



WFM50-60P311

WFM

FORK SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	Part no.
WFM50-60P311	6037825

Other models and accessories → www.sick.com/WFM

Detailed technical data

Features

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

Interfaces

IO-Link functions	—
Advanced functions	—
Fieldbus, industrial network	-
Type of fieldbus integration	-

Mechanics/electronics

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

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.

Response time	125 μs ⁵⁾
Stability of response time	$\pm 15 \mu\text{s}$
Switching output	PNP
Switching output (voltage)	PNP: HIGH = $V_S - \leq 1.5 \text{ V}$ / LOW = 0 V NPN: HIGH = approx. V_S / LOW $\leq 1.5 \text{ V}$
Switching output	Light switching
Output current I_{max}	100 mA
Initialization time	140 ms
Connection type	Connector M8, 3-pin
Ambient light immunity	Sunlight: $\leq 10,000 \text{ lx}$
Protection class	III ⁶⁾
Circuit protection	U_V connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
Enclosure rating	IP67
Weight	Approx. 80 g ... 190 g ⁷⁾
Housing material	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

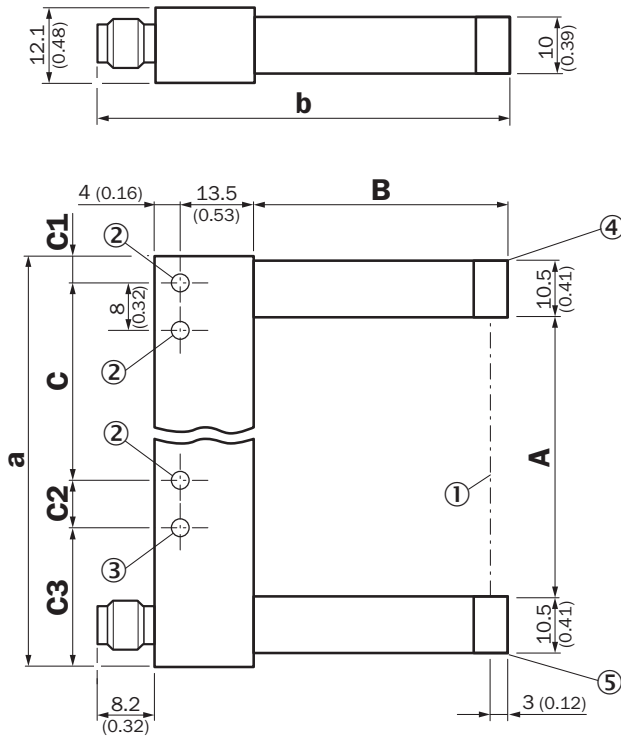
Ambient operating temperature	$-10 \text{ }^\circ\text{C} \dots +60 \text{ }^\circ\text{C}$ ¹⁾
Ambient storage temperature	$-40 \text{ }^\circ\text{C} \dots +80 \text{ }^\circ\text{C}$
Shock load	According to EN 60068-2-27
UL File No.	NRKH.E191603 & NRKH7.E191603

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

Classifications

ECl@ss 5.0	27270909
ECl@ss 5.1.4	27270909
ECl@ss 6.0	27270909
ECl@ss 6.2	27270909
ECl@ss 7.0	27270909
ECl@ss 8.0	27270909
ECl@ss 8.1	27270909
ECl@ss 9.0	27270909
ETIM 5.0	EC002720
ETIM 6.0	EC002720
UNSPSC 16.0901	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

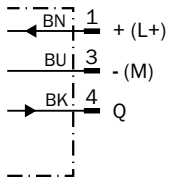
Dimensions in mm (inch)

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

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

	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