

SECON-X

SECON-Lev User Guide

The screenshot displays the SECON-X web interface. At the top, there is a navigation bar with tabs for VAPORIX, LEVEL, Environmental, History, and Information. The 'LEVEL' tab is active. Below the navigation bar, there is a sidebar with a menu containing 'Report', 'Products', 'all Tanks', and five individual tank selection buttons: 'Tank 1 'Normal 92'', 'Tank 3 'Normal 92'', 'Tank 4 'Normal 92'', and 'Tank 5 'Super 95''. The main content area shows a table titled 'LEVEL » all Tanks' with three columns: 'Tank', 'Measurement values', and 'Configuration'. The table lists data for Tank 1, Tank 3, and Tank 4. Tank 1 and Tank 3 are grouped under a '1' and '2' respectively in the first column. Each tank entry includes a small tank icon with a blue fill level, and the measurement values include Volume, Volume TC, Ullage, Level, Temperature, and Water level. Configuration values include Nominal vol., Capacity, Safety vol., Product, and Comp. Temperature.

Tank	Measurement values	Configuration
1	Volume 4092.9 L Volume TC 4014.5 L Ullage 5607.1 L Level 1071.5 mm Temperature 30.7 °C Water level 55.8 mm	Nominal vol. 10000 L Capacity 9700 L Safety vol. 300 L Product Normal 92 Comp. Temperature 15.0 °C
2	Volume 10318.9 L Volume TC 10104.5 L Ullage 18781.1 L Level 940.5 mm Temperature 32.0 °C Water level 57.2 mm	Nominal vol. 30000 L Capacity 29100 L Safety vol. 900 L Product Normal 92 Comp. Temperature 15.0 °C
	Volume 12840.2 L Volume TC 12613.3 L	Nominal vol. 40000 L Capacity 38800 L

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1 Overview

1.1 SECON-X system components

SECON-X is a hardware-software-network system which comprises several components (see figure below) and performs the following tasks:

- Global data access to the SECON-Clients with web interface
- Remote diagnostics
- Remote display, evaluation and data storage
- Universal data format

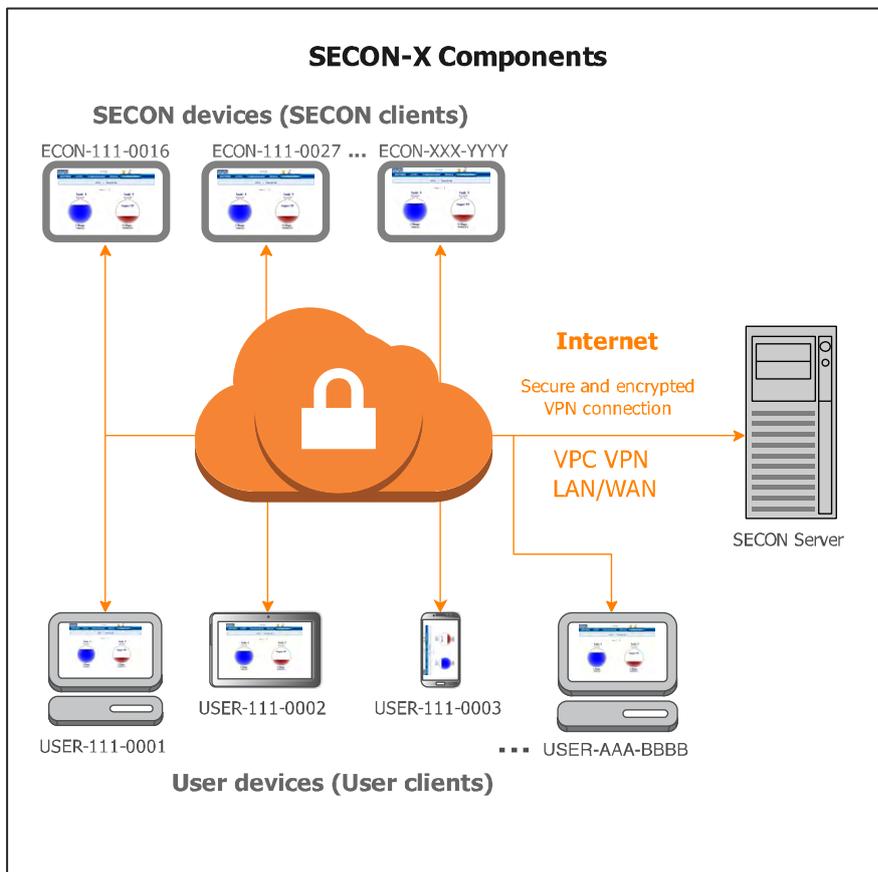


Figure 1: SECON-X system and components

SECON-Lev... is the operating software of the SECON devices with connection to the **VISY-X System**.

1.2 SECON-Lev and SECON-Lev+

SECON-Lev is the operating system of the SECON devices with connection to the **VISY-X System**, with which a precise and continuous filling level measurement in up to 16 tanks is carried out directly at the petrol station. The product temperature and the water level are gauged simultaneously.

SECON-Lev+ is an extension of the operating software for the SECON devices with which in addition all VISY-X environmental sensors are monitored and POS systems are connected.

The SECON device can be used as a supplementary device or as an alternative to a petrol station computer for displaying measured values. The SECON device is also suitable as a display for tank truck drivers for reading out the fill volumes in individual tanks before supplying the petrol station.

The measured values are displayed on a TFT colour screen. All functions are accessible using the touch screen user interface. Alarms are signalled visually by the display module and also audibly by a buzzer.

SECON-Lev... saves the measured values and the evaluations based on it locally in a database and in archive files. The data can be kept for 10 years+ and displayed on site. The measured values can be displayed locally on the SECON device as well as via a secure VPN connection (remote access). Stored values can also be called up via the secure VPN connection with web-DAV. The synchronisation can be used to compare the locally stored data also with a server.

To determine the average product density the pressure sensors VPS-T can be used in fuel tanks and the VPS-L in LPG tanks. The SECON devices and the VPS... pressure sensors are connected with the VISY-Command evaluation unit, see:



Technical Documentation, SECON-Client, art. no. 350076



Technical Documentation, VISY-Command VI-4, art. no. 207184



Technical Documentation, VPS pressure sensors, art. no. 350204

After the installation or replacement of the sensors the VISY-Command evaluation unit must be configured with the VISY-Setup configuration program, see:



Technical Documentation VISY-Setup V4..., art. no. 207158

1.3 About this document

This documentation describes the functioning and operation of the SECON-Lev and SECON-Lev+ operating software as a local application on the SECON device, as well as the use by remote access via a web browser (USER clients).

For the configuration of the SECON-Lev... software, see:



Technical Documentation SECON-Lev Administrator, art. no.: 350136

For the installation and operation of the OpenVPN software for remote access, see:



Technical Documentation OpenVPN installation, art. no. 350199

1.4 Safety instructions

Operating software SECON-Lev... is intended for SECON devices. The software must be used exclusively for this purpose. Please 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 state-of-the-art technology and recognised technical safety regulations. Nevertheless, the system may be a source of danger. The following safety precautions must be observed in order 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 are in line with the technical requirements specified by the manufacturer.
- The installation, operation and maintenance of the SECON device, together with the SECON-Lev software, may only be carried out by expert personnel.
- Operators, fitters and service technicians must observe all applicable safety regulations. This also applies to any local safety and accident prevention regulations which are not stated in these operating instructions.



If these safety instructions are not observed, it may result in the risk of accident or damage to the SECON-X system.



The SECON touch screen may only be operated using a finger or a stylus designed for this purpose. The use of pointed objects (e.g. screwdrivers, pens) may cause damage to the touch screen.



Useful tips and information in this manual that should be observed are written in italics and identified by this symbol.

2 SECON-Lev... as local application



Certain functions may be activated or deactivated depending on what the software is being used for. In the case of the SECON-LEV, for example, the "VAPORIX" function is deactivated.



The lock symbol indicates an existing VPN connection.

2.1 Level

The individual products and tanks are shown in the main view "Level".

FAFNIR 09:38:38				
VAPORIX LEVEL Environmental History Configuration				
LEVEL » Products				
Product name	Color	Tank	Capacity / L	Ullage / L
Normal 92		1, 3, 4	77600	47610.8
Super 95		5	48500	36480.7

Figure 2: Menu Level – Products

FAFNIR 09:39:14				
VAPORIX LEVEL Environmental History Configuration				
LEVEL » all Tanks				
Tank 1	Tank 3	Tank 4	Tank 5	

Figure 3: Menu Level – All tanks

When a tank is selected (e. g. tank 4), further details are displayed, see Figure 4.

LEVEL » Tank 4 » Details	
+ → Deliveries	
Product 	Measurement values Volume 14122.9 L Volume TC 13878.5 L Ullage 24677.1 L Level 959.2 mm Temperature 29.2 °C Water level 0.0 mm Density - g/L Density TC - g/L Sump density - g/L Sump density TC - g/L
Alarms No active records/alarms in the database.	Configuration Nominal vol. 40000 L Capacity 38800 L Safety vol. 1200 L Product Normal 92 Comp. Temperature 15.0 °C

Figure 4: Tank 4

If you click on the PLUS sign beside "Deliveries", the delivery details are shown for the selected tank (see figure below):

- → Deliveries				
	Start date	Stop date	TC Volume / L	Volume / L
-	2013-09-02 18:34:44	2013-09-02 18:45:18	27579.3	28269.8
Delivery details				
	Start date	2013-09-02 18:34:44		
	Stop date	2013-09-02 18:45:18		
	TC Volume	27579.3 Litres		
	Start Vol.TC	10941.9 Litres		
	Stop Vol.TC	38521.2 Litres		
	Volume	28269.8 Litres		
	Start Volume	10840.1 Litres		
	Stop Volume	39109.9 Litres		
	Start Temperature	7.3 °C		
	Stop Temperature	27.3 °C		
	Change in Temperature	20.0 °C		
	Start Product level	789.4 mm		
	Stop Product level	2359.4 mm		
	Change in Prod.Level	1570.0 mm		
	Start Water level	0.0 mm		
	Stop Water level	0.0 mm		
	Change in Water Level	0.0 mm		
	2013-09-02 05:25:21	2013-09-02 05:42:56	21475.4	21804.5

Figure 5: Tank 4 – Deliveries – Details

2.2 History

The stored delivery data for individual tanks and alarms (active and inactive) are displayed under the "History" menu option.



Figure 6: History

2.2.1 Deliveries

In the case of deliveries, individual months and individual tanks can be selected.

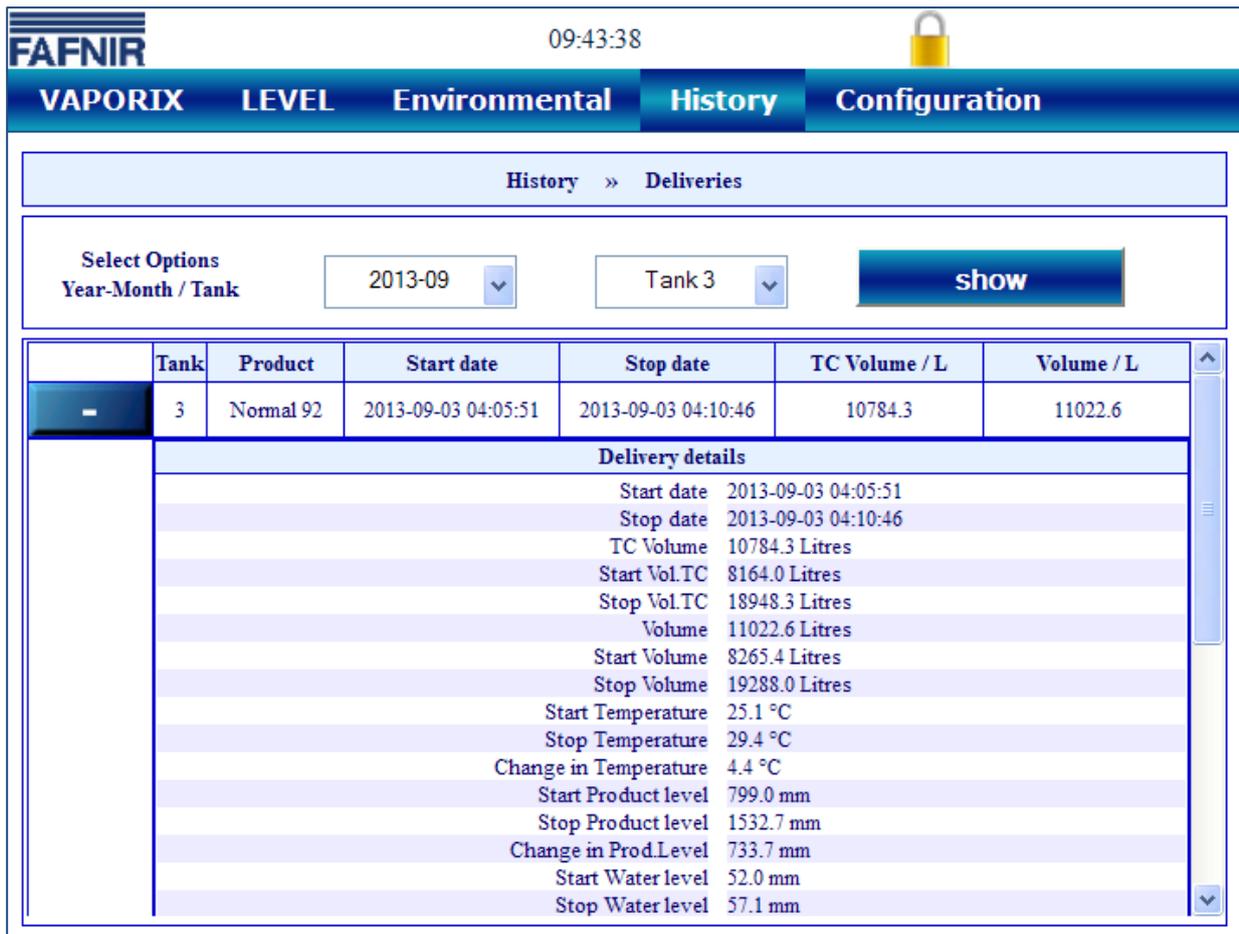


Figure 7: History – Deliveries

2.2.2 Level alarms

Alarms generated by the VISY-X system are displayed as follows:



The yellow alarm symbol indicates a warning.



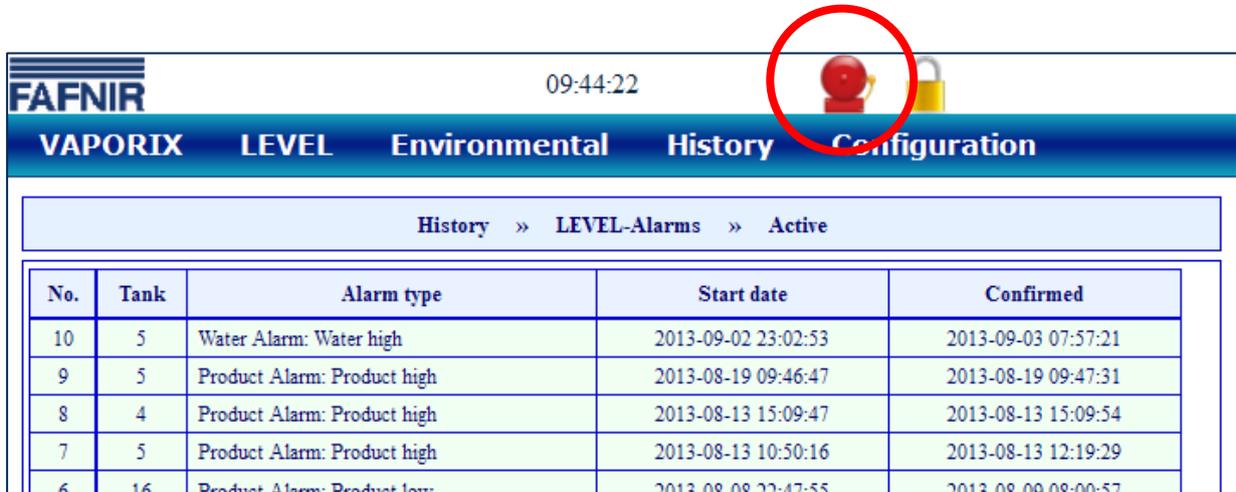
The red alarm symbol indicates an error.



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

In the menu, the user can choose between active and inactive alarms:

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



No.	Tank	Alarm type	Start date	Confirmed
10	5	Water Alarm: Water high	2013-09-02 23:02:53	2013-09-03 07:57:21
9	5	Product Alarm: Product high	2013-08-19 09:46:47	2013-08-19 09:47:31
8	4	Product Alarm: Product high	2013-08-13 15:09:47	2013-08-13 15:09:54
7	5	Product Alarm: Product high	2013-08-13 10:50:16	2013-08-13 12:19:29
6	16	Product Alarm: Product low	2013-08-08 22:47:55	2013-08-08 08:00:57

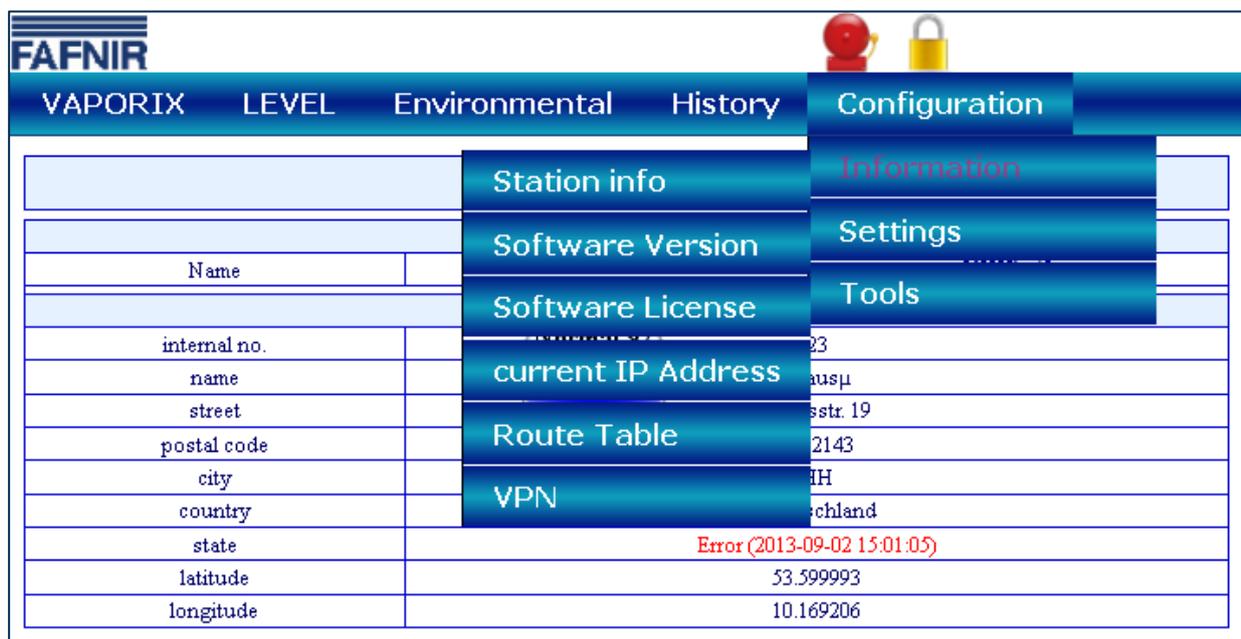
Figure 8: History – Active alarms

2.3 Configuration

2.3.1 Info

The following sub-menus are displayed in the *Configuration >> Info* menu option:

- Station data
- Software version
- Software licence
- Network IP address
- Route table
- VPN

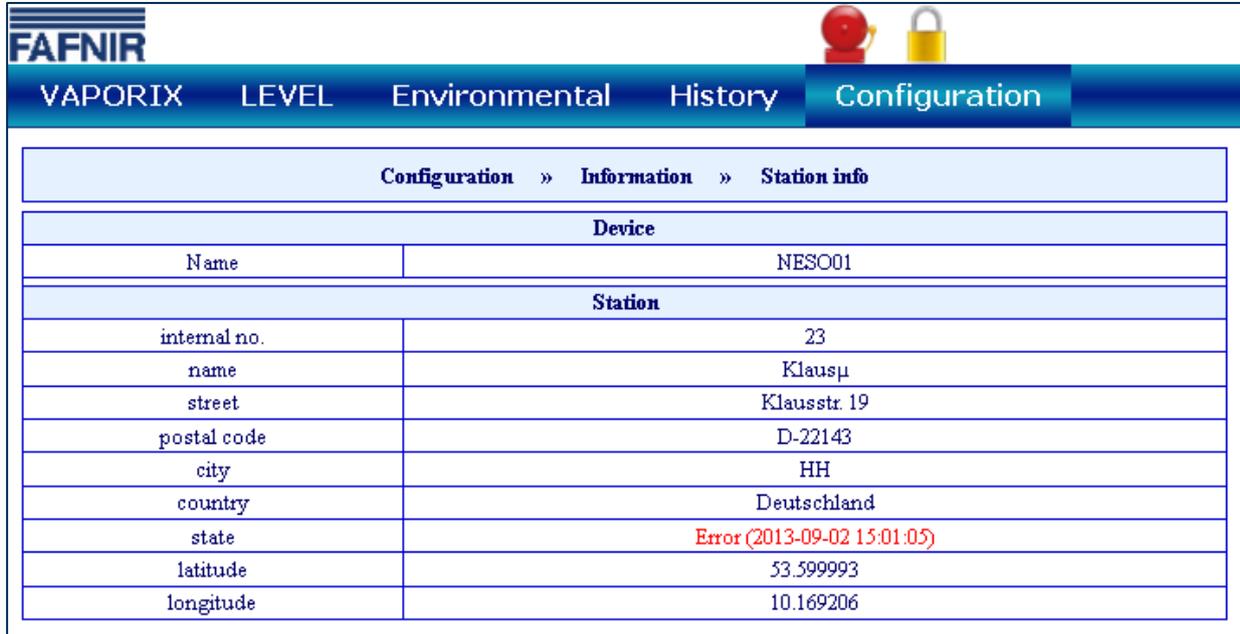


FAFNIR		VAPORIX	LEVEL	Environmental	History	Configuration
		Station info		Information		
Name		Software Version		Settings		
		Software License		Tools		
internal no.		current IP Address		23		
name		Route Table		ausp		
street		VPN		sstr. 19		
postal code				2143		
city				IH		
country				chland		
state				Error (2013-09-02 15:01:05)		
latitude				53.599993		
longitude				10.169206		

Figure 9: System info

Station data

The configured address, the geographical coordinates and the global status of the station are displayed in this table.

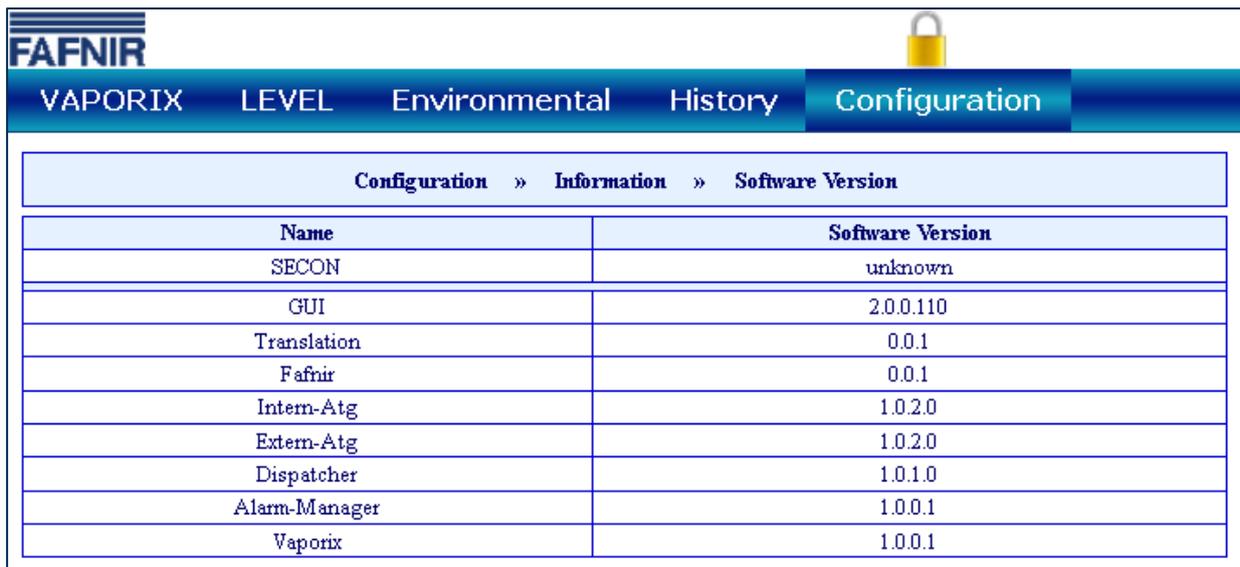


Device	
Name	NES001
Station	
internal no.	23
name	Klausμ
street	Klausstr. 19
postal code	D-22143
city	HH
country	Deutschland
state	Error (2013-09-02 15:01:05)
latitude	53.599993
longitude	10.169206

Figure 10: Info – Station data

The "State" status is equivalent to the alarm messages and is displayed here in the colours green (OK), yellow (warning) and red (error).

Software version



Name	Software Version
SECON	unknown
GUI	2.0.0.110
Translation	0.0.1
Fafnir	0.0.1
Intern-Atg	1.0.2.0
Extern-Atg	1.0.2.0
Dispatcher	1.0.1.0
Alarm-Manager	1.0.0.1
Vaporix	1.0.0.1

Figure 11: Info – Software version

Software licence

The menu option *Configuration » Info » Software licence* is not supported as yet.

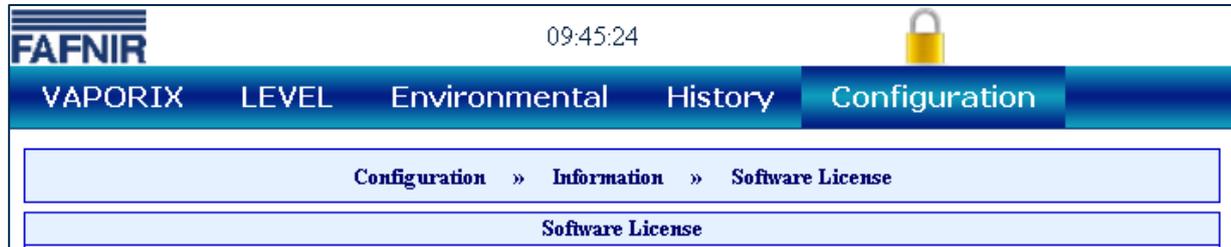
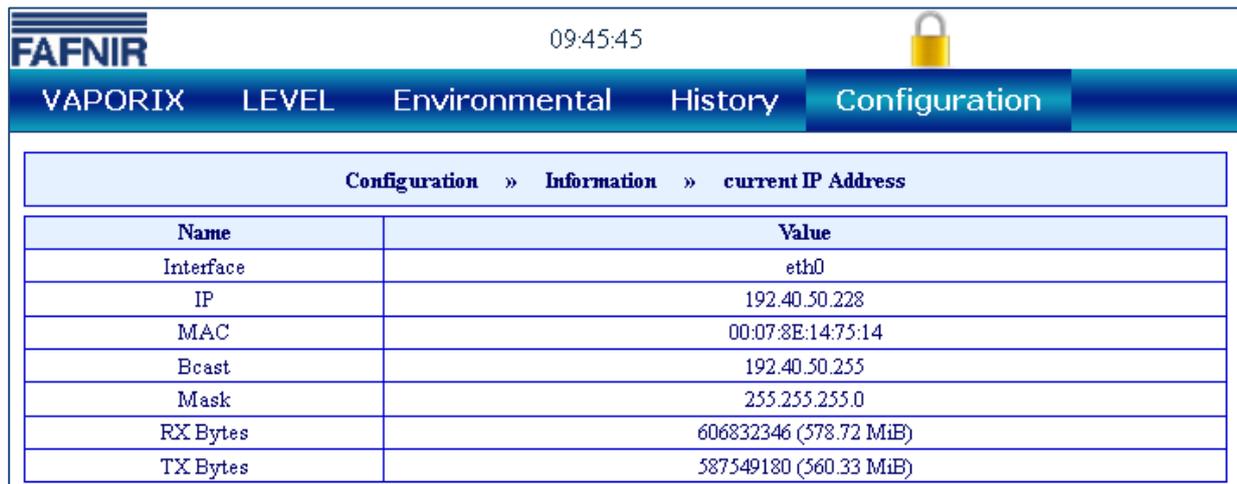


Figure 12: Info – Software licence

Network IP address

The current data and configurations for the local network connection are displayed here. The local connection and the VPN interface must be active in order to ensure that the system can be accessed externally.



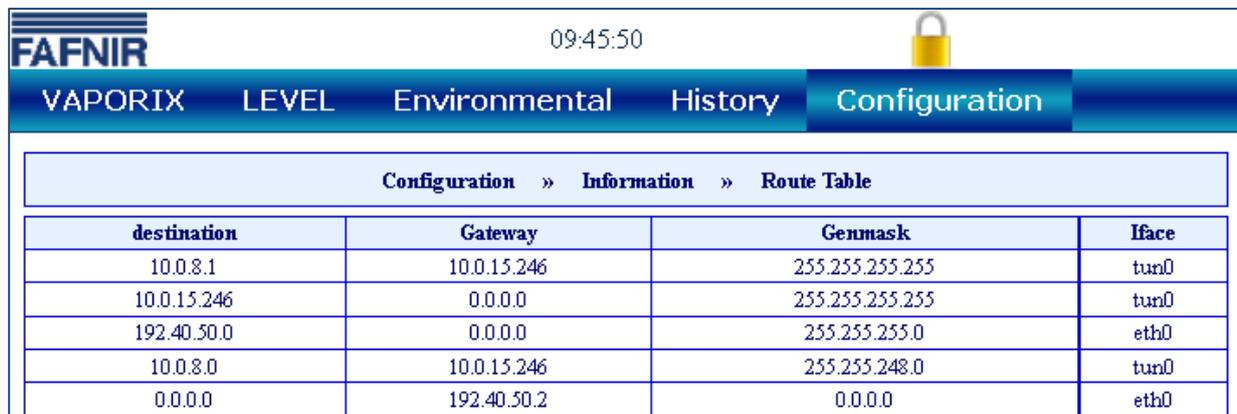
The screenshot shows the FAFNIR web interface with a navigation menu at the top containing VAPORIX, LEVEL, Environmental, History, and Configuration. The Configuration menu is active. Below the menu, the breadcrumb trail reads 'Configuration » Information » current IP Address'. The main content area displays a table with the following data:

Name	Value
Interface	eth0
IP	192.40.50.228
MAC	00:07:8E:14:75:14
Bcast	192.40.50.255
Mask	255.255.255.0
RX Bytes	606832346 (578.72 MiB)
TX Bytes	587549180 (560.33 MiB)

Figure 13: Info – Network IP address

Route table

The routing IP addresses are listed here.



The screenshot shows the FAFNIR web interface with a navigation menu at the top containing VAPORIX, LEVEL, Environmental, History, and Configuration. The Configuration menu is active. Below the menu, the breadcrumb trail reads 'Configuration » Information » Route Table'. The main content area displays a table with the following data:

destination	Gateway	Genmask	Iface
10.0.8.1	10.0.15.246	255.255.255.255	tun0
10.0.15.246	0.0.0.0	255.255.255.255	tun0
192.40.50.0	0.0.0.0	255.255.255.0	eth0
10.0.8.0	10.0.15.246	255.255.248.0	tun0
0.0.0.0	192.40.50.2	0.0.0.0	eth0

Figure 14: Info – Route table

VPN

The current data and configurations for the virtual private network (VPN) are displayed here. The interface must be active in order to ensure that the system can be accessed externally.

Configuration » Information » VPN	
Name	Value
Interface	tun0
IP	10.0.15.245
P-z-P	10.0.15.246
Mask	255.255.255.255
RX Bytes	118275958 (112.80 MiB)
TX Bytes	371914368 (354.69 MiB)

Figure 15: Info – VPN

3 Remote access

3.1 Connection to the SECON-server

3.1.1 Requirements

 Remote access from the user clients (PC/laptops) to the SECON-Server takes place via a secure VPN network connection. This requires the installation of the OpenVPN software on the PC used.

 For remote access, "Mozilla Firefox" or "Opera" are the preferred browsers. Full functionality may be restricted with other browsers.

To install the OpenVPN software, see the technical documentation:

 SECON-X OpenVPN installation, art. no. 350199

3.1.2 VPN connection

 A secure VPN connection (TLS) is used for remote access, i.e. all the data is encrypted.

- (1) Start the program "OpenVPN GUI"
- (2) The VPN connection is created by right clicking on the "OpenVPN GUI" symbol on the Windows taskbar and selecting "Connect"

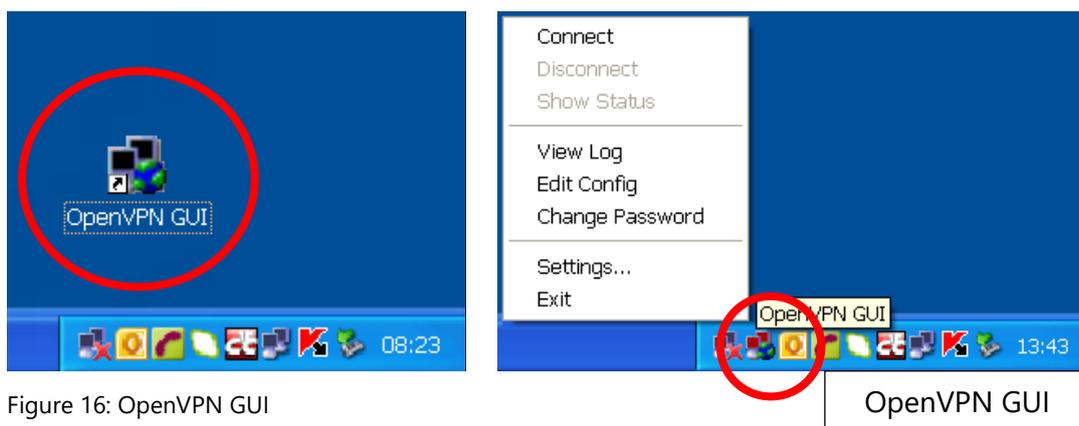


Figure 16: OpenVPN GUI

When a connection is successfully created, the colour of the "OpenVPN GUI" symbol in the Windows taskbar changes from red to green.

3.1.3 Browser

The home page for the SECON-Server can now be called using the web browser. To do this, enter the allocated IP address in the address line of the browser.

3.1.4 SECON-Server home page



Figure 17: SECON-Server home page

A table showing the configured petrol stations is displayed on the home page of the SECON-Server. Using Google Maps, the petrol station locations can also be displayed on a map.

Table view

In table view, all the petrol stations are displayed with their number, name, address, status and network connection:

No.:	Sequential number
Internal ID:	Internal petrol station number (see SECON-Lev configuration)
Address:	Petrol station address
Status:	Status of the SECON-Lev (if the user hovers over this with the mouse, a data table is displayed)
Online:	The network connection is displayed with "-" (not connected) or " connect- " (connected)

The connection to the individual petrol stations is created by clicking on "**connect-**". To obtain access to the petrol stations, a password must be entered (see section "Verification").

Google Maps / Full screen view

In order to display the petrol station locations on a map, select the menu option "View – Google Maps" or "View – Full screen".

Each individual pin represents a petrol station. A jumping pin indicates that the petrol station is online and that it can be accessed by clicking on it.

The colour indicates the status:

- Green: OK
- Yellow: Warning
- Red: Error

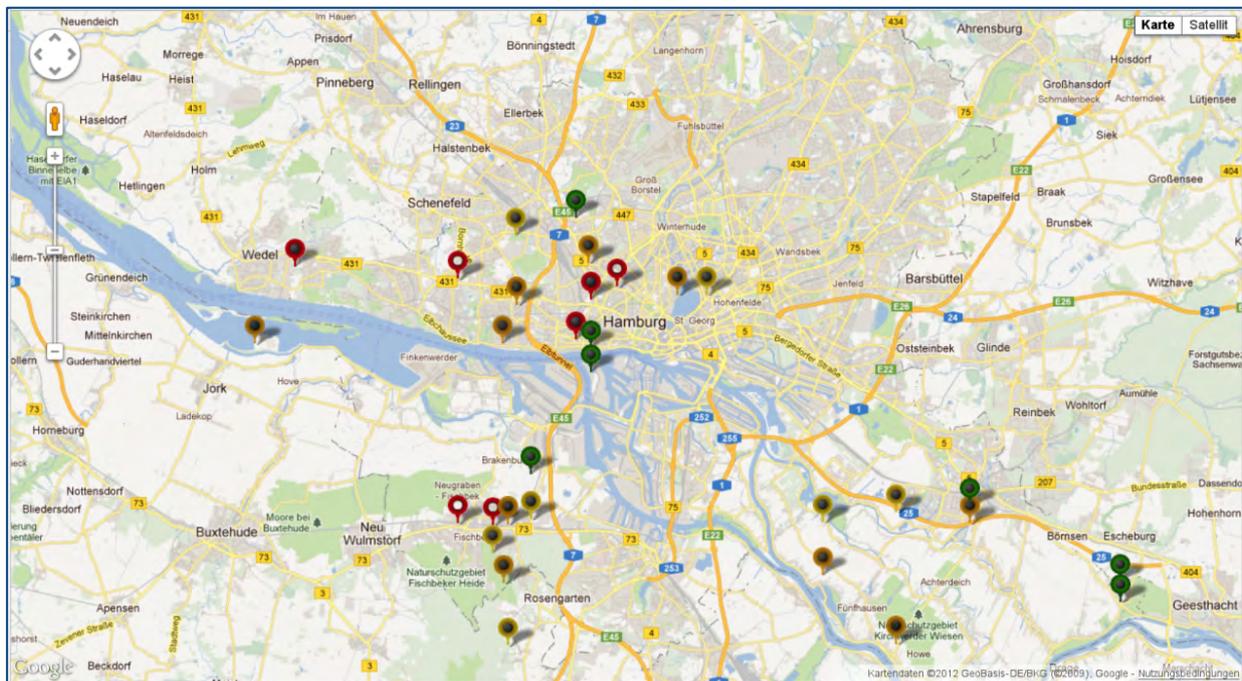


Figure 18: Station locations

In order to obtain detailed information regarding the petrol stations, all the user needs to do is to point at the relevant pin with the mouse. This opens a pop-up window showing further details.

Double clicking (left mouse button) on a pin creates a direct connection to the selected petrol station. To do this, a password must be entered (see next section).

In full screen view, the Google map is displayed without any further SECON menu bars.



The normal view is restored by clicking the Back button in the address line of the browser.

3.2 Connection to the SECON device (SECON-Client)

The connection to a SECON device is established via the home page of the SECON-Server. To do this, select the SECON device of a petrol station with a click on the corresponding button "**connect**":



Figure 19: SECON-Server home page

This is followed by a request for a password for the verification of the user:

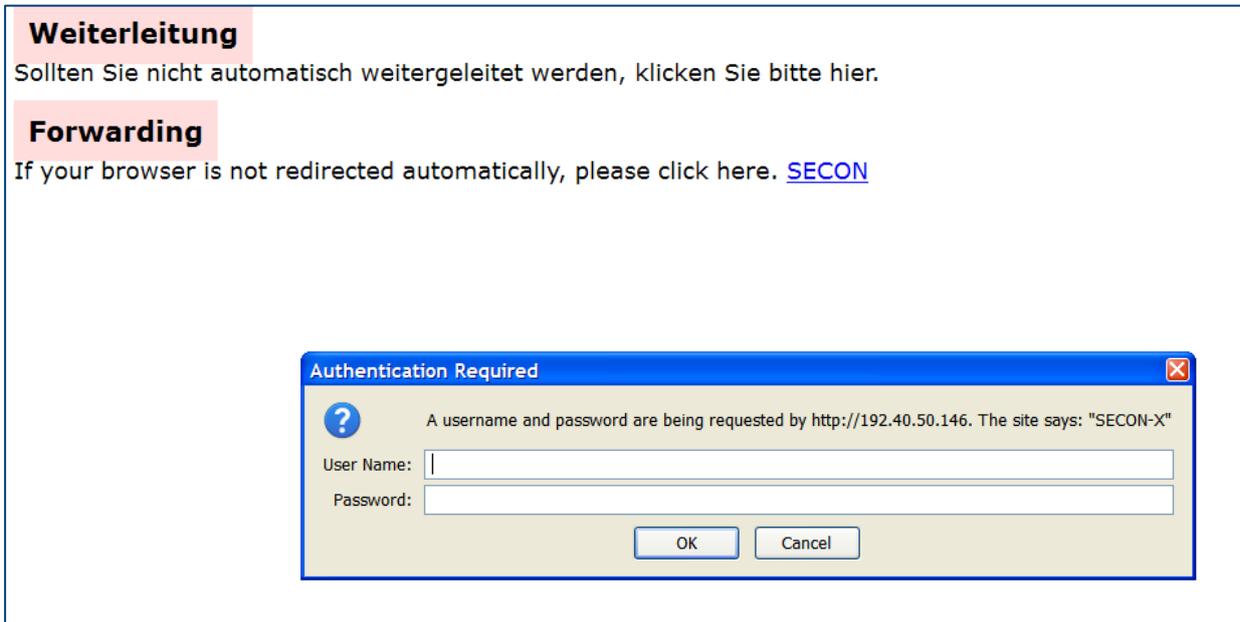


Figure 20: Verification

User name: *fafnir*
 Password: *fafnir22766*

If the verification is successful, you will go to the SECON device of the selected petrol station by remote access.



The data shown by remote access is identical to the data in the display of the SECON devices (see chapter 2).

Tank	Measurement values	Configuration
1	Volume 4092.9 L	Nominal vol. 10000 L
	Volume TC 4014.5 L	Capacity 9700 L
	Ullage 5607.1 L	Safety vol. 300 L
	Level 1071.5 mm	Product Normal 92
	Temperature 30.7 °C	Comp. Temperature 15.0 °C
2	Volume 10318.9 L	Nominal vol. 30000 L
	Volume TC 10104.5 L	Capacity 29100 L
	Ullage 18781.1 L	Safety vol. 900 L
	Level 940.5 mm	Product Normal 92
	Temperature 32.0 °C	Comp. Temperature 15.0 °C
4	Volume 12840.2 L	Nominal vol. 40000 L
	Volume TC 12613.3 L	Capacity 38800 L

Figure 21: Remote access to the SECON device – Menu level

3.2.1 Menu Level

Report, products and tanks can be selected in menu "Level".

Report

The report provides a brief overview of the most important tank data

Report (LEVEL)
date: 2013-09-03 10:00:26
Station: Klausstr. 19, D-22143, HH, Deutschland.

Tank	Measurement values	Configuration
1	Volume 4252.3 L	Nominal vol. 10000 L
	Volume TC 4171.7 L	Capacity 9700 L
	Ullage 5447.7 L	Safety vol. 300 L
	Level 1102.5 mm	Product Normal 92
	Temperature 30.5 °C	Comp. Temperature 15.0 °C
	Water level 55.8 mm	

Figure 22: Level – Report

Products

In "Products" view, a summary, which is broken down by product, is displayed.



Figure 23: Level – Products

All tanks

In "All tanks" view, a summary, which is broken down by tank, is displayed.

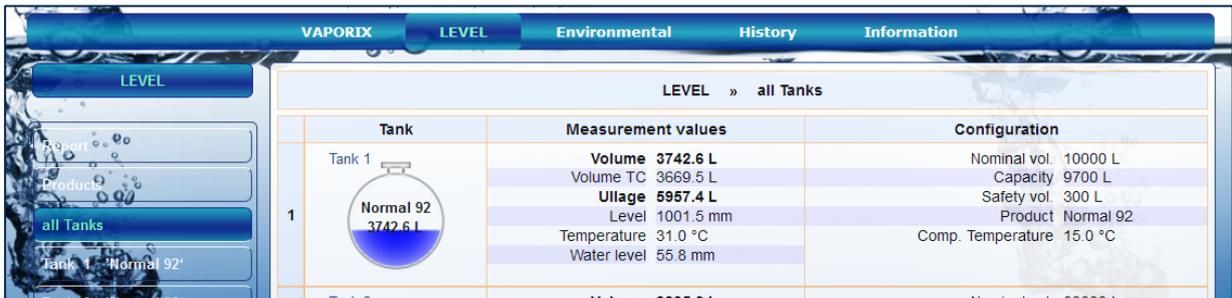


Figure 24: Level – all tanks

Individual tanks

When individual tanks are selected, the relevant window, which contains further details, is opened (showing an alarm as an example in this case):

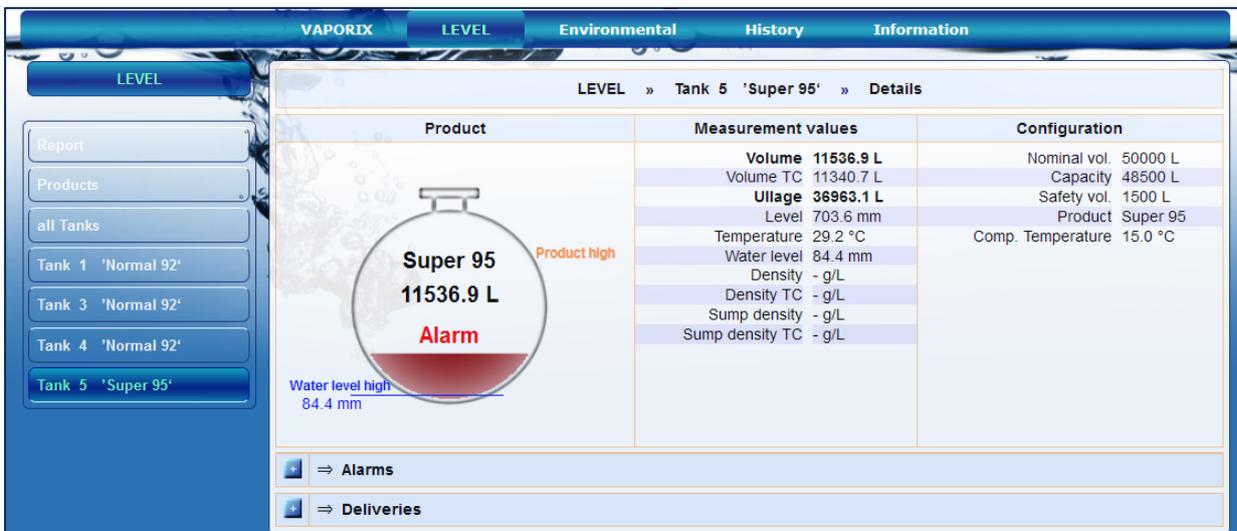


Figure 25: Tank Details

Details for alarms and deliveries are shown by clicking on the Plus sign:

⇒ Alarms			
Active Alarms			
Alarm type	Start date	Ack Date	
Water Alarm: Water high	2013-09-02 23:02:53	2013-09-03 07:57:21	
Product Alarm: Product high	2013-08-19 09:46:47	2013-08-19 09:47:31	
Product Alarm: Product high	2013-08-13 10:50:16	2013-08-13 12:19:29	

Figure 26: Tank Details – Alarms

⇒ Deliveries				
	Start date	Stop date	TC Volume / L	Volume / L
	2013-09-03 00:48:58	2013-09-03 00:54:31	20098.4	20329.0
Delivery details				
	Start date	2013-09-03 00:48:58		
	Stop date	2013-09-03 00:54:31		
	TC Volume	20098.4 Litres		
	Start Vol.TC	10876.8 Litres		
	Stop Vol.TC	30975.2 Litres		
	Volume	20329.0 Litres		
	Start Volume	11036.6 Litres		
	Stop Volume	31365.6 Litres		
	Start Temperature	27.1 °C		
	Stop Temperature	25.4 °C		
	Change in Temperature	-1.7 °C		
	Start Product level	681.3 mm		
	Stop Product level	1501.7 mm		
	Change in Prod.Level	820.5 mm		
	Start Water level	80.3 mm		
	Stop Water level	84.3 mm		
	Change in Water Level	4.0 mm		

Figure 27: Tank Details – Deliveries

3.2.2 History

Downloads

This menu provides central access to history data for the activated services which can be downloaded in xml format for further processing. To do this, select your application (e.g. Level) in order to obtain access to the history data of the SECON device. The data is identical to the history data of the SECON device.

Name	Last Modified	Size	Type
Parent Directory/	-	-	Directory
Level/	2013-Aug-08 13:07:15	-	Directory
Pressure/	2013-Aug-08 13:07:15	-	Directory
Vaporix/	2013-Aug-26 11:47:24	-	Directory

Figure 28: History – Downloads

Deliveries

In the case of deliveries, individual months and individual tanks can be selected and displayed by pressing the “Display” button.

By pressing Reset, the selection criteria for the data displayed last are restored. The report generates a view which is optimised for printer output.

Figure 29: History – Deliveries

Level Alarms

With this menu option, the history of alarms is listed, sorted by date.

The type of display can be selected broken down by active, inactive or all alarms.

Figure 30: History – Alarm Level

3.2.3 Info

The "Info" menu option in remote access is equivalent to the "Info" menu item of the SECON device (see chapter 2.3.1 Info).



The screenshot shows the SECON-X web interface with the 'Info' menu selected. The main content area displays 'Info » Stationsdaten'. A table shows the following data:

Gerät	
Name	NES001

Tankstelle	
internal no.	23
name	Klausu
street	Klausstr. 19
postal code	D-22143
city	HH
country	Deutschland
state	Error (2013-07-31 07:11:28)
latitude	53.599993
longitude	10.169206

Figure 31: Info – Station data



The screenshot shows the SECON-X web interface with the 'Info' menu selected. The main content area displays 'Info » Software-Version'. A table shows the following data:

Name	Software-Version
GUI	2.0.0.100
Translation	0.0.1
Fafnir	0.0.1
Intern-Atg	1.0.2.0
Extern-Atg	1.0.2.0
Dispatcher	1.0.1.0
Alarm-Manager	1.0.0.1
Vaporix	1.0.0.1

Figure 32: Info – Software version



The screenshot shows the SECON-X web interface with the 'Info' menu selected. The main content area displays 'Info » Software-Lizenz'. The table below is currently empty.

Software-Lizenz	

Figure 33: Info – Software licence

3.3 Data download via webDAV

The data of the SECON-Vap+ can be integrated as drive into the operating system via the webDAV protocol. Here you are using the option of the operating system which normally offers support for webDAV. If this is not the case, or problems with connection occur, also external webDAV clients can be used.

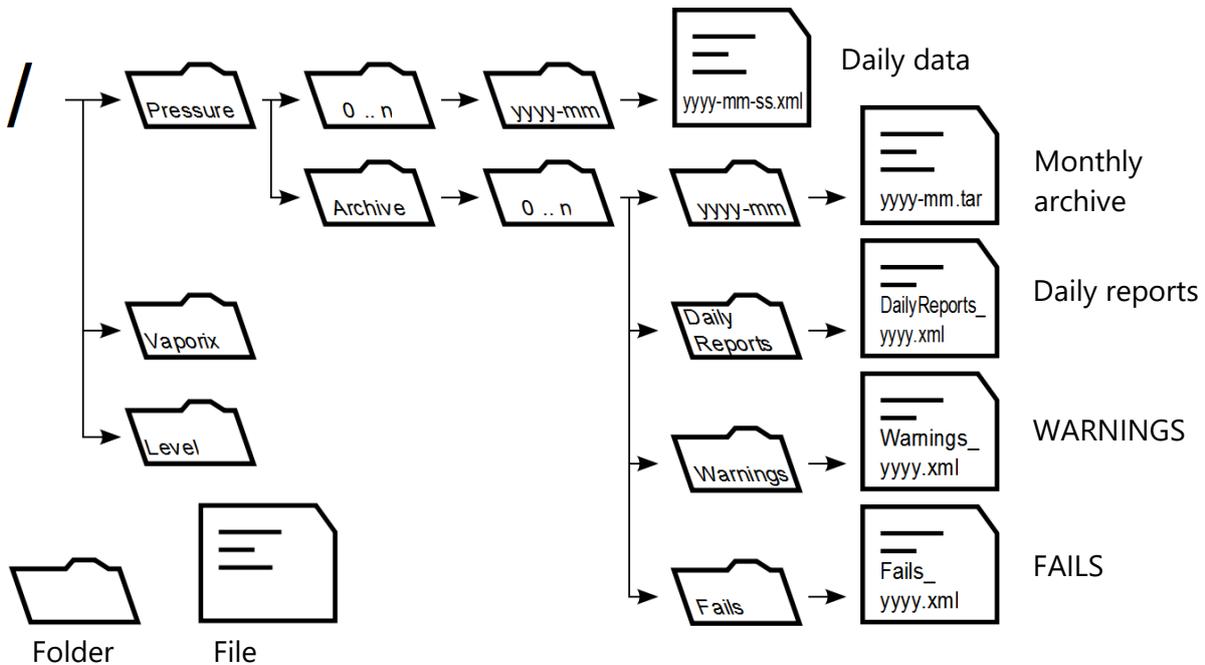
Address: `http://IP.ADDRESS.OF.SECON-Vap+/webdav`

Port: 80

User: webdav

Password: webdav22765

After the connection, a directory structure can be opened in the file manager of the operating system. Based on the basic directory the topology of the directory is displayed as follows.



- 0 ... n Folder for data arranged according to pressure sensor positions.
- yyyy, mm, dd Placeholder for the number of the year, month and day of the month.
- xml File is available in XML format.
- tar File is available as tar archive and must be unpacked.

Figure 34: Directory structure of webDAV

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