PETRO INDUSTRIAL

Colibri

Tank Monitoring System

CL6 Series

Set-Up and Operator's Guide

Important Safety Messages

This equipment is installed close to gasoline and diesel fuel. Working in such a hazardous environment presents a risk of severe injury or death if these instructions and standard industry practices are not followed. Read and follow all instructions thoroughly before installing or working on this, or any other related, equipment.

Be aware of the following symbols and their meanings:

Warning ⚠ A warning sign will appear in the text of this document when a potentially hazardous situation may arise if the instructions that follow are not adhered to closely. A potentially hazardous situation may involve the possibility of severe bodily harm or even death.

Caution ⚠ A caution sign will appear in the text of this document when a potentially hazardous environmental situation may arise if the instructions that follow are not adhered to closely. A potentially hazardous environmental situation may involve the leakage of fuel from equipment that could severely harm the environment.

Danger ⚡ An electrical danger sign will appear in the text of this document when a potentially hazardous situation involving large amounts of electricity may arise if the instructions that follow are not adhered to closely. A potentially hazardous situation may involve the possibility of electrocution, severe bodily harm, or even death.

⚠ Alarms and warnings alert you with specific details when a problem occurs so you can take corrective action. System hardware failure warnings and tank leak alarms can be programmed to do many things. The events that require programming are denoted by a (p) below:

- cause the red Alarm light or yellow Warning light to flash (standard)

- activate / sound the console annunciator alarm horn (p)

- activate internal output relays for external alarm devices (p)

- print alarm reports automatically via attached USB printer (USB - HP compatible printer) (p)

- send alarm and test reports to a specified email address (p)

Warning ⚠ **Follow all applicable codes governing the installation and servicing of this product and the entire system. Always lock out and tag electrical circuit breakers while installing or servicing this equipment and any related equipment. A potentially lethal electrical shock hazard and the possibility of an explosion or fire from a spark can result if the electrical circuit breakers are accidentally turned on during installation or servicing. Please refer to the Installation and Owner's Manual for this equipment, and the appropriate documentation for any other related equipment, for complete installation and safety information.**

Warning ⚠ **Follow all federal, state and local laws governing the installation of this product and its associated systems. When no other regulations apply, follow NFPA codes 30, 30A and 70 from the National Fire Protection Association. Failure to follow these codes could result in severe injury, death, serious property damage and/or environmental contamination.**

Warning ⚠ **Always secure the work area from moving vehicles. The equipment in this manual is usually mounted underground, so reduced visibility puts service personnel working on this equipment in danger from moving vehicles entering the work area. To help eliminate these unsafe conditions, secure the area by using a service truck to block access to the work environment, or by using any other reasonable means available to ensure the safety of service personnel.**

Warning ⚠ **When the Fuel Management System is used to monitor tanks containing gasoline or other flammable substances, you may create an explosion hazard if you do not follow the requirements in this manual carefully.**

Warning ⚠ **All wiring must enter the console's enclosure through the designated knockouts. An explosion hazard may result if other openings are used.**

Warning ⚠ **You must run wiring from probes to the Fuel Management System console in conduits which are separate from all other wiring. Failure to do so will create an explosion hazard.**
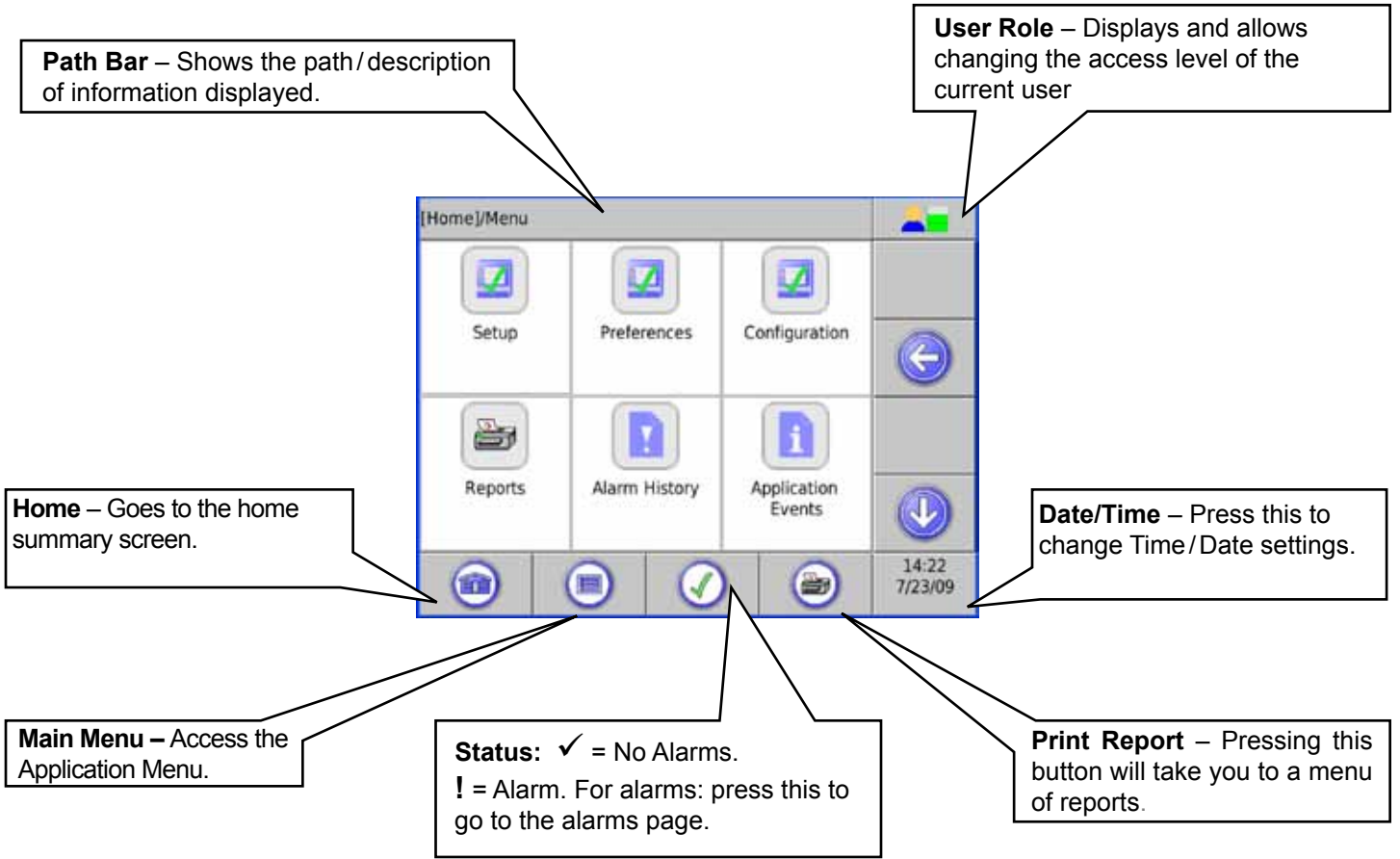
<u>Contents</u>

Basic Console Operation

The console can be operated through the LCD touch screen or the Web Browser Interface via a Personal Computer. Refer to to page 16 for Web Browser Interface setup.

LCD Layout

The LCD interface allows the user to enter on-screen information.

Path Bar – Shows the path/description of information displayed.

User Role – Displays and allows changing the access level of the current user

Home – Goes to the home summary screen.

Date/Time – Press this to change Time/Date settings.

Main Menu – Access the Application Menu.

Status: ✓ = No Alarms.
! = Alarm. For alarms: press this to go to the alarms page.

Print Report – Pressing this button will take you to a menu of reports.

Navigation Buttons

The navigation buttons are on the right side of the LCD touch screen. These change depending upon the application.

FMS: FMS Function Menu

Back: Reverts to the previous screen.

Scroll Up: Indicates that more menu options are available above current view.

Scroll Down: Indicates that more menu options are available below current view.

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Data Entry

If you are prompted to enter information, a keypad and edit buttons will be displayed.

Character Selection: Selects between upper case letters, lower case letters and numerals.

Backspace: Deletes the previous character.

Clear: Deletes data from the entry line.

Enter: Accepts the choice.

Cancel: Returns to the application and no changes will be made to console settings.

Restore Default: This will restore the original settings programmed into the console.

Alternate Characters: Shows accented characters

Number Entry

A screen like that below is used when number information is needed.
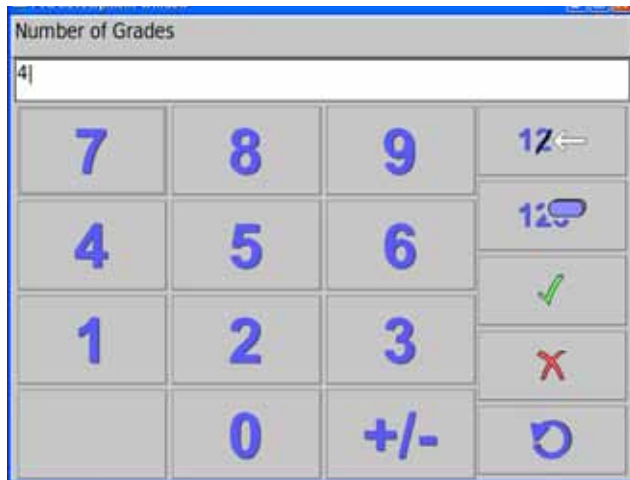
Security Access Control

	Guest	**Monitor system status**
	User	**Perform** system control.
	Administrator	**Modify system setup, plus all functions listed above**
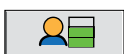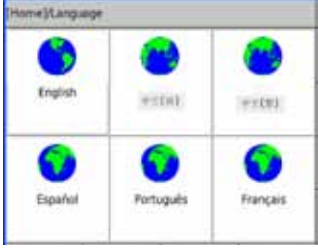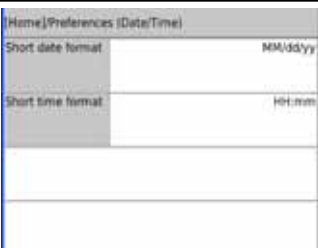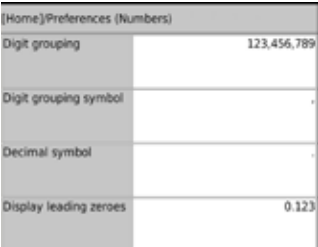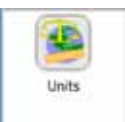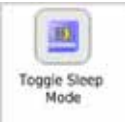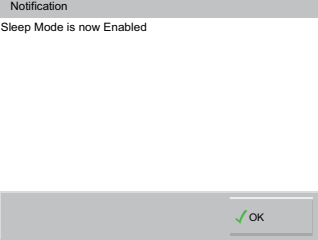
Note: For increased security, it is strongly suggested to change the default passwords (see page 6).
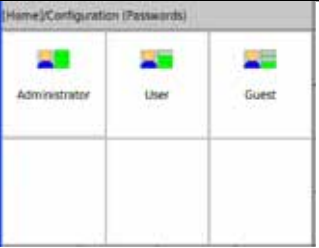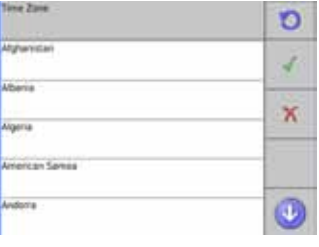
Set up Preferences
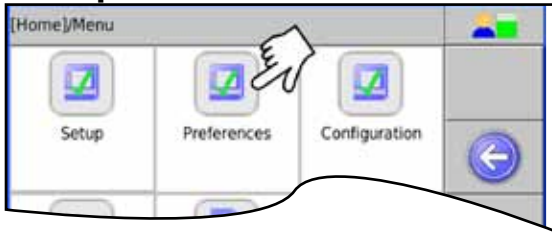
Display	Description	Values
Language	Choose language for console menus.	
Date/Time	Choose date and time display format	
Numbers	Choose format of numbers	
Units	Choose units of measure	
Toggle Sleep Mode	Enables blank screen saver	

Set up Configuration

Display	Description	Values
Passwords	Choose passwords for access	
Network Parameters	Set Network Parameters	
Time Zone	Choose location for correct time zone	
System Clock	Set system time and date	
Serial Port	Set Serial Port Parameters	
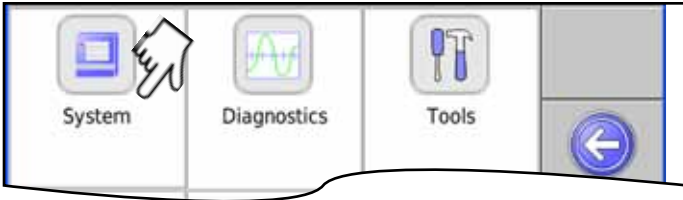
Display	Description	Values
About	Lists detail about the Console	About Tank Sentinel AnyWare 1.1.1.4342 (OS 401, Dev 89) Copyright © 2004-2009 Franklin Fueling Systems. All rights reserved. Franklin Fueling Systems 3760 Marsh Road Tel: +1 608 838 8786 Fax: +1 608 838 6433 Tel: USA & Canada 1 800 225 9787 Tel: Mexico 001 800 738 7610 www.franklinfueling.com
Identification	Lists System Parameters	System|Identification Parameter / Value System Serial Number — 130911FC Ethernet Address — 00:12:27:00:11:FC Controller Serial Number — 92-1457-0E00-0000-00 Created — 09-03-23 04:44 PM
Options	Lists options enabled	System|Options Option / Enabled FMS — Yes Tank Testing — Yes SCALD Testing — Yes Reconciliation — Yes
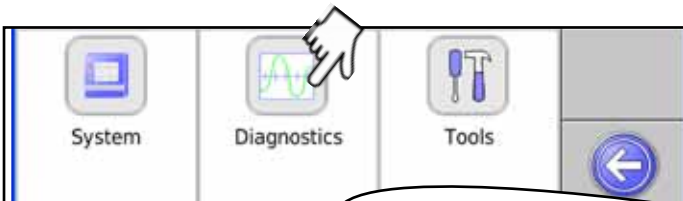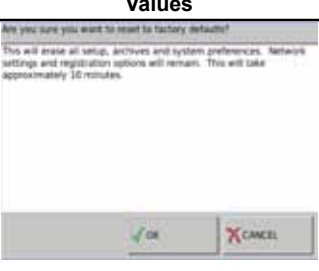
Display	Description	Values
Test Annunciator	To Silence the annunciator	Notification Press a button to silence the annunciator.
Print Test Page	To print or e-mail a test page	Confirmation Are you sure?

Display	Description	Values
Diagnostic Key	Allows technicians access to diagnostic functions*	Diagnostic Key: 20928552
Relay	View relay state and test operation (read screen caution notice)!	Diagnostics|Relay Relay 1 — DEACTIVATED Relay 2 — DEACTIVATED

* Call FFS Tech Support for the password
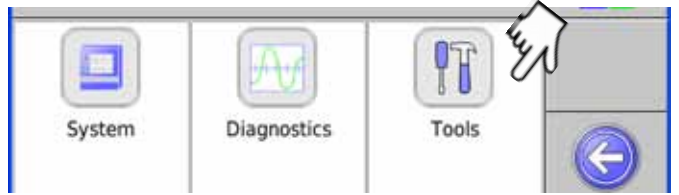
Display	Description	Values
Factory Defaults	Restore factory default settings	Are you sure you want to reset to factory defaults? This will erase all setup, archives and system preferences. Network settings and registration options will remain. This will take approximately 10 minutes.
Erase Archives	Will erase all archived data	Are you sure you want to erase archives? This will erase all archives from the system.
Reboot System	Will reboot system	Are you sure you want to reboot the system? System will restart all applications and be unavailable during reboot. Do not remove power from the device while the system is rebooting.
Touchscreen Calibration	Re-calibrates screen	Confirmation Are you sure?

Entering Setup

Always enter information starting from the top of the menu. Later menus use this information.

Note that the tables are formatted to correspond to the Web Browser Interface. Information shown is also valid for the LCD touch screen.

[Setup] / System ID

Parameter Name	Parameter Value	Description	Max Characters
Site Name	(Site Name)	Name of site.	40
Web UI URL	(http://localhost/tsa)	URL address of site.	40
ID Line 1	(*blank*)	These lines should contain the physical address of the site. This	40
ID Line 2	(*blank*)	information is used in reports and to identify site properties when	40
ID Line 3	(*blank*)	using Web User Interface.	40
ID Line 4	(*blank*)		40
ID Line 5	(*blank*)		40

[Setup] / System Configuration

Parameter Name	Parameter Value	Description	Value
Technical Support Key	(0)	Enter the appropriate key number.	#
Enable Log Files	(No)	Enables the logging option.	Yes/No

Note: The System Configuration entries are for use by Franklin Fueling Systems for diagnostic purposes.

[Setup] / Probe Modules

	Parameter Name	Parameter Value	Description	Value
Module #	Channels	(0)	Number of channels in use per module.	1-6
Channel #	Name	(Probe 1)	Given Name of Probe.	abc# (30 characters maximum)

[Setup] / Relay Modules

	Parameter Name	Parameter Value	Description	Value
Module #	Channels	(2)	Number of channels in use per module.	1 or 2
Channel #	Name	(Relay 1)	Given name of the channel.	abc# (30 characters maximum)
	Enabled	(Yes)	Yes if the channel is in use.	Yes/No
	Polarity	(Normal)	Allows the polarity to be inverted.	Normal, Invert
	Physically Wired As	(Normally Open)	How the relay is wired internally.	NO, NC

Note: The Dispenser Interface allows the console to read dispensing information and requires the TS-TRAC option. Dispenser information is sent through the Serial Port.

Parameter Name	Parameter Name	Parameter Value	Description	Max Value
Grades	Number of grades	(0)	The number and name of products used at the site.	(0-32)
Fueling Points	Number of fueling points	(0)	Anywhere on site where a vehicle can get fueled.	(0-32)
Hoses	Number of hoses	(0)	The number of grades available at a specific fueling point	(0-8)

Dispenser Interface: Example of site set-up

There are 4 grades in this example:

- Unleaded
- Mid-grade
- Premium
- Diesel

Site Top View

Dispenser Detail View

FP = Fueling Point

Dispenser 1

U   M   P

U = Unleaded
M = Mid-Grade
P = Premiuml

There are 3 grades available at Fueling Points 1 and 2. Number of hoses = 3

Dispenser 2

U   M   P   D

U = Unleaded
M = Mid-Grade
P = Premium
D = Diesel

There are 4 grades available at Fueling Points 3 and 4. Number of hoses = 4
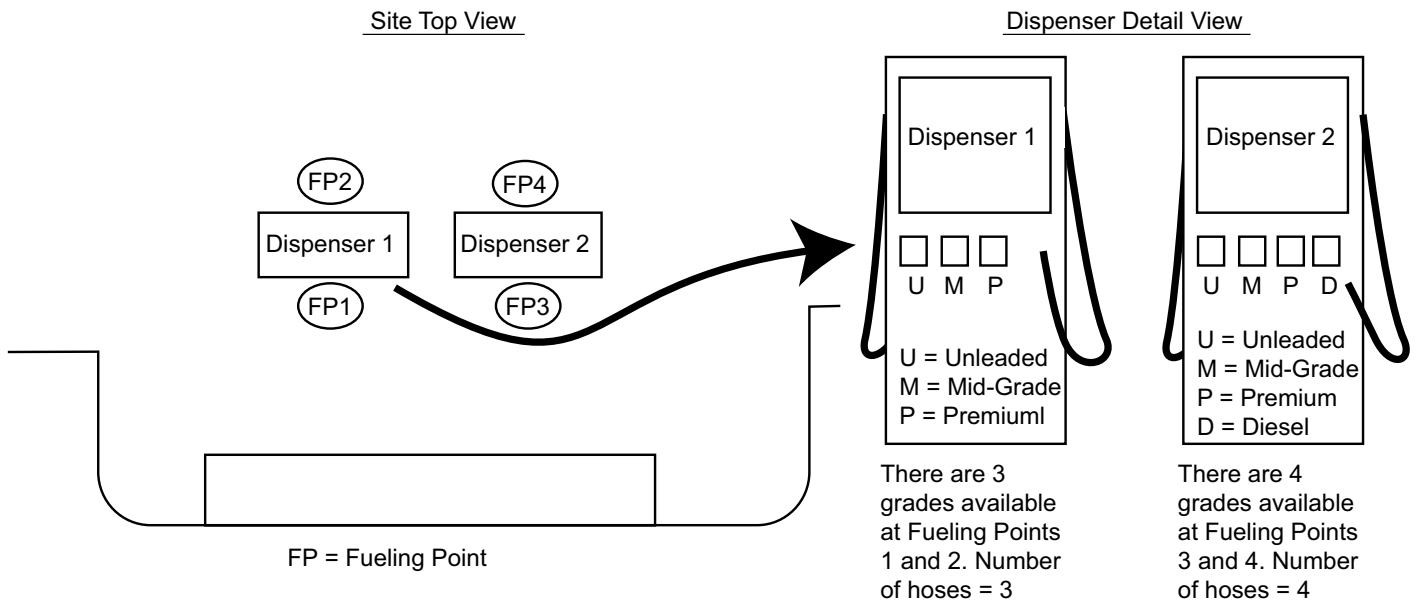
To Setup Dispensing Information:

1. Connect the RS232 serial cable from the distribution box (D-box) to the RS232 port on the Colibri.
2. Verify that the RS232 Communication port settings on the console match the D-box communication settings. Refer to Page 6 of this manual for Serial Port Setup options.
3. On the Colibri console, enter the number of grades. For this example (page 10), there are 4 grades.

Select each grade and assign a name (i.e. Unleaded Regular).

[Setup (Modified)] / Dispenser Interface / Grades

Number of Grades	4
Grade 1	>>
Grade 2	>>
Grade 3	>>
Grade 4	>>
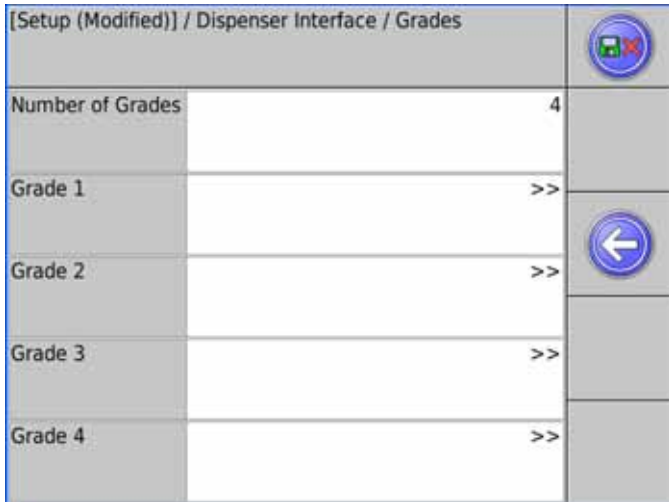
4. Enter the number of fueling points. In this example there are 4.

[Setup (Modified)] / Dispenser Interface / Fueling Points

Number of Fueling Points	4
Fueling Point 1	>>
Fueling Point 2	>>
Fueling Point 3	>>
Fueling Point 4	>>
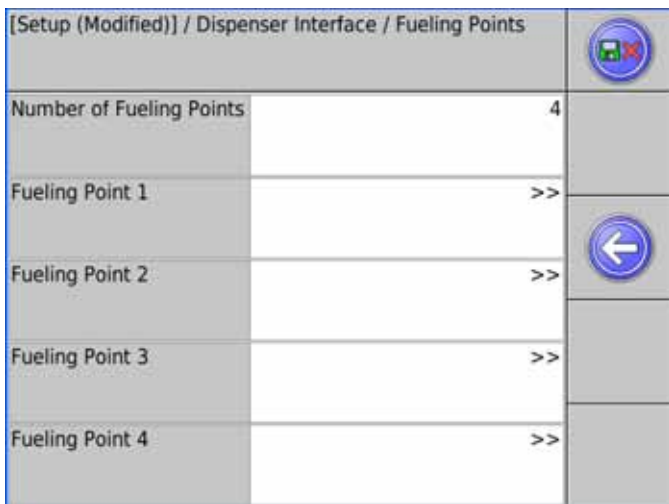
5. Select Fueling Point 1 and program the number of hoses. For this example there are 3 available grades at FP1 and FP2. (number of hoses =3)
and 4 grades available at FP 3 and 4 (number of hoses = 4). Continue to enter the number of hoses for each fueling point.

[Setup (Modified)] / Dispenser Interface / Fueling Points / Fueling Point 1

Number of Hoses	3
Hose 1	>>
Hose 2	>>
Hose 3	>>
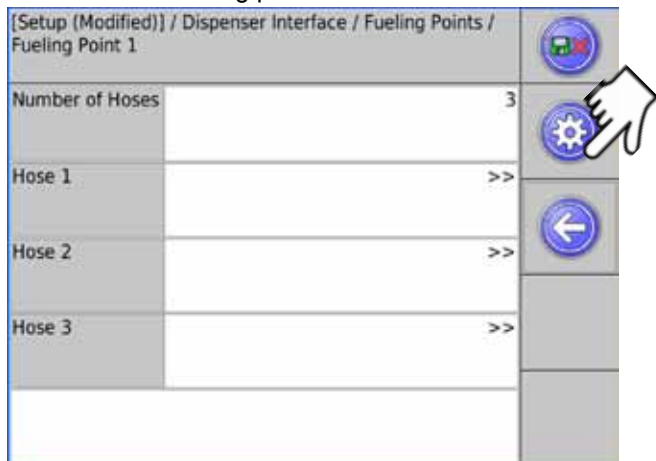
6. After the number of hoses are programmed, push the auto-configuration button for fueling point 1.

This will allow the console to automatically program hose information (grade association and position) for the Fueling points based on information received from the D-box.

Select Action

Autoconfigure	
Copy	
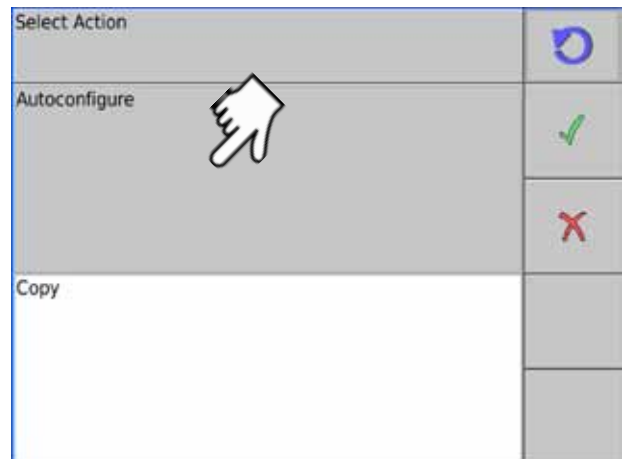
7. Follow the instructions on the screen.

Note: Dispensing small amounts of fuel from each hose is required before copying the information to other fueling points that have the same number of hoses.

Run Autoconfigure before copy.

Confirmation Screens:

Confirmation

All Position programming for this Fueling Point will be overwritten. Do you wish to continue?

✓ OK   ✗ CANCEL

Confirmation

Dispense a small amount of product from each Hose of this Fueling Point. Make note of what order the Grades are dispensed in.

✓ OK   ✗ CANCEL
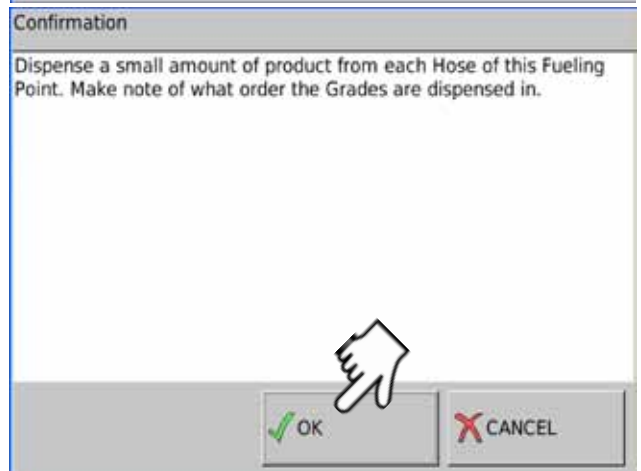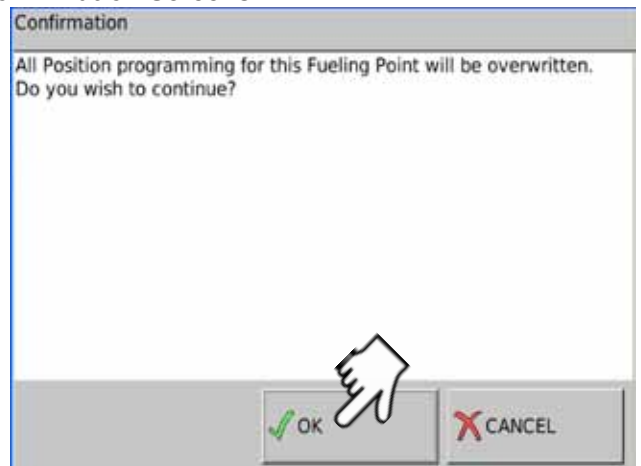
This will allow the console to verify grade and fueling point assignments.

Select Action	
Autoconfigure	
Copy	

Confirmation

Would you like to copy fueling point configuration?

✓ OK   ✗ CANCEL
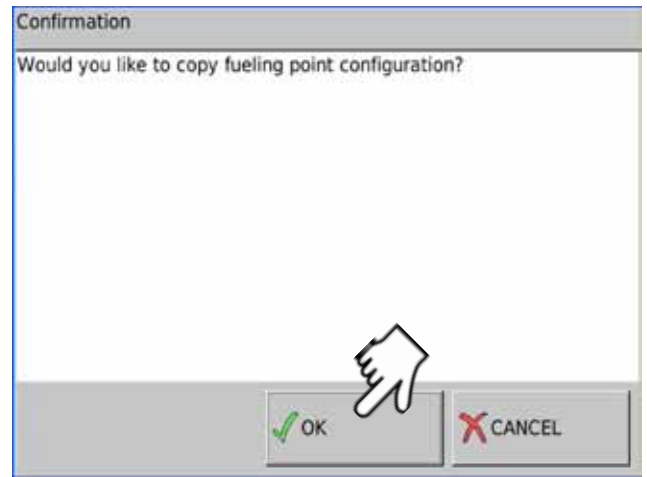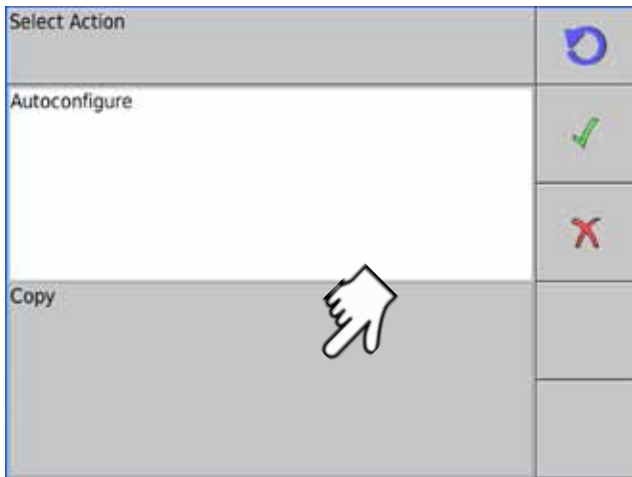
This action will copy the grade association and position information to the other Fueling points.

Next Screen

[Setup]

System ID	>>
System Configuration	>>
Probe Modules	>>
Relay Modules	>>
Dispenser Interface	>>

[Setup]

Fuel Management System	>>
E-Mail	>>
System Sentinel AnyWare	>>
Rules	>>
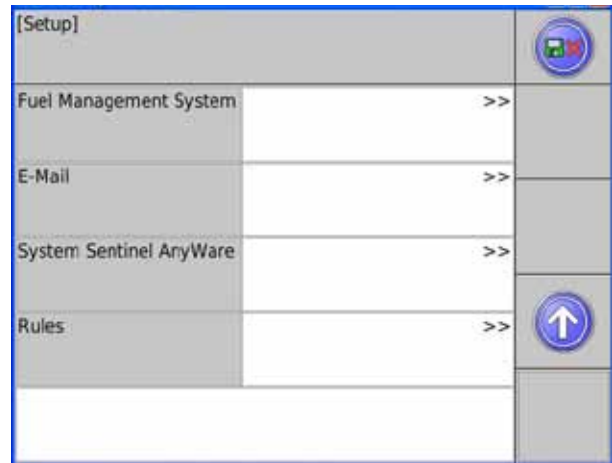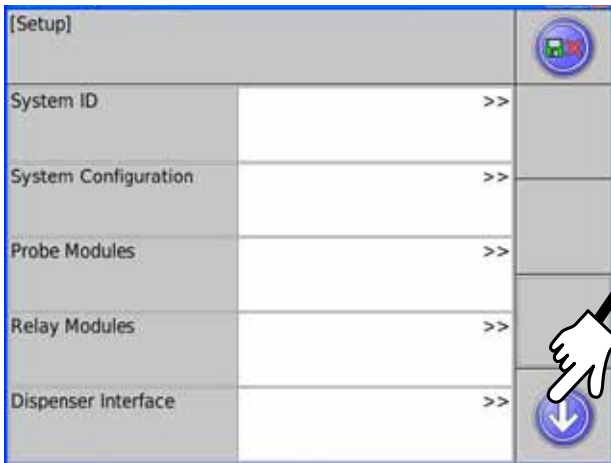
[Setup] / Fuel Management System

Parameter Name	Parameter Value	Description	Value
Ullage Percent	(95)	Percent of tank level used to calculate space left.	70-100 %
Delivery Delay	(15 min)	Time after delivery when increase is reported.	1 - 240 min.
Correction Temperature	(15.50 °C)	Product temperature correction.	-15 to 37.78 °C
High Product Limit	Level	Choose Volume or Level. This will influence how high product alarm is programmed.	Level or volume
Static Tank Testing	See Below		
Tanks	See Below	Choose number and types of tanks	
Special Tanks	See Below	Configure non-standard tanks	
Manifolds	See Below		
Products	See Below	Choose name and type of products	
Grades*	See Below		
Reconciliation*	See Below		
Autocalibration*	See Below		

* Requires TS-TRAC option

[Setup] / Fuel Management System / Static Tank Testing

Parameter Name	Parameter Value	Description	Value
Region	United States	Choose United States, Spain or Other (regulatory)	abc#
Monthly Leak Test Threshold	(0.21)	Set static leak tolerance for monthly testing tanks.	# cc/sec
Yearly Leak Test Threshold	(0.11)	Set static leak tolerance for yearly testing tanks.	# cc/sec
Sentinel Mode Threshold	(3.15)	Set static leak tolerance for Sentinel Mode.	# cc/sec
Confidence	(99%)	Leak testing confidence.	90, 95, 97.5, 99 %
Minimum Leak Test Time	(2 hr)	Minimum amount of time used to test.	0-8
Maximum Leak Test Time	(8 hr)	Maximum amount of time used to test.	1-8
Alarm On Precision Leak Test Failure	(No)	Yes will produce an alarm upon leak test failure.	Yes/No

[Setup] / Fuel Management System / Tanks

Parameter Name	Parameter Value	Description	Value
Name	(Tank 1)	Given name of tank.	abc#
Type	(Special 1)	Type of tank.	Std./Spcl.
Manifolded	(No)	Part of a tank Manifold?	Yes/No
Product #	(1)	Product # In tank	1-48
Delivery Threshold	(757.1 liter)	Level increase needed to signal delivery	>0.3
Theft Threshold	(18.9 liter)	Level decrease needed to signal theft. Note: console must be in Sentinel Mode	>0.3
Monthly Compliance	Yes	Track this tank under monthly section of compliance page.	Yes/No
Annual Compliance	Yes	Track this tank under annual section of compliance page.	Yes/No
Probe		(See below)	
Limits		(See below)	

[Setup] / Fuel Management System / Tanks / Tank 1 / Probe

Parameter Name	Parameter Value	Description	Value
Channel	(Probe 1)	Channel used for the probe in tank.	Probe
Type	(Standard 29)	Type of probe used in this tank.	Std./Spcl.
Ratio	(1 to 1 tip to head)	Ratio of product level movement in proportion to the float	1:1; 7:1; 9:1
Float Type	(4 in gas)	Type of float(s) used on probe.	4, 3, or 2 in. Gas/Diesel, Stainless, LPG, Density
Water Float	Yes	Indicates if water float is on probe.	Yes/No
Gradient	(8.99046 µs/mm)	Speed of probe wire.	# µs/mm
Product Offset	(0.00 mm)	Used for compensation of tank tilt.	# mm
Water Offset	(0.00 mm)	Used to compensate for debris on tank bottom.	# mm

Parameter Name	Parameter Value	Description	Value
High High Product (Level) Limit	(63.5 liter) (cm)	Product level needed to cause alarm. Units depend on whether Level or Volume was chosen for high product limit.	# liters (cm)
High Product (Level) Limit	(58.4 liter) (cm)	Product level needed to produce alarm. Units depend on whether Level or Volume was chosen for high product limit.	# liters (cm)
High Water Level Limit	(5.1 cm)	Water level needed to produce alarm.	# cm
Low Product Volume Limit	(847.9 liter)	Product level needed to produce alarm. Units depend on whether Level or Volume was chosen for low product limit.	# Liters (cm)
Low Low Product Volume Limit	(832.8 liter)	Product level needed to produce alarm. Units depend on whether Level or Volume was chosen for low product limit.	# Liters (cm)

[Setup] / Fuel Management System / Special Tanks

Special #			
Parameter Name	Parameter Value	Description	Value
Shape	(Horizontal Cylinder)	Choose tank shape	Horizontal or Vertical Cylinder, Rectangular
Length	(160)	Enter Tank Length	0-1200 in.
Diameter	(28)	Enter Tank Diameter	0-1200 in.
End Type	(Cylinder)	Describe tank end type	Cylinder, one or two domed ends
Correction Table		Number of points	0-100

The Correction Table is used to adjust tank characteristics by correlating known volume with a known level. The table is more reliable when more points are known.

Note: For the following information, Setup / Fuel Management System / Tanks / Manifolded must be set to Yes.

[Setup] / Fuel Management System / Manifolds

Manifold #			
Parameter Name	Parameter Value	Description	Value
Name	(Manifold 1)	Enter manifold name	abc#
Product #	(1)	Product # In tank	1 - 48
Delivery Threshold	(757.1)	Level increase needed to signal delivery	# liters
Theft Threshold	(18.9)	Level decrease needed to signal theft. Note: console must be in Sentinel Mode	# liters
Monthly Compliance	Yes	Track this manifold under monthly section of compliance page	Yes / No
Limits		Sets high and low level limits (see table top of page 11)	
SCALD		Enable, Qualify and Diagnostic Modes	

Note: SCALD (Statistical Continuous Automatic Leak Detection) tank test runs continuously and requires and detects quiet times of no dispensing or deliveries.

[Setup] / Fuel Management System / Products

Product #			
Name	(Product 1)	Enter Product name	abc#
Type	(Unleaded Regular)	Select type of fuel	Unleaded Regular, Plus, Extra, Super, Diesel, Kerosene, #2 Fuel Oil, Ethanol, Special # (20 Characters maximum)

[Setup] / Fuel Management System / Grades

Grade #			
First Tank	(Tank 1)	Select tank number for first tank	Tank 1-6
Second tank	(none)	Select tank number for second tank	None, Tank 1-6

[Setup] / Fuel Management System / Reconciliation

Parameter	Parameter Value	Description	Value
Over Short Limit Percent	(1.00)	Enter short limit percent	0-100
Over Short Limit Volume	(130)	Enter short limit volume	#
Sales	yes	Include Sales	Yes/No
Deliveries	Yes	Include Deliveries	Yes/No
Tank Volume	Yes	Include tank volume	Yes/No

[Setup] / Fuel Management System / Autocalibration

Note: Must have Dispenser Interface connected for Autocalibration to work

Parameter	Parameter Value	Description	Value
Autostop Volume Coverage	(100)	Enter volume percent at which the Autocalibration will automatically stop.	0-100
Autostop Level Coverage	(80)	Enter level percent at which the Autocalibration will automatically stop.	0-100
Autostop Number of Points Coverage	(100)	Enter number of points required at which the Autocalibration will automatically stop.	0-100

Any of these parameters values can be set separately. If any of the values are met the autocalibration will stop.

• If you want a certain volume coverage, set volume to desired percentage and level and number of points to 100.

• If you want a certain level coverage, set level to desired percentage and set volume and number of points to 100.

• If you want so many points in the table, set number of points to desired number and set volume and level coverage to 100.

If you have accurate tank dimensions entered, you may not need Autocalibration. Refer to Appendix F for detailed information on setting up and running Autocalibration.

E-Mail Setup

Note: This is only needed if you have an Ethernet connection and want the system to send e-mail messages.

Parameter	Parameter Value	Description	Value
"From" Address	your_from@ address.com	Enter e-mail address of sender (console)	abc# (40 Characters Maximum)
SMTP Host	Your SMTP host address	Enter I.P. address of SMTP host	abc# (40 Characters Maximum)
SMTP Port	25	Port address of SMTP	0-65535
Enable Authentication	No	Data authentication (if required)	Yes / No
Maximum Queue Size	20	Maximum size of queue in Megabytes	0-200
Retry Timeout	3600	Time, in seconds, that the console will wait before attempting to resend the message.	86400 max
Watchdog Timeout	30	Time, in seconds, that the console self-monitoring program waits when it expects an error due to software or power quality problems.	0-300
Enable Debugging	No	Keeps record of communication attempts	Yes / No

System Sentinel AnyWare

Note: This section of Set-up is only required if the console is going to transmit data to SSA. It will require the assistance of the SSA Administrator to set up.

Setup would require:
1. Contact an SSA Administrator.
2. The console must be connected through an Ethernet connection.
3. The SSA Administrator must create a site on SSA.
4. On the SSA Site / Setup page there is an EPS option.
5. Click on EPS.
6. You will be prompted with a note "Program EPS for this site?"
7. Click yes, and the program will automatically enter the values in the table below.

Parameter	Parameter Value	Description	Value
IP Address		IP address of SSA server	abc# (40 Characters Maximum)
Port	80	The port that the SSA server uses	#
Path	/ssa/_data/ssa_ webdata.dll	This is the Web Data URL located on the SSA server but without the http:// and the domain name.	abc# (40 Characters Maximum)
Priority	Highest	Sets communication priority. Leave this at High or Highest.	Highest, High, Normal, Low
Database Connection	SSA1	Name of Database. For most applications this is left blank.	abc# (40 Characters Maximum)
Database User Name	SSAADMIN	Name used to access the database	abc# (40 Characters Maximum)
Database User Password		Password of the user above to access the database.	abc# (40 Characters Maximum)
Site ID	(0)	Can leave this at 0.	#

Rules

Rules associate an event (i.e. alarm, delivery, tank test, etc.) with an action (i.e. activate relay, e-mail, sound, etc.).

[Setup] / Rules

List of Default Rule Entries

These rules can be enabled or modified as needed for local conditions.

Rule - Power On Sound
Rule - Application Event Sound
Rule - New Alarm Sound
Rule - Print Inventory Daily
Rule - Print Tank Test Weekly
Rule - Print SCALD Test Weekly
Rule - Print Regulatory Monthly
Rule - Print on Delivery
Rule - Print on Alarm
Rule - Start Tank Test
Rule - E-mail Alarms
Rule - Set Reconciliation Period

[Setup] / Rules / Rule - *Any*

Rules

The table below lists parameters for rule making.

Note: The values shown will change depending upon the selection made.

Group Name		Parameter Name	Parameter Value	Description	Options
Rules					
Rule – New Rule #		Name	(New Rule #)	Given name of rule.	abc#
		Enabled	(No)	Yes to enable rule.	Yes/No
Events					
	Event	Type	(Alarm Occurred)	Event type that triggers action.	Alarm Occurred; Alarm Cleared; Application Event; Schedule
		Category	(Any)	System that event occurs in to trigger action.	Any; System; FMS;
		Code	(Any)	Error/Trouble Event Code that triggers action.	(*see below*)
		Device	(Any)	Device that created the alarm condition.	Various
		State	(Any)	State of alarm to trigger action.	Various
Action					
	Action	Type	(e-mail)	Action that will occur upon event	E-mail, Report, Relay, Tank Testing, Sentinel mode, Reconciliation, sound, Notify SSA, Sample input
		Address	your,email@address.com	Where it will send e-mail	
		Contact	Generated	What e-mail format is used	Generated, Text, HTML, Other
		Template	Text	E-mail Template	HTML, Text, short text

You can find samples of creating rules (in English) on the internet. Sign in at http://techlab.franklinfueling.com and locate FMS/Colibri, or search video libraries

Operation

Check Inventory

Select the tank.

View or print tank information.

Check Deliveries

Choose the tank or manifold (Tanks shown)

Alarms

This will bring up a list of current or active alarms. Refer to Appendix A, Alarm Table.

Print Reports
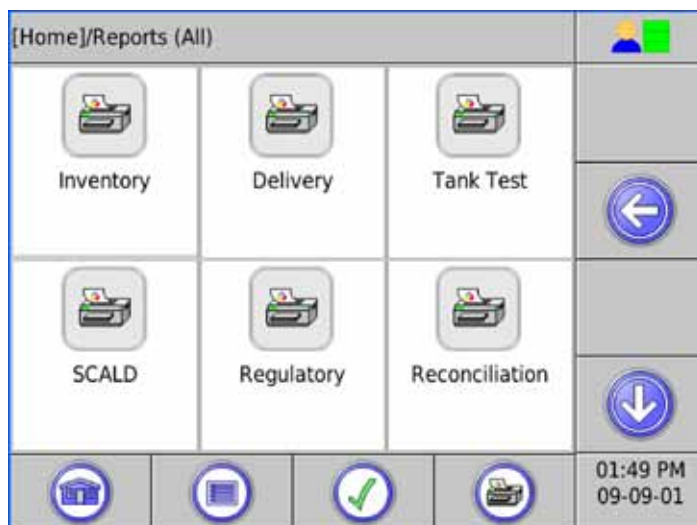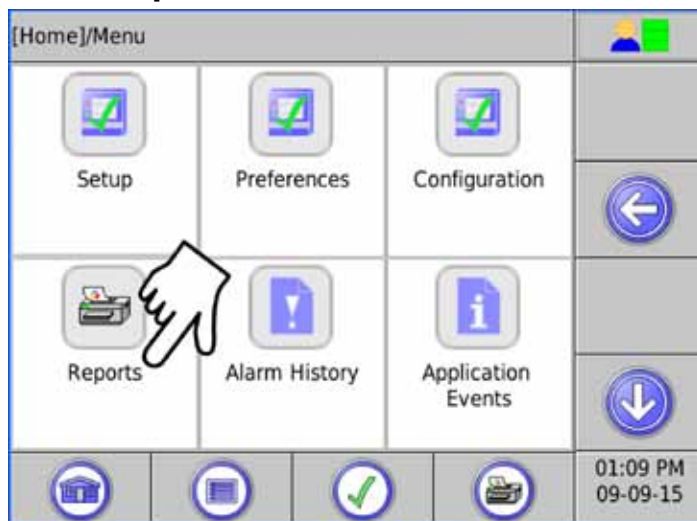
Choose the type of report.
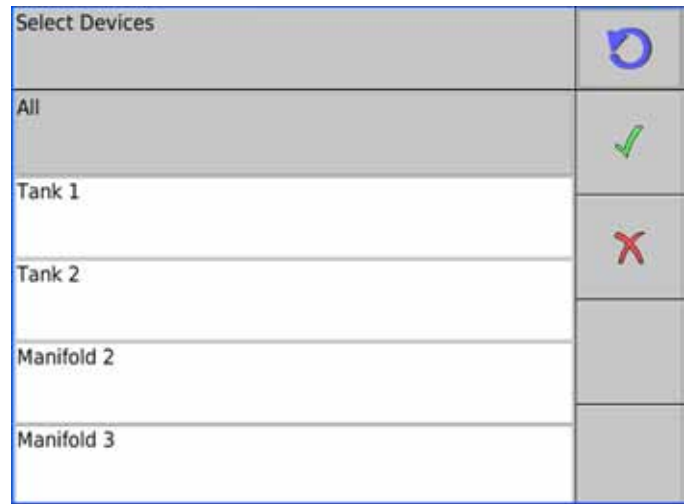
This shows manifolds. Separate tanks will be listed if tanks are not connected together with manifolds.
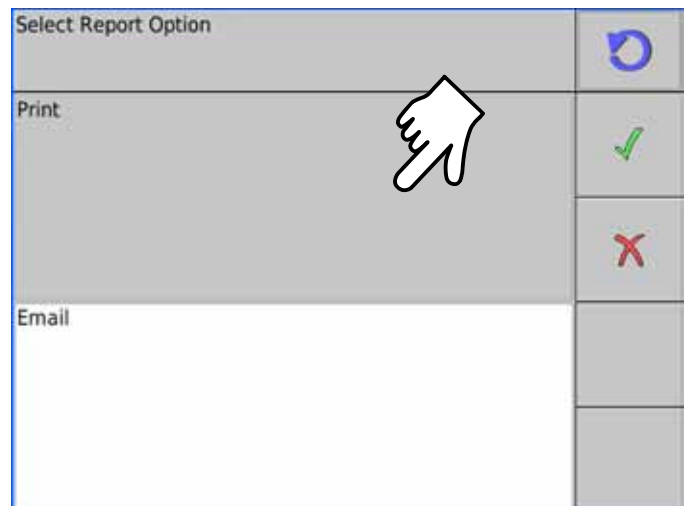
Web Browser Interface

Connecting to the Console

To use the Web Browser Interface, the console must be connected to a computer. You can connect to the console's Ethernet connection using an RJ-45 cable.

Ethernet Connection:

Router or Hub

Use network cross-over cable

Use network straight cable
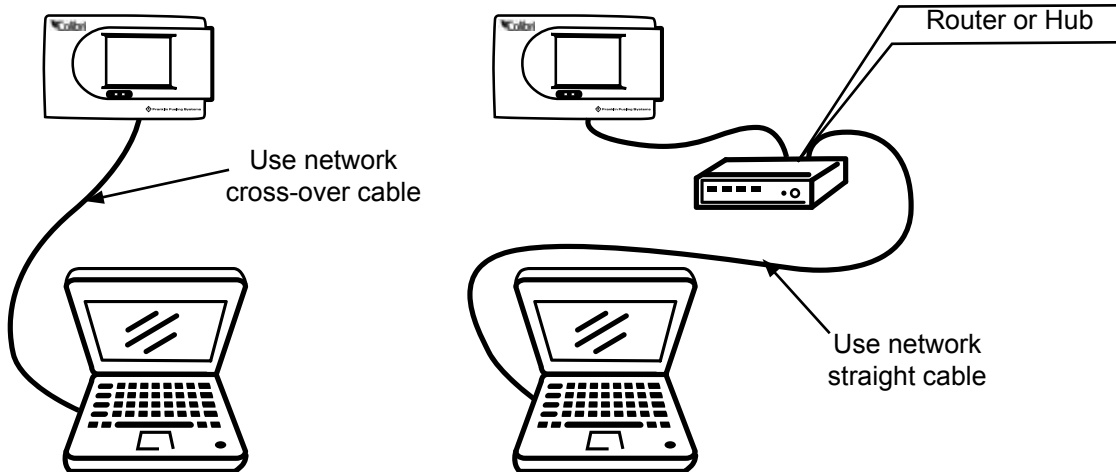
To set up a connection, from the console:

Changing IP settings require administrator sign-on.
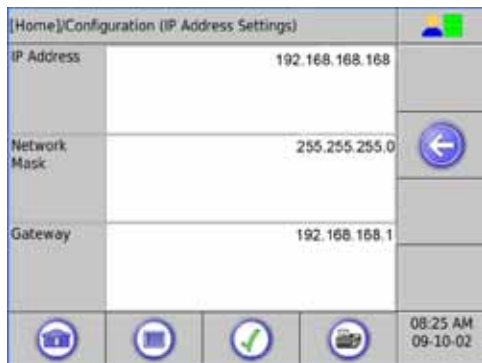
The numbers you get may be different than shown. Copy these numbers for the next step.

Connect the PC to the console with an Ethernet cable.

In M.S. Windows, click on Start:

Connect To   ▶   i.e. Laptop 1200

Printers and Faxes   Show all connectio

Right Click and select Properties

Click

Select **Properties**

Click OK after setting properties

Enter the numbers from the [Home] Configuration IP Address Settings Page of the console, EXCEPT: Change the IP Address to a different value (i.e. 192.168.168.167)

Click OK
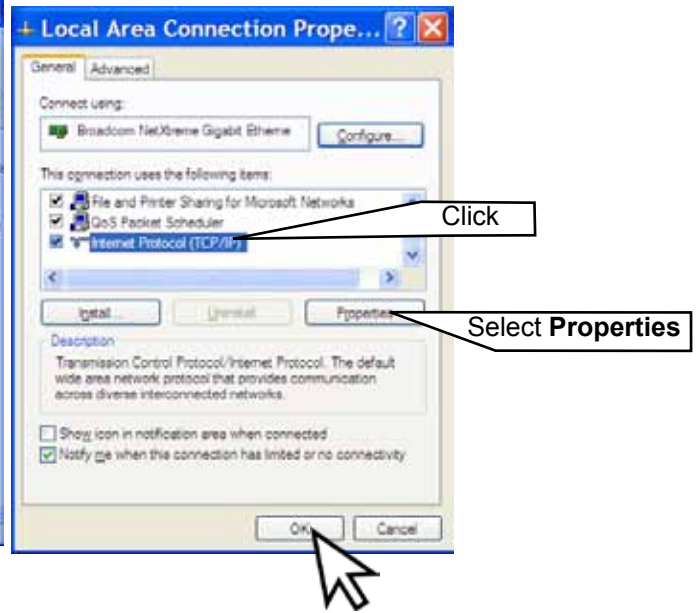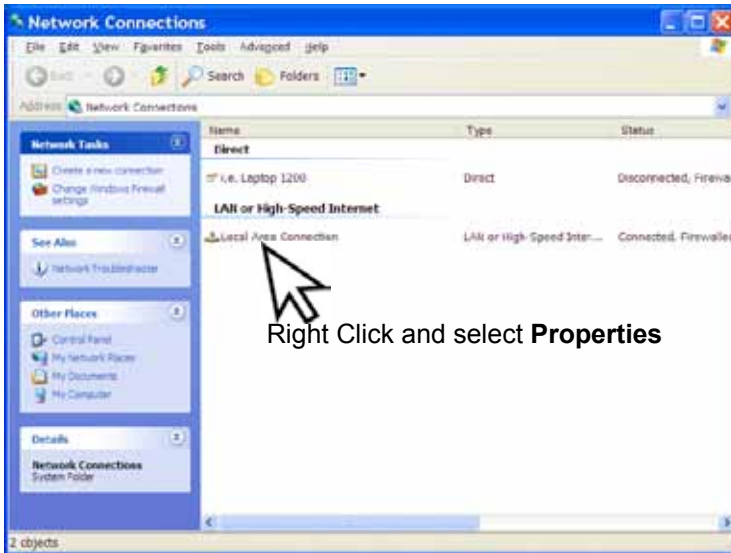
Open the computer's internet browser and put the console's IP address into the address bar of the browser.

A screen should open similar to that below.

Access Level

Alarm Indicator

Software Version
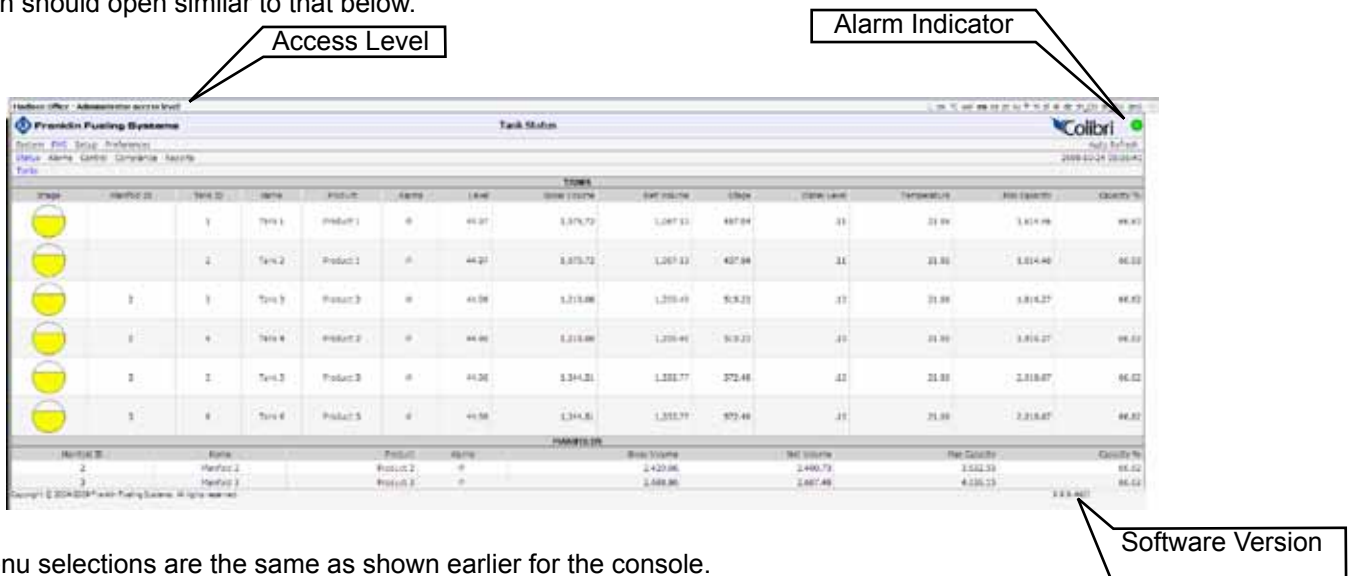
The menu selections are the same as shown earlier for the console.

Web Interface Available Pages

The following pages can be viewed in order to see data and perform control functions. Several pages and functions are controlled by access level. If the Auto Refresh action is listed on the Action Bar of a page, then the data on the page does not refresh automatically. Click **Refresh** on your browser to update the page or click on **Auto Refresh** to have the screen updated continuously.

Menu

Auto refresh

System

Page	Description
Status	Displays alarm status for all applications.
Alarms	Shows a detailed list of all active Alarms and Warnings.
Reports	Make alarm and application event reports.
Configuration	Edit the access level passwords and IP information. (Administrator Only)
Registration	View the installed options.
Diagnostics	Displays SCALD status and Relay status
Tools	Allows rebooting system, erase archives or restore factory defaults
About	Lists manufacturer contact information

FMS

Page	Description
Status	Third navigation line appears showing tank inventory information and alarm status.
Alarms	Lists all active alarms and the date and time they occurred.
Control	Start tank tests, Set Auto-Calibration and calibrate probes.
Compliance	Displays compliance information for all tanks.
Reports	Make various reports like Inventory, Delivery, Tank Tests and Regulatory.

Setup/Config

Refer to pages 8-14 for information. This menu and should only be used by a certified technician. See your Franklin Fueling distributor for assistance.

Preferences

Change the way that data is displayed, change the units of measure and adjust the Auto Refresh rate. There are two levels of preferences:

Preference	Description
Personal	These settings are saved and viewed only on your computer.
System	Changes the way data is displayed for all Web Browser Interfaces and touch screen users.

Tank Leak Testing Using the Web Browser Interface

Before starting a tank leak test, wait 6 hours after the last delivery and 2 hours after last dispense in order for the tank to become stable.

There must be no dispense during a tank leak test.

Tank leak tests can take from 2-8 hours to complete. (See Appendix E)

1. Open your web browser and connect to the site.
2. On the Primary Navigation Bar, select **FMS**.
3. On the Secondary Navigation Bar, select **Control**.
4. Select **Tanks**.

Tank Leak Tests

1. Check the box next to the Tank(s) you want to test.
2. From the drop-box, select the type of test (**Monthly** or **Annual**) you want to perform for each tank, .
3. Click on **Start Leak Tests** on the Action Bar.

Appendix A: List of Alarms

FMS

Tank/Manifold Alarms

Displayed Alarm	Description	Recommended Actions
Correction Table Error	Correction points for the special tank listed with the alarm were not entered or were entered incorrectly.	Verify that the correction table points for the tank listed with the alarm are entered sequentially in 'Special Tanks' Programming.
Manifold Gross Leak Detected	The manifold listed with the alarm has failed a Gross Leak Test.	Review manifold leak test history and programming. It may be necessary to manually start a Gross Leak Test to keep the manifold in compliance.
Manifold Leak Detected	The manifold listed with the alarm has failed a Monthly Leak Test.	Review manifold leak test history and programming. It may be necessary to manually start a Monthly Leak Test to keep the manifold in compliance.
Manifold SCALD Leak Detected	The manifold listed with the alarm has failed a SCALD Leak Test.	Review manifold leak test history diagnostic web page and programming.
Manifold Theft Detected	Product level in the manifold listed with the alarm has dropped below the programmed Theft Limit.	Verify that the programmed Theft limit is correct. Verify that the values of product loss on the console correspond with actual product loss in the tank.
Tank Gross Leak Detected	The manifold listed with the alarm has failed a Gross Leak Test.	Review manifold leak test history and programming. It may be necessary to manually start a Gross Leak Test to keep the tank in compliance.
Tank Leak Detected	The tank listed with the alarm has failed a Monthly Leak Test.	Review tank leak test history and programming. It may be necessary to manually start a Monthly Leak Test to keep the tank in compliance.
Tank SCALD Leak Detected	The tank listed with the alarm has failed a SCALD Leak Test.	Review tank leak test history and programming. Test to keep the tank in compliance.
Tank Theft Detected	Product level in the tank listed with the alarm has dropped below the programmed Theft Limit.	Verify that the programmed Theft Limit is correct. Verify that the values of product loss on the console correspond with actual product loss in the tank.

FMS

Probe Alarms

Displayed Alarm	Description	Recommended Actions
Float Height Error	A float on the probe listed with the alarm is being monitored at a varying height outside of thresholds. Causes can include broken float and programming, or mistakenly associating a gasoline and diesel float.	Verify Probe programming. Visually inspect that the probe float type matches the type of product. Inspect magnet and probe shaft for cracks or debris and clean if necessary.
Float Missing	A float on the probe listed with the alarm has not been detected or the probe was programmed with the incorrect number of floats.	Verify the 'number of floats' in Probe programming. Number of floats must match number of floats installed. Float must be lower than 5" from the bottom of the probe head.
High Water Level	The water float on the Tank/Manifold listed with the alarm is above the programmed High Water Level Limit.	Verify that the programmed limit is correct. Verify that the Water Level values on the console correspond with the actual water level in the tank.
High Product Level	The product float on the Tank/Manifold listed with the alarm is above the programmed High Product Level Limit. Tank may be close to an overfull condition.	Verify that the programmed limit is correct. Verify that the Gross Product Level values on the console correspond with actual product level in the tank.
High High Product Level	The product float on the Tank/Manifold listed with the alarm is above the programmed High High Product Level Limit. Tank may be near an overfull condition.	Verify that the programmed limit is correct. Verify that the Gross Product Level values on the console correspond with actual product level in the tank.
Low Product Level	The product float on the Tank/Manifold listed with the alarm is below the programmed Low Product Level Limit. Tank may be close to an empty condition.	Verify that the programmed limit is correct. Verify that the Gross Product Level values on the console correspond with actual product level in the tank.
Low Low Product Level	The product float on the Tank/Manifold listed with the alarm is below the programmed Low Low Product Level Limit. Tank may be near an empty condition.	Verify that the programmed limit is correct. Verify that the Gross Product Level values on the console correspond with actual product level in the tank.
No Probe Detected	This alarm indicates a communication error between the console and the probe listed with the alarm.	Verify Probe programming. Inspect the probe wiring from the probe module to the probe.
Probe Synchronization Error	This alarm indicates a communication error between the console and the probe listed with the alarm.	Verify Probe programming. Inspect the probe wiring from the probe module to the probe.
RTD Table Error	The RTD Table programmed for the probe listed with the alarm is incorrect.	Verify the RTD Table programming.
Temperature Error	This alarm indicates a temperature sensor error or failure inside the probe shaft of the probe listed with the alarm.	Verify the RTD Table programming. Visually inspect probe shaft for defects and cracks.
Unstable Probe	This alarm indicates inconsistent data from the probe listed with the alarm.	Inspect the probe wiring from the probe module to the probe. Verify that the product in the tank is both physically and thermally stable.

FMS

Special Product Alarms

Displayed Alarm	Description	Recommended Actions
Alpha Volume Correction Error	These Alarms refer to temperature correction coefficients used by the console to calculate Net Volume. When these values are entered too high or too low, an alarm condition will occur.	Verify that the Volume in the Correction Type matches the specifications of the product used in 'Special Products' Programming. These values should be listed in the product manufacturer's Spec Sheets.
API Volume Correction Error	These Alarms refer to temperature correction coefficients used by the console to calculate Net Volume. When these values are entered too high or too low, an alarm condition will occur.	Verify that the Volume in the Correction Type matches the specifications of the product used in 'Special Products' Programming. These values should be listed in the product manufacturer's Spec Sheets.
Level Error	The level of the product float on the probe listed with the alarm has exceeded a possible level according to the programming.	Verify that the following parameters are programmed correctly according to site specifications: Correction Table, Gradient, Probe Type, and Product Offset.
Net Error	The net volume of the product float on the probe listed with the alarm has exceeded a possible volume according to the programming; related to Volume Correction.	Verify that the following parameters are programmed correctly according to site specifications: Correction Table, Gradient, Probe Type, and Product Offset.
Product Volume Error	The volume of the product float on the probe listed with the alarm has exceeded a possible volume according to the programming.	Verify that the following parameters are programmed correctly according to site specifications: Correction Table, Gradient, Probe Type, and Product Offset.
Ullage Error	The Ullage level on the tank/manifold listed with the alarm has exceeded a possible level according to the programming.	Verify that the following parameters are programmed correctly according to site specifications: Correction Table, Gradient, Probe Type, and Product Offset.
Water Volume Error	The Water Volume on the tank/manifold listed with the alarm has exceeded a possible level according to the programming.	Verify that the following parameters are programmed correctly according to site specifications: Correction Table, Gradient, Probe Type, and Product Offset.

If the tank is not listed as a standard tank in Appendix B: Standard Tanks Table, use the tank chart from the manufacturer to create a custom correction table.

Appendix B: Standard Tank Table

Legend
O/C = Owens Corning / FC Fluid Containment
D = Diameter (Dia.)
L = Length
S = Single Wall
DW = Double Wall Tank (DWT)

Type #	Manufacturer	Model	Capacity (Gallons)	Dimensions D x L (inches)	S / DW Wall
01	O/C Tanks	D5	550	48 x 78	S
		DWT-4 (4)	550	51 x 83	DW
02	O/C Tanks	D-5	1,000	50 x 132	S
		DWT-4 (4)	1,000	53 x 138	DW
03	O/C Tanks	D-2B	2,000	74 x 133	S
		D-6	2,000	74 x 133	S
04	O/C Tanks	DWT-2 (6)	2,500	75 x 151	DW
05	O/C Tanks	D-6	4,000	74 x 236	S
		DWT-2 (6)	4,000	75 x 239	DW
06	O/C Tanks	G-5	4,000	92 x 167	S
		G-6	4,000	95 x 167	S
07	O/C Tanks	G-3	4,000	92 x 165	S
08	O/C Tanks	D-6	6,000	74 x 354	S
		DWT-2 (6)	6,000	75 x 357	DW
09	O/C Tanks	G-3	6,000	92 x 231	S
10	O/C Tanks	DWT-2 (8)	6,000	95 x 237	DW
11	O/C Tanks	G-3	8,000	92 x 300	S
12	O/C Tanks	G-5	8,000	92 x 299	S
		G-6	8,000	95 x 299	S
		DWT-2 (8)	8,000	95 x 303	DW
13	O/C Tanks	DWT-2 (6)	8,000	75 x 472	DW
14	O/C Tanks	G-3	10,000	92 x 362	S
15	O/C Tanks	G-5	10,000	92 x 365	S
		G-6	10,000	95 x 365	S
16	O/C Tanks	D-6	10,000	120 x 245	S
17	O/C Tanks	DWT-2(6)	10,000	75 x 570	DW
18	O/C Tanks	G-3	12,000	92 x 432	S
19	O/C Tanks	G-5	12,000	92 x 431	S
		G-6	12,000	95 x 431	S
		DWT-2(8)	12,000	95 x 435	DW
20	O/C Tanks	DWT-2(10)	15,000	124 x 348	DW
21	O/C Tanks	DWT-2(10)	20,000	124 x 458	DW
22	O/C Tanks	DWT-2(10)	25,000	125 x 554	DW
23	Xerxes	DWT-2(10)	30,000	124 x 656	DW
24	Xerxes	—	2,000	96 x 108	S

Type #	Manufacturer	Model	Capacity (Gallons)	Dimensions D x L (inches)	S / DW Wall
25	Xerxes	—	2,000	76 x 166	DW
26	Xerxes	—	2,000	75 x 144	S
27	Xerxes	—	3,000	96 x 147	S
28	Xerxes	—	4,000	75 x 263	S
29	Xerxes	—	4,000	96 x 180	S
30	Xerxes	—	4,000	76 x 252	DW
31	Xerxes	—	6,000	75 x 353	S
32	Xerxes	—	6,000	96 x 246	S
			6,000	97 x 251	DW
33	Xerxes	—	8,000	96 x 312	S
		—	8,000	97 x 317	DW
34	Xerxes	—	10,000	96 x 378	S
		—	10,000	97 x 383	DW
35	Xerxes	—	10,000	124 x 257	S
		—	10,000	125 x 262	DW
36	Xerxes	—	12,000	96 x 444	S
		—	12,000	97 x 449	DW
37	Xerxes	—	12,000	124 x 288	S
		—	12,000	125 x 293	DW
38	Xerxes	—	15,000	124 x 353	S
		—	15,000	125 x 359	DW
39	Xerxes	—	20,000	124 x 452	S
		—	20,000	125 x 458	DW
40	Corespan	—	4,000	99 x 162	DW
41	Corespan	—	5,000	99 x 192	DW
42	Corespan	—	6,000	99 x 216	DW
43	Corespan	—	8,000	99 x 282	DW
44	Corespan	—	10,000	99 x 342	DW
45	Corespan	—	12,000	99 x 402	DW
46	Corespan	—	15,000	99 x 576	DW
47	—	—	275	44 Vertical	S
48	—	—	550	44 Vertical (Dual 275 gal.)	S
49	—	—	275	44 Horizontal	S

Appendix C: Compatible Printers

Hewlett Packard Compatible Printers

Colibri consoles have a standard Type-A USB socket on the bottom of the console. The console uses Printer Control Language (PCL) version 3 or higher protocol developed by Hewlett Packard (HP) to print to external printers.

Colibri consoles have two standard Type-A USB sockets on the bottom of the console. The console uses Printer Control Language (PCL) versions 3 through 5 protocols developed by Hewlett Packard (HP) to print to external printers.

PCL 6 is not compatible with the Colibri consoles. However, many printers with PCL 6 can also support PLC 5. It is also important to note that PCL 3 GUI is a subset of PCL 3 and is not compatible with the Colibri consoles. Franklin Fueling Systems recommends the following HP printers:

- HP Deskjet 6940
- HP LaserJet P1505n.

Important Note
- Do not use printers with a power save feature
- Start the printer before starting the console

Appendix D - Standard Products Table

Product Name	API Gravity (6B Compensation)
Leaded Regular	63.5
Unleaded Regular	63.5
Unleaded Plus	62.8
Unleaded Extra	62.8
Unleaded Super	51.3
Diesel	32.8
Kerosene	41.8
#2 Fuel Oil	32.8

Appendix E - Typical Tank Leak Test Times

For 7 Tank Sizes at Half Capacity (Worst Case is 50% Full)

Tank Size in Gallons	Typical - Tank Leak Test Times (to Finish)
4,000	2.0 hours
6,000	3.0 hours
8,000	4.0 hours
10,000	5.0 hours
12,000	6.0 hours
15,000	7.5 hours
20,000	8.0 hours

Note: The Leak Threshold value is one half of the Leak Test value.

Appendix F - Using the Console's Autocalibration Feature

Using the Autocalibration Feature on an FFS Tank Gauge

Introduction

Autocal is a feature of the Colibri Tank Monitoring Systems which generates a tank strapping chart in order to accurately calibrate and reconcile your fuel management system automatically. Autocal compares sale of product from dispensers with changes in tank volume.

Autocal corrects discrepancies in delivery reporting and daily reconciliations that are caused by inaccurate tank information programmed into the ATG. Incorrect tank information can come from:

- Lack of a tank chart
- Wrong tank chart
- Tank that deforms over time and no longer represents its tank chart

Autocal Requirements

A high variance on a tank's Daily Reconciliation Reports, means that the amount of product flowing through the dispensers appears to be different from the amount leaving the tank. This could mean that the manufacturer's tank chart programmed into the ATG is not accurate, but it can also be caused by several other things. The following items should always be checked by a certified service professional before starting Autocal:

- Autocal **cannot** be performed on manifolded tanks
- Probes must be properly installed
- Tank tilt calculations must be correct (or 0 if the probe is at tank center)
- The tank charts provided must be correct
- The tank must be programmed correctly (length, diameter, correction points)
- Make sure that probe alarms or TS-DIM (Dispenser Interface Module) problems are not the reason for the Over/Short status

- Recently passed tank tests and line tests are on file
- The dispenser meters are calibrated
- Your FFS ATG has the Reconciliation option and is interfaced with a POS/dispenser
- Your FFS ATG has the correct Reconciliation programming

Note: Calibrating a tank with Autocal that does not meet the above criteria could potentially cover up a problem or leak.

Hardware and Software Requirements

An Colibri gauge must have the TS-TRAC internal software option to perform the Autocal feature. The Colibri Tank Monitoring System must be doing accurate dispenser reconciliation.

Autocal Preparation

Determining Sites That May Require Autocal. The following steps will help determine if an Autocalibration may be necessary

1. Generate a DIM Reconciliation Report for the last 30 days. Look for tanks that have Over or Short status on the report.

2. Take note if any days show missing sales or sales numbers that are unrealistic. These days may be the reason that the status may show OVER or SHORT, but they are not reasons for using Autocal. It is possible that the tank still needs to be calibrated even if it has some missing days or data. The "good" days need to be examined to see if the Daily Variance is usually high. If the Daily Variance is greater than 10% of the sales on "good" days, then there is another problem in the system that needs to be fixed prior to starting Autocal.

To See If a Tank Is Autocal Ready

- Use the previous month's DIM Reconciliation Report to look for explanations for the Over/Short status. A typical tank that needs calibration will show a consistently high variance, but not very high. If the Daily Variance is higher than 10% of the sales for that day, then the problem is probably being caused by something that will not be resolved by using Autocal.
- Check the Active Alarms and Alarm History for probe problems on the tank to be calibrated.
- Check the tank setup. Each tank must have its own Special Tank, and each tank type must be the Special Tank of the same number (e.g. Tank 1 type = Special 1, Tank 2 type = Special 2).
- Make sure that the Tank Length (or estimated Length for fiberglass) is programmed correctly. If it is not, there may be a false delivery recorded at the time between the old tank chart being cleared and the first point being put in. To see how to adjust the length of your tank correctly, refer to the following section called Adjusting Length first.
- Are there any known problems at the site in the past that might effect variance?
- Record the daily usage from the ATG in order to estimate how long Autocal will take to complete.
- If Autocal has been attempted before, make sure that it was stopped and that the original tank information was programmed back in prior to starting Autocal again.

If the above bulleted points have all been addressed, then you are ready to start Autocal.

Calibration Procedure

FFS recommends that calibration be started with the tank filled to more than 90% of its total volume, and that the tank be then allowed to drain down to at least 10% of its total volume. When the Autocal program senses 80% volume coverage, it will end automatically, but it can also be stopped manually at any time.

As long as the coverage is around 70%, it should be sufficient. The key is that the new tank chart covers the level range that the tank stays in during normal operation.

Delivery during Calibration

If a delivery occurs during the Autocal process that raises the fuel level to a point above the calibration starting point, **Autocal will STOP**.

Adjusting Length First

If the Tank Length (or estimated Length for fiberglass) isn't programmed correctly, then there may be a **false delivery recorded** at the time between the old tank chart being cleared and the first point being entered in. Make sure that your Tank Length is programmed correctly, and refer to the appropriate section below based on your tank type.

Flat Ends (Steel)

If the ends of the tank are flat so that the tank is a true cylinder, then the ATG should only need to know the length and diameter and should not need to be calibrated. Adjusting the Length may correct the problem.

If the Daily Variance is always negative or always positive, then it is likely that the Length is wrong. Check the delivery accuracy, and it will likely show an error also, though probably in the opposite direction of the variance.

If the Daily Variance is consistently NEGATIVE (with positive deliveries), then the tank is TOO BIG and the Length should be shortened and vice versa. Adjust the Length of the tank. As a rule of thumb, calculate the average variance for the past five days. Figure out what percentage of the total tank volume this average variance is equal to, and modify the length of the tank by the same percentage. Monitor the Daily Variance of the modified tank for several days to see what the effect has been.

Dome Ends (Fiberglass)

If the tank is fiberglass with domed ends, then there is no set Length. An approximate Length should be calculated based on the Diameter and Volume capacity of the tank by using this formula: Length = 231 (4V/πD2) (for metric units replace 231 with 10,000,000). Enter the Correction Points from the manufacturer's tank chart at least every 5 inches (12.7 cm) - the more points entered the better.

Length and Volume Unknown

If the Length and Volume of the tank are unknown and you don't have a tank chart, then the default reference volume will not be accurate enough. Follow these steps to obtain, and enter, an accurate reference volume in the tank:

1. Enter an approximate length.
2. Drain the tank completely dry (the product drop in the next step will be off by whatever amount is not removed).
3. Drop an accurately measured amount of fuel into the tank — the more measured fuel added, the better.
4. Adjust the Length until the ATG reads about the same amount as was dropped.
5. Enter the amount dropped as the reference volume when prompted during the Autocal start.

Starting Autocal

When Autocal starts, it will need a reference volume as the starting point for the calibration. The default reference volume will be what the tank gauge is reading at the time that Autocal is started. This reading needs to be as accurate as possible **and not higher than the initial volume read by the** ATG, in order to produce a quality chart. The Diameter, Length, and Correction Points are what contribute to the default volume's accuracy. The diameter of the tank should be listed on the tank chart, but, if it's not, then it can be easily measured.
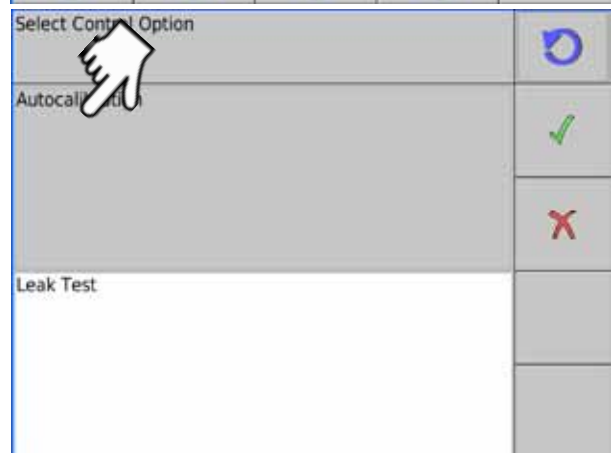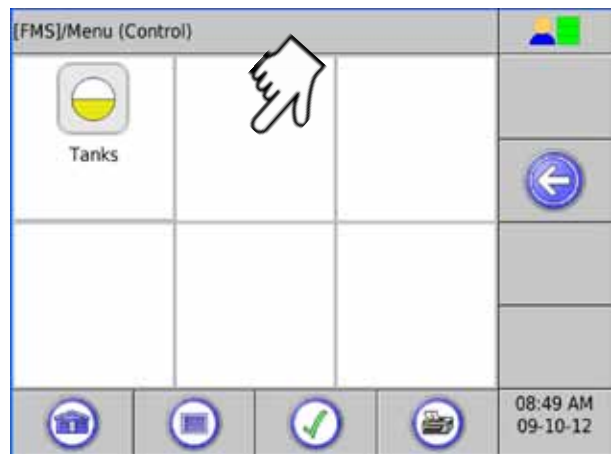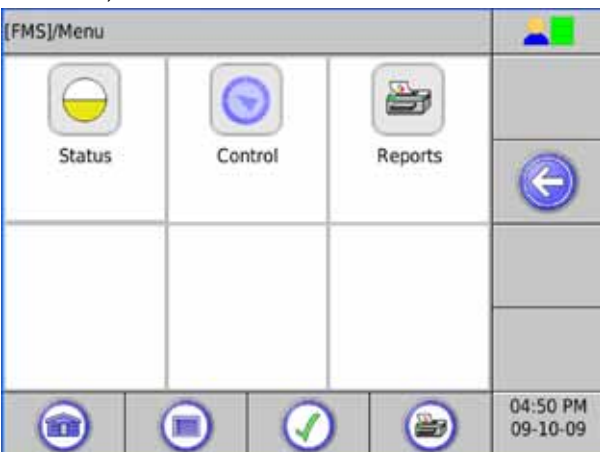
To begin the Autocal process;

1. Select a tank from the Inventory Summary Screen.
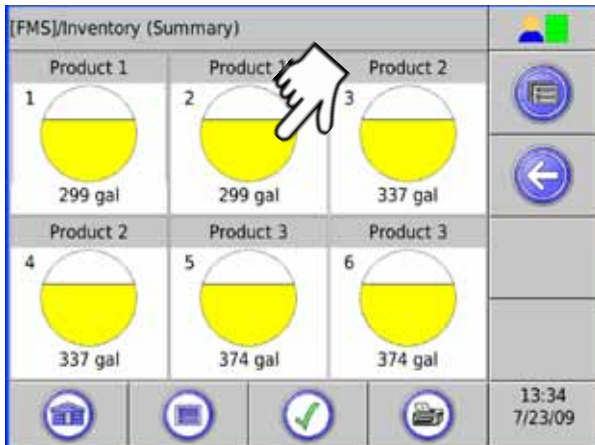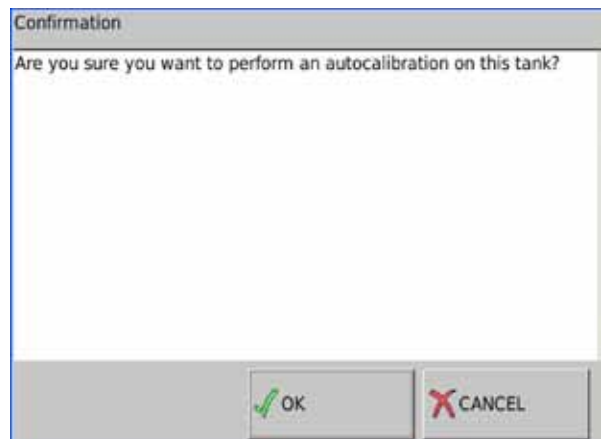

2. After selecting the tank, press the (MENU) key in the upper right hand corner.
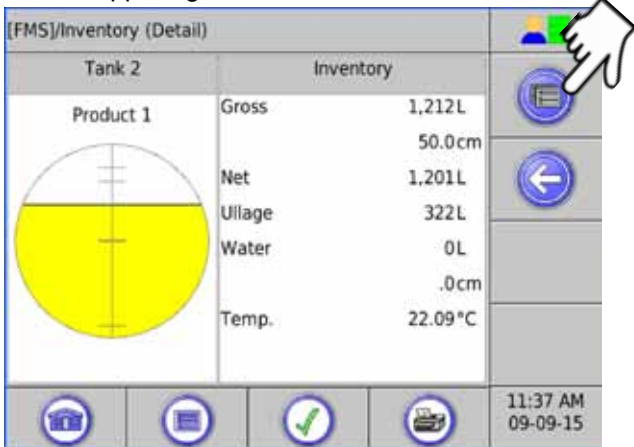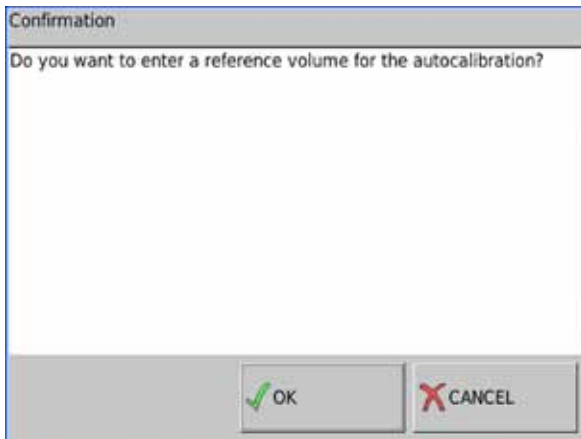

3. Next, select Control/Tanks/Autocalibration.
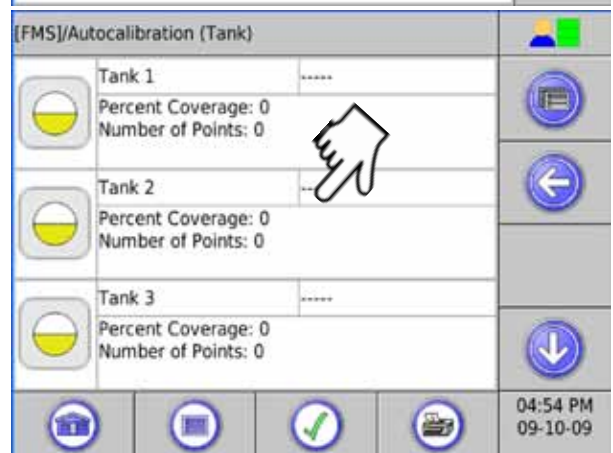
4. Select the tank and this message should appear "Are you sure you want to perform the autocalibration on this tank?" Select OK.

5. The following message will be displayed "Do you want to enter a reference volume for the autocalibration?"

6. Select OK and enter a reference volume to start. The reference volume needs to be slightly less than the current volume.

After the reference volume is entered, the tank should have an ACTIVE indication in the (FMS)/Autocalibration (Tank) screen.

Note: If Autocal stops collecting points for any reason, stop it, reprogram the original tank chart, and start over.

Reasons Why Autocal Would Stop
- Power failure
- Setup entered
- Probe failure
- TS-DIM failure
- Delivery in Tank under Autocal.

Autocal Completion
1. The Autocalibration procedure will stop when the Percent Coverage is reached.
2. Monitor the Daily Reconciliation and Delivery Reports for a few weeks to ensure that they are within tolerance.

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