Data sheet

TIM561-2050101S80

TiM

2D LIDAR SENSORS

SICK
Sensor Intelligence.

Ordering information

Type	part no.
TIM561-2050101S80	1106065

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+A11:2021)
Aperture angle	
Horizontal	270°
Scanning frequency	15 Hz
Angular resolution	
Horizontal	0.33°
Working range	0.05 m ... 10 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/Synchronization output” 5-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
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
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	± 60 mm [2]
Statistical error	< 20 mm [2] < 10 mm [3]
Integrated application	Output of measurement data

[1] At +45° to +225° of the working range; max. 150 ms at –45° to +45° of the working range.
[2] Typical value at 90% remission up to maximum scanning range; real value depends on ambient conditions.
[3] Typical value at 10% remission up to 6 m scanning range; real value depends on ambient conditions.

Interfaces

Ethernet	✓, TCP/IP
USB	✓
Remark	Micro USB
Function	Service interface, parameterization
Digital inputs/outputs	
Inputs	0
Outputs	1 (PNP, "SYNC"/"device ready")
Optical indicators	2 LEDs (ON, "device ready")

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	–25 °C ... +50 °C [4]
Storage temperature	–40 °C ... +75 °C [4]
Temperature change	–25 °C ... +50 °C, 10 cycles [5]

[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.

Damp heat	+25 °C ... +55 °C, 95 % RH, 6 cycles [6]
Permissible relative humidity	
Operation	< 80 %, Non-condensing (EN 60068-2-30:2005)
Storage	≤ 95 %, 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.

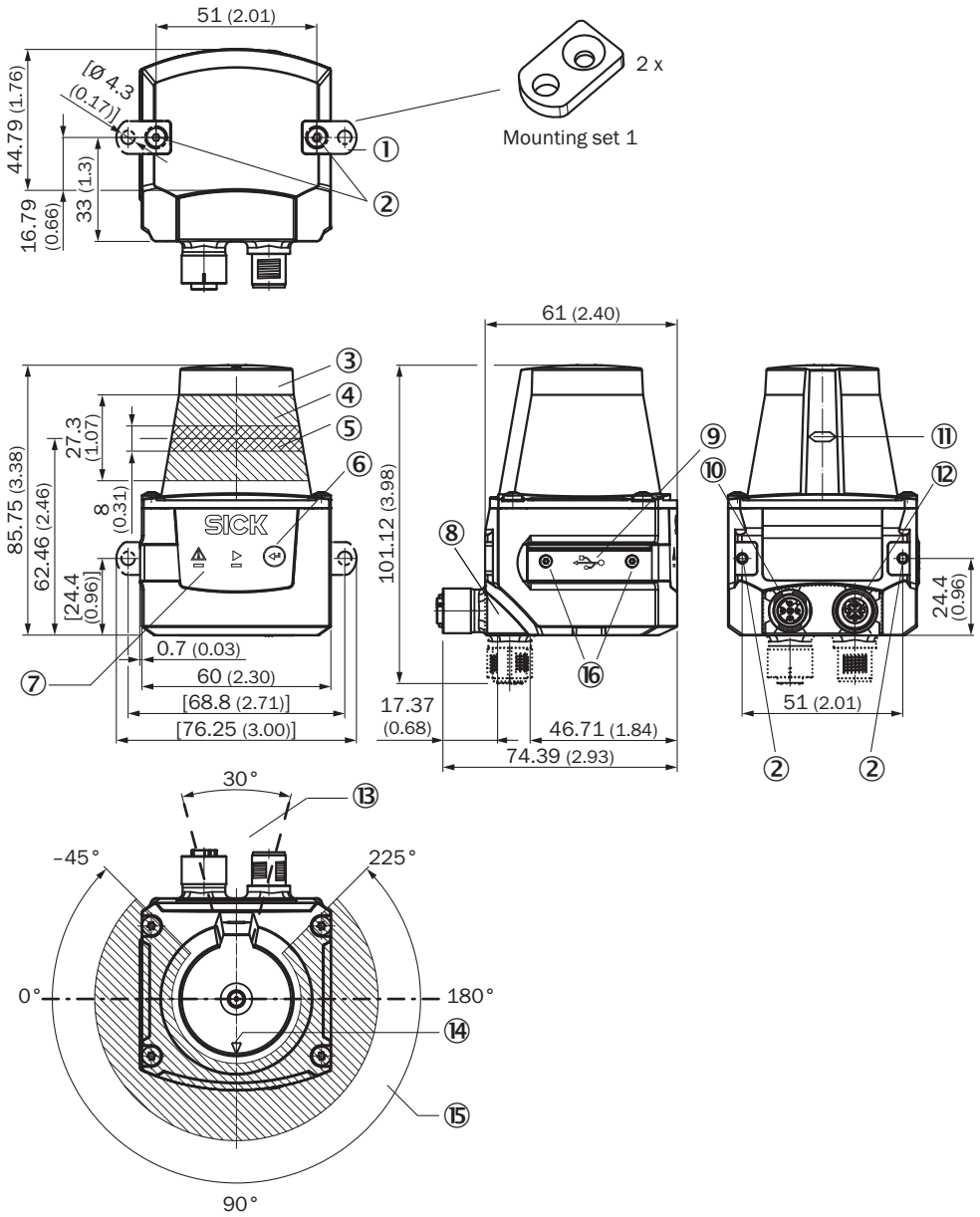
Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
China RoHS	✓
cTUVus certificate	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

Classifications

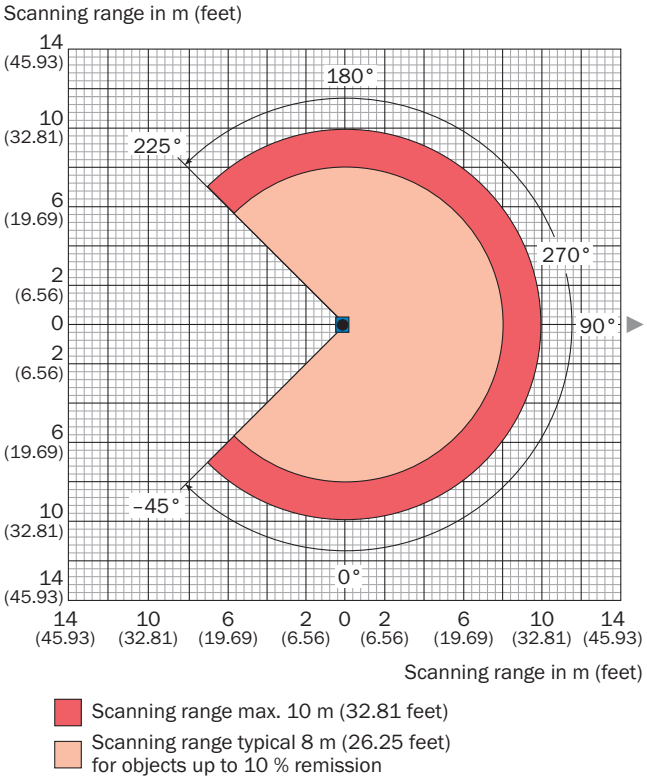
ECLASS 5.0	27270990
ECLASS 5.1.4	27270990
ECLASS 6.0	27270913
ECLASS 6.2	27270913
ECLASS 7.0	27270913
ECLASS 8.0	27270913
ECLASS 8.1	27270913
ECLASS 9.0	27270913
ECLASS 10.0	27270913
ECLASS 11.0	27270913
ECLASS 12.0	27270913
ETIM 5.0	EC002550
ETIM 6.0	EC002550
ETIM 7.0	EC002550
ETIM 8.0	EC002550
UNSPSC 16.0901	41111615

Dimensional drawing

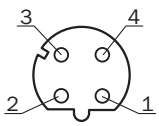


Dimensions in mm (inch)
① 2 x straight plates with M3 x 4 mm screw (included in delivery)
② M3 threaded mounting hole, 2.8 mm deep (blind hole thread), max. tightening torque 0.8 Nm
③ Optical hood
④ Receiving range (light inlet)
⑤ Transmission range (light emission)
⑥ push-button (no function)
⑦ Red and green LED (status displays)
⑧ swivel connector unit
⑨ Micro USB female connector, type B
⑩ connection “Power/Synchronization output” 5-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

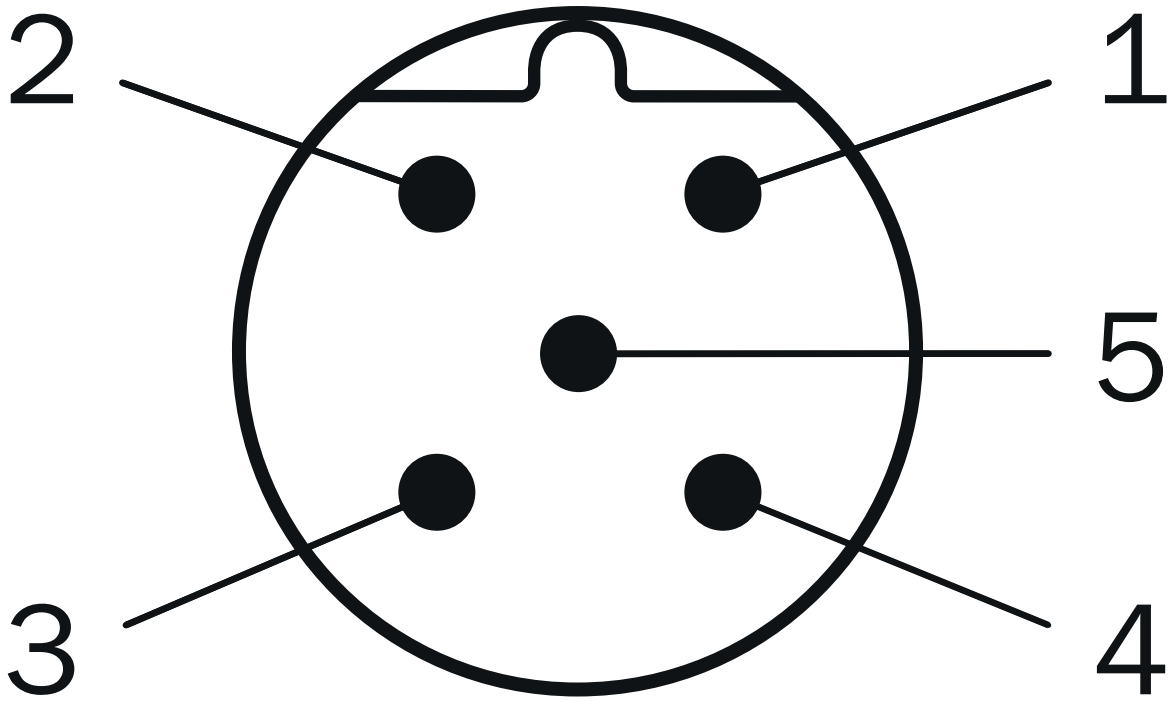


Connection type Ethernet



M12 female connector, 4-pin, D-coded
① TX+
② RX+
③ TX-
④ RX-

PIN assignment Power



Connector M12, 5-pin, A-coded
① DC 9 V ... 28 V
② "SYNC"/"device ready"
③ GND
④ nc
⑤ 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

	Brief description	Type	part no.
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
	• **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Power • **Cable:** 5 m, 4-wire, PUR, halogen-free • **Description:** Power, shielded • **Connection systems:** Flying leads	YF2A64-050XXXXLEAX	6036159
	• **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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