



TIM510-9950000S01

TiM

2D LIDAR SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	part no.
TIM510-9950000S01	1062210

Other models and accessories → www.sick.com/TiM



Detailed technical data

Features

Application	Indoor
Measurement principle	HDDM ⁺
Light source	Infrared (850 nm)
Laser class	1 (IEC 60825-1:2014, EN 60825-1:2014+A11:2021)
Aperture angle	
	Horizontal 270°
Scanning frequency	15 Hz
Angular resolution	
	Horizontal 1°
Working range	0.05 m ... 4 m
Scanning range	
	At 10% remission factor 2 m

Mechanics/electronics

Connection type	1 x cable with 12-pin M12 male connector (0,3 m) 1 x Micro USB female connector, type B
Supply voltage	9 V DC ... 28 V DC
Power consumption	Typ. 4 W
Output current	≤ 100 mA
Housing color	Light blue (RAL 5012)
Enclosure rating	IP65 (IEC 60529:1989+AMD1:1999+AMD2:2013)
Protection class	III (IEC 61140:2016-1)
Weight	150 g, without connecting cables
Dimensions (L x W x H)	60 mm x 60 mm x 79 mm
MTBF	> 100 years

Safety-related parameters

MTTF_D	100 years
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Performance

Response time	1 scan, typ. 67 ms 2 scans, ≤ 134 ms ¹⁾
Detectable object shape	Almost any
Systematic error	± 40 mm ²⁾
Statistical error	< 30 mm ²⁾
Integrated application	Output of measurement data

¹⁾ At +45° to +225° of the working range; max. 150 ms at -45° to +45° of the working range.

²⁾ Typical value at 90% remission up to maximum scanning range; real value depends on ambient conditions.

Interfaces

Serial	✓ , RS-232
Function	Data interface (read result output)
Data transmission rate	460.8 kBaud
USB	✓
Remark	Micro USB
Function	Service interface, parameterization
Digital inputs/outputs	
Inputs	0
Outputs	1 (PNP, "SYNC"/"device ready")
Optical indicators	2 LEDs (ON, switching status)

Ambient data

Object remission	4 % ... 1,000 % (reflectors)
Electromagnetic compatibility (EMC)	
Emitted radiation	Residential area (EN 61000-6-3:2007+AMD:A1:2011)
Electromagnetic immunity	Industrial environment (EN 61000-6-2:2005)
Vibration resistance	
Sine resonance scan	10 Hz ... 1,000 Hz ¹⁾
Sine test	10 Hz ... 500 Hz, 5 g, 10 frequency cycles ¹⁾
Noise test	10 Hz ... 250 Hz, 4.24 g RMS, 5 h ²⁾
Shock resistance	
	50 g, 11 ms, ± 3 single shocks/axis ³⁾
	25 g, 6 ms, ± 1,000 continuous shocks/axis ³⁾
	50 g, 3 ms, ± 5,000 continuous shocks/axis ³⁾
Ambient operating temperature	-10 °C ... +50 °C ⁴⁾
Storage temperature	-30 °C ... +70 °C ⁴⁾

¹⁾ IEC 60068-2-6:2007.

²⁾ IEC 60068-2-64:2008.

³⁾ IEC 60068-2-27:2008.

⁴⁾ IEC 60068-2-14:2009.

⁵⁾ EN 60068-2-14:2009.

⁶⁾ EN 60068-2-30:2005.

Temperature change	-25 °C ... +50 °C, 10 cycles ⁵⁾
Damp heat	+25 °C ... +55 °C, 95 % RH, 6 cycles ⁶⁾
Permissible relative humidity	
Operation	< 80 %, Non-condensing (EN 60068-2-30:2005)
Storage	≤ 95 %, Non-condensing (EN 60068-2-30:2005)
Ambient light immunity	80,000 lx

¹⁾ IEC 60068-2-6:2007.²⁾ IEC 60068-2-64:2008.³⁾ IEC 60068-2-27:2008.⁴⁾ IEC 60068-2-14:2009.⁵⁾ EN 60068-2-14:2009.⁶⁾ EN 60068-2-30:2005.

General notes

Note on use	The sensor does not constitute a safety component as defined by relevant legislation on machine safety.
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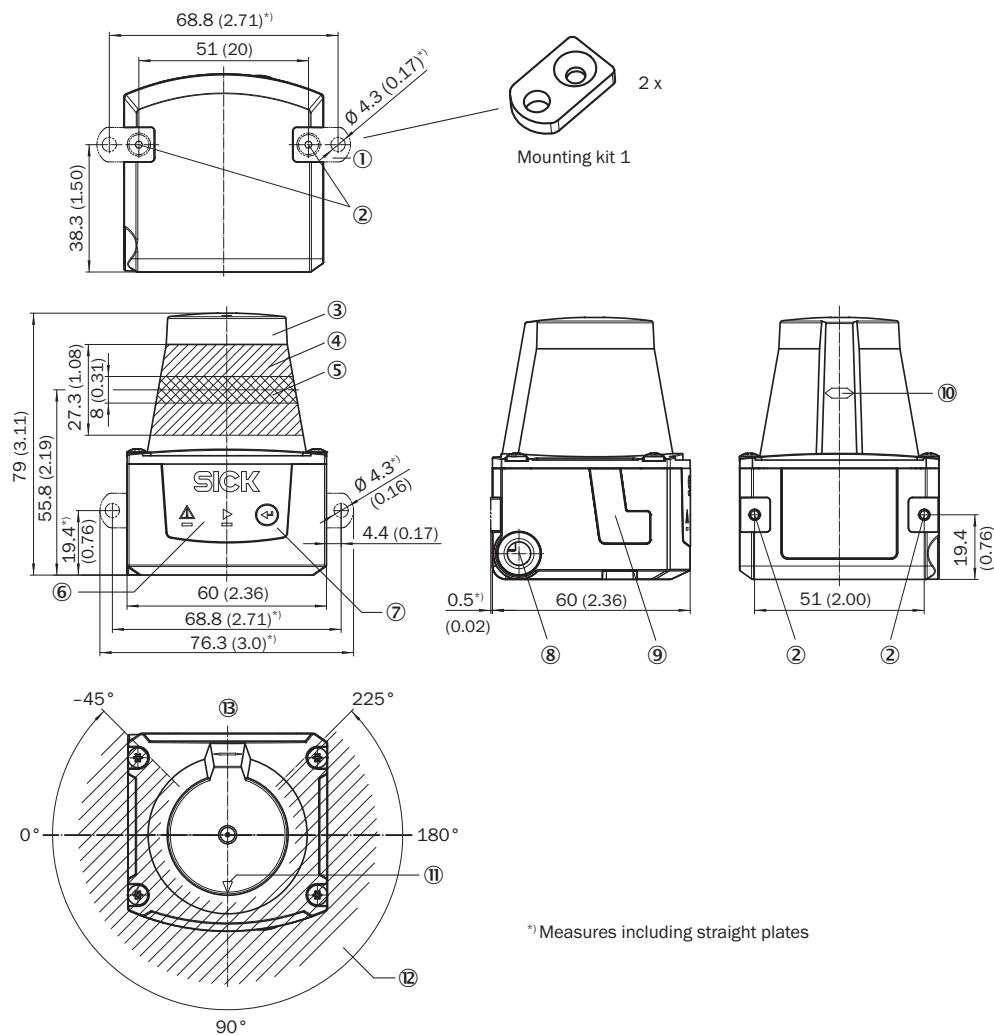
Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
China RoHS	✓
KC Mark certificate	✓
cTUVus certificate	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

Classifications

ECLASS 5.0	27270990
ECLASS 5.1.4	27270990
ECLASS 6.0	27270913
ECLASS 6.2	27270913
ECLASS 7.0	27270913
ECLASS 8.0	27270913
ECLASS 8.1	27270913
ECLASS 9.0	27270913
ECLASS 10.0	27270913
ECLASS 11.0	27270913
ECLASS 12.0	27270913
ETIM 5.0	EC002550
ETIM 6.0	EC002550
ETIM 7.0	EC002550
ETIM 8.0	EC002550
UNSPSC 16.0901	41111615

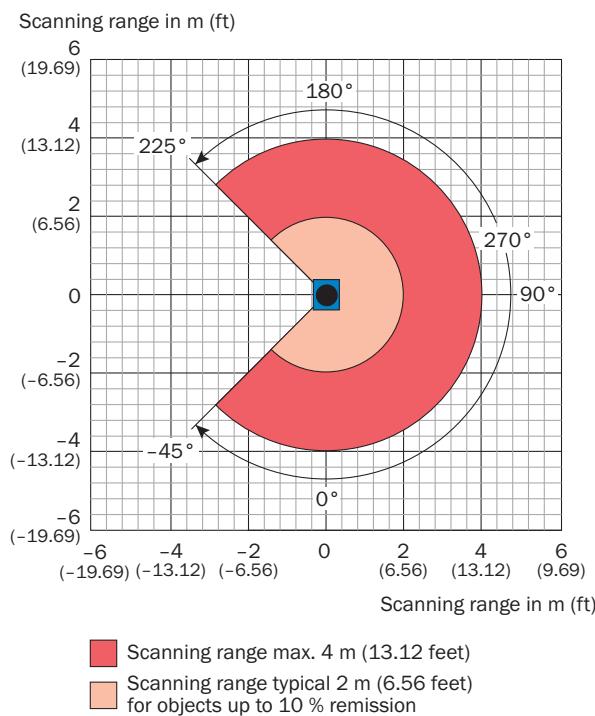
Dimensional drawing



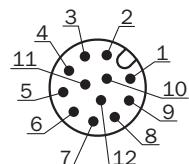
Dimensions in mm (inch)

- ① 2 x straight plates with M3 x 4 mm screw (included in delivery)
- ② M3 threaded mounting hole, 2.8 mm deep (blind hole thread), max. tightening torque 0.8 Nm
- ③ Optical hood
- ④ Receiving range (light inlet)
- ⑤ Transmission range (light emission)
- ⑥ Red and green LED (status displays)
- ⑦ Function button for teach-in
- ⑧ Connecting cable outlet (connection for power/digital inputs/outputs)
- ⑨ Micro USB female connector, type B
- ⑩ Marking for the position of the light emission level
- ⑪ Bearing marking to support alignment (90° axis)
- ⑫ Aperture angle 270° (scanning angle)
- ⑬ Area in which no reflective surfaces are allowed for mounted devices

Working range diagram



PIN assignment Power



Cable with male connector M12, 12-pin, A-coded

- ① GND
- ② DC 9 V ... 28 V
- ③ nc
- ④ nc
- ⑤ nc
- ⑥ nc
- ⑦ nc
- ⑧ "SYNC"/"device ready"
- ⑨ nc
- ⑩ nc
- ⑪ TxD
- ⑫ RxD

Recommended accessories

Other models and accessories → www.sick.com/TiM

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"> Description: Mounting kit with shock absorber Material: Anodized aluminum Details: Anodized aluminum Items supplied: Mounting hardware included Suitable for: TiM3xx, TiM5xx, TiM7xx 	Mounting kit	2086074
	<ul style="list-style-type: none"> Description: Mounting set 2, fender and alignment aid Dimensions (W x H x L): 92 mm x 89.4 mm x 68 mm Material: Anodized aluminum Details: Anodized aluminum Items supplied: Mounting hardware included Suitable for: TiM31x, TiM32x, TiM51x 	Mounting kit 2	2061776
connectors and cables			
	<ul style="list-style-type: none"> Connection type head A: Male connector, Micro-B, 4-pin, straight Connection type head B: Male connector, USB-A, 4-pin, straight Signal type: USB 2.0 Cable: 2 m, 4-wire Description: USB 2.0, unshielded 	USB cable	6036106
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 12-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 12-wire, PUR, halogen-free Description: Sensor/actuator cable, shielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation 	YF2A2B-050UD3XLEAX	2131096

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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