Data sheet

WF30-60B41CA00

WF

FORK SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	part no.
WF30-60B41CA00	6058604

Other models and accessories ➜ www.sick.com/WF

Detailed technical data

Features

Functional principle	Optical detection principle
Dimensions (W x H x D)	10 mm x 60 mm x 74 mm
Fork width	30 mm
Fork depth	59 mm
Light source	LED, Infrared light
Label detection	✓
Minimum detectable object (MDO)	0.2 mm
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
Output function	Light/darkswitching, selectable via button
Safety-related parameters	
$MTTF_D$	97 years
DC_{avg}	0 %

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 V/Low: ≤ 2 V
Switching mode	Light/dark switching
Output current $I_{max.}$	100 mA
Input, teach-in (ET)	Teach: U > 5 V ... < U_V Run: U < 4 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 [2]
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.
[2] Reference voltage DC 50 V.

Mechanics

Housing material	Aluminum
Weight	Approx. 36 g ... 160 g [1]

[1] Depending on fork width.

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

Certificates

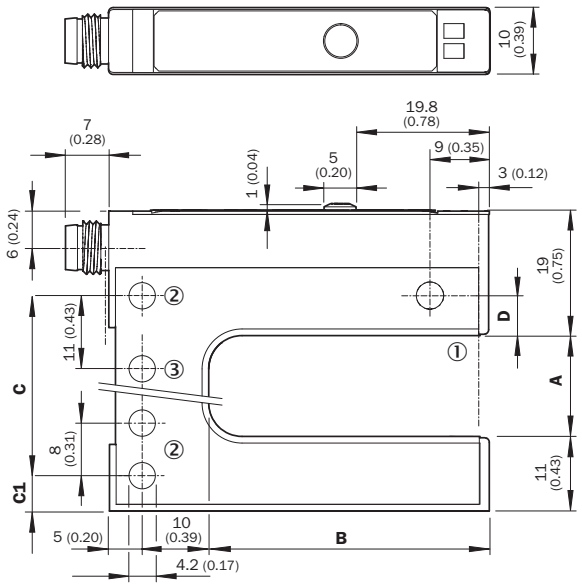
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cULus certificate	✓
IO-Link certificate	✓
Photobiological safety (IEC EN 62471)	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

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

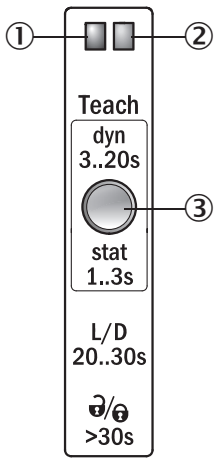


Dimensions in mm (inch)

Dimensions in mm (inch)

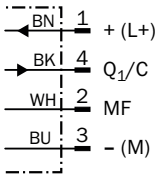
	A	B	C	C1	D
	Gabelweite/Fork width	Gabeltiefe/Fork depth			
WF2	2 (0.08)	42/59/95 (1.65/2.32/3.74)	14 (0.55)	5 (0.20)	6 (0.24)
WF5	5 (0.20)	42/59/95 (1.65/2.32/3.74)	14 (0.55)	6.5 (0.26)	4.5 (0.17)
WF15	15 (0.59)	42/59/95 (1.65/2.32/3.74)	27 (1.06)	5 (0.20)	6 (0.24)
WF30	30 (1.18)	42/59/95 (1.65/2.32/3.74)	42 (1.65)	5 (0.20)	6 (0.24)
WF50	50 (1.97)	42/59/95 (1.65/2.32/3.74)	51 (2.01)	16 (0.63)	6 (0.24)
WF80	80 (3.15)	42/59/95 (1.65/2.32/3.74)	81 (3.19)	16 (0.63)	6 (0.24)
WF120	120 (4.72)	42/59/95 (1.65/2.32/3.74)	121 (4.76)	16 (0.63)	6 (0.24)

Adjustments Adjustment: teach-in via Teach-in button (WFxx-B41Cxx)



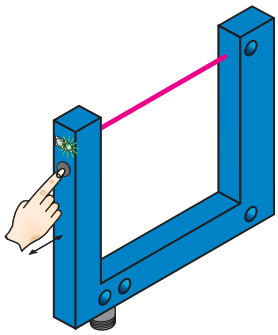
① Function signal indicator (yellow), switching output
② Function signal indicator (green)
③ Teach-in button and function button

Connection diagram Cd-273



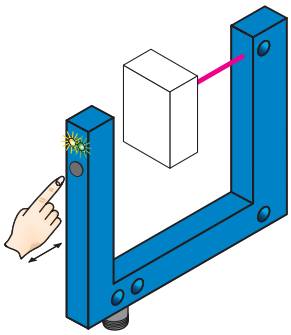
Concept of operation Teach-in via Teach-in button (WFxx-B41Cxx)

1. Start teach-in: Position the background or object between the fork



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

2. End teach-in:



Release the teach-in button for < 20 s. If teach-in is suc-cessful, the function indicator (yellow LED) directly indicates the output state of the sensor. The switching threshold is now optimally set between background and object. 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.

Recommended accessories

Other models and accessories ➜ www.sick.com/WF

	Brief description	Type	part no.
connectors and cables			
	• **Description:** Unshielded • **Connection type head A:** Male connector, M8, 4-pin, straight, A-coded • **Connection systems:** Screw-type terminals • **Permitted cross-section:** 0.14 mm² ... 0.5 mm²	STE-0804-G	6037323
	• **Description:** Sensor/actuator cable, unshielded • **Connection type head A:** Female connector, M8, 4-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 5 m, 4-wire, PVC • **Application:** Uncontaminated zones, Zones with chemicals	YF8U14-050VA3XLEAX	2095889
	• **Description:** Sensor/actuator cable, unshielded • **Connection type head A:** Female connector, M8, 4-pin, straight, A-coded • **Connection type head B:** Male connector, M12, 4-pin, straight, A-coded • **Signal type:** Sensor/actuator cable • **Cable:** 5 m, 4-wire, PVC • **Application:** Uncontaminated zones, Zones with chemicals	YF8U14-050VA3M2A14	2096609
network devices			
		IOLA2US-01101 (SiLink2 Master)	1061790
		SIG200-0A0412200	1089794
		SIG200-0A0G12200	1102605

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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.

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