



WFM180-120N311

WFM

FORK SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | Part no. |
|----------------|----------|
| WFM180-120N311 | 6037839 |

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

Detailed technical data

Features

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

Mechanics/electronics

| | |
|--|---|
| Current consumption | < 20 mA ¹⁾ |
| Switching frequency | 4 kHz ²⁾ |
| Stability of response time | ± 15 µs |
| Switching output | NPN |
| Switching output (voltage) | PNP: HIGH = $V_S - \leq 1.5 \text{ V}$ / LOW = 0 V NPN: HIGH = approx. V_S / LOW ≤ 1.5 V |
| Switching mode | Light switching |
| Output current I_{max} | 100 mA |
| Initialization time | 140 ms |
| Connection type | Connector M8, 3-pin |
| Protection class | III ³⁾ |
| Circuit protection | U_V connections, reverse polarity protected Output Q short-circuit protected |

¹⁾ Without load.

²⁾ With light/dark ratio 1:1.

³⁾ Reference voltage DC 50 V.

⁴⁾ Depending on fork width.

| | |
|-------------------------|--------------------------------------|
| | Interference pulse suppression |
| Enclosure rating | IP67 |
| Weight | Approx. 80 g ... 190 g ⁴⁾ |
| Housing material | Metal, Aluminum |

¹⁾ Without load.

²⁾ With light/dark ratio 1:1.

³⁾ Reference voltage DC 50 V.

⁴⁾ Depending on fork width.

Safety-related parameters

| | |
|-------------------------|-----------|
| MTTF_D | 131 years |
| DC_{avg} | 0 % |

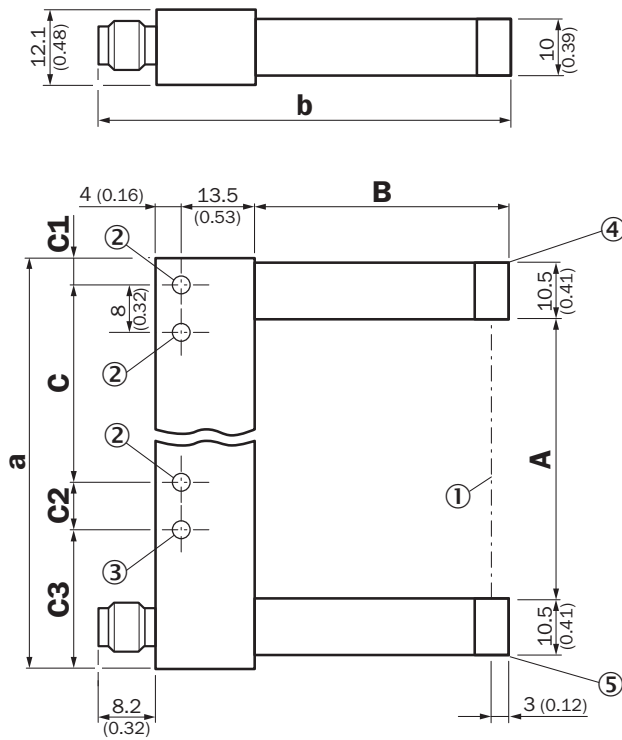
Ambient data

| | |
|-------------------------------|------------------------------|
| Ambient light immunity | ≤ 10,000 lx |
| Shock load | According to EN 60068-2-27 |
| UL File No. | NRKH.E191603 & NRKH7.E191603 |

Classifications

| | |
|-----------------------|----------|
| ECLASS 5.0 | 27270909 |
| ECLASS 5.1.4 | 27270909 |
| ECLASS 6.0 | 27270909 |
| ECLASS 6.2 | 27270909 |
| ECLASS 7.0 | 27270909 |
| ECLASS 8.0 | 27270909 |
| ECLASS 8.1 | 27270909 |
| ECLASS 9.0 | 27270909 |
| ECLASS 10.0 | 27270909 |
| ECLASS 11.0 | 27270909 |
| ECLASS 12.0 | 27270909 |
| ETIM 5.0 | EC002720 |
| ETIM 6.0 | EC002720 |
| ETIM 7.0 | EC002720 |
| ETIM 8.0 | 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

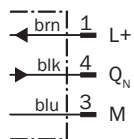
Dimensions in mm (inch)

| | 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 | | | |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M8, 3-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 5 m, 3-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Zones with chemicals | YF8U13-050VA1XLEAX | 2095884 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M8, 3-pin, straight • Description: Unshielded • Connection systems: Screw-type terminals • Permitted cross-section: 0.14 mm² ... 0.5 mm² | DOS-0803-G | 7902077 |
|  | <ul style="list-style-type: none"> • Connection type head A: Male connector, M8, 3-pin, straight • Description: Unshielded • Connection systems: Screw-type terminals • Permitted cross-section: 0.14 mm² ... 0.5 mm² | STE-0803-G | 6037322 |

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:

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