Data sheet

UFN3-70N417

UF

FORK SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	part no.
UFN3-70N417	6058744

Other models and accessories ➜ 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] Output current minimal 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.

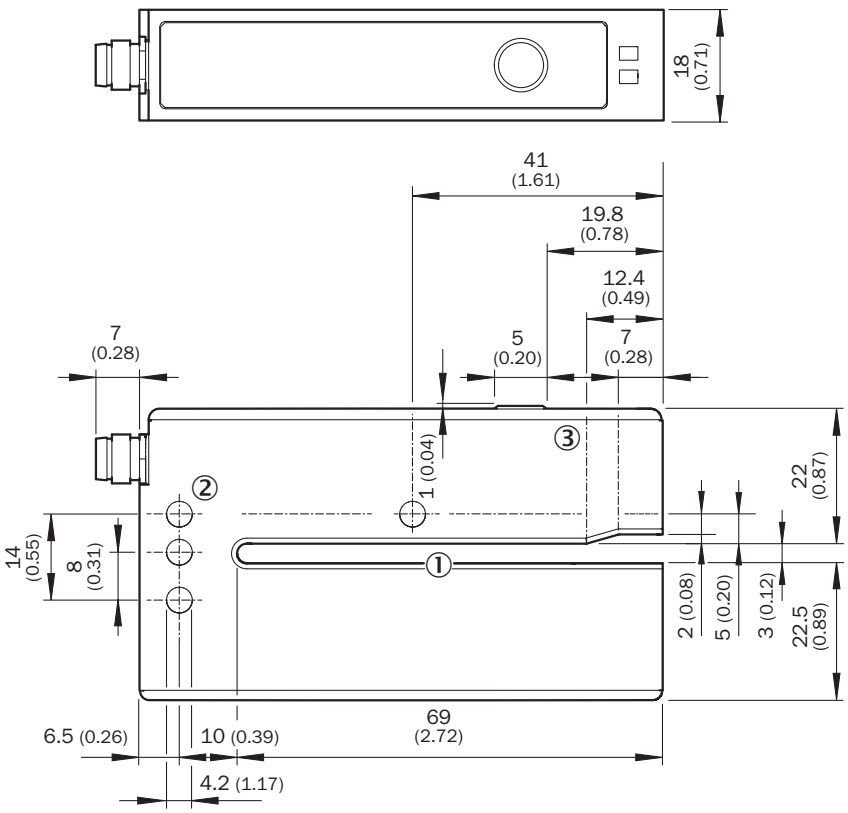
Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cULus certificate	✓

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 UFnext - Teach-in button

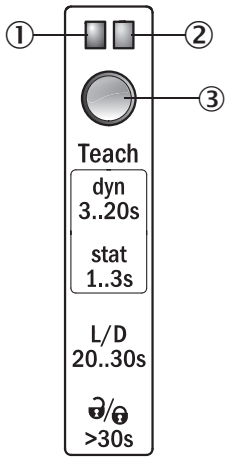


All dimensions in mm (inch)

Dimensions in mm (inch)

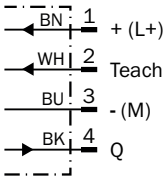
① Fork opening: fork width 3 mm, forks depth 69 mm
② Mounting hole, Ø 4.2 mm
③ Detection axis

Adjustments



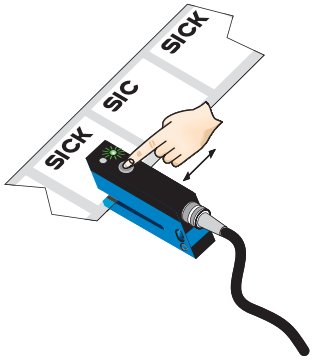
① Function signal indicator (yellow), switching output
② Function signal indicator (green)
③ Teach-in button and function button

Connection diagram Cd-092



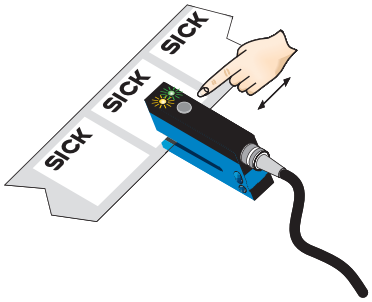
Concept of operation Teach-in dynamic via Teach-in button

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.

Recommended accessories

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

	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

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.”

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