



Illustration may differ



Ordering information

| Type | part no. |
|--------------|----------|
| WF120-40B410 | 6028435 |

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 150 mm x 57 mm |
| Fork width | 120 mm |
| Fork depth | 42 mm |
| Light source | LED, Infrared light |
| Label detection | ✓ |
| Minimum detectable object (MDO) | 0.2 mm |
| 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 |
| Initialization time | 100 ms |
| Switching frequency | 10 kHz |
| Response time | |
| | ≤ 100 μs |
| Stability of response time | ± 20 μs |

¹⁾ Reference voltage DC 50 V.

| | |
|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| 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 |
| Protection class | III ¹⁾ |
| Circuit protection | U_V connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression |
| Connection type | Male connector M8, 4-pin |

¹⁾ Reference voltage DC 50 V.

Mechanics

| | |
|-------------------------|--------------------------------------|
| Housing material | Aluminum |
| 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 | $\leq 10,000 \text{ lx}$ |
| Shock load | According to EN 60068-2-27 |
| Enclosure rating | IP65 |
| UL File No. | NRKH.E191603 |

¹⁾ Do not bend below 0 °C.

Certificates

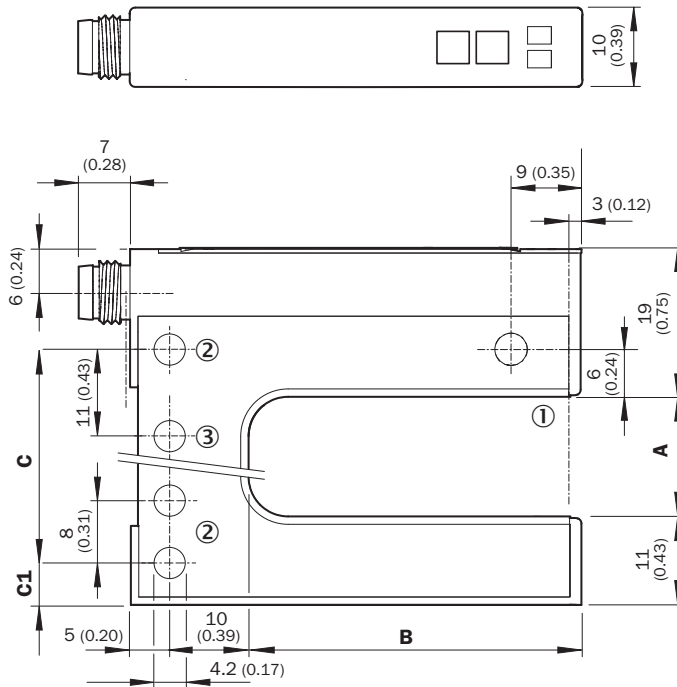
| | |
|----------------------------------------------|---|
| EU declaration of conformity | ✓ |
| UK declaration of conformity | ✓ |
| ACMA declaration of conformity | ✓ |
| Moroccan declaration of conformity | ✓ |
| China RoHS | ✓ |
| cULus certificate | ✓ |
| Photobiological safety (IEC EN 62471) |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

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



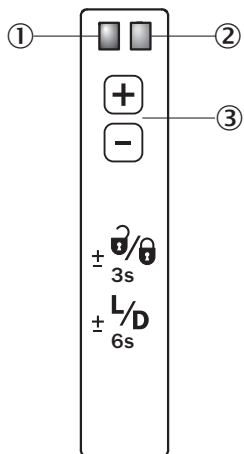
Dimensions in mm (inch)

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

Dimensions in mm (inch)

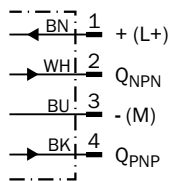
| | A Fork width | B Fork depth | C | C1 |
|--------------|------------------------|------------------------------|---------------|---------------|
| WF2 | 2 (0.08) | 42/59/95 (1.65/2.32/3.74) | 14 (0.55) | 5 (0.20) |
| WF5 | 5 (0.20) | 42/59/95 (1.65/2.32/3.74) | 14 (0.55) | 6.5 (0.20) |
| WF15 | 15 (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)



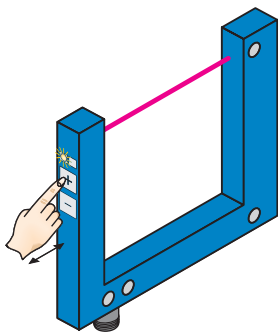
- ① Function signal indicator (yellow), switching output
- ② Function indicator (red)
- ③ “+”/“-” buttons and function button

Connection diagram Cd-086



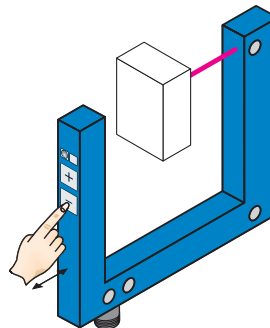
Concept of operation Setting the switching threshold via plus/minus buttons (WFxx-B410)

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. |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| connectors and cables | | | |
|  | <ul style="list-style-type: none"> Description: Unshielded Connection type head A: Male connector, M8, 4-pin, straight, A-coded Connection systems: Screw-type terminals Permitted cross-section: 0.14 mm² ... 0.5 mm² | STE-0804-G | 6037323 |
|  | <ul style="list-style-type: none"> Description: Sensor/actuator cable, unshielded 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 Application: Uncontaminated zones, Zones with chemicals | YF8U14-050VA3XLEAX | 2095889 |

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