

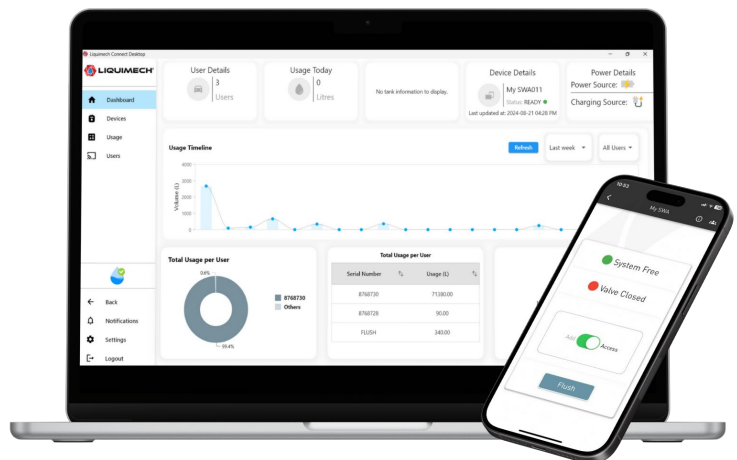


LIQUIMECH — CONNECT

Mobile & Web App

User Manual

V1.0.5



Smart Water Access System

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1. Introduction

1.1. Overview

Smart Water Access System provides secure, efficient control of bulk water access and distribution, powered by advanced technology and real-time data insights.

This manual provides step-by-step instructions for using the Liquimech Connect app to manage your Smart Water Access System on web, Android, and iOS platforms.

- ❑ **Web App:** Primarily for office use, allowing you to manage access control and monitor devices, users, and transactions.
- ❑ **Mobile App (Android/iOS):** Designed for field operations, providing low-level control and management of user access.

1.2. User Access Domains

The user access domains for the web and mobile apps are distinct, meaning an account in one platform does not automatically provide access to the other. This separation is intentional, as the web app is tailored for office use, while the mobile app is designed for field calibration. However, super-admins will have access to both the web and mobile platforms.

Note: For clarity, the following sections will refer to both the Android and iOS versions as the mobile app.

1.3. Controller and Server Communication

As illustrated in Figure 1, the system features a multi-level user structure, providing granular control and ensuring that only authorised individuals can carry out specific tasks.

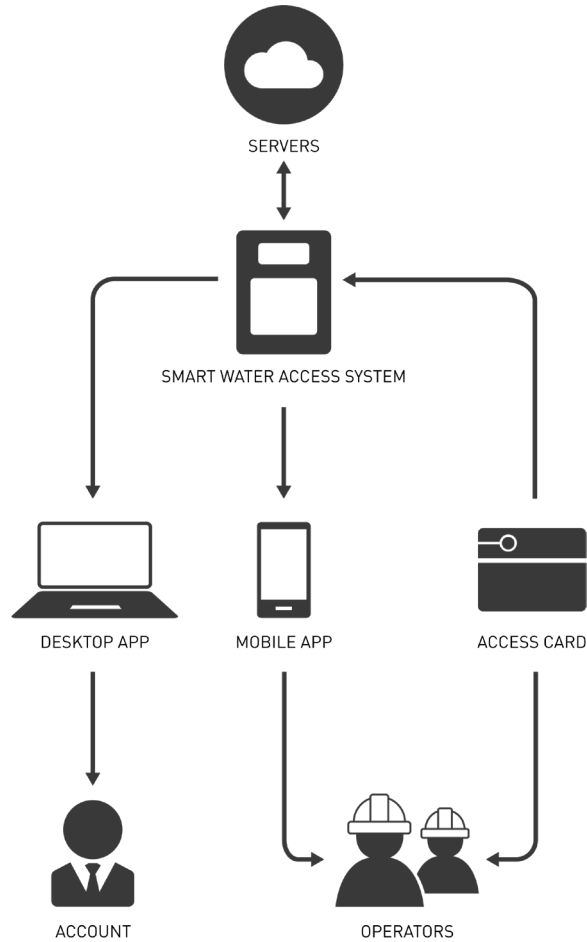


Figure 1: Multi-level user structure.

- ❑ **Account:** A user who accesses the system through the web app.
- ❑ **Operator:** A user who accesses the system using a mobile app, card, or tag.

Note: The web app is used for advanced monitoring and access control. It communicates with our servers to retrieve the transactional data of the smart water access system.

1.4. Web App Communication Types

The web app can be used for the following types of communication:

- ❑ Communication with the field device
 - Control access for any cards, users, or tags in the system (e.g., lock or unlock them).
 - Enable or disable the system, preventing any card, user, or tag from interacting with it.
 - Activate or deactivate emergency access mode for use by emergency services.

- ❑ Communication with the servers
 - Retrieve transactional data related to the device, its cards, tags, or users.
 - Modify non-essential device or user information, such as alias, company, wait time, etc.

1.5. Mobile App Communication Types

The mobile app is designed for operator-level control and can connect directly to the device on-site. It monitors system data, such as valve status and the current mode (Access mode or Add mode). Operators can perform basic tasks like flushing and filling. Additionally, the app provides access control features for admins and super-admins.

2. Launching the Liquimech Connect Web App

Upon launching the Liquimech Connect web app, you will be directed to the Sign-In window, which consists of three pages: Sign-In, Forgot Password, and Sign-Up.

2.1. Sign-In Page

- ❑ On the Sign-In page, enter your email address and password.
- ❑ If the credentials are correct, you will be taken to the main menu, which displays all available Liquimech Connect web apps.

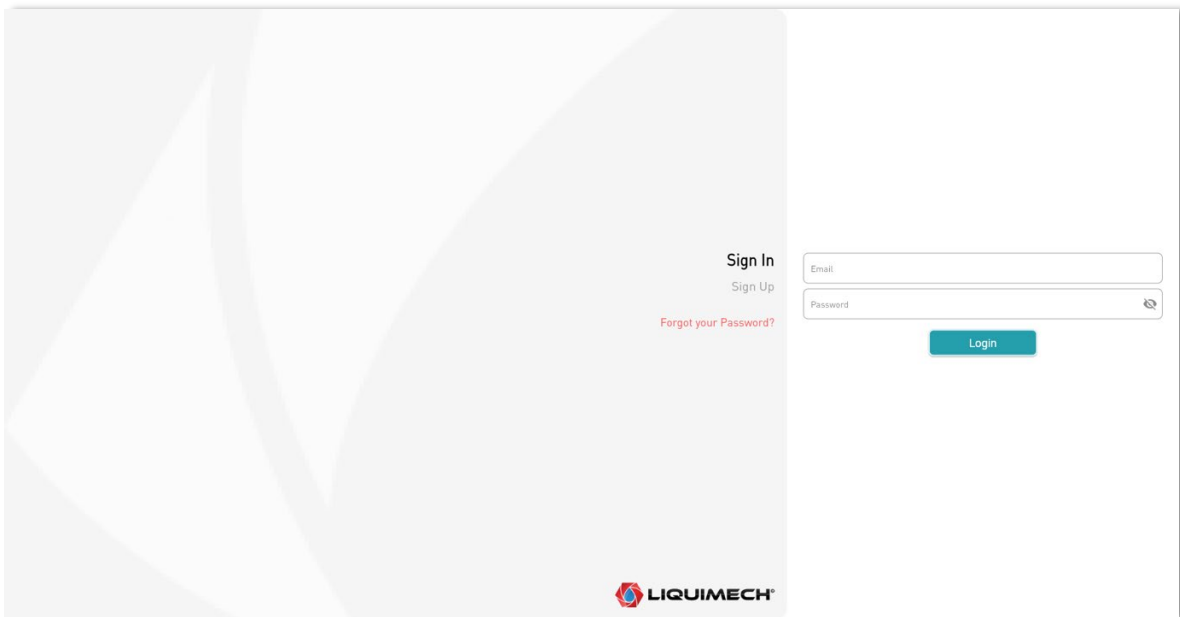
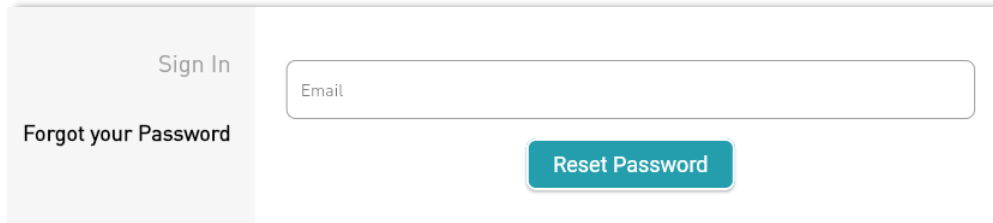


Figure 2: Entry Screen and Sign In.

2.2. Forgot Password Page

- ❑ On the Forgot Password page, enter your email address.
- ❑ An email with instructions to reset your password will be sent to the provided address.
- ❑ To return to the Sign-In page, click the "Sign-In" link.



The screenshot shows a web form for password recovery. On the left, there is a vertical grey bar with the text "Sign In" at the top and "Forgot your Password" below it. To the right of this bar is a white form area. At the top of the form is a text input field with the placeholder "Email". Below the input field is a teal button with the text "Reset Password".

Figure 3: Forgot Password.

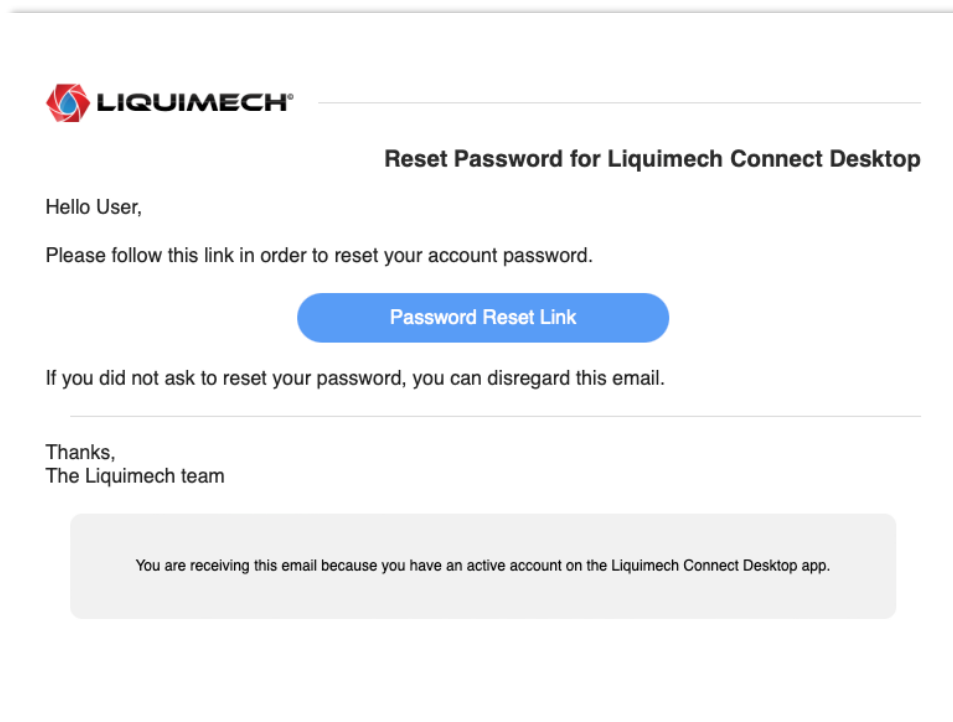


Figure 4: An email with instructions to reset your password.

2.3. Sign-Up Page

If you are interested in signing up, please contact the Liquimech team for assistance.

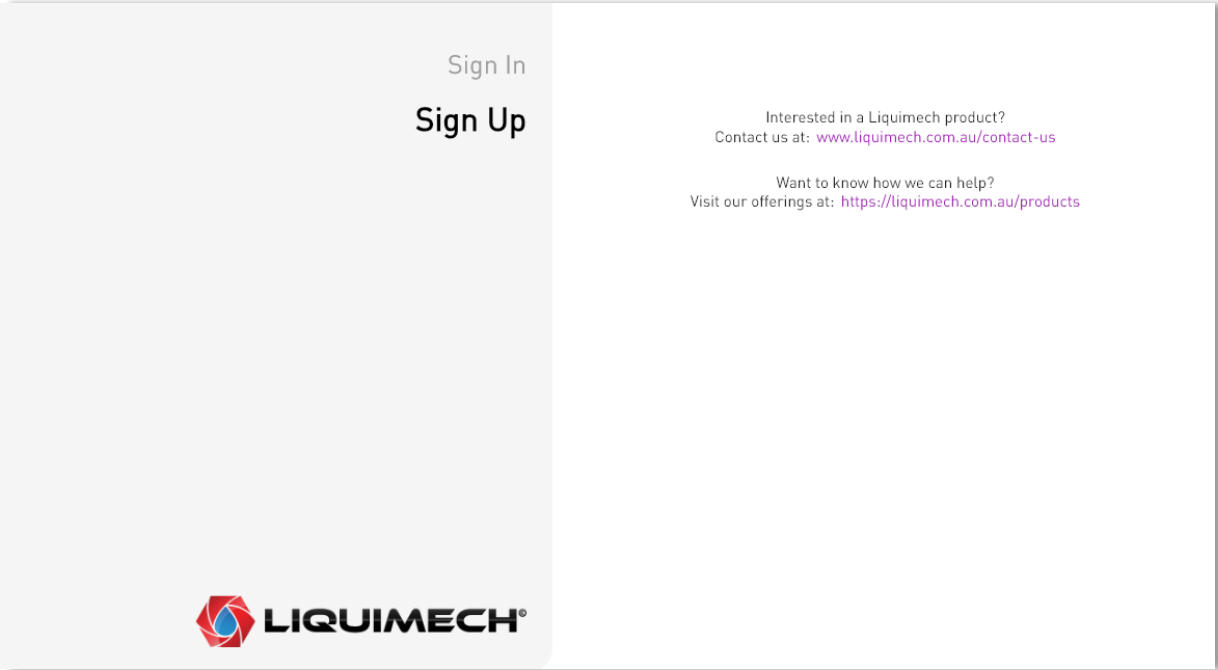


Figure 5: Sign Up screen.

3. Liquimech Connect Web App Overview

3.1. Main Menu

- ❑ The main menu displays a list of available web applications. Purchased apps are shown in colour, while unpurchased apps are greyed out. Selecting a non-accessible app will display a dialog.
- ❑ Click on a coloured app to access its features. When an accessible app is selected, a loading screen will appear.
- ❑ The logout button is located at the bottom left.

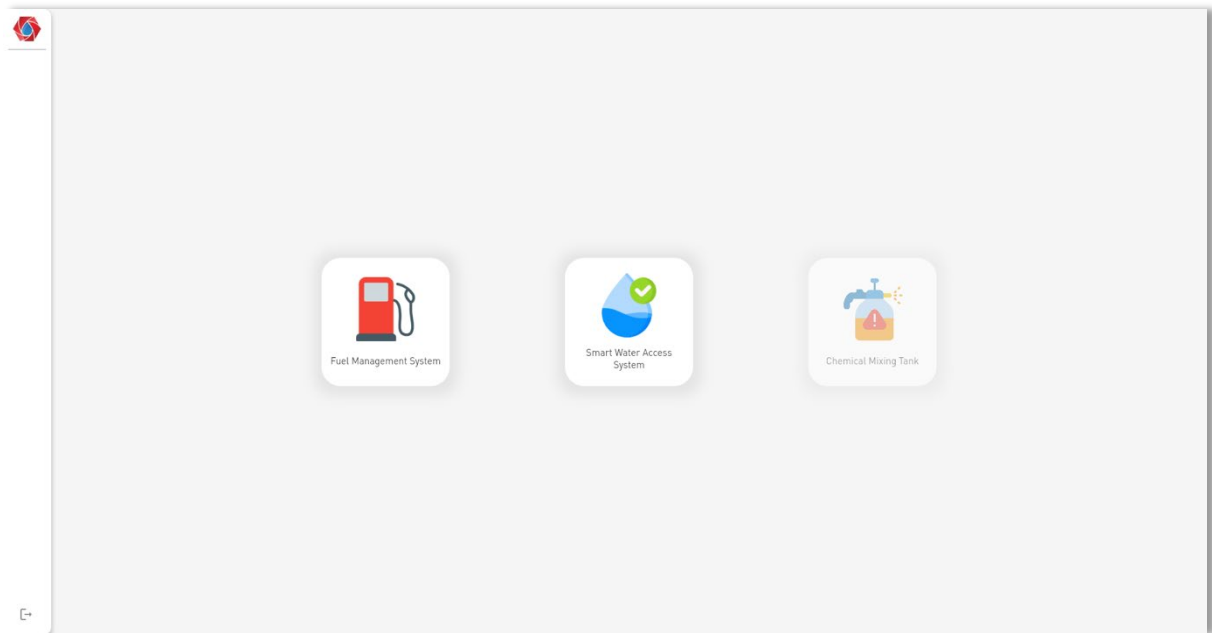


Figure 6: Main Menu Screen.



Figure 7: Selecting a non-access app dialog.

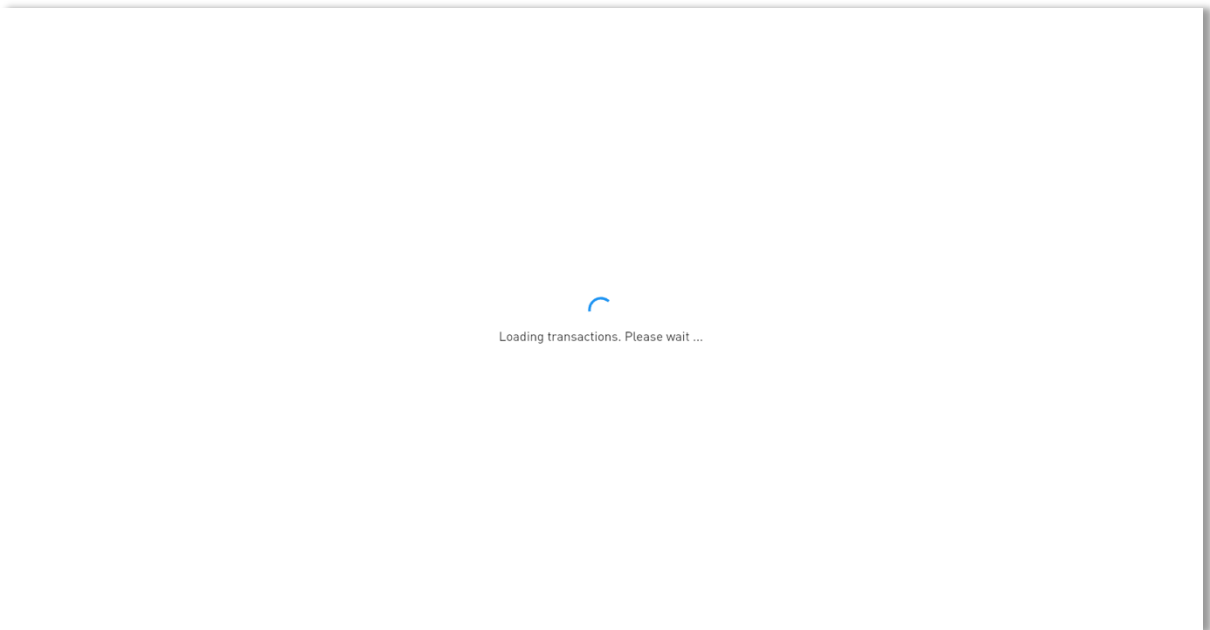


Figure 8: Loading screen when an access app is selected.

3.2. Sidebar

The sidebar provides a convenient way to navigate through the different sections of the Smart Water Access System.

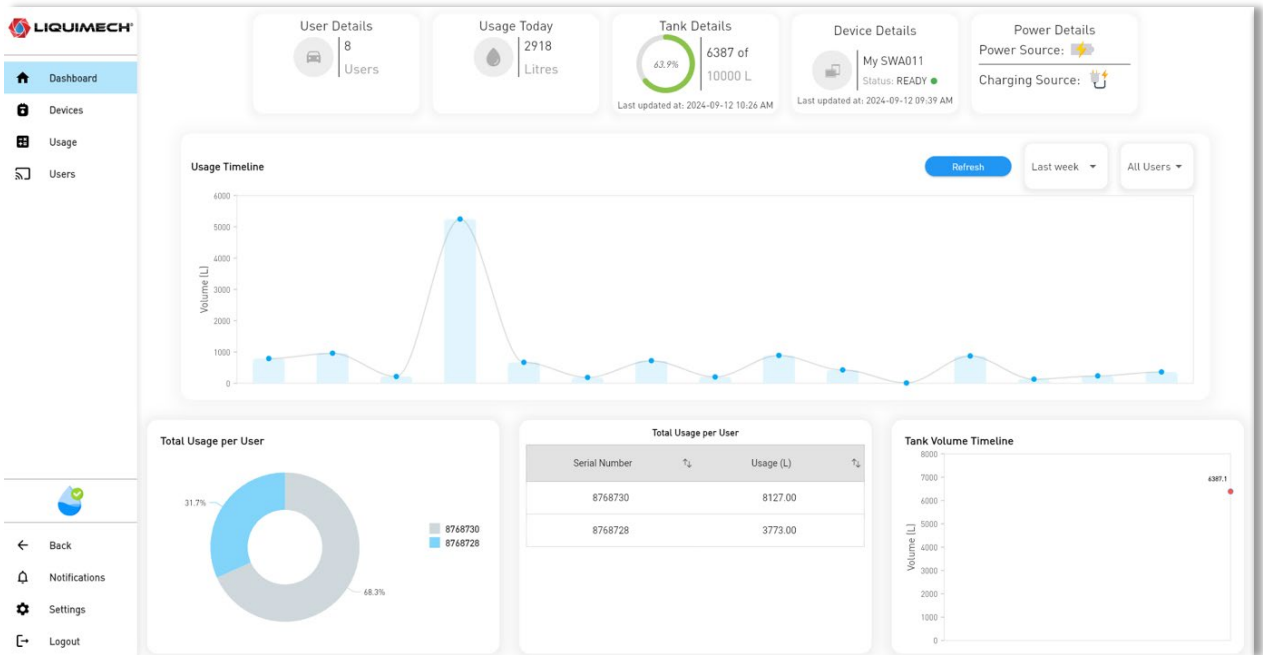


Figure 9: Dashboard of the Smart Water Access System.

3.3. Top Section

- Home: Returns you to the main dashboard.
- Devices: Displays information about the devices linked to the system.
- Usage: View details such as water consumption, date, time, etc.
- Users: Manage user accounts and access levels.

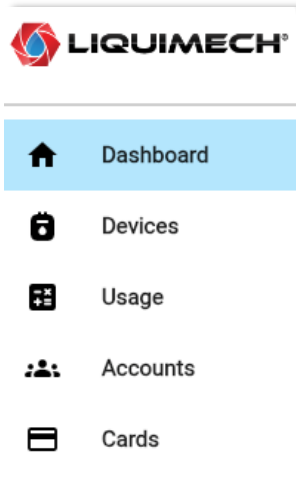


Figure 10: The top-left section of the banner allows navigation to the home (dashboard), devices, usage, users, and cards pages.

3.4. Bottom Section

- Back: Returns to the main menu
- Notifications: Indicates whether notifications are present or absent.
- Settings: Access and modify system settings.
- Log Out: Securely exit the system.

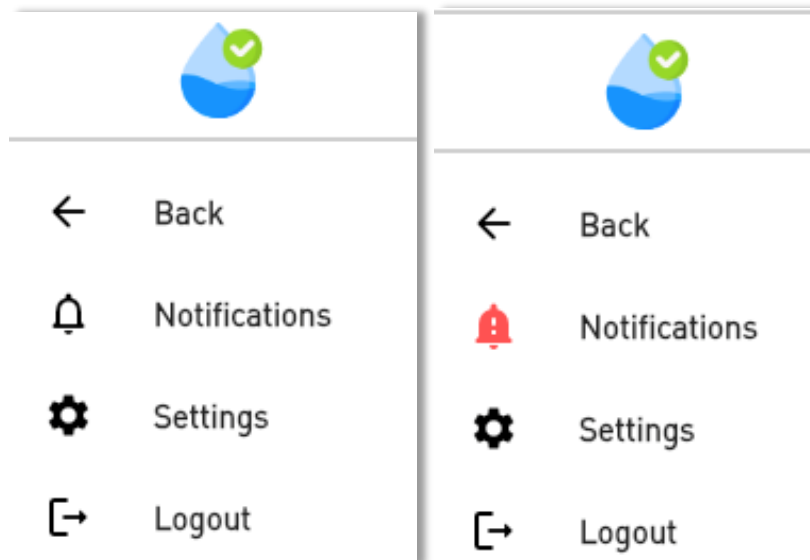


Figure 11: Bottom section of the left banner. Notifications when absent and present.

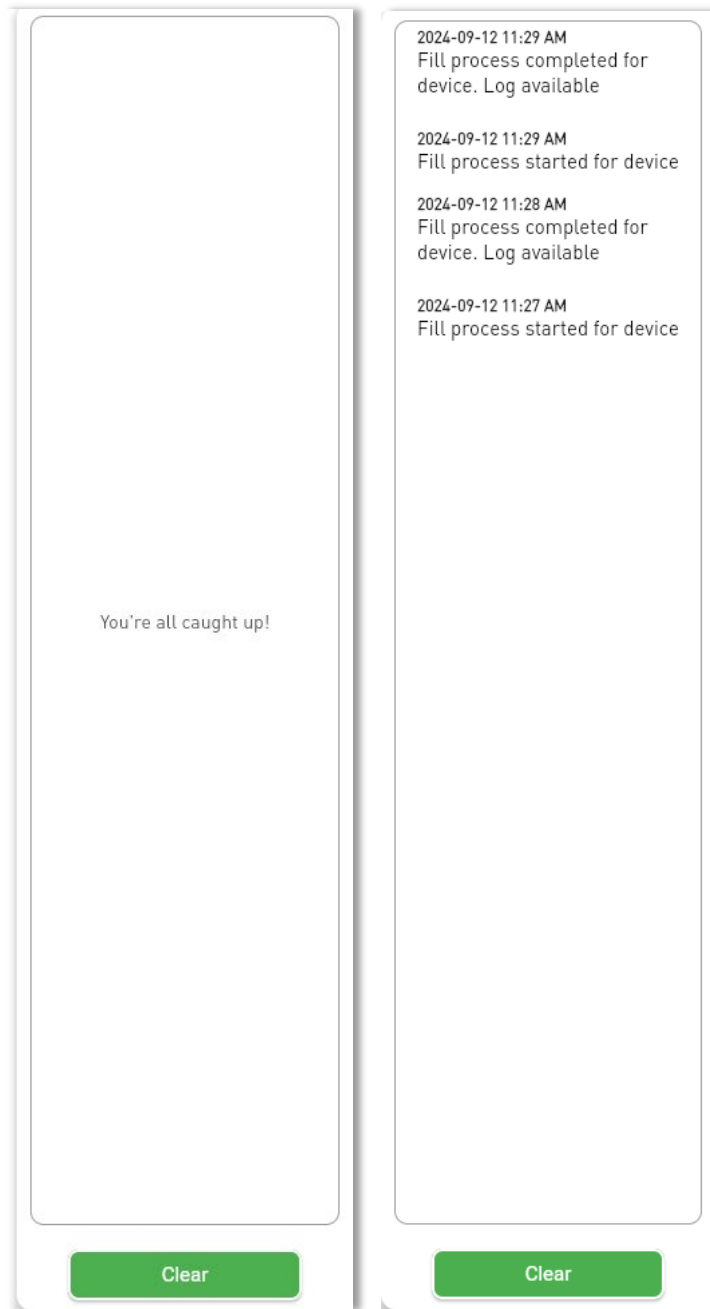


Figure 12: Notifications banner with and without notifications.

3.5. Settings Page Overview

The Settings page allows you to view and modify your account details.

Account Information

- ❑ The first sub-menu displays current account information, including:
 - Username
 - Email address
 - App version

- ❑ If the account has access to a field device and the appropriate permissions (access level), users can edit the email address where monthly usage reports are sent.

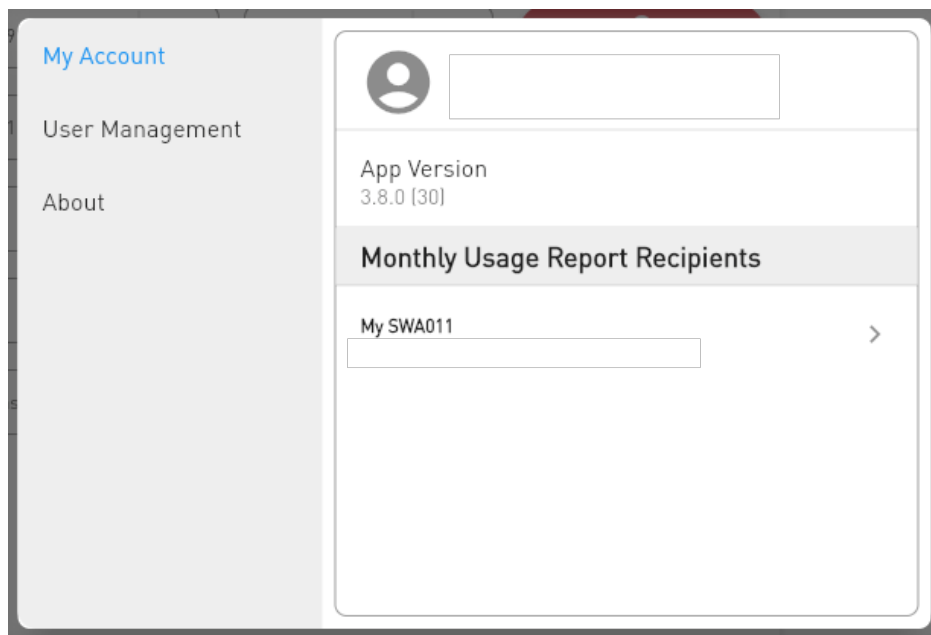


Figure 13: My account screen.

- The nominated email address will receive a monthly usage report on the first day of every month.

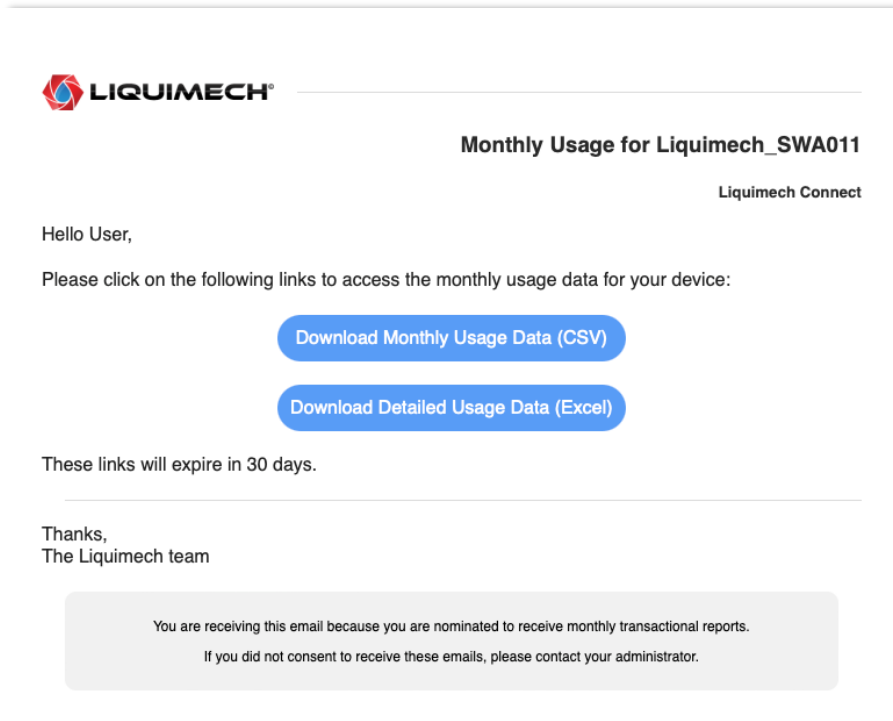


Figure 14: Monthly Usage Report email.

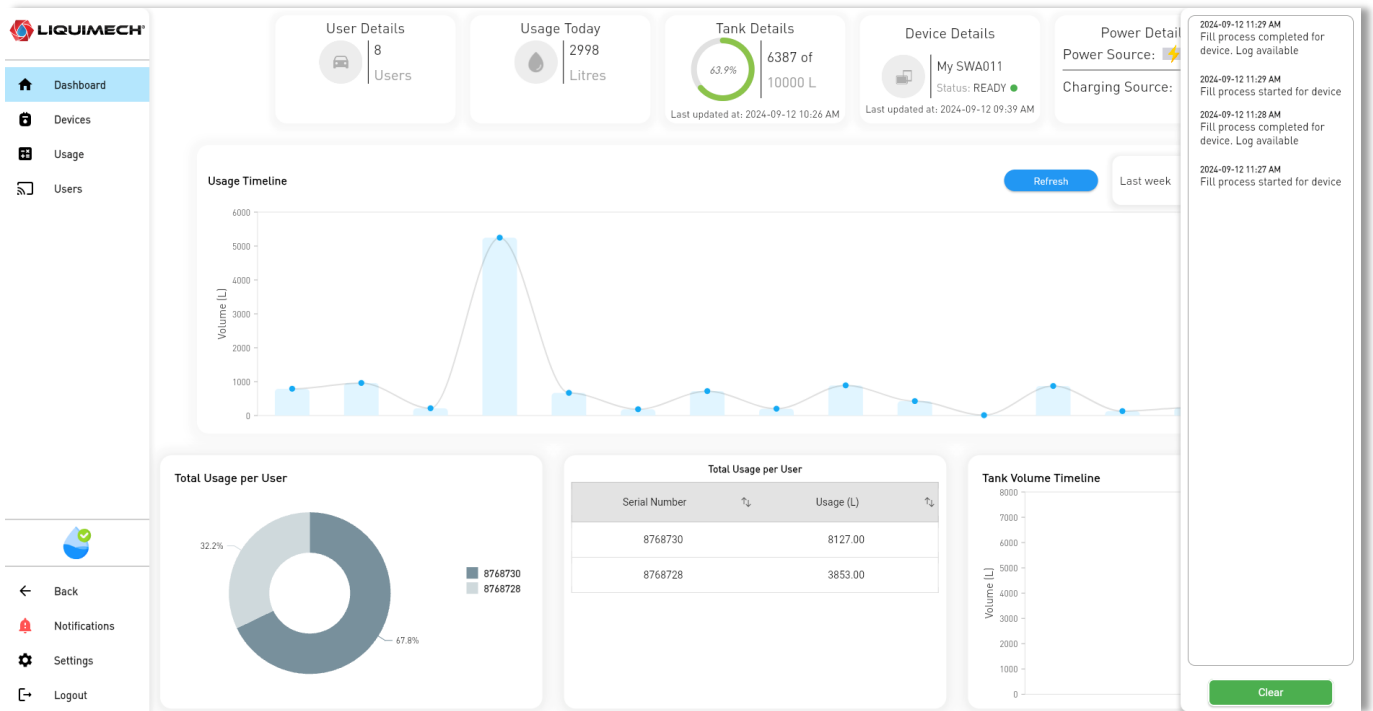


Figure 15: Dashboard view with notifications banner.

3.6. Dashboard

The dashboard serves as the central control panel for your Smart Water Access System, providing a user-friendly interface for managing and monitoring your water hydration stations.

Info Cards

The top row contains info cards, displaying key data:

- Users:** Shows total cards/tags registered on the device.
- Usage:** Displays the total daily water usage.
- Tank Level:** Shows tank level details (visible only if tank sensors are installed).
- Device Status:** Displays device information in unlocked and locked states, as well as other relevant information.
- Power Details:** Displays the power source and charging status of the device.

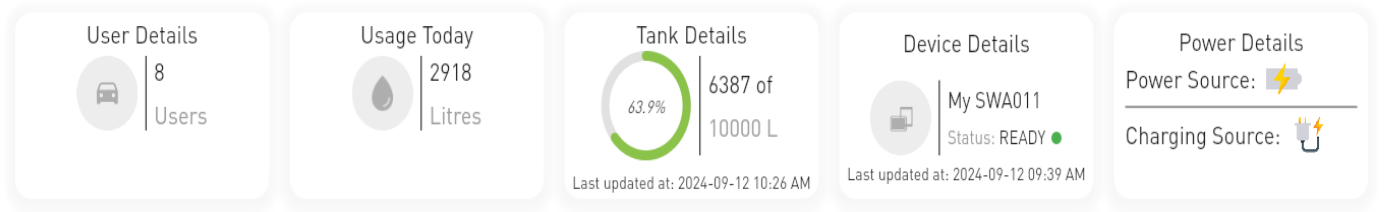


Figure 16: The top row info cards.

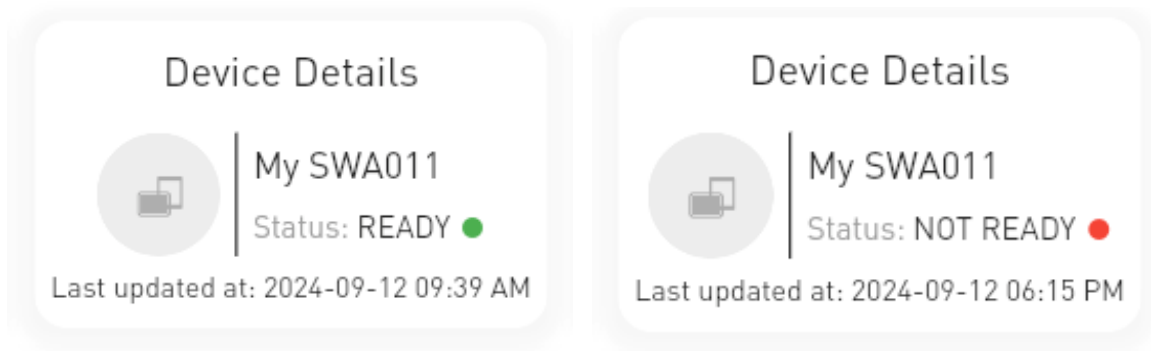





Figure 17: Device details when unlocked (left) and locked (right).

3.7. Power and Charging Sources

The table below lists the different power and charging sources available for your device:

Icon	Source
	Mains/AC
	Battery/DC
	Solar

Note: The power and charging source for your device can be one of the three options provided.

3.8. Usage Statistics

The middle row of the dashboard shows a usage statistics graph. The combo boxes in the top right allow you to filter data based on users and/or time. Use the refresh button to update the data.

Note: When hovered over an entry, an info box is shown with the data.

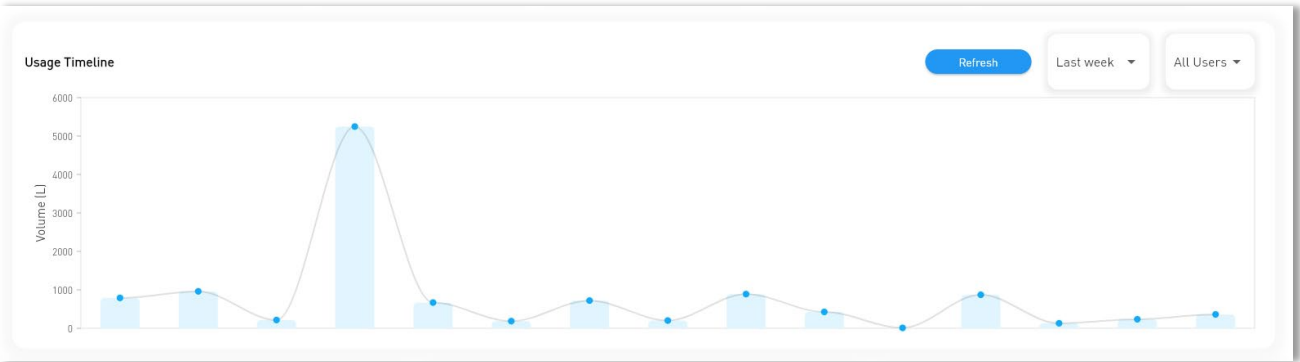


Figure 18: Usage statics.

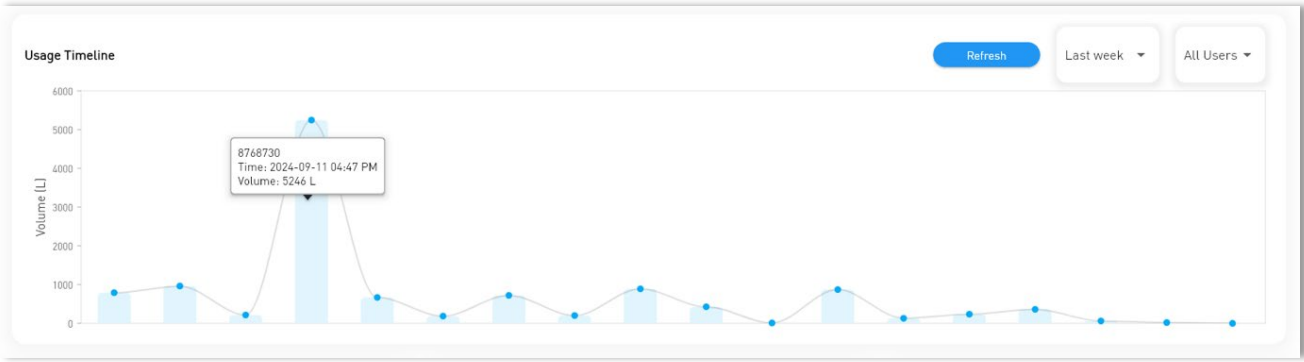


Figure 19: Usage statics with info box.

- ❑ User Combo Box: Select a user to filter the data.
- ❑ Time Combo Box: Select a time range to filter the data.

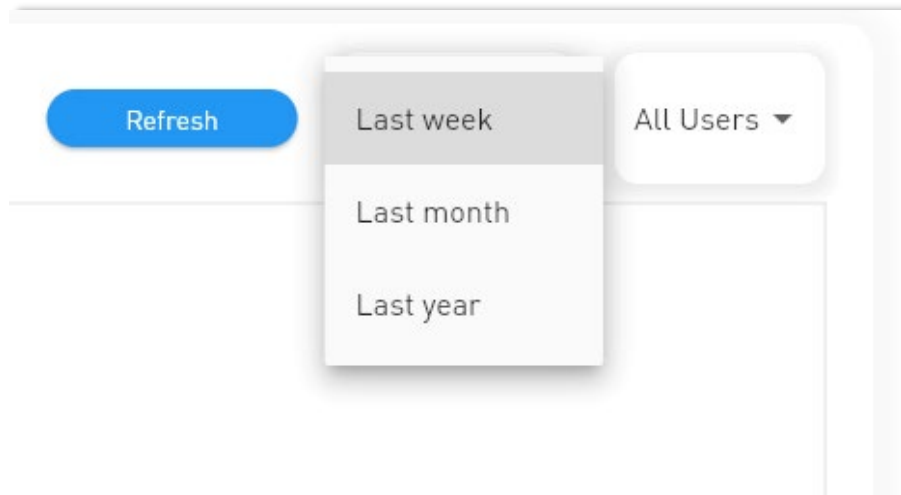


Figure 20: User combo box.

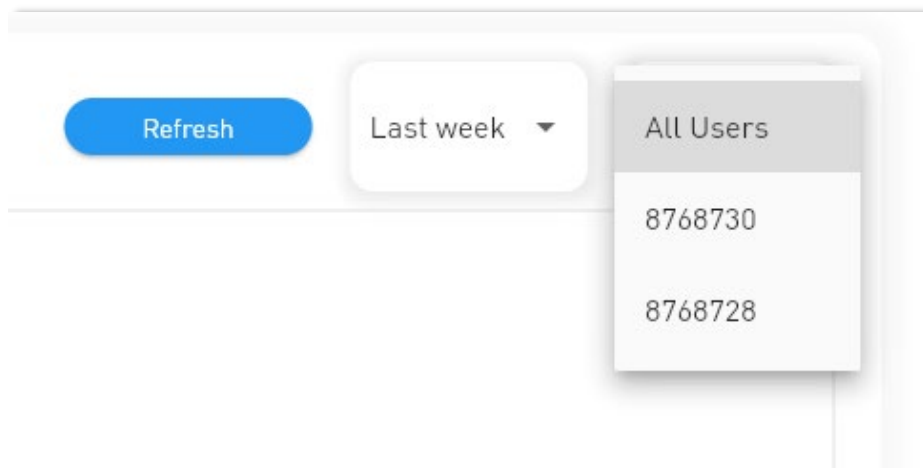


Figure 21: Time combo box.

3.9. Additional Statistics

The bottom row contains additional statistics such as total usage per user in the doughnut chart and tabular forms, and the tank level timeline.

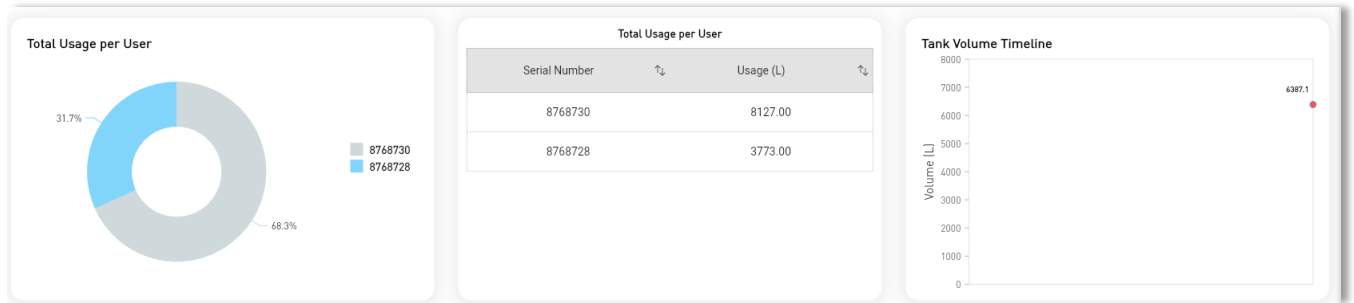


Figure 22: Doughnut chart, tabular forms, and tank level timeline.

- ❑ **Usage Doughnut Chart:** When hovered over a section, an info box is shown with the data. Users whose usages are below 2% are grouped under the 'Others' category to make the chart cleaner.
- ❑ **Usage Table:** This table does not group users into the 'Others' category but shows the total usage in litres for all users no matter their usage.
- ❑ **Tank Volume Timeline:** This shows the tank level history. When hovered over an entry, a label is shown with data (if tank-level sensors are installed).

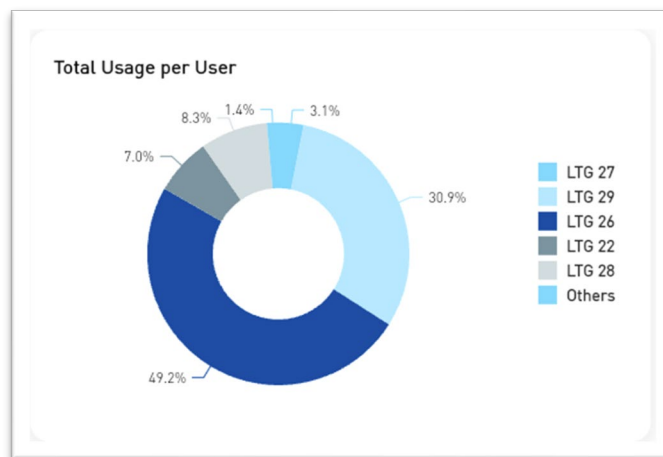


Figure 23: Doughnut chart.

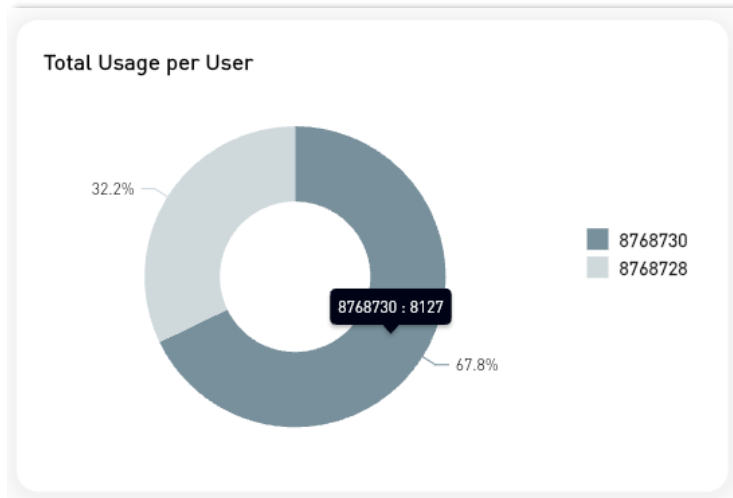


Figure 24: Doughnut chart with info box.

Serial Number	↑↓	Usage (L)	↑↓
8768730		8127.00	
8768728		3773.00	

Figure 25: Usage table.

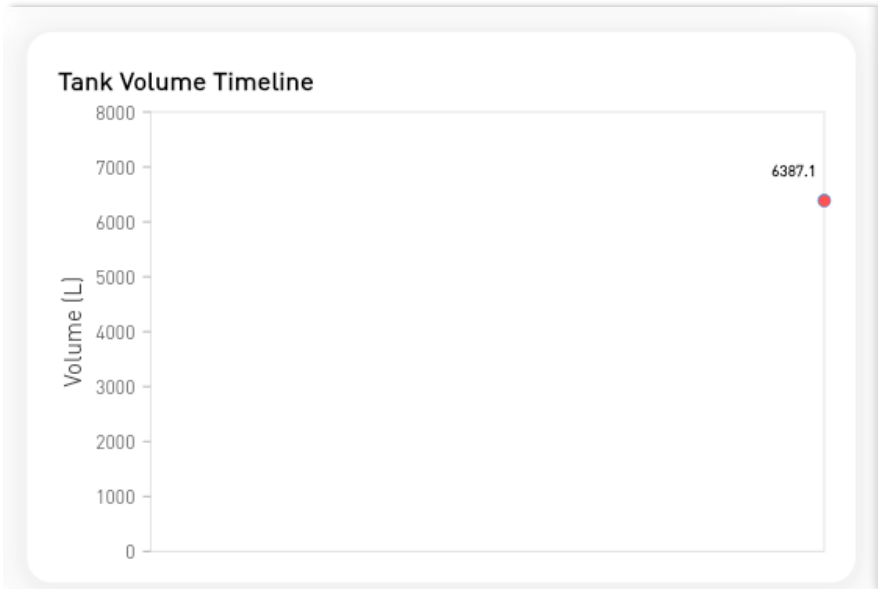


Figure 26: Tank volume timeline.

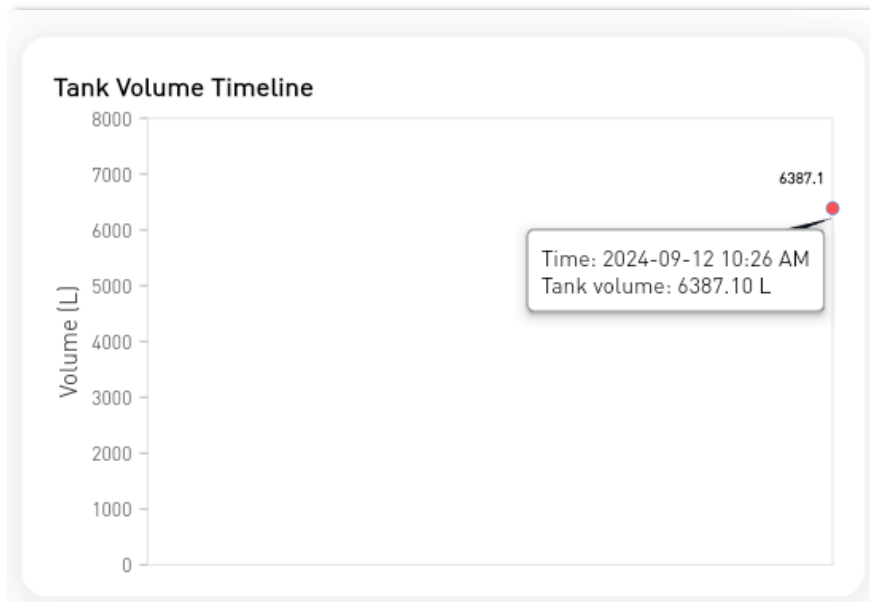


Figure 27: Tank volume timeline with info box.

3.10. Devices Screen

Selecting the devices page icon on the sidebar takes users to the device's screen, showing an overview of all their devices. Shown information includes device lock and settings.

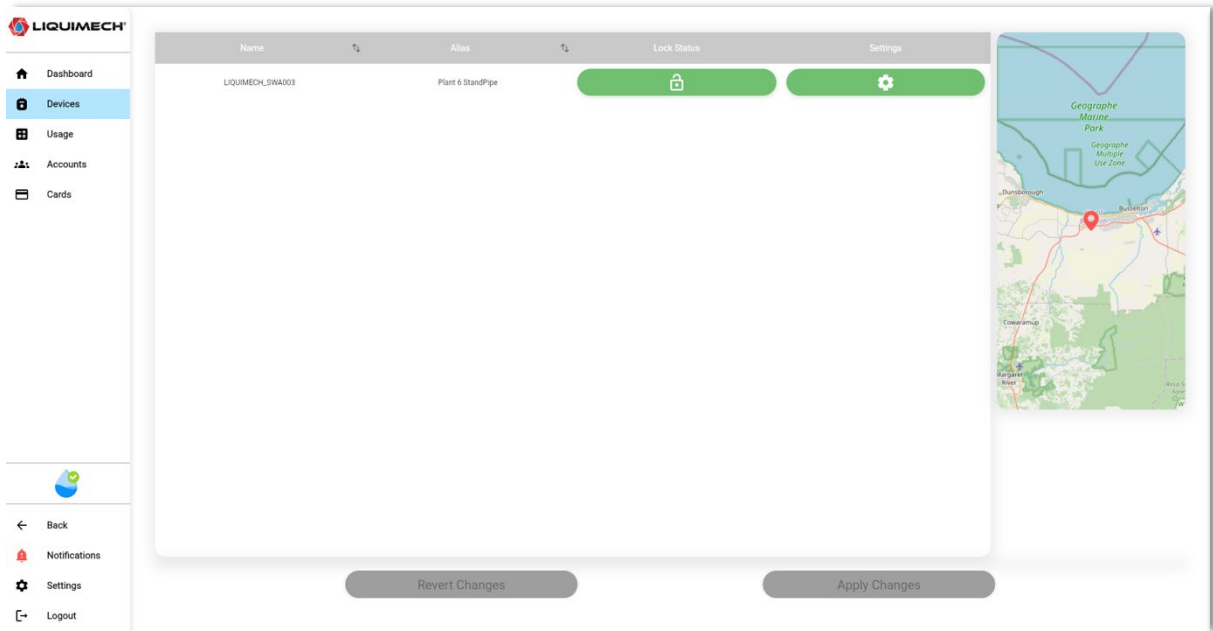


Figure 28: Devices Screen.

Selecting the settings shows the following dialog box, where the alias, wait time, run time, restart and emergency access options can be configured.

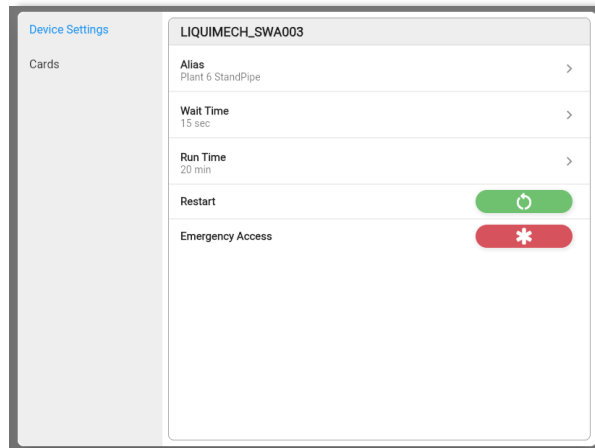


Figure 29: Device Settings.

- ❑ Wait time: The time that the field device waits for a start button press after the user authenticates (tags on) before it times out.

Example scenario:

Consider that the wait time is set to 30 seconds. In order to use the system, an operator must swipe their card on the swipe card reader and then press the start button.

If they swipe the card but do not press the button within that time, the operation times out. They then have to re-authenticate by swiping again.

- ❑ Run time: The maximum time that a fill process runs before it automatically stops. This is a safety mechanism.

Example scenario:

Consider that the run time is 20 minutes. When a fill process is underway, if a worker does not stop it after that time, the field device automatically stops it instead. It is necessary to set the run time to a value that will accommodate most fill operations.

However, if a large fill needs to be made without interruption, then the run time can be changed accordingly.

The second menu allows the modification of which cards have access to the device. The list of allowed cards is shown in the left column, and the remaining company cards are shown on the right.

To add/remove cards, simply select the relevant card, and click on the arrow indicating the list where the card is to be moved.

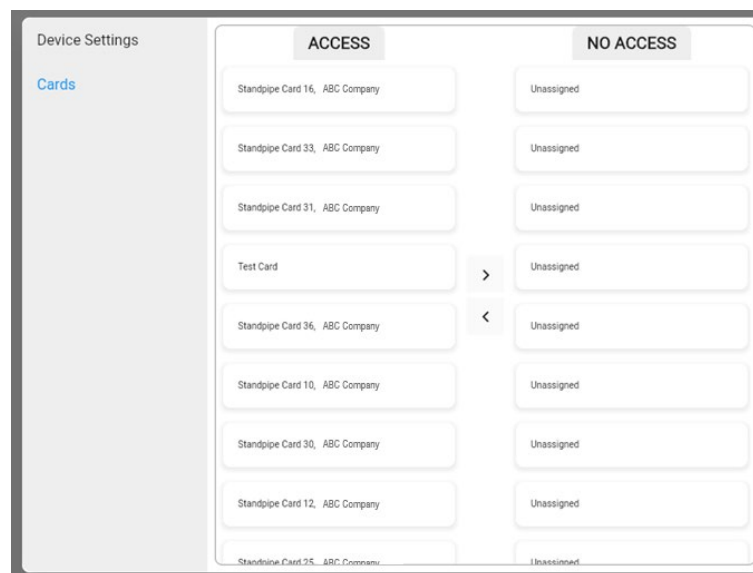


Figure 30: Second menu to modify card access.

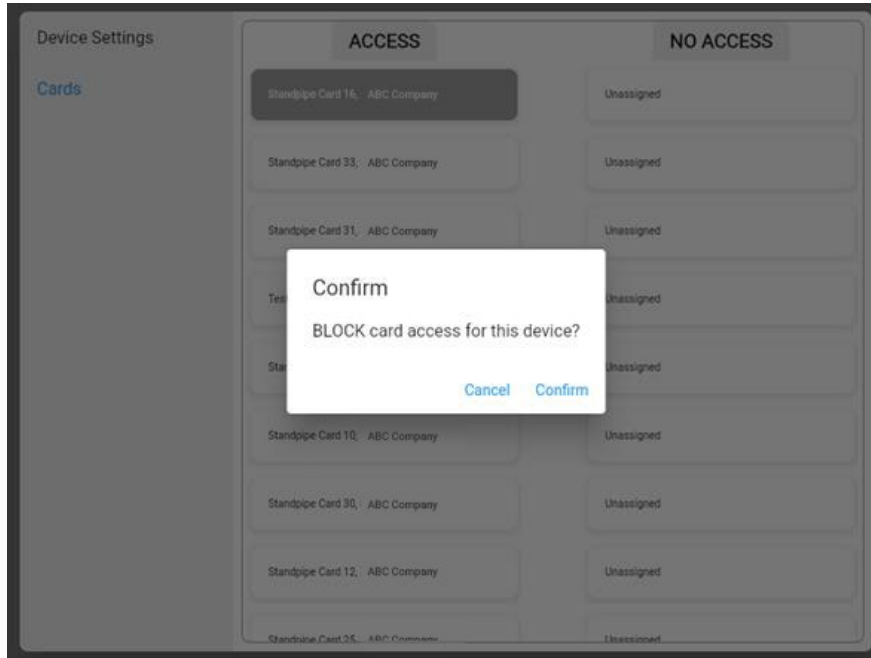


Figure 31: A dialog box is shown to confirm the card modification.

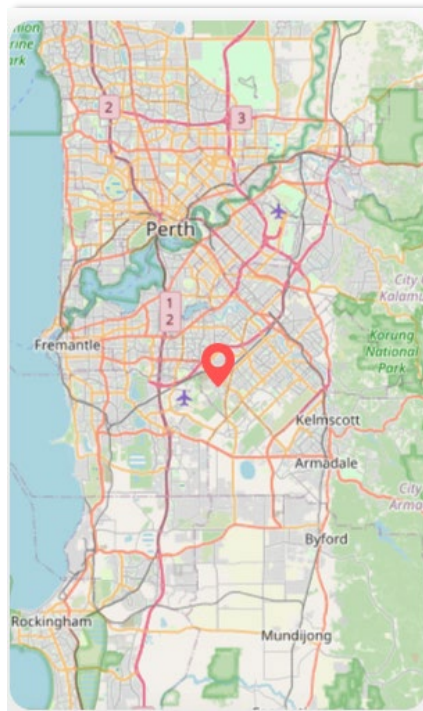


Figure 32: Location data

If a location module is installed on the device, it transmits location data, which is displayed here. If no module is installed, the location data will not be shown.

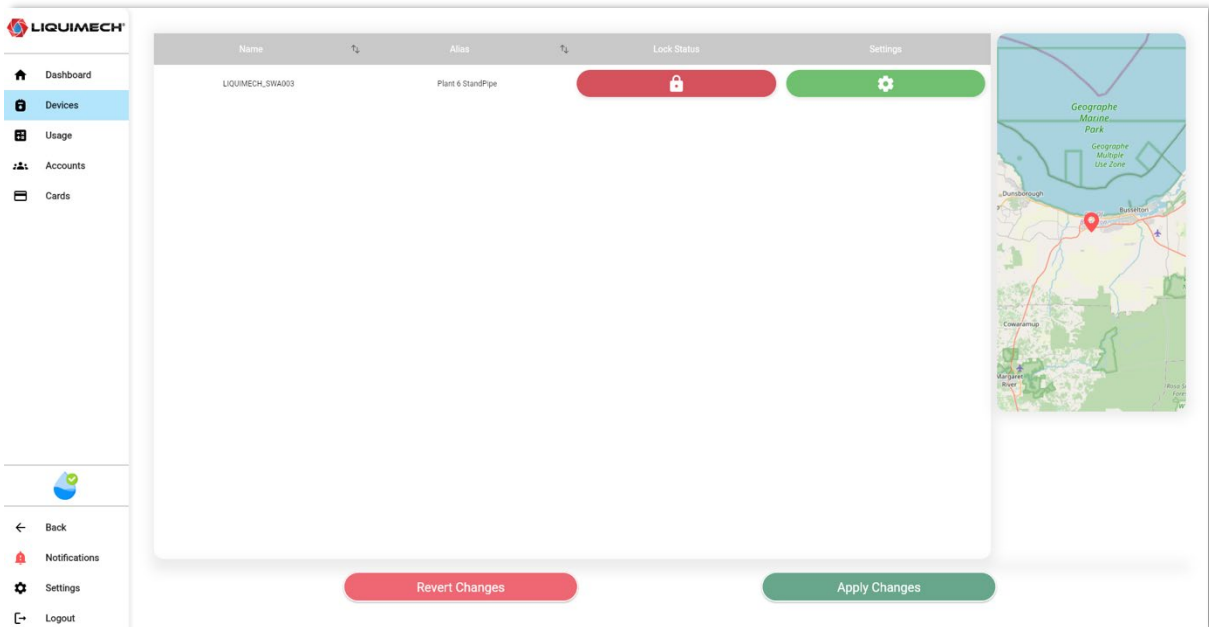


Figure 33: Devices screen with apply and revert buttons.

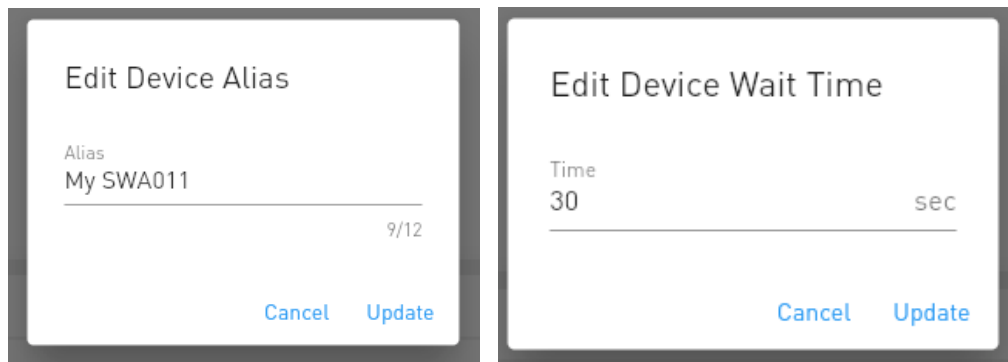
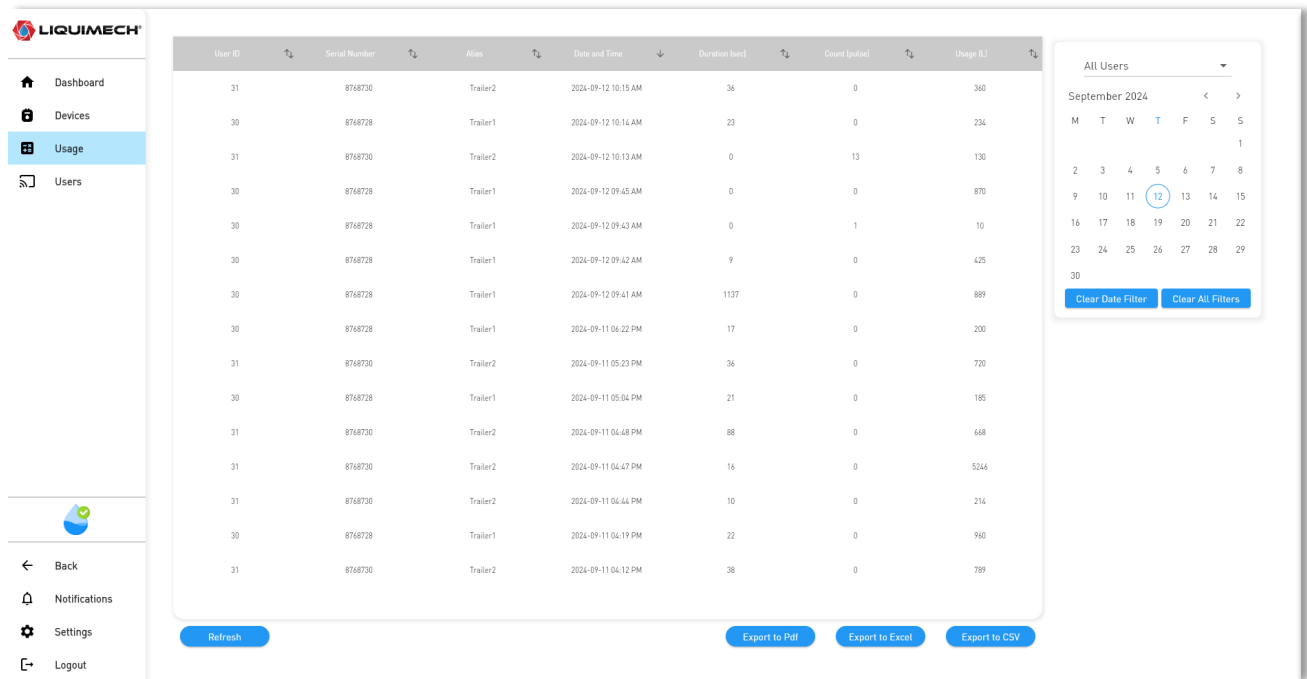


Figure 34: Alias and Wait Time Screen during update.

3.11. Usage Screen

Selecting the usage button navigates to the usage screen, where all historic transactions for the device can be viewed.



The screenshot displays the LIQUIMECH Usage screen. On the left is a sidebar menu with options: Dashboard, Devices, Usage (selected), and Users. Below the menu are icons for Back, Notifications, Settings, and Logout. The main area contains a table with the following columns: User ID, Serial Number, Alias, Date and Time, Duration (sec), Count (pulse), and Usage (L). The table lists 20 transaction records. At the bottom of the table are buttons for Refresh, Export to Pdf, Export to Excel, and Export to CSV. On the right side, there is a filter widget with a dropdown for 'All Users', a calendar for 'September 2024' (with the 12th highlighted), and buttons for 'Clear Date Filter' and 'Clear All Filters'.

User ID	Serial Number	Alias	Date and Time	Duration (sec)	Count (pulse)	Usage (L)
31	8768730	Trailer2	2024-09-12 10:15 AM	36	0	360
30	8768728	Trailer1	2024-09-12 10:16 AM	20	0	234
31	8768730	Trailer2	2024-09-12 10:13 AM	0	13	130
30	8768728	Trailer1	2024-09-12 09:45 AM	0	0	870
30	8768728	Trailer1	2024-09-12 09:43 AM	0	1	10
30	8768728	Trailer1	2024-09-12 09:42 AM	9	0	425
30	8768728	Trailer1	2024-09-12 09:41 AM	1137	0	889
30	8768728	Trailer1	2024-09-11 06:22 PM	17	0	200
31	8768730	Trailer2	2024-09-11 05:23 PM	36	0	720
30	8768728	Trailer1	2024-09-11 05:04 PM	21	0	185
31	8768730	Trailer2	2024-09-11 04:48 PM	88	0	468
31	8768730	Trailer2	2024-09-11 04:47 PM	16	0	524
31	8768730	Trailer2	2024-09-11 04:44 PM	10	0	214
30	8768728	Trailer1	2024-09-11 04:19 PM	22	0	960
31	8768730	Trailer2	2024-09-11 04:12 PM	38	0	789

Figure 35: Usage screen.

Each transaction record includes the following details:

- The ID of the user, card, or tag used to make the transaction.
- The amount of usage, measured in litres.
- The date and time of the transaction.
- The duration of the usage.
- The pulse count from the sensors.

Note: To the right of the table, there are filters for time and user, allowing you to view specific transactions based on these criteria. The calendar widget enables the selection of a specific time frame.

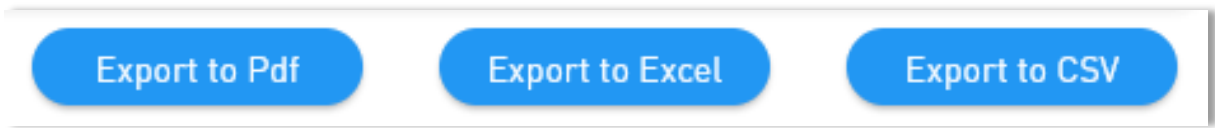


Figure 36: Usage screen: buttons below the table allow you to export the displayed data in PDF, Excel, or CSV formats.

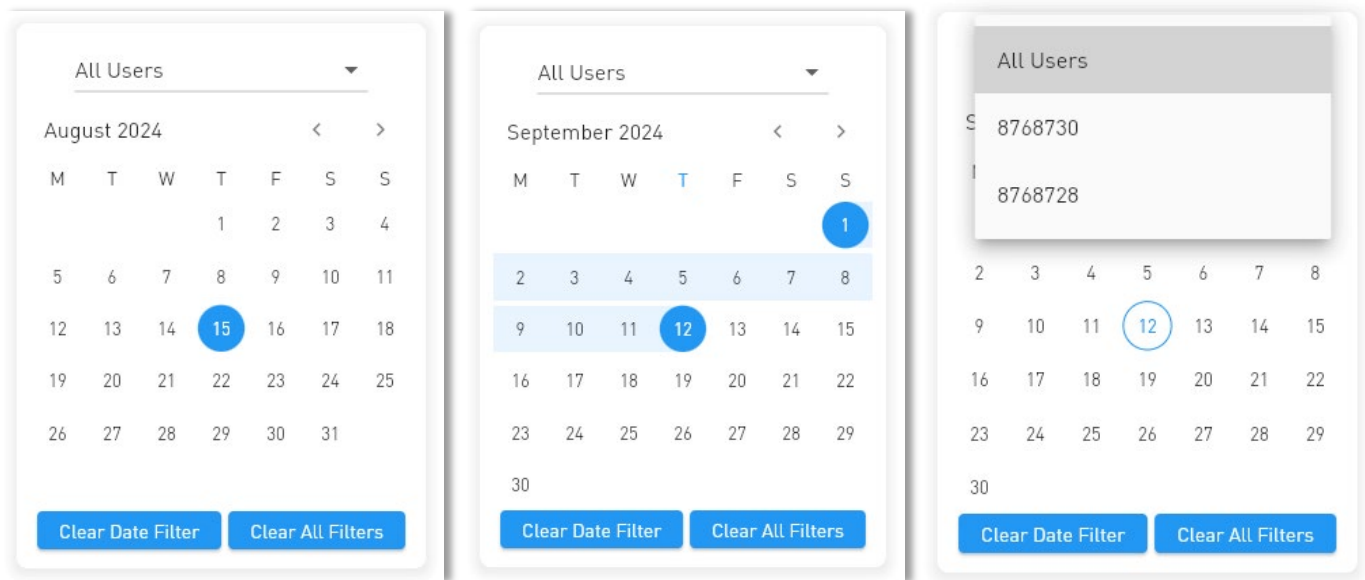


Figure 37: You can also apply user and time frame filters using the calendar widget to further refine the data.

3.12. Account Screen

Selecting the 'Accounts' option navigates to the accounts page, where all the registered accounts are shown.

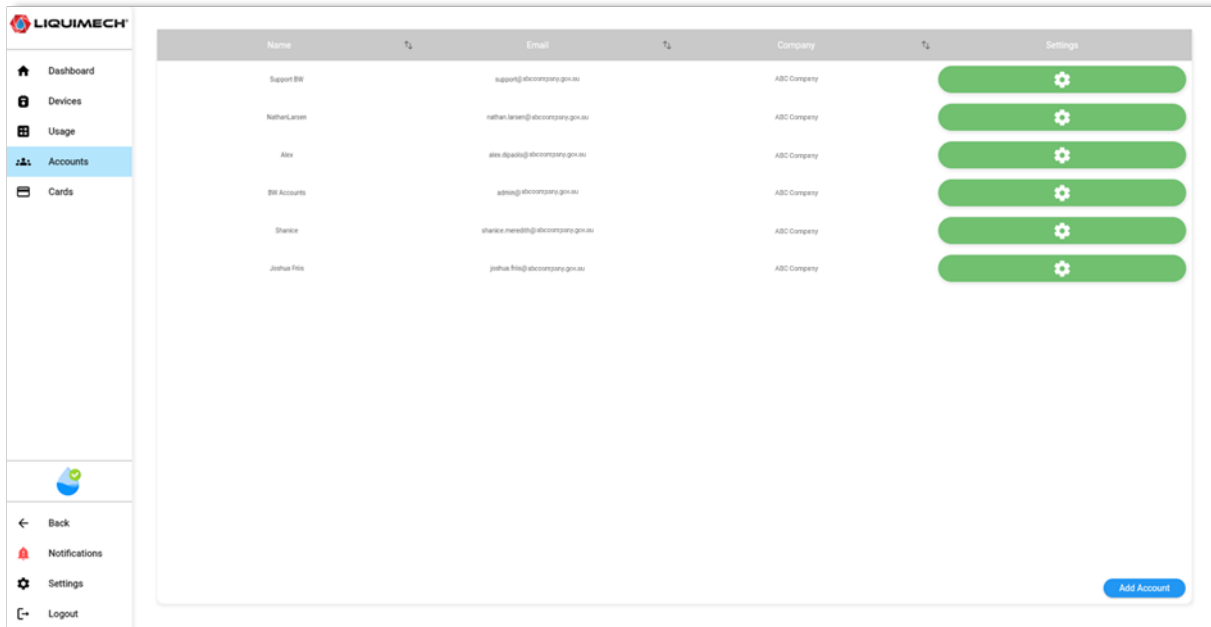


Figure 38: Account screen

Selecting the settings button shows a dialog box where the username, company, and access level of the account can be modified.

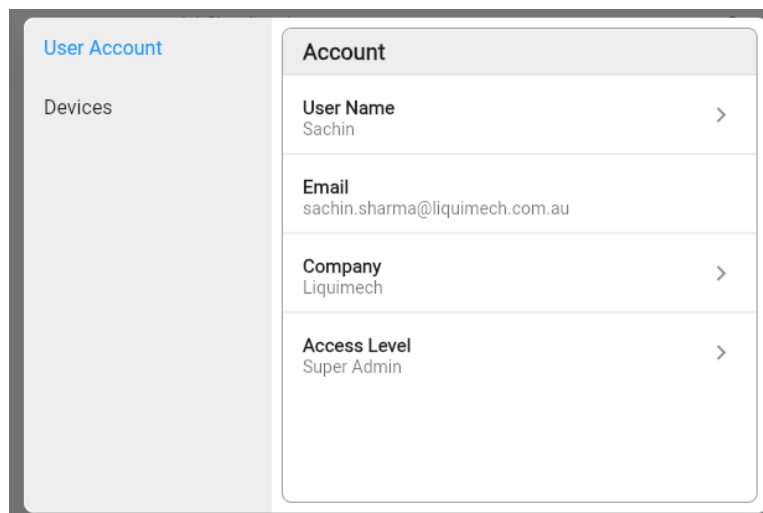


Figure 39: Settings' dialog box

The devices sub-menu shows the list of devices that are available to the account.

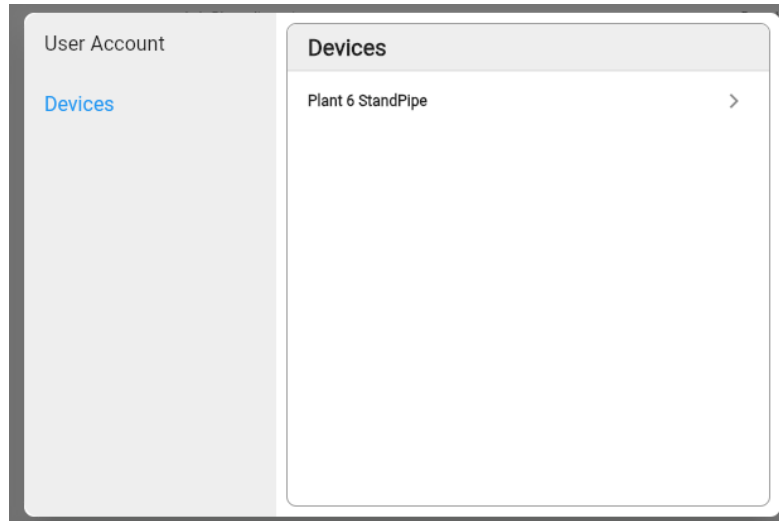


Figure 40: Sub-menu with the list of devices

To modify an account's access to a device, select the relevant device, which will display a dialog box to adjust whether the account has access to the device.

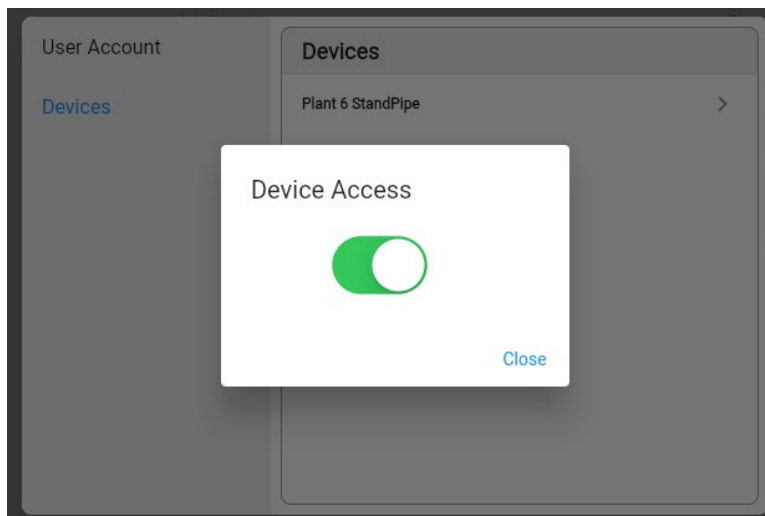
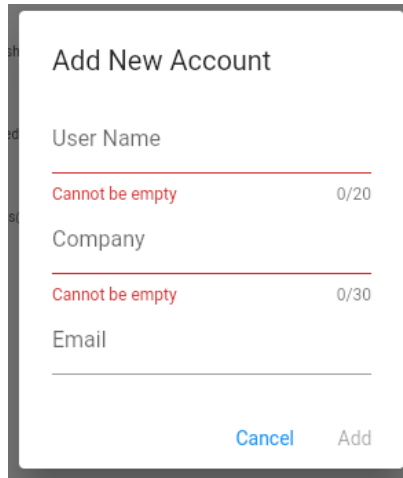


Figure 41: Dialog box to adjust access to the device.

Selecting the 'Add Account' button shows a dialog where a new account can be created.



Add New Account

User Name
Cannot be empty 0/20

Company
Cannot be empty 0/30

Email

Cancel Add

Figure 42: Dialog box to create a new account.

If a new user has been added, they will receive an email notifying them about their access.

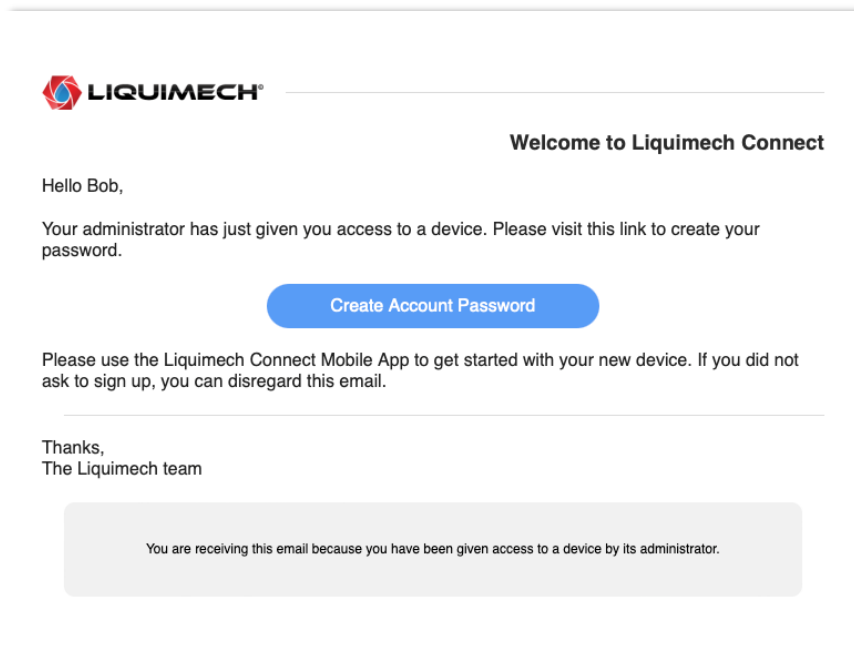


Figure 43: Email notification sent to the newly added user.

3.13. Cards Screen

Selecting the card's tab on the sidebar navigates to the cards page.

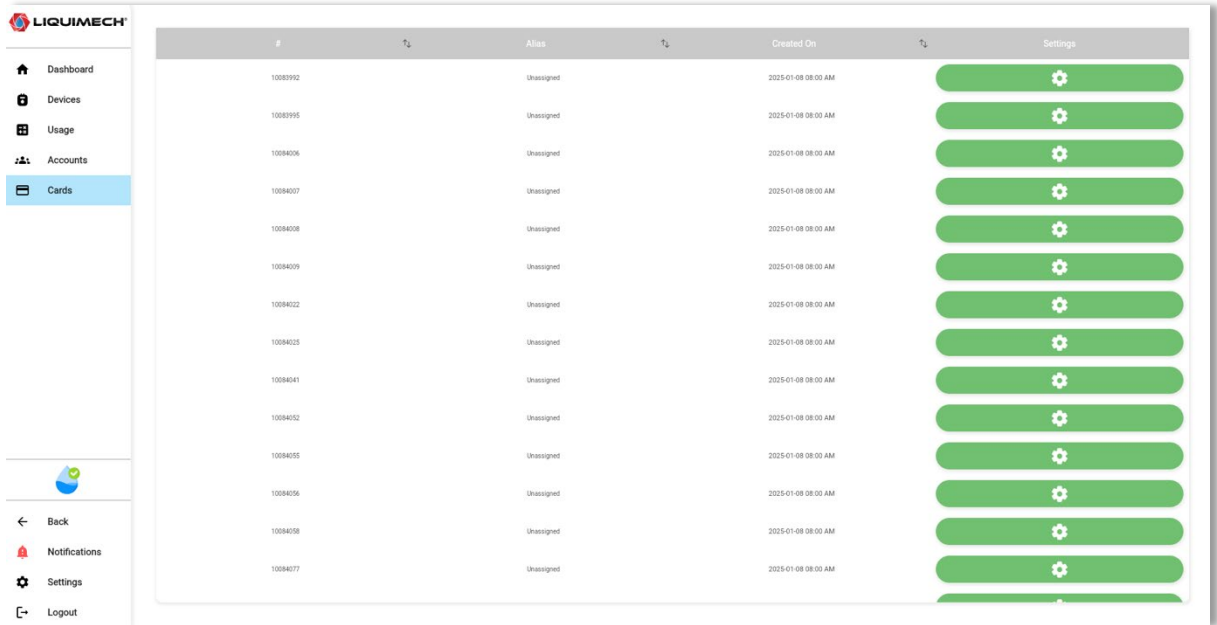


Figure 44: Cards screen

Selecting the option button shows the following dialog, where the alias and the company of the card can be modified.

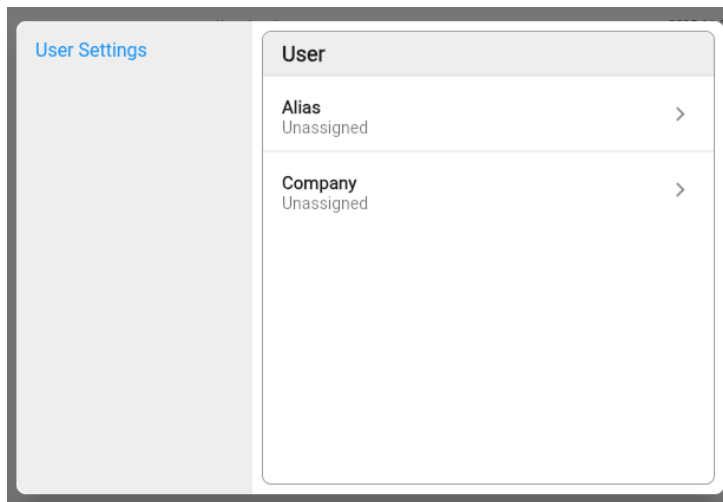
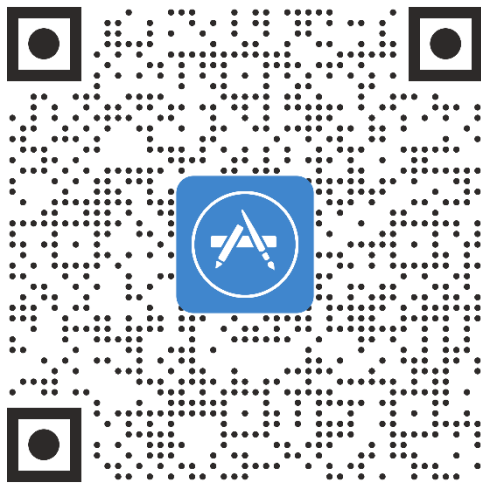


Figure 45: Dialog box to modify alias and company.

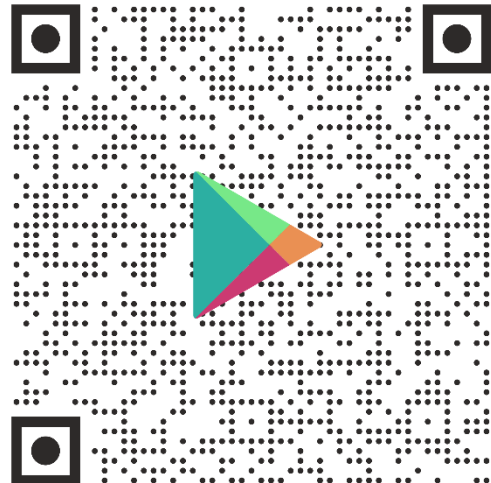
4. Liquimech Connect Mobile App: Getting Started

4.1 Downloading

Download the **Liquimech Connect** Mobile App from the App Store (iOS) or Google Play Store (Android).



App Store



Google Play Store

5. Liquimech Connect Mobile App: Functionalities

5.1. Login Screen

The app's login screen allows users to sign in, recover forgotten passwords, or create new accounts. Below are screenshots of the respective pages:

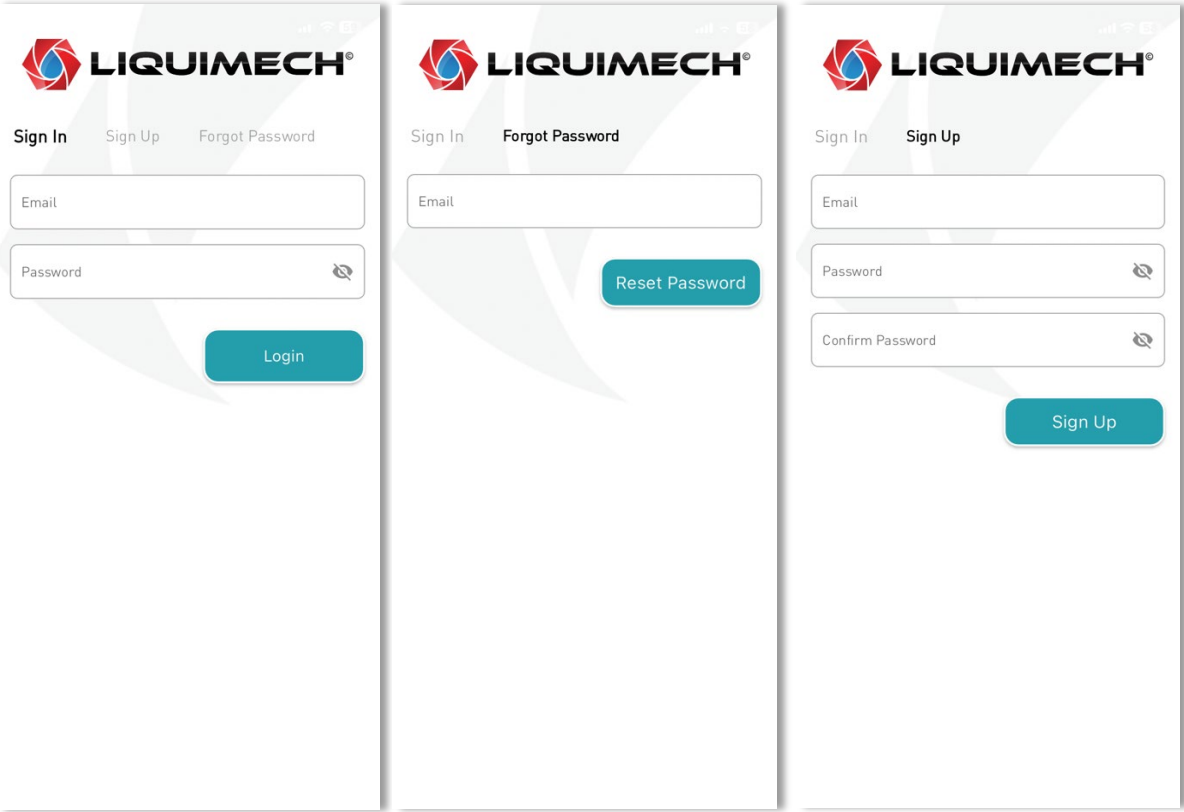


Figure 46: Screenshots of the sign in, forgot password and sign up pages.

Sign-Up

- ❑ Launch the app and sign up.
- ❑ Follow the on-screen instructions to create a new user account.

User Login

- ❑ Launch the app and enter your registered username and password.
- ❑ Tap "Login" to access the app.

Forgot Password

- ❑ If you forget or want to reset your password, tap "Forgot Password" on the login screen.
- ❑ Enter your registered email address and follow the instructions to reset your password.

5.2. Landing Screen

The landing screen consists of the following main sections, navigable via the navigation rail at the bottom of the screen:

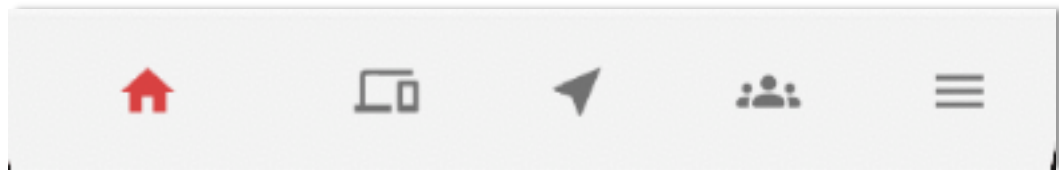
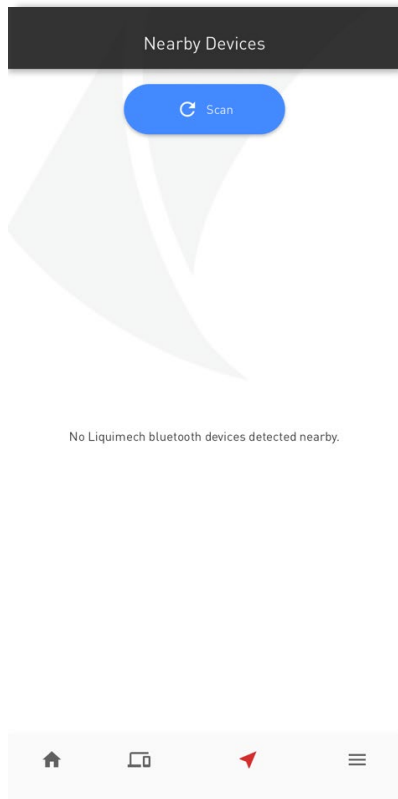


Figure 47: Navigation rail, from left to right: Home, Devices, Nearby Devices, Users and Settings.



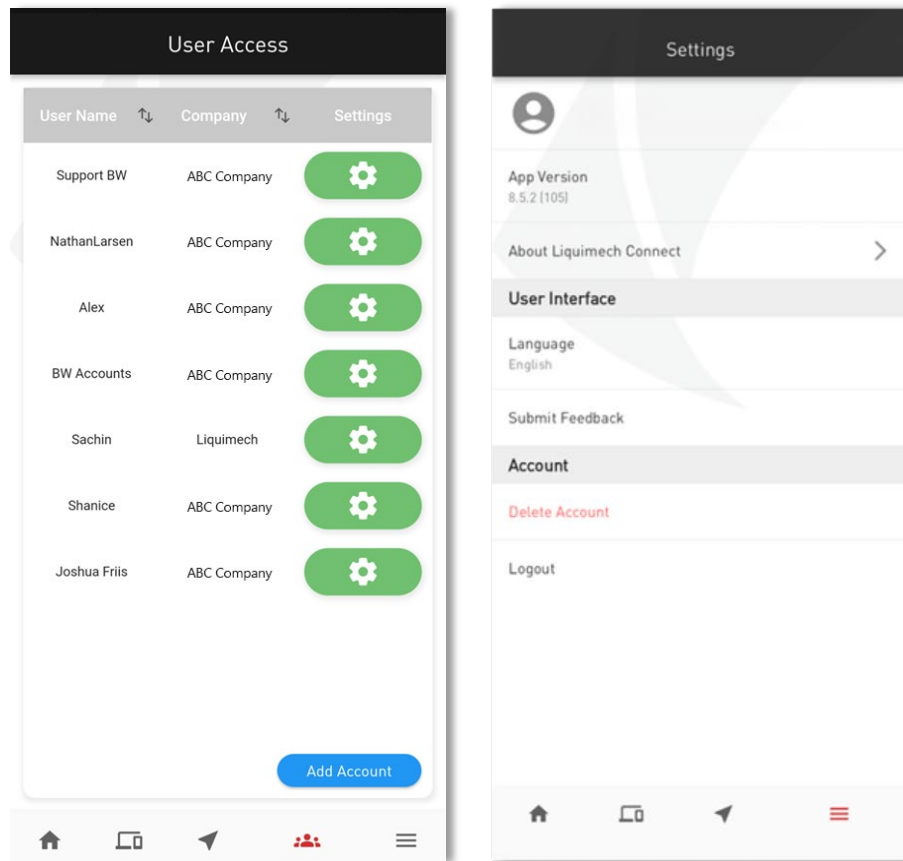


Figure 48: Screenshots showing, in order: Home page, Devices page, Nearby devices page, User Management page, and Settings page.

Smart Water Access System

For smart water access systems, an entry with the following icon will be shown:

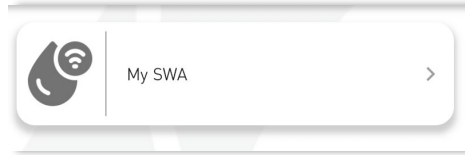


Figure 49: Smart water access icon

- ❑ If the field device supports offline interfacing, the app tries to connect to it if it is nearby.
- ❑ Alternatively, it can also be connected to by navigating to the Nearby Devices page and pressing the scan button.

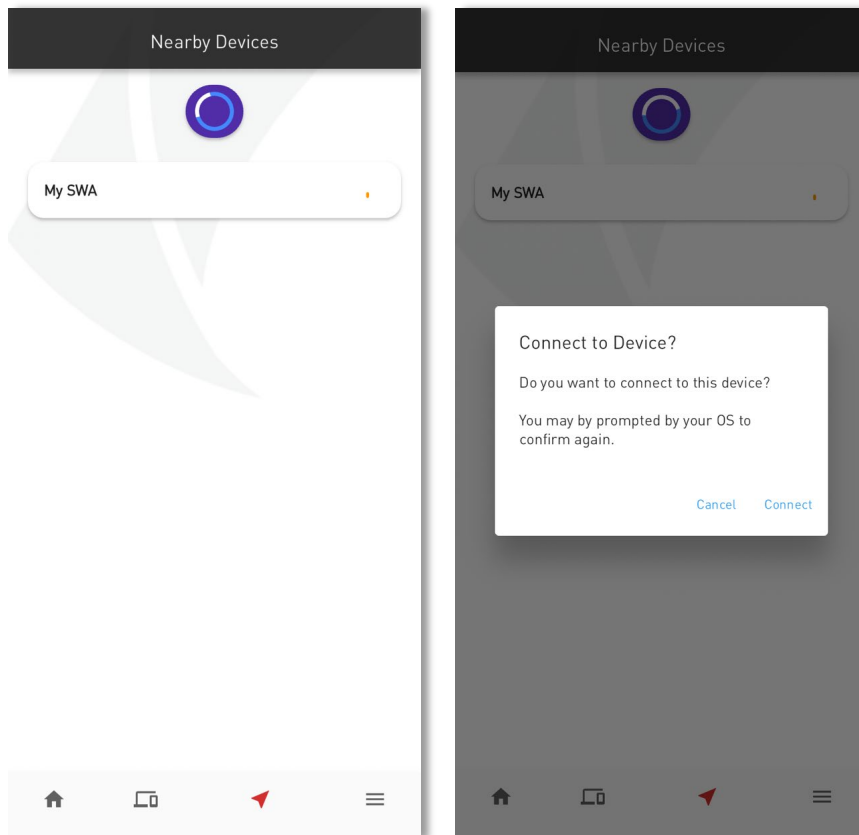


Figure 50: Nearby devices screen and connect to the device confirmation.

- ❑ If the device is nearby, it will appear on the list.
- ❑ When the device entry is tapped, the operator is asked permission to connect to it, after which the following message will be shown.

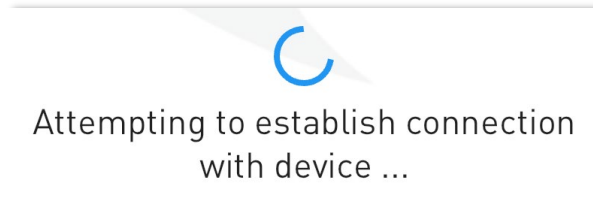


Figure 51: Message after the confirmation.

- ❑ If upon successful connection, or if the field device does not support offline interfacing, the following page is shown:

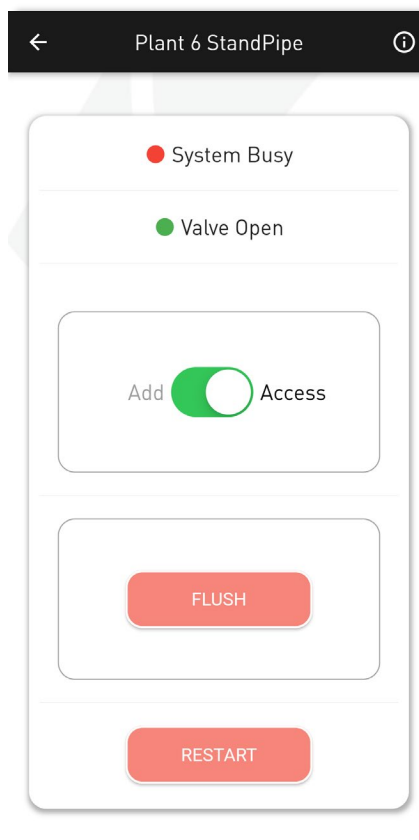


Figure 52: Message after the confirmation.

If the app could not connect to the device, the following screen will be shown. The operator can then try to reconnect by pressing the 'Connect' button.

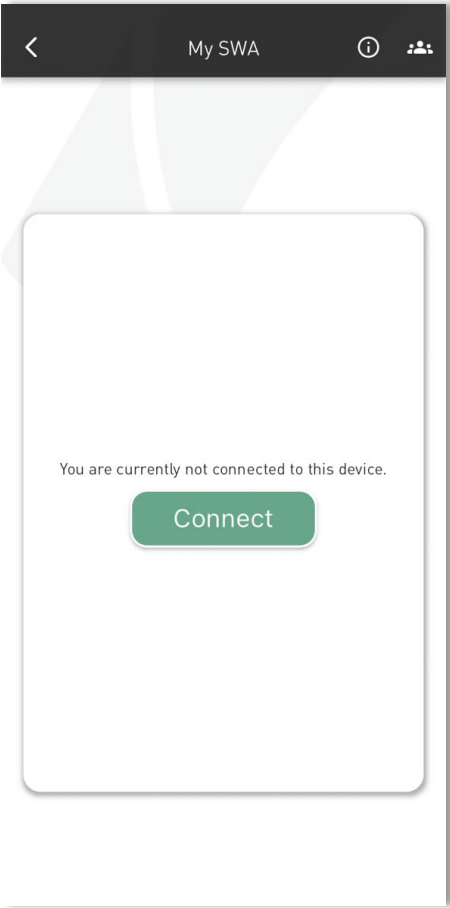


Figure 53: Mobile App cannot connect to the device screen.

In the smart water access page, there are indicators that notify the operator about whether the system and valve status.

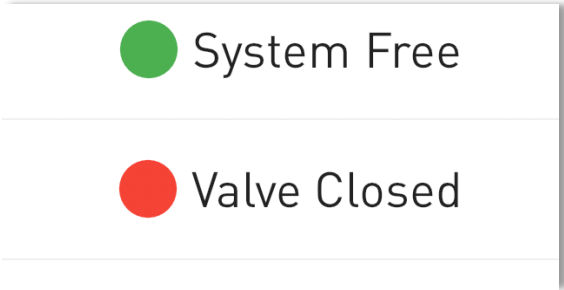


Figure 54: System free and valve closed indicators.

The switch widget allows setting the module into access or add modes.

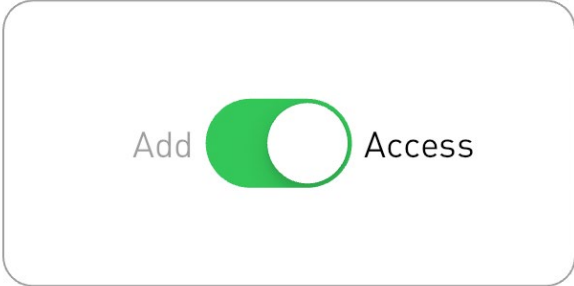


Figure 55: Add and access modes.

- ❑ **Access Mode** This is the normal operating mode, allowing users to swipe their cards and use them for fill processes.
- ❑ **Add Mode** is a setting that enables the system to accept new cards for storage in its local database. This allows a company to roll out new cards for operation and grants them access to the system. An authorised operator can switch the system to Add Mode, add the required cards, and then toggle back to Access Mode.

Note: When adding a new card via the add mode, it will be populated with empty values and be displayed as 'Unassigned' on the cards list of the web app. Any usages made with that card will also be displayed as 'Unassigned'.

It is therefore recommended to follow this process when adding cards:

1. Set the field unit to add mode.
2. Tap a card to grant it access. A new card will be created and shown in the web app.
This new card will have empty details.
3. Edit this new card entry.
4. Repeat for any new cards.

If you have accidentally added multiple cards without editing them, you may have a list of 'Unassigned' cards. To accurately determine the details of the unknown cards, please follow the instructions in Appendix 1.

The Flush Button triggers a manual flush operation on the system.

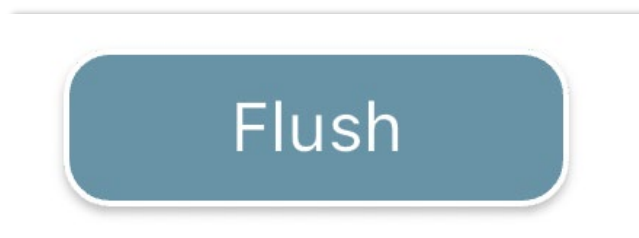


Figure 56: The Flush Button.

5.3. User Account Management

The user management page allows an operator with the right access level to provide access to their device to other users.

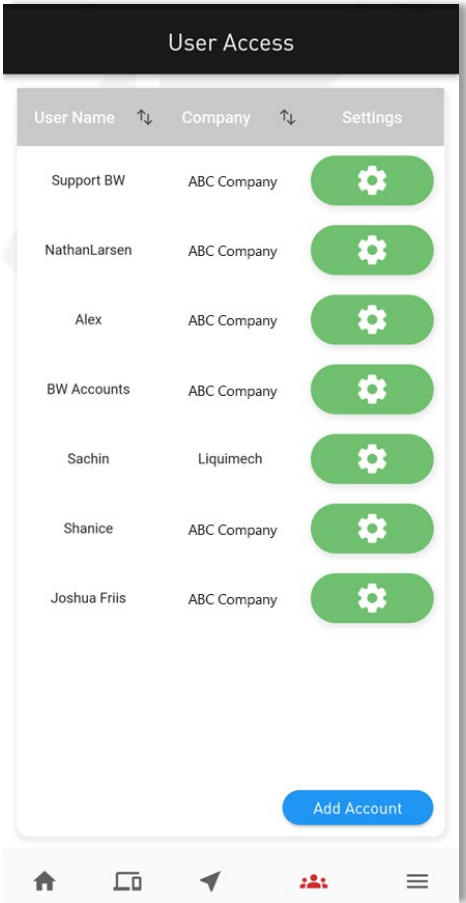


Figure 57: User access screen.

It has a similar layout to the user management features of the web app.

The username, email, and access level can be entered. A target operator may not be given an access level equal to or greater than the access level of the operator using the app.

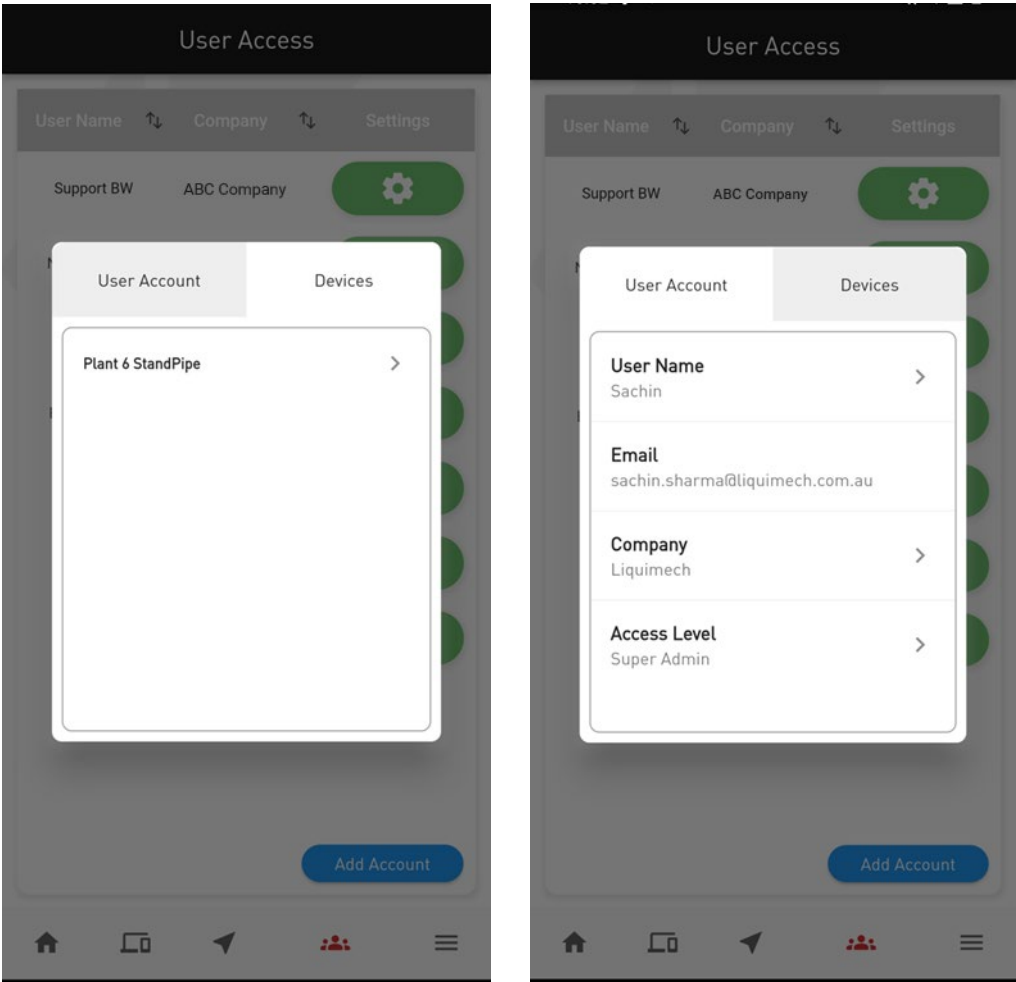


Figure 58: User access screens with a dialog box for user account and devices.

Access levels

The following table lists all the access levels:

Access Level	Access Title	Description
1	Super-admin	Complete system access with user management capabilities. Usually, the account that Liquimech hands over the product to.
2	Admin	Can modify system settings and view all user activities. Usually delegated by the super-admin to perform day-to-day tasks.
3	Technician*	Limited permission to change settings; can view system status only.
4	Operator*	Basic day-to-day access; can view system status only.

***Note:** Depending on the company's organisational structure and the field device's capabilities, a technician and operator may have essentially the same features. For the purposes of most organisations, both access levels may indicate accounts with read-only access.*

Note: When a new user is added to a device, they will receive an email notification about their new device access. Existing mobile app users will not receive this email; instead, the newly added devices will automatically appear in their device list.

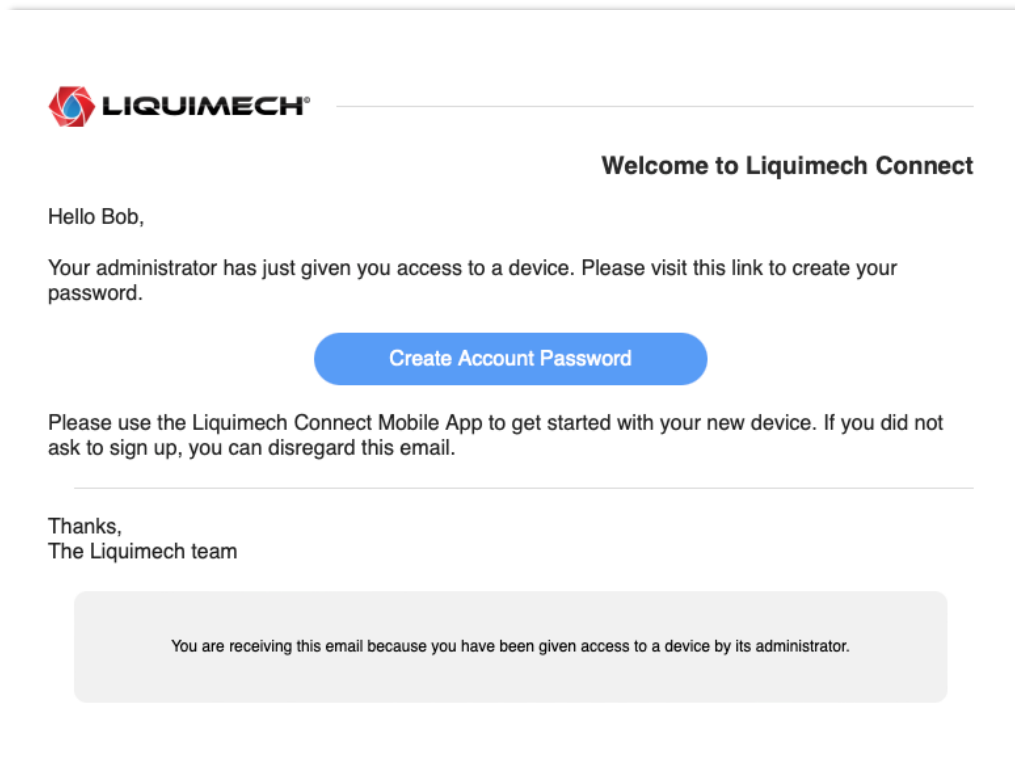


Figure 59: Email notification on new device access.

Appendices

Appendix 1: Modifying an 'Unassigned' Card

The identity of an unassigned card can be determined through the following methods:

- a. **The created time** (the time when the card was registered in the system):
Each card entry in the cards table has a field that shows when that card was registered in the system.

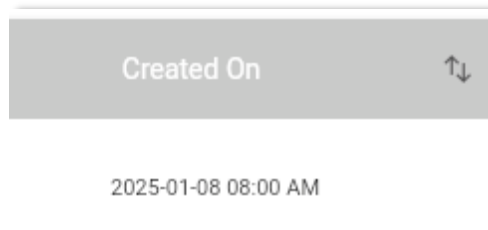
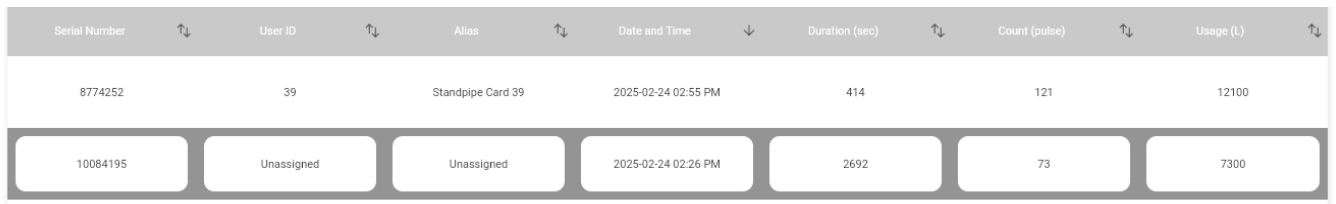


Figure 60: The time when the card was registered in the system.

This time can be used to determine which card was added, and its details (i.e., alias, company) can be edited.

- b. **Comparing the usages made through the card:**



Serial Number	User ID	Alias	Date and Time	Duration (sec)	Count (pulse)	Usage (L)
8774252	39	Standpipe Card 39	2025-02-24 02:55 PM	414	121	12100
10084195	Unassigned	Unassigned	2025-02-24 02:26 PM	2692	73	7300

Figure 61: Card list screen.

If a usage is made with an unassigned card, its serial number can be compared with the cards list to determine which card was used.

From the transaction table, choose a transaction with the unassigned details:

10084195	Unassigned	Unassigned	2025-02-24 02:26 PM	2692	73	7300
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Figure 62: Transaction table screen.

Then from the cards table, look up the card with the matching serial number (10084195, in this example) and update its details accordingly.

10084195	Unassigned	Unassigned	Unassigned	2025-01-08 08:00 AM	
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Figure 63: Cards table screen.



You Define, We Design