



Illustration may differ



Ordering information

| Type | Part no. |
|------------|----------|
| WF5-40B416 | 6028451 |

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

Detailed technical data

Features

| | |
|--|---|
| Functional principle | Fork sensor |
| Functional principle detail | Optical detection principle |
| Dimensions (W x H x D) | 10 mm x 35 mm x 57 mm |
| Fork width | 5 mm |
| Fork depth | 42 mm |
| Minimum detectable object (MDO) | 0.2 mm |
| Light source | LED, infrared |
| Wave length | 850 nm |
| 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 |

Mechanics/electronics

| | |
|---|--|
| Switching frequency | 10 kHz ¹⁾ |
| Response time | 100 µs |
| Stability of response time | ± 20 µs |
| Jitter | 40 µs |
| Switching output | PNP/NPN |
| 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 |
| Connection type | Male connector M8, 4-pin |

¹⁾ With light/dark ratio 1:1.

²⁾ Reference voltage DC 50 V.

³⁾ Depending on fork width.

| | |
|---------------------------|--|
| Protection class | III ²⁾ |
| 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 ³⁾ |
| Housing material | Metal, Aluminum |

¹⁾ With light/dark ratio 1:1.

²⁾ Reference voltage DC 50 V.

³⁾ Depending on fork width.

Safety-related parameters

| | |
|-------------------------|----------|
| MTTF_D | 97 years |
| DC_{avg} | 0 % |

Ambient data

| | |
|-------------------------------|----------------------------|
| Ambient light immunity | ≤ 10,000 lx |
| Shock load | According to EN 60068-2-27 |
| UL File No. | NRKH.E191603 |

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))



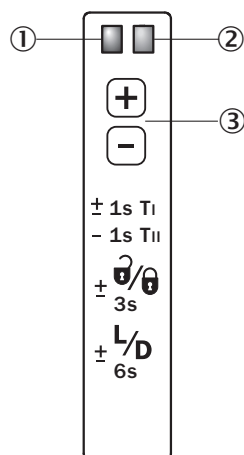
- ① Optical axis
- ② Mounting hole, Ø 4.2 mm
- ③ WF50/80/120 only

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.

 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/WF

| | Brief description | Type | Part no. |
|---|--|--------------------|----------|
| Plug connectors and cables | | | |
|  | <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 | YF8U14-050VA3XLEAX | 2095889 |
|  | <ul style="list-style-type: none"> • 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 |

SICK AT A GLANCE

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