

Configuration Manual

MagLink LX4

M2051-EU

Revision: 1





NOTE: Before you use this manual, make sure you have the most recent revision. Look at the revision of this document to make sure it agrees with the most current revision found at <http://www.opwglobal.com/opw-fms/tech-support/manuals-how-to-videos>. Download the latest revision if necessary.



FUELING SOLUTIONS

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Section 1 Preface

Start Italiana S.r.l. has made every effort possible to see that this document is complete, accurate and updated. With every revision of the console, the related information is added to the document. Start Italiana S.r.l. reserves the right to make unannounced improvements and/or changes in the product and/or associated programs. Start Italiana S.r.l. is not liable for damages of any kind, including those resulting in the document, including typographical errors.

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Section 2 General Warnings

Carefully read the instructions in this manual before you do the installation procedures.

Only approved persons are permitted to install this equipment and configure the console.

The manufacturer is not responsible for operations that are not included in this manual.

The manufacturer is not liable in regards to competent bodies for changes to the equipment and software that are not approved.

In case of failure or defect, refer directly to an authorized service provider or manufacturer.

The manufacturer is not liable for injury and/or damage to persons and/or property and/or pets caused by the failure to obey safety instructions.

All approved personnel must know all safety requirements in this manual, the configuration manual and the user manual.

Refer directly to an approved service provider or manufacturer for questions about the operation of the equipment.



IMPORTANT: You must read and obey all safety instructions in this manual before you use this equipment.



WARNING: Incorrect use of this equipment that does not agree with the instructions in this manual can cause a risk to safety.



Section 3 Introduction

This manual was prepared in accordance with IEC 82079-1 standards. "Preparation of instructions for use - Structuring, content and presentation - Part 1: General principles and detailed requirements and according to the ATEX Directive 2014/34/EU concerning equipment and protective systems intended for use in potentially explosive atmospheres."

This manual gives all necessary information about the configuration of the MagLink LX4 console.

IMPORTANT: This manual must be used together with the related product manuals:



» M2050-EU MagLink LX4 Installation Manual

» M2052-EU MagLink LX4 User Manual

You must install the console as shown in the M2050-EU MagLink LX4 Installation Manual, configure the console as instructed in this manual and use the console in the field as shown in the M2052-EU MagLink LX4 User Manual.

WARNING: This device must not be discarded with household waste. This device is labeled in accordance with European Directive 2012/19/UE concerning used electrical and electronic appliances (waste electrical and electronic equipment – WEEE).



This guideline gives the methods for the return and recycling of used electronic devices as applicable throughout the EU. To return your used device, use the return and collection systems available to you.

The battery used in this device may present a risk of fire or chemical burn if mistreated. Do not disassemble, heat above 50°C or incinerate.



The table that follows lists reference data of the manufacturer:

Data	Description
Name	START ITALIANA S.r.l.
Address	Via Pola 6 20813 Bovisio Masciago (MB) Italy
Telephone	+39 0362 1581465
Fax	+39 0362 1581464
Website	www.startitaliana.com
e-Mail	support@startitaliana.it



INFORMATION: The units of measurement contained in this manual refer to a specified selection by the user. Refer to "[System](#)" on [page 20](#) for more information on how to set units of measure.

3.1 Safety Warnings

This manual contains many important Safety Alerts. There can be a risk of injury or damage to property if you do not obey these alerts. The panels below show the types of safety warnings that can be seen and how each is specified.



DANGER: Indicates an immediately hazardous condition that, if not prevented, will result in death or serious injury.



WARNING: Indicates a possibly hazardous condition that, if not prevented, could result in death or serious injury.



CAUTION: Indicates a possibly hazardous situation that, if not prevented, could result in minor or moderate injury.



NOTICE: Indicates important information not related to hazards. A condition that, if not prevented, can result in property damage.



SAFETY INSTRUCTIONS: Indicates instructions and procedures related to safety or gives the location of safety equipment

3.2 Information Panels



NOTE: This panel gives more information about an instruction or procedure.



IMPORTANT: This panel contains special information that is important and must be read and obeyed.



REMINDER: This panel shows information that has been given before in the manual that is important to show again.



TIP: A step or procedure that is recommended to make another step or procedure easier.



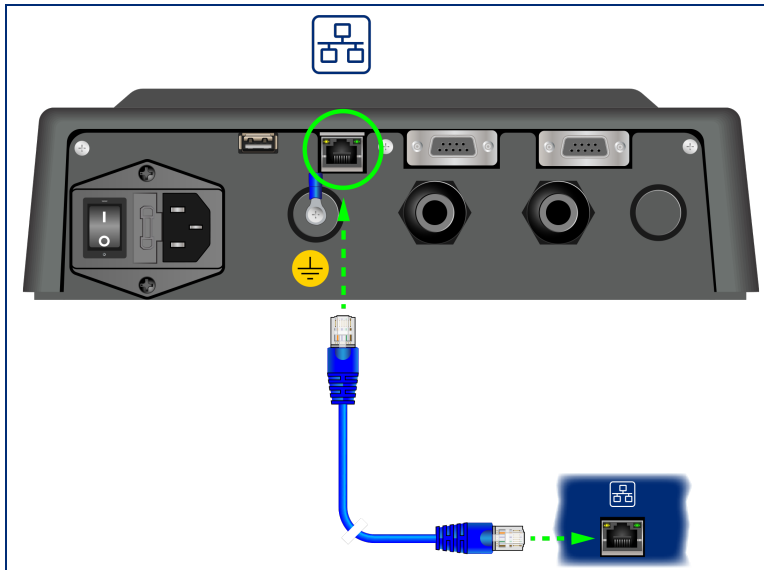
INFORMATION: This panel shows references to more information in other sources.

Direct Connection

This section covers how to connect directly to the console using a standard RJ45 cable.

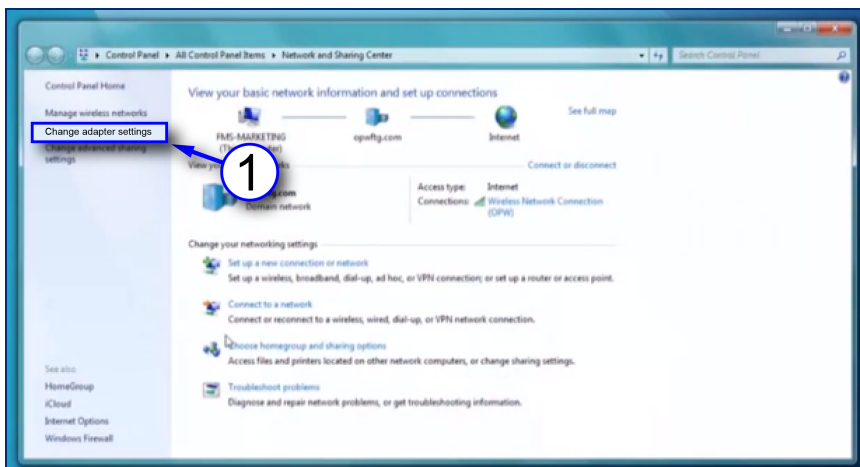


NOTE: If you have a connection problem with a standard RJ45, as an option, try an **RJ45 Crossover cable**.

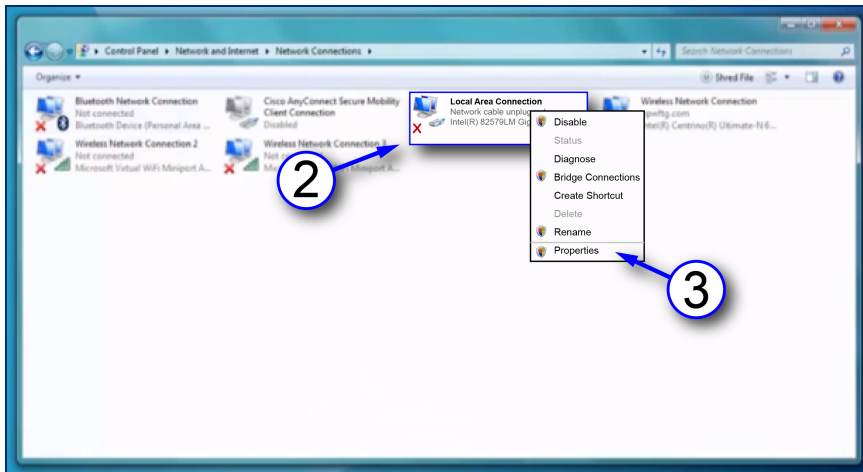


Connect an RJ45 cable from your laptop Ethernet port to the Ethernet port on the bottom panel of the console.

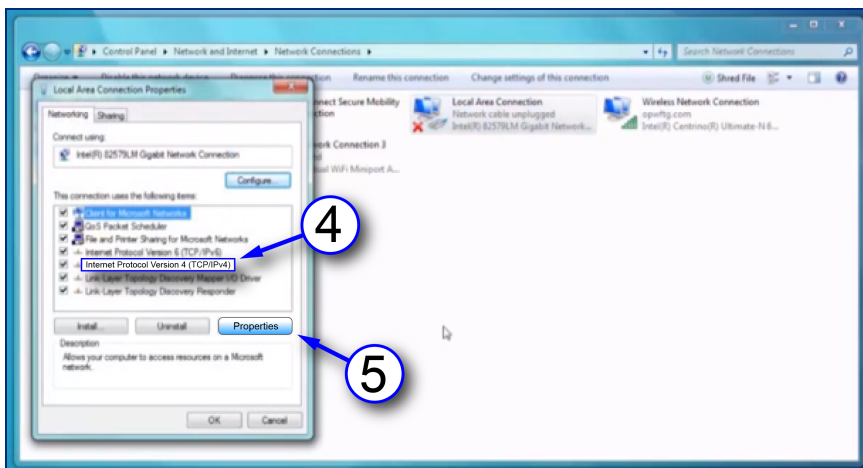
Navigate to Control Panel > All Control Panel Items > Network and Sharing Center on your laptop.



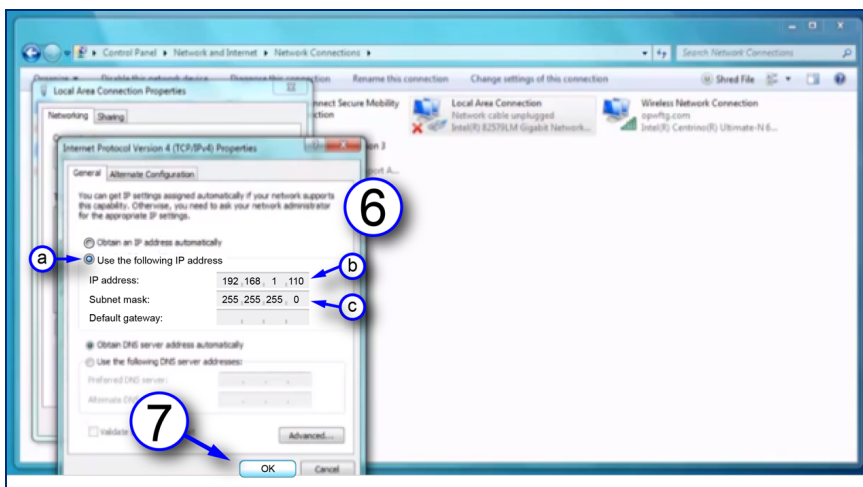
1. Click **Change adapter settings** in the left-side panel.



2. Right-click **Local Area Connections**.
3. Select **Properties** from the menu.



4. Select to highlight **Internet Protocol version 4 (IPv4)** on the list in the pop-up.
5. Click **Properties**.

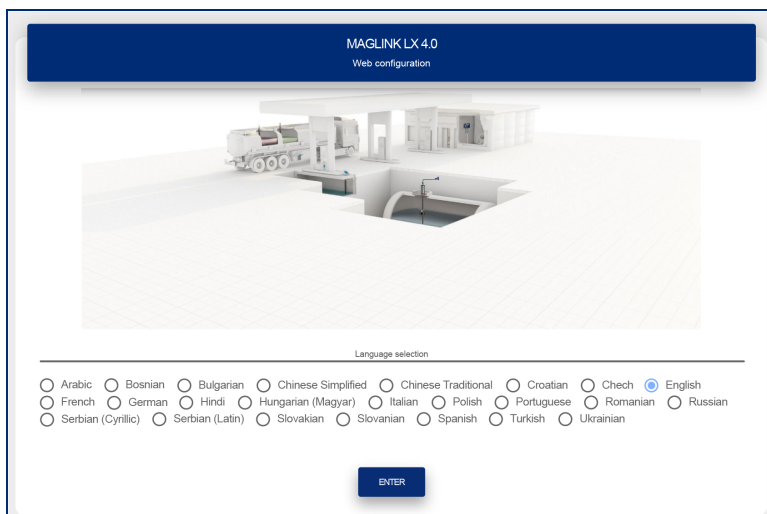


6. Set the **IP address**. The unit comes shipped from the factory with the IP address 10.90.10.92. Your laptop must be set one number higher or one number lower to connect to the console.
 - a. Click the button next to **Use the following IP address**.
 - b. Enter the IP address: **10.90.10.92**.
 - c. Enter the Subnet mask: **255.255.255.0**.
7. Click **OK**.

Your laptop is now set up to communicate directly with your MagLink LX4 console. Enter the IP address into your browser to connect.

Section 5 Login Procedure

The Home Screen shown below will come into view after you enter the IP Address into your browser.

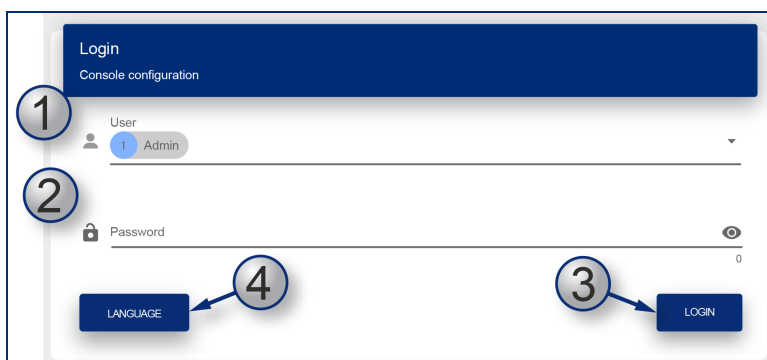


Under **Language selection**, select the radio button adjacent to the language that will be used for the configuration.

The table that follows shows the languages that can be selected:

Bosnian	Czech	Hungarian (Magyar)	Romanian	Slovenian
Bulgarian	English	Italian	Russian	Spanish
Chinese Simplified, Chinese Traditional	French	Polish	Serbian (Cyrillic and Latin)	Turkish
Croatian	German	Portuguese	Slovakian	Ukrainian
Arabic	Hindi			

Push the **Enter** button. The Login page will come into view.



1. Select a **User** type from the drop-down. There are three (3) types of Users:
 - **Guest:** Can only see Tank Status, Sensor Status and Reports (measures, deliveries, leakages, sudden loss). A Guest User cannot make changes to the configuration.
 - **Admin:** Has the same rights as Guest and can also make changes to the configuration.

- **SuperAdmin:** This is for internal use only.

2. Enter the **Password**.



NOTE: The initial password for a Guest user is GUEST-LX4. The initial password for an Admin User is ADMIN-LX4. These passwords are case-sensitive. Only and Admin user can change passwords.



IMPORTANT: The administrator must change the password as soon as possible to prevent access by personnel that are not approved. See ["Change Password" on page 58](#) for information.



TIP: As you type your password only neutral "bullet" characters will show (e.g. •••••). Select the "eye" icon  to show the password characters as you type.

3. Push the LOGIN button to log in to the console with the selected user type.
4. If you did not select the applicable language in the Home screen you can push the LANGUAGE button to go back to the Home screen.

The table that follows shows the types of data that can be seen by the two User types:

Data Type	Guest	Admin
Inventory	X	X
Historical Data Table	X	X
Alarm status	X	X
Delivery/Leakage	X	X
Login	X	X
Logout	X	X
Association of alarm to relays (per tank)		X
Managing internal and external sensors		X
Automatic print features		X
Managing strapping tables		X
Configuring email address book		X
Configuration of all dispensers		X
TCP/IP address configuration, DNS		X
Utility operations (Backup/restore, Clean historical data: Historical readings, alarms, reconciliation, shift reports, Touch screen calibration of the console; Restarting the console, Restarting the operating system of the console)		X
Reconciliation (if enabled)		X
Shift report with scheduling		X
IFSF module configuration		X
Sensors current status	X	X
Autocalibration Analysis		X
Print stock at predefined time of the day		X
SMS config		X

Section 6 Admin Account

The screenshot displays the Admin Account interface. At the top, a navigation bar contains tabs for Site info, System, Protocols, Tank group, Fuelbanks, Sntp, Site mapping, IFSF, and Dipswitches. On the right, a Main Menu is open, listing options such as System settings, Notifications, Tanks setup, Tank status, Reports, Maintenance, Change password, and Logout. The Site info tab is selected, showing a form with fields for Name (New site), Console serial (12345), Total tanks (4), Total external relays (16), Total dispensers (0), and Total sensors (0). Below these are fields for Optional cards (None, Modem, ISFS module) and buttons for SAVE and APPLY SETTINGS TO CONSOLE. Numbered callouts 1 through 6 highlight key UI elements: 1 points to the Main Menu, 2 points to a menu item, 3 points to the active tab, 4 points to a character limit indicator, 5 points to the SAVE button, and 6 points to the APPLY SETTINGS TO CONSOLE button.

1. When an Admin User is logged in, the screen will show a *Main Menu* on the right side of the display.
2. When a **menu item** is selected, its related *tabs* will come into view along the top of the display (the selected menu item will be highlighted by a blue background).
3. When a **Tab** is selected in the *Tabs Bar* it is highlighted by a yellow line.
4. When an entry in a tab has a *character limit* it is shown as "number of characters entered / character limit" to the right of its entry line.
5. Each tab has a **SAVE** button that is used to save that tab's configuration data after it is entered.



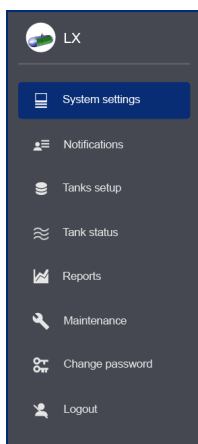
IMPORTANT: Make sure you save the configuration data that you entered before you continue to another tab.

6. When all applicable tabs have been configured you can click the **APPLY SETTINGS TO CONSOLE** button to save all of the configuration data to the console.



TIP: It is recommended to start from the Site Info tab and complete all applicable fields. Then, continue to the next tab to the right and complete all applicable fields. Continue this procedure until you have completed all tabs.

6.1 System Settings



6.1.1 Site Info

Enter the applicable information into the fields and make the correct selections as shown in the table that follows:

Field	Description
Name	The name of your site or station.*
Console serial	Enter your console's serial number. This field is read-only. Only a superuser can change it.
Total Tanks	This field shows the number of probes connected to the console. Enter 1-32*
Total external relays	This field shows the number of external output relays connected to the console. Enter 1-32*
Total dispensers	This <i>read-only</i> field shows the number of pumps configured for reconciliation/autocalibration.
Total sensors	This field shows the number of environmental sensors configured in the console.
Optional cards	Select the applicable radio button: None, Modem (for SMS functionality), IFSP

*Fields marked with an asterisk are mandatory.

Click **Save**. A confirmation message will come into view.

Site info: SiteInfo saved successfully

CLOSE

Select **CLOSE**.

6.1.2 System

System settings

Console language
English

Date formats
yyyy-MM-dd dd-MM-yyyy **MM-dd-yyyy**

NET vol (°C)
15° 20°

Level
mm cm inches

Volume
litres gallons

Alarm settings
Hysteresis (mm)
1

Leak threshold
Max flow rate x hour (litres)
20

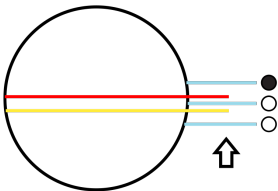
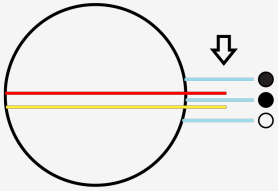
1 / 6 2 / 6

SAVE

APPLY SETTINGS TO CONSOLE



NOTE: All fields have selections (but not Alarm settings/Tolerance & Leak threshold) with default values. Changes to level and/or volume unit and number of decimals can automatically change with the selection.

Field	Description
Console language	Select the language for the graphical user interface .
Date formats	Date format used in the console
NET vol (°C)	Select the temperature used for the temperature compensated volume calculations
Level	Measurement units of the product and water height
Volume	Measurement units of the product and water volume
Alarm Settings	<p>The alarm hysteresis textbox is used ONLY in when there is NO alarm. This is used when there is turbulence in the tank. This is important for relay management.</p> <p>In the examples below, Hysteresis is the value interval between the yellow and red lines.</p> <p>Recommended setting: 10 mm</p>
	<p>STARTING FROM NO ALARM STATUS</p> <p>Relay 1 is linked to H₂O Alarm</p>  <ul style="list-style-type: none"> • $H_2O \leq H_2O \text{ Alarm Threshold} - \text{Hysteresis Value}$ → Alarm OFF ○ • $H_2O \leq H_2O \text{ Alarm Threshold}$ → Alarm OFF ○ • $H_2O > H_2O \text{ Alarm Threshold}$ → Alarm ON ●
Alarm Settings	<p>STARTING FROM ALARM STATUS</p> <p>Relay 1 is linked to H₂O Alarm</p>  <ul style="list-style-type: none"> • $H_2O > H_2O \text{ Alarm Threshold}$ → Alarm ON ● • $H_2O > H_2O \text{ Alarm Threshold} - \text{Hysteresis Value}$ AND $H_2O < H_2O \text{ Alarm Threshold}$ → Alarm ON ● • $H_2O < H_2O \text{ Alarm Threshold} - \text{Hysteresis Value}$ → Alarm OFF ○
Leak threshold (liters)	<p>Used for the Dynamic Tank Leak Detection function*. Defines the maximum leak rate per hour that can be detected. A loss over that threshold will be considered as an unregistered sale and will abort the Dynamic Leak test.</p> <p>Recommended setting: 20 liters</p> <p>*Tank Leak Detection: The console automatically starts a tank leak test (refer to the US EPA procedure) when the tank is idle. The Leak Test can also be started manually from the Tank Status web page.</p> <p>The system must have 2 hrs of continuous idle time to do a 0.2 gph tank test and 3 hrs of idle time to do a 0.1 gph tank test.</p> <p>The tank must be filled to a 50% minimum and the last tank delivery must have occurred at least 6 hours before</p>

Field	Description
	for the system to automatically start a test. A sale or a delivery will cause the tank test in progress to abort.
Leakage Thresholds	This is the threshold for the tank leak test

Click **Save** when you complete the *System* tab configuration.

The system will also show the status of the Dip-switches 1 & 2.

6.1.3 Protocols

Pos	Connection	Sales	Protocol	Port	Baud rate	Parity	Data bit	Stop bit
1	NONE SERIAL TCP-IP	YES	Protocol: GILBARCO	Port 1	Baud rate 9600	Parity Even	Data bit 7	Stop bit 1
2	NONE SERIAL TCP-IP	NO	Protocol: GILBARCO	Port 8001	4 / 5			
3	NONE SERIAL TCP-IP	NO	Protocol: GILBARCO	Port 2	Baud rate 9600	Parity Even	Data bit 7	Stop bit 1

Enable Gilbarco SET commands

Printer connection: NONE COM1 COM2 USB

SAVE

This section specifies the protocol to use to communicate with a POS (point of sale) system or a FCC (forecourt controller system).

Field	Description
Connection	<p>Select the type of connection:</p> <p>» None: If no device communicates with the console.</p> <p>» Serial: If a serial RS232 connection is made between the POS/FCC and the console.</p> <p>» TCP/IP: If a TCP-IP connection is made between the POS/FCC and the console.</p>
Sales	<p>Click YES if the POS/FCC will transmit the dispenser sales transactions to the console. The Gilbarco BCD protocol is supported for this function. Note, that only one connection at a time can support the sales transactions.</p>
Protocol	<p>Select one of the two</p> <p>» Gilbarco: To permit the GVR TLS350 protocol commands.</p> <p>» DOMS OPC: To permit the DOMS OPC protocol commands.</p>
Port	<p>» If serial communication was selected above, select which serial port will be used (COM1 or COM2).</p> <p>» If TCP-IP communication was selected above, configure the TCP-IP port that to be used.</p>
Baud rate / Parity / Data bits / Stop bits	<p>Theses fields are in operation if serial communication has been selected. Configure the settings for the serial ports.</p>
Enable Gilbarco Set Commands	<p>Select this button for a range of GVR TLS350 set commands to be used.</p>
Printer Connection	<p>Select:</p> <p>» None: If no printer is connected</p> <p>» USB: If a printer is connected through the USB port.</p> <p>» COM1/COM2: If a printer is connected to the serial port (baud rate for the printer should be set to 9600 bps). Note that this is necessary for the fields to become available if the serial ports have not been configured for POS/FCC communication.</p>

Click **Save** and **Apply settings to console** when you complete the *Protocols* tab configuration.

6.1.4 Tank Group




NOTE: The number of tanks are configured in the Site Info tab. Tank parameters are configured in Tanks setup from the Main Menu.

This tab is used to make Siphon (Manifold) groups.



IMPORTANT: Tanks in a Siphon (Manifold) group must contain the same product.

There are two (2) panels to configure in the "Tank Group" screen.

- In the top panel:
 - Enter a **Name** for the Tank Group.
 - Select a **Product Family** from the drop-down for this Tank Group. The tanks that contain the selected product family will automatically come into view under *Available Tanks*.
 - Click the **Save New** button.
- In the bottom panel:
 - Add the applicable tanks to the Tank Group
 - Click the **Save**  icon on the right side of the panel.
 - Click **Apply settings to console** to complete the procedure.

To delete a group, click the **Delete**  icon on the right side of the panel.

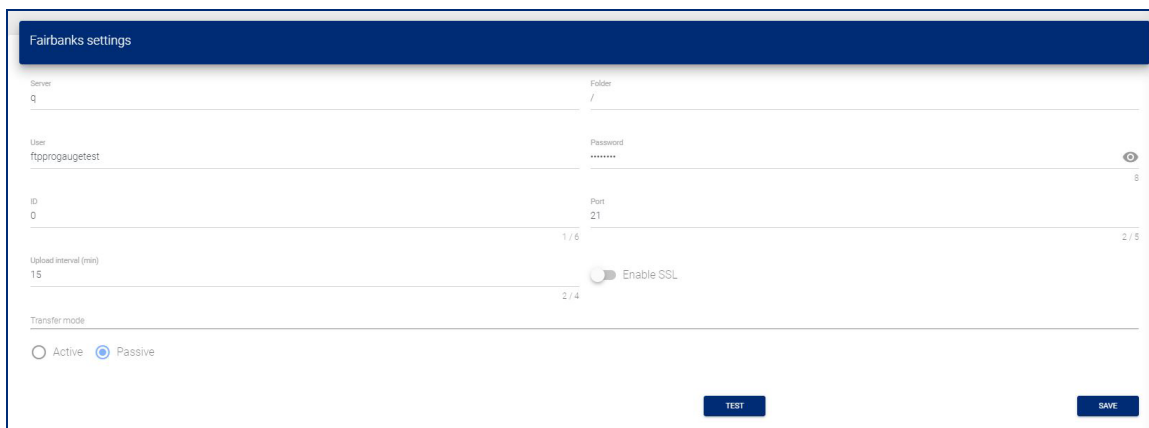
6.1.5 Shifts

The "Shifts" screen is used to configure shift reports. A shift report shows the tank contents at the beginning and end of the shift. The shift report is made in another menu.

Configure the **Closing Time** for up to four shifts (use the drop-down lists)

When complete, click the **Save Shift Schedule** button. Click **Apply Settings to Console** to complete the procedure.

6.1.6 Fairbanks



The console can send information to a Fairbanks server through FTP if applicable. This information includes:

- Inventory stock levels
- Deliveries
- Alarms
- Pump transactions (if connected to a POS/FCC that uses the Gilbarco BCD protocol).

Field	Description
Server	The IP address of the server that will receive the files (given by the server administrator).
Folder	The folder in the server where the files are to be sent, provided by the server administrator (optional, can be left blank)
User	User name provided by the server administrator
Password	Password provided by the server administrator
ID	Console identifier. If set to 0, the FTP transfer gets disabled.
Port	FTP port, provided by the server administrator
Interval	How often the console will attempt to establish connection to the server in order to send the files
Transfer mode	Active or Passive, info provided by the server administrator.
Enable SSL	Activate for SSL connections

Click **Save** when you complete the *Fairbanks* tab configuration.

6.1.7 SMTP

The console can send email notifications related to tank information, tank events and console events.

Configure the SMTP connection parameters in this page. Notifications and email recipients are configured under ["Notifications Menu" on page 29](#).

Field	Description
Server	The email server that handles the email functionality
Sender	Email of the sender
User	Username provided by the mail Server
Password	Password provided by the mail Server
Port	SMTP port, provided by the mail Server
Enable SSL	Activate it for SSL connections.

Use the TEST button to send a test email to a specified recipient.



REMINDER: The recipient must first be configured under ["Contacts" on page 29](#).

Click **Save** when you complete the *SMTP* tab configuration.

6.1.8 Site Mapping (for Reconciliation/Autocalibration mode only)

A POS/FCC that uses the Gilbarco BCD Dispenser Interface Protocol must be used to communicate pump sales. Configure the tank-to-nozzle mapping on this tab.

Field	Description
Dispenser (POS system settings)	<p>This field identifies the index of the first pump (refer to the Gilbarco BCD Dispenser Interface Protocol).</p> <p>Select Index 0 if the first pump in the POS/FCC is identified as Pump 0.</p> <p>Select Index 1 if the first pump in the POS/FCC is identified as Pump 1.</p> <p>The word "Pump" refers to the Fueling Position as shown in the Gilbarco BCD Dispenser Interface Protocol.</p>
Nozzle (POS system settings)	<p>This field identifies the index of the first nozzle of the pump (refer to the Gilbarco BCD Dispenser Interface Protocol).</p> <p>Select Index 0 if the first nozzle in the POS/FCC is identified as Nozzle 0.</p> <p>Select Index 1 if the first nozzle in the POS/FCC is identified as Nozzle 1.</p> <p>The word "Nozzle" refers to the Meter Identifier as shown in the Gilbarco BCD Dispenser Interface Protocol.</p>
Total dispensers	Identifies the total number of pumps (Fueling Positions) that are connected to the tanks monitored by the console
Max nozzles	Identifies the maximum number of nozzles for each pump.

Click **Save** when you complete the top section of the *Site mapping* tab configuration.

6.1.8.1 Map Dispensers and Nozzles to Tanks

1. Select a **Dispenser**.
2. Map each **Nozzle** to a Tank.
3. The offset is the "meter drift" value of the dispenser (the meter drift is set during a pump calibration).
4. Use the swipe button to Enable the Nozzle to Tank mapping.



IMPORTANT: Nozzle-to-tank mapping must be done correctly or the console will communicate incorrect sales data for the tanks and the autocalibration / reconciliation function will not operate correctly.



NOTE: When manifolded tanks are in use, the first tank in the Manifold Group should be mapped to the related nozzles. The reconciliation reports and the delivery reports for the full manifold Group will be shown under the 1st tank.

Autocalibration cannot be performed in a tank that is part of a Manifold Group.

Click the **Save Mapping** button at the bottom of the panel to save the configuration.

6.1.9 IFSF

IFSF settings

Country code

826 United Kingdom

Address node

1 001

Password

••••••

TLG model

mod

TLG serial

serial

TLG type

typ

3 / 3

6 / 12

6 / 6

3 / 3

SAVE



NOTE: You must have an IFSF card installed to use this function.

Field	Description
Country code	Select the country from the drop-down list
TLG model	Console Model (LX4)
Address node	The address node of the console in the IFSF network. This must be set correctly for the POS to connect with the console.
TLG serial	Serial number of the console.
Password	Password (required by the POS in to make the connection).
TLG type	Type of console (LX4).

Click **Save** when you complete the *IFSF* tab configuration.

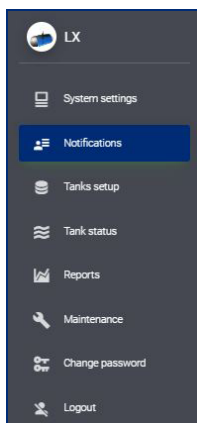
6.1.10 DIP-Switches

Dipswitch status		
Position	Status	Name
1	<input type="checkbox"/>	NotUsed(1)
2	<input type="checkbox"/>	Input sensors
3	<input type="checkbox"/>	Input alarm
4	<input type="checkbox"/>	Inverted relays
5	<input type="checkbox"/>	NotUsed(5)
6	<input type="checkbox"/>	System reset
7	<input type="checkbox"/>	Reconciliation
8	<input type="checkbox"/>	NotUsed(8)

This is a read-only view of the physical configuration of the DIP-Switch block on the Main Board in the console.

When all applicable tabs have been configured, click the **APPLY SETTINGS TO CONSOLE** button.



6.2 Notifications Menu



6.2.1 Contacts

Contacts	
Name	Email
Dimitris Bastounis	dimitris.bastounis@doverfs.com
NEW CONTACT	

When the contacts tab is selected, all contacts that have been entered can be seen.

Click the **Edit** icon  to change information for a contact. Click the Delete icon  to remove a contact.

Click **NEW CONTACT** to configure notification information for a new contact name. The New Contact window will come into view.

New contact

Name
Dimitris Bastounis

Email
dimitris.bastounis@doverfs.com

18 / 30

CANCEL

SAVE

























Complete the fields:

- Name
- Email: To receive notifications by email

Click **Save** when you complete the *New Contact* configuration.

6.2.2 Notifications

Notifications

Event	Hour	Email	Print	Contacts
System alarm				Dimitris Bastounis 
Tank alarm				Dimitris Bastounis 
Delivery				Dimitris Bastounis 
Leakage				Dimitris Bastounis 
Stock	15.00			Dimitris Bastounis 
Shift				Dimitris Bastounis 
Sudden loss				Contact list 
Sensor alarm				Dimitris Bastounis 

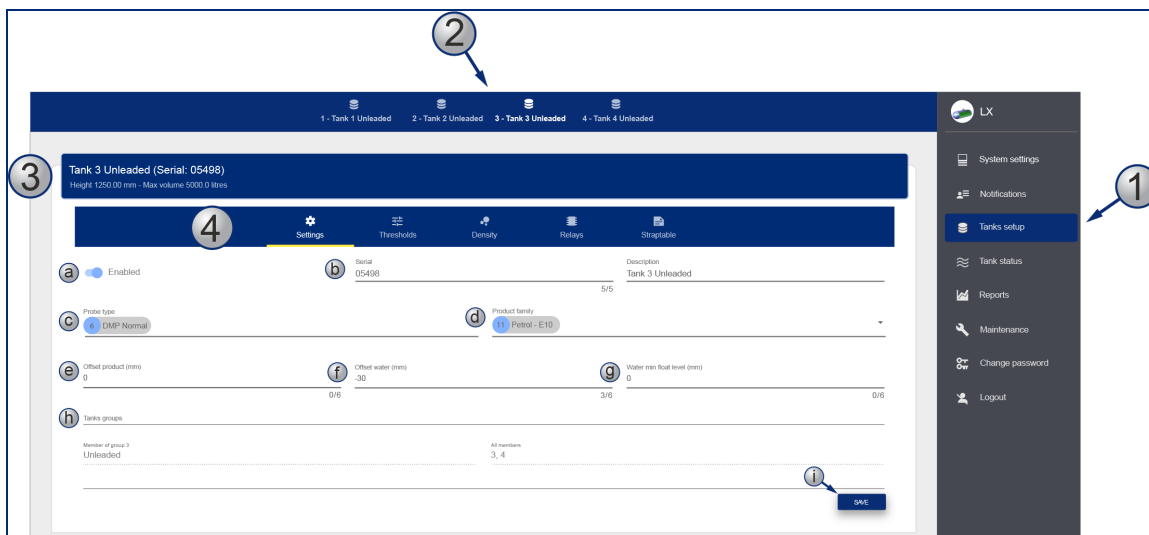
Save

Set up the contact name(s) and notification type for each of the Notification Events.

Field	Alarm Description
System alarm	Probe alarm, Strapping table alarm, Wrong offset alarm (mm<0), Out of Scale alarm
Tank alarm	High-high product, High product, Low product, Low-low product, Water
Delivery	End of delivery report
Leakage	Leakage detected
Stock	Inventory report
Shift	Shift report
Sudden loss	Sudden loss report
Sensor	Sensor alarm

Click **Save** when you complete the *Notifications* tab configuration.

6.3 Tank Setup Menu



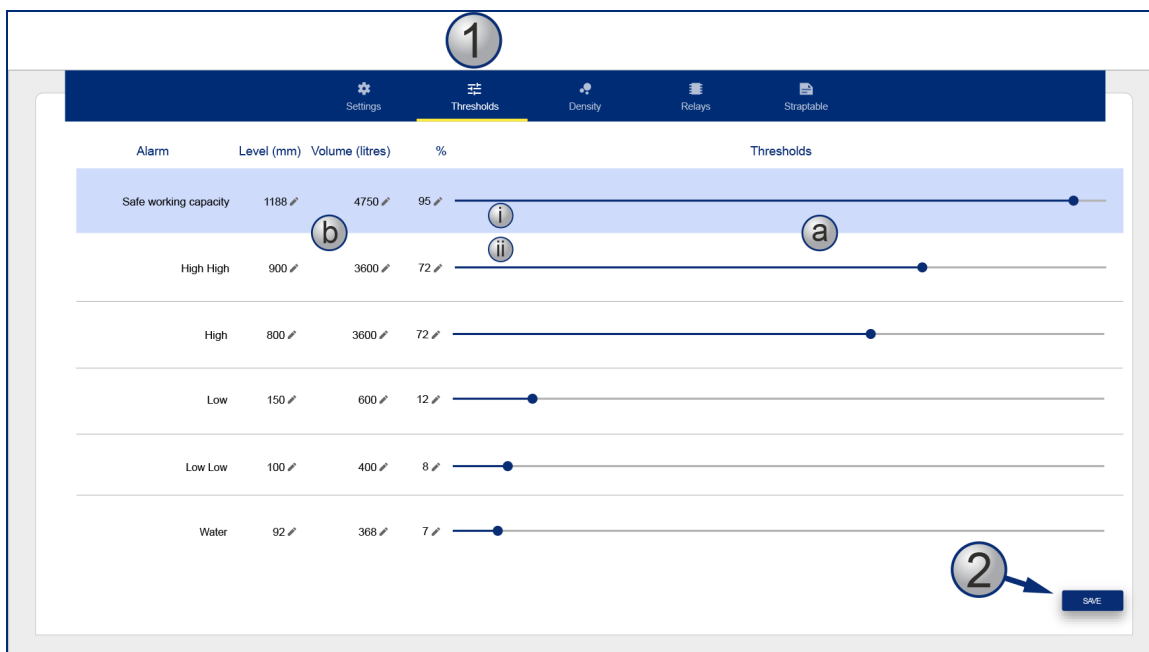
1. Select **Tank setup** from the Main Menu. The number of Tanks configured in "Site Info" on [page 19](#) will show in the Tabs bar.
2. Select a Tank to configure.
3. An information bar below the tabs bar will show the **Height** and **Max Volume** of the selected tank. This is read-only data from the last line of the tank strapping table ("[Straptable](#)" on [page 36](#)).


6.3.1 Settings

4. The bar below the information bar shows the configuration parameter selections. **Settings** is the first selection.
 - a. Move the **Enabled** swipe button to ON to let the application query the installed probe during the read cycle. A probe query does not occur if this button is OFF.
 - b. Serial: This is the Probe address (if it is incorrect, there will be no reading).

- c. Select a **Probe type** from the drop-down:
- DMP (DMP-SI-485 wired)
 - DMP AEF (DMP-SI probe with AEF)
 - DMP DENSITY (DMP-SI with density float)
 - DMP DENSITY & AEF FLOAT (DMP-SI with density float & AEF)
 - XMT/XSI (XMT-SMT / XMT-SI-485)
 - XMT/XSI AEF (XMT-SMT / XMT-SI-485)
 - XMT/XSI AEF RF (XMT-SMT / XMT-SI-RF with AEF)
 - XSI RF
- d. Select the **product type** from the *Product family* drop-down.
- e. **Offset product:** This value is used to calibrate the position of the product float. Possible value range: ± 5000 mm (197 in).
- f. **Offset water:** This value is used to calibrate the water float Possible value range: ± 5000 mm (197 in).
- g. **Water Min Float Level:** This is the threshold to set the water volume at zero and show the water level.
- If “Water level from probe + water offset” > Water Min Float level, the Water volume *and* Water level will be shown.
 - If “Water level from probe + water offset” < Water Min Float level, the Water volume will not be shown but the Water level will be shown.
- h. The **Tank groups** show read-only information that identifies:
- The name of the tank group of which the selected tank is a member.
 - A list of all of the tanks in the tank group.
- i. Click **Save** when you complete the *Settings* configuration.

6.3.2 Thresholds



1. Select **Thresholds** from the configurations parameters. Use one of two methods to adjust each of the parameter values:
 - a. Move the slider until you get the correct values.
 - i. The slider for **Safe working capacity** adjusts by **%**. The Level and Volume values will adjust automatically.
 - ii. The slider for all other parameters adjusts by **Level**. The Volume and % values will adjust automatically.
 - b. Click the **Edit** icon  for one of the values. Enter the correct value in the pop-up. Click **OK** to save the value. The other values for that parameter will adjust automatically.
2. Click **Save** when you complete the *Thresholds* configuration.



NOTE: .From the top Threshold down, each of the Threshold value sets (Level, Volume and %) must be lower than the one above it. For example, the Low Threshold must have lower values than the High Threshold. If the values are not set correctly, the SAVE button will not be on.

6.3.3 Density

The screenshot shows the 'Density' configuration screen. At the top, a navigation bar includes 'Settings', 'Thresholds', 'Density' (highlighted), 'Relays', and 'Straptable'. Below this, the screen is divided into sections. Section 1 (top bar) shows 'Firmware: Ver 1.2.3'. Section 2 (Fuel type and density value) has radio buttons for 'No density float', 'GASOIL', 'GASOLINE' (selected), 'LPG', and 'WATER'. Section 3 (Current Density Values) has fields for 'Density' and 'TC density'. Section 4 (Density) has a toggle switch for 'Density' and a 'Density (kg/m3)' field with a 'SAVE' button. Section 5 (Coefficients settings) has fields for 'Coefficient A' (-430.727) and 'Coefficient B' (4090.824) with a 'SAVE' button. Numbered callouts 1 through 5 point to these specific elements.

Configure a probe with an installed density float in this screen. The parameters that show in the illustration above are only available when the **DMP Density** Probe type is selected in **"Tank Setup Menu"** on page 31 > **"Settings"** on page 31.

1. Select **Density** from the configurations parameters.
2. Select the applicable **Fuel type**(product in the tank).
3. Current Density Values: The density values as read by the sensor.
 - Density: This is the density value at ambient temperature
 - TC density: This is the density value compensated at reference temperature.
4. Use the swipe button to select the density flag if applicable:
 - a. Enter a **value** in the field to self-calibrate the sensor.
 - b. Click **Save**.
5. The **Coefficients settings** are values that are given with the density sensor.
 - a. Enter the Coefficient A (negative) and Coefficient B (positive) values in the fields.
 - b. Click **Save** after you enter the values.

The screenshot shows the 'Density' configuration screen for 'Tank 4 Unleaded (Serial: 05499)'. The top bar includes 'Settings', 'Thresholds', 'Density' (highlighted), 'Relays', and 'Straptable'. Below this, the screen shows fields for 'Density' (0) and 'NET Density' (0), with a 'SAVE' button.

For all other probe types: enter the (normal) **Density** and **NET** (compensated) **density** values in the fields. Enter the same value in both fields if one of the two values is not known.

6.3.4 Relays

The screenshot shows the 'Relays' configuration interface. At the top, a dark blue navigation bar contains icons and labels for 'Settings', 'Thresholds', 'Density', 'Relays' (highlighted), and 'Straptable'. Below this, the 'Internal Relays' section contains four dropdown menus: 1 (HIGH HIGH), 2 (HIGH), 3 (LOW LOW), and 4 (WATER). The 'External Relays' section contains eight dropdown menus: 1 (NO LINK), 2 (NO LINK), 3 (NO LINK), 4 (NO LINK), 5 (NO LINK), 6 (NO LINK), 7 (OFF), and 8 (NO LINK). A blue 'SAVE' button is positioned at the bottom right of the configuration area.

The four internal relays of the console can be configured in this screen.



NOTE: The External Relays that show must first be set up in "Site Info" on page 19.

The available alarms/actions that can be linked to a relay:

- | | | | |
|------------|----------------|-----------------|-------------------|
| » Disabled | » Low | » Very high | » Water |
| » No Link | » Out of scale | » Very low | » Ethanol |
| » High | » Probe | » Communication | » Not Initialized |

Click **Save** when you complete the *Relays* configuration.

6.3.5 Straptable

Unleaded (Serial: 05498)

Height 1250.00 mm - Max volume 5000.0 litres

Settings

Thresholds

Density

Relays

Straptable

COPY FROM TANK

CSV EXPORT

Upload options

Level

☒ mm
 ☐ cm
 ☐ inches

Volume

☒ litres

Field Separator

☐ Comma
 ☒ semicolon
 ☐ Tab
 ☐ Space

File

Select strap table to upload
☐ strapping table 500mm-9202liter

Index	Level (mm)	Volume (litres)	Diff (litres)	Diff (litres)	Level (mm)	Diff (litres)
1	0	0	0	0	0	0
2	1	207.04	207.04	1	207.04	207.04

The Strapping table shows the related mm / litre value of the Tank Volume.

You can enter a Strapping table in one of two methods:

- You can import a table form a csv or txt file. You must configure the import parameters:
 - Level units
 - Volume units
 - The Field separator



IMPORTANT: The Field separator for a tank table/strapping chart from a 3D Laser **MUST** be set as a semicolon (;).

when using the tank table/strapping chart from the 3D Laser the field separator needs to be set as Semicolon.

Select a file from the attachment list

- You can copy a strapping table from a different tank. Click the **Copy from tank** button and select an available strapping table from the list that comes into view.

When a strapping table upload is complete, the strapping points (Index) can be seen in the table at the bottom of the screen. Use the scroll bar to see more points

A selected strapping table can be exported to a csv format that can be saved in a spreadsheet or text editor. Click the **CSV Export** button to continue.

6.3.6 ACR mode

The menu in the image below will show when the tank is in ACR Mode.

The screenshot displays the 'ACR mode' configuration interface. At the top is a navigation bar with icons for Settings, Thresholds, Density, Relays, Straptable, ACR mode (highlighted), and ACR results. Below the navigation bar, the 'ACR CONFIGURATION' section contains three input fields: 'Unstable delivery time (min)' with a value of 0, 'Start delivery detection (litres)' with a value of 0, and 'Ending delivery detection (litres/min)' with a value of 0. Each field has a '0 / 6' indicator below it. Below these fields is a 'Vapor Recovery System' dropdown menu set to '0 No Vapor Recovery System' and an 'Evaporation factor (%)' input field with a value of 0. The 'CALIBRATION PARAMETERS' section follows, containing three input fields: 'Number of segments (25-45)' with a value of 0, 'Low segment' with a value of 0, and 'High segment' with a value of 0. Each field has a '0 / 2' indicator below it. At the bottom, there are 'Accepted values' ranges: '25 - 45' for the number of segments, '1 - 0' for the low segment, and '1 - 0' for the high segment. The 'Calibration cycles' section shows a 'Max' value of 0 and a 'Required' value of 0, with a '0 / 3' indicator and 'Accepted values: 1 - 100'.

ACR CONFIGURATION		
Unstable delivery time (min)	Start delivery detection (litres)	Ending delivery detection (litres/min)
0	0	0
0 / 6	0 / 6	0 / 6
Vapor Recovery System	Evaporation factor (%)	
0 No Vapor Recovery System	0	
	0 / 6	

CALIBRATION PARAMETERS		
Calibration segments		
Number of segments (25-45)	Low segment	High segment
0	0	0
0 / 2	0 / 2	0 / 2
Accepted values: 25 - 45	Accepted values: 1 - 0	
Calibration cycles		
Max	Required	
0	0	
0 / 3	0 / 3	
Accepted values: 1 - 100	Accepted values: 1 - 0	

6.3.6.1 ACR Configuration Parameters

- **Unstable delivery timer:** Enter the time necessary to let the product settle at the end of delivery.
Turbulence can occur during and after a delivery. This can cause incorrect indications. Enter a time from 0 (disable) to 59 minutes. After this time a probe can be monitored as usual.
The recommended value is five (5) minutes.
- **Start delivery detection:** This shows the minimum quantity of product increase necessary to start delivery detection. The recommended value is 100 liters.
- **End delivery detection:** This is the quantity (in gallons/liters) for each minute to show the end of delivery. The recommended value is 20 liters (5.25 gallons).
- **Vapor Recovery system:**
- **Evaporation factor (%):** This is used only when ACR tank mode is selected to calculate evaporation loss as a percentage of unit volume. For diesel products enter "0," for unleaded products enter "0.17."

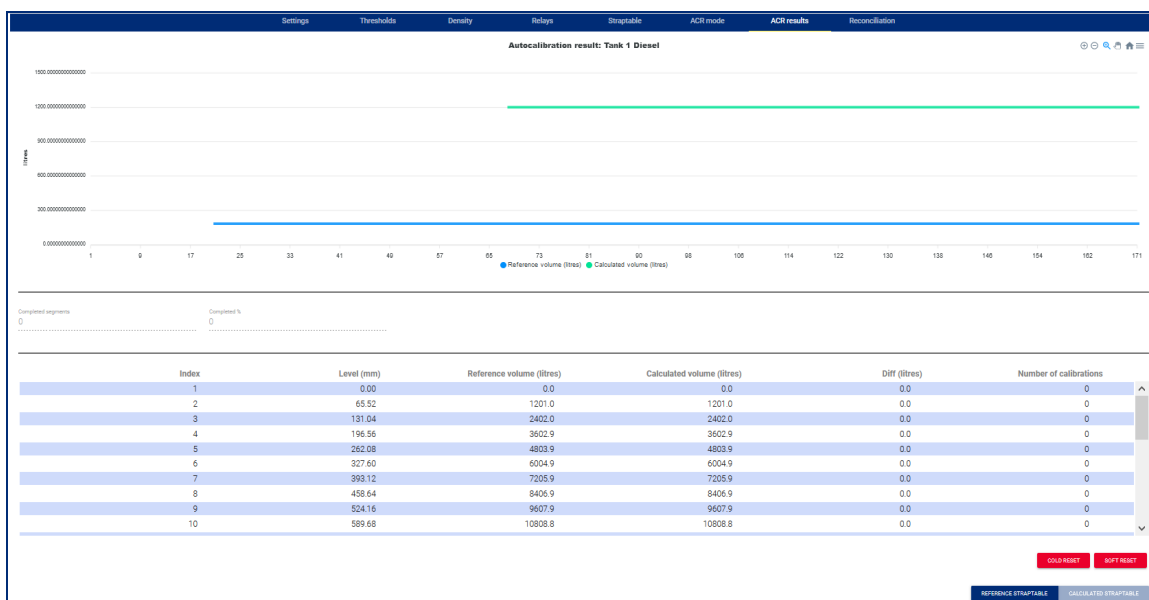
6.3.6.2 Calibration Parameters

- **Number of segments:** The tank is divided into a specified number of segments for Autocalibration. The permitted range is 25-45 segments. The higher number of segments selected, the more precision in the Autocalibration. This would also increase the time to complete Autocalibration.
- **Low segment:** This shows the lowest segment of the calibration range.
- **High segment:** This shows the top segment of the calibration range.

- **Calibration cycles max:** This is the maximum calibration cycles value parameter. This sets the number of auto calibration cycles in which the segments will not be changed if the auto calibration process is not complete. the minimum value is 5 and the maximum is 10.
- **Calibration cycles required:** This value specifies the Autocalibration status percentage (%).

When each segment of the specified auto calibration volume range is at this value, Autocalibration is complete. Because there can be segments in an Autocalibration cycle that are not changed, some segments can be changed more than the required value.

6.3.7 ACR Results



6.3.8 Reconciliation

Field	Value	Indicator
Test vend (litres)	12	2 / 6
Unexpected sales (litres)	15	2 / 6
Average time (litres)	23	2 / 6
Loss warning (litres)	50	2 / 6
Loss alarm (litres)	80	2 / 6
Unaccounted variance (%)	10	2 / 6

- **Test vend:** This is the quantity of product used in the calibration of hose meters. In meter calibration, there is a product quantity removed from the tank without a related sale. if *Unaccounted variance* is greater than Test vend threshold, then it is reported as “Test vend” and it is not thought of as a “Loss”.
- **Unexpected sales (litres):** An alarm will be caused when the tank is in a quiet mode (there are no sales) and product loss is sensed.
- **Average time:** This specifies the time for the loss warning or loss alarm.
- **Loss warning (litres):** A difference more than this threshold will cause a Loss Warning



- **Loss alarm (liters):** A difference more than this threshold will cause a Loss Alarm.
- **Unaccounted variance (%):** If a difference in the daily reconciliation is more than this threshold, it will cause an alarm.

Section 7 Sensor Setup

7.1 On/Off

1. Enter the sensor's **Id number** (e.g. 1, 2, 3 etc.).
2. Select a **sensor type**:
 - Internal on/off: Exd sensors that are connected to the CN10 connector of LX4 console.
 - MagLink I/O: I.S sensors that are connected to the I/O module.
 - Disconnected: The sensor is not connected.
3. Enter a **Name** for the sensor (up to 30 characters).
4. Alarm status: Select the method that will cause an alarm:
 - Open: For normally open sensors, the alarm is caused when the sensor contact closes.
 - Closed: For normally closed sensors, the alarm is caused when the sensor contact opens.
 - For Disconnected sensors: This applies to sensors that are connected through the I/O module. The alarm is caused when the communication of the LX4 with the I/O is stopped.
5. Relay: Select if a relay must be started when an alarm is caused.
6. Click **Save** when you complete the *Sensor* configuration.

The Sensor Status is shown at the bottom of the screen.

Number	Sensor type	Name	Position	Relay	Location	Alarm status	Status
2	ENABLED INTERNAL MAGLINK I/O	Float sensor 12 / 30	2	Internal relay 1	Tank 1	OPEN CLOSED	●  

Status Icon:

Green: No alarm

Yellow: Alarm is active and it has been acknowledged

Red: Alarm is active and it has not been acknowledged

Use the **Edit** button to make changes to the sensor configuration.

The **Delete** button will erase the sensor configuration from the system.

7.2 Discriminating sensors

Discriminating sensors

Number: 0 **ENABLED** Sensor type: INTERNAL MAGLINK I/O Name: sensor 1 Position 1: 1 Relay 1: Internal relay 1 Position 2: 2 Relay 2: Internal relay 2 Alarm status: OPEN CLOSED



Location: TANK 1 TANK 2 TANK 3 SUMP 1 SUMP 2 SUMP 3 SITE/Well

SAVE

Num	Sensor type	Name	Position 1	Relay 1	Status	Position 2	Relay 2	Status	Location	Alarm status
1	INTERNAL MAGLINK I/O	Discrim	1	External relay 1	●	3	External relay 2	●	Site/Well	OPEN CLOSED

- **Number:** Enter a number that the system will use to identify each sensor. This number cannot be shared between two different types of sensors. For example, it is not possible to configure On/Off sensor Number 1 and Discriminating sensor Number 1.
- **Enabled:** If this button is highlighted, then the sensor is thought of as in operation in the system. If the button is not selected, then the sensor is not in operation and there will be no alarms related with the sensor operation.
- **Sensor type:** Select the type of sensor:
 - **Internal On/Off:** Exd sensors connected to the CN10 connector of LX console.
 - **Maglink I/O:** I.S sensors connected to the I/O module.
- **Name:** Enter a name for the sensor.
- **Position 1:** This is the slot position on the CN10 connector or on the I/O sensor board for the **product float**.
- **Relay 1:** Select this option if a relay should be started when the product alarm is caused. If no external relays have been configured in the *System Settings/Site Info* menu, then it will not be possible to select an external relay in this menu.
- **Position 2:** This is the slot position on the CN10 connector or on the I/O sensor board for the **water float**.
- **Relay 2:** Select this option if a relay should be started when the product alarm is caused. If no external relays have been configured in the *System Settings/Site Info* menu, then it will not be possible to select an external relay in this menu.
- **Alarm status:** Select the status of the sensor at which the alarm is caused:
 - **Open:** For normally open sensors, the alarm will trigger when the sensor contact closes.
 - **Closed:** For normally closed sensors, the alarm will trigger when the sensor contact opens.
- **Location:** Enter the location of the sensor (for reporting purposes only).

The Sensor Status is shown at the bottom of the screen.

Number	Sensor type	Name	Position	Relay	Location	Alarm status	Status				
2	ENABLED	INTERNAL	MAGLINK I/O	Float sensor	2	Internal relay 1	Tank 1	OPEN	CLOSED	●	 

12 / 30

Status Icon:

Green: No alarm

Yellow: Alarm is active and it has been acknowledged

Red: Alarm is active and it has not been acknowledged

Use the **Edit** button to make changes to the sensor configuration.

The **Delete** button will erase the sensor configuration from the system.

7.3 Wireless



Wireless sensors setup

Id: 0, Name: , Serial: 0 / 30, Has water float: ☐

Location: TANK 1, TANK 2, TANK 3, TANK 4, MANHOLE, SUMP

Offset product (mm): 0 / 6, Relay product: NONE, Offset water (mm): 0 / 6, Relay water: NONE

SAVE

Id	Name	Serial	Location	Product offset	Product relay	Water offset	Water relay
1	one	11111	101: Sump	Offset product (mm): 26	Relay product: NONE	Offset water (mm): 26	Relay water: NONE

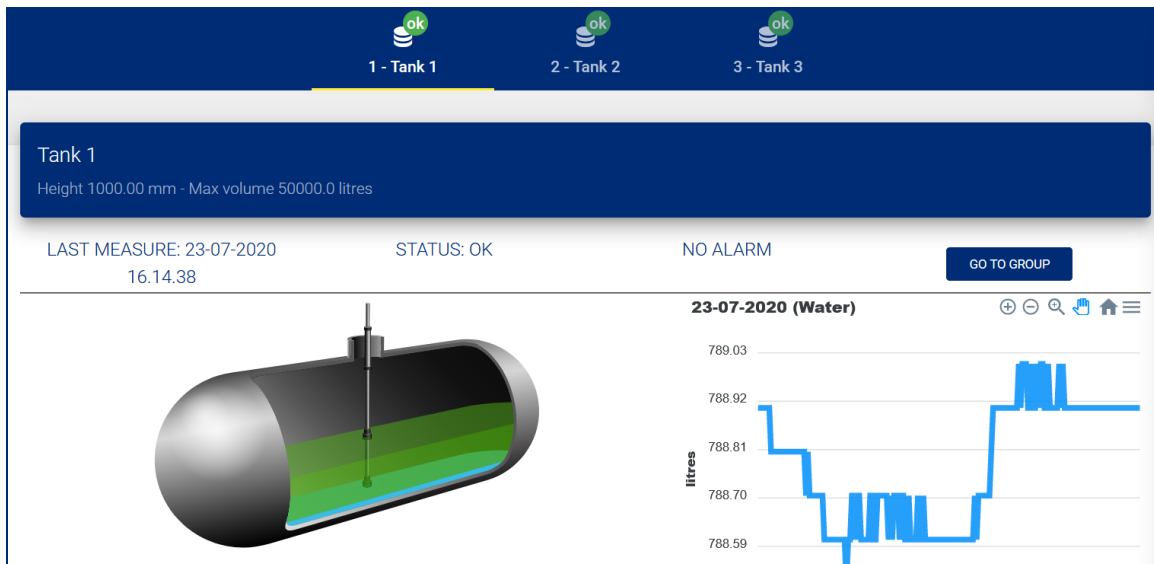
Save / Delete

Select the Wireless icon to configure RF sensors in your system.

1. Enter the **id number** of the sensor (e.g. 1,2,3 etc)
2. Enter a **Name** for the sensor (up to 30 characters).
3. Enter the **Serial number** of the sensor as shown on the sensor body.
4. Use the **Has Water Float** slide button to identify a sensor with a water float.
5. Select the **Location** of the sensor (select the tank, manhole or sump).
6. Enter the **Product offset**.
7. Select a **Relay** to start when a *high product* alarm is sensed.
8. Enter the **Water offset**. This will be available only when the "Has water float" slide button is toggled to the on position.
9. Select a **Relay** to start when a *high water* alarm is sensed.

10. Click **Save** when you complete the *Wireless Sensor* configuration.
11. The saved Wireless sensor configuration will show at the bottom of the screen.
12. Select the **Save** icon to save the configuration to a connected pc. Use the **Delete** icon to remove this configuration.

Section 8 Tank Status

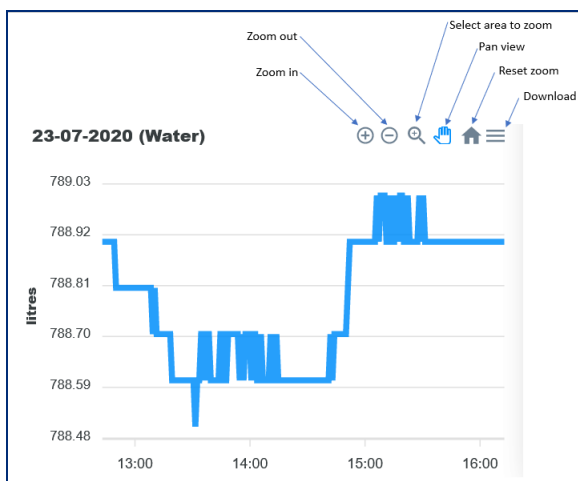


A colored icon next to each tank icon in the top bar shows the status of the tanks:

- Yellow: Alarms are active and they have been acknowledged.
- Red: Alarms are active but they have not been acknowledged.
- Green: There are no alarms for this tank.
- Grey: The tank is disabled.

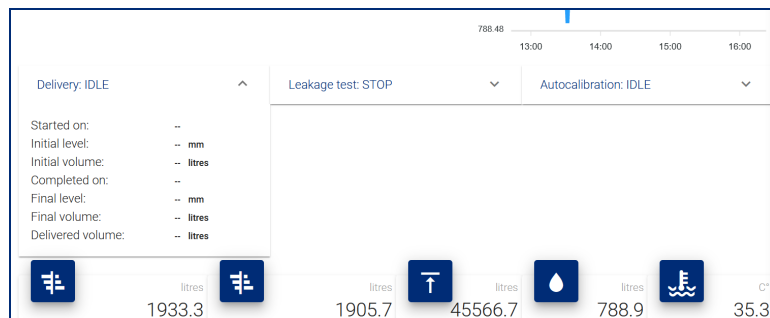
The graph on the right side of the screen will scroll automatically to show the information that follows:

- Product / water height
- Product volume / Product volume TC
- Water volume
- Density / TC density
- Temperature

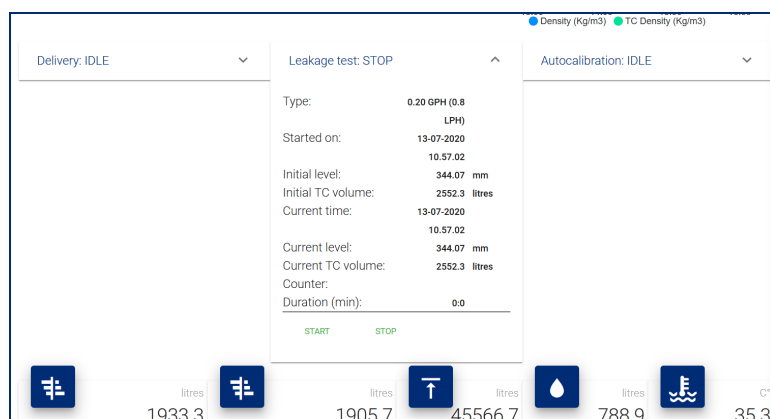


The bottom of the screen shows information on the Deliveries, Leak Tests and Autocalibration.

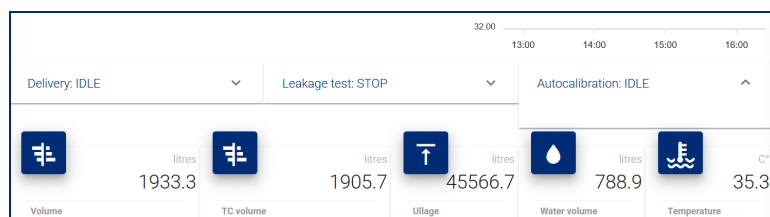
- **Delivery:** Click on the Delivery drop-down menu to show information on the last delivery recorded.



- **Leakage test:** Click on the Leakage drop-down menu to show information on the status of the leakage function. The user can manually start and stop a leak test from this menu.

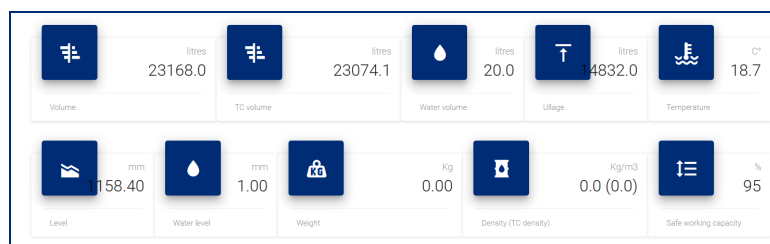


- **Autocalibration:** Click the Autocalibration drop-down menu to show information on the status of the autocalibration function.

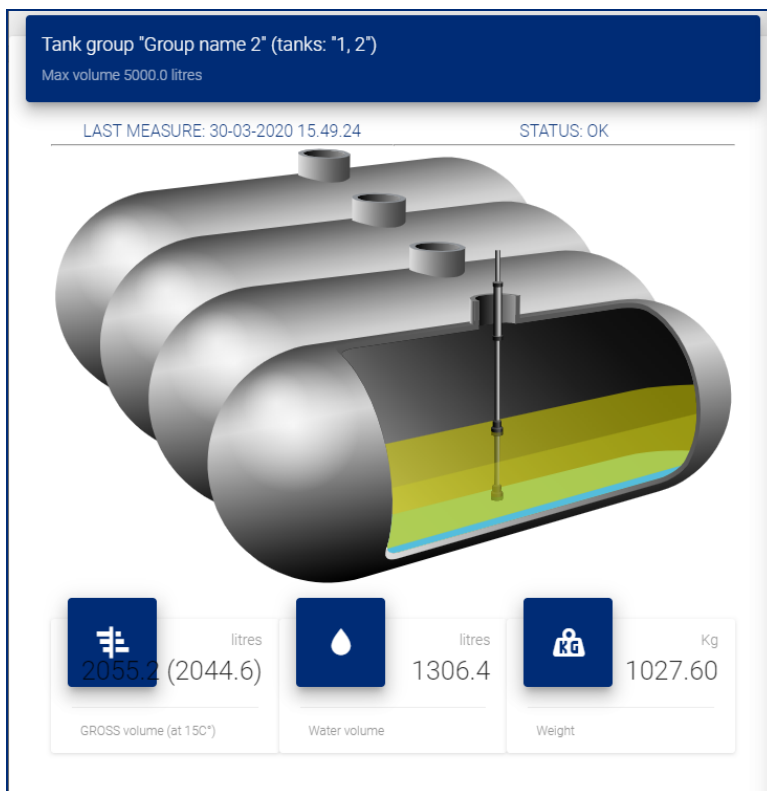


Tank inventory is shown at the bottom of the page.

TC volume refers to the temperature compensated volume. This is calculated through the API tables.



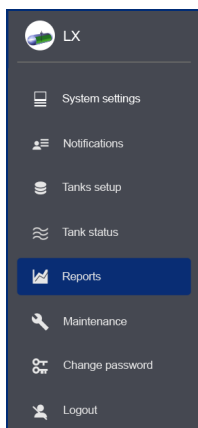
Section 9 Tank Group Status



A summary of the tank group is shown on this screen:

- Gross volume (at 15C°)
- Water volume
- Mass (in Kg)

Section 10 Reports Menu



Reports can be made for eight (8) types of information:

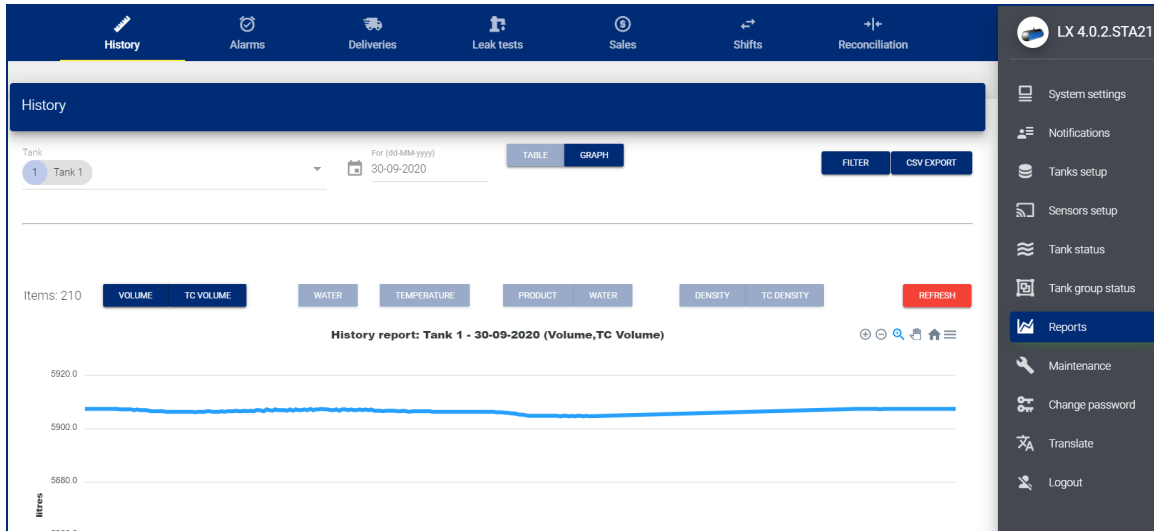
- Tank inventory History
- Tank Alarms
- Sensor Alarms
- Product Deliveries
- Leak Tests
- Pump Sales
- Shifts
- Reconciliation

10.1 History

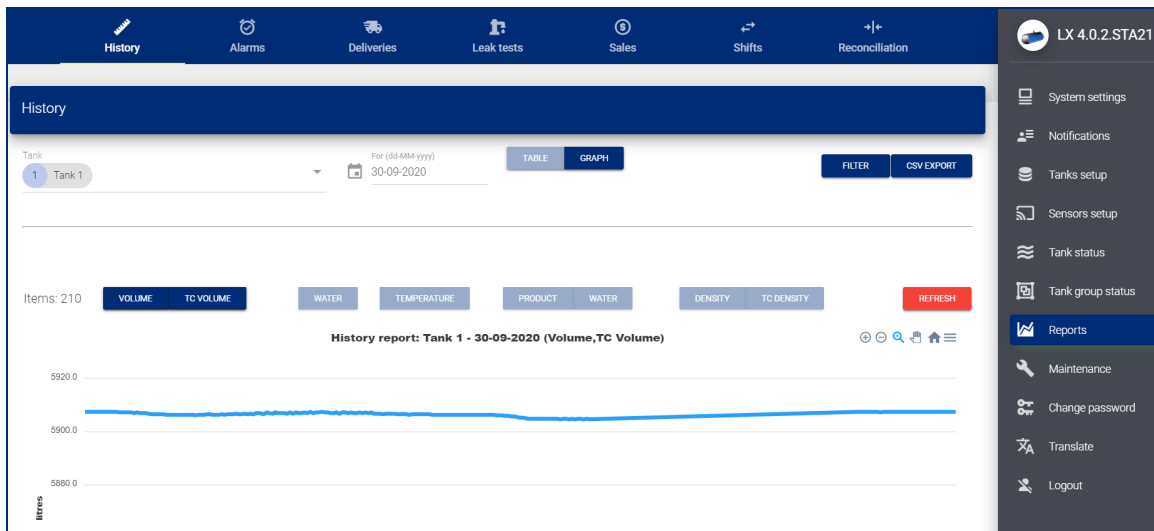
History										
Tank		For (dd-MM-yyyy)		TABLE		GRAPH		FILTER		CSV EXPORT
1	Tank 1 Diesel									
Time	Tank	Level (mm)	Water (mm)	Temp (C°)	Volume (litres)	TC volume (litres)	Water vol (litres)	Density (Kg/m3)	Status	
10-11-2020 15.08	1	719.81	18.85	21.3	13194.1	13098.6	345.5	760.0	WATER	
10-11-2020 15.07	1	719.80	18.85	21.3	13193.9	13098.4	345.5	760.0	WATER	
10-11-2020 15.06	1	719.80	18.85	21.3	13193.9	13098.4	345.5	760.0	WATER	
10-11-2020 15.05	1	719.80	18.85	21.3	13193.9	13098.4	345.5	760.0	WATER	
10-11-2020 15.04	1	719.80	18.85	21.3	13193.9	13098.4	345.5	760.0	WATER	
10-11-2020 15.03	1	719.81	18.85	21.3	13194.1	13098.6	345.5	760.0	WATER	
10-11-2020 15.02	1	719.81	18.85	21.3	13194.1	13098.6	345.5	760.0	WATER	

To set up a History Report:

- Select a **Tank Number** from the drop-down or use the swipe button to select **All tanks**.
- Use the date-picker to select a **From Date** for your report.
- Select to see the data in a **Table** or **Graph**.



- Push the **Filter** button to show the data. The image below shows data as a Graph.



- The History Report can be exported to a csv format that can be saved in a spreadsheet or text editor. Click the **CSV Export** button to continue.

10.2 Tank Alarms

The screenshot shows the 'Alarms' section of the application. Callout 1 points to the 'Tanks' dropdown menu. Callout 2 points to the date range picker (From/To dates). Callout 3 points to the 'FILTER' button. Callout 4 points to the 'CSV EXPORT' button. The table below shows the data for the selected filters.

Time	Tank	Alarm	Status	GROSS vol (litres)	Level (mm)	Water vol (litres)	Water Level (mm)
30-06-2019 15:05:10	1	OK	●	5654.60	341.17	0.00	15.74
30-06-2019 15:04:09	1	OUT OF SCALE	●	5654.48	791.17	0.00	15.74

1. Select a **Tank Number** from the dropdown or use the swipe button to select **All tanks**.
2. Use the date-picker to select a **From Date** and **To Date** for your report.
3. Push the **Filter** button to show the data.
4. The Tank Alarms Report can be exported to a csv format that can be saved in a spreadsheet or text editor. Click the **CSV Export** button to continue.

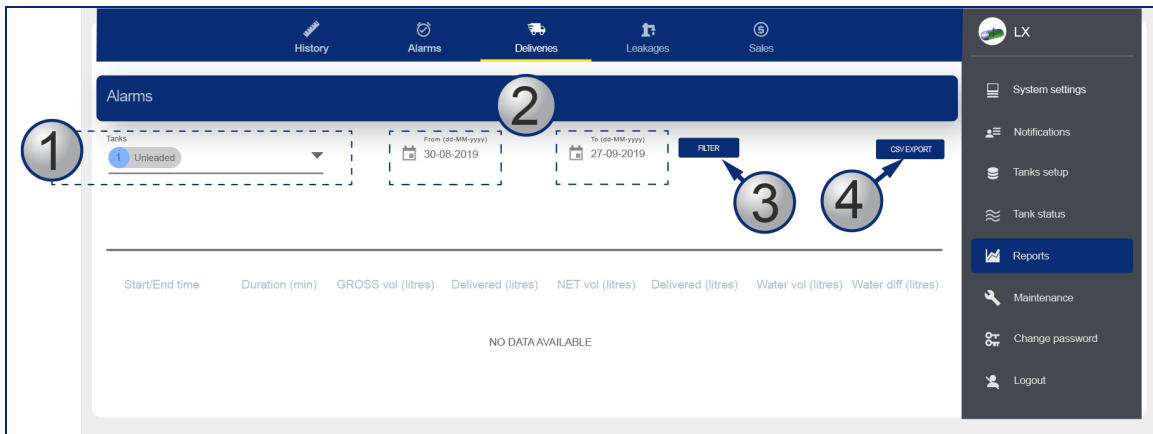
10.3 Sensor Alarms

The screenshot shows the 'Sensor alarms' section of the application. Callout 1 points to the 'Sensor' dropdown menu. Callout 2 points to the date range picker (From/To dates). Callout 3 points to the 'FILTER' button. Callout 4 points to the 'CSV EXPORT' button. The table below shows the data for the selected filters.

Time	Type	Location	Number	Name	Alarm	Status
10-11-2020 15:13:19	Wireless (2 floats)	Tank 1	3	RF Sensor	WATER ALARM	ACK ●
10-11-2020 15:13:00	Wireless (2 floats)	Tank 1	3	RF Sensor	WATER ALARM	ALARM ●

1. Select a **Sensor** from the drop-down or use the swipe button to select **All sensors**.
2. Use the date-picker to select a **From Date** and **To Date** for your report.
3. Push the **Filter** button to show the data.
4. The Sensor Alarms Report can be exported to a csv format that can be saved in a spreadsheet or text editor. Click the **CSV Export** button to continue.

10.4 Delivery



1. Select a **Tank Number** from the dropdown.
2. Use the date-picker to select a **From Date** and **To Date** for your report.
3. Push the **Filter** button to show the data.
4. The Delivery Report can be exported to a csv format that can be saved in a spreadsheet or text editor. Click the **CSV Export** button to continue.

10.5 Leak Tests



1. Select a **Tank Number** from the drop-down.
2. Use the date-picker to select a **From Date** and **To Date** for your report.
3. Push the **Filter** button to show the data.
4. The Leakages Report can be exported to a csv format that can be saved in a spreadsheet or text editor. Click the **CSV Export** button to continue.

Leakages

Tank

1 Tank 1

All tanks

From (dd.MM.yyyy)
23-09-2020

To (dd.MM.yyyy)
30-09-2020

FILTER

CSV EXPORT

Items: 3

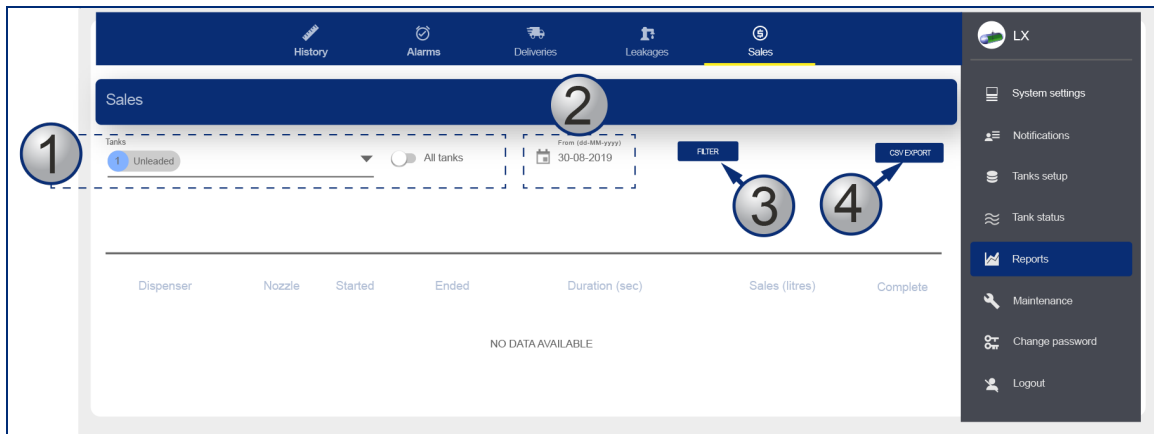
Tank	Start/End time	Duration	Flowrate (litres/h)	TC volume (litres)	Loss (litres)	Water vol (litres)	Diff (litres)	Temp (C°)	Diff (C°)	Method	Res
1	29-09-2020 12:56:03	3m 54s	0.0	5707.6	0.0	0.0	0.0	29.3	0.0	● 0.20 GPH (0.8 LPH)	ABORT (STOPP)
	29-09-2020 12:59:57			5707.6		0.0		29.3			
1	28-09-2020 11:20:03	2h 0m 0s	-6.4	5720.5	-10.0	0.0	0.0	26.7	1.4	● 0.20 GPH (0.8 LPH)	LE INDICAT
	28-09-2020 13:20:03			5710.5		0.0		28.1			

This report will show the results of leak tests that have been done in the tanks.

The report will show:

- The start and end time of the test
- The Leak threshold
- The volume difference between the start-end (at ambient temperature and temperature compensated)
- The result of the test and if the test was aborted.

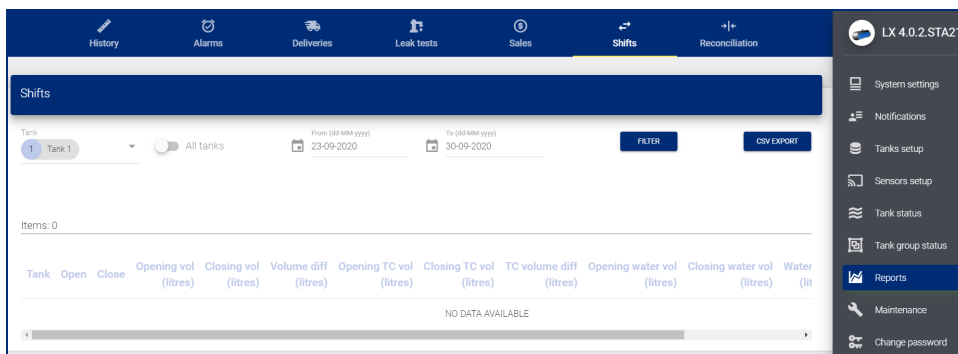
10.6 Sales



NOTE: Pump Sales Reports related to tanks can only be made when the reconciliation function is in operation and there is communication with a forecourt controller.

1. Select a **Tank Number** from the drop-down or use the swipe button to select **All tanks**.
2. Use the date-picker to select a **From Date** and **To Date** for your report.
3. Push the **Filter** button to show the data.
4. The Sales Report can be exported to a csv format that can be saved in a spreadsheet or text editor. Click the **CSV Export** button to continue.

10.7 Shifts



This report will show the shifts related to specified tanks.

- Select a **Tank Number** from the drop-down or use the swipe button to select **All tanks**.
- Use the date-picker to select a **From Date** and **To Date** for your report.
- Push the **Filter** button to show the data.
- The Shift Report can be exported to a csv format that can be saved in a spreadsheet or text editor. Click the **CSV Export** button to continue.

10.8 Reconciliation

Reconciliation

Tank

2 Tank 2 Unleaded

From (dd-MM-yyyy)

01-09-2020

To (dd-MM-yyyy)

10-11-2020

Report type

HOURLY

DAILY

PETROLEUM

FILTER

CSV EXPORT

Items: 14

Loss rate (litres/hour)	Date time	Volume (litres)	Level (mm)	Temp (C°)	Sales (litres)	Temp. var. (litres)	Evap. var. (litres)	Water var. (litres)
0.0	30-10-2020 20:00:00	3514.1	591.39	23.9	0.0	0.0	0.0	0.0
0.0	30-10-2020 19:00:00	3514.8	591.48	24.0	0.0	0.0	0.0	0.1
0.0	30-10-2020 18:00:00	3513.9	591.37	24.2	0.0	0.0	0.0	0.0
0.0	30-10-2020 17:00:00	3514.0	591.38	24.1	0.0	0.0	0.0	0.0
0.0	30-10-2020 16:17:00	3514.8	591.48	24.1	0.0	0.0	0.0	0.0
4.6	30-10-2020 15:21:00	3513.9	591.37	24.4	3157.4	-9.1	0.0	0.1
0.0	27-10-2020 12:15:19	3513.0	591.26	26.5	2823.2	0.0	0.0	0.0

There are three types of reconciliation reports available:

- Hourly
 - Daily
 - Petroleum (periodic)
1. Select a **Tank Number** from the drop-down.
 2. Use the date-picker to select a **From Date** and **To Date** for your report.
 3. Select a report type (Hourly, Daily, Petroleum).
 4. Push the **Filter** button to show the data.

HOURLY REPORT

This report will show (see the image above):

- The Loss rate in liters / hour up to that hour (cumulative figure).
- The volume, the level and the temperature at the end of the hour.
- The cumulative dispenser sales (field Sales) up to that hour.
- The difference in liters because of the temperature difference between the current hour and the hour before.
- The difference in liters because of the evaporation between the current hour and the hour before (only if an evaporation factor has been programmed in the ACR settings in the Tank Setup).
- The difference because of the water change in liters between the current hour and the hour before.

Reconciliation

Tank

1 Tank 1 Diesel

From (dd-MM-yyyy)

01-09-2020

To (dd-MM-yyyy)

10-11-2020

Report type

HOURLY

DAILY

PETROLEUM

FILTER

CSV EXPORT

Initial date

Final date

Accounting var. (litres)

%

Opening stock (litres)

Closing stock (litres)

Deliveries (litres)

Deliv. var. (litres)

%

Tank Depletion (litres)

Pump

NO DATA AVAILABLE

DAILY REPORT

This report will show (see the image above):

- The opening and closing stock for the day.
- The delivered volume for the day.
- The delivery variance for the day.
- The tank depletion for the day.
- The pump sales for the day.

Reconciliation			
Tank	2 Tank 2 Unleaded	From (dd-MM-yyyy)	To (dd-MM-yyyy)
		01-11-2020	10-11-2020
Report type	HOURLY	DAILY	PETROLEUM
FILTER			
CSV EXPORT			
Accounting var.		0.0 litres	Operating var.
		0.0 %	0.0 litres
			0.0 %
Deliveries		0.0 litres	Temp var.
Delivery var.		0.0 litres	0.0 litres
		0.0 %	Evap var.
			0.0 litres
			Water var.
			0.0 litres
Tank Depletion		0.0 litres	Pump Calib
			0.0 litres
Pump sales		0.0 litres	Theft
			0.0 litres
Test Vend		0.0 litres	Unaccounted var
			0.0 litres
			0.0 %

PETROLEUM REPORT

For a given time period, this report will show (see the image above):

- **Accounting var** (variance): This is the sum of Operating variance and Delivery variance, shown in liters and as a % of tank sales
- **Deliveries**: The quantity of liters delivered.
- **Delivery var** (variance): This is the Delivery variance. This is calculated as the difference between ATG measured delivery and invoiced delivery (invoice detail entered manually during delivery report). The result is shown in liters and as a % of tank sales.
- **Tank depletion**: The quantity of liters physically kept in the tank.
- **Pump sales**: The quantity of liters that were sold by the tank (as recorded by the dispensers).
- **Test vend**: The quantity of fuel that was pumped out of the tank during a pump calibration check.

- **Operating var** (variance): This is the difference between Tank Depletion and Pump Sales, In liters and as a % of tank sales.
- **Temp var** (variance): This is a temperature difference for the given time period.
- **Evap var** (Evaporation variance): This is an evaporation difference for the given time period.
- **Water var** (variance): This is a difference because of a change in the water volume for the given time period.
- **Pump calib** (calibration): This is a difference because of the dispenser meter drift (this is only applicable if a meter offset has been programmed in the Site Mapping).
- **Theft**: This is a difference that was recorded as a theft (it will be necessary for the Unexpected Sales threshold to be programmed in the Reconciliation settings in the Tank Setup).
- **Unaccounted var** (variance): This is calculated as:
 - $\text{Unaccounted variance} = \text{Operating variance} - \text{Temp variance} - \text{Evap variance} - \text{Water variance} - \text{Pump calibration} - \text{Theft}$.
 - This is calculated in liters and as a % of sales.

Section 11 Maintenance

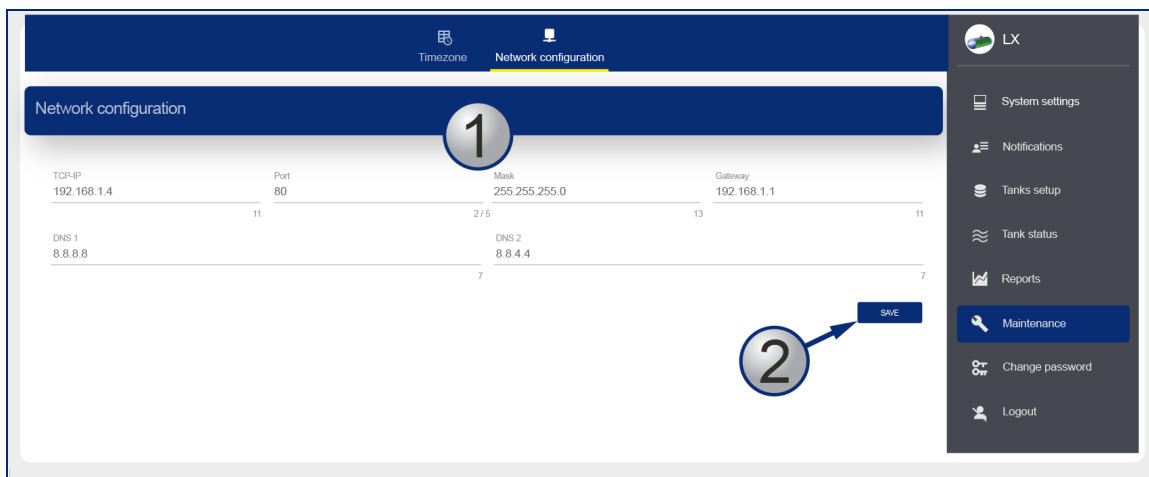
The Maintenance Menu has two (2) tabs to configure the console's Timezone (and Time and date) and Network Configuration.

11.1 Timezone



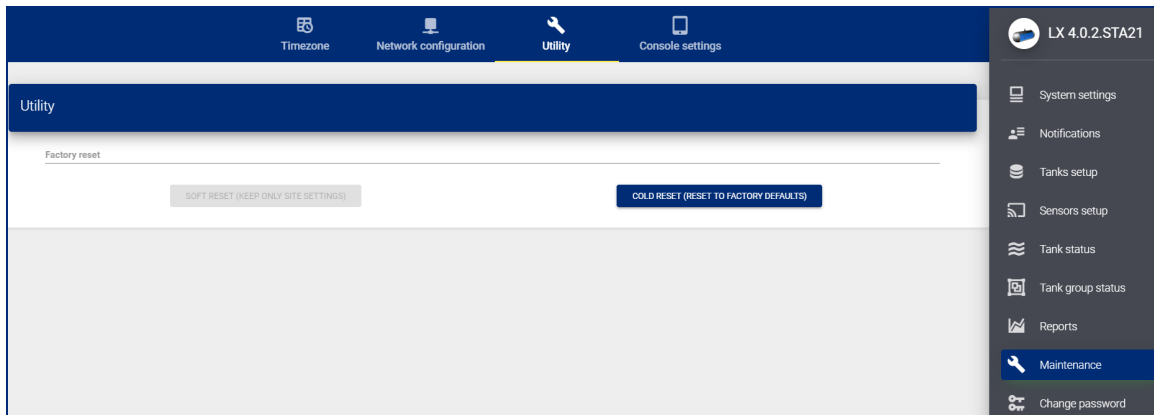
1. Use the calendar and clock tools to select the date and time.
2. Select the applicable time zone from the drop-down.
3. Click Save. The console application will restart.

11.2 Network Configuration



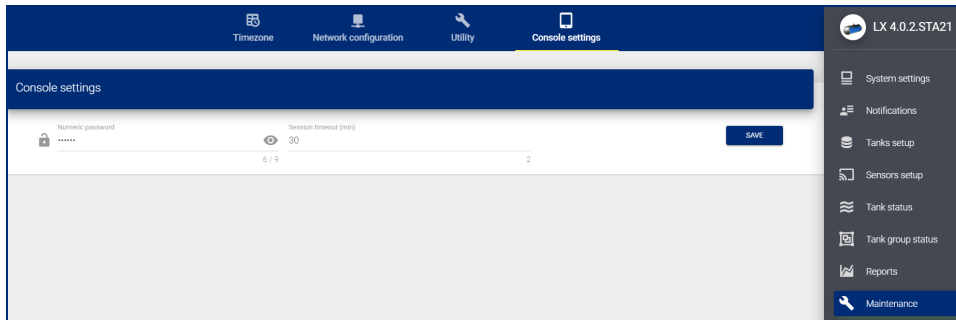
1. Enter the **network parameters** into the applicable fields
2. Click **Save** when you have completed all applicable fields.

11.3 Utility



Use the **Cold Reset** button to delete all data and put the console back to factory settings.

11.4 Console Settings



In this section, the numeric password to get access to the Maintenance section on the Graphical User Interface of the console can be changed.

The timeout session gives the time that the user can be logged in to the Maintenance section before the system automatically logs the user out.

Section 12 Change Password

The screenshot shows a 'Password change' form with a dark blue header. The form contains the following elements:

- 1** A 'User' drop-down menu with '1 Admin' selected.
- 2** A 'Current' password field with an eye icon and a '0' character count below it.
- 3** A 'New' password field with an eye icon and a '0' character count below it.
- 4** A 'Confirm' password field with an eye icon and a '0' character count below it.
- 5** A blue 'SAVE' button, indicated by an arrow from the number 5.



NOTE: Only an Admin user can change passwords.

Select the applicable **User** from the drop-down.

Enter the **Current password** for the selected user.

Enter the **New password**.

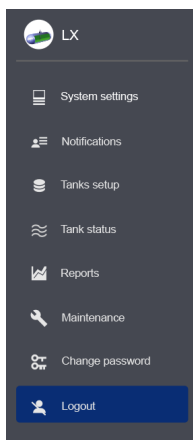
Enter the **new password** again in the *Confirm* field.

Click **Save** when you have completed all fields.



TIP: As you type your password only neutral "bullet" characters will show (e.g. •••••). Select the "eye" icon  to show the password characters as you type.

Section 13 Logout

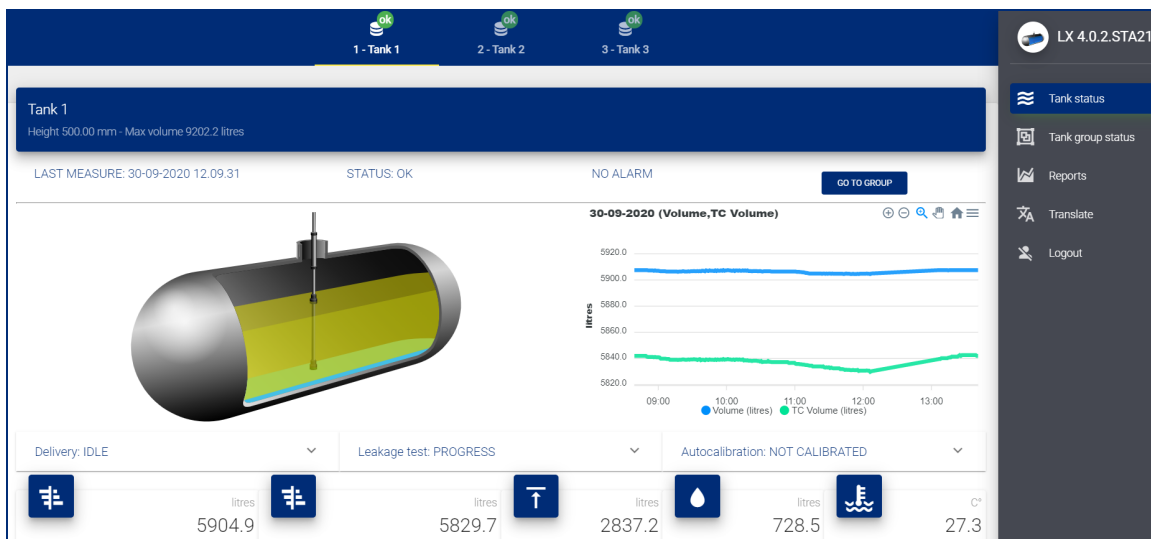


Select **Logout** from the *Main Menu*. The Login screen will come into view.

A login screen with a dark blue header containing the text 'Login' and 'Console configuration'. Below the header is a 'User' selection field with a dropdown menu showing '1 Admin'. Below that is a 'Password' field with a toggle icon and a '0' character count. At the bottom, there are two buttons: 'LANGUAGE' on the left and 'LOGOUT' on the right.

Click the **Logout** button to log out of the console.

Section 14 Guest Account



A Guest account only gives access to the Tank Status page and a view of data from Reports.

Section 15 Technical Support

The best method to communicate with Technical Support personnel is to first connect the console to the Internet. The console must have a public IP Address and Ports 3000 and 22 open. Applicable data can be seen directly by Dover Fueling Solutions Technical Support personnel.

As an alternative, you can use a third-party program (such as TeamViewer 10). The console can then be connected to a remote computer used by Dover Fueling Solutions Technical Support personnel.

If access to the Internet is not available, the user must give Dover Fueling Solutions Technical Support personnel the applicable data related to the console so a debugging procedure can be done.

The procedure that follows shows the steps to send this data to Technical Support:



IMPORTANT: You must have a USB device with at least 50 MB of free space available. The USB device must be formatted to FAT32.

Connect the USB device to a PC.

Put a new folder on the USB device and give it the name "**lx-support**" (make sure you use lower case).

Eject the USB device from the PC.

Connect the USB device to the console (see [General Indications](#) for the location of the USB port on the bottom of the console).

Push the **INFO** button to get access to the applicable page.

Push **Export Log** when it comes into view on the screen. The files will be copied to the **lx-support** folder on the connected USB device.

Remove the USB device from the console.

Connect the USB device back to your PC.

Right-click the **lx-support** folder, select the **Send to** drop-down and select **Compressed (zipped) folder**.

Send the ZIP file by e-mail to support@startitaliana.it

Revisions - M2051

Revision #	ECO	Effective	Software Version	Key Changes
0	1784	8/19/2020		Initial Release
1	1836	12/3/2020		Added Autocalibration and Reconciliation. Updated screens and procedures



NOTE: It is possible that older software versions might not support all features



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