Data sheet

LUTM-UP817A1P

LUTM

LUMINESCENCE SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	part no.
LUTM-UP817A1P	1087463

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

Detailed technical data

Features

Housing design	Small
Dimensions (W x H x D)	12 mm x 31.5 mm x 21 mm
Light source	LED, Ultraviolet light [1]
Light emission	Long side
Light spot size	2 mm x 2.5 mm [2]
Light spot direction	Vertical
Wave length	370 nm
Working range	8 mm ... 20 mm
Sensing distance	≤ 12.5 mm [3]
Receiving range	450 nm ... 750 nm
Adjustment	Cable, IO-Link
Teach-in mode	2-point teach-in static/dynamic
Output function	Light/dark switching [4]

[1] Average service life: 100,000 h at T_U = +25 °C.
[2] At sensing distance.
[3] From leading edge of lens.
[4] L/D switching via teach-in.

Interfaces

IO-Link	✓ , IO-Link V1.1
VendorID	26

DeviceID HEX	800072
DeviceID DEC	8388722
Cycle time	2.3 ms
Process data structure A	Bit 0 = switching signal Q_{L1} Bit 1 = Quality of Run Alarm Bit 2 = Teach successful 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 = Teach successful Bit 3 = Teach busy Bit 4 ... 15 = empty Bit 6 ... 15 = measuring value

Electronics

Supply voltage	12 V DC ... 24 V DC [1]
Ripple	≤ 5 V_{pp} [2]
Current consumption	≤ 50 mA [3]
Switching frequency	6 kHz [4]
Response time	80 µs
Jitter	40 µs
Switching output	PNP
Switching output (voltage)	PNP: HIGH = U_V ≤ 2 V / LOW approx. 0 V
Switching mode	Light/dark switching
Output current $I_{max.}$	< 100 mA [5]
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] Limit values: DC 12 V (–10 %) ... DC 24 V (+20 %). 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.

[5] At supply voltage > 24 V, I_{max} = 30 mA. I_{max} is consumption count of all Q_n.

Mechanics

Housing material	ABS
Weight	70 g

Ambient data

Ambient operating temperature	–10 °C ... +55 °C
Ambient temperature, storage	–20 °C ... +75 °C
Shock load	According to IEC 60068
Enclosure rating	IP67

UL File No.	NRKH.E348498 & NRKH7.E348498

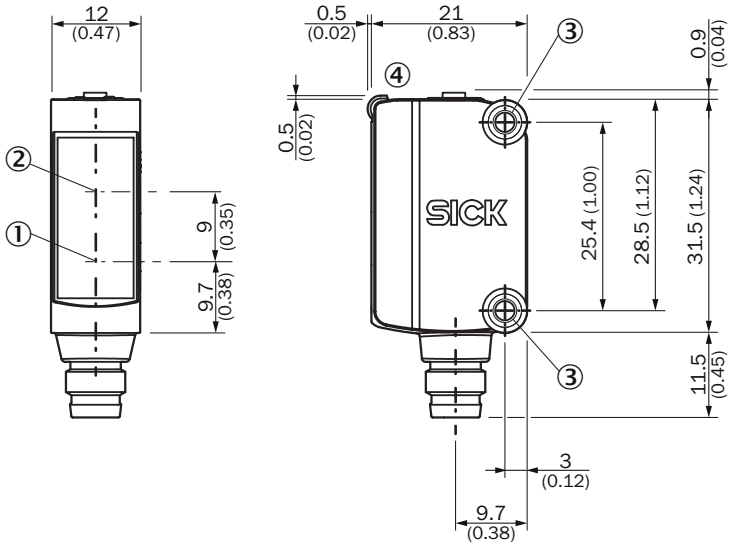
Certificates

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

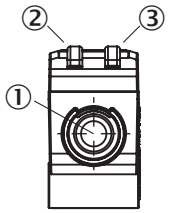
ECLASS 5.0	27270908
ECLASS 5.1.4	27270908
ECLASS 6.0	27270908
ECLASS 6.2	27270908
ECLASS 7.0	27270908
ECLASS 8.0	27270908
ECLASS 8.1	27270908
ECLASS 9.0	27270908
ECLASS 10.0	27270908
ECLASS 11.0	27270908
ECLASS 12.0	27270908
ETIM 5.0	EC001822
ETIM 6.0	EC001822
ETIM 7.0	EC001822
ETIM 8.0	EC001822
UNSPSC 16.0901	39121528

Dimensional drawing



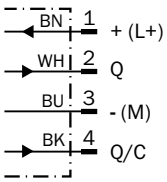
Dimensions in mm (inch)
① Center of optical axis, sender
② Center of optical axis, receiver
③ Mounting holes M3
④ display and adjustment elements

display and adjustment elements



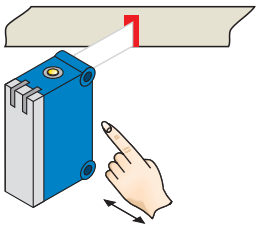
① Teach-in button
② LED yellow
③ LED green

Connection diagram Cd-309



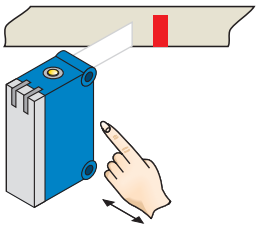
Setting the switching threshold (static)

1. Position fluorecent mark



Press and hold teach-in button > 1 < 3 s.
Yellow LED flashes slowly.

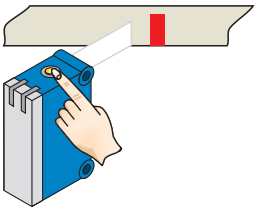
2. Position background



Press and hold teach-in button < 3 s.
Yellow LED goes out.

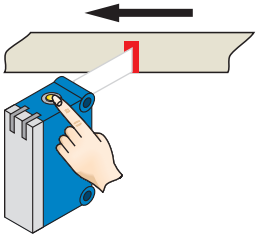
Setting the switching threshold (dynamic)

1. Position background

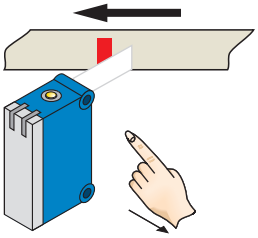


Press the teach-in button and keep it pressed. LED flashing slowly.

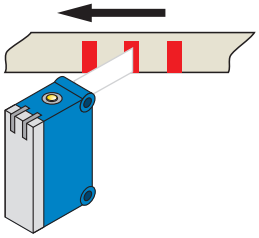
2. Move at least the fluorecent mark and background using the light spot.



Keep the teach-in button > 3 < 30 s pressed.

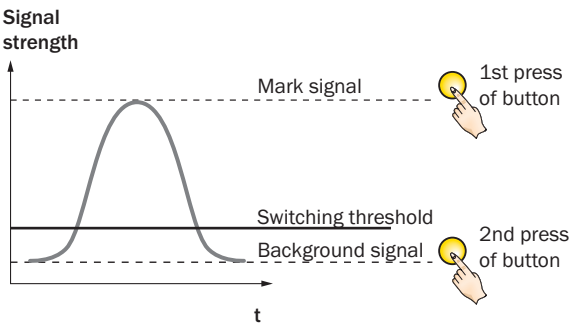


Release the teach-in button.



Yellow LED will illuminate, when emitted light is on the fluorecent mark.

Sensitivity setting



Switching characteristics

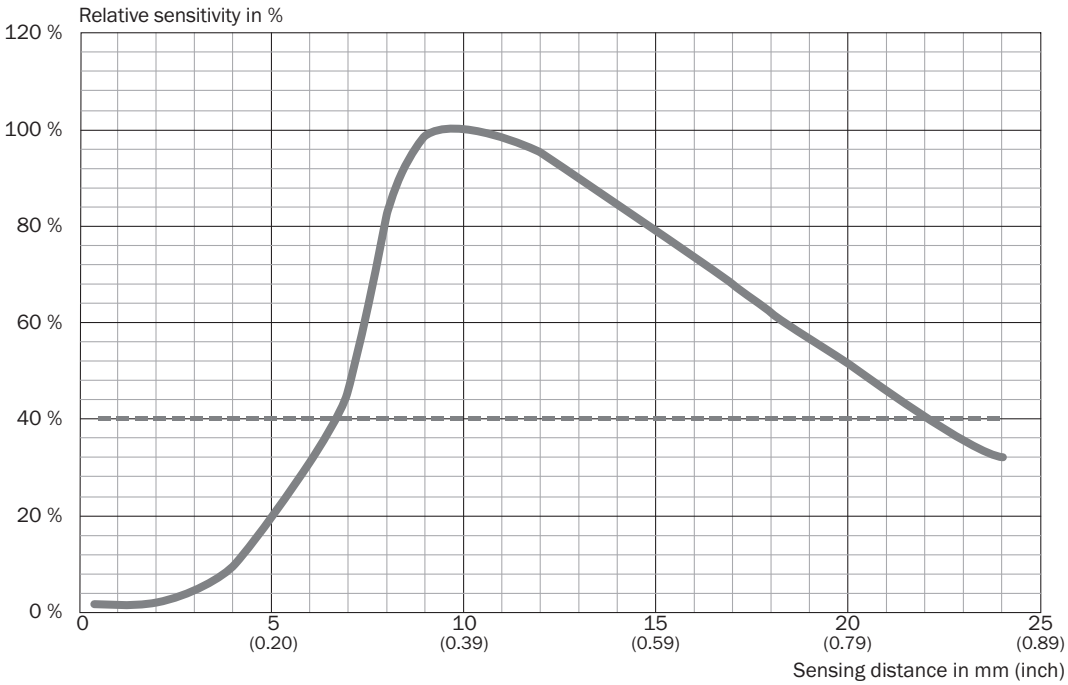
Static teach-in: light/dark setting is defined using teach-in sequence.
Dynamic teach-in: switching output active on fluorecent mark, if background is longer in the field of view during the teach-in. The switching threshold is set automatically between the background and the mark.

Teach-in can also be performed using an external control signal (only dynamic teach-in).

Keylock activation and deactivation: hold down teach-in button > 30 s.

Teach-in failure: yellow LED indicator and the transmitted light of the sensor flashing quickly.
For dynamic teach-in with ET signal (5 Hz) via switching output Q.

Sensing distance



Recommended accessories

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

	Brief description	Type	part no.
Mounting systems			
	• **Material:** Stainless steel • **Details:** Stainless steel (1.4301) • **Suitable for:** W4S, W4S	BEF-WN-G6	2062909

	Brief description	Type	part no.
network devices			
		IOLA2US-01101 (SiLink2 Master)	1061790
		SIG200-0A0412200	1089794
		SIG200-0A0G12200	1102605
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

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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