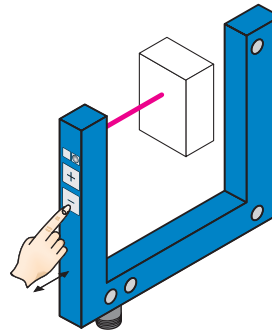|		
BN	1	+ (L+)
WH	2	Q$_{NPN}$
BU	3	- (M)
BK	4	Q$_{PNP}$

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.

± 🔓/🔒 3s Press both the "+" and "−" buttons together (3 seconds) to lock the device and prevent unintentional actuation.

± L/D 6s Press both the "+" and "−" buttons together (6 seconds) to define the switching function (light/dark switching). Standard setting: $\overline{Q}$ = 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 Head B: - Cable: unshielded	STE-0804-G	6037323

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is "Sensor Intelligence."

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