



TiM881P-2100101

TiM

2D LIDAR SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	part no.
TiM881P-2100101	1090292

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



Detailed technical data

Features

Application	Outdoor, Indoor
Measurement principle	HDDM ⁺
Light source	Infrared (850 nm)
Laser class	1 (IEC 60825-1:2014, EN 60825-1:2014)
Aperture angle	
Horizontal	270°
Scanning frequency	15 Hz
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	Typ. 4 W, 16 W with 4 max. loaded digital outputs
Output current	≤ 100 mA
Housing color	Gray (RAL 7032)
Enclosure rating	IP67, applies only when the plastic cover of the "Aux interface" is closed (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	Programmable

¹⁾ Typical value at 90% remission up to maximum scanning range; real value depends on ambient conditions.

Interfaces

Ethernet	✓ , TCP/IP
USB	✓
Remark	Micro USB
Digital inputs/outputs	
Inputs	4 (PNP)
Outputs	4 (PNP)
Delay time	67 ms ... 30,000 ms
Dwell time	67 ms ... 10,000 ms
Optical indicators	2 LEDs
Operator interfaces	Web server, SOPAS ET (diagnostics)
Configuration software	SICK AppStudio

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, 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, 6 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 °C ... +55 °C, 95 % RH, 6 cycles ⁵⁾
Permissible relative humidity	

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.

	Operation	< 80 %, Non-condensing (EN 60068-2-30:2005)
	Storage	≤ 90 %, 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⁾ 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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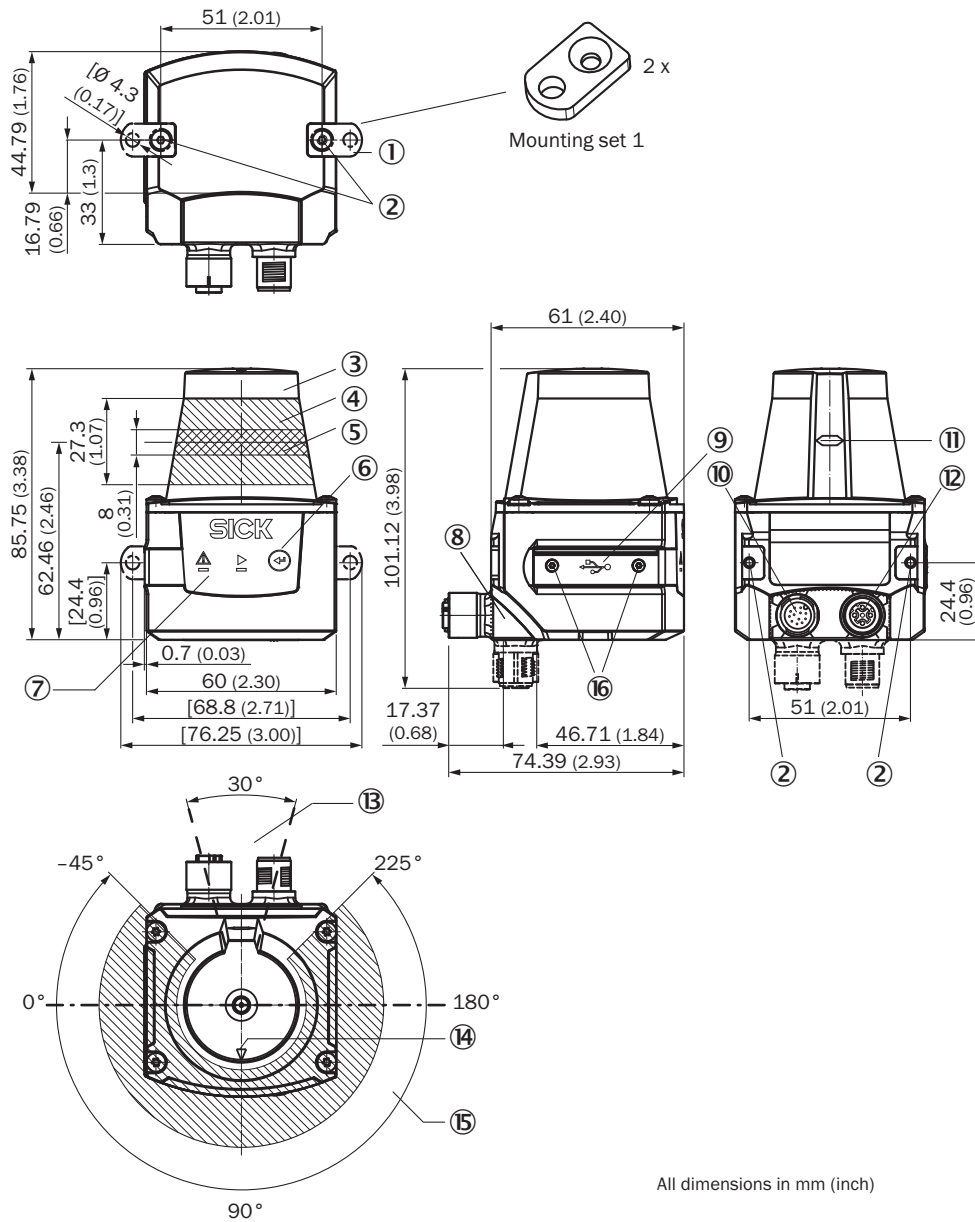
Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
China-RoHS	✓
cTUVus certificate	✓

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

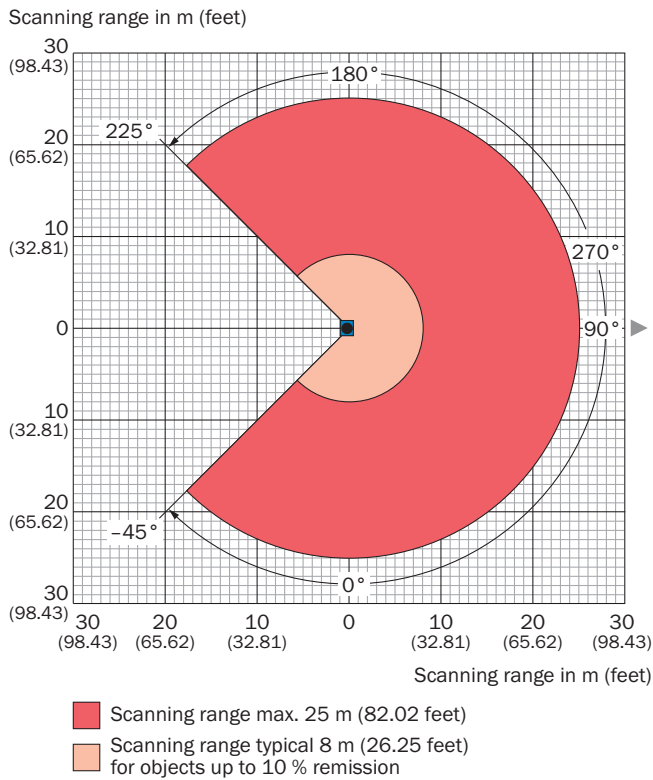
Dimensional drawing



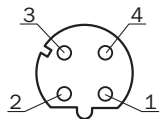
Dimensions in mm (inch)

- 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 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



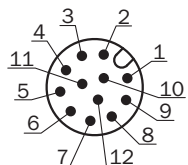
Connection type Ethernet



M12 female connector, 4-pin, D-coded

- ① TX+
- ② RX+
- ③ TX-
- ④ RX-

PIN assignment Power I/O connection

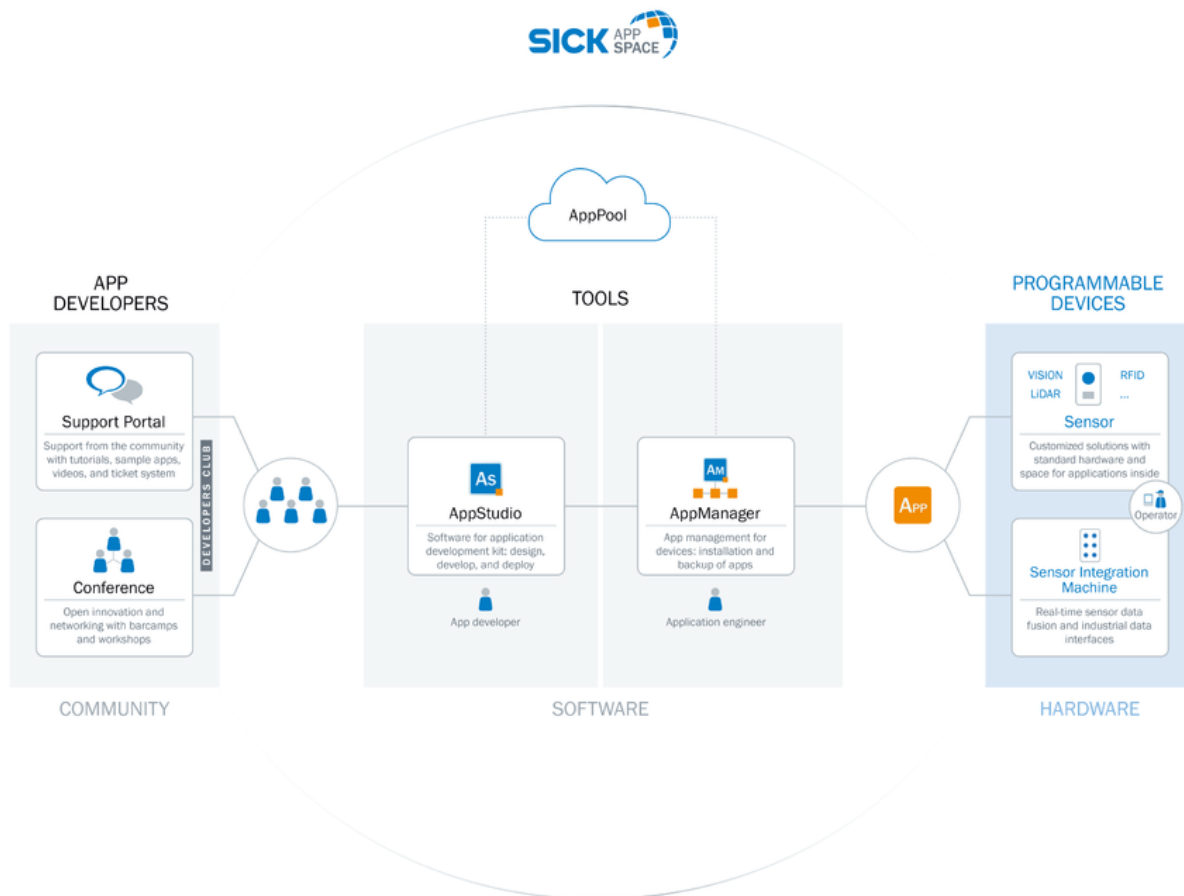


Connecting cable with male connector or M12 male connector, 12-pin, A-coded

- 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

Overview SICK AppSpace



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
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, shieldedPROFINET 	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.”

WORLDWIDE PRESENCE:

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