

TiM31x TiM32x

Detecting Laser Scanner
Short Range

SICK
Sensor Intelligence.



Intended use

The laser scanner TiM31x/TiM32x (referred to as the TiM below) is an intelligent sensor for invisibly detecting objects in areas (fields) to be monitored. It is designed for mobile or stationary interior use in stand-alone operation, with a scanning range of up to 4 m. The combined triggering of the four switching inputs activates one of the 16 field sets as an evaluation case for performing field monitoring.

With the TiM31x, each configurable field set offers three origin-oriented, partially overlapping fields of uniform shape, but different sizes. Field sets with fixed or freely definable shapes are available.

With the TiM32x each field set provides three configurable fields.

The TiM signals detected field infringements in relation to the three fields through a combination of three switching outputs.

The TiM is available in both a PNP and an NPN variant. The NPN variant is identified by S02 in the type code on the type label.

The purpose of this instruction manual is to allow you to put the TiM into operation quickly and easily using preconfigured

field sets and to obtain the first detection results.

Further information on the mechanical and electrical installation is available in the [Technical Information](#) (no. 8014318). This document can be accessed on the [TiM product website](http://www.sick.com/tim3xx) (www.sick.com/tim3xx).

The TiM is certified to IEC/EN/UL/CSA 61010-1:2007. These operating instructions may contain passages of text in a foreign language.

Safety information

- Read these instructions before commissioning the TiM in order to familiarize yourself with the device and its functions.
- Mounting and electrical installation are to be performed only by qualified technicians.
- Electrical connections between the TiM and other devices may only be made when there is no power to the system. Otherwise, the devices may be damaged.
- Select and design conductor cross sections of the supply cable from the customer's power system in accordance with the applicable standards. If the supply voltage for the TiM is not fed via the optional CDB730-001 connection module, protect the TiM with an external 0.8 A delay-action fuse at the start of the supply cable.
- All circuits connected to the TiM must be designed SELV or PELV circuits. (SELV = Safety Extra Low Voltage, PELV = Protective Extra Low Voltage).
- Use the device only under permitted environmental conditions (e.g. temperature, grounding potential, → see "Technical specifications Page 5").
- Protect the TiM against moisture and dust when the cover to the USB socket is open. To comply with the IP 65 enclosure rating during operation, the black rubber plate must be flush-mounted on the housing.
- Opening the screws of the TiM housing will invalidate any warranty claims against SICK AG.
- The TiM does not constitute personal protection equipment in accordance with the respective applicable safety standards for machines.

Commissioning and configuration

Step 1: Electrical installation

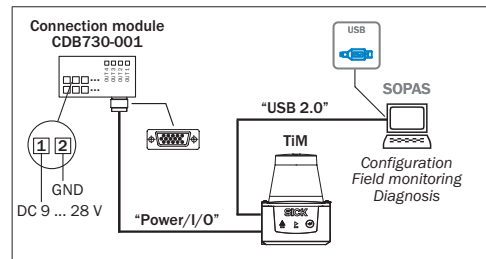
- Connect the 15-pin D-sub-HD connecting cable plug with the corresponding socket of the connection module CDB730-001.
– or –
Connect the 12-pin M12 connecting cable plug to a customer-side connection box. To do this, make a connection box with a 12-pin M12 socket. The box serves as the connection module for feeding the supply voltage, and for the signal routing of the switching inputs and outputs (→ see "Electrical Installation" chapter in the [Technical Information](#) (no. 8014318)).
- Connect the TiM's Micro USB socket (behind the black rubber plate on the side) to a free USB socket (type A) on the

PC using a suitable shielded high-speed USB cable (e.g. no. 6036106, 2 m). Do not extend the cable!

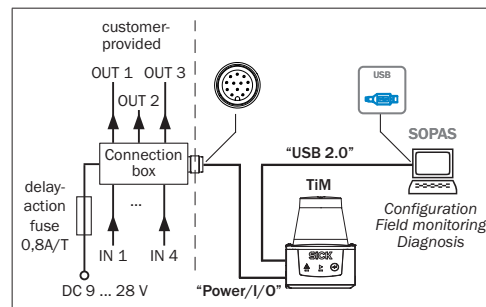
- Supply power to the TiM.

Using the power supply unit it must be ensured that the supply voltage does not drop below 8 V for longer than 2 ms and never rises above 30 V. Following successful initialization, the green LED lights up "►" (device ready for operation).

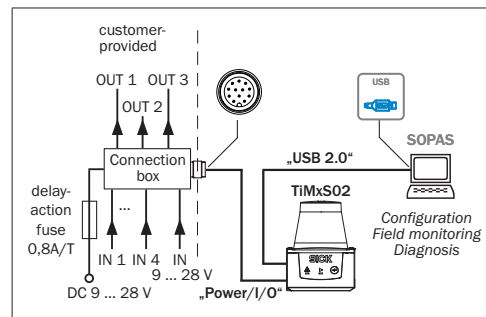
Do not supply the switching inputs with current yet.



Electrical block diagram for commissioning the TiM with a 15-pin D-Sub-HD cable plug.



Electrical block diagram for commissioning the TiM with a 12-pin M12 cable plug.



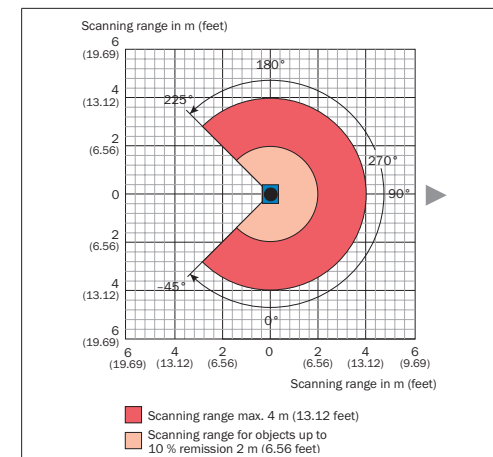
Electrical block diagram for commissioning the NPN variant with a 12-pin M12 cable plug.

Step 2: Mounting and alignment

NOTE

During installation make sure there is no reflective surface behind the reference target→ see "Device overview Page 4", point ③.

- Optional: mount the TiM to separately ordered mounting accessories (mounting kit 2), see "Mounting" Chapter in the [Technical Information](#) (no. 8014318).
- Otherwise, mount the two straight plates from the enclosed mounting kit 1 on the TiM using two M3 screws. Use the two blind-hole threads either on the underside or back of the housing (→ see "Device overview Page 4"). If the straight plates are not used, screw the screws provided by the customer max. 2.8 mm into the thread.
- Mount the TiM on a prepared bracket.
The device should be as free from vibration as possible during operation.
- Align the 90° axis of the TiM's scanning angle with the center of the area to be monitored. The ► marking on the lid of the optical hood serves as a bearing alignment aid (→ see "Device overview Page 4").



Range diagram for TiM

a. Configuration without PC

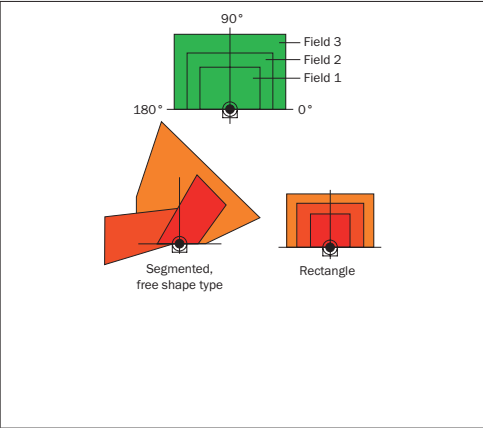
Here, the TiM provides two options:

- Using one of 16 default field sets, each with 3 predefined fields having the same field shape, but different sizes
- Teach-in of the surrounding contour to automatically generate the outer field with any shape, including more complex shapes, and to deduce the two inner fields.

The field sets are organized by groups into segmented field shapes. The shapes can be modified, with the default being a rectangle. In the factory setting, the 3 origin-oriented fields of

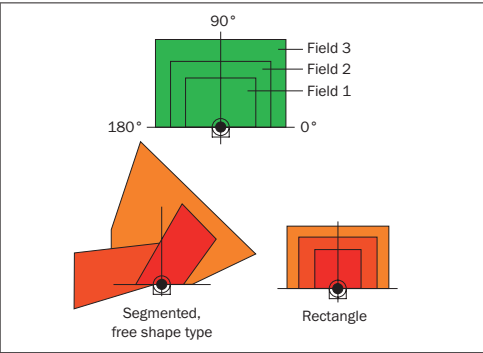
a set overlap to some extent and form a triple. Dimensions of the respective field 1 and its shape in the factory settings, as well as the required wiring of the switching inputs for field set selection → see "Field set factory settings - switching inputs Page 5".

Structure of the fields of a field set and possible field shapes (TIM31x)



The limits of the outer field 3 and the middle field 2 relate to the limits of the inner field 1. The relationship between the limits is fixed as a percentage for the field sets 1 to 4; the limits of field 2 and field 3 can be adjusted freely for the field sets 5 to 16 if needed, using the SOPAS configuration software. The following rules apply: Field 1 may not be larger than field 2, and field 2 may not be larger than field 3; neither may fields be congruent.

Structure of the fields of a field set and possible field shapes (TIM32x)



Preparing for teach-in

- In general, the function button and both LEDs on the device are used for teach-in.
- Remove all objects that will not permanently be in the field of view in monitoring mode later on.
 - Distance yourself sufficiently from the TiM during the advance warning phase of the teach-in, so that you are not detected as part of the field contour.

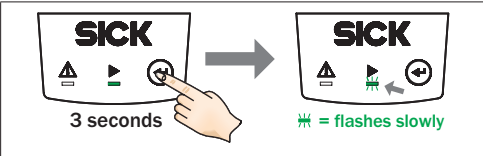
Teaching-in the field contour

The TiM uses field set 1 (segmented, initial shape: rectangle) to adjust the field shape and size to the surrounding contour that was detected. The switching inputs may not be supplied with current during this process.











The TiM forms the outer field 3 from the surrounding contour with a negative offset of 100 mm, and deduces the limits of the two inner fields from this, so that field 2 = field 1 plus 25% and field 3 = field 1 plus 52%.


- The field shape to be formed can be defined by pacing out the limits during the teach-in phase. Do not wear black clothing during this process!

➤ Start the field contour teach-in.



The behavior of the two LEDs indicates the progress of the field contour teach-in:

LED  (red)	LED  (green)	Status
—		Field contour teach-in – Start LED flashes slowly (0.5 Hz)
		Field contour teach-in – Advance warning phase LED flashes increasingly rapidly within 15 s
—		Field contour teach-in – Teach-in phase 60 seconds
—		Field contour teach-in – Completion of advance warning phase LED flashes increasingly rapidly within 15 s
—		Automatic return to monitoring mode All fields free
		Monitoring mode In the event of field infringement

● = illuminated;  = flashes

The TiM stores the new field set 1 permanently.

b. Configuration with PC

The SOPAS configuration software is used by default to adjust the 3 fields of a field set and other TiM parameters to the application and to perform diagnostics in the event of an error. If the field shape of the field set 1 has been taught in without a PC using the function button, SOPAS is generally used to continue the configuration.

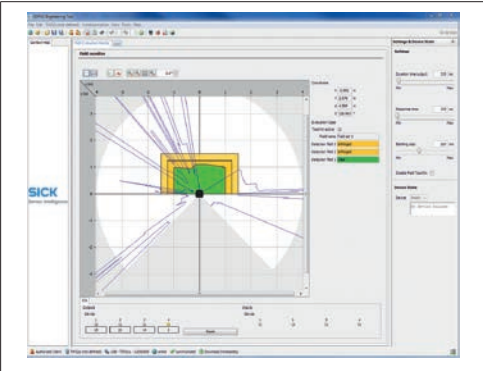
This includes setting the field shapes/sizes and any other non-teachable field sets based on the default setting, the response time of the fields, the blanking size, and the holding time of the assigned switching outputs OUT 1 ... OUT 3.

The blanking size is the cross-section of the object after which an object not previously in the viewing area of the TiM leads to a field infringement. Like the response time and the holding time, the blanking size applies to all field sets and their fields.

Installing and launching the SOPAS configuration software

- Download and install on the PC the software from the website "www.sick.com/SOPAS_ET", SOPAS ET software type. In this case, select the "Complete" option as selected by the installation wizard. Administrator rights may be required on the PC to install the software.
- Start the "Single Device" program option after completing the installation.
Path: Start > Programs > SICK > SOPAS Engineering Tool > SOPAS (Single Device).
SOPAS will automatically install the necessary USB driver the first time it detects a connected TiM. It may then be necessary to restart the PC.
- Establish a connection between SOPAS and TiM via the automatically opened assistant. Select the TiM from the list of available devices.

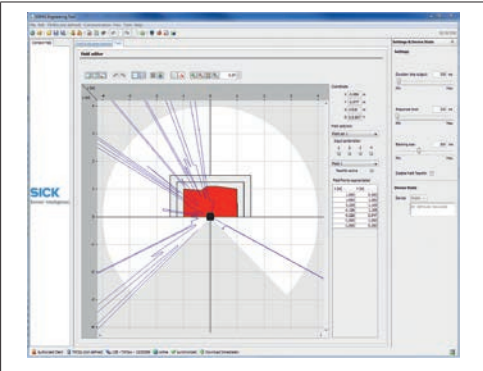
SOPAS program window (single device)



Field monitor display window

- In the FIELD MONITOR window, SOPAS displays the field contour (scan line) currently seen by the device through ambient reflection in blue. If the 4 switching inputs are not supplied with current, SOPAS also displays the three evaluation fields (segmented rectangles) for the field set 1 according to the TiM's default setting, or the field shape generated using the teach-in function along with its dimensions, the status of the switching inputs/outputs, and the position of the mouse pointer.
- SOPAS displays the fields as green if no field infringement is present. If objects of a certain size and duration (→ see "Default settings TiM Page 3") are located in the part of the visual range that is covered by fields, the TiM will recognize this as a field infringement. SOPAS displays this separately in yellow for the individual fields.
- Try changing the orientation of the TiM in the room and observe the effects this has on detection in the field monitor. Click the RESET button to cause SOPAS to reset the switching output counters.

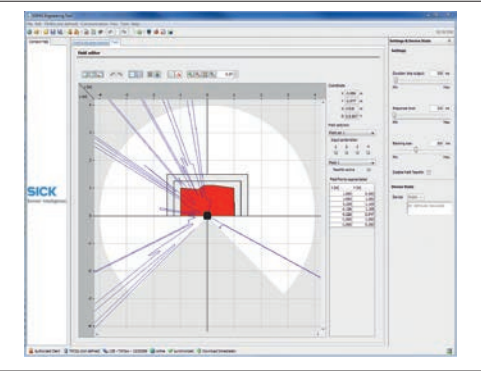
Continuing configuration (TIM31x)




Field editor display window

1. To optimize the monitored fields of the field sets used by the TiM manually, click the FIELD EDITOR tab at the top of the program window.
 2. Select the field set 1, for example, under FIELD NAME on the right of the window.
 3. Adjust the settings for other functions such as response times of the fields, blanking size and holding (duration) time output under SETTINGS on the right of the program window. When selecting the response time, note that the TiM also has its own internal response time.
 4. To check the effects of the settings applied, click the FIELD MONITOR tab at the top.
- SOPAS displays the infringed fields in yellow in the field monitor for the field set 1. If you wish to observe another field set, this must first be activated accordingly using the switching inputs.

Continuing the configuration (TiM32x)



Field editor display window


The user can change parameters in the right part of the program window under SETTINGS & DEVICE STATUS. SOPAS immediately transfers these changes to the TiM32x (default setting). However, evaluation fields that have been changed in size and shape must always be manually transferred to the TiM32x using the  button. All changed parameters are only temporarily stored in the device for the time being and are not stored in the computer at all.

In order to optimize the dimensions of the monitoring fields:


1. Click the EVALUATION FIELDS tab at the top of the program window.
 2. Under FIELD SELECTION on the right side of the window, select, for example, field set 1.
 3. Select the field to be configured.
- You can optionally perform the following actions:

Configuring the TiM


Shifting field positions

1. Click the  button.
2. Click on the green marking rectangle of the desired field position in the outer field.
The color of the marking rectangle changes to blue.
3. Re-click the rectangle and drag it to the desired position, then release the pushbutton. SOPAS controls the available positioning area during shifting.

Inserting additional field positions

1. Click the  button.
2. Click on the desired position on the limits of the outer field.
SOPAS inserts a new, green marking rectangle.
This can now also be shifted as already described.





Deleting field positions

1. Click the  button.
2. Click on the green marking rectangle of the field position to be deleted in the outer field.
The color of the marking rectangle changes to red.
3. Re-click the marking rectangle.
SOPAS removes the marking rectangle and instead connects the two nearest marking rectangles with a new line.

Rotating the field pair around the central axis along with the TiM

- In order to align the position of the field pair in SOPAS to the conditions on site from the user's perspective, enter and confirm the desired angle of rotation in the 0.0° input field (negative sign "-" means turn right).

Some other useful functions

-  button: Display the fields in the polar coordinate system
-  button: Change the view of the TiM/ fields from above (TiM: black) to the view from below (TiM: blue)
-  or  button: Switch off the display the full measuring line or display a dotted measuring line.



Response time, blanking size and holding time

- Adjust the response time of the fields, the blanking size of objects, and the holding time of the OUT 1 and OUT 2 switching outputs under SETTINGS on the right side of the program window. All three values are valid for both fields and switching outputs.
When selecting the response time, note that the TiM's internal reaction time must also be added.
- To test the effects of the changed settings, click on the FIELD EVALUATION MONITOR tab at the top.
If the changed fields have been transferred to the TiM as described, SOPAS will also display these in the monitor, displaying the infringed fields in yellow. If you wish to observe another field set, it must first be activated accordingly using the switching inputs. If you wish to observe another field set, it must first be activated

accordingly using the switching inputs.

The blanking size is the cross-section of the object after which an object not previously in the viewing area of the TiM leads to a field infringement.

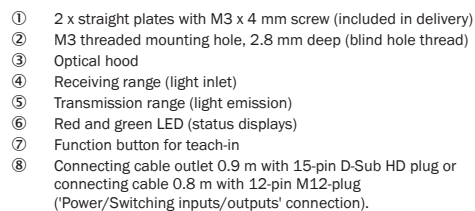
Completing the configuration

- Permanently save the entire configuration:
Parameter set in: TiM click the  button
Configuration file on the PC: click the  button.

Default settings TiM

Parameter	Value
Blanking size	Cross-section 200 mm
Response time of the fields	335 ms (5 scans)
Holding time of the switching outputs	335 ms (5 scans)

Device overview



- ⑨ Micro USB socket, behind the black rubber plate ('Aux interface' connection for configuration with PC)
- ⑩ Marking for the position of the light emission level
- ⑪ Bearing marking to support alignment (90° axis)
- ⑫ 270° aperture angle (visual range)
- ⑬ Area in which no reflective surfaces are allowed for mounted devices

Laser radiation!

CLASS 1 LASER PRODUCT

The TiM corresponds to laser class 1 (eye-safe).
The laser beam is not visible to the human eye.

CAUTION – the use of controls, or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

- Do not open the housing (opening the housing will not switch off the laser).
- Pay attention to the laser safety regulations as per IEC 60825-1 (latest version).

Rayonnement laser !

APPAREIL À LASER DE CLASSE 1

Le TiM est conforme à la classe laser 1 (sécurité des yeux).
Le rayon laser n'est pas visible pour l'oeil humain.

PRUDENCE – tout usage de commandes, réglages ou toute application de procédures autres que ceux décrits dans ce document peut entraîner une exposition dangereuse au rayonnement.

Attention – L'utilisation des commandes ou réglages ou l'exécution des procédures autres que celles spécifiées dans les présentes exigences peuvent être la cause d'une exposition à un rayonnement dangereux.











- Ne pas ouvrir le boîtier. (La diode laser n'est pas désactivée en cas d'ouverture du boîtier)
- Se conformer aux dernières consignes de protection en date contre le rayonnement laser IEC 60825-1 (dernière version).

Additional information → see "Technical specifications Page 5".

Status indicators, functions



Status displays

LED  (red)	LED  (green)	Status
—		Device ready/monitoring mode
		Field infringement
—		Teach-in – Start
		Teach-in – End of advance warning phase 60-second teach-in phase
—		Teach-in – End of teach-in phase
	—	Error
—	—	Device without supply voltage

● = illuminated: ☀ = flashes

Field set factory settings - switching inputs

Field set	Switching inputs				Field shape Default size of field 1
	IN 1	IN 2	IN 3	IN 4	
1	0	0	0	0	Rectangle ^(1,2) , segmented L: 1 m, W: 2 m
2	1	0	0	0	Rectangle ^(1,2) , segmented L: 1.25 m, W: 2 m
3	0	1	0	0	Rectangle ^(1,2) , segmented L: 1.5 m, W: 2 m
4	1	1	0	0	Rectangle ^(1,2) , segmented L: 1.75 m, W: 2 m
5	0	0	1	0	TiM31x: Semi-circle ³⁾ , radius: 0.75 m TiM32x: Rectangle ⁽¹⁾ , seg- mented L: 1 m, W: 2 m
6	1	0	1	0	TiM31x: Semi-circle ³⁾ , radius: 1 m TiM32x: Rectangle ⁽¹⁾ , seg- mented L: 1.25 m, W: 2 m
7	0	1	1	0	TiM31x: Semi-circle ³⁾ , radius: 1.5 m TiM32x: Rectangle ⁽¹⁾ , seg- mented L: 1.5 m, W: 2 m
8	1	1	1	0	TiM31x: Semi-circle ³⁾ , radius: 2 m TiM32x: Rectangle ⁽¹⁾ , seg- mented L: 1.75 m, W: 2 m
9	0	0	0	1	Rectangle ^(1,4) , segmented L: 1 m, W: 2 m
10	1	0	0	1	Rectangle ^(1,4) , segmented L: 1.25 m, W: 2 m
11	0	1	0	1	Rectangle ^(1,4) , segmented L: 1.5 m, W: 2 m
12	1	1	0	1	Rectangle ^(1,4) , segmented L: 1.75 m, W: 2 m
13	0	0	1	1	Rectangle ^(1,4) , segmented L: 1 m, W: 2 m
14	1	0	1	1	Rectangle ^(1,4) , segmented L: 1.25 m, W: 2 m
15	0	1	1	1	Rectangle ^(1,4) , segmented L: 1.5 m, W: 2 m
16	1	1	1	1	Rectangle ^(1,4) , segmented L: 1.75 m, W: 2 m
L = length, W = width					
1) Default setting, starting shape can be modified as required					
2) TiM31x: Field 2 limits = field 1 limits plus 25 %, relationship cannot be changed Field 3 limits = field 1 limits plus 52 %, relationship cannot be changed					
3) TiM31x: Default settings: Field 2 limits = field 1 limits plus 25 %, limits can be adjusted freely Field 3 limits = field 1 limits plus 52 %, limits can be adjusted freely					
4) TiM32x: Default setting, starting shape can be modified as required					

Input level

- PNP: Low (in resting position): ≤ 2 V, high (in working position): ≥ 8 V
- NPN: Active low (in working position): ≤ (IN 9...28 V) – 8 V, inactive high (in resting position) > (IN 9...28 V) – 2 V

Assignment of infringed fields - switching outputs

Fields of a field set	Switching outputs		
	OUT 1	OUT 2	OUT 3
Fields 1, 2, and 3 infringed	Active	Active	Active
Fields 2 and 3 infringed	Deacti- vated	Active	Active
Field 3 infringed	Deacti- vated	Deacti- vated	Active
All fields free	Deacti- vated	Deacti- vated	Deacti- vated
Field 1: inner, field 2: center, field 3: outer Active: in working position; deactivated: in resting position			

Output level

- PNP: The level of the switching outputs OUT 1 ... OUT 3 is active low (in resting position: high, in working position: low (field infringed)).
- NPN: The level of the switching outputs OUT 1 ... OUT 3 is active high (in resting position: low, in working position: high (field infringed)).

All fields of a field set are also deemed to be infringed during switching on, booting, in the event of an error, and when the device is switched off.

The OUT 4 switching output works with the following levels:

Function	Level PNP	Level NPN
Device Ready	High	Low
Index signal (15 Hz), corresponds to measurement at 90 °	Low-Peaks	High-Peaks
Errors	Low	High

Technical specifications

Model Name	TiM310-1030000 (part no. 1052627) TiM310-1130000 (part no. 1056550) TiM310-0130000S02 (part no. 1069932) TiM310-1030000S02 (part no. 1062221) TiM310-1130000S02 (part no. 1067917) TiM320-1031000 (part no. 1063467) TiM320-1131000 (part no. 1062219) TiM320-0131000S02 (part no. 1069933) TiM320-1131000S02 (part no. 1067919)
Scanning range	Radial, aperture angle 270 °
Scanning fre- quency	15 Hz (15 scans/s)
Response time	Typical 134 ms (2 scans)
Scanning range	0.05 m ... 4 m; typically 2 m at 10 % remission
Remission	Typical 4 % ... > 1,000 % (reflector)
Physical minimum object size (cross-section)	112 mm for a scanning range of 4 m, 61 mm for a scanning range of 2 m and 10 % remission
Measuring error	Statistical (1 s): 30 mm Systematic: ± 40 mm Temperature drift 0.5 mm/K
Ambient light immunity	80,000 lx
Light source	Laser diode, infrared (λ = 850 nm)
Device laser class	Laser class 1 according to EN 60825-1: 2014 ¹⁾ , eye-safe
Max. radiation power	2.0 W


Model Name	TiM310-1030000 (part no. 1052627) TiM310-1130000 (part no. 1056550) TiM310-0130000S02 (part no. 1069932) TiM310-1030000S02 (part no. 1062221) TiM310-1130000S02 (part no. 1067917) TiM320-1031000 (part no. 1063467) TiM320-1131000 (part no. 1062219) TiM320-0131000S02 (part no. 1069933) TiM320-1131000S02 (part no. 1067919)
Max. pulse duration	0.5 ns
Field evaluation	1 evaluation case with 1 field set (3 fields). Signaling of field infringements via a combination of 3 switching outputs.
Number of field sets	TiM31x: 16 with 3 configurable fields each TiM32x: 16 with 3 flexible configurable fields each
Aux interface	USB 2.0, for configuration
Switching inputs	PNP: 4 x IN (U _{is} = max. 28 V, I _s = max. 5 mA), opto-decoupled, debouncing time approx. 10 ms NPN: Common reference potential 9 ... 28 V
Switching outputs	4 x OUT (each I _o ≤ 100 mA), not galvanically isolated from the supply voltage, short-circuit protected/temperature protected Configurable for OUT 1 OUT 3: Response time (134 ms ... 30 s) Holding time (0 ms ... 10 s) ²⁾
Electrical connections	1 x 0.9 m cable (+10 %) with 15-pin D-Sub-HD plug 1 x 0.8 m cable (+10 %) with 12-pin M12 plug 1 x micro USB socket, type B (covered)
Function key	Teach-in (field set 1 field contour)
Optical indicators	2 x LED
Supply voltage	DC 9 ... 28 V, SELV and PELV according to IEC 60364-4-41: 2005-12
Power consumption	4 W (for unloaded switching outputs) 16 W (with four loaded switching outputs)
Housing	Lower part: Die-cast aluminum Optics hood: Polycarbonate with scratch-proof coating
Weight	Approx. 150 g without cables
Electrical safety	According to IEC 61010-1 (ed.3)
Protection class	III according to EN 61140: 2006-08 IEC 61010-1 (ed.3)
Enclosure rating	IP 65 (EN 60529: 1991-10/A2: 2000-02)
EMC	Radiated emission: Residential area according to EN 61000-6-3: 2007-01 Electromagnetic immunity: Industrial environment according to EN 61000-6-2: 2005-08
Vibration resistance	According to EN 60068-2-6: 2008-02
Shock resistance	According to EN 60068-2-27: 2009-05
Ambient temperature	Operation: –10 ... +50 °C Storage: –30 ... +70 °C
Temperature change	According to EN 60068-2-14: 2009-07
Damp heat	According to EN 60068-2-30: 2005-12
Air humidity	< 80%
Installation height	< 5,000 m above sea level
Ambient condi- tions	According to EN 61010-1:2011-07, contamina- tion level 3 outside housing
1) Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to to Laser Notice No. 50 of June 2007	
2) The TiM has an internal, system-related time delay of 67 ms.	

For further technical specifications, see the *Online data sheet*
on the product website (www.sick.com/tim3xx)

⚠ WARNING

Risk of potential equalization currents


The TiM is designed to be operated in a system with proper
grounding of all connected devices and mounting surfaces
to the same ground potential. If this condition is not met,
potential equalization currents may through along the cable
shields, causing the following hazards:

- Dangerous contact voltage on the metal housing
 - Malfunction or destruction of the TiM
 - Heating of the cables with possible spontaneous
combustion.
- See the "Electrical Installation" chapter in the  *Technical
Information* (no. 8014318) on the product website ([www.
sick.com/tim3xx](http://www.sick.com/tim3xx)) for measures for eliminating hazards.

⚠ ATTENTION

Risques liés à des courants d'équipotentialité

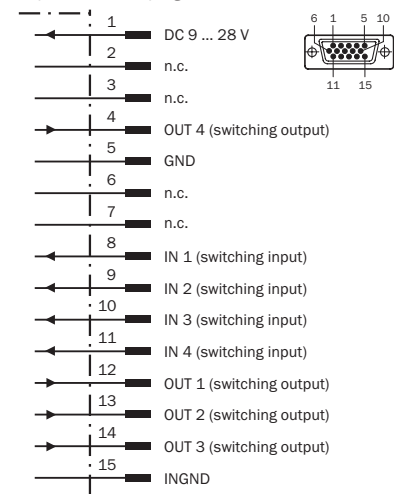
Le TiM a été conçu pour être utilisé dans une installation
prévoyant une mise à la terre correcte de tous les appareils
et surfaces de montage raccordés sur un même potentiel
de sol. Si cette condition n'est pas remplie, des courants
d'équipotentialité risquent dans certaines conditions de
passer par les blindages des câbles et d'exposer aux risques
suivants :

- tension de contact dangereuse sur le boîtier en métal,
 - comportement incorrect ou destruction du TiM.
 - chauffe des câbles jusqu'à leur inflammation spontanée.
- Pour des mesures de prévention de tels risques, voir le
chapitre « Installation électrique » de  *l'Information tech-
nique* (no. 8014318) ou sur la page produit sur internet
(www.mysick.com/en/tim3xx).

Connection plug pin positions

"Power/switching inputs/outputs" connection

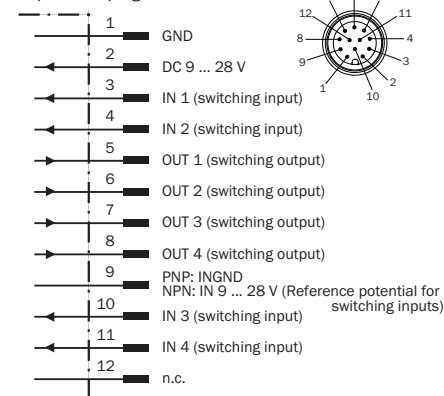
15-pin D-Sub HD plug on the cable



Connection plug pin position TiM with 15-pin D-Sub-HD cable plug

"Power/switching inputs/outputs" connection

12-pin M12 plug on the cable



Connection plug pin position TiM with 12-pin M12 cable plug

Scope of delivery

- TiM including mounting kit 1 (two straight plates, 2 M3 x 4 mm screws)
- Printed operating instructions in German and English, in other languages, as necessary.
- Other optional accessories (if these have been ordered)

Maintenance and care

The TiM does not contain any components that require maintenance. Nor is any maintenance necessary to ensure compliance with laser protection class 1.

- If it is dirty, carefully clean the infrared light-permeable, black optical hood to ensure optimal detection performance. Use a soft, damp cloth and a mild cleaning agent.

Transport and storage

The TiM must be transported and stored in its original packaging with the USB protective cap plugged in. Do not store outdoors. To ensure that any residual moisture present can escape. Do not expose to aggressive media (e. g., solvents).

Storage conditions: dry, dust-free, no direct sunlight, as little vibration as possible, storage temperature -40°C to $+75^{\circ}\text{C}$, relative air humidity max. 90% (non-condensing).

Repair

Repair work on TiM may only be performed by qualified and authorized service personnel from SICK AG.

Removal and disposal

Any TiM which can no longer be used at the end of the product life cycle must be disposed of in an environmentally friendly manner in accordance with the respective applicable country-specific waste disposal regulations.

The TiM is electronic waste and must under no circumstances be disposed of with general waste!

Sources for obtaining additional information

Additional information about the TiM and its optional accessories can be found in the following places:

TiM product website

(www.sick.com/tim3xx)

- Technical Information (supplementary information on mounting and electrical installation, an overview list, and license texts for open-source software) in German (no. 8014317) and English (no. 8014318).
- These operating instructions in German (no. 8015530), English (no. 8015531), and in other languages if required
- SOPAS configuration software with online help
- Ordering information in the detection and ranging solutions product catalog
- TiM product information
- Detailed technical specifications (online data sheet)
- Dimensional drawing and 3D CAD dimension models in various electronic formats
- EC declaration of conformity
- SOPAS configuration software updates

Support is also available from your sales partner: www.sick.com/worldwide.

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