



TiM881A-2101101

TiM

2D LIDAR SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	part no.
TiM881A-2101101	1112243

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

Detailed technical data

Features

Application	Outdoor, Indoor
Measurement principle	HDDM ⁺
Light source	Infrared light, 850 nm 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	0.33°
Angular resolution	Horizontal 0.33°
Working range	0.05 m ... 25 m
Scanning range	At 10% remission factor 8 m

Mechanics/electronics

Connection type	1 x "Ethernet" connection, 4-pin M12 female connector 1 x connection "Power", 12-pin, M12 male connector 1 x Micro USB female connector, type B
Supply voltage	9 V DC ... 28 V DC
Power consumption	16 W with 4 max. loaded digital outputs
Output current	≤ 100 mA
Housing color	Gray (RAL 7032)
Enclosure rating	IP67 (IEC 60529:1989+AMD1:1999+AMD2:2013)
Protection class	III (IEC 61140:2016-1)
Weight	250 g, without connecting cables
Dimensions (L x W x H)	60 mm x 60 mm x 86 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
Detectable object shape	Almost any
Systematic error	± 60 mm ¹⁾
Statistical error	20 mm ¹⁾
Integrated application	DistanceGuard

¹⁾ Technical data such as measurement errors and sensing range can only be guaranteed up to a sensing range of 10 m.

Interfaces

Ethernet	✓ , TCP/IP
USB	✓
	Remark Micro USB
Digital inputs/outputs	
	Inputs 4 (Reserved)
	Outputs 4 (PNP, OUT1 = minimum distance undercut, OUT2 = maximum number of people exceeded, OUT3 = device overloaded, OUT4 = reserved)
Delay time	67 ms ... 30,000 ms
Dwell time	67 ms ... 10,000 ms
Optical indicators	2 LEDs
Operator interfaces	SOPAS ET (diagnostics)

Ambient data

Object remission	4 % ... > 1,000 % (reflectors)
Electromagnetic compatibility (EMC)	
	Emitted radiation Residential area (IEC 61000-6-3:2006+AMD1:2010)
	Electromagnetic immunity Industrial environment (IEC 61000-6-2:2005)
Vibration resistance	
	Sine resonance scan 10 Hz ... 1,000 Hz ¹⁾
	Sine test 10 Hz ... 500 Hz, 5 g, 20 frequency cycles ¹⁾
	Noise test 10 Hz ... 250 Hz, 4.42 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	-25 °C ... +50 °C
Storage temperature	-40 °C ... +75 °C
Temperature change	-25 °C ... +50 °C, 10 cycles ⁴⁾
Damp heat	25 % ... 55 %, 6 cycles ⁵⁾
Permissible relative humidity	≤ 95 %, Non-condensing ⁵⁾

¹⁾ IEC 60068-2-6:2007.

²⁾ IEC 60068-2-64:2008.

³⁾ IEC 60068-2-27:2008.

⁴⁾ EN 60068-2-14:2009.

⁵⁾ EN 60068-2-30:2005.

Ambient light immunity	80,000 lx
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- 1) IEC 60068-2-6:2007.
2) IEC 60068-2-64:2008.
3) IEC 60068-2-27:2008.
4) EN 60068-2-14:2009.
5) 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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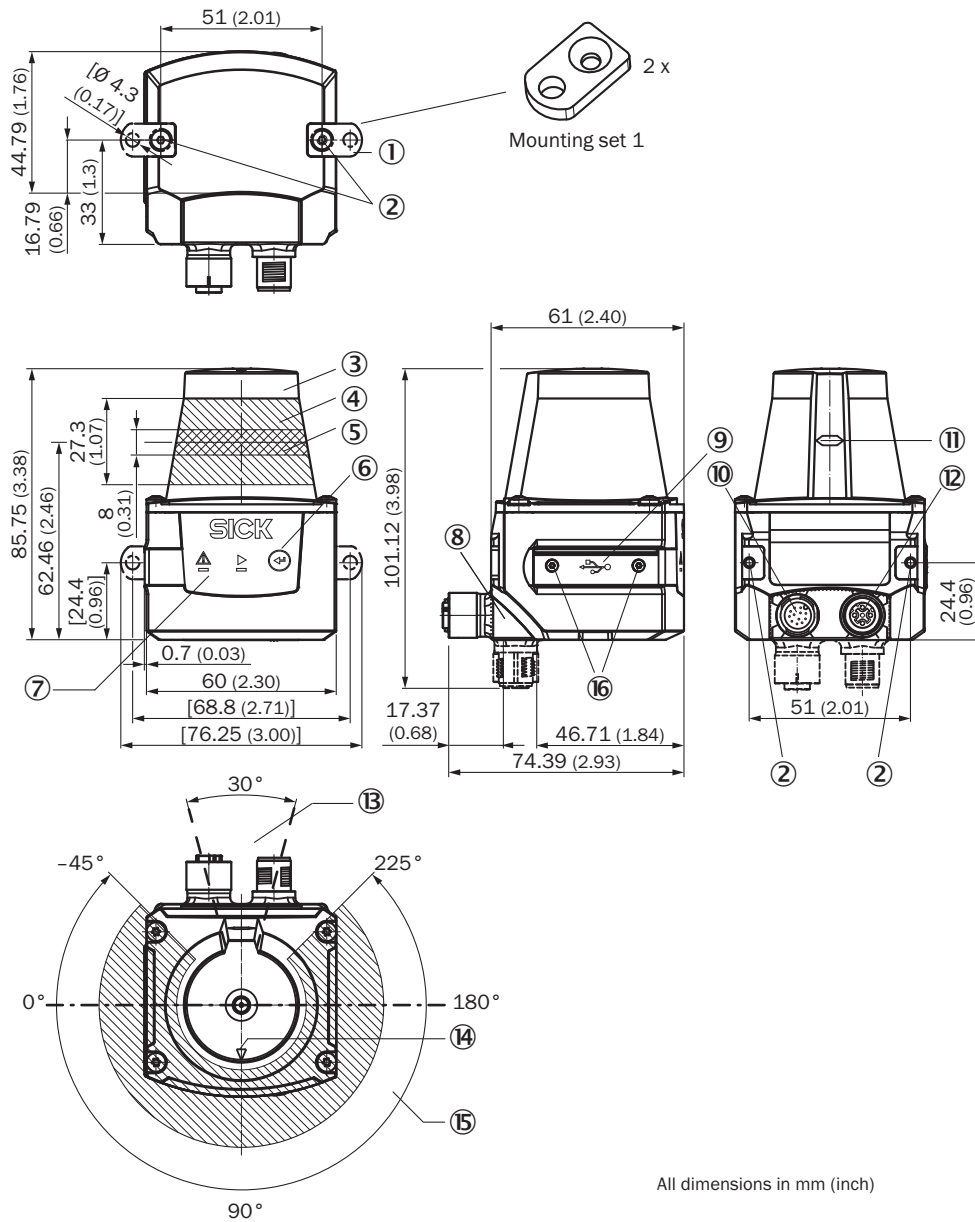
Certificates

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

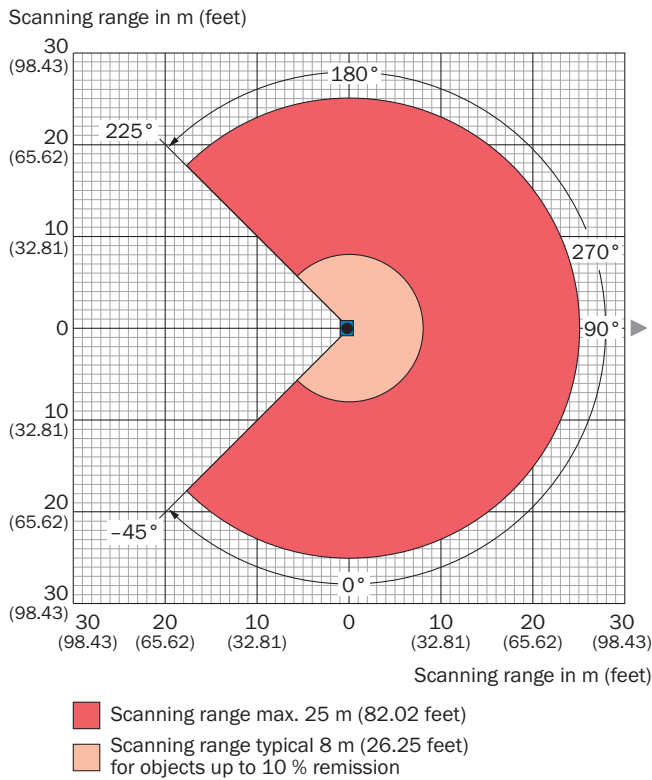


All dimensions in mm (inch)

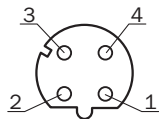
Dimensions in mm (inch)

- 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 Function button for teach-in
- ⑦ Red and green LED (status displays)
- ⑧ swivel connector unit
- ⑨ Micro USB female connector, type B
- ⑩ connection "Power", 12-pin, M12 male connector
- ⑪ Marking for the position of the light emission level
- ⑫ "Ethernet" connection, 4-pin M12 female connector
- ⑬ Area in which no reflective surfaces are allowed for mounted devices
- ⑭ Bearing marking to support alignment (90° axis)
- ⑮ Aperture angle 270° (scanning angle)
- ⑯ 2 x countersunk screw (Torx TX 6) M2 x 4 mm

Working range diagram



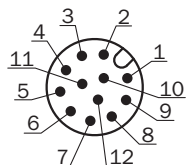
Connection type Ethernet



M12 female connector, 4-pin, D-coded

- ① TX+
- ② RX+
- ③ TX-
- ④ RX-

PIN assignment Power I/O connection



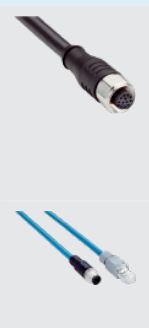
Connecting cable with male connector or M12 male connector, 12-pin, A-coded

- ① GND
- ② DC 9 V ... 28 V
- ③ In₁
- ④ In₂

- ⑤ OUT1
- ⑥ OUT2
- ⑦ OUT3
- ⑧ OUT4
- ⑨ PNP: INGND, NPN: IN 9 V ... 28 V
- ⑩ In3
- ⑪ In4
- ⑫ nc

Recommended accessories

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

	Brief description	Type	part no.
connectors and cables			
	<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• Description: Sensor/actuator cable, Pin 1 and pin 2 swapped over, shielded• Connection systems: Flying leads• Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation, Outdoor	YF2A6B-050S01XLEAX	6054974
	<ul style="list-style-type: none">• Connection type head A: Male connector, M12, 4-pin, straight, D-coded• Connection type head B: Male connector, RJ45, 8-pin, straight• Signal type: Ethernet, PROFINET• Cable: 5 m, 4-wire, AWG26, PVC• Description: Ethernet, shielded, PROFINET	YM2D24-050E-B2MRJA4	6050200

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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