

INSTRUCTIONS

LILIAN SOFTWARE

———— LILIAN MANAGER ————

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# Chapter 1 INTRODUCTION



## 1.1 Overview

Thank you for choosing the LILIAN measuring system.

The revolutionary measuring technology and the digital backup of the measured values make the LILIAN water analysis system a fast, accurate and simple tool for the determination and management of the water quality in your pools. The LILIAN system consists of the LILIAN measuring device with the so-called SensoSticks and is operated with controlled with the help of the LILIAN App or the LILIAN Manager.

The LILIAN app guides you through the measuring process and saves you the handwritten documentation of all measured values. These are stored locally on the smartphone and can be exported as Excel files if required.

Or use the more powerful LILIAN Manager. With this tool, the measurement data is not only stored on the smartphone, but is also from anywhere with the LILIAN Manager or via the LILIAN Manager Dashboard retrievable. Numerous functions make it easy for you to export or analyse your measurement data.

This guide gives you an overview of the two apps. So you can choose the one that suits you best and learn how easy it is to use.



## 1.2 Difference between LILIAN App and LILIAN Manager

When measuring with the LILIAN water analysis system, you have a choice: Do you want to use the LILIAN app for quick measurement results? Or would you like to use the more advanced digital functions of the LILIAN Manager to push the digitalisation of your pools even further? The basic functions of the software are free of charge.

The LILIAN app is an easy-to-use app that allows you to take your measurements and save them. So you can start right away.

The LILIAN Manager App, on the other hand, is more comprehensive. Here you can carry out your measurements as well as digitally document and manage your measured values. This is also possible offline by performing the measurement without an internet connection. As soon as a connection is available, the server can be synchronised. With LILIAN Manager you can keep an eye on your water quality from anywhere - in any facility, at any measurement location and at any measurement position. Your collected measurement data is automatically stored securely and digitally in a single database. You recognise critical measured values immediately!

Create reports, export the data and let the alarm system notify you when abnormal measurement results are recorded. You can also have the data automatically entered into your existing IT system via an interface.

This requires a one-time entry of your pools and swimming pools in the LILIAN Manager Dashboard. You can define at the beginning which parameters and which positions you want to measure. You can also decide which employees are authorised for the measurement and create them in the system. If you use the alarm system, you can also define the limit values.

The LILIAN Manager Dashboard can be accessed at <https://manager.lilianlabs.com>. As an admin, you can use it to manage all the functions just mentioned. Staff members who only measure but do not manage have no access here and only use the LILIAN Manager App on their smartphone.

If required, we will be happy to support you in setting up your bath. Simply call us at +49 531 - 387 274 36 or write to [support@lilianlabs.com](mailto:support@lilianlabs.com).

## 1.3 Installation of LILIAN App and LILIAN Manager

LILIAN App and LILIAN Manager App are preinstalled on the smartphone supplied. If you ordered the LILIAN without a smartphone, you can also easily install them on your existing smartphone or tablet via Google Playstore.

The dashboard associated with the LILIAN Manager App does not require any installation or manual updates. You can reach it with any commercially available browser (e.g. Chrome, Edge, Safari, Firefox,...) over the internet adress <https://manager.lilianlabs.com>. Only the LILIAN App or LILIAN Manager App must be present on the smartphone.

Please note: Both apps only work on Android devices from version 10. Apple devices are unfortunately not supported at present.

The LILIAN App and the LILIAN Manager App are available in the Google Play Store. Simply scan the QR code to access the apps directly.



LILIAN App



LILIAN Manager App

## 1.4 Firmwareupdate

Sometimes it is necessary to carry out a firmware update when switching to a newer version of the LILIAN app or the LILIAN Manager. This involves updating the operating software that runs locally on the LILIAN measuring device.

In addition to the following instructions, you will find a video on how to carry out the firmware update at <https://lilianlabs.com/en/videos/>.

### You need:

- LILIAN measuring device with loading cable
- Laptop with WiFi (Smartphone also possible)

### 1. Download Firmware

- Visit <https://lilianlabs.com/en/downloads-en/>.
- Download the newest Firmware version (.bin file) to your laptop.
- Store this file at your local hard drive, i.g. Downloads or at the Desktop

### 2. Setting the LILIAN in WiFi status

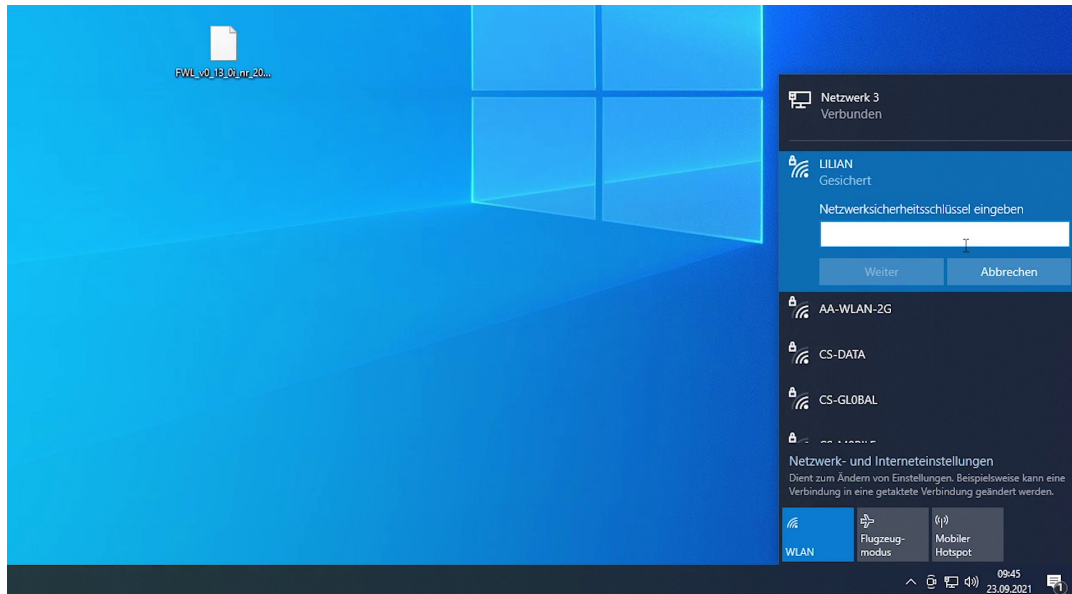
- Plug the LILIAN power supply unit into the socket and then plug it into the LILIAN.
- As soon as the LILIAN has vibrated briefly, immediately "touch" the sensor with two fingers for approx. 5 seconds with two fingers until the device lights up orange constantly.





### 3. Connecting LILIAN and laptop

- Open the WLAN search on your laptop.
- Now search for and connect the laptop to the WiFi „LILIAN“.
- Enter the WLAN password, which is: WAS!lilian.
- Wait until the connection is established. Then the message „No Internet connection, secured“ is displayed for the current WiFi connection.



### 4. Update Firmware

- Enter the internet address 192.168.5.1 in the browser.
- A „LILIAN firmware upload“ web page appears.
- Click „Select file“ and select the firmware file from step 1.
- Now click on „Upload...“.
- A progress bar will fill up and the LILIAN will glow green-turquoise.
- As soon as the process is complete, the message „OK“ will appear.
- The LILIAN flashes green a few times and vibrates.
- You can now remove the plug again.

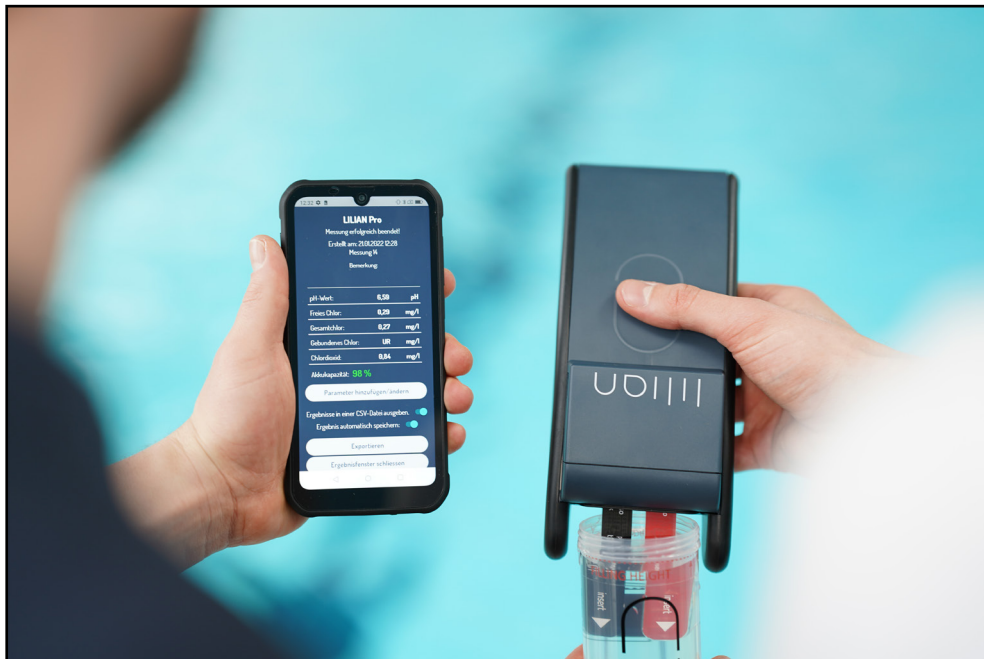


The update is now complete and the device is up to date.

Page is free due to technical reasons



## Chapter 2 LILIAN App



LILIAN Pro  
Messung erfolgreich beendet!  
Erhöht am 20.08.2022 10:28  
Messung A  
Messung

Parameter	Wert	Einheit
pH-Wert	6,58	pH
Freies Chlor	0,29	mg/l
Gesamtchlor	0,27	mg/l
Gesamtammoniumchlor	UR	mg/l
Chlorbleichmittel	0,84	mg/l
Alkalinität	0,05	%

Parameter neu eingeben

Ergebnisse in einer CSV-Datei exportieren

Ergebnisse automatisch speichern

Exportieren

Ergebnisse weiterleiten

## Chapter 2.1:

### Measuring with the LILIAN App

The LILIAN app is the right app for you if only want to use it to operate the LILIAN meter. The measurement data is stored, but only on the smartphone. If you lose it, all reading are also lost.

You can also export individual measurement data. However, this is much more time-consuming than the fully automatic documentation with the LILIAN Manager. Use the LILIAN App, especially if you simply get started quickly and measure without having to map your swimming pool in the software first. The LILIAN App is also the right choice for you if you continue to document the measured values manually on paper.

**Note:** If you are currently using the LILIAN App only because you have no internet reception (e.g. SIM card or WLAN) at all measuring points - we have developed a function that allows you to carry out measurements with the LILIAN Manager even if there is no internet available.

In this chapter you will learn everything about the operation of the LILIAN App. It explains how to start a new measurement as well as how to view and delete old measurements.

## LILIAN App V3

Welcome to LILIAN!

Control your LILIAN measuring device and save the measurement results with this app. Click on "New measurement" and the app will guide you through the measurement process.



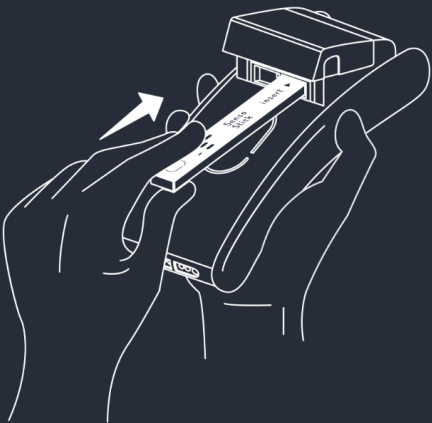
New measurement

Saved measurement values

Settings

Close

## New measurement



Open the lid and insert the SensoStick into one of the two slots. You will hear a clicking sound as soon as the SensoStick is in place. The printed side of the SensoStick points upwards and the arrows point forward. Click in the app on "Connect to LILIAN" button.

Connect with LILIAN

Back

## 2.1.1 Start and export measurements

To start a new measurement, first open the LILIAN App on your smartphone.

On the bottom half you will see the main menu of the app. Click on the top tab "New measurements" to start a new measurement.

The Lilian app guides you in a few steps with instructions through the measurement with the LILIAN.

To do this, the app only has to connect to the LILIAN. To do this, click on "Connect to LILIAN" and follow the instructions of the app.

202203240822\_json  
Created on: 24.03.2022 08:22  
Comment:  
---

pH-Wert:	7,50	pH
Freies Chlor:	< 0,03	mg/l
Gesamtchlor:	< 0,03	mg/l
Gebundenes Chlor:	< 0,03	mg/l

Battery capacity:  
30 %

Add/change parameter  
Export  
Close results window

After the measurement has been carried out, you will see the result window. The measurement date and time are automatically documented.

You now have the option of naming the measurement or adding a comment. To do this, simply click on the three lines.

Below you will find the listing of the measurement results and the remaining battery capacity of your LILIAN meter.

If you receive an error message instead of the result window, it is best to consult the quick start guide of your LILIAN measuring or compare the error message with the table in chapter 5.1 of these instructions.

202203240822\_json  
Created on: 24.03.2022 08:22  
Comment:  
---

pH-Wert:	7,50	pH
Freies Chlor:	< 0,03	mg/l
Gesamtchlor:	< 0,03	mg/l
Gebundenes Chlor:	< 0,03	mg/l

Battery capacity:  
30 %

Add/change parameter  
Export  
Close results window

Via the button "Add/change parameter" you have the option of manually entering further values for temperature, conductivity or redox voltage to the measurement.

To do this, enter in the corresponding field the value you have entered yourself with the appropriate measuring device to enter the measured value. To do this, click on the three dashes.

After the entries have been accepted, you can enter your new parameter among the stored measurements view. Finally, click on “Apply” to save your entry.

Click on “Cancel” to discard your entries.

temperature	---	°C
conductivity	---	µS/cm
redoxvoltage	---	mV

Accept

Cancel

1	2	3	-
4	5	6	←
7	8	9	⊗
,	0	.	✓

You can share the measurement with various apps via the “Export” button. A corresponding Excel file is then created for the Example in your online folder (e.g. Dropbox, OneDrive, etc.) Also sharing of the results, e.g. with WhatsApp, is possible.

Click on “Close results window” to return to the main menu.

Provided that the settings (see chapter 2.2.3) is switched on, the measurement is automatically saved.

Saved measurement values

202203240822\_.json  
Created on: 24.03.2022 08:22  
Comment:  
---

pH-Wert:	7,50	pH
Freies Chlor:	< 0,03	mg/l
Gesamtchlor:	< 0,03	mg/l
Gebundenes Chlor:	< 0,03	mg/l

Battery capacity:  
30 %

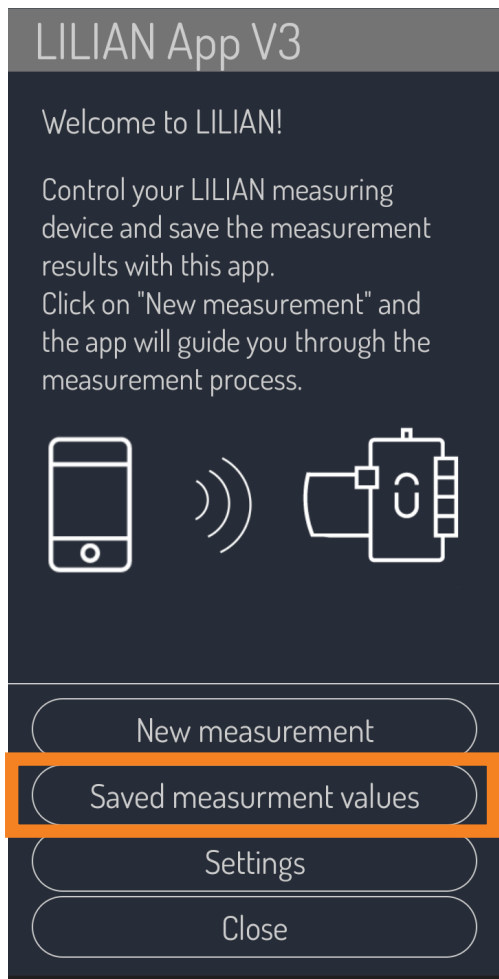
Add/change parameter

Export

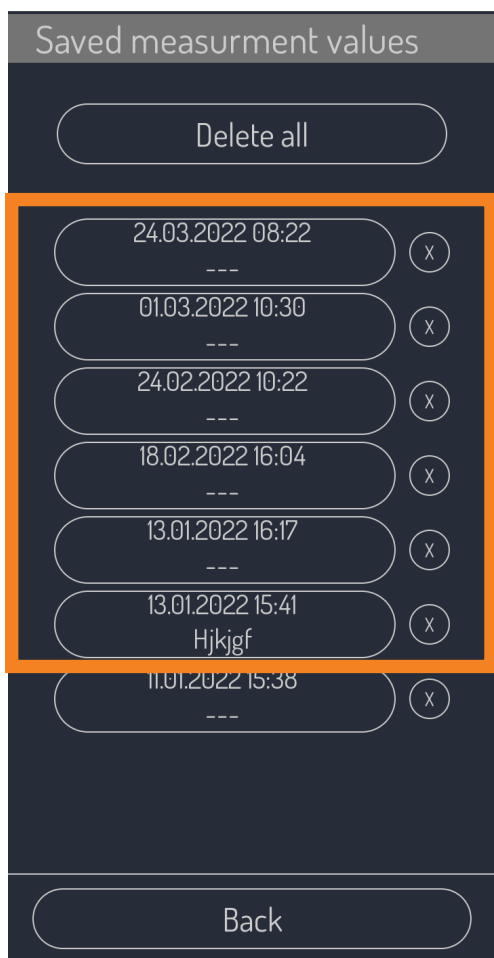
Close results window

## 2.1.2 View and manage measured values

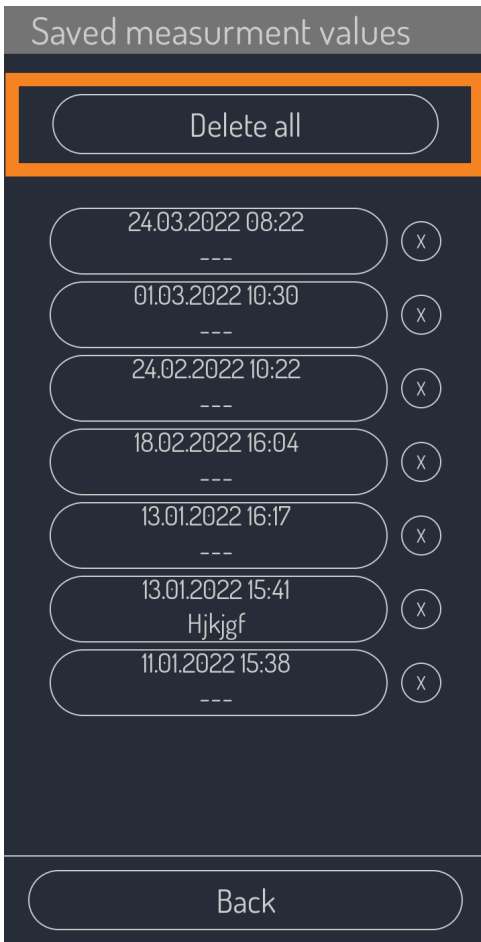
In the main menu you will find the tab “Saved measurement values”. By clicking on the button, all measurements available on the smartphone are displayed.



Now you can overview each saved measurement sorted by date. Click on the individual measurements to view the Display details.







Clicking on the “Delete all” button will delete all measurement results on your Smartphone. Click on the “X” buttons to delete individual measurements. For security reasons, the deletion must be confirmed in a dialogue window.

**Please note:** The deletion is irregular and Lilian Labs cannot restore this data! Even in the event of a smartphone loss, your non-exclusive data is not exceptional exported measurement data is lost. For this reason we recommend the LILIAN Manager for a secure digital documentation of the measurement data.



By clicking on a saved measurement, you call up its contents.

The display of a saved measurement is structured in the same way as the results window after a measurement. You are shown the date and time of the measurement, remarks and the measurement results are clearly displayed.

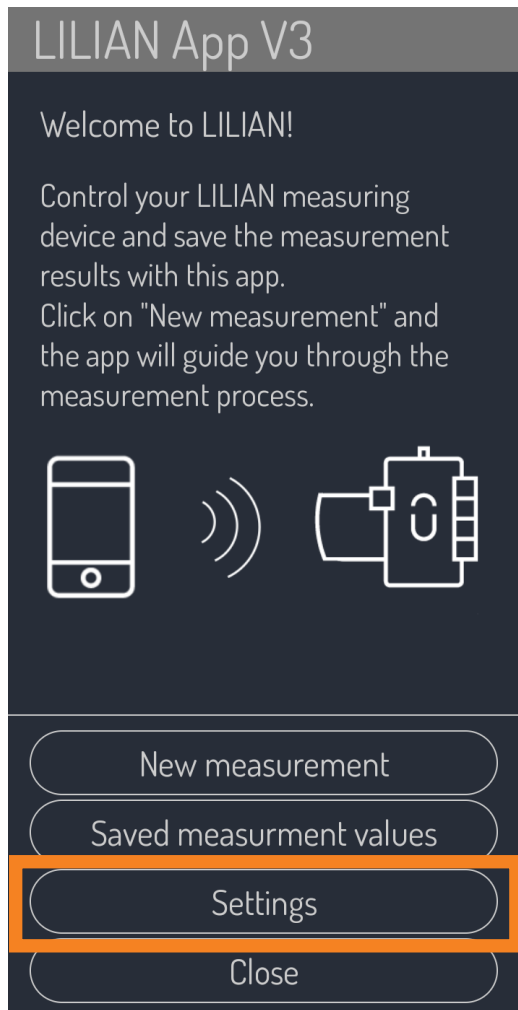
Please note that you cannot subsequently change the file name. However, it is possible to change the comment or the manually entered measured values afterwards.

The stored measured values can of course also be exported.

## Chapter 2.2:

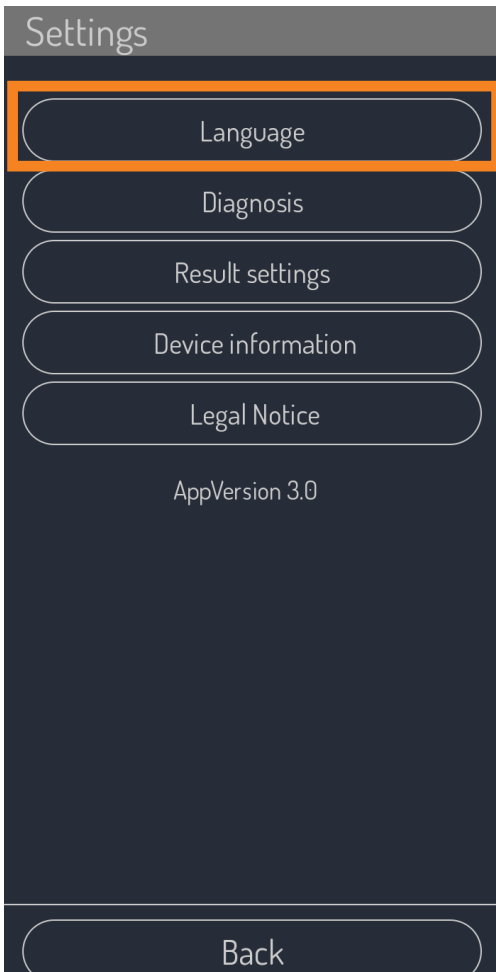
### Settings

In this chapter you will learn the basics settings of the LILIAN app. You can change the language of the app, check the LILIAN measuring device with the diagnostics function, change the result settings, view internal data about your LILIAN measuring device and access the legal notice.

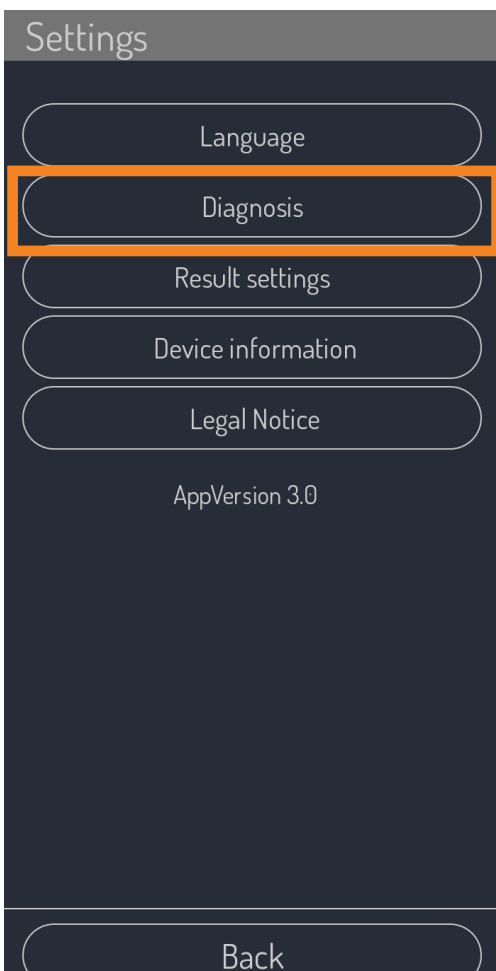


#### 2.2.1 Language

To access the "Settings" menu, select the corresponding menu item in the main menu.



Click on the “Language” button. Select your desired language from the corresponding list.

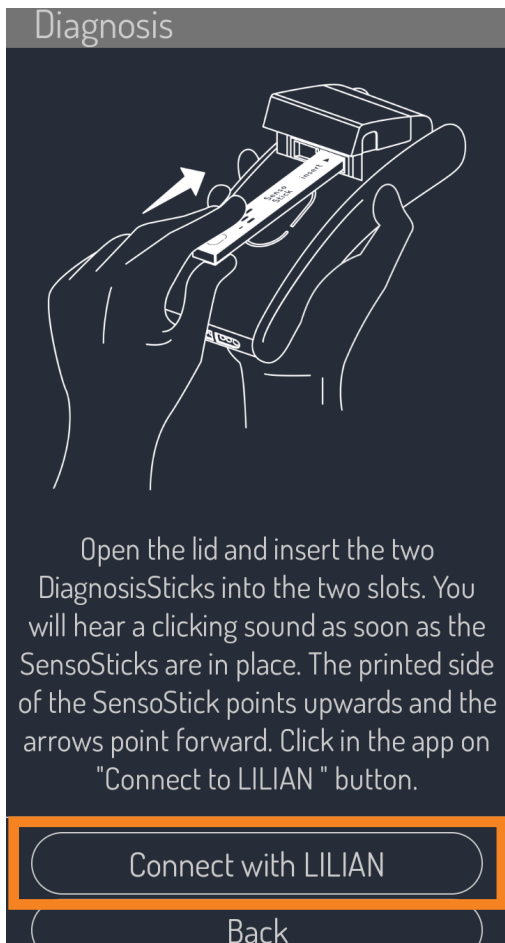


## 2.2.2 Diagnosis of the LILIAN measuring device

If you want to check on site whether the LILIAN is working properly, use the “Diagnosis” function in the settings.

Note that you need the diagnostic kit for this. This consists of two special SensoSticks are inserted simultaneously into both measuring slots of the LILIAN during self-diagnosis. The measuring device must be plugged in.

You can obtain the diagnostic kit from your Lilian Labs partner or directly from Lilian Labs.

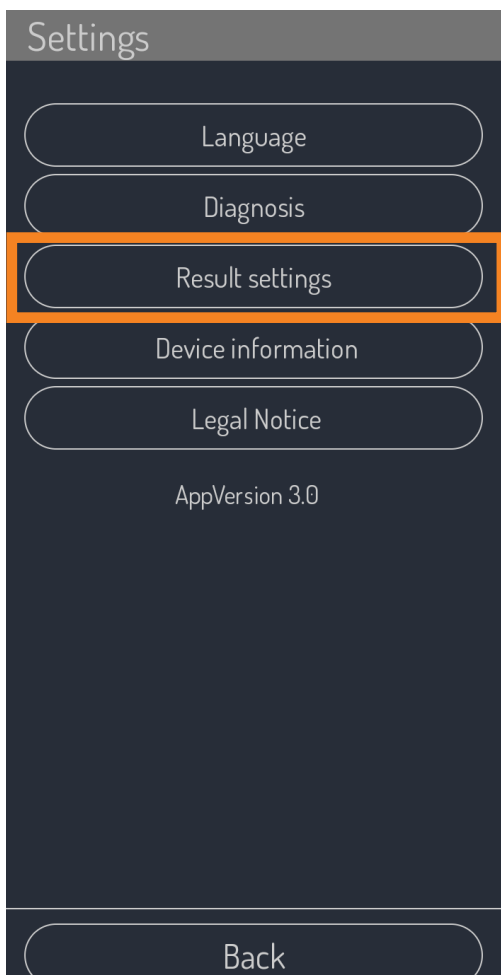


To start the diagnosis, the app must first connect to the LILIAN. For this click on "Connect to LILIAN".

After connecting, you will receive a message from the App Instructions for further action.

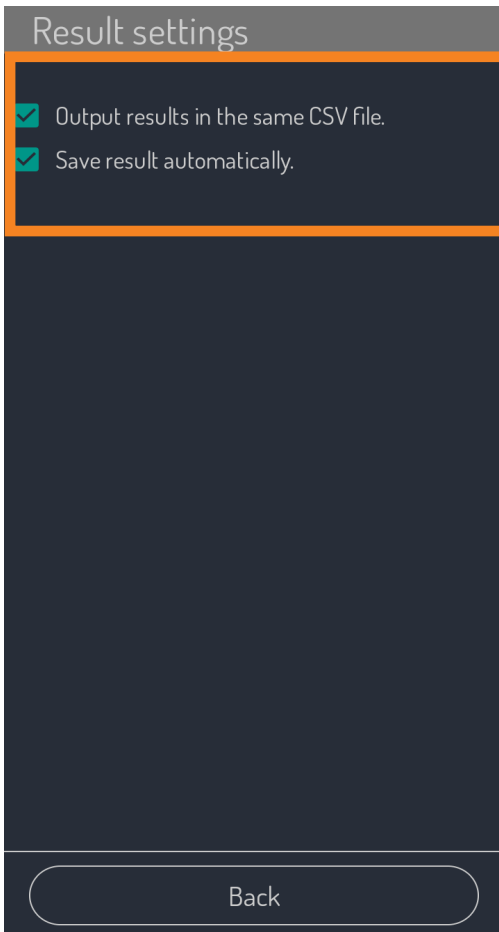
At the end, the result window appear. But this time there are no measured values. The app will tell you either "The system is working properly" or "Discrepancies were found".

If any errors have occurred, please contact the Lilian Labs support or your Lilian Labs partner.



### 2.2.3 Result settings

In the "Settings" menu you will find the menu item "Result settings". Here you can determine how to proceed with the measurement results.

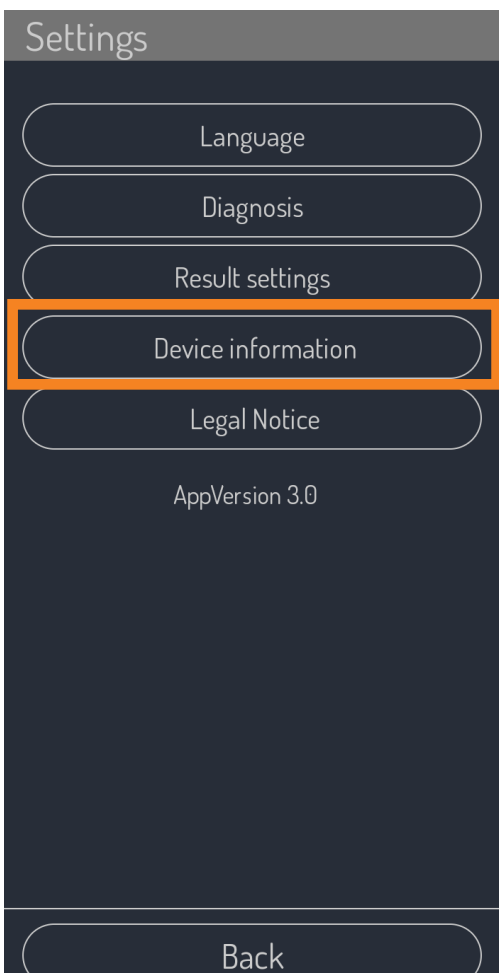


You have two options:

Check the first box to select the Export results as an Excel file. If the check mark is not set, the results are output as a text file.

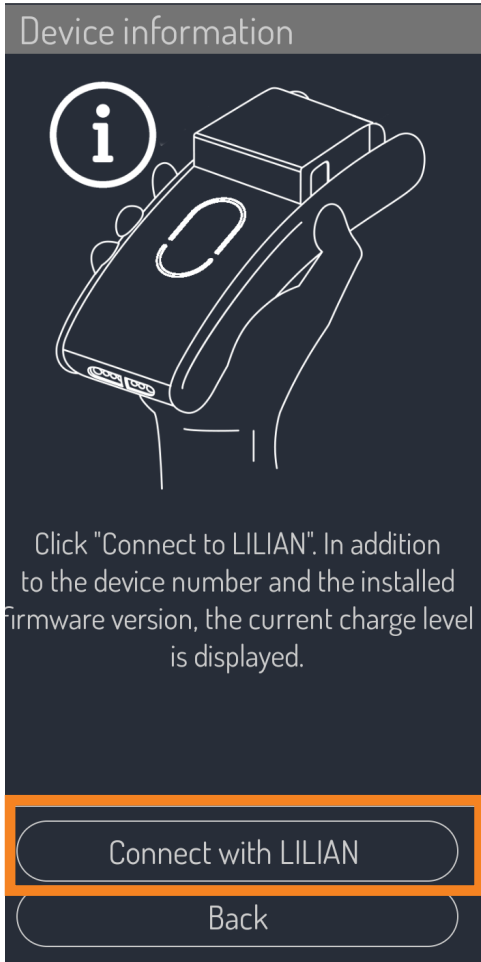
With the second tick you can set certain. The check box indicates whether the measurement is saved when the results window is closed. If the check mark is not set, the measurement results are saved discarded directly after closing the result window.

After a new installation, both ticks are automatically set (default setting).



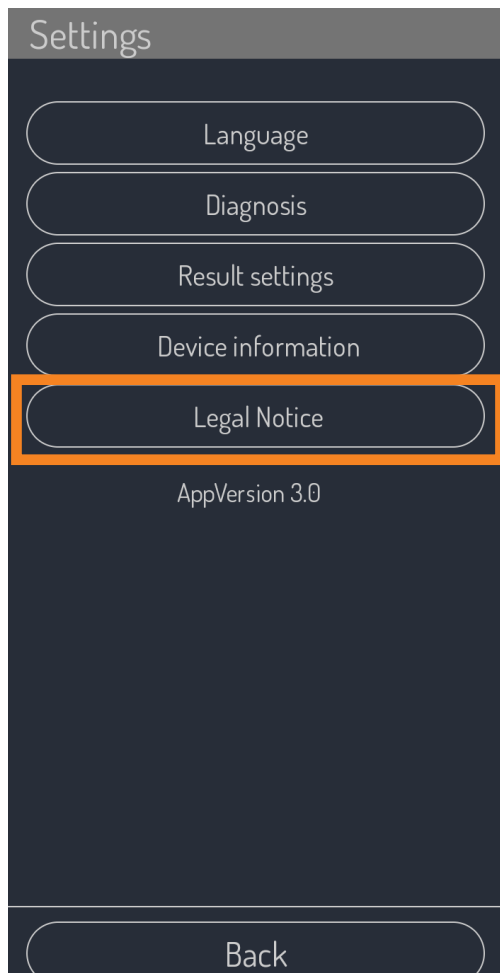
## 2.2.4 Unit information

To view the unit number, the installed firmware version and the current charging status of the unit, press to display the status of you LILIAN, open the settings and select the tab "Device information."



You will now be prompted to start the app with the LILIAN. For this click on the upper selection option "Connect to LILIAN".

In this case, the result window does not give you measured values, but the desired information about you LILIAN meter.



### 2.2.5 Legal Notice

Click on "Legal Notice" to find all important data about the company.



# Chapter 3 LILIAN Manager App



## Chapter 3.1:

### Measuring with the LILIAN Manager App

The LILIAN Manager is the right tool for you, if you do not only measure with LILIAN but also digitally store and want to manage your measurement data.

In this chapter you will learn everything about the operation of the LILIAN Manager App. All measurement data are entered into the LILIAN Manager via the LILIAN Manager App. This can be measurement data obtained with the LILIAN handheld as well as any other parameters.

In the LILIAN Manager App, there is also the possibility to display existing measurement data or warnings. However, this information is always available to the person measuring on site prepared. Not all analyses and insights into the data are therefore possible via the LILIAN Manager.

With the new software update V3, it is possible to perform the measurement of-line via the Manager App. As soon as there is an internet connection, the data can be updated in "Settings".

Chapter 4 deals with the LILIAN Manager Dashboard, where the data can be viewed or exported in a processed form can be made. The dashboard is also used to set up the settings and defaults for the measurements. These include, for example, the Creating users or parameters to be measured, setting up measuring locations or defining limit values.



Email...  
 Password...  
**LOG IN**  
 By logging in you accept our terms and privacy policy:  
[PRIVACY POLICY](#)  
[GENERAL TERMS AND CONDITIONS](#)  
[FORGOT PASSWORD?](#)

### 3.1.1 Login

To get started, log in via the input mask. You will receive the login information from the administrator of the LILIAN Manager Platform. Please note upper and lower case.

If you have forgotten your password, you can have a new password sent to you by e-mail by clicking on the “forgotten your password?” button.

Please note that you must agree to our terms of use when you first register.

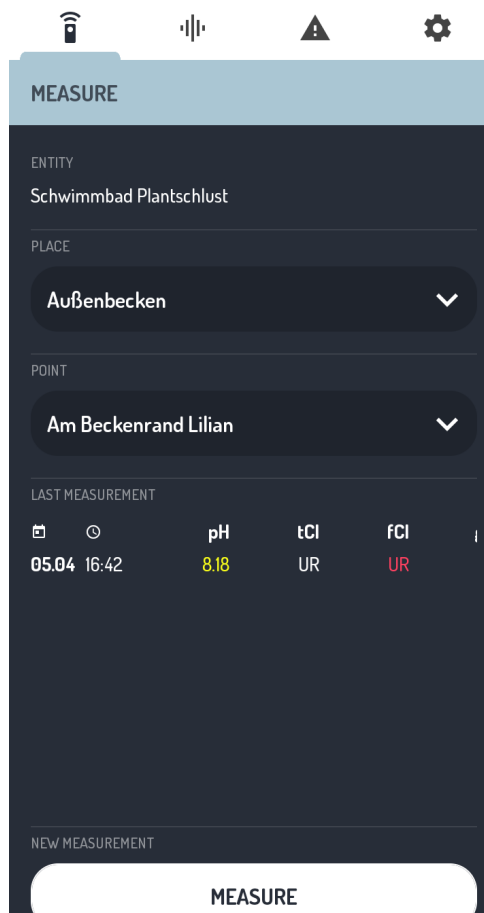
**MEASURE**  
 ENTITY  
 Schwimmbad Plantschlust  
 PLACE  
 Außenbecken  
 POINT  
 Am Beckenrand Lilian  
 LAST MEASUREMENT  
 05.04 16:42    pH 8.18    tCl UR    fCl UR  
 NEW MEASUREMENT  
**MEASURE**

### 3.1.2 Function overview

You can easily reach the 4 main functions via the tabs at the top of the screen. Click on the respective symbol to switch to the corresponding function.



Trade fairs	Measuring position	Warnings	Settings
Here you select the measurement location and the measuring position and start the measurement.	See the last measurement data and whether limit values have been exceeded.	Should Limit values have been exceeded, see the warnings here.	Choose your facility, change the password or log out.



### Tab: Measure

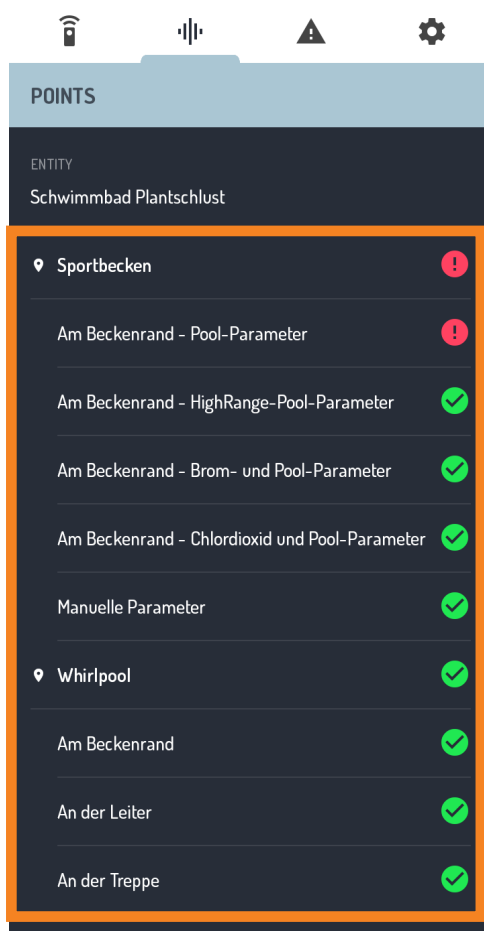
Here you will see the selected facility or a button with which you can select it.

Select a measuring location (e.g. basin).

Select a measuring position (e.g. pool edge)

The results of the last measurement at this measuring position are displayed here.

Click here to start the measurement.



### Tab: Measuring positions



Under the tab “Measuring positions” you will find an overview of all measuring locations and measuring positions of your facility.

On the right-hand side there are icons that show you whether limit values have been exceeded at the corresponding locations.

Click on a measurement position to display the stored measurements.

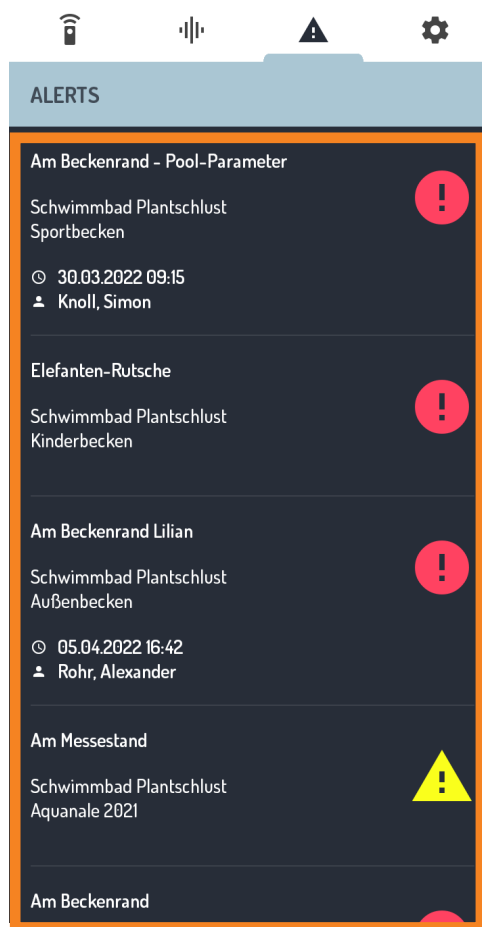


## Tab: Warnings

In order to receive warnings here, limits for the measurement parameters must have been set by an administrator via the LILIAN Manager Dashboard ( chapter 4).

If these limits are exceeded at a measuring position, a corresponding warning is generated and displayed here. Clicking on a warning takes you to the measurement history of the corresponding measurement position.

To clear the warnings, you must start a new measurement at the measurement position, which does not contain any limit value overruns.

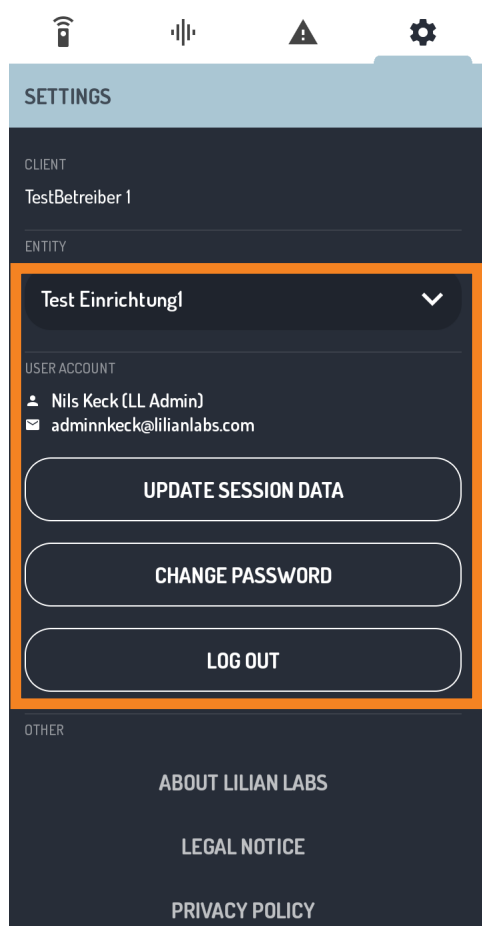


## Tab: Settings and Logout

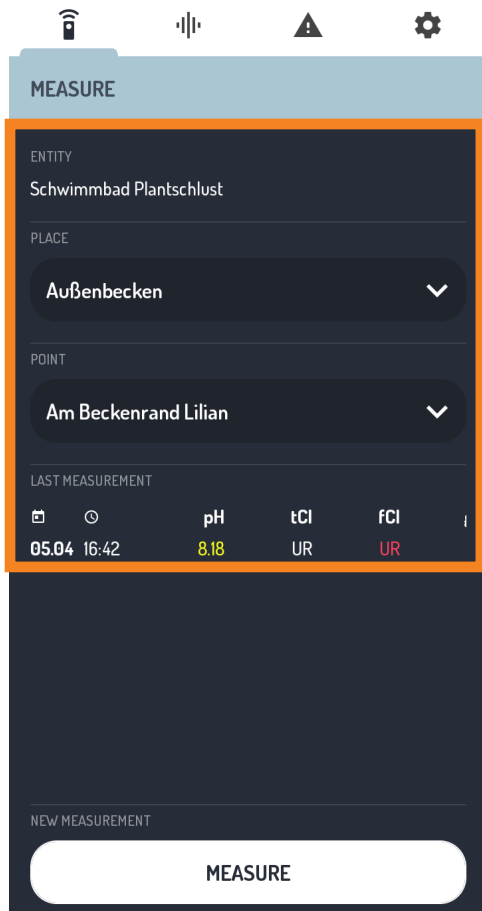
Select here in which facility they are active. Facilities are managed by the Administrator if your facility is not available.

Also check which user is currently logged into the LILIAN Manager App, if someone has forgotten. If you need to log out, please log out this person and log in with your user name and password. Enter your own access data so that the measurements are correctly assigned.

If you have performed your measurement offline, you can update the session data here. You can also change the password for the current user and log out here.



Below you will find some links to the web. The following links lead you to the website, the imprint, the general terms and conditions and the data protection declaration of Lilian Labs GmbH.

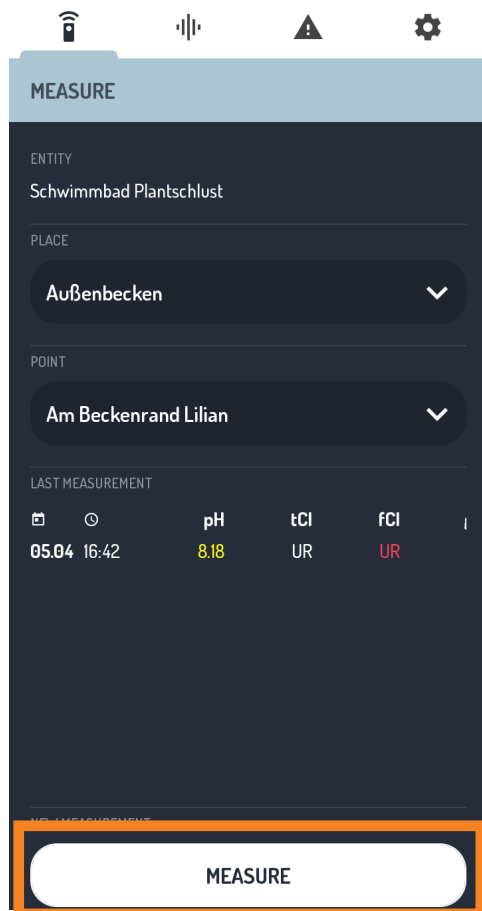


### 3.1.3 Record measured values

First, select the desired, select your facility from the “Settings” tab in the top right-hand corner and then switch to the “Measure” tab in the top left-hand corner.

Now select a measuring location and a measuring position. The setup and change new measuring locations and measuring positions take place via the LILIAN Manager Dashboard at <https://manager-v3.lilianlabs.com>.

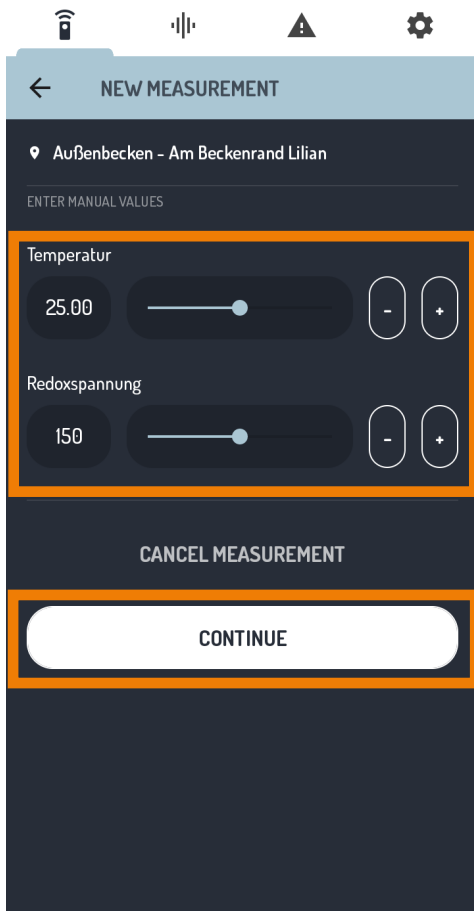
If necessary, ask your administrator.



Once measurement locations and positions have been selected you can click on the button at the bottom. Click on “Measure.”

Now follow the instructions of the app to perform a LILIAN measurement.

If an error message is displayed instead of the next window at the end of the measurement, it is best to pull the Quick Start Guide of your LILIAN Measuring. Add the error message to the device or compare the error message with the table in chapter 5.1 of this manual.

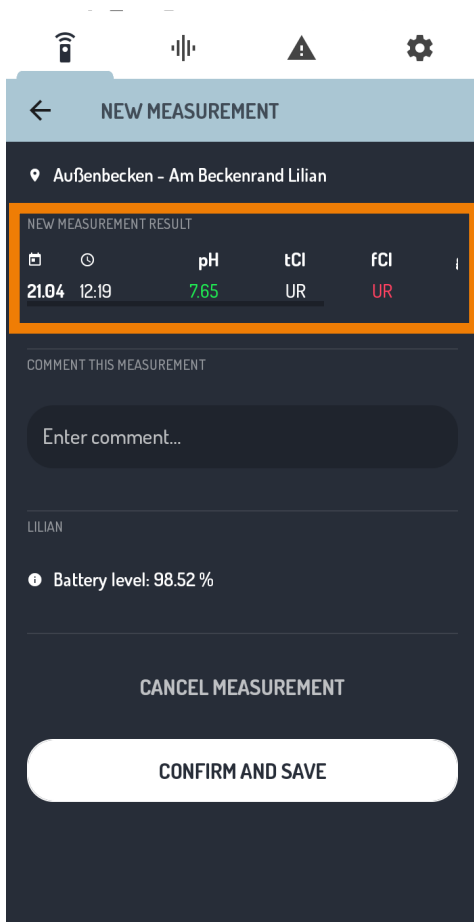


Via the LILIAN Manager Dashboard you can be specified by an administrator that additional measured values are to be recorded manually with the app.

Only in this case does another screen appear after the measurement where you enter the additional values directly into the app. Manual values can be any parameter such as temperature, conductivity or weather data.

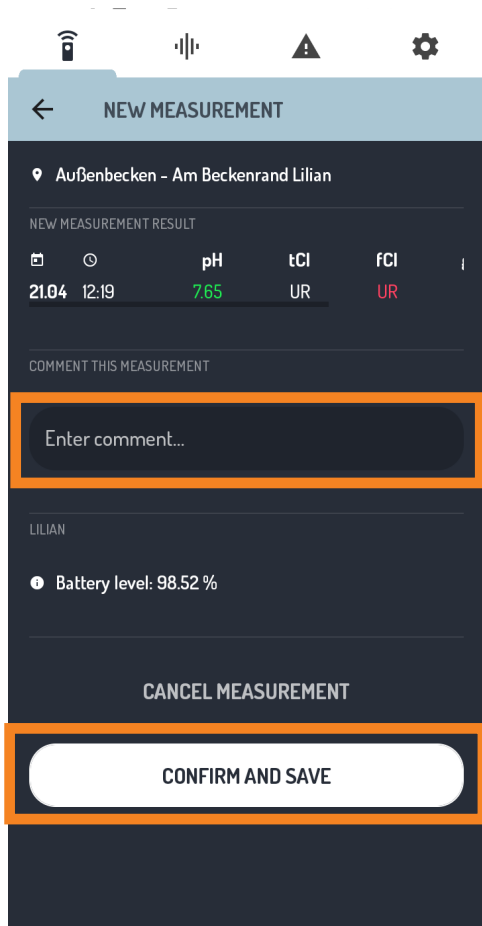
You can enter the value directly by clicking on the measured value on the left. You can also use the slider in the middle or the arrow keys on the right to adjust the least decimal place.

When all measurement data have been entered, click on "Continue".



After the measurement has been carried out, the results window is displayed in which you can check all the results again. These are displayed in the upper area of the app.

If, due to the width of the smartphone screen, not all measured values are displayed at the same time, you can navigate through swipe horizontally to display the remaining results.

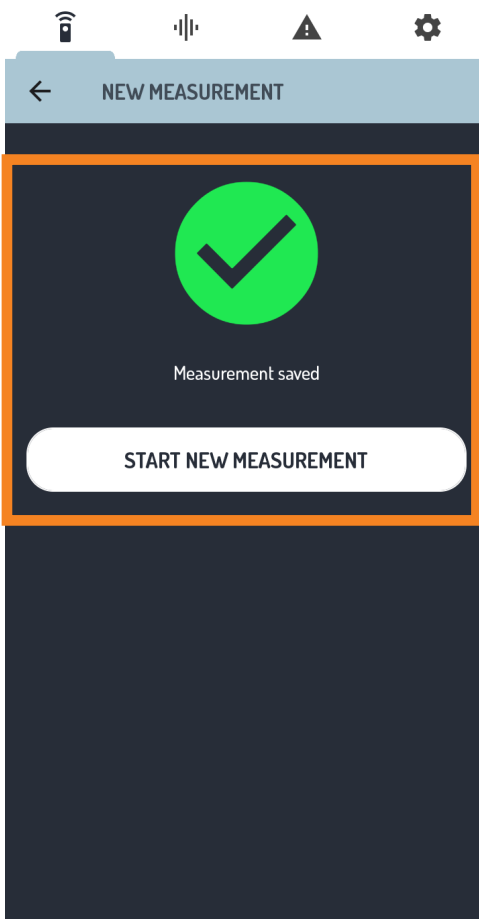


There is the possibility after each measurement to add a comment. Whether this is displayed to you depends, whether your administrator has enabled this in the LILIAN Manager Dashboard.

To enter the comment, simply click on the field and type in a comment.

If the readings are correct and you have entered the comment, click on the button “Confirm and Save” to complete the step.

If something has gone wrong, you can also cancel without changing the values. To do this, click on the button “Cancel measurement”.



At the end of the measurement you will receive a message that the measurement has been saved. Only if you see the green symbol, everything has worked properly.

You now have the option of starting a new measurement or navigating to a different area of the app using the tabs at the top.



## Chapter 4 LILIAN MANAGER DASHBOARD



## Chapter 4.1:

### Manage measured values with the dashboard

Via the dashboard, you can digitally display any measured values and access your measurement data with any current browser. The data is protected by user name and password and, if desired, also by two-factor authentication.

The integrated alarm system notifies you when set limits are exceeded. Measured values obtained in swimming pools with special water properties (e.g. brine or salt pools) can be automatically corrected during the measurement.

In addition, you can manually save all data on your computer via the integrated Excel export tool. Alternatively, there is also an interface via which you can automatically transfer all measured values to existing IT systems.

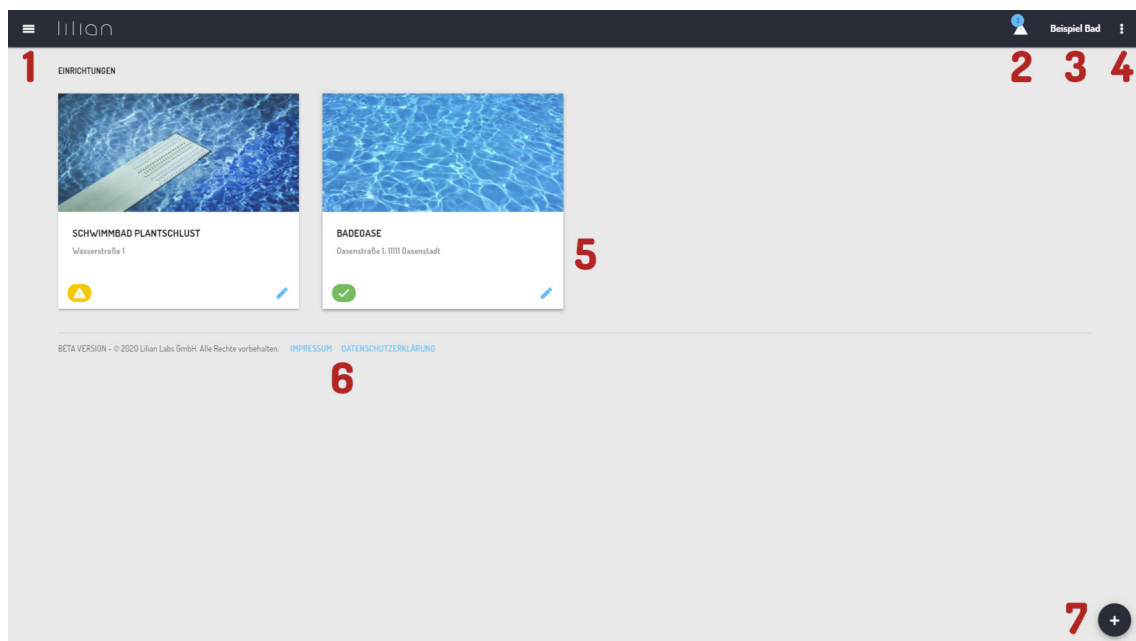
Furthermore, you manage all parameters and users via the dashboard. At the beginning, the range of functions can have a frightening effect. We or your Lilian Labs partner will of course support you in furnishing your pools. You can reach us at 0531 387 274 36 or [support@lilianlabs.com](mailto:support@lilianlabs.com).

This chapter is divided into three parts: In the first part, you will get an overview of the user interface in order to find your way around. In the second part, you will create your own measuring environment step by step. In the third part, you will learn about the data management and analysis possibilities offered by the LILIAN Manager Dashboard.



## 4.1.1 User interface

Immediately after logging in (see chapter 4.2) you will see the user interface. The following figure shows the 7 most important elements of the user interface:



**1:** Main menu

**2:** Current warnings are displayed here

**3:** Here you can see your company name

**4:** Account settings and user logout

**5:** Facilities, measurement locations and measured values

**6:** Data protection and imprint

**7:** Add button for new elements

## 4.1.2 Account settings

To access the account settings, click on the 3 dots at the top right of the menu bar and select the item “Account settings”.

The screenshot shows the 'ACCOUNT SETTINGS' dialog box. It contains the following elements:

- 1**: A text input field labeled 'MOBILE PHONE'.
- 2**: A text input field labeled 'PHONE'.
- 3**: A section titled 'WHEN A VALUE IS OUT OF RANGE SEND A NOTIFICATION VIA...' with two toggle switches: 'EMAIL' and 'PUSH NOTIFICATION'.
- 4**: A toggle switch labeled 'CHANGE PASSWORD'.
- At the bottom right, there are two buttons: 'CANCEL' and 'UPDATE' (highlighted with a blue border).

**1:** Enter your mobile phone number here. If warnings are generated, you can be reached via this number.

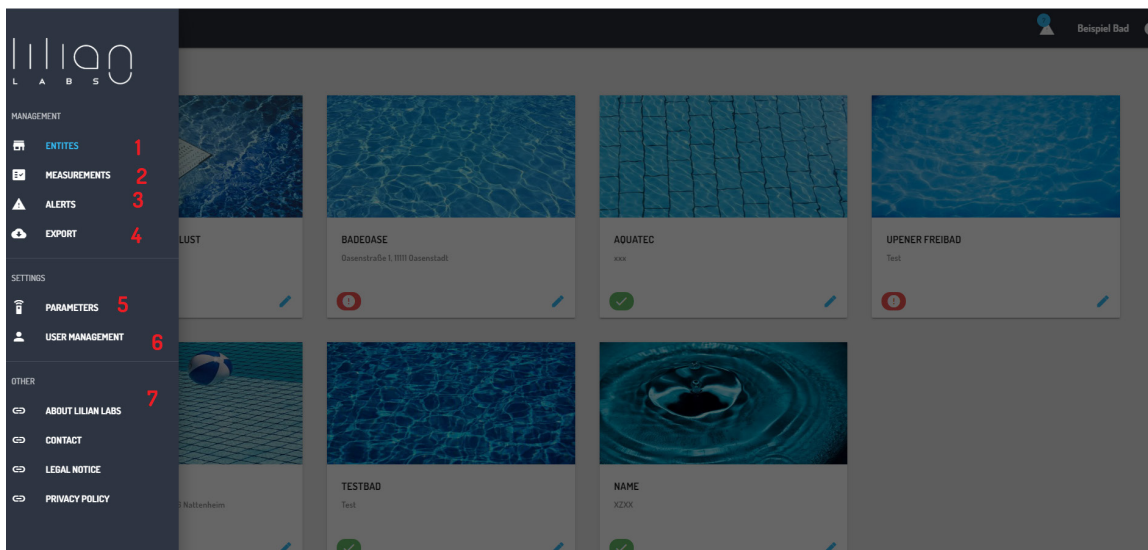
**2:** Enter your landline number here. If warnings are generated, you can be reached via this number.

**3:** Select whether you want to be notified by email or push message and want to be informed when a limit value is exceeded during measurement.

**4:** Here you can change the password. If the password we sent you is still in use, please change it by clicking on “Change password”, enter it twice and click on “Update”.

### 4.1.3 Main menu

Click on the symbol with the three dashes at the top left to open the main menu as shown in the illustration.



**1:** Via the menu item “Facilities”, you are shown the facilities is displayed. This will take you to the measured values that are stored there.

**2:** Via the menu item “Measurements” you can display several measuring points simultaneously over any period of time.

**3:** Current warnings are displayed here.

**4:** You can export the stored measured values to Excel via Export.

**5:** Here you can create or edit new measurement parameters.

**6:** Here you can create and edit new users.

**7:** Under “More” you will find useful links.

## **Chapter 4.2:**

### **Schedule for the first installation of your pools**

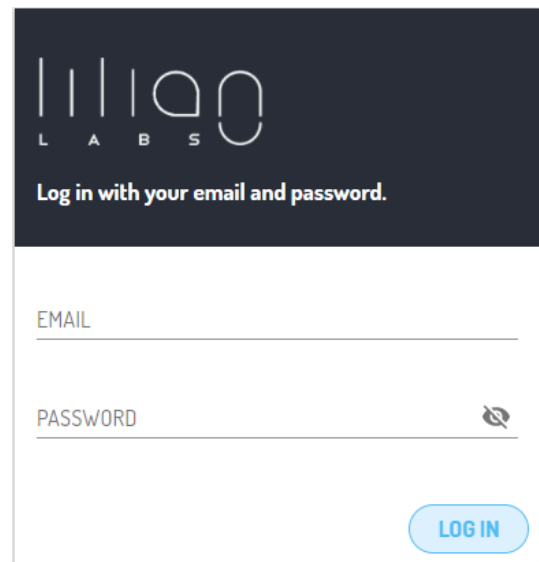
In this section you will learn how to create your first pools step by step, starting with the login and the user settings up to the creation of parameters and measuring locations.

## 4.2.1 Login and password change

You can access the dashboard with any browser. To do so, enter <https://manager-v3.lilianlabs.com> in the address bar.

In order to work with the LILIAN Manager , please register with your e-mail address and your password.

You have received the password automatically by email that your account was created by us.

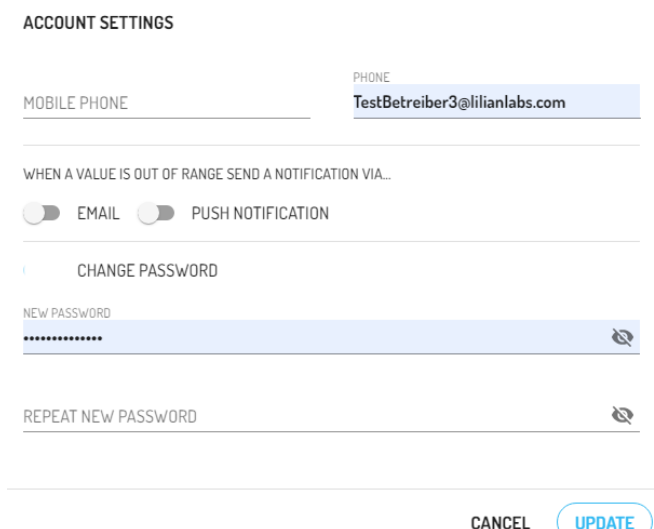


We recommend that you change your password now.

Once you have successfully logged in, click on the 3 dots top right in the menu bar and select the item "Account settings".

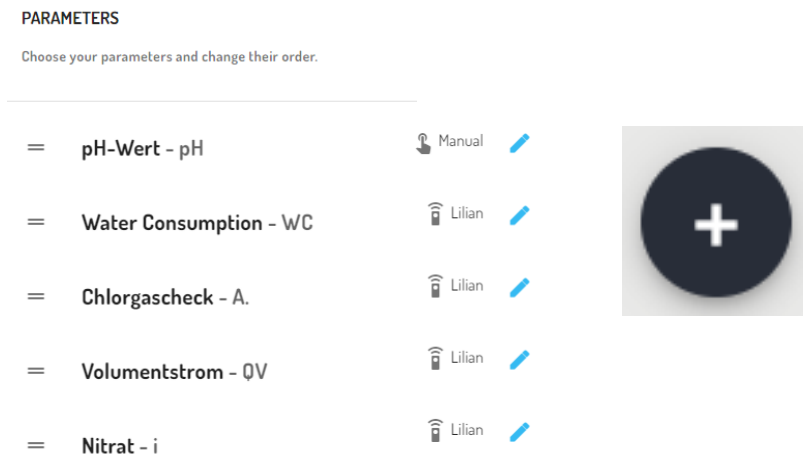
Now press the control "Change password". If the slider appears blue, you can enter your new password. To confirm repeat it in the next line.

To save the password change, click on "Update".



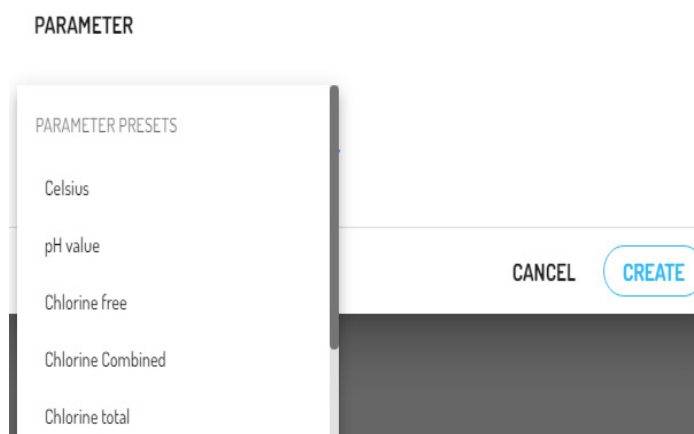
## 4.2.2 Create and edit measurement parameters

Click on the menu item “Measuring parameters” in the main menu.



A list appears with parameters that have already been created. A distinction is made between “LILIAN parameters” and “manual parameters”. The LILIAN parameters are determined by the measuring device, manual parameters are entered manually by the user via the app.

You can create new parameters by clicking on the plus symbol at the bottom right.



A list of parameters appears that you add to the list. Add all parameters you want to record or measure with the LILIAN. If you have selected a LILIAN parameter, just click on “Create” to store the parameter in the system. It can now be selected at each measuring position.

If you select a free parameter (number/selection) for creation, you must specify this parameter further.

**PARAMETER**

PARAMETER TYPE  
 Number Manual input

NAME  
 Water Consumption ABBREVIATION (FOR DISPLAY IN APP)  
 WC 2 / 10

UNIT  
 m<sup>3</sup>/d NUMBER OF DECIMALS  
 1

Range of slider for manual value input in app:  
 SMALLEST SLIDER VALUE  
 0 BIGGEST SLIDER VALUE  
 100

ACTIVATE RANGE

Select the name of the parameter, the abbreviation that is displayed in the app, a unit, the numer of decimal places and the minimum-maximum range. Click on “Create” to store the free parameter in the system.

You can edit parameter that have already been created by clicking on the pencil symbol can be edited. Please note that LILIAN parameters have fixed properties. With the exception of the field “Unit”, all settings of the free parameters can be edited subsequently.



You can also delete parameters that have already been created by clicking on “Delete” in the settings window at the bottom.

With both types of parameters, you can click on the pencil icon Set threshold values at which employees are notifies. If measurements show that the limit values are exceeded. More on this in chapter 4.2.3.

### 4.2.3 Set offsets, limits and alarm system

By clicking the pencil icon in the list of parameters, you can only edit their properties or delete them. You can also enter an automatic correction for the corresponding measured value (e.g. for salt water pools) and define limit values which, if exceeded will trigger an alarm.

When the alarm is triggered, a corresponding warning message is displayed in the LILIAN Manager App and in the Dashboard. The Warning shows you who measured which values, how, where and when.

In Chapter 4.2.7. you will learn how to create users so that they are notified by e-mail or push message when the limit values are exceeded. This way you can act quickly in case of an emergency.

You cannot delete a warning message. It disappears automatically when another measurement is carried out at the corresponding measuring position where no limit values are exceeded.

**PARAMETER**

PARAMETER TYPE  
pH value

MANUAL INPUT

ACTIVATE OFFSET

OFFSET  
0

ACTIVATE RANGE

6,7      7      7,2      7,5

DELETE      CANCEL      UPDATE

In the editing window of the parameter (here in the example of pH), you can activate the correction and the limit values by setting the tick marks and set. You can see in the picture that the sliders for “Activate Range” and “Activate Offset” are blue and thus switched on.



A number appears for “Activate correction”. This is preset to zero. Here you can enter a correction value, e.g. +0.21 or -0.13. Please note that this correction is only intended to determine pools with special water properties where the required optical measuring methods inevitably lead to deviations from the electrical measurements. This is the case, for example, when adding salts and minerals to the bathing water.

If you have set a correction value, the corrected measured values in the dashboard is always marked with an \*. Run the mouse pointer over the \*, the incorrect value used is displayed. The correction values are also taken into account during export. It is therefore always possible to see whether and which correction values were used.

When you activate the threshold values, a scale with 4 numbers appears. These numbers represent the threshold values to the yellow and red range, respectively to upper and lower measured values. **IMPORTANT:** All 4 numbers must be set!

In the example picture on the left for pH, all measured values between 6.8 - 7.2 would be evaluated as green, i.e. desired values. Between 6.5 - 6.8 and 7.2 - 7.5 the values would be evaluated as a yellow alarm. If the values are below 6.5 or above 7.5 this is considered a red alarm.

Click on “Update” to save your parameter settings. These limit values can be created separately for each parameter. During a measurement, the entire measurement is always classified as the highest alarm level of one of the parameters.

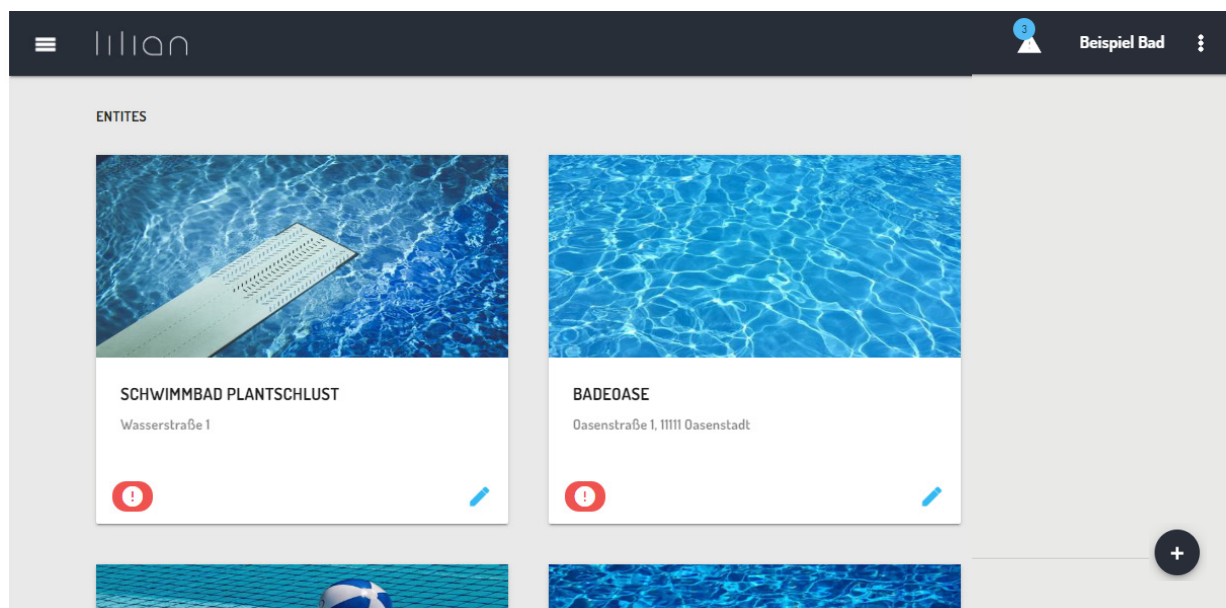
Please note: The parameter settings apply globally to all your settings, measuring locations and measuring positions. However, you have the possibility to overwrite these global settings at the individual measuring positions (chapter 4.2.4).

Example 1: You have not activated a global correction. Nevertheless, you can specify a correction at a special basin that only applies there.

Example 2: You have set threshold values for pH, but special threshold values apply to a basin. You can set these separately in the measuring position so that the global settings are ignored for this one basin.

### 4.2.4 Set up measuring point

Click on the menu item “Facilities” in the main menu or on the LILIAN symbol in the upper bar. This will take you to the overview of measurements.



You can see two facilities in the picture as an example, the swimming pool “Plantschlust” and “Badeoase”. Click on one of the pictures and see an overview of all measurement locations at these facilities. For the swimming pool example, these are the pools. When you select a pool, you can select another measuring point, e.g. “At the edge of the pool”.

The measurement data is stored at the measurement positions! All measurement data can thus be accessed under Setup/Measuring location/Measuring position.  
**Example:** Plantschlust swimming pool - children’s pool - next to the ledler.

If no facilities have been created yet or you would like to add more, click on the plus symbol at the bottom right. You will be asked for the name and address of the facility. Optionally, you can also enter a descriptive text.

Type in this information and click on “Create”. The newly created facility immediately appears in the list. The images are created automatically and cannot be changed.

If you click on a facility, the list of measuring locations is displayed. This is empty for newly created facilities, Click on the plus sign in the bottom right-hand corner to create further measuring points.

ENTITY

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

DESCRIPTION

\_\_\_\_\_

CANCEL CREATE

Enter a name. Optionally, you can also enter a description as well as latitude and longitude. When you have finished, click on “Create”.

If you now select the measuring location, the list of measuring positions appears, that are stored at this measuring point. In the case of a newly created measuring point, this list is of course also empty. To create new measuring points, click on the plus symbol at the bottom right again.

POINT

NAME \_\_\_\_\_

DESCRIPTION

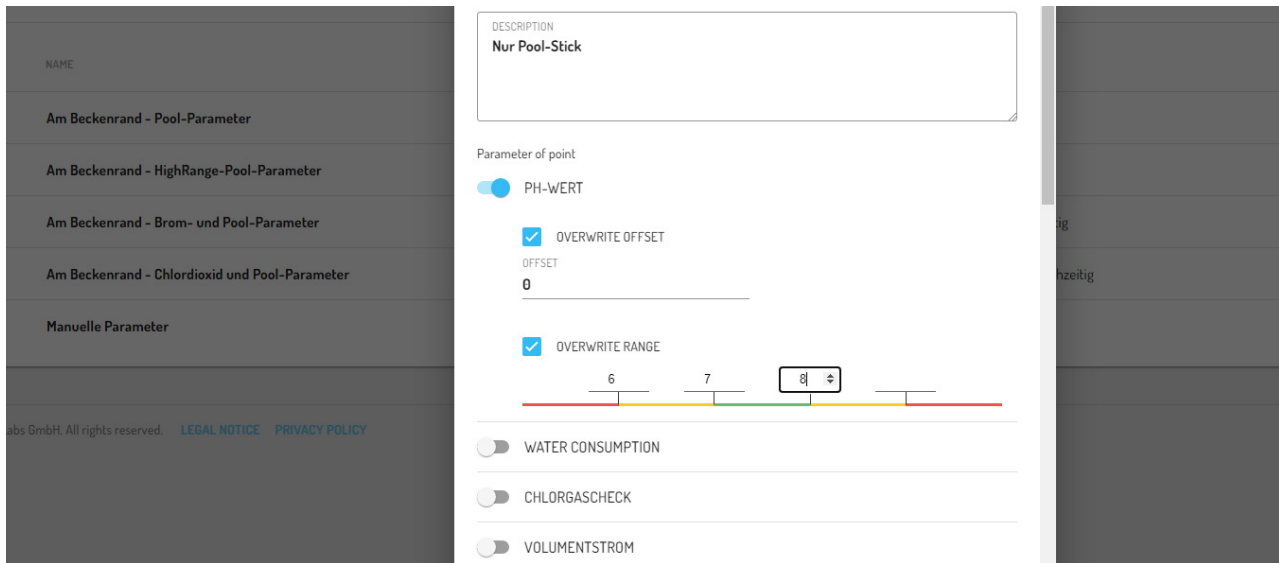
Parameter of point

PH-WERT

WATER CONSUMPTION

Give the measurement position a name and optionally a description. The most important point: Here you activate the parameter for this measuring position! **Only switched-on parameters are measured with the app at this position.**

When selecting a parameter, two options appear: “Overwrite Offset” and “Overwrite Range”. These are the options for overwriting the global parameter settings already mentioned in chapter 4.2.3.



With “Update offset” you define a correction value for the parameter at this one measuring position. The format is the same as for the global settings, e.g. +0.21 or -0.13.

If you select “Overwrite Range”, you overwrite the globally applicable limit values. This also means if you have not activated any limit values globally, e.g. for pH value, you can set this up for this one measuring positions, The mode of operation here is the same as in chapter 4.2.3.

When everything is set, click on the “Create” button. This completes the creation of measuring point.

## 4.2.5 Create and edit users

Click on “User management” in the main menu. You will see a list of the created users. By clicking on the pencil symbol you can already edit created users, create new users by clicking on the plus symbol.

USER

FIRST NAME  LAST NAME

USER ROLE  LANGUAGE

EMAIL  COMPANY

MOBILE PHONE  PHONE

WHEN A VALUE IS OUT OF RANGE SEND A NOTIFICATION VIA...

EMAIL  PUSH NOTIFICATION

PERMITTED ENTITIES

Please select...

SCHWIMMBAD PLANTSCHLUST

BADEOASE

Enter the first name and surname of the user. For the user role, choose between Staff and Admin. **Employees may only use the app while admins can also access the online dashboard.** In addition, only staff members can be registered at the bottom under “Admitted facilities” restrict access to certain facilities.

The language selects the language of the user interface in the app and online dashboard. The email is important because it is the language used when the password is sent to the user. Optionally enter company, mobile phone and telephone number. This information is transferred when a warning message is generated so that notified persons can quickly contact the sampler.

If you want to be notified when limit values are exceeded, activate “E-mail” or “Push message” in the next field. The User will be contacted according to the email address or mobile phone number provided above, regardless of which user has measured.

When you have finished, click on “Create” or “Update”.

## **Chapter 4.3:**

### **Evaluation of measurement data and warnings**

In this chapter, you will learn the ways in which you can display the measurement data. It also describes how you can export the data as Excel files and in which form the warnings for exceeding limit values can be viewed.

### 4.3.1 Display measured values in the browser

Click as described in chapter 4.2.4 about the facilities and measurement locations for the measurement positions. When you have selected a measuring position, the stored measured values are displayed.

DATE	TIME	MEASURED BY	PH-WERT (PH)	GESAMTCHLOR (MG/L)	FR CHLOR (MG/L)	GEB CHLOR (MG/L)
30.03.2022	09:15	Knoll, Simon	7.00	0.94	UR	0.94
	09:13	Knoll, Simon	7.02	0.91	UR	0.91
	08:29	Knoll, Simon	7.00	0.93	0.06	0.87

**1:** You can quickly switch to other measuring positions via the “Go to” field.

**2:** In the list view, the measured values are displayed here sorted by date and time. If threshold values for the parameters are activated, the readings appear green when they are on target. At yellow or red highlighted measured values, a limit value has been exceeded.

**3:** If you have accidentally saved incorrect readings, you can mark the data set as incorrect by clicking the bin.

**4:** Incorrect data records are hidden. You can still display them by clicking this button.

**5:** By clicking on the speech bubble you have the possibility to view and edit the comments on the measurements.

**6:** Here you can switch from the list view to the history graph. In the history graph view, the measurement data are displayed graphically. You can change individual parameters in the view by clicking on the Switch names on and off.

**7:** Select the period for which the data is to be displayed.

Alternatively, you can also display several measurement positions at the same time. To do this, select the option “Measurements” in the main menu.

**MESSUNGEN**

ZEITRAUM: Freier Zeitraum    VON: 2022-01-01    BIS: 2022-04-14

**Schwimmbad Plantschlust / Außenbecken / Am Beckenrand Lilian**

DATUM	UHRZEIT	GEMESSEN VON	PH-WERT (PH)	GESAMTCHLOR (MG/L)	FR CHLOR (MG/L)	GEB CHLOR (MG/L)	TEMPERATUR (CCLSIUS)	REDOXSPANNUNG
05.04.2022	16:42	Betreiber3_Test	8.18	UR	UR	UR	23.00	167
29.03.2022	14:51	Betreiber3_Test	7.86	UR	UR	UR	34.00	171
24.03.2022	08:25	Betreiber3_Test	7.53	UR	0.03	UR	50.00	150
18.03.2022	10:35	Betreiber3_Test	7.61	UR	UR	UR	25.00	154
01.03.2022	10:37	Betreiber3_Test	7.36	UR	UR	UR	25.00	150
18.01.2022	13:40	Gelöschter Nutzer	*7.52	UR	UR	UR	23.00	174
17.01.2022	17:33	Gelöschter Nutzer	*7.78	UR	UR	UR	25.00	150
13.01.2022	16:08	Gelöschter Nutzer	*7.19	UR	UR	UR	50.00	131
16.01	16:01	Gelöschter Nutzer	7.47	UR	UR	UR	25.00	178
11.01.2022	13:55	Gelöschter Nutzer	UR	0.63	0.55	0.07	25.00	150

\* OFFSET ANGEWENDET

**Schwimmbad Plantschlust / Kinderbecken / Elefanten-Rutsche**

DATUM	UHRZEIT	GEMESSEN VON	GESAMTCHLOR (MG/L)	FR CHLOR (MG/L)	GEB CHLOR (MG/L)	TEMPERATUR (CCLSIUS)	REDOXSPANNUNG
14.03.2022	08:01	Betreiber3_Test	0.62	UR	0.62	-	-

Now select the desired period. The default setting is the “Today” indicator is displayed so that you can easily check at the end of the day whether all measurements have been carried out as required.

The other options are “Yesterday” and “Free period”. If you select “Free period”, two input fields “From” and “To” appear. Enter the desired period here. Please note that your date selection is not accepted until you confirm it with the “OK” button.

When you have selected the desired time period, all measuring positions that contain measured values for this time period appear automatically. Listet one after the other, as shown in the figure.



### 4.3.2 Export measured values to Excel

Click on “Export” in the main menu.

**EXPORT**

Export all measurements for a given time period.

---

RANGE  
 Current month ▼

---

POINTS  
 Please select...

---

In the following view, first select the period. There are default settings such as “Current month” or last “100 measurements”. However, free entries for the period are also possible.

Then select which facilities, measurement locations or measurement positions you want to export. Then click on “as .XLXS export”.

	A	B	C	D	E	F	G	H	I	J
1	Schwimmbad Plantschlust: Außenbecken - Am Beckenrand Lilian									
2										
3	Datum & Uhrzeit	Gemessen von	Status	fr. Chlor	geb. Chlor	Gesamtchlor	pH	Temperatur	Redoxspannung	Kommentar
4	2020-11-10 11:23	M...	OK	0.00	0.00	0.00	7.00	24	200	

1 Schwim...Am Beckenrand Lilian

For each measurement position, a separate tab with the stored data is created in the Excel table. In the uppermost line, the following is stored which measuring position it is.

Note that free parameter were also created in the example. These are of course exported as well. Also, remarks that are added to the measurements that have been added are taken into account in the export. Corrected measured values are also included in the export with the correction factor.

Faulty measured values are also exported. However, the “Status” column does not say “OK” but “Error”.




### 4.3.3 Display and delete open warnings

Exceeded limit values are displayed in several places:

- In the app in the “Warnings” tab
- Measurements are shown in red/yellow/green in the app under “Measured values”
- In the online dashboard in the title bar
- As red/green/yellow symbol in view for measuring points
- As red/green/yellow values in the measurement data view
- As an e-mail or push message to selected users

ALERTS

Current alerts of all entities.

STATUS	DATE & TIME	ENTITY	MESSORT	MESSPUNKT	GEMESSEN VON
	30.03.2022, 09:03	Schwimmbad Plantschlust	Außenbecken	Am Beckenrand Lilian	Rohr
		Schwimmbad Plantschlust	Sportbecken	Am Beckenrand	Rohr
	05.04.2022, 16:04	Schwimmbad Plantschlust	Kinderbecken	Elefanten-Rutsche	Rohr

You can only delete a warning by doing following:

- Repeat a measurement at the measuring position in question and all parameters are in the green range.
- Mark the triggering measurement as faulty.
- Switch off the limit values for the corresponding parameter.

In the case of warnings transmitted by e-mail or push message, the following you can click to view the profile page of the measuring user and contact them directly.

## **Chapter 4.4:**

### **Interface to other platforms**

It is possible to automatically transfer the measurement data to other systems via a client-based interface IT structures. This chapter describes what is necessary for this and which interfaces to external applications already exist.

## 4.4.1 Description and documentation

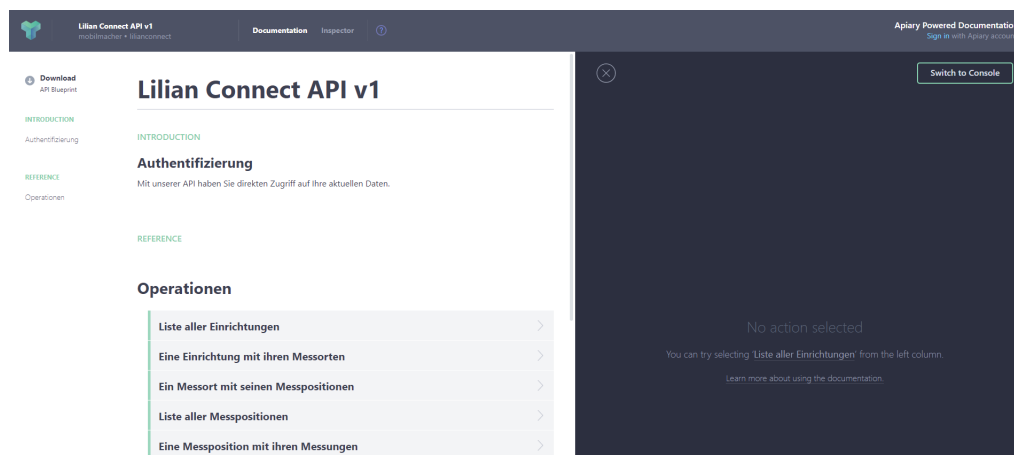
The interface is a client-based API. This interface communicates via the json format.

You will receive a special API key from Lilian Labs on request, which identifies you when requesting measured values for your existing IT system

**Please note: The interface is set up for you. As long as no API has been requested, there is no technical possibility for external access.**

The query of the measured values functions via a few commands. This allows lists of facilities, measuring locations and measuring positions to be output. If you know the path to the measuring positions to be output. If you know the path to the measuring position ( Setup - Measuring location - Measuring position) you can query this measuring position.

The query command provides that you can transmit the last X measurement data with x as the number of the last measurements.



At <https://lilianconnect.docs.apiary.io/#> you will find detailed online documentation with the commands and corresponding script examples.



## Chapter 5 Further information



## 5.1 Error codes

If something went wrong during the measurement, an error message will be displayed. The most common solutions are listed below. If the problem persists, please contact our support.

Code	Error messages	Solution
2	"I2C-Modul-Scan faulty."	Please restart the measurement.
10	"The SensoStick did not take a water sample"	Follow the instructions in the message.
87	"Faulty readings"	Repeat the measurement with a new SensoStick.
89	"No measurement results received from the LILIAN."	Repeat the measurement with a new SensoStick.
90	"Stick does not support the parameter request"	If you see the LILIAN Manager, the parameters to be measured are defined for the measuring locations. Use the corresponding SensoStick.
92	"There is no SensoStick in the LILIAN"	Insert a SensoStick into one of the two slots of the LILIAN.
93	"No metadata received from LILIAN"	Bluetooth connection faulty, please repeat measurement.
95	"LILIAN could not be authenticated."	Bluetooth connection faulty, please repeat measurement.
96	"No connection could be established to the LILIAN"	Please restart the measurement.
97	"No LILIAN was found."	Switch on the LILIAN.
98	"No Bluetooth module found."	Switch on Bluetooth on the smartphone.

## 5.2 Support

If you have any further questions, please feel free to contact us:

Lilian Labs GmbH  
Salzdahlumer Str. 196  
38126 Brunswick  
Germany



TEL. +49 531 - 387 274 38



SUPPORT@LILIANLABS.COM

## 5.3 Legal

Privacy policy: <https://lilianlabs.com/en/privacy-policy/>

General terms of delivery: <https://lilianlabs.com/en/gdt/>

Safety data sheet: <https://lilianlabs.com/en/downloads-en/>

In addition, you can also obtain this information in paper form on request.

## 5.4 Explanatory videos

**TUTORIAL- measurement with the LILIAN App**

<https://youtu.be/-9kSdwd7sDI>



**TUTORIAL - App Download & Firmware update LILIAN**

<https://youtu.be/zUrSs3F-lxU>



**TUTORIAL- measurement with the LILIAN Manager**

<https://youtu.be/4V9Xj5Mkkzl>



**Solve problems: LILIAN does not respond**

<https://youtu.be/92DzYDRldcw>



**TUTORIAL -Setup of the LILIAN Manager Dashboard**

<https://youtu.be/J60ZBvSiPI>



**Solve problems: Change seals & clamps**

[https://youtu.be/dDnqYM\\_XD9g](https://youtu.be/dDnqYM_XD9g)



Our explanatory videos are updated on an ongoing basis. Please visit <https://lilianlabs.com/en/videos/> to see all the videos at a glance. If required, you can also select other languages in the subtitles under YouTube.

WATERANALYSIS  
OF TOMORROW



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State: February 2024