Data sheet

TIM361S-2134101

TiM

2D LIDAR SENSORS

SICK
Sensor Intelligence.

Ordering information

Type	part no.
TIM361S-2134101	1090608

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

Detailed technical data

Features

Application	Indoor
System part	sensor
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	0.33°
Scan field flatness	± 1.5°
Working range	0.05 m ... 10 m (> 90% remission)
Safety-related working range	0.05 m ... 4 m (At 5% remission)
Blind zone	0 m ... 0.05 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	Yellow
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
MTBF	> 100 years

Safety-related parameters

Category	B (EN ISO 13849-1:2015)
Performance level	PL b (EN ISO 13849-1:2015)
T_M (mission time)	20 years (EN ISO 13849-1:2015)
Conformities	EN ISO 13849-1:2015, EN ISO 13482:2014, EN ISO 13855:2010, ANSI/ITSDF B56.5:2012
$MTTF_D$	100 years, at 25 °C ambient temperature (EN ISO 13849-1:2015)

Performance

Response time	1 scan 2 scans, ≤ 134 ms [1]
Detectable object shape	Almost any
Integrated application	Protective field evaluation with flexible fields
Protective field tolerance	100 mm, 0.66° (DIN CLC/TS 62046:2009, 5% remission)
Number of field sets	16 field triples (48 protective fields)
Simultaneous evaluation cases	3 simultaneous protective fields (per field set)

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

Interfaces

USB	✓
Remark	Micro USB
Function	Service interface, parameterization
Digital inputs/outputs	
Inputs	4 (PNP, for field set switching)
Outputs	3 (PNP, to display a detection in the protective field, 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	≥ 5 % (reflectors) [1]
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 [2]

[1] When using reflectors, observe notes in the operating instructions.
[2] IEC 60068-2-6:2007.
[3] IEC 60068-2-64:2008.
[4] IEC 60068-2-27:2008.
[5] IEC 60068-2-14:2009.
[6] EN 60068-2-14:2009.
[7] EN 60068-2-30:2005.

Sine test	10 Hz ... 500 Hz, 5 g, 10 frequency cycles [2]
Noise test	10 Hz ... 250 Hz, 4.24 g RMS, 5 h [3]
Shock resistance	50 g, 11 ms, ± 3 single shocks/axis [4] 25 g, 6 ms, ± 1,000 continuous shocks/axis [4] 50 g, 3 ms, ± 5,000 continuous shocks/axis [4]
Ambient operating temperature	–10 °C ... +50 °C [5]
Storage temperature	–40 °C ... +75 °C [5]
Switch-on temperature	–10 °C ... +50 °C
Temperature change	–25 °C ... +50 °C, 10 cycles [6]
Damp heat	+25 °C ... +55 °C, 95 % RH, 6 cycles [7]
Permissible relative humidity	
Operation	< 80 %, Non-condensing (EN 60068-2-30:2005)
Storage	≤ 90 %, Non-condensing (EN 60068-2-30:2005)
Ambient light immunity	60,000 lx 3,000 lx, With direct light

[1] When using reflectors, observe notes in the operating instructions.
[2] IEC 60068-2-6:2007.
[3] IEC 60068-2-64:2008.
[4] IEC 60068-2-27:2008.
[5] IEC 60068-2-14:2009.
[6] EN 60068-2-14:2009.
[7] EN 60068-2-30:2005.

General notes

Note on use	The TiM361S is a safety-related sensor that is suitable for use in the following applications: hazardous area, hazardous point, and access protection as well as mobile hazardous area protection (protection of automated guided vehicles and mobile platforms). The sensor must only ever be used within the limits of the prescribed and specified technical data and operating conditions.

Certificates

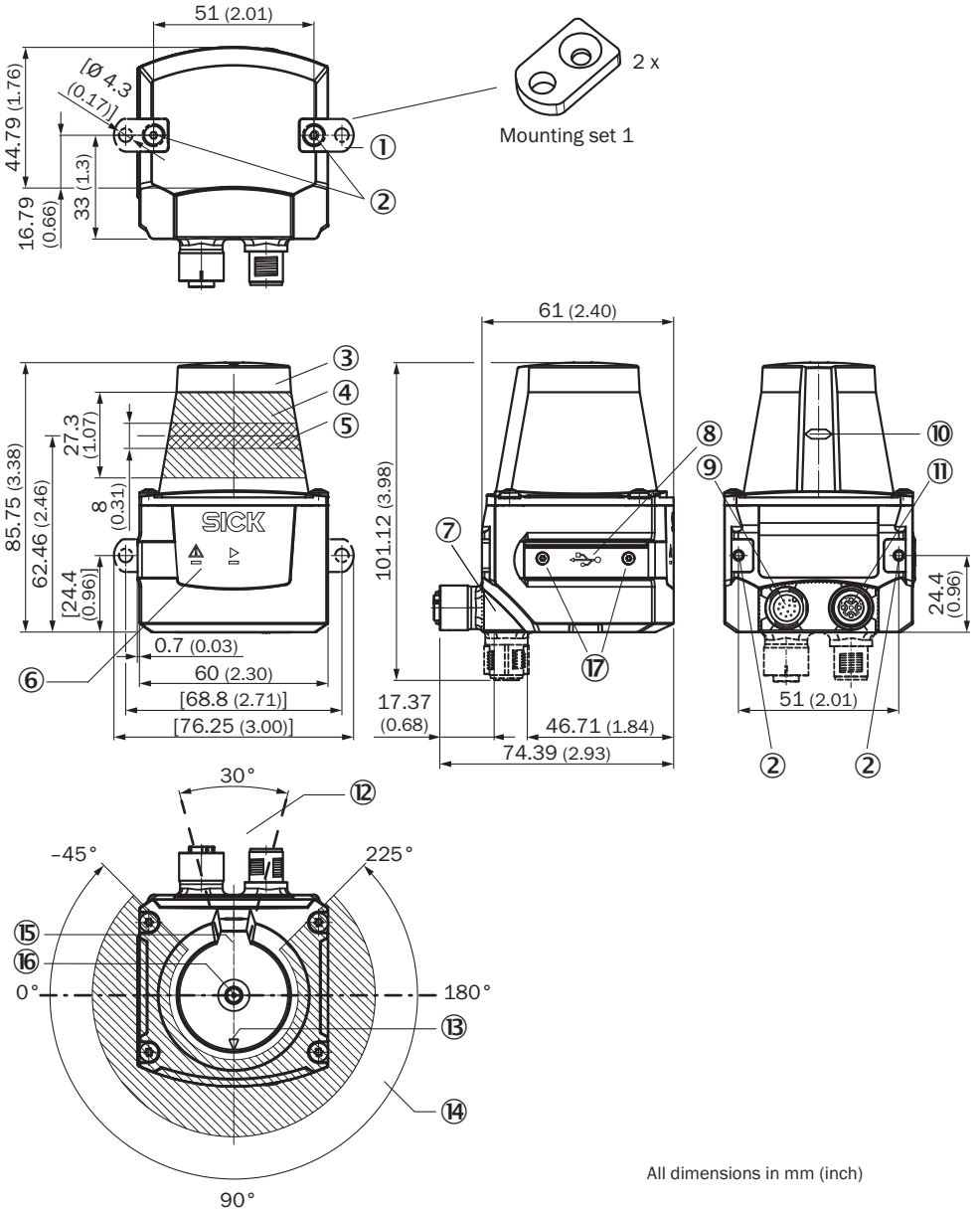
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
China-RoHS	✓
TÜV approval	✓
TÜV approval annex	✓
cTUVus certificate	✓
EC-Type-Examination approval	✓

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

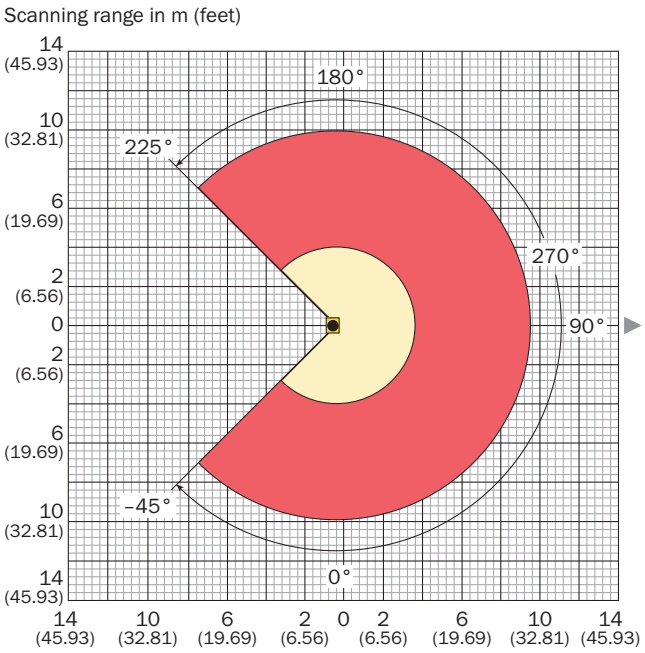


All dimensions in mm (inch)

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 Red and green LED (status displays)
⑦ swivel connector unit
⑧ Micro USB port, behind the black rubber plate (“Aux interface” connection for configuration with PC)
⑨ “Power/inputs and outputs” connection, 12-pin M12 male connector
⑩ Marking for the position of the light emission level
⑪ 4-pin M12 female connector: not assigned
⑫ Area in which no reflective surfaces are allowed for mounted devices
⑬ Bearing marking to support alignment (90° axis)
⑭ Aperture angle 270° (scanning angle)
⑮ Internal reference target
⑯ Measurement origin

⑰ 2 x countersunk screw (Torx TX 6) M2 x 4 mm

Working range diagram

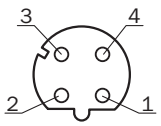


Range for **not safety-related** detection:
0.05 m to max. 10 m (32.81 feet)

Range for **safety-related** detection:
0.05 m to max. 4 m (13.21 feet)

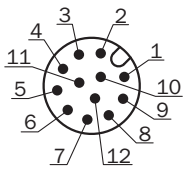
Attention! From the measurement origin up to a distance of 0.05 m (0.17 feet) no objects are detected (blind zone!) over the entire radial field of view (scanning range of 270°).

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 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

Recommended accessories

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

	Brief description	Type	part no.
Mounting systems			
	• **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			
	• **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

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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