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DATA SHEET

WFM50-60P321

WFM
Fork sensors

Sensor Intelligence

Illustration may differ

FORK SENSORS

WFM50-60P321

ORDERING INFORMATION

Type	part no.
WFM50-60P321	6037824

Further device versions and accessories at 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
Fork width	50 mm
Fork depth	60 mm
Light source	LED, visible red light
Minimum detectable object (MDO)	0.8 mm
Adjustment	None
Safety-related parameters	
$MTTF_D$	131 years
DC_{avg}	0 %

ELECTRONICS

Supply voltage	10 V DC ... 30 V DC
Ripple	< 10 %
Current consumption	< 20 mA [1]
Initialization time	140 ms
Switching frequency	4 kHz
Response time	≤ 125 µs
Stability of response time	± 15 µs
Switching output	PNP
Switching output (voltage)	PNP: HIGH = V_S – ≤ 1.5 V / LOW = 0 V NPN: HIGH = approx. V_S / LOW ≤ 1.5 V
Switching mode	Dark switching
Output current $I_{max.}$	100 mA

[1] Without load.

[2] Reference voltage DC 50 V.

Protection class	III [2]
Circuit protection	U_V connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
Connection type	Connector M8, 3-pin

[1] Without load.

[2] Reference voltage DC 50 V.

MECHANICS

Housing material	Aluminum
Weight	Approx. 80 g ... 190 g [1]

[1] Depending on fork width.

AMBIENT DATA

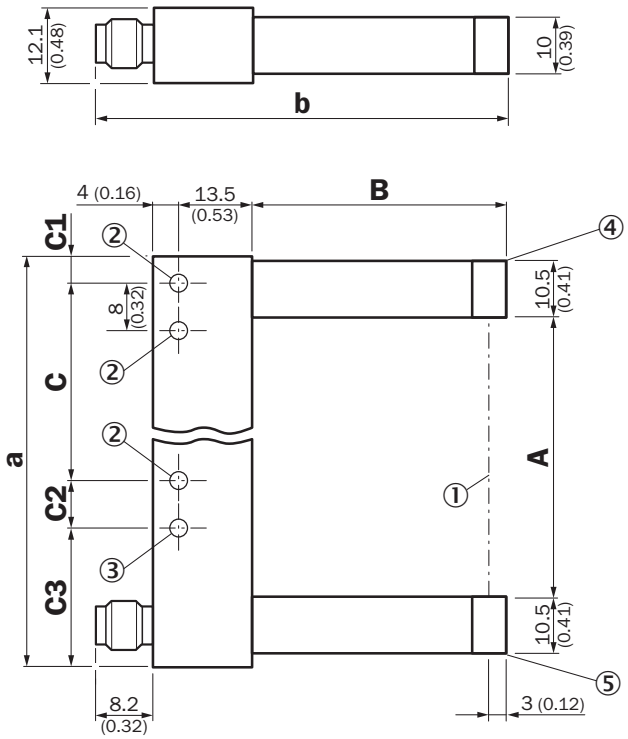
Ambient operating temperature	–10 °C ... +60 °C [1]
Ambient temperature, storage	–40 °C ... +80 °C
Ambient light immunity	≤ 10,000 lx
Shock load	According to EN 60068-2-27
Enclosure rating	IP67
UL File No.	NRKH.E191603 & NRKH7.E191603

[1] Do not bend below 0 °C.

CERTIFICATES

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
China Compulsory Product Certification (CCC) exempt	✓
cULus certificate	✓

DIMENSIONAL DRAWING



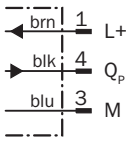
Dimensions in mm (inch)

	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)

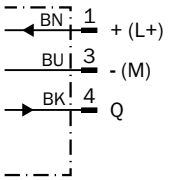
	C2	C3	a	b
WFM30	– (–)	– (–)	54 (2.13)	67.7 (2.67)
WFM50	8 (0.31)	19.5 (0.77)	74 (2.91)	85.7 (3.37)
WFM80	8 (0.31)	19.5 (0.77)	104 (4.09)	85.7 (3.37)
WFM120	10 (0.39)	17 (0.67)	144 (5.67)	150.2 (5.91)
WFM180	8 (0.31)	22 (0.87)	204 (8.03)	150.2 (5.91)

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

CONNECTION DIAGRAM



CONNECTION DIAGRAM CD-045



Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/6037824

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SICK AT A GLANCE

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SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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