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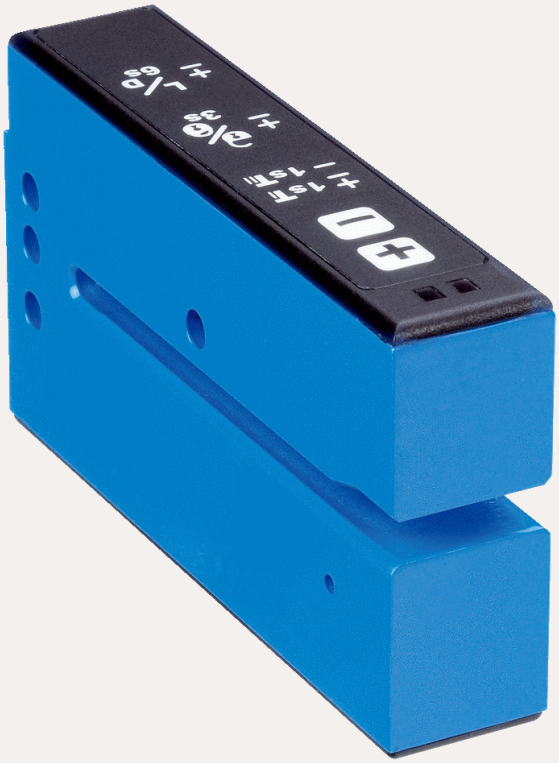


DATA SHEET

UFN3-70N415

UF
Fork sensors

Sensor Intelligence

Illustration may differ

FORK SENSORS

UFN3-70N415

ORDERING INFORMATION

Type	part no.
UFN3-70N415	6049680

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

DETAILED TECHNICAL DATA

FEATURES

Functional principle	Ultrasonic detection principle
Housing design	Fork shaped
Dimensions (W x H x D)	18 mm x 47.5 mm x 92.5 mm
Fork width	3 mm
Fork depth	69 mm
Label detection	✓
Minimum detectable object (MDO)	Gap between Labels / Size of labels: 2 mm [1]
Adjustment	Plus/minus button, cable (Teach-in, sensitivity, light/dark switching, Teach-in dynamic)
Teach-in mode	2-point teach-in Teach-in dynamic
Safety-related parameters	
$MTTF_D$	207 years
DC_{avg}	0 %

[1] Depends on the label thickness.

ELECTRONICS

Supply voltage	10 V DC ... 30 V DC [1]
Ripple	< 10 % [2]

[1] Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A.

[2] May not fall below or exceed U_V tolerances.

[3] Without load.

[4] With light/dark ratio 1:1, typical, depending on material and speed.

[5] Minimum output current 0.3 mA.

[6] Reference voltage DC 50 V.

Current consumption	40 mA [3]
Initialization time	100 ms
Switching frequency	1.5 kHz [4]
Response time	≤ 250 µs
Switching output	NPN
Switching output (voltage)	NPN: HIGH = approx. U_V / LOW ≤ 2 V
Switching mode	Light/dark switching
Output current $I_{max.}$	100 mA [5]
Input, teach-in (ET)	Teach: U > 7 V ... < U_V Run: U < 2 V
Protection class	III [6]
Circuit protection	Output Q short-circuit protected Interference pulse suppression
Connection type	Male connector M8, 4-pin

[1] Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A.

[2] May not fall below or exceed U_V tolerances.

[3] Without load.

[4] With light/dark ratio 1:1, typical, depending on material and speed.

[5] Minimum output current 0.3 mA.

[6] Reference voltage DC 50 V.

MECHANICS

Housing material	Aluminum
Weight	95 g

AMBIENT DATA

Ambient operating temperature	+5 °C ... +55 °C [1]
Ambient temperature, storage	–20 °C ... +70 °C
Shock load	According to EN 60068-2-27
EMC	EN 60947-5-2 [2]
Enclosure rating	IP65
UL File No.	NRKH.E191603 & NRKH7.E191603

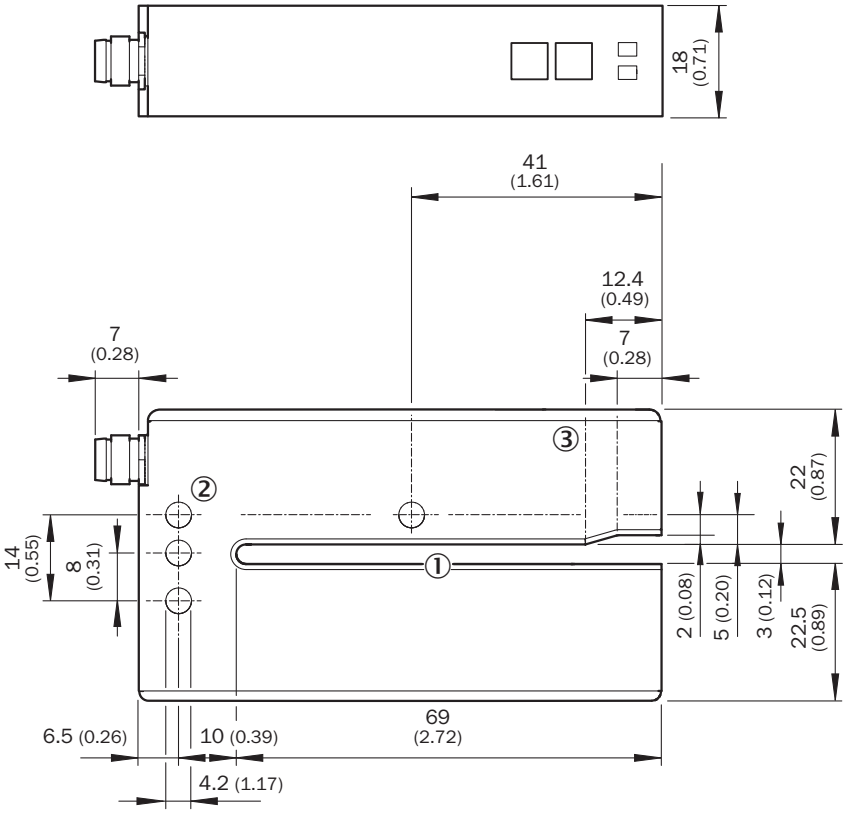
[1] Do not bend below 0 °C.

[2] The UFN complies with the Radio Safety Requirements (EMC) for the industrial sector (Radio Safety Class A). It may cause radio interference if used in residential areas.

CERTIFICATES

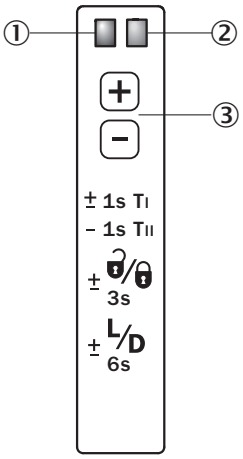
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
China Compulsory Product Certification (CCC) exempt	✓
cULus certificate	✓

DIMENSIONAL DRAWING UFNEXT - PLUS/MINUS BUTTONS



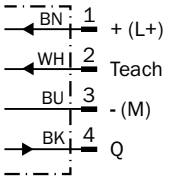
Dimensions in mm (inch)
① Fork opening: fork width 3 mm, forks depth 69 mm
② Mounting hole, Ø 4.2 mm
③ Detection axis

ADJUSTMENTS ADJUSTMENT: TEACH-IN VIA PLUS/MINUS BUTTONS (WFXX-B416)



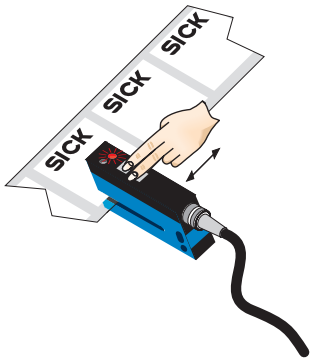
① Function signal indicator (yellow), switching output
② Function indicator (red)
③ “+”/“–” buttons and function button

CONNECTION DIAGRAM CD-092



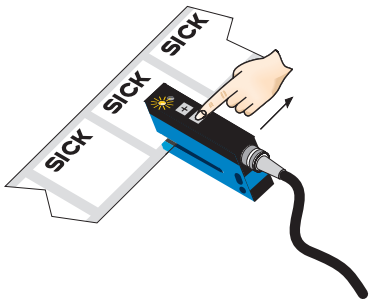
CONCEPT OF OPERATION TEACH-IN DYNAMIC VIA PLUS/MINUS BUTTONS

1. Position label or substrate in the active area of the fork sensor



Press both the “+” and “–” buttons together, hold > 1 s and than release the teach-in buttons. The red LED flashes.

2. Move multiple labels through the fork sensor



Press “–” button, teach-in process is finished.

Notes

Switching threshold adaptation:
Only, the first teach-in procedure after switching on is permanently stored. Teach-in can be repeated cyclically. Switching output also during teach-in active.

+ / – Once teach-in process is complete, the switching threshold can be adjusted at any time using the “+” or “–” button. To make minor adjustments, press the “+” or “–” button once. To configure settings quickly, keep the “+” or “–” button pressed for longer.

± 3s Press both the “+” and “–” buttons together (3 seconds) to lock the device and prevent unintentional actuation.

± L/D 6s Press both the “+” and “–” buttons together (6 seconds) to define the switching function (light/dark switching). Standard setting: Q = light switching.

Teach-in (static): Setting the switching threshold without movements of label, cf. operating instruction.

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/6049680

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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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