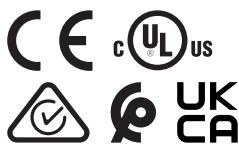


## FORK SENSORS



Illustration may differ



Ordering information

| Type           | part no. |
|----------------|----------|
| WFM120-120N311 | 6037835  |

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

Detailed technical data

Features

|                                 |                             |
|---------------------------------|-----------------------------|
| Functional principle            | Optical detection principle |
| Dimensions (W x H x D)          | 10 mm x 140 mm x 141.8 mm   |
| Fork width                      | 120 mm                      |
| Fork depth                      | 124 mm                      |
| Light source                    | LED, visible red light      |
| Minimum detectable object (MDO) | 0.8 mm                      |
| Adjustment                      | None                        |
| Safety-related parameters       |                             |
|                                 | MTTF <sub>D</sub> 131 years |
|                                 | DC <sub>avg</sub> 0 %       |

Electronics

|                            |                                                  |
|----------------------------|--------------------------------------------------|
| Supply voltage             | 10 V DC ... 30 V DC                              |
| Ripple                     | < 10 %                                           |
| Current consumption        | < 20 mA <sup>1)</sup>                            |
| Initialization time        | 140 ms                                           |
| Switching frequency        | 4 kHz                                            |
| Response time              |                                                  |
|                            | ≤ 125 μs                                         |
| Stability of response time | ± 15 μs                                          |
| Switching output           | NPN                                              |
| Switching output (voltage) | PNP: HIGH = V <sub>S</sub> - ≤ 1.5 V / LOW = 0 V |

<sup>1)</sup> Without load.  
<sup>2)</sup> Reference voltage DC 50 V.

|                                             |                                                                                                                     |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
|                                             | NPN: HIGH = approx. $V_S$ / LOW $\leq 1.5$ V                                                                        |
| <b>Switching mode</b>                       | Light switching                                                                                                     |
| <b>Output current <math>I_{\max}</math></b> | 100 mA                                                                                                              |
| <b>Protection class</b>                     | III <sup>2)</sup>                                                                                                   |
| <b>Circuit protection</b>                   | $U_V$ connections, reverse polarity protected<br>Output Q short-circuit protected<br>Interference pulse suppression |
| <b>Connection type</b>                      | Connector M8, 3-pin                                                                                                 |

<sup>1)</sup> Without load.

<sup>2)</sup> Reference voltage DC 50 V.

## Mechanics

|                         |                                      |
|-------------------------|--------------------------------------|
| <b>Housing material</b> | Aluminum                             |
| <b>Weight</b>           | Approx. 80 g ... 190 g <sup>1)</sup> |

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

## Ambient data

|                                      |                                 |
|--------------------------------------|---------------------------------|
| <b>Ambient operating temperature</b> | -10 °C ... +60 °C <sup>1)</sup> |
| <b>Ambient temperature, storage</b>  | -40 °C ... +80 °C               |
| <b>Ambient light immunity</b>        | $\leq 10,000$ lx                |
| <b>Shock load</b>                    | According to EN 60068-2-27      |
| <b>Enclosure rating</b>              | IP67                            |
| <b>UL File No.</b>                   | NRKH.E191603 & NRKH7.E191603    |

<sup>1)</sup> Do not bend below 0 °C.

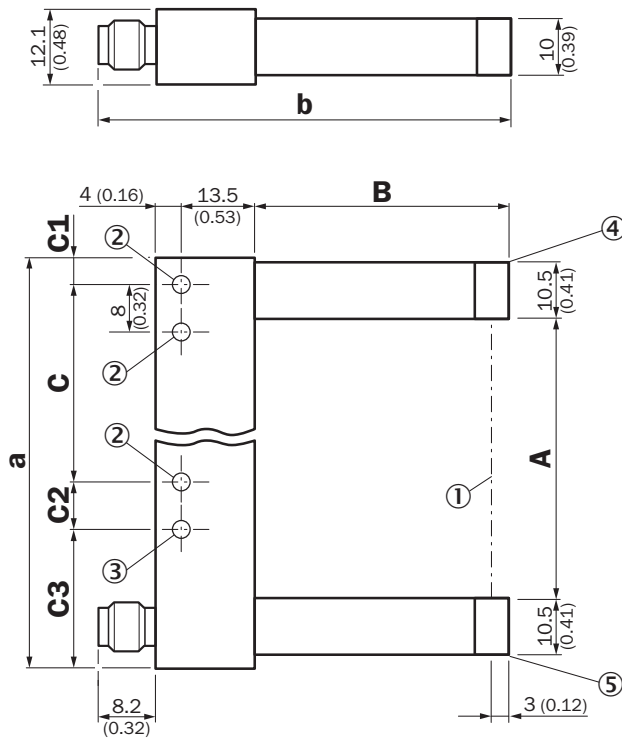
## Classifications

|                       |          |
|-----------------------|----------|
| <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 |
| <b>UNSPSC 16.0901</b> | 39121528 |

## Certificates

|                                    |   |
|------------------------------------|---|
| EU declaration of conformity       | ✓ |
| UK declaration of conformity       | ✓ |
| ACMA declaration of conformity     | ✓ |
| Moroccan declaration of conformity | ✓ |
| China RoHS                         | ✓ |
| cULus certificate                  | ✓ |

## Dimensional drawing



## Dimensions in mm (inch)

|        | A<br>Fork width | B<br>Fork depth | C             | C1            |
|--------|-----------------|-----------------|---------------|---------------|
| WFM30  | 30<br>(1.18)    | 42<br>(1.65)    | 30<br>(1.18)  | 6.5<br>(0.26) |
| WFM50  | 50<br>(1.97)    | 60<br>(2.36)    | 40<br>(1.57)  | 6.5<br>(0.26) |
| WFM80  | 80<br>(3.15)    | 60<br>(2.36)    | 70<br>(2.76)  | 6.5<br>(0.26) |
| WFM120 | 120<br>(4.72)   | 124.3<br>(4.89) | 100<br>(3.94) | 17<br>(0.67)  |
| WFM180 | 180<br>(7.09)   | 124.3<br>(4.89) | 152<br>(5.98) | 22<br>(0.87)  |

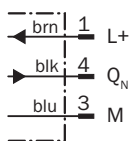
  

|        | C2           | C3             | a             | b               |
|--------|--------------|----------------|---------------|-----------------|
| WFM30  | -<br>(-)     | -<br>(-)       | 54<br>(2.13)  | 67.7<br>(2.67)  |
| WFM50  | 8<br>(0.31)  | 19.5<br>(0.77) | 74<br>(2.91)  | 85.7<br>(3.37)  |
| WFM80  | 8<br>(0.31)  | 19.5<br>(0.77) | 104<br>(4.09) | 85.7<br>(3.37)  |
| WFM120 | 10<br>(0.39) | 17<br>(0.67)   | 144<br>(5.67) | 150.2<br>(5.91) |
| WFM180 | 8<br>(0.31)  | 22<br>(0.87)   | 204<br>(8.03) | 150.2<br>(5.91) |

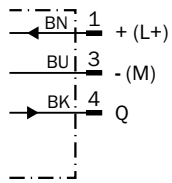
## Dimensions in mm (inch)

- ① Optical axis
- ② Mounting hole,  $\varnothing$  4.3 mm
- ③ WFM50/80/120/180
- ④ Transmitted light (red)
- ⑤ Function signal indicator (yellow), switching output

## Connection diagram



## Connection diagram Cd-045



## Recommended accessories

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

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                                                                                                                                      | Type               | part no. |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| connectors and cables                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |          |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M8, 3-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>                                                                                                                         | DOS-0803-G         | 7902077  |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M8, 3-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-0803-G         | 6037322  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M8, 3-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, 3-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul> | YF8U13-050VA1XLEAX | 2095884  |

## 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)