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DATA SHEET

UFN3-70N417

UF
Fork sensors

SICK
Sensor Intelligence



Illustration may differ

FORK SENSORS

UFN3-70N417

ORDERING INFORMATION

Type	part no.
UFN3-70N417	6058744

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	Teach-in button, cable (Teach-in, sensitivity, light/dark switching, Teach-in dynamic)
Teach-in mode	1-point teach-in 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

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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

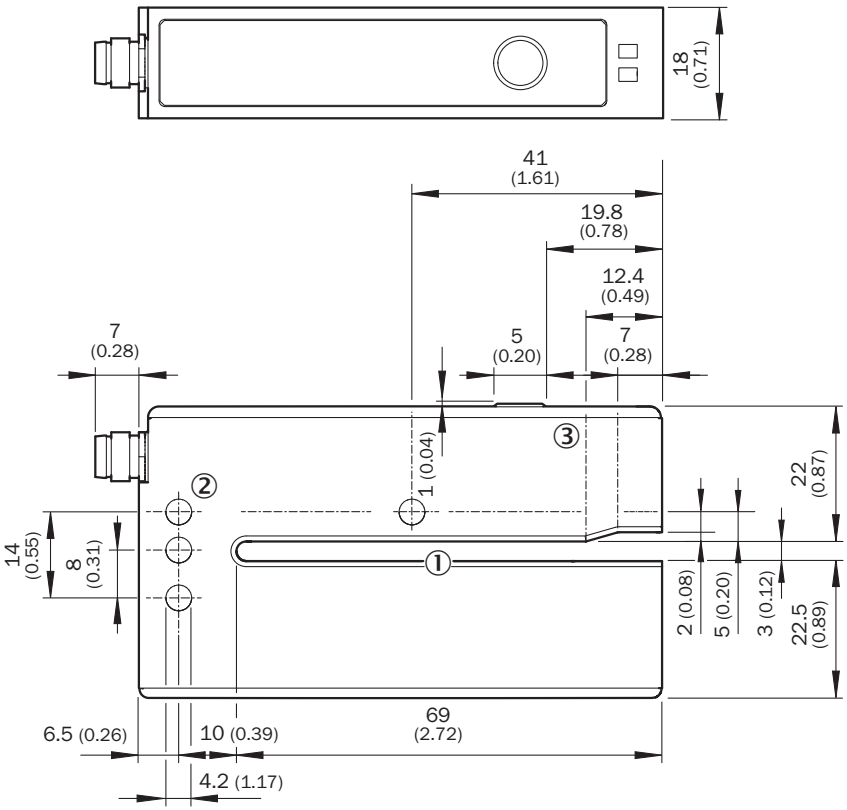
[1] Do not bend below 0 °C.

[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	✓

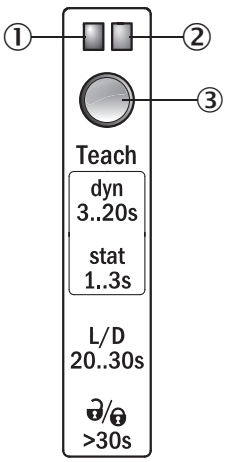
DIMENSIONAL DRAWING UFNEXT - TEACH-IN BUTTON



All dimensions in mm (inch)

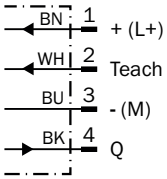
Dimensions in mm (inch)
① Fork opening: fork width 3 mm, forks depth 69 mm
② Mounting hole, Ø 4.2 mm
③ Detection axis

ADJUSTMENTS



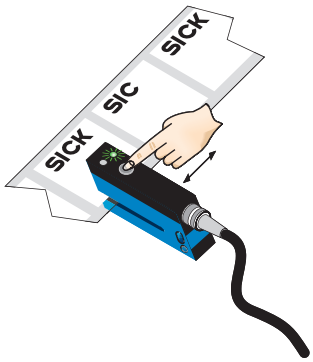
① Function signal indicator (yellow), switching output
② Function signal indicator (green)
③ Teach-in button and function button

CONNECTION DIAGRAM CD-092



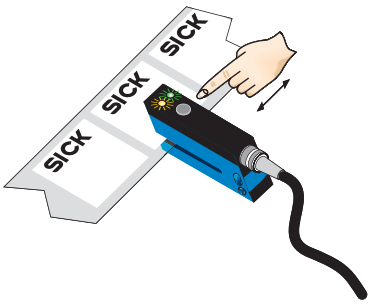
CONCEPT OF OPERATION TEACH-IN DYNAMIC VIA TEACH-IN BUTTON

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 t hreshold 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/6058744

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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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