

# Tower Dryer PLC Watchdog

## Operation Manual

PNEG-2134

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**All information, illustrations, photos and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.**

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### Safety Guidelines

Safety guidelines are general-to-specific safety rules that must be followed at all times. This manual is written to help you understand safe operating procedures and problems that can be encountered by the operator and other personnel when using this equipment. Save these safety guidelines for future reference.

As owner or operator, you are responsible for understanding the requirements, hazards, and precautions that exist and to inform others as required. Unqualified persons must stay out of the work area at all times.

Alterations must not be made to the equipment. Alterations can produce dangerous situations resulting in **SERIOUS INJURY** or **DEATH**.

This equipment must be installed in accordance with the current installation codes and applicable regulations, which must be carefully followed in all cases. Authorities having jurisdiction must be consulted before installations are made.

When necessary, you must consider the installation location relative to electrical, fuel and water utilities.

Personnel operating or working around equipment must read this manual. This manual must be delivered with equipment to its owner. Failure to read this manual and its safety instructions is a misuse of the equipment.

**ST-0001-3**

## Cautionary Symbols Definitions

Cautionary symbols appear in this manual and on product decals. The symbols alert the user of potential safety hazards, prohibited activities and mandatory actions. To help you recognize this information, we use the symbols that are defined below.



This symbol indicates an imminently hazardous situation which, if not avoided, **will result in serious injury or death.**



This symbol indicates a potentially hazardous situation which, if not avoided, **can result in serious injury or death.**



This symbol indicates a potentially hazardous situation which, if not avoided, **can result in minor or moderate injury.**



This symbol is used to address practices not related to personal injury.



This symbol indicates a general hazard.



This symbol indicates a prohibited activity.



This symbol indicates a mandatory action.

ST-0005-2

## Safety Cautions

### Use Personal Protective Equipment

- Use appropriate personal protective equipment:

**Eye Protection**



**Respiratory Protection**



**Foot Protection**



**Hearing Protection**



**Head Protection**



**Fall Protection**



**Hand Protection**



- Wear clothing appropriate to the job.
- Remove all jewelry.
- Tie long hair up and back.

ST-0004-1

### Follow Safety Instructions

- **Warning:** If the information in the manual is not followed exactly, a fire or explosion can result, causing property damage, personal injury or loss of life.
- Carefully read all safety messages in this manual and safety signs on your machine. Keep signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from the manufacturer.
- Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.
- If you do not understand any part of this manual or need assistance, contact your dealer.
- Retain these instructions for future reference.



ST-0025-3

### Maintain Equipment and Work Area

- Understand service procedures before doing work.
- Keep area clean and dry.
- Do not service equipment while it is operating. Disconnect and lock-out power and fuel supply before entering equipment or before performing maintenance.
- Keep your equipment in proper working condition. Replace worn or broken parts immediately.
- Depressurize the fuel train before disassembling for service.
- Allow the fan to operate for 20 minutes with the burner off to purge products of combustion and to cool the components before entering.
- Check regularly for any developing gas plumbing leaks. Do not operate the dryer if any gas leak is detected. Shut down and repair before further operation.



ST-0030-2

### Exercise Caution When Drying Flammable Grains

- Be aware that some grains are highly flammable including, but not limited to, rapeseed, canola, linseed, sunflower and milo.
- All grain and seed must be whole (minimal cracking or crushing), clean, and dust free before drying.
- Avoid dust and chaff from being drawn into the fan and heater.
- To reduce risk of fire, keep the fan, heater, drying plenum, and ducts clean at all times.
- In the event of a fire (or suspected fire):
  1. Shut down the entire dryer.
  2. Turn off the fuel at the tank or supply valve.
  3. Shut off and lock electrical power.
  4. Evacuate the area.
  5. Call the fire department.



ST-0032-1

## 1. Safety

### Handle and Use Equipment Properly

- Equipment is intended for the use of grain drying only. Any other use is a misuse of this equipment.
- The operating instructions in this manual pertain to the common cereal grains as indicated. When drying any other grain, contact GSI for additional recommendations.
- On LP fired units, set pressure regulator to avoid excessive gas pressure applied to the burner during ignition and operation. Do not exceed maximum recommended drying temperatures.
- Equipment has sharp edges that may cause serious injury. To avoid injury, handle sharp edges with caution and use proper protective clothing and equipment at all times.
- All guards must be in place before and during operation. Images of guards removed in this manual are for illustration purposes only.
- Use caution when working around high-speed fans, gas burners, augers and auxiliary conveyors which can start automatically.
- Keep hands, feet, and clothing away from moving parts.
- Do not bypass any safety device or interlock.
- Do not enter the dryer/bin while it is operating.
- Do not operate in an area where combustible material will be drawn into the dryer.



ST-0029-2

### Stay Clear of Hoisted Equipment

- Always use proper lifting or hoisting equipment when assembling or disassembling equipment.
- Do not walk or stand under hoisted equipment.
- Always use sturdy and stable supports when needed for installation. Not following these safety precautions creates the risk of falling equipment, which can crush personnel and cause serious injury or death.



ST-0047-1

### Confined Space Hazards and Entry Procedures

- Note that the interior of this equipment is considered a confined space. Maintenance of this equipment can require access to the confined space.
- Access doors must be shut and locked except when access is required.
- Doors giving access to dangerous equipment must be safety interlocked.
- The following entry procedures must be followed:
  - Be aware of all possible hazards present inside the confined space and wear personal protective equipment (PPE) as needed.
  - Complete a permit to work and follow all permit required confined space entry procedures defined by the site manager.
  - Make sure that the area has been purged of any hazardous products or gases. Check the atmosphere for harmful gases or vapors with a suitable gas analyzer and make sure levels are safe before entering.
  - Do not smoke or use naked flames.
  - Lock out and tag out power supplies and fuel supplies to all equipment.
  - Do not work alone. Work in teams of at least three so that help is immediately available in the event of an emergency.
  - Confirm that all personnel have safely exited the equipment and tools have been recovered once work is complete.



ST-0055-1

### For Your Safety

- If you smell gas:
  - Do not try to light any appliance.
  - Extinguish any open flames.
  - Do not touch any electrical switch.
  - Immediately call your gas supplier. Follow the gas supplier's instructions.
  - If you cannot reach your gas supplier, call the fire department.
- The use and storage of gasoline and other flammable vapors and liquids in open containers in the vicinity of this appliance is hazardous.
- Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment. Installation and service must be performed by a qualified installer, service agency or the gas supplier.



ST-0024-1



## PLC Watchdog Connection Tips

1. The system works best if the PanelView is set for a static IP from your LAN and you have a static IP assigned by your internet provider (ISP).
2. Ideally, someone familiar with network setup should configure the addresses in the PanelView, router, modem, etc.

**NOTE:** *The IP address of the PanelView should not be altered. If altered, it can cause connection problems with the rest of the dryer.*

3. If you plan to access the PanelView from the WAN (outside your LAN), certain ports need to be forwarded in your router. The ports that need to be forwarded to the PanelView's IP address is: 5900.
  - a. If accessing the PanelView via router, remember to enter the gateway address of the router into the IP setup of the PanelView.
4. Possible Connection Errors
  - a. Errors stating "Invalid Credentials" or the like often mean that there is a connection password set in the PanelView. If this system was purchased as a factory option on a dryer, the connection password will be the last four (4) digits of the order number. Refer to the PV+6 VNC Server Setup instructions [on Page 12](#) for more information on configuring security.
  - b. Errors such as "this port is blocked" or "could not connect to server" or "the target device actively refused the connection" can mean that the VNC Server is not turned ON in the PanelView. Refer to the PV+6 VNC Server Setup instructions [on Page 12](#) for more information.

### 3. PanelView Server Setup Instructions

## PanelView Plus 6 VNC Server Setup

1. Press the “Dryer Setup” on the Dryer Control screen. (See Figure 3A.)

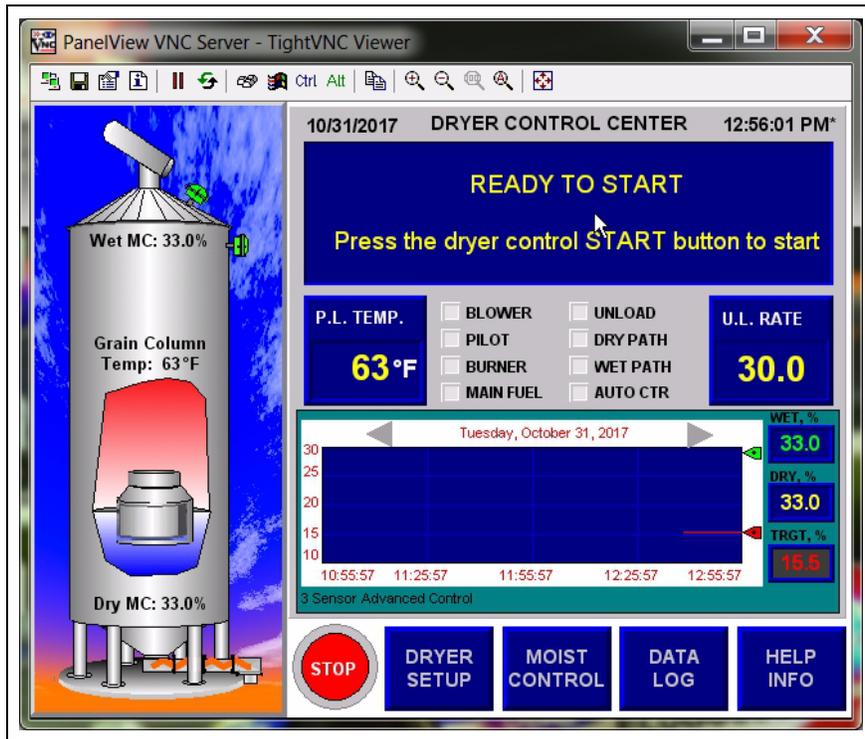


Figure 3A

2. Press the “Login with Your User name” on the default screen to access other options. (See Figure 3B.)

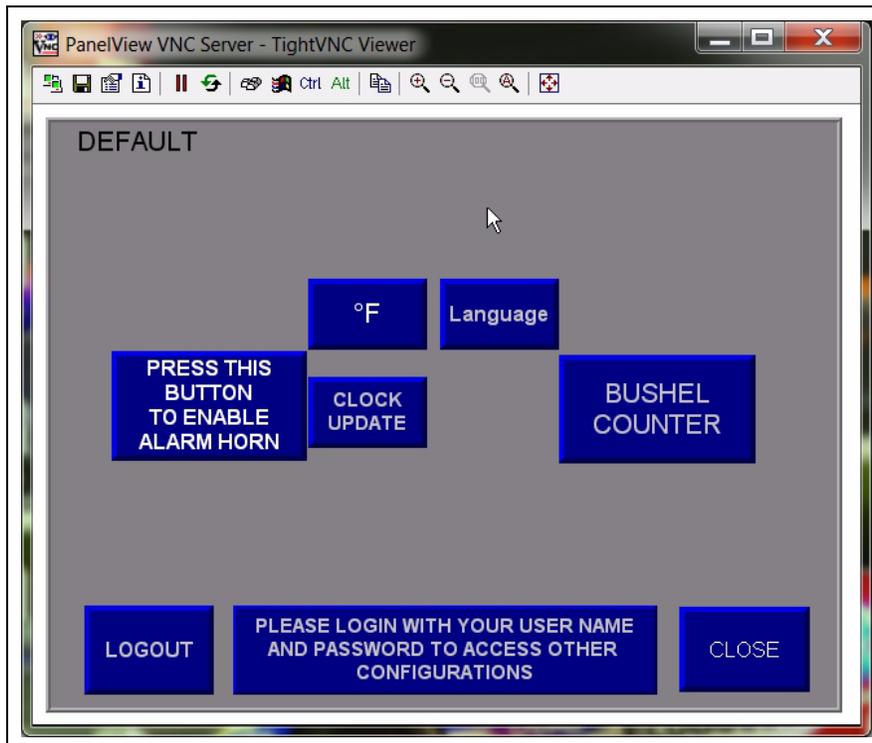


Figure 3B

3. The login window appears as shown in *Figure 3C*.

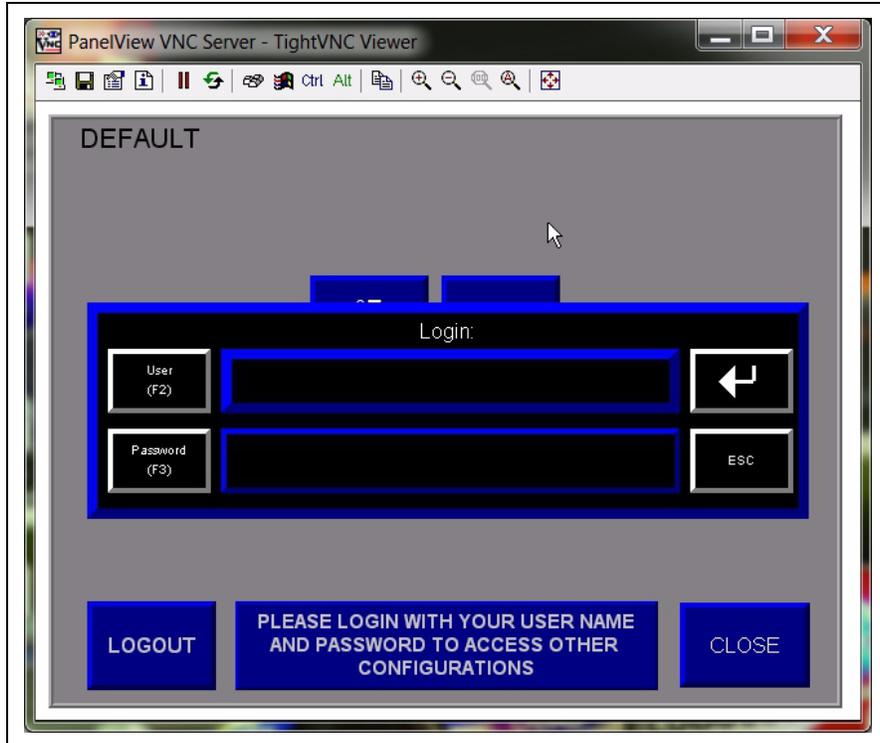


Figure 3C

4. Enter the User name as "admin" and the Password and then press the enter button. (See *Figure 3D*.)

**NOTE:** This "Password" was 1004.

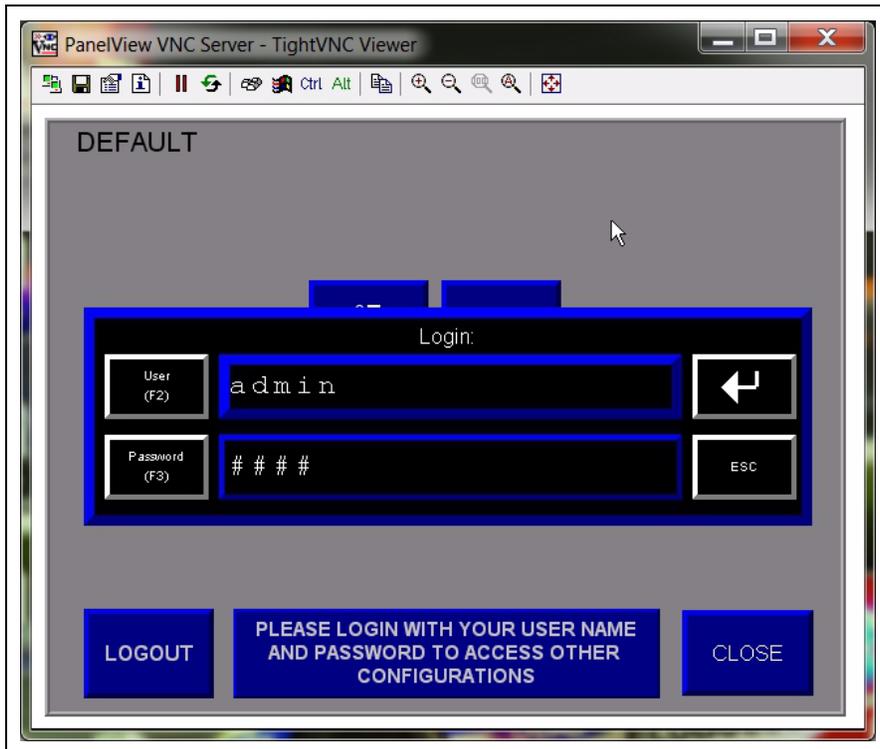


Figure 3D

### 3. PanelView Server Setup Instructions

5. The Admin screen is displayed with more options. Press the “Shut OIU Down” button.  
(See Figures 3E and 3F.)

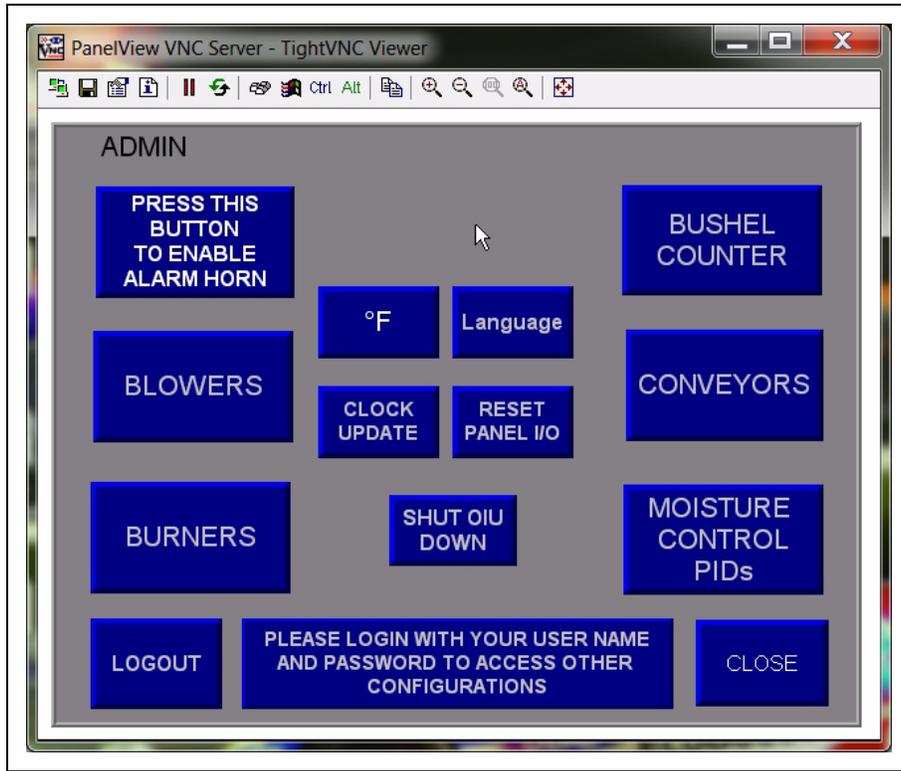


Figure 3E

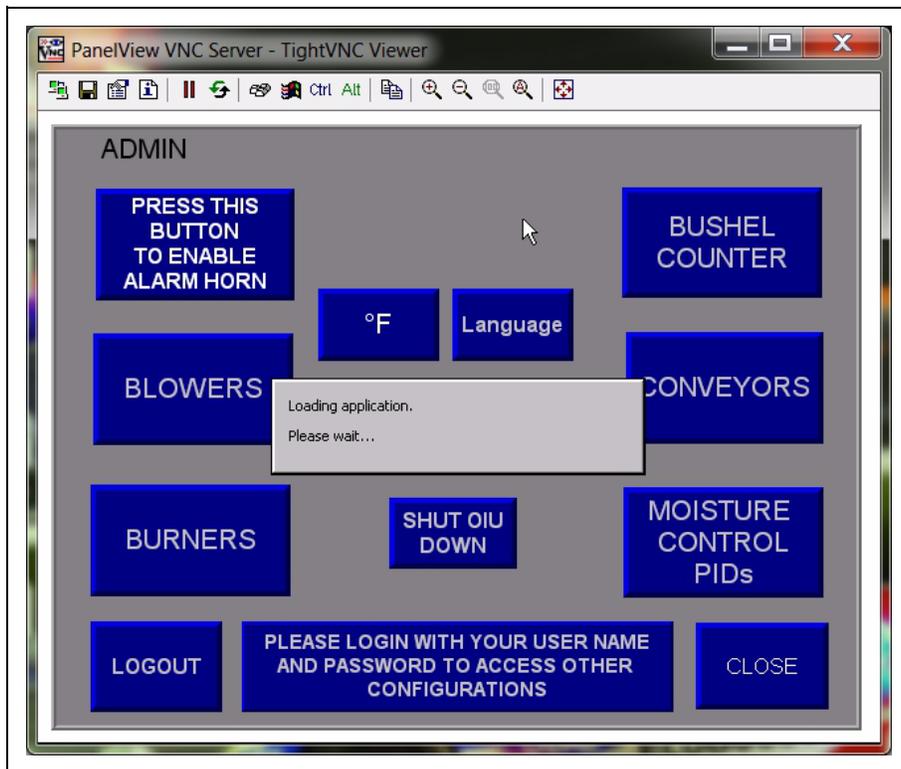


Figure 3F

# 4. IP and DNS Setup Instructions

**NOTE:** Follow *Steps 1 and 2* in Chapter 3 on Page 12 to get started with the below instructions.

- 1. Select Terminal Settings and press enter. (See Figure 4A.)

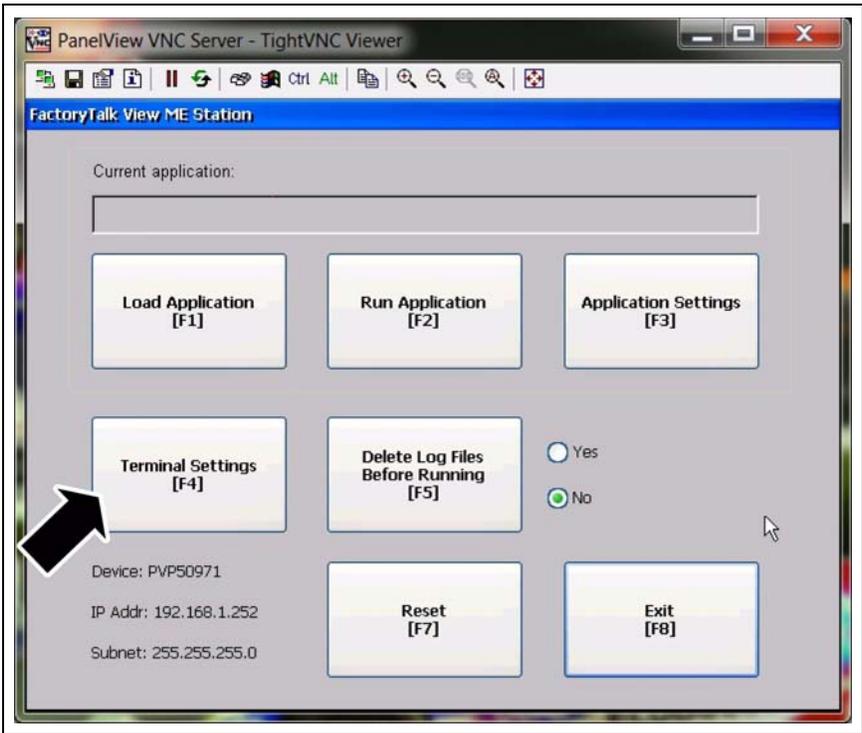


Figure 4A

- 2. Select Networks and Communications and press Enter. (See Figure 4B.)

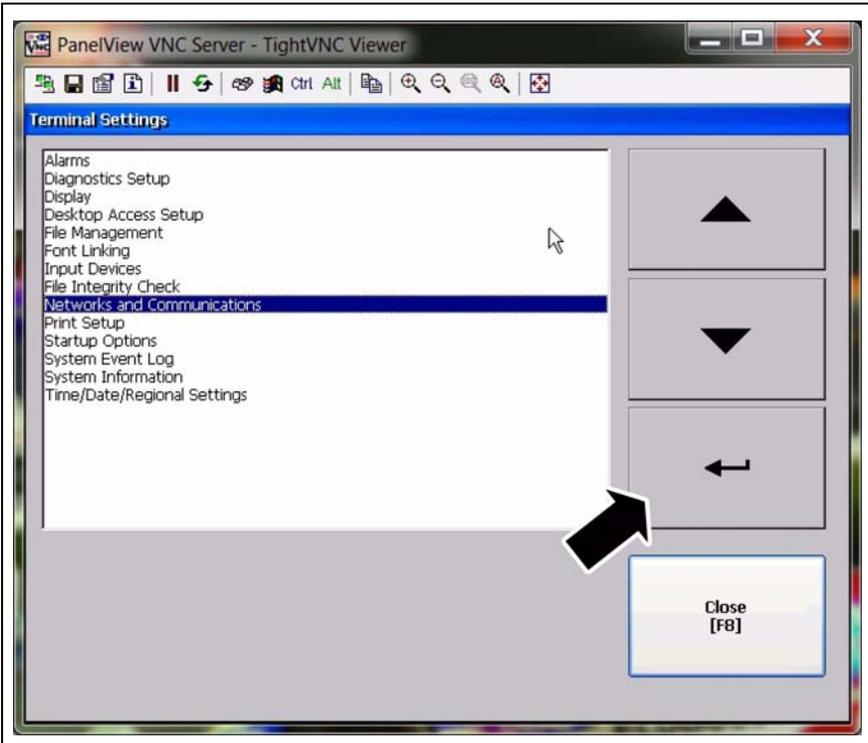


Figure 4B

## 4. IP and DNS Setup Instructions

3. Select Network Connections and press Enter. (See Figure 4C.)

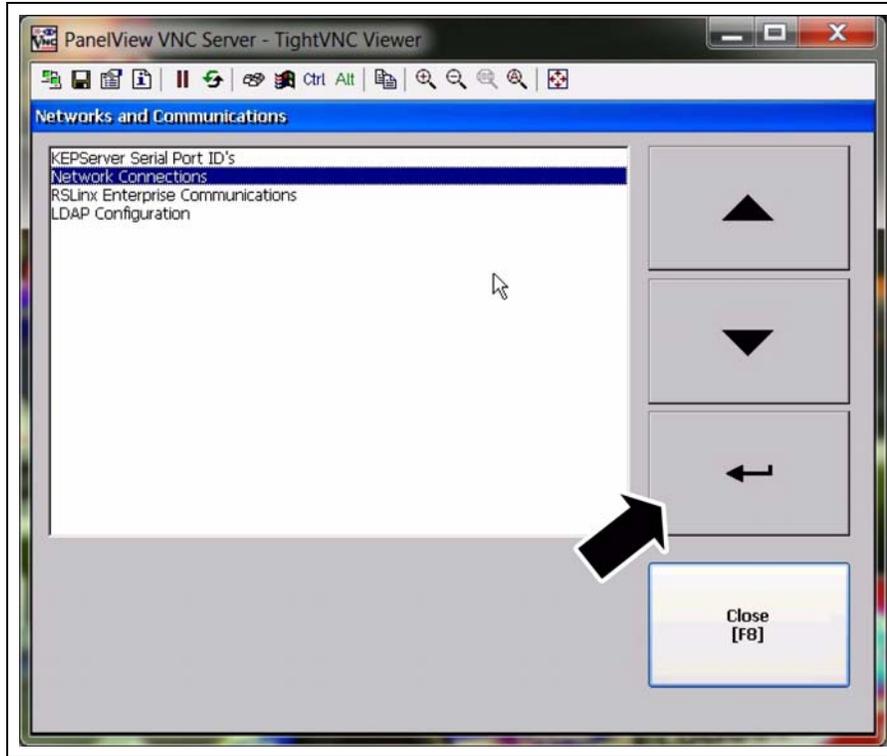


Figure 4C

4. Select Network Adaptors and press Enter. You now have buttons to change the IP or DNS addresses for the PanelView. (See Figure 4D.)

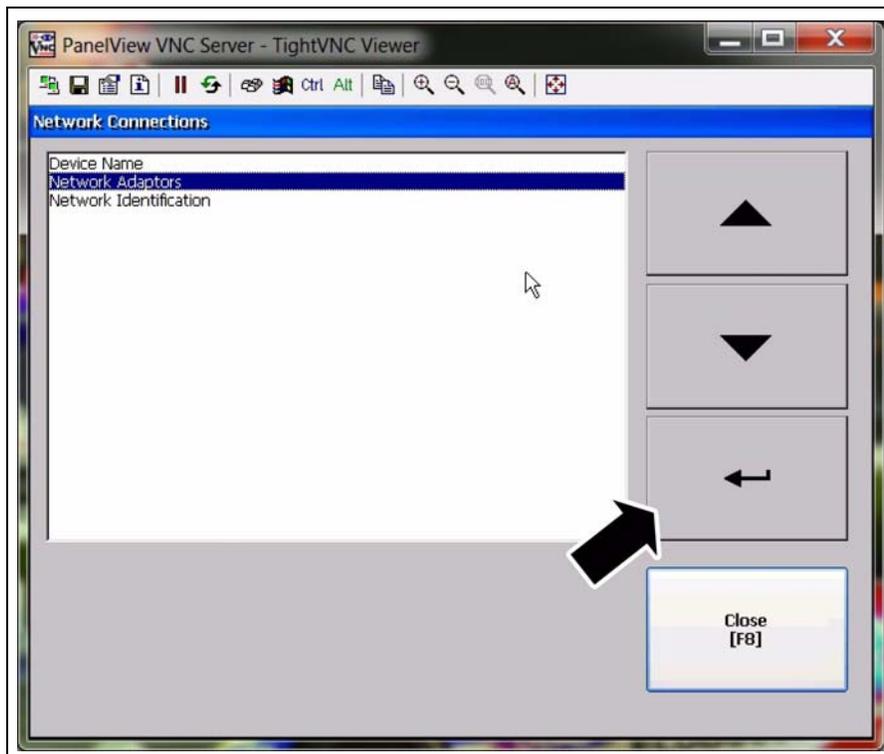


Figure 4D

## 4. IP and DNS Setup Instructions

5. Select IP address to modify the IP or Gateway address of the PanelView. (See Figure 4E.)

**NOTE:**

- a. We do not recommend changing the IP address of the PanelView as that can cause connectivity issues with the dryer.
- b. The gateway address needs to match the address of your router or cell modem.

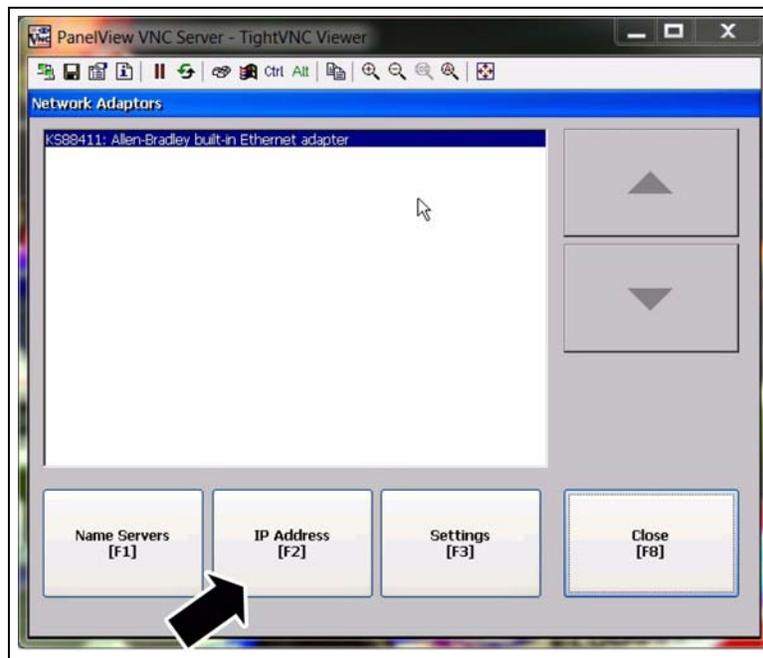


Figure 4E

6. IP addresses will typically be set as seen below. When finished, select Cancel to discard any changes or Enter to save the changes. (See Figure 4F.)

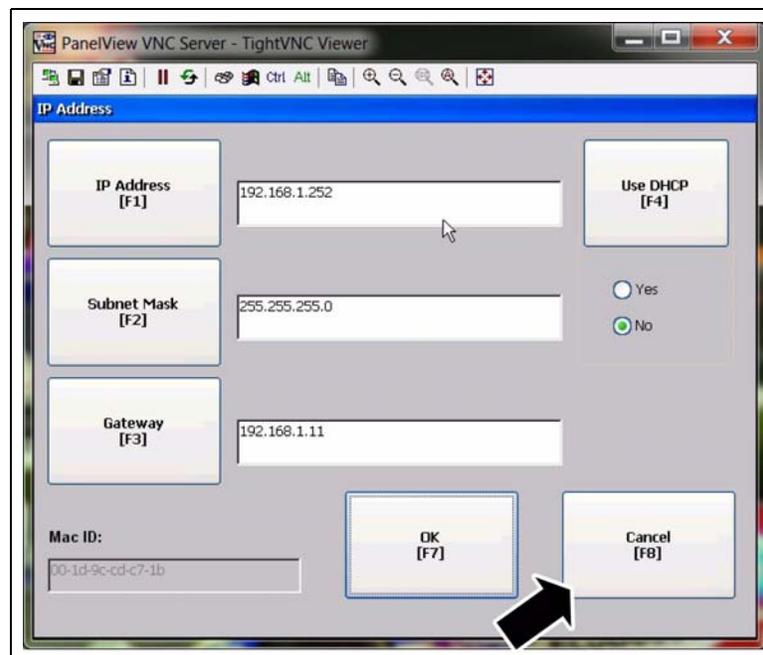


Figure 4F

## 4. IP and DNS Setup Instructions

7. You will then see the screen below. Press Name Servers to modify the DNS settings.  
(See Figure 4G.)

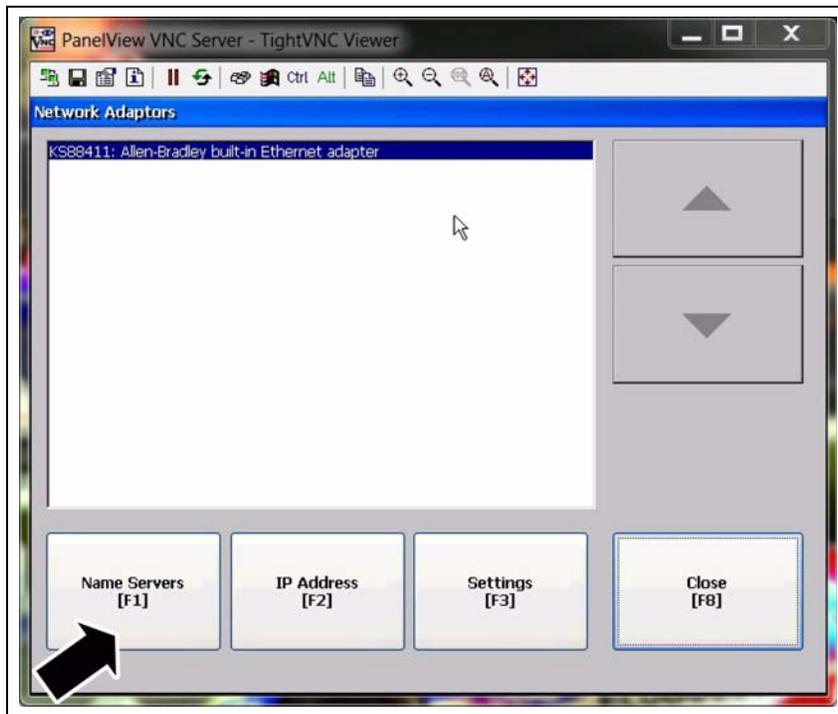


Figure 4G

8. Typical DNS settings using Google's DNS servers are seen below. Press Primary DNS or Secondary DNS to make changes. (See Figures 4H and 4I.)

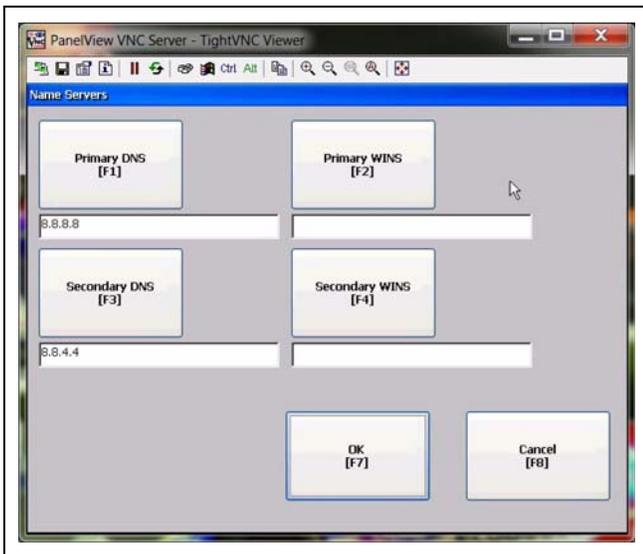


Figure 4H

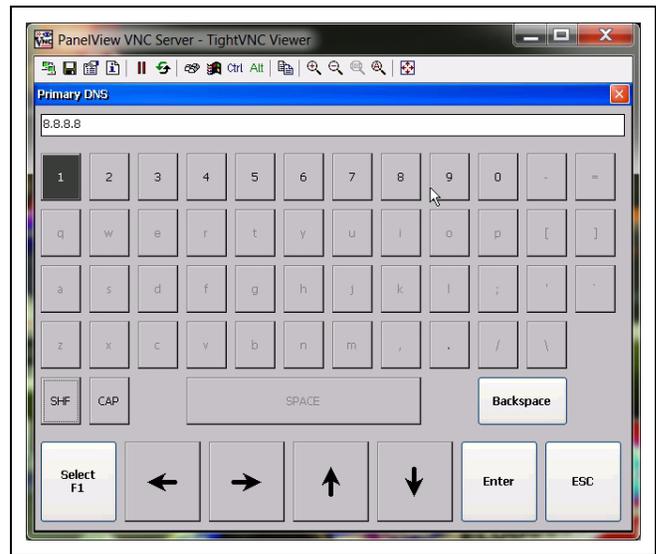


Figure 4I

## 4. IP and DNS Setup Instructions

9. Press OK to be taken back to the screen below. Continue to cancel out to get to the FactoryTalk menu. (See Figure 4J.)

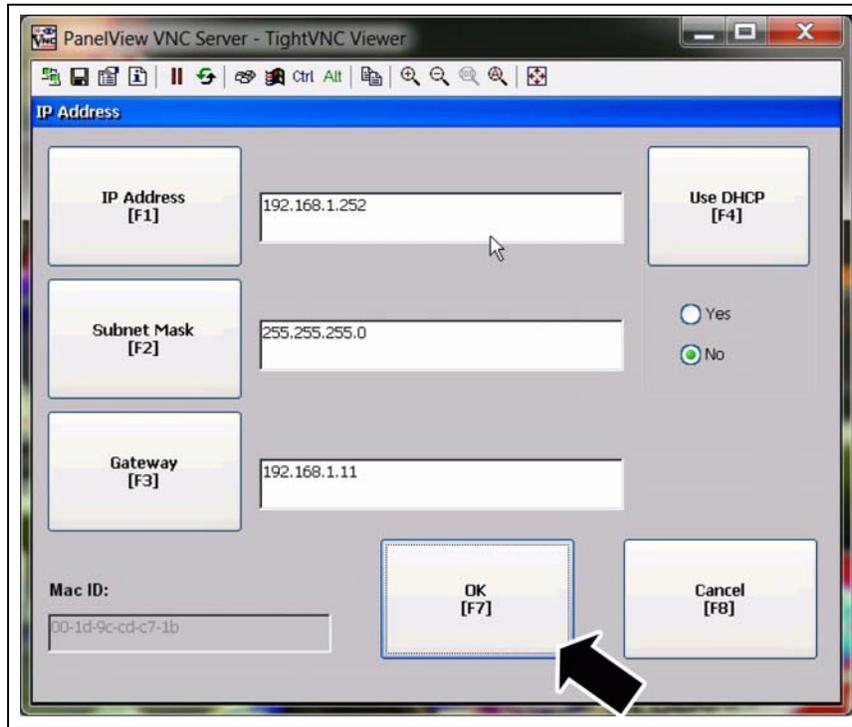


Figure 4J

10. Restart terminal for settings to take effect.

## 5. Watchdog Messaging Email Server Setup

**NOTE:** These instructions assume that the HMI is already accessible from the WAN either through a cellular modem or through a properly configured router on the customer's LAN.

1. Navigate to the Message Setup screen by going through the Help/Info, then Watchdog Messaging. (See Figure 5A.)

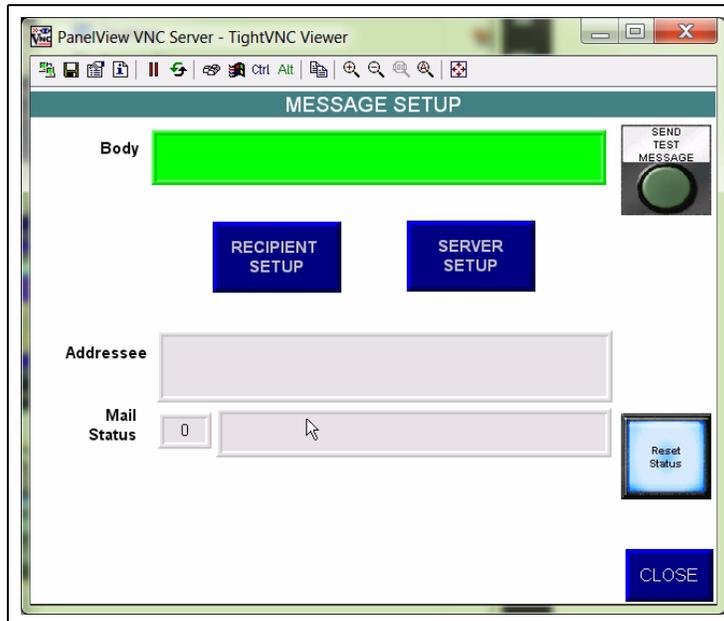


Figure 5A

2. Select Server Setup to get to the SMTP Server Configuration screen as shown in Figure 5B.

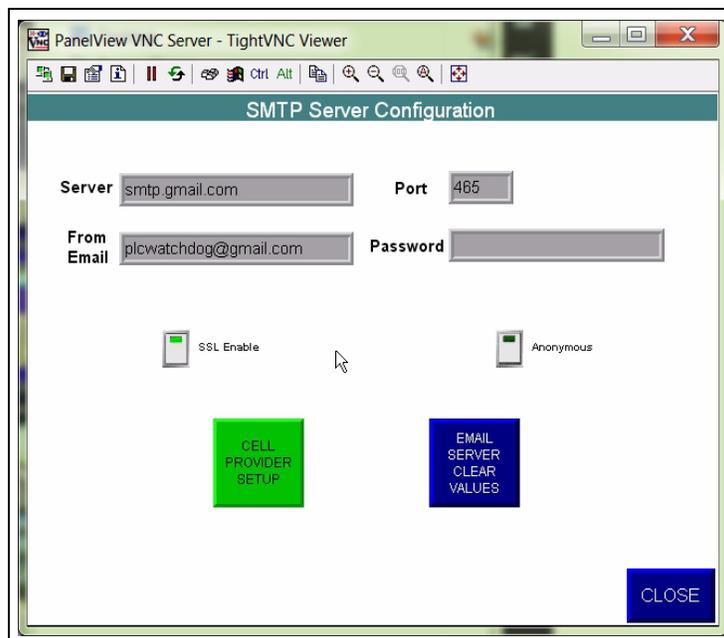


Figure 5B

**NOTE:** Watchdog has been tested with GMAIL email service. The correct server address and port for GMAIL are shown above. The user will need to use a GMAIL account that they have administrative rights to.

## 5. Watchdog Messaging Email Server Setup

3. Sending a test message. (See Figure 5C.)

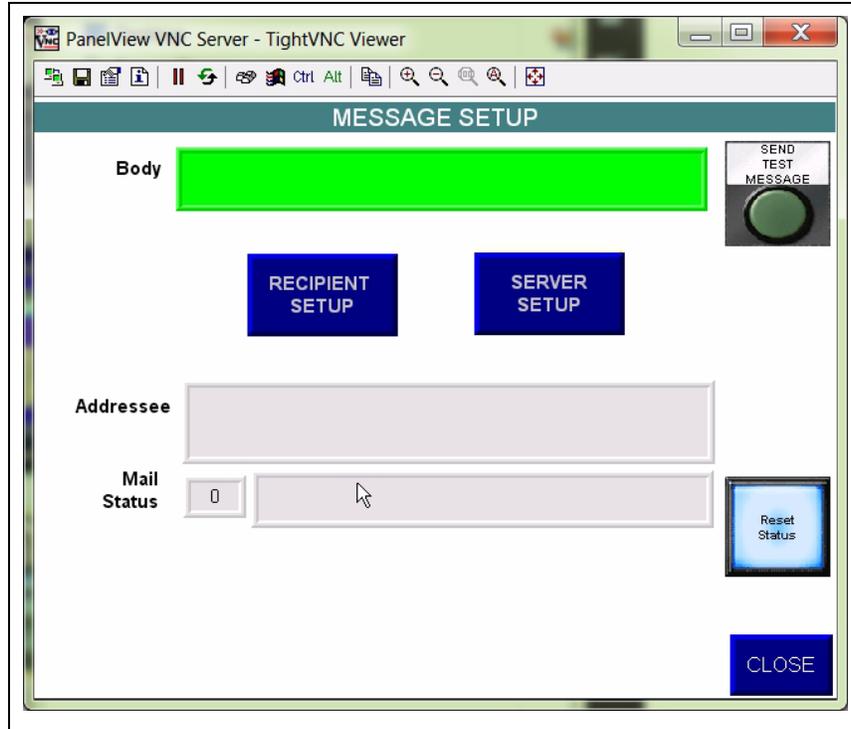


Figure 5C

4. From the Message Setup screen, touch anywhere in the green box to open the keyboard. Then type your test message and press the enter key. (See Figure 5D.)

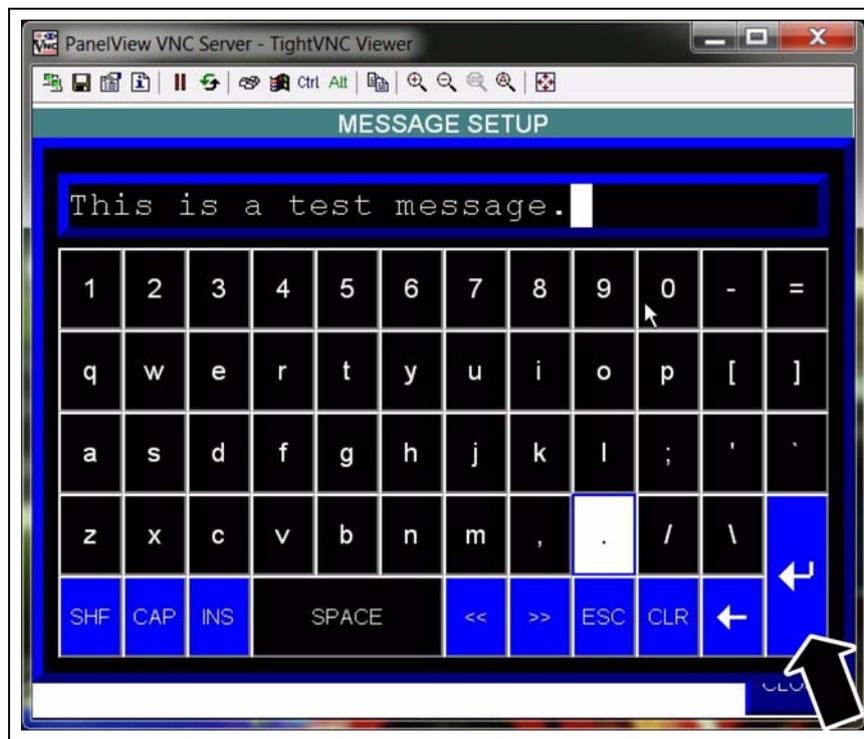


Figure 5D

## 5. Watchdog Messaging Email Server Setup

5. It should now look like this. Press the “Send Test Message” button and hold it for 1-2 seconds and the message should send. (See Figure 5E.)

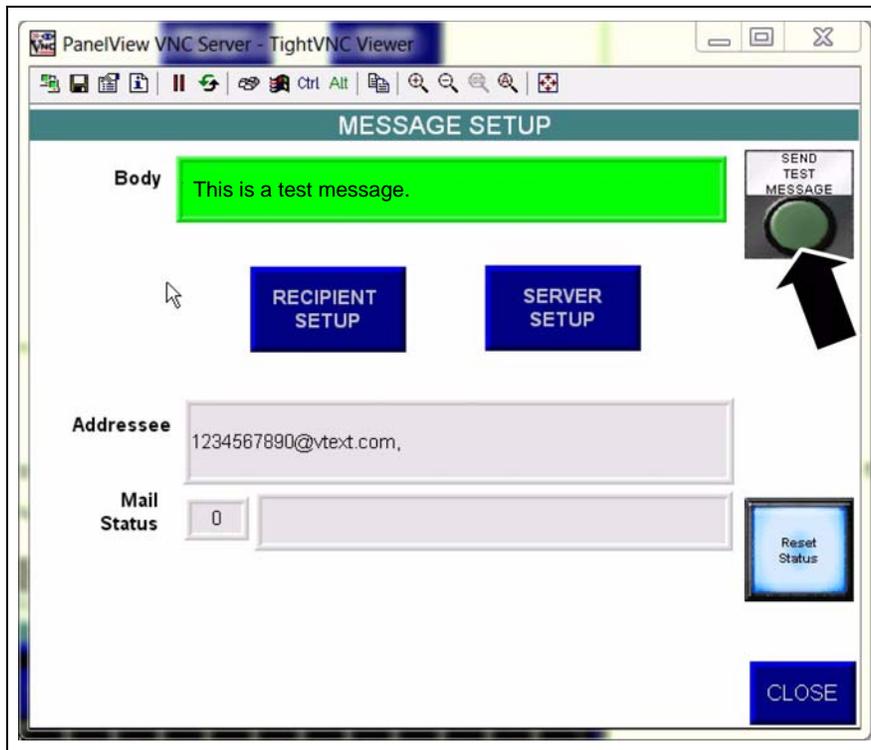


Figure 5E

6. Is successful, you should have the message below. (See Figure 5F.)

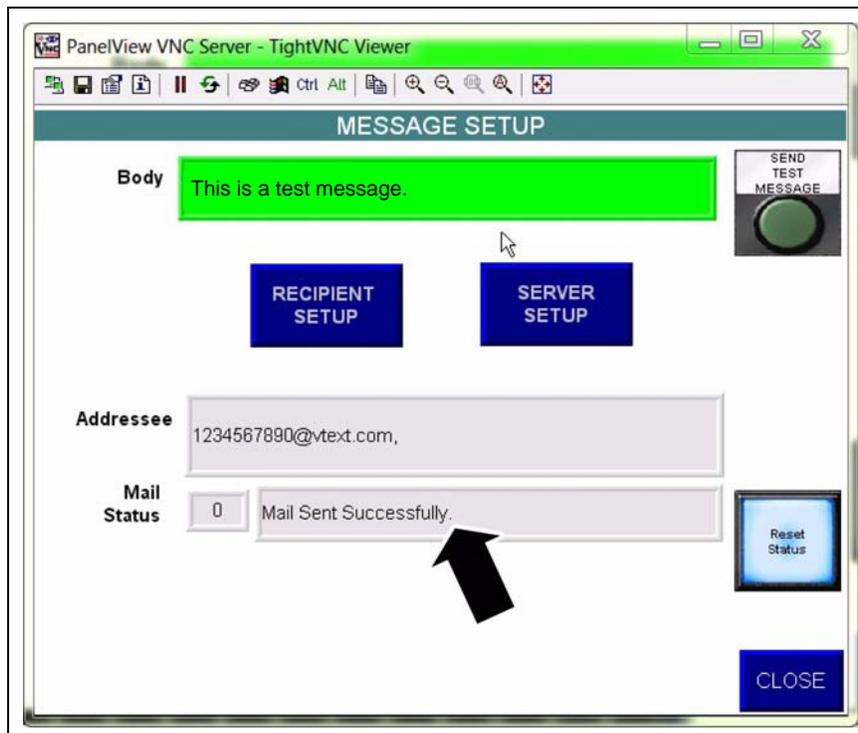


Figure 5F

## Common Error Messages and Causes

**NOTE:** The cause of the error is displayed in the “Body” field. This text is for illustrative purposes only and will not be displayed during normal operation.

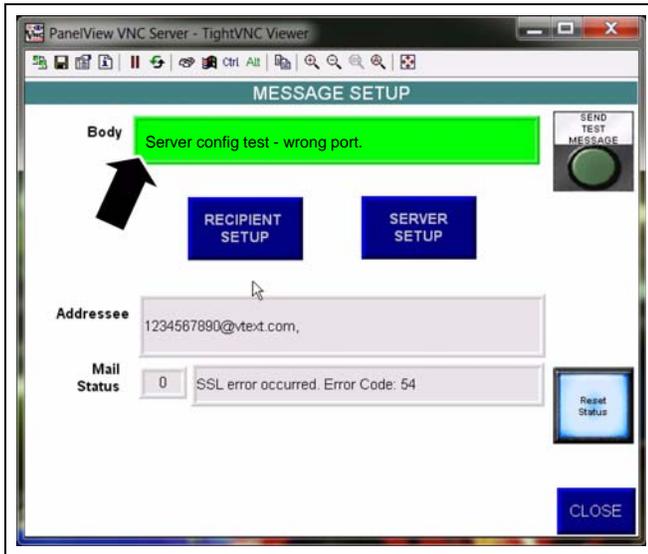


Figure 5G

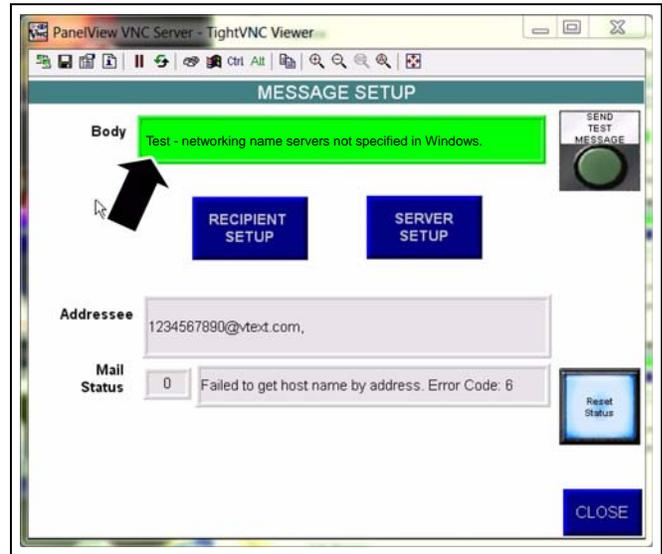


Figure 5I

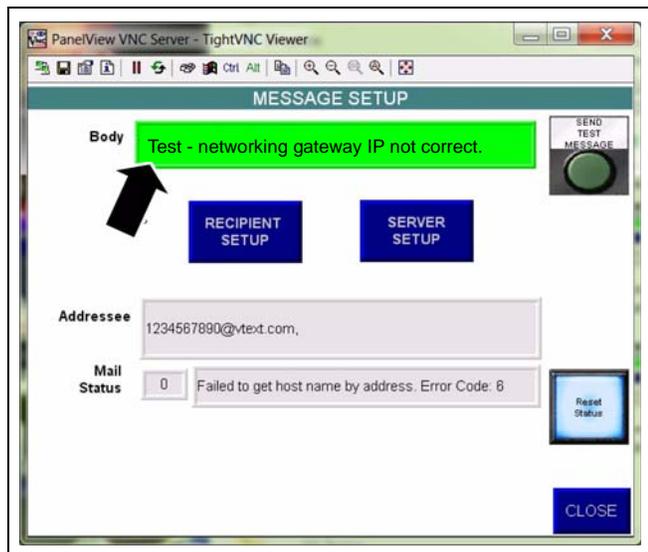


Figure 5H

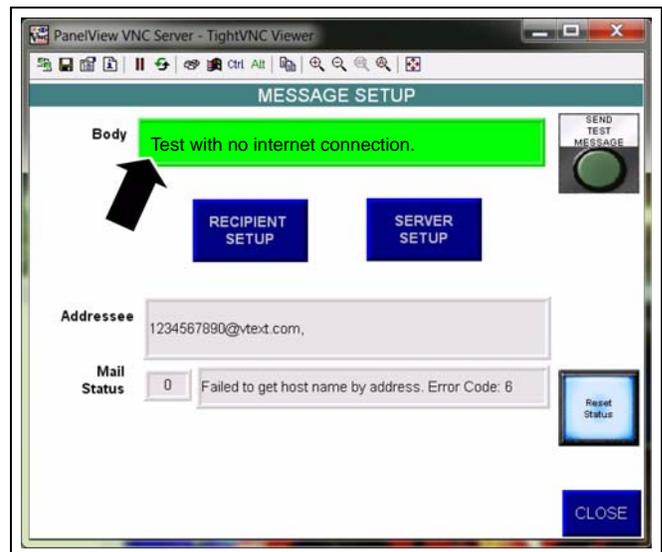


Figure 5J

## 5. Watchdog Messaging Email Server Setup

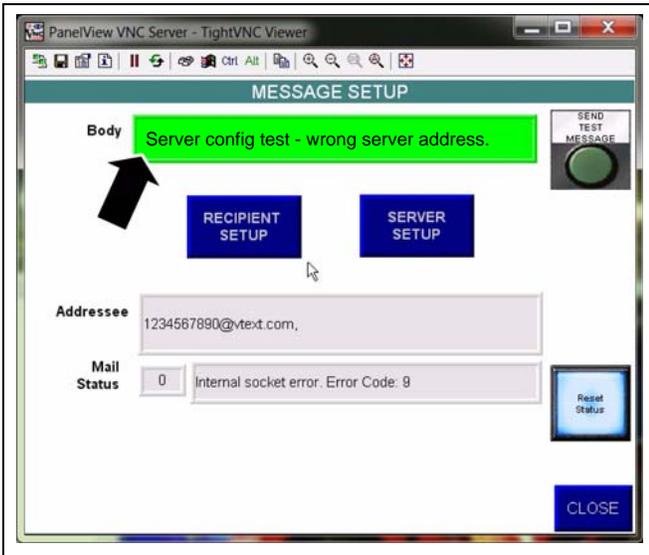


Figure 5K

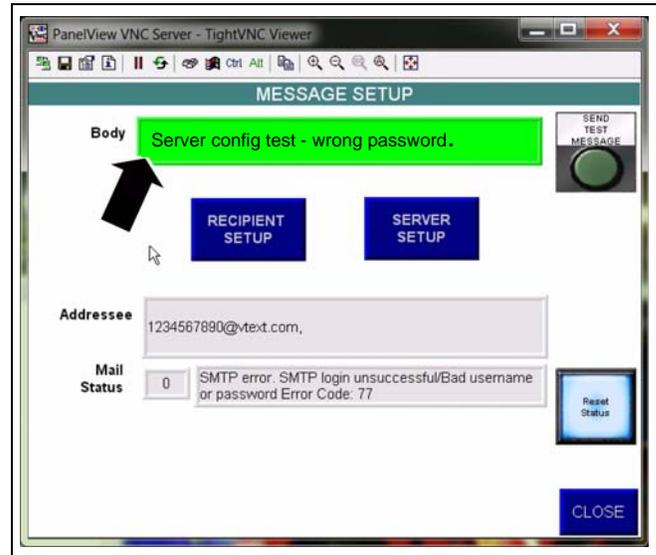


Figure 5L

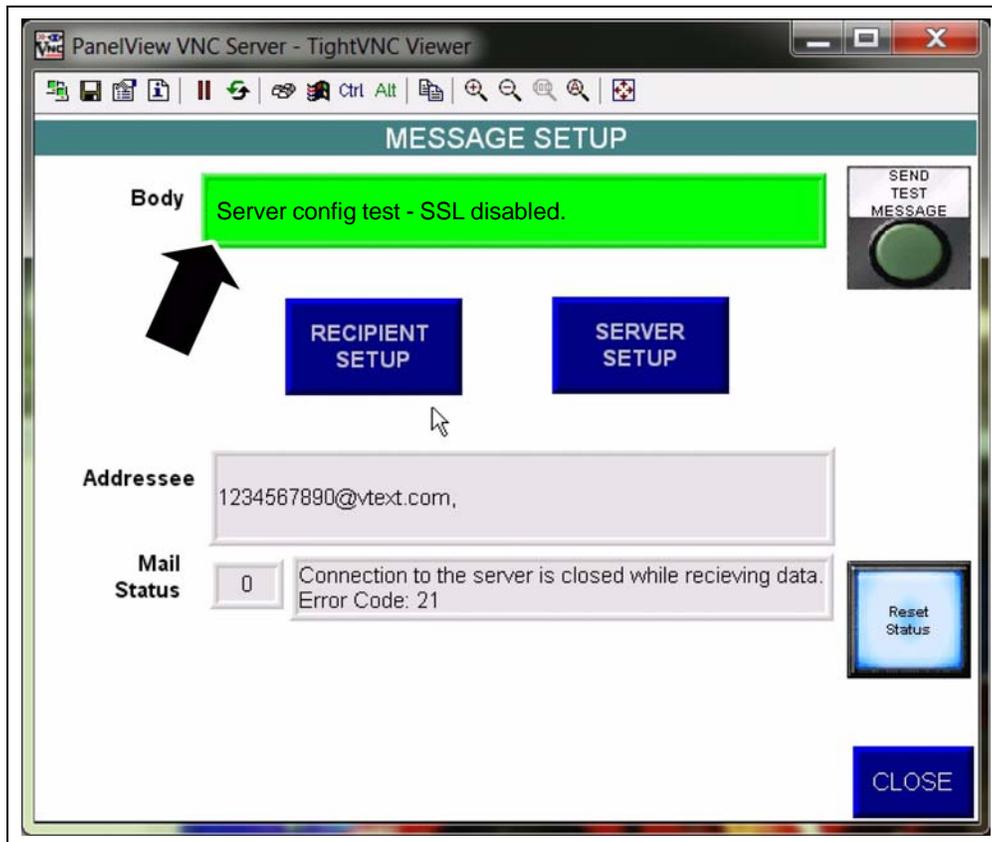


Figure 5M

## 6. PLC Watchdog Messaging Setup and Operation

1. Select Help/Info and then select Watchdog Messaging from the screen as shown in [Figure 6B](#).

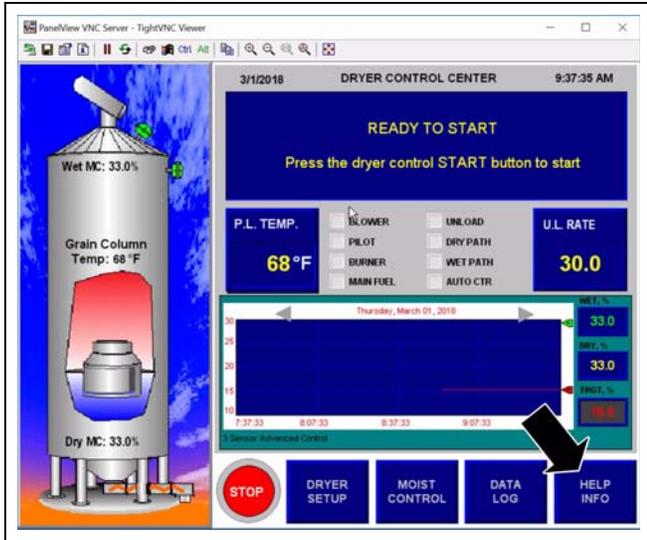


Figure 6A

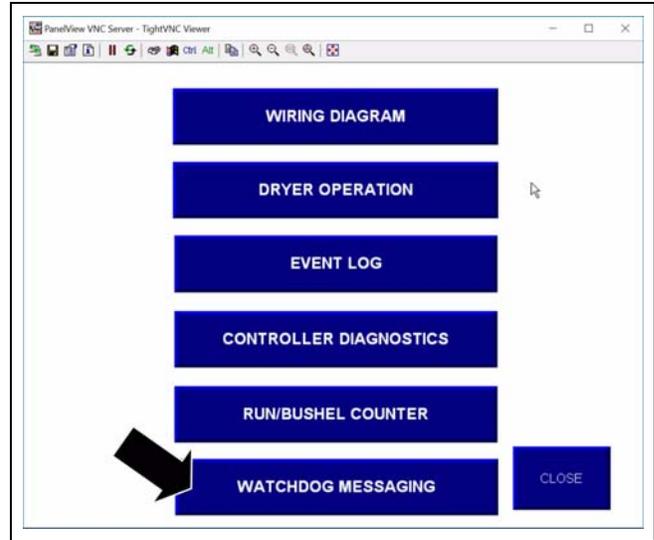


Figure 6B

2. You will now see the Message Setup screen. (See [Figure 6C](#).)

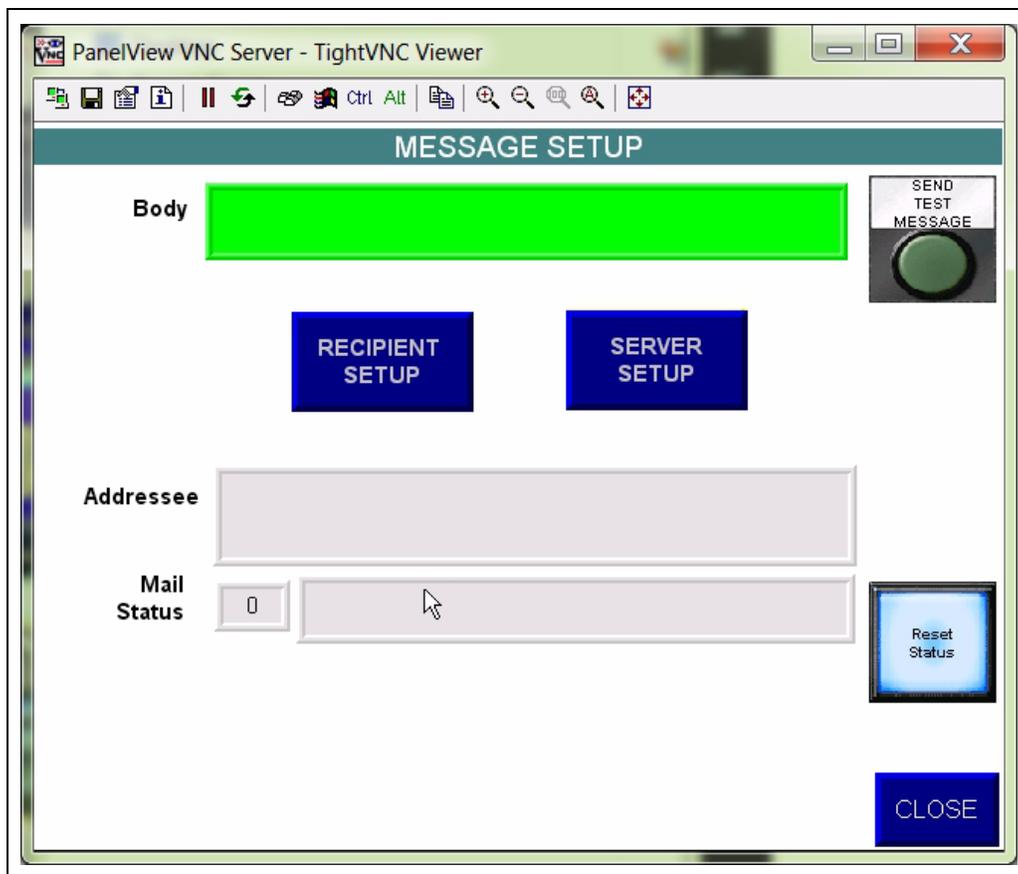


Figure 6C

## 6. PLC Watchdog Messaging Setup and Operation

3. Press Recipient Setup to begin setting up the message recipients. You will be taken to the following screen. (See Figure 6D.)

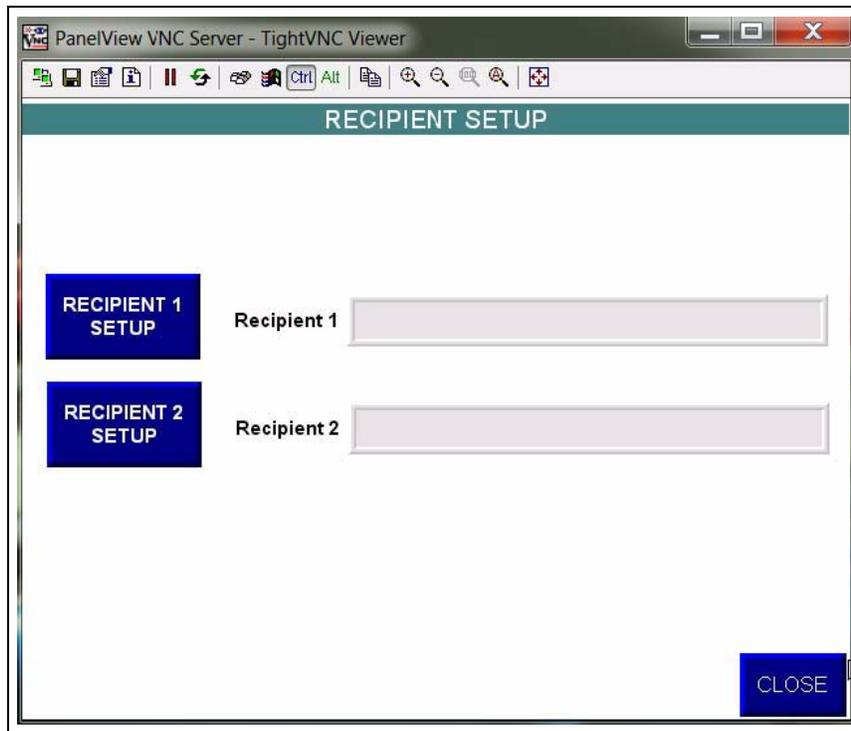


Figure 6D

4. Press Recipient 1 Setup. This will take you to the Recipient # 1 display. To send an email message, go to [Step 5 on Page 27](#). To send a text, skip [Step 7 on Page 28](#). (See Figure 6E.)

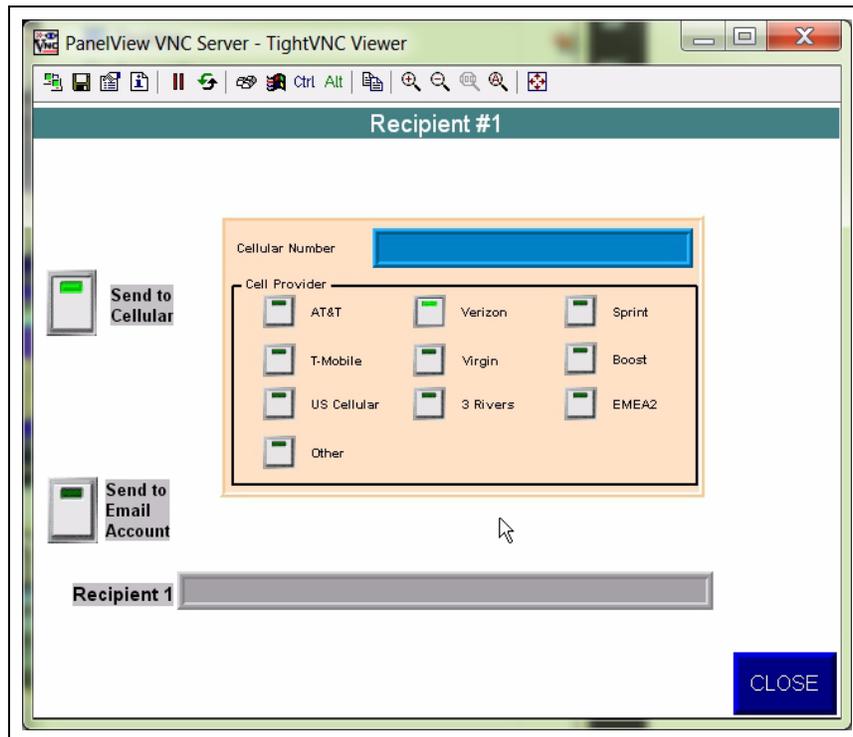


Figure 6E

## 6. PLC Watchdog Messaging Setup and Operation

- To send the message to an email recipient, press the radio button next to “Send to Email Account”. (See Figure 6F.)

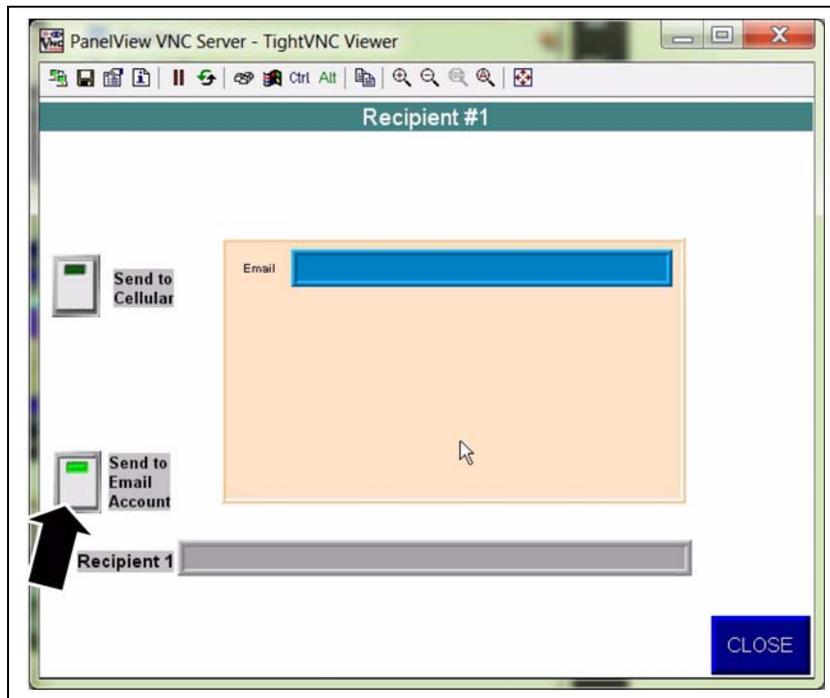


Figure 6F

- Click on the blue Email entry box. A keypad will pop up so you can enter the address. When finished, press the return key to close the keypad. The email address should show up in the grey box for Recipient 1. Press the Close button when complete. (See Figure 6G.)

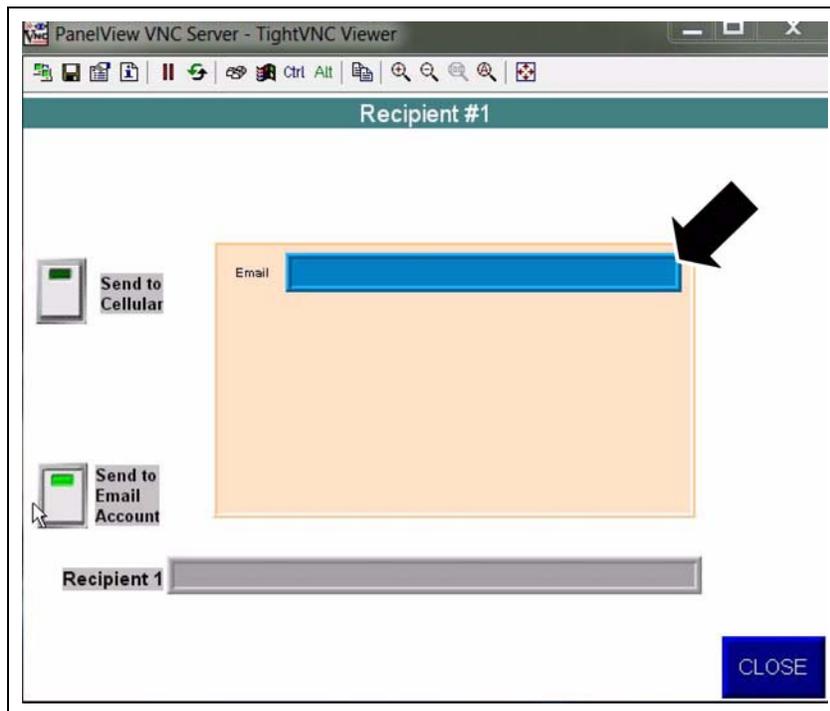


Figure 6G

## 6. PLC Watchdog Messaging Setup and Operation

7. Press the radio button next to “Send to Cellular”. This display will look like this as shown in [Figure 6H](#).

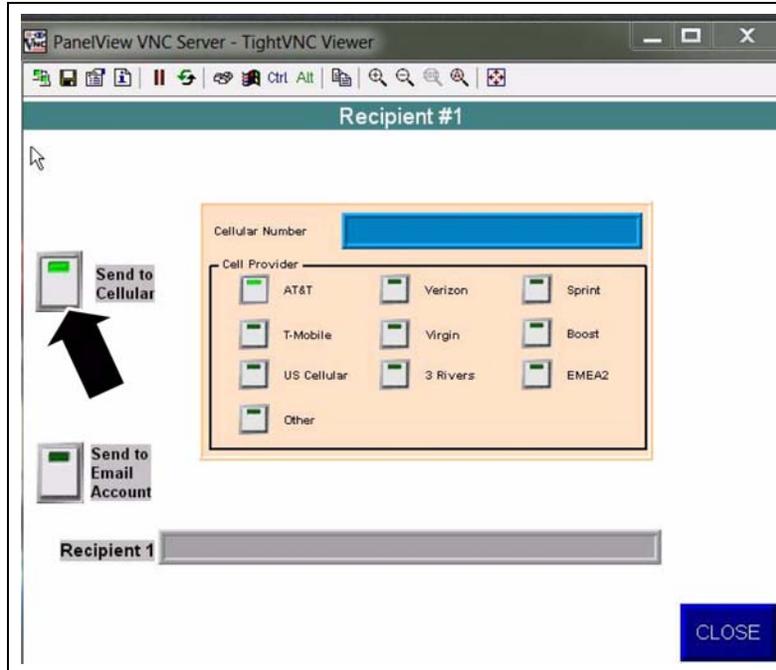


Figure 6H

8. Select the radio button for the cellular carrier for the number you want to send a message to. Then click on the blue Cellular Number window to enter the phone number, including area code. Do not include dashes, only numbers. After hitting the return key, the phone number should show up in the grey Recipient field with the carrier information appended to the number string. Select Close when finished. (See [Figure 6I](#).)

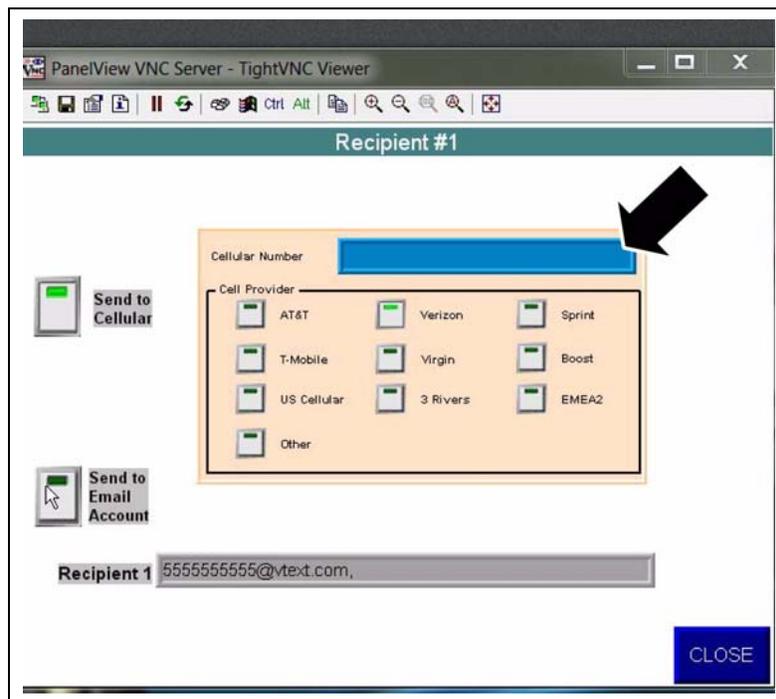


Figure 6I

## 6. PLC Watchdog Messaging Setup and Operation

9. Repeat the process for Recipient 2 if desired. Select Close when Recipient setup is complete.  
(See Figure 6J.)

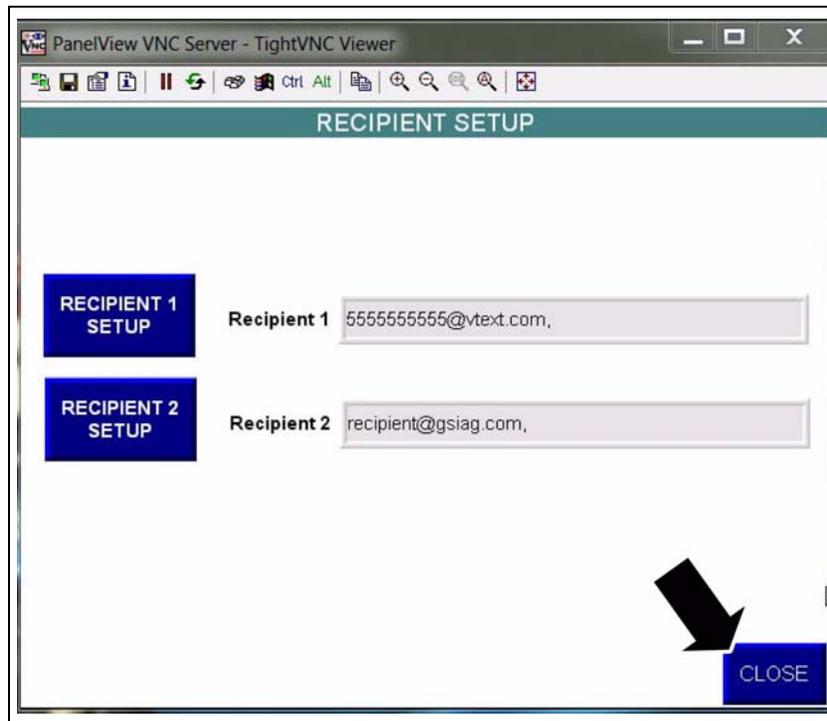


Figure 6J

10. You should now be back at the Help/Info screen shown below. That concludes the message setup.  
(See Figure 6K.)

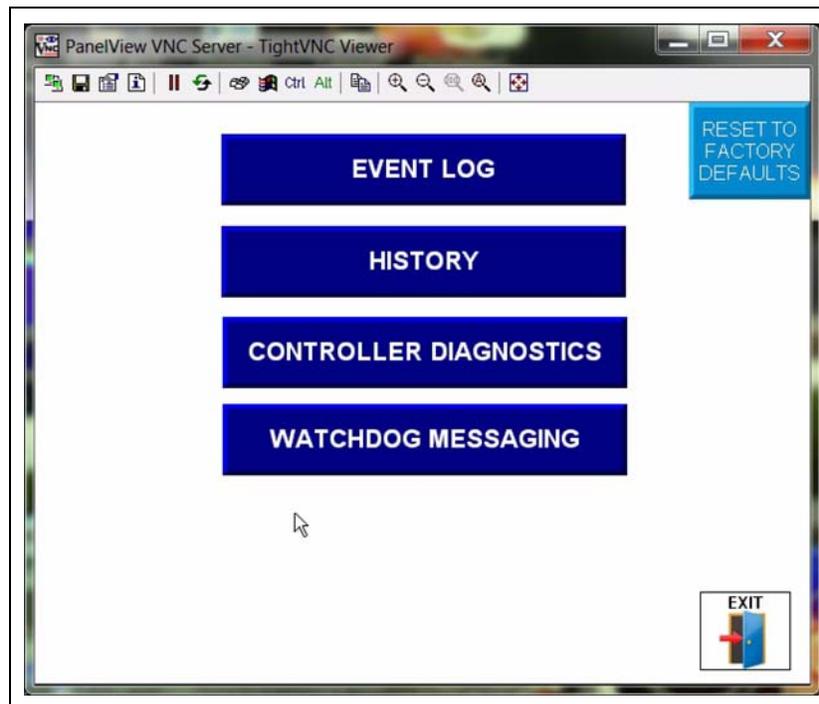


Figure 6K

## 7. Watchdog Google Account Access

Allow less secure apps must be set to “ON” for the PanelView to access your gmail account. This is only if you are using gmail to send the Watchdog messages.

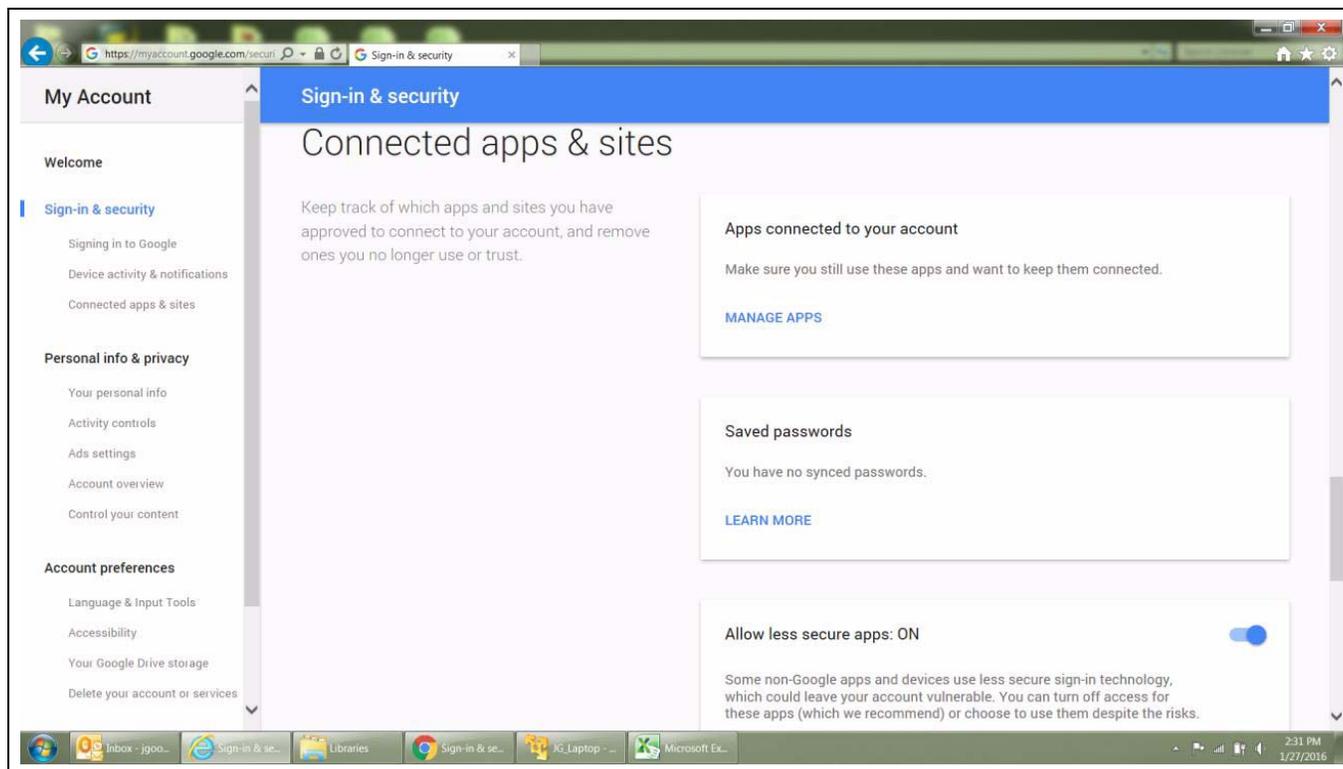


Figure 7A

## VNC Applications

- We recommend TightVNC Viewer if you want to connect to the PanelView with a computer on the same LAN. After installation on your computer, just point the application to the LAN IP address of the PanelView. (You must be connected to the same network as the PanelView.)
- TightVNC Viewer is a free program that can be downloaded here: <http://www.tightvnc.com/download.php>
- For mobile devices, there are a number of VNC apps available for download. We have used VNC Viewer by RealVNC with success. Just install the app and point it to the WAN IP address (not the LAN IP address) where the PanelView resides.

## Limited Warranty — N.A. Grain Products

The GSI Group, LLC. (“GSI”) warrants products which it manufactures, to be free of defects in materials and workmanship under normal usage and conditions for a period of 12 months from the date of shipment (or, if shipped by vessel, 14 months from the date of arrival at the port of discharge). If, in GSI’s sole judgment, a product is found to have a defect in materials and/or workmanship, GSI will, at its own option and expense, repair or replace the product or refund the purchase price. This Limited Warranty is subject to extension and other terms as set forth below.

**Warranty Enhancements:** The warranty period for the following products is enhanced as shown below and is in lieu of (and not in addition to) the above stated warranty period. (Warranty Period is from date of shipment.)

	Product	Warranty Period
<b>Storage</b>	Grain Bin Structural Design • Sidewall, roof, doors, platforms and walkarounds • Flooring (when installed using GSI specified floor support system for that floor) • Hopper tanks (BFT, GHT, NCHT, and FCHT)	5 Years
<b>Conditioning</b>	Dryer Structural Design – (Tower, Portable and TopDry) • Includes (frame, portable dryer screens, ladders, access doors and platforms)	5 Years
	All other Dryer parts including: • Electrical (controls, sensors, switches and internal wiring)	2 Years
	All Non-PTO Driven Centrifugal and Axial Fans	3 Years
	Bullseye Controllers	2 Years
<b>Material Handling</b>	Bucket Elevators Structural Design	5 Years
	Towers Structural Design	5 Years
	Catwalks Structural Design	5 Years
	Accessories (stairs, ladders and platforms) Structural Design	5 Years

### Conditions and Limitations:

THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE LIMITED WARRANTY DESCRIPTION SET FORTH HEREIN; SPECIFICALLY, GSI DISCLAIMS ANY AND ALL OTHER WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE IN CONNECTION WITH: (I) ANY PRODUCT MANUFACTURED OR SOLD BY GSI, OR (II) ANY ADVICE, INSTRUCTION, RECOMMENDATION OR SUGGESTION PROVIDED BY AN AGENT, REPRESENTATIVE OR EMPLOYEE OF GSI REGARDING OR RELATED TO THE CONFIGURATION, INSTALLATION, LAYOUT, SUITABILITY FOR A PARTICULAR PURPOSE, OR DESIGN OF SUCH PRODUCTS.

The sole and exclusive remedy for any claimant is set forth in this Limited Warranty and shall not exceed the amount paid for the product purchased. This Warranty only covers the value of the warranted parts and equipment, and does not cover labor charges for removing or installing defective parts, shipping charges with respect to such parts, any applicable sales or other taxes, or any other charges or expenses not specified in this Warranty. GSI shall not be liable for any other direct, indirect, incidental or consequential damages, including, without limitation, loss of anticipated profits or benefits. Expenses incurred by or on behalf of a claimant without prior written authorization from the GSI warranty department shall not be reimbursed. This warranty is not transferable and applies only to the original end-user. GSI shall have no obligation or responsibility for any representations or warranties made by or on behalf of any dealer, agent or distributor. Prior to installation, the end-user bears all responsibility to comply with federal, state and local codes which apply to the location and installation of the products.

This Limited Warranty extends solely to products sold by GSI and does not cover any parts, components or materials used in conjunction with the product, that are not sold by GSI. GSI assumes no responsibility for claims resulting from construction defects, unauthorized modifications, corrosion or other cosmetic issues caused by storage, application or environmental conditions. Modifications to products not specifically delineated in the manual accompanying the product at initial sale will void all warranties. This Limited Warranty shall not extend to products or parts which have been damaged by negligent use, misuse, alteration, accident or which have been improperly/inadequately maintained.

#### Notice Procedure:

In order to make a valid warranty claim a written notice of the claim must be submitted, using the RMA form, within 60 days of discovery of a warrantable nonconformance. The RMA form is found on the OneGSI portal.

#### Service Parts:

GSI warrants, subject to all other conditions described in this Warranty, Service Parts which it manufactures for a period of 12 months from the date of purchase unless specified in Enhancements above.

This equipment shall be installed in accordance with the current installation codes and applicable regulations, which should be carefully followed in all cases. Authorities having jurisdiction should be consulted before installations are made.



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