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Product data sheet



WFL120-40B416

WFL

FORK SENSORS

SICK
Sensor Intelligence.

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FORK SENSORS



Illustration may differ

Ordering information

Type	Part no.
WFL120-40B416	6036827

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

Detailed technical data

Features

Functional principle	Fork sensor
Functional principle detail	Optical detection principle
Dimensions (W x H x D)	10 mm x 158.5 mm x 47 mm
Fork width	120 mm
Fork depth	42 mm
Minimum detectable object (MDO)	0.05 mm
Light source	Laser, red
Wave length	670 nm
Adjustment	Plus/minus button (Teach-in, sensitivity, light/dark switching)
Teach-in mode	2-point teach-in

Mechanics/electronics

Current consumption	40 mA [1]
Switching frequency	10 kHz [2]
Stability of response time	± 20 µs
Jitter	40 µs
Switching output	PNP/NPN
Switching output (voltage)	PNP: HIGH = U_V ≤ 2 V / LOW approx. 0 V NPN: HIGH = approx. U_V / 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

[1] Without load.
[2] With light/dark ratio 1:1.
[3] Reference voltage DC 50 V.
[4] Depending on fork width.

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Protection class	III [3]
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 [4]
Housing material	Metal, Aluminum

[1] Without load.
[2] With light/dark ratio 1:1.
[3] Reference voltage DC 50 V.
[4] Depending on fork width.

Safety-related parameters

$MTTF_D$	80 years
DC_{avg}	0 %

Ambient data

Ambient light immunity	≤ 10,000 lx
Shock load	According to EN 60068-2-27

Classifications

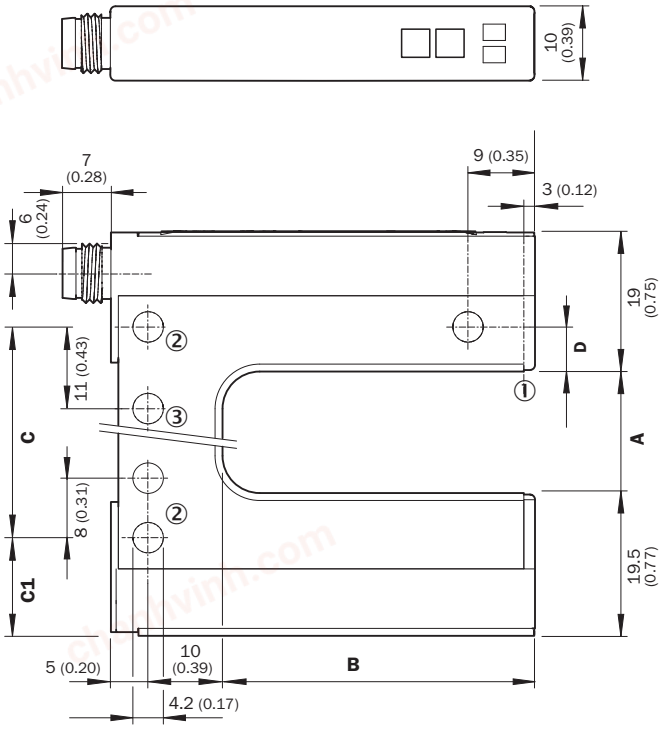
ECLASS 5.0	27270909
ECLASS 5.1.4	27270909
ECLASS 6.0	27270909
ECLASS 6.2	27270909
ECLASS 7.0	27270909
ECLASS 8.0	27270909
ECLASS 8.1	27270909
ECLASS 9.0	27270909
ECLASS 10.0	27270909
ECLASS 11.0	27270909
ECLASS 12.0	27270909
ETIM 5.0	EC002720
ETIM 6.0	EC002720
ETIM 7.0	EC002720
ETIM 8.0	EC002720
UNSPSC 16.0901	39121528

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FORK SENSORS

Dimensional drawing (Dimensions in mm (inch))

WFL - Plus/minus buttons



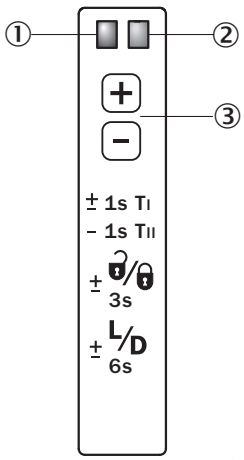
① Optical axis
② Mounting hole, Ø 4.2 mm
③ WFL50/80/120 only

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)

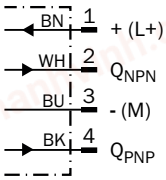


① Function signal indicator (yellow), switching output
② Function indicator (red)
③ “+”/“–” buttons and function button

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Connection diagram

Cd-086

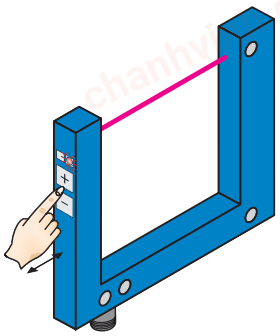


Concept of operation

Teach-in

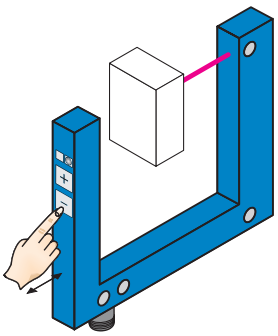
The switching threshold is set automatically. Fine adjustment is possible using the “+”/“–” buttons.

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: $\overline{Q}$ = light switching.

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Recommended accessories

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

	Brief description	Type	Part no.
Plug connectors and cables			
	• **Connection type head A:** Female connector, M8, 4-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 5 m, 4-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals	YF8U14-050VA3XLEAX	2095889
	• **Connection type head A:** Male connector, M8, 4-pin, straight • **Description:** Unshielded • **Connection systems:** Screw-type terminals • **Permitted cross-section:** 0.14 mm² ... 0.5 mm²	STE-0804-G	6037323

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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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