



WF50-60B410

WF

FORK SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | Part no. |
|-------------|----------|
| WF50-60B410 | 6028440 |

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

Detailed technical data

Features

| | |
|--|---|
| Functional principle | Optical detection principle |
| Dimensions (W x H x D) | 10 mm x 80 mm x 74 mm |
| Housing design (light emission) | Fork shaped |
| Fork width | 50 mm |
| Fork depth | 59 mm |
| Minimum detectable object (MDO) | 0.2 mm |
| Label detection | ✓ |
| Light source | LED, Infrared light |
| Wave length | 850 nm |
| Adjustment | Plus/minus button (Sensitivity, light/dark switching, key lock) |
| Teach-in mode | – |
| Output function | Light/darkswitching, selectable via button |

Mechanics/electronics

| | |
|-----------------------------------|-----------------------------------|
| Supply voltage | 10 V DC ... 30 V DC ¹⁾ |
| Ripple | < 10 % ²⁾ |
| Power consumption | 40 mA |
| Switching frequency | 10 kHz ³⁾ |
| 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⁾ With light/dark ratio 1:1.

⁴⁾ Reference voltage DC 50 V.

⁵⁾ Depending on fork width.

| | |
|---|---|
| Switching output (voltage) | PNP: HIGH = $V_S - \leq 2 \text{ V}$ / LOW approx. 0 V NPN: HIGH = approx. V_S / LOW $\leq 2 \text{ V}$ |
| Switching output | Light/dark switching |
| Output current I_{max} | 100 mA |
| Initialization time | 100 ms |
| Connection type | Male connector M8, 4-pin |
| Ambient light immunity | Sunlight: $\leq 10,000 \text{ lx}$ |
| Protection class | III ⁴⁾ |
| 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 ⁵⁾ |
| Housing material | Metal, Aluminum |

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²⁾ May not exceed or fall below U_V tolerances.

³⁾ With light/dark ratio 1:1.

⁴⁾ Reference voltage DC 50 V.

⁵⁾ Depending on fork width.

Ambient data

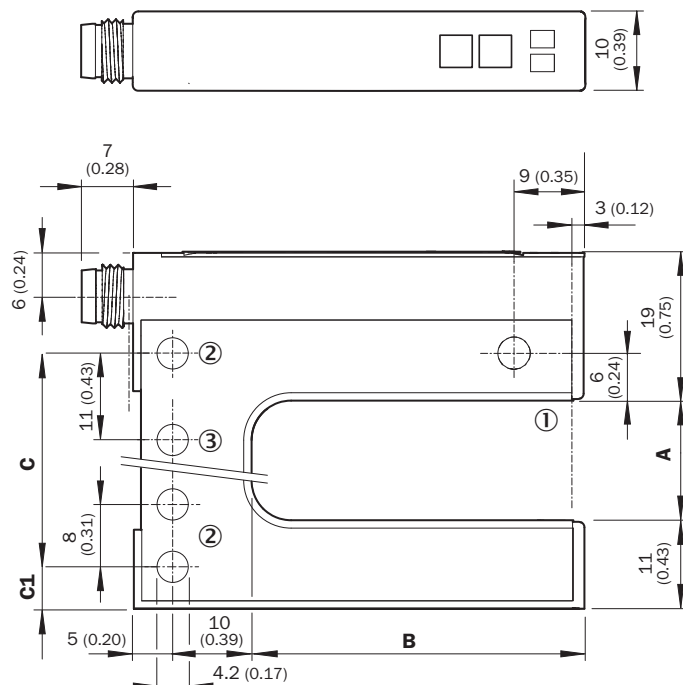
| | |
|--------------------------------------|---|
| Ambient operating temperature | $-20 \text{ °C} \dots +60 \text{ °C}$ ¹⁾ |
| Ambient storage temperature | $-30 \text{ °C} \dots +80 \text{ °C}$ |
| Shock load | According to EN 60068-2-27 |
| UL File No. | NRKH.E191603 |

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 |
| ETIM 5.0 | EC002720 |
| ETIM 6.0 | EC002720 |
| UNSPSC 16.0901 | 39121528 |

Dimensional drawing (Dimensions in mm (inch))



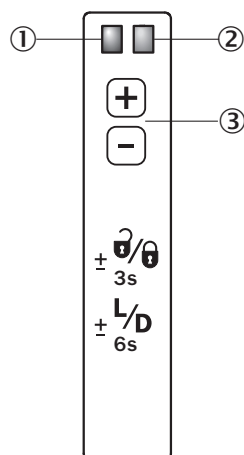
- ① Optical axis
- ② Mounting hole, \varnothing 4.2 mm
- ③ WF50/80/120 only

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

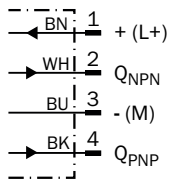
Adjustment: plus/minus buttons (WFxx-B410)



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

Connection diagram

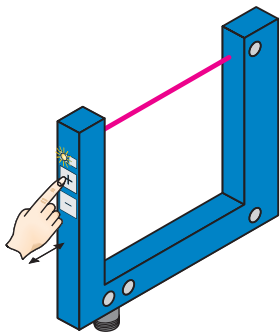
Cd-086



Concept of operation

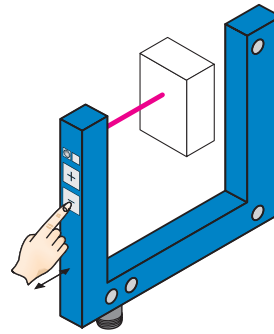
Setting the switching threshold via plus/minus buttons (WFxx-B410)

1. No object in the beam path



The yellow function indicator illuminates when the light received is at its optimum level. If necessary, increase sensitivity using the “+” button.



2. Object in the beam path



Yellow function indicator goes out. If necessary, reduce sensitivity using the “-” button.

Recommended accessories

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

| | 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

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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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