



# WFM50-60P321

WFM

**FORK SENSORS**

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

Type	Part no.
WFM50-60P321	6037824

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

### Detailed technical data

#### Features

<b>Functional principle</b>	Optical detection principle
<b>Dimensions (W x H x D)</b>	10 mm x 70 mm x 77.5 mm
<b>Housing design (light emission)</b>	Fork shaped
<b>Fork width</b>	50 mm
<b>Fork depth</b>	60 mm
<b>Minimum detectable object (MDO)</b>	0.8 mm
<b>Light source</b>	LED, visible red light
<b>Adjustment</b>	None
<b>Output function</b>	Dark switching

#### Interfaces

<b>IO-Link functions</b>	–
<b>Advanced functions</b>	–
<b>Fieldbus, industrial network</b>	-
<b>Type of fieldbus integration</b>	-

#### Mechanics/electronics

<b>Supply voltage</b>	10 V DC ... 30 V DC <sup>1)</sup>
<b>Ripple</b>	< 10 % <sup>2)</sup>
<b>Power consumption</b>	< 20 mA <sup>3)</sup>
<b>Switching frequency</b>	4 kHz <sup>4)</sup>

<sup>1)</sup> Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A.

<sup>2)</sup> May not exceed or fall below  $U_V$  tolerances.

<sup>3)</sup> Without load.

<sup>4)</sup> With light/dark ratio 1:1.

<sup>5)</sup> Signal transit time with resistive load.

<sup>6)</sup> Reference voltage DC 50 V.

<sup>7)</sup> Depending on fork width.

<b>Response time</b>	125 $\mu\text{s}$ <sup>5)</sup>
<b>Stability of response time</b>	$\pm 15 \mu\text{s}$
<b>Switching output</b>	PNP
<b>Switching output (voltage)</b>	PNP: HIGH = $V_S - \leq 1.5 \text{ V}$ / LOW = 0 V NPN: HIGH = approx. $V_S$ / LOW $\leq 1.5 \text{ V}$
<b>Switching output</b>	Dark switching
<b>Output current <math>I_{\text{max}}</math></b>	100 mA
<b>Initialization time</b>	140 ms
<b>Connection type</b>	Connector M8, 3-pin
<b>Ambient light immunity</b>	Sunlight: $\leq 10,000 \text{ lx}$
<b>Protection class</b>	III <sup>6)</sup>
<b>Circuit protection</b>	$U_V$ 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>7)</sup>
<b>Housing material</b>	Aluminum

- 1) Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A.
- 2) May not exceed or fall below  $U_V$  tolerances.
- 3) Without load.
- 4) With light/dark ratio 1:1.
- 5) Signal transit time with resistive load.
- 6) Reference voltage DC 50 V.
- 7) Depending on fork width.

### Ambient data

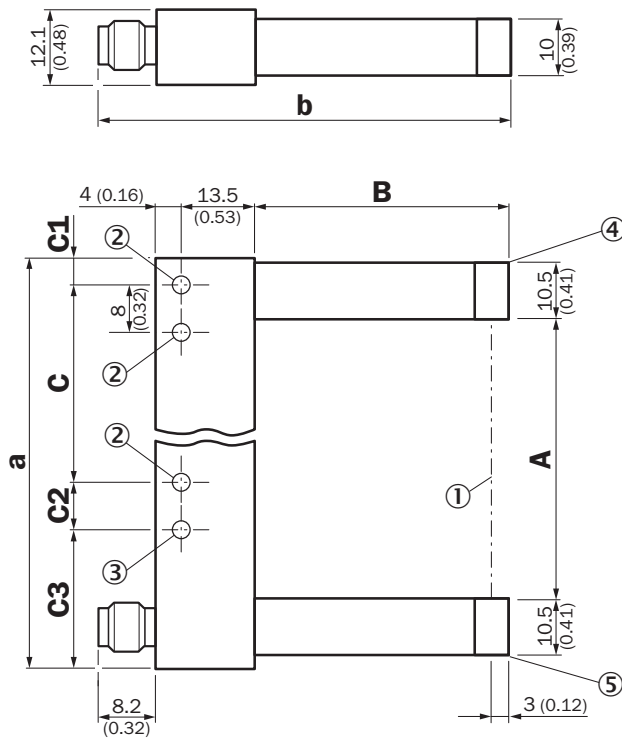
<b>Ambient operating temperature</b>	$-10 \text{ }^\circ\text{C} \dots +60 \text{ }^\circ\text{C}$ <sup>1)</sup>
<b>Ambient storage temperature</b>	$-40 \text{ }^\circ\text{C} \dots +80 \text{ }^\circ\text{C}$
<b>Shock load</b>	According to EN 60068-2-27
<b>UL File No.</b>	NRKH.E191603 & NRKH7.E191603

- 1) Do not bend below 0  $^\circ\text{C}$ .

### Classifications

<b>ECl@ss 5.0</b>	27270909
<b>ECl@ss 5.1.4</b>	27270909
<b>ECl@ss 6.0</b>	27270909
<b>ECl@ss 6.2</b>	27270909
<b>ECl@ss 7.0</b>	27270909
<b>ECl@ss 8.0</b>	27270909
<b>ECl@ss 8.1</b>	27270909
<b>ECl@ss 9.0</b>	27270909
<b>ETIM 5.0</b>	EC002720
<b>ETIM 6.0</b>	EC002720
<b>UNSPSC 16.0901</b>	39121528

### Dimensional drawing (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

### Dimensions in mm (inch)

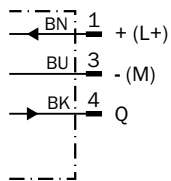
	<b>A</b> Fork width	<b>B</b> Fork depth	<b>C</b>	<b>C1</b>
<b>WFM30</b>	30 (1.18)	42 (1.65)	30 (1.18)	6.5 (0.26)
<b>WFM50</b>	50 (1.97)	60 (2.36)	40 (1.57)	6.5 (0.26)
<b>WFM80</b>	80 (3.15)	60 (2.36)	70 (2.76)	6.5 (0.26)
<b>WFM120</b>	120 (4.72)	124.3 (4.89)	100 (3.94)	17 (0.67)
<b>WFM180</b>	180 (7.09)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



Recommended accessories

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

	Brief description	Type	Part no.
Plug connectors and cables			
	Head A: female connector, M8, 3-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YF8U13-020VA1XLEAX	2095860
	Head A: female connector, M8, 3-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF8U13-050VA1XLEAX	2095884
	Head A: female connector, M8, 3-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 10 m	YF8U13-100VA1XLEAX	2095885
	Head A: female connector, M8, 3-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YG8U13-020VA1XLEAX	2096165
	Head A: female connector, M8, 3-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YG8U13-050VA1XLEAX	2096166
	Head A: female connector, M8, 3-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 10 m	YG8U13-100VA1XLEAX	2096209
	Head A: female connector, M8, 3-pin, straight Head B: - Cable: unshielded	DOS-0803-G	7902077
	Head A: female connector, M8, 3-pin, angled Head B: - Cable: unshielded	DOS-0803-W	7902078

## 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)