



TiM881A-2101101

DistanceGuard

2D LIDAR SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
TIM881A-2101101	1112243

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



Detailed technical data

Features

Measurement principle	HDDM ⁺
Application	Outdoor
Light source	Infrared light, 850 nm Infrared (850 nm)
Laser class	1 (IEC 60825-1:2014, EN 60825-1:2014)
Aperture angle	Horizontal 270°
Scanning frequency	15 Hz
Angular resolution	0.33°
Working range	0.05 m ... 25 m
Scanning range	At 10% remission 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
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

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	4 (Reserved)
Digital outputs	4 (PNP)
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⁾
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⁾ EN 60068-2-14:2009.

⁵⁾ EN 60068-2-30:2005.

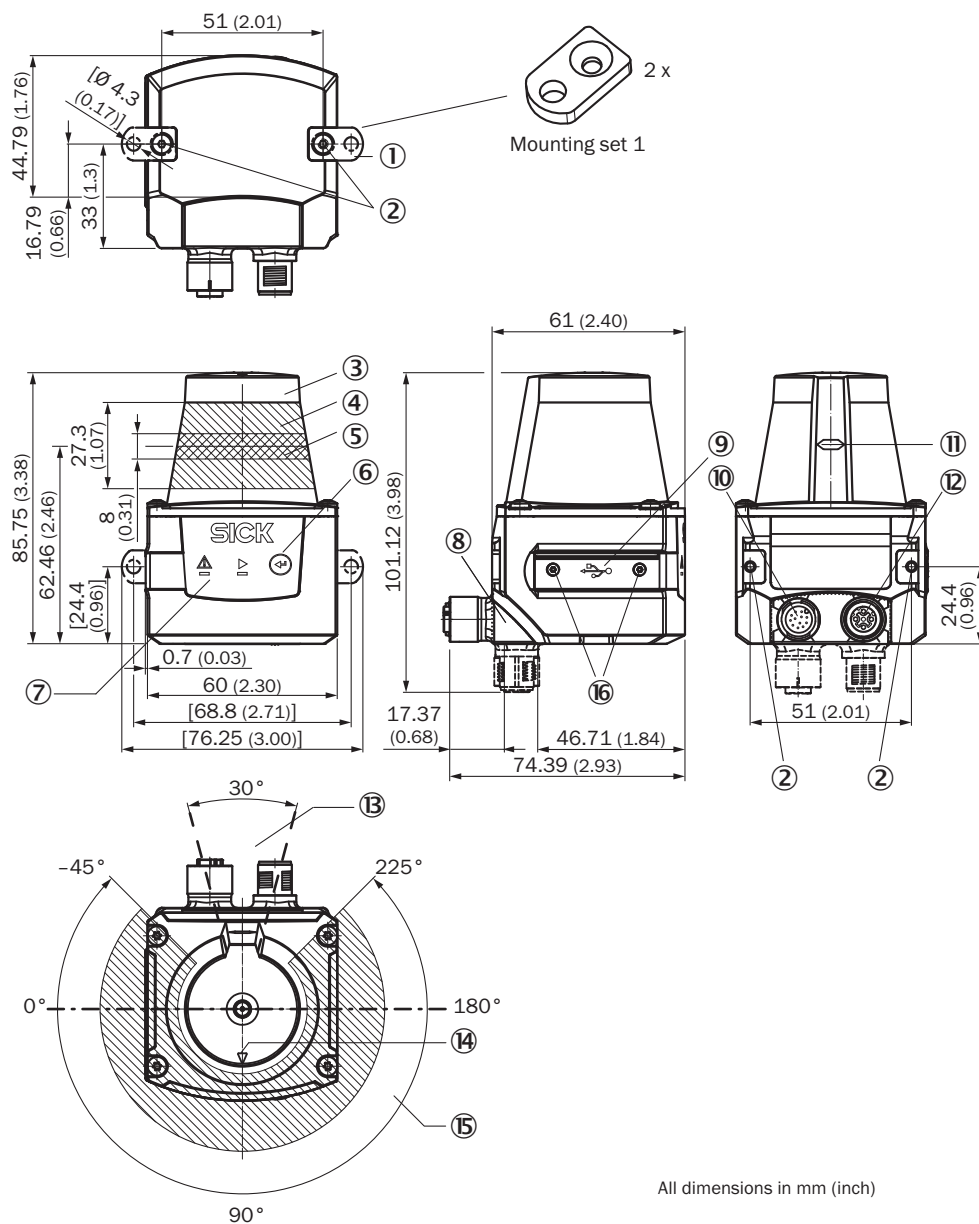
General notes

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

ECl@ss 5.0	27270990
ECl@ss 5.1.4	27270990
ECl@ss 6.0	27270913
ECl@ss 6.2	27270913
ECl@ss 7.0	27270913
ECl@ss 8.0	27270913
ECl@ss 8.1	27270913
ECl@ss 9.0	27270913
ECl@ss 10.0	27270913
ECl@ss 11.0	27270913
ETIM 5.0	EC002550
ETIM 6.0	EC002550
ETIM 7.0	EC002550
ETIM 8.0	EC002550
UNSPSC 16.0901	46171620

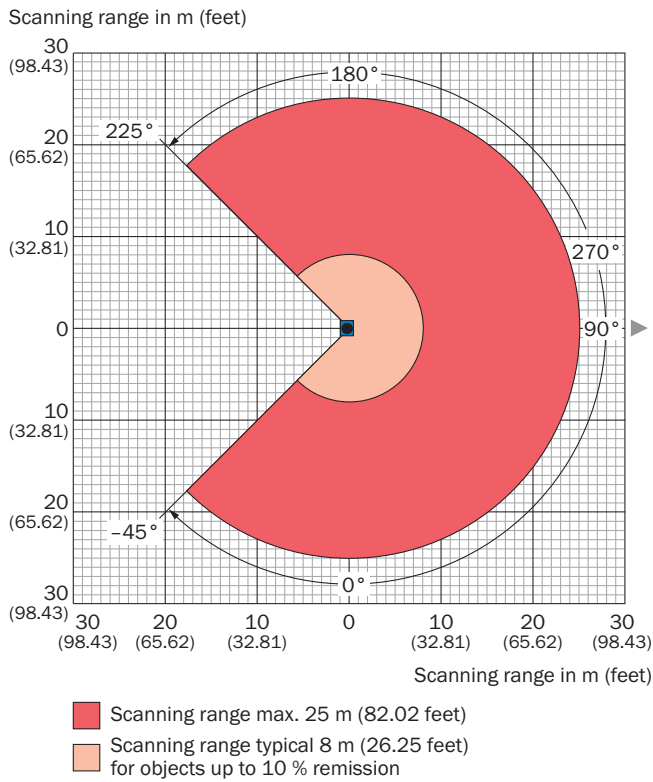
Dimensional drawing (Dimensions in mm (inch))



All dimensions in mm (inch)

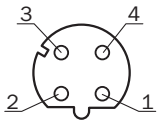
- ① 2 x straight plates with M3 x 4 mm screw (included in delivery)
- ② M3 threaded mounting hole, 2.8 mm deep (blind hole thread), max. tightening torque 0.8 Nm
- ③ Optical hood
- ④ Receiving range (light inlet)
- ⑤ Transmission range (light emission)
- ⑥ Function button for teach-in
- ⑦ Red and green 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)

Working range diagram



Connection type

Ethernet

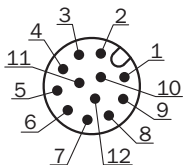


M12 female connector, 4-pin, D-coded

- 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/DistanceGuard

	Brief description	Type	Part no.
Mounting brackets and plates			
	Mounting kit, fender and alignment aid, Anodized aluminum, mounting hardware included	Mounting kit	2086761
Plug connectors and cables			
	Head A: female connector, M12, 12-pin, straight, A-coded Head B: Flying leads Cable: Power, I/O, PUR, shielded, 5 m	YF2A6B-050UD3XLEAX	6054974
	Head A: male connector, M12, 4-pin, straight, D-coded Head B: male connector, RJ45, 8-pin, straight Cable: Ethernet, shielded, 5 m	YM2D24-050EB2MRJA4	6050200

Recommended services

Additional services → www.sick.com/DistanceGuard

	Type	Part no.
Product, system, and software training		
<ul style="list-style-type: none"> • Range of services: The training contents relate to the following 2D and 3D LiDAR sensors: LMS series, MRS1000, MRS6000, NAV series or TiM series, Training format and location can be worked out in collaboration with SICK 	Training LMS/MRS/NAV/TiM	1612234
Warranty extensions		
<ul style="list-style-type: none"> • Product area: Identification solutions, machine vision, Distance sensors, Detection and ranging solutions • Range of services: The services correspond to the scope of the statutory manufacturer warranty (SICK general terms and conditions of purchase) • Duration: Five-year warranty from delivery date. 	Extended warranty for a total of five years from delivery date	1680671

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.”

WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com