DRESSER Wayne

Programming

Wayne Nucleus© Fusion Site Controller

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1 PRODUCT

Product	Fusion Site Controller
Application	Nucleus
Production Version	Version x.xx
Current Build	Version x.xx
Hardware Platform	Wayne Proprietary Hardware

2 INTRODUCTION

The Fusion Site Controller is an Ethernet-based device capable of supporting existing peripheral devices that are currently supported through the SCC card. This manual explains how to program Fusion and configure it for use.

3 TYPICAL FUSION INSTALLATION

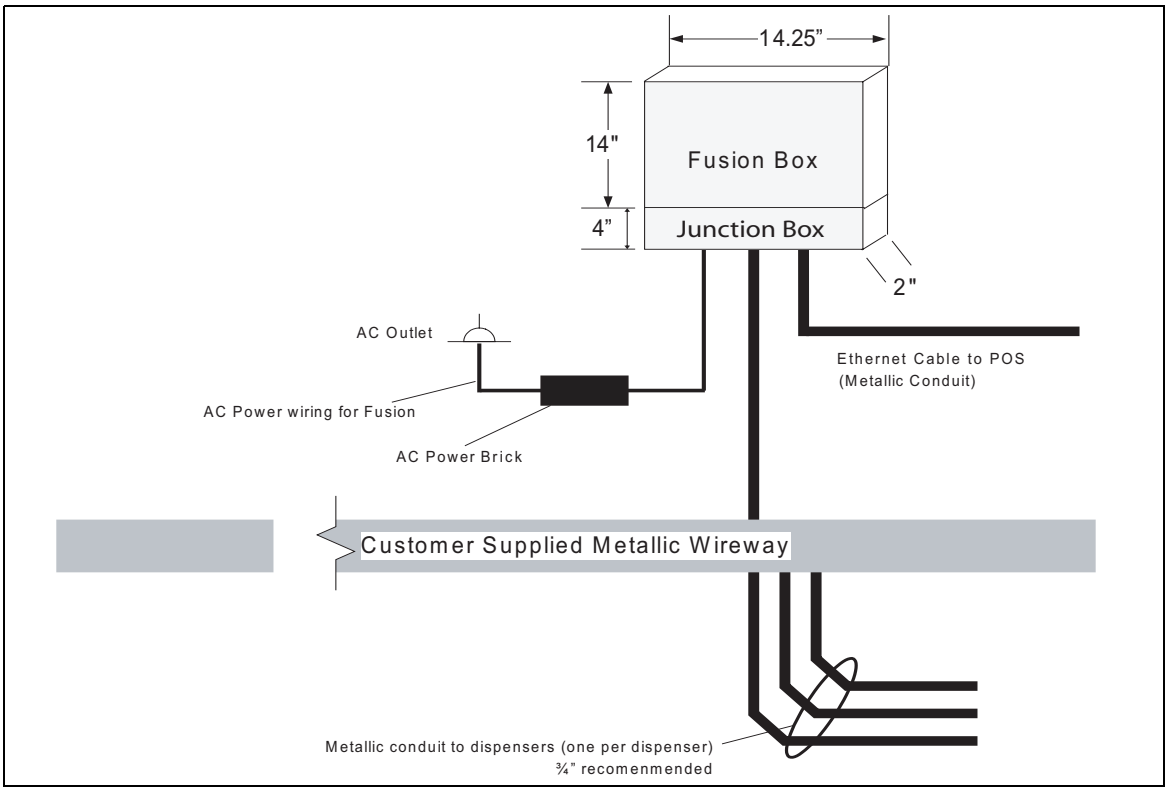

Figure 1 Backroom Installation

4 CONFIGURATION PROCEDURE

This section details the basic procedure to configure the system. There are two methods that you can use, the first is to configure the system step by step, and the other is by using the Fusion Wizard. In both cases the first step is a login.

4.1 Log In to Fusion

To access the Fusion programming, log on using a laptop connected to the Fusion ethernet port via a CAT5 ethernet cable.

___ 1. On the laptop, go to the Windows **Start** button **> All Programs > Internet Explorer**.

___ 2. In the Explorer Address bar, type in **192.168.1.20** and press <enter>. The following Screen will then be displayed.

Figure 2 Fusion Login Screen

___ 3. Enter the **Admin** in the Login field and **Dresser3141** in the Password field. Press <enter> to continue. The following window will be displayed.

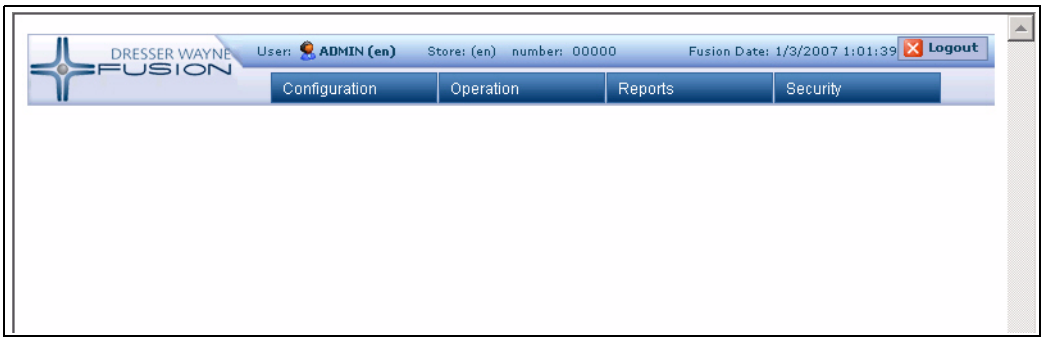

Figure 3 Fusion Programming Window

4.2 Configure the System - Step by Step

It's important to follow the configuration steps in the order presented to be assured of a successful installation. The first step to configure the Fusion is to add the basic products. These are the products that will be in a tanks, which may or may not be the actual products that are dispensed from the pumps due to the nature of blending dispensers.

4.2.1 Product Configuration

1. Click **Configuration** and then select **Devices** then **Product**. See Figure 4.

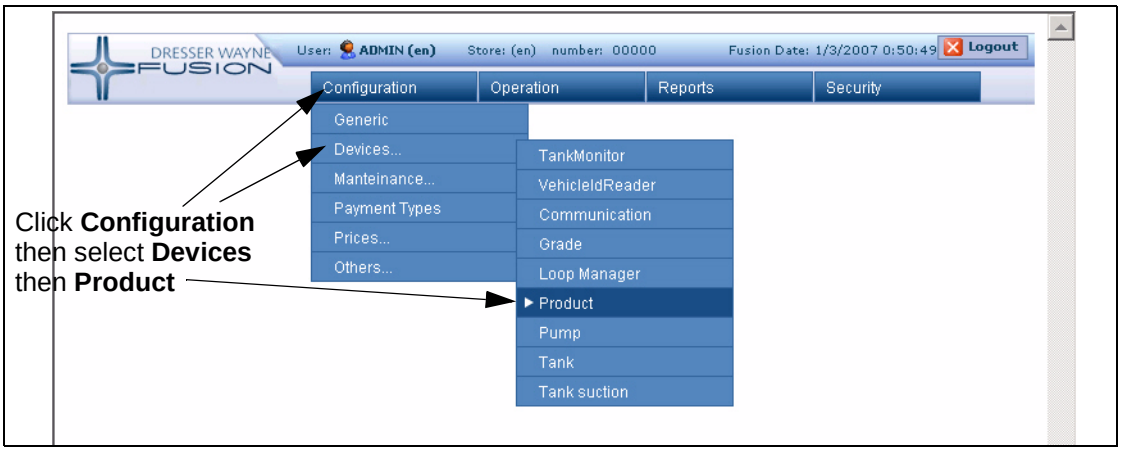

Figure 4 Fusion Programming Window 1

2. Click on **Add** to add a new product and configure the id of the product. See Figure 5. Enter an ID of the product and press **OK**. This ID must be the name of the product. See Figure 6.

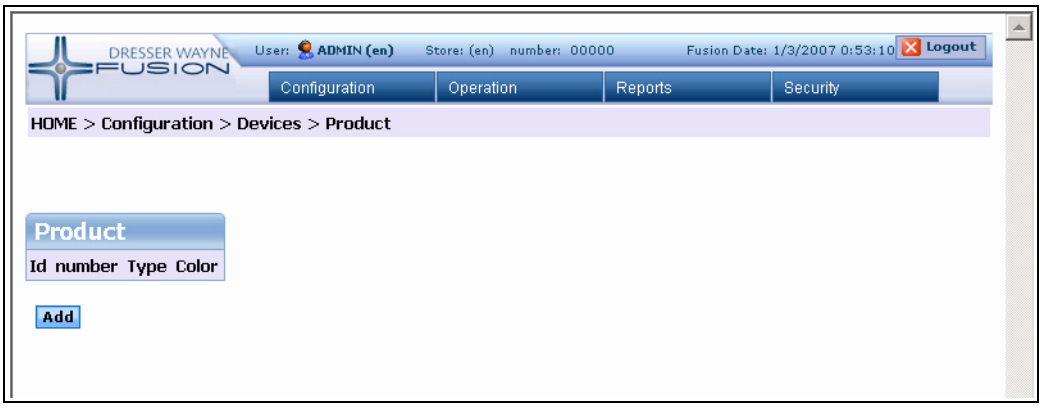

Figure 5 Product Programming Window

Figure 6 Enter Product ID Window

3. After the ID of the product is configured you must then configure the following parameters:

- **Number** of the product:
  - A numeric value that will identify the product.
- **Type**:
  - Use the pull-down to select a product type. (Unleaded, Premium).
- **Color**:
  - This value indicates the color representation of the product; that will be show in the console if this module is activated.

Figure 7 Enter Product Parameters Window

4. Repeat the procedure for all fuel products to be sold. See the following window.

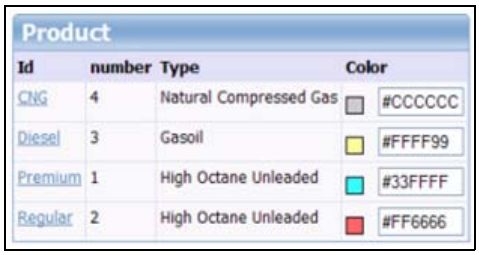

Figure 8 Product Programming

4.2.2 Tank Configuration

After the product configuration is complete, the tank parameters must be configured. After the tanks have been configured the tanks must be assigned a product. To do this, go to the **Configuration > Devices > Tank** menu. See the following window.

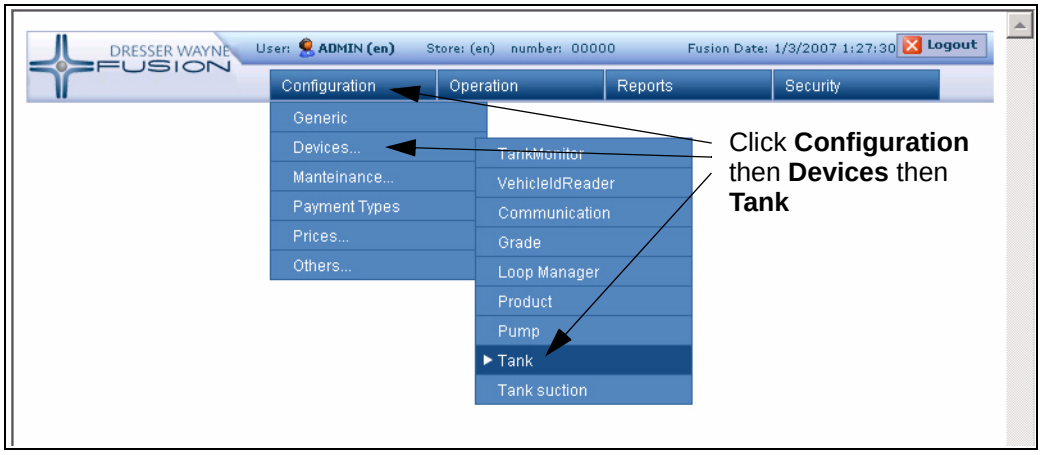

Figure 9 Fusion Programming Window 2

1. Click **Add** and the following window will be displayed.

Figure 10 Enter Tank ID Window

2. Enter the ID of the tank then press **OK**. This is the first parameter to configure and must be a numeric value. This value is used to identify the tank in Fusion programming. Next, you program the tank capacity and the product.

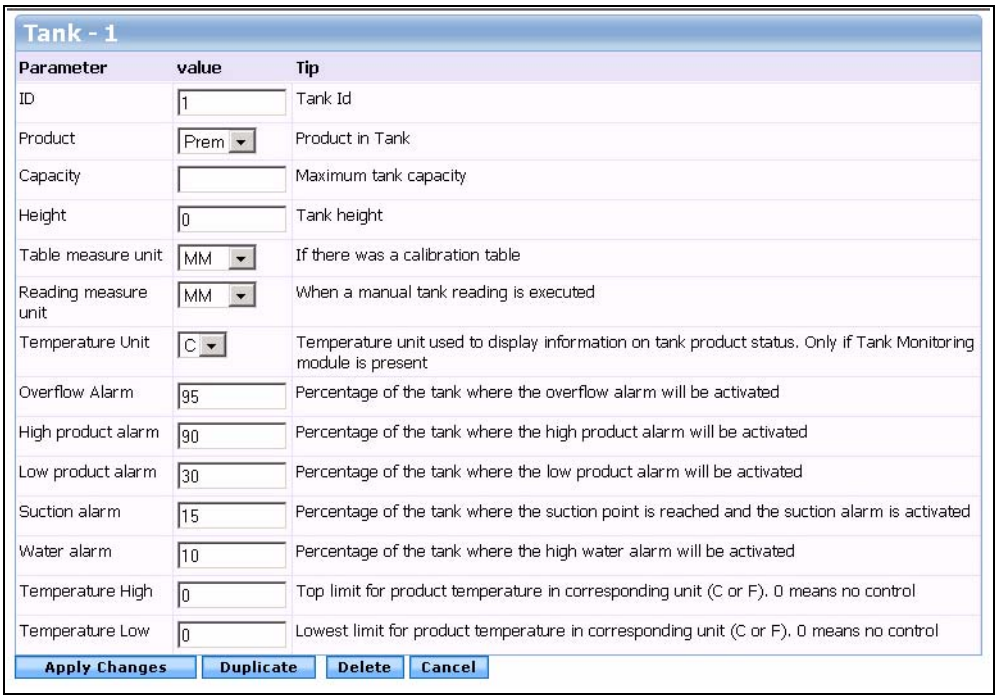

Figure 11 Tank Programming - Page 1

3. Click **Apply Changes**.
4. Repeat from step 1 for each tank at the site.

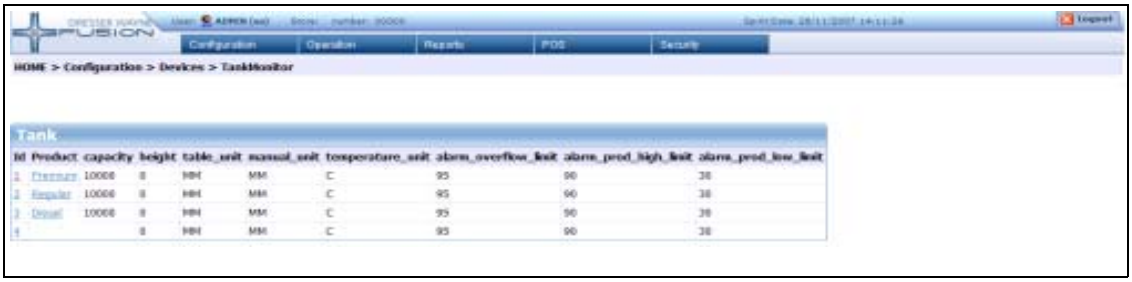

Figure 12 Tank Programming - Page 2

4.2.3 Grade Configuration

This step is used to configure the grades that are sold at the site. These can be pure grades or blend grades depending on the dispensers at the site and the tank plumbing. To do this, go to the **Configuration > Devices > Grade** menu. See the following window.

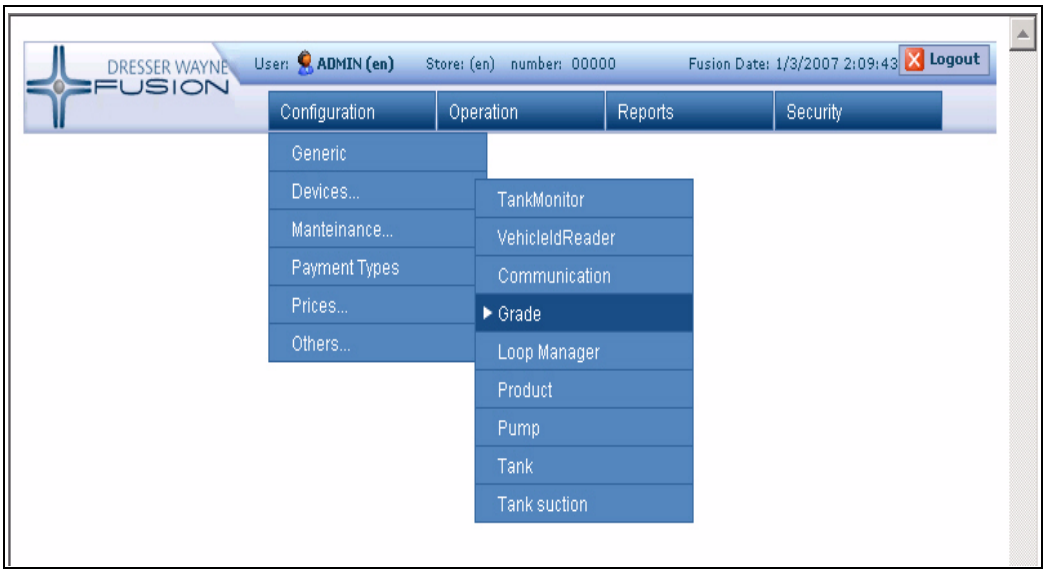

Figure 13 Fusion Programming Window 3

1. Click **Add** and the following window will be displayed.

Figure 14 Enter Grade ID Window

2. The first option to set is an ID of the grade which is the name of the grade. Click **OK** to continue.
3. Next you will assign the **Number** of the product, or the high and low product (If you are installing a Blender pump).
4. Program the **Measure Unit** (Liters or Gallons) and then the color of the grade. See Figure 15.

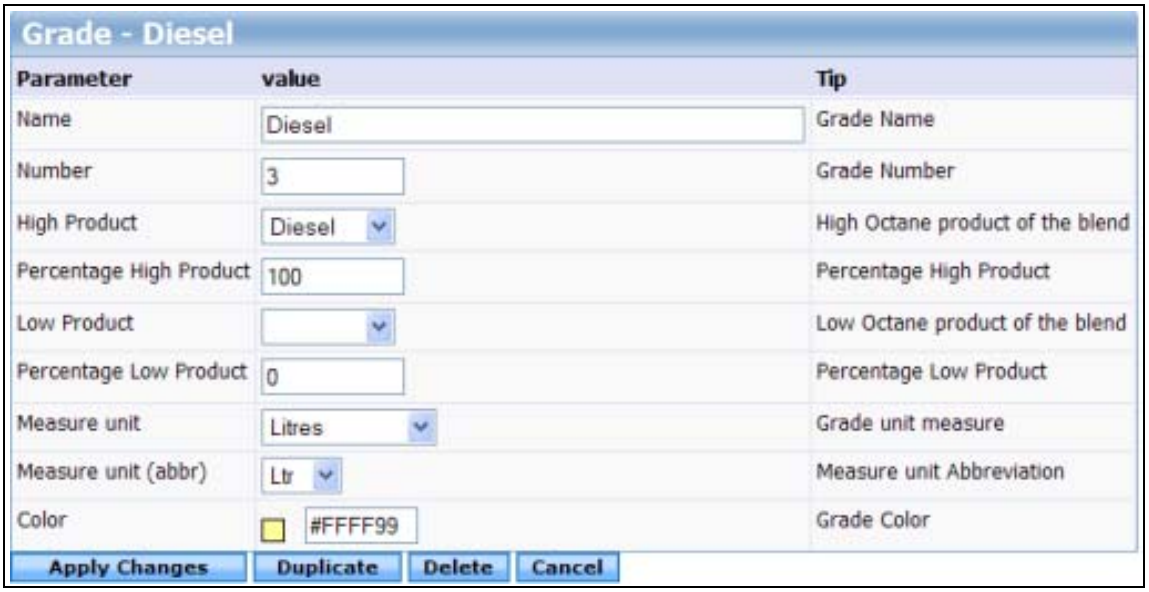

Figure 15 Grade Programming - Page 1

5. Repeat from step 1 for each product.

Figure 16 Grade Programming - Page 2

4.2.4 Tank Suction Configuration

Next, you program the tank suction, which is the relationship between the grades and the tanks. To set the Tank Suction parameters go to **Configuration > Devices > Tank Suction**.

Figure 17 Fusion Programming Window 4

1. Click **Add** and the following window will be displayed.

Figure 18 Enter Tank Suction ID Window

1. Enter the first parameter which is the ID, this is the name of the tank suction. Click **OK** to continue.
2. Next, configure the type (Simple, Parallel or manifold) and then the tank where the product is stored. Click **Apply Changes** to save and continue.

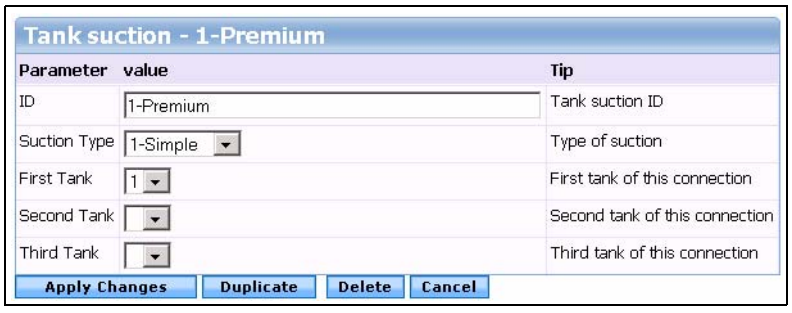

Figure 19 Tank Suction Programming - Page 1

3. Repeat from step 1 for each Tank Suction.

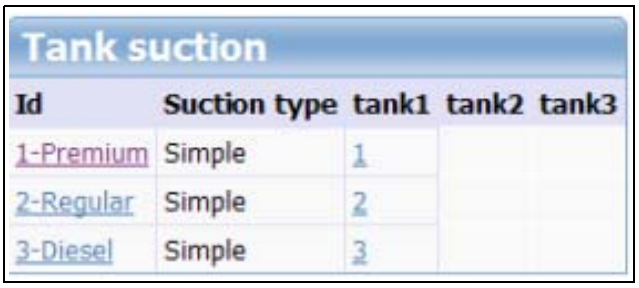

Figure 20 Tank Suction Programming - Page 2

4.2.5 Communications Configuration

Next, you need to configure the connection to the physical devices. To do that you assign the output port that will be used for the system to communicate with the loop board. Go to **Configuration > Devices > Communications**.

Figure 21 Fusion Programming Window 5

1. Click **Add** and the following window will be displayed.

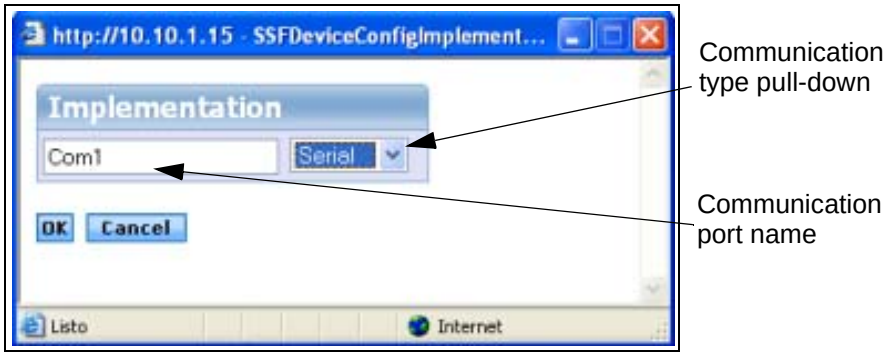

Figure 22 Enter Serial ID Window

2. Select the communication type from the pull-down, in this case select **Serial**. Next, enter a name for the communication port then press **OK** to continue.
3. Next, you program the communications parameters. Is important to set the Echo parameter as **True** and the address of the serial port.
4. Click **Apply Changes** to save and continue or **Duplicate** to clone the current programming and create a new port.

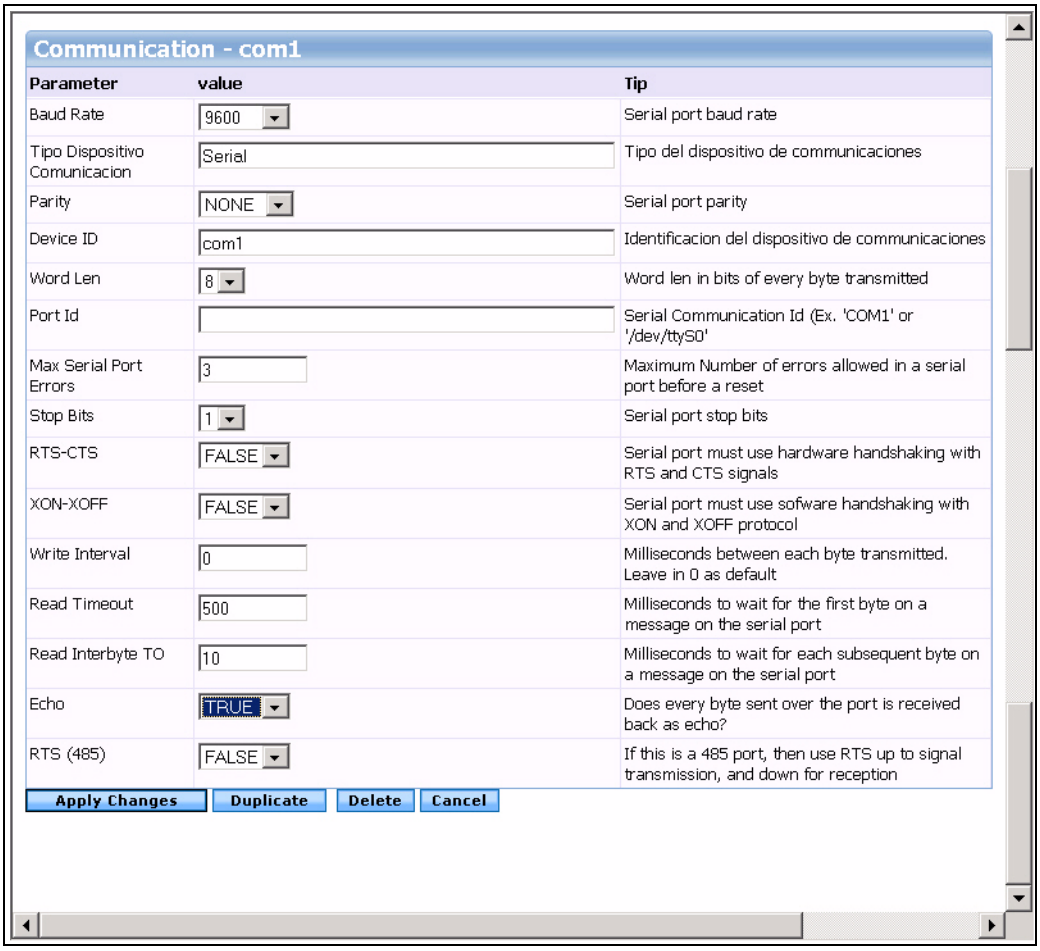

Figure 23 Communications Programming Window

4.2.6 Loop Manager Configuration

The Loop Manager configuration must be done next to assign the output communication configuration to the loops in the loop board. Go to **Configuration > Devices > Loop Manager** to program these settings.

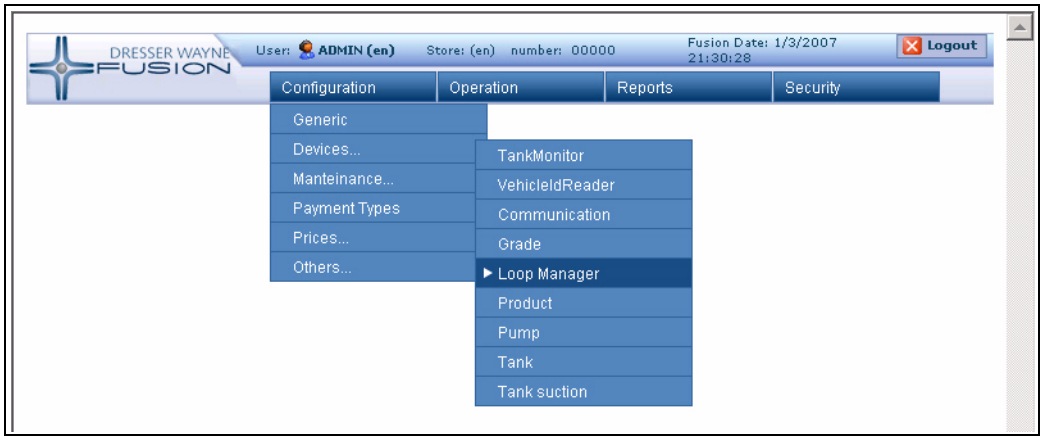

Figure 24 Fusion Programming Window 6

1. Click **Add** and the following window will be displayed.

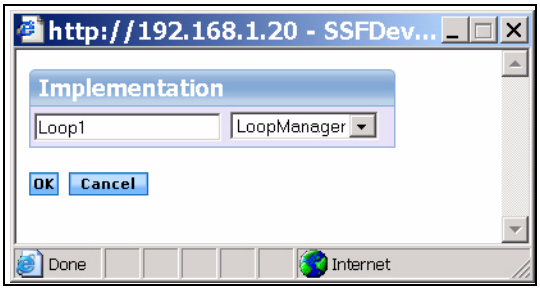

Figure 25 Enter Loop ID Window

2. Enter the name of the Loop and click **OK**. The following window will then be displayed.

Figure 26 Configure Loop Window

3. Use the **Communications** pull-down to select the desired communications configuration.

Note: The communication configurations were created in the previous section.

4. Click **Duplicate** to create another Loop Configuration using the current settings.
5. Click **Apply Changes** to save and continue.

4.2.7 Pump Configuration

To configure the pumps, go to **Configuration > Devices > Pump**. This is where you define the number of the pumps at the site and the pump brand.

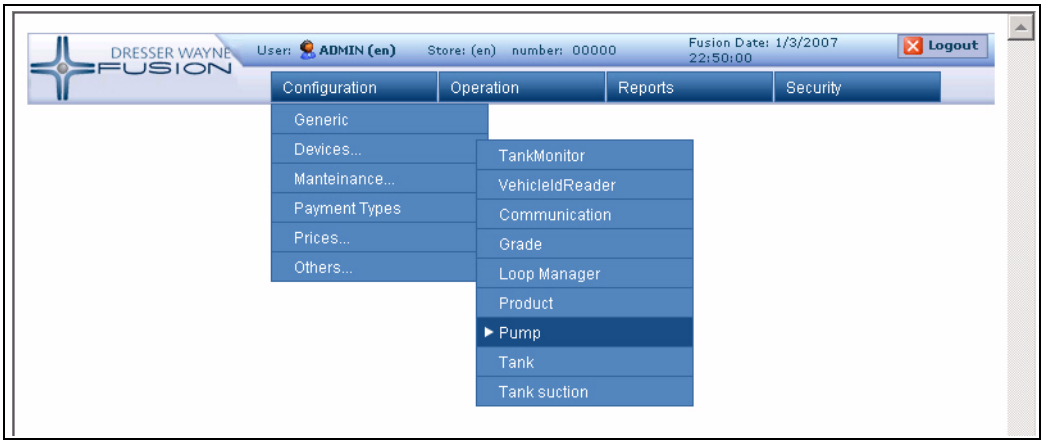

Figure 27 Fusion Programming Window 7

1. Click **Add** and the following window will be displayed.

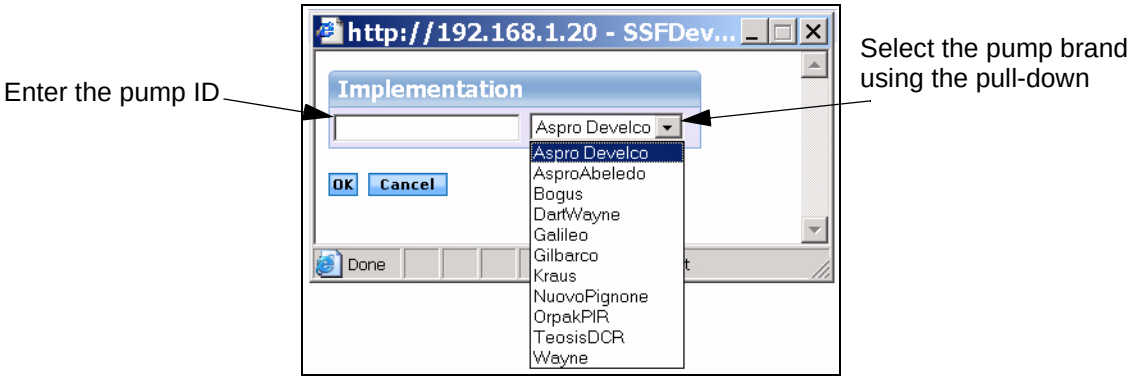

Figure 28 Configure Pump ID and Type

2. Select the pump brand using the pull-down and then assign a pump ID. (This is the pump number of the fueling point.) Click **OK** to save and continue. The following window will be displayed where pump configuration is completed.

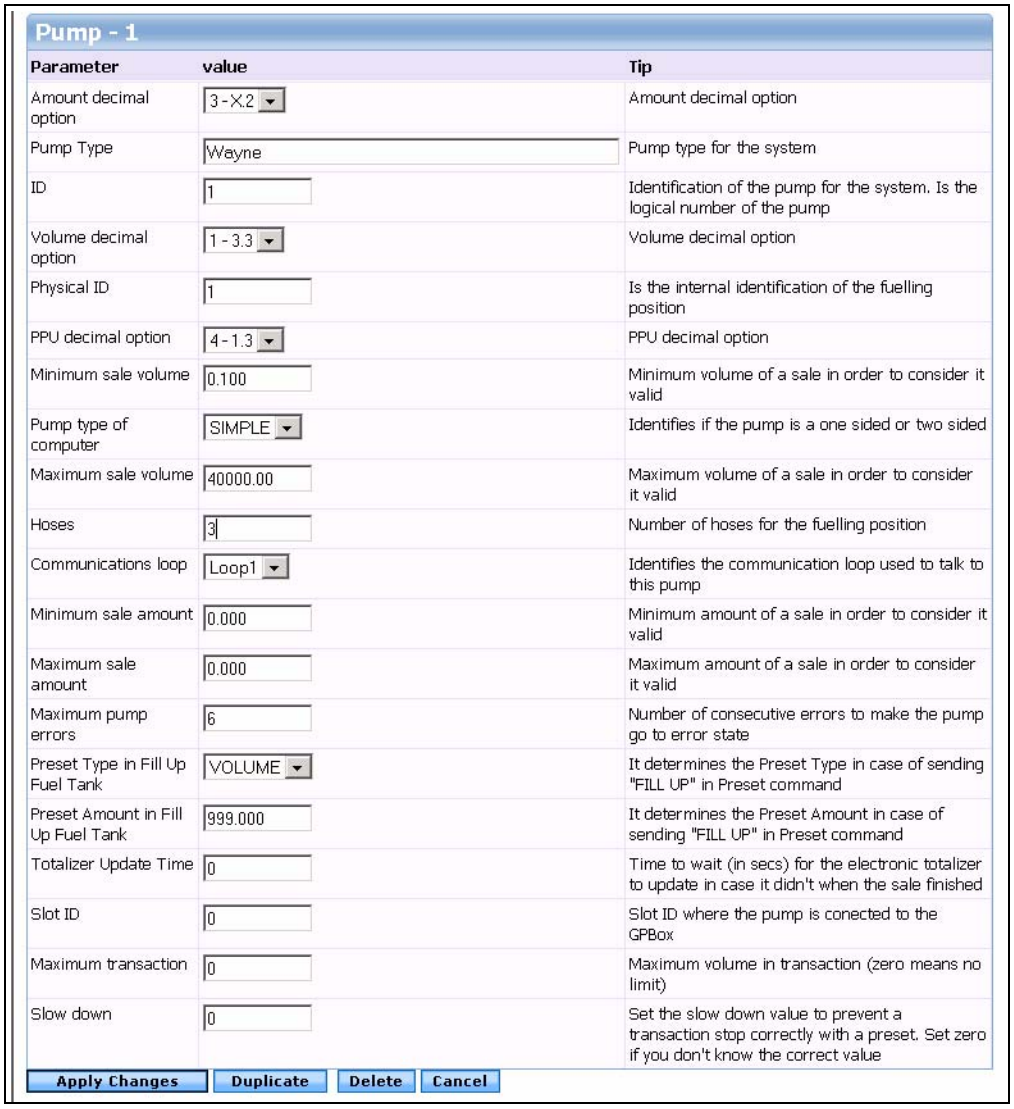

Figure 29 Pump Programming Window

3. Program the ID, this is the logical number of the pump (fueling point).
4. Program the number of hoses for this pump ID.
5. Program the communications loop that is used to talk to this pump ID.
6. Program the remainder of the pump options according to site requirements.
7. Click **Apply Changes** to save and continue or **Duplicate** to clone the current pump programming for use in defining another pump.
8. The following Hose Configuration programming screen will then be displayed.

4.2.8 Hoses Configuration

Hose Configuration programming must now be completed for this Pump ID. You must assign fuel grades to the hoses. Click on the Hose ID link for each pump and configure the grade, the high product suction and the physical id of the hose. If you don't have the id of the hoses, you must set this parameter in "0". The system will learn the hoses physical ID.

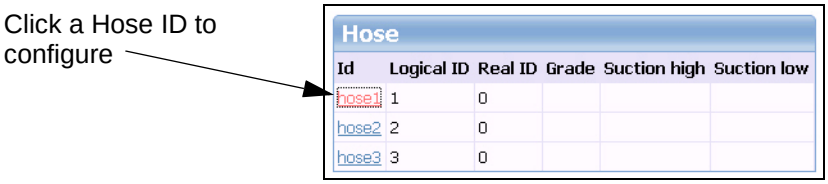

Figure 30 Hose Selection Window

1. Click on a Hose ID to configure that hose for the current pump ID. The following window will then be displayed.

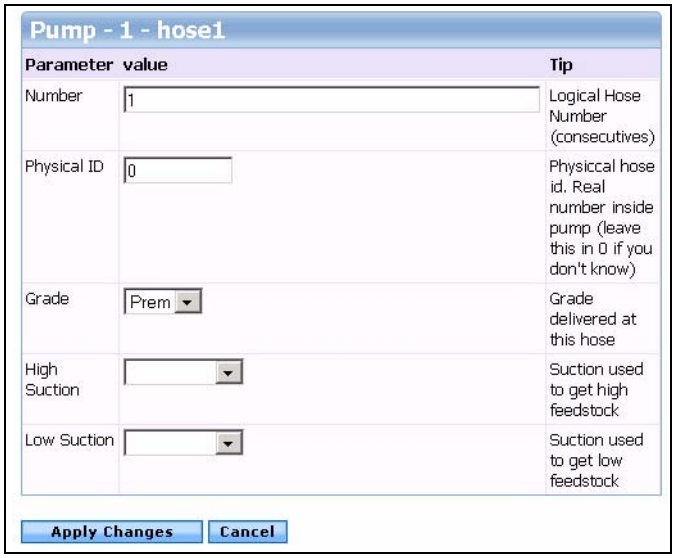

Figure 31 Hose Programming Window

2. Program the grade and suction settings according to site requirements.
3. Click **Apply Changes** to save and continue.
4. Program the remaining hoses.

4.2.9 Tank Monitor Configuration

The tank monitor installation/configuration in Fusion consists in two parts, the physical connection and the logical configuration.

Physical Connection

The physical tank monitor system connection must be done before beginning the logical configuration. Physical connections of the tank monitor have yet to be determined.

Tank Monitor Configuration

Go to **Configuration > Devices > Tank Monitor** to configure the tank monitor.

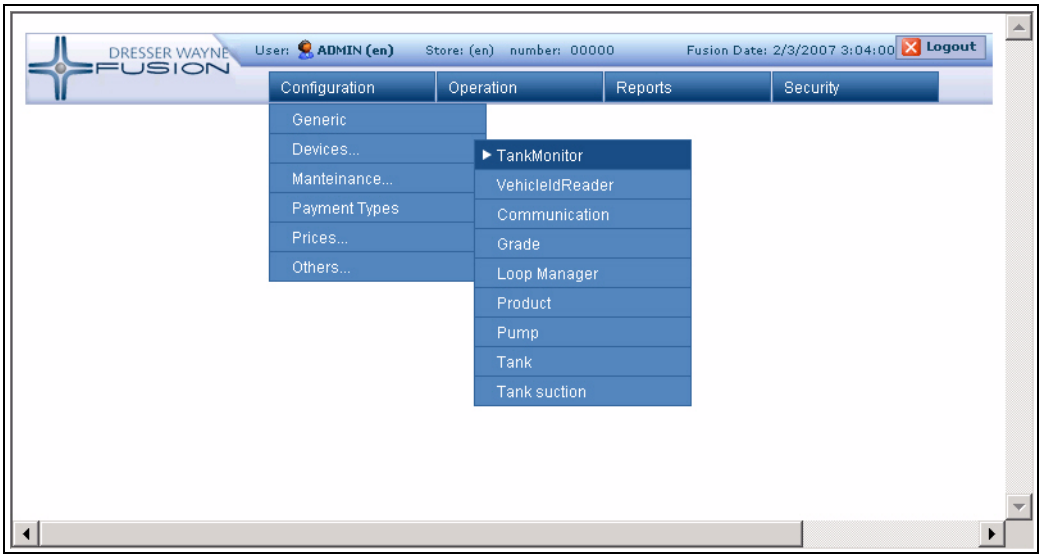

Figure 32 Fusion Programming Window 8

1. Click **Add** and the following window will be displayed.

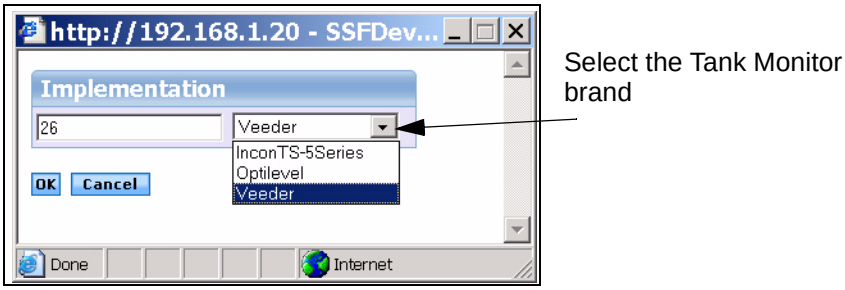

Figure 33 Tank Monitor Selection Window

1. Select the brand of Tank Monitor from the pull-down.
2. Assign a numeric ID to the Tank Monitor.
3. Click **OK** to proceed. The following configuration window will then be displayed.

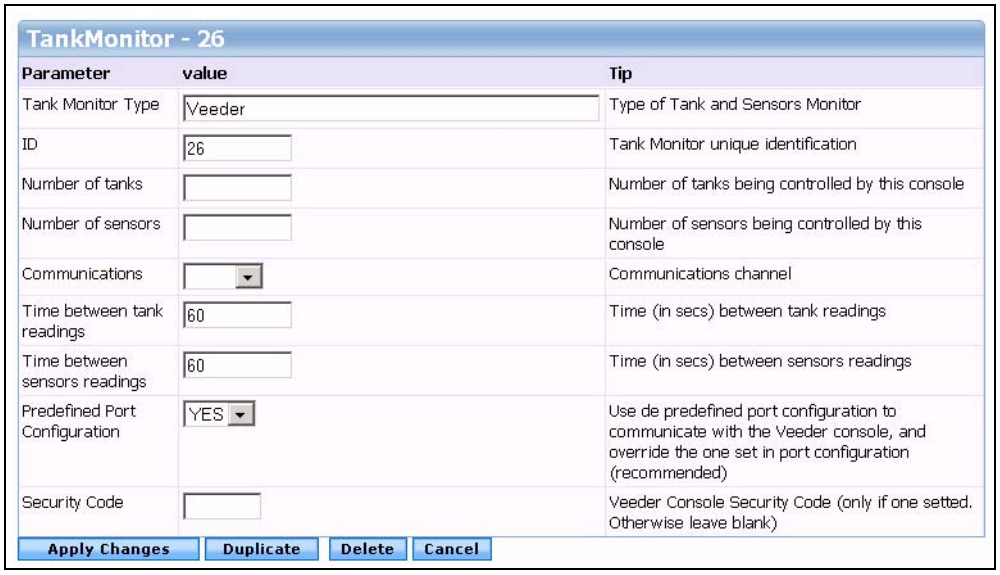

Figure 34 Tank Monitor Configuration Window

4. Program the Tank Monitor according to site requirements.
5. Click **Apply Changes** to save and continue.

4.3 Configure the System - Using the Wizard

The configuration wizard is an easy way to configure the Fusion Forecourt Controller.

As in the configuration step by step, you need the configuration survey sheet completed to use during the Wizard setup.

4.3.1 Wizard General Options

1. Click **Configuration** and then select **Other** then **Wizard**. See Figure 35.

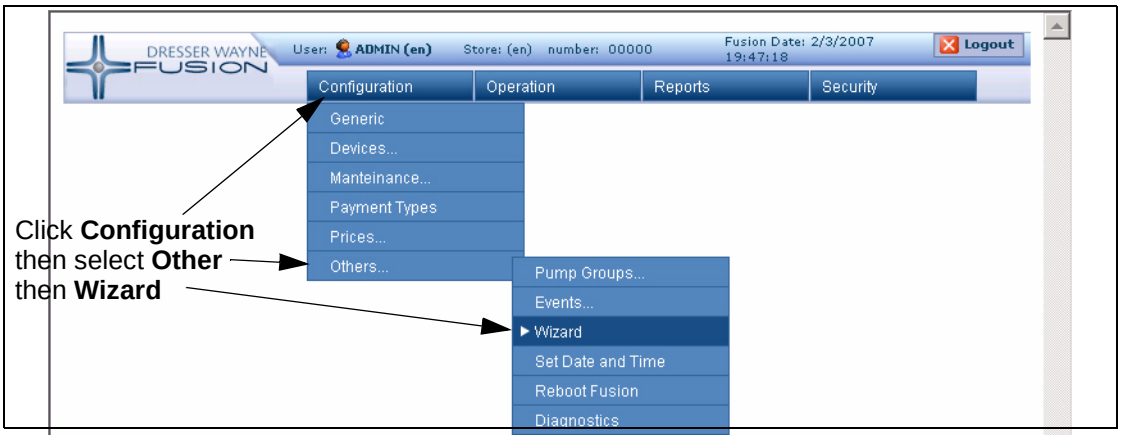

Figure 35 Access the Wizard Window

2. The following window will then be displayed where you configure the first set of general parameters.

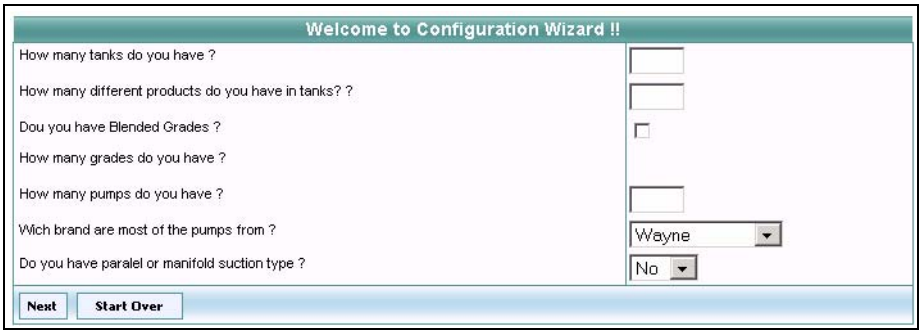

Figure 36 General Parameters

3. Program the following options:
   - **How many tanks do you have?** - The quantity of underground storage tanks at the site.
   - **How many different products do you have in tanks?** - The quantity of fuel products to be sold.
   - **Do you have Blended grades?** - Enable the check box if you have blender pumps.
   - **How many grades do you have?** - If you have enabled Blenders in the previous question, the wizard needs to know the number of grades, otherwise the wizard will configure the same grades as the products.
   - **How many pumps do you have?** - How many total pumps at the site? Fuel position is not a pump quantity, because Fusion handles each pump as two fueling positions.
   - **Which brand are most of the pumps?** - Specify the brand of the pumps that you have.
   - **Do you have parallel or manifold suction type?** - Specify if you have parallel / manifold connection between the tanks or not.
4. The wizard is now prepared to configure the remaining options. Click **Next** to save and continue or **Start Over** to begin again.

4.3.2 Product Configuration

The following window is now displayed where you configure the product options.

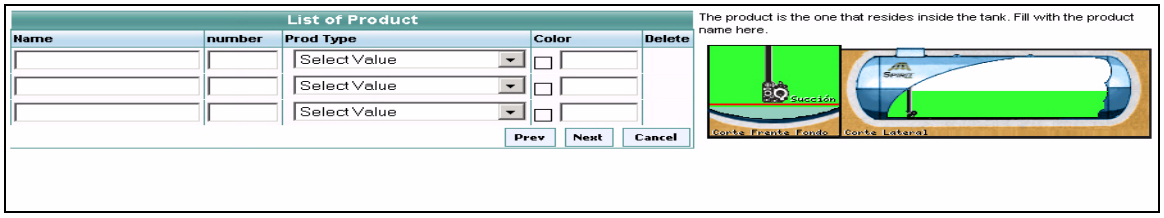

Figure 37 Product Configuration Window

1. Program the following options:
   - **Name of the product** - Enter the name of the product
   - **Number of the product** - Enter a numeric value that will identify the product.
   - **Prod Type** - This value indicates the type of product, (Premium, Unleaded).
   - **Color** - This value, if enabled, indicates the color of the product that will be shown in the console.
2. Click **Next** to save and continue or **Prev** to go back.

4.3.3 Tank Configuration

The following window is now displayed where you program the tank configuration. The ID of the tank is the first parameter to configure and must be a numeric value. This value allows identify the tank in a Fusion Forecourt controller. Then you must set the capacity and the product

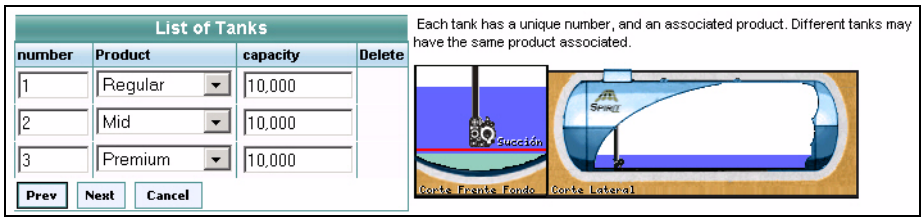

Figure 38 Tank Configuration Window

1. Program the following options:
   - **Tank Number** - Enter a numeric value for the tank which is used by Fusion to identify the tank.
   - **Product** - Define a Product for the tank using the Product pull-down.
   - **Capacity** - Enter the tank capacity.
2. Click **Next** to save and continue or **Prev** to go back.

4.3.4 Communication Configuration

The following window is now displayed where you program the communication configuration. Here you add the serial ports that you will use to connect the Single board computer with the loop board.

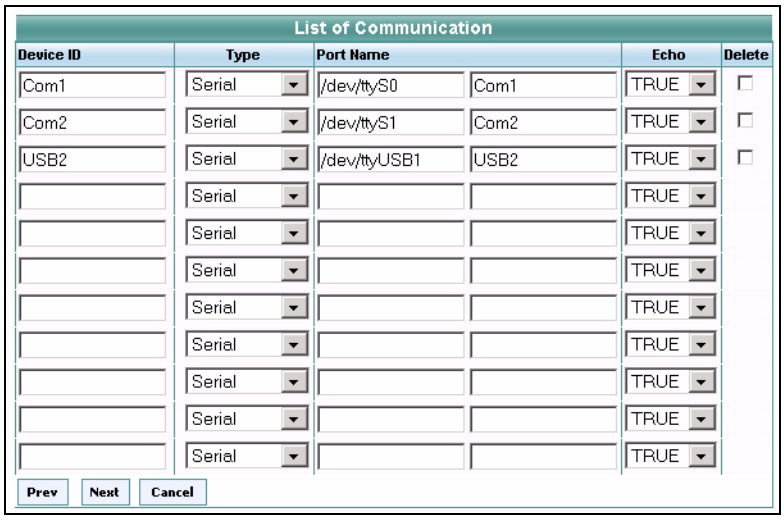

Figure 39 Communication Configuration Window

1. Program the following options:
   - **Device ID** - Enter the Device ID of the communications port.
   - **Type** - Select the type of communications for the port using the pull-down.
   - **Port Name** - Enter the Port Name of the communications port.
   - **Echo** - Define as True or False using the pull-down.
   - **Delete** - Enable the Delete box to delete the entry.

2. Click **Next** to save and continue or **Prev** to go back.

4.3.5 Pump Configuration

The following window is now displayed where you program the pump configuration. To configure the pumps you must configured the Brand of the pump, if you have more than one brand, the quantity of hoses and the communication port, where the pump will be connected.

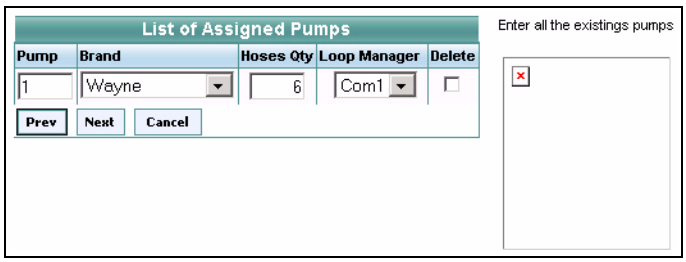

Figure 40 Pump Configuration Window

1. Program the following options:
   - **Brand** - Select the pump Brand using the pull-down.
   - **Hose Qty** - Enter the number of hoses per dispenser.
   - **Loop Manager** - Select the communication port using the Loop Manager pull-down.
   - **Delete** - Enable the Delete box to delete the entry.
2. Click **Next** to save and continue or **Prev** to go back.

4.3.6 Hose Configuration

The following window is now displayed where you program the hose configuration. Configure the relation between the grades, the products, and the hoses of the pumps.

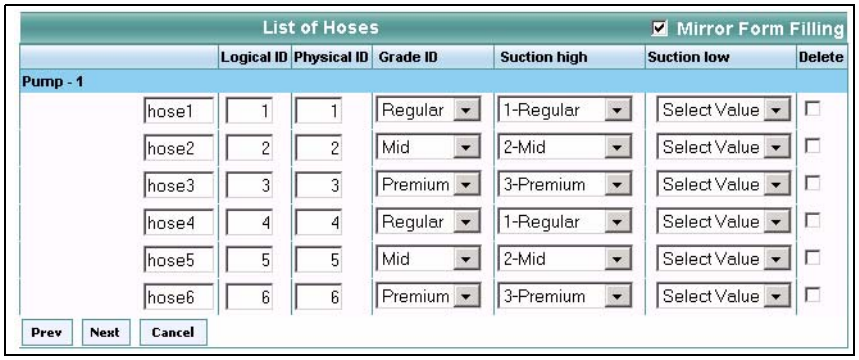

Figure 41 Hose Configuration Window

1. Program the following options:
   - **Physical ID** - Enter the physical ID of each hose on the pump.
   - **Grade ID** - Select the Grade ID of the product for each hose.
   - **Suction High** - Select the grade to be used for high suction
   - **Suction Low** - Select the grade to be used for low suction (use this value when programming blenders)
   - **Delete** - Enable the Delete box to delete the entry.

2. Click **Next** to save and continue or **Prev** to go back.

4.3.7 Applying the Configuration

1. To finish the configuration you must press the **End Process** button then click **Salir** to exit. See the following window.

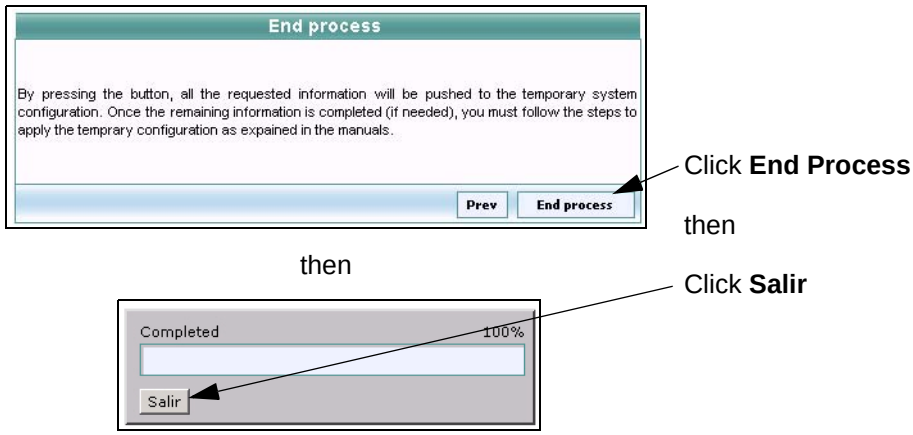

Figure 42 End Process Window

2. Go to **Configuration > Maintenance > Apply Configuration**

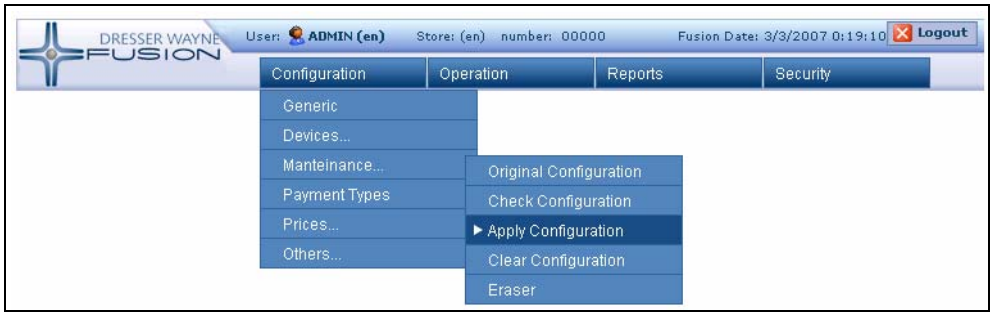

Figure 43 Apply Configuration

3. The following confirmation window will be displayed. Click **Close Window**.

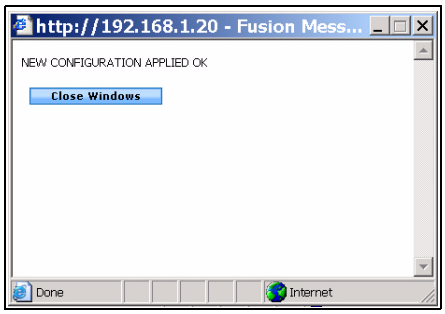

Figure 44 Apply Configuration Confirmation

4.4 IP Address Configuration

The Fusion is configured with the IP Address of 192.168.1.20. If you need to change the IP address you must login the LINUX session with the user "ipchange" with the password "ipchange". There are two ways to do this, one is connecting a screen and a keyboard to the fusion box and the other is by starting an SSH session through the PuTTy software.

4.4.1 How to use the Putty Software

1. To access Linux through the putty software go to the Start menu, look up the Putty Shortcut and click on it.
2. To start a session you have to complete the Host Name or IP address field and click **Open**.

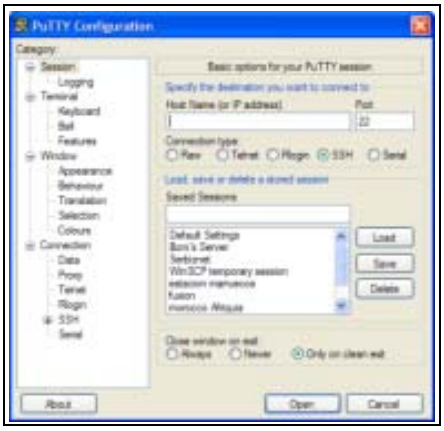

Figure 45 PuTTY Configuration Window

3. The profile of this user will start a session in the IP change script where you can add the new values and restart the computer to apply the changes.

4.4.2 How to Change the IP Address

If you access through the Putty Software or using a Screen and a Keyboard you will follow the same steps, first you must login and then you have to add the network values and restart the computer to apply the changes.

Figure 46 Login Screen

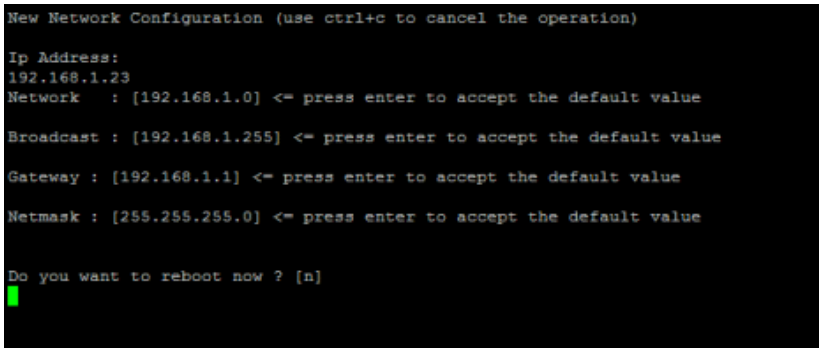

Figure 47 Confirmation Screen

PROGRAMMING

Wayne Fusion

Site Controller

Written by Tom Sigmon

This manual was produced on a personal computer using Adobe® FrameMaker® and Photoshop®

Page design uses Times New Roman and Arial Fonts

Manuals were electronically produced on a IKON Publishing System

Dresser Wayne, Dresser, Inc., is located at 3814 Jarrett Way, Austin TX 78728.
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