

Operating manual

## S-SB10 software

Configuration of the Stationary Sensor Box S-SB10

Original

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# 1 Introduction

## 1.1 Notes on this document

### Usage

This document constitutes an integral part of the product and contains important advice on safe operation as well as all information on intended and efficient use. Any person using the product needs to have read and understood this document.

### Accessibility

The staff working with this product has to have constant access to this document to prevent handling errors and guarantee trouble-free operation.

### Version

The current software version is 'V.1.1.1'. New software functions may be developed and published in the future.

### Up-to-dateness

Every effort has been made to ensure that the information contained in this document is complete and correct at the time of release. This document describes all units and functions known of at the current point of time.

## 1.2 Representations in this document

### Illustrations

Illustrations used in this document do not always contain all details or special cases. They only represent the relevant information.

### Hints

Hints are marked as follows:

ⓘ Hints describe specific information or particular features that might not be evident, even for experienced users. Neglecting a hint poses no direct safety risk. However, it can lead to workflow disruptions.

## General icons

The following icons are used for visual emphasis:

Icon	Function
	Indicates a hyperlink

## Inputs and outputs

Certain recurring representations marking possible inputs and outputs for users are used as follows:

Input/output	Representation
Button	<b>Button</b>
Dialog window	<Dialog window>
User interface element	'GUI element'

## General fields of the user interface

At several instances, the user interface contains recurring fields with the following general meaning:

Fields	Usage	Function
	Selection field	<ul style="list-style-type: none"> <li>For selection of differing settings</li> </ul>
	Activation field	<ul style="list-style-type: none"> <li>Activates/deactivates alarm settings     within the level curve</li> <li>Activates/deactivates the current output  within the level curve</li> </ul>

## 2 Safety instructions

### **No alterations to the software**

No modifications to the software must be made or commissioned to third parties. The software may not be disassembled, decrypted or decompiled in full or in part.

### **Cyber security measures**

Based on analysis of vulnerabilities according to IEC 62443-4-1 and IEC 62443-4-2, no cyber security measures are necessary for the product.

However, a cyber attack on the product and its environment can never be completely ruled out.

Thus, we strongly recommend to implement safety measures (e.g. anti-virus programs, firewalls, access restrictions) against potential cyber attacks within the product environment.

## 3 Software description

This chapter describes use and operating elements of the S-SB10 software.

### 3.1 Intended use

The S-SB10 software is a component of the Stationary Sensor Box S-SB10. The software has specifically been developed for airborne and structure-borne sound testing.

Multiple parameters for signal acquisition, processing and output may be configured via the software.

These parameters include:

- Filter (broadband / narrowband)
- Current output including signal source
- Amplification (manual / automatic)
- Averaging time
- Alarm threshold values

The software interface allows for level curve monitoring via a chart window.

### 3.2 Prohibited use

Any use not approved by the manufacturer (including use of the 'Stationary Sensor Box' device) is prohibited and may lead to personal injury and/or damage to property.

SONOTEC GmbH accepts no liability for damage caused by prohibited use of the device.

In particular, prohibited use includes:

- Neglect of the 'Prohibited use' chapter in the operating manual of the associated Stationary Sensor Box S-SB10

### 3.3 System requirements

#### Minimum requirements

- Laptop / PC with Windows operating system
- Software
- SONOTEC driver
- Stationary Sensor Box S-SB10
- Portable USB data converter type 025
- Probes may be selected optionally

### 3.4 Description of the user interface

#### Setup

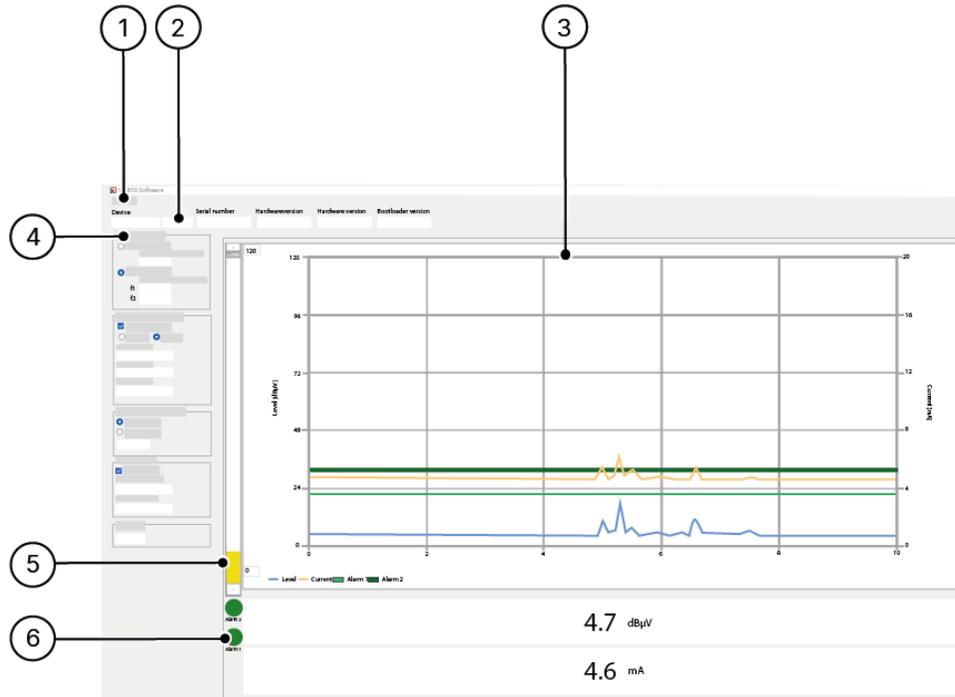


Figure 1: User interface

#### Description

No.	Type	Description
1	File	Contains the following functions: <ul style="list-style-type: none"> <li>• Measurement data administration</li> <li>• Language settings (English and German)</li> </ul>
2	Device connection / disconnection	Contains the following functions: <ul style="list-style-type: none"> <li>• Connecting the device</li> <li>• Disconnecting the device</li> </ul>
3	Trend diagram	<ul style="list-style-type: none"> <li>• Shows the measurement results of the applied key metrics as time-based trend.</li> <li>• Shows the alarm and warning thresholds as horizontal lines.</li> </ul>
4	Settings fields	Contains the following parameter settings: <ul style="list-style-type: none"> <li>• Filter</li> <li>• Current output</li> <li>• Amplifier</li> <li>• Alarm thresholds</li> <li>• Averaging time</li> </ul>

No.	Type	Description
-----	------	-------------

5 Level indicator

Shows a vertical graph with the following colors:

- Green = optimum measurement range, amplification is O.K.

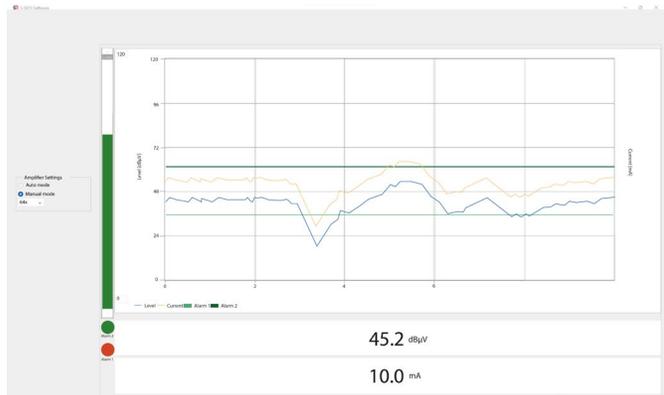


Figure 2: Optimum measurement range

- Yellow = signal undermodulation, amplification needs to be increased

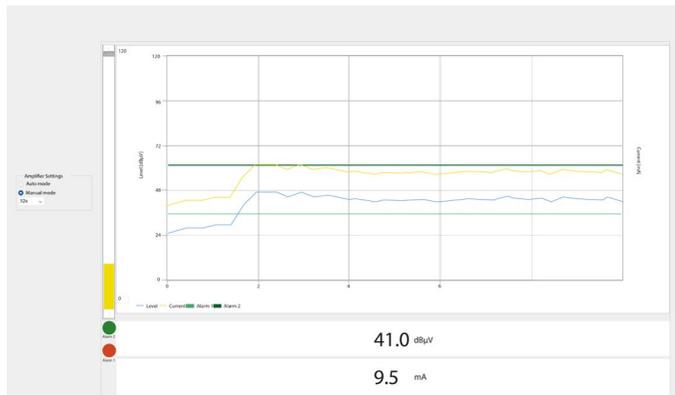


Figure 3: Signal undermodulated

- Red = signal overmodulation, amplification needs to be decreased

6 Alarm 1 and alarm 2

- Shows the threshold value transgression for alarm 1 and alarm 2
- Green light = current measured value below alarm threshold
- Red light = current measurement value above alarm threshold

ⓘ Please mind that the threshold values may only be entered with alarm 2 greater than alarm 1.

## 4 Methods for parameter setting

### 4.1 Installing the software

For starting the software, the 'USB Data Converter' needs to be connected to a personal computer and the 'Stationary Sensor Box S-SB10'.

! For additional information, please refer to the 'Stationary Sensor Box S-SB10' user documentation.

☑ The link for downloading the 'S-SB10 software' and the SONOTEC driver will be sent by email for download from the Sonotec Cloud server <https://cloud.sonotec.de/login>.

1. Install the SONOTEC driver.
2. Start the 'S-SB10 software' on the computer.

### 4.2 Setting the user interface language

1. Click the 'File' window element.

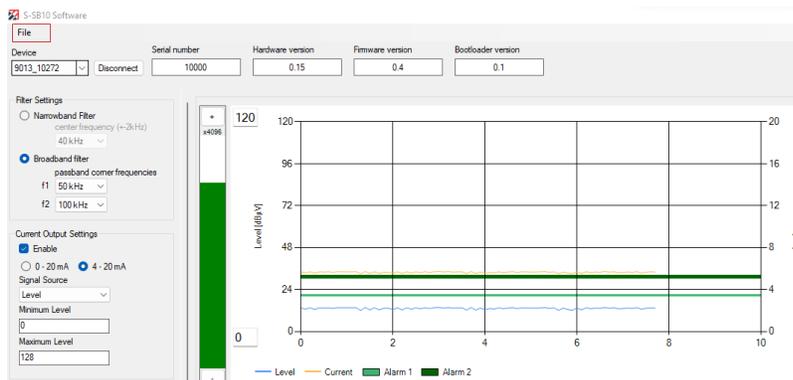


Figure 4: 'File' window element

2. Select the **Software settings** button.  
→ The window offers the language options <German> and <English>.

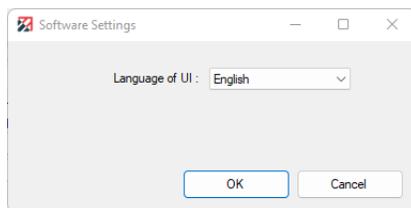


Figure 5: Selection window for Language of UI

3. Click the **OK** button.
4. The software needs to be restarted.  
→ The user interface is set to the selected language.

## 4.3 Setting parameters

Depending on the work order, differing settings may be required or useful for optimized recording of measurement values and analysis and evaluation of measurement data.

### Setup

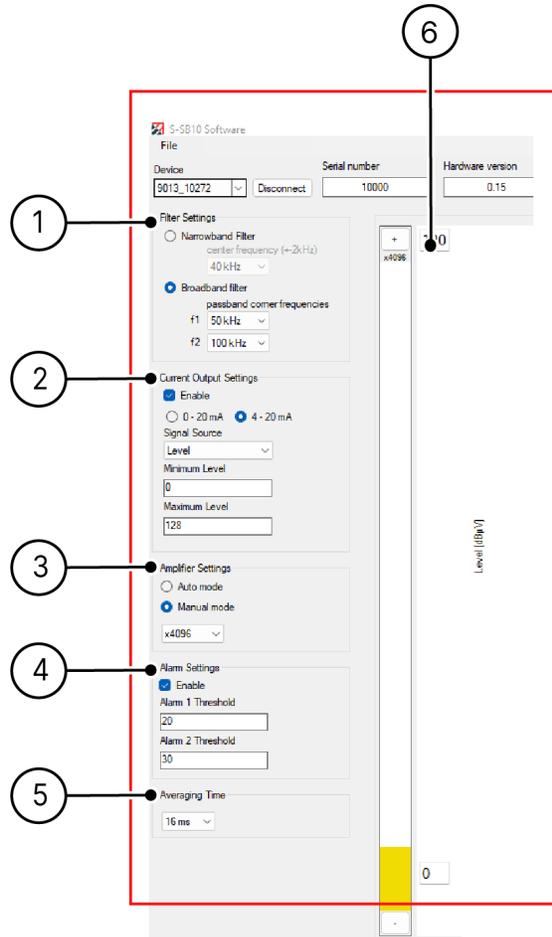


Figure 6: Parameter settings

## Description

No.	Type	Description/function
1	Filter settings	<p>The following features are available:</p> <ul style="list-style-type: none"><li>• Setting the required center frequency of the narrowband filter.</li><li>• Setting the required corner frequencies of the bandpass filter.</li></ul> <p>ⓘ The settings depend on the application of the product to be tested.</p>
2	Current output settings	<ul style="list-style-type: none"><li>• Configuring the current signal.</li></ul>
3	Amplifier settings	<ul style="list-style-type: none"><li>• Toggling between automatic and manual mode.</li><li>• Manual amplification may also be selected in steps via a drop-down list box.</li></ul> <p>ⓘ This setting controls the amplification of the level indicator (see Figure 1: User interface).</p>
4	Alarm settings	<ul style="list-style-type: none"><li>• Setting the threshold values of alarm 1 and alarm 2.</li></ul> <p>ⓘ Both alarms will be actuated consecutively to represent a behavior analogous to traffic lights.</p>
5	Averaging time	<ul style="list-style-type: none"><li>• Setting the sampling time in milliseconds.</li><li>• Selection from predefined values.</li></ul>
6	Level (y-axis) in relation to time in s (x-axis)	<ul style="list-style-type: none"><li>• Setting the sound level (in dB<math>\mu</math>V).</li><li>• Adjusting the sound level (in dB<math>\mu</math>V).</li></ul> <p>ⓘ Mind the thresholds of the maximum / minimum level.</p>

## 4.4 Managing parameters

For measurement data management, several options exist.

### 'Load parameters from file' function

1. Click the 'File' element.
  2. Select the **Load parameters from file** option.
- Saved files may be opened in XML format.

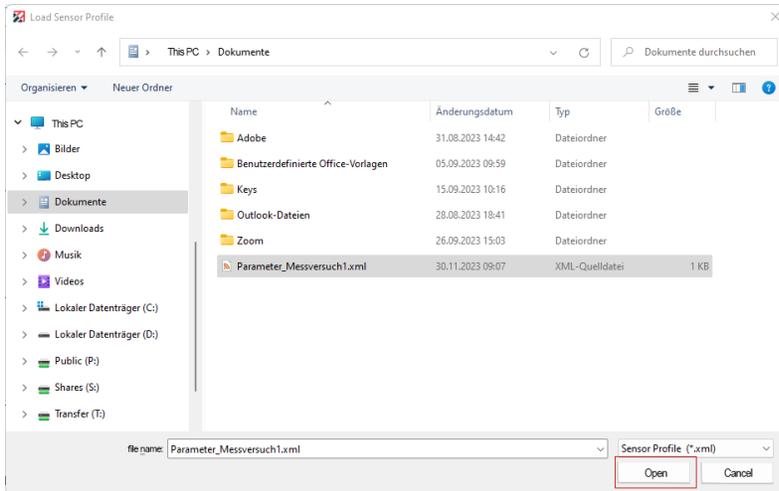


Figure 7: Load parameters from file

### 'Save parameters to file' function

1. Click the 'File' element.
  2. Select the **Save parameters to file** option.
- Settings will be saved on the computer and put out as XML file.

```

1  <?xml version="1.0" encoding="utf-8"?>
2  <sensor>
3    <parameters>
4      <gain>12</gain>
5      <gain_mode>Manual</gain_mode>
6      <filter_index>64</filter_index>
7      <filter_enable>True</filter_enable>
8      <current_output_mode>Mode4To20MilliAmps</current_output_mode>
9      <current_output_measurement_value>Leq</current_output_measurement_value>
10     <current_output_enable>True</current_output_enable>
11     <current_output_max_value>128</current_output_max_value>
12     <current_output_min_value>0</current_output_min_value>
13     <alarm1_trigger_level>20</alarm1_trigger_level>
14     <alarm1_source>Leq</alarm1_source>
15     <alarm2_trigger_level>30</alarm2_trigger_level>
16     <alarm2_source>Leq</alarm2_source>
17     <averaging_time>16</averaging_time>
18   </parameters>
19 </sensor>

```

Figure 8: XML file output

### **'Read parameters from sensor' function**

1. Click the **'File'** element.
2. Select the **Read parameters from sensor** option.
  - Parameter settings will be loaded from the 'Stationary Sensor Box S-SB10'.
  - The parameters will be shown in the software and may be adjusted.

### **'Write parameters to sensor permanently' function**

1. Click the **'File'** button.
2. Select the **Write parameter to sensor permanently** option.
  - All parameter settings will be used and stored permanently in the 'Stationary sensor box S-SB10'.

ⓘ Modified parameters may be lost on the user interface if the supply voltage is turned off before permanent writing of data to the sensor.

## 5 Rectification of error messages

Error message	Possible cause	Troubleshooting
'Sensor communication failure occurred !Connection closed.'	Connection loss due to faulty installation	<ul style="list-style-type: none"> <li>• Check all plug connections of the computer and device.</li> <li>• If necessary, reconnect the cable connections.</li> <li>• Click the <b>Connect</b> button or restart the software.</li> </ul>
'The value for alarm 2 threshold must be greater than the value for alarm 1 threshold.'	Incorrect threshold value setting	<ul style="list-style-type: none"> <li>• Correct the indicated threshold value.</li> <li>• Confirm the new value with <b>Enter</b>.</li> </ul> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>ⓘ Please mind that 'alarm 2 threshold' must always be &gt; 'alarm 1 threshold'.</p> </div>
'For setup of the alarm trigger threshold, please enter a number between -20 and 128.'	Incorrect threshold value settings for alarm 1 / for alarm 2	<ul style="list-style-type: none"> <li>• Enter a number between '-20' and '128' in 'Alarm settings'.</li> </ul>
'The value for axis maximum must be greater than the value for the axis minimum.'	Incorrect maximum value setting / incorrect minimum value setting input for y-axis	<ul style="list-style-type: none"> <li>• Enter a higher number for the axis maximum.</li> </ul>
'For setup of the y-axis please enter an integer number between -30 and 130.'	Incorrect number entered for y-axis	<ul style="list-style-type: none"> <li>• Please note that threshold values will be adjusted automatically.</li> </ul>
'The value for maximum level must be greater than the value for minimum level.'	Wrong maximum level set for the current output	<ul style="list-style-type: none"> <li>• Enter a higher number for the maximum level than for minimum level.</li> </ul>
Error message	Possible cause	Troubleshooting
'For setup of the current output level please enter a number between -20 and 128.'	Wrong minimum level or maximum level set for the current output	<ul style="list-style-type: none"> <li>• For minimum level, enter at least the number '-20'.</li> </ul>

		<ul style="list-style-type: none"><li>• For maximum level, enter at least the number '128'.</li></ul>
'Reading parameters from sensor failed!'	Sensor error due to connection loss	<ul style="list-style-type: none"><li>• If necessary, reconnect the cable connections.</li><li>• Restart the software afterwards.</li></ul>
'Persisting parameters in sensor failed!'	Sensor error due to connection loss	<ul style="list-style-type: none"><li>• If necessary, reconnect the cable connections.</li><li>• Restart the software afterwards.</li></ul>

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If the error cannot be rectified by the actions described above, please contact our Service staff.

In case of requests, please keep the following information at hand:

- Model ID and serial number of the device and the sensor system (see product labeling)
- Version of the S-SB10 software
- Email with Cloud login information

The following information may also be helpful:

- Date of purchase and name of dealer
- Applications in use when the error occurred

## 6 Guarantee

### Condition at delivery

The software has been thoroughly tested at the manufacturer's site and is a state-of-the-art product that adheres to all applicable safety regulations at the time of delivery.

### Warranty

SONOTEC GmbH will eliminate all software deficiencies that result from software bugs free of charge. For this, files will be provided to update or replace the software.

### Exceptions

Defects resulting from prohibited use of the software are exempt from warranty.

### Responsibility of the user/operator

Users/operators must ensure that the product is properly installed and set up and used safely.

### Operating errors

Operating errors may never be completely ruled out by the manufacturer. SONOTEC GmbH is in no way liable for any direct or indirect damage caused by operating errors (e.g. damage on software and/or hardware, damage by downtime, damage by malfunction as well as damage or loss of measurement and test data).

### Quality of captured data

The determination of valid test results, their interpretation and the actions derived therefrom are exclusively subject to the personal responsibility of the users. SONOTEC GmbH does not guarantee the correctness of determined test values and/or test results. SONOTEC GmbH does not assume liability for any faults or damages that might occur due to further use of determined test and measurement values.

## 7 Manufacturer information

### Copyright

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### Certification and registration

- Quality management according to ISO 9001:2015  
(license registration number: 091006014)
- Registration according to Electrical and Electronic Equipment Act (ElektroG) at  
"stiftung ear":  
WEEE Reg. No. DE 22125904

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