lilian

LABS

INSTRUCTIONS

LILIAN SOFTWARE

LILIAN MANAGER

Table of contents

User: Only LILIAN Manager Smartphone App is needed for using the LILIAN system

Administrators: Only LILIAN Manager Dashboard for setup and data analysis

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 the LILIAN Manager.

As a user, you therefore only need the LILIAN Manager Smartphone App to use LILIAN to its full extent. The functions of the app are explained in chapter 2.

If you are an administrator, you use the LILIAN Manager Dashboard to digitise your institution, manage users, manage interfaces and much more. If you are not sure whether you are an administrator, you probably are not. The info to the Dashboard you'll find in chapter 3.

SensoStick
Minilab with
integrated tests

DAS LILIAN
Innovative
watermeter

LILIAN Manager App
Entering the measurement
data

LILIAN Manager
Digital data platform

1.2 Installation of LILIAN App and LILIAN Manager

The LILIAN Manager App is available in the Google Store for Android smartphones and in the iOS Store for Apple iPhones.

The dashboard associated with the LILIAN Manager App does not require any installation or manual updates. You can access it with any standard browser (e.g. Chrome, Edge, Safari, Firefox,…) at the internet address https://manager.lilianlabs.com. Only the LILIAN Manager App must be present on the smartphone.

Simply scan the QR code to access the apps directly:

1.3 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Sometimes it is necessary to carry out a firmware update when switching to a newer version of the LILIAN app or the LILIAN Manager.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 devicewith 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.
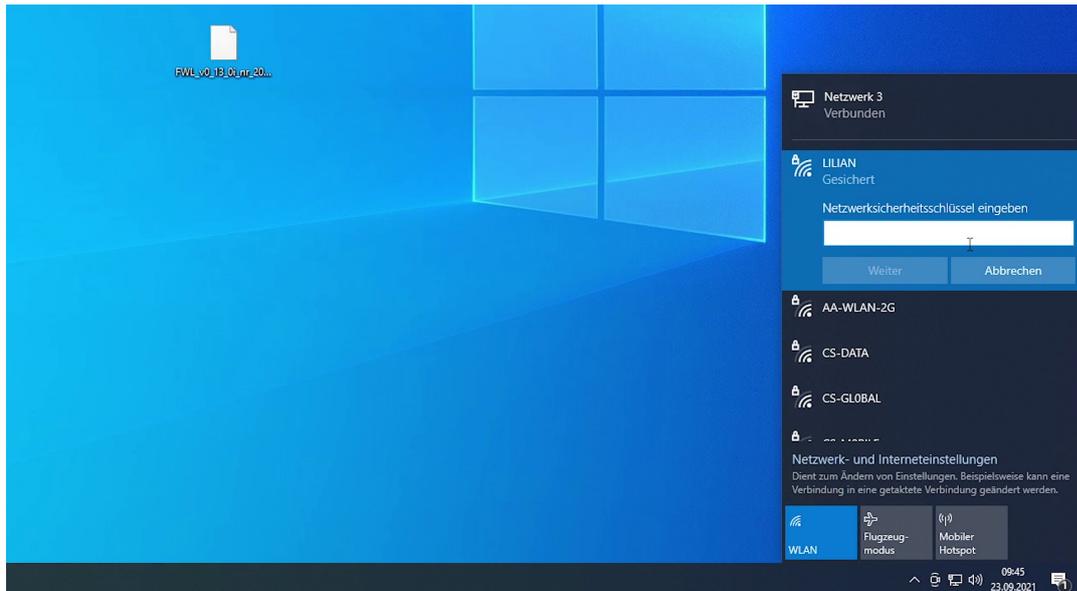

4. Update Firmware
– Enter the internet address 192.168.5.1 in the browser.
– A „LILIAN firmware upload" web page appears.
– Click „Select file" and select the firmware file from step 1.
– Now click on „Upload...".
– A progress bar will fill up and the LILIAN will glow green-turquoise.
– As soon as the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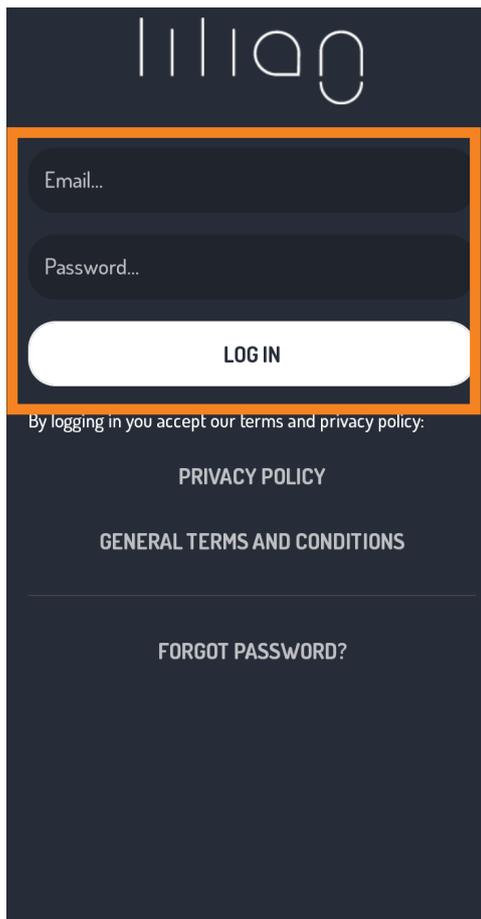– You can now remove the plug again.

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

Chapter 2
LILIAN Manager App
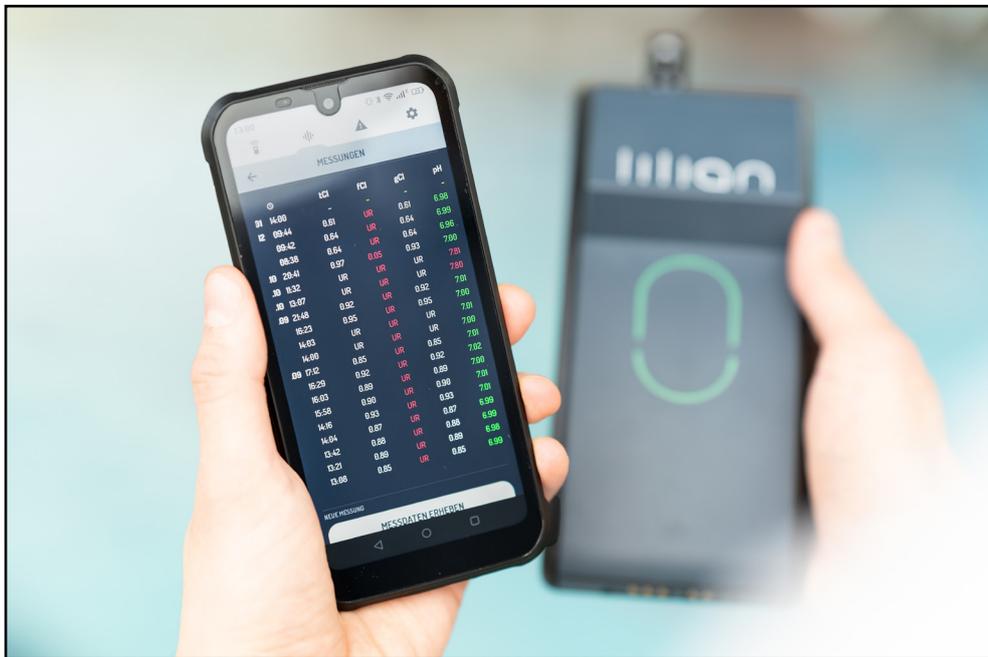
2.1 Login

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.

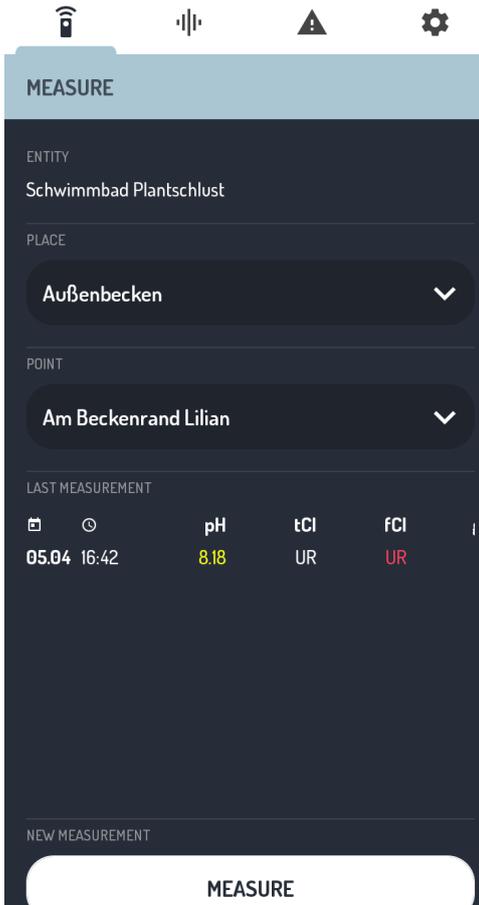Please note that you must agree to our terms of use when you first register.
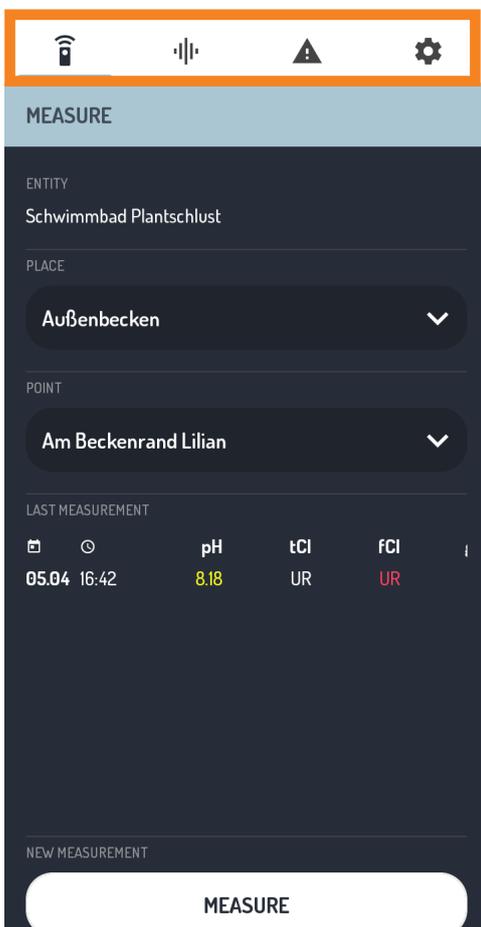
2.2 Function overview

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.

Measure	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

MEASURE

ENTITY
Schwimmbad Plantschlust

PLACE
Außenbecken ⌄

POINT
Am Beckenrand Lilian ⌄

LAST MEASUREMENT

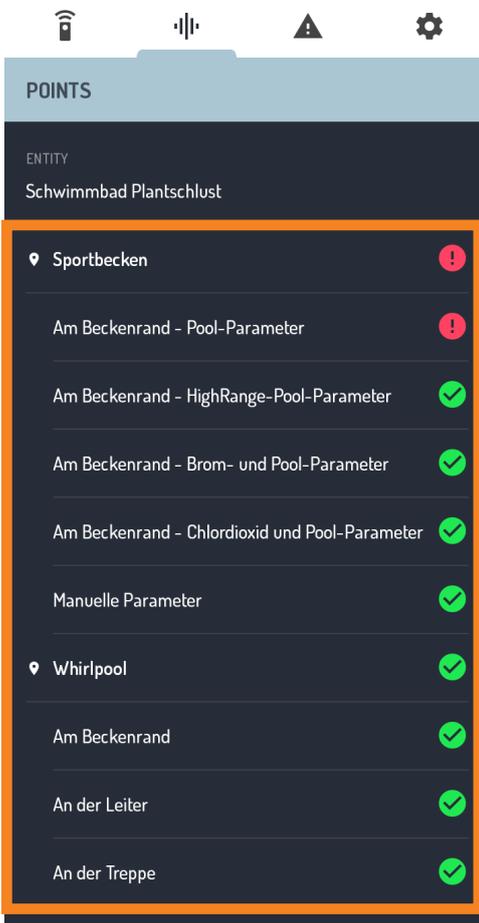| 📅	🕐	pH	tCl	fCl	
05.04	16:42	8.18	UR	UR	

NEW MEASUREMENT

MEASURE

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

POINTS

ENTITY
Schwimmbad Plantschlust

📍 Sportbecken ❗

Am Beckenrand - Pool-Parameter ❗

Am Beckenrand - HighRange-Pool-Parameter ✅

Am Beckenrand - Brom- und Pool-Parameter ✅

Am Beckenrand - Chlordioxid und Pool-Parameter ✅

Manuelle Parameter ✅

📍 Whirlpool ✅

Am Beckenrand ✅

An der Leiter ✅

An der Treppe ✅

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. The icon only appears in this case

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.
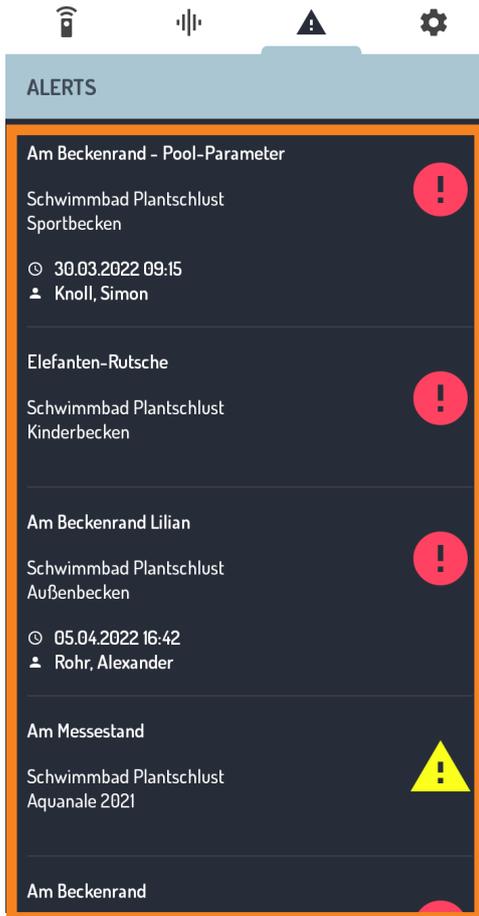
Tab: Settings and Logout

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.
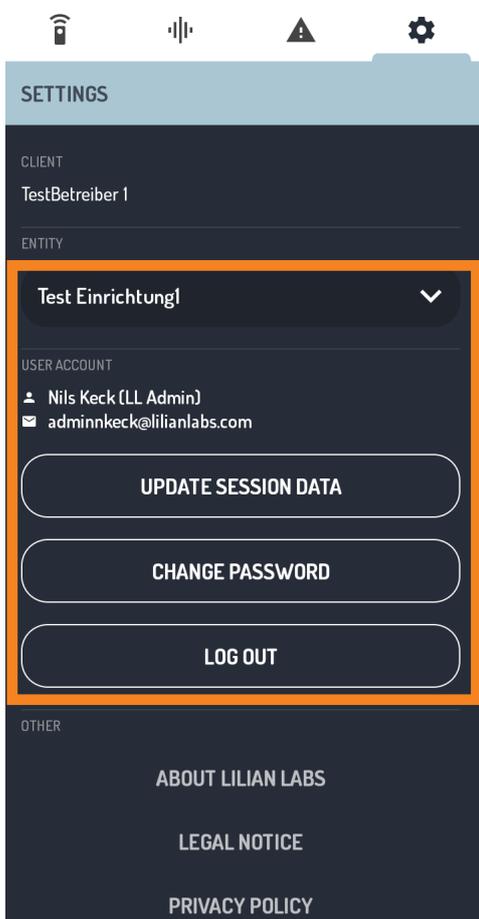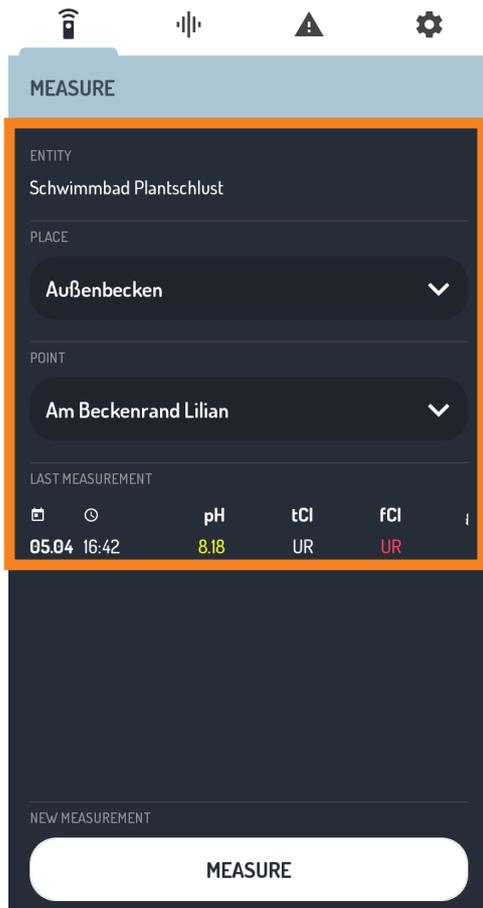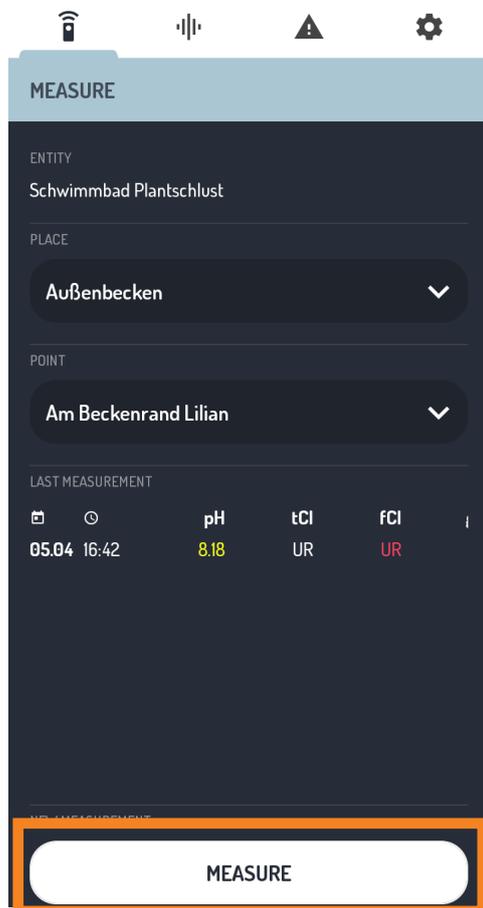
2.3 Record measured values

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 must be done by 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 perfom a LILIAN measurement.

If an error message is displayed instead of the next window at the end of the measurement, it is best to check the error table in the Quick Start Guide of your LILIAN device.

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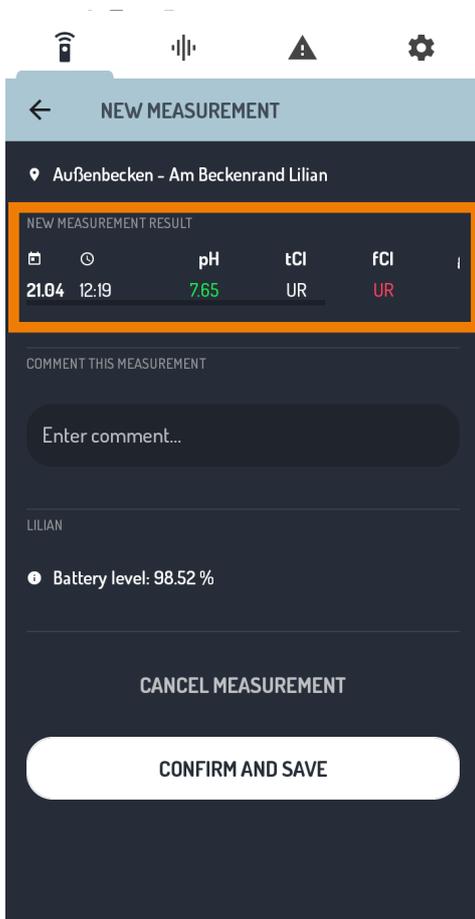
After the measurement has been carried out, the results window is displayed in which you can check all the results again. These are displayed in the upper area of the app.

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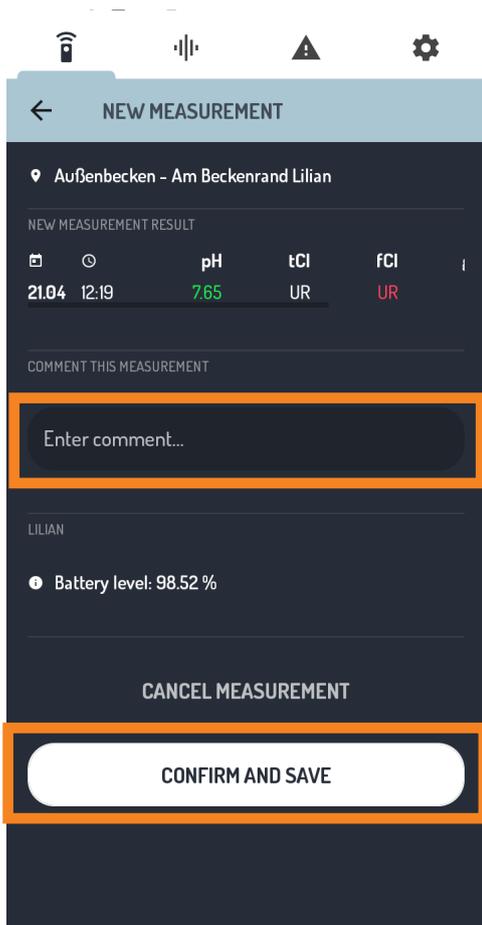
There is the possibility after each measurement to add a comment. Whether this is displayed to you depends, whether your administrator has enabled this in the LILIAN Manager Dashboard.

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".
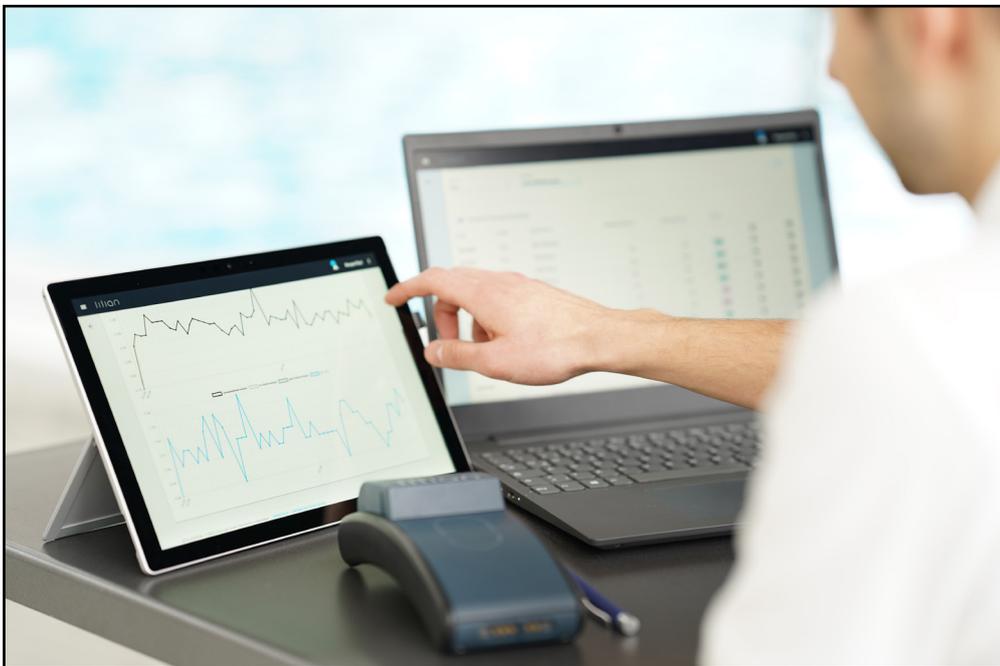

At the end of the measurement you will receive a message that the measurement has been saved. Only if you see the green symbol, everything has worked properly.

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 3
LILIAN MANAGER DASHBOARD

Chapter 3.1:

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 abtained 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 +49 531 387 274 36 or 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.

3.1.1 User interface

Immediately after logging in you will see the user interface. The following figure shows the 7 most important elements of the user interface:
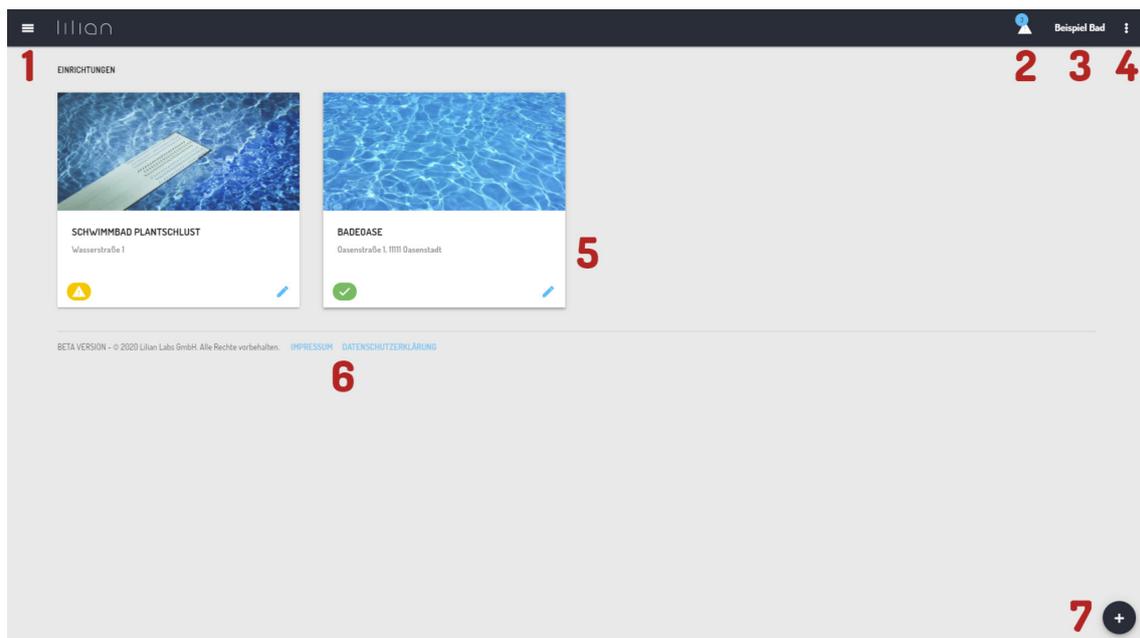
1: Main menu

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

3.1.2 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".

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".

3.1.3 Main menu

Click on the symbol with the three dashes at the top left to open the main menu as shown in the illustration.
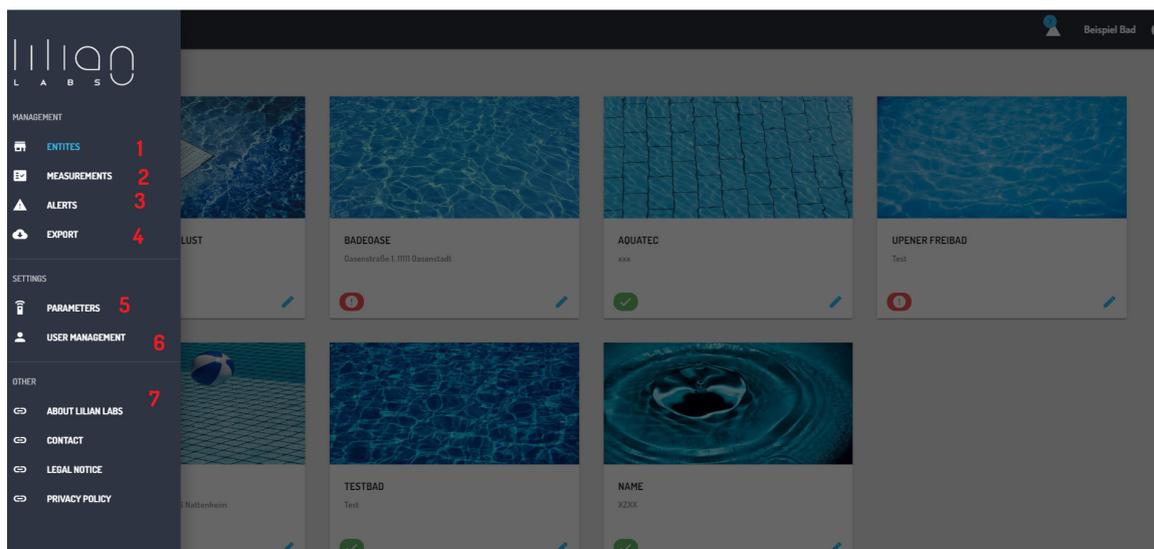
1: Via the menu item "Facilities", you are shown the facilities is displayed. This will take you to the measured values that are stored there.

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 3.2:

# 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.

3.2.1 Login and password change

You can access the dashboard with any browser. To do so, enter https://manager.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.
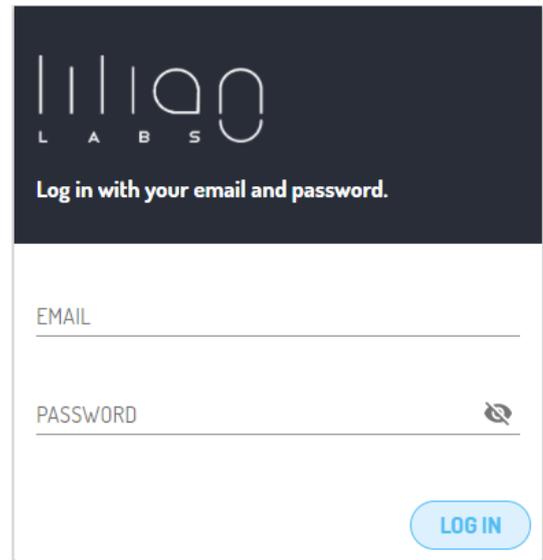
We recommend that you change your password now.

Once you have successfully logged in, click on the 3 dots top right in the menu bar and select the item "Account settings".
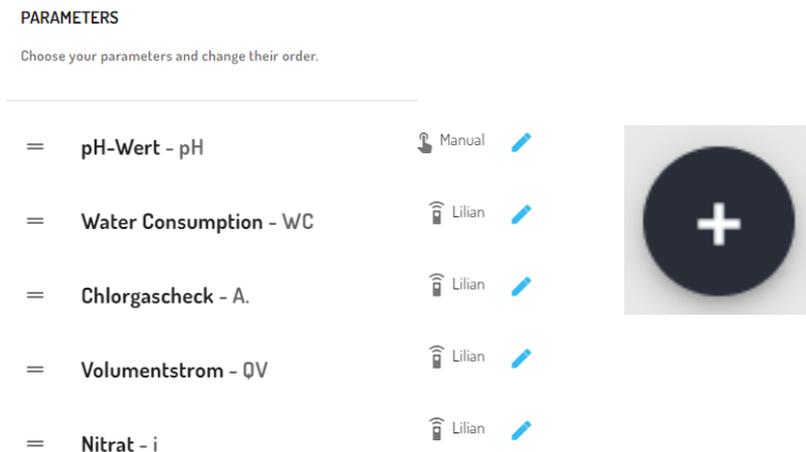
Now press the control "Change password". If the slider appears blue, you can enter your new passowrd. To confirm repeat it in the next line.

To save the password change, click on "Update".
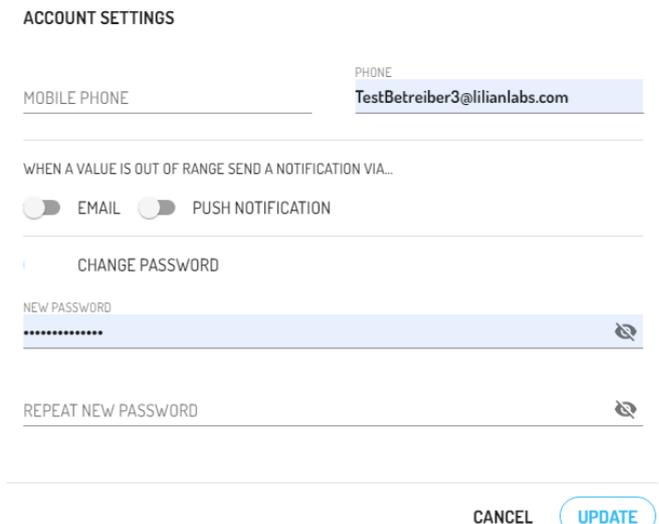
3.2.2 Create and edit measurement parameters

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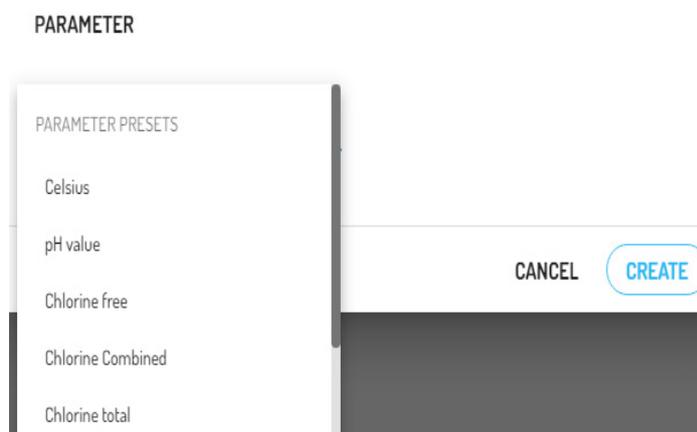
A list of parameters appears that you add to the list. Add all paramets you want to record or measure with the LILIAN. If you have selected a LILIAN parameter, just click on "Create" to store the parameter in the system. It can now be selected at each measuring position.

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

PARAMETER

PARAMETER TYPE
Number   Manual input

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

UNIT   NUMBER OF DECIMALS
m³/d   1

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

3.2.3 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.

Later 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.

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 electrial 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 cirrectuib 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 thredhold valuesm, 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 yelllow 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.
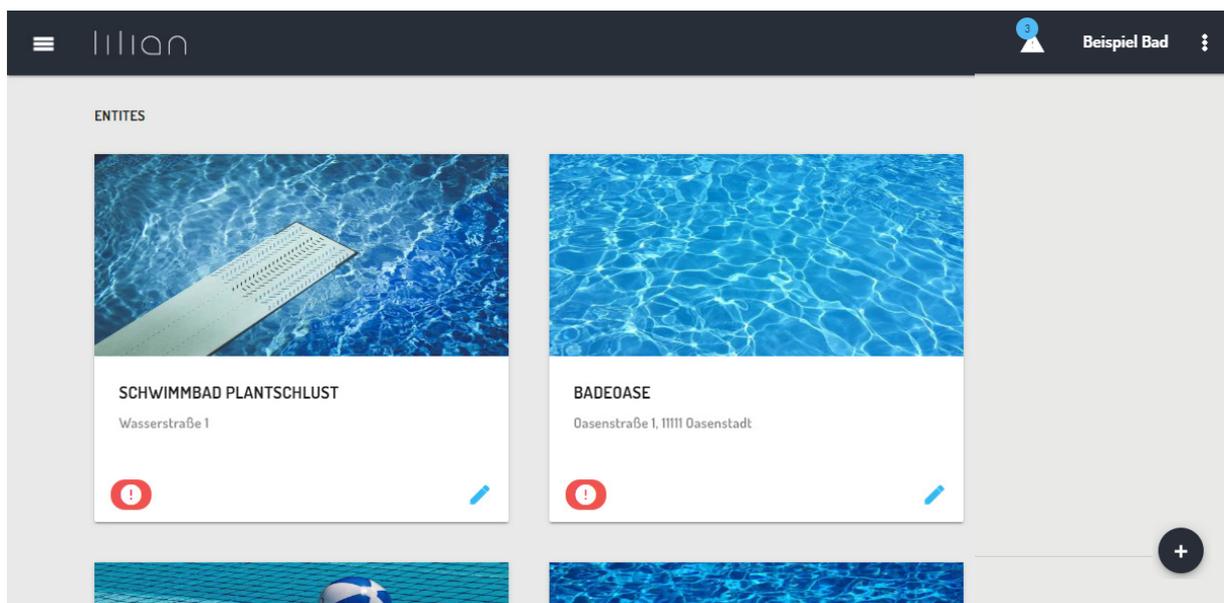
You can see two facilities in the picture as an example, the swimming pool "Plantschlust" and "Badeoase". Click on one of the pictures and see an overview of all measurement locations at these facilities. For the swimming pool example, these are the pools. When you select a pool, you can select another 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 ledder.

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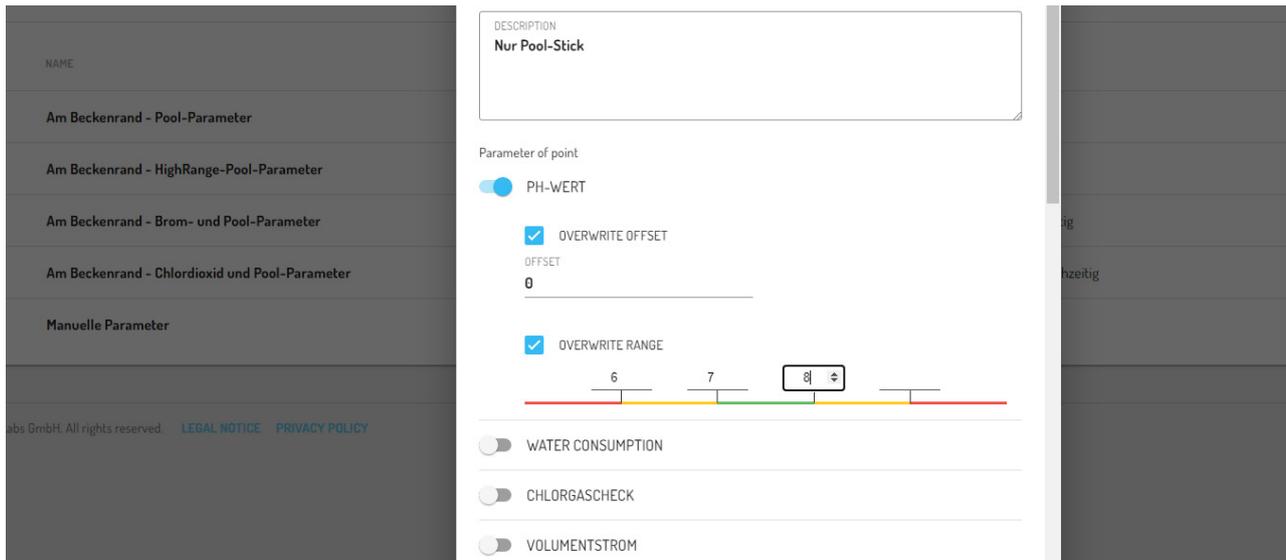
With "Update offset" you define a correction value for the parameter at this one measuring position. The format is the same as for the global settings, e.g. +0.21 or -0.13.

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,

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

3.2.5 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.

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 massage 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 fielt. The User will be contacted according to the email adress or mobile phone number provided above, regardless of which user has measured.
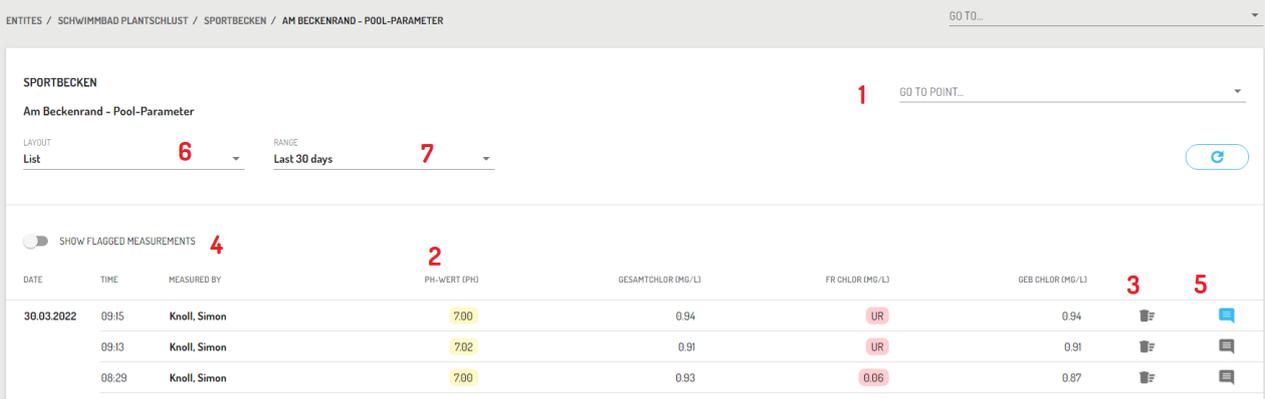
When you have finished, click on "Create" or "Update".

Chapter 3.3:

Evaluation of measurement data and warnings

In this capter, 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.

3.3.1 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.

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 thredhold 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.

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.

3.3.2 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	2020-11-18 11:33	Mustermann, Max	OK	0.06	0.88	0.95	7.03	24	300	

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".

3.3.3 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 3.4:

Interface to other plattforms

It is possible to automatically transfer the measurement data to other systems via a client-based interface IT structures. 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.
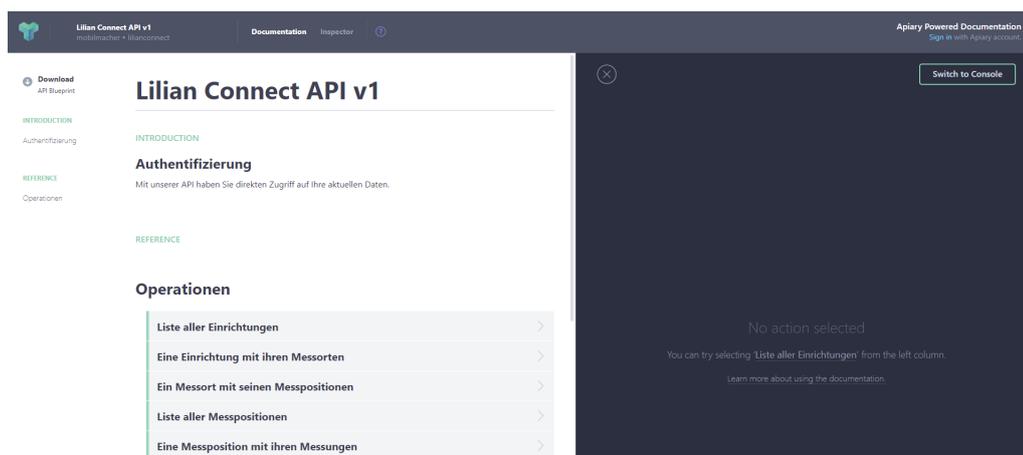
At https://lilianconnect.docs.apiary.io/# you will find detailed online documentation with the commands and corresponding script examples.

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