



## WFM180-120N311

WFM

FORK SENSORS

**SICK**  
Sensor Intelligence.



## Ordering information

Type	part no.
WFM180-120N311	6037839

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

Illustration may differ



## Detailed technical data

## Features

<b>Functional principle</b>	Optical detection principle
<b>Dimensions (W x H x D)</b>	10 mm x 200 mm x 141.8 mm
<b>Fork width</b>	180 mm
<b>Fork depth</b>	124 mm
<b>Minimum detectable object (MDO)</b>	1 mm
<b>Light source</b>	LED, red
<b>Adjustment</b>	None

## Mechanics/electronics

<b>Supply voltage</b>	10 V DC ... 30 V DC
<b>Ripple</b>	< 10 %
<b>Current consumption</b>	< 20 mA <sup>1)</sup>
<b>Switching frequency</b>	4 kHz
<b>Response time</b>	≤ 125 µs <sup>2)</sup>
<b>Stability of response time</b>	± 15 µs
<b>Switching output</b>	NPN
<b>Switching output (voltage)</b>	PNP: HIGH = V <sub>S</sub> - ≤ 1.5 V / LOW = 0 V NPN: HIGH = approx. V <sub>S</sub> / LOW ≤ 1.5 V
<b>Switching mode</b>	Light switching
<b>Output current I<sub>max.</sub></b>	100 mA
<b>Initialization time</b>	140 ms

<sup>1)</sup> Without load.<sup>2)</sup> Signal transit time with resistive load.<sup>3)</sup> Reference voltage DC 50 V.<sup>4)</sup> Depending on fork width.

<b>Connection type</b>	Connector M8, 3-pin
<b>Protection class</b>	III <sup>3)</sup>
<b>Circuit protection</b>	U <sub>V</sub> connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
<b>Enclosure rating</b>	IP67
<b>Weight</b>	Approx. 80 g ... 190 g <sup>4)</sup>
<b>Housing material</b>	Aluminum

1) Without load.

2) Signal transit time with resistive load.

3) Reference voltage DC 50 V.

4) Depending on fork width.

#### Safety-related parameters

<b>MTTF<sub>D</sub></b>	131 years
<b>DC<sub>avg</sub></b>	0 %

#### 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>	≤ 10,000 lx
<b>Shock load</b>	According to EN 60068-2-27
<b>UL File No.</b>	NRKH.E191603 & NRKH7.E191603

1) Do not bend below 0 °C.

#### Certificates

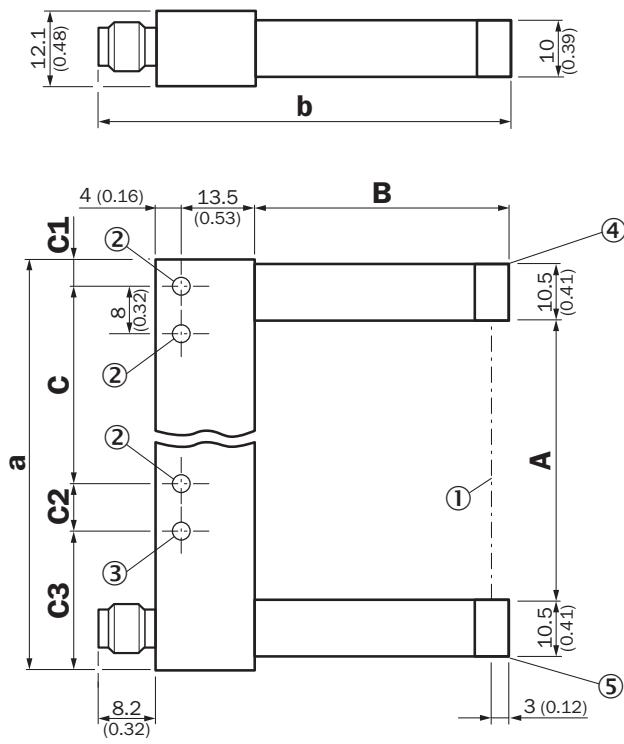
<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>Moroccan declaration of conformity</b>	✓
<b>China-RoHS</b>	✓
<b>cULus certificate</b>	✓

#### 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

## Dimensional drawing



## Dimensions in mm (inch)

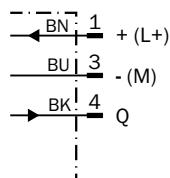
- ① Optical axis
- ② Mounting hole, Ø 4.3 mm
- ③ WFM50/80/120/180
- ④ Transmitted light (red)
- ⑤ Function signal indicator (yellow), switching output

## Dimensions in mm (inch)

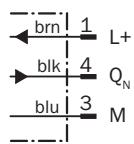
	<b>A</b> Fork width	<b>B</b> Fork depth	<b>C</b>	<b>C1</b>
<b>WFM30</b>	30 (1.18)	42 (1.65)	30 (1.18)	6.5 (0.26)
<b>WFM50</b>	50 (1.97)	60 (2.36)	40 (1.57)	6.5 (0.26)
<b>WFM80</b>	80 (3.15)	60 (2.36)	70 (2.76)	6.5 (0.26)
<b>WFM120</b>	120 (4.72)	124.3 (4.89)	100 (3.94)	17 (0.67)
<b>WFM180</b>	180 (7.09)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

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

## Connection diagram Cd-045



## Connection diagram



## 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 mm<sup>2</sup> ... 0.5 mm<sup>2</sup></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 mm<sup>2</sup> ... 0.5 mm<sup>2</sup></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)