DRESSER Wayne

Installation/Operation

Dresser Wayne Fusion® HyperPIB, PAM™ Emulation and Console Installation

Table of Contents

1 PRODUCT

Product	Dresser Wayne Fusion Forecourt Controller
Application	3rd Party POS and Console
Production Version	Version 2.1.8
Current Build	Version x.xx
Hardware Platform	Wayne Proprietary Hardware

2 INTRODUCTION

The Dresser Wayne Fusion Forecourt Controller is a device capable of supporting existing peripheral devices that are currently supported through the HyperPIB. This manual explains how to install Fusion and configure it for use as a Console or with a Ruby Verifone POS or any other supported brand of POS.

3 HOW TO USE THIS DOCUMENT

By following the installation instructions and performing the steps in the sequence presented, you will be assured of a successful install.

NOTE: This kit may require installation of several wiring and hardware assemblies. Any installation or modification must comply with the requirements of the National Electrical Code (NFPA 70), the Automotive and Marine Service Station Code (NFPA 30A) and any other applicable codes

NOTE: You must wear a static wrist strap, part number 916962 or equivalent, securely attached to an earth ground, when handling any circuit board, electronic component or assembly, or when reaching into the site controller or dispenser computer enclosure. Do not use power tools.

4 UNPACKING AND INSPECTION

Complete the following steps:

1. Before opening any cartons, count the number of cartons and verify the carton count against the supplied packing list.
2. Inspect the cartons for damage made during transit.
3. File claim information with the carrier on the bill of lading.
4. Retain cartons suspected of damage for future claim purposes.

NOTE: You must wear an anti-static wrist strap, part number 916962 when removing electronic components from static packages. Attach the wrist strap securely to an earth grounding point to prevent possible damage from static electricity.

5. Remove all equipment from the shipping cartons and carefully inspect for visible damage.

NOTE: Any damage should be brought to the attention of the carrier and claims made immediately. Return all equipment to the respective cartons for protection until actual installation is made. Save all cartons until it is certain that return shipments are not required.

5 RETURNING DAMAGED COMPONENTS

Parts or components returned to the factory under warranty or for repair are subject to damage if not packaged properly. Complete the following steps to return parts or components to the factory.

1. Place electronic components in an anti-static bag and in the original shipping cartons for return shipment to the factory.

NOTE: If original shipping cartons are not available use a sturdy cardboard container and suitable packing materials such as anti-static polyethylene foam or bubble pack, to ensure the component is firmly packed.

2. Include a Return Parts Tag with the defective component describing the particular problem with the part.
3. Make sure adequate insurance is provided when returning parts to the factory.

⚠ **WARNING**

If the parts or components arrive at our factory in a damaged condition and it is determined that the damage is a direct result of inadequate or improper packaging, the damage will not be covered under the original warranty and the customer or distributor will be held responsible for the cost of repairs necessary to correct or replace the damaged parts.

6 SAFETY INFORMATION

Read NFPA 30A and NFPA 70 (U.S. Installations)

Before installing the equipment, the installer must read, understand and follow this manual, NFPA 30A, NFPA 70, and applicable federal, state and local codes and regulations. Failure to do so may adversely affect the safe use and operation of the equipment.

CSA C22.1 (Canadian Installations)

For installation in Canada the installer must read and understand this manual, CSA C22.1 (Canadian Electrical Code) and applicable federal, provincial and local codes and regulations.

Emergency Power Cutoff

NFPA30A require that an emergency power cutoff be installed. An emergency power cutoff is a single control that removes AC power from all site fueling equipment and submersible pumps. Make sure the control is accessible, labeled clearly, and installed away from dispensers. Make sure all station employees know where the Emergency Power Cutoff is located and how to operate it.

Electrical Circuits

Some of the procedures in this manual involve removal and connection of components during installation or service. Remove power from the distribution box before executing these procedures.

Low Voltage

Do not be misled by the term "Low Voltage". Voltage potentials as low as 50 volts may cause death under adverse conditions.

High Voltage

High voltage of 110 volts AC is used for operation of this equipment. Death on contact may result if safety procedures are not followed.

7 INSTALLATION LOCATION

Fusion equipment may be installed in a variety of locations, all the cabinets and required wireways must be located in a non-hazardous area of an enclosed weather protected building.

Table 1: Mounting Location

Component	Preferred Location	Notes
Dresser Wayne Fusion Forecourt Controller	Back room; on wall near the wiring conduits for pumps and CATs	AC Power input required

Table 2: Space Requirements (in inches)

Component	Width	Height	Depth
Dresser Wayne Fusion Forecourt Controller	16	14	2

Dispenser conduit and Wiring requirements

Conduits used must be ¾ in. and the length of each conduit can be up to 330 feet from Fusion to the dispenser. Verify that approved wireways and threaded metallic conduit with tight connections are used, that Data Link wiring is #18 AWG 600 Volt oil and gasoline resistant as a minimum.

Environmental Requirements

Ensure that all cabinets are located in an area that offers easy access for service, and free air space for cooling, 6" away from other cabinets.

Care should be taken to ensure that the temperature of the cabinets does not exceed the operational ranges of 0°C to 40°C (32°F to 104°F)

Preliminary Wiring

The site wiring must be completed before installation of a Fusion Forecourt Controller.

Data Link and CAT Wiring

Two pairs of data link wires must be installed from each dispenser to the location of the Fusion cabinet. One pair for pump communication and one pair for CAT communication.

8 CONFORMITY WITH STANDARDS

Ensure that all National, State, and local standards and codes are observed in site preparations, wiring, and installation.

Power Wiring

Confirm that all 120VAC to 240VAC wiring for outdoor equipment (line, neutral, relay select, etc.), is #14 AWG minimum (unless local codes call for 12 gauge), stranded, oil and gasoline resistant.

One conduit from the breaker panel to a dedicated outlet located near the Fusion Site Controller location is required. The conduit must contain three 14 AWG wires; 110 to 240 VAC, Phase, Neutral and Ground. Do not use electrical conduit to provide earth ground (earth ground does not exceed 5 ohms) The electrical wiring for the Fusion dedicated outlet must be run through the Emergency Stop circuit at the site so that all electrical power is cut to the dedicated outlet for Fusion whenever the Emergency Stop button is pressed. Do not connect the Fusion power supply cord to any UPS.

The circuit powering the distribution box must not power other devices. This circuit must not share a conduit with wiring for devices drawing high amperage (compressor, freezer, etc.) or devices that are sources of RFI (TV, microwave, intercom, etc.)

Data Wiring

Confirm that all data wiring for outdoor equipment (communication lines) is #18 AWG (minimum) stranded, oil and gasoline resistant. Pump and CAT data wiring that attaches from the wiring trough to Fusion needs to be double insulated to satisfy **NEC** code for commercial use. Wayne recommends the use of the following cable or equivalent for use as the pump and CAT communication wire for running between the wiring trough and the Fusion box.

General Cable

Product SKU: C2404.41.10

Product Description: Communication & Control Cable, Multi-Conductor, Unshielded, UL 2464, NEC Type CM (UL) c(UL), CSA CMG, No. of Conductors: 4, Gauge Size (AWG): 18, Conductor/Strands: 16/30, Jacket: Gray PVC, Temperature Range: -20Â°C to +80Â°C - Gray - 1000 Ft. Reel

Product Category: Electronics - Communication & Control Cable, Multi-Conductor - Unshielded-18 AWG & 20 AWG - Gray

Product Construction:

Conductor:	• 20 or 18 AWG fully-annealed, stranded tinned copper per ASTM B-33
Insulation:	• Color Code: See charts below
	• Premium grade color coded PVC per UL 1007
Jacket:	• PVC, gray
	• Temperature Range: -20ÂºC to +80ÂºC

Product Specification:

No. of Conductors:	• 4
Conductor Size (AWG):	• 18
Conductor/Strands:	• 16/30
Jacket Color:	• Gray
Nominal Insulation Thickness (in):	• 0.016
Nominal Insulation Thickness (mm):	• 0.41
Nominal Jacket Thickness (in):	• 0.032
Nominal Jacket Thickness (mm):	• 0.81
Nominal Outside Diameter (in):	• 0.258
Nominal Outside Diameter (mm):	• 6.55
Color Code:	• 1
Nominal C-C Capacitance (pF/ft):	• 28.0
Standard Packaging:	• 1000' Non-returnable Wood Reels
Standard Package Quantity:	• 1
UPC #:	• 079407700875

NOTE: Existing wiring that runs from the wiring trough out to the dispensers do not need to be modified since those wires are protected within the wiring trough or conduit.

Codes

Confirm that all equipment is installed in accordance with the National Electrical Code (NFPA 70), the automotive and Marine Service Station Code (NFPA 30A), and any other applicable State and local codes.

9 REQUIRED TOOLS

Refer to Table 3 for a list of tools required to install Fusion.

Table 3: Required Tools

Quantity	Description
1	Small Channel Lock pliers
1	Phillips Screwdriver Set (standard sizes)
1	Slotted Screwdriver Set (standard sizes)
1	Wire Cutters
1	Anti-static Wrist Strap
1	Needle Nose Pliers
1	Wire Strippers
16 to 32	Wire Nuts
1	Volt Meter
1	Diagonal Cutters
1	Standard Drill Bit Set
1	Drill
1	PC Feature Card Slot Blank

10 INSTALLATION OVERVIEW

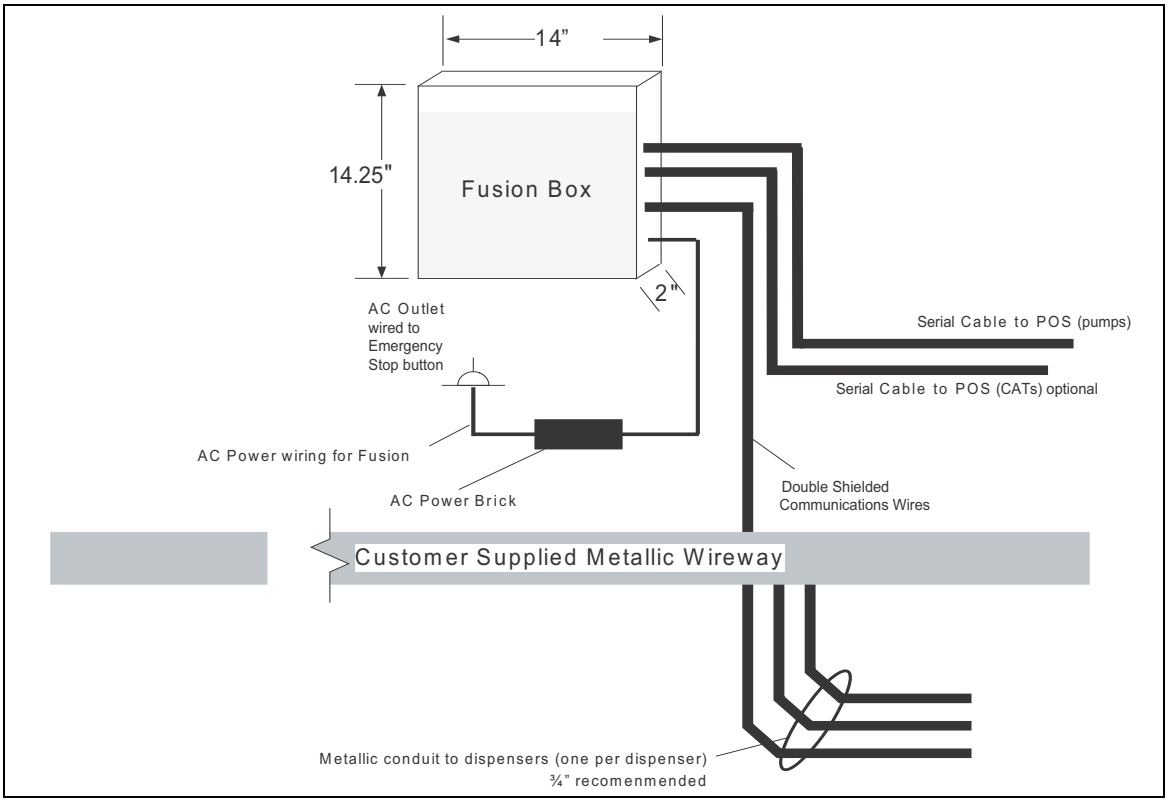


Figure 10-1 Backroom Installation

11 INSTALLATION PROCEDURE

When possible, mount the Dresser Wayne Fusion Forecourt Controller at a location on the back wall near where there is access to the wiring trough where the dispenser comm wires are located. If Fusion is going to be a HyperPIB replacement then the location will be where the HyperPIB EC was located. The previous diagram shows a typical placement of the Fusion Unit.

NOTE: If mounting the Fusion to a concrete wall, you will need concrete bits and appropriate mounting hardware.

NOTE: The Fusion mounting location may require different placement than shown. Whenever handling boards and components that are susceptible to damage from static electrical discharge, BE SURE to wear an anti-static wrist strap.

11.1 Shutdown the Site

___ 1. Stop all pumps one at a time, allowing current customers to complete their transactions.

___ 2. Shutdown the site and tape off the pumps and run EOD.

11.1.1 Sites with Wayne Dispensers

Perform the following steps if you are installing at a site with Wayne dispensers.

___ 1. Open the wiring trough and verify the labeling of the pump and CAT data wires.

___ 2. Disconnect pump and CAT wires from HyperPIB if present.

___ 3. Disconnect pump and CAT wire conduit from HyperPIB if present and remove the HyperPIB box.

___ 4. Extend discrete CAT and pump wire pairs from the wiring trough to the Fusion box location for each dispenser if needed.

NOTE: CAT data wires may have been bundled together in parallel within the wiring trough. Un-bundle the wire pairs and splice extensions if needed so that each discrete CAT wire pair reaches the location of the Fusion box. Use double insulated wire specified in Section 8 for all exposed wiring from the wiring trough to the Fusion box.

11.2 Fusion Installation

___ 1. Select a Dresser Wayne Fusion Forecourt Controller mounting location on the wall near where the HyperPIB box was located. The Fusion Site Controller mounting bracket should be mounted on the wall first, then the Fusion Site Controller slides onto the mounting tabs or slots of the bracket. Orient the bracket/box so that the data wire connectors are located on the right side and the vent holes are on the top and bottom. Fusion should not be mounted too far to the right otherwise visual access to the XMIT and RCV LEDs, which are next to the GRIB connectors, will be limited. The opposite end of the box has the Status display LEDs and should also be visible.

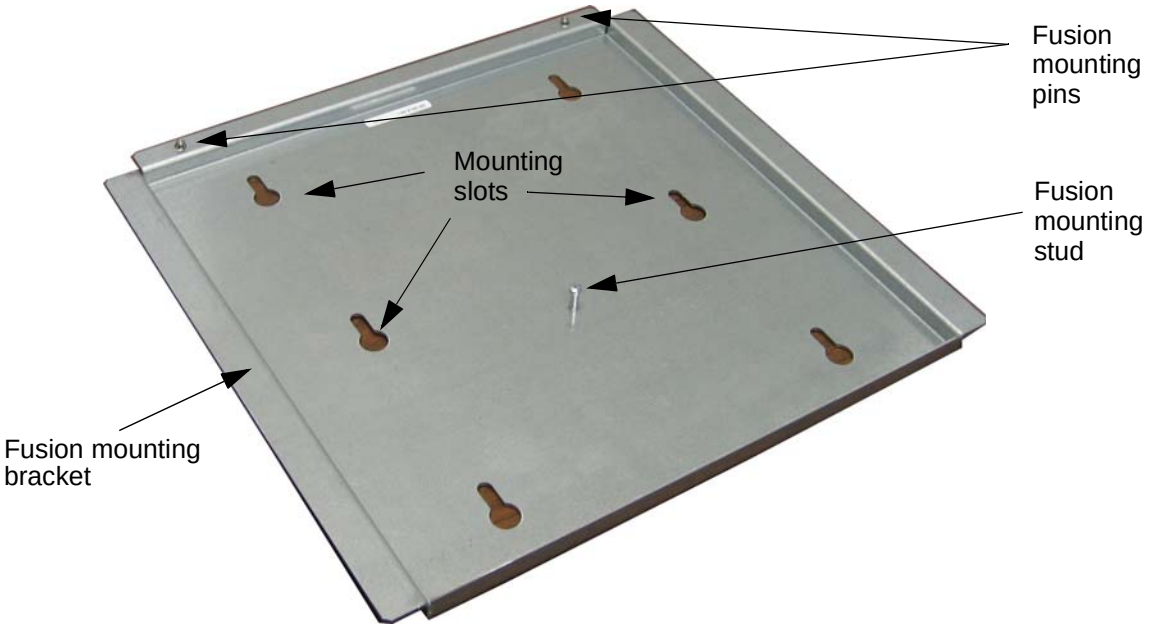


Figure 11-1 Fusion Mounting Bracket

___ 2. After selecting a mounting location, attach the bracket to the wall using six screws through the six mounting slots. Next, mount the fusion box to the bracket using the two mounting pins. Secure with a screw using the hole in the Fusion case into the Fusion mounting stud.

___ 3. Route the pump data wires (2 pairs per connector) up to the pump GRIB plugs beginning with Dispenser #1. Pump data wires can be connected as 4 fueling points per plug. See Figure 12-11 and Figure 12-12 .

___ 4. Route the CAT data wires up to the CAT GRIB plug beginning with Dispenser #1. See Figure 12-8 and Figure 12-10 .

NOTE: The green GRIB connectors for the Pumps (Current Loop) are located on the right-hand row of connectors while the black GRIB connector for the Wayne CATs (RS485/422) is located on the left-hand row of connectors. See Figure 12-1 .

___ 5. Insert the green current loop GRIB plugs into the appropriate GRIB sockets on the rear panel of the Fusion Site Controller beginning with the plug for Pump #1, #2, #3 and #4. See Figure 12-9 .

___ 6. Insert the black CAT GRIB plug into the GRIB socket on the rear panel of the Fusion Site Controller. See Figure 12-8 .

NOTE: Make a note of where all of the pumps and CATs are connected.

NOTE: Fusion units ship pre-configured for BIR functionality. BIR communication is through the 4th port of the Current Loop GRIB. If BIR functionality is not needed then remove the resistor from the GRIB plug that is in the 4th port.

___ 7. Connect CAT serial communications cable from the existing POS into the DB9 connector on the Serial-485 CAT GRIB.

___ 8. Connect pump serial communications cable from the Ruby system into the bottom Serial port on the back of the Fusion box [the CUPS board].

___ 9. Complete the wiring, secure the conduit, etc.

___ 10. Plug Fusion power brick into the dedicated120VAC power outlet which has been wired into the Emergency Stop button, then plug the other end into the transformer input of the Fusion Site Controller.

11.2.1 Logging on to Fusion

To access the Fusion programming you can either log in using remote mode using a laptop connected to the Nucleus switch or you can get a OneShot password and log onto Nucleus as Level 6. You can also log in using local mode by using a directly connected display, keyboard, and mouse.

Remote Mode

___ 1. Go to Programming (if using the Nucleus), and then click 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.

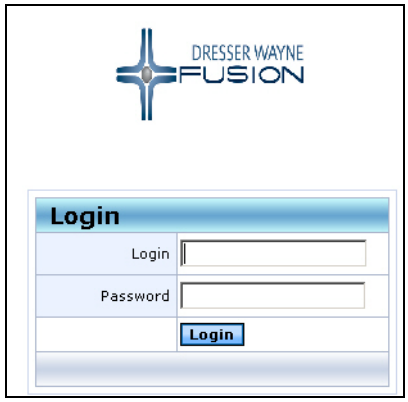


Figure 11-2 Fusion Login Screen

___ 3. Enter the **Admin** in the Login field and enter **Dresser3141** as the password. Press <enter> to continue.

Local Mode

___ 1. If logging on using local mode, Select the **ADMIN** user and enter the password of **Dresser3141** then click the **Login** button.

___ 2. Click the **Config** button then the **Browser** button. The following Login window will be displayed.

Figure 11-3 Fusion Login Screen

___ 3. Enter the **Admin** in the Login field and enter **Dresser3141** as the password. Click the **Login** button to continue.

11.2.2 Clear Configuration

1. Navigate to **Configuration > Maintenance > Clear Configuration** to erase any configuration programming done so far. You will be asked to confirm the command before processing the Clear Configuration request.

Figure 11-4 Clear Configuration Menu

11.2.3 Apply Configuration

Press the **Apply Configuration**, the system will not only validate the current programming, but try to apply the configuration. If successful a message will be displayed with an **OK** button. Otherwise, an error message will be displayed.

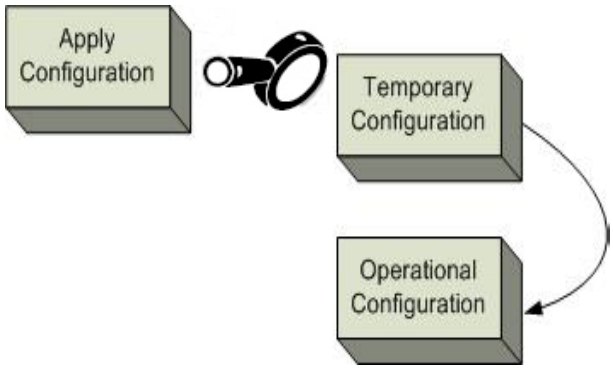


Figure 11-5 Apply Configuration

11.2.4 Wizard

The Wizard is used to automatically set the most common pump programming settings when configuring a Fusion system. The Wizard will ask for equipment and site layout information and configure Fusion based on this input.

___ 1. Log into the Web UI, Using Internet Explorer and navigate to **HOME > Configuration > Others > Wizard** to open the first window of the Wizard.

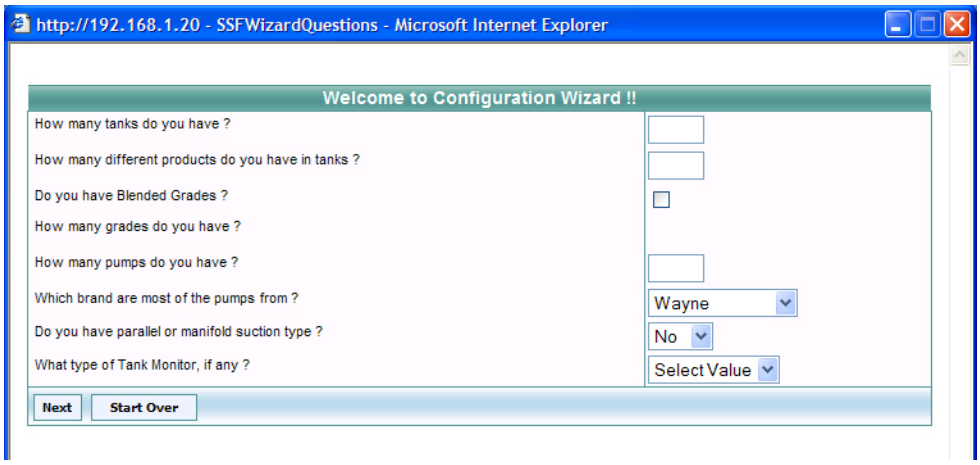


Figure 11-6 Welcome to Configuration Wizard Window

Enter the following station configuration information in this window.

- Number of underground fuel storage tanks at the site
- Number of different products in the tanks
- Does the site sell blended grades - If so, how many?
- Number of pumps (fueling points)
- What brand of pumps do you have
- Are any of the underground tanks parallel or manifold suction type
- What type of Tank Monitor (if any)

___ 2. Click the **Next** button to continue, and the following window will be displayed.

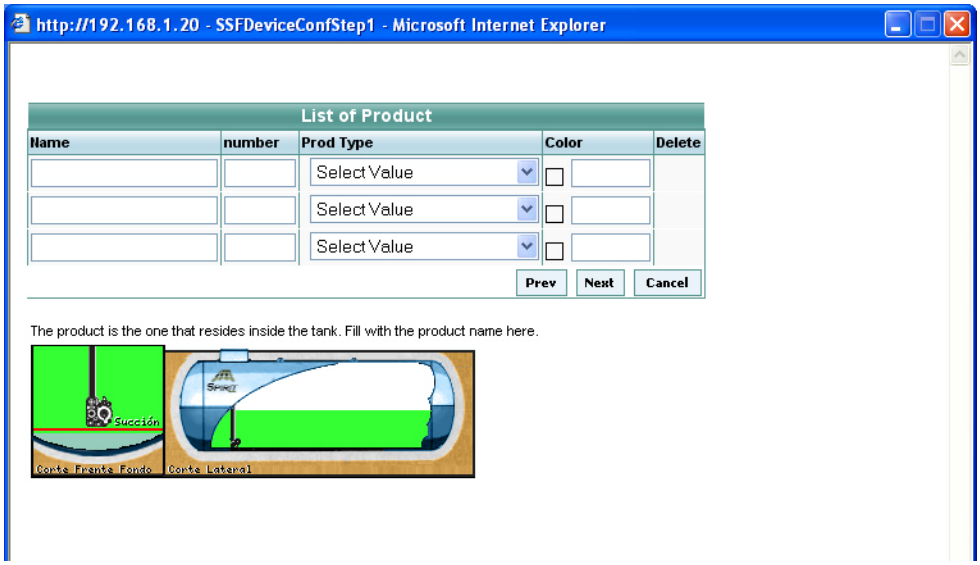


Figure 11-7 List of Product Window

___ 3. This window is used to define the fuel product that resides in the underground tank. Enter the following fuel product information.

- Name of the fuel product
- Number of the fuel product
- Fuel product type
- Color to be used by Fusion to define this grade

___ 4. Click the **Next** button to continue, and the following window will be displayed.

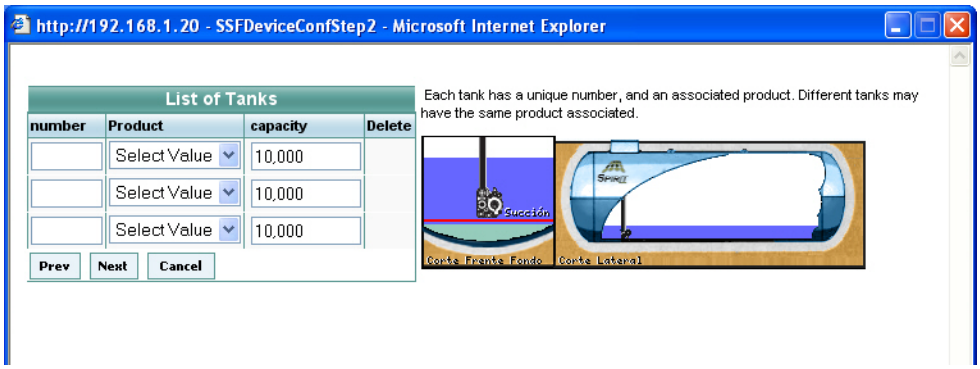


Figure 11-8 List of Tanks Window

___ 5. This window is used to define the configuration of the underground fuel tanks at the site. Enter the following fuel product information.

- Assign the tank number
- Assign the product that is in the tank
- Define the tank capacity

___ 6. Click the **Next** button to continue, and the following window will be displayed.

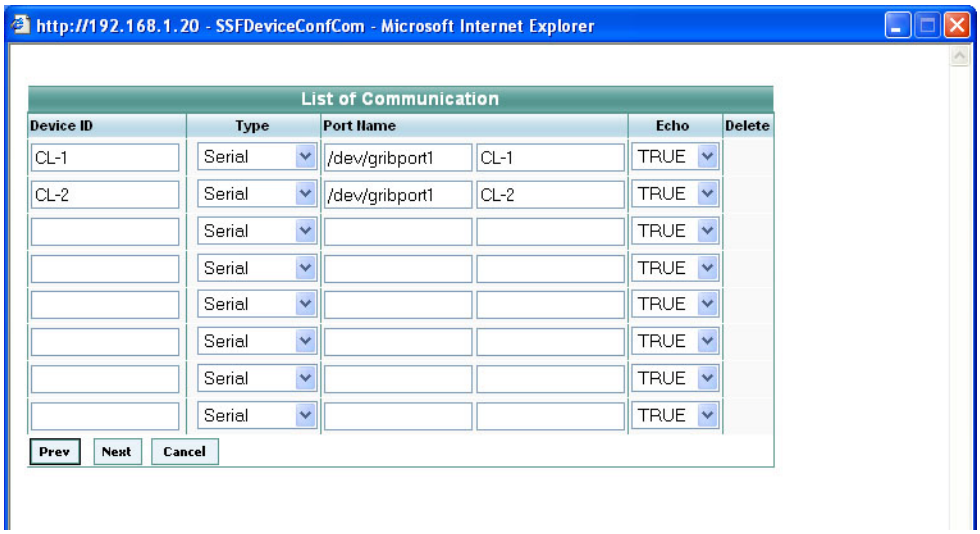


Figure 11-9 List of Communication Window

___ 7. This window is used to define the communication loops and assign them to physical ports on the GRIBs which are installed in the Fusion. The GRIBs vary according to their function but generally are used to communicate with the various devices on the forecourt. Enter the following communication information.

- **Device ID** - Define a communication loop ID that will be used to identify the communication loop on the selected GRIB. There can be 1 or 2 loops per GRIB port.
- **Type** - Define the communications type to use for this communications loop.
- **Port Name** - This is the device name used by the Linux operating system to define the physical GRIB port on the GRIB.
- **Echo** - This is normally set to ON.

___ 8. Click the **Next** button to continue, the following window will be displayed.

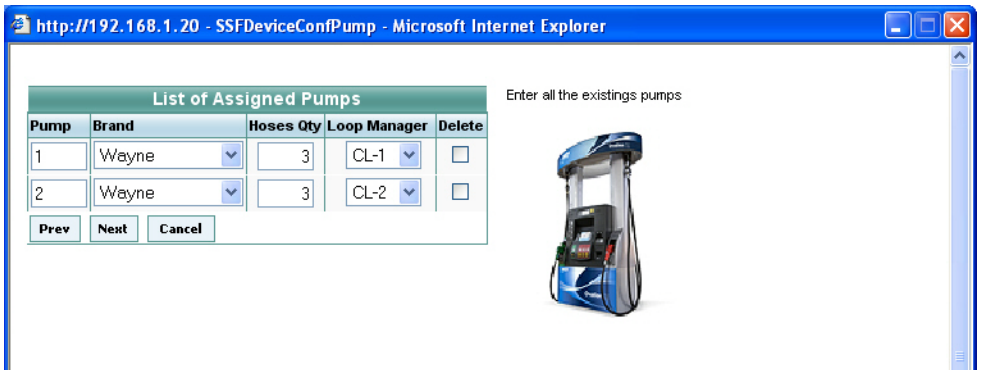


Figure 11-10 List of Assigned Pumps

___ 9. This window is used to define the pump type and to assign a communications loop to the pump. Enter the following information.

- **Brand** - Use the pull-down to select the brand of the pump.
- **Hoses Qty.** - Enter the number of grades the pump dispenses.
- **Loop Manager** - Use the pull-down to select the communications loop that the pump (fueling point) uses.

___ 10. Click the **Next** button to continue, and the following window will be displayed.

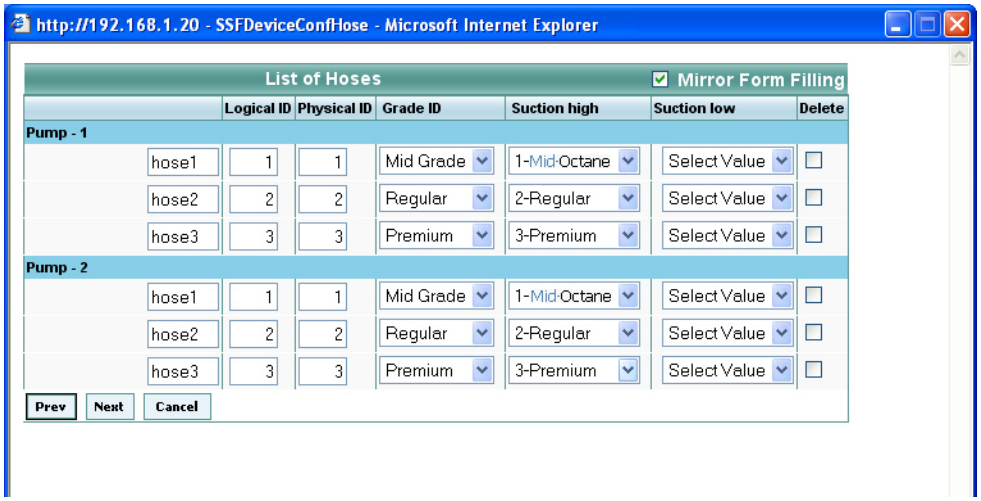


Figure 11-11 List of Hoses Window

___ 11. This window is used to assign fuel grades to the individual logical nozzles of the pump (fueling point). You also assign the Suction high and Suction low to the hose which will determine the tank used and product that is dispensed from the hose. For a pure grade, the Suction high programming is used to determine the Grade for the hose. For a blended grade, the Suction high is programmed as the high grade and the Suction low is programmed as the low grade.

- **Physical ID** - This value is the physical position number of the hose.
- **Grade ID** - This value is the Grade Name for the product assigned to the hose.
- **Suction high** - This value is the fuel product used for a pure fuel grade. It is also the fuel product used as the high product of a blended grade.
- **Suction low** - This value is not used for a pure fuel grade, however this is the fuel product used as the low product of a blended grade.

NOTE: When entering the Physical ID above you can optionally leave the value at zero, then use Learning Mode to physically lift each nozzle of the dispensers one at a time to "learn" the ID and automatically enter the value.

___ 12. Once all the hoses have been programmed click the **Next** button to continue, and the following window will be displayed.

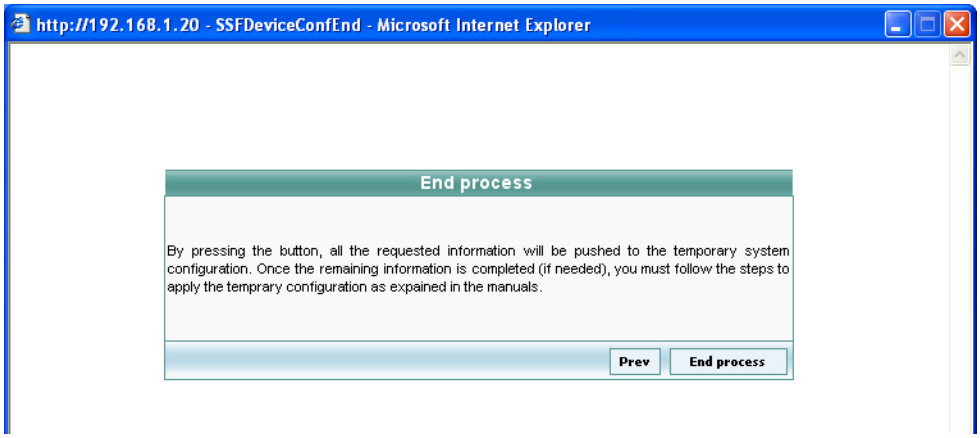


Figure 11-12 End Process Window

___ 13. This completes the Wizard pump programming. Click the **End Process** button to save the configuration in memory. This configuration has not yet been sent to Fusion so additional programming can be done if required prior to sending the configuration to Fusion. The following window will be displayed after the wizard saves the configuration programming.

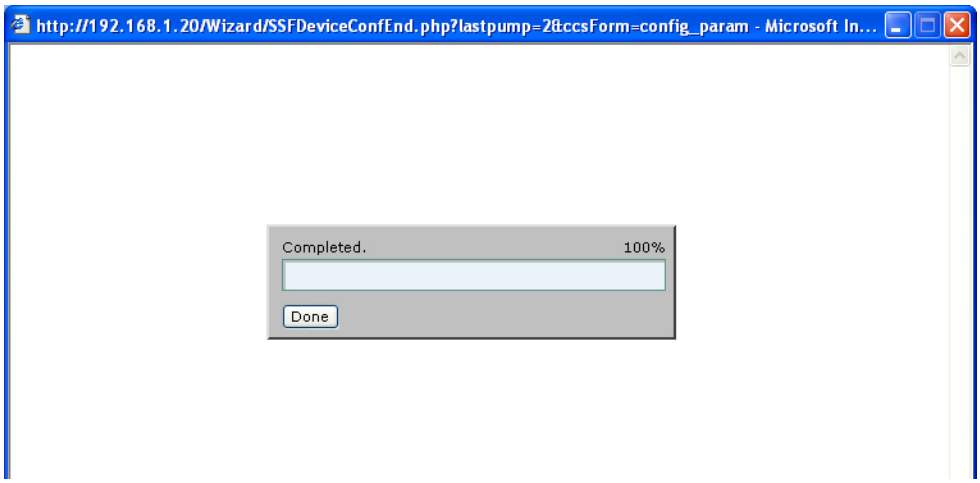


Figure 11-13 Wizard Complete

___ 14. Click the **Done** button to exit the Wizard.

11.3 Payment Types

Figure 11-14 Payment Types Menu

In the menu of payment types can vary according to the Fusion license and modules installed. There are types of payments that belong to the system and can not be modified, and there are others that come pre-loaded with the system. Other types of payments can be made by choosing a payment group, as seen in the next few screens.

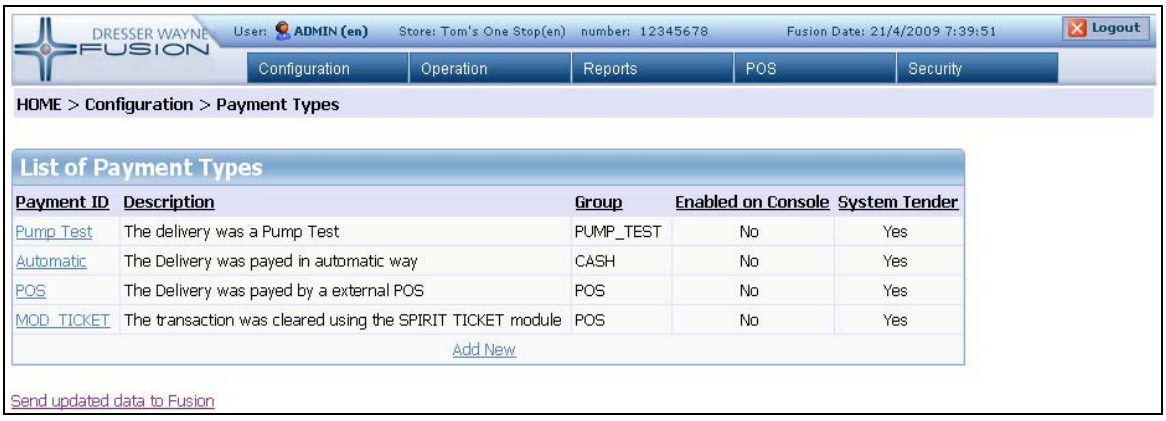


Figure 11-15 List of Payment Types

If you press the link **Add New** it displays the following screen, beneath the table of payment types, containing the necessary fields to create a new type of payment:

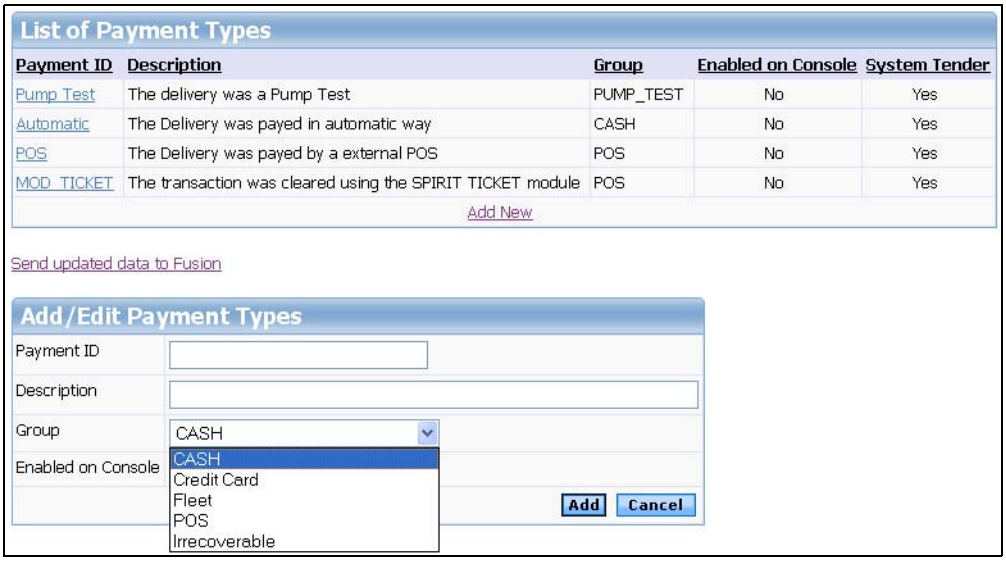


Figure 11-16 Add Payment Types

When creating a new payment type, you must choose the payment type from the **Group** pull-down, The options can be configured:

Note: As with most screens modification of data, the ID field can not be changed. In this case, the Payment ID field can be changed.

Once you've created or modified as necessary, should click on the link **Send updated data to Fusion**, which will send the changes to the controller, to verify and update with the payment type. In this case a screen messaging, confirming the change.

11.3.1 Payments

Log into the Web UI, Using Internet Explorer and navigate to **HOME > Configuration > Generic > Payments**.

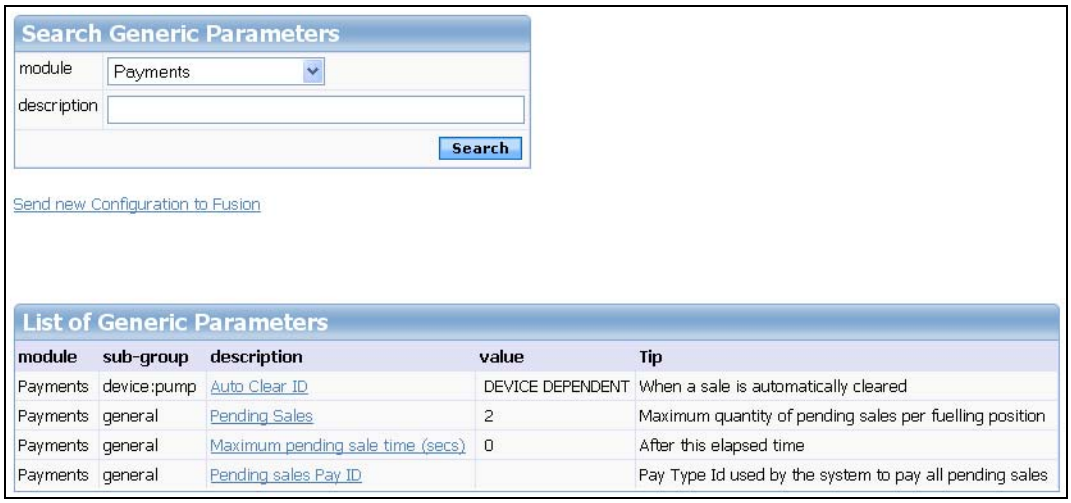


Figure 11-17 Payments Parameters

This module groups the parameters relating to the payment of the sales generated at the pump.

* **Auto Clear ID**: Parameter indicates the type of payment that will be used when a pump sale is automatically cleared. The sale can be set to Automatic or Unpaid and can be assigned per pump.
* **Pending Sale**: This value represents the number of stacked sales that will be allowed at the pump.
* **Maximum Pending Sale Time**: This value represents the maximum time that a sale will remain in a pending state in seconds. A value of 0 means no maximum.
* **Pending Sales Pay ID**: When a pending sale is automatically paid then use this payment method. Either Automatic , Unpaid, or leave at Select Value.

Click **Send new Configuration to Fusion** to send changes to Fusion.

11.3.2 Service Modes

Log into the Web UI, Using Internet Explorer and navigate to **HOME > Configuration > Generic > ServiceModes**.

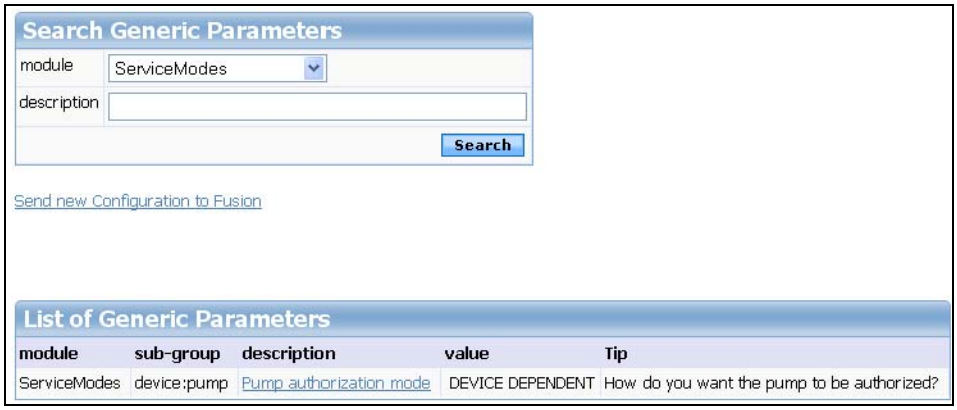


Figure 11-18 Service Mode Parameters

This module defines the Service level of the defined pump. The choices are **Full Service** or **Self Service** and can be defined on a per pump basis.

Click **Send new Configuration to Fusion** to send changes to Fusion.

11.4 Veeder-Root BIR Installations with EDIM

If the site has a Veeder-Root Business Inventory Reconciliation (BIR) system installed then the installation of Fusion is different depending on the hardware at the site.

The Electronic Dispenser Interface Module (EDIM) solution sends commands from Fusion to the EDIM over a serial link by capturing pump control data and sending it to the EDIM module in the Veeder-Root. A serial communication channel and a Tank Monitor must be defined in Fusion (via the Web UI) to enable this feature.

___ 1. Plug EDIM cable into DB9 EDIM connector on the Fusion. See Figure 12-1.

___ 2. Log into the Web UI, Using Internet Explorer and navigate to **HOME > Configuration > Devices > Communications**.

Figure 11-19 EDIM Programming 1

___ 3. Select **Add** to bring up the next screen where you enter **BIR1** then select **Serial** and click **OK**.

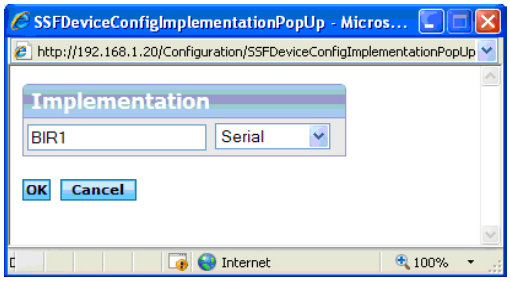


Figure 11-20 EDIM Programming 2

___ 4. The following programming window is then displayed where the BIR1 programming values are set.

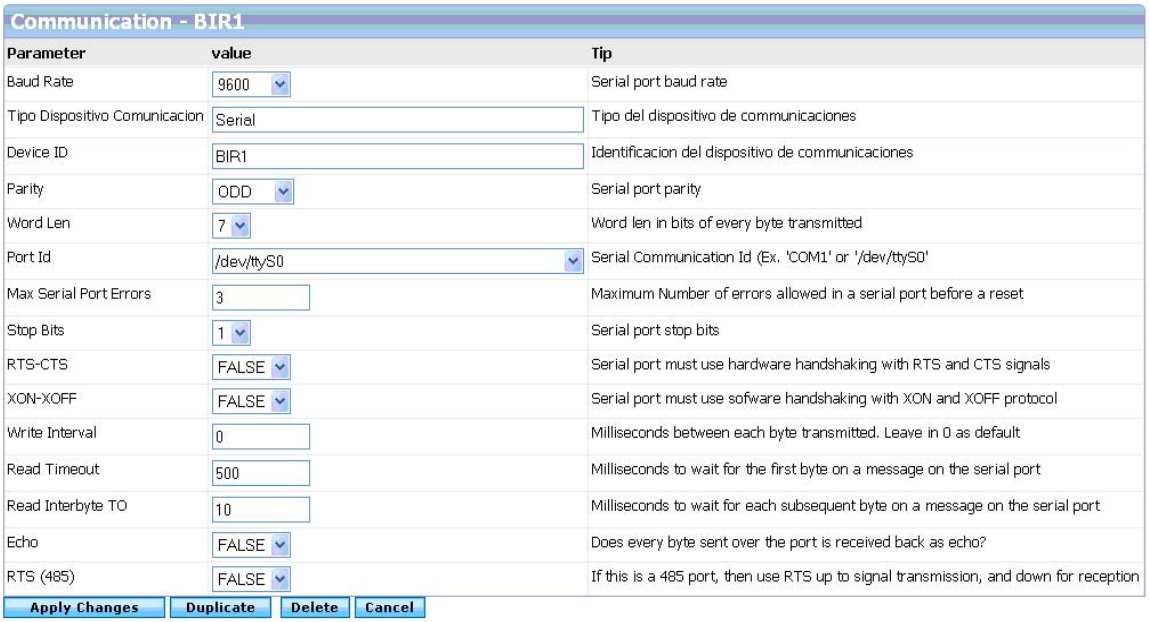


Figure 11-21 BIR1 Programming

Set the following values:

Baud Rate: **9600**

Device ID: **BIR1**

Parity: **ODD**

Word Len: **7**

Port ID: **/dev/ttyS2** (COM3, the 3rd Serial Port - this is case sensitive and zero based!)

Stop Bits: **1**

___ 5. Leave the other values unchanged and press **Apply Changes**.

___ 6. Next, Add a Tank Monitor by going to **HOME > Configuration > Devices > TankMonitor** and clicking **Add**. The following window will then be displayed.

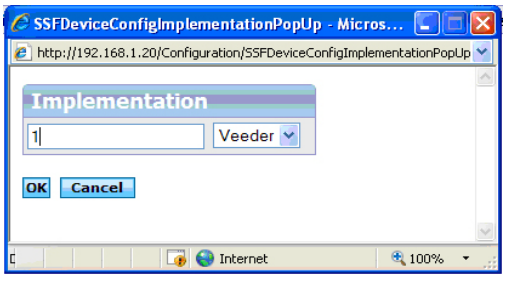


Figure 11-22 Tank Monitor Programming 1

___ 7. Enter **1** and select **Veeder** from the pull-down and then press **OK**. The following window will be displayed.

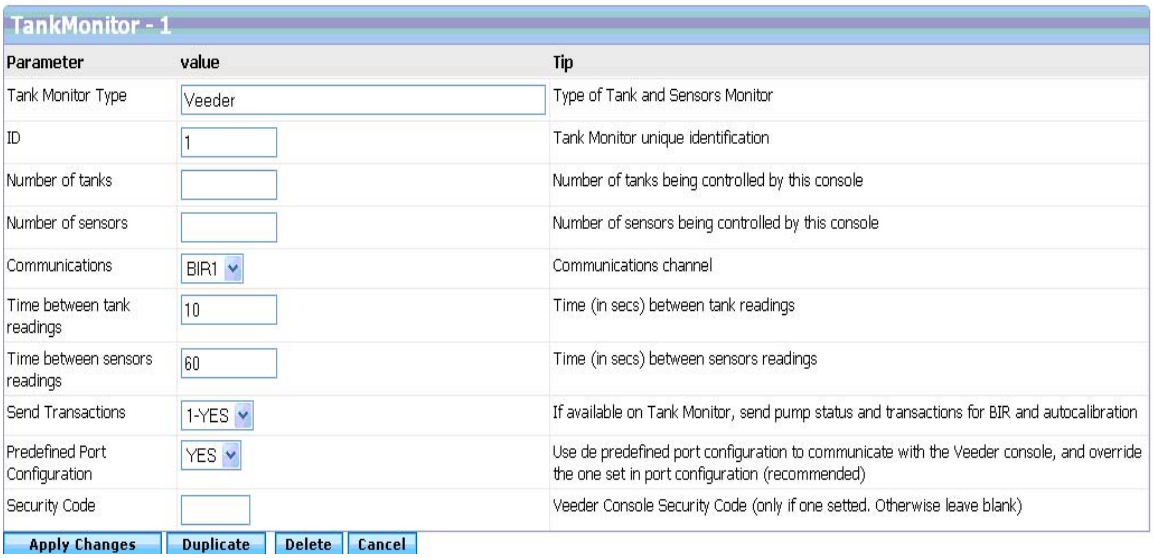


Figure 11-23 Tank Monitor Programming 2

Set the following values:

Communications: **BIR1**

Send Transactions: **YES**

___ 8. Leave the other values unchanged and press **Apply Changes** then click **Close Windows** to exit.

___ 9. Reboot Fusion for the changes to take effect.

11.5 Veeder-Root BIR Installations with CDIM

If you are installing Fusion in a site which utilizes a Veeder-Root BIR (Business Inventory Reconciliation) system, the following instructions will guide you through configuring the system to work with the Fusion site controller. The CDIM (Current Loop Dispenser Interface Module) has three communications ports but the only ones that are used are Port 1 and Port 2.

Figure 11-24 Veeder-Root CDIM Ports

Each CDIM port is attached to one (1) CAB (Cable Adapter Box) which can handle up to 16 Fueling Positions. If a site has more than 16 Fueling Positions then a second CAB is required.

When a CAB is connected to a Current Loop GRIB, it will plug into Port 4 at pins 3(+) and 4(-). Pins 2 and 3 are not used. This leaves Port 1, Port 2 and Port 3 as connection points for the current loop wires coming from the dispensers.

If a site has 16 Fueling Points they can be connected using one CAB and two Current Loop GRIBs. One GRIB connects the 16 Fueling Points and the 2nd GRIB connects the CAB at port 9.

11.5.1 Connect the CABs

___ 1. Disconnect the CAB communications cable(s) which are connected to the Wayne Nucleus Data Distribution box. (Make a note of the polarity of the wires when disconnecting.)

___ 2. Attach the CAB communications wire(s) to a GRIB plug. See the example below.

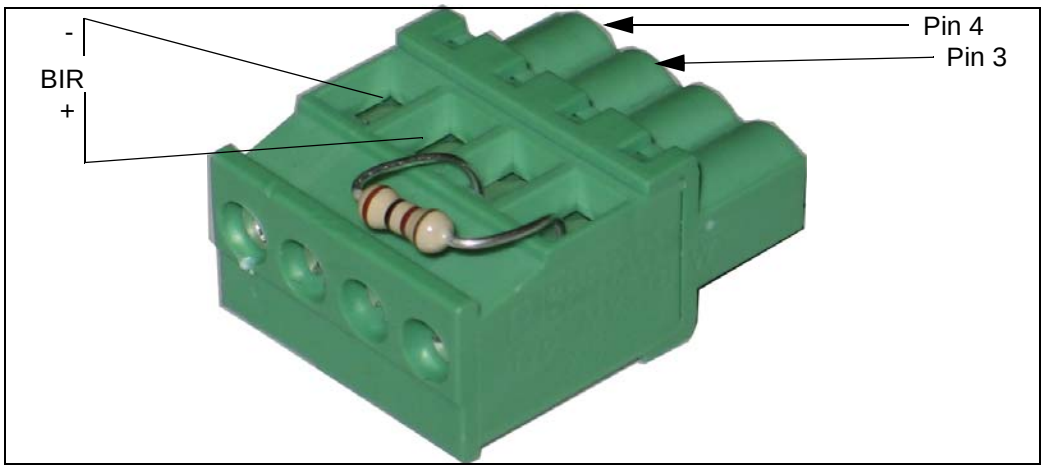


Figure 11-25 GRIB Plug

___ 3. Insert the GRIB plug into Port 4 of Current Loop GRIB #1.

___ 4. If there are two CABs then the CAB GRIB plugs get plugged into the Current Loop GRIB #2 at ports 8 and 9. See Figure 11-28.

See the following examples for configuration options when connecting up the CABs.

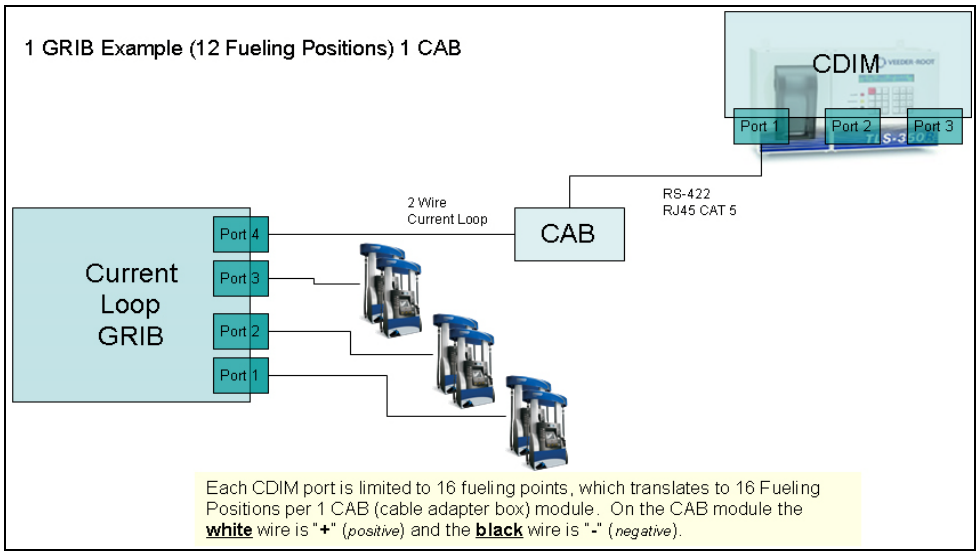


Figure 11-26 One CAB - 12 Fueling Points

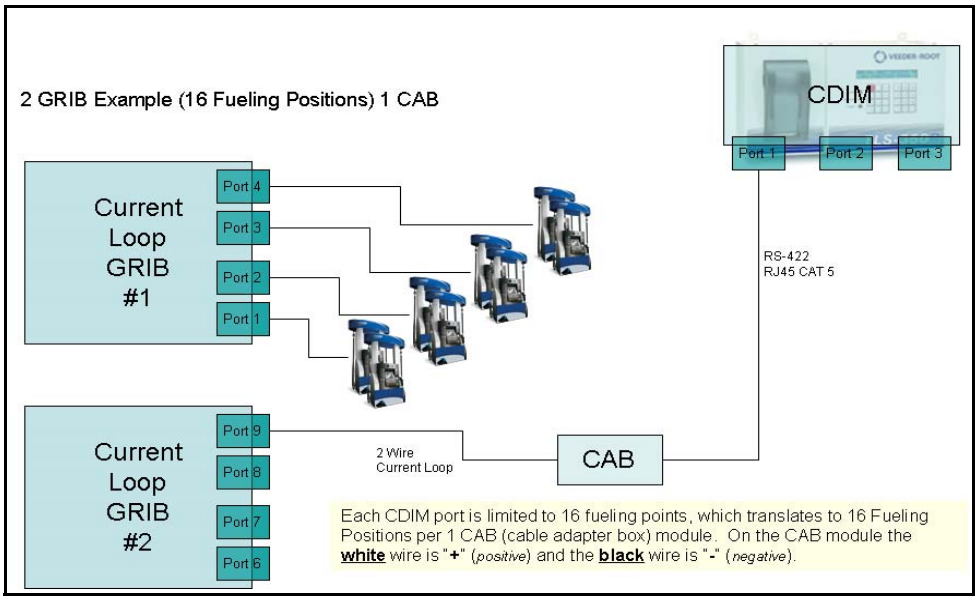


Figure 11-27 One CAB - 16 Fueling Points

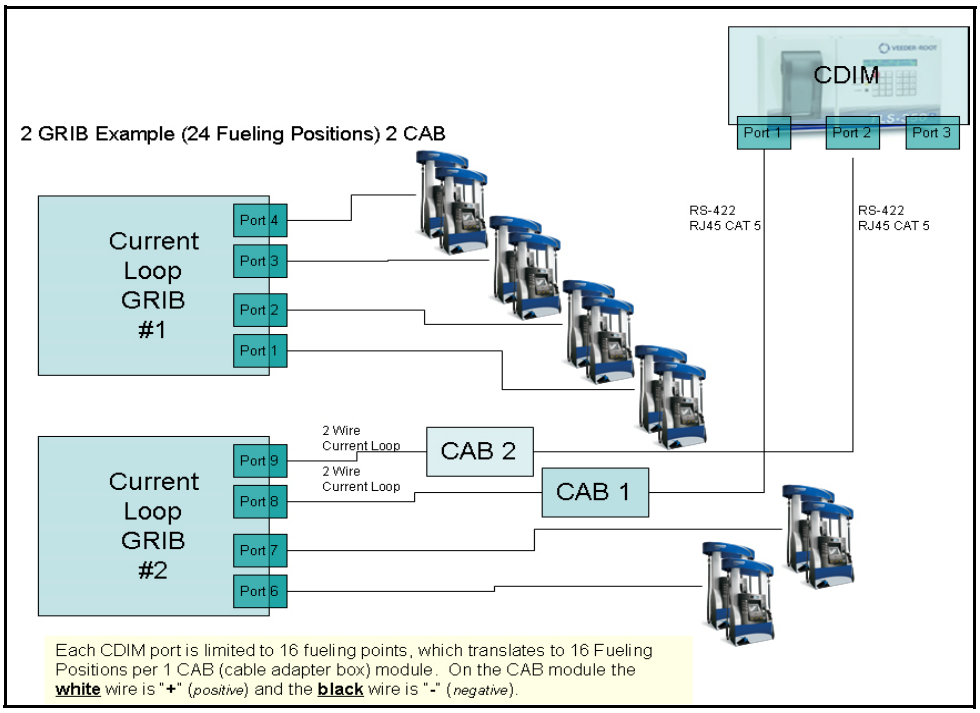


Figure 11-28 Two CABs - 24 Fueling Points

11.5.2 Connect the Dispensers

___ 1. Connect the dispenser with the lowest Fueling Point number to the Current Loop GRIB #1 beginning with Port #2. See Section 12.5. Continue plugging dispensers into GRIB ports 3 and 4.

___ 2. If there are 2 CABs at the site then continue plugging any additional dispensers into the next set of GRIB plugs on Current Loop GRIB #2.

11.5.3 Programming the Fusion for Sites with Veeder-Root BIR

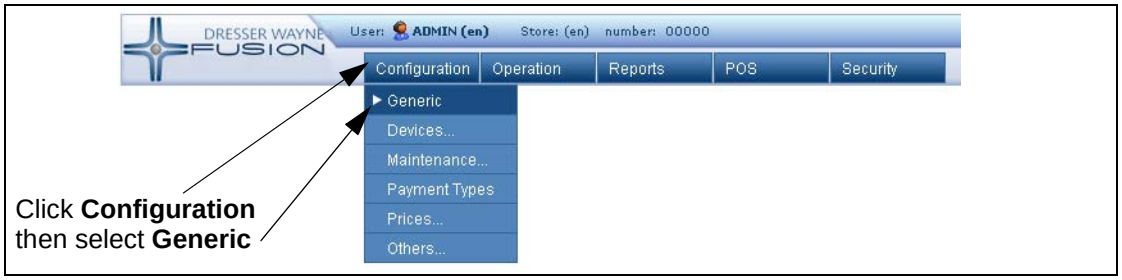


Figure 11-29 Fusion Programming Screen 1

___ 1. Click **Configuration**, and then select Generic. The following window will be displayed.

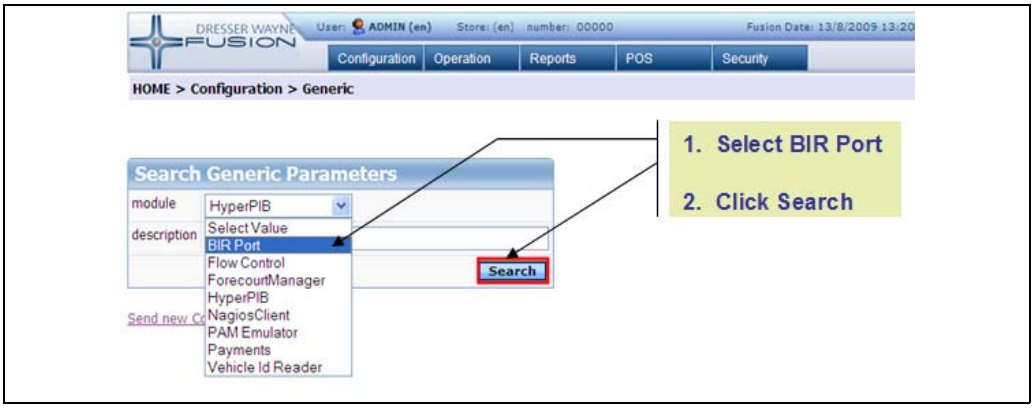


Figure 11-30 Fusion Programming Screen 2

___ 2. Select **BIR Port** from the module pull-down, then click **Search**. Scroll the display down to show the list of BIR Port Parameters.The following window will be displayed where you verify that the BIR port is set to **Enabled**.

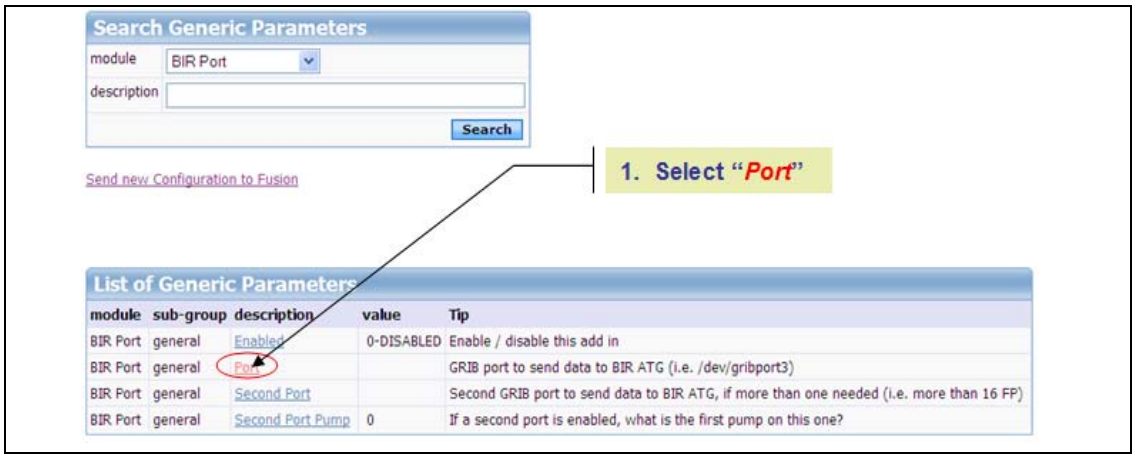


Figure 11-31 Fusion Programming Screen 3

___ 3. Click **Port** to open the following window. Use the drop-down to select the BIR CAB port address as **/dev/gribport4** when the CAB is plugged into port 4. See the following window.

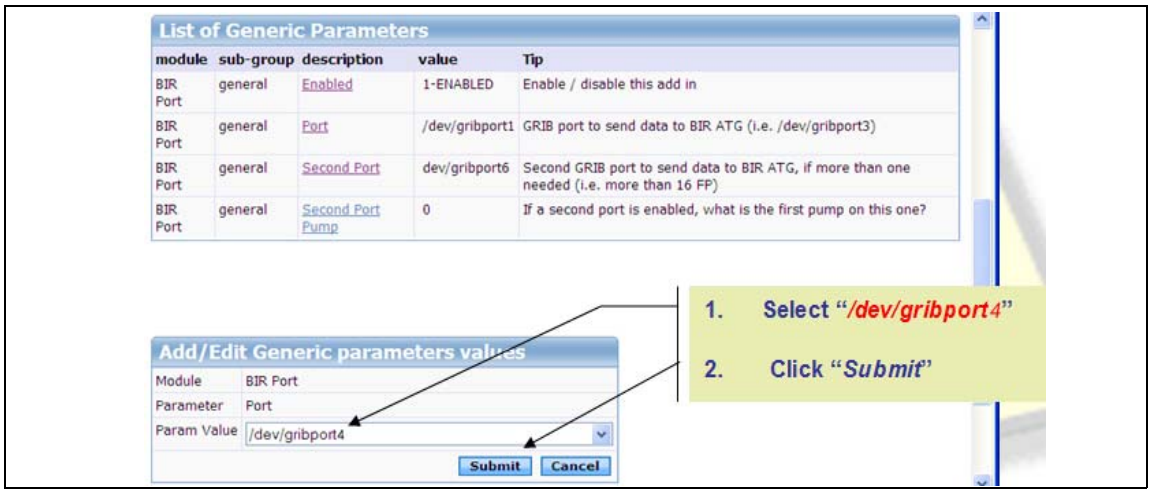


Figure 11-32 Fusion Programming Screen 4

___ 4. If you are installing a site that has 2 CABs, then you will need to program the communication for the second CAB. Click **Second Port** and the following window will be displayed.

IMPORTANT: If the "Second Port" is not used, then the "Second Port Pump" MUST be set to '0'

Figure 11-33 Fusion Programming Screen 5

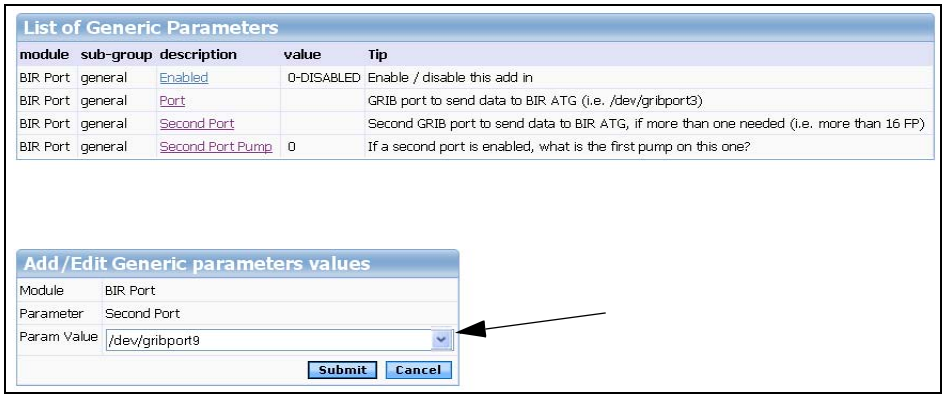


Figure 11-34 Fusion Programming Screen 6

___ 5. Using the drop-down, select the second BIR CAB port address as **/dev/gribport9** then click **Submit**.

___ 6. When using a second BIR CAB, click on **Second Port Pump** to program the fueling point address of the pump that is plugged into Current Loop GRIB #2 - Port 6 then click **Submit**.

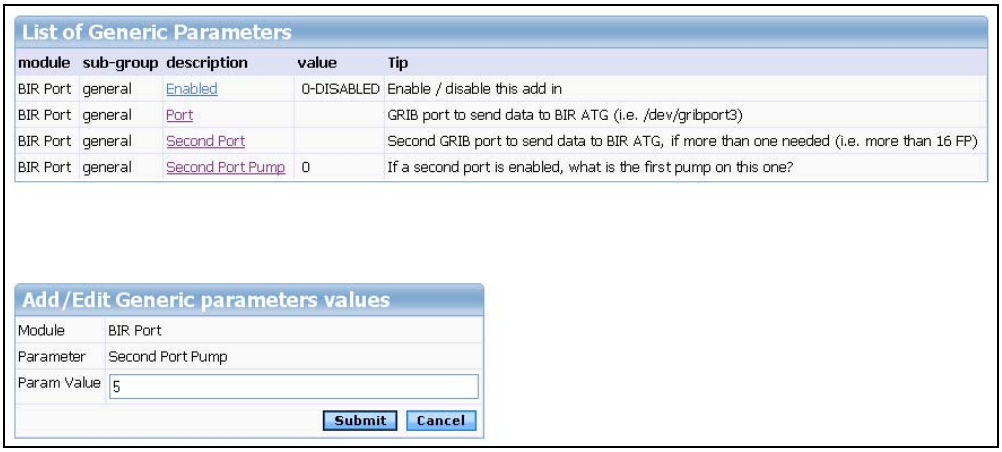


Figure 11-35 Fusion Programming Screen 7

___ 7. Click **Send new Configuration to Fusion** to download the new configuration to Fusion. The following windows will then be displayed.

Figure 11-36 Fusion Programming Screen 8

___ 8. Click **Close Windows** to complete the process.

___ 9. Navigate to **HOME > Configuration > Others > Reboot Fusion**.

___ 10. Select the **Reboot Fusion** button and Fusion will display:

The system will stop Fusion processes, shutdown the operating system and then reboot.

11.6 Programming the Fusion for 3rd Party POS

To access the Fusion programming screen, open an Internet Explorer session using a laptop connected to the Fusion ethernet port.

___ 1. Change the IP address of the laptop to match the IP scheme as the Fusion so that a connection can be made.

___ 2. Change your Subnet Mask to **255.255.255.0**

___ 3. Start an **Internet Explorer** session.

___ 4. In the Explorer Address bar, type in **192.168.1.20** and press <enter>. The following Screen will then be displayed.

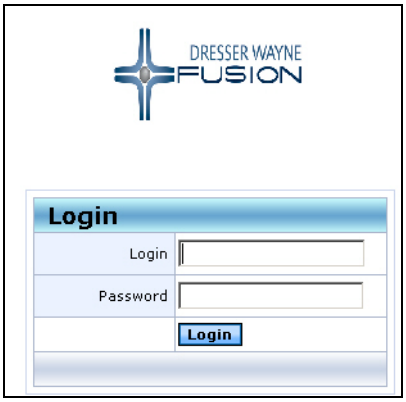


Figure 11-37 Fusion Login Screen

___ 5. Enter **Admin** in the Login field and enter **Dresser3141** in the Password field. Press <enter> to continue. The following window will be displayed.

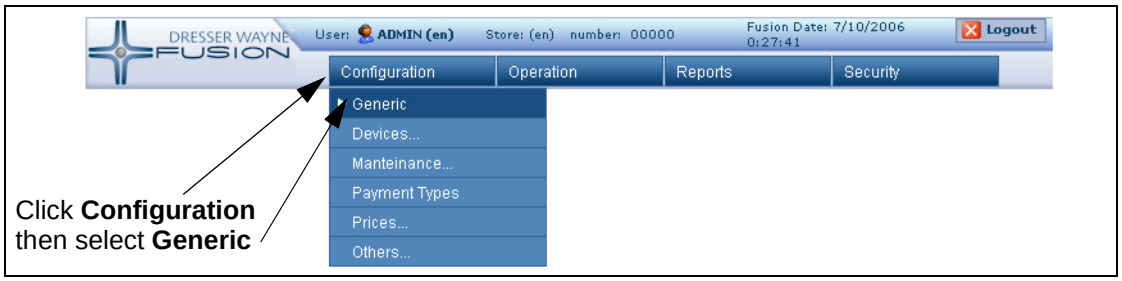


Figure 11-38 Fusion Programming Screen 1

___ 6. Click **Configuration**, and then select **Generic**. The following window will be displayed.

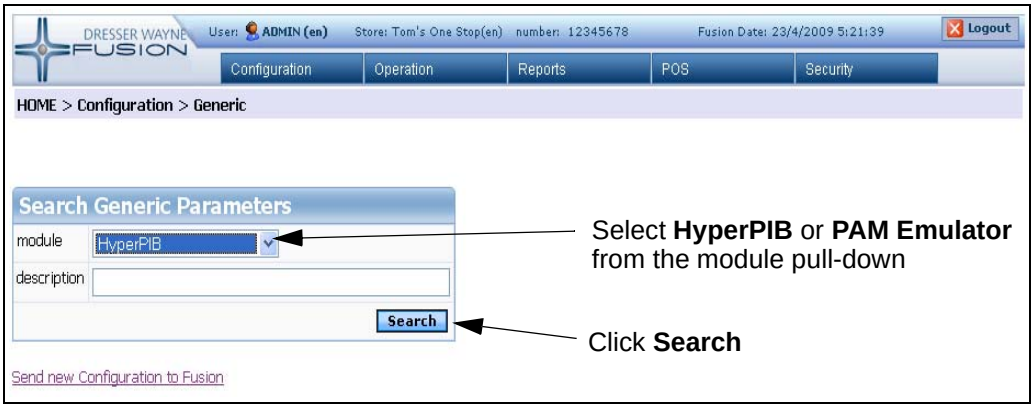
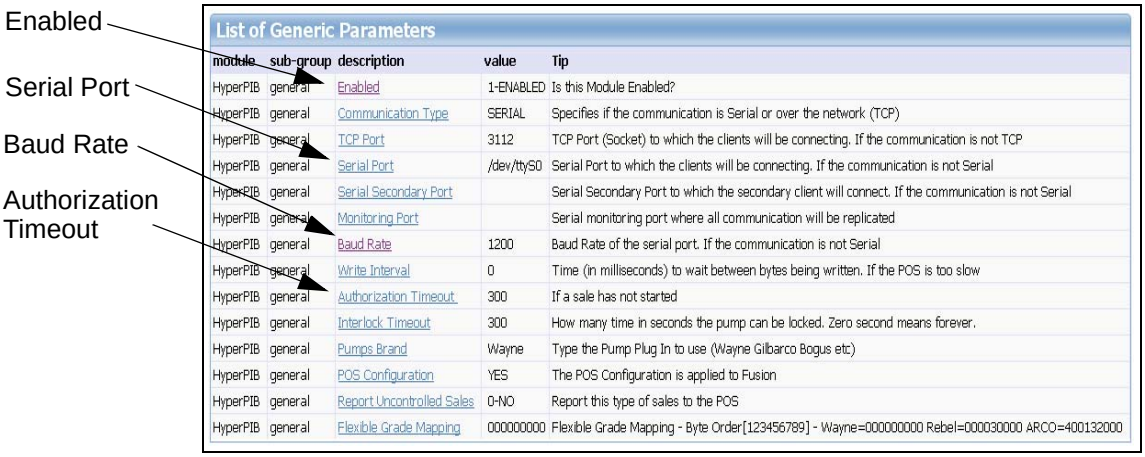


Figure 11-39 Search Generic Parameters

11.6.1 HyperPIB Configuration

___ 1. Select **HyperPIB** from the module pull-down, then click **Search**. Scroll the display down to show the List of Generic Parameters.The following window will be displayed.



module	sub-group	description	value	Tip
HyperPIB	general	Enabled	1-ENABLED	Is this Module Enabled?
HyperPIB	general	Communication Type	SERIAL	Specifies if the communication is Serial or over the network (TCP)
HyperPIB	general	TCP Port	3112	TCP Port (Socket) to which the clients will be connecting. If the communication is not TCP
HyperPIB	general	Serial Port	/dev/ttyS0	Serial Port to which the clients will be connecting. If the communication is not Serial
HyperPIB	general	Serial Secondary Port		Serial Secondary Port to which the secondary client will connect. If the communication is not Serial
HyperPIB	general	Monitoring Port		Serial monitoring port where all communication will be replicated
HyperPIB	general	Baud Rate	1200	Baud Rate of the serial port. If the communication is not Serial
HyperPIB	general	Write Interval	0	Time (in milliseconds) to wait between bytes being written. If the POS is too slow
HyperPIB	general	Authorization Timeout	300	If a sale has not started
HyperPIB	general	Interlock Timeout	300	How many time in seconds the pump can be locked. Zero second means forever.
HyperPIB	general	Pumps Brand	Wayne	Type the Pump Plug In to use (Wayne Gilbarco Bogus etc)
HyperPIB	general	POS Configuration	YES	The POS Configuration is applied to Fusion
HyperPIB	general	Report Uncontrolled Sales	0-NO	Report this type of sales to the POS
HyperPIB	general	Flexible Grade Mapping	000000000	Flexible Grade Mapping - Byte Order[123456789] - Wayne=000000000 Rebel=000030000 ARCO=400132000

Figure 11-40 Fusion HyperPIB Generic Parameters

___ 2. Click **Enabled** to open the following window where you verify that **1-ENABLED** is set from the Param pull-down. Click the **Submit** button to save. See the following window.

NOTE: When setting up the HyperPIB Configuration then set the value for the PAM™ (Pump Access Module) Emulator Communication Type to blank. See step 2 on page 36.

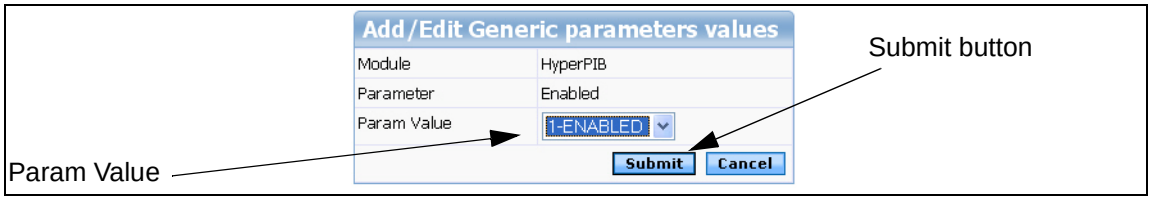


Figure 11-41 Fusion HyperPIB Programming Screen 1

___ 3. Click **Serial Port** to open the following window where you verify that **/dev/ttyS0** is set from the Param pull-down. Click the **Submit** button to save. See the following window.

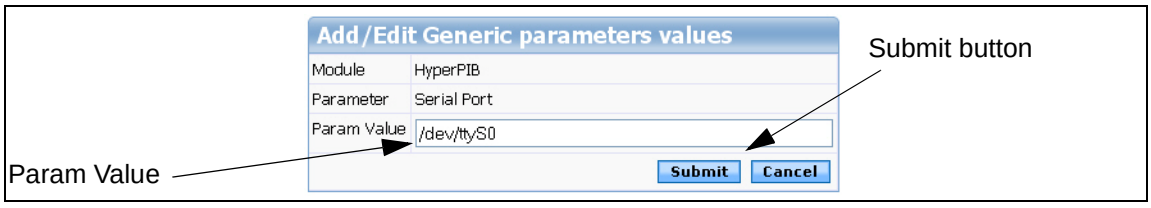


Figure 11-42 Fusion HyperPIB Programming Screen 2

___ 4. Click **Baud Rate** to open the following window where you verify/set the Baud Rate to match your POS. Click the **Submit** button to save. See the following window.

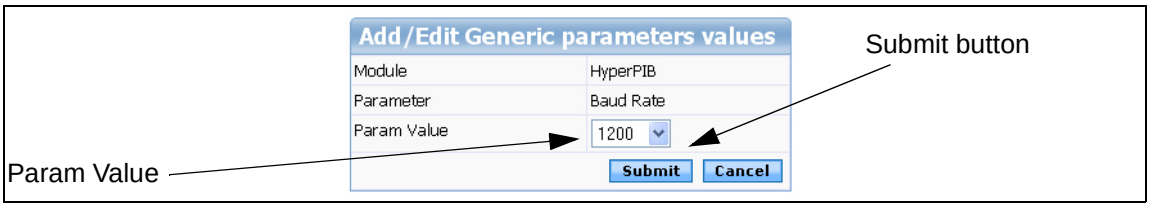


Figure 11-43 Fusion HyperPIB Programming Screen 3

___ 5. Click **Authorization Timeout** to open the following window where you verify/set the Authorization Timeout value to **300**. Click the **Submit** button to save. See the following window.

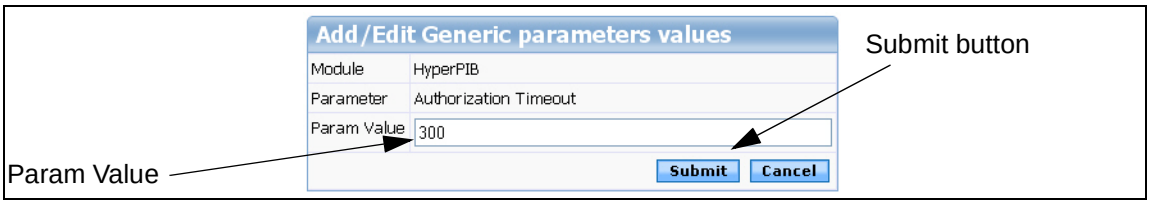


Figure 11-44 Fusion HyperPIB Programming Screen 4

___ 6. Click **POS Configuration** to open a window where you set the option to **Yes** or **No**. The first time you configure Fusion this value should be set to Yes to allow your system to download configuration data to Fusion. Once the download is complete, and the system has been verified to be operational, return to this option and set it to **No** to prevent any changes to the Fusion configuration. Click the **Submit** button to save.

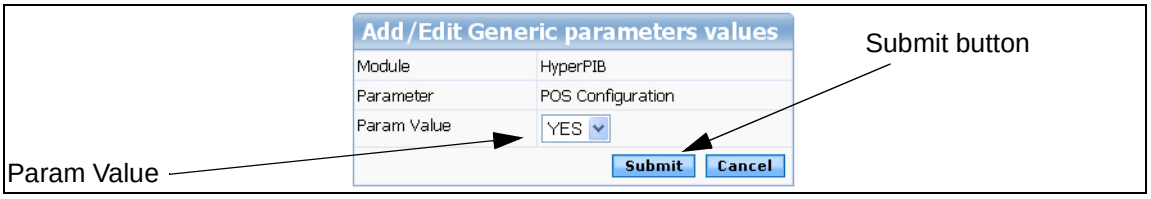


Figure 11-45 Fusion HyperPIB Programming Screen 5

___ 7. Click **Retries for auth/preset** to open the following window where **3** is set from the Param pull-down. This controls the amount of retries that will be allowed during a prepay for a customer to select the grade to pump. Click the **Submit** button to save. See the following window.

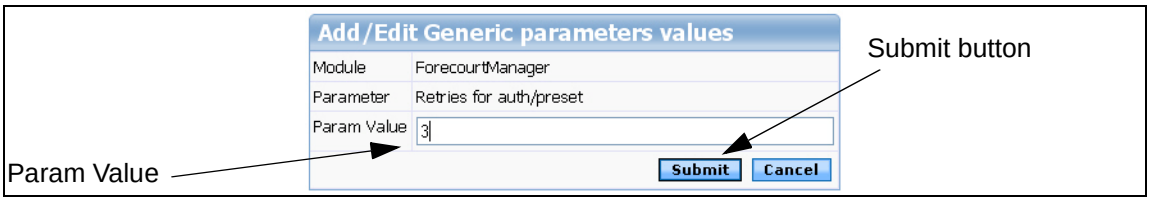


Figure 11-46 Fusion Programming Screen 4

11.6.2 PAM Emulation™ Configuration

___ 1. Select **PAM** from the module pull-down, then click **Search**. Scroll the display down to show the List of Generic Parameters.The following window will be displayed.

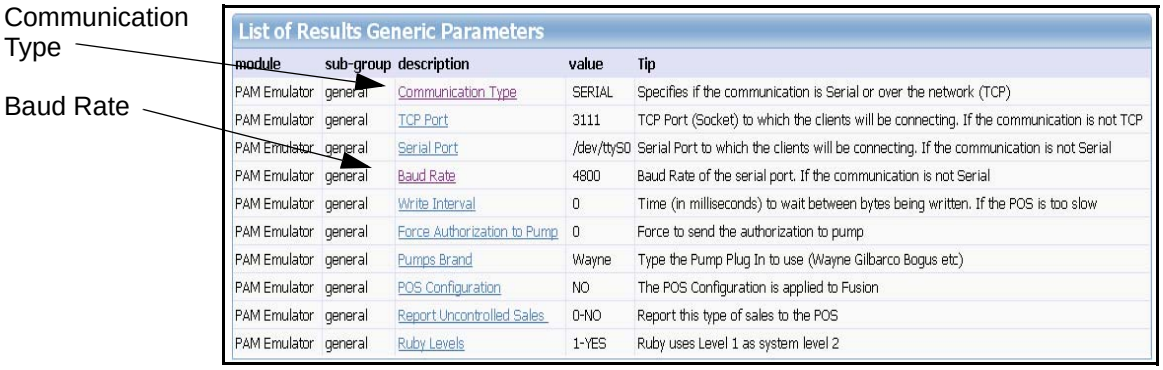


Figure 11-47 Fusion PAM Generic Parameters

___ 2. Click **Communication Type** to open the following window where you set select **Serial** from the Param pull-down. Click the **Submit** button to save. See the following window.

NOTE: When setting up the PAM Emulator be sure to set the HyperPIB Enabled option to 0-DISABLED.
See step 2 on page 34

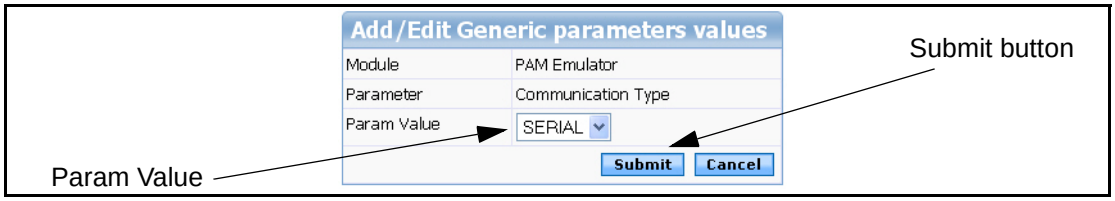


Figure 11-48 Fusion PAM Programming Screen 1

___ 3. Click **Baud Rate** to open the following window where you use the Param Value pull-down to set the baud rate to match your POS. Click the **Submit** button to save. See the following window.

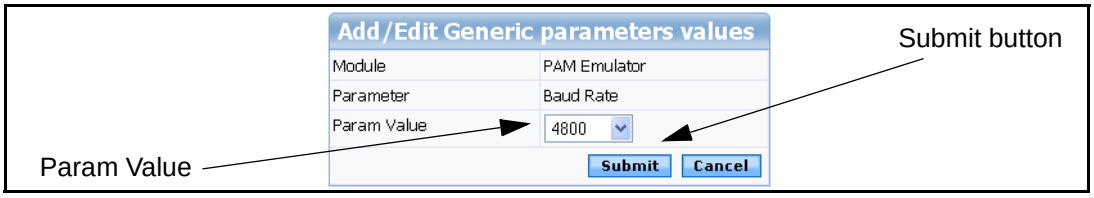


Figure 11-49 Fusion PAM Programming Screen 2

11.6.3 Save the Configuration

___ 1. Click **Send new Configuration to Fusion** to download the new configuration to the Fusion Site Controller. See Figure 11-39.

___ 2. Click **Close Windows**. Next, click **Configuration**, and then select **Generic**. The following window will be displayed.

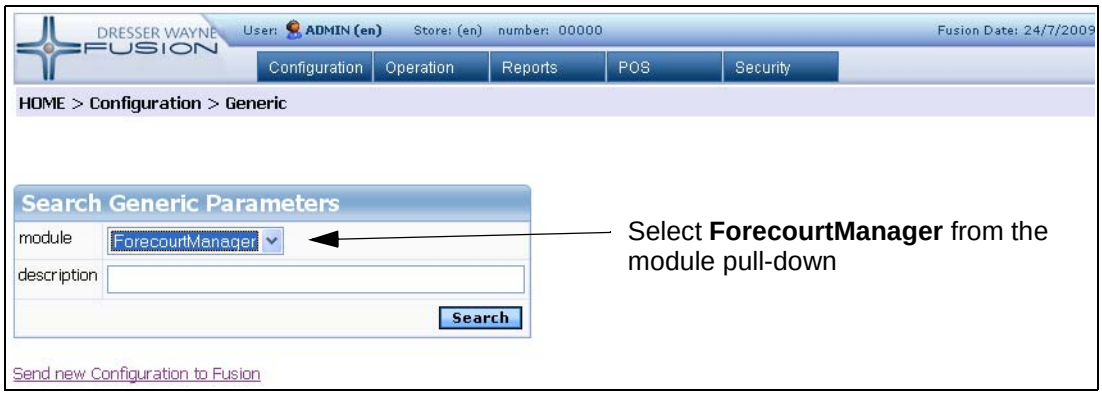


Figure 11-50 Fusion Programming Screen 2

___ 3. Select **Forecourt Manager** from the module pull-down, then click **Search**. Scroll the display down to show the List of Generic Parameters.The following window will be displayed.

Figure 11-51 Fusion Programming Screen 3

___ 4. Click **Retries for auth/preset** to open the following window where **3** is set from the Param pull-down. This controls the amount of retries that will be allowed during a prepay for a customer to select the grade to pump. Click the **Submit** button to save. See the following window.

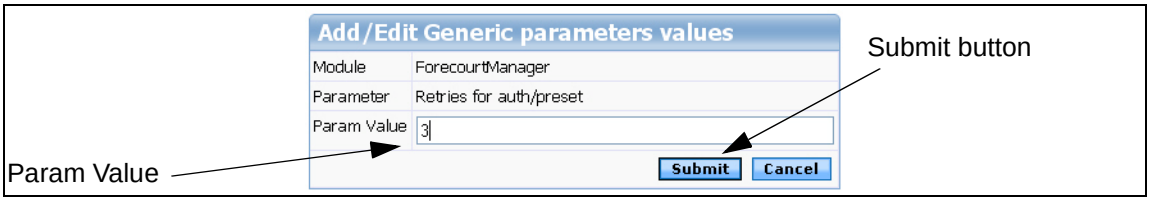


Figure 11-52 Fusion Programming Screen 4

5. Click **Send New Configuration to Fusion**.

Figure 11-53 Fusion Programming Screen 5

___ 6. Click **Close Windows** to complete the process.

___ 7. Close the Internet Explorer window by clicking the **X** in the upper right corner.

___ 8. Initialize Fuel Configuration on your POS. Once the download is complete, return to Fusion programming step 6 above to disable POS downloads.

___ 9. You will have to do a separate price change on the Ruby before the prices go out. The full initialize may not send the prices.

11.7 Installing a Site with a Mix of Wayne and Gilbarco Pumps

If you are Installing Fusion at a site with a mix of pump brands like Wayne and Gilbarco, then you will need to configure the site according to the following instructions.

___ 1. Make sure all the Gilbarco pumps are isolated on their own channel.

NOTE: If you are connecting a BIR, then you must use the EDIM solution since the CDIM solution will not work with this configuration.

___ 2. Program the pumps at the POS as if they were all Wayne pumps.

___ 3. After you have created your configuration with the Fusion option of "**POS Config = YES**", then turn the setting off (set to "**NO**").

___ 4. Next, from the Fusion Web UI, delete the Wayne pumps that are going to be the replaced with Gilbarco pumps.

NOTE: Pumps cannot be removed from the middle of the list. The Gilbarco pumps will need to be added/replaced at the end of the list.

___ 5. From the Fusion Web UI, add the Gilbarco Pumps.

___ 6. Apply the Configuration.

___ 7. Go to **Operations > Forecourt > Current Status** and open the "Closed" pumps (Gilbarco).

11.8 Installing a Receipt Printer in the Console Configuration

The following instructions detail the steps necessary to set up a printer on the Fusion system when setting up the Console. The standard printers that are used are TPG A794 or TPG A798. These instructions assumes that the connection type used for the printer is serial and that the printer is connected to Fusion using the available serial port. Perform the following steps to set up the printer:

NOTE: A default printer called PRINTER should already be installed.

- Create printer
- Configure Printer parameters
- Assigning the new printer to default POS (which has pos ID 0)
- Configuring Receipt layout
- Assigning Receipt Layout
- Apply the entire configuration to Fusion system
- Test configured printer from Fusion console.

11.8.1 Create the Printer

1. Go to **POS > Configuration > Printers** to add/see available printers.

Figure 11-54 Create the Printer 1

2. Click on **Add New** to add new printer with following information.

- Printer Id - Anything alphanumeric - Configure it to be TPG
- Computer - Fusion (typically this would remain same for fusion box)
- Type - Serial (this is standard since we use serial communication for fusion printers)

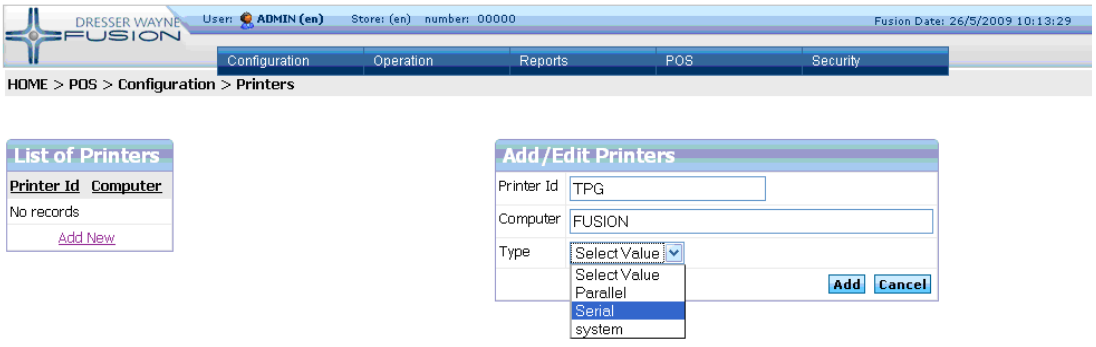


Figure 11-55 Create the Printer 2

11.8.2 Configure Printer Parameters

Click on printer Id to configure printer parameters. You will see a screen similar to following example.

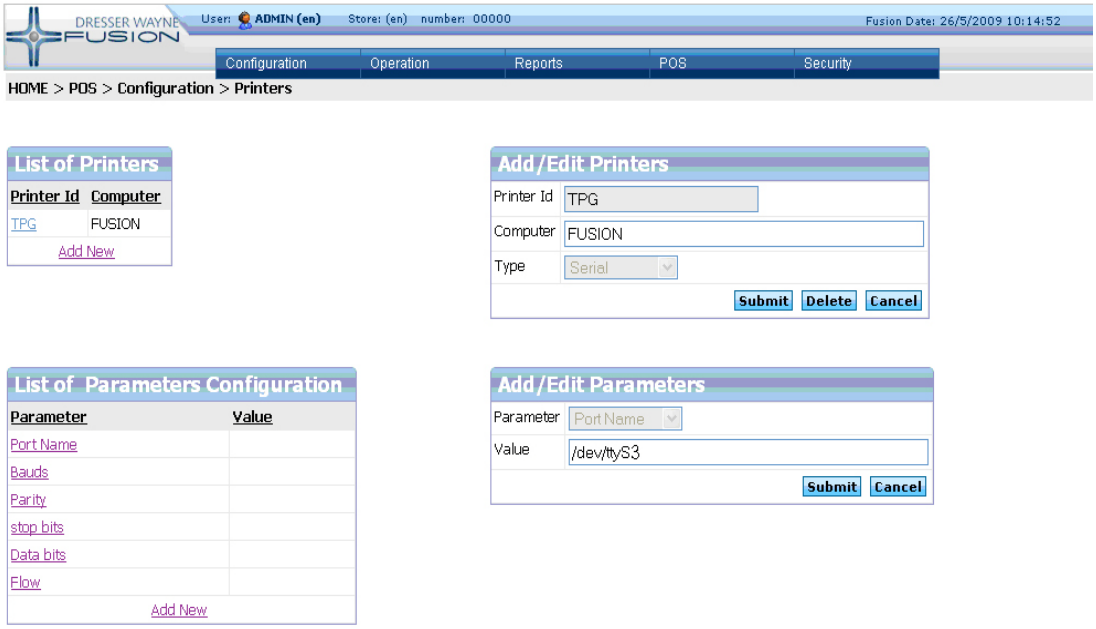


Figure 11-56 Create the Printer 3

Click on each individual parameter to enter corresponding values for each of them.

Add following values for the parameters.

- Bauds - 9600
- Parity - none
- Stop bits - 1
- Data bits - 8
- Flow - none
- Port Name - /dev/ttyS3 (Capital 'S' -Case sensitive configuration)

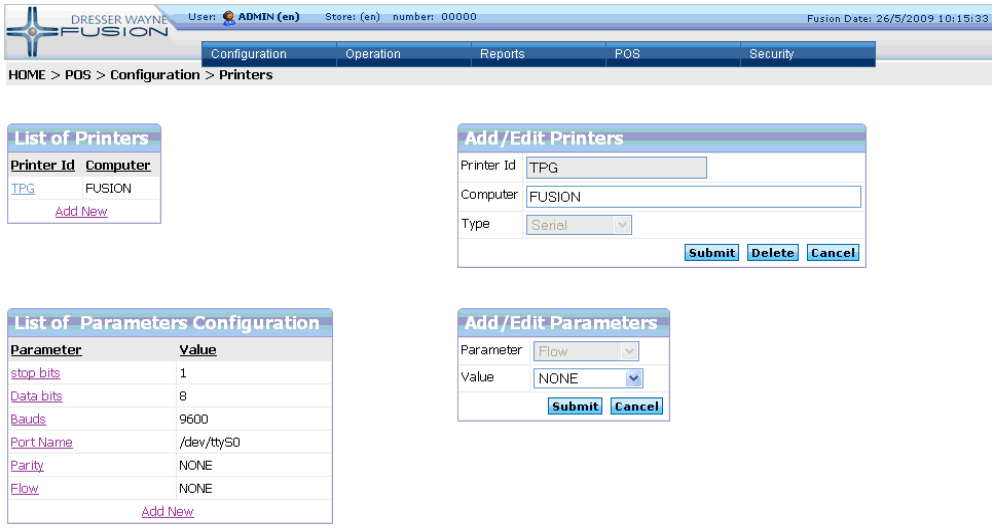


Figure 11-57 Create the Printer 4

11.8.3 Adding the New Printer "TPG" to the POS

Go to **POS > Configuration > POS** and click on Pos Id "0". If you have more than one POS configured then select whatever POS ID you want to setup the printer. For now, use the default POS which is ID 0. After selecting POS you will see a parameter configuration window. Click "**add new**" and select parameter PRINTER_ID and add printer ID "TPG" or whatever ID you have given as part of printer creation.

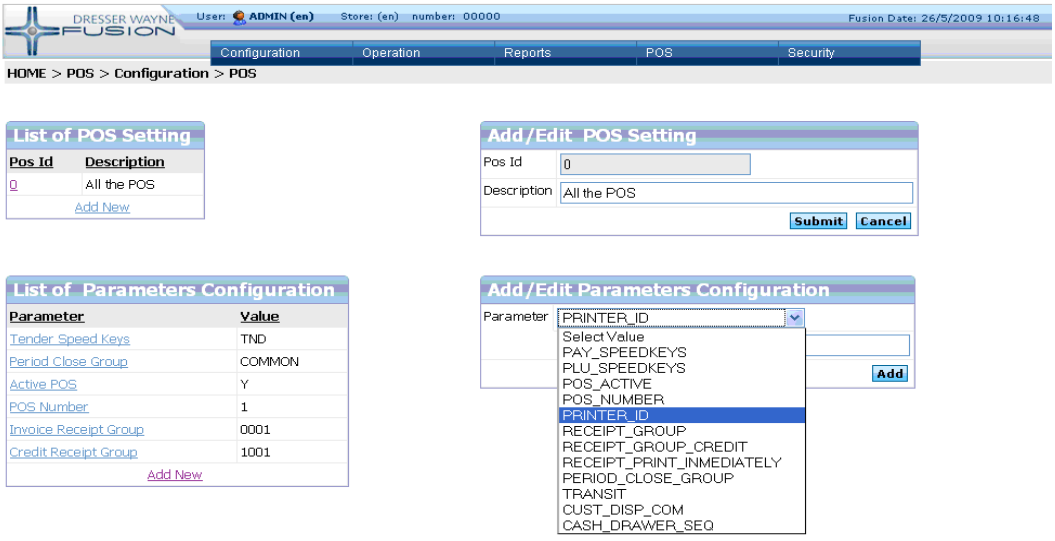


Figure 11-58 Add New Printer TPG

11.8.4 Assigning Receipt Layout

1. Go to **POS > Customers > Customers Types** and the following window will be displayed.

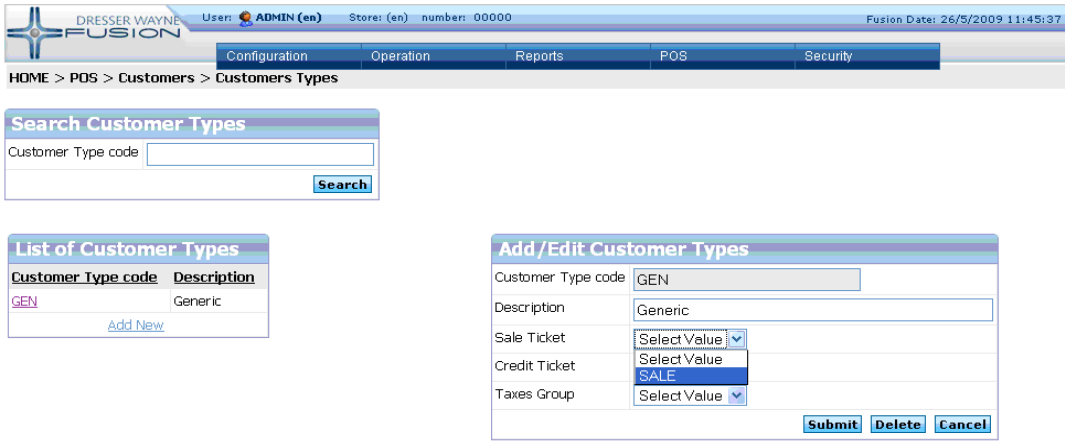


Figure 11-59 Assign Receipt Layout

2. Click on customer type **GEN**.
3. Select the default receipt layout for sale ticket and click **Submit**. The example above has a receipt format called SALE.

11.8.5 Configuring Automatic Receipt Printing

1. Go to **POS > Configuration > POS** and click on Pos Id "0". If there is more than one POS configured then select whichever POS ID that you want to setup the printer. For now use default POS which as id **0**. After selecting the POS ID you see the **List of Results Parameter**

Configuration window. Click "**add new**" and select parameter RECEIPT_PRINT_IMMEDIATELY. Click **Add** to add the parameter to the List of Results Parameters Configuration.

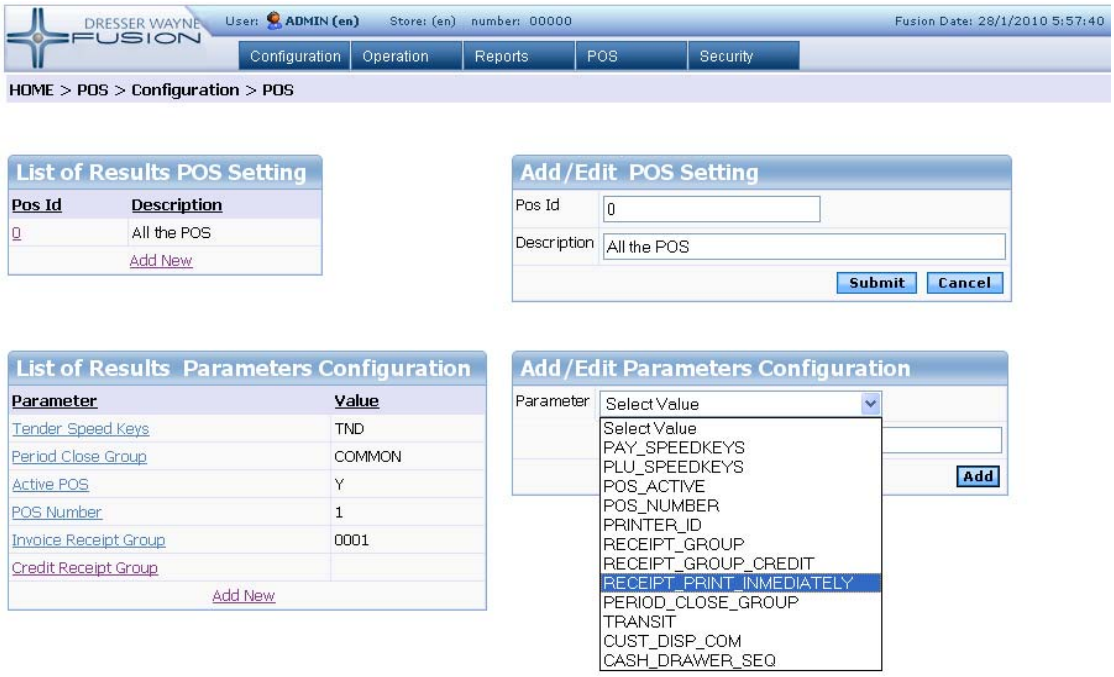


Figure 11-60 Configure Automatic Receipt Printing 1

2. Click on the **Print Receipts immediately** parameter which is now listed in the **List of Results Parameters Configuration** table. Click on the **Print Receipts immediately** pull-down to select the behavior of the receipt printing function.

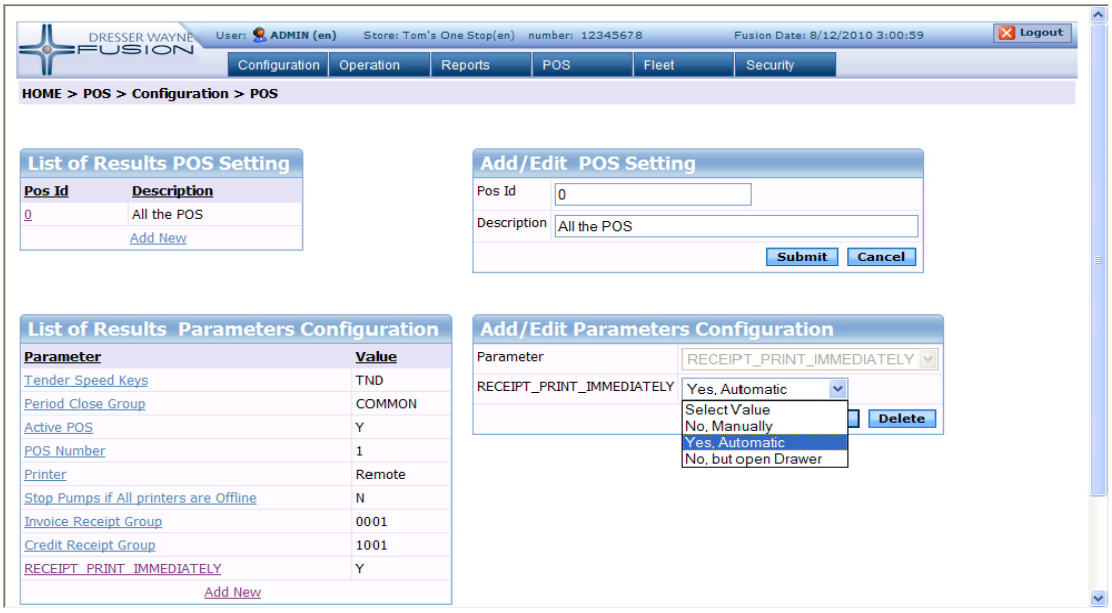


Figure 11-61 Configure Automatic Receipt Printing 2

3. Select from:

* **No, Manually** to only print the receipt manually
* **Yes, Automatic** to print the receipt automatically (default)
* **No, but Open Drawer** to only open the drawer

4. Select the default receipt layout for sale ticket and click **Submit**. The example above has a receipt format called SALE.

Note: This setting can be used to save receipt paper

11.8.6 Apply the Entire Configuration to the Fusion System

This is Final step in the process.

1. Go to **POS > Configuration > Maintenance > Apply Configuration** this will open a pop up window with status.

Figure 11-62 Apply Configuration

11.8.7 Testing the Printer

1. Start Fusion Console if it is not running. If it is already running, restart Fusion Console for recent printer changes.

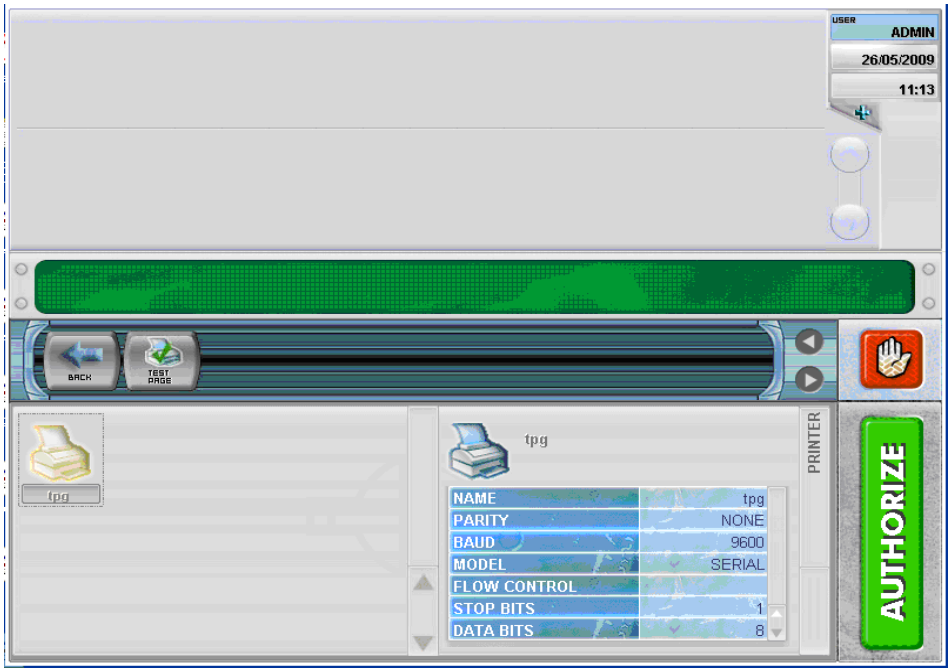


Figure 11-63 Test the Printer

2. Log in to Fusion then Click **Config > Printer**.

3. You should see printer with the id 'tpg' or whatever the name you have given appear as a printer icon. If the printer is not added then you won't see printer icon here. You can validate printer configuration too here.
4. Click on Test Page and if you see printer printing "print test" 4 times then you have successfully configured the printer.

11.9 Prices

Figure 11-64 Price Change Menu

The prices of fuel products are administered by the Fusion system, and must always be modified using Fusion and never directly at the dispenser. Should Fusion and the dispenser have a different price, Fusion will correct the price on the dispenser.

NOTE: Price changes can be done from the Console as well.

11.9.0.1 Entering a Price Change

Figure 11-65 Enter Price Change

Use the link **Add New**, as shown in the image above to enter a new price change to be implemented by Fusion.

The first thing to do is indicate the date and time that the price change should be implemented. To implement immediately, a date and time equal or prior to the time on the Fusion Console.

It is important to note that the date and time of the Fusion may vary from the date and time of the machine that is running the web browser. This can be viewed on the top of the page header.

The date can be entered manually, in **YYYYMMDD** format (year, month and day) or by pressing on the calendar image to the right of the date field, the same holds true when entering the time format **hhmmss** (hour, minutes and seconds). Once these two fields are complete, press the **Add** button.

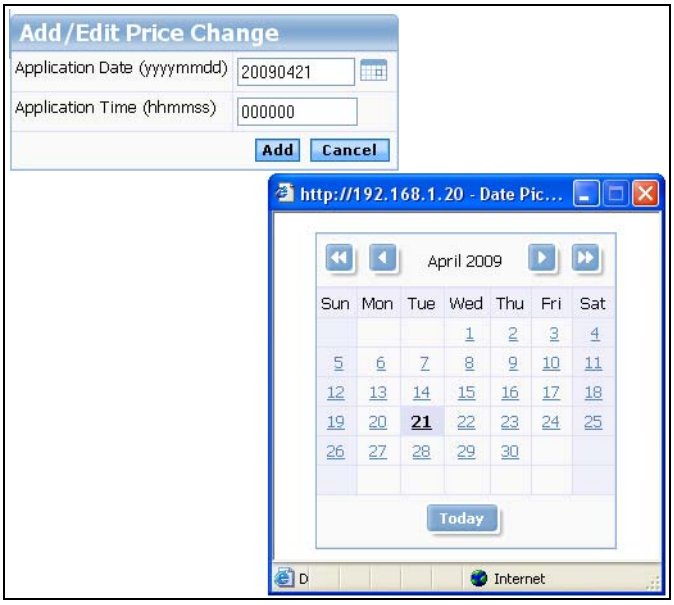


Figure 11-66 Enter Price Change cont.

This enables the entry of new prices for products that need to change.You only need to enter the products that need a price change while the other prices remain the same.

Select the product, the price level and then the unit price you want, including the decimal point. Then press the **Submit** button, and continue with the next product.

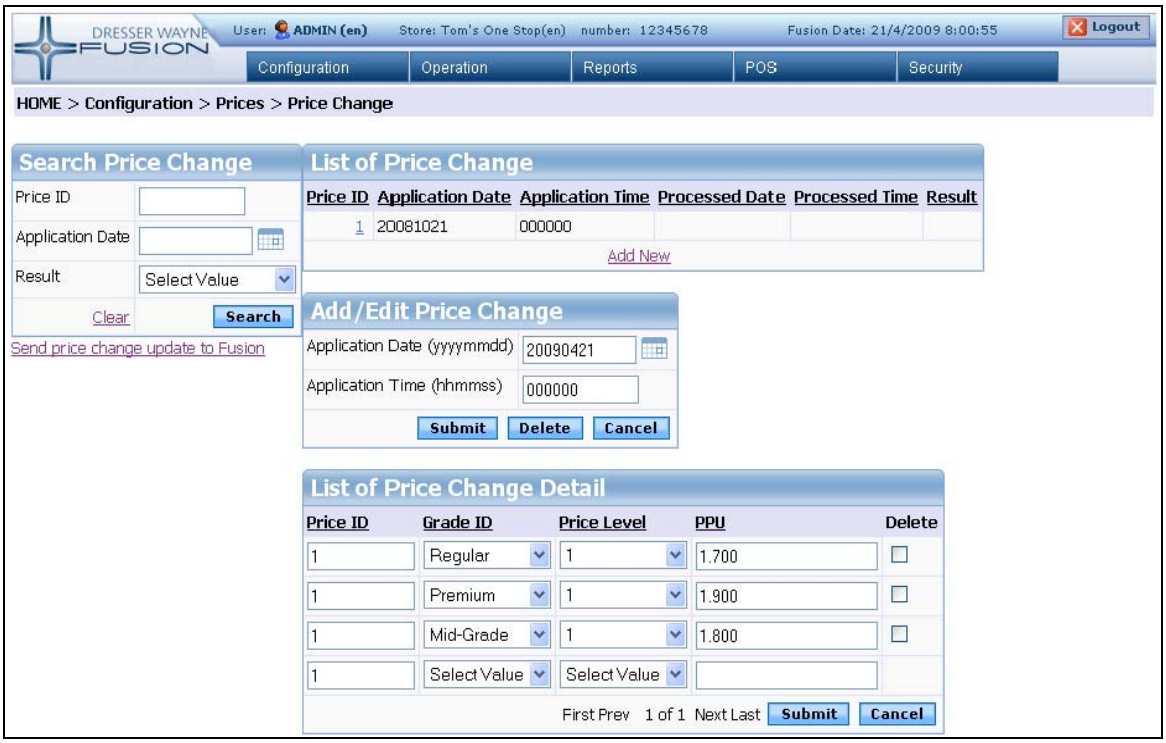


Figure 11-67 Price Change Detail

Once the entry of all products with price changes has been made, we need to tell Fusion to update the data for processing. Click the link to the left of the page labelled **Send price change update to Fusion**. See below.

Figure 11-68 Send Price Change to Fusion

11.9.0.2 Verifying the Price Change

Once the price change has been sent to Fusion, you can track the status of it by viewing the table **List of Price Change**. This tracks the status of price changes, you can refresh the content, (usually by pressing the 'F5' on the browser).

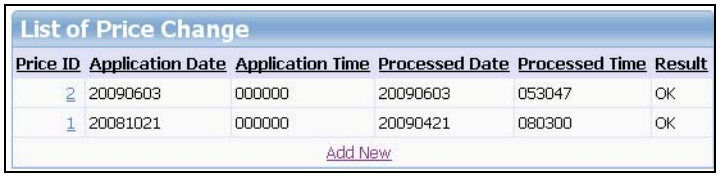


Figure 11-69 Verify Price Change

You have to pay attention to three areas:

* **Processed Date**: This indicates the date on which the Fusion processed price changes.
* **Processed Time**: This indicates the time that Fusion processed price changes.
* **Result**: The result of processing price changes. OK means that the change was implemented correctly. ERROR indicates that something went wrong.

More information can be obtained through the reports of price changes, in the Reports section.

11.9.0.3 Editing a Price Change

Price changes that have not yet been processed by the Fusion, can be edited.

For editing, just click on the latest entry under the **Price ID** column in the **List of Price Change** table for the change you want to edit.

Once edited, you have to press the **Submit** button under the **List of Price Change Detail** table for information to be recorded. As before, Click the link to the left of the page labelled **Send price change update to Fusion**, and the updated information will be sent to Fusion.

Processed price changes can not be edited.

11.9.1 Current Prices

Figure 11-70 Current Prices Menu

This functionality is used to display the current fuel prices of different grades.

Figure 11-71 Current Prices

11.9.2 Price Levels

Figure 11-72 Price Levels

This functionality is used to change to the current price levels for each dispenser. Once you click on **Price Levels** the following window is displayed:

Figure 11-73 Price Levels Programming

Using the pull-down for each Device Id, chose a price level for each dispenser, then press the **Submit** button.

11.9.3 Price Change Delta Amount

Price Change Delta amount is the allowable amount of a price change. Price changes cannot be in excess of of this programmed limit. This is to prevent programming errors during price changes.

1. Go to **Home > Configuration > Generic** and select the **Forecourt Manager** module.
2. Click **Price Change Delta**. Enter a parameter value and then click the **Submit** button.

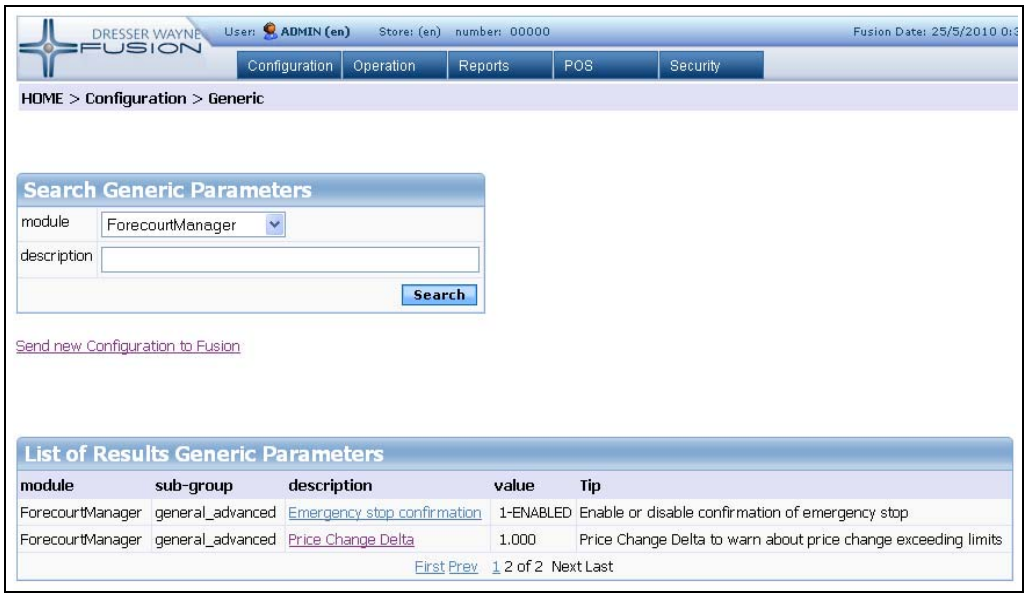


Figure 11-74 Price Change Delta

11.9.4 Gallons/Liters Programming

Unit of measure programming is done from the **Home > Configuration > Devices > Grade** section.

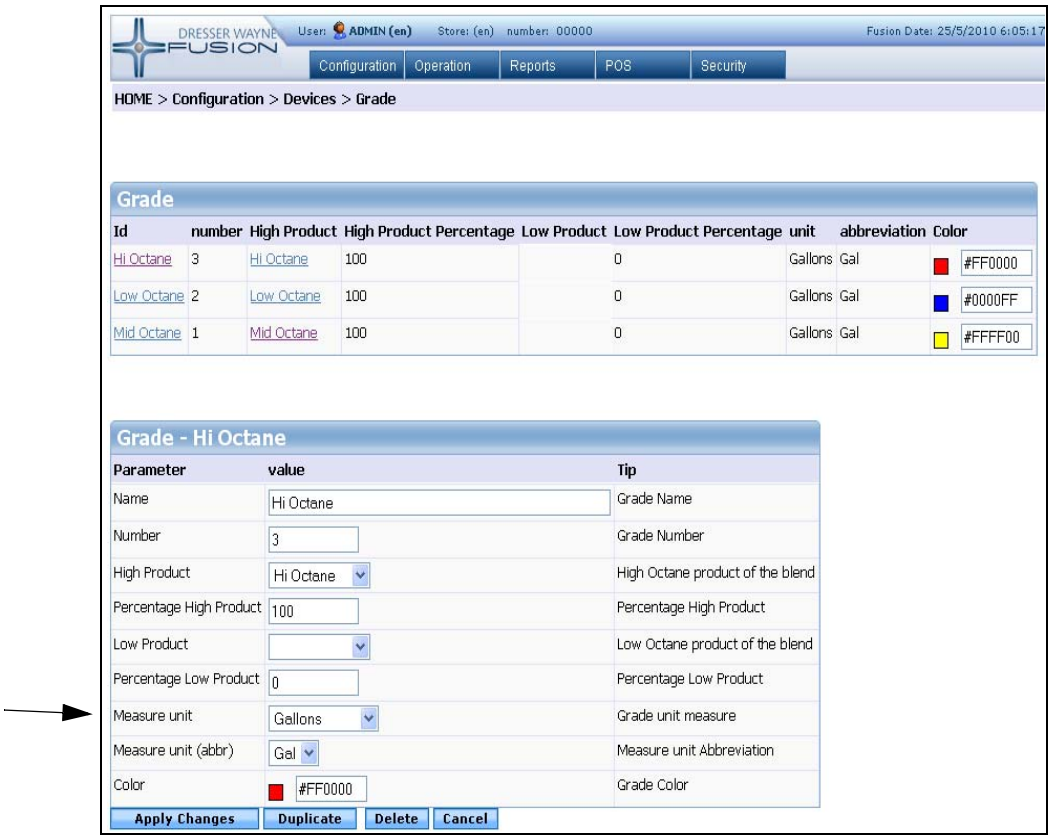


Figure 11-75 Grade Programming

1. Select each of the grades that are available and then select Gallons or Liters from the **Measure Unit** pull-down. Click on **Apply Changes** to save.
2. Next, navigate to **Home > POS > Inventory > Products**, then click each Fuel ID.
3. Select the unit of measure from the **Unit** pull-down then click **Submit**.
4. Repeat for all the Fuel IDs listed.

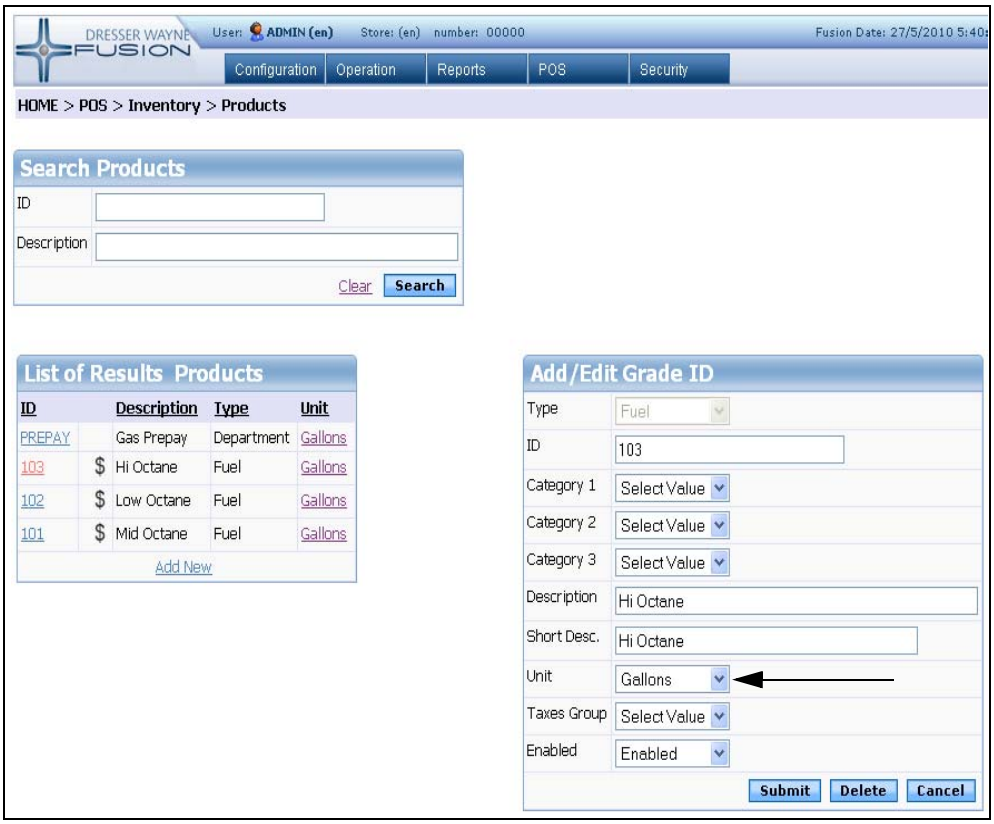


Figure 11-76 Unit of Measure Programming

11.10 Emergency Button Access and Confirmation

Emergency Button Access and Confirmation programming controls whether or not the Emergency button will be available without a user being logged in and whether or not a confirmation is required.

1. Go to **Home > Configuration > Generic** and select the **Forecourt Manager** module.
2. Click **Emergency Button Access**. Select Enabled or Disabled and then click the **Submit** button.

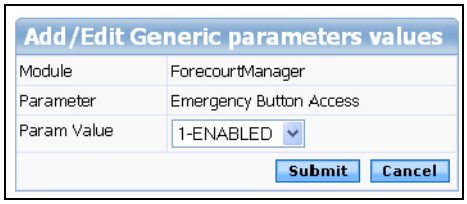


Figure 11-77 Emergency Button Access Programming

3. Click **Emergency Stop Confirmation**. Select Enabled or Disabled and then click the **Submit** button.

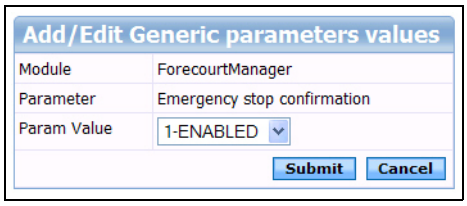


Figure 11-78 Emergency Stop Confirmation Programming

11.11 Language Programming

The Fusion system can be programmed for different languages to be used for the Web UI or for the Fusion Console. Language programming is done from the Web UI which can be accessed remotely through a web browser or locally using the Browser button from the Console.

1. Go to the Web UI and navigate to **HOME > Configuration > Generic**. Next, select **Forecourt** from the module pull-down and click **Search**.

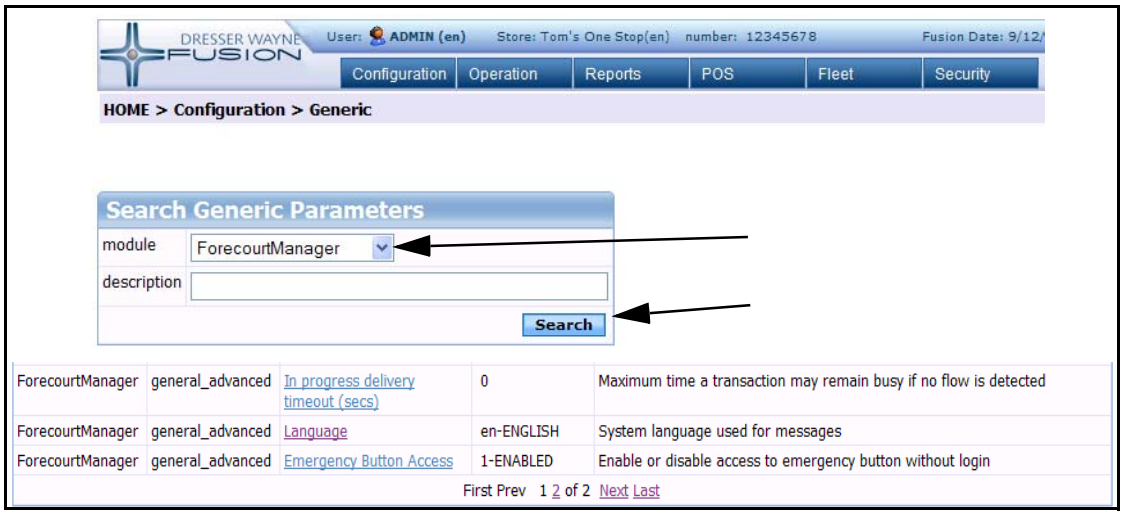


Figure 11-79 Forecourt Manager Search

2. Click on the **Language** option to open the following window.

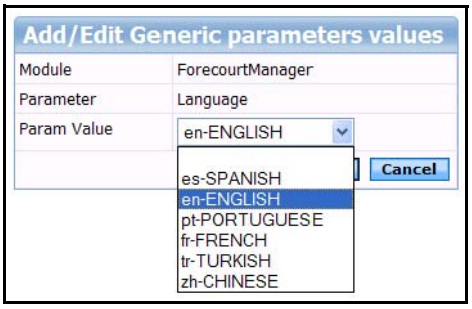


Figure 11-80 Language Parameter

3. Select the desired language from the pull-down then click **Submit**. Next, click **Send New Configuration to Fusion**.

11.12 Date and Time Programming

The current Date and Time can be programmed from the Browser by going to **HOME > Configuration > Others > Set Date and Time**. The following window will be displayed.

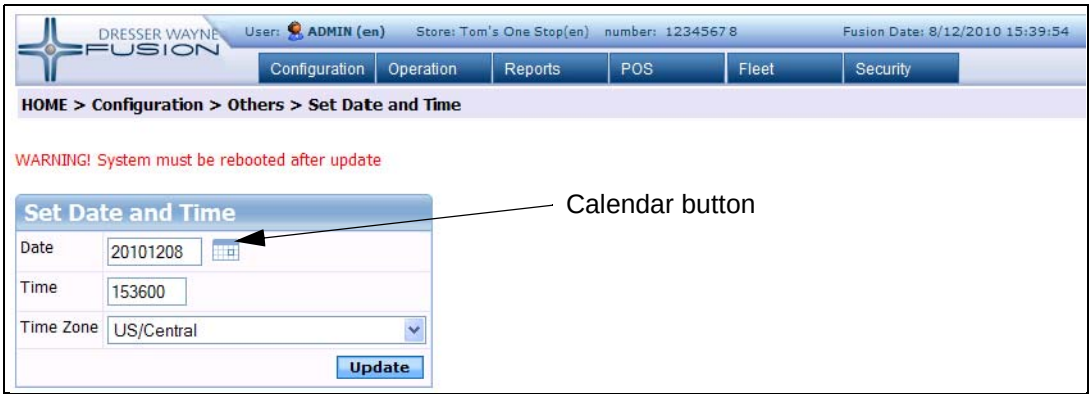


Figure 11-81 Set Date and Time

Set the date using the Calendar button, then set the time using the “hhmmss” format. Finally, set the Time Zone using the Time Zone pull-down.

11.13 Database Backup and Restore

The Fusion database can be backed up and restored using two methods. The first will backup the database locally on the Fusion system. The second will allow you to backup the Fusion database and copy it to a USB key.

Note that during Restore Database and Restore Configuration operations, any running sales will be lost because the forecourt operations will be stopped.

11.13.1 Database Backup and Restore Using Fusion

Navigate to **Home > Operation > Database** and the following window will be displayed where you can select from the following options.

- **Backup Database**
- **Restore Database**
- **Backup Configuration**
- **Restore Configuration**

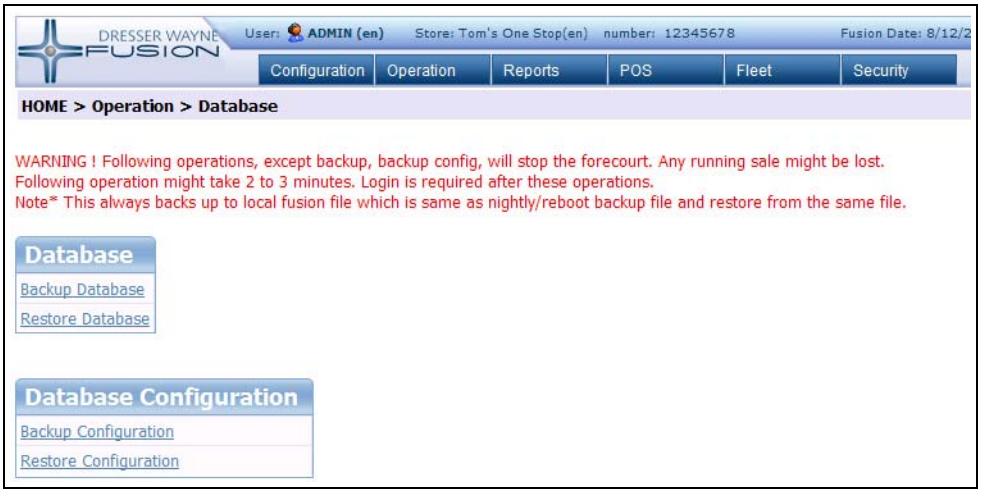


Figure 11-82 Database Functions

Select **Backup Database** to backup the current database. The following prompt will be displayed. Select **OK** to continue.

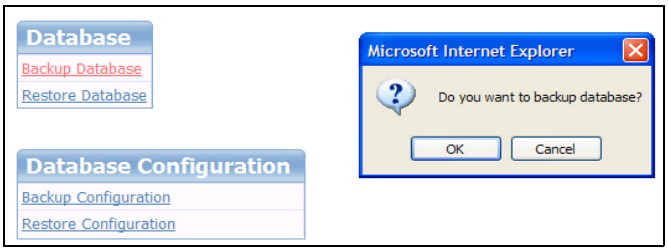


Figure 11-83 Backup Database

Select **Restore Database** to restore the current database. The following prompt will be displayed. Select **OK** to continue.

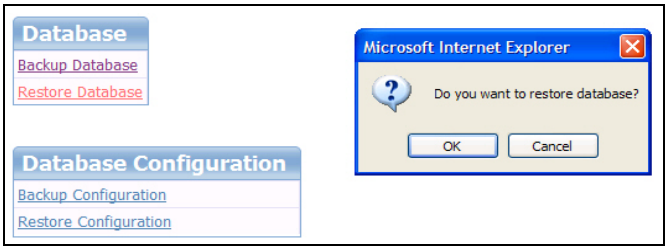


Figure 11-84 Restore Database

Select **Backup Configuration** to backup the current configuration. The following prompt will be displayed. Select **OK** to continue.

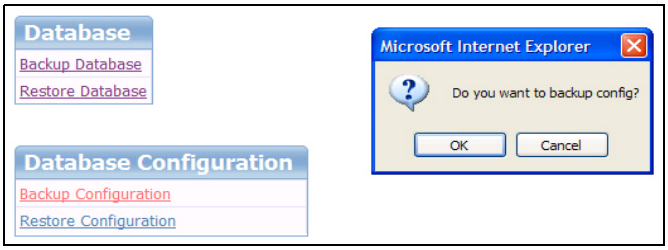


Figure 11-85 Backup Configuration

Select **Restore Configuration** to restore the current configuration. The following prompt will be displayed. Select **OK** to continue.

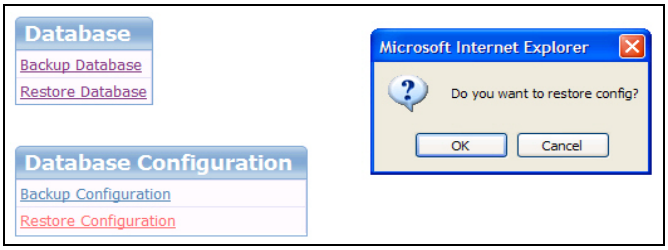


Figure 11-86 Restore Configuration

11.13.2 Database Backup Using USB Maker

The USB Maker utility can be used to backup the Fusion database using a USB key.

1. First obtain the USB Maker utility from the ASONet and load it on your laptop.
2. Insert the USB key into your laptop and execute **StartUSBMaker.bat**, The following window will then be displayed.

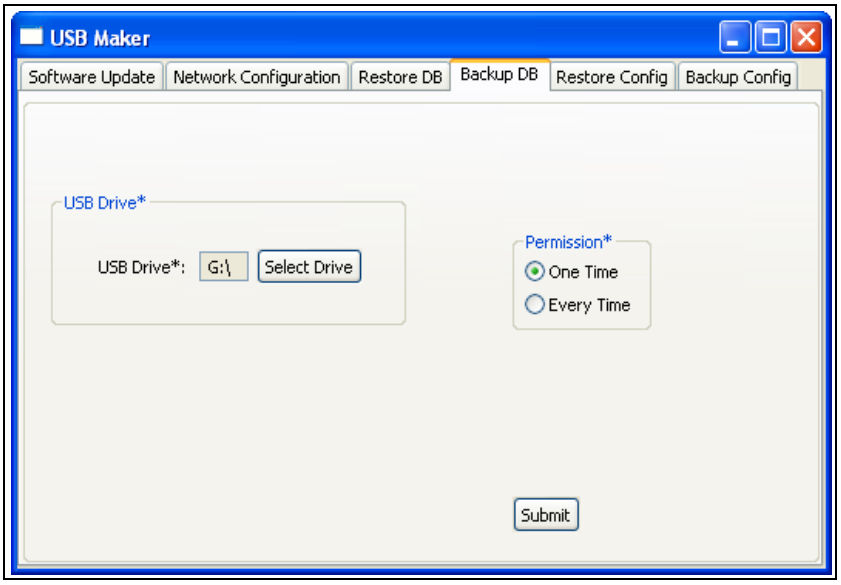


Figure 11-87 USB Maker Window

3. Select the **Backup DB tab**; select **Permission** and **USB Drive**. Permission of "One Time" will direct the USB to be used only once. If "Every Time" is selected, then every time this USB is used it will backup the db - **be careful when selecting this option!**
4. Press the **Submit** button. You should get a "successful" notification. Now the USB key is ready to be used.
5. Remove the USB key from your laptop and insert into Fusion.
6. The system will beep once after a few seconds indicating the process has started.
7. After a few more seconds, the system will beep 4 times indicating success (3 low tones indicates failure).

Fusion copies the database to \DresserWayne\Fusion\Backups\Database under a unique filename. For example, the file DBbackup.fs00089bba86ab-20090903-100748 is created (MAC address and date/time stamp).

As with all the USB Fusion operation, a log file is written to the USB key. Please review this logfile under \DresserWayne\Fusion\usb.log for detailed information.

11.13.3 Database Restore Using USB Maker

The USB Maker utility can be used to restore the Fusion database that was backed up using a USB key.

1. Insert the USB key into your laptop and execute **StartUSBMaker.bat**, The following window will then be displayed.

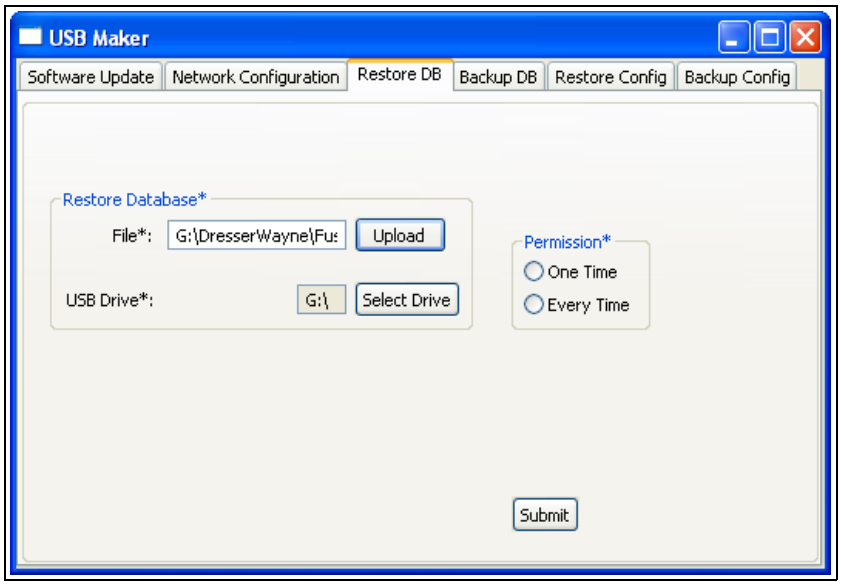


Figure 11-88 USB Maker Window

2. Select the **Restore DB** tab; Press the **Upload** button and select the location of Database to restore, set **Permission** and **USB Drive**. Permission of "One Time" will direct the USB to be used only once. If "Every Time" is selected, then every time this USB is used it will restore the db - **be careful when selecting this option!**
3. Press the **Submit** button. You should get a "successful" notification. Now the USB key is ready to be used.
4. Remove the USB key from your laptop and insert into Fusion.

5. The system will beep once after a few seconds indicating the process has started.
6. After a few more seconds, the system will beep 4 times indicating success (3 low tones indicates failure).

As with all the USB Fusion operations, a log file is written to the USB key. Please review this logfile under \DresserWayne\Fusion\usb.log for detailed information

11.14 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 three ways to do this, one is connecting a screen and a keyboard to the fusion box, another is by starting an SSH session through the PuTTy software. The third method involves using USB Maker to program a USB key to perform the update when the key is inserted into the Fusion box.

11.14.1 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**.

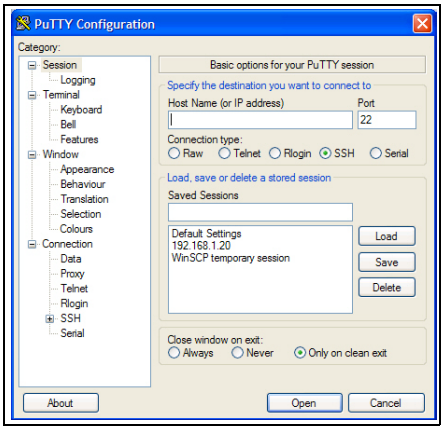


Figure 11-89 PuTTY Configuration Window

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.

11.14.2 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 11-90 Login Screen

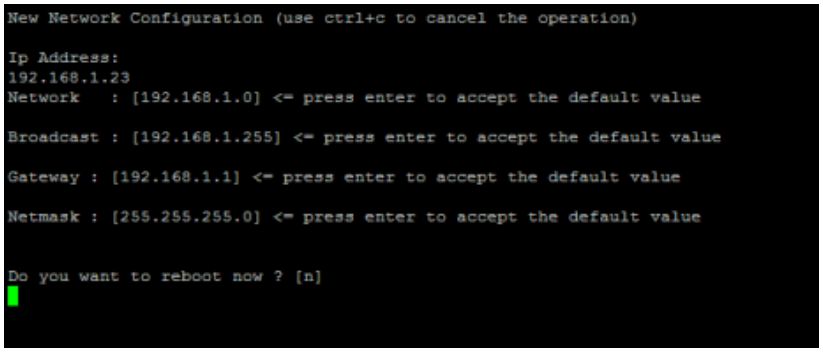


Figure 11-91 Confirmation Screen

11.14.3 How to Use USB Maker to Change the IP Address

The USB Maker utility can be used to change the IP address of the Fusion box using a USB key.

1. First obtain the USB Maker utility from the ASONet and load it on your laptop.
2. Insert the USB key into your laptop and execute **StartUSBMaker.bat**, The following window will then be displayed.

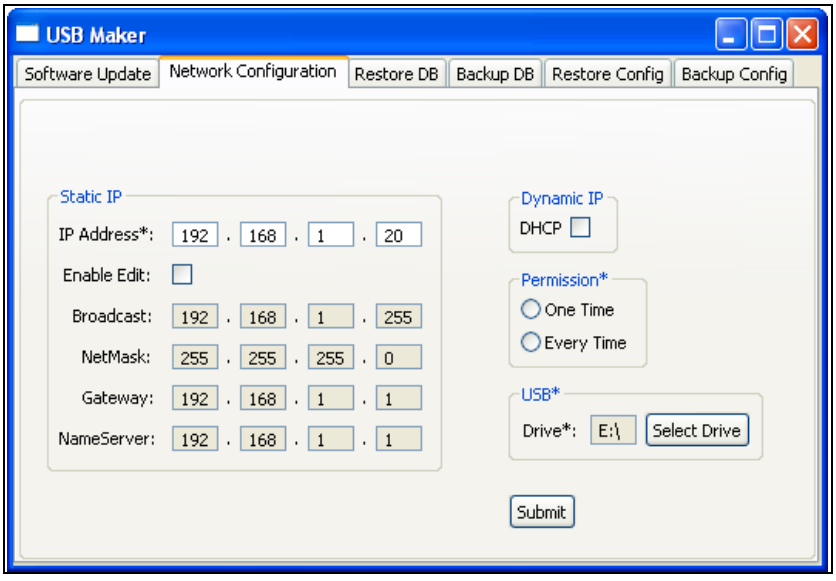


Figure 11-92 USB Maker Window

3. Select the **Network Configuration** tab; enter **IP Address**, **Permission** and **USB Drive**. Permission of "One Time" will direct the USB to be used only once. If "Every Time" is selected, then every time this USB is used it will change the IP address - **be careful when selecting this option!**
4. Press the **Submit** button. You should get a "successful" notification. Now the USB key is ready to be used.
5. Remove the USB key from your laptop and insert into Fusion.
6. The system will beep once after a few seconds indicating the process has started.
7. After a few more seconds, the system will beep 4 times indicating success (3 low tones indicates failure).

After the IP change, Fusion automatically restarts the network with the new IP address. There is no need to reboot Fusion.

As with all the USB Fusion operations, a log file is written to the USB key. Please review this logfile under \DresserWayne\Fusion\usb.log for detailed information.

11.15 Fusion GSM/DSM Configuration

To enable DSM communication the GSM cable must be disconnected from the CUPS board, and the DSM cable installed between the CUPS board and the GRIB board as shown in Figure 12-2 and Figure 12-14.

11.16Troubleshooting

After the Dresser Wayne Fusion Forecourt Controller has been mounted and the system wiring has been completed, all of the pumps and CATs should be online. If pumps or CATs remain offline then double-check for the correct polarity of the pump current loop. The CAT communication wiring should also be double checked.

If a BIR system is not used then be sure to remove the resistor from the current loop GRIB of the 4th port. Otherwise communication errors my occur if the resistor is left connected.

11.16.1 Powering Fusion On and Off

Note that after pressing the Fusion power button in order to power down, that the Fusion power down sequence actually can take up to a minute to complete. This is due to the internal battery backup of Fusion which is shutting down in a controlled manner so that no file corruption occurs.

11.16.2 Uncontrollable Sales

If POS configuration changes are made while the pumps are fueling and Apply Configuration is then executed, then uncontrollable sales may occur. To prevent this, always restart the Console whenever POS configuration changes are made.

11.16.3 Fusion Box Components

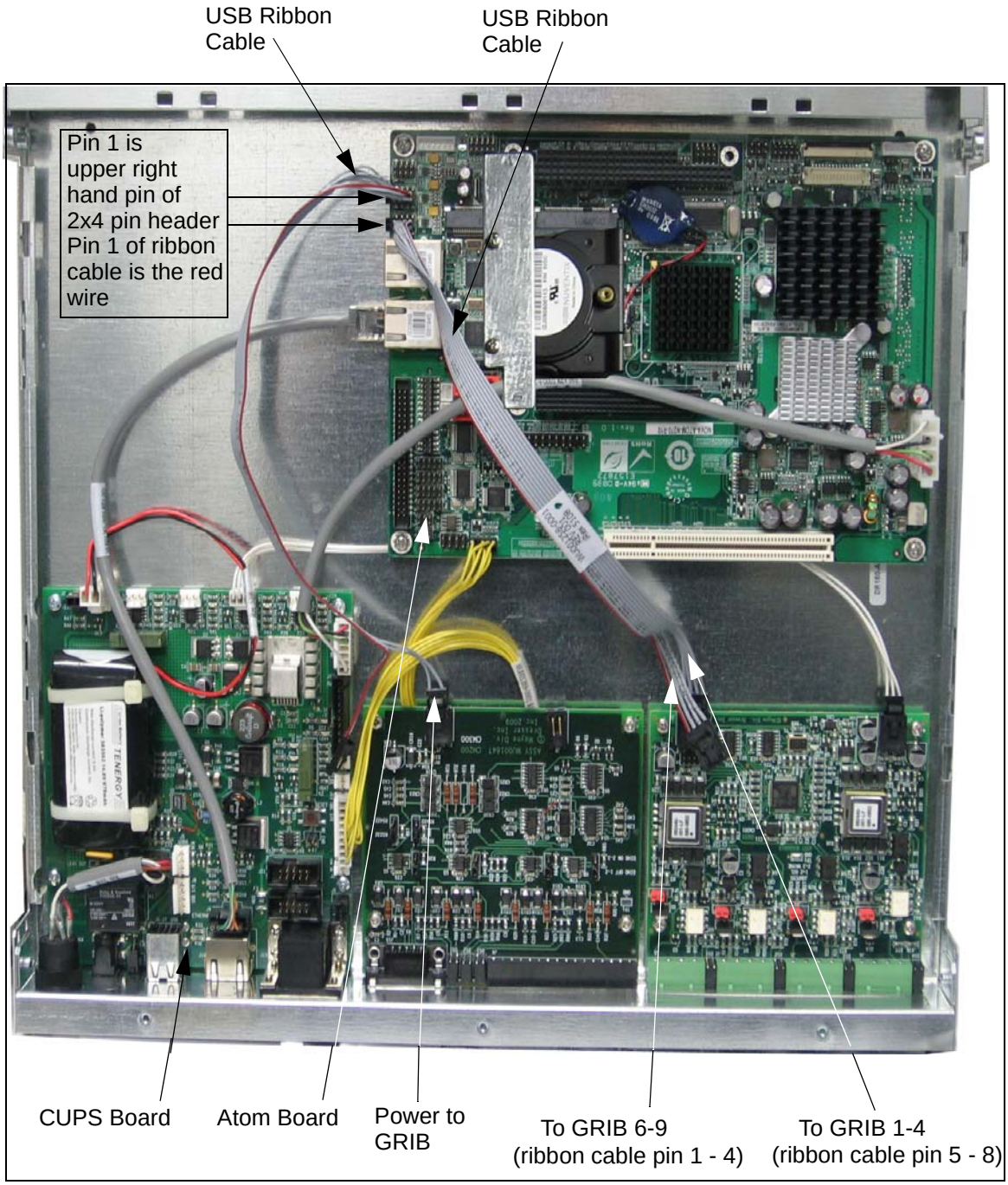


Figure 11-93 Fusion Box Components

12 APPENDIX

12.1 Fusion Site Controller Rear Panel

The following diagrams show the Fusion Site Controller connections.

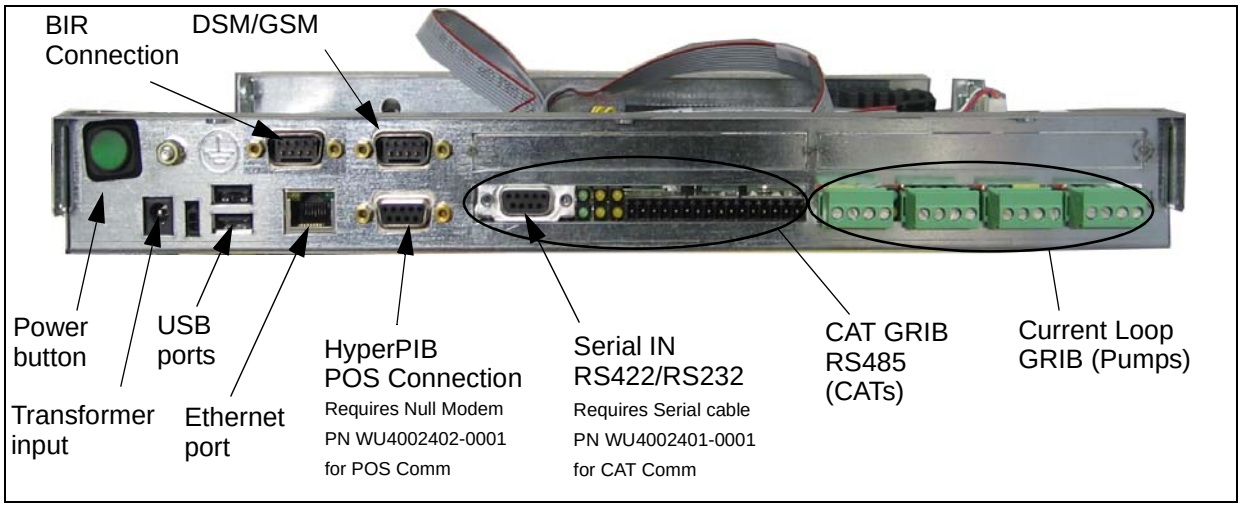


Figure 12-1 Fusion Rear Panel (Wayne Dispenser Configuration)

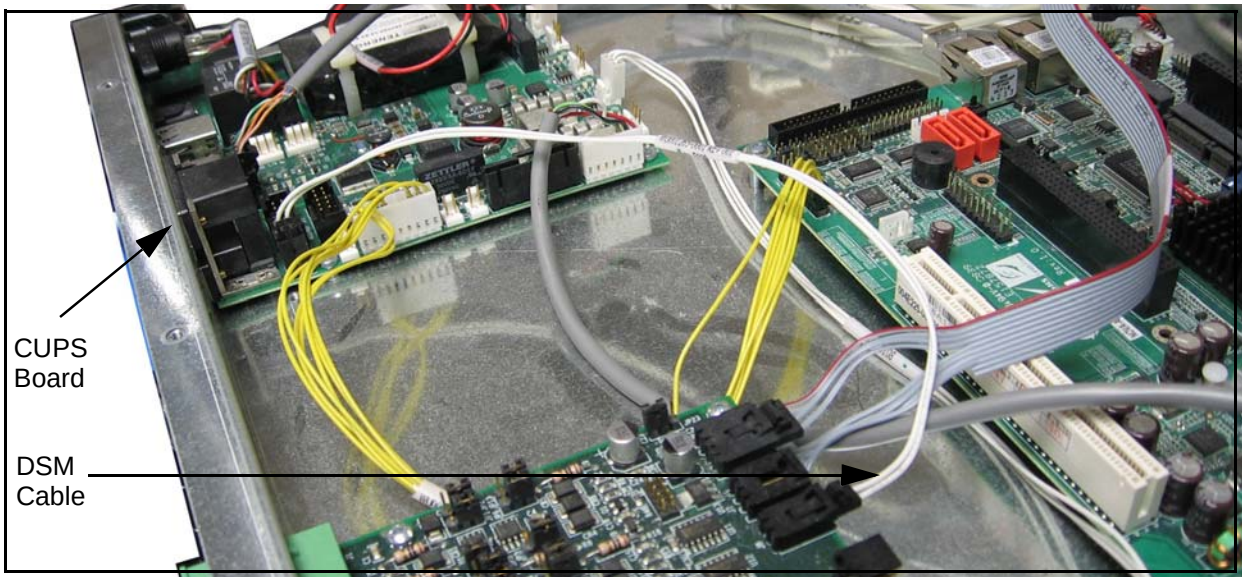


Figure 12-2 DSM Cable Connection (WU0001265-0001) (J14 to GRIB J8)

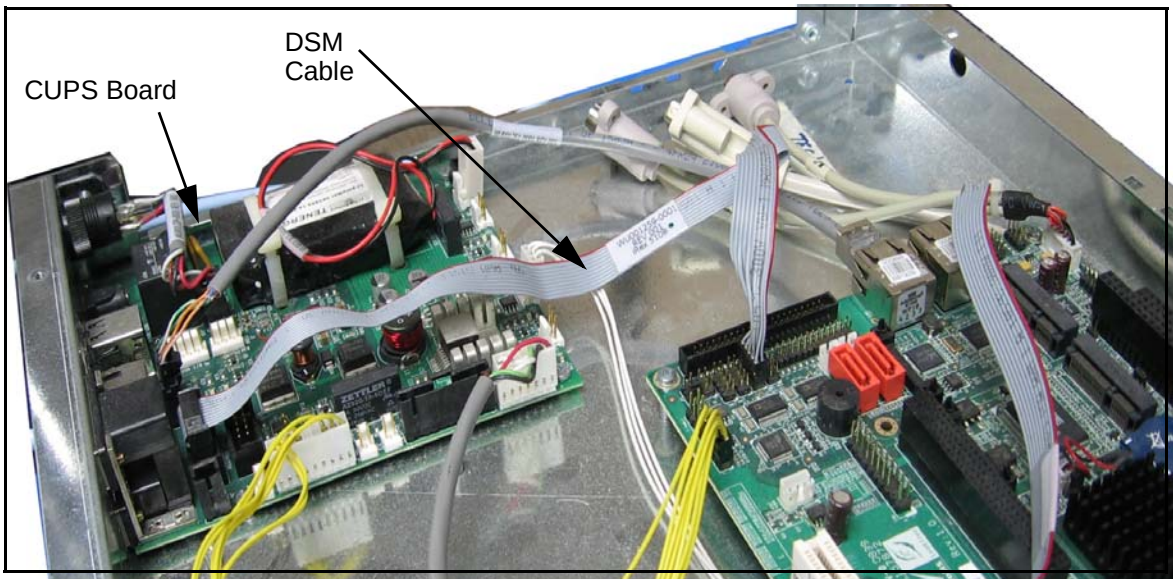


Figure 12-3 GSM Cable Connection (WU0001259-0001) (J14 to COM2)

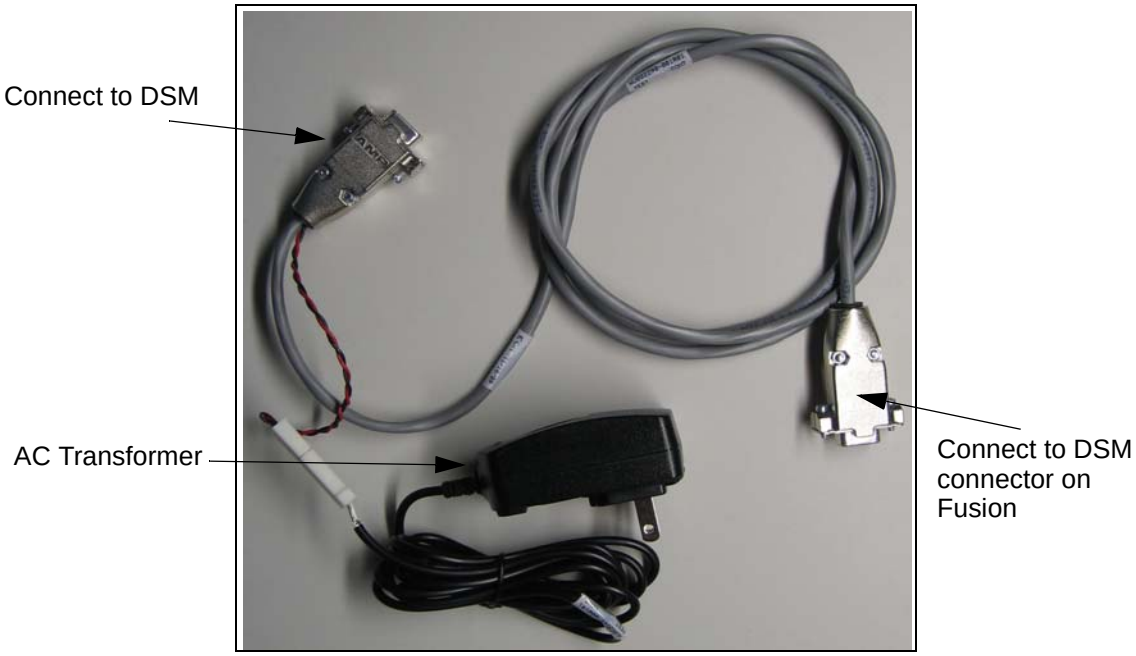


Figure 12-4 DSM Power Cable PN WU002290-001R01

12.2 Fusion Site Controller Rear Panel - Gilbarco CRIND

The following diagrams show the Fusion Site Controller rear panel connections for Gilbarco CRINDS

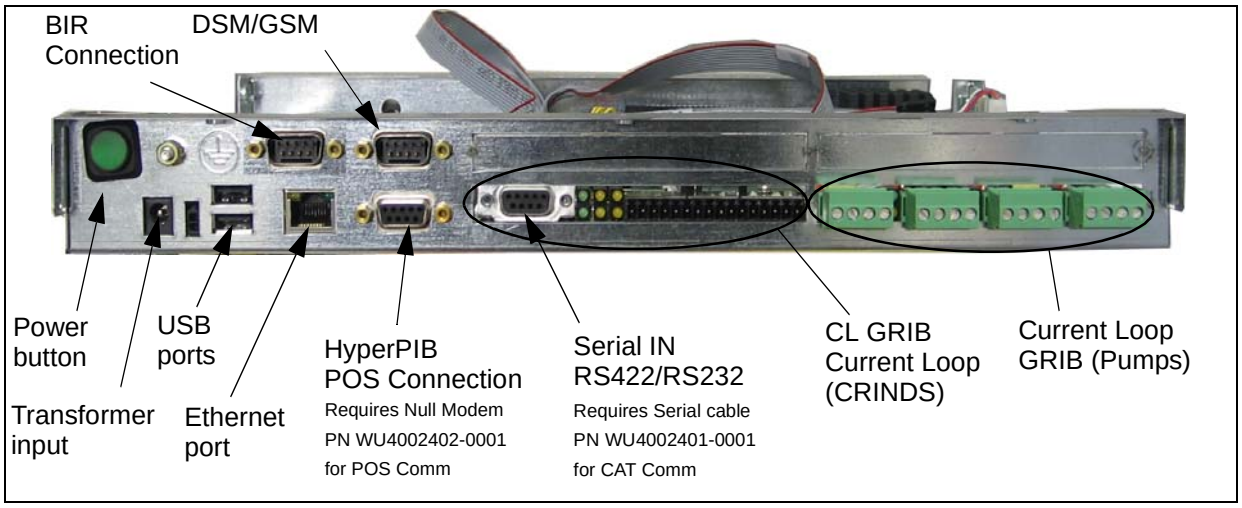


Figure 12-5 Fusion Rear Panel (Gilbarco Dispenser Configuration)

12.3 Fusion Site Controller Rear Panel - Console Configuration

The following diagram shows the Fusion Site Controller connections for the Console configuration.

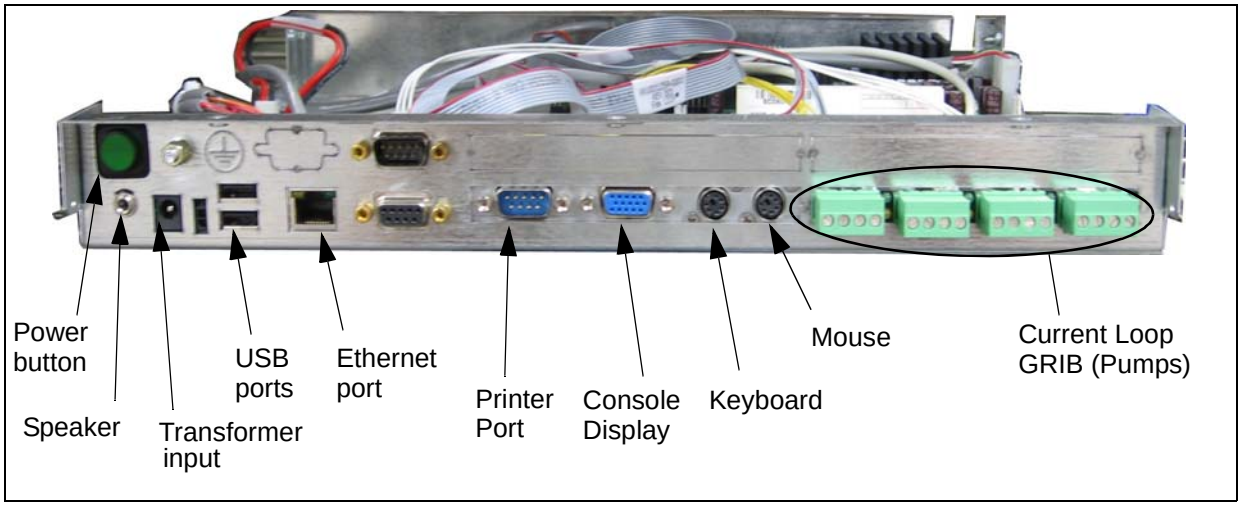


Figure 12-6 Fusion Rear Panel - Console Configuration

12.4 Serial Port Pin-Outs

There are two serial ports in this Fusion configuration. The HyperPIB DB9 POS connector on the CUPS board and RS422/232 connector on the GRIB board.

HyperPIB DB9
POS Connector

RJ-45	RJ45 Color	DB9
1	Blue	2
2	Orange	3
3	Black	8
4	Red	7
5	Green	4
6	Yellow	5
7	Brown	4
8	White	6,1
		9

Serial IN RS422/232

RJ-45	RJ45 Color	DB9
1	Blue	3
2	Orange	2
3	Black	7
4	Red	8
5	Green	6
6	Yellow	5
7	Brown	1
8	White	4
		9

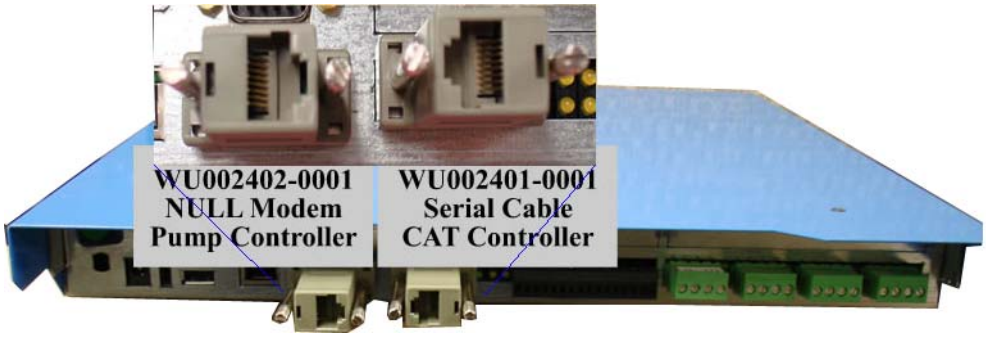


Figure 12-7 Serial Port Adapters and Pinouts

12.5 GRIB Connectors

NOTE: Each GRIB Channel can connect with two dispensers (4 CATs)

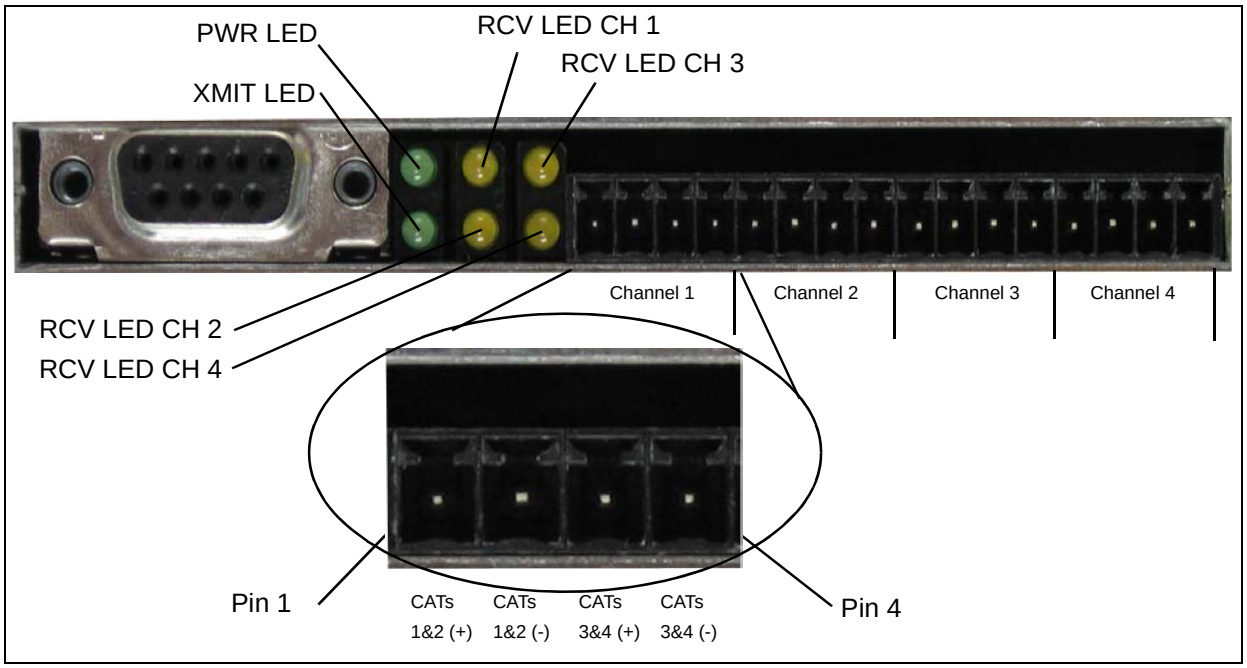
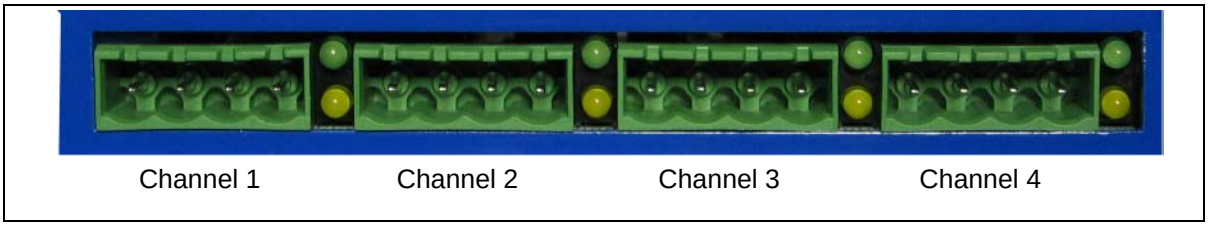
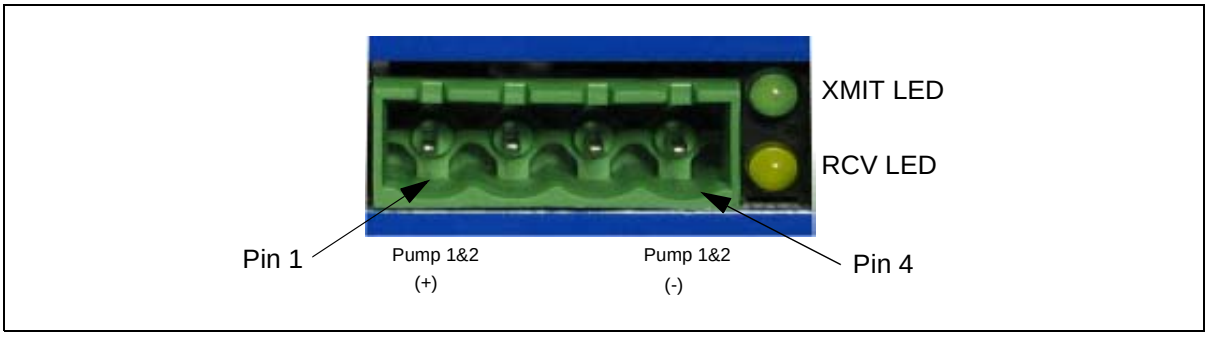


Figure 12-8 GRIB Connectors - Nucleus CAT Configuration

NOTE: Each GRIB Connector can connect with two dispensers (4 fueling points)





OR

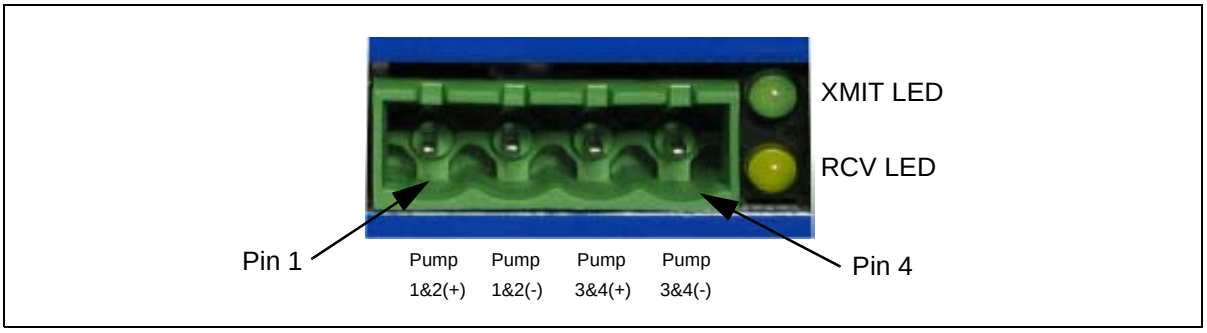


Figure 12-9 GRIB Connectors - Wayne Pump Configuration

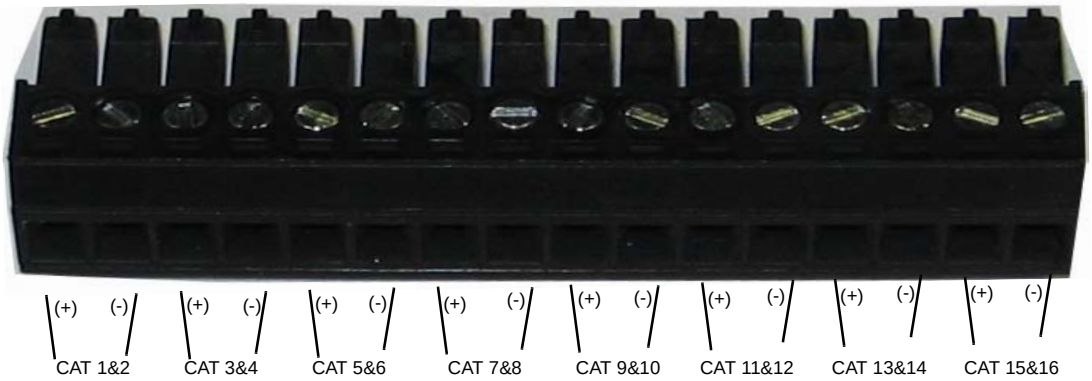


Figure 12-10 GRIB Plug - Wayne CAT Configuration

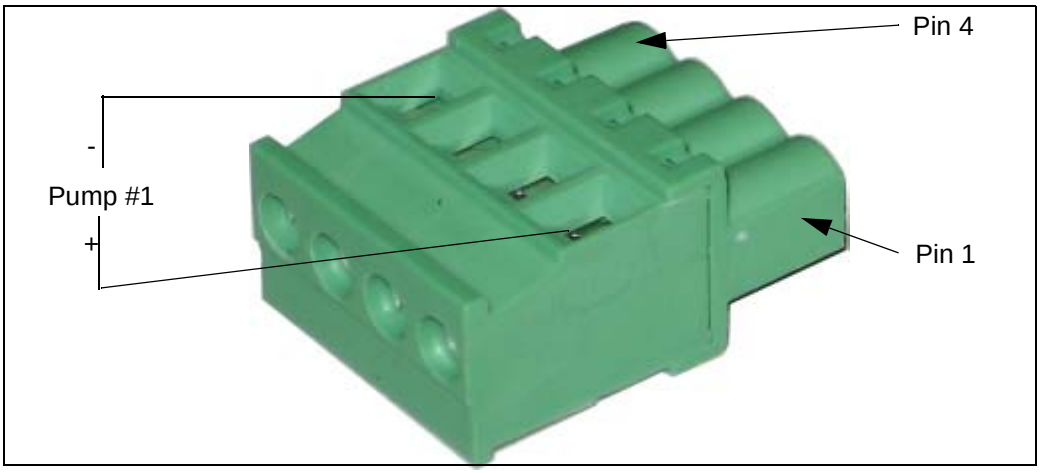


Figure 12-11 GRIB Plug - Single Pump (Dispenser) Per Plug Configuration

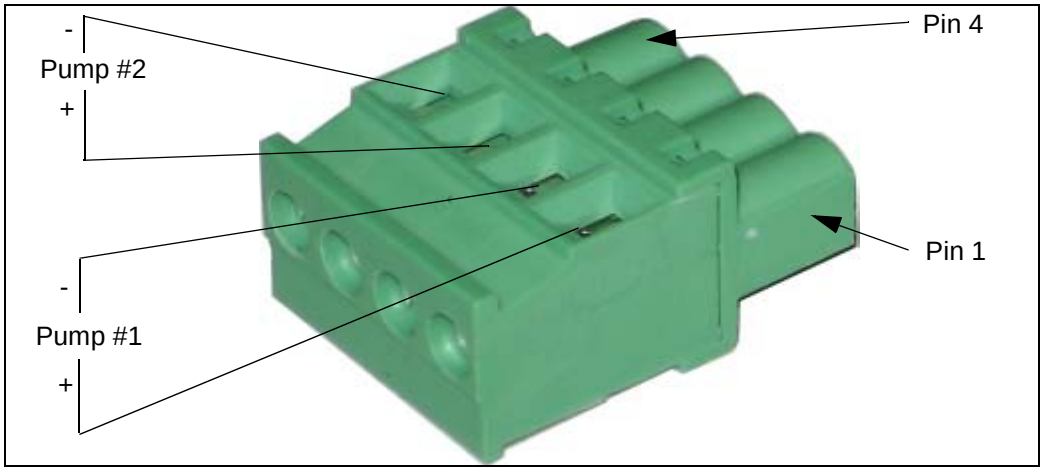


Figure 12-12 GRIB Plug - Two Pumps (Dispensers) Per Plug Configuration

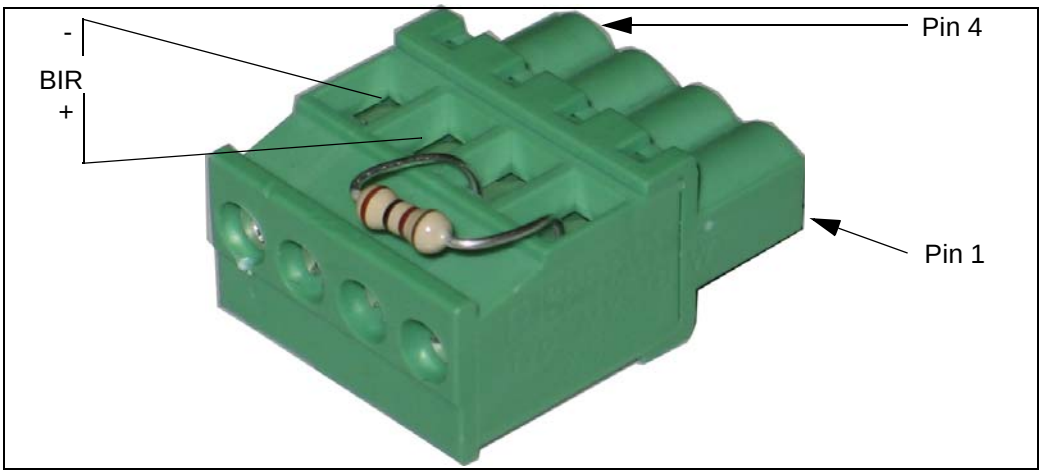


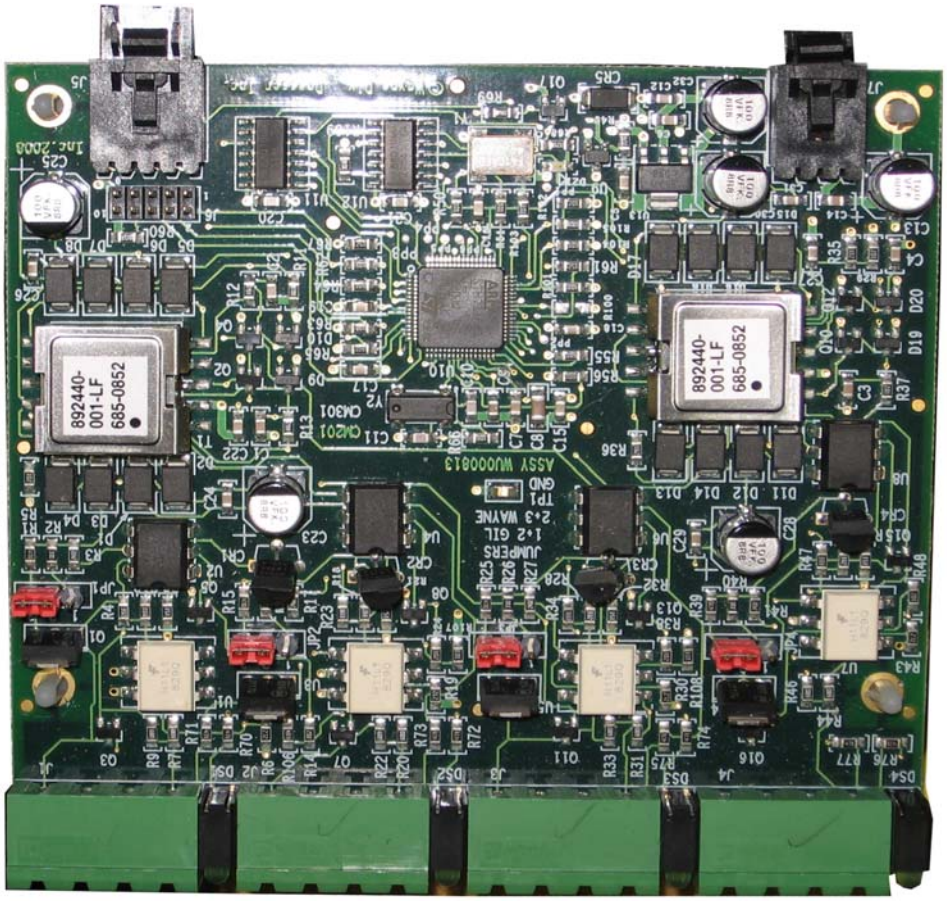
Figure 12-13 GRIB Plug Used for BIR Communication in Channel 4

12.6 Current Loop GRIB Jumper Configurations

Table 4: Current Loop GRIB Jumper Configurations

	CH1	CH2	CH3	CH4
Dispenser	**JP1**	**JP2**	**JP3**	**JP4**
Wayne	**2 & 3**	**2 & 3**	**2 & 3**	**2 & 3**
Gilbarco	**1 & 2**	**1 & 2**	**1 & 2**	**1 & 2**

12.7 Current Loop GRIB Component Layout



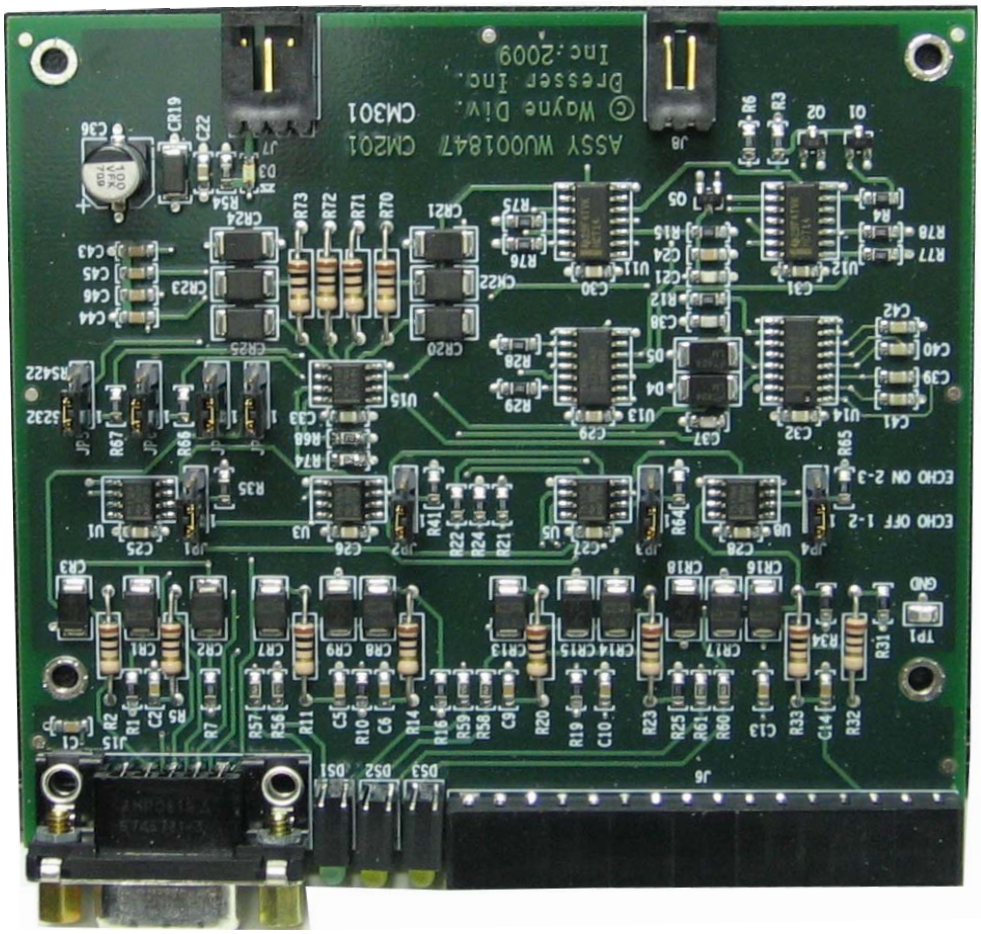
12.8 Serial-485 CAT GRIB Jumper Configurations

Table 5: Channel 1

GRIB 485	JP1	JP2	JP3	JP4
Echo On	2 & 3	2 & 3	2 & 3	2 & 3
Echo Off	1 & 2	1 & 2	1 & 2	1 & 2

Serial Port	JP5	JP6	JP7	JP8
RS422	2 & 3	2 & 3	2 & 3	2 & 3
RS232	1 & 2	1 & 2	1 & 2	1 & 2
	Off	Off	Off	Off

12.9 Serial-485 CAT GRIB Component Layout



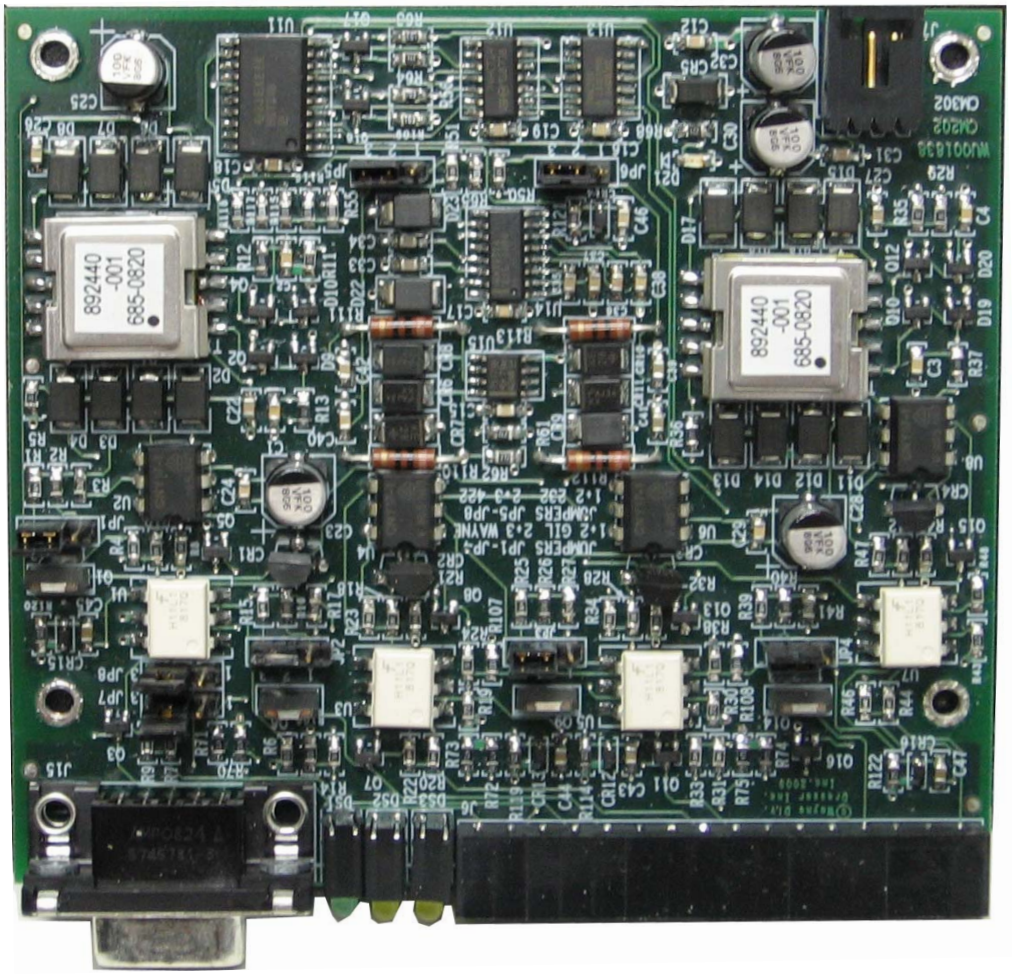
12.10Serial to Current Loop GRIB Jumper Configurations

Table 6: Serial to Current Loop GRIB Jumpers

	CH1	CH2	CH3	CH4
Dispenser	JP1	JP2	JP3	JP4
Wayne	2 & 3	2 & 3	2 & 3	2 & 3
Gilbarco	1 & 2	1 & 2	1 & 2	1 & 2

Serial Port	JP5	JP6	JP7	JP8
RS422	2 & 3	2 & 3	2 & 3	2 & 3
RS232	1 & 2	1 & 2	1 & 2	1 & 2
	Off	Off	Off	Off

12.11Serial to Current Loop GRIB Component Layout



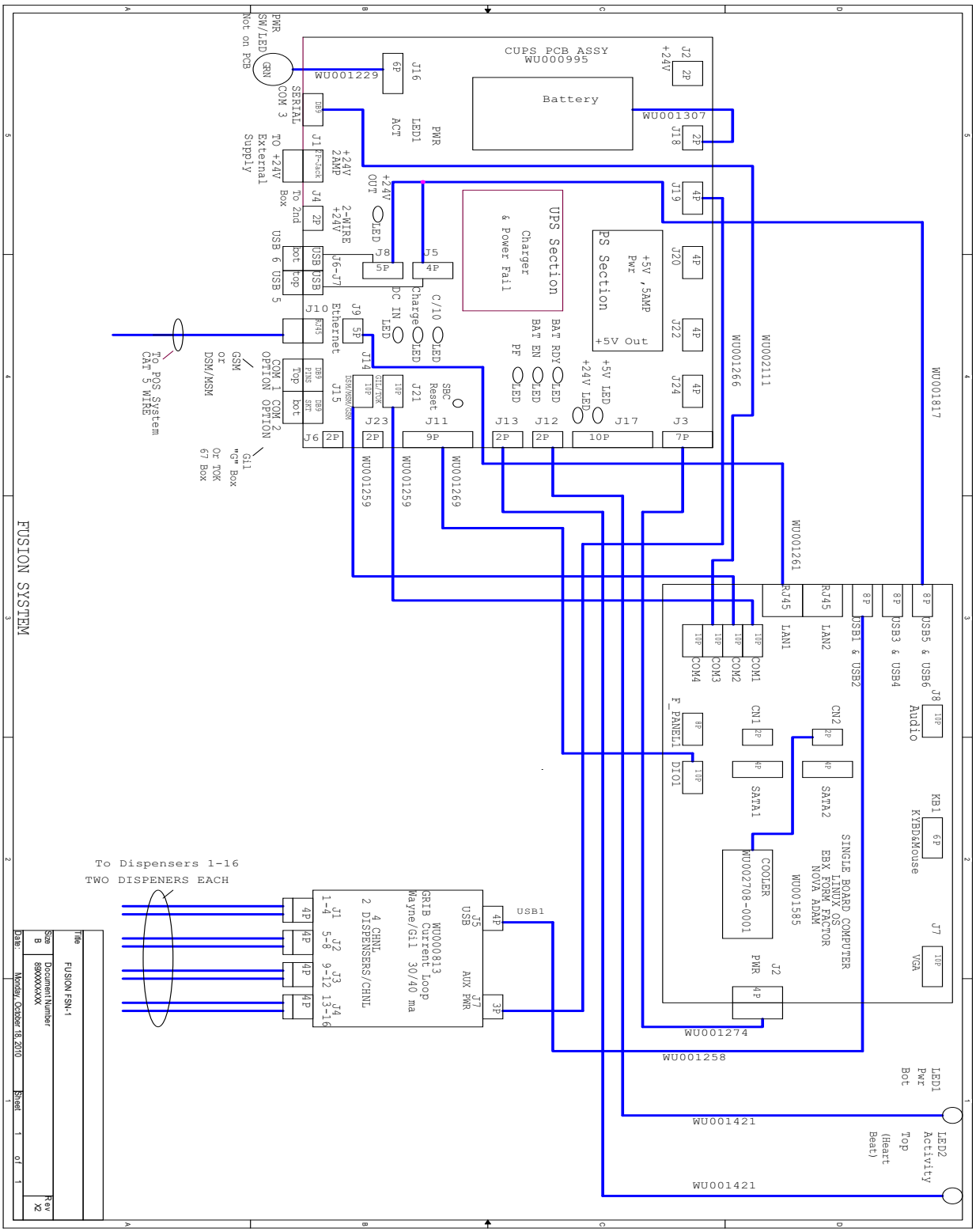


Figure 12-14 Fusion T/AA1Z0/0/Z Wiring Diagram

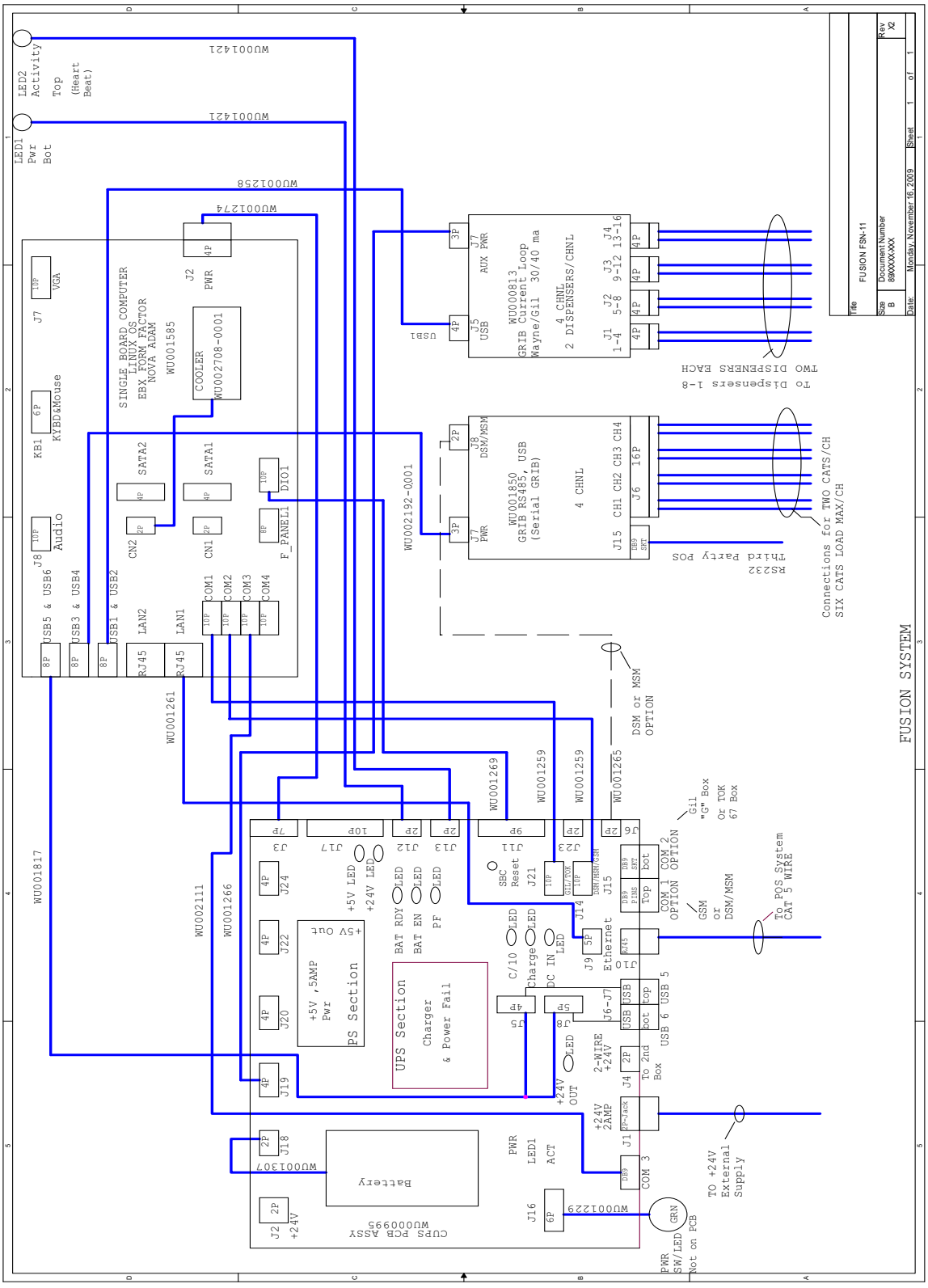


Figure 12-15 Fusion T/AA1D1/0/Z Wiring Diagram

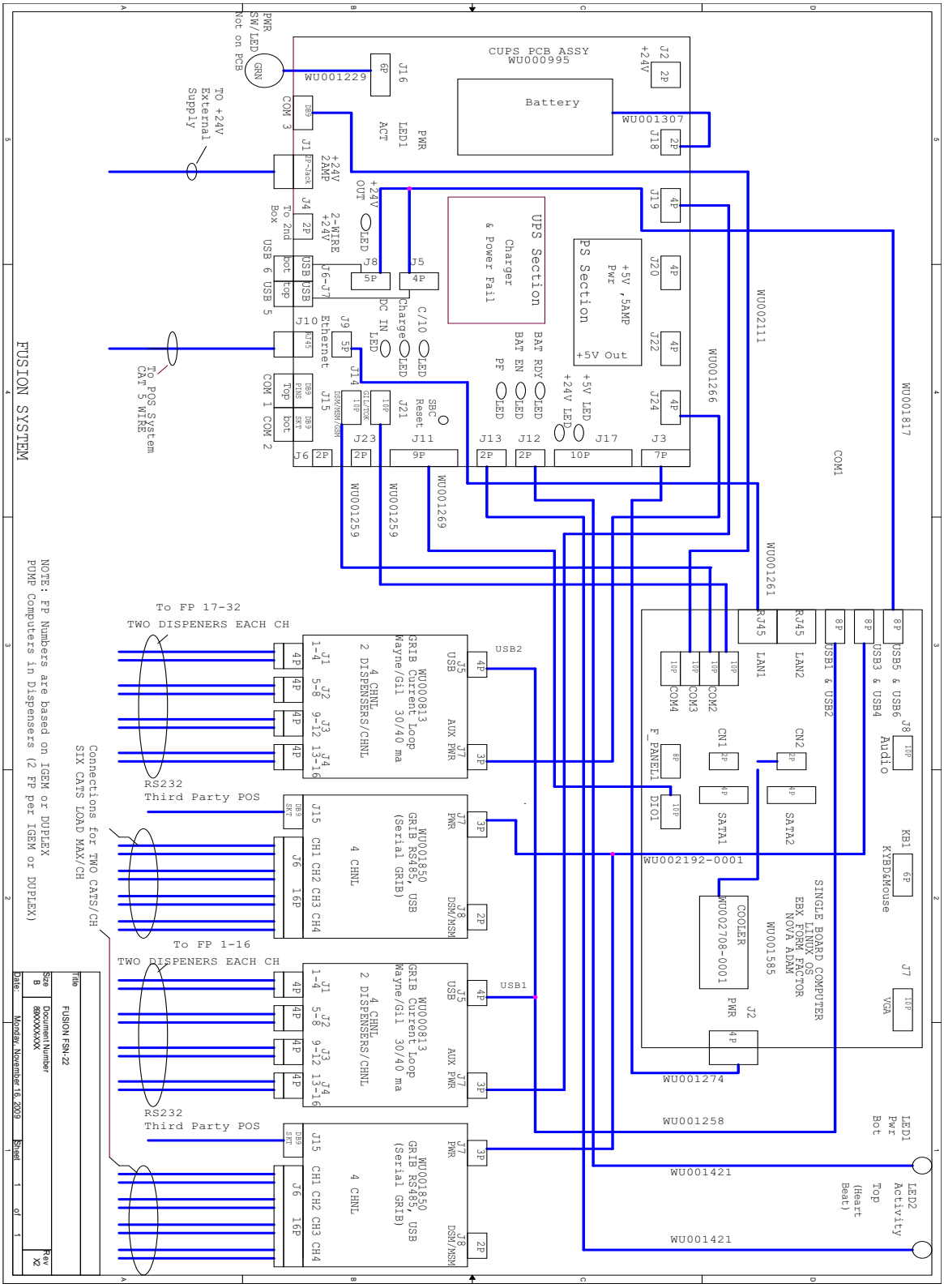


Figure 12-16 Fusion T/AA2D1/0/Z Wiring Diagram

INSTALLATION/OPERATION

Wayne Fusion

HyperPIB, PAM™ Emulation and Console Installation

Written by Tom Sigmon

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Wayne's general telephone number is (512)-388-8311.

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