



www.conairgroup.com

USER GUIDE
UGC081-1019

Truck Fill / Proofing



Please record your equipment's model and serial number(s) and the date you received it in the spaces provided.

It's a good idea to record the model and serial number(s) of your equipment and the date you received it in the User Guide. Our service department uses this information, along with the manual number, to provide help for the specific equipment you installed.

Please keep this User Guide and all manuals, engineering prints and parts lists together for documentation of your equipment.

Date: _____

Manual Number: UGC081-1019 _____

Serial Number(s) _____

Model Number(s): _____

DISCLAIMER: Neither Conair, nor its employees shall be liable for errors contained in this User Guide or for incidental, consequential damages in connection with the furnishing, performance or use of this information. Conair makes no warranty of any kind with regard to this information, including, but not limited to the implied warranties of merchantability and fitness for a particular purpose.

1 Introduction.....	1-1
Purpose of the user guide.....	1-2
How the guide is organized	1-2
Your responsibility as a user.....	1-2
ATTENTION: Read this so no one gets hurt.....	1-3
Zero Mechanical State (ZMS)	1-3
2 Description.....	2-1
What is the Truck Fill / Proofing control system?	2-2
How it Works.....	2-2
Truck Fill / Proofing system components.....	2-2
Material / Resin Codes.....	2-3
Specifications.....	2-3
3 Installation.....	3-1
Unpacking the equipment.....	3-2
Preparing for mechanical installation	3-2
Preparing for electrical installation.....	3-2
Ethernet Connectivity	3-2
Installing Locking Couples.....	3-4
4 Operation.....	4-1
TruckFill Operator Control Panel	4-2
Operating the Lockable Gate Arms	4-2
Operating the Gate Arm.....	4-3
Security settings.....	4-3
Touch Panel Interface.....	4-3
USB.....	4-3
User Interface.....	4-4
General Concepts	4-4
Screen Navigation.....	4-5
Basic Navigation Buttons	4-6
Keypads	4-7
Operating Screens.....	4-7
Initial Page	4-7
Screen Saver	4-8
Help.....	4-9
Home.....	4-9
Security	4-12
Gate Detail	4-13

Event Log.....	4-15
Alarms.....	4-15
Active Alarms	4-16
Logged Alarms	4-18
Reports	4-19
On Demand Reports	4-19
Scheduled Reports	4-21
Logging Data	4-24
Viewer	4-25
Sample Reports.....	4-27
Active Alarm Report.....	4-27
Alarm Log Report.....	4-27
Gate Event Log.....	4-28
Resin Report	4-28
5 Setup.....	5-1
Setup and Configuration.....	5-2
System Device.....	5-3
Info.....	5-3
Control	5-4
Panel Device.....	5-5
Panel.....	5-5
Units.....	5-6
Security	5-7
Users	5-8
Users Rights.....	5-10
Time	5-11
Network.....	5-13
IP Address.....	5-14
Protocol.....	5-15
Email.....	5-17
Sample Emails	5-19
SQL Server.....	5-20
Gate Lock.....	5-22
Gate Control.....	5-23
Resin Selection / Editing	5-23
Maintenance	5-24

System.....	5-25
File Manager.....	5-26
Drive Explorer.....	5-27
Data File Action.....	5-28
License.....	5-29
Programming the Truck Fill / Proofing PLC.....	5-30
6 Diagnostics.....	6-1
Diagnostics.....	6-2
X20 PLC.....	6-2
Panel.....	6-2
X20 PLC.....	6-2
Remote.....	6-5
CDB.....	6-5
Modbus TCP/IP.....	6-6
SDManager.....	6-7
Simulation.....	6-7
7 Maintenance.....	7-1
Preventive Maintenance schedule.....	7-2
Preventive Maintenance Checklist:.....	7-2
Software Upgrades.....	7-2
8 Troubleshooting.....	8-1
Before Beginning.....	8-2
A Few Words of Caution.....	8-2
How to Identify the Cause of a Problem.....	8-2
Signaling Alarm Message.....	8-2
Handling Alarm Messages.....	8-3
Alarms.....	8-4
Replacing Fuses.....	8-8
9 Appendix 1.....	9-1
Equipment Guarantee.....	9-3
Performance Warranty.....	9-3
Warranty Limitations.....	9-3

Table of Figures

Figure 1: Ethernet Topology - Straight-Thru.....	3-2
Figure 2: Ethernet Topology – Crossover.....	3-3
Figure 3: Ethernet Port Interface	3-3
Figure 4: Ethernet Cable Pinout - Straight-Thru.....	3-4
Figure 5: Ethernet Cable Pinout – Crossover	3-4
Figure 6: Home Screen – This is the home screen of the Truck/Fill System.....	4-2
Figure 7: Gate Detail = This is the detail and control screen for the Gate.....	4-2
Figure 8: Command Bar	4-5
Figure 9: Keypad - Number Pad.....	4-7
Figure 10: Keypad - Alphanumeric Pad	4-7
Figure 11: Initial Screen	4-8
Figure 12: Screen Saver.....	4-8
Figure 13: Help Screen	4-9
Figure 14: Home Screen.....	4-11
Figure 15: Operation, Home Context Help.....	4-11
Figure 16: Operation, Home Context Help.....	4-12
Figure 17: Operation, Gate Detail.....	4-14
Figure 18: Operation, Gate Detail - Unlock Gate.....	4-14
Figure 19: Operation, Gate Event Log.....	4-15
Figure 20: Alarms - Active Alarms	4-17
Figure 21: Alarms - Logged Alarms.....	4-19
Figure 22: Reports - On Demand.....	4-21
Figure 23: Reports - Scheduled	4-23
Figure 24: Reports - Schedule Time.....	4-24
Figure 25: Reports - Data Logging.....	4-25
Figure 26: Reports - File Manager.....	4-26
Figure 27: Reports - File Viewer	4-26
Figure 28: Setup - System, Info.....	5-4
Figure 29: Setup - System, Control	5-4
Figure 30: Setup - Panel, Info.....	5-6
Figure 31: Setup - Panel, Units.....	5-7
Figure 32: Setup - Panel, Security	5-10
Figure 33: Setup - Panel, Rights	5-10
Figure 35: Setup - Panel, Time	5-11
Figure 36: Setup - Panel, Time – Shifts.....	5-13
Figure 37: Setup –Network, IPAddress	5-14
Figure 38: Setup –Network, IPAddress Advanced	5-15
Figure 39: Setup –Network, Protocol	5-17
Figure 40: Setup, Network, Email	5-18
Figure 41: Setup, Network, Email Recipients	5-19
Figure 42: Setup - Network, SQL Server	5-21
Figure 43: Setup - Network, SQL Server Data Tables	5-22
Figure 44: Setup - Gate Lock, Control	5-23
Figure 45: Setup - Resin Select, Edit.....	5-24
Figure 47: Setup - Maintenance, System.....	5-26
Figure 48: Setup - Maintenance, System - Clean Screen.....	5-26
Figure 49: Setup - Maintenance, File Manager	5-29
Figure 50: Setup - Maintenance, License	5-30
Figure 51: Diagnostics, Panel.....	6-2
Figure 52: Diagnostics, X20 PLC.....	6-3
Figure 53: Diagnostics, X20BR7300 Slice.....	6-4
Figure 54: Diagnostics, X20DI9371 Slice.....	6-4
Figure 55: Diagnostics, X20DO9322 Slice	6-5
Figure 56: Diagnostics, Remote - CDB.....	6-6

Figure 57: Diagnostics, Remote - Modbus TCP/IP.....	6-6
Figure 58: Diagnostics, SDManager.....	6-7
Figure 59: Diagnostics - Simulation.....	6-8
Figure 60: Troubleshooting - Alarm Handling.....	8-3

Table of Tables

Table 1: Alarms - Alarm List.....	8-4
-----------------------------------	-----

SECTION

1

1 Introduction

Purpose of the user guide 1-2
How the guide is organized 1-2
Your responsibility as a user 1-2
ATTENTION: Read this so no one gets hurt
Zero Mechanical State (ZMS) 1-3

Purpose of the user guide

This user guide describes Conair's Truck Fill & Proofing control system and explains step-by-step how to install, operate, maintain and repair this equipment.

Before installing this product, please take a few moments to read the user guide and review the diagrams and safety information in the instruction packet. You should also review manuals covering associated equipment in your system. This review won't take long, and it could save you valuable installation and operating time later.

How the guide is organized

Symbols have been used to help organize the user guide and call your attention to important information regarding safe installation and operation.



Symbols within triangles warn of conditions that could be hazardous to users or could damage equipment. Read and take precautions before proceeding.

1

Numbers indicate tasks or steps to be performed by the user.



A diamond indicates the equipment's response to an action performed by the user.



An open box marks items in a checklist.



A circle marks items in a list.



This symbol indicates a tip. A tip is used to provide you with a suggestion that will help you with the maintenance and the operation of this equipment.



This symbol indicates a note. A note is used to provide additional information about the steps you are following throughout the manual.

Your responsibility as a user

You must be familiar with all safety procedures concerning installation, operation and maintenance of this equipment. Responsible safety procedures include:

- Thorough review of this user guide, paying particular attention to hazard warnings, appendices and related diagrams.
- Thorough review of the equipment itself, with careful attention to voltage sources, intended use and warning labels.
- Thorough review of instruction manuals for associated equipment.
- Step-by-step adherence to instructions outlined in this user guide.

ATTENTION: Read this so no one gets hurt

We design equipment with the user's safety in mind. You can avoid the potential hazards identified on this machine by following the procedures outlined below and elsewhere in the User Guide.



WARNING: Improper installation, operation, or servicing may result in equipment damage or personal injury.

This equipment should be installed, adjusted, and serviced by qualified technical personnel who are familiar with the construction, operation, and potential hazards of this type of machine.

All wiring, disconnects, and fuses should be installed by qualified electrical technicians in accordance with electrical codes in your region. Always maintain a safe ground. Do not operate the equipment at power levels other than what is specified on the machine serial tag and data plate.



WARNING: Voltage hazard

This equipment is powered by single-phase alternating current, as specified on the machine serial tag and data plate.

A properly sized conductive ground wire from the incoming power supply must be connected to the chassis ground terminal inside the electrical enclosure. Improper grounding can result in severe personal injury and erratic machine operation.

Always disconnect and lock out the incoming main power source before opening the electrical enclosure or performing non-standard operating procedures, such as routine maintenance. Only qualified personnel should perform troubleshooting procedures that require access to the electrical enclosure while power is on.



CAUTION: Misuse Hazard

This equipment is only designed to be used as intended by Conair. Any modifications or use other than intended void any warranty stated or implied, and risk damage to equipment and/or injury to personnel.

Zero Mechanical State (ZMS)



CAUTION: Before performing maintenance or repairs on this product, you should disconnect and lockout electrical power sources to prevent injury from unexpected energization or start-up.

During maintenance, it is essential that the system be put into a state which eliminates the possibility of components making an unexpected and dangerous movement. This procedure is typically referred to as lockout. After all energy sources have been neutralized, the system is in the zero mechanical state (ZMS). This provides maximum protection against unexpected mechanical movement.

The lockout procedure must include all energy sources:

- Electrical power supply
- Compressed air supply
- Hydraulic fluids under pressure
- Potential energy from suspended parts
- Energy in springs
- Any other source that might cause unexpected mechanical movement

The following is a recommended Zero Mechanical State procedure which must be followed prior to any inspection, adjustment or maintenance of the system.

1. **If there is a remote control device, press the <STOP> key at that remote operator's control.**
2. **Disconnect and lock out the primary electrical supply feeding the Truck Fill / Proofing controller.**
3. **Disconnect and lock out the primary electrical supply feeding the material handling system that is feeding the Truck Fill / Proofing process material lines.**
4. **Lock out all energy sources which might cause unexpected movement of equipment which is accessible through the material lines connected to the Truck Fill / Proofing system (if equipped).**
5. **Test to verify that all energy sources have actually been disconnected and/or de-energized.**



WARNING: Before removing lockout devices and returning switches to the ON position, make sure that all personnel are clear of the machine, tools have been removed, and all safety guards reinstalled.

SECTION

2

2 Description

What is the Truck Fill / Proofing control system? 2-2
How it Works 2-2
Truck Fill / Proofing system components..... 2-2
Material / Resin Codes 2-3
Specifications 2-3

What is the Truck Fill / Proofing control system?

This system is designed to prevent accidentally loading material into a silo or storage bin which contains a different material type. This is accomplished by attaching a locking device/gate to the storage systems fill tube or pipe. The gate covers the end cap of the material fill pipe. When the gate is closed and locked, it prevents the connection of a material fill hose to the coupler on the fill tube. The lock can be removed by an authorized user from the Truck Fill / Proofing touch-screen interface. The user interface provides a means to monitor, control, and manage the available locking devices. In order to open the gates, an operator must login to the system, and if they have sufficient rights, they will have the ability to lock/unlock any gate in the system. With the gate unlocked, the user can then manually lift the gate away from the end cap providing access to the fill tube.

The system supports 6 gates as standard but is expandable to 12 by adding more I/O cards to the programmable logic controller's (PLC) I/O rack.

How it Works

The operator simply presses a button on the touch-screen interface to change the state of the lock for a gate. With the gate unlocked, the gate arm can be manually lifted up and away and a fill source hose can be connected. Material transfer can then take place. When the material transfer has finished, the operator returns the dust cover and lowers the gate arm. The gate lock is then re-established securing the arm in the down position.

Whenever the state of the locks is changed, or the gate arm is raised / lowered, an entry is made in a log file. The event includes the event timestamp, current user, material code, and the state of the lock and the position of the gate.

The state of the locks and the presence of the fill tube cap, can be viewed at the HMI, additionally the gate lock device itself has a green LED indicator which informs the user that the gate is unlocked. Once the gate is unlocked the green LED at the gate lock device will light and the gate can be opened. Once the system detects the gate has been opened then closed, the lock is re-established automatically. If the gate has been unlocked, and the gate has never opened, the lock will be re-established after a configurable set time.

The system will trigger an alarm if the gate is closed without a fill cap in place, when the gate has been opened for too long of a settable time, or if the gate is locked with the gate arm in the open position, there is an alarm. There is a system alarm output that can be used to trigger a light or a horn. Also there is an output provided for each gate lock device. This can be used to provide an alarm indication at the location of the gate lock device itself.

Truck Fill / Proofing system components

The Truck Fill / Proofing control system is comprised of a number of separate components, each having a specific function, as described below:

- Truck Fill / Proofing PLC IO Rack – The PLC's IO rack is in the main control panel and is where the connections to the individual gates are terminated. The PLC's CPU will monitor the signal I/O and perform the necessary data manipulation and remote connectivity interface.
- Truck Fill / Proofing fill pipe Lockable Gate – This is a device that mounts at the end of fill tube where the fill tube end cap is located. It includes a small control box, and a 'gate' that can be positioned over the end cap of the fill pipe. A gate prevents the connection of a filling hose unless the lock is removed and the gate itself is manually opened.

- Truck Fill / Proofing Operator HMI – The Truck Fill / Proofing HMI panel includes a 7” HMI operator panel mounted in the enclosure door. It provides a visual and touch-screen interface for locally monitoring, controlling, and configuring of the system. In the absence of a physical operator panel, it is also possible to connect a variety of VNC capable devices with an installed VNC client application.

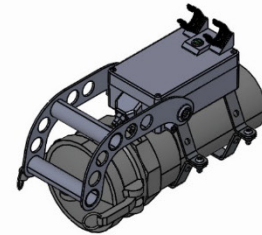
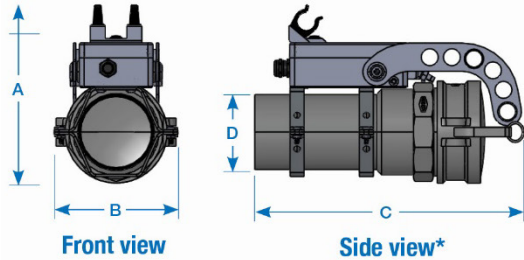
Material / Resin Codes

Material codes are used to identify the various resins protected the gate lock devices. There can be up to 3000 different resin codes entered and each code can be comprised of a 15 character alphanumeric name a solid density, and a bulk density.

The use of material / resin codes is provided merely for reporting purposes. If SQL reporting is included, the resin codes will be available in all SQL Reports. The SQL queries will also include the resin codes as a filterable item for generation of resin reports.

Specifications

Note - truck fill line with camlock not included. Shown for sizing reference only.



Models	Truck-Fill
Performance characteristics	
Control platform	Truck Fill Line Proofing Control
Coupling Lock Dimensions* † inches {mm}	
A - Height	9.47 {241}
B - Width	6.59 {167}
C - Depth	14.22 {361}
D - Line size	4.0 {102}
Approximate weight lb {kg}	
Installed	18
Shipping	24
Voltage	
	24 VDC

Specification Notes
* Allow for clearance in front and top of the coupler for the locking mechanism to swing forward and up.
† The remote-mounted control enclosure is designed to be wall-mounted and intended for indoor use only. The dimensions of the enclosure box are: 20 inches tall {508 mm}, 20 inches wide {508 mm}, and 08 inches {203 mm} deep. The enclosure weighs under 100 lbs {45 kg}.
Specifications may change without notice. Consult with a Conair representative for the most current information.

SECTION

3

3 Installation

Unpacking the equipment 3-2
Preparing for mechanical installation 3-2
Preparing for electrical installation 3-2
Ethernet Connectivity 3-2
Installing Locking Couples..... 3-4

Unpacking the equipment

Upon receiving the shipment, always perform a thorough inspection of the contents and compare it with the enclosed packing list. Make sure all parts listed are present and that no visible damage exists.

Inspect all of the equipment in the presence of the freight carrier's representative for damage during shipment. Note any damage on the delivery receipt before signing it. If damage is evident, file a claim immediately against the carrier as it is their responsibility to pay for any damage incurred during shipping. Make sure to include a detailed report of the damage along with photos.

The Truck Fill / Proofing panel and gate locks are attached to the pallet to prevent damage during shipment. Care must be taken when removing the system from the pallet, in order to avoid damage to any component.

Additional parts to be installed may include: any alarm indication equipment that may be associated with the system.

Preparing for mechanical installation

1. Clearance around the gate lock device must be sufficient to allow for the gate to be in the open position.

Preparing for electrical installation

1. The operator control panel for the Truck Fill / Proofing system if equipped should be conveniently located for easy operator access.

Ethernet Connectivity

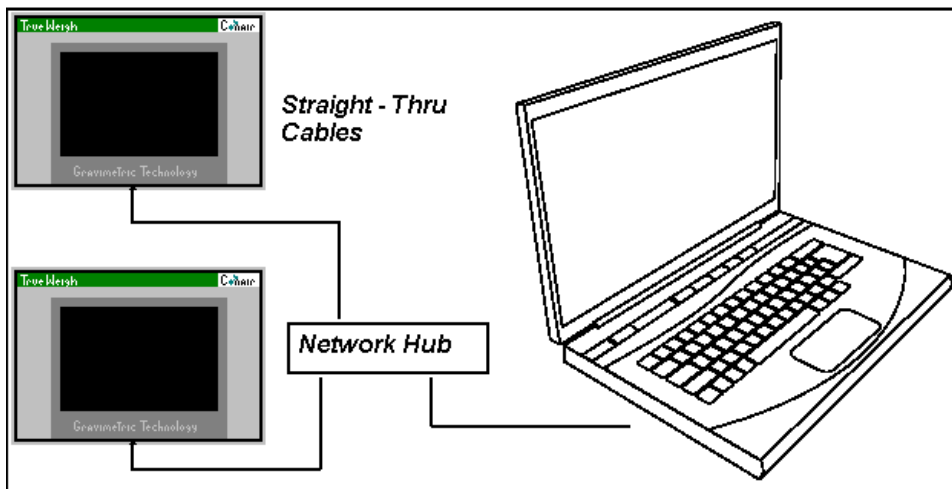


Figure 1: Ethernet Topology - Straight-Thru

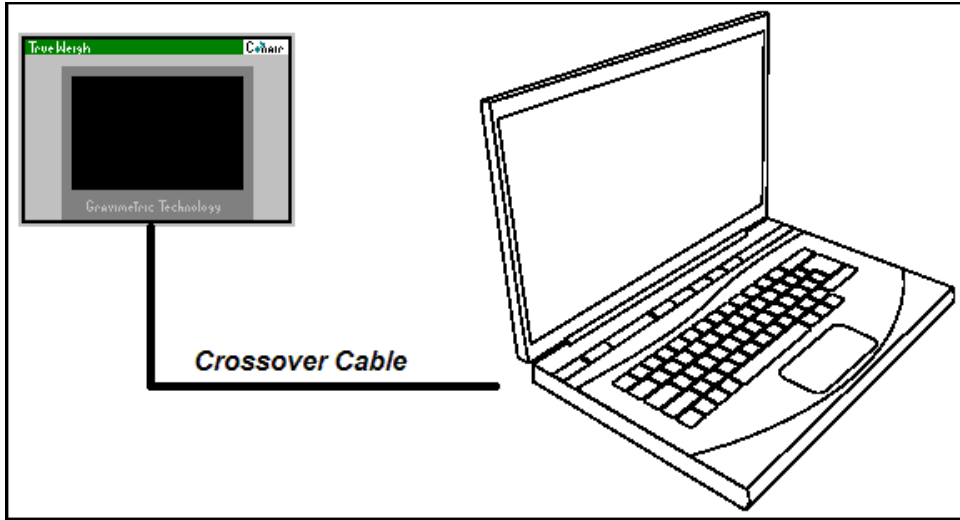


Figure 2: Ethernet Topology – Crossover

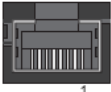
Interface	Pin assignments		
	Terminal		
Ethernet interface  1 RJ45 twisted pair socket (10BaseT/100BaseT)	1	RXD	Receive signal
	2	RXD\	Receive signal inverted
	3	TXD	Transmit signal
	4	Termination	Termination
	5	Termination	Termination
	6	TXD\	Transmit signal inverted
	7	Termination	Termination
	8	Termination	Termination

Figure 3: Ethernet Port Interface

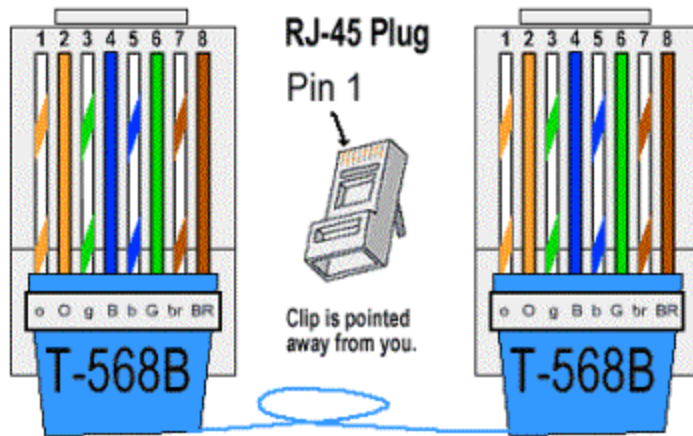


Figure 4: Ethernet Cable Pinout - Straight-Thru

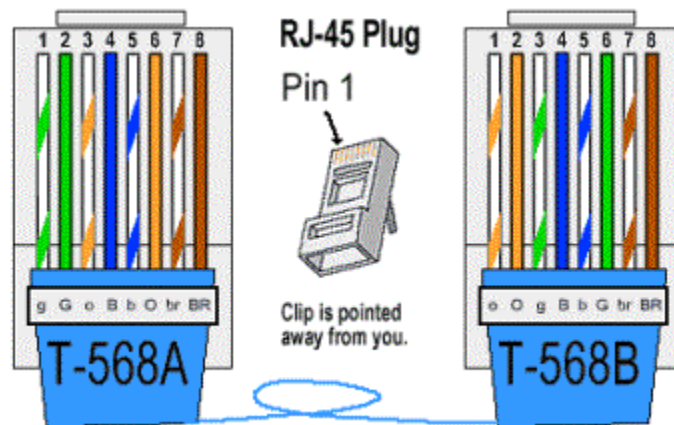


Figure 5: Ethernet Cable Pinout – Crossover

Installing Locking Couples

1. Loosen / remove the bottom half of the clamp, and place the lowering unit loosely on the Truck Fill line.
2. Line up the locking handles, so that when closed, it prevents the camlock cap removal.
3. Tighten the clamp to secure the locking coupler in place.
4. Repeat for each coupler / Truck Fill line.
5. Carefully run each communication line back to the control, following proper communication / power and wiring standards.

SECTION

4

4 Operation

TruckFill Operator Control Panel4-2

Operating the Lockable Gate Arms4-2

Operating the Gate Arm4-3

Security settings4-3

Touch Panel Interface4-3

Operating Screens4-7

TruckFill Operator Control Panel

The <Home> screen is the primary screen for the TruckFill / Proofing system. It contains graphical images displaying the status of all locking gates in the system. The screen can simultaneously display the status of up to (10) gates. Additional gates if available can be viewed by pressing the appropriate group buttons shown below the graphical images. Pressing the [Home] button on any screen will return control to this screen.

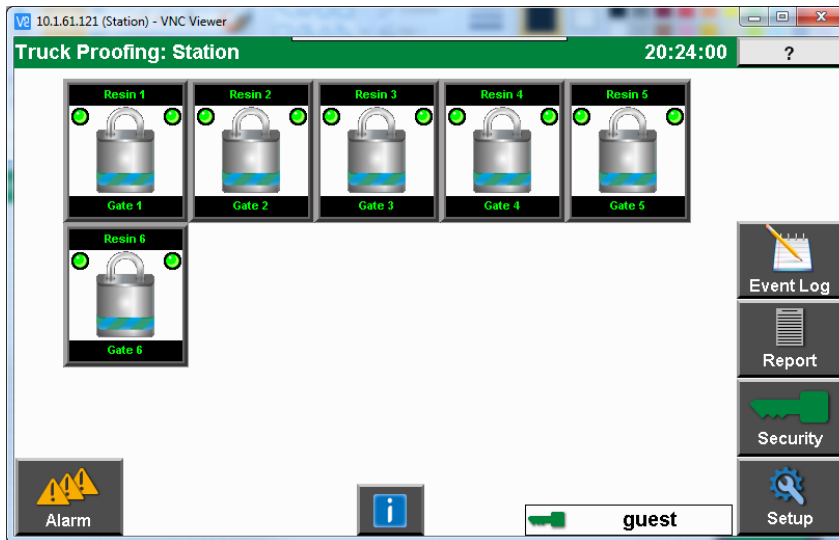


Figure 6: Home Screen – This is the home screen of the Truck/Fill System

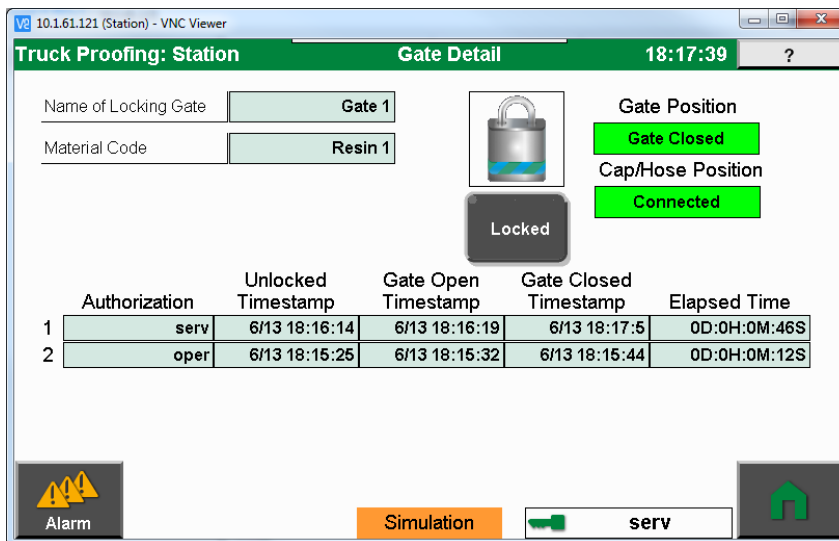


Figure 7: Gate Detail = This is the detail and control screen for the Gate

Operating the Lockable Gate Arms

The material fill lines will each have an installed locking gate at the end of the fill line. The gate arm will be in the lowered locked position preventing access to the fill line. Access to the end of the fill line will require unlocking of the gate arm and raising it allowing access to the fill line.

Operating the Gate Arm

1. **Turn power on to the TruckFill system..** The controller will come on and the TruckFill <Home> screen will be displayed.
2. **Press the [Security] button.** The user login security screen will be presented. A user with sufficient rights to unlock the gate must enter their password. In order to unlock a gate, a user with sufficient rights must be logged into the system. The default user from power up does not have sufficient rights.
3. **Press the graphic image button for the gate to be unlocked.** The TruckFill <Gate Detail> page will be shown for the selected gate.
4. **Press the [Locked] button.** This will unlock the gate arm for the selected gate.
5. **Raise the unlocked gate arm:** Raise the gate arm for the unlocked gate providing access to the fill line.
6. **Remove the fill lines end cap / dust cover.** Remove the end cap of the fill line to allow connection of the fill hose.
7. **Transfer the material from source.** Connect the transfer line to the fill line and transfer the material from the source provider to the destination.
8. **Replace the end cap / dust cover.** With the transfer of material completed, remove the transfer line from the fill line and return the end cap to the fill line.
9. **Lower the gate arm:** Lower the gate arm to the locked state. Upon returning the arm to the down state, the gate lock will be re-established.



If a gate lock has been manually re-established, and the gate arm is still in the raised/open position, an alarm will immediately occur.

Security settings

Security roles and rights dictate what portions of the system are accessible to the user. On each screen page in the status area at the bottom of the each screen, a security box indicates the currently logged in user. The access rights for the current user will be checked to verify access. The current user's name will be included in any data logging and reporting fields as needed for security purposes.

The security rights for users can be changed in the <Setup> - <Panel> - <Security> screens. Refer to setup security section of this guide for more information regarding user-defined passcodes and setting up the security system.

Touch Panel Interface

USB

There are two USB ports on the back side of the main touch screen unit. Open the panel door on the side of the control to gain access to the USB ports. Either of these USB ports accepts a formatted USB thumb drive (FAT16, FAT32). Both USB ports can be populated with a thumb drive. When a thumb drive is inserted into the unit, it will be listed for selection in the drive availability box. Removing the drive will also remove the drive reference from the drive availability box.

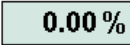


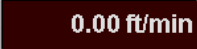



The USB thumb drives are useful for saving a variety of system parameters as well as report generation. Files that can be saved are system configuration, recipes, and resins. All reports can be formatted as text files and placed on a USB thumb drive as well.

User Interface

The user interface, presented on the touch screen, is a collection of pages or screens which can be used to monitor and control the system. The TruckFill Proofing system is designed to work with a variety of configurations and applications. As a result, screen pages will vary, depending upon the configuration of the system. It is impossible to show all possible screen variations.

General Concepts

Presented here are useful concepts for operating the TruckFill Proofing system.

- All user interaction is through the touch screen display. Navigation is processed via pressing raised 3D-shaped buttons. Pressing a 'button' will appear to indent the button indicating a button press.
- Numeric and character entry is performed by touching an 'input' box, which reveals an alpha/numeric keypad. An input repeat feature occurs, if a character is pressed and held on the keypad.
- The Numeric only keypad will display the minimum/maximum values allowed for the particular data field to be edited. If data is entered outside the listed range, the data will reset to the range limit nearest the entered data value. The minimum number is on the bottom with the maximum number on the top.
- Parameters for display only will be presented within a box with a light blue background. 
- Boxes that allow user input have a white background with a simple 'box frame' border. 
- The currently selected input box will have a 'box frame' border around a blue box with black text. 
- Buttons and input boxes that are currently 'locked' will have a dark brown box with white text. 

- In the lower left corner of the display, the 'Alarms' button is presented. This button face will change in color to represent an active alarm. Pressing this button on any screen of the system will immediately display the active alarms screen. Pressing the 'Back' button on the alarms screen will return to the screen displayed, before going to the alarms screen. 
- The 'Alarm' button will change color to reflect an active alarm in the system. If no alarms are present, the button face will be gray. 
- Resins are numbered 1 to 3000
- Screen layout:

- **The ‘Title Area’ of each screen** appears across the top of each page. In the top left corner is the name of the production line with the name of the truck fill system, on the right side is the current system time and the [Help] button. The [Help] button presents context sensitive help information for each screen. In the center of the title bar the screen name is displayed.
- **The ‘Status Area’ of each screen** appears across the bottom of each page. This area contains a variety of information displaying the operational status of the system. On the bottom left of the screen is the [Alarm] button which navigates to the ‘Active Alarms’ screen. The alarm button face color an active alarm.

On the bottom right a [Back] or [Home] button will typically be displayed. The [Back] button will return to the previously displayed screen. The [Home] button returns to the initial <Home> screen. Next to the [Back] or [Home] button is a field indicating the current security level. Touching the security text status also provides the security popup for a shortcut method to change security levels.
- **The ‘Navigation Area’** of the operation screens appears across the right side of each page.

Screen Navigation

Screen navigation is accomplished by pressing buttons visible on the command bars shown at the right hand side of the screen. Each button appears as a raised area and is represented with a name, an icon, or both an icon and name. When the button is pressed it will change color and appear to be depressed. Note that on some screens it may not be possible to show all navigation buttons at the same time. In these cases, the lower right hand side of the screen will show a ‘More...’ button which will scroll through additional navigation buttons.

An example of a command bar:

The buttons present on the command bars will change based on which page is currently being shown. Navigation buttons with identical function will be located in the same area on numerous pages. For example, [Back] and [Home] buttons will be in the lower right corner when applicable.


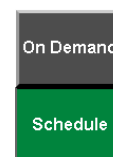
 **Note:** If the button face appears as dark brown, then that button is ‘locked’ and will not function. This is due to the current operating security level or the current operating state of the system. Pressing a button in the locked condition will present the security popup window to allow the user to enter a pass-code which will raise the operating security level to a higher level. This will allow the button to become ‘un-locked’.



Figure 8: Command Bar

Selection buttons are buttons that represent a selected / not selected state. When **NOT** selected these buttons appear raised with a gray face. When selected, this button will appear sunken and have a dark green face. This button type is commonly found in ‘Reports’, ‘Setup’, and ‘Help’ areas of the system. They are used to select a type of Report, an area of the Setup system, or a specific Help document.



Basic Navigation Buttons

There are several navigation buttons that are not specific to any page. The following section outlines these buttons.



More – This button is used to scroll through the various navigation / command buttons on the screen.



Alarm – This button is used to change the current screen to the 'Active Alarms' screen. This button will also change color to reflect the level of the alarm highest active alarm. *Refer to the Operation section entitled, Menu- Alarms* for detailed descriptions and alarms processing.



Back – This button is used to return to the screen previously shown to the current screen.



Home – This button is used to return to the main screen of the system.



Yes – Affirmative response to question, perform the action.



No – Negative response to question, cancel the action.



Page Up – Move up a full page of text in the text box.



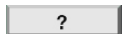
Page Down – Move down a full page of text in the text box.



Line Up – Move up a line of text within the text box.



Line Down – Move down a line of text within the text box.



Help – Launch the context sensitive help system.

Keypads



Figure 9: Keypad - Number Pad



Figure 10: Keypad - Alphanumeric Pad

Operating Screens

Initial Page

When the system is first powered on, the touch screen will go through the manufacturer's boot up process. Upon completion, the TruckFill code will display the 'Initializing System' screen, indicating the software is loading the configuration of the system setting the initial operating parameters. Do not turn off power during the time this page is shown. In the lower right hand corner of the screen, the current Software Version is displayed. There is firmware protection built into the system.

Contact Conair technical support if the system does not boot.

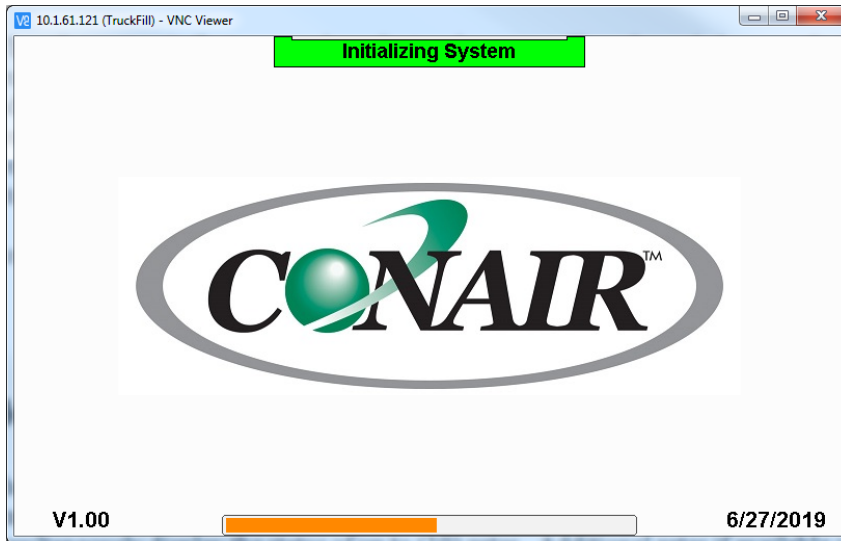


Figure 11: Initial Screen

Screen Saver

The TruckFill Proofing HMI has implements (2) levels of screen saver functions. Either screen saver function can be activateion times can be configured, or fully disabled. Initially after an initial screen timeout occurs, the screen will turn black and a Conair logo can be seen moving around the screen. The second screen saver will completely black out the screen and the moving Conair logo will disappear. With either screen saver function, touching the screen will turn off the screen saver and return the screen to that shown when the screen saver became active.

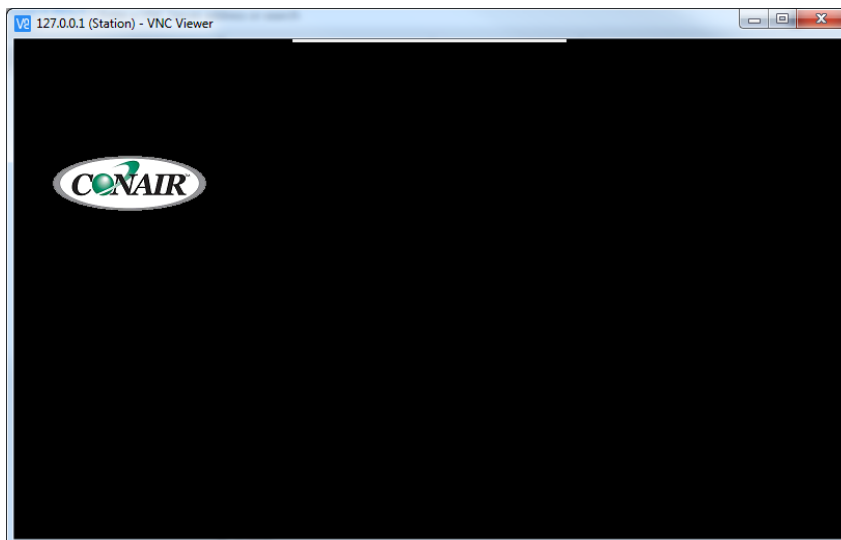


Figure 12: Screen Saver

Help

The Help system provides support documentation for each screen in the user interface. In order to more easily navigate the various help documents, they are organized by Chapter, Section, and Page. When the Help system is accessed, the support document for the relevant screen is presented.

The Help screen is shown by pressing the [Help] button located in the top right corner of the screen. Across the top of the <Help> screen are selection buttons that will allow selection of the available Chapters. Along the left side of the screen are selection buttons that select a Section of documents that pertain to the chosen chapter. Across the bottom of the screen are selection buttons that will display the desired Page within the Chapter and Section. The support document is presented within a scrollable text window. Buttons along the right side of the screen will scroll the document displayed in the text window.

The Chapter, Section, and Page buttons which are pressed indicate which support document is presented. Additional support information can be shown by selecting a different combination of buttons. Pressing the [Back] button will return control to the previous screen.

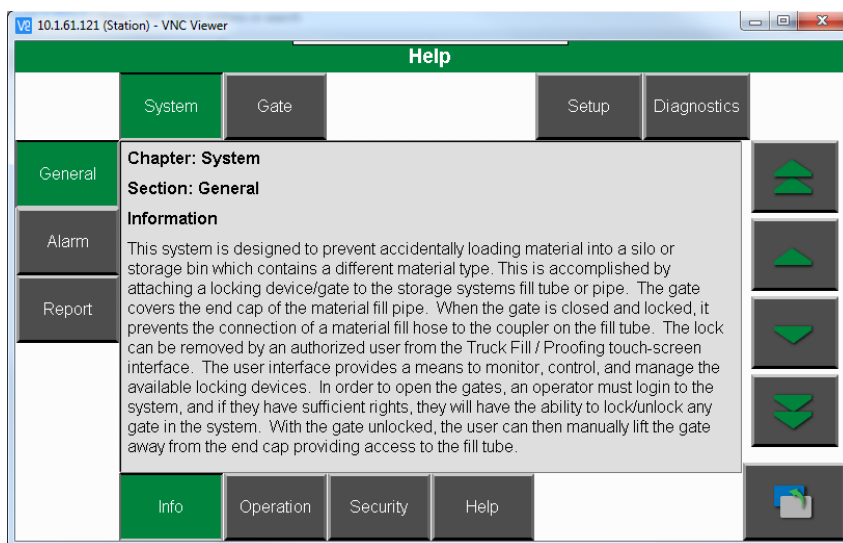


Figure 13: Help Screen

Home

The <Home> screen is always displayed after the initial boot screen. For a TruckFill system the <Home> screen displays the status of the locking gates. The display will return to the <Home> screen whenever the [Home] button is pressed.

The <Home> screen is the primary screen for the TruckFill / Proofing system. It contains graphical images displaying the status of all locking gates in the system. The appearance of this screen will vary based on the application. For this reason, not all representations of this screen will be discussed here, but the functionality of all screen variations will be discussed. The focus of this page is to monitor the status of the gate locks. The screen can simultaneously display the

status of up to (10) gates. Additional gates if available can be viewed by pressing the appropriate group buttons shown below the graphical images.

Gate Monitor Components: The <Home> screen shows for each gate, the state of the gate arm, the status of the End Cap, the status of the gate lock, the name of the gate, and the material assigned to the gate. If the gate is experiencing an alarm an alarm indicator will appear. Each graphic acts as a button and when pressed will navigate to a page that details the status of the selected gate.

- **Gate Status** - The status of the gate arm is shown as a 'Green = Closed', 'Yellow = Open', or 'Red = Alarm' indicator light in the top left of the gate graphic.
- **Cap Status** - The status of the end cap / dust cover is shown as a 'Green = present', 'Yellow = missing', or 'Red = alarm' indicator light in the top right of the gate graphic.
- **Lock Status** - The status of the lock on gate is shown as a padlock bitmap. When the graphic shows a closed padlock, the lock is in place. When the graphic shows an open padlock, the lock has been removed.
- **Resin Name** - Above the padlock graphic is the name of the resin assigned to the gate.
- **Gate Name** - Below the padlock graphic is the name of the gate.
- **Gate Alarm** - An alarm indicator will appear in the lower left corner of the padlock graphic. When the gate has an active alarm, the alarm indicator will appear.

Command Bar: Along the right side of the screen is a command bar that provides navigation to further operational and configuration screens.



Security – Navigate to the security passcode entry screen.



Setup – Navigate to the setup screens.



Report – Navigate to the report generation screen.



Event Log – Navigate to a screen that displays the log of gate events.

Context Graphical Help: The TruckFill <Home> screen has an additional Help support system that graphically assists with support for specific screen objects. When the [Information] button is pressed, the screen background will change to a light blue indicating the Graphical Help system is active. The user can then press any object on the screen to present a popup text box that will provide specific Help support for the object touched. With the graphical help system active, screen navigation and data entry is disabled. Therefore it is safe to press any object on the screen without any adverse effects. Press the 'Information' button a second time to exit the Help system.



Graphic Help – Enter the graphical support system. Press the 'Info' button to enable the Help system. Press the 'Info' button a second time exit the

Help system.

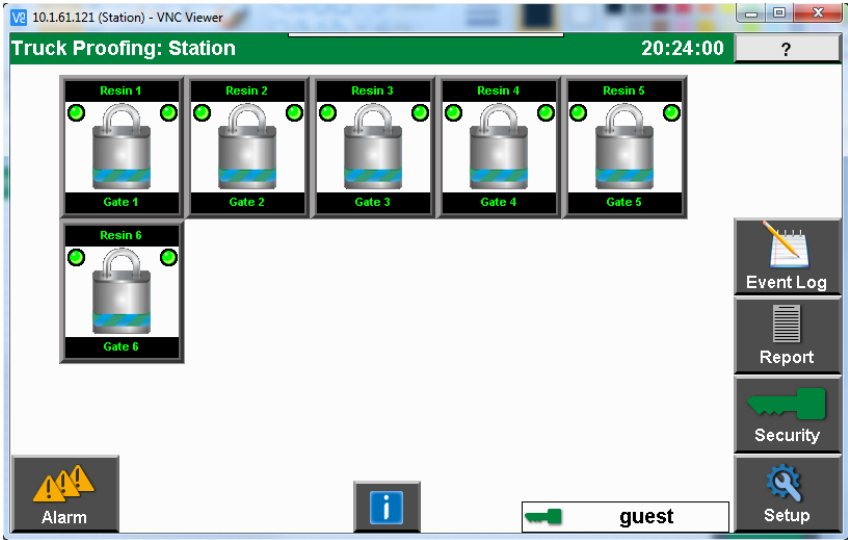


Figure 14: Home Screen

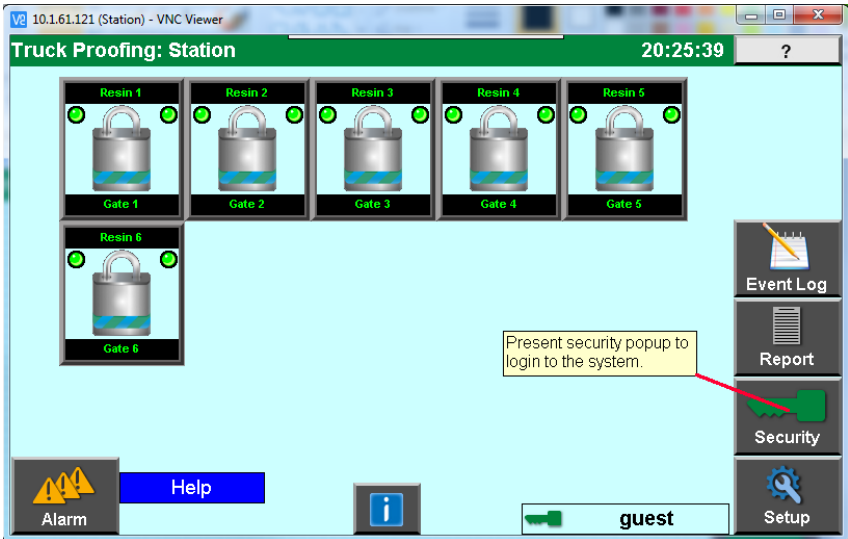


Figure 15: Operation, Home Context Help

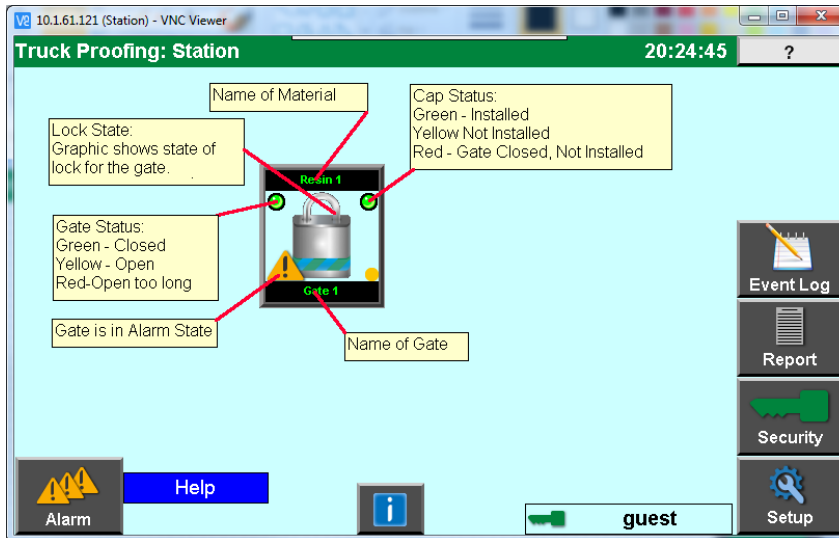




Figure 16: Operation, Home Context Help

Security

Security levels dictate what data is accessible by the user. On each screen in the lower right, a text box indicates the current user. If the current security level prevents the user from changing a data field, the background of the field will be brown in color with grey text. The same applies to a button; the button face will turn a brown color.

Pressing a locked field will present a popup window where a new security level passcode may be entered. Touching the status area of the screen around the security indication will launch the security entry popup. It is also possible to display the security screen popup from the <Home> screen command bar by pressing [More...] – [Security].

With the security popup window displayed, a new passcode can be entered. If the passcode is valid, the new security level will be set and the popup will close automatically after a short timeout. If the new security level is high enough, data entry may resume. The popup window can be dismissed by pressing the [Back] button. Pressing the [Lock] button will automatically set the Guest security level and close the popup, without entering a passcode.

-  **Note:** If the passcode entered is invalid, the security level will be set to the minimum level.
-  **Note:** Some user interactions are also not possible if the TruckFill system has a set IO condition existing. In these cases the fields will again be locked, however when touched, a popup will be presented indicating why the item is locked in order to perform the necessary action. Pressing the [Back] button will dismiss the popup.

The security level, color, and default pass-codes are as follows:

The pass-codes for each level can be changed in the 'Setup' – 'Panel' – 'Security' screen. Refer to the Setup – Panel – Security section for more information regarding user-defined pass-codes and setting up the security system.

Also available with the security system is an 'Auto Logout' feature. If the 'Auto Logout Timeout' value is set to a value other than 0, then after the set timeout value has elapsed, the current security level number will be set to the minimum level (Guest).



Lock – Set the security level to the minimum value without entering a passcode. Close the security popup window.

Gate Detail

The <Home> screen shows a set of graphic images for each gate that indicates basic status information for the gate. For each gate there is a more detailed presentation of its current state. To 'UNLOCK' or 'LOCK' a gate, the operator must also navigate to the <Gate Detail> screen. By pressing the graphic for a gate on the <Home> screen, the <Gate Detail> screen will be shown.

The <Gate Detail> screen displays the name of the gate, the type of material assigned to the gate, the current state of the gate, and a button that is used to change the locked state of the gate. The name of the gate and material code assigned to the gate are configured from within <Setup>. The values shown here are for reference only.

A bitmap 'padlock' is presented that shows the state of the lock for the gate. When the 'padlock' is shown in the closed position, the gate is locked. When the 'padlock' is in the open position, the gate is unlocked.

In order to 'Unlock' the gate a user must:

1. A user with the sufficient rights must be logged in to the system. If a user has insufficient rights to operate the gate, when the 'Locked' button is pressed, the user will be shown a user login window.
2. With sufficient rights, press the 'Locked' button. A confirmation pop-up window will be presented requesting confirmation before unlocking the gate.
3. Select 'Yes' to verify unlocking of the gate.
4. The gate will now be 'UNLOCKED'.
5. The button will remain in the 'Unlocked' position until the lock is re-established.

To 'Lock' a gate, the operator must navigate to the <Gate Detail> page for the appropriate gate. The user then simply presses the 'Unlocked' button and the gate lock will be reset.

NOTE: if the gate is still open, then access to the material line is still possible.

Next to the bitmap showing the status of the lock, there are indicators which relate the position of the gate and the connection status for the material line end cap or feed line.

- Gate Position:
 - Gate Closed – Green Indicator: The gate locking bar is in the closed state.
 - Gate Open – Red Indicator: The gate locking bar is in the open state.
- Cap/Hose Position
 - Connected – Green Indicator: The end of the material line is either covered with the dust cover or the feed line is connected.
 - Not Connected – Red Indicator: The end of the material line is open and does NOT have a cover or fill line connected. **NOTE:** If the position of the cap/hose is showing 'Not Connected' and the gate is closed, an alarm is generated for the gate. This is to insure that the dust cover is in place when the gate is closed.

Additionally the <Gate Detail> screen may show a table that is a log of the last (5) completed cycles of gate operation. This table is maintained separately from the internal log data file and will be cleared in the event of a power loss.

This gate event log table has columns indicating:

- Authorization: The user that was logged in at the time of the gate event.
- Unlocked Timestamp: This is the time that the gate was unlocked.
- Gate Open Timestamp: This is the time the physical gate was indicated as being opened.
- Gate Close Timestamp: This is the time the physical gate was indicated as being closed.
- Elapsed Time: The total amount of time that has elapsed since the gate was 'Opened'.

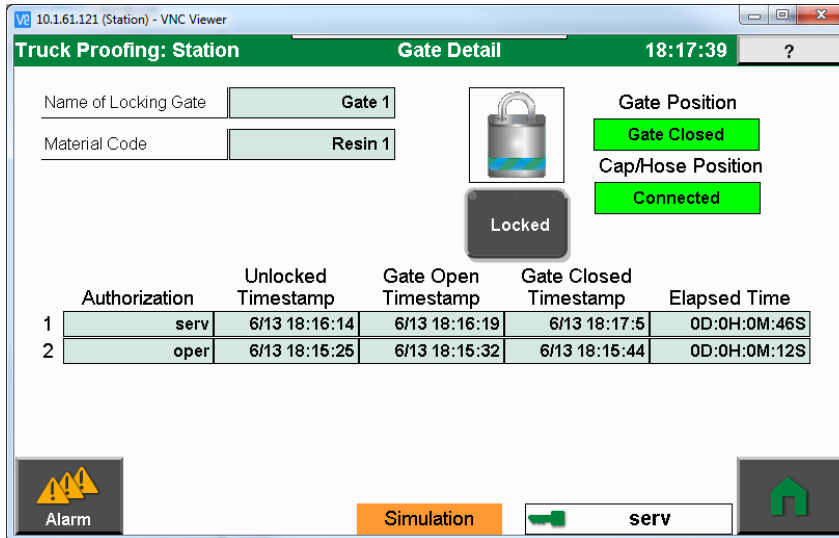


Figure 17: Operation, Gate Detail

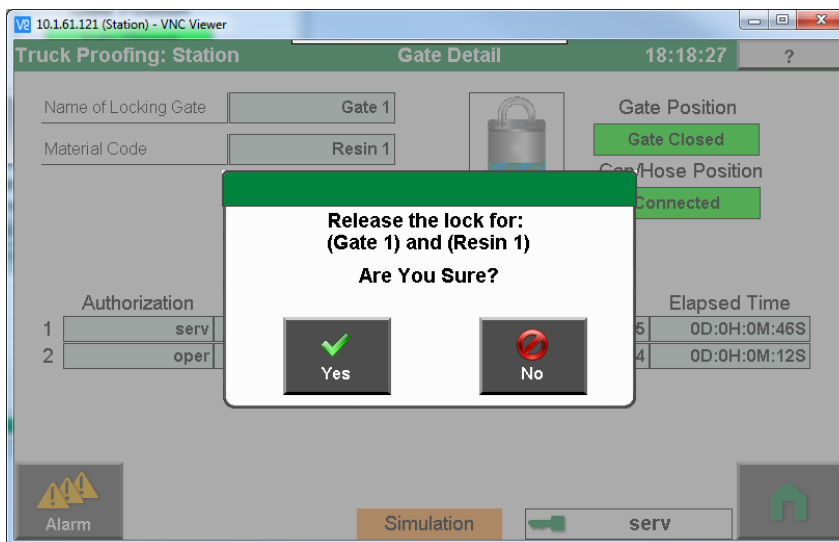


Figure 18: Operation, Gate Detail - Unlock Gate

Event Log

The TruckFill Proofing system maintains a log of gate activity. When a user unlocks, locks, opens, or closes a gate, an entry is made into the log. The log will retain the last 200 gate events. The entries in the log file are ordered with the most recent events at the top. The summary of the logged data can be viewed on the <Event Log> screen. This screen shows a table with columns:

- Authorization: The user that was logged in at the time of the gate event.
- Gate: The name of the gate that experienced the event.
- Unlocked Timestamp: This is the time that the gate was unlocked.
- Gate Open Timestamp: This is the time the physical gate was indicated as being opened.
- Gate Close Timestamp: This is the time the physical gate was indicated as being closed.

Along the left side of the table, is a scroll bar. This scroll bar will allow the user to scroll through all of the events in the log file.

The full contents of the log file can be saved to a file from the <Maintenance> - <File Manager> screen. A formatted summary report can be generated from the <Reports> - < On Demand> screen. There is also the capability to log the events to an external file as they occur from the <Reports> - <Logging> screen.

Note: Some the Open and Closed timestamp entries in the table may have an empty entry. This is indicative of not yet having occurred during the typical cycle of events. For example, the gate cannot be opened until it has been unlocked. The gate cannot be closed until it has been opened.

	Authorization	Gate	Unlocked Timestamp	Gate Open Timestamp	Gate Closed Timestamp
1	oper	Gate 1	6/13 18:54:59	6/13 18:55:7	6/13 18:55:15
2	oper	Gate 1	6/13 18:54:59	6/13 18:55:7	
3	oper	Gate 1	6/13 18:54:59		
4	oper	Gate 2	6/13 18:54:17	6/13 18:54:24	6/13 18:54:39
5	oper	Gate 2	6/13 18:54:17	6/13 18:54:24	
6	oper	Gate 2	6/13 18:54:17		
7	oper	Gate 2	6/13 18:44:31		
8	oper	Gate 2	6/13 18:44:31		
9	oper	Gate 2	6/13 18:40:58	6/13 18:41:14	6/13 18:42:23
10	oper	Gate 2	6/13 18:40:58		

Figure 19: Operation, Gate Event Log

Alarms

The Truck Fill / Proofing system contains alarms for each device in the system. There are two levels of alarm severity General and Critical. A General alarm indicates an issue with the system needs to be attended to. A Critical alarm indicates there is a major fault with the system and could affect the direct operation of the system.

The last 250 alarms are logged to the system memory and even after a reboot sequence, are available for viewing. This historical log can be cleared by the user. The logged alarm list has additional entries, indicating when the alarm became active, when it went inactive, as well as when an alarm was acknowledged. All alarms must be acknowledged in order to clear them from the active alarm list.

On the <Report> screen it is possible to generate reports that list either the active or logged historical alarms. These reports can then be viewed away from the device.

To view the active or logged alarm lists, an operator can press the [Alarm] button located on the lower left hand corner of the touch-screen. The color of the alarm button reflects the level of the most severe active alarm. Touching this button will navigate the operator to the active alarms screen. The logged alarm list can then be viewed by pressing the [Alarm Log] button located on the <Active Alarm> screen.

Alarm Severity	Color	Description
General Alarm	Yellow	This alarm severity indicates a serious condition that needs immediate attention.
Shutdown Alarm	Red	This alarm severity indicates a critical condition & caused the line to shut-down. This requires immediate attention.

Active Alarms

The <Active Alarms> screen is divided into two main sections. The (Alarms) section contains the list of active alarms. The (Help) section contains context sensitive help information for the currently highlighted alarm. Active alarms are alarms whose trigger condition is actively occurring or that had occurred but have not yet been acknowledged. Active alarms can be acknowledged, but as long as the trigger condition occurs, they will continue to appear in the list. When the alarm condition is no longer occurring, and has been acknowledged, it will be removed from the list.

The (Alarms) section appears along the left hand side of the screen. The alarms in the list will appear color coded based on the severity of the alarm at the time it was triggered. If the alarm condition is white, the alarm condition is no longer occurring.

Alarm List

For each alarm in the alarm list, information fully describes the alarm state and time of occurrence.

- Severity- (1:General, 2:Critical)
- Date & Time- The date and time the alarm occurred or changed state.
- Alarm State- (Active, Inactive)
- Acknowledge State- (A, nA, RA, AR) An indication of the acknowledge state (Acknowledged, not Acknowledged, Reset then Acknowledged, Acknowledged then Reset).
- Description- Descriptive text indicating the alarm, and the device where the alarm occurred.

Alarm Indication:

- General- Yellow: Needs immediate attention.
- Critical- Red: Needs Immediate attention, the system has stopped.

- White- The alarm trigger is no longer occurring, and the alarm has not yet been acknowledged.

Alarm Control:

- Active alarms may be acknowledged by pressing the [Acknowledge] button.
- Press the [Alarm Log] button to view the <Logged Alarms> screen.
- Press the [Reports] button to navigate to the <Report> screen to output the alarm list CTRL-R.

Content Sensitive Help

Using the navigation buttons in the (Alarms) section it is possible to highlight/select any alarm in the list. Once selected the (Help) section will update with descriptive text for the selected alarm. The text will include a definition of the alarm, possible causes, and resolutions for clearing the alarm. As the highlighted alarm changes, the help document will automatically update with the appropriate text.

Security:

In order to acknowledge the active alarms the operator must have at least (Operator) level of security.



Acknowledge – Acknowledges alarms in the active alarms list. If the alarm is ‘inactive’ then it will be cleared from the list.



Alarm Log – Navigate to the logged alarm page.



Report – Send the logged alarm list to an outputdevice such as a printer or USB thumb drive.

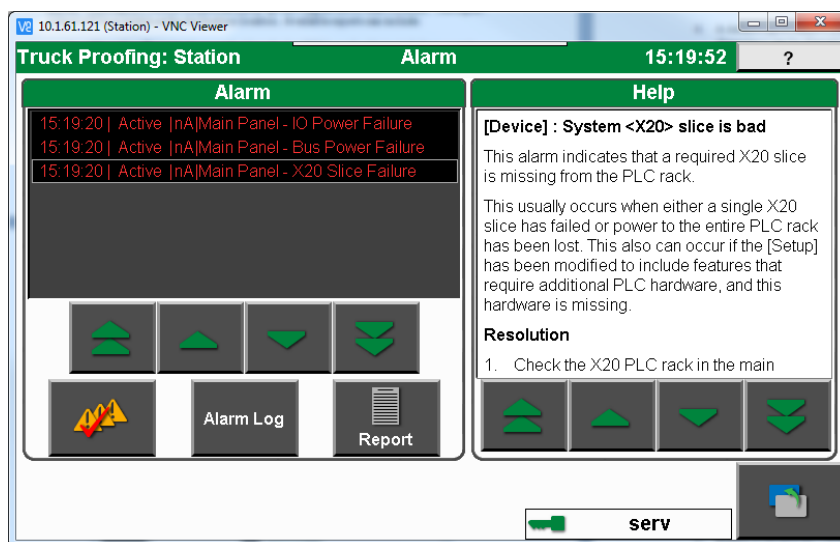


Figure 20: Alarms - Active Alarms

Logged Alarms

The <Logged Alarms> screen is divided into two main sections. The (Alarm Log) section contains the list of logged or historical alarms. The (Help) section contains context sensitive help information for the currently highlighted alarm. Whenever an alarm is triggered or changes state (active, inactive, acknowledged) an entry will be made into the alarm log list. The alarm status column of the alarm list will reflect the state of the alarm when it was added to the list. The 250 most recent alarm events will appear in the logged alarm list. As new alarms occur, the oldest alarm entries will be removed from the list.

The (Alarm Log) section appears along the left hand side of the screen. The alarms in the list will appear color coded based on the severity of the alarm at the time it was triggered. If the alarm condition is white, the alarm condition is no longer occurring. A [Clear All] button is presented which allow the alarm list to be cleared.

Alarm List

For each alarm in the alarm list, information fully describes the alarm state and time of occurrence.

- Severity- (1:General, 2:Shutdown)
- Date & Time- The date and time the alarm occurred or changed state.
- Alarm State- (Active, Inactive)
- Acknowledge State- (A, nA, RA, AR) An indication of the acknowledge state (Acknowledged, not Acknowledged, Reset then Acknowledged, Acknowledged then Reset).
- Description- Descriptive text indicating the alarm, and the device where the alarm occurred.

Alarm Indication:

- General- Yellow; immediate attention.
- Critical- Red; Needs immediate attention, the system has stopped.
- White- The alarm trigger is no longer occurring, and the alarm has not yet been acknowledged.

Alarm Control:

- Press the Alarm button to view the active alarms screen F1
- Press the Clear button to delete all entries from the logged alarm list CTRL-CLEAR.
- Press the Reports button to navigate to the Reporting screen to output the alarm list CTRL-R.

Content Sensitive Help

Using the navigation buttons in the (Alarms) section it is possible to highlight/select any alarm in the list. Once selected the (Help) section will update with descriptive text for the selected alarm. The text will include a definition of the alarm, possible causes, and resolutions for clearing the alarm. As the highlighted alarm changes, the help document will automatically updated with the appropriate text.

Security:

In order to clear the Alarm Log the operator must have at least (Setup) level of security.



Clear All – Clear the logged alarm list of all entries.



Report – Send the logged alarm list to an output device such as a printer or USB thumb drive.

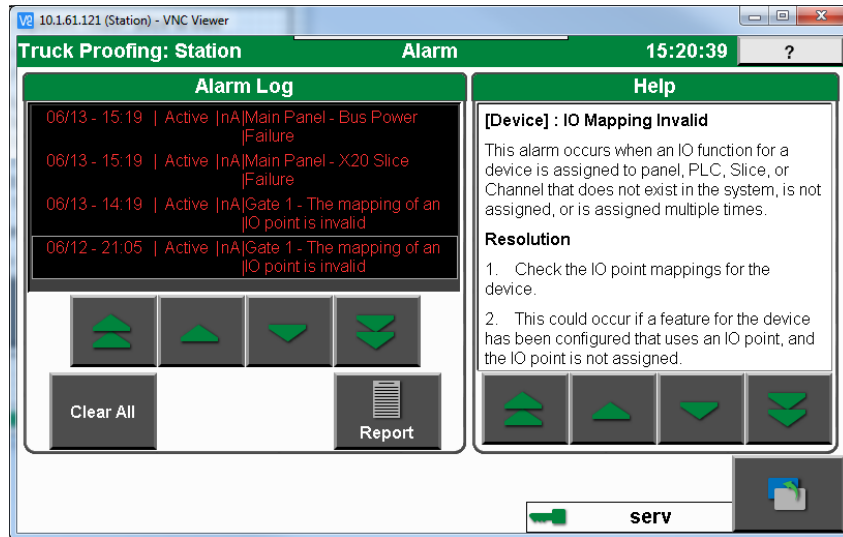


Figure 21: Alarms - Logged Alarms

Reports

The Truck Fill / Proofing system has a variety of reporting features. It has the capability of generating text based report outputs, or continuous logged data output. Each featured output is executed and configured from the <Reports> screens. Along the left side of the <Reports> screen, selection buttons are present for selecting which featured reports is to be addressed.

On Demand Reports

For text based output, the system has the capability to generate a variety of pre-defined reports. All reports are formatted as plain text and can be saved to either a USB thumb-drive, or to the onboard memory drive. If using a physical drive and the drive is at capacity, an alarm will occur indicating the problem. Each report includes a header which identifies the production line, report time, report name, and the name of the system. All reports can be formatted as either a comma separated file (.csv), or as a formatted text file (.txt).

Parameter	Options	Description
Select Report	Alarm Log Report Active Alarms Report Current Status Report Locking Gate Log Report	Select the type of report you wish to generate.
Report Style	Formatted Report Comma Separated Data File	Select the output format or style you wish to generate
Select Destination	Compact Flash USB Port 1	Select the destination where the report output should be

Parameter	Options	Description
Report Name	USB Port 2 Reports\<<Report Name>.txt Reports\<<Report Name>.csv	sent. The name of the report as it will appear at the destination drive.

It is also possible to generate reports on a scheduled basis. When outputting to a physical drive the output filename will include a date and time coding this identifies when the report was generated.

On demand reports are generated the moment the [Run Report] button is pressed. A progress bar will be presented showing the progress of the report generation. Once the progress bar vanishes, the report is complete. The report results will be immediately shown in result popup window.

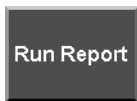
If an error occurs during the process with any file IO access, a [File System Error] button will appear. Pressing this button will present a pop-up showing the errors that occurred. The report output will be available at the destination location. Available reports can include:

- **Alarm Log Report:** A report that lists the last 200 logged or historical alarm events. This report may take some time to generate depending on the length of the historical alarm list. The following data is included:
 - Event Date and Time
 - Alarm State
 - Acknowledge Status
 - Device Name
 - Alarm Message
- **Active Alarm Report:** This report will output the entire list of current active alarms. For active alarms, only the current state is listed. For non-current alarms, each is updated with the new status. Each alarm will remain on the list until the alarm is cleared and acknowledged. The following data is included:
 - Event Date and Time
 - Alarm State
 - Acknowledge Status
 - Device Name
 - Alarm Message
- **Current Status Report:** This report prints out the current status of the system. This will include the state of all gate locks and the amount of time the gates have been unlocked and opened.
- **Resin Report:** If resin codes are enabled this report will be available. This report outputs a list of all resins maintained by the system including the total amount of material processed by each resin.
- **Gate Lock Report:** This report will list the last 200 events of the gate activity log. Included in the report is:
 - Event date and time
 - Name of user who unlocked the gate.
 - The name of the gate
 - The name of the resin assigned if any

- The time when the gate was unlocked
- The time when the gate was returned to the closed position
- The elapsed time the gate was opened.

To generate an on demand report:

1. In the (On Demand) section, select the type of report to be generated from the pull-down menu.
2. Select the format of the report output from the pull-down menu. Either a formatted report output with data properly column aligned, or a comma separated file format where each data value is separated by a comma.
3. Select the report destination. The report destination pull-down will update with the output options based on what hardware is currently available. The system will show the available drive space for the destination selected. If the space exceeds 4 Gigabytes, the value shown will be '>4Gb'.
4. A default report name is populated into the (Report Name) field. This report name (15 characters) can be changed. Take care when specifying the file extension. A '.csv' or '.txt' file extension is added automatically depending on the file format selected.
5. Press the [Run Report] button to generate the report. When complete the report will be shown in a Report View popup window.



Run Report: Execute or Run the report as specified by the selected data filters. The progress bar will show the progress of the report. Upon completion of the report, the output will be presented in a 'Report Viewer' popup window.

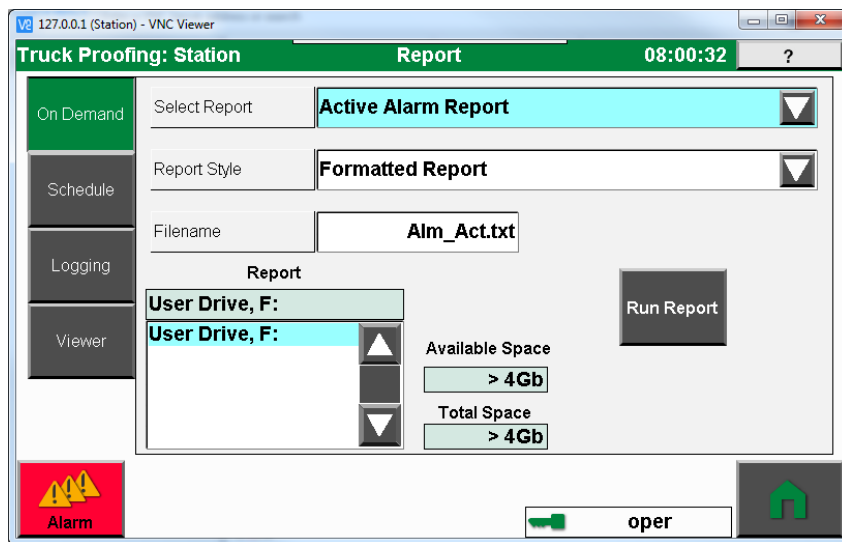


Figure 22: Reports - On Demand

Scheduled Reports

Each On Demand text report has the capability of being generated automatically on a periodic basis. The date and time of the report execution is appended to the filename.

This allows multiple reports to be generated without user interaction. This method will continue to consume drive space until the reports are retrieved and removed from the drive. It is recommended to use a thumb-drive for scheduled reports due to the larger capacities available.

Parameter	Options	Description
Select Report	Alarm Log Report Active Alarms Report Current Status Report Locking Gate Log Report	Select the type of report you wish to generate.
Report Style	Formatted Report Comma Separated Data File	Select the output format or style you wish to generate
Select Destination	Compact Flash USB Port 1 USB Port 2	Select the destination where the report output should be sent.
Report Name	Reports\<<Report Name> Reports\<<Report Name>	The name of the report as it will appear at the destination drive. The file extension will be added after the date and time concatenation.
Schedule Report	YES / NO	Choice of whether the selected report output will be scheduled. (Enabled/Disabled)
Report Start Time [HH:MM]	HH = 7, MM = 30 (7:30 am)	The first time of the day that the report will be generated. This is a 24 hour clock representation.
Report Interval Time [HH:MM]	HH = 1, MM = 0 (Report output hourly)	The interval from the last time the report was generated before generating another report.

To generate a scheduled report:

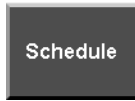
1. In the (Scheduled) section, select the type of report to be generated from the pull-down menu.
2. Select the format of the report output from the pull-down menu. Either a formatted report output with data properly column aligned, or a comma separated file format where each data value is separated by a comma.
3. Enable or Disable the schedule report using the Schedule Report pull-down.
4. Select the report destination. The report destination pull-down will update with the output options based on what hardware is currently available. The system will show the available drive space for the destination selected. If the space exceeds 4 Gigabytes, the value shown will be '>4Gb'.
5. A default report name is populated into the (Report Name) field. This report name (15 characters) can be changed.



NOTE: Do not specify the file extension! The file extension will be added when the report is generated.

6. Pressing the (Schedule) button will present a popup window, to enter the report schedule.
7. Enter the Report Start time. This value is the time (24 hour clock) that the report should first be generated.

8. Enter the Report Interval time. This value is the amount of time (24 hour clock) between the last generated report and the next.
9. Press the back button to close the schedule popup.
10. Press the [Save] button to save the schedule report settings.



Schedule: Present a popup window where the report times are scheduled.



Save: Save the selected report parameters as shown.

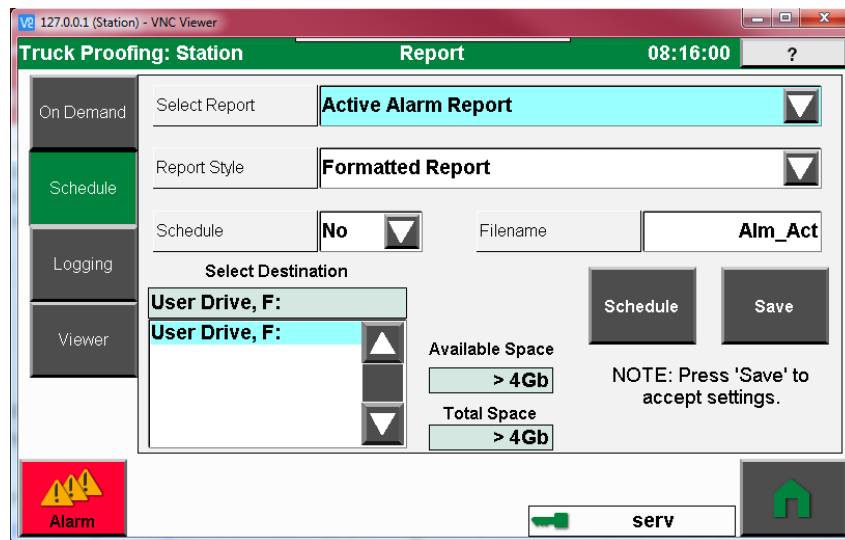


Figure 23: Reports - Scheduled

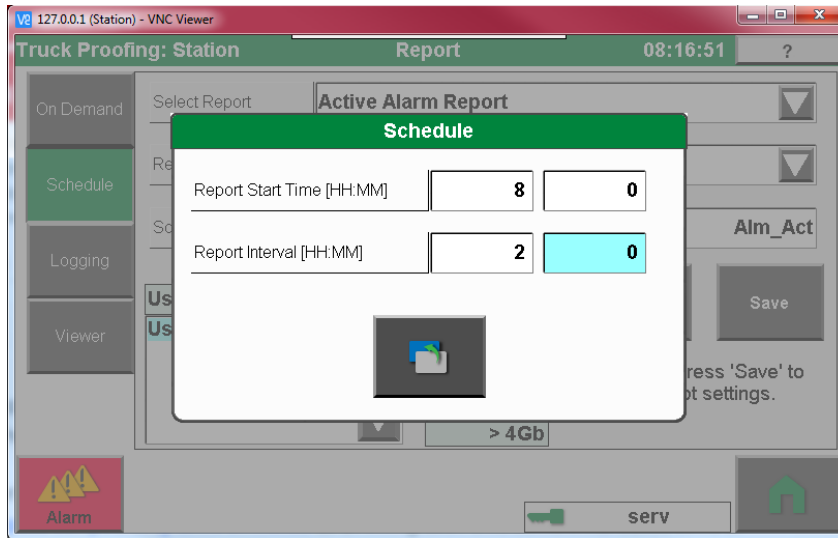



Figure 24: Reports - Schedule Time

Logging Data

Process data can be logged to files either on the internal drive or a USB thumb drive. Each data record consists of a single line of data that is comma separated. The first line of each file is a header line which contains the column headings for the data lines to follow. Each day a new file is created, and a date code is concatenated with the filename. Once the data drive is full, data logging will stop and an alarm will be shown in the alarm list. For data files located on the internal drive, a simple FTP client can be used to manage the files.

- **Gate Data:** For every gate event, the amount of material, the type of material, and other component statistics are saved.

 **Note:** Each data line will be contain approximately 70 bytes + (50 bytes * Number of Components).

Parameter	Options	Description
Enable logging output	Yes / No	Enable / Disable the various data logging output reports.
Report / Data File Name	LogData\<<Report Name>	The file name prefix for the resulting data file. The date and extension will be concatenated.
Select Destination	USB Port 1 USB Port 2 Compact Flash	The destination where the file output will be placed.

To enable data logging

1. In the (Logging) section, enable or disable the various logging options.
2. If Inventory logging is enabled, set the desired logging interval.
3. Enter a filename prefix for the data file. The date and extension will be concatenated to the prefix to create the final file name.

4. Select the destination for ALL data logging output. The system will show the available drive space for the destination selected. If the space exceeds 4 Gigabytes, the value shown will be '>4Gb'.



Note: For the destination of logged data, a single destination is set for all data logging outputs.

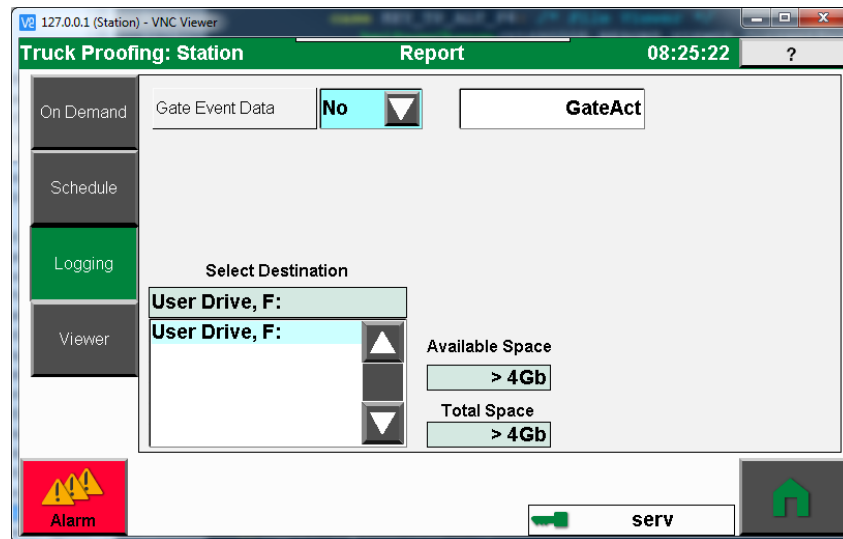


Figure 25: Reports - Data Logging

Viewer

The [Viewer] button presents a screen where the operator can view On Demand and Scheduled text reports that have been created. The reports reside in the (Drive:)\Reports\ directory of the selected drive.

To view a report

The operator screen presents a drive selection list where available drives are shown. Once a drive is selected, the file list will populate with all files residing in the (Reports) directory of the chosen drive.

1. Select the source drive.
2. Select a file from the file list. The selected drive path and file will be shown in the (Path) field.
3. Press the [View File] button to display the selected report.
4. Press the [Back] button to close the report viewer.

With the correct permissions {Setup} the operator has the option to delete either the selected file, or all files in the reports directory. Press the [Clear] button to delete a single report file, or the [Clear All] button to delete all files.

View File

View File: View the file selected in the 'Report Viewer' popup window.

Clear

Clear: Remove the file selected from the drive. This will permanently delete the file from the drive.

Clear All

Clear All: Remove all files on the selected drive. This will permanently delete all files from the drive.

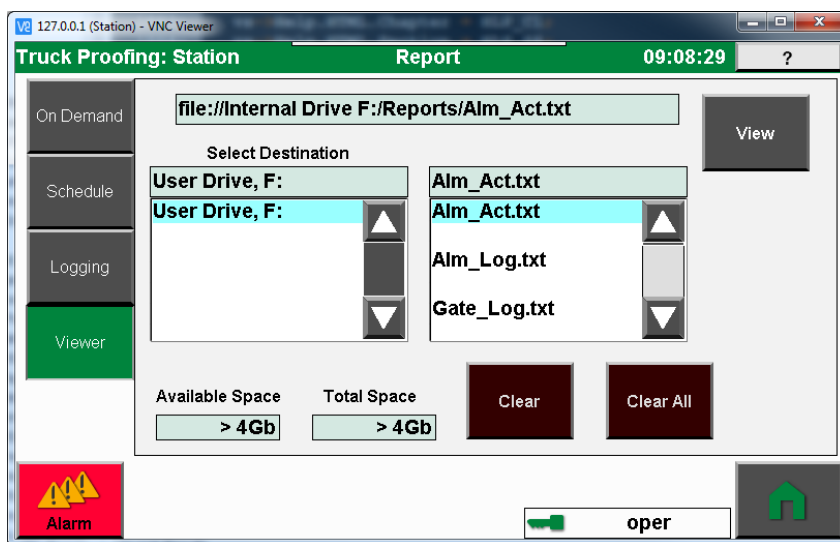


Figure 26: Reports - File Manager

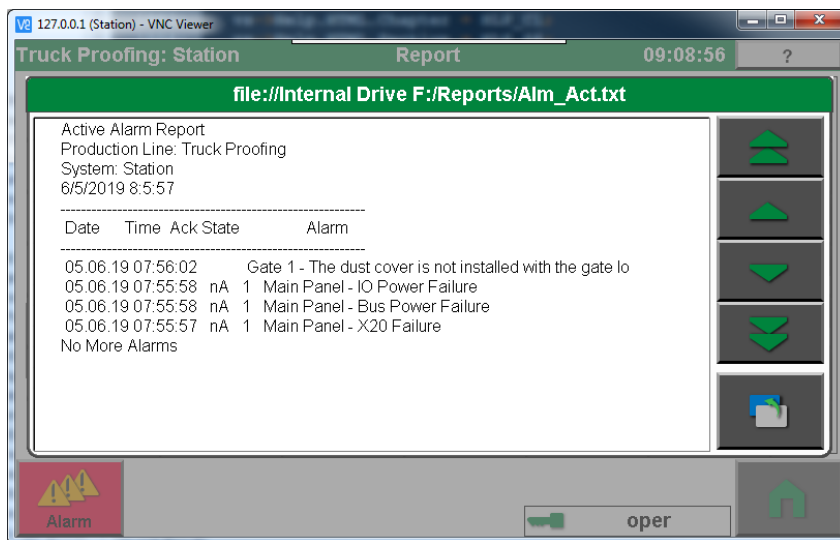


Figure 27: Reports - File Viewer

Sample Reports

All reports generated by the system are standard text based reports. It is suggested to use a basic text editor like Microsoft's WordPad or Word to view the formatted reports. For comma separated reports use Microsoft's Excel. Following are several sample formatted report outputs.

Active Alarm Report

Active Alarm Report
 Production Line: Truck Proofing
 System: Station
 6/5/2019 8:5:57

```

-----
Date      Time      Ack State      Alarm
-----
05.06.19 07:56:02      Gate 1 - The dust cover is not installed with the
gate lo
05.06.19 07:55:58  nA  1  Main Panel - IO Power Failure
05.06.19 07:55:58  nA  1  Main Panel - Bus Power Failure
05.06.19 07:55:57  nA  1  Main Panel - X20 Failure
No More Alarms
  
```

Alarm Log Report

Alarm Log Report
 Production Line: Truck Proofing
 System: Station
 6/5/2019 8:6:12

```

-----
Date      Time      Ack State      Alarm
-----
05.06.19 07:56:02      Gate 1 - The dust cover is not installed with the
gate lo
05.06.19 07:55:58  nA  1  Main Panel - IO Power Failure
05.06.19 07:55:58  nA  1  Main Panel - Bus Power Failure
05.06.19 07:55:57  nA  1  Main Panel - X20 Failure
05.06.19 07:55:54      1  System Init
04.06.19 21:28:39      Gate 1 - The dust cover is not installed with the
gate lo
04.06.19 21:28:34  nA  1  Main Panel - IO Power Failure
04.06.19 21:28:34  nA  1  Main Panel - Bus Power Failure
04.06.19 21:28:34  nA  1  Main Panel - X20 Failure
04.06.19 21:28:31      1  System Init
04.06.19 21:28:07      Gate 1 - The dust cover is not installed with the
gate lo
04.06.19 21:28:07  nA  1  Main Panel - IO Power Failure
04.06.19 21:28:07  nA  1  Main Panel - Bus Power Failure
04.06.19 21:28:07  nA  1  Main Panel - X20 Failure
04.06.19 21:28:07      1  System Init
04.06.19 21:24:06      Gate 1 - The dust cover is not installed with the
gate lo
04.06.19 21:24:02  nA  1  Main Panel - IO Power Failure
04.06.19 21:24:02  nA  1  Main Panel - Bus Power Failure
04.06.19 21:24:01  nA  1  Main Panel - X20 Failure
04.06.19 21:23:59      1  System Init
04.06.19 21:18:32      Gate 1 - The dust cover is not installed with the
gate lo
-----
  
```

Gate Event Log

Gate Activity Log
Production Line: Truck Proofing
System: Station
6/5/2019 8:13:32

User Name	Gate Name	Resin	Unlocked	Closed	Elapsed Time
oper	Gate 6	Resin 6	5/13 22:26:26	5/13 22:29:8	0D:0H:2M:41S
oper	Gate 8	Resin 8	5/13 22:26:12	5/13 22:28:53	0D:0H:2M:41S
oper	Gate 6	Resin 6	5/13 22:26:26		
oper	Gate 8	Resin 8	5/13 22:26:12		
oper	Gate 1	Resin 1	5/13 21:31:40	5/13 21:34:21	0D:0H:2M:41S
oper	Gate 1	Resin 1	5/13 21:31:40		

Resin Report

Resin Report
Production Line: Truck Proofing
System: Station
6/5/2019 8:6:53

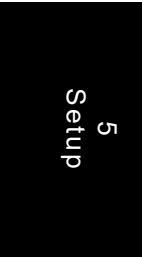
ID	Resin Name	Density	Bulk Density	Inventory
1	Resin 1	1.0000	1.0000	
2	Resin 2	1.0000	1.0000	
3	Resin 3	1.0000	1.0000	
4	Resin 4	1.0000	1.0000	
5	Resin 5	1.0000	1.0000	
6	Resin 6	1.0000	1.0000	
7	Resin 7	1.0000	1.0000	
8	Resin 8	1.0000	1.0000	
9	Resin 9	1.0000	1.0000	
10	Resin 10	1.0000	1.0000	

SECTION

5

5 Setup

- Setup and Configuration 5-2
- System Device 5-3
- Panel Device 5-5
- Network 5-13
- Gate Lock 5-22
- Maintenance 5-24
- Programming the Truck Fill / Proofing PLC 5-30



Setup and Configuration

Setup is used to configure the Truck Fill / Proofing systems operating parameters, the number of gate locks, operator security, and other parameters. It also contains the configuration menus for remote communication protocols and all Maintenance and some Diagnostic functions. Each Setup parameter is configured and then stored in permanent memory.

To navigate to the <Setup> screen, first navigate to the <Home> page. At the <Home> screen press the [Setup] button. Pressing the button labeled [Setup] and the screen will change to the main <Setup> screen.

The setup screens are organized to group the configuration parameters by the type of device (System, Panel, Locking Gate, Network, and Maintenance). The various device types are chosen by 'Selection' buttons shown across the TOP of the screen. For each device, relevant parameters are further grouped into sections. Each section is chosen using 'Selection' buttons along the Left side of the screen. With this method it is very easy to navigate through-out the setup system with a minimal amount of screen navigation and user interaction.

All setup parameters can be viewed by the user; however the current security level and operating state will dictate whether or not the parameters can be adjusted. If while in setup, a parameter needs to be changed, touch the desired input field. If the user does not have proper security a security popup screen will appear, where the user can input a new security passcode. If the system operating state does not allow a parameter field to be edited, a security popup screen will appear informing the user the system state must be changed before editing the selected field. If the user enters the correct passcode, the field will become editable. Locked parameters will have a darkened background.



Note: After changing any setup parameter, DO NOT power down without first returning to the <HOME> screen and waiting for at least a minute. The system requires this time to store any parameter changes to the Compact Flash CF card installed in the touch screen.



Note: If the system requires a reboot sequence, a 'Reboot Requested' popup will be displayed. After the configuration has been saved, the system will automatically perform a reboot sequence.

In case it is necessary to reset the system to a default state, there is a [Factory Default] button provided which will erase all memory and reset the entire configuration back to an initial default state. This button can be found in the <Maintenance> section of setup.

Setup Devices

System

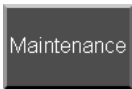
System: This device contains setup parameters that define the physical configuration of the blender, the methods by which production recipes are entered, and the severity and processing of alarm states.

Panel

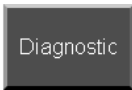
Panel: This device contains parameters which define the appearance of the touch-screen and the security requirements for user actions

Network

Network: This device provides for configuration and setup of remote communications and networking support.



Maintenance: This area provides various support functions for file IO, licensing, and Manual Control of the blender.

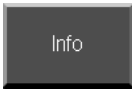


Diagnostics: {Service} This button provides access into the blender diagnostics support sections. The user must have service level security in order to enter the system diagnostics.

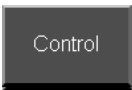
System Device

This group of screens is used to set system wide operational parameters. This includes sections for the parameters that define the physical configuration of the blender, the methods by which production recipes are entered, and the severity and processing of alarm states.

System Device Sections



Info: Shows a screen displaying the systems software version and date information, the current time and date, and the licensing station identifier.



Control: This section contains parameters that define the physical configuration of the system, and how the overall system is being controlled.

Info

This screen provides basic system information about the version of firmware and the touch-screen identification. It is the first screen presented when [Setup] is pressed on the <Home> screen.

- **Date:** The current date and time reported by the system. This can be changed in the setup of the <Panel> <Time> screen.
- **Station Identifier:** The station identifier is a six digit number unique to each touch-screen system. It is used for obtaining license codes for system features that require an unlock code in order to enable. The <Maintenance> <License> screen lists the Station Identifier and the License Codes for all unlocked features.
- **Firmware Version:** The version of firmware currently installed.
- **Firmware Date:** The date the currently installed firmware was released.

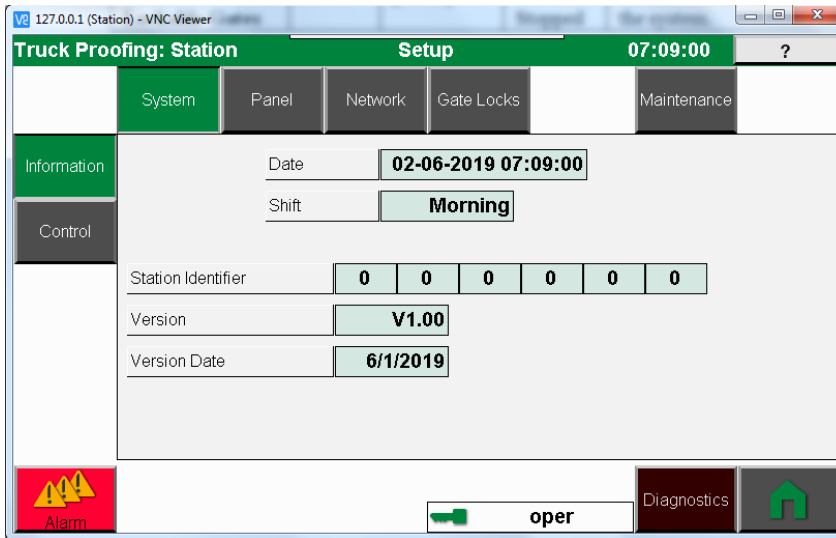


Figure 28: Setup - System, Info

Control

This screen sets parameters that dictate what a system consists of and how the overall system is being controlled. Any changes on this screen will greatly change the operation and screen appearance of the system. Changes made on this screen will force a system restart when returning to the <Home> screen.

The TruckFill control parameters are:

Parameter	Default	Range	Security	Description
Number Lockable Gates	6	[1 : 12]	Service / Stopped	The number of lockable gates in the system.

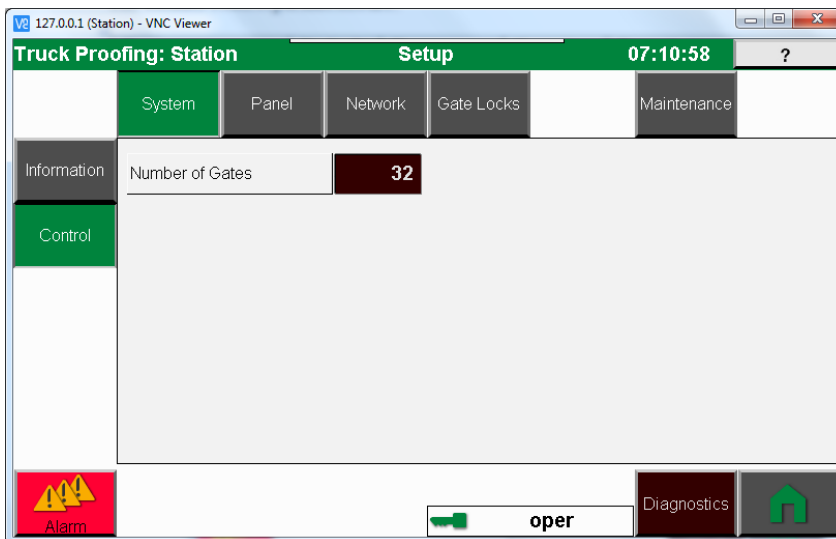


Figure 29: Setup - System, Control

Panel Device

This group of screens is used to configure the general appearance of the touch-panel and its interaction with the user. Specifically the system names, displayed units, user security level, and system date and time parameters can be changed.

Panel Device Sections

Panel	Panel: Parameters for setting the display language, system naming, and screen saver.
Units	Units: Parameters for selection of English or Metric units and display precision.
Security	Security: Parameters for granting security access to various system functions and entry of security level passwords.
Time	Time: Parameters for setting the system time and defining operator shift times.

Panel

This page of the setup is concerned with the setup of the systems default language and touch-screen appearance. This page also provides for adjusting the screen brightness, contrast and screensaver settings.

The basic Panel settings are:

Parameter Name	Default	Range	Security	Description
	Truck Fill/Proofing	[various]	Service	The name of the system as it will appear throughout the touch-screen pages and on reports.
Production Line Name	Line 1	[various]	Service	This defines a name used for naming a full production line. This is included in the various data and report outputs. If multiple systems comprise a full production line, this name provides a means by which all devices can be grouped under a single name for reporting purposes.
Language	English	[various]	Operator	The default display language. This is the language that will be used when the system is booted. Any change made will immediately take effect.

Parameter	Default	Range	Security	Description
Backlight Off Time	600	[0 : 7200]	Operator	The time in seconds after which the screen will turn completely off.. To re-activate the screen simply touch the display and the last page viewed will be shown. A value of 0 will disable backlight timeout.
Screen Saver Time	600	[0 : 7200]	Operator	The time in seconds after which the screen will show an image randomly on the screen. To re-activate the screen simply touch the display and the last page viewed will be shown. A value of 0 will disable the screen saver.

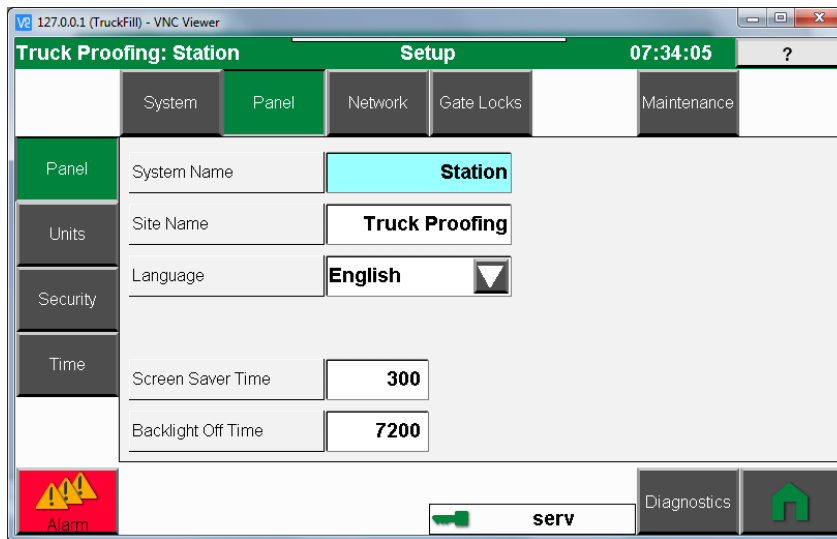


Figure 30: Setup - Panel, Info

Units

All units are represented internally the same regardless of what unit types are shown on the display. The touch-panel automatically converts the internal units to that selected to be shown on the display. This page is provided to change the displayed units to either English or Metric values based on user preferences. The default precision for displayed units is typically 2 decimal places. In the Precision frame, the default settings can be changed for individual unit types. This change affects all devices controlled through the touch-panel.

The basic Units settings are:

General Frame

Parameter	Default	Range	Security	Description
Units	English	English / Metric	Setup	The base number system shown by the touch-panel. If extrusion control is enabled, additional settings are provided for key unit types.

Precision Frame

Parameter	Default	Range	Security	Description
Precision	2	[0 : 3]	Setup	Typically 2 decimal places of resolution are presented. It is possible to increase or decrease this value as necessary for several unit types. Fields are provided to change the displayed resolution for various unit types.

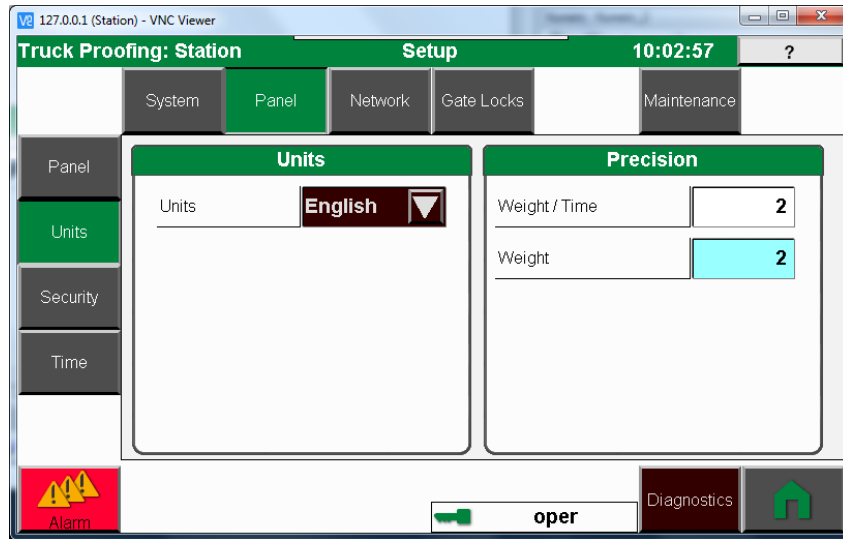


Figure 31: Setup - Panel, Units

Setup 5

Security

This screen sets parameters relevant to the security system. The Truck Fill / Proofing systems support a multiple user Role Base Access Control (RBAC) system. The system supports 28 configurable users, a fixed 'Guest' user, and at least 1 user assigned as an 'Administrator'. Each user is assigned a specific 'Role' which dictates which parts of the system that user will have access to. In addition each user can be granted or denied specific rights for certain operations or features.

Features that are locked will have a dark brown background. When an input field or a button that is locked is pressed, a security unlock popup will appear. The user simply needs to enter their password to unlock the item if there user role and rights permit it. If the user does not have the necessary credentials, the item will remain locked and the popup window will be closed. The user can also close the popup window manually.

It is possible to set a timeout value for the length of time the current user's login will remain active. After the timeout value expires, the system will automatically change to the 'Guest' user. The timeout value is set within the security system 'Auto Logout Timeout'. By default this function is disabled with a time value of 0 seconds. The minimum timeout value is 5 minutes and the maximum is 8 hours.

Parameter	Default	Range	Security	Description
-----------	---------	-------	----------	-------------

Parameter	Default	Range	Security	Description
Auto Logout Timeout	15 Min	0 53	Admin	This value is the amount of time that will elapse before the user security level is returned to the minimal state. If this value set to 0, then the feature is disabled.
Authorization	Passcode Only	Passcode Only,	Admin	

Users

Each user has the following characteristics:

- **UserName** – The case-sensitive name of the user with a maximum length of 15 characters. The current users name will be displayed at the bottom of each screen in the system.
- **PassCode** – The case-sensitive passcode for the user with a maximum length of 15 characters.




Note: the user must have a unique passcode within the system. The user will enter their passcode on the security popup window when needed to unlock operational components allowed by their login credentials. The system will identify them by this unique passcode and log them into the system. If accepted, features specific to that user will be unlocked.

- **Role** – The role of the user grants access to various areas within the system. There are 6 roles that can be assigned each providing greater access to the system. The available rolls include:
 - **Guest:** This role provides the greatest level of security. It allows for navigation only within the system. Parameters can be viewed and screens can be navigated. Operational, Setup, and Service areas of the system will be locked and cannot be modified. By default there is always at least one ‘Guest’ user that cannot be configured. This user will be the fallback user that will be used when the current user’s login timeout expires.
 - **Operator:** This role will allow the user to operate the equipment only. It allows for navigation within the system. Parameters can be viewed and screen can be navigated. The user can operate the equipment and perform basic functionality. Setup and Service areas of the system will be locked and cannot be modified.
 - **Supervisor:** This role allows for all of the functionality of the operator and additionally the user can clear the alarm log, schedule reports, and clear totals.
 - **Setup:** This role allows for all of the functionality of the supervisor role and additionally provides credentials for the user to modify system configuration and setup parameters.
 - **Service:** This role allows for all of the functionality of the supervisor role and also provides rights for viewing and configuring diagnostic capabilities.
 - **Admin:** This role allows for all functionality within the system including diagnostic functions. In addition this role allows for configuration and setup of user credentials. The system must always have an administrative user. The last item in the user list is reserved for the required administrative user. The password and name of this user in the list can be changed, but the role of this user is always admin. Additional administrative users can be created if needed.

- **Rights:** For each user it is possible to set specific rights. The rights will grant/deny specific functionality to the user regardless of the role setting of the user. For example an operator could be denied rights to modify recipes within the recipe book. Press the 'User Rights' button when editing a user to deny/grant specific rights to the user.

By default the system will be configured with 6 basic users. Each user is assigned a role and rights. To reconfigure the default user credentials and to add new users; the current user has to have administrative rights. Only an administrator can modify the user database. The administrator can change his own administrative password. Take care to not forget the new password as all modifications to the user database will be locked without this password.

Username	Passcode	Role	Description
guest	0000	Guest	(Not Configurable) This level allows navigation only.
oper	3333	Operator	This level allows 'guest' level access and also the ability to lock/unlock gates, standard report navigation.
super	4444	Supervisor	This level allows 'oper' level access and also the ability to generate logging files.
setup	2222	Setup	This level allows 'super' level access and the ability to change setup and configuration parameters.
serv	1111	Service	This level allows 'setup' level access and the ability to perform maintenance and diagnostic functions.
Admin	admin	Administrator	This level provides full access to the system and allows modifications to the user security system.

 **Note:** If the administrative password is lost, contact Conair Technical Support.

Only the administrator has the ability to change the user's role and rights. When a user is selected from the 'User List' the details of that user will be shown in the 'User Detail' frame. The user's name, and role can be seen, but the password will be hidden. Pressing the 'Security Rights' button will present a popup where individual user rights can be viewed and assigned.

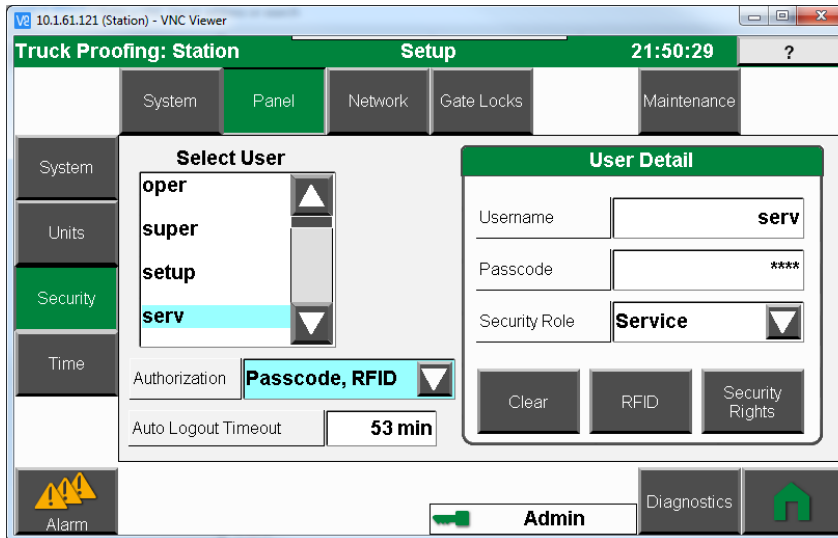


Figure 32: Setup - Panel, Security

Users Rights

Individual rights can be assigned to the user. The user rights further define the functionality that a user has beyond their assigned role. Possible user rights include:

Right	Description
Right to Delete Alarm Log	This right grants the user the ability to delete the historical log of alarms for the system.
Right for Control of Gate Locks	This right grants the user the ability to lock and unlock the gates.
Right for Changing the Resin Codes	This right grants the user the ability to change or modify the list of available resins that can be assigned.

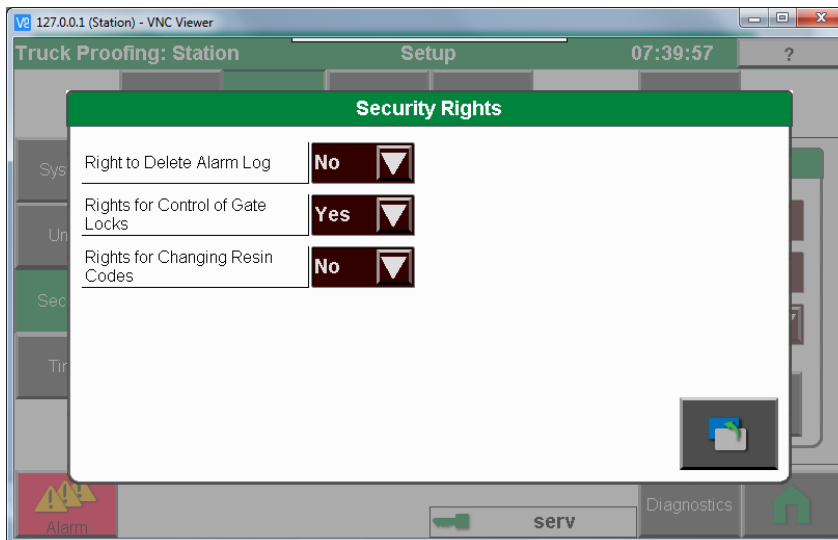


Figure 33: Setup - Panel, Rights

Time

This screen is used for setting the systems time and date. Pressing the [Shift] button, a popup is presented where time parameters are available for setting up (3) work shifts for both the weekday and weekend periods.

The system maintains its own time and date values. The time and date will be included on reports and data logging file output. The time and date are also used to schedule automatically generated reports, data logging output, and to determine the current working shift. The name of the current shift is also output to SQL. If the email feature is enabled, it is possible to assign an email recipient to a work shift for the purpose of receiving alarm and system notifications.

The basic time and date settings are:

Parameter	Default	Range	Security	Description
Hour		[0 : 24]	Setup	The current hour value implemented with a 24 hour clock.
Minute		[0 : 59]	Setup	The current minute value.
Second		[0 : 59]	Setup	The current second value.
Month		[1 : 12]	Setup	The current month value.
Day		[1 : 31]	Setup	The current day of the month value.
Year		[2008 : 2032]	Setup	The current 4 digit year representation.

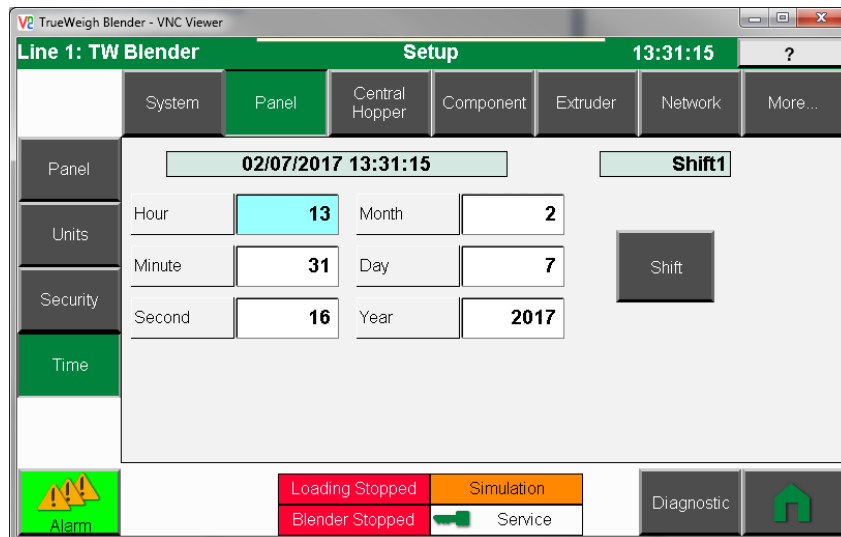



Figure 34: Setup - Panel, Time




Shift: This button will present a popup window where the start and duration of the work shifts and names can be configured.

Shift Configuration: {Setup}

The system supports configuration of 3 shifts for both the weekday and weekend. To configure the shift periods, press the [Shift] button to present a popup. To configure a shift, it must first be enabled. Enable the shift and enter the shift starting time using a 24 hour clock value [HH:MM]. Enter the duration of the shift in hours and minutes [HH:MM].

 **Note:** The duration of the shifts cannot sum to a value greater than 24 hours. Also the duration of a shift should not overlap another shifts time. If two shifts are configured with overlapping times, the shift that started first will be given priority.

 **Note:** Shifts can span the midnight hour, but care should be taken as some reporting packages do not properly recognize spanning midnight. Data for a shift started on the previous day may be reported on the following days report. Care will have to be taken when selecting the report time filter.

The basic shift settings for both the weekday and weekend are:

Parameter Name	Default	Range	Security	Description
	Shift 1 Shift 2 Shift 3	[various 11 char]	Setup	The name of the shift.
Start Time [HH]	0 0 0	[0 : 24]	Setup	The 24-hour clock starting hour of the shift.
Start Time [MM]	0 0 0	[0 : 59]	Setup	The starting minute of the shift.
Duration [HH]	24 0 0	[0 : 24]	Setup	The 24-hour clock duration in hours of the shift
Duration [MM]	0 0 0	[0 : 59]	Setup	The duration in minutes of the shift beyond the duration hour.
Enable	Yes No No	Yes / No	Setup	Enable this shift as a valid work shift.

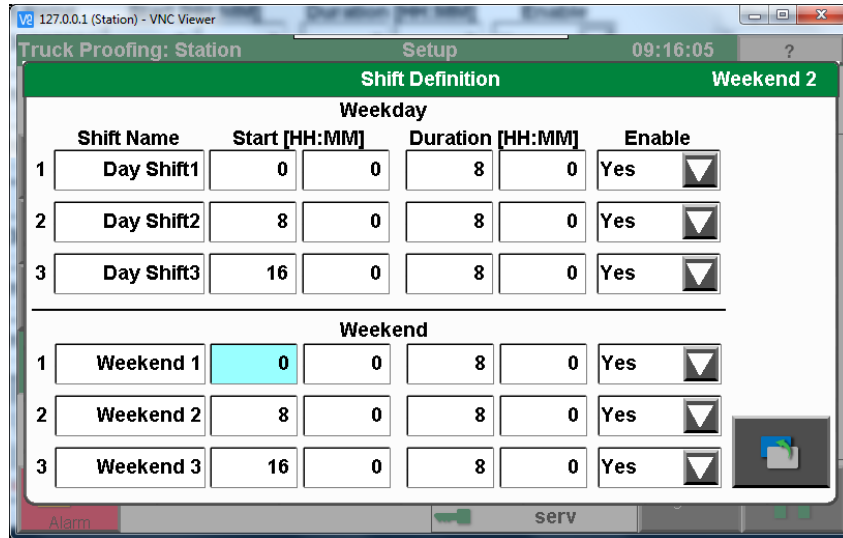


Figure 35: Setup - Panel, Time – Shifts

Network

The system supports remote communications using a variety of protocols. Some of these protocols use the built in TCP/IP port of the touch-panel, while others may require the addition of hardware. Multiple protocols can operate simultaneously over the touch-panels TCP port. Some remote protocols will require an unlock code to enable. This page will configure and setup the various protocols and required hardware.

When entering the unlock code, the station identifier will be presented. A Conair representative can use the station identifier code to generate the unlock code. The unlock code must be correctly applied in order to enable the protocol.

For more information on the capabilities of Conair’s implementation of the protocol, refer to the available protocol manual.

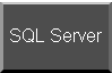
All remote protocol parameters will require a security level of {Service} to modify. Once a protocol is enabled, or any protocol settings have been changed, the system will perform a reboot sequence upon returning to the <Home> screen. When the reboot sequence is completed, the protocol will become available.

Network Device Sections

IP Address **IPAddress:** This screen is for the setup and review of the systems remote network configuration.

Protocol **Protocol:** This screen is provided to enable and set configuration parameters for a number of remote communication protocols.

Email **Email:** This section will configure the transmission of an email whenever an alarm occurs.



SQL Server: This screen will provide configuration for connecting the blender to a remote SQL server.

IP Address

This screen shows the touch-panels unique NodeID and current Ethernet network addressing. Whenever changes are made to these parameters, a reboot of the system will be performed upon returning to the <Home> screen.

TCP/IP Settings

For the following parameters the current set values are shown along with fields for data entry. Pressing the [Set] button located next to the parameter entry fields will immediately change the system set value. Navigating away from this page will also set the values in the system. Once set, external devices will be able to 'PING' the touch-station at the newly set address, however a system reboot will be still be performed upon returning to the <Home> screen to insure full functionality of the change takes place.

The basic IP Address settings are:

Parameter	Default	Range	Security	Description
IP Address	10.1.44.1	[0 : 255]	Service / Stop	The Ethernet TCP/IP network ip address.
SubNet Mask	255.255.0.0	[0 : 255]	Service / Stop	The Ethernet TCP/IP subnet mask.
Gateway Address	0.0.0.0	[0 : 255]	Service / Stop	The Ethernet TCP/IP gateway address if required.

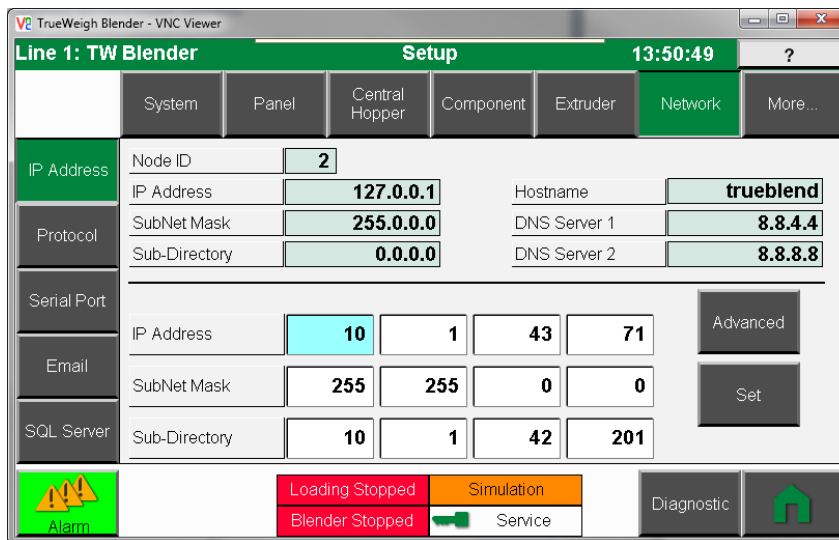
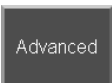
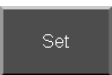


Figure 36: Setup –Network, IPAddress



Advanced: This button will present a popup window where additional less frequently used parameters can be set.



Set: The network settings can only be saved when all changes have been completed. This button will save the changes made to the configuration parameters, and immediately set the new values..

The advanced IP Address settings are:

Parameter	Default	Range	Security	Description
NodeID	1	[1 : 15]	Service / Stop	The Node ID is a unique number assigned to the touch-screen. This is used as additional network node identification ID for some protocols.
HostName	truckfill	15 character string	Service / Stop	The Ethernet hostname of the touch-panel.
DNS Server 1	8.8.8.8	[0 : 255]	Service / Stop	The address of a Domain Name Server used for internet address lookup.
DNS Server 2	8.8.4.4	[0 : 255]	Service / Stop	The address of a Domain Name Server used for internet address lookup.

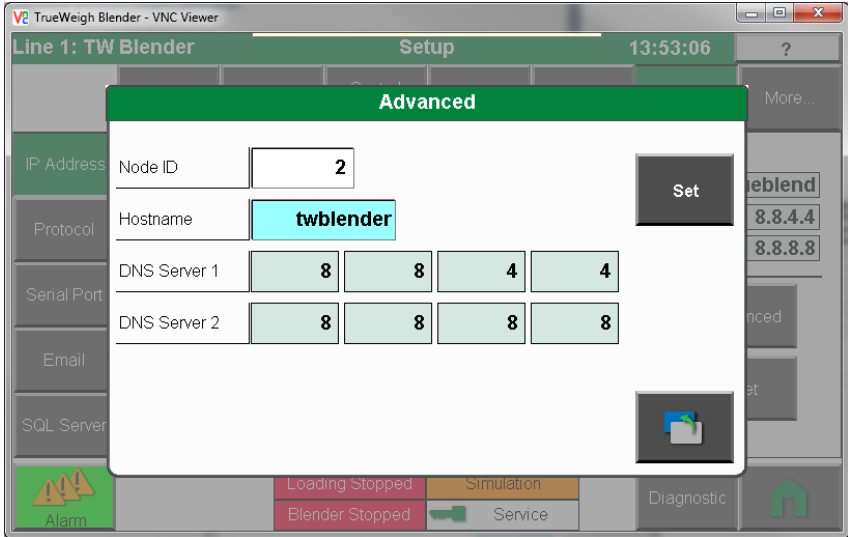


Figure 37: Setup –Network, IPAddress Advanced

Protocol

The system supports remote communications using a variety of protocols. Some of these protocols use the built in TCP/IP port of the touch-panel, while others may require the addition of hardware. Multiple protocols can operate simultaneously over the touch-panels TCP port. Some remote protocols will require an unlock code to enable. This page will configure and setup the various protocols and required hardware.

All remote protocol parameters will require a security level of {Service} to modify. Once a protocol is enabled, or any protocol settings have been changed, the system will perform a reboot

sequence upon returning to the <Home> screen. When the reboot sequence is completed, the protocol will become available.

The protocols that can work over the Ethernet port include: ModbusTCP, EtherNetIP, and OPC Server. The Ethernet port is always available on the touch panel for usage. The IP addressing of the touch-panel is configured on the <IP Address> setup page. The OPC Server and EtherNetIP protocols will require an unlock code to enable. The Modbus TCP does not require an unlock code.

The protocols settings are:

Parameter	Default	Range	Security	Description
Modbus TCP/IP	No	Yes / No	Service / Stop	The Modbus protocol does not require an unlock code in order to enable. Please refer to the Modbus protocol manual for the available tag list. The IP Address of the touch panel configured on the <IP Address> screen is used by this protocol.
EtherNet/IP Protocol	No	Yes / No	Service / Stop	The EtherNetIP protocol requires an unlock code in order to enable. Please refer to the EtherNetIP protocol manual. The IP Address of the touch panel configured on the <IP Address> screen is used by this protocol. This interface also requires the IP Address of the remote system be defined. This protocol will also require a double reboot of the touch-screen. The first reboot will enable the protocol, and the second reboot will acknowledge the remote systems IP address.
OPC UA Server	No	Yes / No	Service / Stop	The OPC UA Server protocol does require an unlock code in order to enable. Please refer to the OPC Server protocol manual for the available tag list and connection requirements. The IP Address of the touch panel configured on the <IP Address> screen is used by this system.
EtherNetIP	No	Yes / No	Service / Stop	The EtherNetIP protocol requires an unlock code in order to enable. Please refer to the EtherNetIP protocol manual. The IP Address of the touch panel configured on the <IP Address> screen is used by this protocol. This interface also requires the IP Address of the remote system be defined. This protocol will also require a double reboot of the touch-screen. The first reboot will enable the protocol, and the second reboot will acknowledge the remote systems IP address.
EtherNetIP: IP Address	0.0.0.0	[0 : 255]	Service / Stop	The EtherNetIP interface also requires the IP Address of the remote system be defined.

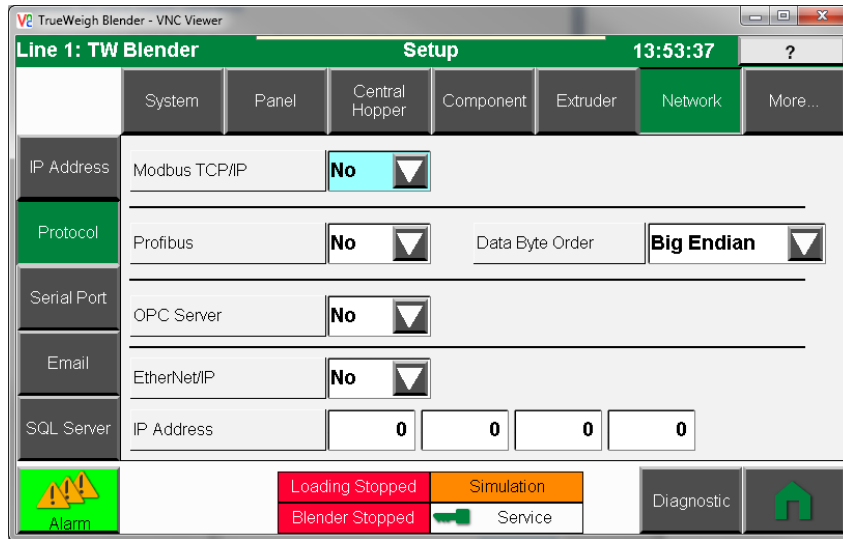


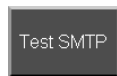
Figure 38: Setup –Network, Protocol

Email

The system has the capability of sending an email whenever an alarm of a set severity occurs. Also whenever a gate is unlocked or closed, an email can be sent. A maximum of 10 recipients can be configured to receive the emails. The recipients are also assigned to one or more work shifts. The emails will only be sent to recipients during their assigned work shift(s). The shift time configuration is setup in the <Panel – Date> screen. The configuration of the types of alarms that will trigger an email can be found on the <Alarms> page.

A local SMTP server can be used to send the messages, or if the touch-screen is connected with the Internet, it can connect directly with outside SMTP services like Gmail.

The system will use the public DNS servers implemented by Google for name resolution. The DNS server addressing can be changed if a different DNS service is needed. The addresses of the DNS service can be found on the <IP Address> settings screen.



Test SMTP: This button when pressed will send a test email message to the enabled recipients configured in the recipient list.

The basic email settings are:

Parameter	Default	Range	Security	Description
Enable Email	No	Yes / No	Service / Stop	The email feature must be enabled to operate. This will require a security unlock code.
SMTP Address	NA	34 character string	Service	The address of the remote SMTP Server (example smtp.mail.gmail.com).
Response Timeout (sec)	240	60 / ...	Service	The timeout value for a response from the remote SMTP server.

Parameter	Default	Range	Security	Description
Authentication	Plain / Login	Plain / Login / SSL/TLS	Service	The authentication mechanism for the server connection.
Port Number	25	0 / ...	Service	The port number used for the server connection. (Typical: Port 465 or 587 for SSL/TLS, Port 25 for Plain/Login).
User Name	NA	34 character string	Service	The user name for the touch-screen login to the SMTP Server.
Passcode	NA	34 character string	Service	The user passcode for the touch-screen login to the SMTP Server.
Receive from Email Address	NA	34 character string	Service / Stop	The email address of the touch-screen (sender email address).

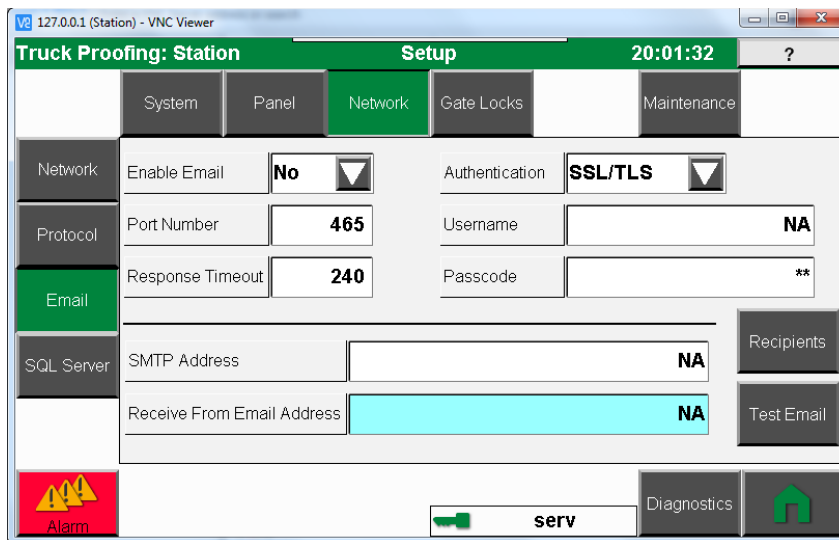


Figure 39: Setup, Network, Email

Recipients: This button will present a popup window where the email recipients, settings are configured. The popup window contains a list of 10 possible recipients. To edit a recipient, select it from the list. With the recipient selected, the email address can be edited, and the work shifts can be assigned.

The basic email settings are:

Parameter	Default	Range	Security	Description
Recipient Enable	No	Yes / No	Service	Enable the recipient to receive email notifications.
Send to Email Address	NA	34 character string	Service / Stop	The recipients email addresses. A maximum of 10 recipients can be configured.

Parameter	Default	Range	Security	Description
Recipients Active Shifts	NA	Enabled / Disabled – By Work Shift	Service	Depress the shift buttons for each work shift that the recipient will receive emails.

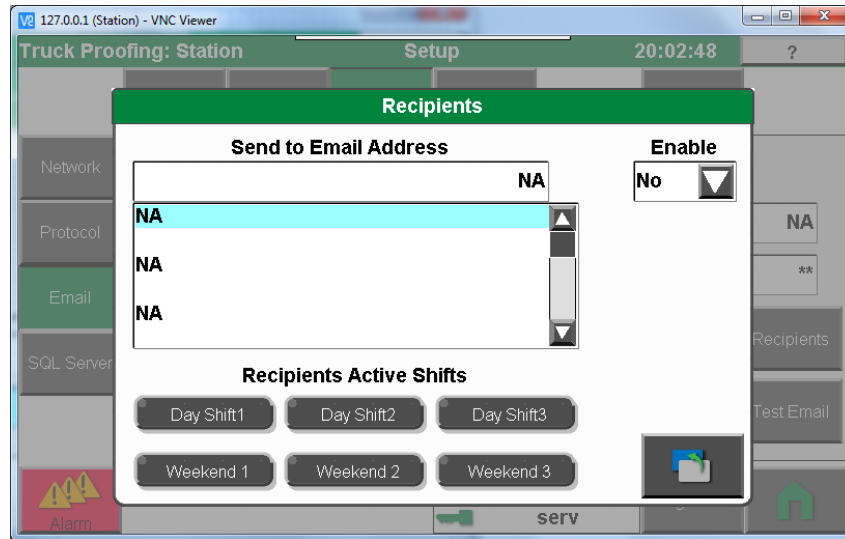


Figure 40: Setup, Network, Email Recipients

Sample Emails

- Gate Unlocked Sample – This is a sample email when a gate has been unlocked.

```

From: conairatl@gmail.com
Sent: Tuesday, June 18, 2019 11:49 AM
To: Kuehnel, Fritz
Subject: [External] Truck Proofing:Station-(Gate 1) - Gate UNLOCK Event Occurred

The Truck Proofing:Station system has detected the Gate 1 has been UNLOCKED!

At 6/18/2019 15:49:23 the gate was unlocked.
The user (johndoe) unlocked the gate (Gate 1) with material (Resin 1).

Submitted by:
Truck Proofing
Station

```

- Gate Closed Sample – This is a sample email from the gate closed event.

```

From: conairatl@gmail.com
Sent: Tuesday, June 18, 2019 11:50 AM
To: Kuehnel, Fritz
Subject: [External] Truck Proofing:Station-(Gate
1) - Gate CLOSED Event Occurred

```

The Truck Proofing:Station system has detected the Gate 1 has been CLOSED!

At 6/18/2019 15:49:23 the gate was closed.
The gate (Gate 1) with material (Resin 1) was closed with the current user (johndoe).

Submitted by:
Truck Proofing
Station

SQL Server

The system has the capability of communicating directly with Microsoft SQL Server. This is accomplished with an Ethernet connection with the SQL Server's network. The touch-panel must have its IP Address settings configured to reside on this network (see <IP Address> screen). This section will configure the connection with the server and the type of data that will be output to the server. The SQL interface will require an unlock code to enable. This section will configure the parameters needed to implement the interface. If the touch-panel cannot communicate with the SQL Server an alarm will be generated.

When the touch-panel first connects with the server it will verify that the Conair database and the proper tables and relationships have been established within the server. Conair can provide documentation that shows the contents of the tables and relationship mappings.



Note: The setup of the Microsoft SQL server side is the responsibility of the customers IT department. Conair does have an SQL Server interface manual which can be used as a guide in this process.



Note: Part of SQL Server setup process will be to set up a user within the SQL Server and for the Conair Database. This interface also **requires** that dynamic port addressing be **disabled** for this connection.

The basic SQL Server settings are:

Parameter	Default	Range	Security	Description
-----------	---------	-------	----------	-------------

Parameter	Default	Range	Security	Description
SQL Server	No	Yes / No	Service / Stop	This setting will enable or disable the connection with the server. The SQL Server interface requires an unlock code in order to enable.
Database Type	Microsoft SQL	Microsoft SQL	Service / Stop	The type of SQL database server.
Database Name	ConairIPEG	11 character string	Service / Stop	The name of the database defined in the SQL Server.
Server Port	1433	Plain/Logi n / SSL/TLS	Service / Stop	The port used by the SQL Server.
Server IP Address	0.0.0.0	[0 : 255]	Service / Stop	The IP address of the SQL Server.
User Name	NA	11 character string	Service	The touch-panel user login to the SQL server.
Passcode	NA	11 character string	Service	The touch-panel user logins passcode to the SQL Server.

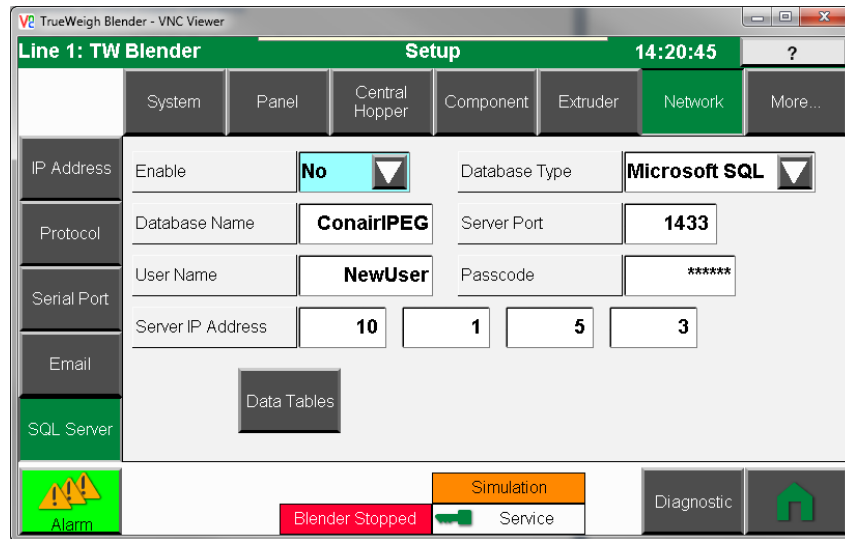
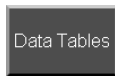


Figure 41: Setup - Network, SQL Server



Data Tables: This button will present a popup window where the type of data to be saved to the SQL Database is configured.

Note: Conair can provide several pre-built report outputs which can be loaded into the Microsoft SQL Server. These reports provide a variety of means by which material usage data can be seen. These reports **require the (BATCHES) data table be enabled.**

The data table settings are:

Parameter	Default	Range	Security	Description
Inventory Data	No	Yes / No	Service	This setting will enable or disable the connection with the server. The SQL Server interface requires an unlock code in order to enable.
Inventory Data: [HH]	1	[0 : 23]	Service	24 hour clock hour interval value for when the inventory data is saved to database.
Inventory Data: [MM]	0	[0 : 59]	Service	24 hour clock minute interval value for when the inventory data is saved to database.
Recipe Data	No	Yes / No	Service	The type of SQL database server.
Alarm Data	No	Yes / No	Service	The name of the database defined in the SQL Server.
Batches	No	Yes / No	Service	The port used by the SQL Server.

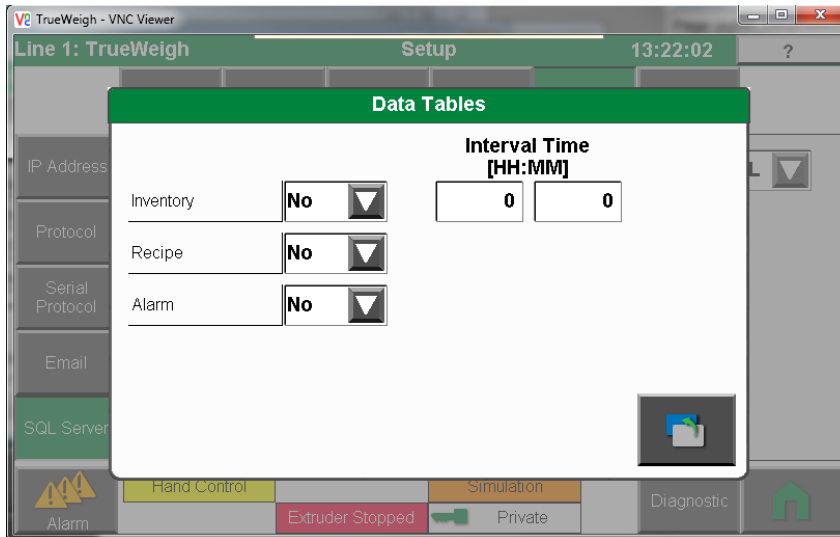


Figure 42: Setup - Network, SQL Server Data Tables

Gate Lock

The Gate Locks setup screens are used to set parameters that are relevant to an individual gate locks. Settings are further grouped into a Control category. The system will have multiple locking gates and each gate will have its own parameters. When first entering the Gate Lock setup screens the first gate is always presented first. Along the right side of the screen are (8) 'Selection' buttons with the names of the gates. The selected gate is represented as the depressed button. If there are additional gates there are additional previous and next buttons to navigate through all locking gates. The set parameters shown will be for the selected gate.

Gate Lock Device Sections



Control: This page is for setting up control settings for the locking gate.

Gate Control

This page is for setting up control settings for the locking gate. Each feed hopper has its own set of settings. Select the feed hopper by name using the [Component] selection buttons on the right side of the screen.

The basic component control settings are:

Parameter Name	Default	Range	Security Service	Description
Gate Name	Gate <x>	[various 15 char]	Service	Each gate has its own name. This is used on some screens as well as with the reporting features.
Resin Name	various	[0 : 9999]	Setup	This field when touched will present a screen where a resin can be selected or edited.
Maximum time gate can be open	240 min	[0 : xxx]	Setup	This is the amount of time the gate can remain open before an alarm will be generated. A value of 0 will disable the checking for elapsed time.
Time allotted to open gate	60 min	[0 : xxx]	Setup	Once the gate is unlocked, the lock will be re-established if the gate is not open within this set time. A value of 0 will disable the checking for elapsed time.

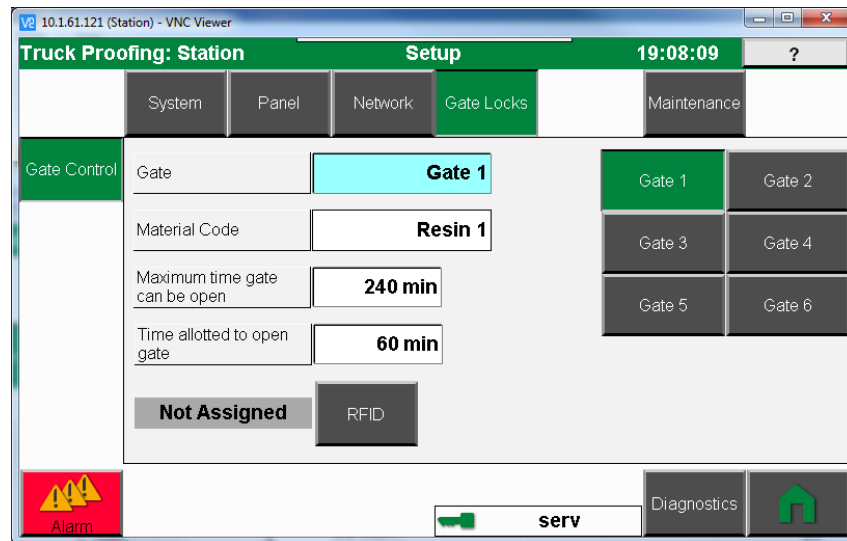


Figure 43: Setup - Gate Lock, Control

Resin Selection / Editing

If resins codes are used then for each gate in the system, a resin data entry field can be used to select a resin for the gate. The text of the field will show the name of the selected resin for that gate. To select a new resin, press the data entry field.

A resin selector popup will be shown where the list of available resins can be viewed and chosen. Select resins to be viewed in the list by using the scrollbar, the up/down buttons, or simply typing the resin number into the selection field. It is also possible to touch the resin name in the table itself to select a specific resin. The selected resin will be highlighted in the table with an arrow pointing to it. It will also appear to the right of the table in the selected resin box. There are a total of 3000+ resin locations available.

After verifying the resin and its density, press the select button to use the selected resin. The solid and bulk density values can be used by the system for various mathematical calculations.

- **Select:** Press [Select] to choose the displayed resin for the locking gate selected. The resin popup window will close automatically.
- **Edit:** The desired resin may not be available in the list. To edit a resin, press the [Edit] button. This will unlock the fields defining the selected resin so that they may be edited. Each resin has a name, a solid density, and a bulk density value. The [Save] button is pressed when complete to save the changes into the list. To edit a resin the operator must have the necessary rights (Security level to change resins).

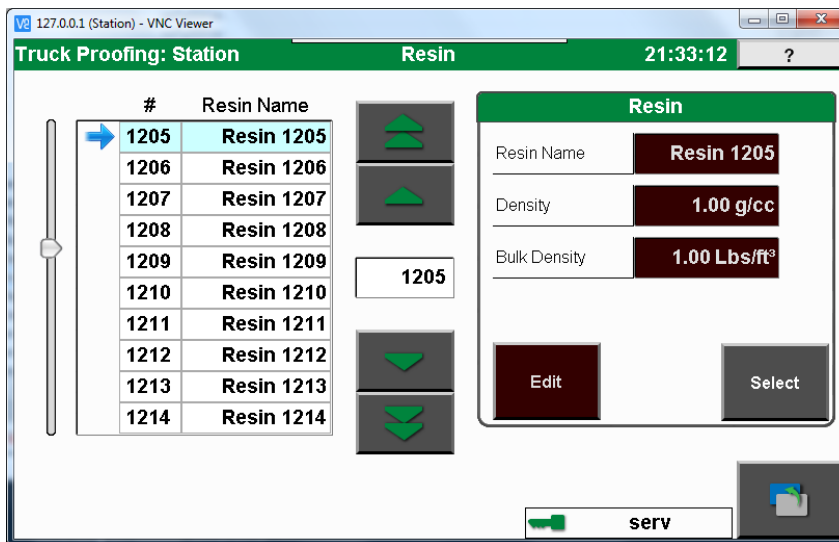
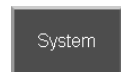


Figure 44: Setup - Resin Select, Edit

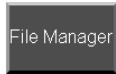
Maintenance

The maintenance area provides a set of screens which enable the operator to perform a series of maintenance features, including backing up the configuration, recipes, licensing, and defaulting the system to factory defaults. A screen is also provided to allow manual control of the component gates, the batch hopper gate, and the mixing system.

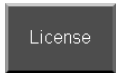
Maintenance Device Sections



System: This section provides for basic system functions Factory Defaults, Touch-screen Calibration, and Safe Screen Cleaning.



File Manager: This section allows various file IO functions to take place including saving and retrieving configuration, recipe book, and resins. Report and log files can also be removed from the respective drives if necessary.



License: This section shows the current systems station identifier and the unlock codes for any locked features.

System

This section provides for basic system functions Factory Defaults, Touch-screen Calibration, and Safe Screen Cleaning.

- **Defaults:** Security: {Service/Stop} The system can be reset back to a Factory Default setting. Pressing this button a confirmation popup will be presented before any action is taken. Once the system is reset, returning to the [Home] screen the system will perform a reboot sequence.
- **Calibrate Touchscreen:** Security: {Service/Stop} The touch-screen system is touch calibrated from the factory. In the event that the touch-actions do not align with pressing of the screen, the screen can be re-calibrated. When the button is selected, a target will be presented in each corner of the screen one at a time. Press the target to re-calibrate the touch-action.
- **Cleaning Screen:** Security: {Setup} Press this button to present a popup screen for 30 seconds. During this time it is possible to clean the touch-screen without affecting the operation of the system. A progress bar is presented to indicate the time remaining before the popup screen will vanish.
- **Default Resin Codes:** Security: {Setup} Press this button to reset the resin codes back to the factory default state. A popup will be presented requesting that this operation be confirmed before the action is taken. This action will delete the existing internal resin file and re-create it with default resin assignments. Using the <File Manager> features, a resin code file can be loaded to restore the resin list to a known state.
- **Default Gate Log:** Security: {Setup} Press this button to delete the internal gate event log file. A popup will be presented requesting that this operation be confirmed before the action is taken. This action will delete the existing internal gate log file and re-create it. ALL EVENTS in the gate log will be DELETED if this operation is completed.

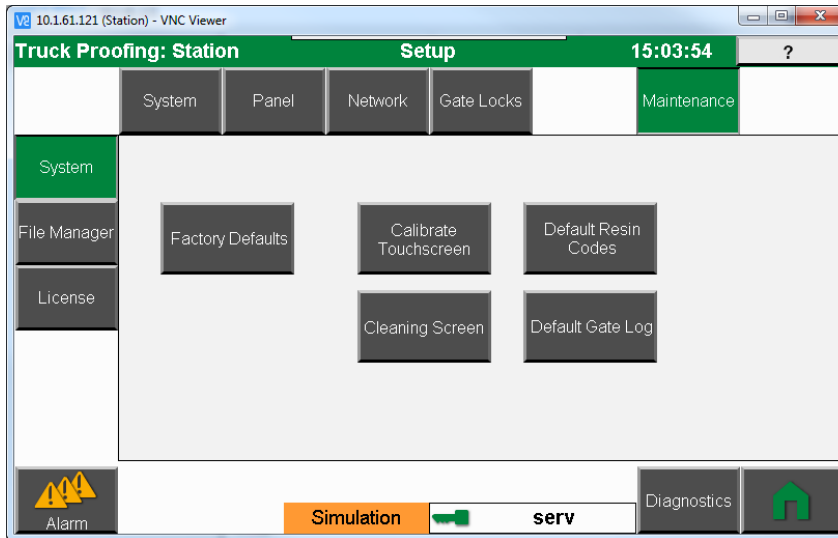


Figure 45: Setup - Maintenance, System

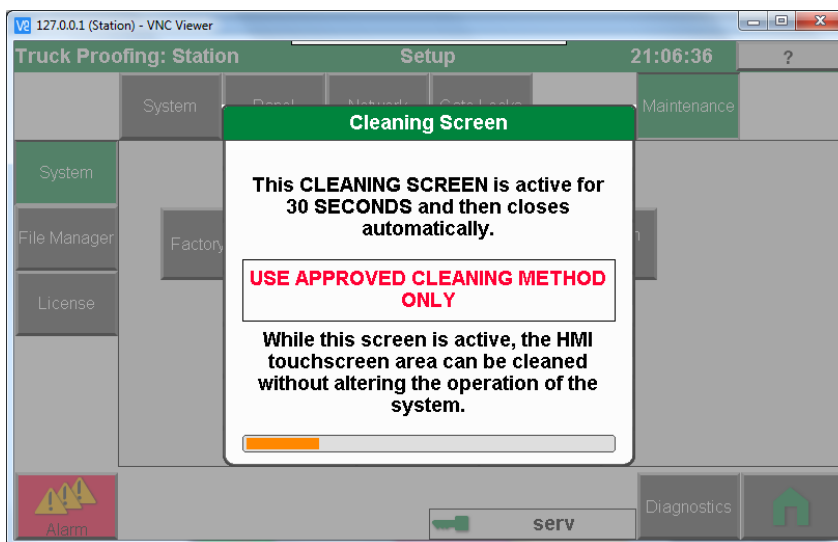


Figure 46: Setup - Maintenance, System - Clean Screen


File Manager


This screen allows the operator to save and retrieve various data files to the onboard flash drive, or to an attached USB thumb-drive. When the drive is selected, the screen will display the available space and the total space available for the drive. If the selected drive is at capacity, then file IO will not be possible, and for the case of data logging, an alarm will be generated.

This system has a built in FTP Server, therefore it is possible to access the files using and FTP Client software package. The IP address of the touch-panel can be viewed or set within the <Setup-Network> screen. The touch-panel must be connected to the PC with the FTP client via standard Ethernet practices.

- **Internal Hard Drive:** (Compact Flash, F:) There is an internal flash drive available for storage of data files. The total space of this drive can vary. An FTP Client is required to access files on the internal drive. FTP client access to the internal hard drive is possible with a user login and password of (Username: conairftp, Password: conairftp).
- **USB Thumb-Drives:** (USB Port 1, USB Port 2, ...) The system has at least 1 USB thumb-drive. Multiple thumb-drive sockets may be available depending on the system. The maximum size of the USB stick is 32 GB. Once the USB stick has been plugged into the system, the system will recognize the drive and it will become available in the list of available drives.

Access to the USB thumb-drive with an FTP Client is possible with a user login and password of (USB Port 1: Username: conairusb1, Password: conairusb / USB Port 2: Username: conairuSB3, Password: conairusb). Of course the USB stick may also be removed. Do not remove the USB stick while data access is occurring.

 **NOTE:** The USB stick **CANNOT** be formatted with NTFS, this is **not** supported.

 **NOTE:** Take care when using multiple USB thumb-drives. The first USB thumb-drive inserted will be referred to as USB Port 1, the second as USB Port 2. If the first thumb-drive USB Port 1 is removed, the remaining USB thumb-drive will still be referenced as USB Port 2.

Drive Explorer

From the pull-down menu, the 'Drive Explorer' is the first available selection. The Drive Explorer will allow for the various drives to be scanned for files and directories. Buttons are provided to allow for individual files or entire directories to be deleted.

To explore a drive:

1. Select the destination drive to explore. The sub-directory selection box will populate with all of the directories on the selected drive.
2. Select the sub-directory. The file selection box will populate with all of the files in the selected directory.
3. Select the desired file.

Clear

Clear: {Setup} This button will delete the selected file from the selected path.

Clear All

Clear All: {Setup} This button will delete all of the selected files from the selected path.

Reload

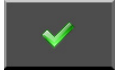
Reload: This button will refresh the directory and file lists for the selected drive selection.

Data File Action

From the pull-down menu, various file IO operations can be performed. The list of operations available can change based on the configuration of the system.

For each action, the user will

1. Select a source or destination drive.
2. Depending on the file action selected, the user can then select a directory.
3. Select or enter a filename, depending on the action taken.
4. Press the 'OK' button to perform the selected action.



OK/Run: This button will execute the selected file action.

- **Save/Retrieve Configuration:** The full configuration of the system can be saved or retrieved. This is useful in the event that a firmware update is required; the existing system configuration can be saved then reloaded after the firmware update is completed. Also Conair service often will request the configuration files in order to diagnose issues with the system. After performing a retrieval of the configuration, the system will perform a reboot sequence upon returning to the <Home> screen.

Multiple files are used for the configuration so selecting an individual file for this task is not available. The default directory for the configuration files is (CfgFiles).

- **Save/Retrieve Resin:** The list of resins can be saved or retrieved. In the event of a firmware update, the resin list can be saved and reloaded after the firmware update is completed. With identical systems, it is also possible to copy the resin list from one system to another.

The default path for the resin list is (/DatFiles/ResinLst.csv).

- **Diagnostic Dump:** This option will save multiple diagnostic files to the hard-drive. Files included will be the system configuration, feed tables, batch data, mixer state, and the alarm log. These files are typically used by Conair service to diagnose issues with the system. This provides a simpler method of obtaining diagnostic files without having to individually select them.

The destination drive is the only selectable path option for this option. The various data files will be stored in the (Diagnostics) directory on the specified drive.

- **System Dump:** This option will save the internal log files to the selected hard-drive. The internally logged data is saved in several different log files. These log files are combined into a single compressed file for output to the drive. This file is intended for use by Conair service personnel.
- **Event Log Diagnostic:** This option will save the internal gate event log in its entirety to the selected location. The file is saved in .csv format with a default filename TFDiag.csv.

The default path for the internal log files is (/Diagnose/SdmDump.tar.gz).

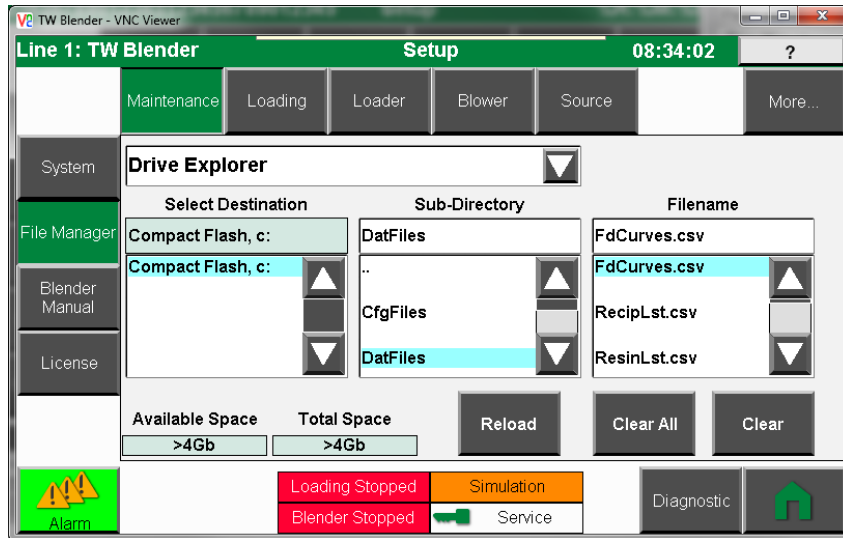


Figure 47: Setup - Maintenance, File Manager

License

Each touch-system has a unique Station Identifier. This identifier is used to unlock features of the system that require an unlock code in order to enable. The primary required unlock code is for the station firmware itself. When a feature requires an unlock code, a security popup window will be presented when the user tries to enable the feature. At this time the unlock code must be entered. If the code is invalid or unavailable, the popup window will close and the feature will be disabled.

The Station Identifier must be provided to a Conair representative in order to generate the unlock code for the feature. Each unlock code is unique for the touch-panel and the feature. This screen displays the Station Identifier for the current system as well as all entered unlock codes for the respective features.



Note: During a system firmware upgrade, it may be necessary to re-enter the unlock codes. Write down the unlock codes before performing any firmware upgrades.

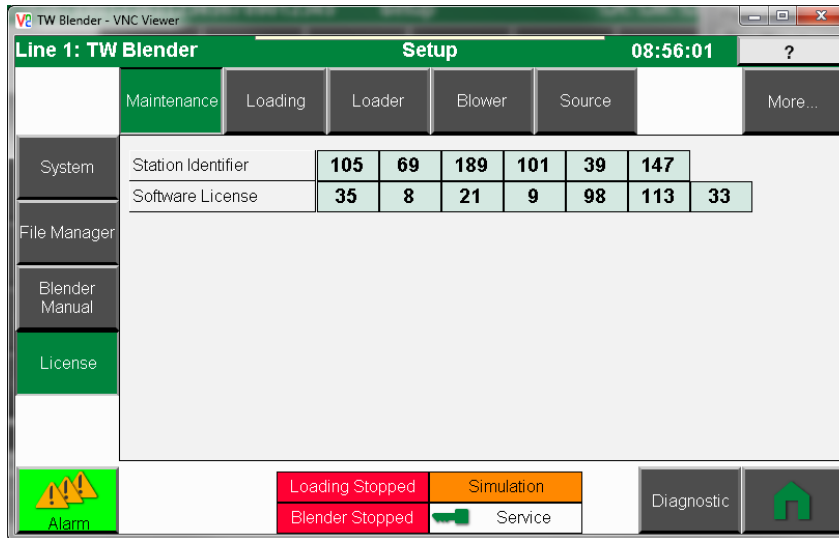




Figure 48: Setup - Maintenance, License

Programming the Truck Fill / Proofing PLC

Initially the Truck Fill / Proofing PLC will be pre-programmed with the latest firmware release. It is possible to update the onboard program while in the field. The following procedure will step through this process. The programming process will require a USB stick with a maximum size of 32 GB.

 **Note:** Not all commercial USB sticks may work correctly. Contact Conair technical support to obtain further information on approved USB sticks.

 **Note:** Installation of new firmware onto the PLC will erase any retained data. This includes any log files, IP Addressing, and license codes for specially locked features. When updating the firmware on an existing system, it will be necessary to re-enter any license codes. Use the screens in Setup to write down any license codes or calibration factors before beginning the update process.

The procedure may also require the PLC panel to reboot several times. Do not interrupt the programming process. As the update process may take some time, be sure to allow for sufficient time to perform the update so as not to interrupt current production.

PLC Programming Procedure:

6. Obtain the desired version of firmware from the Conair support team. The firmware will be compressed into .zip file format.
7. Extract the contents of the zip file into an empty folder.
8. Copy the contents of the folder to an empty USB stick. The USB stick must not exceed 32 GB in size.
9. Turn off the power to the enclosure with the touch-screen.
10. Install the USB stick into either USB port (IF4, IF4) (Figure 8) on the back of the touch-panel device.
11. Turn on the power to the touch-panel enclosure. This will start the process of copying the firmware from the USB stick onto the PLC.
12. The programming process may take several minutes to complete. During the update process, the PLC may reboot one or more times before completing. Not only is the program being installed on the PLC's CPU, any firmware updates for the PLC slices may also be updated as required.

13. When the programming is complete, the touch-screen will boot to the initial Conair splash screen and ultimately the HOME screen.
14. Remove the USB stick from the back of the touch-panel.



Note: If the USB stick is not removed and the system is turned off and on, the programming sequence will be repeated.

SECTION

6

6 Diagnostics

Diagnostics 6-2
X20 PLC 6-2
Remote 6-5
SDManager 6-7
Simulation 6-7

Diagnostics

The diagnostics section is intended for advanced users to reference when a possible issue with the Truck Fill system is occurring. A user must have 'Service' role rights to enter the diagnostics area. The diagnostics capabilities of the system are divided into sub sections where each section can be individually explored. The X20 PLC section details the current hardware state, and the Remote section details the status of any remote communications protocols that may be in use. These areas are the most commonly used.

To navigate to the <Diagnostics> screen, first navigate to the <Home> page. At the <Home> screen press the [Setup] button. Pressing the button labeled [Setup] and the screen will change to the main <Setup> screen. Press the [Diagnostics] button and the <X20 PLC> screen will be shown.

X20 PLC

The <X20 PLC> diagnostics section is used to check the status of the hardware in the system. The section has (2) sub-sections Panel and X20 PLC. The panel section shows the state of the primary PLC processor and the HMI. The X20 PLC section relates the status of the PLC IO rack. Note the data shown reflects exactly what the hardware itself is reporting.

Panel

The <Panel> section shows the current status of the primary PLC processor and the HMI component of the hardware. Items of key interest on this screen include the current operating temperatures, the available memory, and the total amount of data written to the internal drive. The data written to the internal memory is stored in permanent memory, but will be reset if a software update is performed.

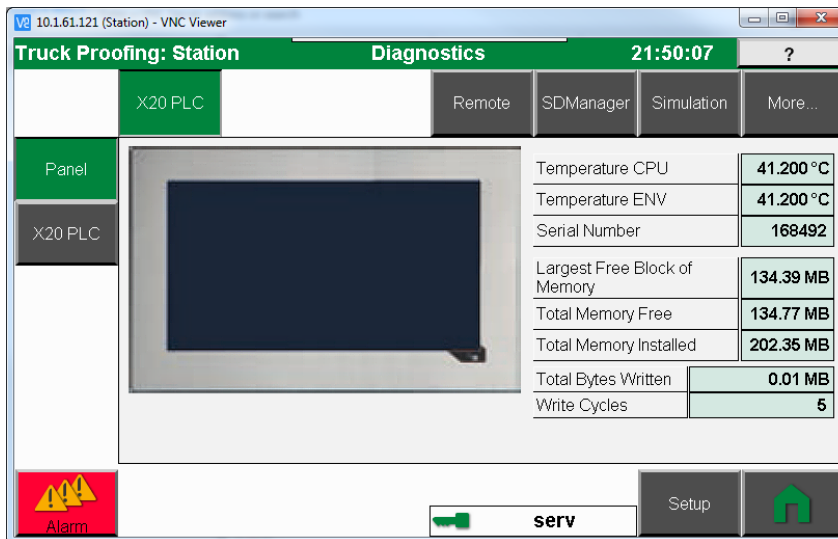


Figure 49: Diagnostics, Panel

X20 PLC

The <X20 PLC > sections shows the status of the slices in the PLC's IO rack. Each slice in the IO rack is identified with an individual bitmap image. The bitmap image will reflect the state of the

slice and will either show as 'Green' indicating no issues, or as 'Red' if there is an issue. Note that the TruckFill system may not have a fully populated IO rack depending on the possible number of gates controlled. Therefore a slice may be reporting a fault condition, when in reality it may not be present because of the system configuration. For each slice the position of the slice in the rack is shown. The abbreviated name of the slice is also shown on a button that when pressed will show detail status of the slice. The name on the button reflects the name of the slice that can be seen on the face of the physical slice in the IO rack.

The screen can show the status of up to 7 physical slices of the PLC rack. A scroll bar is provided to scroll through additional slices as needed.

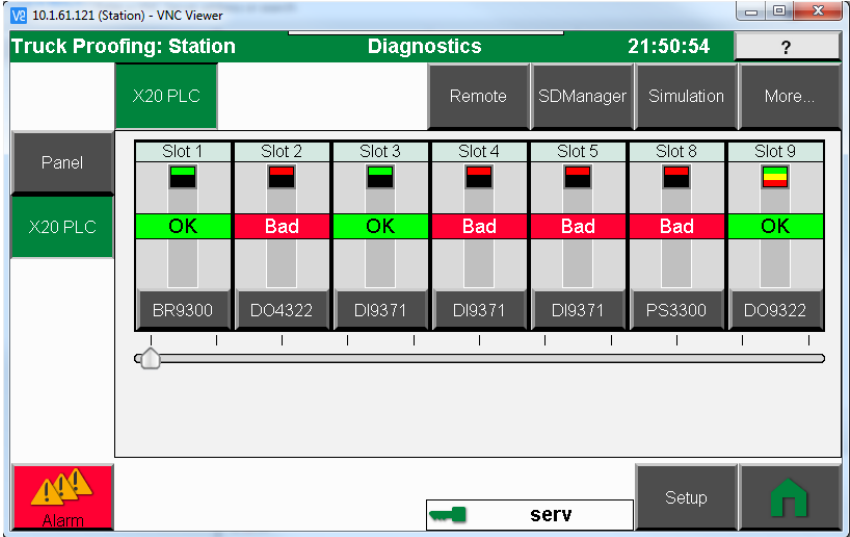


Figure 50: Diagnostics, X20 PLC

Touching the bitmap for a slice, or the button at the bottom of the slice will present a detail screen for the selected slice. Each type of slice will have its own unique detail screen. The detail screen reflects the status of the power, the firmware version, hardware version, and serial number of the slice. A graphic of the slice is shown along with text boxes reflecting the expected wire terminations for each connection point on the slice.

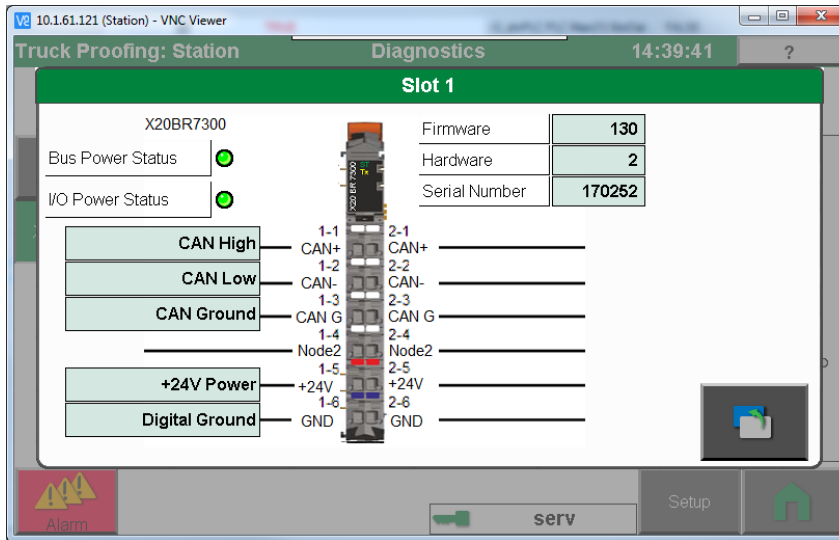


Figure 51: Diagnostics, X20BR7300 Slice

For slices with digital inputs, the state of the input is shown. The input is considered OFF when the indicator is colored 'YELLOW'. The input is considered ON when the indicator is colored 'GREEN'.

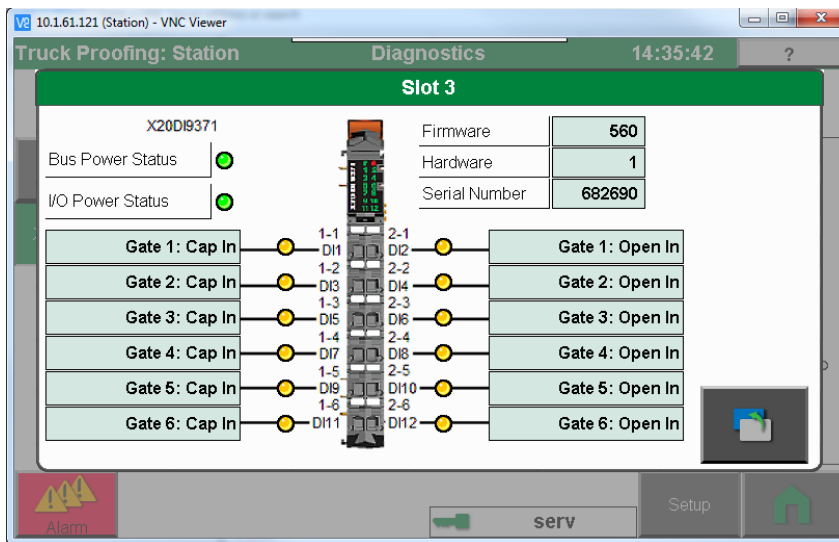


Figure 52: Diagnostics, X20DI9371 Slice

For slices with digital outputs, the state of the output is shown along with an output valid indication. The output valid indicators can show a possible issue with an individual output point. The output is considered OFF when the indicator is colored 'Gray', and is ON when the indicator is colored 'YELLOW'. The output status indicators are 'GREEN' when there is no indicated error with the output, and 'RED' when the output does not reflect the expected state.

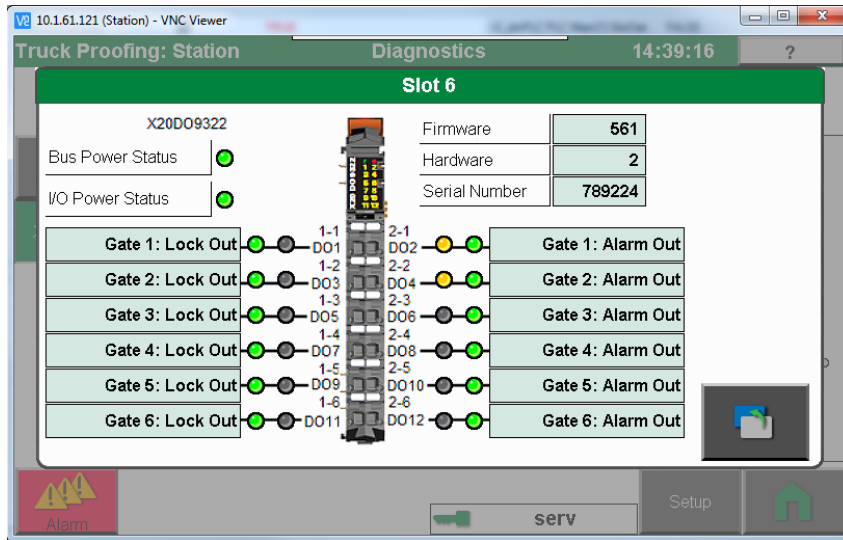


Figure 53: Diagnostics, X20DO9322 Slice

Remote

The TruckFill system supports a number of ways that 3rd party systems can obtain operational data. An Ethernet connection is made to the HMI panel and a remote communications protocol is selected. This section of <Diagnostics> provides information regarding the state of the remote connection and the data handling with the 3rd party data servers.

CDB

For some protocols like Modbus, data is transferred in blocks. Multiple Data Registers are grouped together within the block. Each position in the block has an assigned Data Tag that identifies the data at that position in the block. The screen will show the definition value, the last read, and last written data for each position in the block. Each block can be separately selected and displayed. The definition value can also be changed on this screen in the event the default value is not acceptable. For more information on Common Data Blocks (CDB) refer to the specific remote communication protocol guide.

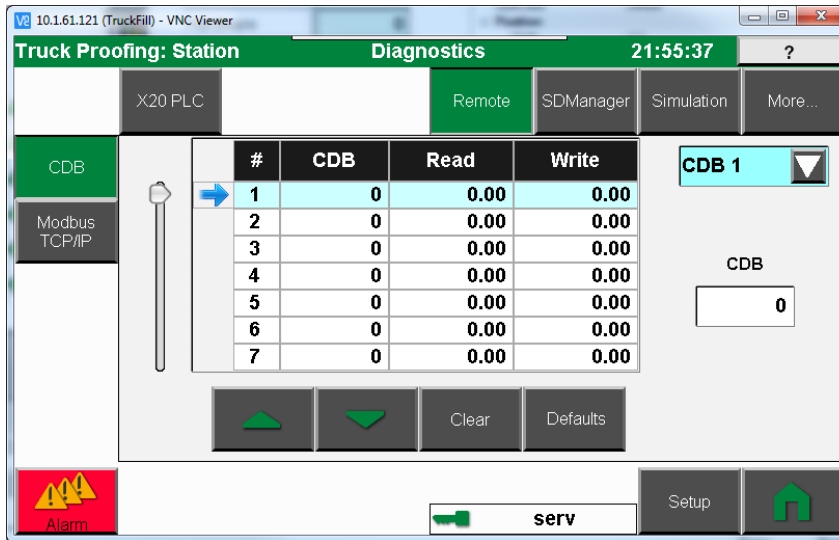


Figure 54: Diagnostics, Remote - CDB

Modbus TCP/IP

The Modbus TCP/IP screen will show the status of the Ethernet connection. A maximum of 5 connection sockets can be established simultaneously. It is suggested that once a connection is established, it not be closed. Some servers will close the socket with each transmission and this will greatly slow the data response of the system. It is also suggested that only (2) sockets be opened in order to leave the remaining sockets open for other client-server connections that may be needed.

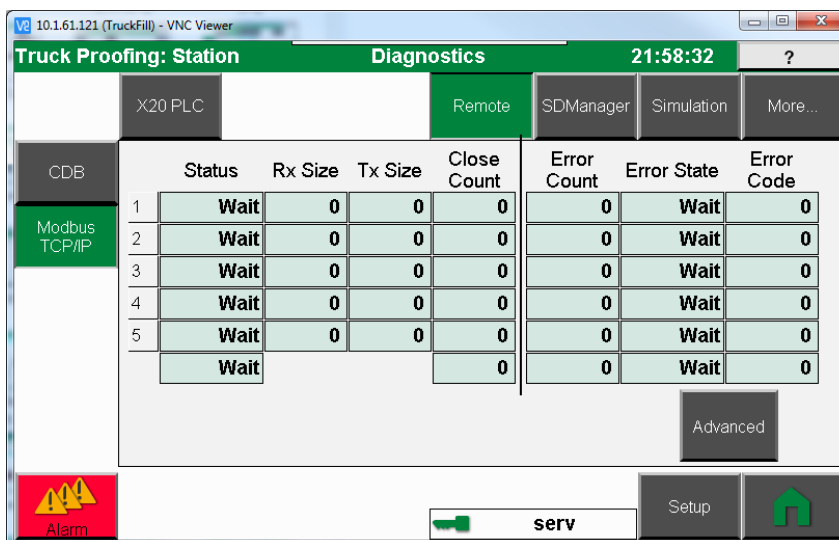


Figure 55: Diagnostics, Remote - Modbus TCP/IP

SDManager

The System Diagnostic Manager (SDManager) is a utility provided by the PLC Manufacturer. It is a series of web pages that provide system diagnostic information with regards to all aspects of the hardware. It is hosted within a Web Browser window on the HMI.

The SDManager can also be viewed from an external Web Browser located on a PC or remote system. To access the SDManager remotely connect the HMI system to a network where the remote browser is located. Verify the connection is valid by executing a 'PING' request using the HMI's network address. Once connected in the browser's URL path type (<http://<HMI Address>/sdm>) by example: (<http://10.1.61.121/sdm>).

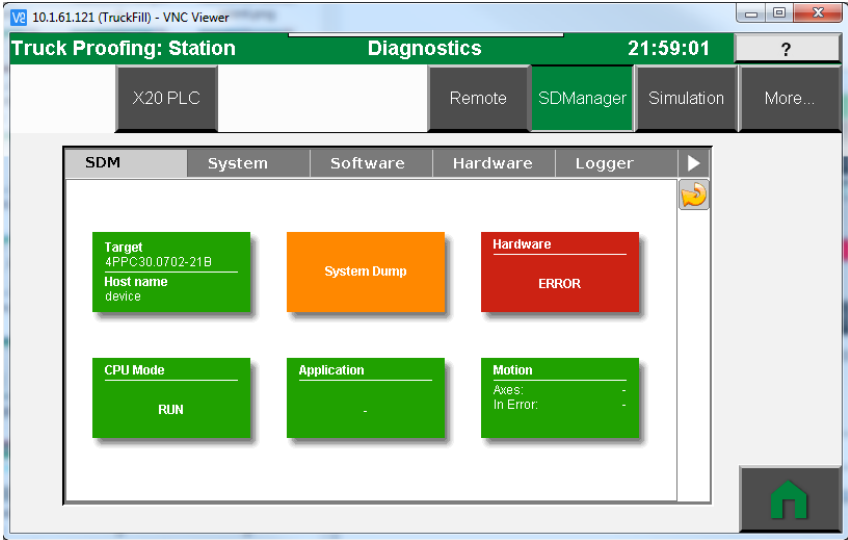


Figure 56: Diagnostics, SDManager

Simulation

The simulation tab will provide the ability to place the TruckFill system into a simulation mode. In this mode the system will behave as a fully operation system, but will not require the external PLC hardware be present. This mode is typically used by 3rd party developers. An integrator can receive a TruckFill HMI and place it in simulation. They can then develop their SCADA interface without the need for physical hardware. Once the final equipment is installed, the SCADA interface will then be done with little to no onsite development needed.

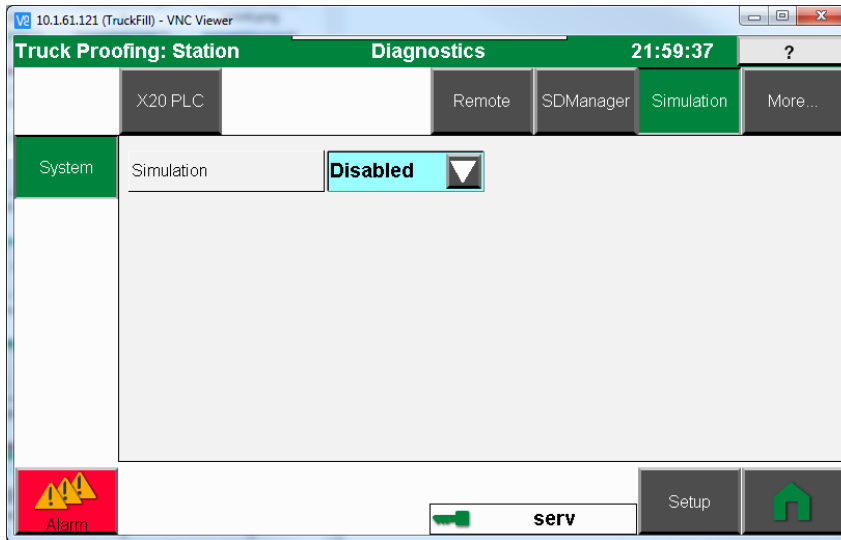


Figure 57: Diagnostics - Simulation

SECTION

7

7 Maintenance

Preventive Maintenance schedule 7-2
Preventive Maintenance Checklist: 7-2
Software Upgrades 7-2

Preventive Maintenance schedule

The TruckFill Proofing system contains several components that should be verified for proper operation every six months. Being a security system, the proper operation of the lockable gates is important for reliable and accurate operation of the system.

Preventive Maintenance Checklist:

Routine maintenance will ensure optimum operation and performance of the TruckFill system. We recommend the following maintenance schedule and tasks.

- Whenever you change materials
 - Check EMERGENCY STOP function (if equipped)

 - Test the operation of the gate arm through its full range of motion

- Monthly, or as often as needed
 - Inspect the gate lock devices for damage or wear

 - Inspect wiring from gate lock to control.

 - Inspect the installation

Check installed mounting hardware to make sure that the installation is secure.

- Yearly, or as often as needed
 - Clean the gate arm body

Software Upgrades

Upgrading the software on the TruckFill Proofing controller is accomplished by downloading the latest software version from Conair, copying the software to a USB stick, and rebooting the touch-screen controller.

To download the most up to date TruckFill Proofing software version, contact Conair service.

Contact Conair Parts 1 800 458 1960 From outside of the United States, call: 814 437 6861
--

SECTION

8

8 Troubleshooting

Before Beginning8-2
A Few Words of Caution8-2
How to Identify the Cause of a Problem8-2
Signaling Alarm Message8-2
Handling Alarm Messages8-3
Alarms8-4
Replacing Fuses8-8

Before Beginning

You can avoid most problems by following the recommended installation and maintenance procedures outlined in this User Guide. If you do have a problem, this section will help you determine what caused it and how to fix it.

Before you begin troubleshooting:

- Find the wiring diagrams and other schematics that were shipped with your equipment. These diagrams are the best reference for correcting a problem. The diagrams also will note any custom features, such as special wiring or control options, not covered in this user guide.
- Verify that you have all instructional materials related to the TruckFill Proofing system, its control systems and its components.

Additional details about troubleshooting and repairing specific components are in this manual.

A Few Words of Caution



WARNING: This machine should be adjusted and serviced only by qualified technical personnel who are familiar with the construction and operation of this type of equipment.



DANGER: Voltage Hazard.

Always disconnect and lock out the main power supply before opening the TruckFill electrical enclosure. Troubleshooting procedures that require access to the electrical enclosure while the power is on should be performed only by qualified electrical technicians who know how to use electrical testing equipment and understand the hazards involved.

Improper corrective actions can lead to hazardous conditions and should never be attempted to sustain production.

How to Identify the Cause of a Problem

To find the cause of an alarm, on each screen in the system the [Alarms] key appears in the lower left corner of the display. The color of this key will reflect the severity level of the most severe active alarm. Press the [Alarms] key to navigate to a screen where the alarm list will be displayed. The list will display all unacknowledged alarms. Alarms whose state has cleared will also appear in the list if they have not been acknowledged. Once acknowledged, the cleared alarms will be removed from the list. Active alarms will remain in the list.

The cause of the alarm and the time that it occurred will be displayed on the screen. The user can navigate the alarm list using the [Up] and [Down] keys. The [ACK] key when pressed, acts to acknowledge all of the alarms in the list.

Signaling Alarm Message

The operator knows when an alarm is occurring due a variety of means:

- The alarm beacon flashes if available.
- The <HOME> screen has an alarm indicator for each device which will turn on if that device is experiencing an alarm.
- The [Alarm] button face will change from a 'gray' color to indicate the severity of the alarm.
- When the [Alarm] button is pressed, the visualization will show a list of all alarms.



Handling Alarm Messages

1. Press the [Alarm] button to navigate to the 'Alarm List'.



2. Press the [Ack] button to acknowledge and clear any old alarms.

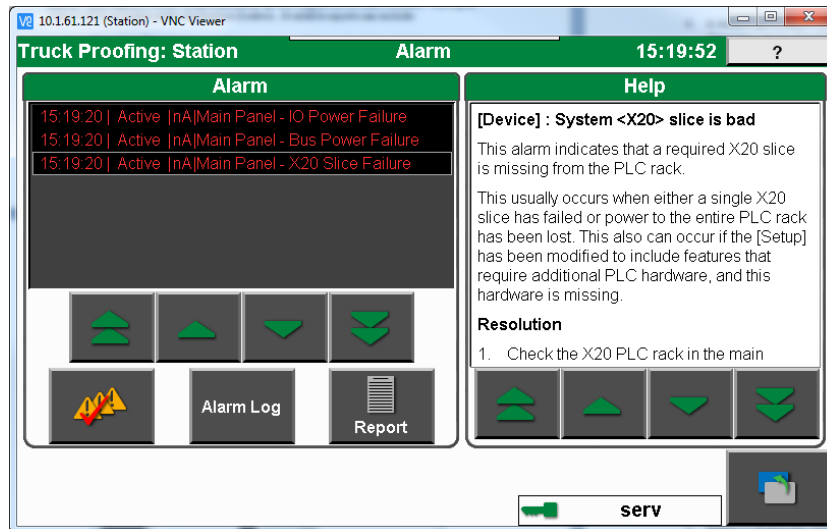


Figure 58: Troubleshooting - Alarm Handling

Alarms

The 'ALARM' key allows the operator to view, silence and acknowledge any alarm in the TruckFill Proofing system. The alarms screens include a 'Help' text area which provides further information on the alarm, including a description, cause, and resolution guidance.

Understanding alarm codes:

In front of some alarm messages you may see these designators:

- **Gate #** - along with the alarm text. Gate alarms are alarms specifically generated by an individual gate itself.
- **System** - along with the alarm text. System alarms are general alarms that are not related directly with a specific device or material. They may reference an issue with a specific system feature or function.
- **Main Panel** - along with the alarm text. Main Panel alarms are alarms specifically generated by an issue with the PLC hardware located in the primary PLC panel.

Table 1: Alarms - Alarm List

Device	Alarm	Description	Resolution
Panel Alarm	X20 Failure	A slice that is expected to be in the PLC rack is reported as missing or in a fault condition.	<p>Navigate to the <Setup> - <Diagnostic> - <X20PLC> - <X20PLC> screen. This screen display the slices in the rack and provide an indication of which slice is causing the fault.</p> <p>Inspect the physical PLC slice rack. Each slice has green 'r' indicator. This indicator should not be blinking.</p> <p>Check the IO rack to insure it is assembled correctly.</p>
Panel Alarm	Hardware Failed	The specific function of the card has an issue. A digital output could be failing. An analog input could be unstable or incorrectly wired.	<p>Navigate to the <Setup> - <Diagnostic> - <X20PLC> - <X20PLC> screen. This screen display the slices in the rack and provide an indication of which slice is causing the fault.</p> <p>Inspect the physical PLC slice rack. The slice may have an error indication shown.</p>

Device	Alarm	Description	Resolution
Panel Alarm	IO Power Failed	The power feeding the IO points is out of specification.	<p>Verify the power supply connections supplying power to the IO voltage terminations on the power slice.</p> <p>Check the fuses used for the IO power.</p> <p>Verify the IO power voltage is +24VDC.</p>
Panel Alarm	Bus Power Failed	The power feeding the slice control electronics is out of specification.	<p>Verify the power supply connections supplying power to the BUS voltage terminations on the power slices.</p> <p>Check the fuses used for the BUS power.</p>
System Alarm	Disk at Capacity	The destination drive selected for report output is at capacity.	<p>If the drive is a USB thumb-drive, replace the thumb-drive.</p> <p>If the drive is the internal hard-drive, connect an FTP client application and delete/remove any unnecessary files.</p> <p>Use the <File Manager> screen to delete unnecessary files.</p>
System Alarm	SQL Server Error	The connection to the remote SQL server is not established.	<p>Verify the SQL Server can ping the touch-panel.</p> <p>Verify the user-name and password of the TruckFill system matches the configuration used in the server.</p> <p>Verify the TCPIP configuration of the SQL Server and any PC based firewalls to allow traffic flow.</p>
System Alarm	Communication Error	The TruckFill system is attempting to connect with a remote system and is experiencing an issue.	<p>Verify the remote system resides on the same network segment as the TruckFill and there is not an IP conflict.</p> <p>Verify each side of the connection is configured correctly.</p>

Device	Alarm	Description	Resolution
System Alarm	SMTP Error	Sending of an email to the configured SMTP provider has failed.	<p>Verify the configuration of the SMTP email feature.</p> <p>Verify the settings on the SMTP provider side. Specifically the security aspect of the SMTP provider.</p>
System Alarm	Maintenance Alarm	The system has reached the limit where basic maintenance tasks should be performed.	Review the setup, configuration, and operation of the system is performing at an acceptable level.
System Alarm	IO Map Invalid	An IO point related to the System functions is mapped to an invalid point in the IO rack.	<p>Verify the status of the PLC rack.</p> <p>Verify the assignment of the IO points are valid locations within the PLC rack available IO points.</p>
Gate # Alarm	Hardware Failed	The specific function of the card has an issue. A digital output could be failing. An analog input could be unstable or incorrectly wired.	<p>Navigate to the <Setup> - <Diagnostic> - <X20PLC> - <X20PLC> screen. This screen display the slices in the rack and provide an indication of which slice is causing the fault.</p> <p>Inspect the physical PLC slice rack. The slice may have an error indication shown.</p>
Gate # Alarm	Open Too Long	A locking gate arm has been open beyond the allowed maximum time.	<p>Verify the gate arm is actually open.</p> <p>If the gate is closed, there could be an issue with the gate closed sensor.</p> <p>Adjust the maximum time to allow the gate to be open longer.</p> <p>Set a value of 0 to disable the alarm.</p>

Device	Alarm	Description	Resolution
Gate # Alarm	Cap Not Installed	The dust cover / end cap is not in place and the gate arm is in the closed position.	<p>Unlock the gate arm, return the end cap to the fill tube, return and lock the gate arm.</p> <p>The proximity sensor detecting the placement of the end cap is having an issue.</p>
Gate # Alarm	IO Map Invalid	An IO point related to the gate device functions is mapped to an invalid point in the IO rack.	<p>Verify the status of the PLC rack.</p> <p>Verify the assignment of the IO points are valid locations within the PLC rack available IO points.</p>
Gate # Alarm	Locked Gate Arm Open	The gate arm is in the open position, but the gate is locked.	<p>The gate lock is in the locked state, but the gate arm is still reported as being open.</p> <p>Close the gate arm.</p> <p>If the gate arm is in the closed position an issue could be with the gate close sensor.</p>

Replacing Fuses



WARNING: Improper installation, operation, or servicing may result in equipment damage or personal injury.



This equipment should be installed, adjusted, and serviced by qualified technical personnel who are familiar with the construction, operation, and potential hazards of this type of machine.

All wiring, disconnects, and fuses should be installed by qualified electrical technicians in accordance with electrical codes in your region. Always maintain a safe ground. Do not operate the equipment at power levels other than what is specified on the machine serial tag and data plate.

This procedure covers the factory-installed fuses inside the TruckFill electrical control panel. If you have installed an electrical disconnect or emergency stop switch, additional fuses and/or breakers may have been used elsewhere in the main power circuit.

Located inside the TruckFill control panel are fuses for the AC line, FU1, and the power supply output side, FU2 and FU3.

To replace a blown fuse:

1. **Disconnect and lockout the main power.**
2. **Open the electrical enclosure door.** Turn the screws on the front panel counterclockwise to open.
3. **Replace the fuse.** The fuses are located inside the control cabinet and are labeled and identified on the subpanel and the electrical print.
4. **Close the electrical enclosure and restart the unit.**



9Appendix 1

We're here to Help

Conair has made the largest investment in customer support in the plastics industry. Our service experts are available to help with any problem you might have installing and operating your equipment. Your Conair sales representative also can help analyze the nature of your problem, assuring that it did not result from misapplication or improper use.

Additional manuals and prints for your Conair equipment may be ordered through the Customer Service or Parts Department for a nominal fee. Most manuals can be downloaded free of charge from the product section of the Conair website. www.conairgroup.com

How to Contact Customer Service

To contact Customer Service personnel, call:



Note: Normal operating hours are 8:00 am - 5:00 pm. After hours emergency service is available at the same phone number.

From outside the United States, call: 814-437-6861

You can commission Conair service personnel to provide on-site service by contacting the Customer Service Department. Standard rates include an on-site hourly rate, with a one-day minimum plus expenses.

Before You Call...

If you do have a problem, please complete the following checklist before calling Conair:

- Make sure you have all model, control type from the serial tag, and parts list numbers for your particular equipment. Service personnel will need this information to assist you.
- Make sure power is supplied to the equipment.
- Make sure that all connectors and wires within and between control systems and related components have been installed correctly.
- Check the troubleshooting guide of this manual for a solution.
- Thoroughly examine the instruction manual(s) for associated equipment, especially controls. Each manual may have its own troubleshooting guide to help you.
- Check that the equipment has been operated as described in this manual.
- Check accompanying schematic drawings for information on special considerations.

Equipment Guarantee

Conair guarantees the machinery and equipment on this order, for a period as defined in the quotation from date of shipment, against defects in material and workmanship under the normal use and service for which it was recommended (except for parts that are typically replaced after normal usage, such as filters, liner plates, etc.). Conair's guarantee is limited to replacing, at our option, the part or parts determined by us to be defective after examination. The customer assumes the cost of transportation of the part or parts to and from the factory.

Performance Warranty

Conair warrants that this equipment will perform at or above the ratings stated in specific quotations covering the equipment or as detailed in engineering specifications, provided the equipment is applied, installed, operated and maintained in the recommended manner as outlined in our quotation or specifications.

Should performance not meet warranted levels, Conair at its discretion will exercise one of the following options:

- Inspect the equipment and perform alterations or adjustments to satisfy performance claims. (Charges for such inspections and corrections will be waived unless failure to meet warranty is due to misapplication, improper installation, poor maintenance practices or improper operation.)
- Replace the original equipment with other Conair equipment that will meet original performance claims at no extra cost to the customer.
- Refund the invoiced cost to the customer. Credit is subject to prior notice by the customer at which time a Return Goods Authorization Number (RGA) will be issued by Conair's Service Department. Returned equipment must be well crated and in proper operating condition, including all parts. Returns must be prepaid. Purchaser must notify Conair in writing of any claim and provide a customer receipt and other evidence that a claim is being made.

Warranty Limitations

Except for the Equipment Guarantee and Performance Warranty stated above, Conair disclaims all other warranties with respect to the equipment, express or implied, arising by operation of law, course of dealing, usage of trade or otherwise, including but not limited to the implied warranties of merchantability and fitness for a particular purpose.