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DATA SHEET

TIM310-1130000S02

TiM
2D LiDAR sensors

SICK Sensor Intelligence



2D LIDAR SENSORS

TIM310-1130000S02

ORDERING INFORMATION

Type	part no.
TIM310-1130000S02	1067917

Further device versions and accessories at 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)
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 M12 12-pin male connector (0.8 m)
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	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

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	< 20 mm [3]
Integrated application	Field evaluation
Number of field sets	16 field triples (48 fields, 1 triple (3 fields) can be configured directly at the scanner)
Simultaneous evaluation cases	1 (3 fields)

[1] At +45° to +225° of the working range; max. 150 ms at –45° to +45° of the working range.

[2] Typical value; actual value depends on environmental conditions.

[3] Typical value, actual value depends on ambient conditions. Technical data such as measurement errors and sensing range can only be guaranteed up to a sensing range of 10 m at 90% remission.

INTERFACES

USB	✓
Remark	Micro USB
Function	Service interface, parameterization
Digital inputs	4
Digital outputs	3 (NPN, additional 1 x “Device Ready”)
Delay time	67 ms ... 30,000 ms (configurable)
Dwell time	67 ms ... 600,052 ms (configurable)
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]
Switch-on temperature	–10 °C ... +50 °C

[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	–10 °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	≤ 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] IEC 60068-2-14:2009.

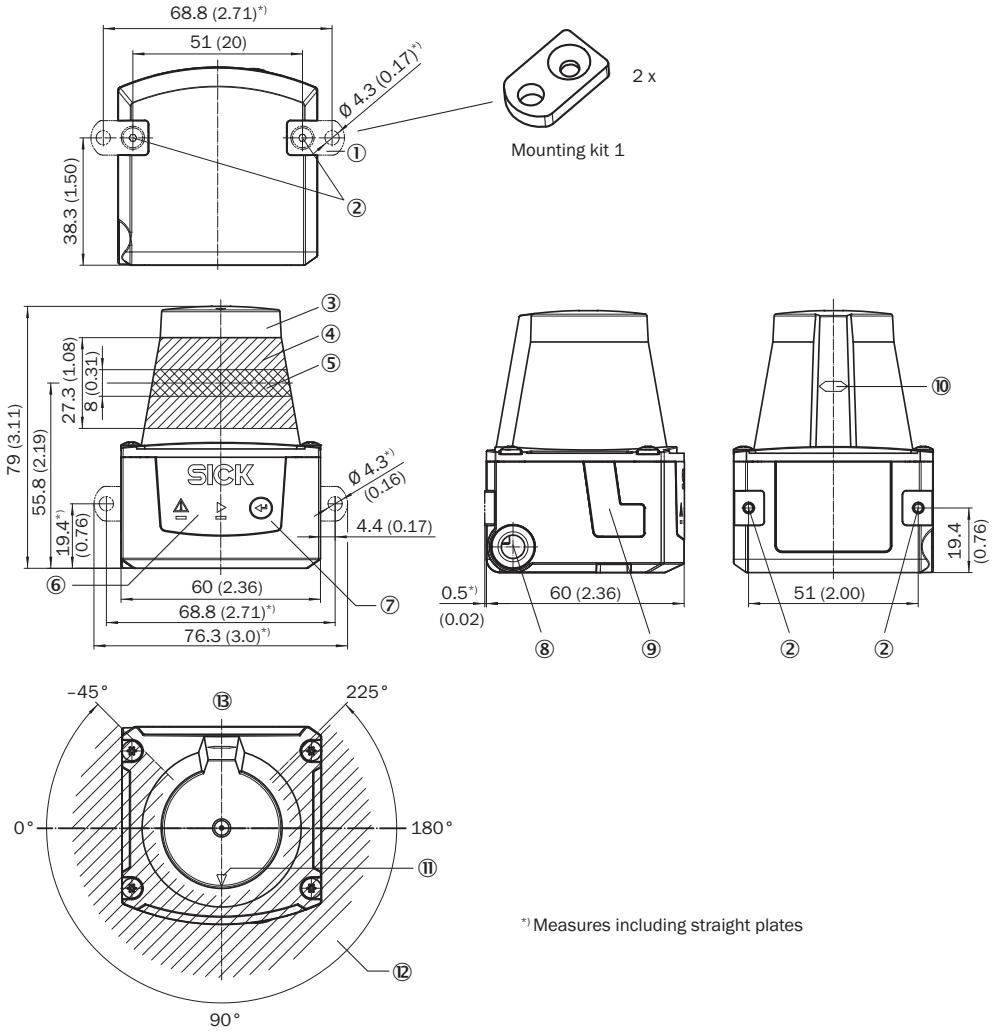
[5] EN 60068-2-14:2009.

[6] EN 60068-2-30:2005.

GENERAL NOTES

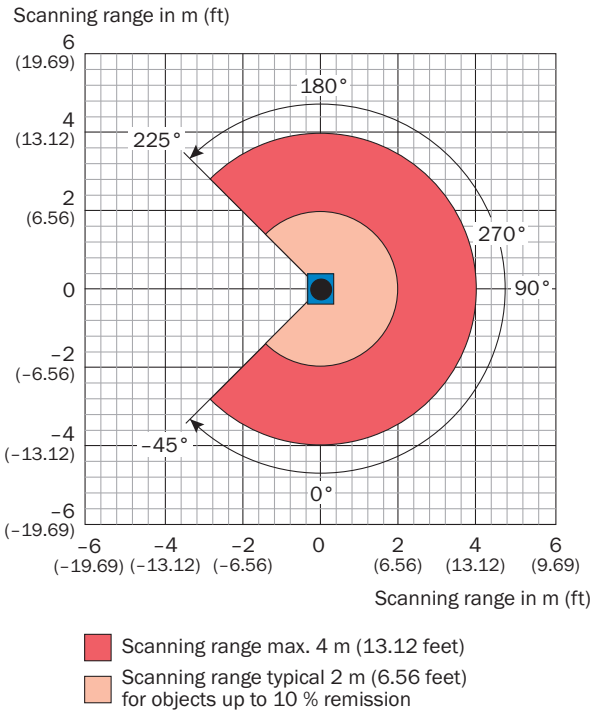
Note on use	The sensor does not constitute a safety component as defined by relevant legislation on machine safety.

DIMENSIONAL DRAWING

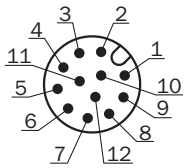


Dimensions in mm (inch)
① 2 x straight plates with M3 x 4 mm screw (included in delivery)
② M3 threaded mounting hole, 2.8 mm deep (blind hole thread), max. tightening torque 0.8 Nm
③ Optical hood
④ Receiving range (light inlet)
⑤ Transmission range (light emission)
⑥ Red and green LED (status displays)
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 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 In_1
④ In_2
⑤ OUT1
⑥ OUT2
⑦ OUT3
⑧ OUT4
⑨ PNP: INGND, NPN: IN 9 V ... 28 V
⑩ In3
⑪ In4
⑫ nc

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1067917

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SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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