Instruction manual

Leak detector Testo Sensor LD basic



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2 Safety instructions

About this document

- Read this documentation carefully and familiarize yourself with the product before using it. Pay particular attention to the safety and warning instructions to prevent injury and product damage.
- Keep this documentation handy for future reference.
- Share this documentation with future users of the product.

2.1 General safety instruction

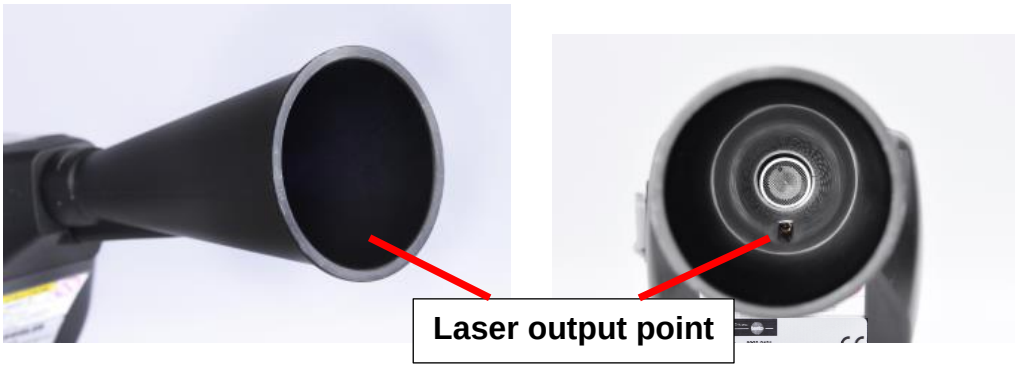


- The product is to be used only in accordance with the intended purpose and within the parameters specified in the technical data. Do not use force for operation.
- Never measure with the device at or near live/energized parts!
- During leak detection on electrical systems, please maintain a sufficient safety distance to avoid dangerous electric shocks!
- Avoid any direct contact with hot and/or rotating parts.
- Always switch on the device before putting on the headphones! At high signal levels (bar graph headphones in the red area), the volume can be correspondingly large. The sensitivity setting can be used to reduce the volume.
- Observe the prescribed storage and operating temperatures.
- In case of improper handling or violence, the warranty claims are lost.
- Interventions on the device of any kind, unless they correspond to the intended and described procedures, lead to the expiration of warranty and to the disclaimer.
- The device is intended solely for the described purpose.

2.2 Using of class 2 laser



- Never point the laser directly towards persons!
- Absolutely avoid a direct irradiation of the eyes of humans and animals!
- If a person‘s eyes are exposed to class 2 laser radiation, they should shut their eyes and immediately move away from the beam
- Do not stare into the beam
- Laser module: corresponds to DIN EN 60825-1: 2014 Class 2 (<1mW / 635nm)
- Laser output point trumpet and parabolic mirror:



3 Service and maintenance

Service and maintenance work must only be carried out by authorized personnel.

4 Environmental protection



- Disposal of defective batteries / dead batteries according to the valid legal regulations.
- After the end of the useful life, take the product to the separate collection for electrical and electronic equipment (observe local regulations) or return the product to Testo Sensor GmbH for disposal.

Testo Sensor GmbH makes no warranty as to its suitability for any particular purpose and assumes no liability for any errors contained in this manual. Nor for consequential damages in connection with the delivery, performance or use of this device.

The following accumulator is contained in this electrical appliance

Battery type	Chemical system
Akkumulator	LiIon 2S1P

Information on the safe removal of the batteries or accumulators

- Warning: Make sure that the battery is completely empty.
- Removing the battery



Removing the battery cover



Disconnecting the connector



Carefully pull out the battery

- Carefully remove the accumulator
- The accumulator and the appliance can now be disposed of separately

5 Intended use

The Testo Sensor LD basic is a leak detector for quick and reliable leak detection in/on compressed air systems.
It is solely designed and constructed for the intended use described here and may only be used for this purpose.
The user must verify that the device is suitable for the intended use. The technical data listed in this datasheet are binding.
Improper handling or operation outside the technical specifications is not permitted. Claims of any kind for damages arising from improper use are excluded.

6 Technical data Testo Sensor LD basic

Dimensions hand-held housing	263 x 96 x 280 mm (with preamp module and acoustic trumpet)
Weight	0.55 kg with preamp module and acoustic trumpet, complete set in case approx. 3.0 kg
Operating frequency	40 kHz (+/-2 kHz)
Power supply	Internal 7.4 V lithium-ion battery
Operating time	> 10 h (continuous operation)
Charging	ext. battery charger (included in scope of delivery)
Charging time c	Max. 4h
Laser	Wavelength 630–660nm, output power < 1mW (laser class 2)
Connections	3.5 mm stereo jack for headset, Power supply socket for connecting an external charger USB connection
Colour screen	3.5" touch panel TFT transmissive
Interface	USB for SW update.
Application Area	Indoor use
Operating temperaturer	-5 °C bis +50 °C
Storage temperature	-20 °C to +60 °C
Altitude	Up to 4000m above sea level
Max. Humidity	<95% rH, without condensation
Pollution degree	2
Protection class	IP20

7 Identification

7.1 Name plate



7.2 Laser warning label



7.3 Label position



8 Device components and controls

8.1 The Testo Sensor LD basic



3.5" TFT colour display with touch panel

Foil keypad (4 buttons)

On/Off button

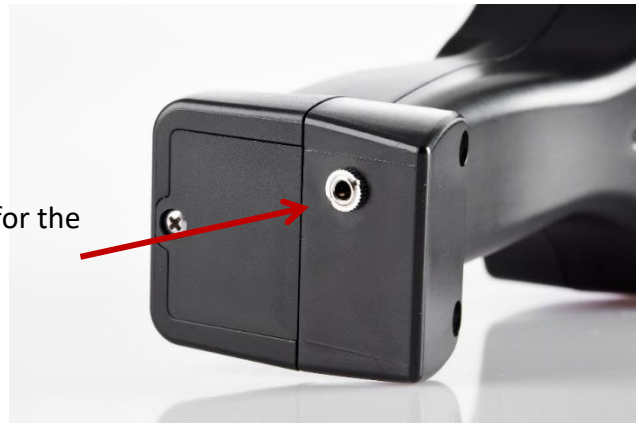
Acoustic trumpet

USB Connection

Plug-in connection for power supply (battery

Save button

Volume (+/-)



3.5mm jack for the headphone

9 Overview and application description of the different sensor types

Acoustic trumpet (standard tool)	Straightening tube
 The acoustic trumpet bundles incident ultrasonic waves, thereby extending the range of the device. This behaviour makes it ideal for medium distances. The leakage can be heard from large distances, for precise detection, the user must approach the leakage and consistently follow the "loudest" point. Individual compressed air components are then checked for precise detection. Quantification distance (distance) □ 1 – 6 m **Use of acoustic trumpet:** • Average distance to pipe/component 0.2 - 6 m • Low interfering noise • Leakage freely accessible	 The straightening tube permits only very few ultrasonic waves to pass in the direction of the ultrasonic transducer, allowing leakages to be located very precisely. For this reason, the use of the straightening tube is recommended for small distances, for the precise detection of the corresponding leakage. **Quantification distance:** 0…0,2 m **Use of focus tube:** • Short distance to pipe/component 0.05 m • Pipe/component freely accessible • Pipes and components to be inspected are very close together

10 Start-up / / Application Testo Sensor LD basic

Please first observe the safety instructions in Chapter 2

10.1 Switch on

Hold down the power button for about 1 second, the power will turn on, and a start-up sequence will appear on the display. Pressing the button again switches the device off again.

On-Off button, see device components and controls

10.2 Headphone Volume Up / Volume Down

The volume up and volume down buttons in the headset can be increased or decreased in 16 steps.
Continuously pressing the button automatically increases / decreases the value.

Volume up / down buttons for headphone volume, see device components and controls

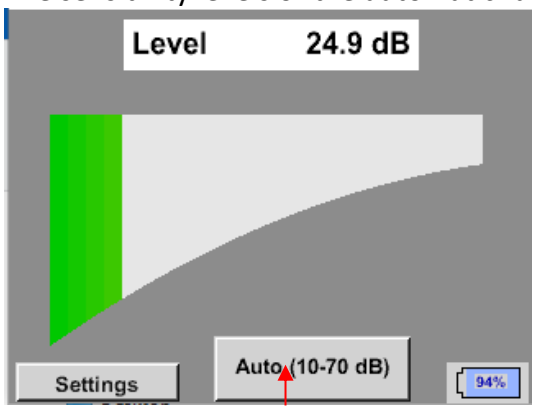
Please make sure the headphone level is <50% before putting on the headphones.

10.3 Sensitivity level

Ultrasound levels can be understood as a "loudness" of the leakage.

With the “Sensitivity" button, the sensitivity of the Testo Sensor LD basic can be adjusted to the environment, which strongly influences the acoustic behaviour of the device and increases or decreases the valid value range. A reduction in sensitivity reduces the range of the leakage .

The sensitivity levels or the automatic function are selected via the "Sensitivity" button.



Sensitivity Button

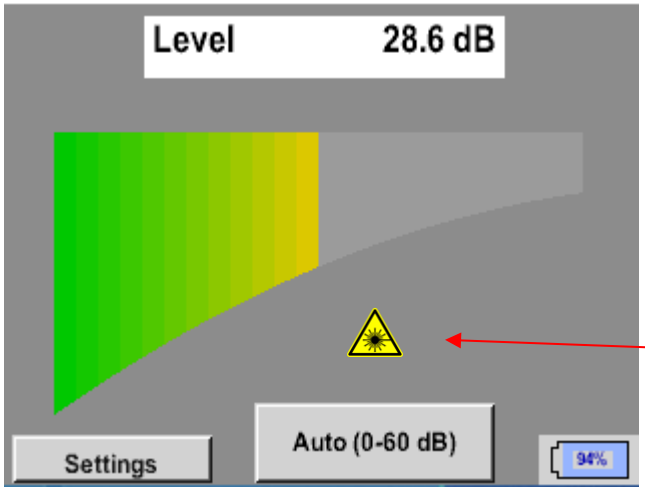
The LD basicoffers a manual selection as well as an automatic function *"Auto*" for setting the sensitivity.
Selection is made by pressing the *"Sensitivity"* setting button.
When *"Auto"* is selected, the LD basic selects the best possible sensitivity level.

Sensitivity levels

0 – 60 dB = Highest sensitivity level of the device (use with small leaks and no noise
10 – 70 dB = Leakages and noises get "less noisy", the range is reduced.
20 – 80 dB = Leakages and noises get "less noisy", the range is reduced.
30 – 90 dB = Leakages and noises get "less noisy", the range is reduced.
40 – 100 dB = Most insensitive stage (large leaks, many noises → for heavy-duty application)

10.4 Laser On/Off

The laser pointer can only be switched on by pressing the laser on / off button.
When switched on, the display shows a laser warning symbol.



Laser „On“ Icon

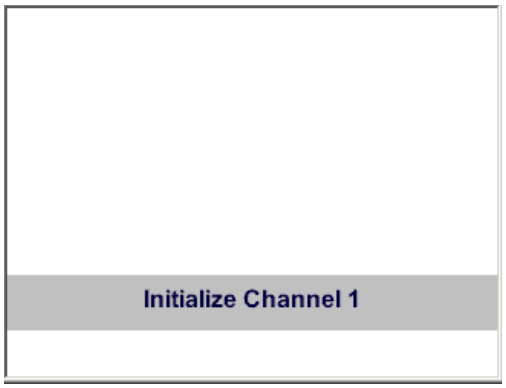
Please note the warnings for laser operation!
Avoid direct / indirect (via reflexion) irradiation of the eyes in humans and animals!

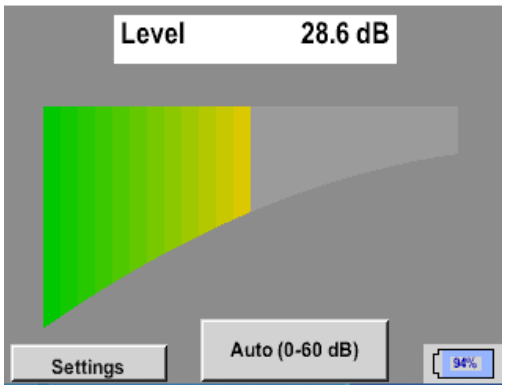
11 Operation

The operation is largely self-explanatory and menu-driven via the touch panel.
The selection of the respective menu items occur via short "tapping" with the finger or a soft round pen.

<u>Attention</u>: Please use no pens or other objects with sharp edges!
The foil can be damaged!

11.1 Initialization

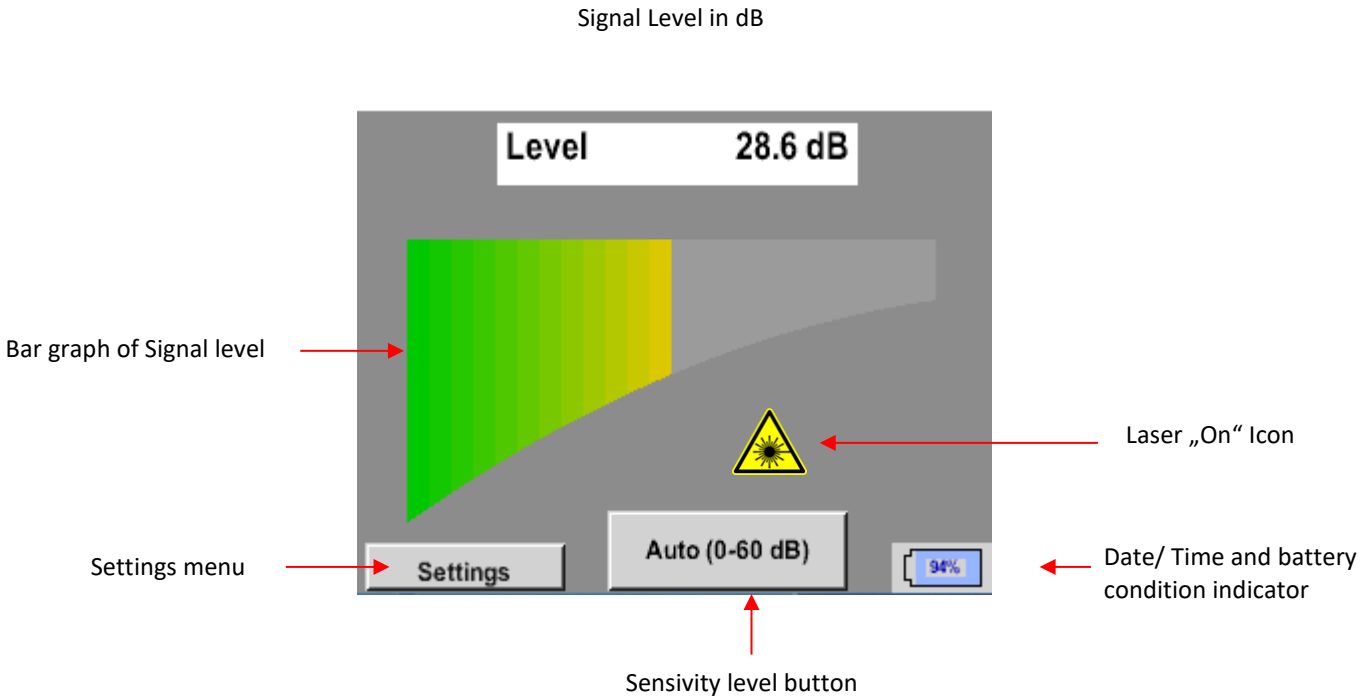




After switching on the Testo Sensor LD basic, the initialization takes place and then switch to leakage display

11.2 Screen Leckage

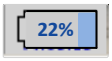
The following picture shows and describes the display elements.



Date / Time:



Battery condtion indicator

Battery condition: 

Power supply connected and battery is charging: 

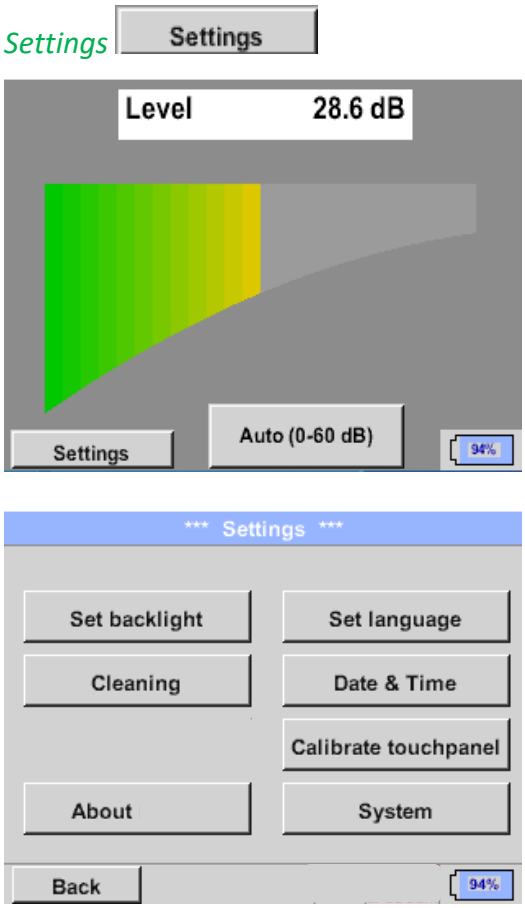
11.3 ^Settings menu Testo Sensor LD basic

The operation is largely self-explanatory and menu-driven via the touch panel.
The selection of the respective menu items occur via short "tapping" with the finger or a soft round pen.

<u>Attention</u>: Please use no pens or other objects with sharp edges!
The foil can be damaged!

Before the leakage search is started, the device must be configured. The user can access the menu by clicking the "Settings" button. The following figure shows the Settings "Menu".

Settings



With the button ***„Settings“*** you access the basic menu of the Testo Sensor LD basic.

Return to measurement by pressing ***„Back“*** –button.

11.3.1 Language

Settings ➔ Set language

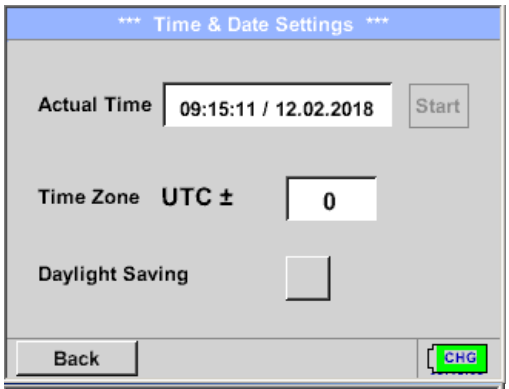


Here you can select one of 13 languages for the Testo Sensor LD basic.

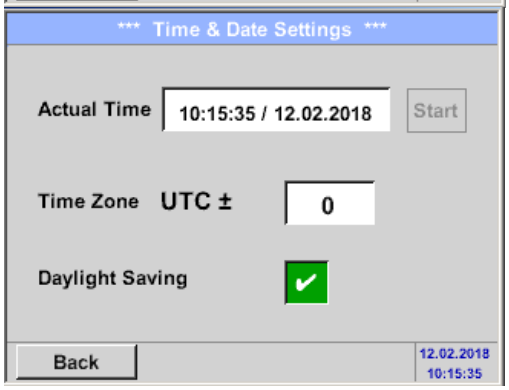
For languages on page 2 please press Page

11.3.2 Date & Time

Settings ➔ Date & Time



By pushing the *Time Zone* description field and enter the correct *UTC*, you can set the correct time all over the world.



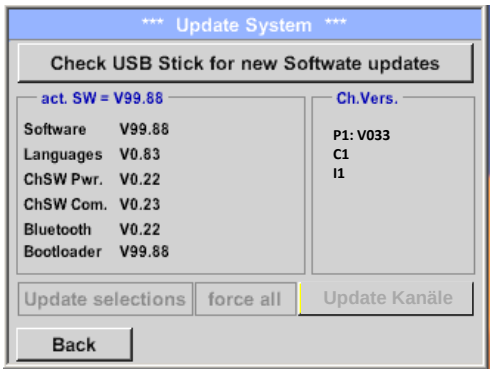
The summer and wintertime switchover is realized by pushing the *Daylight Saving* button.

11.3.3 System settings

11.3.3.1 System update

If required, there is the possibility for the Testo Sensor LD basic to download a firmware via the USB stick.
The file must then be stored on the USB stick and transferred to your device as described below.

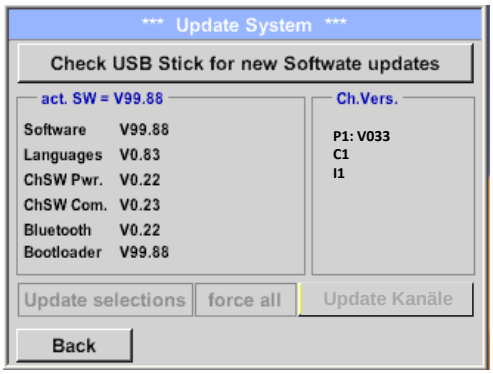
Settings ➔ System ➔ System-Update



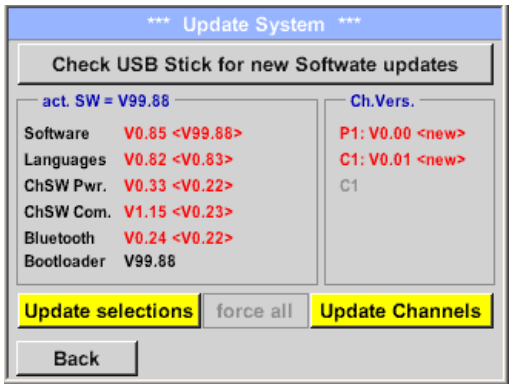
Overview of *System-Update*-Functions.

11.3.3.1.1 Check for Updates

Settings ➔ System → System-Update➔ check USB-Stick for new Updates



f after pressing the button *"Check USB Stick for new Software updates"* the following messages appear in the window, is the Testo Sensor LD basic is not properly connected to the USB flash drive or there are no files available.



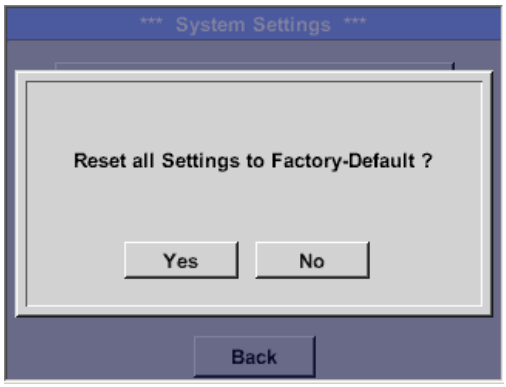
I If the Testo Sensor LD basic is correctly connected to the USB stick and there are new versions of the individual SW Parts, the new versions are marked in red.

The update is started by pressing the ***„Update selections"*** button.

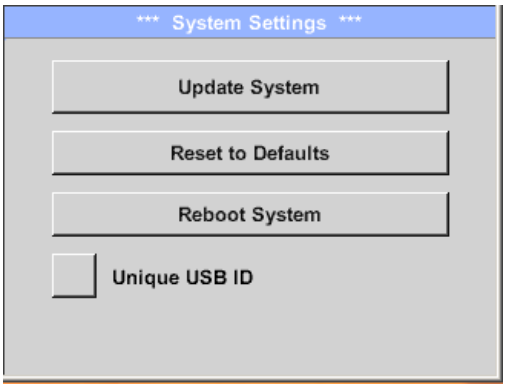
If it is required to install an older software version, you have press the button ***„Force all".***

11.3.3.2 Reset to default settings

Settings ➔ System ➔ Reset to Defaults



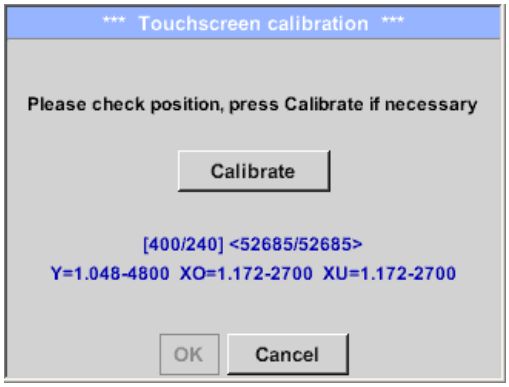
Bevor the settings are changed to the production default settings a safety prompt is displayed and must be confirmed by pressing the button ***„Yes“***.

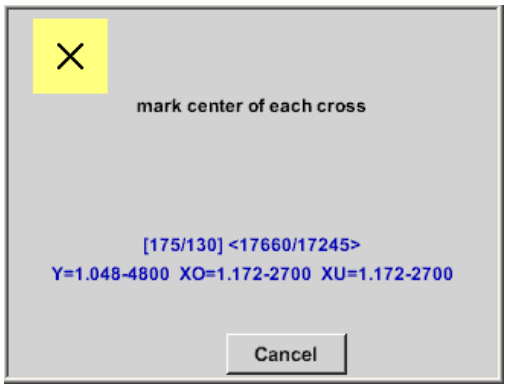


If needed with ***„Reboot System“*** the Testo Sensor LD basic could be started(reboot) here.

11.3.4 Calibration of touchpanel

Settings ➔ calibrate touchscreen





If necessary, the touch-screen calibration can be changed here.

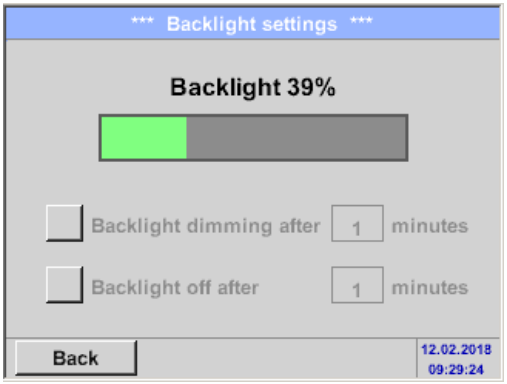
Push *Calibrate* and it appears, 1. left above,2. bottom right, 3. bottom left, 4.right above and 5. in the middle, a calibration cross that must be pushed consecutively.

If the calibration finished positive a message *“Calibration successful”* appears and have to be confirmed with *OK*.

Is this not the case, so you can repeat the calibration with the help of the Cancel and *Calibrate* button.

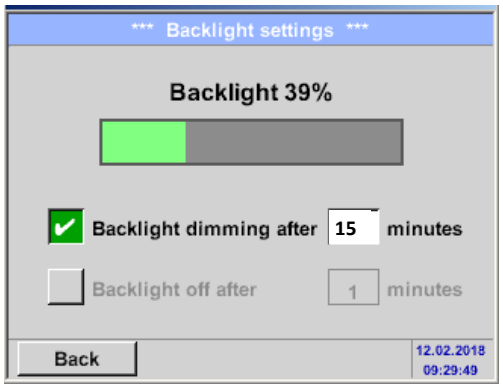
11.3.5 Set backlight brightness

Settings ➔ Set backlight



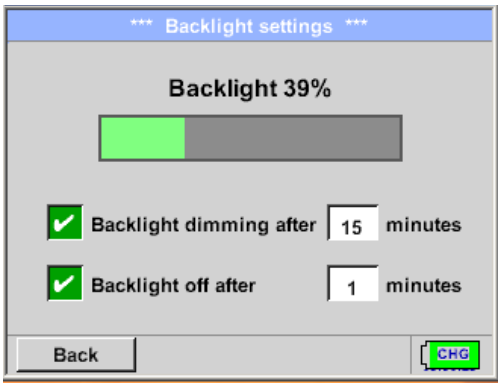
Here you adjust the desired *Backlight* (15-100%) of the display directly.

E.g. *Backlight* to 39 %



With the help of the *Backlight dimming after* button, after a definable time interval (here after 15 minutes), the *Backlight* can be reduced to the minimum.

As soon as the dimmed screen is operated again, the *Backlight* is committed automatically on the last set value before dimming.



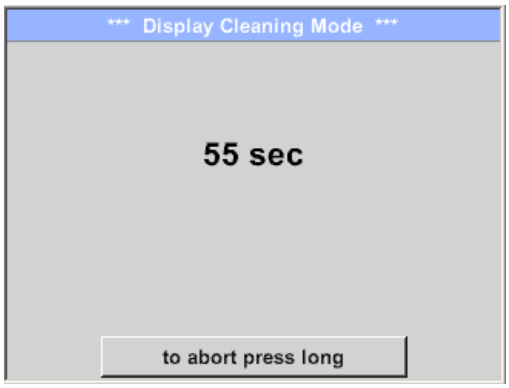
To reduce the energy consumption (device runtime), you can switch off the display backlight by setting ***"Backlight off after".***

Remark:
At the first touch, the *Backlight* in our example is reset to 39%, after that a "normal" function operation is possible.

<u>Important</u>:
If the *Backlight dimming after* button is not activated, then the *Backlight* stays permanently on, in the currently set brightness.

11.3.6 Cleaning

Settings ➔ Cleaning



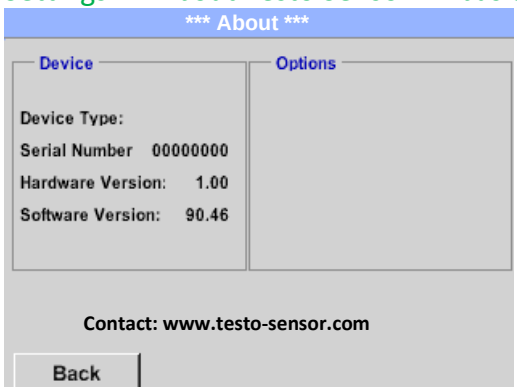
This function can be used for cleaning the touch panel during running measurements.

If one minute is not enough time to clean, the process can be repeated at any time.

Is the cleaning faster finished, then you can push the *to abort press long* button (for one or two seconds) to cancel.

11.3.7 About Testo Sensor LD basic

Settings ➔ About Testo Sensor LD basic

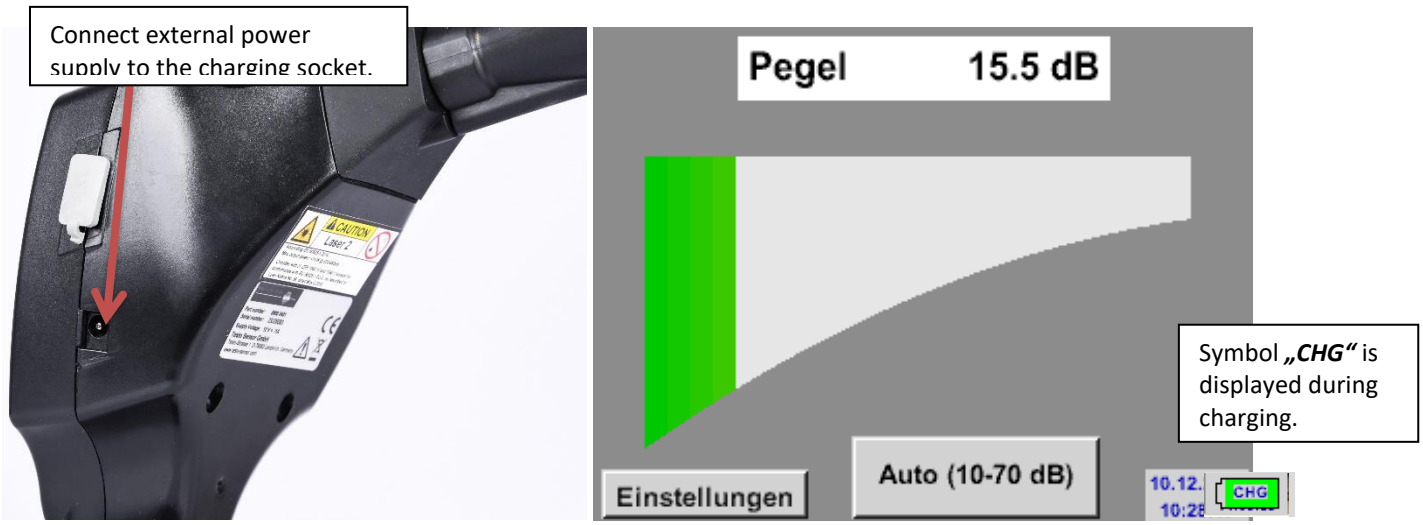


Brief description of the Hardware and Software Version, as well as the Serial Number of the Testo Sensor LD basic.

Under options, you can buy four additional, different functions, if you have not done this by ordering.

12 Charging the batteries

The battery is charged within the device. For this, the supplied plug-in power supply is connected to the built-in charging socket of the Testo Sensor LD basic and the 230V socket.



The Testo Sensor LD basic checks the charging status of the battery and starts the charging process automatically if necessary.

To protect the Li-ION accumulator of exhaustive discharge the device is switching off automatically if a cell voltage of 6,4V will be reached.

13 Scope of delivery

Testo Sensor LD basic is available either as a single unit or in a set. The set contains all the components and accessories that are protected in a rugged and shock-resistant transport case.



The following table lists the components with their respective order numbers.

Description	Order number
TESTO Sensor LD basic ultrasound detector set, consisting of:	8900 0401
TESTO Sensor LD basic ultrasound detector basic device	8900 0402
Acoustic trumpet	8800 0303
Soundproof headset	8800 0304
Focus tube with directional tip	8800 0305
Battery charger	8800 0306
Transport case	8800 0307

14 Appendix

In the appendix on the following pages you will find the Test Report of the Li-ion batteries used.

14.1 Report UN 38.1

Jauch
THE PULSE OF PROGRESS

Lithium cells or batteries test summary according to UN38.3

Battery Manufacturer:

Jauch Quartz GmbH
In der Lache24
D-78056 Villingen-Schwenningen
Germany
+49 7720 945-0
www.jauch.com · info@jauch.com

UN38.3 Test Lab:

Waltek Testing Group (Shenzhen) Co., Ltd.
Liuxian 2nd Road, Block 70, Bao'an District, Shenzhen, China
Tel- +86-0755-33663308
www.waltek.com.cn
sem@waltek.com.cn

Description of cell or battery:

Cell/battery type: ☐ Lithium metal ☒ Lithium-ion
Cell or battery: ☐ cell ☐ single-cell-battery ☒ battery
Model name: LI18650JE 2s1p
Physical Description: round cell battery stacked with wires and connector
Part-no.: 249611
Voltage: 7.2V
Capacity: 2550mAh
Energy: 18.36Wh
Lithium content: /
Weight of cell/battery: Approx. 100g

Test report-no.:
WTX21X06061626B

Date of test report:
Aug. 06, 2021

List of tests (result: pass/fail):

Test number	Test item	Result	Remarks
T-1	Altitude	pass	
T-2	Thermal cycling	pass	
T-3	Vibration	pass	
T-4	Shock	pass	
T-5	External short circuit	pass	
T-6	Impact /Crush	pass	for cell only
T-7	Overcharge	pass	
T-8	Forced Discharge	pass	for cell only

For air transportation only:

State of charge
☒ max. 30%
☐ not applicable

Test results in accordance with the UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS" Manual of Test and Criteria ST/SG/AC.10/11 Rev.6, Amend. 1, 38.3. Cell manufacturing as well as battery assembly is done under the quality assurance program of ISO9001.

This document remains valid as long as no changes, modifications or additions are made to the model(s) described in this document. The model(s) has (have) been classified according to the applicable transport regulation and the UN Manual of Test and Criteria as of the date of the certification. The model(s) must be packed, labelled and documented according to country and other international regulations for transportation.

Name / Title of Signatory / Date Sönke Zacher / Head of Project Management Aug. 31, 2021

Headquarters: Jauch Quartz GmbH · In der Lache 24 · 78056 Villingen-Schwenningen · Germany
Registry court: Freiburg HRB 502574, Managing Director: Thomas Jauch

14.2 Report IEC62133-2

	Ref. Certif. No.
IEC IECEE CB SCHEME	SG ITS-26038

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

CB TEST CERTIFICATE

Product	Rechargeable Li-Ion Battery
Name and address of the applicant	Jauch Quartz GmbH In der Lache 24, 78056 Villingen-Schwenningen, Germany
Name and address of the manufacturer	Jauch Quartz GmbH In der Lache 24, 78056 Villingen-Schwenningen, Germany
Name and address of the factory Note: *When more than one factory, please report on page 2*	Jauch Quartz GmbH In der Lache 24, 78056 Villingen-Schwenningen, Germany ☒ Additional Information on page 2
Ratings and principal characteristics	7.2V, 2550mAh, 18.36Wh
Trademark (if any)	Jauch www.jauch.com
Customer's Testing Facility (CTF) Stage used	-
Model / Type Ref.	Li18650JE 2S1P
Additional information (if necessary may also be reported on page 2)	-
A sample of the product was tested and found to be in conformity with	IEC 62133-2:2017
As shown in the Test Report Ref. No. which forms part of this Certificate	210721010GZU-001

This CB Test Certificate is issued by the National Certification Body

Intertek Testing Services (Singapore) Pte Ltd
5, Pereira Road, #06-01
Asiawide Industrial Building
Singapore 368025

intertek

Date: 30 August 2021

Signature: Ong Keng Chuan