TECHNICAL INFORMATION

TiM55x
Ranging Laser Scanner

Mounting, electrical installation, measured value output format and license texts

SICK
Sensor Intelligence.

Trademark

Windows 2000™, XP™, Vista™, Windows 7™ are registered trademarks or trademarks of the Microsoft Corporation in the USA and other countries.

Adobe® Reader® is a registered trademark of Adobe Systems Incorporated.
Download via Internet: http://get.adobe.com/reader/

1 About this document

This document summarizes supplementary information on **mounting** and **electrical installation, measured value output fomat** of the TiM55x as well as **license texts**. It is aimed at sufficiently qualified personnel for the purposes of installation, commissioning and further data processing.

Notes on commissioning, configuration and maintenance can be found in the TiM55x operating instructions.

Information on the TiM55x can be found on the Internet on the TiM55x product page at **www.mysick.com/en/tim55x**:

- Technical specifications in the online data sheet (PDF)
- Dimensional drawing and 3D CAD dimension models in various electronic formats
- Range diagram (PDF)
- EC Declaration of Conformity (PDF)
- Configuration software SOPAS ET (**www.mysick.com/en/SOPAS_ET**)
- Product information with overview of available accessories (PDF)
- TiM55x operation instructions (PDF) in additional languages where applicable
- This technical information (PDF)

Support is also available from your sales partner, see **www.sick.com/worldwide.**

Symbols used

Certain information in this documentation is emphasized as follows to enable faster access to the information:

NOTICE

Notice!

A notice indicates potentially damaging hazards or functional impairments to the TiM55x or its connected devices.

⚠ WARNING

Warning!

A warning indicates specific or potential dangers to the user's physical integrity. It is intended to protect the user against accidents.

The safety symbol to the left of the warning indicates the type of accident hazard e.g. due to electricity. Increasing warning levels (CAUTION, WARNING, DANGER) indicate the severity of the possible hazard.

➢ Always reading warnings carefully and obey them meticulously.

Important This important notice informs you about special aspects.

This symbol refers to supplementary technical documentation.

Safety information

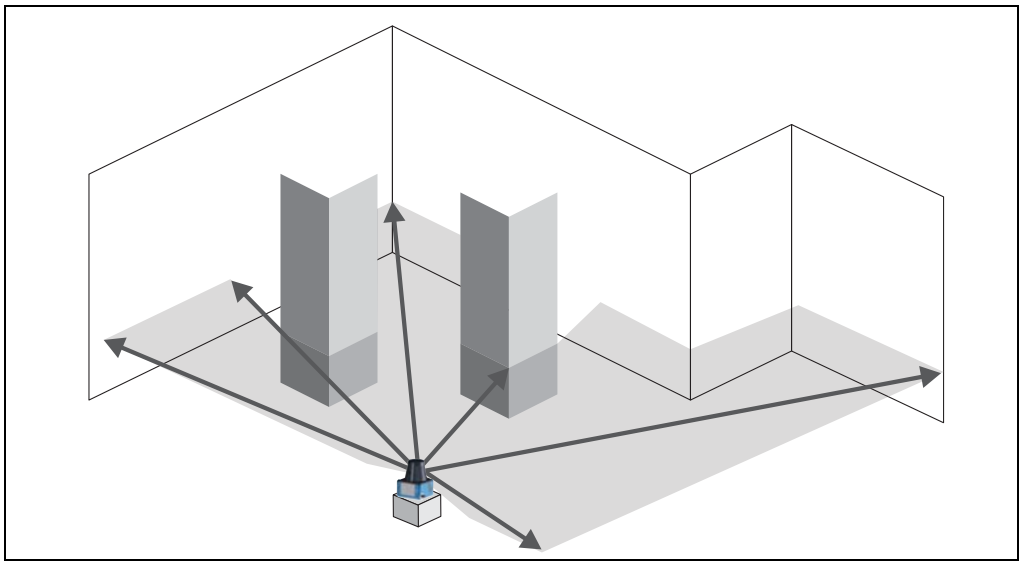
- Read the notes on mounting and electrical installation before carrying out these tasks.
- Read additionally the TiM55x operating instructions to familiarize yourself with the device and its functions.
- The TiM55x complies with laser class 1, for laser warnings see the operating instructions.
- Only use the device in permissible ambient conditions (e.g. temperature, ground potential). Any applicable legal regulations or regulations of other authorities will have to be observed during operation.
- Opening the screws of the TiM55x housing will invalidate any warranty claims against SICK AG.
- Repairs may only be performed on the TiM55x by trained and authorized SICK AG service personnel.
- The TiM55x does not constitute personal protection equipment in sense of the respective applicable safety standards for machines.
- The TiM55x must not come into contact with moisture and dust when the cover of the USB port is open and/or the USB cable is connected. In this status, the TiM55x does not correspond to any specified IP protection class.
- For CE conformity, the maximum length of all connecting cables on the TiM55x must not exceed 3 m.
- Turn the swivel connector with the electrical connections max 180° from end position to end position.

Table of contents

2 Operating principle of the TiM55x

2.1 Measurement principle

The TiM55x is an opto-electronic laser scanner that electro-sensitively scans the perimeter of its surroundings at a single plane with the aid of laser beams. The TiM55x measures its surroundings using two-dimensional polar coordinates based on its measurement origin. This is marked on the hood in the centre using a circular indentation. If a laser beam hits an object, its position in terms of distance and direction is determined.



Scanning is performed across a 270° sector. The maximum range of the TiM55x is max. 10 m on light, natural surfaces with an object reflectivity > 50 % (e.g. a white house wall).

2.2 Distance measurement

The TiM55x emits pulsed laser beams using a laser diode. If one of these laser pulses hits an object or a person, this is reflected at its surface. The reflection is detected in the TiM55x's receiver by a photodiode. The TiM55x uses HDDM technology (**H**igh **D**efinition **D**istance **M**easurement), a SICK own-development. Using this measurement method, a measured value is formed by the average value for several individual pulses. The TiM55x calculates the distance to the object from the transit time required by the light from emission of the beam to receipt of the reflection. This principle of "time-of-flight measurement" is used by radar systems in a similar manner.

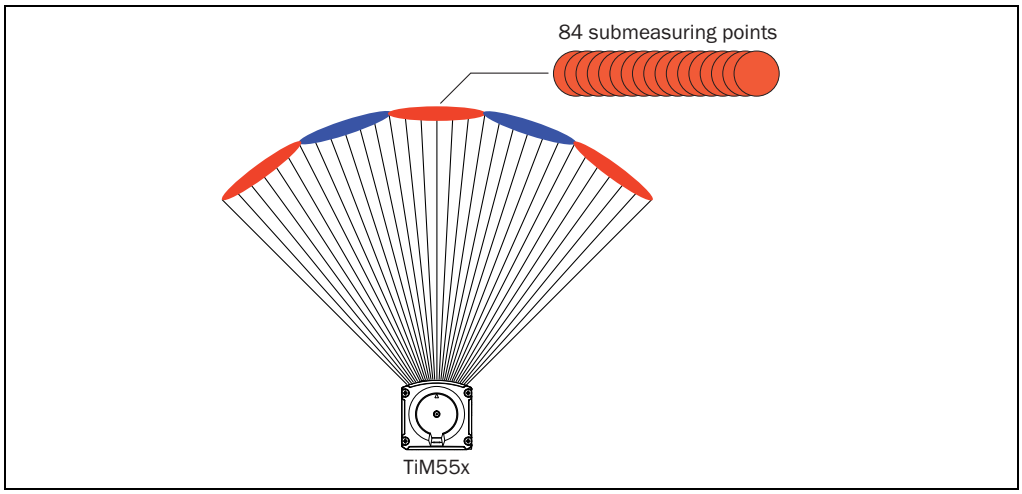
2.3 Direction measurement

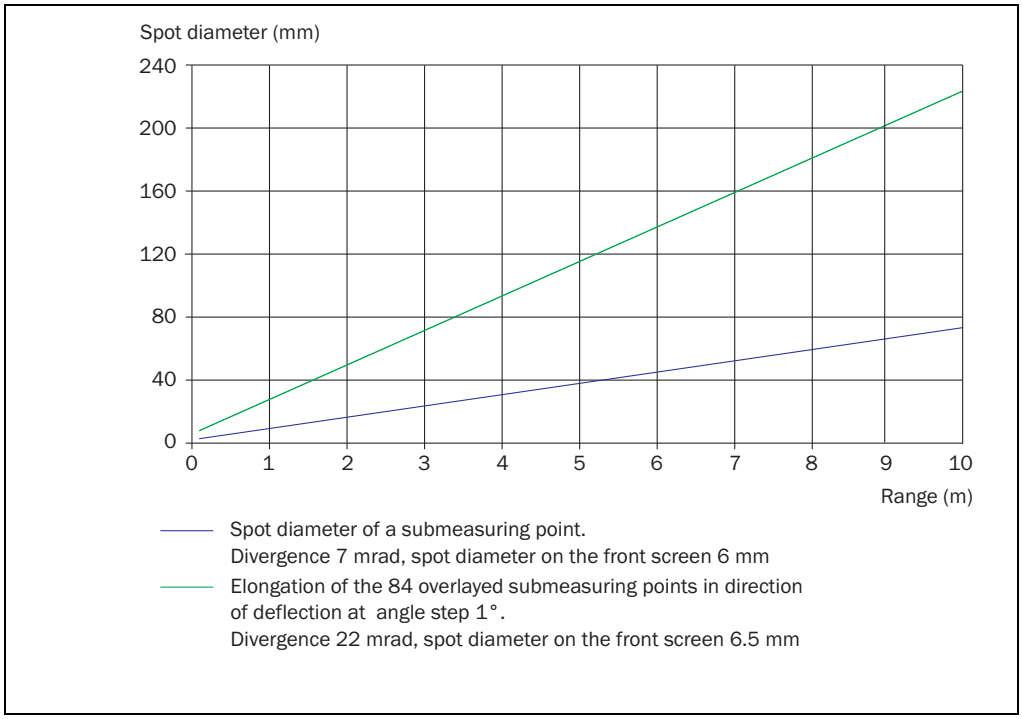
The emitted laser beams are deflected by the TiM55x using a rotating mirror and its surroundings scanned in a circular form. The measurements are triggered internally at regular angle increments using an angular encoder. One complete rotation represents one measuring process (scan).

The TiM55x works at a scanning frequency of 15 Hz, i.e. it performs 15 measuring processes per second and makes the measurement results continuously available in real time via an Ethernet interface.

The measurement method forms an average value from several pulses to determine individual measured values.

At an angle resolution of 1°, a measuring point is formed from the average of 84 measurements. The spot geometry of the submeasuring points is virtually circular whereas a measuring point has the form of a narrow rectangle due to overlapping.

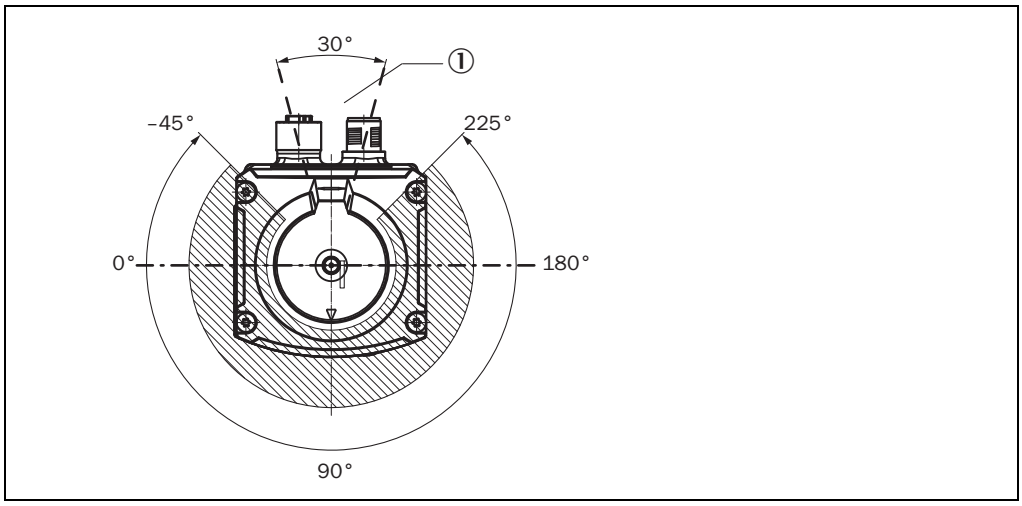




3 Mounting

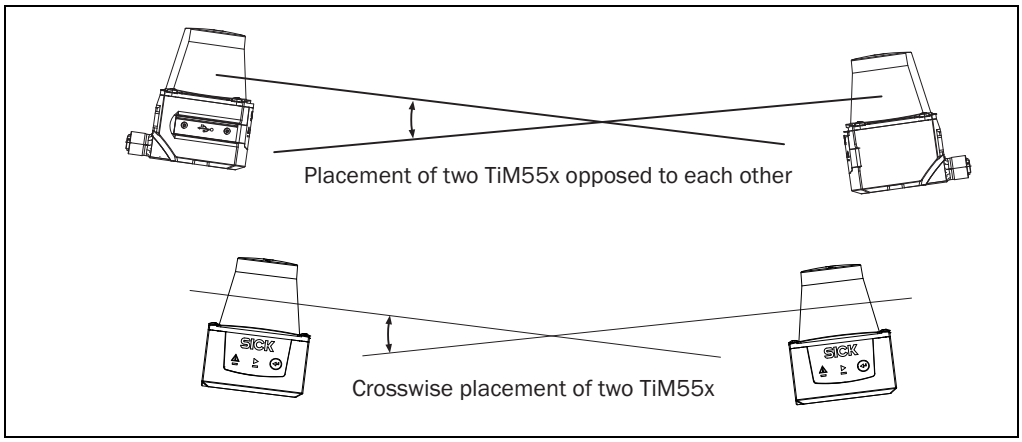
3.1 Notes on mounting

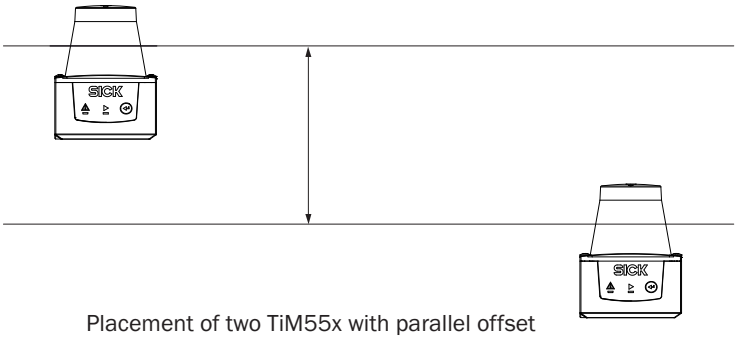
- The TiM55x can, depending on the application purpose, be mounted in any position.
- Install the TiM55x so it as unaffected by shocks and vibrations as possible.
- Install the TiM55x so it is not exposed to any direct sunlight (window, skylight) or any other heat sources. This prevents impermissible temperature increases inside the device.
- During installation make sure there is no light or reflective surface behind the reference target (see Figure ①).



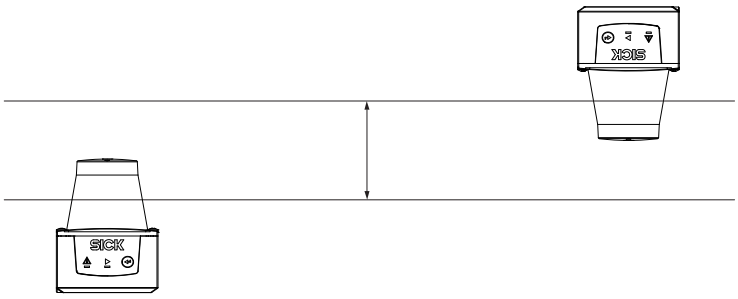
Using several TiM55x

The TiM55x is designed so that mutual interference of the same types of sensors is very unlikely. To preclude even the slightest of influences on the measuring accuracy, we recommend installing the TiM55x as in the examples below.

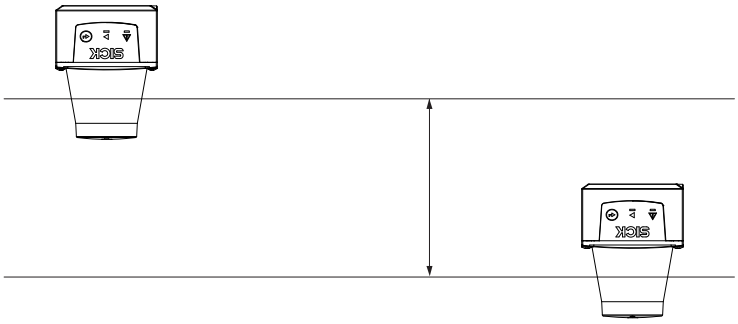




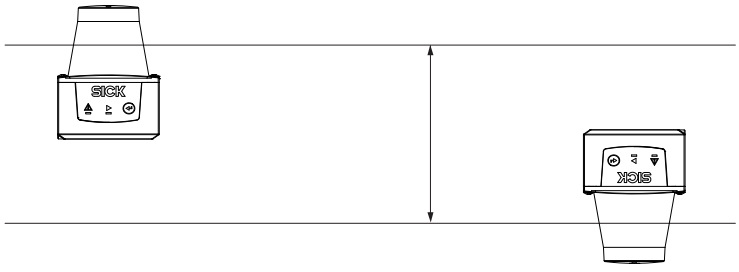
Placement of two TiM55x with parallel offset



Placement of two TiM55x with parallel offset, one of these upside down



Placement of two TiM55x upside down, parallel offset

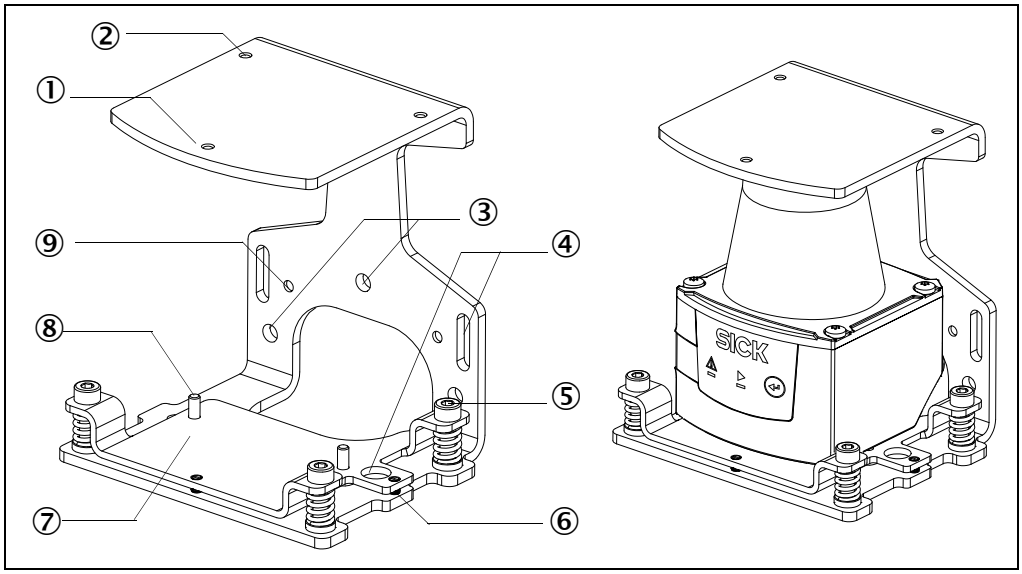


Placement of two TiM55x with parallel offset, one of these upside down

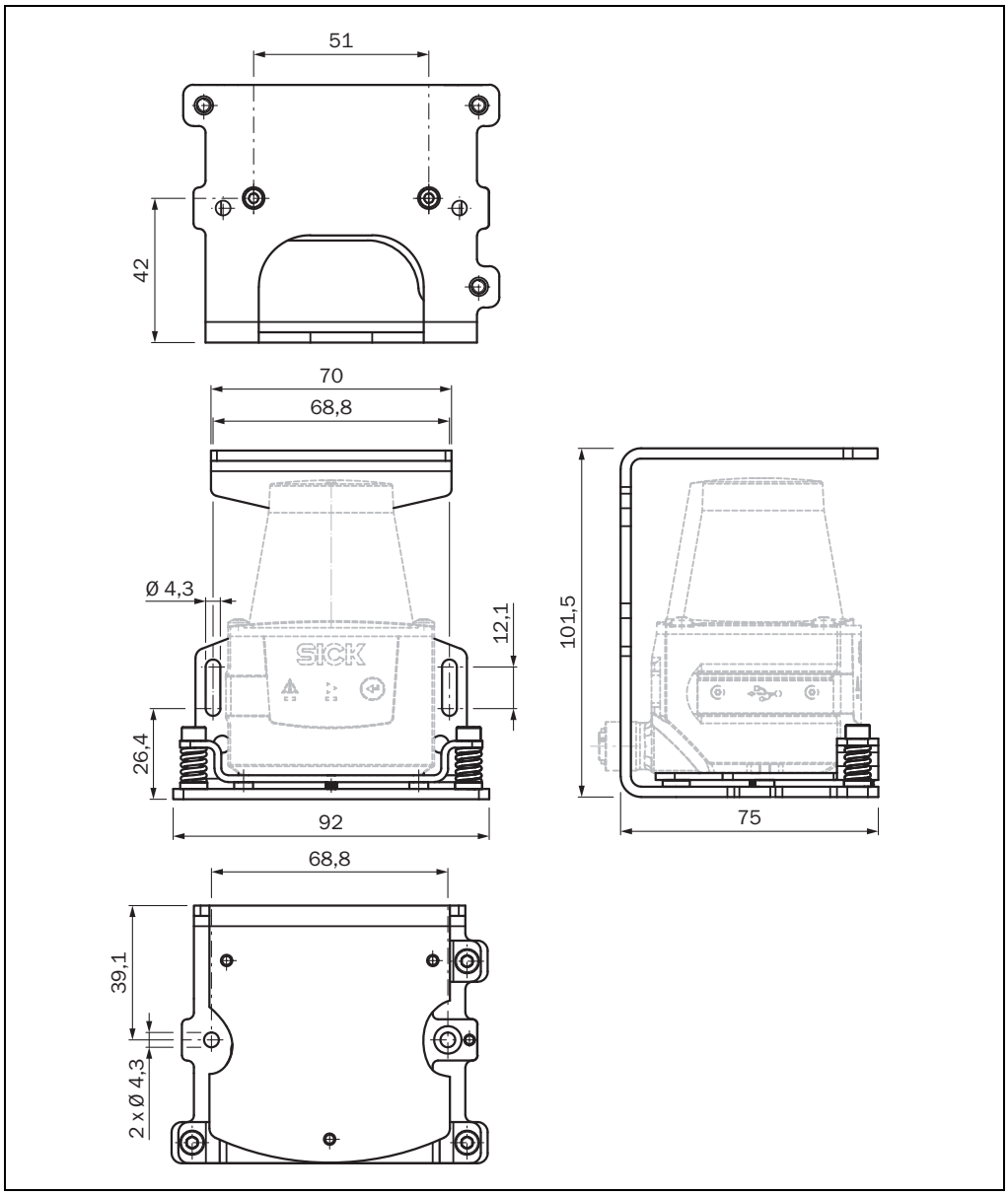
3.2 Optional accessories

3.2.1 Install mounting set 2 (part no. 2068398) on the TiM55x

The hanger-shaped mounting set 2 is used as skirting protection and as a bracket for making fine adjustments on the scan plane. The TiM55x can also be fastened directly onto the bracket without the adapter plate (skirting protection only).



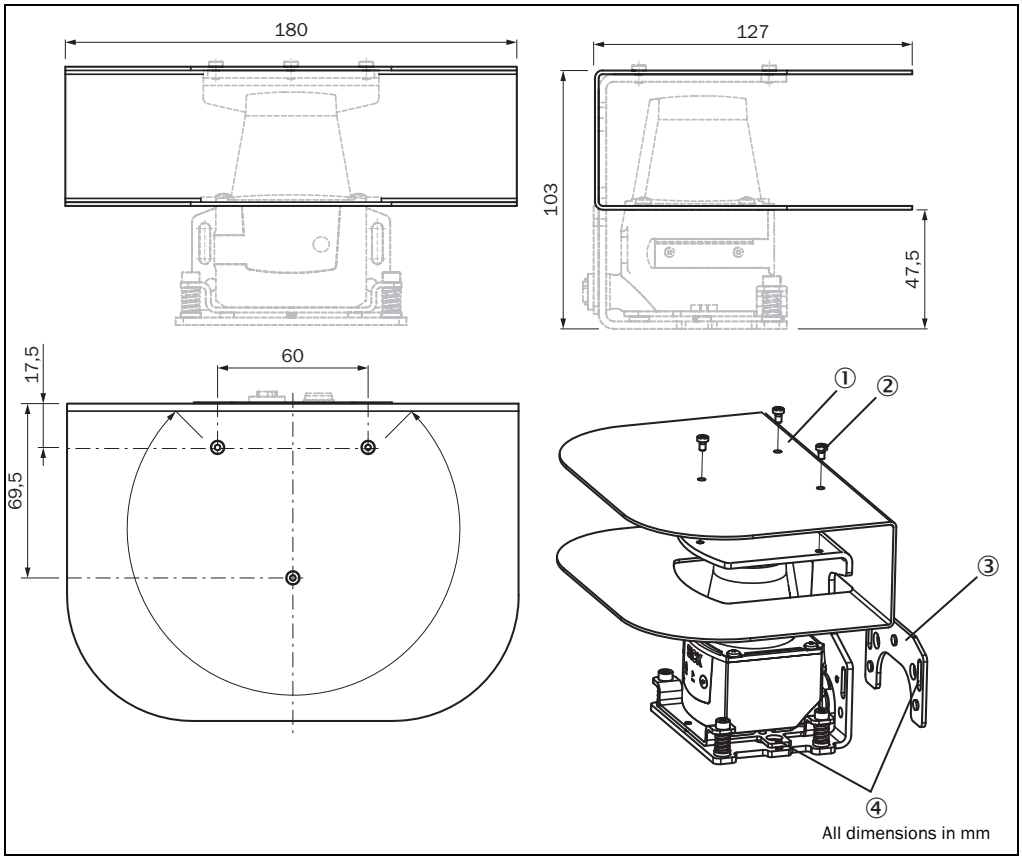
① Mounting bracket
② Hole for mounting the weatherproof housing, 3 x
③ Holes for mounting the spacer (for mounting weatherproof housing), 3 x
④ Hole for horizontal or vertical mounting of the mounting bracket on a base, 2 x 2
⑤ M4 x 16 cylinder head screw (hexagon socket) and compression spring for aligning the TiM55x, 3 x
⑥ Stud for locking the adapter plate after alignment, 2 x
⑦ Adapter plate
⑧ M3 x 8 cylinder head screw in ∅ 3.2 mm hole for mounting the TiM55x on the adapter plate, 2 x
⑨ Hole for mounting the TiM55x directly on the mounting bracket, 2 x (alternatively, without the option of adjusting the scan level)



Procedure for mounting the TiM55x

1. Mount the TiM55x on the adapter plate using the two M3 x 8 screws supplied. To do this, insert the screws from below through the hole in the mounting bracket and the hole in the adapter plate.
2. Align the scan level of the TiM55x using the three cylinder head screws ⑤.
3. After adjusting the adapter plate using the two studs ⑥, lock against the mounting bracket.
4. Mount the mounting bracket horizontally or vertically on a base using suitable screws ④ or mount weatherproof housing; see *Chapter Procedure for mounting the weatherproof housing, Page 12*.

Weatherproof housing



NOTICE

Restricted scanning range!

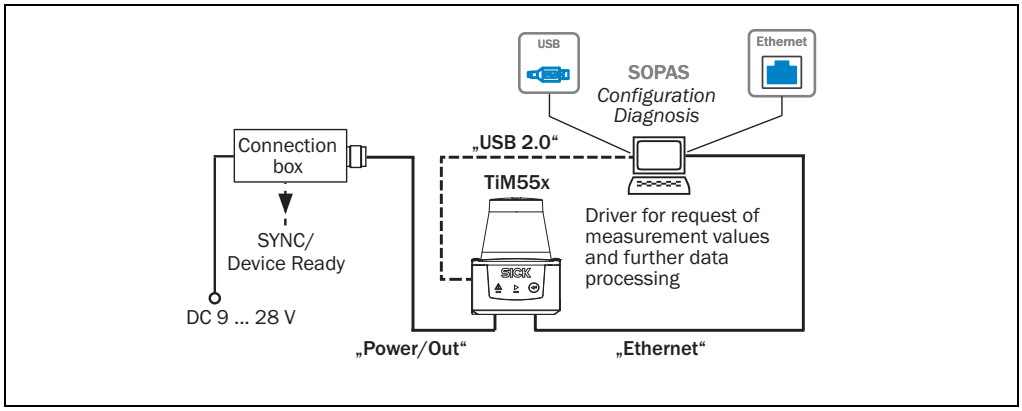
Using the weatherproof housing restricts the field of vision of the TiM55x to a full extent of 210°.

Procedure for mounting the weatherproof housing

1. Lock and mount the TiM55x in the mounting kit as desired; see *Chapter Procedure for mounting the TiM55x, Page 11*.
2. Mount the spacer plate ③.
3. Slide the weatherproof housing ① over the TiM55x in the mounting kit.
4. Secure the weatherproof housing to the TiM55x using the fixing screws ②.
5. Mount the mounting bracket horizontally or vertically on a base using suitable screws ④.

4 Electrical installation

4.1 Overview of all interfaces

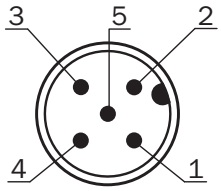


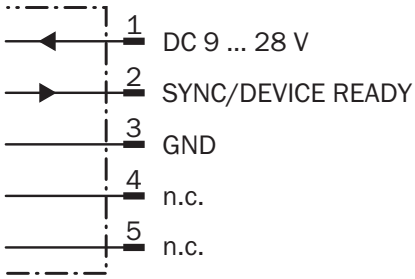
4.2 Pin and wire color assignments

5-pin POWER connection (supply voltage)

Connection “Power”

5-pin M12 plug



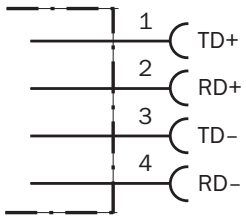


Pin	Signal	Color of wire	Function
1	DC 9 ...28 V	brown	Supply voltage
2	SYNC/DEVICE READY	white	Synchronization output (SYNC/Device Ready)
3	GND	blue	Ground
4	n.c.	–	–
5	n.c.	–	
–	–	metal	Shield
Do not connect reserved pins!			

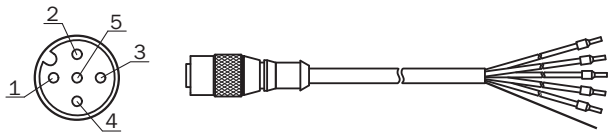
Ethernet connection (6034415)

“Ethernet” connection

M12 socket,
D-encoded



4.2.1 Connecting cable no. 6036159 with 5-pin M12-Stecker and open end (optional accessory)



M12 - A / Socket

Illustration may differ

Pin	Signal	Color of wire	Function
1	DC 9 ... 28 V	brown	Supply voltage
2	SYNC/DEVICE READY	white	Synchronization output (SYNC/Device Ready)
3	GND	blue	Ground
4	n.c.	–	–
5	n.c.	–	
–	–	metal	Shield
Do not connect reserved pins!			

4.3 Notes on electrical installation

- When the cover of the USB socket is open or the USB cable is connected, the TiM55x must not come into contact with moisture and dust. In this status, the TiM55x does not correspond to any specified IP enclosure rating.
  Use the supplied seal for the USB connection to prevent contact with moisture and dirt.
- When operating the USB interface, ESD/EMC interferences can lead to an interruption of the USB connection. To continue with the data transfer, disconnect the USB cable from the TiM55x and reattach it to establish contact. To re-establish communication between TiM55x and PC, select COMMUNICATION > GO ONLINE in the SOPAS configuration software.
- Electrical connections between the TiM55x and other devices may only be connected or disconnected when the system is not live, otherwise the devices may be damaged.
- All connection cables on the TiM55x may not exceed a length of 3 m (9.84 ft) in order to ensure that it conforms with the CE.
- Conducting cross sections of the supply cable from the customer's power system should be selected and perform in accordance with the applicable standards.
- Protected the TiM55x with an external 0.8 A delay-action fuse at the start of the supply cable from the point of view of the power supply.
- All electrical circuits connected to the TiM55x must be designed as SELV electric circuits (SELV = **S**afety **E**xtra **L**ow **V**oltage).
- When setting up a startup device with a 5-pin M12 male connector, do not wire the reserved pins (e.g. as solder post)!
- Do not switch on the supply voltage for the TiM55x until the connection work has been completed and wiring work has been checked carefully.

4.4 Prerequisites for safe operation of the TiM55x in a system

The TiM55x is designed and tested for electrical safety according to the standard EN 60950-1 (2006-04)/A11 (2009-03):

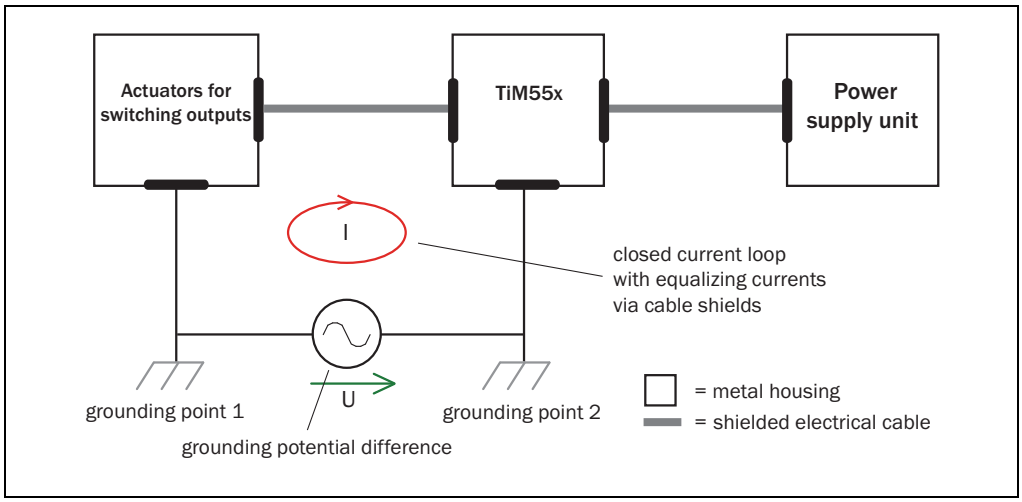
It is connected to peripheral devices (power supply, control, actuators) via shielded cables. The cable shield e.g. of the supply line is therefore flush with the metal housing of the TiM55x. The device can either be grounded via the cable shield or via the two straight plates.

If the peripheral devices also have metal housing and if the cable shields also flush with their housing, it is assumed that all devices involved in installation have the **same ground potential**.

This is achieved by observing the following conditions for instance:

- mounting of devices on conducting metal surfaces
- professional grounding of devices/metal surfaces in the system
- low-impedance and current-conducting equipotential bonding between areas with different ground potentials if necessary.

If these conditions are not met, e.g. on devices in a widely distributed system across several buildings, equipotential bonding currents may, due to different ground potentials, flow via the cable shields between the devices, which can lead to dangers.



Insufficient ground potential equalization leads to voltage differences arising between grounding points 1 and 2. The current loop closes via the shielded cables/metal housing.

DANGER

Risk of injury/risk of damage due to electrical current!

Equipotential bonding currents between the TiM55x and other grounded devices in the system may have the following effects:

- dangerous currents on the metal housing e.g. of the TiM55x
- incorrect functioning or irreparable damage to the devices
- Damage/irreparable damage of the cable shield due to heating and cable fires

➢ Where local conditions are unfavorable and thus do not meet conditions for a safe earthing method (same ground potential at all grounding points), carry out the measures below.

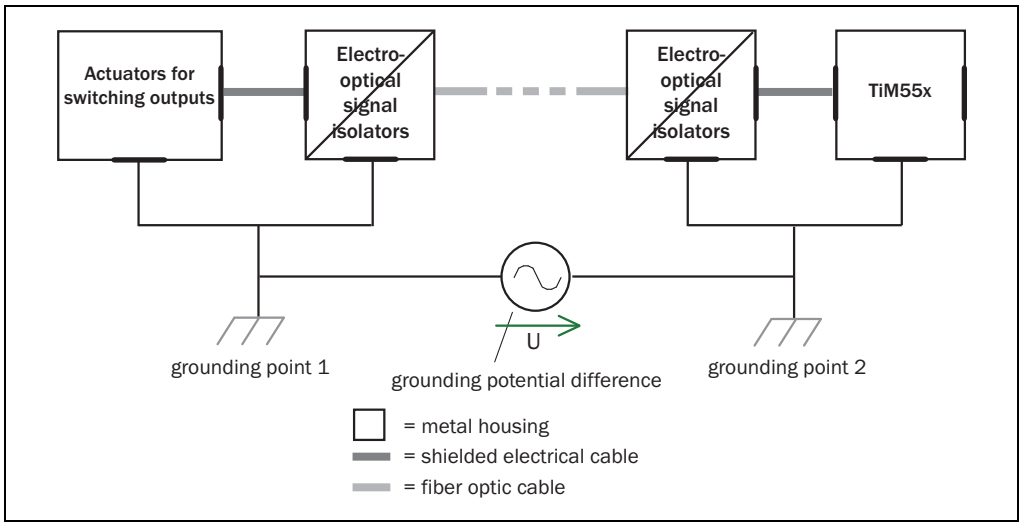
Remedial measures

The primary solution for avoiding equipotential bonding currents on the cable shields is to guarantee low-impedance and current-conducting potential equalization. If this is not possible, the following two solution approaches are intended as suggestions.

Important It is not advisable to open up the cable shields. This can cause compliance with EMC limit values for the devices to be no longer guaranteed.

a) Measures for widely distributed system installations

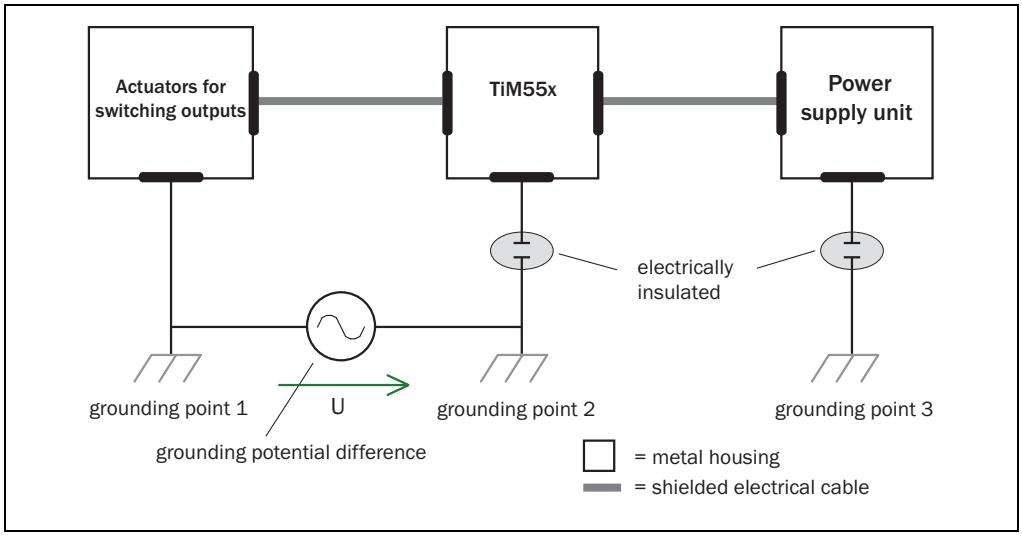
On widely distributed system installations with correspondingly large potential differences, we recommend setting up local islands and connecting them using commercially available **electro-optical signal isolators**. This will attain maximum resistance to electromagnetic interference, while observing all requirements of EN 60950-1 at the same time.



The ground loop is isolated by using the electro-optical signal isolator between the islands. Equalization currents are prevented on the cable shields within the islands by conductible equipotential bonding.

b) Measures for small system installations

For smaller installations with only slight potential differences, insulated installation of the TiM55x and of peripheral devices may be a sufficient solution.



There is effective suppression of ground loops even at ground potential differentials of up to 60 V RMS / 80 V DC maximum. As result, equalizing currents can no longer flow via the cable shields and metal housing.

Important The power supply for the TiM55x and the connected peripheral devices must also guarantee the required level of insulation.

Under certain circumstances, a tangible potential can develop between the insulated metal housings and the local ground potential.

Special national regulations for Sweden and Norway

Varning och atjarder

Utrustning som ar kopplad till skyddsjord via jordat vagguttag och/eller via annan utrustning och samtidigt ar kopplad till kabel-TV nat kan i vissa fall medfora risk for brand.

➢ For att undvika detta skall vid anslutning av utrustningen till kabel-TV nat galvanisk isolator finnas mellan utrustningen och kabel-TV natet.

Advarsel og tiltaker

Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr - og er tilkoplet et kabel - TV nett, kan forarsake brannfare.

➢ For a unnga dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel-TV nettet.

Corresponding English translation

Devices which are connected to the electrical system PE of the building via a mains connection or other devices with a connection to the PE, and which are connected to a cable distribution system with coaxial cables, can under certain circumstances cause a risk of fire.

➢ Connections to a cable distribution system must therefore be made such that electrical insulation is offered below a certain frequency range (galvanic separating link).

4.5 Installation steps

4.5.1 Supply voltage connection

The TiM55x requires a supply voltage between DC 9 and 28 V (stabilized protective extra-low voltage [SELV] as per the IEC 60364-4-41 standard) .
The electricity source must be able to provide a power of 5 W at minimum.

DANGER

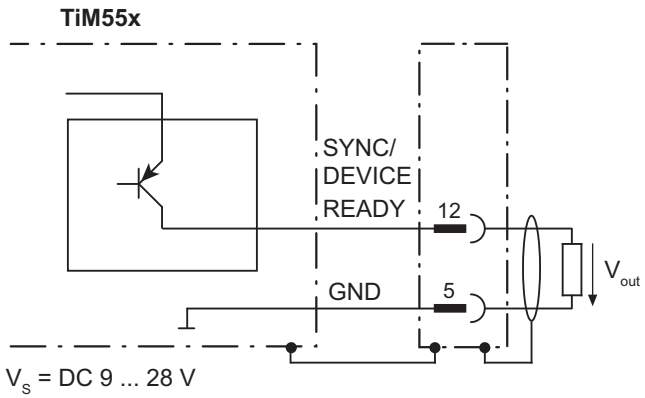
Risk of injury due to electrical current!

If the supply voltage is generated by extracting and converting current from the alternating current network using a stabilized power supply unit, insufficient electrical separation between the input and output circuit may lead to an electric shock.

➢ Only use a power supply unit whose output circuit has reliable electrical separation due to double insulation and a safety transformer as per IEC 742.

4.5.2 Wiring of output SYNC/DEVICE READY

Output SYNC/DEVICE READY is used to output the Device Ready signal, an error and a regular index pulse.



Structure and wiring principle of output SYNC/DEVICE READY (pin 2)

Switching behavior	PNP-switching against supply voltage V_S. • SYNC/DEVICE READY: Idle level: High (Device Ready), Working level: Low (error), low pulse (15 Hz, index, corresponds to measurement at 90°)
Properties	– Short-circuit resistant and temperature-protected – Not electrically isolated from the supply voltage V_S
Electrical values	$0\ V \le V_{out} \le V_S$ Guaranteed: $(V_S - 1.5\ V) \le V_{out} \le V_S$ at $I_{out} \le 100$ mA

Important Longer connecting cables at the switching outputs of the TiM55x should be avoided due to the resultant voltage drop. This is calculated as follows:

$$\Delta V = \frac{\textbf{2 x length x current}}{\textbf{Conductance value x cross section}}$$

Conductance value for copper: 56 m/W mm².

5 Measured value output

5.1 Telegrams

Notation

The individual sections in the syntax of the telegrams from the TiM55x are each separated by a space (ASCII code 32, 20h) as also neccessary in the request to the TiM55x.

The TiM55x sends measured values conditioned as followed:

- Values with a leading “+” or “–” as a decimal value (ASCII notation).
- Values without a leading “+” or “–” as a hexadecimal value (ASCII notation).
- The different notations can be mixed within the telegram.
- All following telegram examples refer to the CoLa-A protocol

Variable types

The variable types are the given in the syntax of the measuring data output telegram. The following variable types are possible:

Variable type	Length (byte)	Value range	Sign
uint_8	1	0 ... 255	No
uint_16	2	0 ... 65,535	No
uint_32	4	0 ... 4,294,967,295	No
int_32	4	–2,147,483,648 ... +2,147,483,647	Yes
float_32	4	$-10^{-44.85}$ ... $+10^{38.53}$	Yes
string	Context-dependent	Important: strings are not terminated by zeroes	

Important

- The information in the “Length” column of the table refers to the binary transfer of the numeric parameters.
- The information in the “Value range” column in the table refers to the value range mathematically possible for the variable type. The actual value ranges for the parameters may be different see also *Chapter 5.3 Measured value output fomat, Page 24*.

5.2 Request measured values

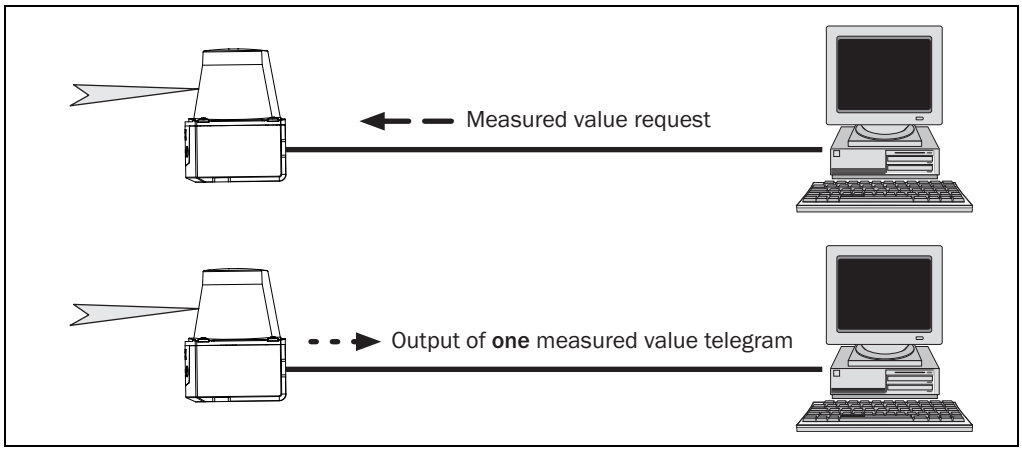
After switching on the supply voltage, the TiM55x initializes and the green LED ▶ will light up to indicate its readiness for operation.

The TiM55x begins its readiness to measure automatically. It continuously scans the surrounding contour in its field of vision at a frequency of 15 Hz. It continuously saves the values determined in each measuring process (scan) in its measured value memory by overwriting the previous values.

5.2.1 Single measured value output

If the data from a measuring process are required, the TiM55x sends the measured values from the most recent scan.

Example of single measured value output



Request:

<STX>sRN LMDscandata<ETX>

Answer of TiM55x:

<STX>sRA LMDscandata (contents see *Chapter 5.3 Measured value output fomat, Page 24*) <ETX>

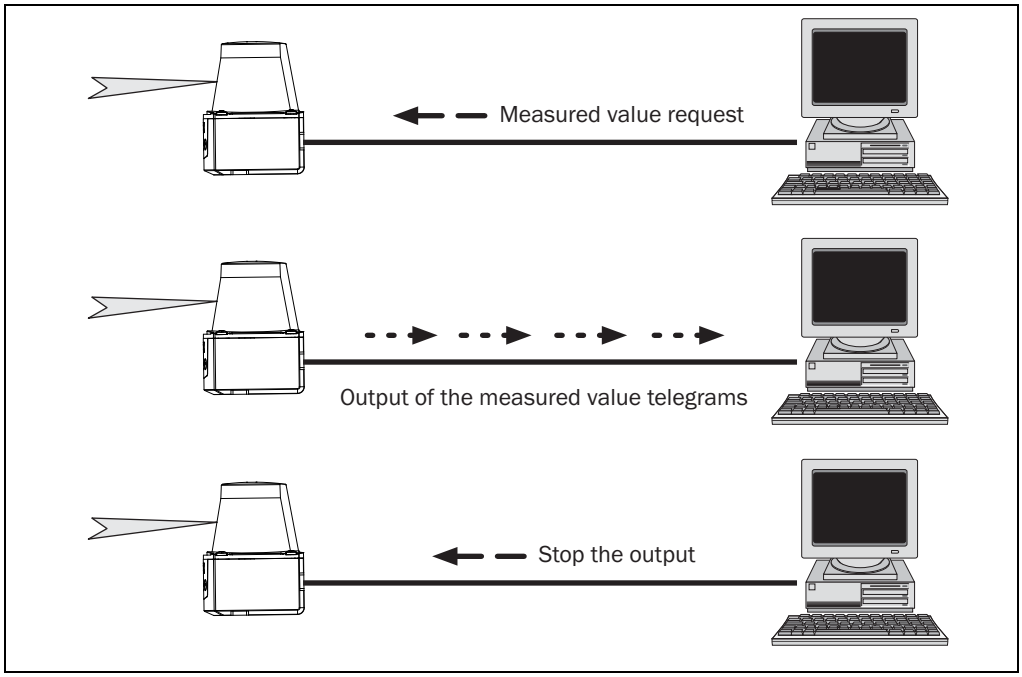
Telegram structure: **sRN LMDscandata**

Telegram part	Description	Variable type	Length (byte)	Value range
Type of command	Request (SOPAS read by name)	string	3	**sRN**
Command	Data request	string	11	**LMDscandata**

5.2.2 Continuous measured value output

If the data from ongoing measuring processes are required, the TiM55x sends measured values from successive scans until the output of measured values is stopped again using the same telegram.

Example of continuous measured value output



1. Start measured value output

Request:

<STX>sEN LMDscandata 1<ETX>

Answer of TiM55x (acknowledgement of request):

<STX>sEA LMDscandata 1<ETX>

Answer of TiM55x (measured value output):

<STX>sSN LMDscandata (contents see *Chapter 5.3 Measured value output fomat, Page 24*) <ETX>

2. Stop measured value output

Request:

<STX>sEN LMDscandata 0<ETX>

Answer of TiM55x (acknowledgement of request):

<STX>sEA LMDscandata 0<ETX>

Telegram structure: **sEN LMDscandata** MeasurementStartStop

Telegram part	Description	Variable type	Length (byte)	Value range
Type of command	Request (SOPAS event by name)	string	3	**sEN**
Command	Data request	string	11	**LMDscandata**
MeasurementStartStop		Enum8	1	**0** Stop measured value output **1** Start measured value output

5.3 Measured value output fomat

Important Information that is grayed out in the following table is not output by the TiM55x.

Telegram part		Description	Variable type	Length (byte)	Value range
	Type of command	Request (**S**OPAS **r**ead **a**nswer/**S**OPAS **s**ent **e**vent)	string	3	**sRA**/**sSN**
	Command	Data request	string	11	**LMDscandata**
	Version number	Firmware version information	uint_16	2	**0000h ... FFFFh**
Device information	Device number	Device ID as configured in SOPAS ET	uint_16	2	**0000h ... FFFFh**
	Serial number	Factory serial number	uint_32	4	**00000000h ... FFFFFFFFh**
	Device status	Status of the TiM55x	uint_x	2 x 2	**00 00h** Device OK **00 01h** Device error
Status information	Telegram counter	Counter, starting at the first measured value telegram (cyclic data) after confirmation of the measured value request. When the upper limit is reached, the counter starts again at 0 (= 1st telegram).	uint_16	2	**0000h**–**FFFFFh**
	Scan counter	Counter, starting with the first scan after confirmation of the measured value request. When the upper limit is reached, the counter starts again at 0 (= 1. scan).	uint_16	2	**0000h** 0 **FFFFFh** 65,535
	Time since startup	Time since the TiM55x was switched on and the end point of the scan in micro seconds (µs)	uint_32	4	**00000000h** 0 **FFFFFFFFh** 68.719.476.735
	Time of transmission	Time since the TiM55x was switched on and the transfer of the measured values in micro seconds (µs)	uint_32	4	**00000000h**–**FFFFFFFFh**
	Input status	The least significant byte reflects the state of the digital switching inputs by bit. The least significant bit corresponds to input 1.	uint_x	2 x 2	**00 00h** all inputs inactive
	Output status	The least significant byte reflects the state of the digital switching outputs by bit. The least significant bit corresponds to output 1.	uint_x	2 x 2	**00 00h** all outputs inactive **00 01h** Device ready
	Reserved byte A	Reserved	uint_16	2	–

Telegram part		Description	Variable type	Length (byte)	Value range
Measurement parameters	Scanning frequency	Information in 1/100 Hz	uint_32	4	**1500** 15 Hz
	Measurement frequency	Frequency between two separate measurements in 100 Hz Spot to spot frequency in 1/100Hz ' 15Hz, 1° resolution ' 360 shots / 66.67ms ' 5.4kHz	uint_32	4	**00000000h ... FFFFFFFFh** 5.4 kHz
Number of encoders		Defines the number of encoders from which data are output	uint_16	2	**0** No encoder data (can not be changed)
Encoder	Encoder position	Information in ticks	uint_32	4	**00000000h ... FFFFFFFFh**
	Encoder speed	Information in mm/s	uint_16	2	**0000h ... FFFFh**
Number of 16 bit channels		Defines the number of 16-bit output channels on which the TiM55x outputs measured data. If “0 output channels” are selected, no data is output.	uint_16	2	**1** The TiM55x sends the distance data as 16 bit value via one channel
Output channels 1 ... 4 (16 bit)	Measured data contents	The telegram part defines the contents of the output channel.	string	5	**DIST1** Radial distance for the first echo
	Scaling factor	Multiplier for the values in the telegram parts Data_1 to Data_n	Real	4	**00000000h ... FFFFFFFFh**
	Scaling offset	For the TiM55x always 0	Real	4	**00000000h ... FFFFFFFFh**
	Starting angle	Information 1/10,000 degree	Int_32	4	–450,000 ... + 2,250,000
	Angular step width	Information 1/10,000 degree	uint_16	2	10,000
	Number of data	Defines the number measured values the TiM55x outputs	uint_16	2	91
	Data_1 ... Data_n	Output of the measured values 1 to n. The contents and the unit depend on the telegram part “Measured data contents”. DIST in mm	uint_16	2	**0000h ... FFFFh**
Number of 8 bit channels		Defines the number of 8-bit output channels on which the TiM55x outputs measured data. If “0 output channels” are selected, no data is output.	uint_16	2	**1** The TiM55x sends the RSSI data as 8 bit value via one channel

(contd.)

Telegram part		Description	Variable type	Length (byte)	Value range
Position		Defines the output of position data	uint_16	2	**0** No position data (can not be changed)
Position information	X position	XN coordinate of the sensor in a coordinate system	Real	4	00000000h ... FFFFFFFFh
	Y position	YN coordinate of the sensor in a coordinate system	Real	4	00000000h ... FFFFFFFFh
	Z position	ZN coordinate of the sensor in a coordinate system	Real	4	00000000h ... FFFFFFFFh
	X rotation	XN rotation of the sensor in a coordinate system	Real	4	00000000h ... FFFFFFFFh
	Y rotation	YN rotation of the sensor in a coordinate system	Real	4	00000000h ... FFFFFFFFh
	Z rotation	ZN rotation of the sensor in a coordinate system	Real	4	00000000h ... FFFFFFFFh
	Type of rotation	Kind of rotation	Enum8	1	**0** No rotation **1** Pitching **2** Rolling **3** Free rotation
Name		Defines whether the TiM55x outputs the device name configured with SOPAS ET	uint_16	2	**0** No device name **1** Device name (can be changed)
	Device name	Flexible range from 0 to 16 characters (20h ... FFh)	string	0 ... 16	.....
Comment		Defines whether the TiM55x outputs the comment configured with SOPAS ET	uint_16	2	**0** No comment (can not be changed)
	Contents of comment	Configured comment	string	0 ... 128	.....
RSSI = Received Signal Strength Indicator					
Time information		Defines whether the TiM55x outputs time information	uint_16	2	**0** No time information (can not be changed)
Time information	Year	Year (4 digits)	uint_16	2	0000h ... 270Fh
	Month	Month from 1 to 12	uint_8	1	00h ... 0Ch
	Day	Day of the month from 1 to 31	uint_8	1	00h ... 1Fh
	Hour	Hour from 0 to 23	uint_8	1	00h ... 17h
	Minute	Minute from 0 to 59	uint_8	1	00h ... 3Bh
	Second	Second from 0 to 59	uint_8	1	00h ... 3Bh
	Micro second	Micro seconds from 0 to 999,999	uint_32	4	00000000h ... 000F423Fh

(contd.)

Telegram part		Description	Variable type	Length (byte)	Value range
Event information		Defines whether the TiM55x outputs event information	unit_16	2	**0** No event information (can not be changed)
Event information	Type of event	Fast digital input event	string	4	FDIN
	Encoder position	Encoder position at the time of the event. Information in ticks	uint_32	4	**00000000h ... FFFFFFFFh**
	Event time	Time since the TiM55x was switched on up to the time of the event in micro second (µs)	uint_32	4	**00000000h** 0 **FFFFFFFFh** 68,719,476,735
	Angular position	Angular position of the TiM55x at the time of the event. Information in 1/10,000 degree	int_32	4	–450,000 ... + 2,250,000

(contd.)

6 License texts

In the product TiM55x, SICK uses unmodified open source software and, as far as required and permitted in accordance with the relevant license conditions, modified open source software.

6.1 List of software licenses

1. NCURSES - 5.7- License:
   Copyright (c) 2006 Free Software Foundation, Inc.
2. Z-Lib 1.2.3:
   Copyright (C) 1995-2004 Jean-loup Gailly and Mark Adler
3. binutils-2.18.93.20081009
   GNU LESSER GENERAL PUBLIC LICENSE, Version 3, 29 June 2007 Copyright (C) 2007 Free Software Foundation, Inc
4. e2fsprogs-1.41.11 (UUID-license based on BSD 3-clause license):
   Copyright (C) 1996, 1997 Theodore Ts'o.
5. Dropbear - 0.52.tar.bz2:
   Copyright (c) 2002-2008 Matt Johnston - Portions copyright (c) 2004 Mihnea Stoenescu

5.1 Import code in keyimport.c is modified from PuTTY's import.c, licensed as follows: PuTTY is copyright 1997-2003 Simon Tatham - Portions copyright Robert de Bath, Joris van Rantwijk, Delian Delchev, Andreas Schultz, Jeroen Massar, Wez Furlong, Nicolas Barry, Justin Bradford, and CORE SDI S.A.

6. OpenSSH - 5.1p1

6.1 Cryptographic attack detector for ssh - source code: Copyright (c) 1998 CORE SDI S.A., Buenos Aires, Argentina.

6.2 Copyright 1995, 1996 by David Mazieres <dm@lcs.mit.edu>.

6.3 Copyright (c) 1983, 1990, 1992, 1993, 1995 The Regents of the University of California.

6.4 Remaining components of the software are provided under a standard 2-term BSD licence with the following names as copyright holders: Markus Friedl, Theo de Raadt, Niels Provos, Dug Song, Aaron Campbell, Damien Miller, Kevin Steves, Daniel Kouril, Wesley Griffin, Per Allansson, Nils Nordman, Simon Wilkinson

Portable OpenSSH additionally includes code from the following copyright holders, also under the 2-term BSD license: Ben Lindstrom, Tim Rice, Andre Lucas, Chris Adams, Corinna Vinschen, Cray Inc., Denis Parker , Gert Doering, Jakob Schlyter, Jason Downs, Juha Yrjölä, Michael Stone, Networks Associates Technology, Inc., Solar Designer, Todd C. Miller, Wayne Schroeder, William Jones, Darren Tucker, Sun Microsystems, The SCO Group, Daniel Walsh

6.5 Portable OpenSSH contains the following additional licenses:

a) snprintf replacement: Copyright Patrick Powell 1995

b) Compatibility code (openbsd-compat): Some code is licensed under a 3-term BSD license, to the following copyright holders: Todd C. Miller, Theo de Raadt, Damien Miller, Eric P. Allma, The Regents of the University of California, Constantin S. Svintsoff

c) Some code is licensed under an ISC-style license, to the following copyright holders: Internet Software Consortium: Todd C. Miller, Reyk Floeter, Chad Mynhier

d) Some code is licensed under a MIT-style license to the following copyright holders: Free Software Foundation, Inc.

7. OPENSSL – 09.8N:

7.1 OpenSSL License. Copyright (c) 1998 - 2011 The OpenSSL Project.

7.2 Original SSLeay License. Copyright (c) 1995 - 1998 Eric Young

8. STRACE – 4.5:20
Copyright (c) 1991, 1992 Paul Kranenburg, Copyright (c) 1993 Branko Lankester, Copyright (c) 1993 Ulrich Pegelow, Copyright (c) 1995, 1996 Michael Elizabeth Chastain, Copyright (c)1993, 1994, 1995, 1996 Rick Sladkey, Copyright (C) 1998 -2001 Wichert Akkerman

9. GNU GENERAL PUBLIC LICENSE (Version 2, June 1991):
Copyright (C) 1989, 1991 Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

9.1 BusyBox 1.16.1: Copyright (C) 1989, 1991 Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

9.2 iproute2-2.6.34: Copyright (C) 1989, 1991 Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

9.3 kexec-tools-2.0.1: Copyright (C) 1989, 1991 Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

9.4 libelf-0.8.12.: Copyright (C) 1989, 1991 Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

9.5 libgcc: Copyright (C) 1989, 1991 Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

9.6 ltrace-0.5: Copyright (C) 1989, 1991 Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

9.7 lzo-2.03: Copyright (C) 1989, 1991 Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

9.8 mtd-utils-1.3.1: Copyright (C) 1989, 1991 Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

9.9 porcps-3.2.8 (only ps used): Copyright (C) 1989, 1991 Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

9.10udev-119: Copyright (C) 1989, 1991 Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

10. libstdc++:
GNU LESSER GENERAL PUBLIC LICENSE (Version 3, 29 June 2007): Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>

11. Glibc 2.8

11.1GNU LESSER GENERAL PUBLIC LICENSE (Version 3, 29 June 2007): Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>

11.2GNU GENERAL PUBLIC LICENSE (Version 3, 29 June 2007): Copyright © 2007 Free Software Foundation, Inc. <http://fsf.org/>

12. GNU GENERAL PUBLIC LICENSE:
Version 3, 29 June 2007: Copyright (c) 2007 Free Software Foundation, Inc.

12.1dosfstools-3.0.10: Copyright (c) 2007 Free Software Foundation, Inc.

12.2gnupg-1.4.10: Copyright (c) 2007 Free Software Foundation, Inc.

12.3binutils-2.18.93.20081009: Copyright (c) 2007 Free Software Foundation, Inc.

6.2 Used open source software and corresponding license texts

1. NCURSES - 5.7 - License

Copyright (c) 2006 Free Software Foundation, Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, distribute with modifications, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE ABOVE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
Except as contained in this notice, the name(s) of the above copyright holders shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization.
These are the principal authors/contributors of ncurses since 1.9.9e, in decreasing order of their contribution:
TDThomas E. Dickey
JPFJuergen Pfeifer
ESREric S Raymond
AVLAlexander V Lukyanov
PBPhilippe Blain
SVSven Verdoolaege

2. Z-Lib 1.2.3

Copyright (C) 1995-2004 Jean-loup Gailly and Mark Adler

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

3. e2fsprogs-1.41.11 (UUID-license based on BSD 3-clause license)

Copyright (C) 1996, 1997 Theodore Ts'o.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, and the entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED “AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,

EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF NOT ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

4. Dropbear - 0.52.tar.bz2

Licenser: - Matt Johnston
- Mihnea Stoenescu
- Tom StDenis
- Tatu Ylonen
- Andre Lucas
- Todd C. Miller
- Simon Tatham

Dropbear contains a number of components from different sources, hence there are a few licenses and authors involved. All licenses are fairly non-restrictive.

The majority of code is written by Matt Johnston, under the license below.

Portions of the client-mode work are (c) 2004 Mihnea Stoenescu, under the same license:

4.1

Copyright (c) 2002-2008 Matt Johnston
Portions copyright (c) 2004 Mihnea Stoenescu
All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

4.2 Import code in keyimport.c is modified from PuTTY's import.c, licensed as follows:

PuTTY is copyright 1997-2003 Simon Tatham.
Portions copyright Robert de Bath, Joris van Rantwijk, Delian Delchev, Andreas Schultz, Jeroen Massar, Wez Furlong, Nicolas Barry, Justin Bradford, and CORE SDI S.A.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

5. OpenSSH - 5.1p1

5.1 Cryptographic attack detector for ssh - source code

Copyright (c) 1998 CORE SDI S.A., Buenos Aires, Argentina.

All rights reserved. Redistribution and use in source and binary forms, with or without modification, are permitted provided that this copyright notice is retained.

THIS SOFTWARE IS PROVIDED "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES ARE DISCLAIMED. IN NO EVENT SHALL CORE SDI S.A. BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR MISUSE OF THIS SOFTWARE.

Ariel Futoransky <futo@core-sdi.com>
<http://www.core-sdi.com

5.2

Copyright 1995, 1996 by David Mazieres <dm@lcs.mit.edu>.

Modification and redistribution in source and binary forms is permitted provided that due credit is given to the author and the OpenBSD project by leaving this copyright notice intact.

5.3

Copyright (c) 1983, 1990, 1992, 1993, 1995
The Regents of the University of California.
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

5.4

Remaining components of the software are provided under a standard 2-term BSD licence with the following names as copyright holders:

- **Markus Friedl**
- **Theo de Raadt**
- **Niels Provos**
- **Dug Song**
- **Aaron Campbell**
- **Damien Miller**
- **Kevin Steves**
- **Daniel Kouril**
- **Wesley Griffin**
- **Per Allansson**
- **Nils Nordman**
- **Simon Wilkinson**

Portable OpenSSH additionally includes code from the following copyright holders, also under the 2-term BSD license:

- **Ben Lindstrom**
- **Tim Rice**
- **Andre Lucas**
- **Chris Adams**
- **Corinna Vinschen**
- **Cray Inc.**
- **Denis Parker**
- **Gert Doering**
- **Jakob Schlyter**
- **Jason Downs**
- **Juha Yrjölä**
- **Michael Stone**
- **Networks Associates Technology, Inc.**
- **Solar Designer**
- **Todd C. Miller**
- **Wayne Schroeder**
- **William Jones**
- **Darren Tucker**
- **Sun Microsystems**
- **The SCO Group**
- **Daniel Walsh**

Copyright < year > <copyright holders >. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT

SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TOR (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

5.5 Portable OpenSSH contains the following additional licenses:

a) md5crypt.c, md5crypt.h

"THE BEER-WARE LICENSE" (Revision 42):

<phk@login.dknet.dk> wrote this file. As long as you retain this notice you can do whatever you want with this stuff. If we meet some day, and you think this stuff is worth it, you can buy me a beer in return. Poul-Henning Kamp

b) snprintf replacement

Copyright Patrick Powell 1995

This code is based on code written by Patrick Powell (papowell@astart.com)
It may be used for any purpose as long as this notice remains intact on all source code distributions

c) Compatibility code (openbsd-compat)

Apart from the previously mentioned licenses, various pieces of code in the openbsd-compat/ subdirectory are licensed as follows:

Some code is licensed under a 3-term BSD license, to the following copyright holders:

- **Todd C. Miller**
- **Theo de Raadt**
- **Damien Miller**
- **Eric P. Allman**
- **The Regents of the University of California**
- **Constantin S. Svintsoff**

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLU-

DING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

d) Some code is licensed under an ISC-style license, to the following copyright holders:

- **Internet Software Consortium.**
- **Todd C. Miller**
- **Reyk Floeter**
- **Chad Mynhier**

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.
THE SOFTWARE IS PROVIDED "AS IS" AND TODD C. MILLER DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL TODD C. MILLER BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

e) Some code is licensed under a MIT-style license to the following copyright holders:

- Free Software Foundation, Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, distribute with modifications, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:
The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE ABOVE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
Except as contained in this notice, the name(s) of the above copyright holders shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization.

7. OpenSSL License

Copyright (c) 1998-2011 The OpenSSL Project. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgment:

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (http://www.openssl.org/)"
4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact openssl-core@openssl.org.
5. Products derived from this software may not be called "OpenSSL" nor may "OpenSSL" appear in their names without prior written permission of the OpenSSL Project.
6. Redistributions of any form whatsoever must retain the following acknowledgment:
"This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (http://www.openssl.org/)"
THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS'' AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
This product includes cryptographic software written by Eric Young (eay@cryptsoft.com).
This product includes software written by Tim Hudson (tjh@cryptsoft.com).
Original SSLeay License
Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com) All rights reserved.
This package is an SSL implementation written by Eric Young (eay@cryptsoft.com).
The implementation was written so as to conform with Netscapes SSL.
This library is free for commercial and non-commercial use as long as the following conditions are aheared to. The following conditions apply to all code found in this distribution, be it the RC4, RSA, lhash, DES, etc., code; not just the SSL code. The SSL documentation included with this distribution is covered by the same copyright terms except that the holder is Tim Hudson (tjh@cryptsoft.com).

Copyright remains Eric Young's, and as such any Copyright notices in the code are not to be removed.
If this package is used in a product, Eric Young should be given attribution as the author of the parts of the library used. This can be in the form of a textual message at program startup or in documentation (online or textual) provided with the package.
Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgement:
"This product includes cryptographic software written by Eric Young (eay@cryptsoft.com)"
The word 'cryptographic' can be left out if the rouines from the library being used are not cryptographic related :-).

4. If you include any Windows specific code (or a derivative thereof) from the apps directory (application code) you must include an acknowledgement:
"This product includes software written by Tim Hudson (tjh@cryptsoft.com)"
THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
The licence and distribution terms for any publically available version or derivative of this code cannot be changed. i.e. this code cannot simply be copied and put under another distribution licence [including the GNU Public Licence.]

8. STRACE – 4.5:20
Copyright (c) 1991, 1992 Paul Kranenburg <pk@cs.few.eur.nl>
Copyright (c) 1993 Branko Lankester <branko@hacktic.nl>
Copyright (c) 1993 Ulrich Pegelow <pegelow@moorea.uni-muenster.de>
Copyright (c) 1995, 1996 Michael Elizabeth Chastain <mec@duracef.shout.net>
Copyright (c) 1993, 1994, 1995, 1996 Rick Sladkey <jrs@world.std.com>
Copyright (C) 1998-2001 Wichert Akkerman <wakkerma@deephackmode.org>
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

9. GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA- Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

10. Libstdc++-v3

The source code of libstdc++-v3 is distributed under version 2 of the GNU General Public License, with the so-called "runtime exception," as follows (or see any header or implementation file):

As a special exception, you may use this file as part of a free software library without restriction. Specifically, if other files instantiate templates or use macros or inline functions from this file, or you compile this file and link it with other files to produce an executable, this file does not by itself cause the resulting executable to be covered by the GNU General Public License. This exception does not however invalidate any other reasons why the executable file might be covered by the GNU General Public License.

11. Glibc 2.8 und 3. binutils-2.18.93.20081009

11.1 GNU LESSER GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates the terms and conditions of version 3 of the GNU General Public License, supplemented by the additional permissions listed below.

0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser General Public License, and the "GNU GPL" refers to version 3 of the GNU General Public License.

"The Library" refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.
An "Application" is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.
A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked Version".
The "Minimal Corresponding Source" for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.
The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

1. Exception to Section 3 of the GNU GPL.
You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.
2. Conveying Modified Versions.
If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:
a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or
b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

3. Object Code Incorporating Material from Library Header Files.
The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:
a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.
b) Accompany the object code with a copy of the GNU GPL and this license document.

4. Combined Works.
You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following:
a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.
b) Accompany the Combined Work with a copy of the GNU GPL and this license document.
c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.
d) Do one of the following:

0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.

1) Use a suitable shared library mechanism for linking with theLibrary. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.

e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.

b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

11.2 GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright © 2007 Free Software Foundation, Inc. <http://fsf.org/>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are

used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.
The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.
The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.
All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.
You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.
Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.
No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures. When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.
You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.
You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.
You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

a) The work must carry prominent notices stating that you modified it, and giving a rel-

evant date.

b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

"a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

"b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

"c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

"d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

"e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

"a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or

"b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or

"c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

"d) Limiting the use for publicity purposes of names of licensors or authors of the material; or

"e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or

"f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your reci-

pient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.
If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.
A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.
Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.
Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.
Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.
THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.
IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.
If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

Notes:

8015883/XZ80/2014-01-08 · HS_8M (2014-01) · A4 4c int41

Australia
Phone +61 3 9457 0600
1800 334 802 – tollfree
E-Mail sales@sick.com.au

Belgium/Luxembourg
Phone +32 (0)2 466 55 66
E-Mail info@sick.be

Brasil
Phone +55 11 3215-4900
E-Mail sac@sick.com.br

Canada
Phone +1 905 771 14 44
E-Mail information@sick.com

Česká republika
Phone +420 2 57 91 18 50
E-Mail sick@sick.cz

China
Phone +86 4000 121 000
E-Mail info.china@sick.net.cn
Phone +852-2153 6300
E-Mail ghk@sick.com.hk

Danmark
Phone +45 45 82 64 00
E-Mail sick@sick.dk

Deutschland
Phone +49 211 5301-301
E-Mail info@sick.de

España
Phone +34 93 480 31 00
E-Mail info@sick.es

France
Phone +33 1 64 62 35 00
E-Mail info@sick.fr

Great Britain
Phone +44 (0)1727 831121
E-Mail info@sick.co.uk

India
Phone +91–22–4033 8333
E-Mail info@sick-india.com

Israel
Phone +972-4-6881000
E-Mail info@sick-sensors.com

Italia
Phone +39 02 27 43 41
E-Mail info@sick.it

Japan
Phone +81 (0)3 3358 1341
E-Mail support@sick.jp

Magyarország
Phone +36 1 371 2680
E-Mail office@sick.hu

Nederland
Phone +31 (0)30 229 25 44
E-Mail info@sick.nl

Norge
Phone +47 67 81 50 00
E-Mail austefjord@sick.no

Österreich
Phone +43 (0)22 36 62 28 8-0
E-Mail office@sick.at

Polska
Phone +48 22 837 40 50
E-Mail info@sick.pl

România
Phone +40 356 171 120
E-Mail office@sick.ro

Russia
Phone +7-495-775-05-30
E-Mail info@sick.ru

Schweiz
Phone +41 41 619 29 39
E-Mail contact@sick.ch

Singapore
Phone +65 6744 3732
E-Mail sales.gsg@sick.com

Slovenija
Phone +386 (0)1-47 69 990
E-Mail office@sick.si

South Africa
Phone +27 11 472 3733
E-Mail info@sickautomation.co.za

South Korea
Phone +82 2 786 6321/4
E-Mail info@sickkorea.net

Suomi
Phone +358-9-25 15 800
E-Mail sick@sick.fi

Sverige
Phone +46 10 110 10 00
E-Mail info@sick.se

Taiwan
Phone +886 2 2375-6288
E-Mail sales@sick.com.tw

Türkiye
Phone +90 (216) 528 50 00
E-Mail info@sick.com.tr

United Arab Emirates
Phone +971 (0) 4 88 65 878
E-Mail info@sick.ae

USA/México
Phone +1(952) 941-6780
1 (800) 325-7425 – tollfree
E-Mail info@sickusa.com

More representatives and agencies
at **www.sick.com**

SICK
Sensor Intelligence.