



WF15-60B410  
WF

FORK SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

Type	part no.
WF15-60B410	6028438

Other models and accessories → [www.sick.com/WF](http://www.sick.com/WF)

### Detailed technical data

#### Features

<b>Functional principle</b>	Optical detection principle
<b>Dimensions (W x H x D)</b>	10 mm x 45 mm x 74 mm
<b>Fork width</b>	15 mm
<b>Fork depth</b>	59 mm
<b>Light source</b>	LED, Infrared light
<b>Label detection</b>	✓
<b>Minimum detectable object (MDO)</b>	0.2 mm
<b>Adjustment</b>	Plus/minus button (Sensitivity, light/dark switching, key lock)
<b>Teach-in mode</b>	—
<b>Output function</b>	Light/darkswitching, selectable via button
<b>Safety-related parameters</b>	MTTF <sub>D</sub> 97 years
	DC <sub>avg</sub> 0 %

#### Electronics

<b>Supply voltage</b>	10 V DC ... 30 V DC
<b>Ripple</b>	< 10 %
<b>Current consumption</b>	40 mA
<b>Initialization time</b>	100 ms
<b>Switching frequency</b>	10 kHz
<b>Response time</b>	≤ 100 µs
	± 20 µs
<b>Stability of response time</b>	± 20 µs

<sup>1)</sup> Reference voltage DC 50 V.

<b>Jitter</b>	40 µs
<b>Switching output</b>	PNP/NPN
<b>Switching output (voltage)</b>	PNP: HIGH = $U_V \leq 2 \text{ V}$ / LOW approx. 0 V NPN: HIGH = approx. $U_V$ / LOW $\leq 2 \text{ V}$
<b>Switching mode</b>	Light/dark switching
<b>Output current <math>I_{\max}</math></b>	100 mA
<b>Protection class</b>	III <sup>1)</sup>
<b>Circuit protection</b>	$U_V$ connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
<b>Connection type</b>	Male connector M8, 4-pin

<sup>1)</sup> Reference voltage DC 50 V.

## Mechanics

<b>Housing material</b>	Aluminum
<b>Weight</b>	Approx. 36 g ... 160 g <sup>1)</sup>

<sup>1)</sup> Depending on fork width.

## Ambient data

<b>Ambient operating temperature</b>	-20 °C ... +60 °C <sup>1)</sup>
<b>Ambient temperature, storage</b>	-30 °C ... +80 °C
<b>Ambient light immunity</b>	$\leq 10,000 \text{ lx}$
<b>Shock load</b>	According to EN 60068-2-27
<b>Enclosure rating</b>	IP65
<b>UL File No.</b>	NRKH.E191603

<sup>1)</sup> Do not bend below 0 °C.

## Classifications

<b>ECLASS 5.0</b>	27270909
<b>ECLASS 5.1.4</b>	27270909
<b>ECLASS 6.0</b>	27270909
<b>ECLASS 6.2</b>	27270909
<b>ECLASS 7.0</b>	27270909
<b>ECLASS 8.0</b>	27270909
<b>ECLASS 8.1</b>	27270909
<b>ECLASS 9.0</b>	27270909
<b>ECLASS 10.0</b>	27270909
<b>ECLASS 11.0</b>	27270909
<b>ECLASS 12.0</b>	27270909
<b>ETIM 5.0</b>	EC002720
<b>ETIM 6.0</b>	EC002720
<b>ETIM 7.0</b>	EC002720
<b>ETIM 8.0</b>	EC002720

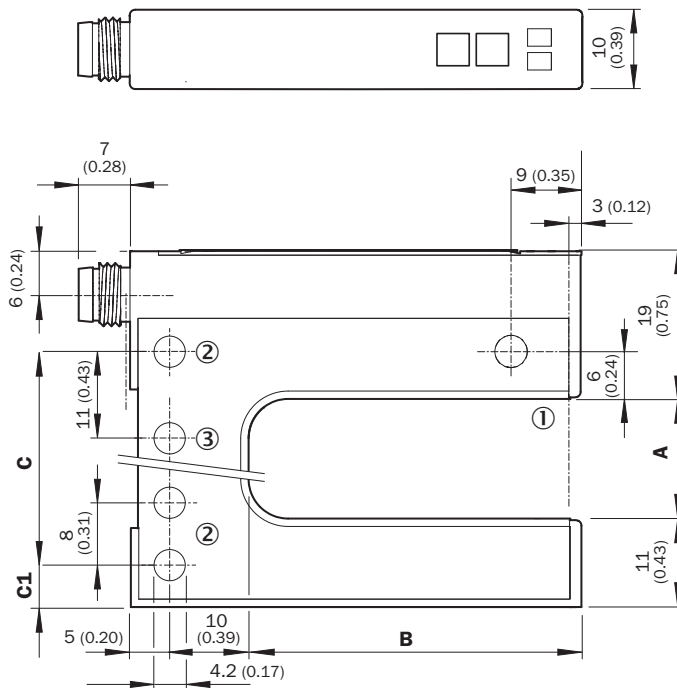
UNSPSC 16.0901

39121528

## 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)	✓

## Dimensional drawing



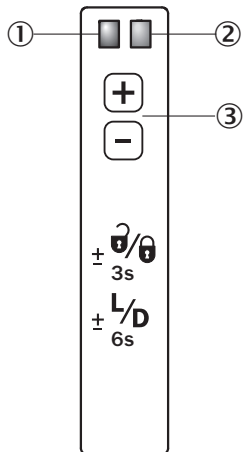
Dimensions in mm (inch)

	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)

Dimensions in mm (inch)

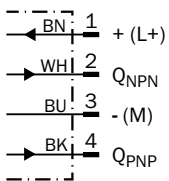
- ① Optical axis
- ② Mounting hole, Ø 4.2 mm
- ③ WF50/80/120 only

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



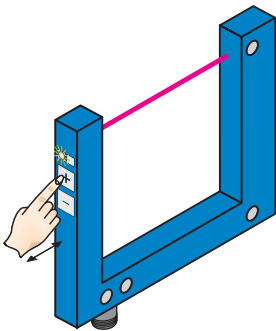
- ① Function signal indicator (yellow), switching output
- ② Function indicator (red)
- ③ “+”/“-” buttons and function button

## Connection diagram Cd-086



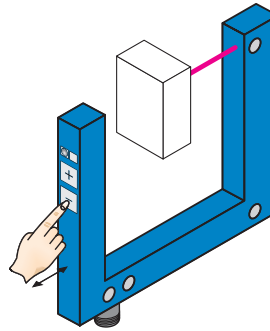
## Concept of operation Setting the switching threshold via plus/minus buttons (WFxx-B410)

### 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](http://www.sick.com/WF)

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"><li>• <b>Connection type head A:</b> Male connector, M8, 4-pin, straight, A-coded</li><li>• <b>Description:</b> Unshielded</li><li>• <b>Connection systems:</b> Screw-type terminals</li><li>• <b>Permitted cross-section:</b> 0.14 mm² ... 0.5 mm²</li></ul>	STE-0804-G	6037323
	<ul style="list-style-type: none"><li>• <b>Connection type head A:</b> Female connector, M8, 4-pin, straight, A-coded</li><li>• <b>Connection type head B:</b> Flying leads</li><li>• <b>Signal type:</b> Sensor/actuator cable</li><li>• <b>Cable:</b> 5 m, 4-wire, PVC</li><li>• <b>Description:</b> Sensor/actuator cable, unshielded</li><li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li></ul>	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:

Contacts and other locations –[www.sick.com](http://www.sick.com)