

WFM – CONNECT AND GET STARTED



Product description

WFM fork sensors can be integrated quickly due to Plug and Play installation – no time-consuming alignment is necessary. A 360-degree output indicator makes it easy to see the switching status during the operation. Since the sender and receiver of the sensor are integrated within the same aluminum housing, aligning the sensors is not necessary and detection tasks can be

prepared and solved even faster. The WFM line includes five different types with fork widths from 30 to 180 mm and fork depths from 40 to 120 mm, providing greater application flexibility. This generation of SICK fork sensors is suited for a variety of applications, such as detecting parts in production processes or checking presence when filling bottles.

At a glance

- Highly visible red emitted light
- No setup, out-of-the-box operation
- 360° output indicator
- 5 fork sizes: maximum depth 120 mm, maximum width 180 mm
- Rugged, IP 67 aluminum housing

Your benefits

- Fixed housings guarantee a high level of operational safety with simple commissioning
- A visible red light enables easy alignment and fast adjustment
- The 360-degree yellow output indicator makes continual process control possible
- A wide range of different fork sizes increases installation flexibility
- The aluminum housing meets all requirements for use in harsh industrial conditions



Additional information

Detailed technical data F-189
 Ordering information F-190
 Connection diagram F-191
 Dimensional drawing F-191
 Recommended accessories F-192

→ www.sick.com/de/en/WFM

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



F

Detailed technical data

Features

Functional principle	Optical detection principle
Housing design (light emission)	Fork shaped
Fork width	30 mm ... 180 mm (depending on type)
Fork depth	42 mm ... 124 mm (depending on type)
Minimum detectable object (MDO)	0.8 mm / 1 mm (depending on type)
Light source	LED
Type of light	Visible red light
Adjustment	None
Output function	Dark switching / Light switching (depending on type)

Mechanics/electronics

Supply voltage ¹⁾	10 V DC ... 30 V DC
Ripple ²⁾	< 10 %
Power consumption ³⁾	< 20 mA
Switching frequency ⁴⁾	4 kHz
Response time ⁵⁾	125 µs
Stability of response time	± 15 µs
Switching output	PNP: HIGH = $V_s - \leq 1.5$ V / LOW = 0 V NPN: HIGH = approx. V_s / LOW ≤ 1.5 V
Output type	PNP / NPN (depending on type)
Output current I_{max}	100 mA
Initialization time	140 ms
Connection type	Connector M8, 3-pin / Cable, 3-wire, 2 m (depending on type)
Ambient light safety	Sunlight: ≤ 10,000 klx
Protection class ⁶⁾	III
Circuit protection	V_s connections reverse-polarity protected, Output Q short-circuit protected, Interference suppression
Enclosure rating	IP 67
Weight ⁷⁾	Approx. 80 g ... 190 g
Housing material	Metal, 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 ¹⁾	-10 °C ... +60 °C
Ambient storage temperature	-40 °C ... +80 °C
Shock load	According to EN 60068-2-27
UL File No.	NRKH.E191603 & NRKH7.E191603

¹⁾ Do not bend below 0 °C.

Ordering information

Other models → www.sick.com/de/en/WFM

WFM30-40

- **Fork width:** 30 mm
- **Fork depth:** 42 mm

MDO ¹⁾	Connection type	Switching output	Output function	Type	Part no.
0.8 mm	Connector M8, 3-pin	PNP	Dark switching	WFM30-40P321	6037819
			Light switching	WFM30-40P311	6037820
		NPN	Dark switching	WFM30-40N321	6037821
			Light switching	WFM30-40N311	6037822
	Cable, 3-wire 2 m	PNP	Dark switching	WFM30-40P121	6037823

¹⁾ Minimum detectable object.

WFM50-60

- **Fork width:** 50 mm
- **Fork depth:** 60 mm

MDO ¹⁾	Connection type	Switching output	Output function	Type	Part no.
0.8 mm	Connector M8, 3-pin	PNP	Dark switching	WFM50-60P321	6037824
			Light switching	WFM50-60P311	6037825
		NPN	Dark switching	WFM50-60N321	6037826
			Light switching	WFM50-60N311	6037827

¹⁾ Minimum detectable object.



WFM80-60

- **Fork width:** 80 mm
- **Fork depth:** 60 mm

MDO ¹⁾	Connection type	Switching output	Output function	Type	Part no.
0.8 mm	Connector M8, 3-pin	PNP	Dark switching	WFM80-60P321	6037828
			Light switching	WFM80-60P311	6037829
		NPN	Dark switching	WFM80-60N321	6037830
			Light switching	WFM80-60N311	6037831

¹⁾ Minimum detectable object.

WFM120-120

- **Fork width:** 120 mm
- **Fork depth:** 124 mm

MDO ¹⁾	Connection type	Switching output	Output function	Type	Part no.
0.8 mm	Connector M8, 3-pin	PNP	Dark switching	WFM120-120P321	6037832
			Light switching	WFM120-120P311	6037833
		NPN	Dark switching	WFM120-120N321	6037834
			Light switching	WFM120-120N311	6037835

¹⁾ Minimum detectable object.

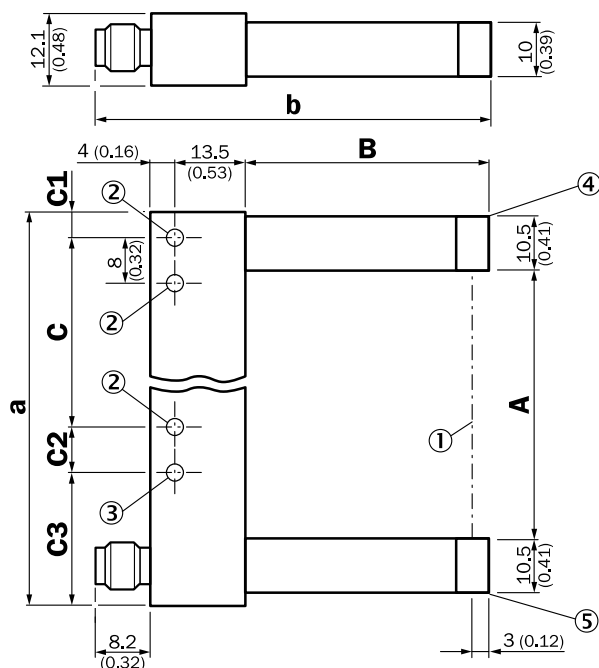
WFM180-120

- **Fork width:** 180 mm
- **Fork depth:** 124 mm

MDO ⁴⁾	Connection type	Switching output	Output function	Type	Part no.
1 mm	Connector M8, 3-pin	PNP	Dark switching	WFM180-120P321	6037836
			Light switching	WFM180-120P311	6037837
		NPN	Dark switching	WFM180-120N321	6037838
			Light switching	WFM180-120N311	6037839

⁴⁾ Minimum detectable object.

Dimensional drawing (Dimensions in mm (inch))



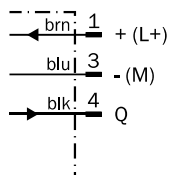
Dimensions in mm (inch)

	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)

- 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

Connection diagram

Cd-045





Recommended accessories

Plug connectors and cables

Connecting cables with female connector

M8, 3-pin, PVC, chemical resistant

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M8, 3-pin, straight, unshielded	Cable, open conductor heads	2 m, 3-wire	DOL-0803-G02M	6010785
			5 m, 3-wire	DOL-0803-G05M	6022009
			10 m, 3-wire	DOL-0803-G10M	6022011
	Female connector, M8, 3-pin, angled, unshielded	Cable, open conductor heads	2 m, 3-wire	DOL-0803-W02M	6008489
			5 m, 3-wire	DOL-0803-W05M	6022010
			10 m, 3-wire	DOL-0803-W10M	6022012

→ For additional accessories, please see page K-240

F

F