

WF2-40B416S01

WF

FORK SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	part no.
WF2-40B416S01	6033169

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

Illustration may differ



Detailed technical data

Features

Functional principle	Optical detection principle
Dimensions (W x H x D)	10 mm x 32 mm x 57 mm
Fork width	2 mm
Fork depth	42 mm
Minimum detectable object (MDO)	0.2 mm
Adjustment	Plus/minus button (Teach-in, sensitivity, light/dark switching, key lock)
Teach-in mode	2-point teach-in
Output function	Light/darkswitching, selectable via button
Special features	Bottom fixing hole with M5 thread

Mechanics/electronics

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
Connection type	Male connector M8, 4-pin
Circuit protection	U _V connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
Weight	Approx. 36 g ... 160 g ¹⁾
Housing material	Aluminum

¹⁾ Depending on fork width.

Safety-related parameters

MTTF_D	97 years
DC_{avg}	0 %

Ambient data

Shock load	According to EN 60068-2-27
UL File No.	NRKH.E191603

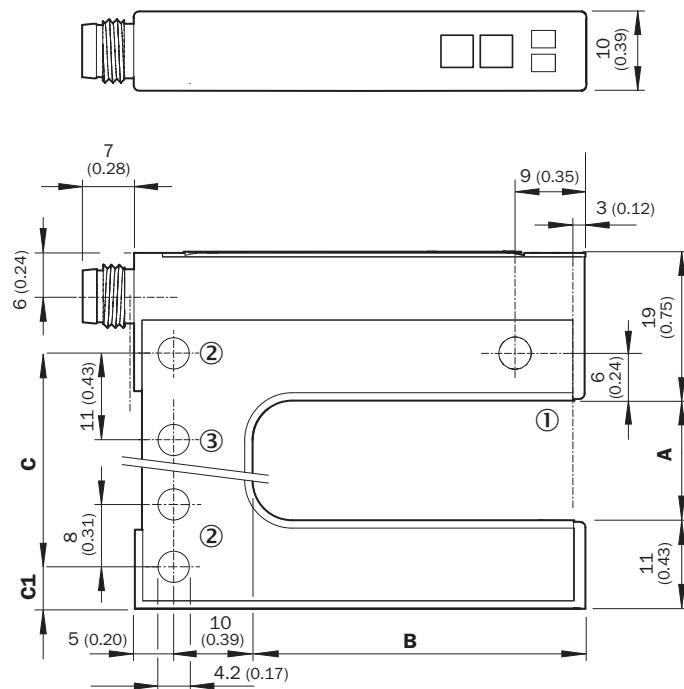
Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China-RoHS	✓
cULus certificate	✓
Photobiological safety (IEC EN 62471)	✓

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

Dimensional drawing



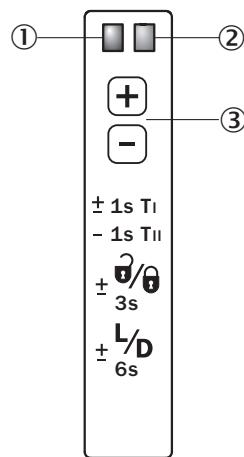
Dimensions in mm (inch)

- ① Optical axis
- ② Mounting hole, Ø 4.2 mm
- ③ WF50/80/120 only

Dimensions in mm (inch)

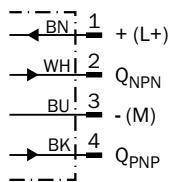
	A Fork width	B Fork depth	C	C1
WF2	2 (0.08)	42/59/95 (1.65/2.32/3.74)	14 (0.55)	5 (0.20)
WF5	5 (0.20)	42/59/95 (1.65/2.32/3.74)	14 (0.55)	6.5 (0.20)
WF15	15 (0.59)	42/59/95 (1.65/2.32/3.74)	27 (1.06)	5 (0.20)
WF30	30 (1.18)	42/59/95 (1.65/2.32/3.74)	42 (1.65)	5 (0.20)
WF50	50 (1.97)	42/59/95 (1.65/2.32/3.74)	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)

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

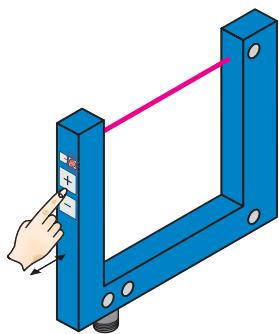
Connection diagram Cd-086



Concept of operation Teach-in via plus/minus buttons (WFxx-B416)

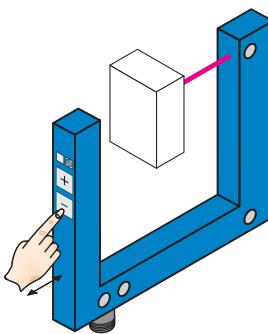
The switching threshold is set automatically. Fine adjustment is possible using the “+”/“-” buttons.

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.

$\pm \frac{1}{3s}$ Press both the “+” and “-” buttons together (3 seconds) to lock the device and prevent unintentional actuation.

$\pm \frac{1}{6s}$ 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/WF

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"> Connection type head A: Male connector, M8, 4-pin, straight, A-coded Description: Unshielded Connection systems: Screw-type terminals Permitted cross-section: 0.14 mm² ... 0.5 mm² 	STE-0804-G	6037323
	<ul style="list-style-type: none"> 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, Uncontaminated zones 	YF8U14-050VA3XLEAX	2095889

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."

WORLDWIDE PRESENCE:

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