Technical Documentation

SECON-X

SECON-Client User (local access)

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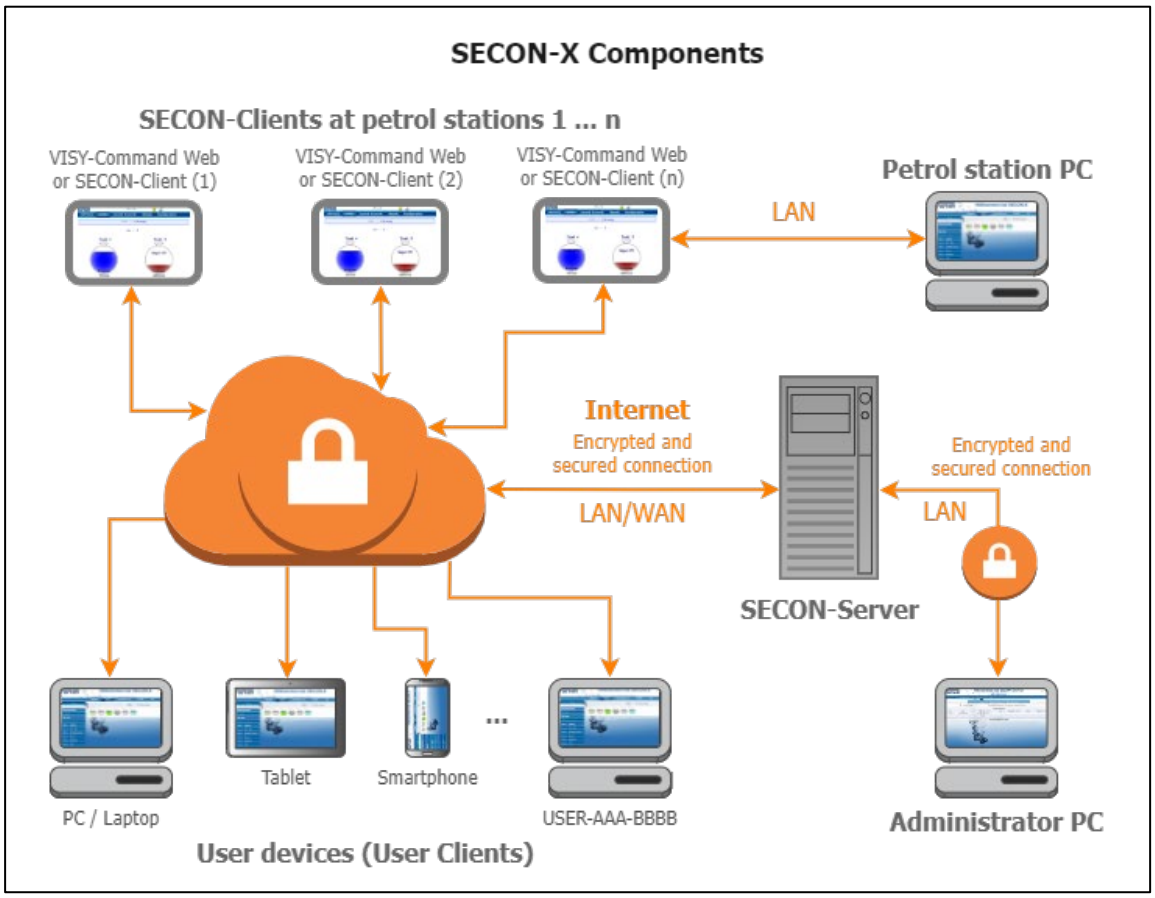
1 Overview

SECON-X is a universal hardware-software network system for recording, evaluating and displaying gas station data. The system performs the following tasks: Worldwide data access with web interface, local and remote display, remote evaluation, data backup (local and remote), remote diagnosis, and universal data format (XML).

At each single petrol station, the data is recorded, displayed and made available locally with one **VISY-Command Web** or by a combination of **VISY-Command/VAPORIX-Control and SECON-Client**. A **petrol station PC** connected to the LAN serves as a local application and the **SECON-Server** is used for the worldwide transmission of the data. The data is transmitted to the end devices (user clients) by a protected HTTPS connection.



☞ *The term "SECON-Client" is used synonymously for the devices SECON-Client with VISY-Command/VAPORIX-Control and for the VISY-Command Web.*

☞ *A network connection is required for the SECON-X components.*

☞ *The access to the SECON-Server should preferably be done with the Internet browsers Mozilla Firefox, Google Chrome, or Apple Safari.*

☞ *For the web access to the SECON Server or SECON Client, its IP address and the access data (user name and password) are required.*

1.1 SECON-X Documentation

This manual "**SECON-Client User (local access)**" describes the functions of the SECON-Client device when the device is used locally on site.

Other manuals of the SECON-X system are:

SECON-Client (hardware device)	Art. no. 350076
SECON-Client Administrator (local and remote access)	Art. no. 350340
SECON-Client User (remote access)	Art. no. 350175
SECON-Server Installation	Art. no. 350112
SECON-Server Administrator	Art. no. 350088
SECON-Server User	Art. no. 350377
SECON-X Autocalibration	Art. no. 350342
SECON-X Reconciliation	Art. no. 350344
VAPORIX Flow/Control	Art. no. 207083
VISY-Command	Art. no. 207184
VPS Pressure Sensors	Art. no. 350204

1.2 Safety Instructions

The SECON-X system is intended for the display, evaluation and storage of petrol station data. Observe and follow all product safety notes and operating instructions. The manufacturer accepts no liability for any form of damage resulting from improper use.

The SECON-X system has been developed, manufactured and tested in accordance with the latest good engineering practices and recognised technical safety regulations. Nevertheless, the system may be a source of danger. The following safety precautions must be observed to reduce the risk of injury, electric shocks, fire or damage to the equipment:

- Do not change or modify the system or add any equipment without the prior consent of the manufacturer.
- Only use original parts. These comply with the technical requirements specified by the manufacturer.
- The installation, operation and maintenance of the devices may only be carried out by qualified personnel.
- Operators, installers and service technicians must comply with all applicable safety regulations. This also applies to any local safety and accident prevention regulations which are not stated in this manual.

Not observing these safety instructions result in the risk of accident or damages to the system.

2 SECON-Client Menu Structure

The SECON-Client device has the following main menus:
VAPORIX, **LEVEL**, **Environmental**, **History**, and **Configuration.**

The **lock symbol** indicates the VPN connection to the SECON-Server.

The **eye symbol** indicates the tank truck driver display.

The **alarm icons** are displayed as follows:

The yellow alarm symbol indicates a warning.

The red alarm symbol indicates an error.

The grey alarm symbol indicates that the status cannot be requested.

Alarms can be "**active alarms**" or "**inactive alarms**":

- Active alarms are currently present, confirmed or unconfirmed alarms
- Inactive alarms are expired alarms that have been cancelled by the system.

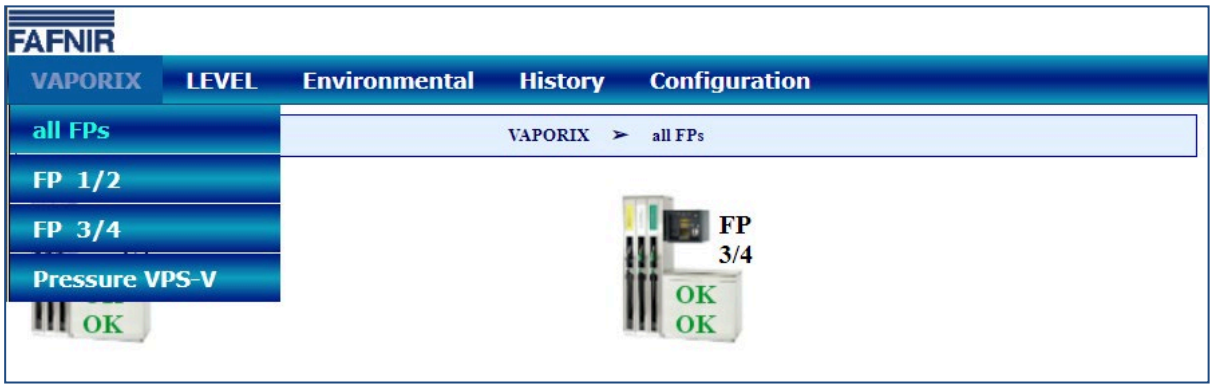
Depending on the registered **services** (SECON-VAP, SECON-VAP+, SECON-LEV, SECON-LEV+), individual functions in the menus are activated or deactivated, see technical documentation:

SECON-Client Administrator, chapter “Services“, art. no. 350340

3 VAPORIX Menu

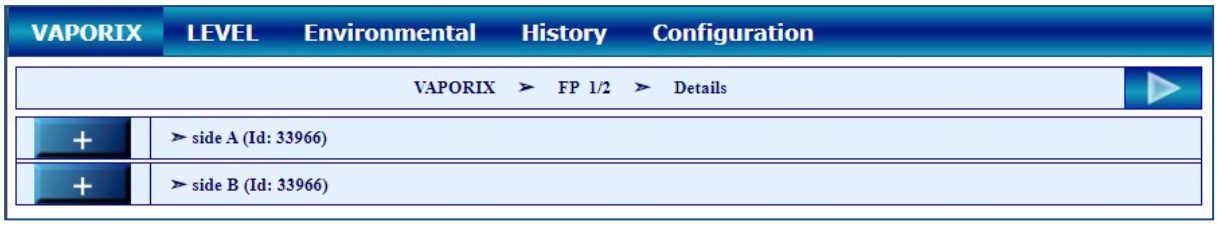
3.1 All Fuelling Points (all FPs)

The main view shows the status of the individual VAPORIX-Control fuelling points.

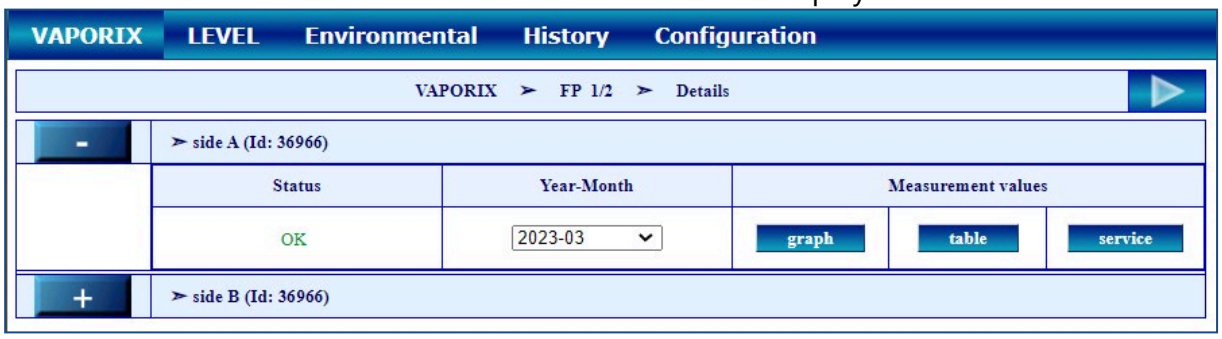


3.2 FP 1/2 …

After selecting a fuel dispenser (e.g. FP 1/2) a window opens showing the two fueling points of this dispenser (side A and B):



With a click on the PLUS sign of a fueling point (e.g. side A), its status, the date and the buttons for the detailed view of the measured values are displayed:



Status: OK, Warning or Error (Fail)

Year-Month: Period of the displayed values

Measurement values:

- Graph: Graphical representation of the recorded data
- Table: Tabular representation of the recorded data
- Service: Tabular representation of the service calls

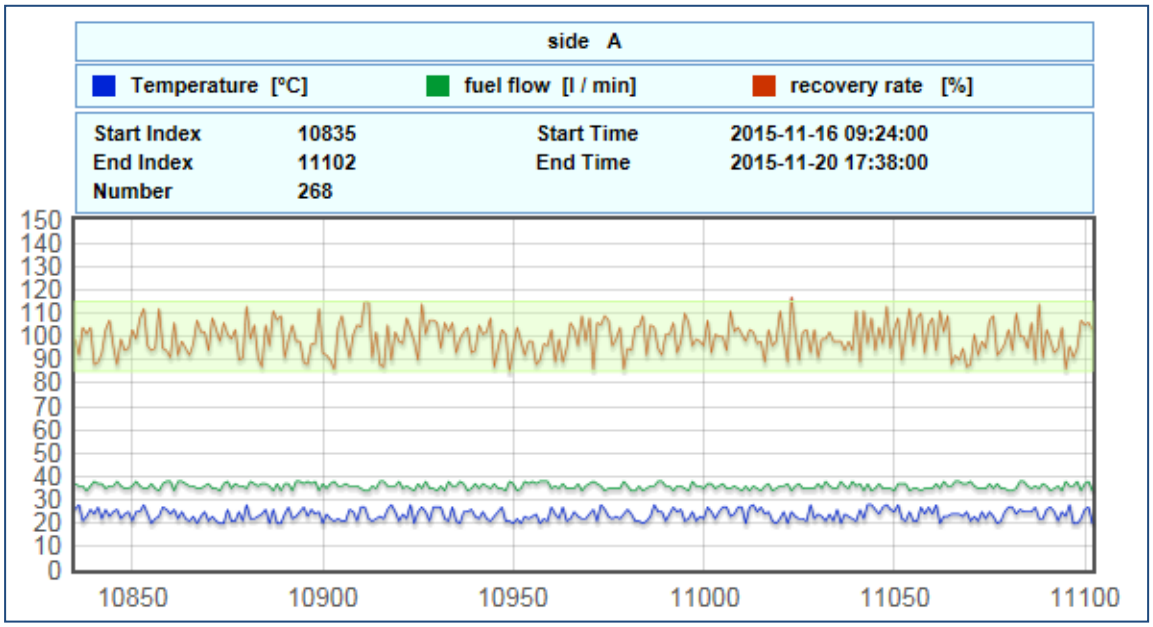


Figure "graph"

VAPORIX	
sensor ID:	33966
Side:	A
start time:	2016-03-07 13:53:00
end time:	2016-03-07 16:57:00
start index:	375
end index:	436
number:	62

No.	index	date	vapour flow	recovery rate	fuel flow	error counter	GK	temperature
1	375	2016-03-07 13:53:00	39	95	41	0	38	13
2	376	2016-03-07 13:56:00	40	102	39	0	50	13
3	377	2016-03-07 13:59:00	39	94	41	0	42	12

Figure "table"

side A » service history			
No.	date	dongle ID	event
24	2016-03-29 08:49:00	404	10
23	2016-03-29 08:38:00	404	0
22	2016-03-29 08:36:00	404	10
21	2016-03-29 08:26:00	404	0
20	2016-03-29 08:25:00	404	10
19	2016-03-29 08:15:00	404	1
18	2016-03-29 08:15:00	404	0

Figure "service":

3.3 VPS-V Pressure Sensor

☞ *The VPS-V pressure sensor is no longer available.*

3.3.1 Country-specific evaluation of the pressure sensor data (AU/IL)

Data

Data from the connected pressure sensors is queried and stored every 30 seconds.

WARNINGS

The pressure sensor data is queried at an interval of 30 seconds. The data is continuously checked for error condition. If such occurs, a WARNING is first generated and remains active until the values no longer correspond to the error condition.

Error type	Condition
DEGRADATION	Half of the pressure readings of the last hour (60/120) must be below -20 mbar or above 7.5 mbar.
LARGE	3 minutes of the pressure readings of the last hour (6/120) must be below -25 mbar or above 12.5 mbar.
NO-TEST	All pressure readings from the last hour (except incorrect measurements) must be within a range of +/- 0.5 mbar and the petrol station must not be in operation (no refuelling).
VAPOUR LEAK	For 23 hours of the day the pressure readings must be within a range of +/- 0.5 mbar and the petrol station is in operation.
SYSTEM ERROR	The pressure sensor cannot be reached for at least 1 hour of the day or supplies incorrect data.

Table 1: Error types WARNINGS (pressure evaluation AU/IL)

WARNINGS are stored in the database with the following information:

Information	Value format
Error type	DEGRADATION, GROSS, NO-TEST, VAPOUR LEAK, SYSTEM ERROR
Start of error state	YYYY-MM-DD hh:mm:ss
End of error state	YYYY-MM-DD hh:mm:ss
Average value	mbar

Table 2: Data structure WARNINGS (pressure evaluation AU/IL)

FAILS

While WARNINGS can occur individually they do not result in a shutdown. Only when a certain number of WARNINGS is exceeded within a specified time, a FAIL state is recognized and a shutdown of the monitored fuelling points is initiated. Attention to a FAIL state is drawn by a visual and acoustic alarm. This must be confirmed manually.

The occurrence of a FAIL state requires the maintenance of the system by a service technician, who can deactivate the FAIL state and reset the shutdown after rectifying the problem.

Error type	Condition
DEGRADATION	One DEGRADATION WARNING must have occurred at least once a day for 7 consecutive days. The shutdown occurs after 30 days.
GROSS	One GROSS WARNING must have occurred at least once a day for 3 consecutive days. Shutdown occurs on the 7th day after the first occurrence.
NO-TEST	No shutdown required.
VAPOUR LEAK	One VAPOUR LEAK WARNING must have occurred at least once a day for 2 consecutive days. Shutdown occurs on the 7th day after the first occurrence.
SYSTEM ERROR	One SYSTEM ERROR WARNING must have occurred at least once a day for 2 consecutive days. Shutdown occurs on the 7th day after the first occurrence.

Table 3: Error types FAILS (pressure evaluation AU/IL)

FAILS are stored in the database with the following information:

Information	Value format
Error type	DEGRADATION, GROSS, VAPOUR LEAK, SYSTEM ERROR
Start of FAILS	YYYY-MM-DD hh:mm:ss
Time of shutdown	YYYY-MM-DD hh:mm:ss
Date of confirmation	YYYY-MM-DD hh:mm:ss
Average value	mbar
Fuelling points to be shut down	Logical numbers of the fuelling points, separated by semicolons

Table 4: Data structure FAILS (pressure evaluation AU/IL)

Daily reports

At each end of the day, a summary for the day with all occurred events and measured values is created. This summary has the following details:

Information	Value format
Start of day	YYYY-MM-DD hh:mm:ss
End of day	YYYY-MM-DD hh:mm:ss
Status of the day	PASS: No errors have occurred. WARNING: At least one WARNING has occurred. FAULT: A FAIL is active, there is the danger of a shut-down. SHUTDOWN: At least one of the monitored fuelling points has been shut down and must be serviced and unlocked by a service technician. NO-TEST: The petrol station is not in the operating state (no refuelling registered; pressure difference is balanced).
Average value	mbar
Maximum pressure	mbar
Minimum pressure	mbar
Types of WARNINGS that have occurred	DEGRADATION, GROSS, NO-TEST, VAPOUR LEAK, SYSTEM ERROR
Types of FAILS that have occurred	DEGRADATION, GROSS, VAPOUR LEAK, SYSTEM ERROR
Time of shutdown	YYYY-MM-DD hh:mm:ss (only when set)
Fuelling points to be shut down	Logical number (only if FAIL is active)
Average value of DEGRA-DATION errors of the day	mbar
Average value of the GROSS errors of the day	mbar
Consecutive days on which one WARNING type has occurred.	n days each for DEGRADATION, GROSS, NO-TEST, VAPOUR LEAK, SYSTEM ERROR

Table 5: Data structure daily reports (pressure evaluation AU/IL)

3.3.2 Alarms and Shutdown by pressure monitoring

Display of alarms

The pressure evaluation in countries with legal required monitoring distinguishes between WARNINGS and FAILS. WARNINGS are temporary error states whose occurrence is registered and stored.

A FAIL state occurs, when the WARNING exceeds a defined limit. An acoustic and visual alarm is output locally. It contains information about the type of error and must be confirmed. The date of the confirmation is stored.

Since a FAIL state sets the petrol station into an alarm state by starting a shutdown process of the fuelling points, this is also indicated with SECON-Server on the web interface of the petrol station, as well as on the web interface of the associated SECON-Client.

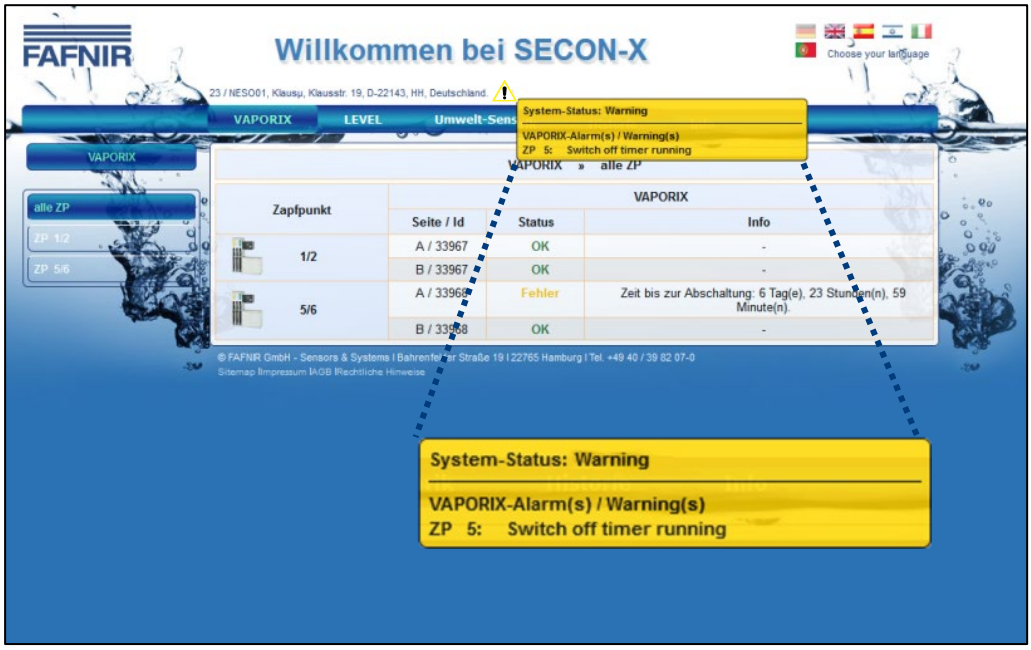
Local display on the touch screen

An alarm window appears on the SECON-Client and an acoustic alarm sounds. By touching the "**Confirm all**" or "**Confirm**" button the alarm is confirmed.

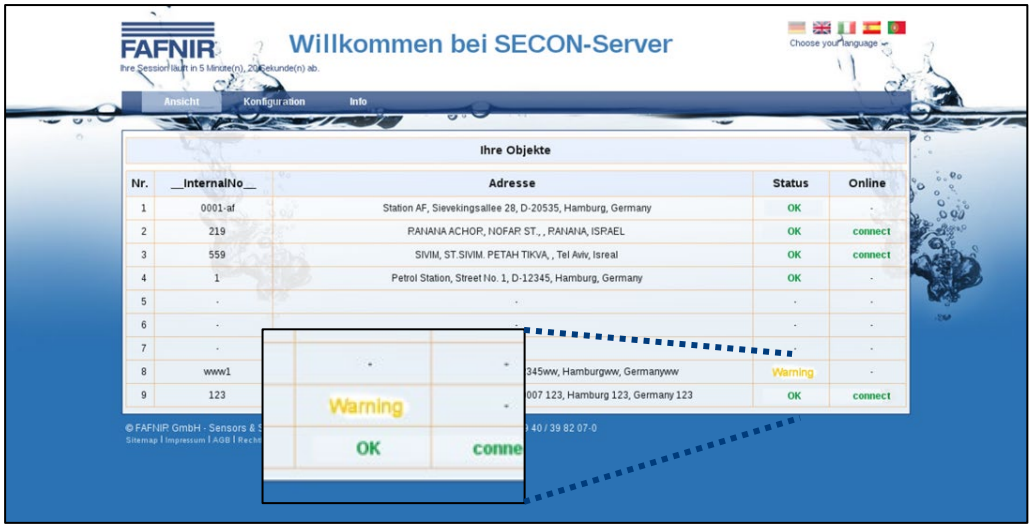
Alarms and Shutdown of SECON-Client (series of pictures)

Web interface

A warning symbol is displayed in the web interface. This remains in place until the error has been rectified by a service technician:



More detailed information is shown if the mouse cursor is moved over the symbol:



Shutdown

A FAIL state always sets a shutdown time that depends on the type of the error. This process is analogous to the shutdown of the individual fuelling points by the VAPORIX-Control but affects all monitored fuelling points.

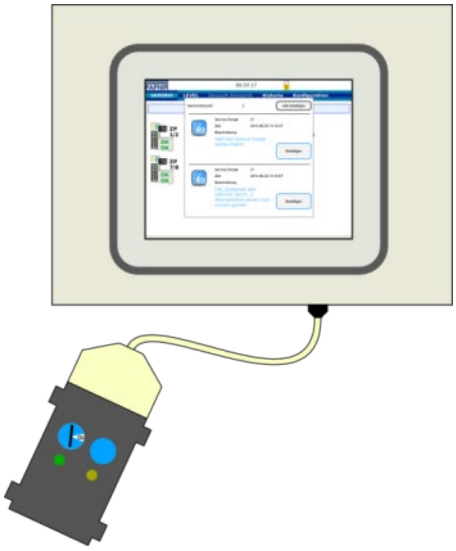
The times of shutdown are displayed on site and in the web interface under the item VAPORIX on the overview of the fuelling points.

The shutdown counter continues to run after the start independently of the SECON-Client. Leaving the error status or shutting down the SECON-Client cannot stop this process. A reset can only be performed by a service technician with a VAPORIX Service Dongle.

Reset of the shutdown counter with the VAPORIX Service Dongle

If the shutdown counter is triggered by pressure monitoring, the counter is not reset individually on the VAPORIX-Controls in the dispensers, but on the SECON-Client for all devices. There is no reset of an individually triggered shutdown on the fuel dispenser.

A reset can only be performed by service technicians who must use a VAPORIX Service Dongle licensed by FAFNIR.

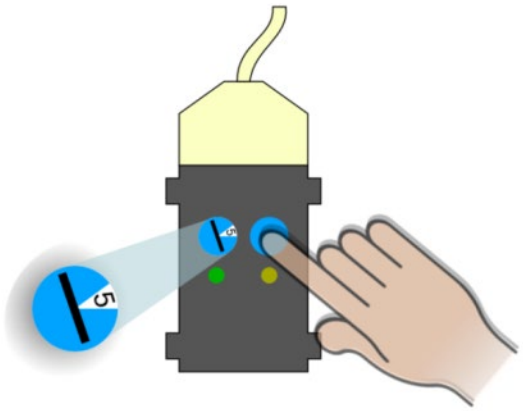


For the reset, the VAPORIX Service Dongle must be connected to the SECON-Client via the adapter cable.

Reset of FAIL conditions SECON-Client (picture series)

The reset with the Service Dongle works only for shutdowns triggered by exceeding pressure limit values.

The Dongle is recognized by the system and a message (1) appears.



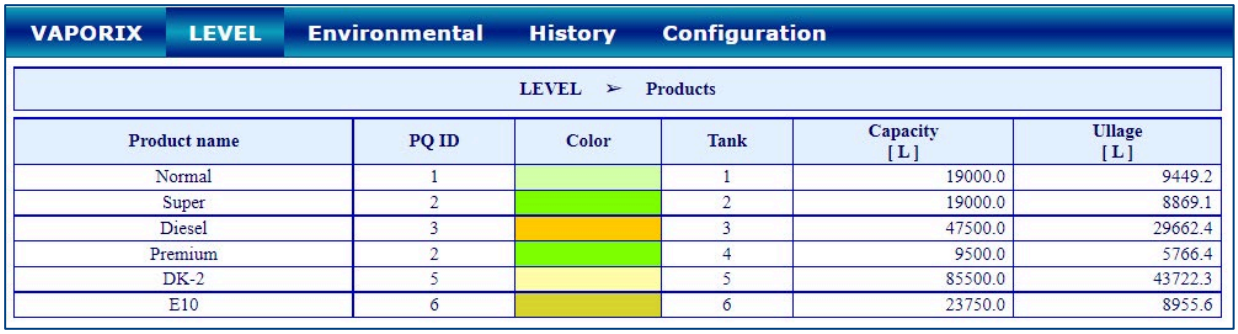
Now the FAIL state can be cancelled and the shutdown can be stopped by turning the switch to position 5 and pressing the button on the dongle.
The reset is confirmed by another message (2).

In the overview of the fuelling points on the screen of the SECON-Client all fuel dispensers with status OK are displayed with the next status update (1 min. interval), unless further shutdowns were initiated directly by the VAPORIX systems. These must be deactivated directly on the fuel dispensers.

4 Level Menu

4.1 Products

In the "Products" submenu, the individual products, product quality ID (PQ ID), and tanks with capacity and ullage are displayed.

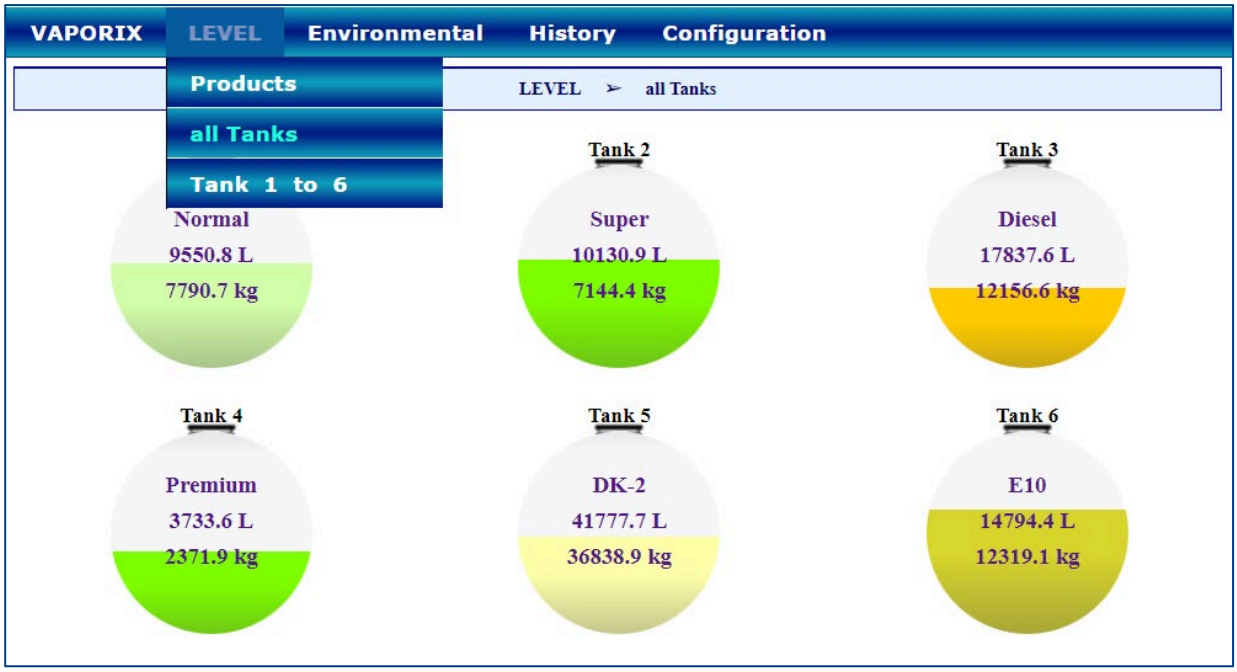


Product name	PQ ID	Color	Tank	Capacity [L]	Ullage [L]
Normal	1		1	19000.0	9449.2
Super	2		2	19000.0	8869.1
Diesel	3		3	47500.0	29662.4
Premium	2		4	9500.0	5766.4
DK-2	5		5	85500.0	43722.3
E10	6		6	23750.0	8955.6

4.2 All Tanks

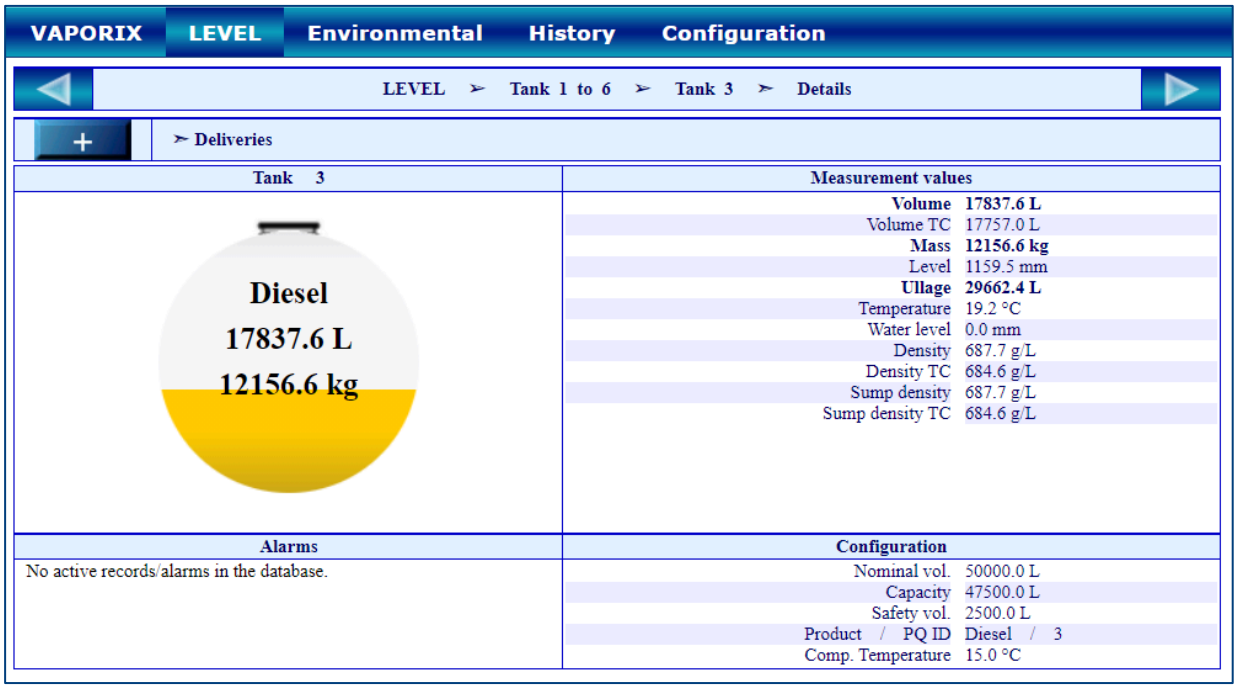
An overview of all tanks with the respective filling levels in the selected unit of measurement is displayed in the "**all Tanks**" submenu.

A maximum of 8 tanks can be shown on the display. If there are more than 8 tanks, these are shown in a 2nd window view.

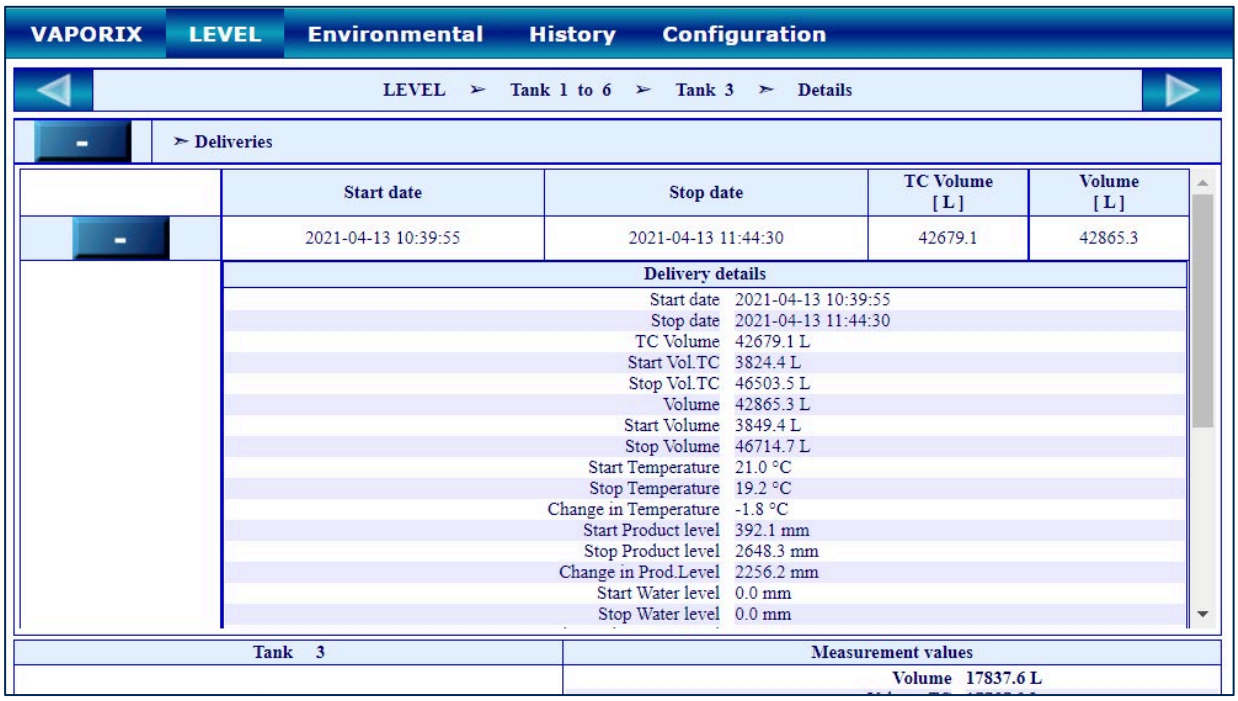


After selecting a specific tank, the submenu for this tank opens in a detailed view "**Tank 1 to ...**".

4.3 Tank 1 to ...

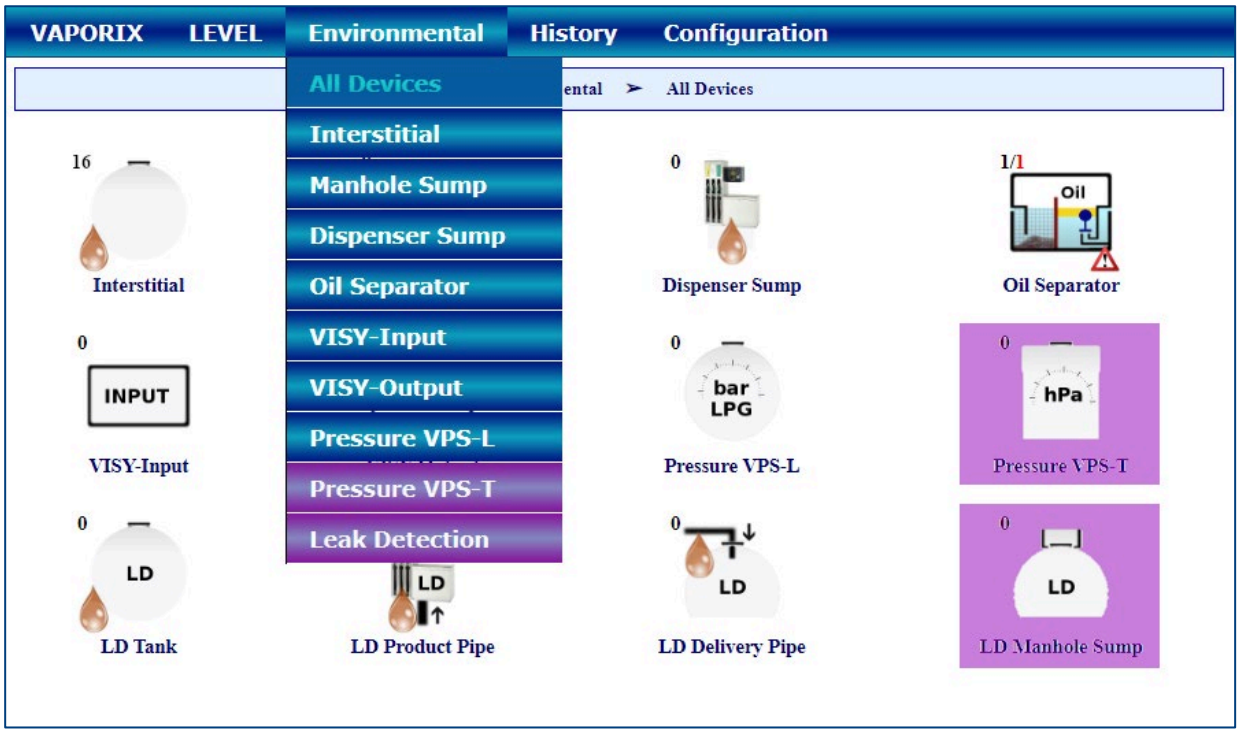


If you click on the PLUS sign of "Deliveries", the delivery details are displayed:



5 Environmental Menu

All sensors belonging to the environmental sensors are displayed here:



☞ *The VPS-T pressure sensors and the LD Manhole Sump leakage detection (marked purple) have been removed from the range and are no longer available.*

5.1 All Devices

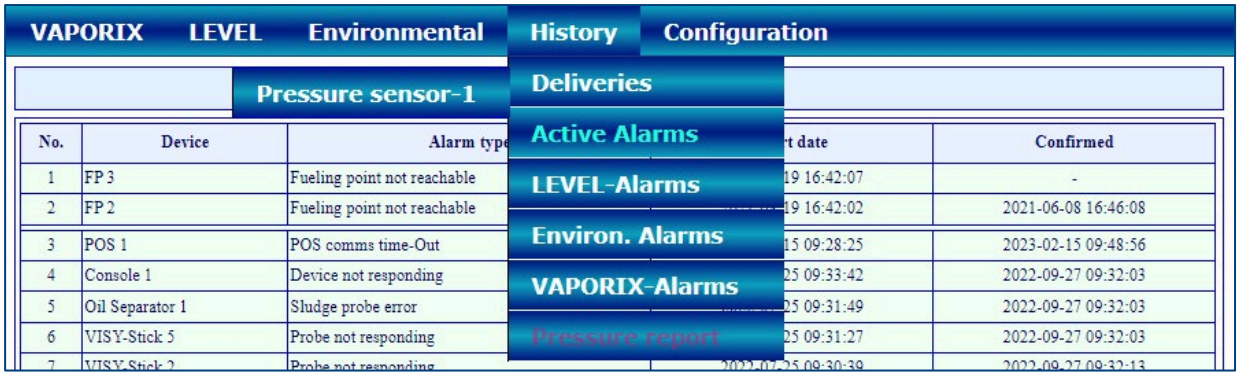
In the "All Devices" view, all environmental sensors are displayed with information on the number of active devices (e.g. 16 x Interstitial).

The following environmental sensors can be selected for a group view and detailed view:

- Interstitial (= VISY-Stick Interstitial)
- Manhole Sump (= VISY-Stick/Reed Manhole Sump)
- Dispenser Sump (= VISY-Stick/Reed Dispenser Sump)
- Oil Separator
- VISY-Input
- VISY-Output
- Pressure Sensor VPS-L
- Leakage Detection (LD Tank / LD Product Pipe / LD Delivery Pipe)

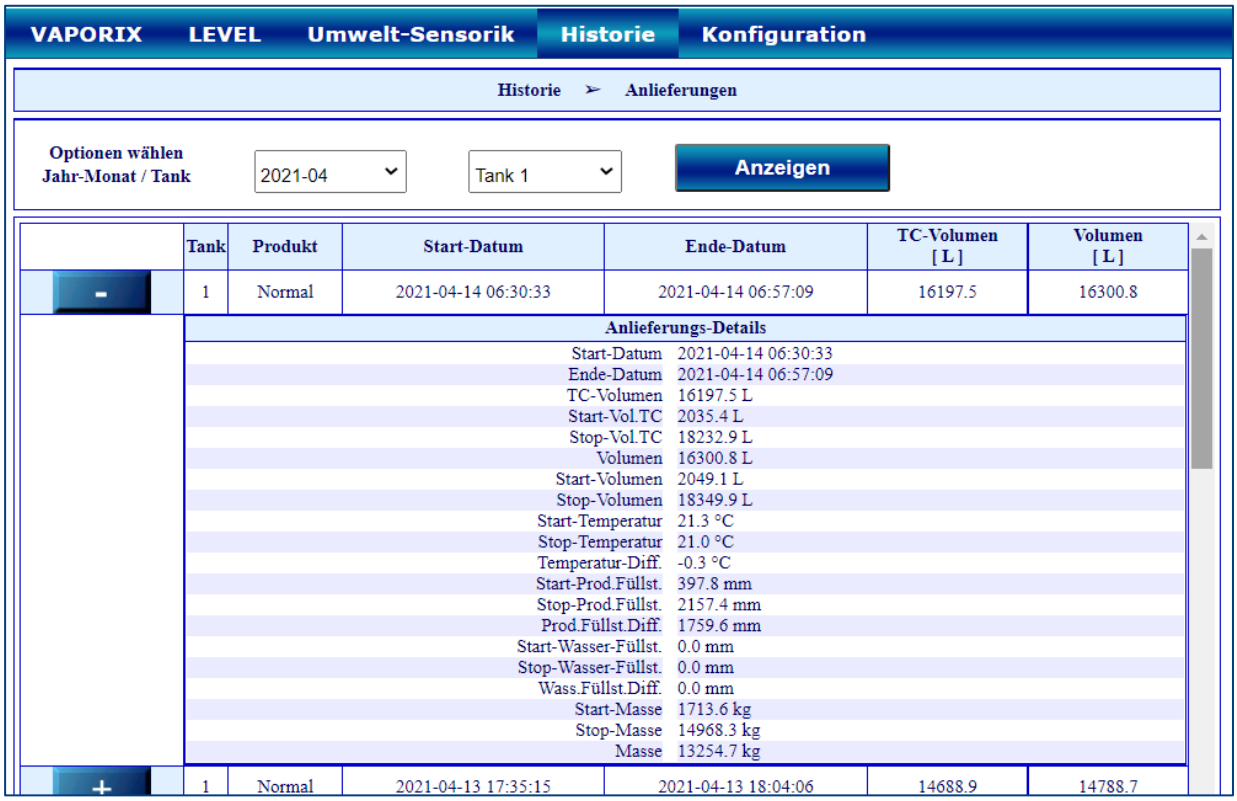
6 History Menu

The stored data of the Deliveries, SLD (Static Leakage Detection), Alarms (active and inactive), and Pressure Report are displayed in the "History" menu item:



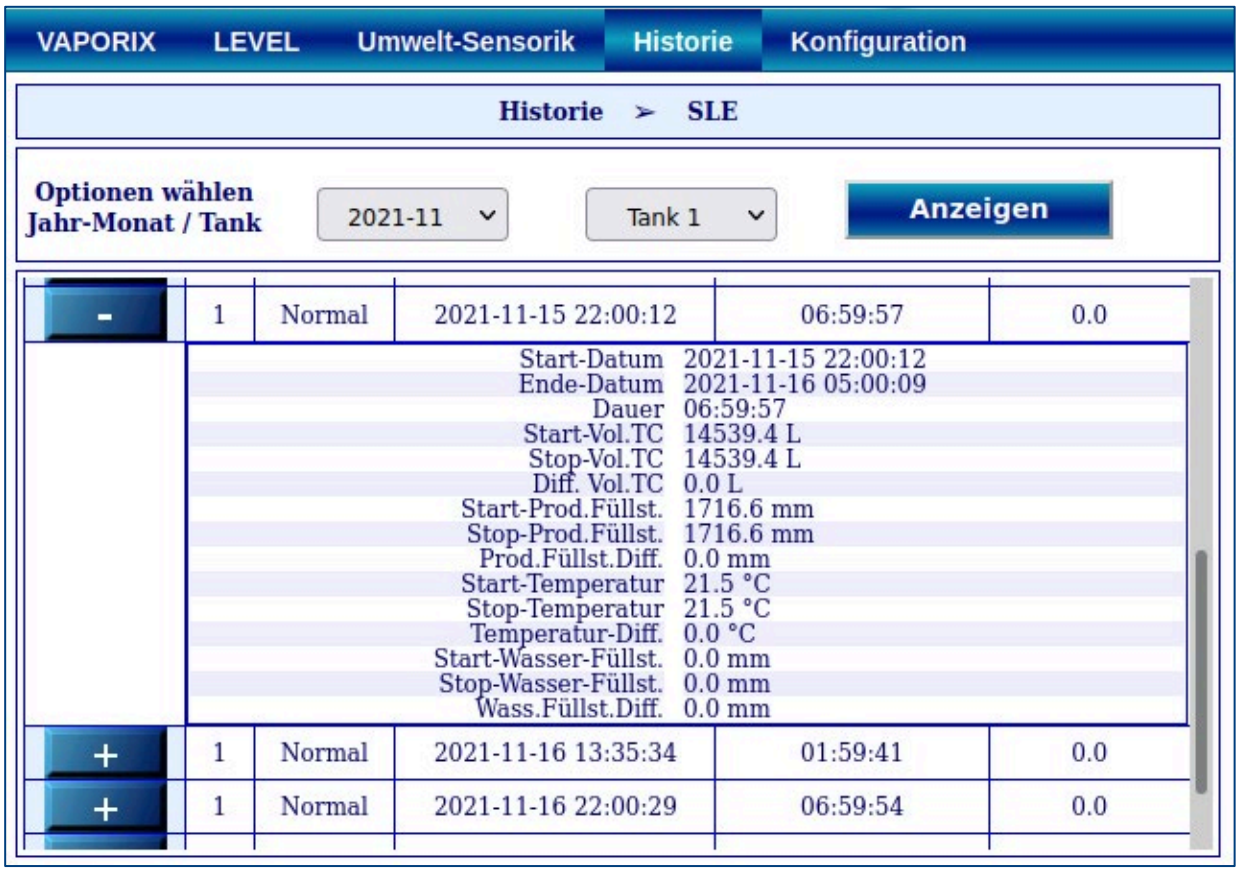
6.1 Deliveries

The deliveries are displayed for individual or all tanks for a specific month:



6.2 SLD (Static Leakage Detection)

The SLD data is displayed for individual or all tanks for a specific month:



6.3 Active alarms

All existing, confirmed or unconfirmed alarms from all devices are listed here, sorted by date.

6.4 Level Alarms

With this menu item, the history of the Level Alarms is listed, sorted by date.

Active or inactive alarms can be selected for the display.

6.5 Environmental Alarms

With this menu item, the history of the Environmental Alarms is listed, sorted by date.

Active or inactive alarms can be selected for the display.

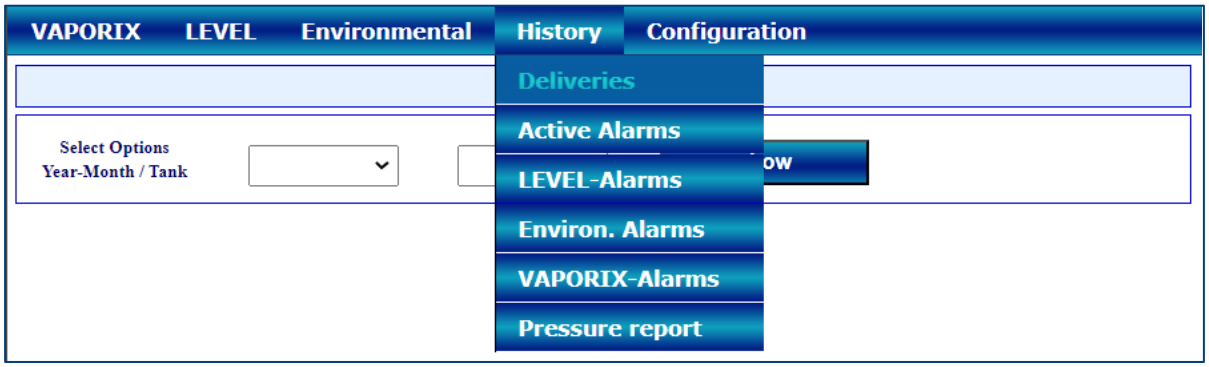
6.6 VAPORIX Alarms

With this menu item, the history of the VAPORIX Alarms is listed, sorted by date.

Active or inactive alarms can be selected for the display.

6.7 Pressure Report

The "History - Pressure Report" menu provides the stored data of the VPS-V pressure sensor.



Without the Pressure Sensor VPS-V no pressure data is shown by the "History - Pressure Report" menu.

For more details on the Pressure Alarms see chapter:
3.3.1 Country-specific evaluation of the pressure sensor data (AU/IL)

7 Configuration menu

In the "Configuration" menu, information and settings of the associated SECON System are mainly displayed for administrative purposes.

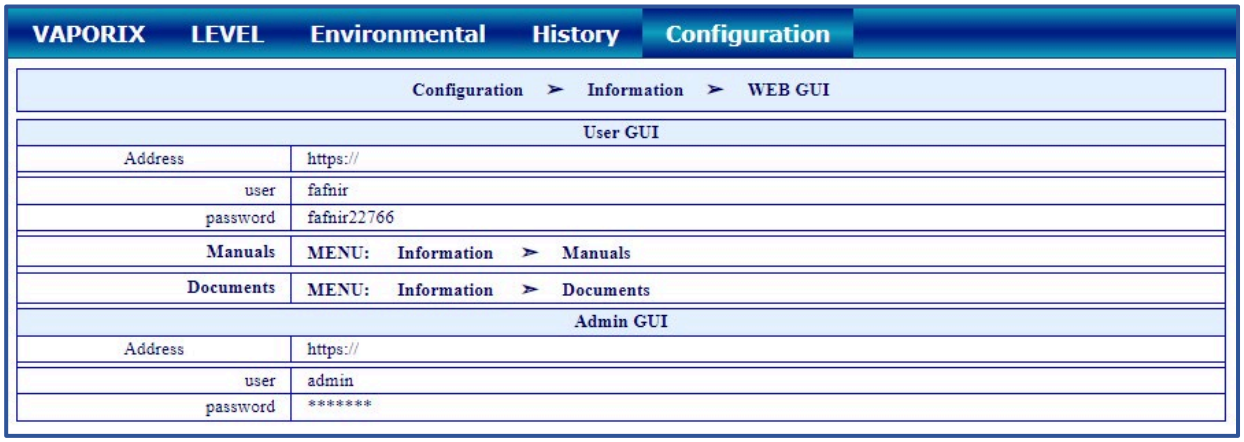
For a full description of this menu "Configuration", see the technical documentation:

SECON-Client Administrator, art. no. 350340

For using the device, the following menu items are worth mentioning:

7.1 Information - WEB GUI

You can reach the SECON-Client by a PC / Laptop via a web interface. Here, the access data for the web interface of the respective SECON-Client is displayed:



Users can access the SECON-Client via web browser with the "User GUI" access data, see technical documentation:

SECON-Client User (Remote Access), art. no. 350175

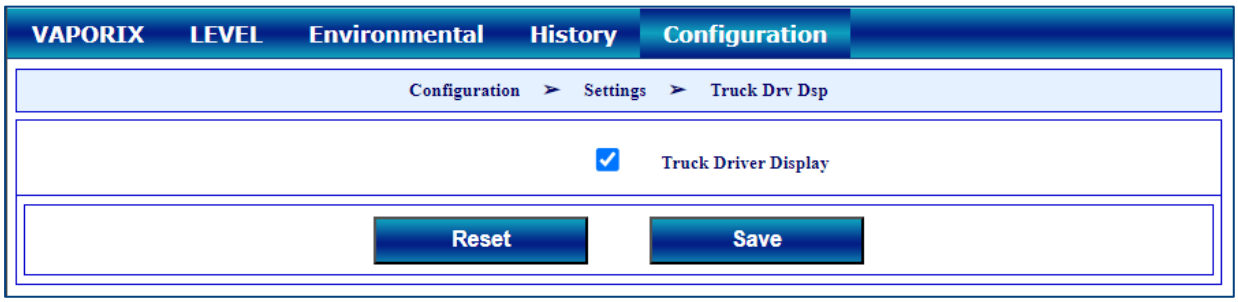
Administrators can access the SECON-Client via web browser with the "Admin GUI" access data, see technical documentation:

SECON-Client Administrator (local and remote access), art. no. 350340

7.2 Settings – Truck Driver Display

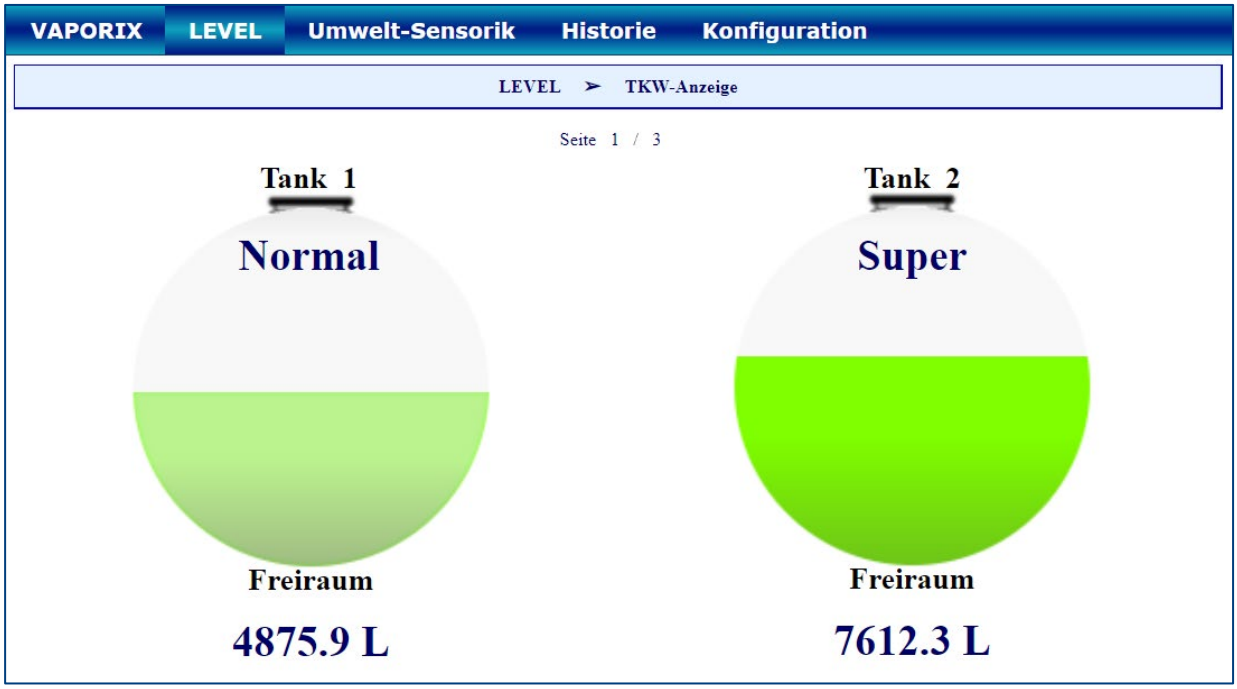
Here the view of the tanks can be changed to the **Truck Driver Display** to show only 2 tanks in 1 window sequentially.

Tick on the Truck Driver Display selection field and confirm with Save:



The symbol  appears in the Truck Driver Display above the menu line.

Then the display changes to the Truck Driver Mode with the enlarged display of only 2 tanks:



7.3 Settings – Language

The language of the user interface is set here. The menu is password protected.

Enter the following access data and confirm with "OK":

User: **admin**
Password: **vap22765**

The window for selecting the language opens:

Choose your desired language: German, English, Spanish, Hebrew, Italian, Portuguese, Russian or Chinese

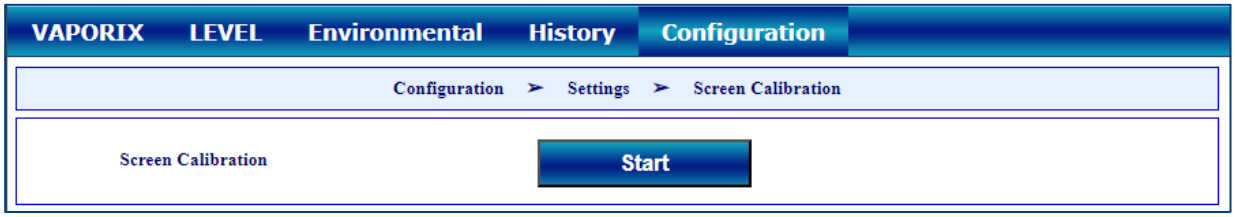
7.4 Settings - Screen Calibration

The accuracy of the touchscreen is set here. The menu is password protected.

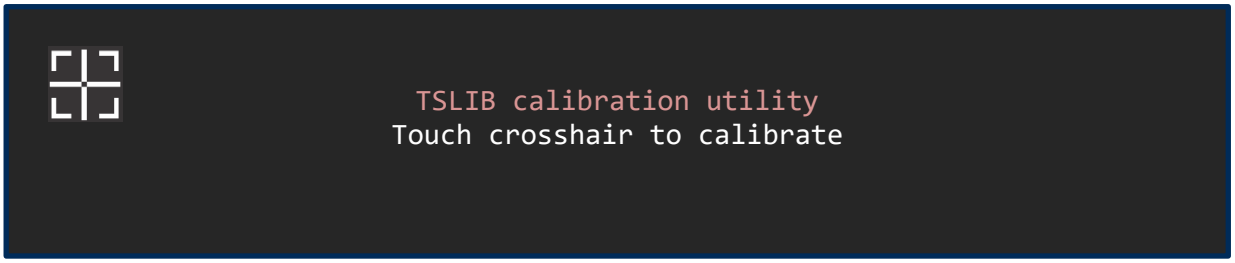
Enter the following access data and confirm with "OK":

User: **admin**
Password: **vap22765**

Press the <**Start**> button:



Use the touchscreen pen to touch the 5 calibration crosses one after the other:



If the calibration is not done correctly, the touchscreen may no longer be usable !

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