Unitronics' Demo Case Guide

Technical Support Document   12/16

Contents

Overview: Unitronics Demo Case

Welcome to the Unitronics Demo Case.

This valuable sales aid enables you to easily demonstrate the powerful range of features that Unitronics HMI + PLC All-in-One controllers bring your customers.

Each controller in the case is pre-installed with a program that shows its feature range, including communications with external devices. This document walks you through scenarios that allow you to showcase Unitronics controllers.

The Demo Case contains the following controllers and external devices.

Demo Case Contents

1. PT100
2. Samba 4.3"
3. IP Camera
4. Vision 700
5. RFID Reader + RFID Card
6. Emergency Push button
7. UniStream 10.4"
8. Tower Light

Inside the Demo Case

9. Power supply 24V, 2.5A.
10. Wireless Router, TP-link model TL-WR740N
   Note that the three controllers and the IP camera communicate using Ethernet, via the router.

Using the Demo Case

On the rear of the Demo Case, locate the power socket and switch. Connect the case to a power source and switch it on.

| Notes	• Connect the Demo Case to a power source using an IEC 320 C13 or C14 cable.
	• The power socket has a built-in fuse + 1 spare.

Inside view of the Demo Case

Power-up/Main Screens

After power-up, the HMI panel of each controller displays the main screen. The main screen offers two options: General Demo and Market Segment.

The General Demo application of each model enables you to demonstrate the key features of Unitronics PLCs.

| Note	Pressing the **General Demo** button on any of the controller panels, which are linked via Ethernet, invokes the General Demo program on all three panels.
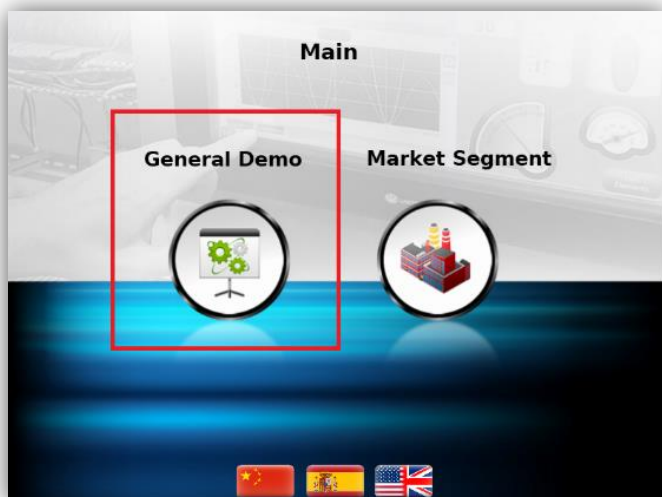
Connecting to your Demo Case via Wi-Fi

The Demo Case serial number is the name of the wireless connection of your router. The serial number is located inside the Demo Case on top of the router. To connect to the case via Wi-Fi, open Wireless Network Connection and connect to the serial number name.

Router address 192.168.1.1
User name: admin
Password: admin
Default VNC port is 5900
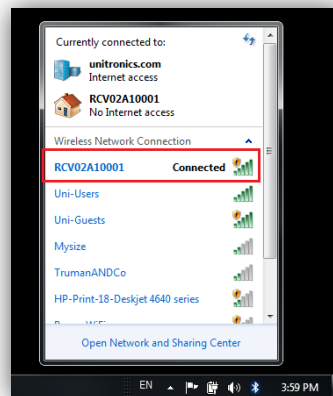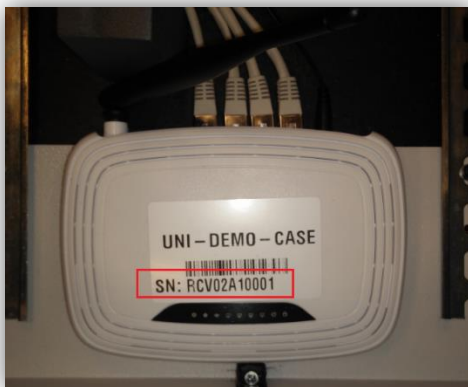
Emergency Push Button

Pressing the button will switch all three PLCs to Emergency Stop mode.

To release them from Emergency mode, turn the button to the right.

This is a simple way for you to verify that all of the PLCs are communicating.
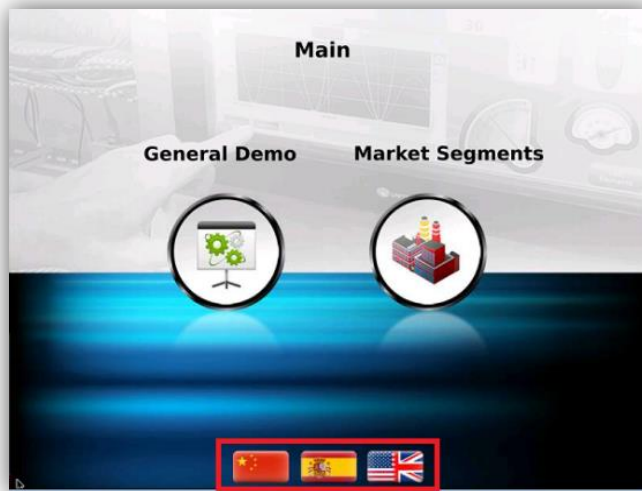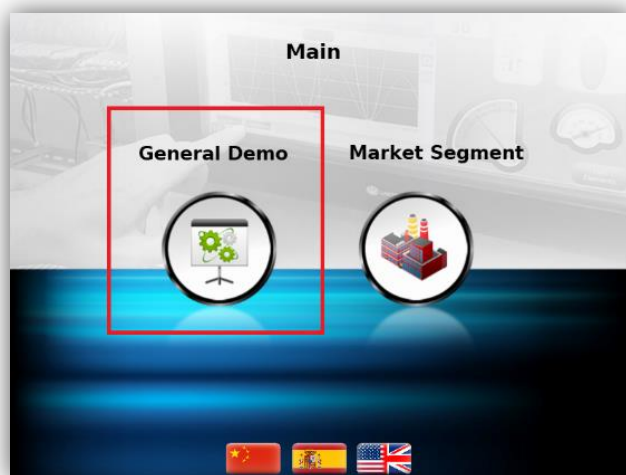
General Demo - UniStream

Multi-Language Support

The screen of the UniStream 10.4" displays language buttons in the form of flags.

To demonstrate Multi-Language support, press a flag to switch languages, and continue with the demo.

Press on General Demo to start demonstrating UniStream Features:

Web Cam

You can view streaming video from the camera installed on the Demo Case panel.

Note that you can connect an IP camera (RTSP) directly to the UniStream itself, or via a switch.

This saves time and effort—no need to install a dedicated PC system. Note that you can easily place an IP Camera inside a machine to monitor ongoing procedures

- Show inaccessible or remote parts of a machine or process
- Excellent for monitoring Hazardous Locations
- Safety & Security Applications
- Enables Centralized Operator Location

To demonstrate this feature, press on the Web Cam icon.

RFID

Worker Identification RFID cards identify staff for doors/elevators/labs/high security level floors, Time clock. You can also link an RFID reader to add layers of security and permission levels to the control application.

Note that the RFID card reader is physically connected to the V700 inside the Demo Case. The data is sent to the UniStream via Ethernet.

The RFID card supplied with the Demo Case is located in the red pocket inside the case.

Note that most RFID tags are compatible with this specific RFID reader.
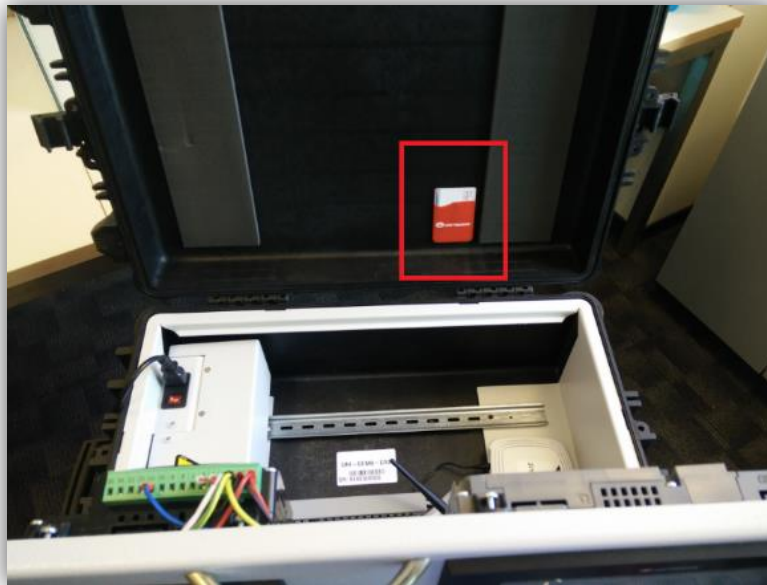
The embedded application allows you to add RFID cards, assign them to a user and even add animation picture that will be displayed when a registered tag is swiped.

You can also assign each tag different access levels and permissions, and adapt the controller's applications accordingly.
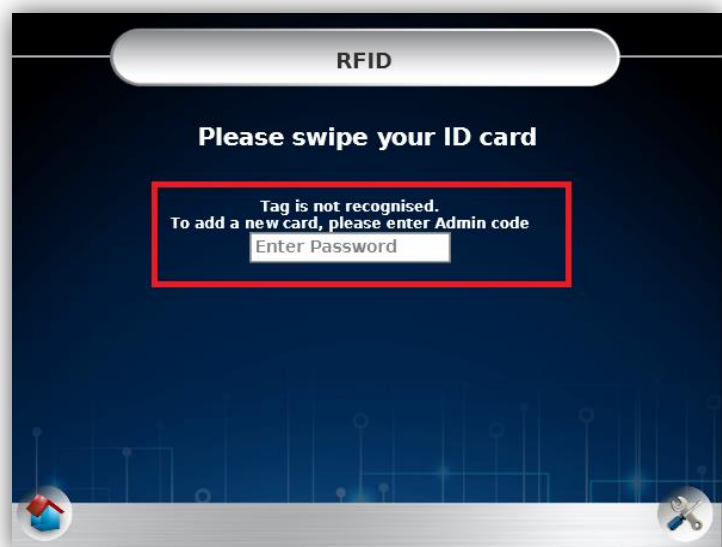
To start the demonstration, press on the RFID icon.

To add a new RFID tag:
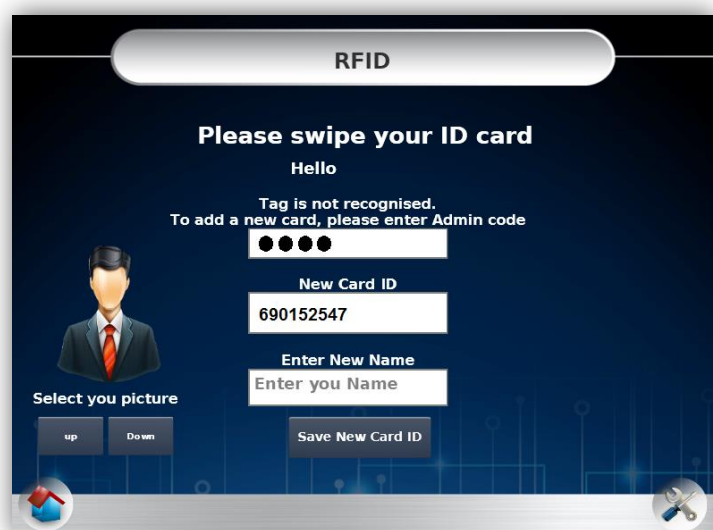Swipe the card.

Enter the Administrators Password
    (default: 1111).

Assign the card a "User Name" by
    pressing on the "Enter New
    Name" text box.

To set a "User Picture", navigate
    between the pictures using the
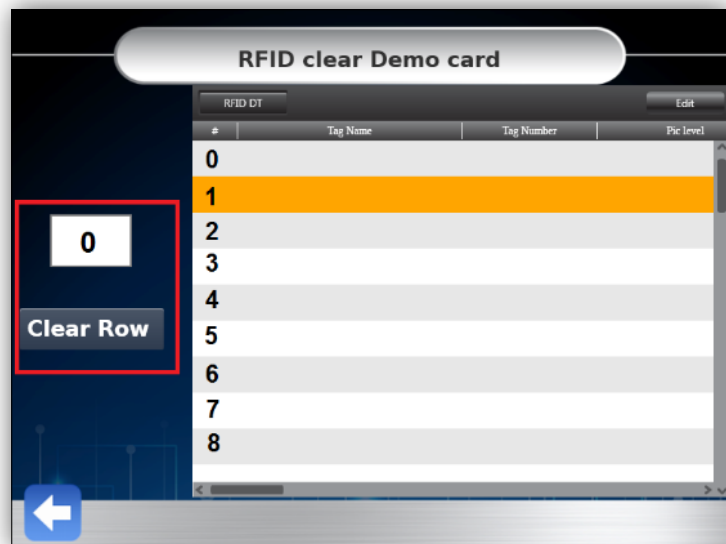   "Up" and "Down" buttons.

Press "Save New Card ID" to assign
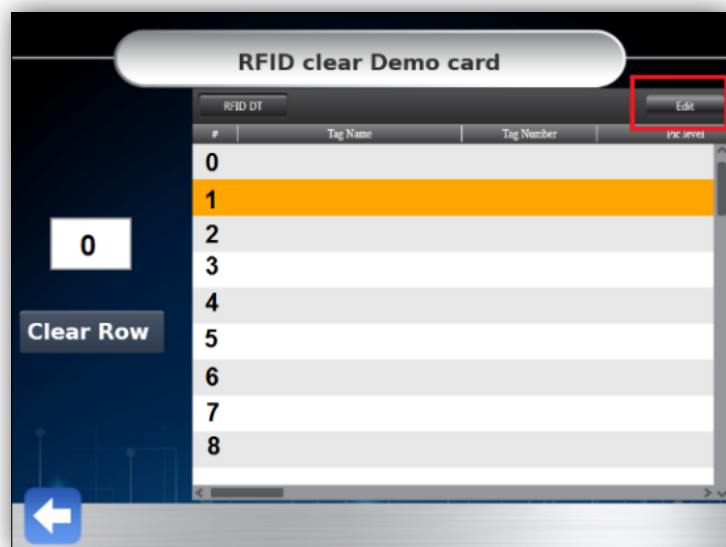   this user name to this card ID.

To edit or delete users, press the
Management icon on the bottom
right of the screen

To delete a User, press the row
number to select the row, and press
the Clear Row button.

To edit a User name or picture,
press Edit to enter the Data Table.

Communication Protocols

UniStream supports a broad range of protocols over Ethernet, RS232/RS485, CANBUS, including:

- MODBUS TCP/IP and RTU
- UniCAN
- CANopen
- CAN_Layer2
- Email
- FTP
- VNC

- Ethernet/IP
- SNMP V1,V2C,V3.
- 3-party protocols
- TCP RAW
- UDP RAW
- SMS & GPRS
- BACnet & KNX via Gateway

Press the Communication icon. The application displays protocols supported by UniStream.
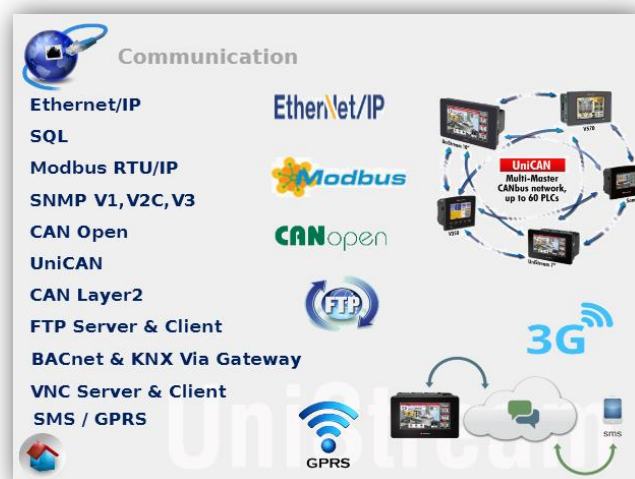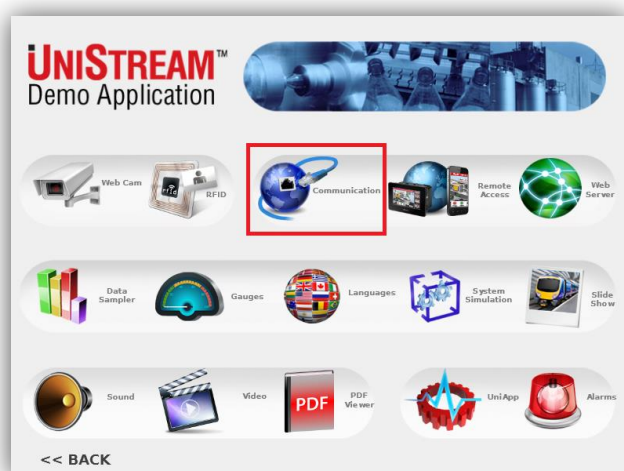
Remote Access via VNC - UniStream

UniStream functions as a VNC Server. This means that, via an Ethernet/internet connection, you can access UniStream from anywhere in the world, and both view and control the controller.

To demonstrate the feature, you must have a VNC client application on your mobile , tablet or PC which you can download from the iOS App , Google Play stores or web.

To demonstrate Remote Access:

1. Press the Remote Access icon.

2. Set up your VNC client application to communicate with UniStream.
   The IP address of the panel is set to 192.168.1.2, and the default VNC port is 5900.

3. Connect your mobile device to the Demo Case Wi-Fi network. The Wifi network name is the demo case serial number. You can find the serial number on a sticker on top of the router, and also on the case itself, as shown on page 2.

Note	**Vision & Samba PLCs**: These controllers do not support VNC. For easy remote access, use "Remote Operator" on your mobile/tablet.
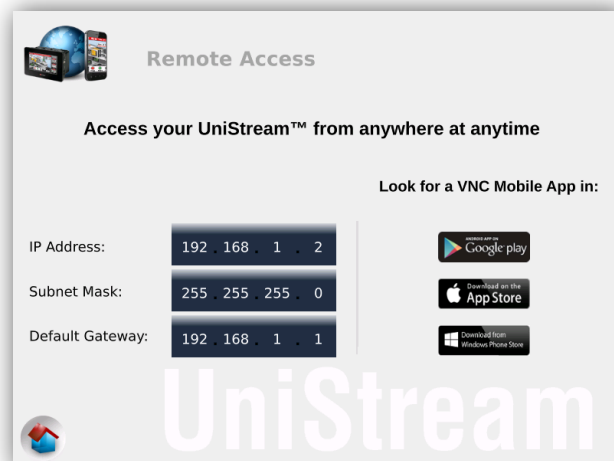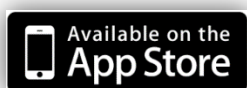
Web Server

UniStream offers a built-in webserver that supports dozens of simultaneuos connections. Users can access UniStream via a standard browser, and perform tasks – in real-time - according to the role and password you assign via UniStream's multi-level security system.

The webserver functions independently of the HMI application.

You create elegant Web pages in UniLogic, via drag & drop—no HTML required. User controls and widgets enable remote users to view & enter data using any web browser.

In addition, you can save HMI screens as Web pages.

To demonstrate the Webserver:

1. Press the WebServer icon.

2. Connect your mobile device/ PC to the Demo Case Wifi network, as shown on page 2.

3. Open your mobile/PC browser, and connect to UniStream; the IP address of the panel is set to 192.168.1.2.

4. Browse to the water management page and view & change values that will appear both on the UniStream HMI and Web page
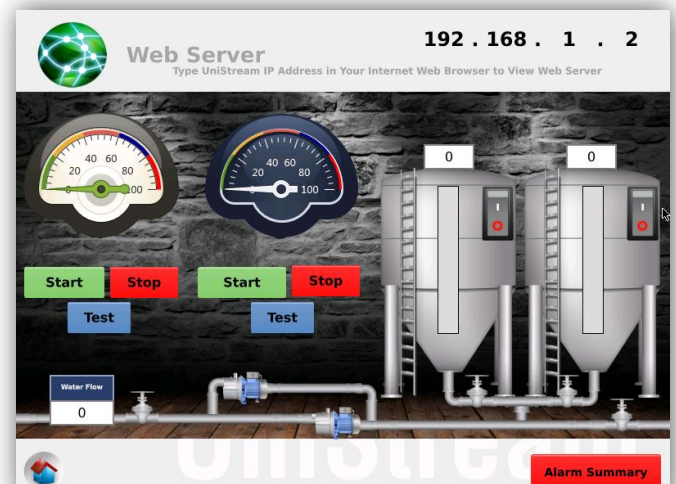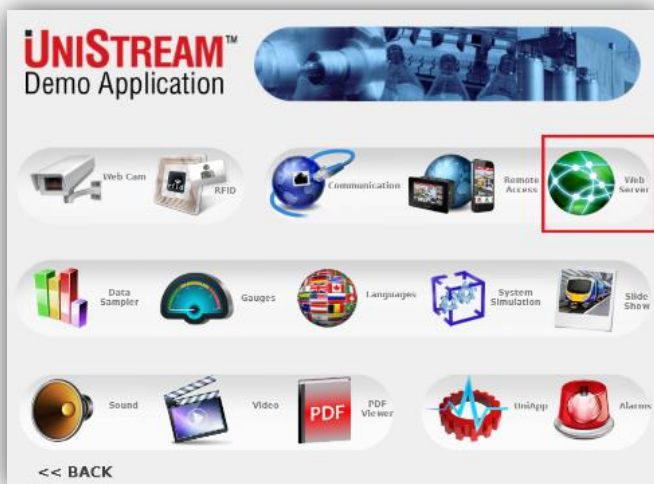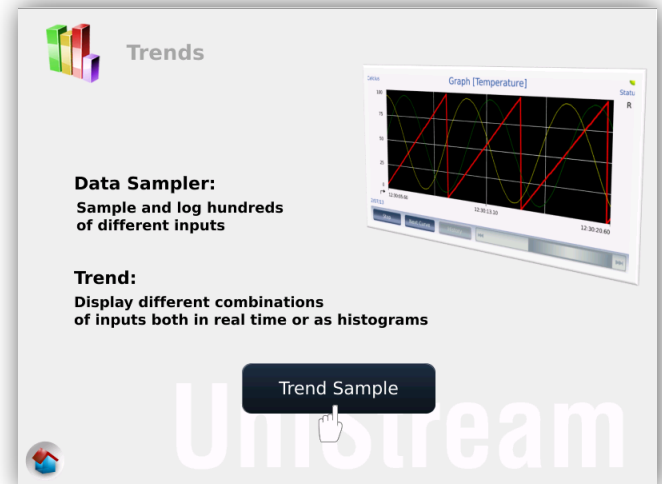
Data Sampling

Use the Data Sampler to log time-sensitive dynamic data such as output values. Then, display the data – simply drag and drop Trend and/or Gauge widgets onto your HMI screens.

The Trend widget enables you to display graphs of real time data and history. The viewer can also take screenshots of the Trend and page through the data history.
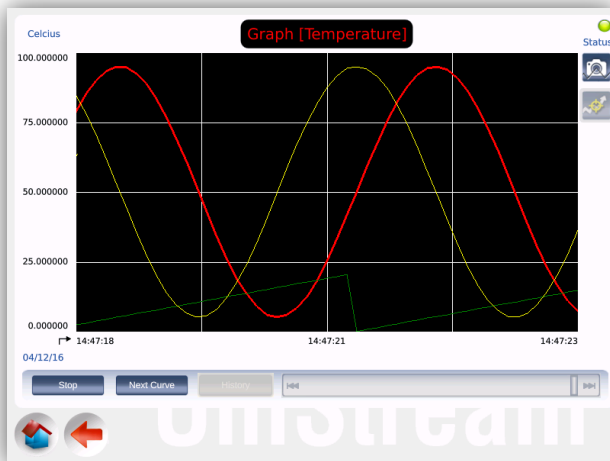
Dynamic Gauge widgets are an especially effective way to display live data -

Note:a Micro SD must be installed in the controller in order to log.

To demonstrate Trends, press the Data Sampler icon, and then press Trend Sample.

While the Trend runs, press the buttons to show the paging features and screenshot function.
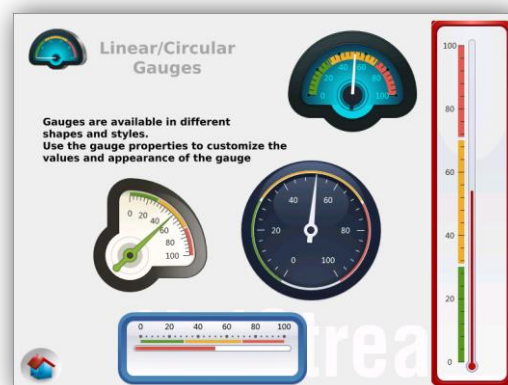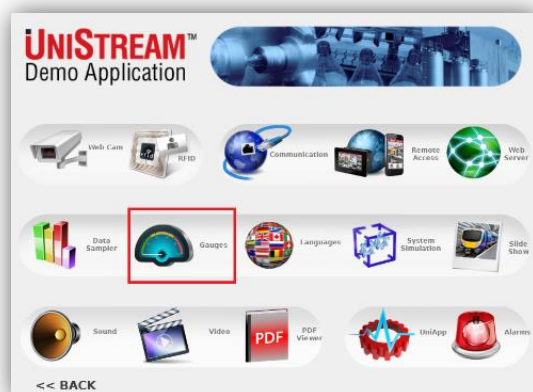

To browse your sampling History, press on the "Run" button.

Pressing on the "View Data Point" button, will enable you to view the X, Y value of the Trend

Gauges

To demonstrate Gauges, press the Gauges icon.

Languages

UniStream's multi-language support enables you to set up to 24 Languages for one project, including character-based Asian languages (Chinese, Japanese, Korean).

You can switch Languages in an instant, including the virtual keyboard, at the touch of a button - while the application is running.

This is a great benefit for OEMs, who can produce a single machine for international markets.

To demonstrate Languages, navigate back to the Main screen and press the flag icons to change the language, as shown on page 5.

System Simulation

This simulator features screens that were built and animated in UniLogic's HMI editor.

1. Press on 'System Simulation' icon to run the 'Bottling Factory'.
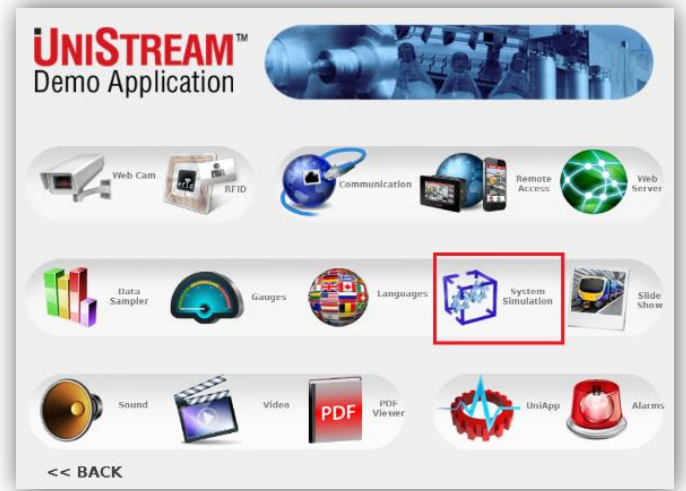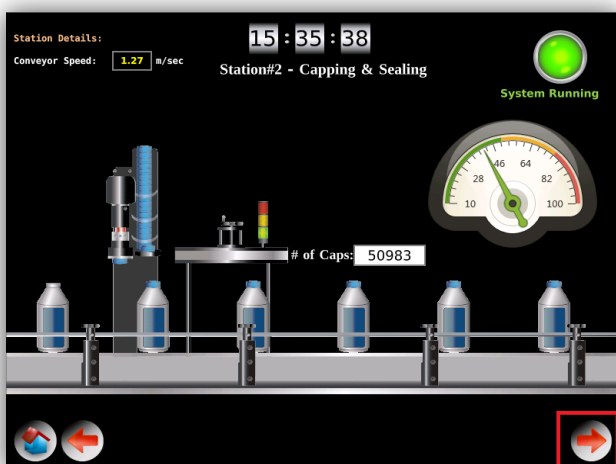

Filling

2. Start the 'Bottling' process by pressing the button on the top right of the screen.
   Note that UniStream plays a sound when the process is turned ON and OFF.

3. Press the arrow at the bottom right of the screen to navigate through the screens.
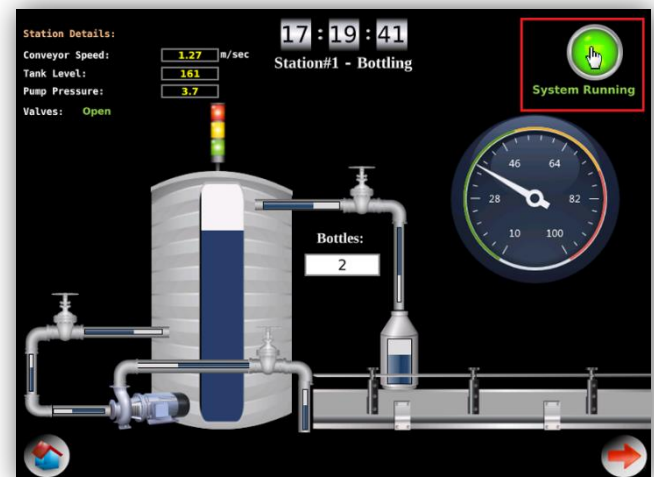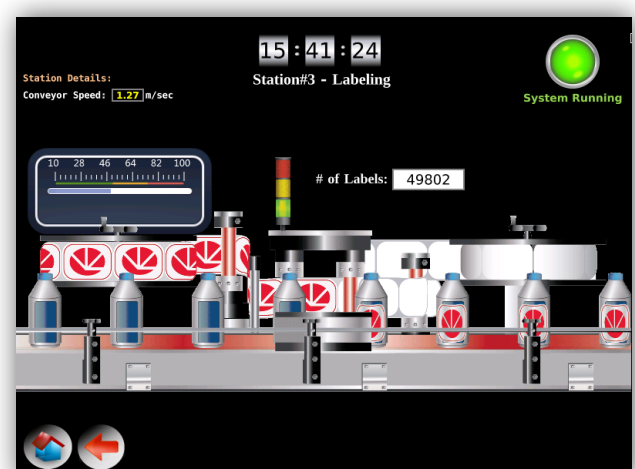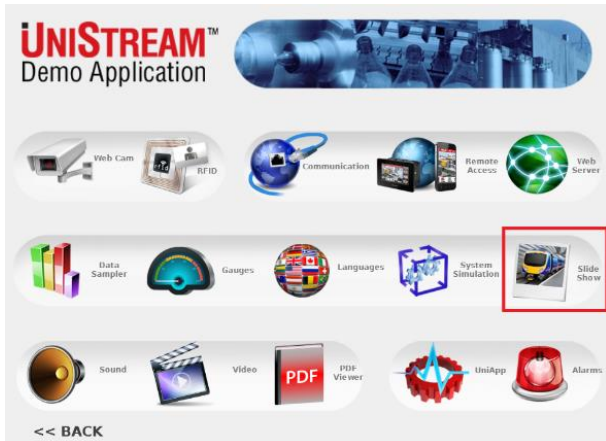

Capping

Labeling

Slideshow: HMI Panel Showcase

Show the high quality of the HMI panel, press on the Slideshow icon.

You can use the Slideshow as a screensaver between demonstrations.

Sound

Sound support, bulit-in speakers, and a 3.5mm audio jack for your P.A. system are an added value of UniStream.

You can incorporate voice instructions, alarm notifications, or even a welcome greeting and trigger them at run-time. UniLogic includes a rich audio library - plus you can import your own voice recordings in your own language.

To demonstrate, press on the Sound icon, and press the sound buttons to play .mp3 files.
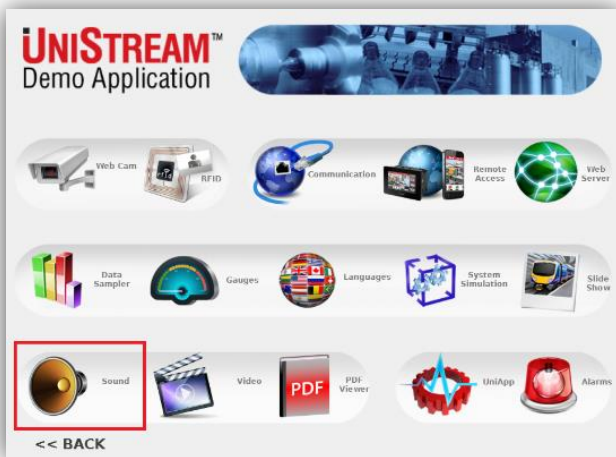
Video

UniStream can play MP4 videos. Import videos from the web or even use your own videos to instruct, promote, or advertise to viewers.

Some potential applications include:

- Operating instructions for complicated tasks
- Interactive Troubleshooting
- Maintenance

Note	Videos under 4MB are stored in UniStream; larger files on the SD card.

To demonstrate, press on the Video icon, then watch and listen.

PDF

UniStream offers a built-in PDF viewer, enabling you to display your machine installation instruction, specifications, user manuals, and even troubleshooting guides

To demonstrate, press on the PDF icon, and page through a .pdf manual.

UniApps

UniApps is a tool suite that is embedded in the operating system of the controller.

UniApps enables you to perform a number of operations. For example, you can:

- View and edit system data.
- Run updates to upgrade different aspects of the controller.
- View and edit communication settings.
- Force I/O values.
- Implement working mode actions such as resetting the controller.

You can enter UniAps at any time without regard to what is currently displayed on the LCD screen. UniApss can be protected by user name and password.

Press on the UniApps icon to learn more.
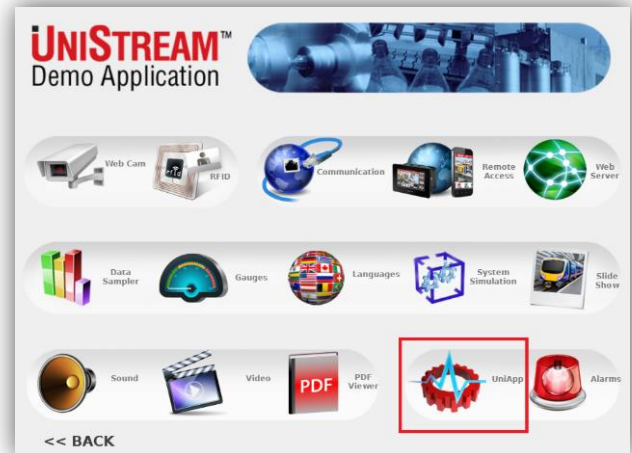
To enter UniApps:
1. Press the right upper corner of your UniStream panel for 3 seconds.

Select UniApps, and navigate through the system.

To exit back to your application, press the right upper corner of the panel for 3 seconds.
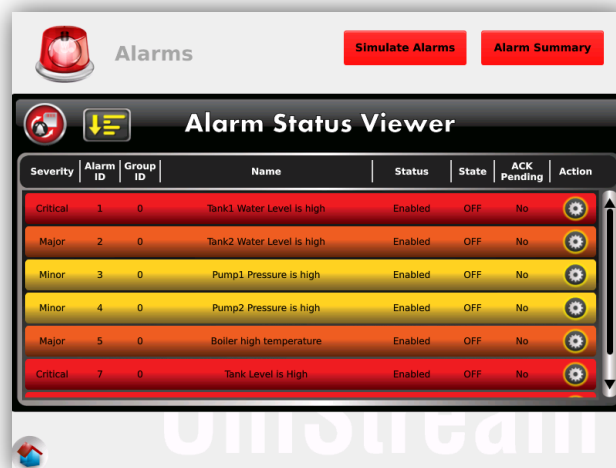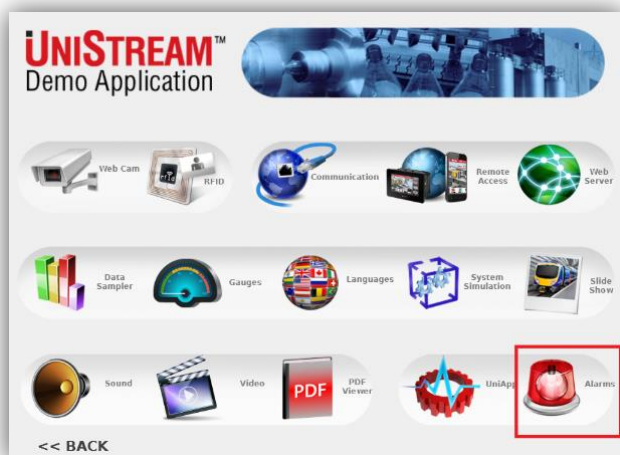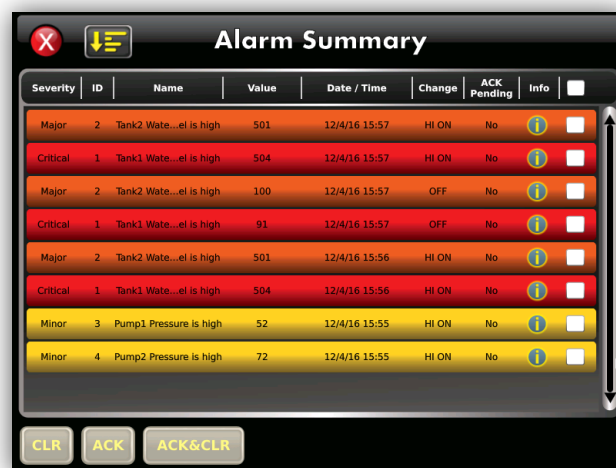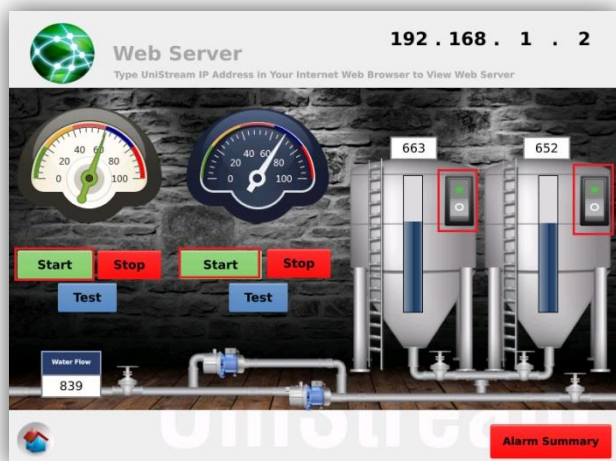
Alarms

UniStream offers a built-in Alarm system, equipped with an "Alarm Status Viewer" and "Alarm History". Alarms can be trigger via digital (bit) or analog (value), according to your needs.

To demonstrate the system:
1. Press on the Alarm icon, Alarm Status Viewer screen opens.
2. Press on the Simulate Alarms button.

3. This opens the Web Server screen, to generate Alarms, press the Start buttons.
4. When Alarms have been generated, press the Alarms Summary button to view all Alarms in the list.

Note that a programmer can decide to display an Alarm banner that notifies users when an alarm triggered, including Alarm Details and a Snooze and Minimize button.

   5. To exit the system and turn off Alarms, return to the initial screen and press on "Simulate Alarms".

* Picture for reference only. The Alarm Banner feature is not implemented in the Demo Case application.

General Demo - Samba "Wrapping Machine"

This demo simulates a Wrapping Machine application.

You can set the application to run manually or automatically via the Manual / Automatic switch shown below.

When set to automatic (A) the system operates independently. You can change wrapping direction on a push on the Wrapping Direction switch.

When set to "Manual" (M), you can control the wrapping movement (right or left) via the Left and Right Jog buttons.

The physical light tower on the case will start automatically in accordance with the bar graph.
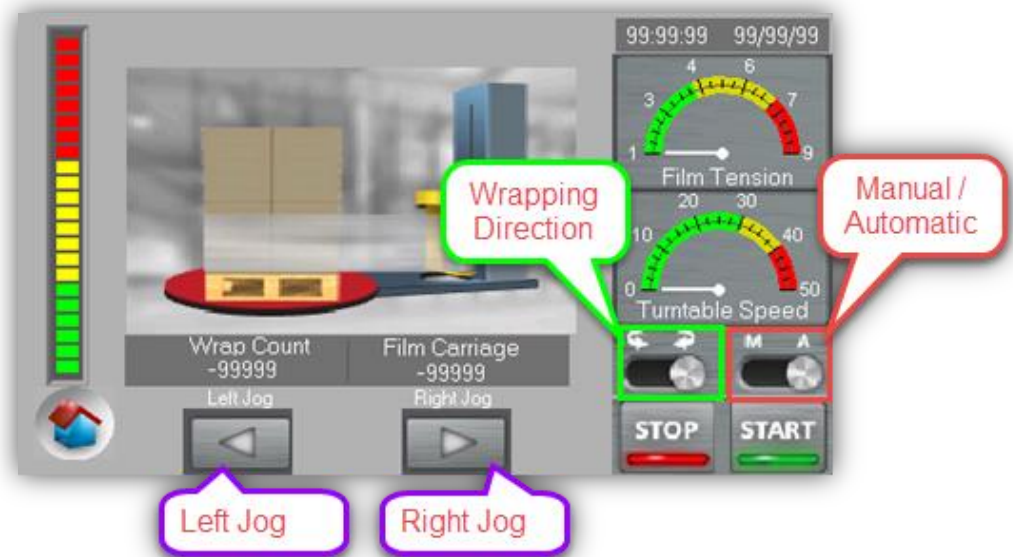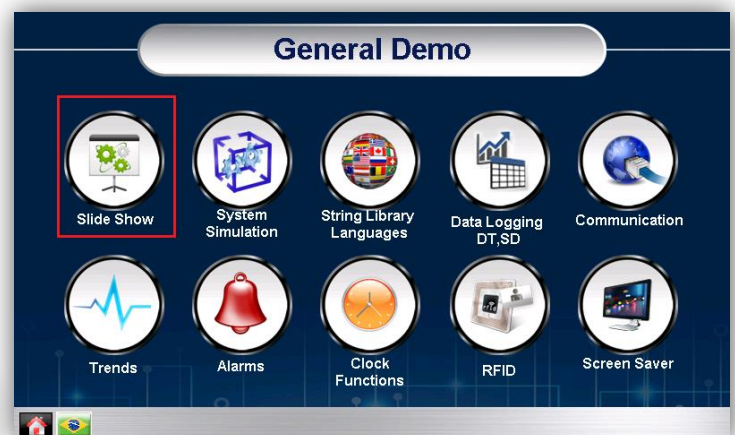
General Demo - Vision700

Press the icons to run the different features.

Slideshow

To show the high quality of the HMI panel, press on the Slideshow icon.

You can use the Slideshow as a screensaver between demonstrations.

System Simulation

This simulator features screens that were designed in VisiLogic's HMI editor, using the extensive free graphic library.

1. Press System Simulation on the Home screen.

2. Press Start. The tanks will 'fill'; use the switches to control the valves

You can control the filling and draining of the tanks using the controls to the right. Pressing the "On" button enables you to adjust the slider to control the liquid flow.
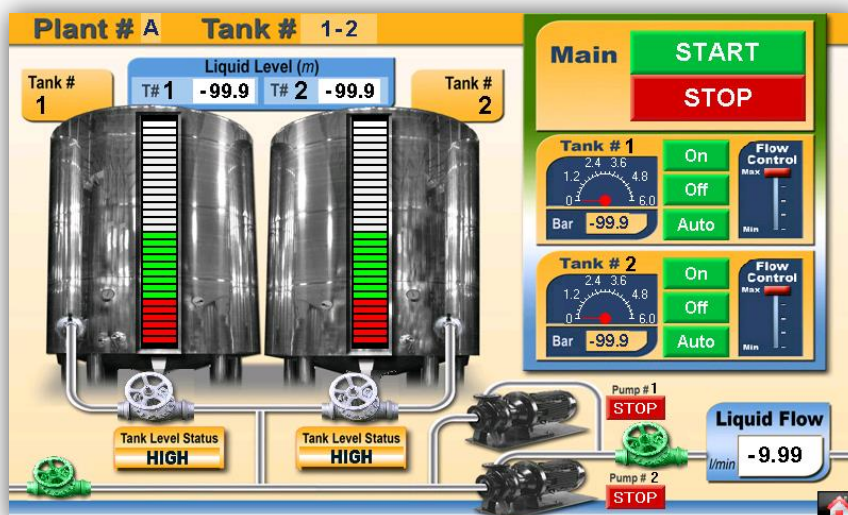
<u>Languages</u>

The String Library is a powerful feature enables you to switch languages in an instant.

1. Press on the String Library / languages icon, and then press the flags.

2. Switch to other screens to view the language change.

Data Logging

You can collect, log, and manipulate run-time data into Data Tables. Data logs are stored on the V700's SD card. Note that a Micro SD must be installed in the PLC card slot in order to create logs. (A Micro SD is supplied already inserted in the V700)

To demonstrate this feature, press on the DataLogging icon.
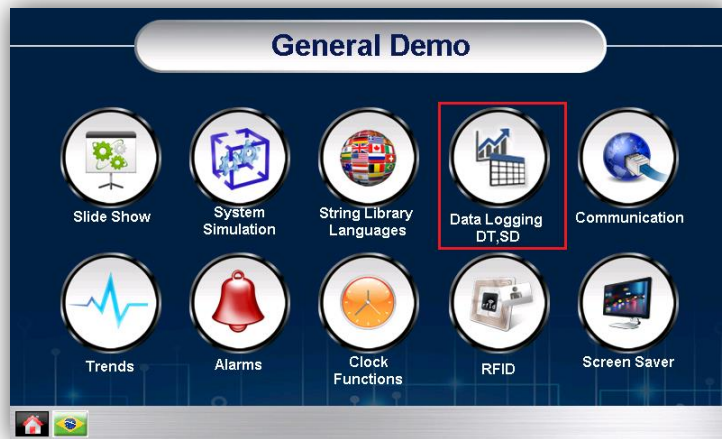
To start logging, press on "START DT Logging" button. This will enable/disable logging Tank Levels into a Data Table.

You can also log data to a .CSV file, by pressing the "START Logging to CSV" button.
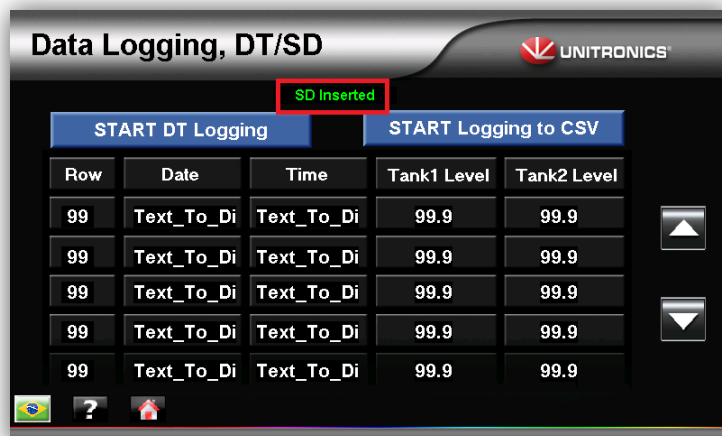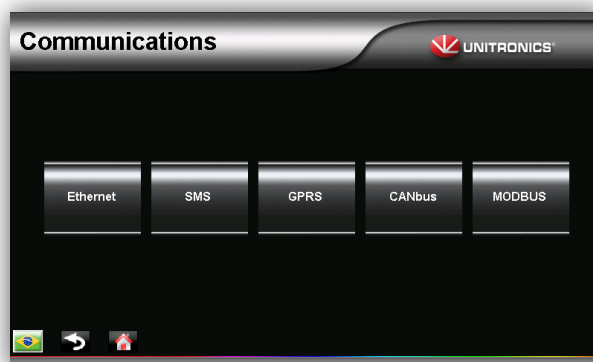
Communication

Vision HMI + PLC controllers support a broad range of communication protocols over Ethernet, Serial and CANBUS, including:
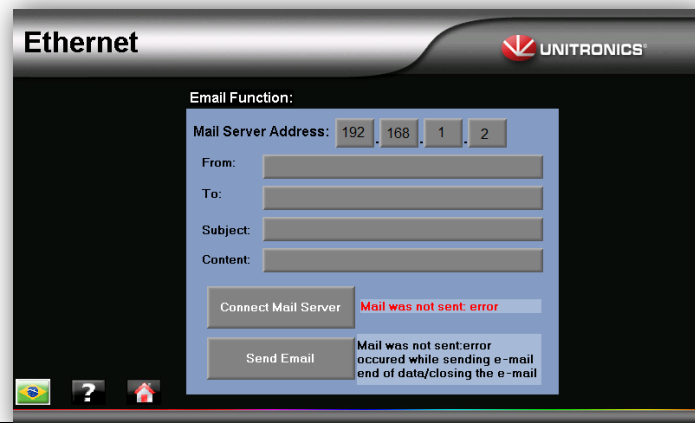
- MODBUS TCP/IP and RTU
- CANopen
- J1939
- SNMP V1
- TCP RAW
- SMS & GPRS

- UniCAN
- CAN_Layer2
- Email
- 3 party protocols
- UDP RAW
- BACnet & KNX via Gateway

Press on the Communication icon, and then press on each one of the communication options to show the communication functionality.

Ethernet

Simulate sending an Email capability.

| Note	This is a simulation, email will not be sent.

SMS

Vision controllers can communicate via SMS text messaging

In upper section of this screen, press "Initialize Modem", enter a number and message and then press "Send" to send an SMS to a mobile.

In the lower section, send an SMS to a PLC in order to switch on a lamp for 10.00 seconds.

Note	This is a simulation. To send an actual message, connect an Enfora modem to the V700. The Demo Case does not include a modem.
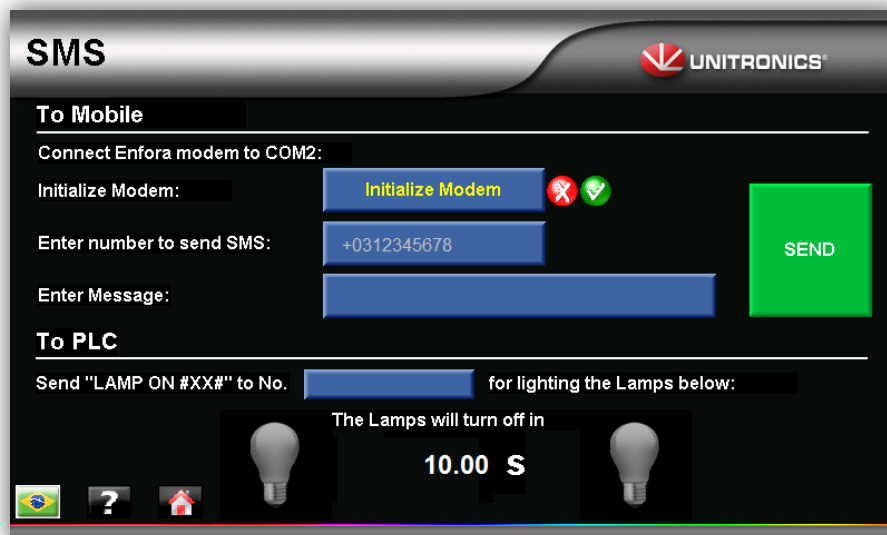
GPRS

This section allows you to demonstrate V700 support for GPRS modem.

| **Note**	This is a simulation. To send an actual message, connect an Enfora modem to the V700. The Demo Case does not include a modem.
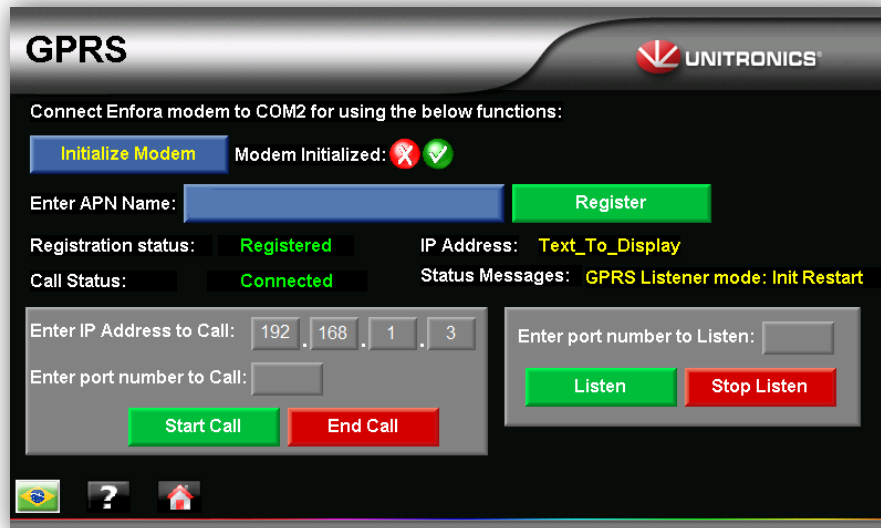
CANbus

Via CANbus you can communicate with up to 60 Unitronics PLCs, using Unitronics proprietary UniCAN protocol. The V700 support other protocols over CANBUS such as CANopen , Can_Layer 2 and J1939.

Trends

A Trend graph displays a dynamically changing value graph that tracks a single, dynamic value such as a temperature value, as a curve on the Vision screen.

To demonstrate this feature, press on the Trend icon.
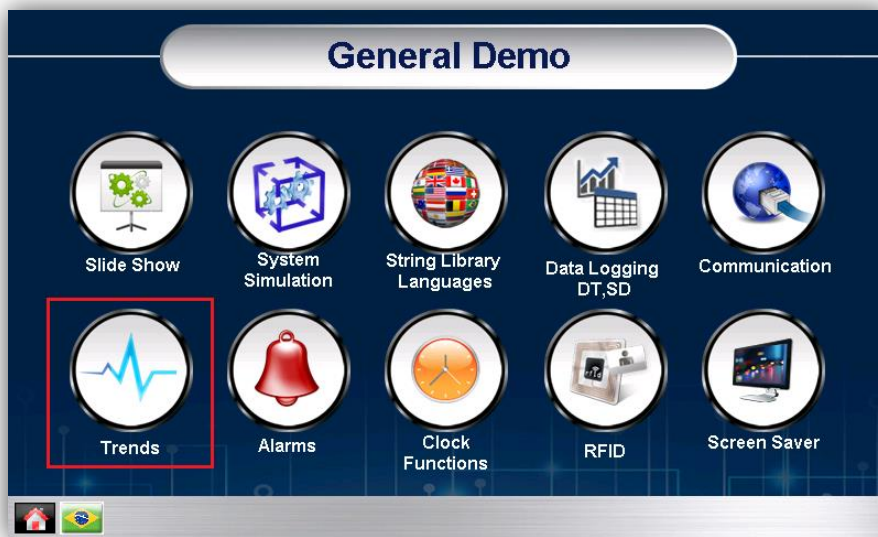
The Trend graph displayed on the screen shows a Mode button, marked M. Press this button to toggle between viewing Real-time and Historical graphs.

Pressing on the button "Save Trend to SD" will start saving the Trend to a file in the SD card. This will show the Trend saved to SD on the right part of the screen.
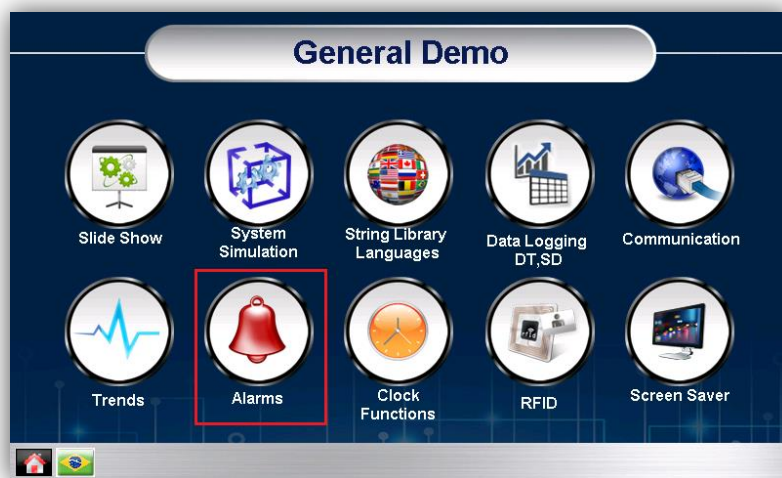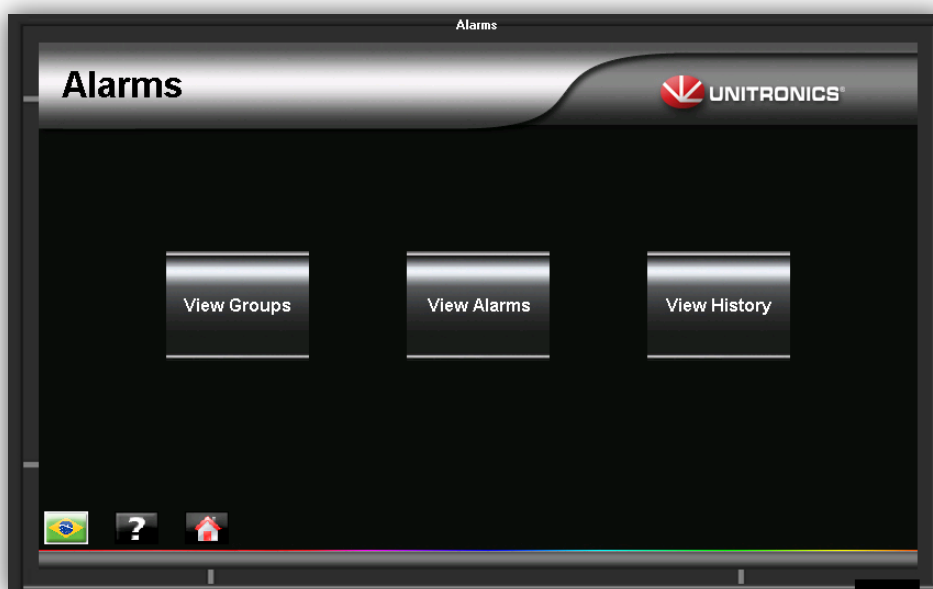
.
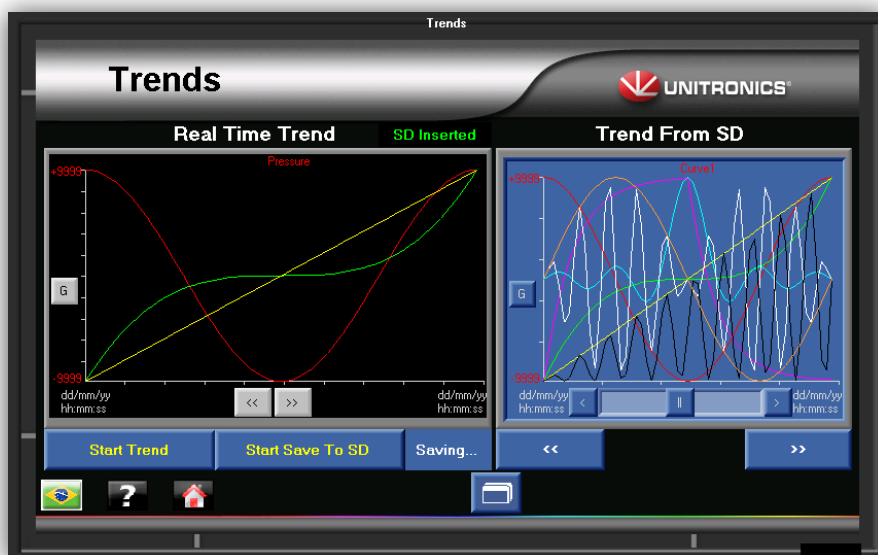
Alarms

VisiLogic's built in Alarm system can:

- Show Alarm status.
- Provide instructions.
- Require operator action.
- Report the event to the machine operator.
- Play an active role in the conditions enabling the running of the process.

Press on the Alarm icon to start the demonstration.

Alarms are generated automatically via tank simulation.

Press on the View in Groups to see the Alarm status, Trigger time, priority.
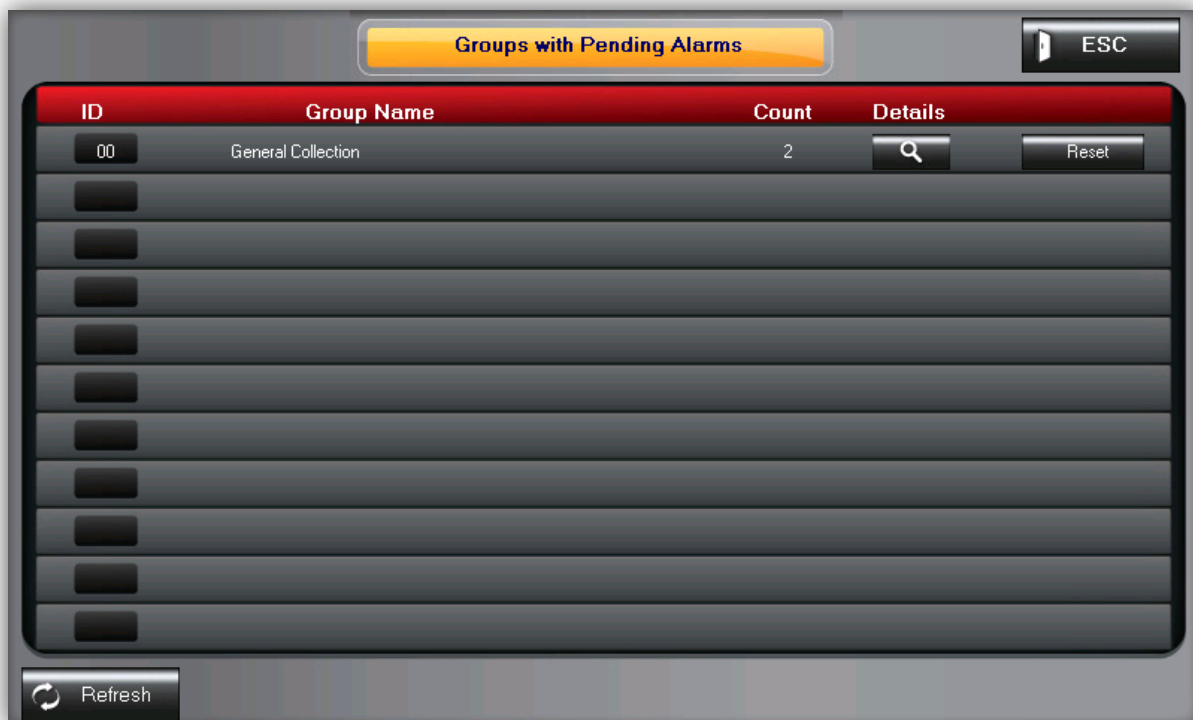

Groups with Pending Alarms:
Alarms are arranged in groups. Group 00, General Collection, is the default group.

This display shows all groups that contain one or more pending Alarms.
If the Alarms in a group are no longer pending, the group is not displayed.
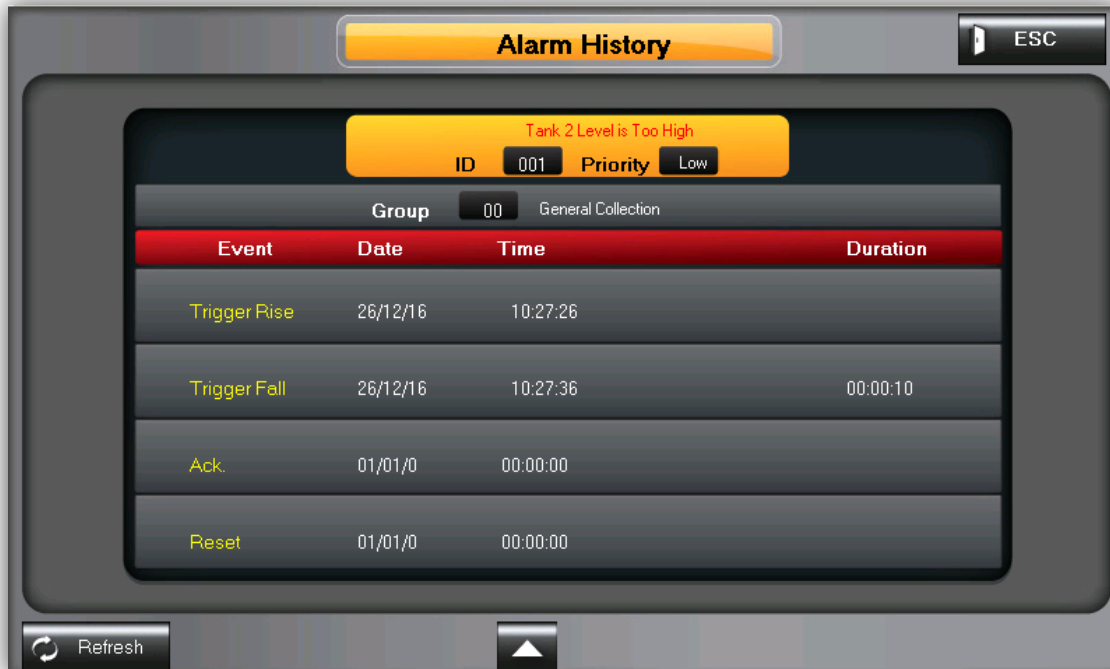
Alarm History

An Alarm is added to the History buffer after it has:
- Become Inactive.
- Has no Pending actions: View, Acknowledge and Reset.

The History display records the time the Alarm became active, the time it became inactive, and when Acknowledge and Reset were performed.

The buffer holds up to 256 History displays; when it is full it functions according to FIFO.
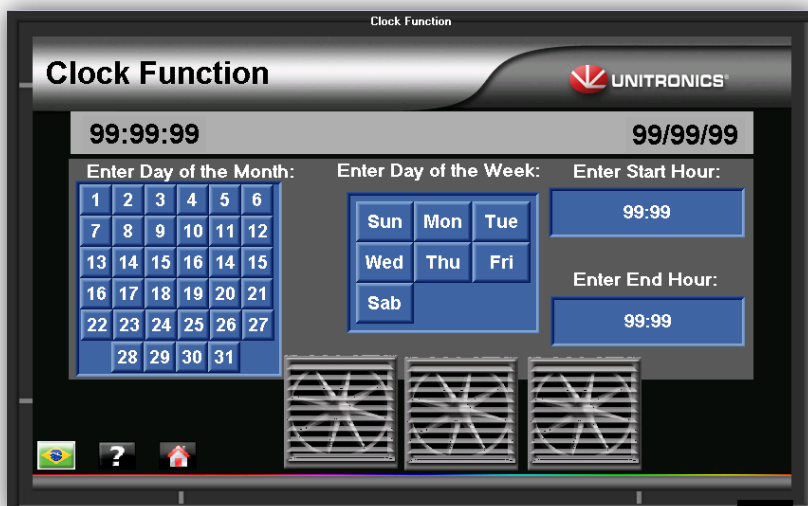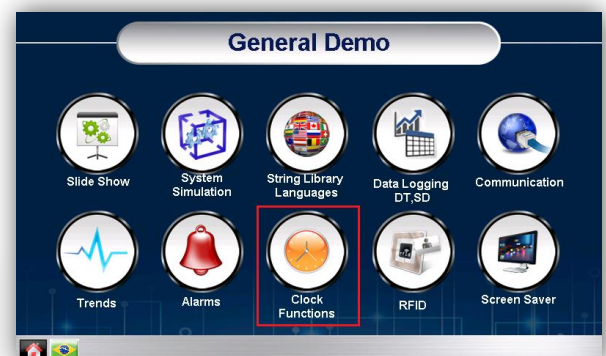

Clock Function

Clock functions enable you to schedule tasks according to year, month, day of the month and hour. This can be helpful in energy-saving applications.

To demonstrate, press on the Clock Function icon.

Set the range of date & time by Month/Day/Hour in order to activate the fans in the screen.
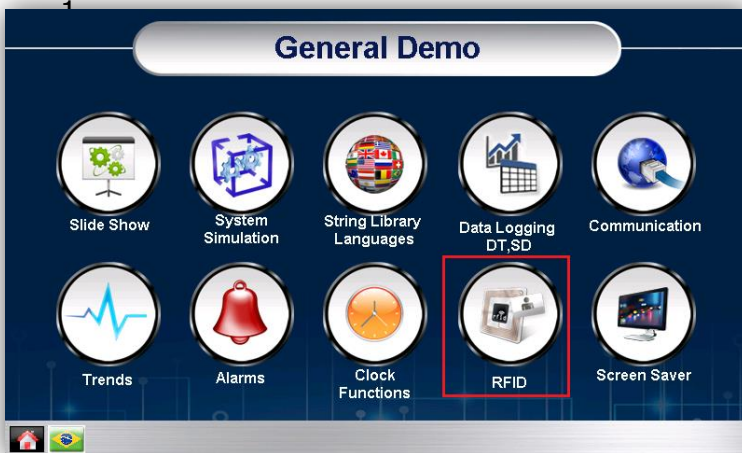
RFID

The RFID card reader is physically connected to the V700 inside the Demo Case. The data is sent to the UniStream via Ethernet.

The RFID card supplied with the Demo Case is located in the red pocket inside the case.

Note that most RFID tags are compatible with this specific RFID reader.
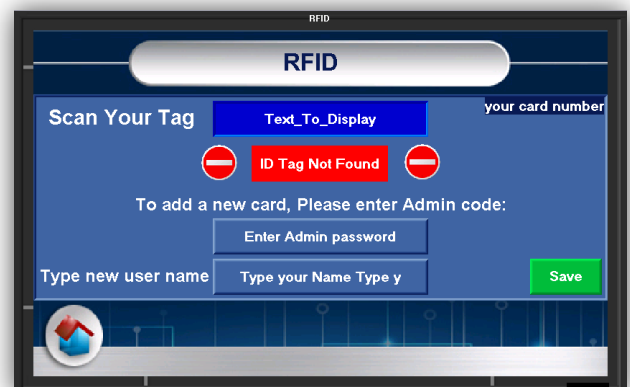
Press on the RFID icon.


To add a new RFID tag:
2. Swipe the card.

3. Enter the Administrators Password (default: 1111).

4. Assign the card a "User Name" by pressing on the "Type Your Name" text box.

5. Press "Save" to assign this user name to this card ID.

Market Segments

The Market Segments offers two scenarios, Boilers and Water Treatment. On the Home
screen, press the Market Segment icon, and then select the desired scenario.
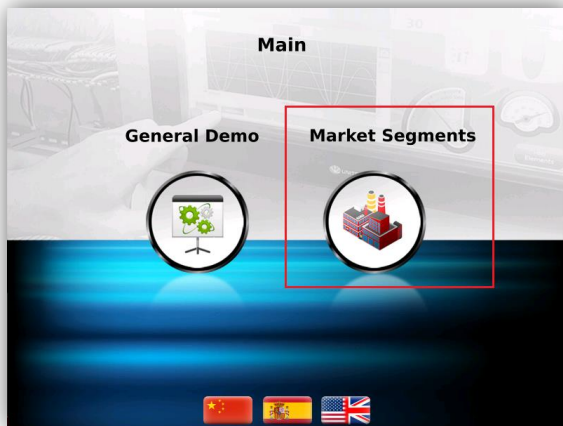
Water Treatment Scenario

This application simulates a
water treatment installation.

All three PLCs are in constant
communication, sharing data

Any change in one PLC
influences the others.

The next screens show all three HMI panels. Any element, such as pumps and valves, can be
triggered from any PLC.

The Samba screen displays two waste water tanks, with green-fill.

The V700 screen displays a purification station. There are two purification tanks, which
deliver purified water to a filling tank.

The UniStream screen displays the entire system, combining the HMIs of both the V700 and
Samba, and enabling you to both monitor and operate the entire system from one screen.

The water levels and valve status are logged in a Data Table and can be displayed in a Trend
graph.

The colors of the light tower indicate the level of the purified water in the filling tank. The
color changes are determined by setpoints, which you can edit. The setpoint linked to 'alarm'
triggers a red light and also triggers a sound. Note that you can mute the sound by pressing
the speaker icon.

The application also contains Alarm system, which
 will trigger by the 'alarm' setpoint
(minimum value of the red tower light).

As you navigate through the screens,
you can return to the main screen at
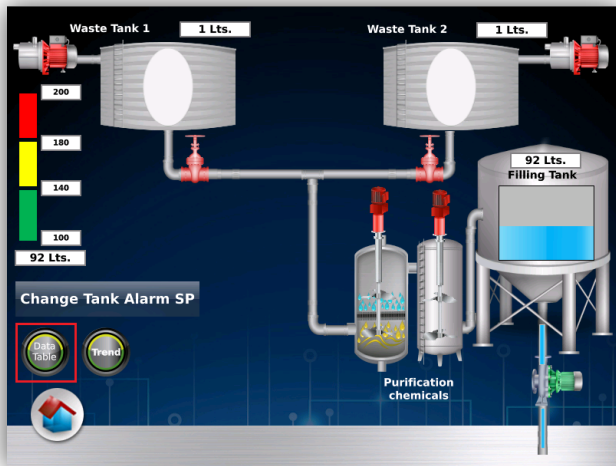any time by pressing the Home button.
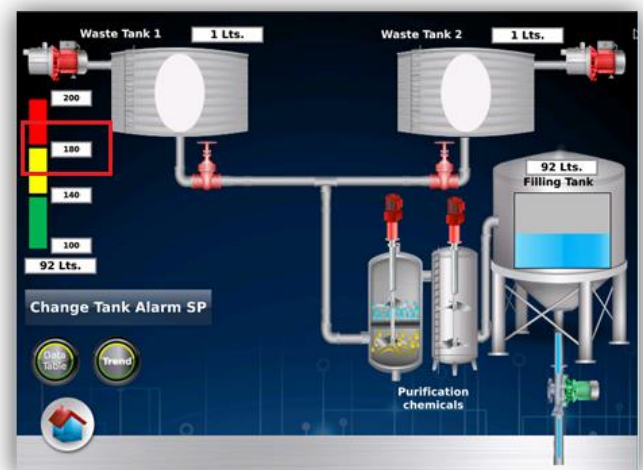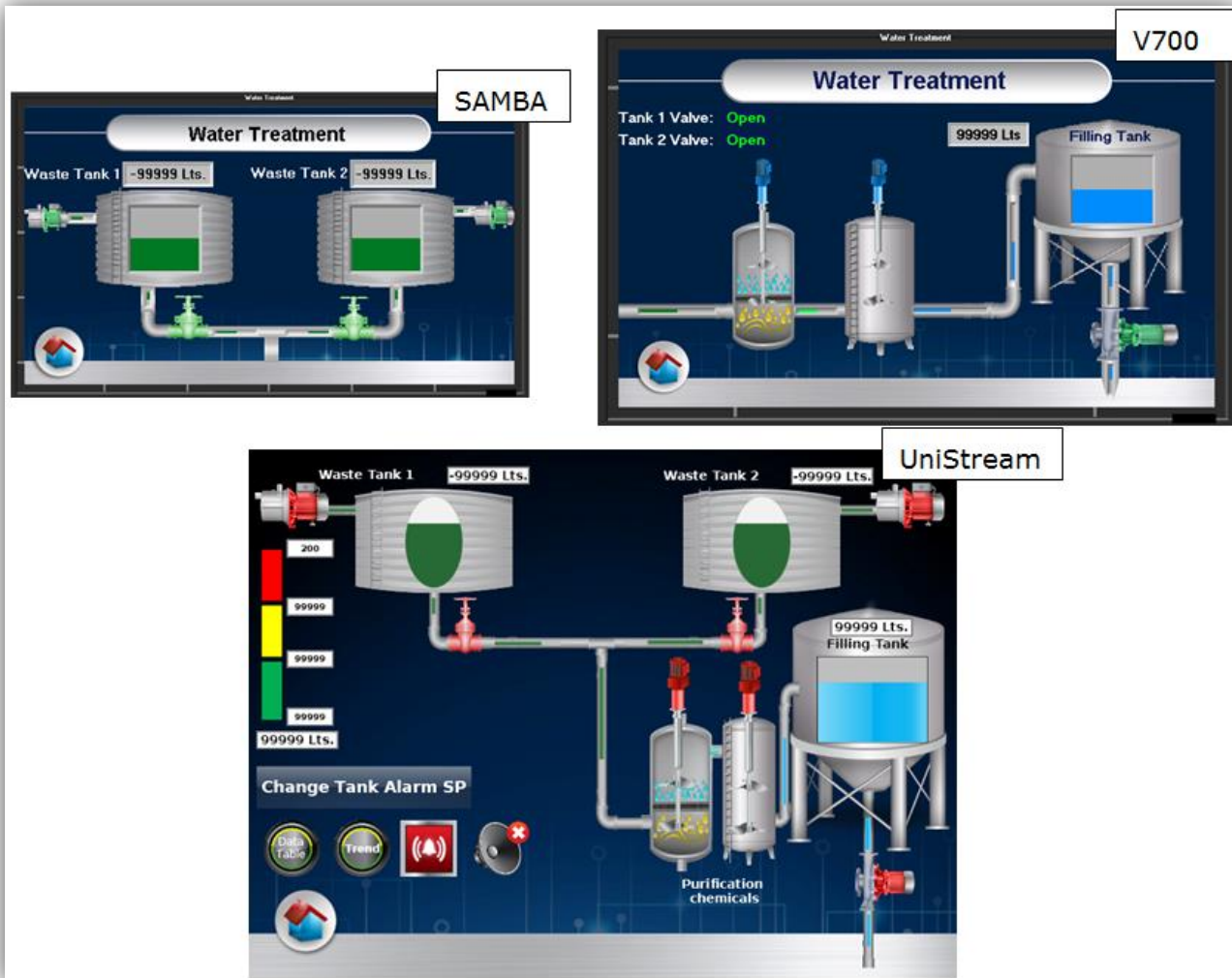
To display a running graph of system values, press the Trend button on UniStream's screen. Return to the main screen by pressing the red arrow on the lower left.
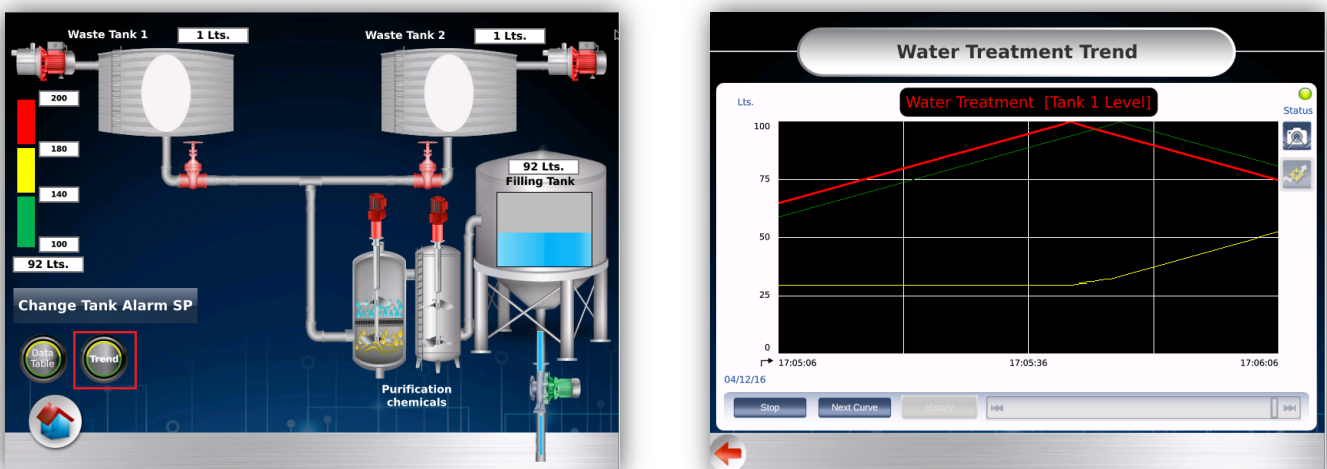
To display the data logging of the tank levels, press the Data Table button on UniStream's screen.


Editing the set points: control the bar graph and light towers threshold, is restricted to approved personell.

1. Press on the "Change Tank Set Point".

2. Swipe your RFID card to access the setpoints. (Instructions for registering and editing RFID cards and user names begin on page 7) and then touch a value to edit it.

Below, the value 180 is the emergency 'Alarm' setpoint. When the filling tank reaches 180, a buzzer will sound and the Alarm screens will be triggered.
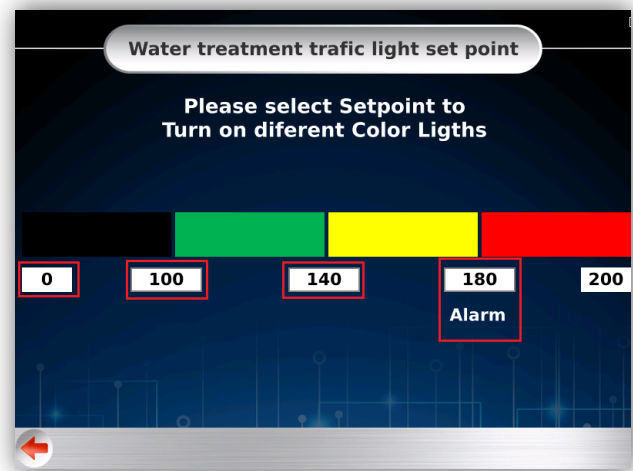
A red bell icon appears when the Alarms are triggered and in an active state. You can enter the Alarm History by pressing the red Alarm icon.

Boiler Scenario

This application simulates a boiler room.

All three PLCs are in constant communication, sharing data

Any change in one PLC influences the others.

The next screens show all three HMI panels. Any element can be triggered from any PLC.

The V700 screen displays two tanks , which are filled automatically and deliver water to the boiler through the pipes.

The Samba screen displays the boiler and its control switch, as well as its temperature and pressure.

The UniStream screen displays the entire system, combining the HMIs of both the V700 and Samba, and enabling you to both monitor and operate the entire system from one screen.

Turn the boiler switch to simulate heating the water.

The PT100 temperature is represented by the bar graph and the light tower.

You can heat the PT100 sensor in order to simulate alarm, sound and the tower light.

The color changes are determined by setpoints, which you can edit. The setpoint linked to 'alarm' triggers a red light and also triggers a sound.

Note that you can mute the sound by pressing the speaker icon.

The temperature values and water levels are logged in a Data Table and can be displayed in a Trend graph.

The application also contains Alarm screens, which are also triggered by the 'alarm' setpoint.

As you navigate through the screens, you can return to the main screen at any time by pressing the Home button.
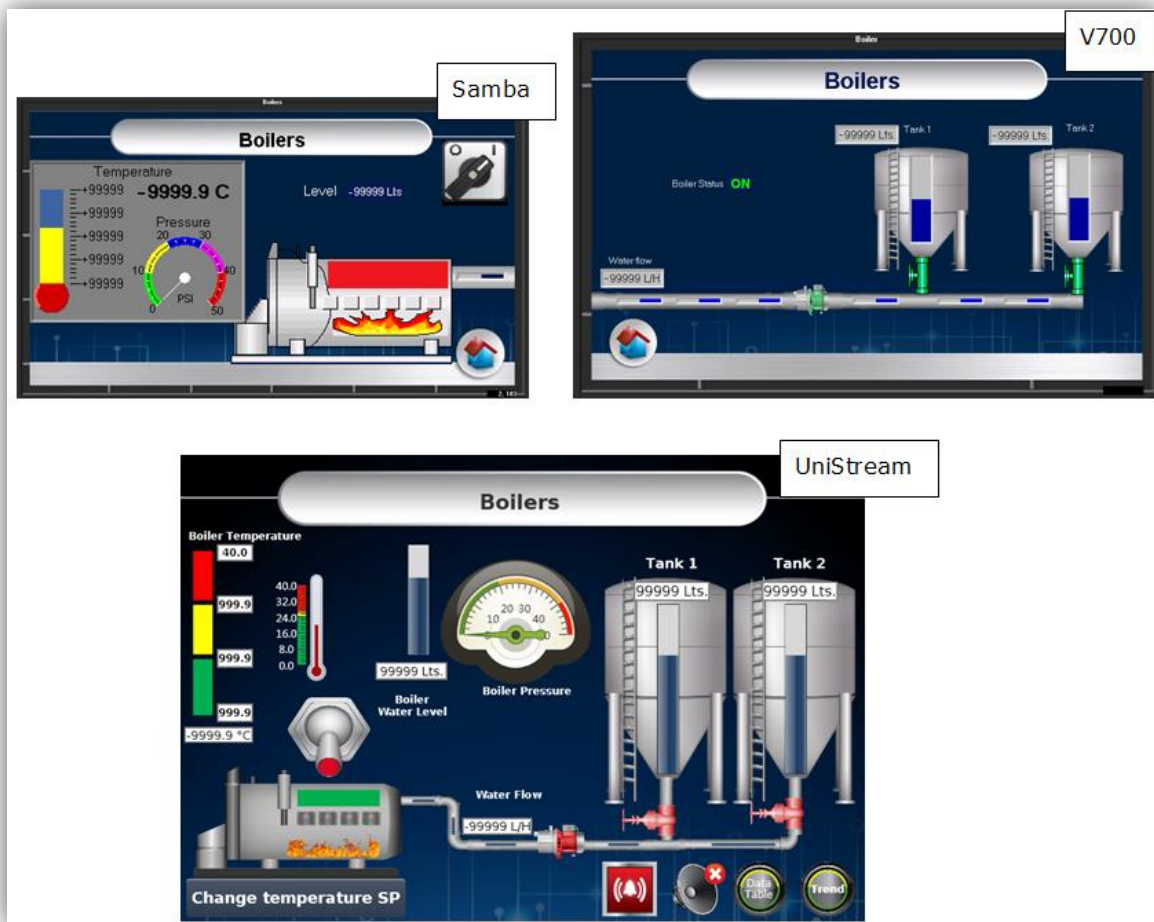
Editing the set points, which control the bar graph and light tower, is restricted to approved personell.

1. Press on the "Change temperature SP".

2. Swipe your RFID card to access the setpoints. (Instructions for registering and editing RFID cards and user names begin on page 7) and then touch a value to edit it.

Below, the value 27.0 is the emergency 'Alarm' setpoint. When the temperature reaches 27.0, a buzzer will sound and the Alarm screens will be triggered.
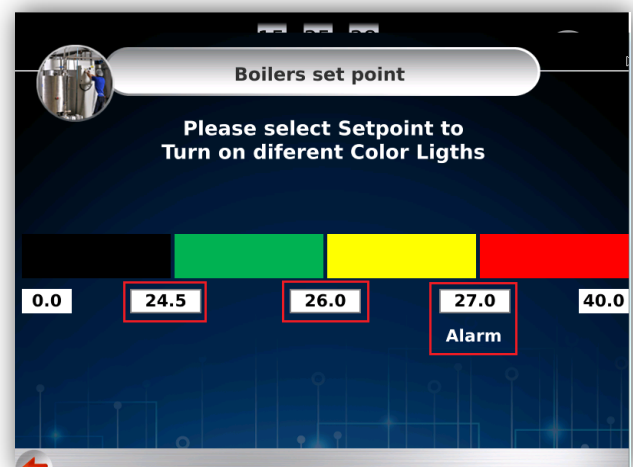
To display a running graph of the system values, values logged to Data Tables, or enter the Alarms system, the appropriate button on UniStream's screen.

Return to the main screen by pressing the red arrow on the lower left.