Data sheet

# WF50-40B410

WF

FORK SENSORS

SICK
Sensor Intelligence.

Illustration may differ

## Ordering information

| Type | part no. |
|---|---|
| WF50-40B410 | 6028432 |

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 57 mm |
| **Fork width** | 50 mm |
| **Fork depth** | 42 mm |
| **Minimum detectable object (MDO)** | 0.2 mm |
| **Label detection** | ✓ |
| **Light source** | LED, infrared, Infrared light |
| **Adjustment** | Plus/minus button (Sensitivity, light/dark switching, key lock) |
| **Teach-in mode** | – |
| **Output function** | Light/darkswitching, selectable via button |
| **Safety-related parameters** | |
| $MTTF_D$ | 97 years |
| $DC_{avg}$ | 0 % |

### Electronics

| | |
|---|---|
| **Supply voltage** | 10 V DC ... 30 V DC |
| **Ripple** | < 10 % |
| **Current consumption** | 40 mA |
| **Switching frequency** | 10 kHz |
| **Response time** | ≤ 100 µs |
| **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 |
| **Circuit protection** | $U_V$ connections, reverse polarity protected<br>Output Q short-circuit protected<br>Interference pulse suppression |
| **Enclosure rating** | IP65 |

## Mechanics

| | |
|---|---|
| **Housing material** | Aluminum |
| **Connection type** | Male connector M8, 4-pin |
| **Weight** | Approx. 36 g ... 160 g [1] |

[1] Depending on fork width.

## Ambient data

| | |
|---|---|
| **Ambient operating temperature** | –20 °C ... +60 °C [1] |
| **Ambient temperature, storage** | –30 °C ... +80 °C |
| **Ambient light immunity** | ≤ 10,000 lx |
| **Shock load** | According to EN 60068-2-27 |
| **Protection class** | III [2] |
| **UL File No.** | NRKH.E191603 |

[1] Do not bend below 0 °C.
[2] Reference voltage DC 50 V.

## Certificates

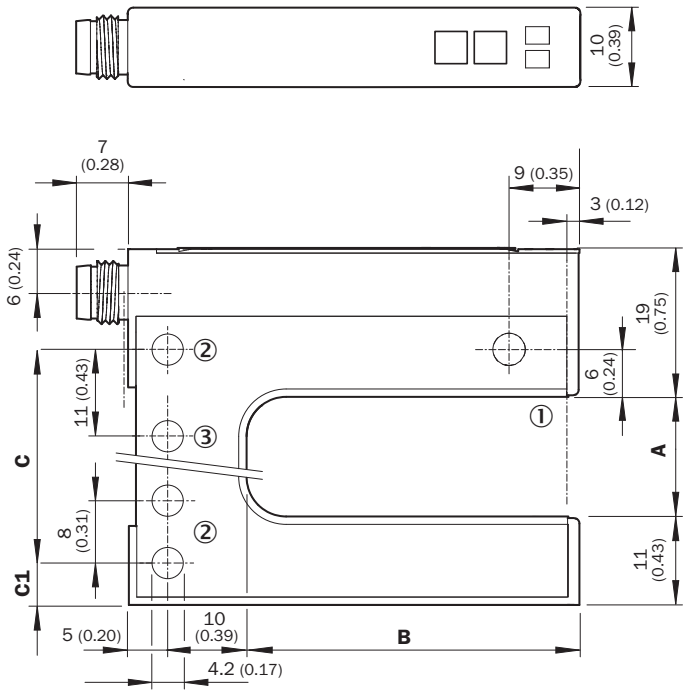
| | |
|---|---|
| **EU declaration of conformity** | ✓ |
| **UK declaration of conformity** | ✓ |
| **ACMA declaration of conformity** | ✓ |
| **Moroccan declaration of conformity** | ✓ |
| **China RoHS** | ✓ |
| **cULus certificate** | ✓ |
| **Photobiological safety (IEC EN 62471)** | ✓ |

## 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

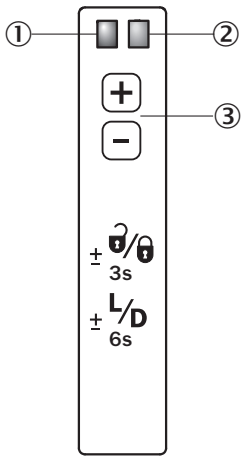



**Dimensions in mm (inch)**

| | A<br>Fork width | B<br>Fork depth | C | C1 |
|---|---|---|---|---|
| **WF2** | 2<br>(0.08) | 42/59/95<br>(1.65/2.32/3.74) | 14<br>(0.55) | 5<br>(0.20) |
| **WF5** | 5<br>(0.20) | 42/59/95<br>(1.65/2.32/3.74) | 14<br>(0.55) | 6.5<br>(0.20) |
| **WF15** | 15<br>(0.59) | 42/59/95<br>(1.65/2.32/3.74) | 27<br>(1.06) | 5<br>(0.20) |
| **WF30** | 30<br>(1.18) | 42/59/95<br>(1.65/2.32/3.74) | 42<br>(1.65) | 5<br>(0.20) |
| **WF50** | 50<br>(1.97) | 42/59/95<br>(1.65/2.32/3.74) | 51<br>(2.01) | 16<br>(0.63) |
| **WF80** | 80<br>(3.15) | 42/59/95<br>(1.65/2.32/3.74) | 81<br>(3.19) | 16<br>(0.63) |
| **WF120** | 120<br>(4.72) | 42/59/95<br>(1.65/2.32/3.74) | 121<br>(4.76) | 16<br>(0.63) |

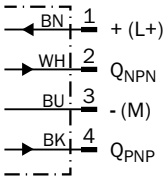
Dimensions in mm (inch)
① Optical axis
② Mounting hole, Ø 4.2 mm
③ WF50/80/120 only

## Adjustments Adjustment: plus/minus buttons (WFxx-B410)



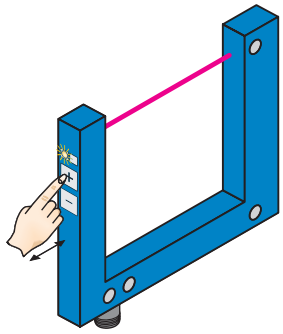

① Function signal indicator (yellow), switching output
② Function indicator (red)
③ “+”/“–” buttons and function button

## Connection diagram Cd-086



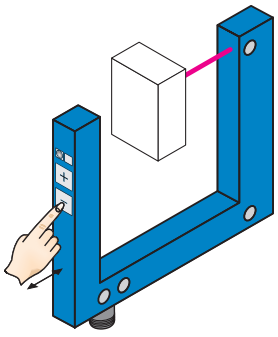

## Concept of operation Setting the switching threshold via plus/minus buttons (WFxx-B410)

**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. |
|---|---|---|---|
| connectors and cables | | | |
| | • **Connection type head A:** Male connector, M8, 4-pin, straight, A-coded<br>• **Description:** Unshielded<br>• **Connection systems:** Screw-type terminals<br>• **Permitted cross-section:** 0.14 mm² ... 0.5 mm² | STE-0804-G | 6037323 |
| | • **Connection type head A:** Female connector, M8, 4-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 5 m, 4-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded<br>• **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.”**

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