



DATA SHEET

WFS3-40B41CA00

WFS
Fork sensors

SICK

Sensor Intelligence



Illustration may differ

FORK SENSORS

WFS3-40B41CA00

ORDERING INFORMATION

Type	part no.
WFS3-40B41CA00	6058649

Further device versions and accessories at www.sick.com/WFS



DETAILED TECHNICAL DATA

FEATURES

Functional principle	Optical detection principle
Dimensions (W x H x D)	10 mm x 25 mm x 64.3 mm
Fork width	3 mm
Fork depth	42 mm
Light source	LED, Infrared light
Label detection	✓
Minimum detectable object (MDO)	Gap between Labels / Size of labels: 2 mm ¹⁾
Adjustment	Teach-in button, cable (Teach-in, sensitivity, light/dark switching, key lock, Teach-in dynamic)
Teach-in mode	1-point teach-in 2-point teach-in Teach-in dynamic
Safety-related parameters	MTTF _D 97 years DC _{avg} 0 %

¹⁾ Depends on the label thickness.

INTERFACES

IO-Link	✓, IO-Link V1.1
VendorID	26
DeviceID HEX	8000AE
DeviceID DEC	8388782
Cycle time	2.3 ms

Process data structure A	Bit 0 = switching signal Q_{L1} Bit 1 = switching signal Q_{L2} Bit 2 = not used Bit 3 = Teach busy Bit 4 ... 15 = empty
Process data structure B	Bit 0 = switching signal Q_{L1} Bit 1 = Quality of Run Alarm Bit 2 = not used Bit 3 = Teach busy Bit 4 ... 15 = empty
Process data structure C	Bit 0 = switching signal Q_{L1} Bit 1 = switching signal Q_{L2} Bit 2 = not used Bit 3 = Teach busy Bit 4 ... 5 = empty Bit 6 ... 15 = measuring value
Process data structure D	Bit 0 = switching signal Q_{L1} Bit 1 = Quality of Run Alarm Bit 2 = not used Bit 3 = Teach busy Bit 4 ... 5 = empty Bit 6 ... 15 = measuring value

ELECTRONICS

Supply voltage	10 V DC ... 30 V DC
Ripple	< 10 %
Current consumption	20 mA ¹⁾
Initialization time	40 ms
Switching frequency	15 kHz
Response time	≤ 46 µs
Stability of response time	± 20 µs
Jitter	17 µs
Switching output	Push-pull: PNP/NPN
Switching output (voltage)	Push-pull: PNP/NPN High = $U_v - < 2 \text{ V}$ / Low: ≤ 2 V
Switching mode	Light/dark switching
Output current I_{max}	100 mA
Input, teach-in (ET)	Teach: $U > 5 \text{ V} \dots < U_v$ Run: $U < 4 \text{ V}$
Time delay	Switch-off delay, 0 ms / 8 ms / 16 ms / 32 ms / 65 ms / 130 ms / 260 ms / 520 ms, adjustable via IO-Link (0 ms = default)
Protection class	III
Circuit protection	U_v connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
Connection type	Male connector M8, 4-pin

¹⁾ Without load.

MECHANICS

Housing material	PA (glass-fiber reinforced)
Weight	Approx. 36 g

AMBIENT DATA

Ambient operating temperature	-20 °C ... +60 °C ¹⁾
Ambient temperature, storage	-30 °C ... +80 °C
Ambient light immunity	≤ 10,000 lx
Shock load	According to EN 60068-2-27
Enclosure rating	IP65
UL File No.	NRKH.E191603

¹⁾ Do not bend below 0 °C.

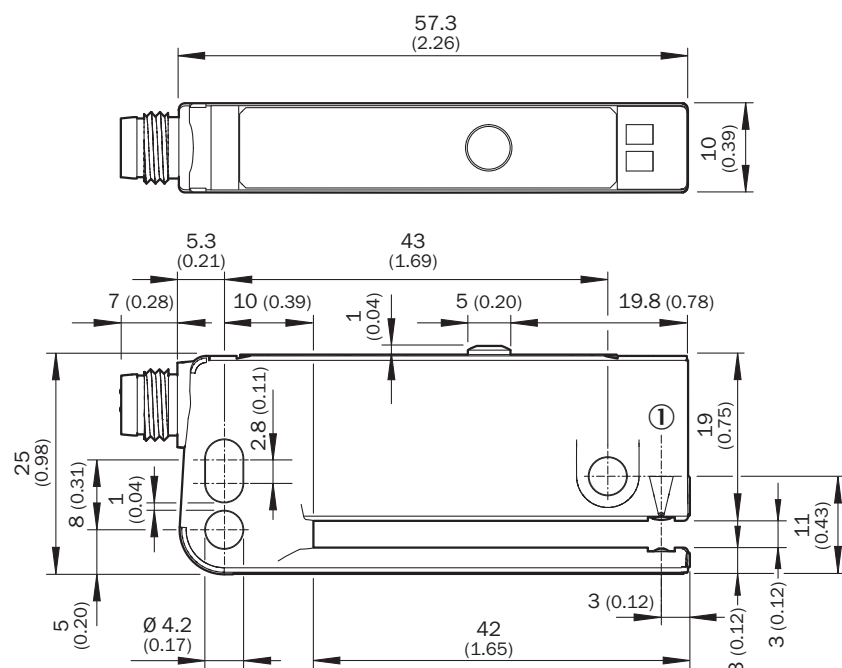
SMART TASK

Smart Task name	Base logics
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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	✓
IO-Link certificate	✓
Photobiological safety (IEC EN 62471)	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

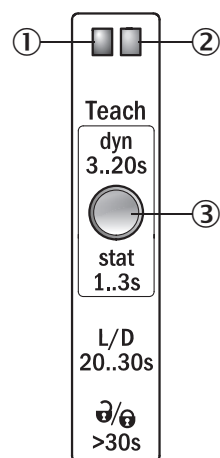
DIMENSIONAL DRAWING



Dimensions in mm (inch)

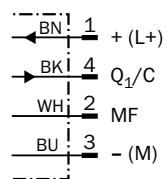
① Optical axis

ADJUSTMENTS ADJUSTMENT: TEACH-IN VIA TEACH-IN BUTTON (WFXB-B41CXX)



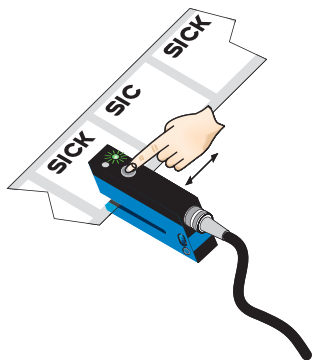
- ① Function signal indicator (yellow), switching output
- ② Function signal indicator (green)
- ③ Teach-in button and function button

CONNECTION DIAGRAM CD-273



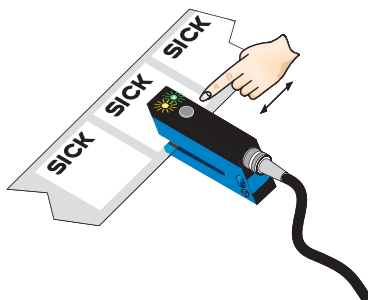
CONCEPT OF OPERATION TEACH-IN DYNAMIC VIA TEACH-IN BUTTON

1. Start teach-in: Position carrier or label between the fork



Press the teach-in button for 3 - 20 s. With the pushbutton pressed down, move several label with carrier material (label) through the sensor. The yellow LED flashes at 3 Hz during the teach-in procedure. Recommendation: Move at least 3 label + carrier through the sensor.

2. End teach-in:



Release the teach-in button for < 20 s. If teach-in is successful, the function indicator (yellow LED) directly indicates the output state of the sensor. The switching threshold is now optimally set between carrier and label. The best possible operational safety is provided.

Note

Fine adjustment

In order to obtain a higher operating reserve, a fine adjustment can be carried out after successful teach-in. For this purpose, the switching threshold is set close to the taught-in object. The teach-in button must be pressed and released within 10 s of successful teach-in. Successful setting is signaled by flashing twice at 1 Hz.

Light/dark switching

- ☐ You can change between light switching and dark switching by pressing the teach-in button for 20 - 30 s.

Pushbutton lock

- ☐ The device can be locked against unintended operation by pressing the teach-in button for > 30 s. The device can be unlocked by pressing the teach-in button again for > 30 s.

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/6058649



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SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

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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