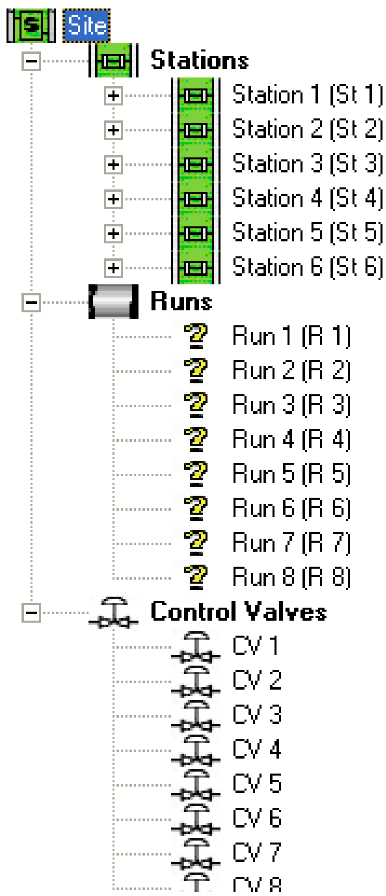
Instruction Manual
Part Number D301684X012
May 2016

ControlWave®
Station Manager Configuration Manual
(For Station Manager Version 4.2.1)



Remote Automation Solutions
www.EmersonProcess.com/Remote

IMPORTANT! READ INSTRUCTIONS BEFORE STARTING!

Be sure that these instructions are carefully read and understood before any operation is attempted. Improper use of this device in some applications may result in damage or injury. The user is urged to keep this book filed in a convenient location for future reference.

These instructions may not cover all details or variations in equipment or cover every possible situation to be met in connection with installation, operation or maintenance. Should problems arise that are not covered sufficiently in the text, the purchaser is advised to contact Emerson Process Management, Remote Automation Solutions for further information.

EQUIPMENT APPLICATION WARNING

The customer should note that a failure of this instrument or system, for whatever reason, may leave an operating process without protection. Depending upon the application, this could result in possible damage to property or injury to persons. It is suggested that the purchaser review the need for additional backup equipment or provide alternate means of protection such as alarm devices, output limiting, fail-safe valves, relief valves, emergency shutoffs, emergency switches, etc. If additional information is required, the purchaser is advised to contact Remote Automation Solutions.

RETURNED EQUIPMENT WARNING

When returning any equipment to Remote Automation Solutions for repairs or evaluation, please note the following: The party sending such materials is responsible to ensure that the materials returned to Remote Automation Solutions are clean to safe levels, as such levels are defined and/or determined by applicable federal, state and/or local law regulations or codes. Such party agrees to indemnify Remote Automation Solutions and save Remote Automation Solutions harmless from any liability or damage which Remote Automation Solutions may incur or suffer due to such party's failure to so act.

ELECTRICAL GROUNDING

Metal enclosures and exposed metal parts of electrical instruments must be grounded in accordance with OSHA rules and regulations pertaining to "Design Safety Standards for Electrical Systems," 29 CFR, Part 1910, Subpart S, dated: April 16, 1981 (OSHA rulings are in agreement with the National Electrical Code).

The grounding requirement is also applicable to mechanical or pneumatic instruments that include electrically operated devices such as lights, switches, relays, alarms, or chart drives.

EQUIPMENT DAMAGE FROM ELECTROSTATIC DISCHARGE VOLTAGE

This product contains sensitive electronic components that can be damaged by exposure to an electrostatic discharge (ESD) voltage. Depending on the magnitude and duration of the ESD, this can result in erratic operation or complete failure of the equipment. Read supplemental document S14006 for proper care and handling of ESD-sensitive components.

Contents

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Chapter 1 – Getting Started

This chapter discusses how to install the Station Manager application and provides some general information about how to use it.

In This Chapter

1.1 What is the Station Manager?

Station Manager is an application that allows the ControlWave Micro controller to manage up to six (6) natural gas measurement stations that include, among all the stations, up to:

- Maximum of six (6) or eight (8) meter runs, depending on the software version.
- Eighteen (18) control valves.
- Eight (8) PID loops per station for control. You can configure each station for tube switching, and Station Manager supports indication of bi-directional measurement for up to three (3) pairs of stations.
- Three general purpose proportional integral derivative (PID) loops.

The Station Manager application consists of:

- A ControlWave project file (*.PRO) pre-programmed for mult-run multi-station natural gas measurement.
- A customized flash configuration profile (*.FCP) file that configures the ports, audit, and archive parameters of the ControlWave Micro for the Station Manager.
- A TechView session. This includes the TechView session file (*.TVS), associated *.INI files, and a set of HTM menus customized for the Station Manager application. You use these menus to configure the application.

Note: Two versions of Station Manager are available for purchase:

- Station Manager 6-Run supports up to six meter runs and also supports communication to HART® devices, and a Coriolis Modbus interface. Station Manager 6-Run has Measurement Canada approvals; see *Appendix C* for details.
- Station Manager 8-Run supports up to eight meter runs, **without** HART® support, and without the Coriolis Modbus interface.
- The maximum number of meter runs also affects the number of certain components you can define, for example the number of ultrasonic flow meters (UFMs) or gas chromatographs (GC).

1.2 Before You Begin

- You must install the ControlWave Micro controller on site and connect field devices to its I/O modules. For information on ControlWave Micro hardware, see document *CI-ControlWave Micro*.
- For this version of Station Manager, your ControlWave Micro must have 64MB of SDRAM and 5.60 firmware (or newer).
- For full functionality, your ControlWave Micro should not use the System Controller Module (SCM) used with the ControlWave EFM; you should use a power supply sequence module (PSSM).
- You must install OpenBSI software (5.9 or newer) including TechView on your PC workstation. See the *OpenBSI Utilities Manual (D5081)***,** the *BSI_Config User's Manual* (D5128), and the *TechView User Manual* (D5131) for details on installation requirements.
- For optimum results, you should set the screen resolution on your PC to 1280 x 1024, your screen refresh rate to 60 Hz, and DPI to 96 (normal size).
- You must connect the PC workstation to the ControlWave Micro controller. You can communicate using a serial cable or an Ethernet cable. Cable diagrams are included in *CI-ControlWave Micro*.
- The ControlWave Micro must be running a flash configuration profile file (*.FCP) compatible with Station Manager software. For information on updating FCP files, see *Chapter 5* of the *OpenBSI Utilities Manual* (D5081).
- The ControlWave Micro must be running the ControlWave project (*.PRO) file configured for the Station Manager. See *Chapter 7* of the *OpenBSI Utilities Manual* (D5081) for information on downloading a ControlWave project (*.PRO) file.
- Your Station Manager application must be properly licensed; if you purchased a license dongle, you must run the Application Licensing tool and install the dongle in your USB port. **You must then reset**

the ControlWave and perform a cold start. See the *ControlWave Designer Programmer's Handbook* (D5125) for more information.

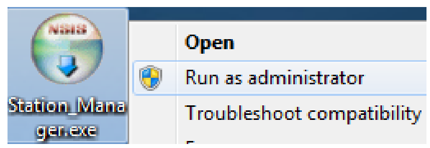
Note: If you ordered your ControlWave Micro with Station Manager software pre-installed, the FCP and PRO files are already loaded when the unit ships from the factory.

1.3 Installing Station Manager Software

Notes:

- Station Manager runs on the following Windows operating systems: Windows XP and Windows 7
- All Station Manager users must have modify privileges to the **\ProgramData\Bristol\StationManager**\ folder.

1. Right-click on the Station Manager application's icon and choose **Run as Administrator.**



2. The Station Manager Installer Setup screen opens; allow it to run on its own.

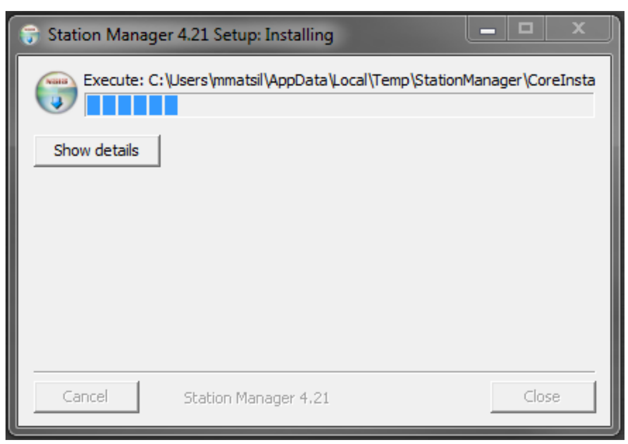


Figure 1-1. Station Manager Installer Setup Screen.

3. Click **Next** on the welcome screen of the installer.

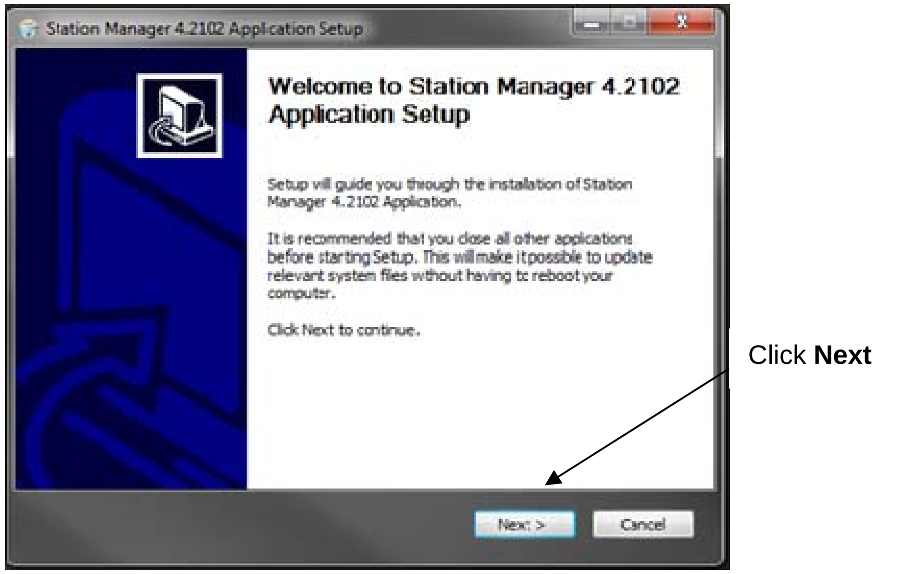


Figure 1-2. Station Manager Installer – Welcome Screen

4. You can look at the Read Me file to view information about this release. Use the scroll bar to view portions not currently on screen. Click **Next** to proceed.

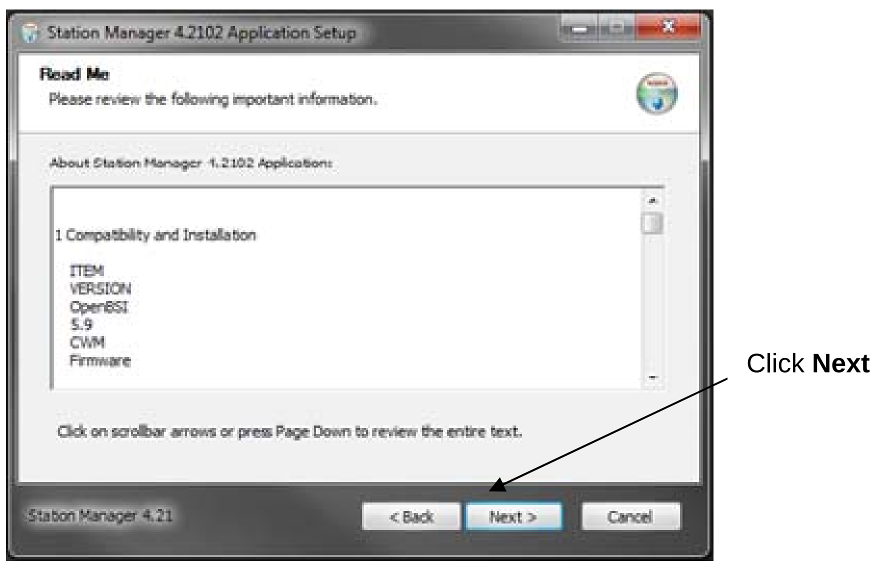


Figure 1-3. Station Manager Installer – Read Me

5. Review the license agreement and click the **I Agree** button to proceed with the installation or **Cancel** to abort the installation process

Click **I Agree**

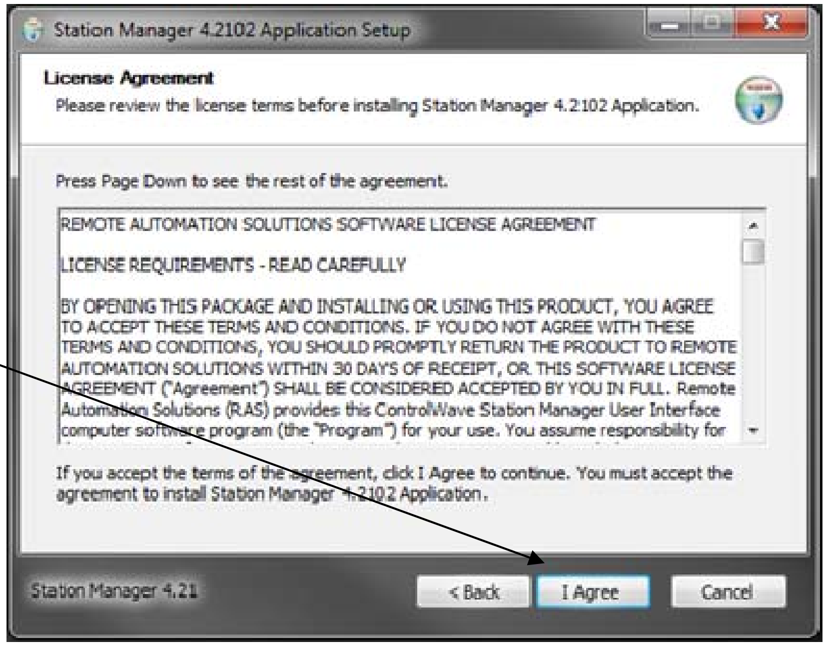


Figure 1-4. License Agreement page

Choose **Station Manager 8 Run** and click **Install**. If you choose the XT version, refer to Appendix X of this manual for information on differences in the XT version.

NOTE: This page only applies to the Station Manager 8-run version.

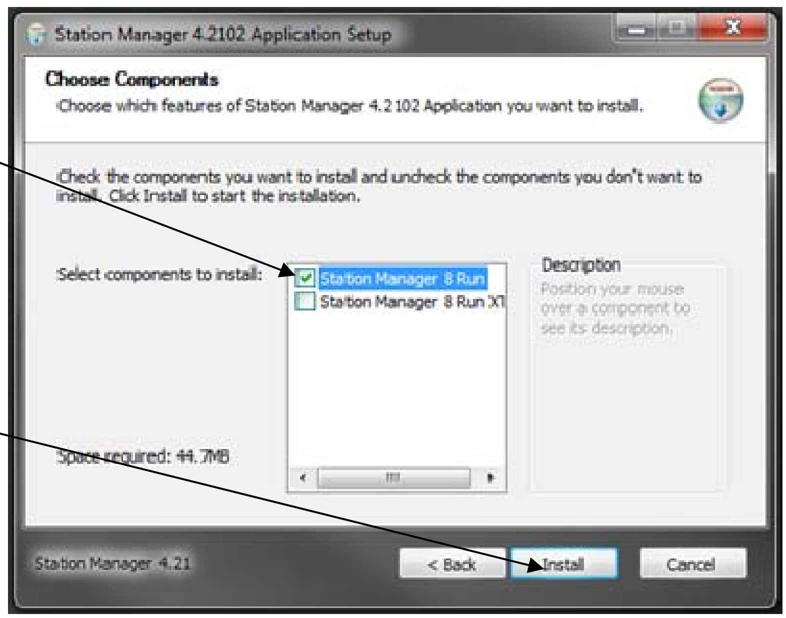


Figure 1-5. Selecting Application (8-Run Version ONLY)

The installation begins.

6. At the completion of the installation, click **Next**.

Click **Next**

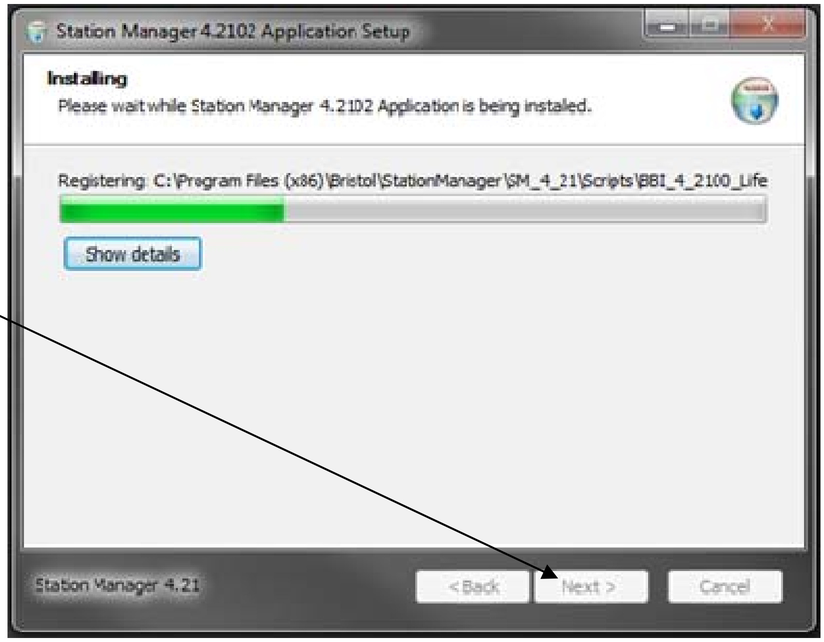


Figure 1-6. Installation Completion

7. Now click **Finish** to exit the installer.

Click "Finish."

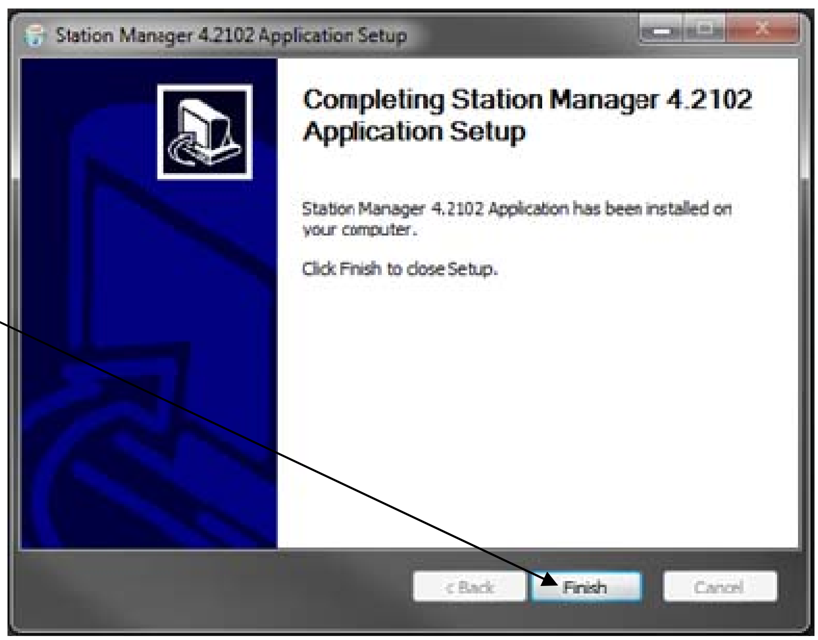


Figure 1-7. Exit the Installer

1.4 Starting Station Manager Software

You start the Station Manager software by invoking the proper TechView file. There are two ways to do this:

Starting Station Manager from the Start Programs Menu

For an IP connection, click: **Start** > **Programs** > **Station_Manager** > **SM_4_0_IP_tvs**

For a serial connection, click: **Start** > **Programs** > **Station_Manager** > **SM_4_0_Serial_tvs**

Starting Station Manager from an icon

From a desktop icon, similar to those below, or from the \Station_Manager\ SM_4_0\SUPPORT folder, double-click the IP or serial TVS file, depending upon your type of connection.

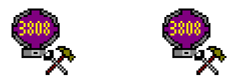


Figure 1-8. Station Manager TVS file icons

For IP communication, see *Section 1.4.1 Station Manager IP Startup.*

For serial communication see *Section1.4.2 Station Manager Serial Startup.*

1.4.1 Station Manager IP Startup

Once you start the TVS file for IP operation, TechView opens the Runtime Configuration Parameters dialog box:

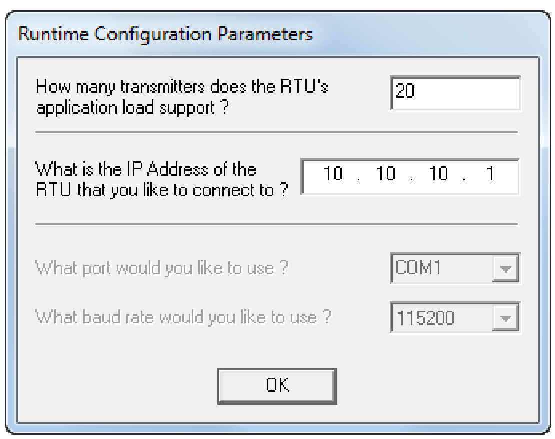


Figure 1-9. IP Runtime Parameters

1. Leave the number of transmitters at the default value.
2. Enter the IP address of the ControlWave Micro IP port to which you are connected.
3. Click **OK**.
4. Log onto the ControlWave Micro as described in *Section 1.4.3.*

1.4.2 Station Manager Serial Startup

Once you start the TVS file for serial operation, TechView opens the Runtime Configuration Parameters dialog box:

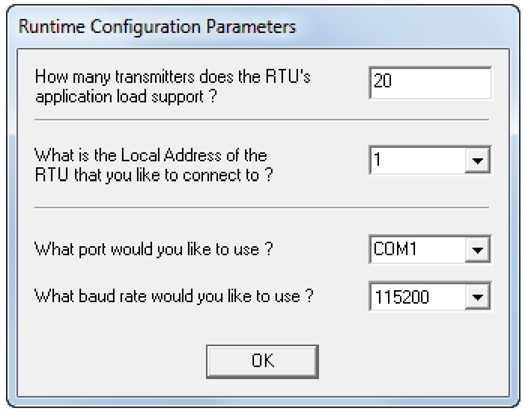


Figure 1-10. Serial Runtime Parameters

1. Leave the number of transmitters at the default of 12.
2. Enter the BSAP local address of the ControlWave Micro to which you are connected.
3. Select the serial communication port on the PC which you are using to communicate with the ControlWave Micro.
4. Select the baud rate on the serial communication line.
5. Click **OK**.
6. Log onto the ControlWave Micro as described in *Section 1.4.3.*

1.4.3 Logging Onto the ControlWave Micro

In the SignOn to RTU dialog box, enter a **Username / Password** combination that allows full access to the ControlWave Micro, then click the **SignOn** button.

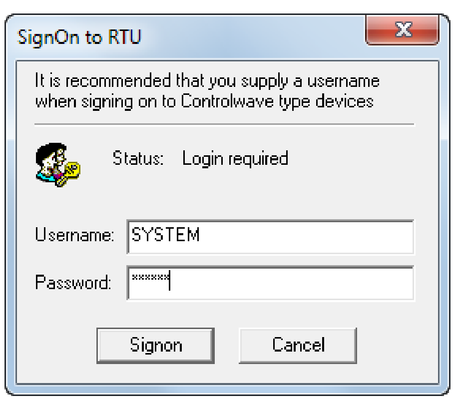


Figure 1-11. Logging onto the ControlWave Micro

1.5 Accessing Pages of the Station Manager Application

To access various pages of the Station Manager application, click on the tab for the function you want to configure, then click on the buttons which appear on that tab. By default, the I/O tab appears first.

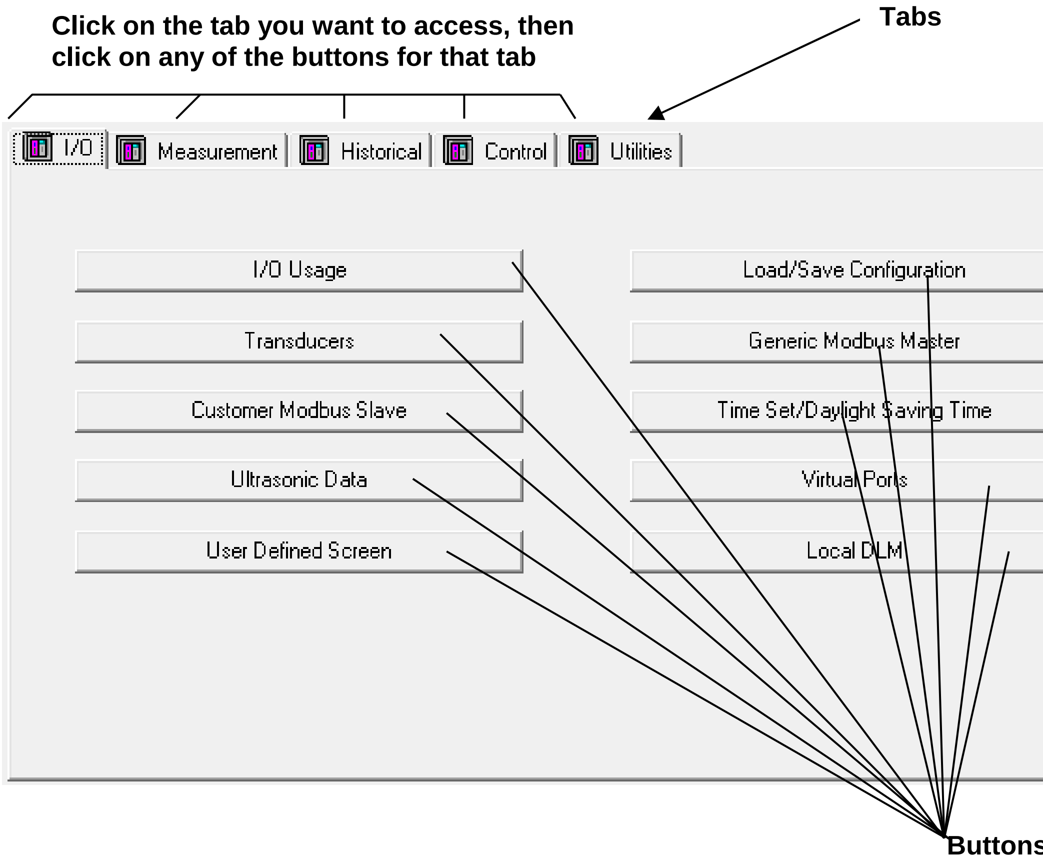


Figure 1-12. Tabs and Buttons in Station Manager

The next several chapters describe the functions available on each tab of the application.

You need not configure all the features of the application; only those that you need for your particular purpose and measurement needs.

1.6 Entering Data in Fields of the Station Manager Application

Whenever you select a field and enter data, or select from a drop-down menu, you must press the **[Enter]** key to confirm and save your choice.

To exit a field without entering data, press the **[Esc]** key.

1.7 Setting the Archive Mode

When you first start Station Manager, you may see a warning indicating that the archive mode is not set (see *Figure 1-13*).

Figure 1-13. Archive Mode Not Set Warning

This warning tells you that until archiving is configured, Station Manager cannot log data into archives.

Caution

You cannot mix older archive files with new archive files or change archive file parameters after archive collection begins:

- **If you've never configured archives, and you plan to use the default archive mode (Push Down) and no archives exist on this PC workstation or in the ControlWave Micro, you can proceed to set the archive mode as described in *Section 1.7.2 Setting the Archive Mode.***
- **If old archives already exist, and/or you plan to use Wrap Around mode, or you want to change archiving parameters, you must first follow the instructions in *Section 1.7.1 Clearing Old Archive Files and Setting Other Archive Parameters Before You Set the Archive Mode.***

You have three choices when you see this warning.

Field	Description
Click to Hide	During initial configuration, the warning doesn't really matter, so you can click here to hide the warning. The warning will not be present until you open another TechView screen or restart TechView.
Disable warning for one hour	Check this box to disable the warning for one hour, or until TechView is restarted, after which the warning returns.
Click to Set Archives	Click this button to set the archive mode. See *Section 1.7.2*, below.

1.7.1 Clearing Old Archive Files and Setting Other Archive Parameters Before You Set the Archive Mode

If you plan to use the default archive mode (Push Down) with default archive parameters, and no older archive files exist on your PC workstation or in the ControlWave Micro, you can skip this section and proceed to *Section 1.7.2.*

Caution — **The instructions in this section delete archive data files from your ControlWave Micro and your OpenBSI workstation. Be sure you follow the steps carefully, and in the order shown, so you can save those archives, if you need to preserve them.**

You cannot mix older archive files with different storage methods or archive parameters with new archive files. Therefore, if older archive files exist on your PC workstation, or you plan to use Wrap Around mode for your archives or you want to change archive parameters, you must follow these steps in the order shown, first:

Clearing Old Archive Files from Station Manager AND the ControlWave Micro

1. If the ControlWave Micro holds existing archive files you have not yet collected, follow the instructions in *Chapter 4* of this manual, to collect those archives.

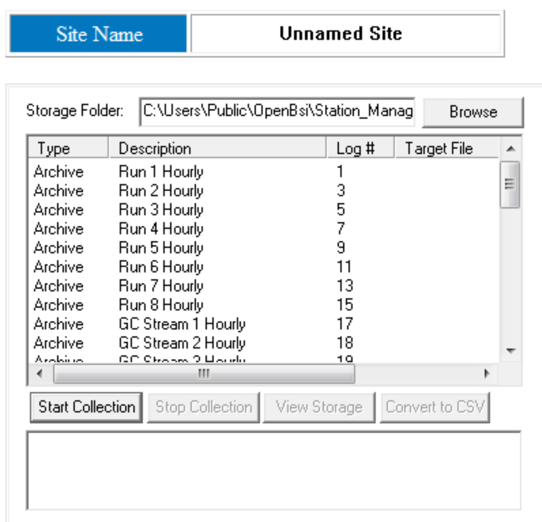


Figure 1- 14 Collect Local Archives

2. To preserve the archive files you just collected,(and any other archives files collected by Station Manager) go to Station Manager's Log area, and copy those files to a different location. By default, the log area is located in the path \OpenBSI\Station Manager\Logs.

3. Now that you have a safe copy of the log files elsewhere (Step 2), delete all files in the \Station Manager\Logs area.

4. Cold start the ControlWave Micro. To do this, click **Start** > **Programs** > **OpenBSI Tools** > **Debugging Tools** > **Reset ControlWave** then log into the unit, and click the **Cold Start** button. When the status message shows "Restart Complete," click **Close**.

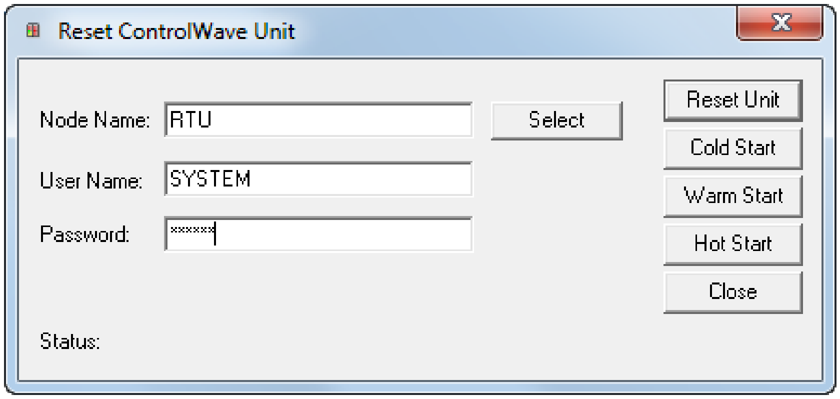


Figure 1-15. Reset ControlWave Unit

5. In TechView, clear all archives from the ControlWave Micro. To do this, click **Operations** > **Clear History**. Then select **Clear All Archive Files** and click **Start**. Answer the prompts to perform the deletion, and when the status message says "Task Complete," click **Exit** to close the Clear RTU History utility.

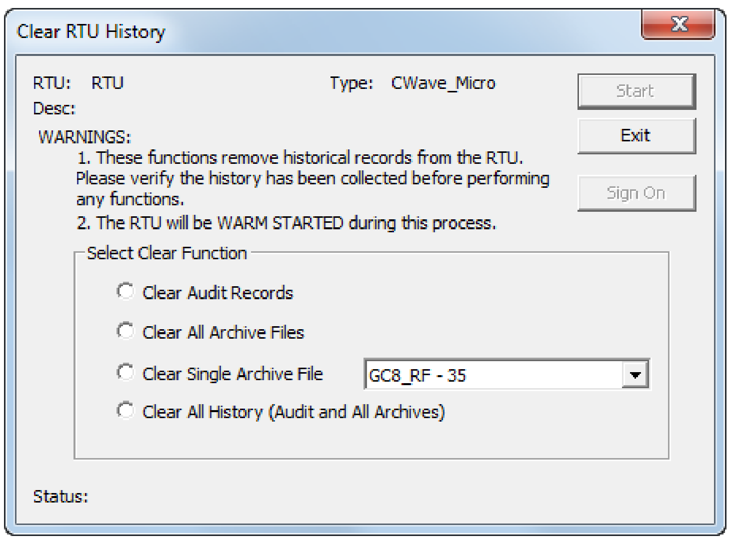


Figure 1-16. Clear RTU History

Changing Archive Parameters

Now that you've deleted all existing archive files you can optionally change archive parameters for Enron Modbus collections. These are set in List 20 in the ControlWave Station Manager application. You can call List 20 up using DataView; right click on the RTU icon in TechView, choose **DataView** from the pop-up menu. Once DataView opens, click the Remote List icon  and enter 20 in the Remote List Properties dialog box and click **OK**; this opens list 20. You can then click on a value to change it.

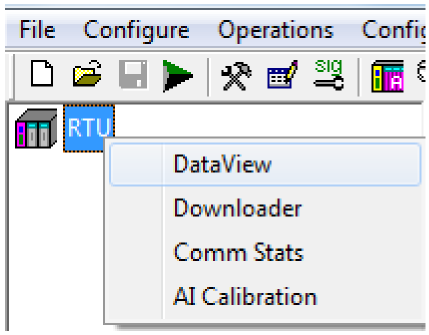


Figure 1-17. – Calling Up DataView

You can change archive parameters through this list. For example, you can change date formats (Parameter 6) for archive entries here through the MB.ENRON_DTFORMAT variable. For details on these different parameters, see the ACCOL3 function block online help in ControlWave Designer for the CUSTOM function block and look up Enron Modbus.

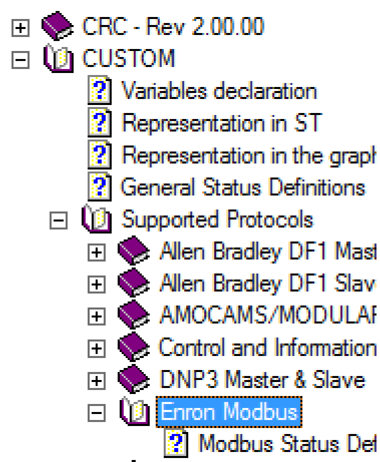


Figure 1-18. Enron Modbus Icon in ACCOL3 Function Block Help

You can now select the archive mode as described in *Section 1.7.2 Setting the Archive Mode* and begin to collect new archives.

1.7.2 Setting the Archive Mode

You may select one of two modes for the way archived data is stored for retrieval via Enron Modbus.

Push Down – This is the default mode. In this mode a request for archive record 1 returns the record with the oldest local sequence number and the oldest timestamp. A request for the highest archive record number (840 for the hourly archives, 62 for the daily archives) returns the record with the newest local sequence number and the most recent timestamp.

Wrap Around – In this mode, a request for archive record 1 returns the record in the archive with the newest data. A request for the highest record number returns the record in the archive with the oldest data.

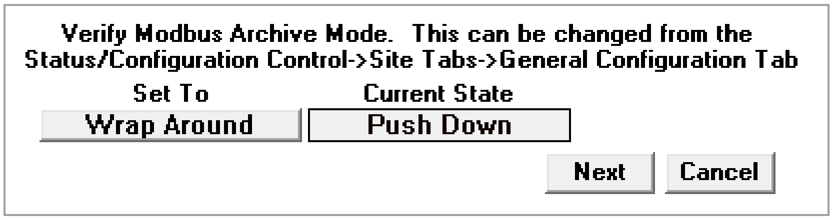


Figure 1-19. Verify Modbus Archive Mode selection

The **Current State** shows the currently active archive mode. To toggle that to the other mode, click the desired **Set To** mode button. After you have selected the Enron Modbus archive retrieval mode, click **Next**. You must now select the archive storage mode. The selections are **Push Down** and **Wrap Around**, as defined above.

If the archive mode is left as **Not Set**, no archive records will be generated. From this selection screen, once you select a mode, the change will take effect immediately and cannot be changed until the ControlWave Micro performs a cold start.

After selecting the archive mode, click **Done** to close this window.

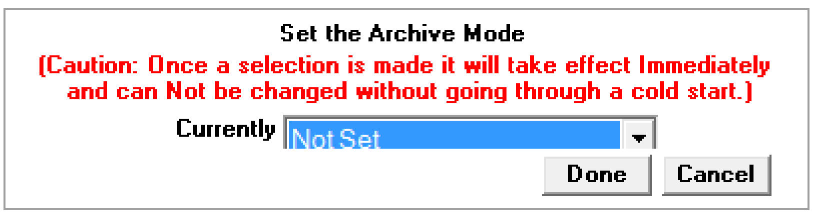


Figure 1-20. Setting the Archive Storage Mode selection

1.8 Checking Status Information on the Page

On the top of most pages in the Station Manager application is the title block. This provides certain status information about Station Manager operation.

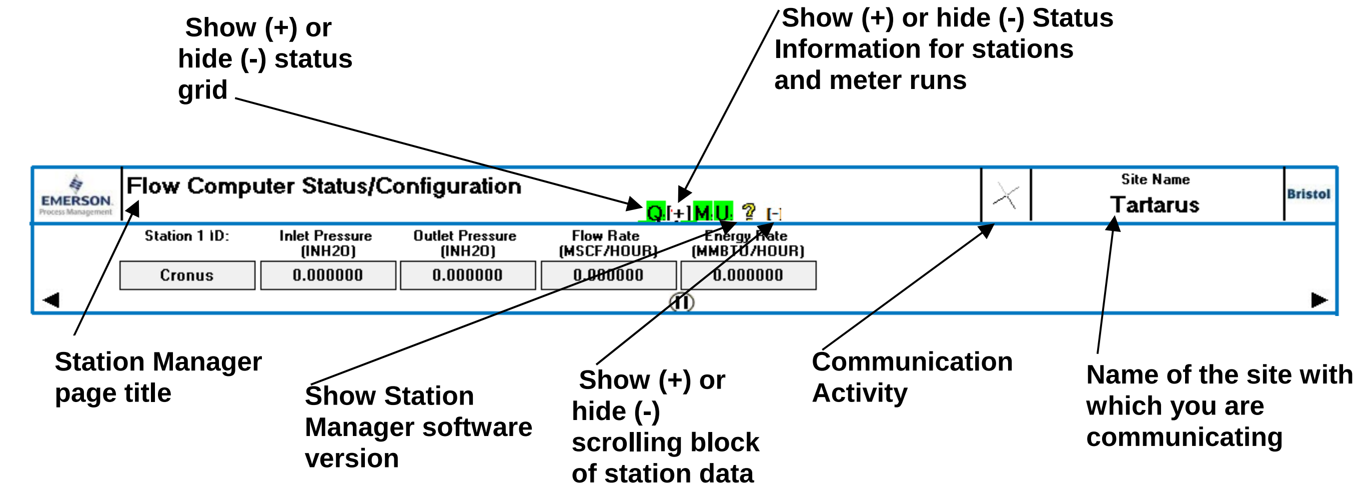


Figure 1-21. Title Block at Top of Screens

The title block shows the following:

- The title of the current Station Manager page
- The Station Manager software version (you can show/hide this by clicking the question mark icon.
- The name of the site to which you are communicating.
- A communication activity "X" which rotates if communications are good. If communication is lost it shows a red frowning face.

In addition, if you click the "+" between the "Q" and "M" you can view status information on all stations and meter runs.

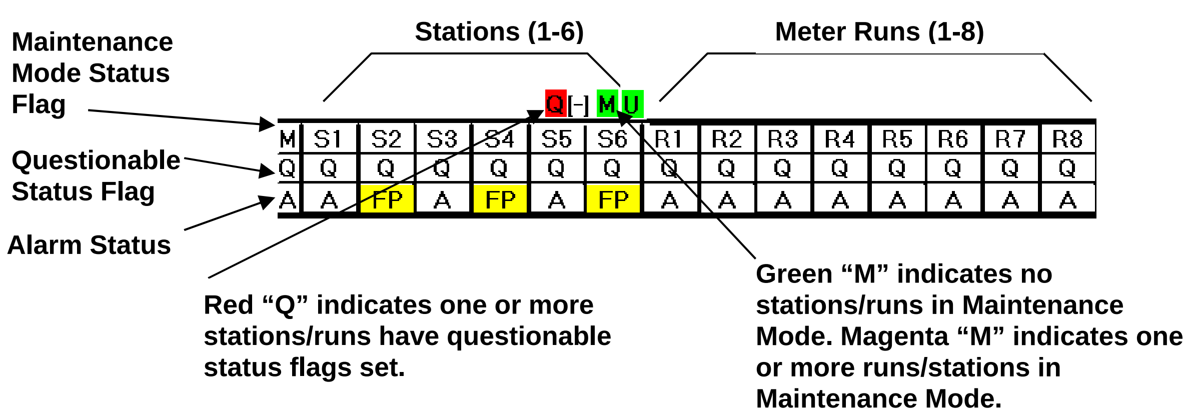


Figure 1-22. Status Grid

The Q and M icons just above the grid summarize the system status:

- A red "Q" indicates one or more runs/stations have a questionable status.
- A green "M" indicates no stations or runs are in Maintenance Mode.
- A magenta "M" indicates at least one run/station is in Maintenance Mode.

The U icons just above the grid shows the status of communication with ultrasonic flow meters (UFMs).

- A green "U" indicates communications with UFMs are good.
- A red "U" indicates communications with at least one UFM have failed.

This icon only shown in Station Manager 8-Run.

Table 1-1 shows the meaning of the different items in the status grid.

Table 1-1 Status Grid Icons

Line	Stations (S1 to S6)	Meter Runs (R1 to R8)
M (Maintenance)	S*n* = Station not in Maintenance Mode (White background)	R*n* = Run not in Maintenance Mode(White background)
	S*n* = Station in Maintenance Mode (Magenta background)	R*n* = Run in Maintenance Mode (Magenta background)
Q (Questionable)	Q = Not questionable -OK (White background)	Q = Not questionable -OK (White background)
	Q = Unspecified questionable (Q) data issue for this station.(Red background)	Q = Unspecified questionable (Q) data issue for this run. (Red background)
	DP = Differential pressure (DP) data is questionable for this station. (Red background)	DP = Differential pressure (DP) data is questionable for this run. (Red background)
	SP = Static pressure (SP) data is questionable for this station. (Red background)	SP = Static pressure (SP) data is questionable for this run. (Red background)
	FT = Flowing temperature (FT) data is questionable for this station. (Red background)	FT = Flowing temperature (FT) data is questionable for this run. (Red background)
	** = Multiple (**) questionable data issues for this station. (Red background)	** = Multiple (**) questionable data issues for this run. (Red background)
A (Alarm)	A = OK. No alarm reported. (White background)	A = OK. No alarm reported. (White background)
	FP = Flow Permissive (FP) Mode active for this station.(Yellow background)	FP = Flow Permissive (FP) Mode active for this run.(Yellow background)

Line	Stations (S1 to S6)	Meter Runs (R1 to R8)
	DCP = Direction Change Permissive (DCP) Mode active for this station. (Yellow background)	DCP = Direction Change Permissive (DCP) Mode active for this run. (Yellow background)

If an item in the status grid has a non-white background color, you can move your mouse over that location to view an explanatory Detail message box.

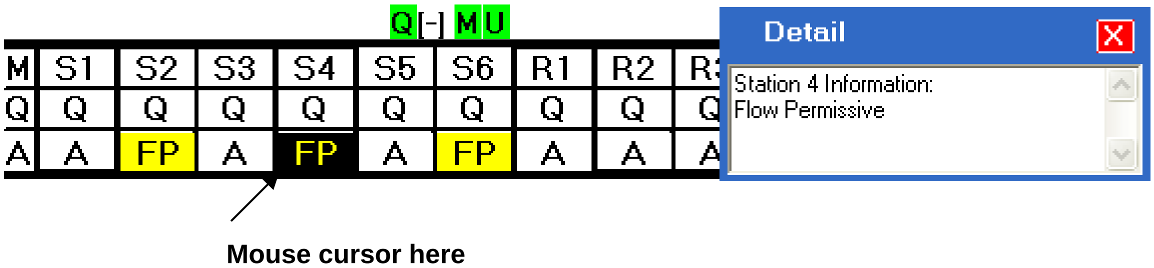


Figure 1-23. Viewing the Detail Message

Note: If you make changes to entries on a Station Manager screen, the Detail pane must be visible for screen updates to occur.

Chapter 2 – Configuring Inputs and Outputs (I/O Tab)

This chapter discusses configuring the Station Manager application to accept field inputs and outputs (I/O). This is accomplished from the Station Manager's I/O tab.

In This Chapter

2.1 I/O Tab

Click the I/O tab to display the various I/O options you can configure. We'll discuss each of these in the sections that follow.

To configure an I/O function or feature, click on its button.

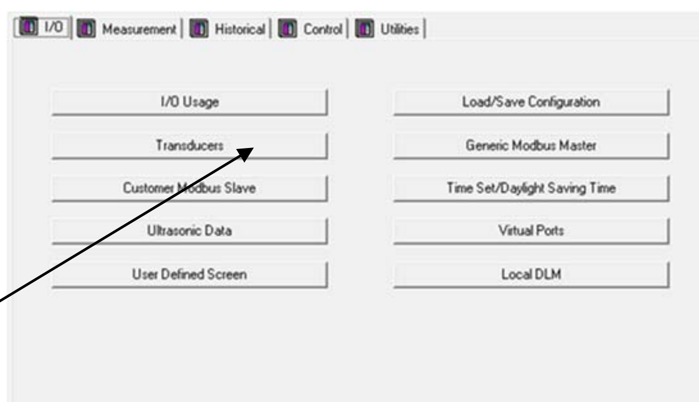


Figure 2-1. I/O Tab in Station Manager

2.2 I/O Usage

When you click the [I/O Usage] button on the I/O tab, the I/O Usage page displays a graphical representation of the ControlWave Micro, showing each of the I/O modules detected by the Station Manager. If Station Manager cannot detect a particular module or an I/O slot is empty, its graphic shows “Not Present.”

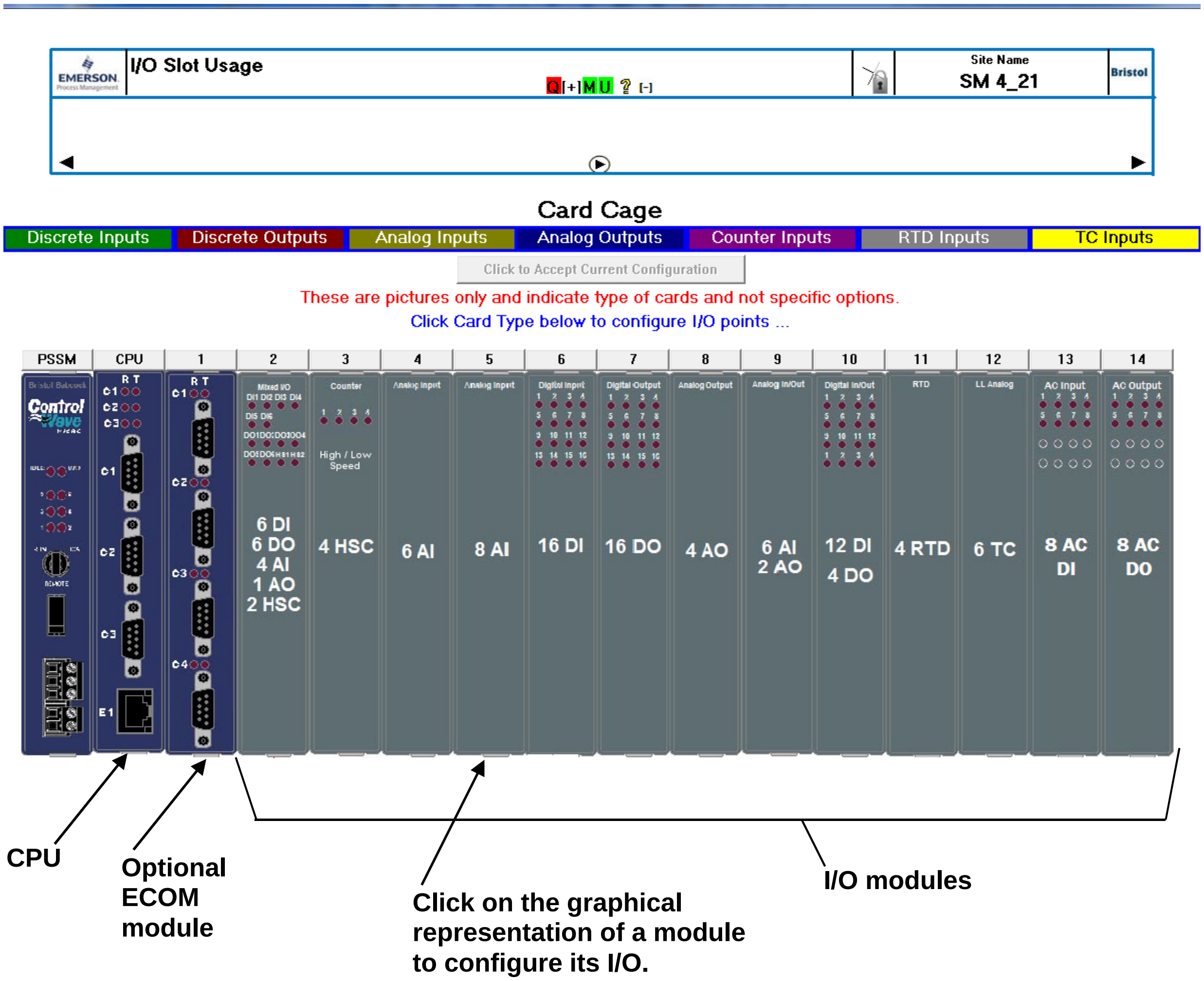


Figure 2-2. I/O Usage Screen Showing I/O Modules Detected

When you move the cursor over the CPU module, an Expansion Communication (ECOM) module, or any I/O module, you’ll see a yellow box on the screen. To configure I/O, follow these steps:

1. From the I/O tab, click the **I/O Usage** button.

2. Position the cursor over the I/O module you want to configure; a yellow box indicates the cursor position on any configurable module.

3. Click on the module you want to configure. This opens a screen showing the possible choices for I/O. The Mixed I/O Module shows multiple types of I/O (see *Figure 2-3*).

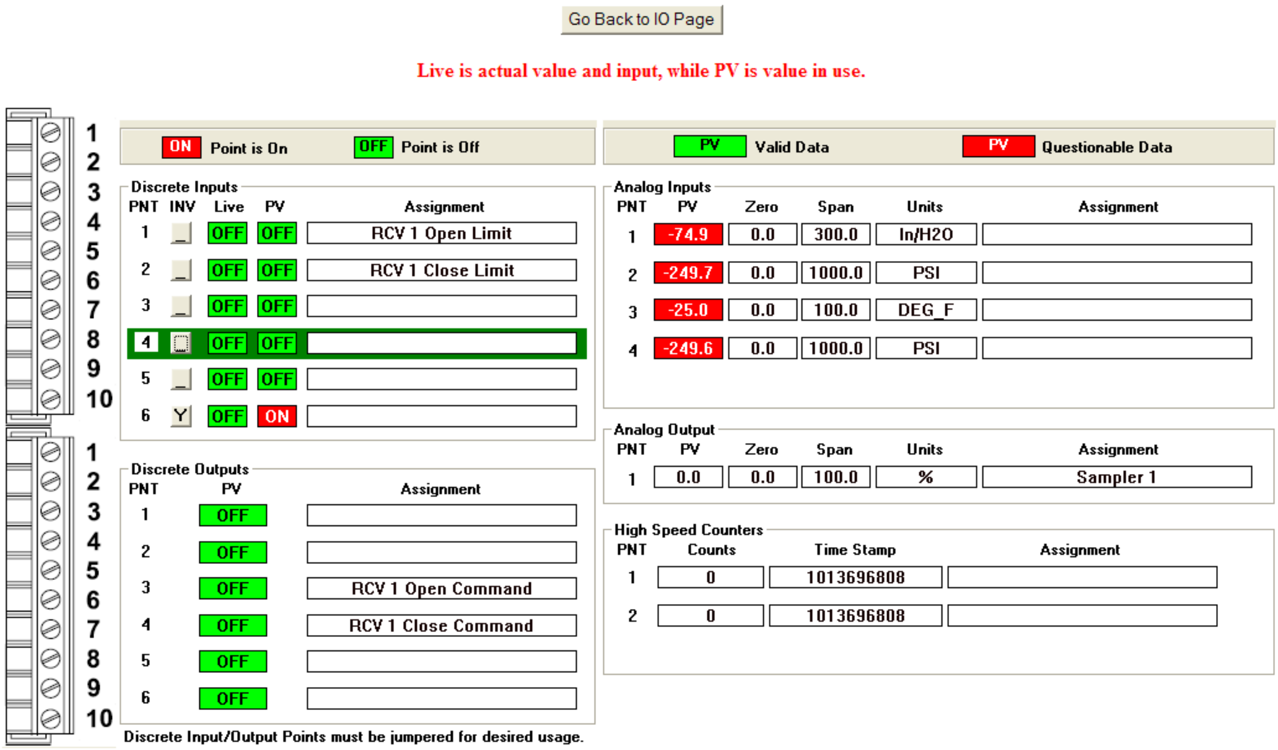


Figure 2-3. Mixed I/O Module

4. Click in the **Assignment** field, and use the drop-down menu to select the function in the Station Manager that you want to connect to a particular I/O point. For example, if remote control valve 1's open limit switch field input is connected to discrete input 1, select **RCV 1 Open Limit** for the **Assignment**. (See *Figure 2-5*.) Press the **[Enter]** key to confirm and save your choice.

Note: You may have noticed that when the cursor is left hovered over an IO point, the graphics to the left display the applicable connection points for direct and remote IO (see *Figure 2-4*).

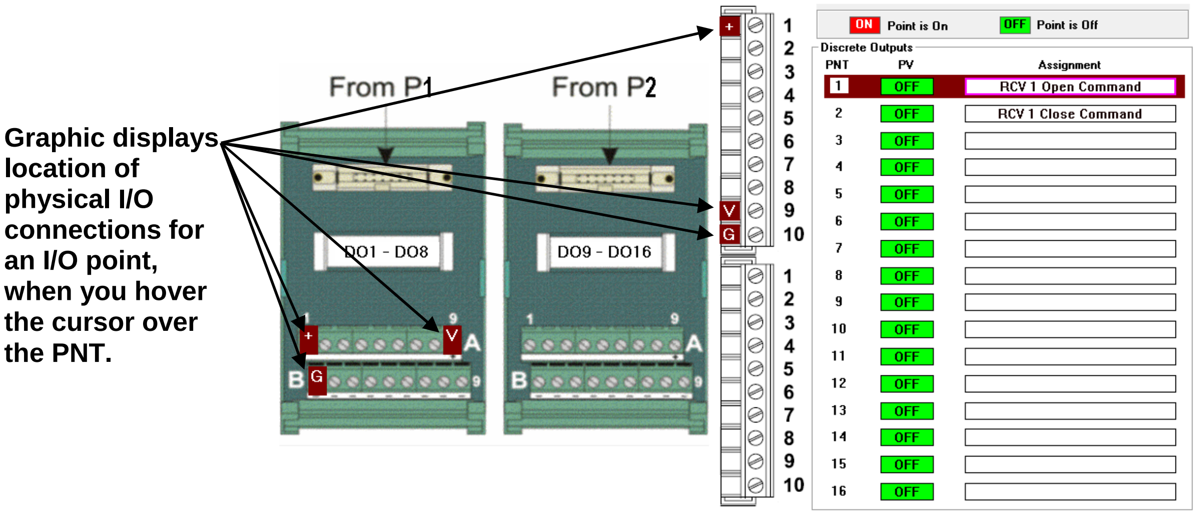


Figure 2-4. Connection Points for Physical I/O

5. Continue assigning Station Manager functions to their applicable field I/O points. See the sub-sections below for information on the different I/O module types.

Notes:

- Only assign a given function to one **input** I/O point. If you subsequently assign the same function to a different **input** point, Station Manager re-assigns it to your newer choice and disconnects it from the earlier choice.
- Depending upon your particular configuration, you might not use all the inputs or outputs in a particular meter run or station.
- If you have I/O that comes from an ultrasonic flow meter or a multi-variable transmitter that communicates with the Station Manager through a communication port, instead of an I/O module, you configure it from the UFM or Transducer pages, discussed later in this chapter.
- To return to the I/O Usage page from any page underneath it, click the Go Back to IO Page button.

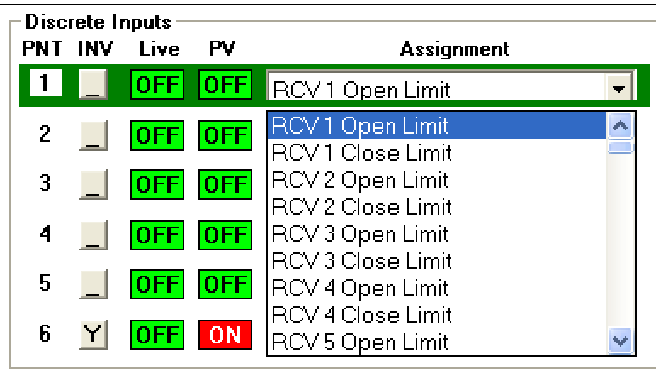


Figure 2-5. Assigning Discrete Input 1

Viewing Communication Port Configuration

To view the current port configuration, position the cursor over the CPU or ECOM module (see *Figure 2-2*) and click; this displays the current configuration of ports on the CPU or ECOM module. To alter the configuration, you need to edit the flash configuration profile for the ControlWave Micro. **Note:** Changes made to the flash configuration profile are not reflected within Station Manager screens until you restart the ControlWave Micro.

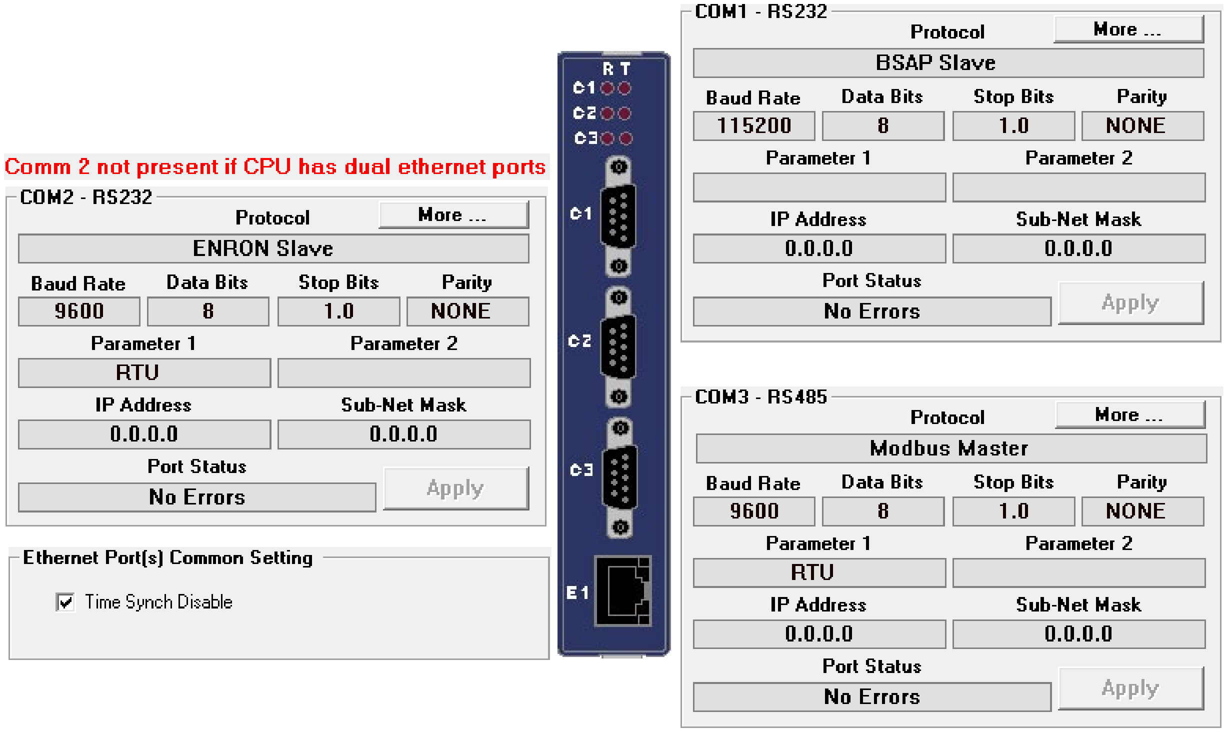
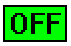
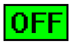


Figure 2-6. Viewing Configuration of Ports

2.2.1 Discrete Inputs (DI)

Discrete inputs (DIs) include the following fields:

Field	Description
PNT	This read-only field displays the I/O point number. The number varies depending upon the type of I/O module.
INV	If you check this box for a given I/O point, Station Manager inverts the real-live field value and uses the inverted value as the process value. For example, if the **Live** value of discrete I/O point 5 is **OFF**, and **INV** is checked for that point, **PV** is set **ON** and that's what Station Manager uses for control and processing.
Live	This read-only field shows the actual ON/OFF status of this discrete input point. Points that are **ON** show in red.  Points that are **OFF** show in green. 

PV	This read-only field shows the value of the process variable **(PV)** used in Station Manager. This matches the **Live** value unless you invert the input using **INV**. Points that are **ON** show in red.  Points that are **OFF** show in green. 
Assignment	Use the drop-down menu to select the function within Station Manager that corresponds to this discrete input. Press **[Enter]** to save your selection.

2.2.2 Discrete Outputs (DO)

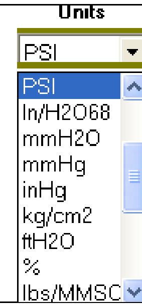
Discrete outputs (DOs) include the following fields:

Field	Description
PNT	This read-only field displays the I/O point number. The number varies depending upon the type of I/O module.
PV	This read-only field shows the value of the process variable **(PV)** Station Manager will output to the field device.
Assignment	Use the drop-down menu to select the function within Station Manager that corresponds to this discrete output. Press **[Enter]** to save your selection.

2.2.3 Analog Inputs (AI)

Analog inputs (AIs) include the following fields:

Field	Description
PNT	This read-only field displays the I/O point number. The number varies depending upon the type of I/O module.
PV	This read-only field shows the calculated value of the analog input process variable **(PV)** based on the configured **Zero** and **Span**. If the value shows in red, the value is questionable  . This could indicate no connection, a communication problem with the field device, data timeout or some other problem that could cause the value to be invalid.
Zero	Enter the value that the process variable should read when the AI field input is 4mA. Press **[Enter]** to save your selection.
Span	Enter the value that, when added to the **Zero** value, represents what the process variable should display when the AI field input is 20mA. Press **[Enter]** to save your selection.

	For example, if **Zero** is 5 and **Span** is 20, then: If the AI field input is: / PV will be: 4mA / 5 20mA / 25 12mA / 15
Units	The engineering units for this process variable. Click in the field and select the proper units from the drop-down menu. Press **[Enter]** to save your selection. 
Assignment	Use the drop-down menu to select the function within Station Manager that corresponds to this analog input. Press **[Enter]** to save the selection.

2.2.4 Analog Outputs (AO)

Analog outputs (AOs) include the following fields:

Field	Description
PNT	This read-only field displays the I/O point number. The number varies depending upon the type of I/O module.
PV	This read-only field shows the calculated value of the analog output process variable **(PV)** based on the configured **Zero** and **Span**. This value will be sent to the field device.
Zero	Enter the value that the process variable should read when the AO field output is 4mA. Press **[Enter]** to save your selection.
Span	Enter the value that, when added to the **Zero** value, represents what the process variable should display when the AO field output is 20mA. Press **[Enter]** to save your selection. For example, if **Zero** is 5 and **Span** is 20, then: If PV is: / The AO field output is: 5 / 4mA 25 / 20mA 10 / 8mA
Units	The engineering units for this process variable. Click in the field and select the proper units from the drop-down menu. Press **[Enter]** to save your selection.
Assignment	Use the drop-down menu to select the function within Station Manager that corresponds to this analog output. Press **[Enter]** to save the selection.

2.2.5 High Speed Counters (HSC)

High speed counters (HSC) include the following fields:

Field	Description
PNT	This read-only field displays the I/O point number. The number varies depending upon the type of I/O module.
Counts	This read-only field displays the number of counts since the last power cycle.
Time Stamp	This read-only field displays the timestamp of the last sample from the HSC module. The timestamp is the number of milliseconds since boot.
Assignment	Use the drop-down menu to select the function within Station Manager that corresponds to this high speed counter input. Press **[Enter]** to save the selection.

2.2.6 Multi-variable Transmitters (Transducers)

If you have one or more multi-variable transmitters, click the Transducers button on the top of the I/O tab to call up the Transducers page.

The following MVTs have been tested with Station Manager:

- Rosemount 3095
- Rosemount 4088A
- Rosemount 4088B
- Bristol 3808

The Transducers page shows the first three multi-variable transmitters (MVTs) for the station; if you want to view a different group of three MVTs, click the tab corresponding to the range of MVTs you want to see.

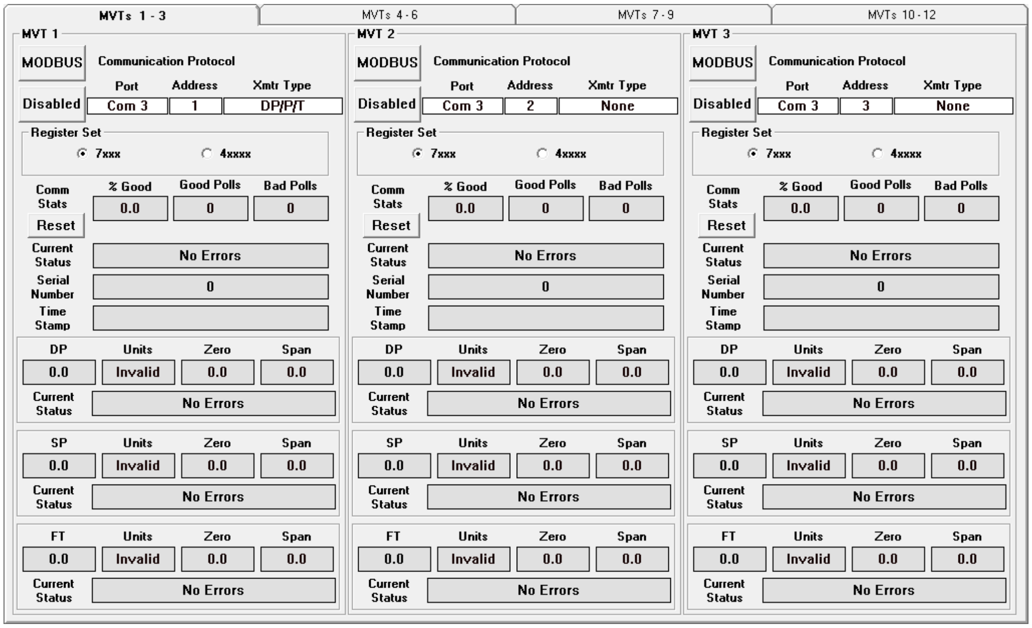


Figure 2-7. Transducers Page (Multi-Variable Transmitters)

Each MVT includes the following fields:

Field	Description
Enabled/Disabled	Click this button to enable communication from this MVT to the Station Manager.
Communication Protocol (BSAP/MODBUS)	Click the **BSAP/MODBUS** button to toggle the method used to communicate with this MVT between BSAP protocol and MODBUS protocol.
Port	Use the dropdown menu to specify the ControlWave Micro serial communication port which connects to this MVT. Press **[Enter]** to save the selection.
Address	Enter the address of the MVT here. Press **[Enter]** to save the selection.
Xmtr Type	Use the drop-down menu to select the type of data coming from this MVT. Choose either: <u>Type</u>: <u>Data from this type</u>: GP/T gage pressure and temperature DP/P/T differential pressure, static pressure, and temperature T temperature Press **[Enter]** to save your selection.
Register Set	This field applies only to MODBUS communication. Click either **7xxx** or **4xxxx** to select the MODBUS register set used by this MVT.
<u>Comm Stats</u>	
% Good	This read-only field shows the percentage of successful communication transactions with this MVT.

Good Polls	This read-only field shows the number of good poll messages in communications with this MVT.
Bad Polls	This read-only field shows the number of bad poll messages in communications with this MVT.
Reset	This button resets the communication statistics in the **%Good**, **Good Polls**, and **Bad Polls** fields.
Current Status	These read-only fields display the most recent status messages from this MVT.
Tag Name	This read-only field shows the tag name from this MVT. (BSAP only)
Serial Number	This read-only field shows the serial number from this MVT. (MODBUS only)
Time Stamp	This read-only field shows the time stamp of the most recent value received from this MVT.
DP	This read-only field shows the most recent differential pressure reading from this MVT.
SP	This read-only field shows the most recent static pressure reading from this MVT.
FT	This read-only field shows the most recent temperature reading from this MVT.
Units	This read-only field shows the engineering units for this variable.
Zero	This read-only field shows the value for this variable when the MVT receives a 4mA field input.
Span	This read-only field shows the value that, when added to the **Zero** value, represents what the process variable should display when the field input to the MVT is 20mA.

2.2.7 HART Transmitters (6-Run Version ONLY)

To configure wired HART transmitters, click on the graphical representation of the HART/BTI module in the I/O Usage screen. This calls up the HART Configuration page.

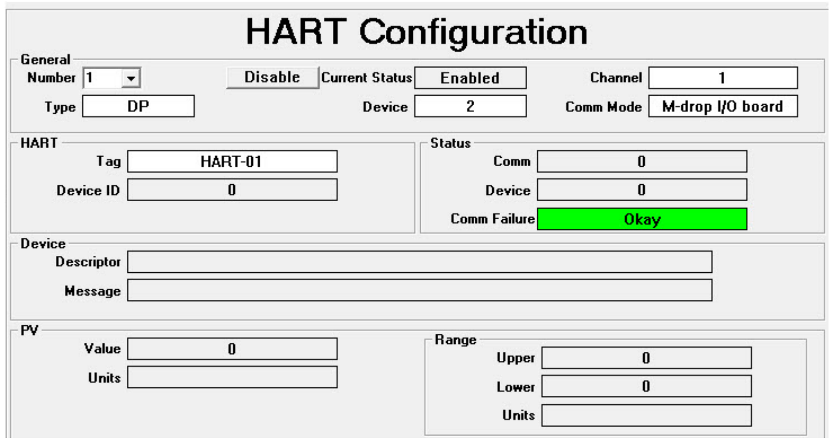


Figure 2-8. HART Configuration

Field	**Description**
General	
Number	Select the HART transmitter number (from 1 to 18).
Enable/Disable	Click **Enable** to activate communications with the transmitter or click **Disable** to turn off communications with the transmitter. When the communication state changes, the **Current Status** field updates to show the change, and the label on the button toggles to the opposite title. After disabling the transmitter, a cold/warm start of the CPU is necessary to stop the continuous polling of the transmitter.
Type	Shows the transmitter type: DP = Differential Pressure SP = Static Pressure FT = Flowing Temperature MVT = Multi-Variable Transducer
Device	If HART communications is through the HART/BTI module, specify the I/O slot in the ControlWave Micro that holds the HART/BTI module. Only slots 1 and 2 are supported. If HART communication is through a communication port, specify the ControlWave Micro COM port number used for HART.
Channel	Specify the channel number on the HART/BTI module associated with the transmitter.
Comm Mode	Select whether HART transmitter data comes from the HART/BTI module or from a COM port.
HART	
Tag	Shows the tag name read from the HART transmitter.
Device ID	Shows the Device ID read from the HART transmitter.
Status	
Comm	Shows the HART communication status code. Valid codes are shown in *Table 2-1.*

Table 2-1. HART Communication Status Codes

Binary	Dec	Hex	Description
10000000	28	0x80	When this bit is clear the remaining bits represent the command status response from the device. When this bit is set it indicates there is a communications error defined by the remaining bits.
01000000	64	0x40	The parity of one or more of the bytes received by the device was not odd.
00100000	32	0x20	At least one byte of received data was not processed fast enough and was overwritten before it could be read.
00010000	16	0x10	An expected stop bit for one or more bytes received was not detected.
00001000	8	0x08	The longitudinal parity calculated by the device did not match the check byte at the end of the message.
00000100	4	0x04	Reserved – set to 0.
00000010	2	0x02	The message was too long for the receive buffer of the device.
00000001	1	0x01	Reserved – set to 0.

Device	Shows the status code for the HART transmitter. Valid codes are in *Table 2-2*.

Table 2-2. HART Device Status Codes

Binary	Dec	Hex	Description
10000000	128	0x80	The device detected a serious error or failure that compromises device operation.
01000000	64	0x40	An operation was performed that changed the device's configuration.
00100000	32	0x20	A power failure or device reset has occurred.
00010000	16	0x10	More status information is available; use command48 to read the additional status information.
00001000	8	0x08	The loop current is being held at a fixed value and is not responding to process variations.
00000100	4	0x04	The loop current has reached its upper (or lower) endpoint limit and cannot increase (or decrease) any further.
00000010	2	0x02	A device variable not mapped to the PV is beyond its operating limits.
00000001	1	0x01	The primary variable is beyond its operating limit.

Comm Failure	Shows "Okay" in green when communications are working or "FAIL" in red when there is a communication failure with the HART transmitter.

Device	
Descriptor	The descriptive text for this HART transmitter.
Message	The message text read from the HART transmitter.
PV	
Value	Shows the process value read from the HART transmitter.
Units	Shows the engineering units read from the HART transmitter for the given process value.
Range	
Upper	Shows the upper range for the process variable read from the HART transmitter.
Lower	Shows the lower range for the process variable read from the HART transmitter.
Units	Shows the engineering units for the process variable read from the HART transmitter.

2.2.8 *Wireless*HART Transmitters (6-Run Version ONLY)

To configure wireless *Wireless*HART transmitters, click on the graphical representation of the IEC62591 module in the I/O Usage screen. This calls up the Wireless HART Configuration page.

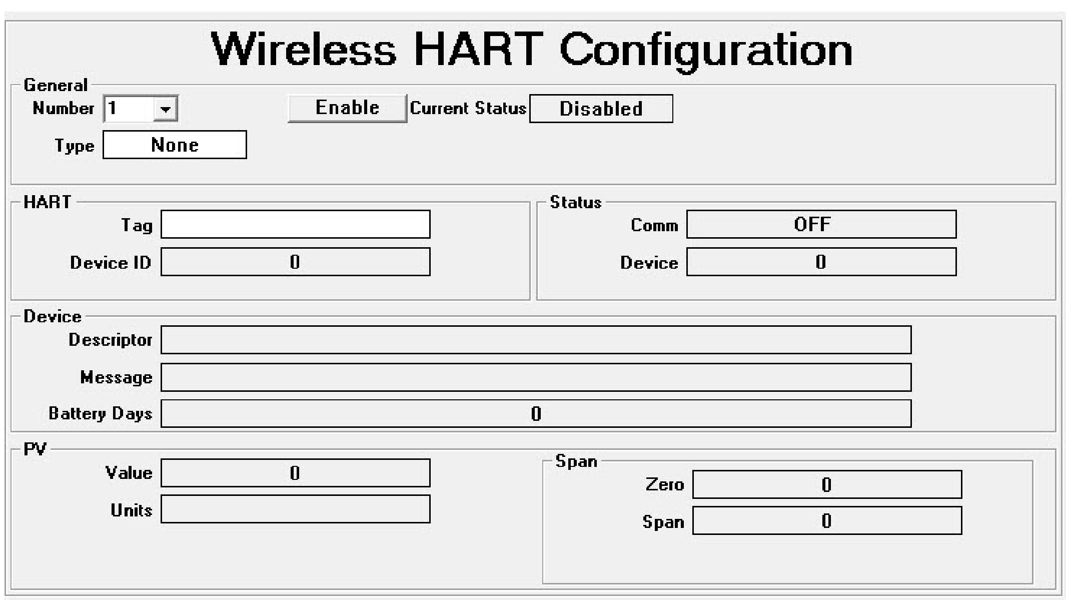


Figure 2-9. Wireless HART Configuration

Field	**Description**
General	
Number	Select the *Wireless*HART transmitter number (from 1 to 18).
Enable/Disable	Click **Enable** to activate communications with the transmitter or click **Disable** to turn off communications with the transmitter. When the communication state changes, the **Current Status** field updates to show the change, and the label on the button toggles to the opposite title.
Type	Shows the transmitter type: DP = Differential Pressure SP = Static Pressure FT = Flowing Temperature MVT = Multi-Variable Transducer
HART	
Tag	Shows the tag name read from the *Wireless*HART transmitter.
Device ID	Shows the Device ID read from the *Wireless*HART transmitter.
Status	
Comm	Shows the *Wireless*HART communication status code. Valid codes are listed in *Table 2-1.*
Device	Shows the status code for the *Wireless*HART transmitter. Valid codes are listed in *Table 2-2.*
Device	
Descriptor	The descriptive text for this *Wireless*HART transmitter.
Message	The message text read from the *Wireless*HART transmitter.
Battery Days	Shows the number of days of battery life remaining.
PV	
Value	Shows the process value read from the *Wireless*HART transmitter.
Units	Shows the engineering units read from the *Wireless*HART transmitter for the given process value.
Span	
Zero	Shows the lowest value for the process variable read from the *Wireless*HART transmitter.
Span	Shows the value which, when added to the Zero value, represents the full range for the process variable read from the *Wireless*HART transmitter.

Notes:

- You must specify the Network ID and Join Key for the wireless network in a text file called **whart_key.ini**. The first four lines of the file represent the Join Key, the fifth line is the Network ID. Once you download the whart_key.ini file into the ControlWave Micro flash, Station Manager reads the file and then deletes it for added security. You use the Flash File Access utility in OpenBSI to download the whart_key.ini file into the ControlWave Micro flash.
- The information from the ini file is retained internally across cold starts so if you ever need to change these parameters, you must download a new whart_key.ini file.

```
12345678
00000000
00000000
00000000
13684
```

Figure 2-10. Sample WHART_KEY.INI file

2.3 Local DLM

Notes:

- The local Data Line Monitor (DLM) provides details about low-level communication messages sent through a selected serial port used by the Station Manager.
- Typically, you would only use the local DLM if you are a very advanced user and need to perform communication troubleshooting for a particular port.
- The local DLM only displays the first 80 characters of a message.
- The local DLM only captures messages approximately every half second, therefore, it can miss some messages.

Click the Local DLM button on the I/O tab to activate the Data Line Monitor function. The DLM includes the following fields:

Field	Description
Monitor Port	Use the dropdown menu to select the ControlWave Micro serial communication port you want the DLM to monitor. Press **[Enter]** to save the selection. **Note:** After you collect the data, if you select "None" for the monitor port, you can copy data from the window to the clipboard. You can then paste this data into another file for off-line review.
TX Data	This read-only field shows the most recent message transmitted through this port.
RX Data	This read-only field shows the most recent message received through this port.
window	The window shows successive messages detected by the DLM. Most recent messages appear at the top; you can use the scroll bar to adjust the window to show earlier messages.

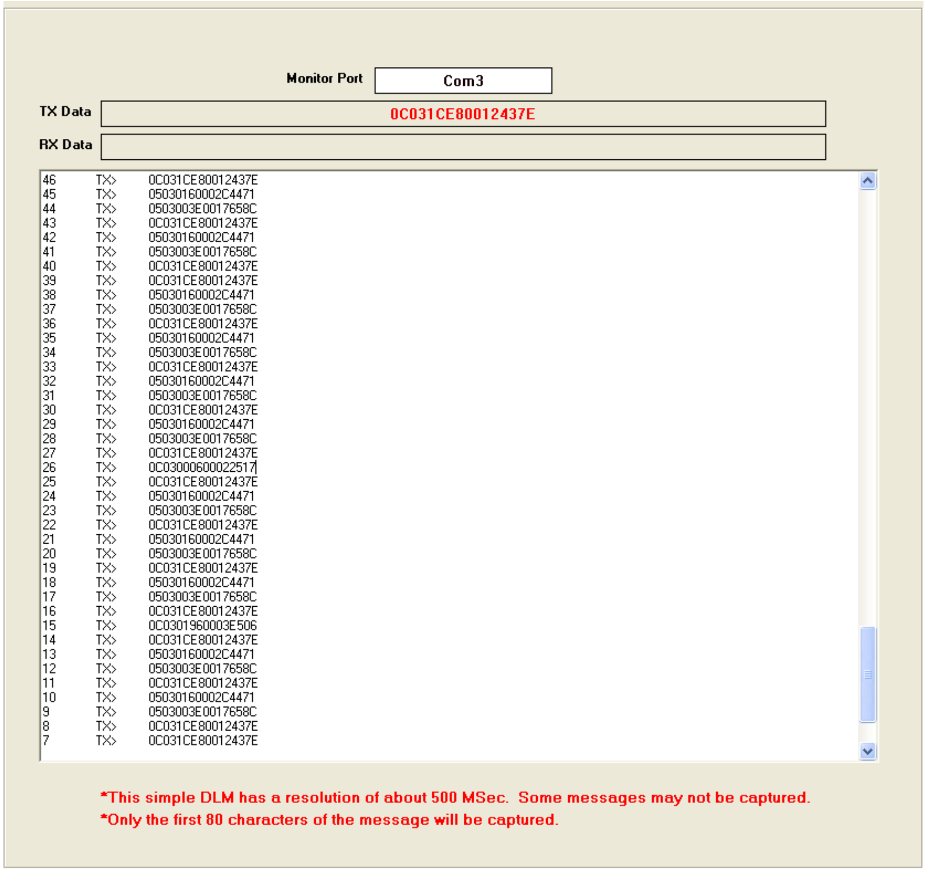


Figure 2-11. Local DLM

2.4 Customer Modbus Slave

Station Manager supports up to five customer Modbus slave sessions you can configure for the controller. The Station Manager controller then serves as a Modbus slave to those devices.

Click the [Customer Modbus Slave] button on the I/O tab to bring up the Customer Modbus Slave pages.

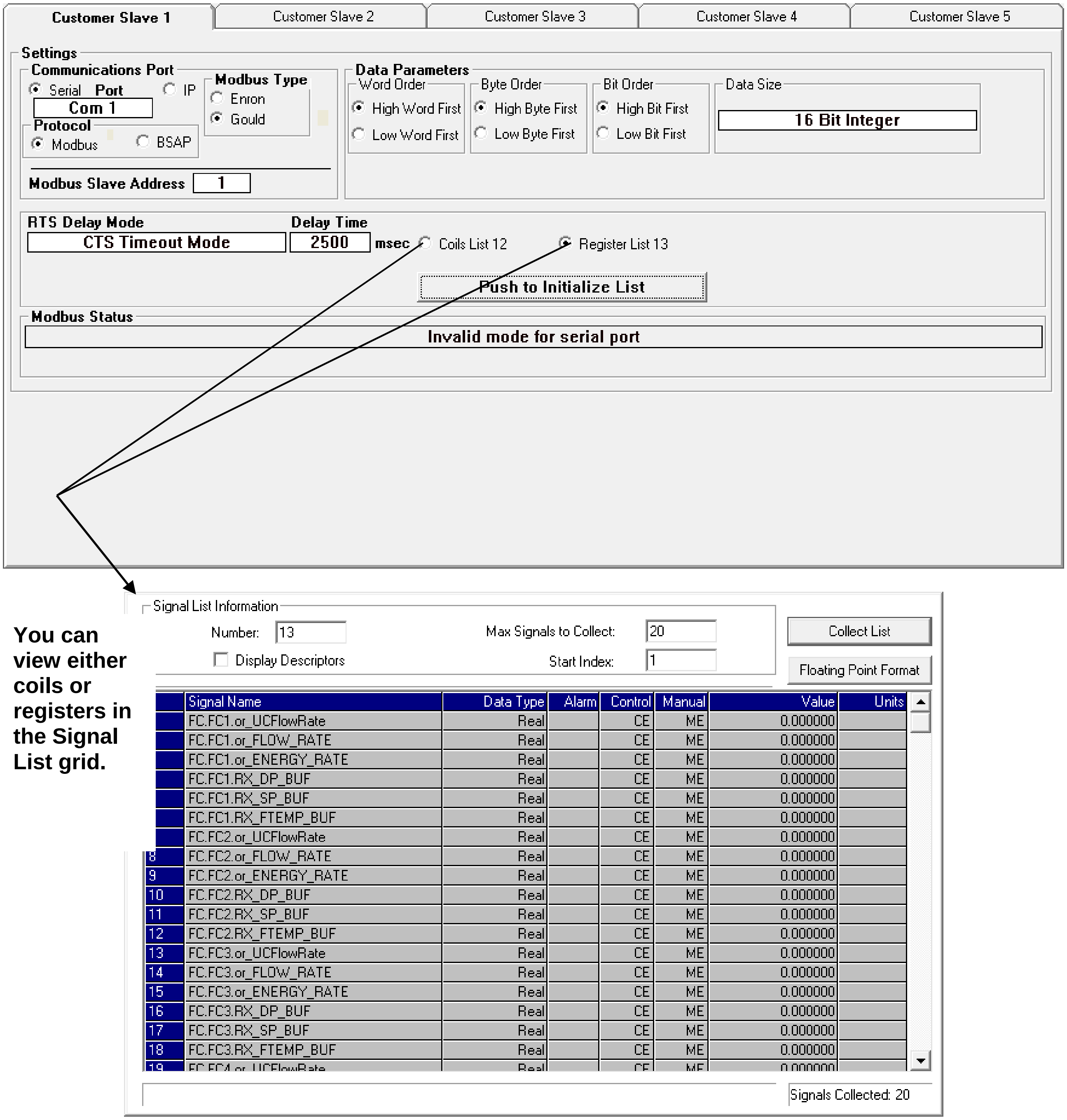


Figure 2-12. Customer Slave Page

These pages include the following fields:

Field	Description
Settings	
Communications Port	Modbus communications can use **either** serial **or** IP communications.
Serial	Click the **Serial** button to use serial Modbus communication, and specify the port you want to use. (See **Port**).

Field	Description
Port	Specify the serial communication port on the ControlWave Micro you want to use for Modbus slave communication. Use the following code: Enter this: To select this serial CW Micro port: 1 COM1 2 COM2 3 COM3 4 COM4 5 COM5 6 COM6 7 COM7 8 COM8 9 COM9 10 COM10 11 COM11 Press **[Enter]** to save the selection.
IP	Click the **IP** button to use IP Modbus (Open Modbus) communication.
Protocol	
Modbus	Click this button to configure Modbus communication.
BSAP	Do **NOT** choose this when configuring Modbus communication.
Modbus Slave Address	Enter the Modbus slave address. If the local slave address you enter has already been assigned to either the SCADA Enron Modbus slave interface, or any of the other Customer Modbus Slave sessions, you will see **a Loc Addr Conflict** message. Modify the **Modbus Slave Address** as required to resolve the conflict.
Modbus Type	
Enron	If you want to communicate using **Enron** Modbus, click this button.
Gould	If you want to communicate using **Gould** Modbus, click this button.
Data Parameters	
Word Order	Choose the data word order to match the data word order used by the Modbus Master that communicates with this Modbus Slave.

Field	Description
High Word First	Click this to specify that the high word is first.
Low Word First	Click this to specify that the low word is first.
Byte Order	Choose the data byte order to match the data byte order used by the Modbus Master that communicates with this Modbus Slave.
High Byte First	Click this to specify that the high byte is first.
Low Byte First	Click this to specify that the low byte is first.
Bit Order	Choose the data bit order to match the data bit order used by the Modbus Master that communicates with this Modbus Slave.
High Bit First	Click this to specify that the high bit is first.
Low Bit First	Click this to specify that the low bit is first.
Data Size	Select the appropriate data format for Modbus Register data from the drop down menu. The available selections are: **Single Bit** – Each Register will include a single bit **Byte Data** – Each Register will include a single byte **16 Bit Integer** – Each Register will include a single 16-bit integer **32 Bit Int., 1 Reg., Cnt*1, Adr*1** – Each Register will include a 32-bit double integer. **32 Bit Float, 1 Reg., Cnt*1, Adr*1** – Each Register will include a 32-bit floating point number **32 Bit Int., 2 Reg., Cnt*2, Adr*2** – Two registers will be used for each 32-bit double integer. The MODBUS Master must poll two registers for each 32 bit integer. **32 Bit Float, 2 Reg., Cnt*2, Adr*2** – Two registers will be used for each 32-bit floating point number. The MODBUS Master must poll two registers for each 32 bit number. **32 Bit Int., 2 Reg., Cnt*2, Adr*1** - Two registers will be used for each 32-bit double integer. The MODBUS Master must poll a single register for each 32 bit integer.

Field	Description
	32 Bit Float, 2 Reg., Cnt*2, Adr*1 - Two registers will be used for each 32-bit floating point number. The MODBUS Master must poll a single register for each 32 bit number. Press **[Enter]** to save the selection. If you don't make a selection, the field shows **Not Set**.
RTS Delay Mode	Select from one of two modes for the Ready-to-Send (RTS) delay mode. **Message Delay Mode** - After the Modbus Slave port raises RTS, a delay timer starts. The length of the delay is determined by the value in the **Delay Time** field. No message is sent until after this delay expires. The value of CTS does not affect the operation of this mode. **CTS Timeout Mode** - After the Modbus slave port raises RTS, it uses the **Delay Time** value as the maximum time to wait for CTS to be received from the master. If the Modbus slave port receives CTS at any time before this time expires, the port starts to transmit the message. If the Modbus slave port does not receive a CTS from the master prior to the expiration of the **Delay Time**, it does not respond to the master and instead reports an error. Press **[Enter]** to save the selection.
Delay Time msec	Specify the **Delay Time** (in milliseconds) used by the **RTS Delay Mode and CTS Timeout Mode**.
Coils List 12	Each Modbus slave session has two dedicated lists, one for Modbus Registers and the other for Modbus Coils. To display coils in the signal list grid, click this button. See *Section 2.4.1* for instructions on using the signal list grid.
Register List 13	Each Modbus slave session has two dedicated lists, one for Modbus Registers and the other for Modbus Coils. To display registers in the signal list grid, click this button. See *Section 2.4.1* for instructions on using the signal list grid.
Push to Initialize List / Initializing	Click **Push to Initialize List** to set all coils in list 12 to FALSE or all registers in list 13 to 0.0, depending upon which list you are viewing in the grid The button shows “Initializing” while this is in progress.
Modbus Status	This read-only field displays a status code indicating the health of the Modbus slave communications. If you see any code other than 0 here or see an error message above the code, see *Appendix E – Errors and Troubleshooting* for more information.

Field	Description
	The fields below are only visible when using BSAP protocol, which makes the ControlWave Micro running Station Manager into a BSAP slave.
BSAP Slave Address Modbus Status	The ControlWave Micro's BSAP slave address.
BSAP Server ID	Specify the ID for the server function block in your ControlWave Micro Station Manager application.
BSAP Send List 12	Click this to display the send list in the signal list grid. This list holds outgoing data sent to the BSAP master.
BSAP Receive List 13	Click this to display the receive list in the signal list grid. This list holds incoming data received from the BSAP master.
BSAP Status	Shows BSAP communication status messages.

2.4.1 Signal List Grid

The Signal List grid displays lists of variables included in the Station Manager application.

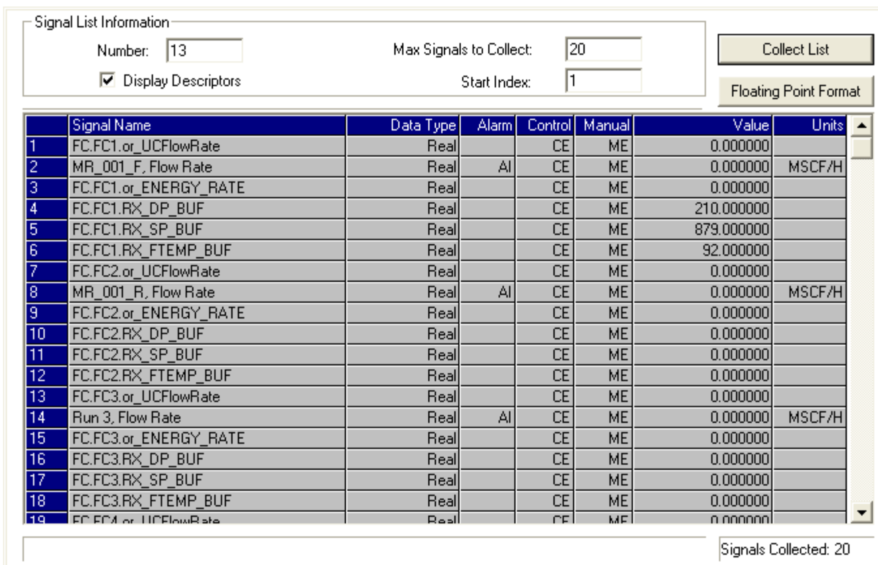


Figure 2-13. Signal List Grid Control

Field	Description
<u>Signal List Information</u>	The list window shows the contents of lists within the application.
Number	Specifies the number of the list. In some cases, pushing a button elsewhere on the page fills in this number; in other cases, you must enter a list number directly.
Max Signals to Collect	Specifies the number of list items to retrieve into the grid control. Depending upon how many list items are collected, you may need to use a scroll bar to view them.

Field	Description
Display Descriptors	If the application programmer configured descriptors for this list, check this box to view them instead of variable names in the **Signal Name** field.
Start Index	Normally, the signal list grid displays variables beginning with the first variable in the list. If you want to skip further into the list, enter the number of the first list item you want to see in this field, and the grid starts displaying from that item forward.
Collect List	Click this button to force the Signal List grid to collect the specified list now.
Floating Point Format	Click this to specify the Floating Point Format dialog box. See *Figure 2-14*
Signal Name	Shows the variable name for this list item, or its descriptor.
Data Type	Shows the variable type, such as Real or Boolean.
Alarm	If this variable is an alarm, and this shows “AI” it indicates the variable is alarm inhibited. If this shows “AE” it indicates that the variable is alarm enabled.
Control	If this shows “CI” it indicates the variable is control inhibited. If this shows “CE” it indicates that the variable is control enabled.
Manual	If this shows “MI” it indicates the variable is manual inhibited. If this shows “ME” it indicates that the variable is manual enabled.
Value	Shows the current value of the variable.
Units	Shows the engineering units (if specified) for this variable.
Signals Collected	Displays a count of the number of variables collected into the signal list grid.

2.4.2 Floating Point Format

The floating point format is the way floating point (real) numbers display within a screen in the Station Manager application.

To change this format, you click the Floating Point Format button on a page, to call up the Float Format dialog box.

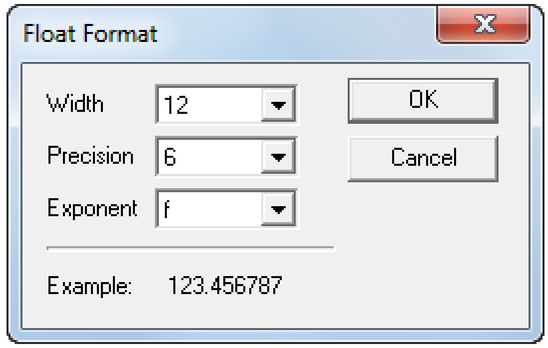


Figure 2-14. Floating Point Format dialog box

Field	Description
Width	Choose the total number of characters in the field (including the decimal point) used to display a floating point number.
Precision	Choose the number of places to the right of the decimal point which the floating point number should show.
Exponent	Select one of these formats: **e** show number in exponential notation **f** show number in floating point notation **g** allow application to choose the "best fit" format for this number.
OK	Click this to save your entries and exit the dialog box.
Cancel	Click this to discard your entries and exit the dialog box.

2.5 Ultrasonic Data

To access this page, click the 

button on the I/O tab.

The data displayed for the ultrasonic tests is not the raw Modbus data from the ultrasonic flow meter (UFM). The data is run through a filtering process before being displayed. The displayed data is the rolling output from the filtering process. The filtering process eliminates false alarms caused by variability in the process.

Customers have used the following UFMs with Station Manager:

- Daniel MARK III
- Instromet Q.Sonic 3/4/5/6 Path, CheckSonic 1/2 Path, CheckSonicVx 3/6 Path Series VI and S.Sonic Series III
- Sick Maihak FLOWSIC600

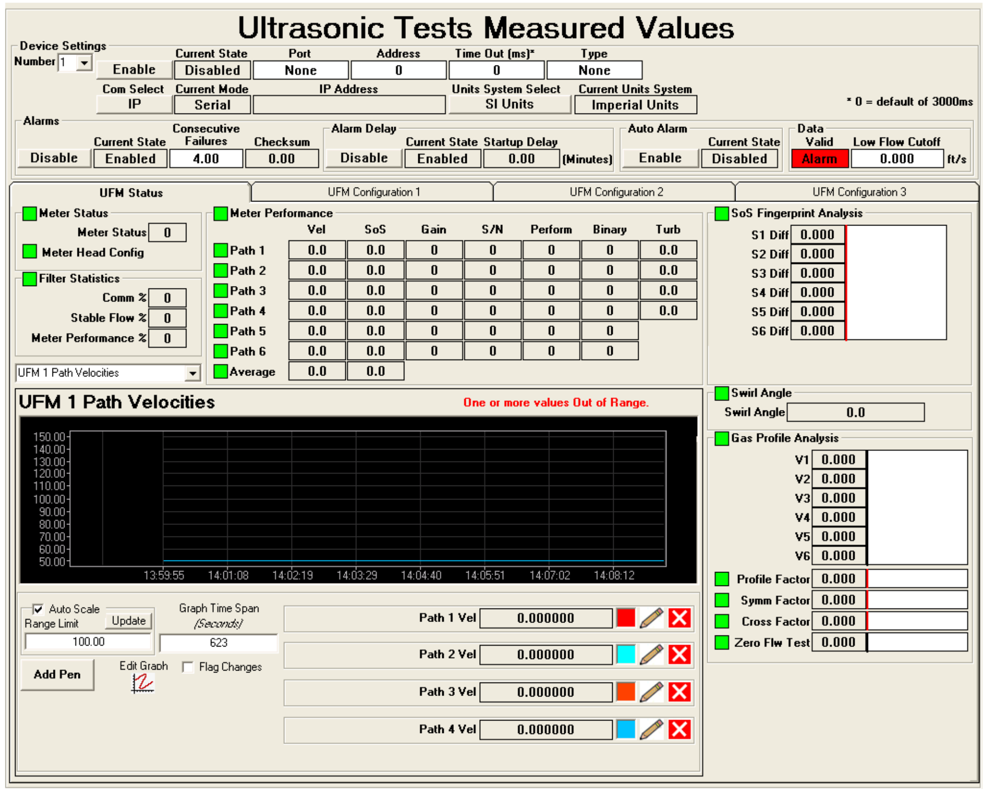


Figure 2-15. Ultrasonic Tests Measured Values page

Field	Description
Device Settings	If you are running the 6-run version of Station Manager, you will only have 6 items to choose from for many of these fields.
Number	Select the ultrasonic meter number for which you want to view status data.
Enable/Disable	Click **Enable** to enable communications from Station Manager to the specified UFM. Click **Disable** to disable communications to the specified UFM. Note: Whenever you change any communication settings, you must first disable communications; then when you've completed all communication setting changes, re-enable communications.
Current State	Shows the current enable/disable state of communications to the UFM.

Port	Use the dropdown menu to specify the ControlWave Micro serial communication port which connects to this UFM.
Address	Specify the address of the UFM.
Time Out	Specify the maximum length of time (in milliseconds) for a UFM to respond to the ControlWave Micro before a communication failure is declared. If you leave this value at 0, Station Manager uses a default timeout of 3000 ms (3 seconds).
Type	Use the drop-down menu to select the type of UFM.
Com Select IP/Serial	Choose the method of communication to the UFM. Click **IP** to select IP communication or **Serial** to select serial communication.
Current Mode	Shows the current method of communication with the UFM, either Serial or IP.
IP Address	When communicating to the UFM via IP, enter its IP address here.
Generic Modbus (base 0) / Sick Modbus (base 1)	Click here to identify for Station Manager the Modbus base offset it should use when collecting data from a Sick UFM. The button label indicates what offset you will use and the **Current State** updates to reflect your choice. (Sick UFM only.)
Current State	Shows the current Modbus base offset Station Manager uses when collecting data from a Sick UFM. (Sick UFM only.)
<u>Alarms</u>	Alarms may be generated from the UFM.
Enable/Disable	Click **Enable** to turn on alarming for this UFM. Click **Disable** to turn off alarming for this UFM.
Current State	Shows whether alarming is currently enabled or disabled.
Consecutive Failures	Shows the number of consecutive failures required to trigger an alarm from the UFM.
Checksum	If checksum changes, some configuration change occurred.
<u>Delay</u>	You can optionally set up a delay period at the start of polling during which the system ignores alarms from the UFM.
Enable/Disable	Click **Enable** to apply a delay during which alarms are ignored at the start of polling.

	Click **Disable** to turn off the delay.
Current State	Shows whether the delay is enabled or disabled.
Startup Delay	Specifies the delay in minutes during which alarms from this UFM are ignored at the start of polling.
<u>Auto Alarm</u>	Based on velocity min and max values, the auto alarm chooses which ranges to use.
Enable/Disable	Click **Enable** to turn on the auto-alarm function. Click **Disable** to turn off the auto-alarm function.
Current State	Shows whether the auto-alarm function is currently enabled or disabled.
<u>Data</u>	
Valid	Shows the data valid alarm status from the UFM.
Low Flow Cutoff	Specifies a flow limit below which the data valid alarm is disabled.
<u>UFM Status/Meter Status</u>	
Meter Status	The results of the analysis are displayed as a binary number in the bottom left corner. The binary status is calculated as follows:

	Alarm
1	Meter performance orange alarm (at least one path orange)
2	SoS fingerprint alarm
4	SoS comparisons alarm
8	Gas profile analysis alarm
16	Zero flow alarm
32	Meter performance red alarm (at least one path red)
64	ACF comparisons alarm
128	Checksum alarm
256	Modbus Comm % alarm

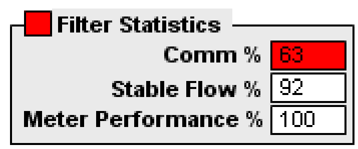
Meter Head Config	The ControlWave polls the meter for the configuration checksums and compares the checksum to values stored in the ControlWave. If the values do not match the appropriate checksum the light is set to red and the Meter Head Configuration Box light is set to red
<u>Filter Statistics</u>	The filter statistics section displays the results from the last output of the rolling data filter. The size of the filter is configurable and set on the UFM Configuration 1 tab. The filter should default to 20

which means that the displayed data is the results of the last 20 communications to the meter.

Comm %

The **Comm %** illustrates the percent of successful Modbus communications to the meter during the last set of data. Stable flow yields good USM data analysis results.

If the Comm % for any set of rolling filter data is less than the limit then the Comm % box is set to red and the Filter Statics Box light is set to red as shown below:



Stable Flow %

The **Stable Flow %** illustrates the percent of the last set of data on which analysis was performed (see the SoS Fingerpirnt Analysis and Gas Profile Analysis boxes). Flow is considered stable when the average velocity from one poll to the next changes by less than 1 ft/s) and all the paths are OK, and the corrected gas velocity and SoS are OK.

Meter Performance %

The **Meter Performance %** illustrates the percent of the last set of data where all the path performances were good (Since Stable Flow % depends on Meter Performance %, Stable Flow must be less than or equal to Meter Performance %).

<u>Meter Performance</u>

The Meter Performance Box analyzes the meter's online diagnostics to determine the health of the meter (not the meter system.)

For each data set that makes up a rolling filter, the path diagnostics are examined. If the path velocity or SoS is outside the limits or the path binary status indicates a failed path then that set of path data is discarded from the rolling filter results. After examining all the data sets the percentage of successful data is calculated and the successful path data processed.

Colors are used to indicate the success/failure of individual path parameters and the health of the meter.

Green

Indicates path data passed all tests.

Orange

Indicates a minor failure.

Red

Indicates a major failure. If the Meter Performance Box is red then the SoS Fingerprint Analysis, the

	SoS Comparisons, and the Velocity Profile Analysis box lights are turned to grey and the interior values set to gray to indicate that the test is not being performed due to the failed meter performance.
Path *n*	If this path's data passes all the tests then the status light is set to green. If the path data fails a test then the status light turns orange and the offending parameter's box turns orange.
Vel	Shows the average velocity for this path. If this is outside the configured limits, data for this path is discarded from the rolling filter results.
SoS	Shows the average speed of sound for this path. If this is outside the configured limits, data for this path is discarded from the rolling filter results.
Gain	Shows the average gain for this path.
S/N	Shows the average signal to noise ratio for this path.
Perform	Shows the average performance for this path.
Binary	• 0= Path is OK • 1 = Path Gain above limit • 2 = Path S/N below limit • 4 = Path Turbulence above limit • 8 = Path performance below performance limit The path binary status is set to a 16 if all the binary status in the rolling average indicated that the path is failed or all the velocities or SoS are outside the limits.
Turb	Shows the average turbulence for this path.
<u>SoS Fingerprint Analysis</u>	The SoS Fingerprint Analysis box displays the maximum difference between each path and all the other paths. For example, if there are four paths (S1 through S4) S1 Diff is the maximum of s1-s2, s1-s3, s1-s4, where the sign is kept. For example if s1-s2 = 0.23 and s1-s3 = -0.41 and s1-s4 = 0.11 the S1 Diff should be displayed as -0.41
S*n* Diff	If the diff is positive the bar should be dark blue. It the difference is negative it should be light blue. If any of the differences are greater than the limit (the red line) then the SoS Fingerprint Analysis light is turned to red.
<u>Swirl Angle</u>	
Swirl Angle	This is gas profile data read from the UFM.
<u>Gas Profile Analysis</u>	The Gas Profile Analysis Box displays the path velocity ratios. The path ratios are calculated by dividing each path velocity by the average velocity calculated as follows:

- Daniel SS= (v1+v4)*0.1382 + (v2+v3)*0.3618
- Daniel X = (v1+v2+v3+v4)/4
- Sick = (v1+v4)*0.1382 + (v2+v3)*0.3618
- Q5 = 0.85/3*(v1+v3+v5)+0.15/2*(v2+v4)
- Q3 = 0.15*v2+0.85/2*(v1+v3)

These equations are used to make the ratios independent of the flow calibration. For a Daniel SeniorSonic the Profile ratio, Symmetry ratio, and Cross flow are also displayed and tested. If a ratio fails the test then the ratio box light is turned to red and the Gas Profile Analysis Box light is also turned to red.

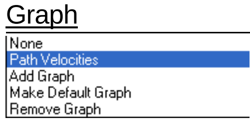
If any of the path velocities average less than 0.05 ft/s then the other velocities are tested to make sure they are also close to zero (check for zero bias). When this condition is true V1, V2, V3, V4 show the actual velocities (not the ratios described above) with positive velocities in dark blue and negative velocities in light blue. The velocities are then tested as follows:

- Daniel or Sick: if any velocity is less than 0.05 ft/s then the average of all four must be less than 0.1 ft/s
- Instromet: if any velocity is less than 0.05 ft/s then all the other velocities must be less than 0.1 ft/s

The average velocity in the Sick or Daniel Test or the maximum velocity calculated in the Instromet test is displayed in the box next to the Zero Flow Test and the value is graphically displayed with the limit.

V*n*	This represents the ratio of the path velocity to the average velocity, or the actual path velocity if they all average less than 0.05 ft/sec.
Profile Factor	Shows the profile factor of this UFM.
Symm Factor	Shows the symmetry factor of this UFM.
Cross Factor	Shows the cross factor of this UFM.
Zero Flw Test	Shows the zero flow test value for this UFM.

<u>Graph</u>



NOTE: This list box applies to Station Manager 8-Run only.

The list box above the graph lets you perform various operations:

None	Do not show any graph.
Path Velocities	(Default) – Select this to show the path velocities.
Add Graph	Choose a path and column heading (as you would when adding a pen) then select **Add**

Graph to add a graph.

Make a Default Graph To assign the current graph as the default when you open the page, select **Make a Default Graph**.

Remove Graph To delete the current graph select **Remove Graph**.

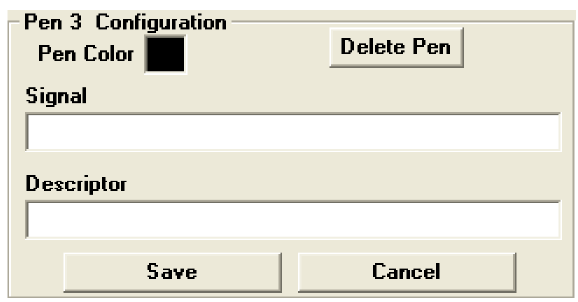
Note: Station Manager stores graph information in a text file that gets overwritten each time you make a new default graph.

Low Limit Specify the minimum value the system should display on the graph.

High Limit Specify the maximum value the system should display on the graph.

Graph Time Span Allows you to specify the number of seconds of data displayed in the graph window.

Add Pen Click this button to add an additional pen to the graph in the Pen Configuration dialog box:



Pen Color Click here to bring up the color palette to select a color for the pen.

Signal Specify the name of the ControlWave variable which drives this pen; the variable must have been marked PDD.

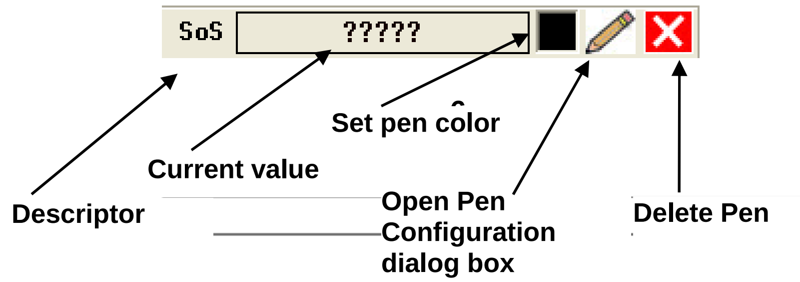
Descriptor Optionally specify a name to appear next to this pen's controls underneath the graph.

Delete Pen Click here to delete this pen.

Save Click here to save the pen configuration entries.

Cancel Click here to exit the dialog box without saving changes.

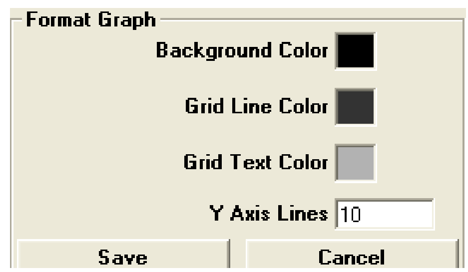
Pen Controls



For information on adding pens for specific path parameters, see *Adding Pens for Specific Path Parameters*.

Edit Graph

Click here to open the Format Graph dialog box.



Background Color	Click here to bring up the color palette to select a color for the background.
Grid Line Color	Click here to bring up the color palette to select a color for the grid lines.
Grid Text Color	Click here to bring up the color palette to select a color for the grid text.
Y-Axis Lines	Specify the number of grid line markers to appear along the Y-axis.
Save	Click here to save the graph configuration entries.
Cancel	Click here to exit the dialog box without saving changes.

Flag Changes

If you check this, the graph will show a red vertical dashed line at the time position on the graph where a setting for the graph changed.

Auto Scale

If you check this, Station Manager tries to do a “best fit” graph within the range specified.

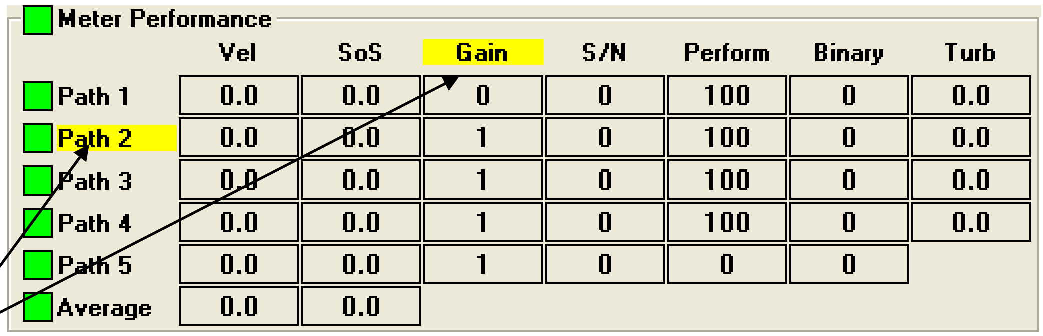
Range Limit

Specifies the maximum range of values to show on the graph. For example, if the **Range Limit** is 100, Station Manager averages the values and displays a range 50 above and below the average value.

Update	If you change the **Range Limit**, click the **Update** button to activate the new upper and lower limits. Station Manager only changes the limits on an update to prevent continually changing the upper and lower limits.

Adding Pens to the Graph for Specific Path Parameters

If there is a specific path parameter that you want to include on the graph, click the path name on the left of the Meter Performance area so it is highlighted, then click the desired parameter, so it is highlighted. This adds a pen to the graph for that variable.



Click the path name, then click the parameter name to add a pen for that parameter to the graph.

Figure 2-16. Adding Pens

UFM Configuration 1

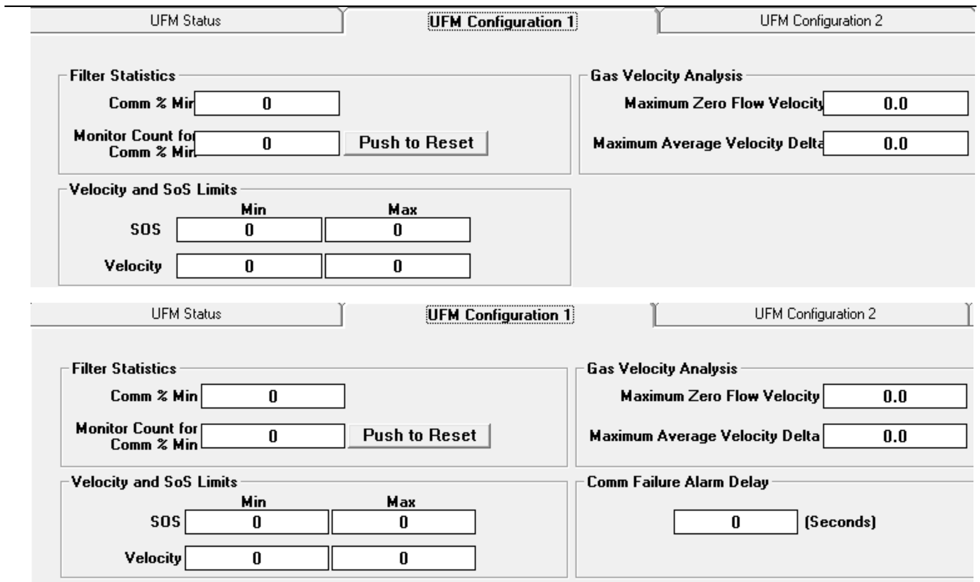


Figure 2-17. UFM Configuration 1 page

Filter Statistics	
Comm % Min	Enter the minimum communication percentage setting for UFM statistics.
Monitor Count for Comm % Min	Specify the number of communication attempts used to calculate the communication percentage.
Push to Reset	Click here to reset the communication attempt counter to 0.
Gas Velocity Analysis	
Maximum Zero Flow Velocity	Enter the maximum zero flow velocity.
Maximum Average Velocity Delta	This is the alarm setting for the maximum difference (delta) of the average gas velocity between different paths.
Velocity and SoS Limits	These limits are used to check velocity and speed of sound.
SoS Min	Specify the minimum speed of sound alarm limit.
SoS Max	Specify the maximum speed of sound alarm limit.
Velocity Min	Specify the minimum velocity alarm limit.
Velocity Max	Specify the maximum velocity alarm limit.
Comm Failure Alarm Delay	If communication with this UFM fails, this field specifies the number of seconds the Station Manager application waits before generating a communication failure alarm.

UFM Configuration 2

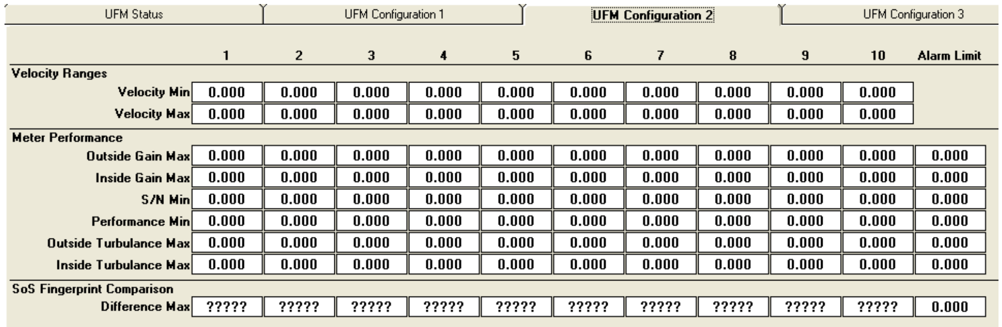


Figure 2-18. UFM Configuration 2 page

Velocity Ranges

Velocity Min	The columns represent velocity ranges and allow the user to tune the parameter limits to the velocity range. **Velocity Min** defines the lower end of the velocity range. The 10 ranges allow the user to select 5 ranges in both the positive and negative direction or 10 ranges in a single direction. If a parameter is left empty on the screens then the test should not be performed for that velocity range.
Velocity Max	The columns represent velocity ranges and allow the user to tune the parameter limits to the velocity range. **Velocity Max** defines the upper end of the velocity range. The 10 ranges allow the user to select 5 ranges in both the positive and negative direction or 10 ranges in a single direction. If a parameter is left empty on the screens then the test should not be performed for that velocity range.

Meter Performance

Outside Gain Max	Define the maximum outside gain allowed for this UFM.
Inside Gain Max	Define the maximum inside gain allowed for this UFM.
S/N Min	Define the minimum signal to noise ratio for this UFM.
Performance Min	Define the minimum performance value for this UFM.
Outside Turbulence Max	Define the maximum outside turbulence for this UFM.

Inside Turbulence Max	Define the maximum inside turbulence for this UFM.
Alarm Limit	The current alarm limit in use for auto-alarm. If you disable auto-alarm, you enter your own alarm limit here.
SoS Fingerprint Comparison	
Difference Max	The maximum allowable difference in the speed of sound fingerprint calculation.

UFM Configuration 3

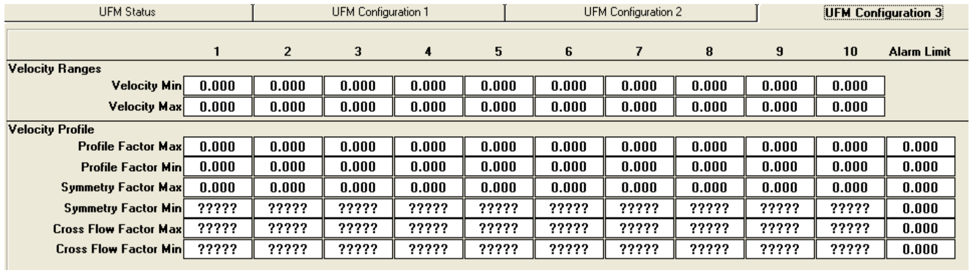


Figure 2-19. UFM Configuration 1 page

Velocity Ranges

Velocity Min	The columns represent velocity ranges and allow the user to tune the parameter limits to the velocity range. **Velocity Min** defines the lower end of the velocity range. The 10 ranges allow the user to select 5 ranges in both the positive and negative direction or 10 ranges in a single direction. If a parameter is left empty on the screens then the test should not be performed for that velocity range.
Velocity Max	The columns represent velocity ranges and allow the user to tune the parameter limits to the velocity range. **Velocity Max** defines the upper end of the velocity range. The 10 ranges allow the user to select 5 ranges in both the positive and negative direction or 10 ranges in a single direction. If a parameter is left empty on the screens then the test should not be performed for that velocity range.

Velocity Profile

Profile Factor Max	Specify the maximum profile factor for this UFM.
Profile Factor Min	Specify the minimum profile factor for this UFM.
Symmetry Factor Max	Specify the maximum symmetry factor for this UFM.
Symmetry Factor Min	Specify the minimum symmetry factor for this UFM.
Cross Flow Factor Max	Specify the maximum cross flow factor for this UFM.
Cross Flow Factor Min	Specify the minimum cross flow factor for this UFM.
Alarm Limit	Shows the current alarm limit in use.

2.6 Load/Save Configuration

The Load/Save Configuration function provides a way to save and restore Station Manager configuration files. It uses the ControlWave ScriptTool utility to launch various utilities to accomplish the read/write operations.

Caution **Do not manually rename the files you save with the Load/Save function. Doing so may prevent the Load/Save function from recognizing the proper file type and could result in an invalid restore.**

Notes:

- If you plan to restore arrays related to a UFM or GC RF you should restore the associated recipes for those arrays first before you attempt to restore the arrays. This ensures the control knows which arrays are available. If you restore arrays and recipes together in the same Load operation, the software restores them in the proper order for you.
- If you plan to restore batch edits you should restore the associated recipes for the application first, before you attempt to restore the batch edits. If you restore batch edits and recipes together in the same Load operation, the software restores them in the proper order for you.
- Depending on the version of Station Manager you are using, the number of items may vary (six for six runs, or eight for eight runs).
- While a load/save operation is in progress, TechView is locked until the ScriptTool operation finishes or is stopped.

Click the Load/Save Configuration button on the I/O tab to activate the Load/Save Configuration page.

To prevent confusion, the page is divided into two tabs, one for saving configuration files from the RTU, the other for loading configuration files into the RTU. Both tabs share most of the same fields.

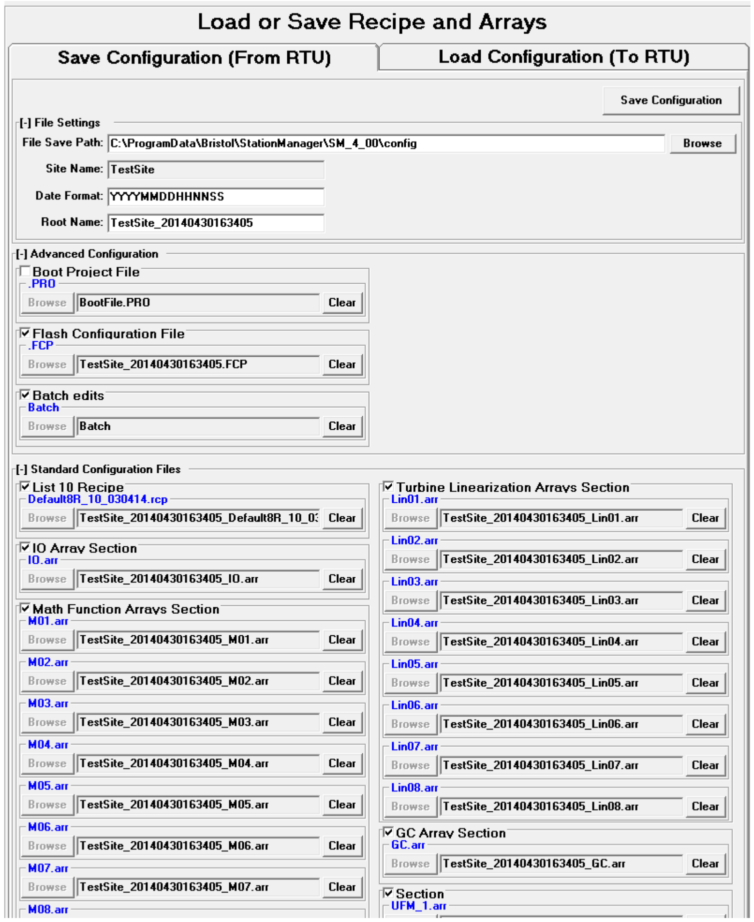


Figure 2-20. Load/Save Configuration – Save Configuration tab

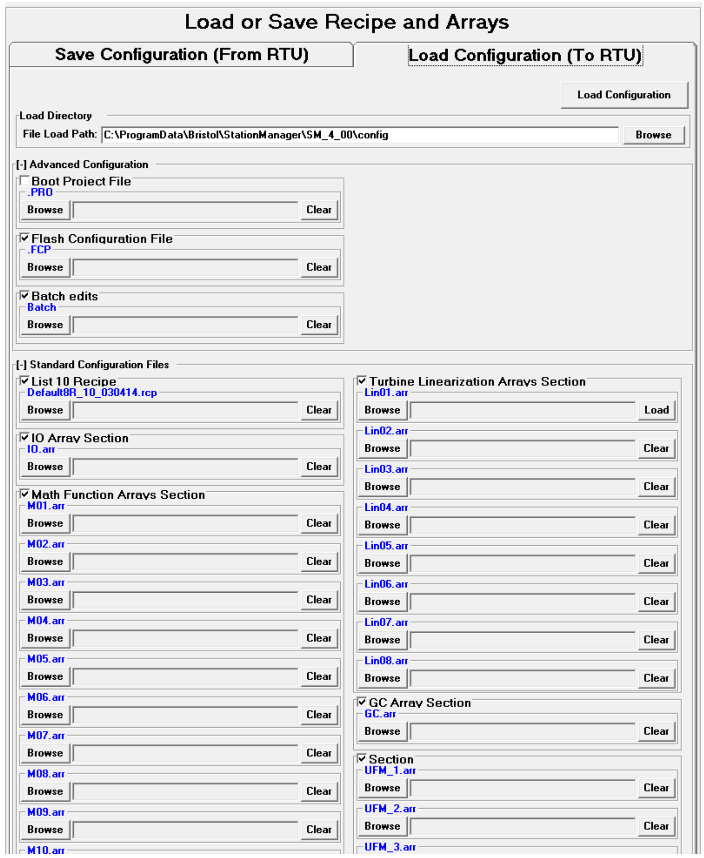


Figure 2-21. Load/Save Configuration – Load Configuration tab

<u>File Settings</u>	The File Settings section applies only to the Save tab.
File Save Path	Specify the folder on your PC where you want to save the files retrieved from the RTU.
Site Name	Shows the site name as configured in the Status/Configuration pages of the measurement tab. The Site name and year format are used to create the default root filename.
Year Format	Specify the date format you want to use. The field turns red if you make an invalid entry. This format and the site name are used to create the default root filename. If you don't want to include a date in the root filename, you can blank out this field.
Root Name	Use the default root filename (made up of the site name and date format) or specify a different root filename here.
<u>Load Directory</u>	The Load Directory section applies only to the Load tab.
File Load Path	Specify the folder on your PC which contains the files you want to load into the RTU.
<u>Advanced Configuration</u>	
Boot Project File	The boot project (BootFile.pro) is the ControlWave project boot file.

Note: By default, the boot project file is not checked to prevent you from accidentally overwriting an existing boot file on your RTU or on the PC. You must specifically check the box if you want to save or load it.

<u>On the Save Configuration tab</u>: This field shows the name of the boot project residing in the RTU.

- Check the box ☑ if you want to save the boot project when you save the configuration.
- If you don't want to save the bootproject when you save the configuration, either uncheck the section, or click **Clear** to erase the name. If you want to restore the name you cleared, click **Load**.

<u>On the Load Configuration tab</u>: This field shows the path and name of the boot project residing on your PC that you want to load into the RTU. You can use the **Browse** button to locate and specify the file.

- Check the box ☑ if you want to load the boot project when you load the configuration.
- If you don't want to load the bootproject when you load the configuration, either uncheck the box, or click **Clear** to erase the name. If you want to restore the name you cleared, click **Load**.

Flash Configuration File

The flash configuration profile (*.FCP) file holds various configuration parameters for the ControlWave.

<u>On the Save Configuration tab</u>: This field shows the name of the FCP file residing in the RTU.

- Check the box ☑ if you want to save the FCP file when you save the configuration.
- If you don't want to save the FCP when you save the configuration, either uncheck the box, or click **Clear** to erase the name. If you want to restore the name you cleared, click **Load**.

<u>On the Load Configuration tab</u>: This field shows the path and name of the FCP file residing on your PC that you want to load into the RTU. You can use the **Browse** button to locate and specify the file.

- Check the box ☑ if you want to load the FCP file when you load the configuration.
- If you don't want to load the FCP file when you load the configuration, either uncheck the box, or click **Clear** to erase the name. If you want to restore the name you cleared, click **Load**.

Batch edits

Batch edits refers to a file of changes which occur together. If you are restoring individual sections, always restore recipe files before you restore batch edits.

On the Save Configuration tab: This field shows the name of the batch edits file residing in the RTU.

- Check the box ☑ if you want to save the batch edits file when you save the configuration.
- If you don't want to save the batch edits file when you save the configuration, either uncheck the box, or click Clear to erase the name. If you want to restore the name you cleared, click Load.

On the Load Configuration tab: This field shows the path and name of the batch edits file residing on your PC that you want to load into the RTU. You can use the Browse button to locate and specify the file.

- Check the box ☑ if you want to load the batch edits file when you load the configuration.
- If you don't want to load the batch edits file when you load the configuration, either uncheck the box, or click Clear to erase the name. If you want to restore the name you cleared, click Load.

Standard Configuration Files

List 10 Recipe

The List 10 recipe specifies several important Station Manager parameters. If you are restoring individual sections separately, you need to restore this recipe before you restore UFM arrays, GC RF arrays, or batch edits.

On the Save Configuration tab: This field shows the name of the List 10 recipe file residing in the RTU.

- Check the box ☑ if you want to save the List 10 recipe file when you save the configuration.
- If you don't want to save the List 10 recipe file when you save the configuration, either uncheck the box, or click Clear to erase the name. If you want to restore the name you cleared, click Load.

On the Load Configuration tab: This field shows the path and name of the List 10 recipe file residing on your PC that you want to load into the RTU. You can use the Browse button to locate and specify the file.

- Check the box ☑ if you want to load the List 10 recipe file when you load the configuration.
- If you don't want to load the List 10 recipe file when you load the configuration, either uncheck the box, or click Clear to erase the name. If you want to restore the name you cleared, click Load.

IO Array Section

On the Save Configuration tab: this field shows the name of the IO array file residing in the RTU.

- Check the box ☑ if you want to save the IO array file when you save the configuration.
- If you don't want to save the IO array file when

- you save the configuration, either uncheck the box, or click Clear to erase the name. If you want to restore the name you cleared, click Load.

the Load Configuration tab: This field shows the path and name of the IO array file residing on your PC that you want to load into the RTU. You can use the Browse button to locate and specify the file.

- Check the box if you want to load the IO array file when you load the configuration.
- If you don’t want to load the IO array file when you load the configuration, either uncheck the box, or click Clear to erase the name. If you want to restore the name you cleared, click Load.

Math Function Arrays Section

On the Save Configuration tab: These fields show the names of the math function array files residing in the RTU.

- Check the box if you want to save all (or some) of the math function array files when you save the configuration.
- If there are one or more math function array files you don’t want to save, but you are saving at least one, click Clear to erase the name of any math function array file you don’t want to save. If you want to restore the name you cleared, click Load.

On the Load Configuration tab: These fields show the paths and names of the math function array files residing on your PC that you want to load into the RTU. You can use the Browse buttons to locate and specify each file.

- Check the box if you want to load one or more of the math function array files when you load the configuration.
- If you don’t want to load one or more of the math function array files when you load the configuration, click Clear to erase its name. If you want to restore the name you cleared, click Load.

Turbine Linearization Arrays Section

The linearization configuration arrays are used with turbine meters.

On the Save Configuration tab: These fields show the names of the turbine linearization array files residing in the RTU.

- Check the box if you want to save all (or some) of the turbine linearization array files when you save the configuration.
- If there are one or more turbine linearization array files you don’t want to save, but you are saving at least one, click Clear to erase the name of any turbine linearization array file

you don't want to save. If you want to restore the name you cleared, click Load.

<u>On the Load Configuration tab</u>: These fields show the paths and names of the turbine linearization array files residing on your PC that you want to load into the RTU. You can use the Browse buttons to locate and specify each file.

- Check the box if you want to load one or more of the turbine linearization array files when you load the configuration.
- If you don't want to load one or more of the turbine linearization array files when you load the configuration, click Clear to erase its name. If you want to restore the name you cleared, click Load.

GC Array Section

<u>On the Save Configuration tab</u>: This field shows the name of the gas chromatograph (GC) array file residing in the RTU.

- Check the box if you want to save the GC array file when you save the configuration.
- If you don't want to save the GC array file when you save the configuration, either uncheck the box, or click Clear to erase the name. If you want to restore the name you cleared, click Load.

<u>On the Load Configuration tab</u>: This field shows the path and name of the GC array file residing on your PC that you want to load into the RTU. You can use the Browse button to locate and specify the file.

- Check the box if you want to load the GC array file when you load the configuration.
- If you don't want to load the GC array file when you load the configuration, either uncheck the box, or click Clear to erase the name. If you want to restore the name you cleared, click Load.

UFM Arrays Section

The UFM arrays are used with ultrasonic flow meters. If you are restoring individual sections, always restore recipe files before you restore UFM arrays.

<u>On the Save Configuration tab</u>: These fields show the names of the UFM array files residing in the RTU.

- Check the box if you want to save all (or some) of the UFM array files when you save the configuration.
- If there are one or more UFM array files you don't want to save, but you are saving at least one, click Clear to erase the name of any UFM array file you don't want to save. If you want to restore the name you cleared, click Load.

<u>On the Load Configuration tab</u>: These fields show

<table>
<tr><td></td><td>the paths and names of the UFM array files residing on your PC that you want to load into the RTU. You can use the Browse buttons to locate and specify each file.

Check the box ☑ if you want to load one or more of the UFM array files when you load the configuration.
If you don't want to load one or more of the UFM array files when you load the configuration, click Clear to erase its name. If you want to restore the name you cleared, click Load.
</td></tr>
<tr><td>GC RF Arrays Section</td><td>The GC RF arrays are used with gas chromatographs. If you are restoring individual sections, always restore recipe files before you restore GC RF arrays.

<u>On the Save Configuration tab</u>: These fields show the names of the GC RF array files residing in the RTU.

Check the box ☑ if you want to save all (or some) of the GC RF array files when you save the configuration.
If there are one or more GC RF array files you don't want to save, but you are saving at least one, click Clear to erase the name of any GC RF array file you don't want to save. If you want to restore the name you cleared, click Load.

<u>On the Load Configuration tab</u>: These fields show the paths and names of the GC RF array files residing on your PC that you want to load into the RTU. You can use the Browse buttons to locate and specify each file.

Check the box ☑ if you want to load one or more of the GC RF array files when you load the configuration.
If you don't want to load one or more of the GC RF array files when you load the configuration, click Clear to erase its name. If you want to restore the name you cleared, click Load.
</td></tr>
<tr><td>Save Configuration</td><td>Click this button to save the specified files on your PC. See Section 2.6.1 for more information.</td></tr>
<tr><td>Load Configuration</td><td>Click this button to load the specified files into the RTU.</td></tr>
</table>

2.6.1 Save Configuration (From RTU)

The Save Configuration (From RTU) tab lets you save the ControlWave boot project, flash configuration profile (FCP) file, as well as various array files and recipe files used by the Station Manager application.

1. Go to the Save Configuration (From RTU) tab.
2. To view the items to be saved in a section, click “+” to expand that section.
3. Use the **Browse** button in the **File Save Path** field to specify the path on your PC where you want to save the configuration files.
4. Optionally use the **Year Format** field to specify the date format used in the root filenames which you will save.
5. Optionally edit the **Root Name** to specify the base filename used for the configuration files which you will save.
6. If you want to save the boot project, FCP, and batch edit files, go to the **Advanced Configuration** box, and check those files.
7. In the **Standard Configuration Files** section check the box for any groups of files you want to save.
8. If there are certain files in a group that you do **not** want to save, and they don’t have their own check box for you to un-check, click the **Clear** button for each of the files you don’t want to save; this erases their name so they won’t be saved at the PC. If you accidentally clear the wrong one, click **Load** to restore its name.
9. Click the **Save Configuration** button. This activates the ControlWave ScriptTool which in turn sequentially retrieves all of the specified files from your RTU, and saves them on your PC.

Note: Depending upon which files you choose to save, this process could take several minutes. Allow the ScriptTool to run by itself until the script finishes.

Caution **Once you’ve saved the files, do not manually rename them (for example, in Windows Explorer). Doing so may prevent the Load/Save function from recognizing the proper file type and could result in an invalid restore.**

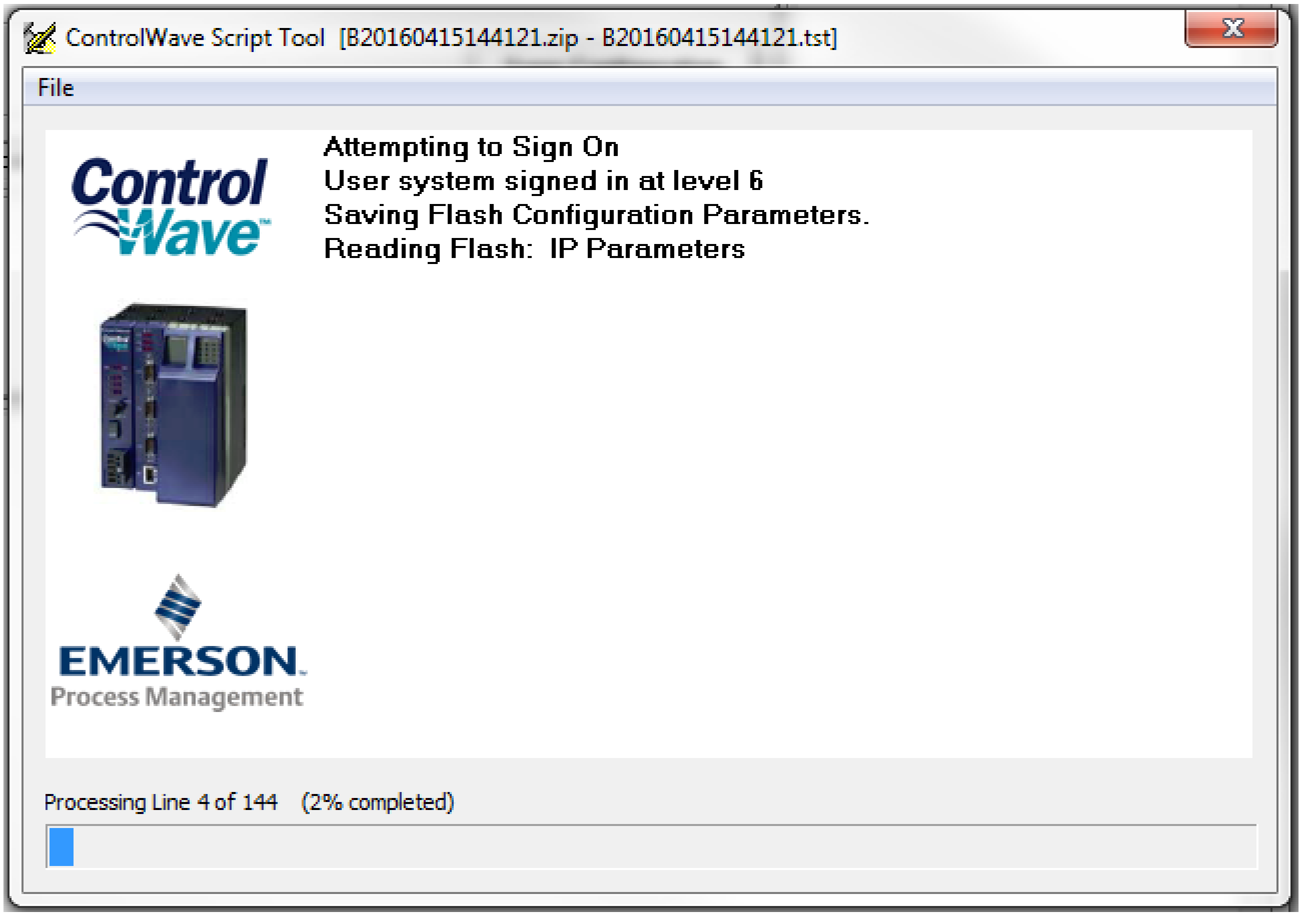


Figure 2-22. ControlWave ScriptTool Performs File Save Operations

2.6.2 Load Configuration (To RTU)

The Load Configuration (To RTU) tab lets you load the ControlWave boot project, flash configuration profile (FCP) file, as well as various array files and recipe files used by the Station Manager application into the ControlWave Micro controller. This is useful if, for example, you took the controller out of service to replace a component and now you want to restore its configuration.

Note: If you restore multiple files, the software restores them in the proper order for you. If you choose to restore individual files separately, be sure you always restore recipes prior to restoring batch edits, GC RF arrays, or UFM arrays.

---

1. In the **Load Directory** field, use the **Browse** button to specify the folder on your PC which contains the files you want to load into the RTU. Alternatively, you can choose an existing ZIP file containing configuration files. In either case, the utility automatically populates fields based on the contents of the folder or ZIP file. If a section is unchecked, it won't be populated. If filenames don't match the expected name pattern, they are highlighted in red; this could indicate a potential mismatch in file types.

2. Click "+" to expand any sections into which you want to load individual files. You must expand a section to load all files in a section. If a section is unchecked, no files will be loaded from that section.

3. If you want to load the boot project (*.PRO), flash configuration profile files (*.FCP), and batch edit files, go to the **Advanced Configuration** box and check those files.

4. In the **Standard Configuration Files** section check the box for any group of files you want to load.

5. If there are certain files in a group that you do **not** want to load, and they don't have their own check box for you to un-check, click the **Clear** button for each of the files you don't want to load; this erases their name so they won't be saved at the PC. If you accidentally clear the wrong one, click **Load** to restore its name.

6. Click the **Load Configuration** button. This activates the ControlWave ScriptTool which in turn sequentially retrieves all of the specified files from the **Load Directory** on your PC (or from the zip file) and loads them into the RTU. If you are restoring advanced files, you will be required to provide a valid user/password combination.

Notes:

- Depending upon which files you choose to save, this process could take several minutes. Allow the ScriptTool to run by itself until the script finishes. The screen updates to show the progress of the script.
- ScriptTool always loads the recipe files first. When loading individual sections separately, you must load recipes before loading GC RF arrays, UFM arrays, or batch edits.

2.7 Generic Modbus Master

Click the Generic Modbus Master button on the I/O tab to activate the Generic Modbus page. There are multiple pages for Modbus Master 1 (MB1) to Modbus Master 5 (MB5). You click on a tab to call up the appropriate Modbus Master.

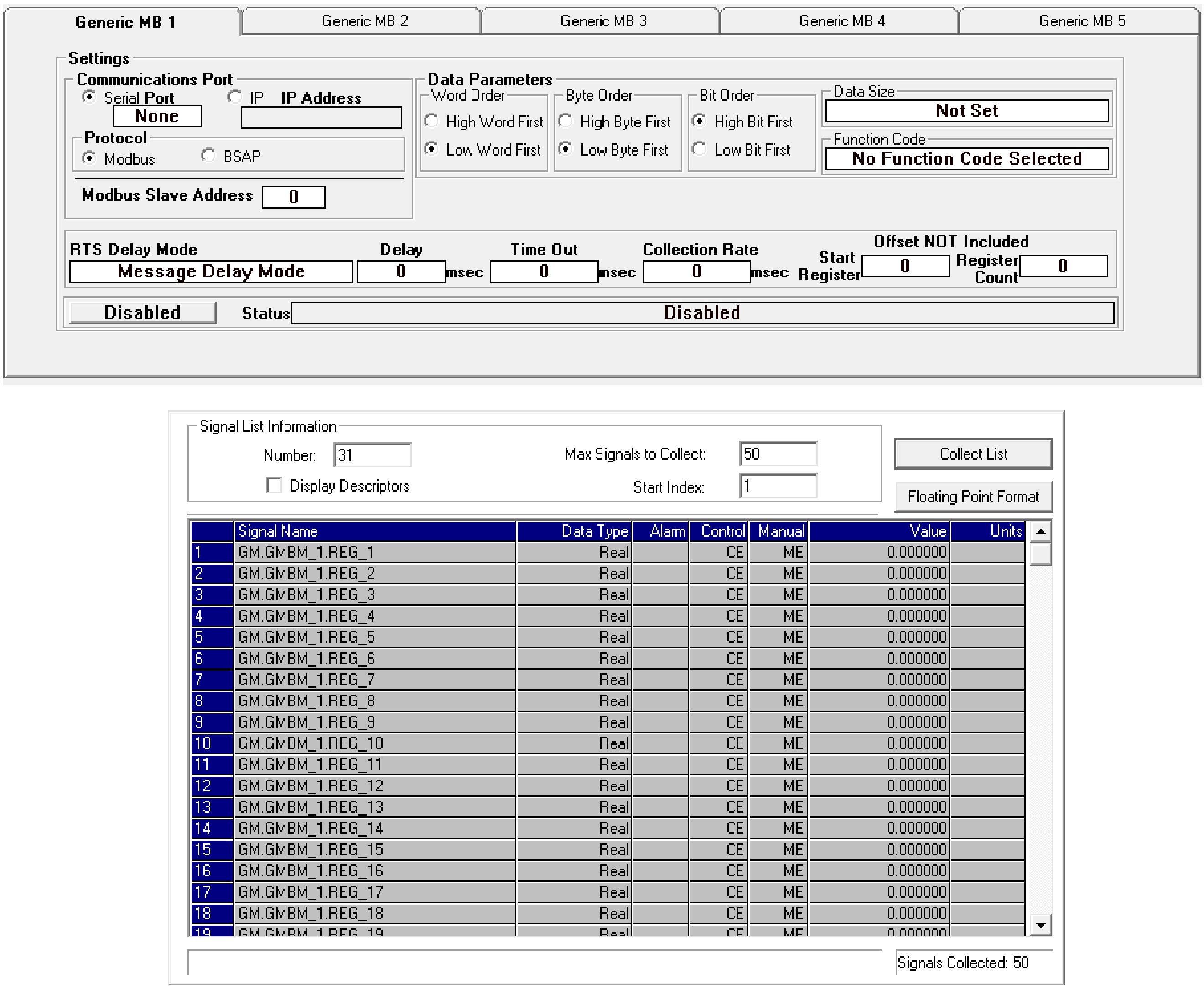


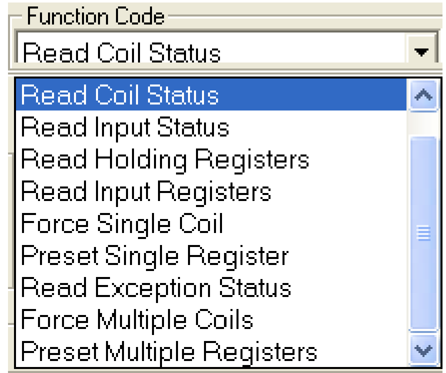
Figure 2-23. Generic Modbus Master

This page includes the following fields:

Field	Description
<u>Settings</u>	
<u>Communications Port</u>	Modbus communications can use **either** serial **or** IP communications.
Serial	Click the **Serial** button to use serial Modbus communication, and specify the port you want to use. (See **Port**).

Field	Description
Port	Specify the serial communication port on the ControlWave Micro you want to use for Modbus master communication. Use the following code: <u>Enter this</u>: <u>To select this serial CW Micro port</u>: 1 COM1 2 COM2 3 COM3 4 COM4 5 COM5 6 COM6 7 COM7 8 COM8 9 COM9 10 COM10 11 COM11 Press **[Enter]** to save the selection.
IP	Click the **IP** button to use IP Modbus (Open Modbus) communication.
IP Address	If you want to use IP Modbus (Open Modbus), enter the IP address of the port used by this master.
<u>Protocol</u>	
Modbus	Click this button to configure Modbus communication.
BSAP	Do **NOT** choose this when configuring Modbus communication.
<u>Data Parameters</u>	
<u>Word Order</u>	Choose the data word order to match the data word order used by the Modbus Slave that communicates with this Modbus Master.
High Word First	Click this to specify that the high word is first.
Low Word First	Click this to specify that the low word is first.
<u>Byte Order</u>	Choose the data byte order to match the data byte order used by the Modbus Slave that communicates with this Modbus Master.
High Byte First	Click this to specify that the high byte is first.

Field	Description
Low Byte First	Click this to specify that the low byte is first.
Bit Order	Choose the data bit order to match the data bit order used by the Modbus Slave that communicates with this Modbus Master.
High Bit First	Click this to specify that the high bit is first in a byte of data..
Low Bit First	Click this to specify that the low bit is first in a byte of data.
Data Size	Select the appropriate data format for Modbus Register data from the drop down menu. The available selections are: **Single Bit** – Each Register will include a single bit **Byte Data** – Each Register will include a single byte **16 Bit Integer** – Each Register will include a single 16-bit integer **32 Bit Int., 1 Reg., Cnt*1, Adr*1** – Each Register will include a 32-bit double integer. **32 Bit Float, 1 Reg., Cnt*1, Adr*1** – Each Register will include a 32-bit floating point number **32 Bit Int., 2 Reg., Cnt*2, Adr*2** – Two registers will be used for each 32-bit double integer. The MODBUS Master must poll two registers for each 32 bit integer. **32 Bit Float, 2 Reg., Cnt*2, Adr*2** – Two registers will be used for each 32-bit floating point number. The MODBUS Master must poll two registers for each 32 bit number. **32 Bit Int., 2 Reg., Cnt*2, Adr*1** - Two registers will be used for each 32-bit double integer. The MODBUS Master must poll a single register for each 32 bit integer. **32 Bit Float, 2 Reg., Cnt*2, Adr*1** - Two registers will be used for each 32-bit floating point number. The MODBUS Master must poll a single register for each 32 bit number. Press **[Enter]** to save the selection. If you don't make a selection, the field shows **Not Set**.
Function Code	Select the Modbus function from the drop-down menu.

Field	Description
	 Press **[Enter]** to save the selection.
Modbus Slave Address	Enter the Modbus slave address. If the local slave address you enter has already been assigned to either the SCADA Enron Modbus slave interface, or any of the other Customer Modbus Slave sessions, you will see **a Loc Addr Conflict** message. Modify the **Modbus Slave Address** as required to resolve the conflict.
RTS Delay Mode	Select from one of two modes for the Ready-to-Send (RTS) delay mode. **Message Delay Mode** - After the Modbus Master port raises RTS, a delay timer starts. The length of the delay is determined by the value in the **Delay** field. No message is sent until after this delay expires. The value of CTS does not affect the operation of this mode. **CTS Timeout Mode** - After the Modbus Master port raises RTS, it uses the **Delay** value as the maximum time to wait for CTS to be received from the slave. If the Modbus Master port receives CTS at any time before this time expires, the port starts to transmit the message. If the Modbus master port does not receive a CTS from the slave prior to the expiration of the **Delay** it does not respond to the slave and instead reports an error. Press **[Enter]** to save the selection.
Delay msec	Specify the **Delay** (in milliseconds) used by the **RTS Delay Mode and CTS Timeout Mode**. Press **[Enter]** to save the selection.
Time Out msec	Specify the time (in milliseconds) that the Modbus master must wait for a response from the Modbus slave before the master declares that the slave timed out. Press **[Enter]** to save the selection.
Collection Rate msec	Specify the interval (in milliseconds) between poll attempts by the Modbus master. Press **[Enter]** to save the selection.

Field	Description
Start Register	Specify the starting address for coil or register operations. The address transmitted to the Slave is one less than the value specified here. For example, the address 7031 is sent as 7030 for Function code 3. Press **[Enter]** to save the selection.
Register Count	Specify the number of coils or registers the Master should read. The value can range from 1 to 2000 for coils or 1 to 125 for 16-bit registers, or 1 to 62 for 32-bit registers. Press **[Enter]** to save the selection.
Disabled/Enabled	If this shows **Disabled**, click on it to enable the Modbus Master.
Status	This read-only field displays a message regarding the health of the Modbus master communications.
<u>BSAP Parameters</u>	The fields below are only visible when using BSAP protocol, which makes the ControlWave Micro running Station Manager into a BSAP master.
BSAP Server ID Status	Specify the number of the Server function block in the BSAP slave.
Mode	Choose **Read Only** if you only want to receive data from the slave; choose **Write Only** if you only want to send data to the slave; choose **Read/Write** if you want to read and write.
Time Out	Specify how long (in tenths of seconds) to wait for a response from the Server function block in the BSAP slave.
Send List	Specify the number of the send list here.
BSAP Server List #	Shows the number of the list in the BSAP slave from which data is sent/received.
Item Count	Not applicable in BSAP mode
BSAP Slave Address	The BSAP slave address of the slave device.
BSAP Receive List	Click this to display the receive list in the signal list grid. This list holds incoming data received from the BSAP slave.
BSAP Send List	Click this to display the send list in the signal list grid. This list holds outgoing data sent to the BSAP slave.

2.8 Time Set/Daylight Saving Time

Click the Time Set/Daylight Saving Time button on the I/O tab to open the Time Set/Daylight Saving Time page.

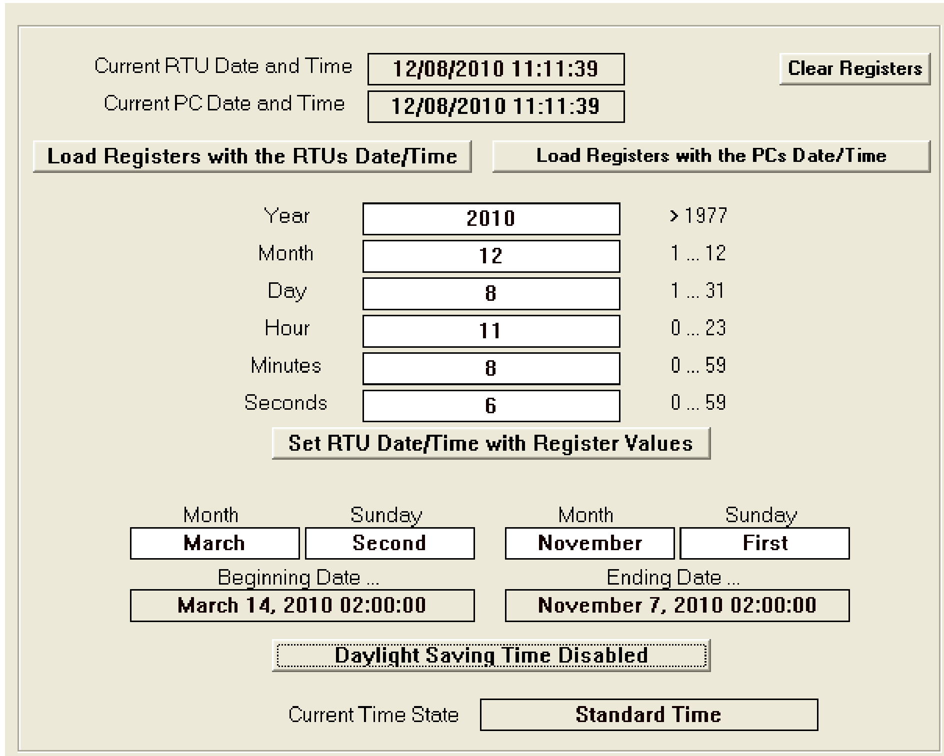


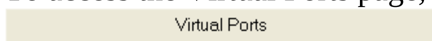
Figure 2-24. Time Set/Daylight Saving Time page

Field	Description
Current RTU Date and Time	This read-only field shows the current date and time setting at the controller.
Current PC Date and Time	This read-only field shows the current date and time at the PC workstation.
Clear Registers	Click this button to set all six time registers (**Year, Month, Day, Hour, Minutes and Seconds**) to zero.
Load Registers with the RTUs Date/Time	Click this button to store the controller time in the six time registers.
Load Registers with the PCs Date/Time	Click this button to store the PC workstation time in the six time registers.
Year	This time register holds a year value. You can set it by typing in a value, or you can load it by one of the buttons.
Month	This time register holds a month value. You can set it by typing in a value, or you can load it by one of the buttons.

Field	Description
Day	This time register holds a day value. You can set it by typing in a value, or you can load it by one of the buttons.
Hours	This time register holds an hour value. You can set it by typing in a value, or you can load it by one of the buttons.
Minutes	This time register holds a minute value. You can set it by typing in a value, or you can load it by one of the buttons.
Seconds	This time register holds a seconds value. You can set it by typing in a value, or you can load it by one of the buttons.
Set RTU Date/Time with Register Values	Click this button to update the controller's date and time with the values currently in the time registers.
<u>Daylight Saving Time</u>	
Beginning Date	Shows the calculated beginning date for daylight saving time, based on the **Month** and **Sunday** rules defined above it.
Month	Select the month in which Daylight Saving Time starts here. Press [**Enter]** to save your selection.
Sunday	Select the Sunday of the month at which Daylight Saving Time starts here. Press [**Enter]** to save your selection.
Ending Date	Shows the calculated ending date for daylight saving time, based on the **Month** and **Sunday** rules defined above it.
Month	Select the month in which Daylight Saving Time ends here. Press [**Enter]** to save your selection.
Sunday	Select the Sunday of the month at which Daylight Saving Time ends here. Press [**Enter]** to save your selection.
Daylight Saving Time Enabled/Disabled	Click this button to toggle between Daylight Saving Time and Standard Time.
Current Time State	This read-only field displays the time state setting to show whether you are in Daylight Saving Time or Standard Time based on the other entries on the page.

2.9 Virtual Ports

UFMs can optionally communicate using virtual ports. A virtual port is a software construct that re-directs messages out an IP port. This allows you to use a terminal server for a communication port. This can be useful when you're working with UFMs, chromatographs, or other third-party devices.

To access the Virtual Ports page, click the 

button on the I/O tab.

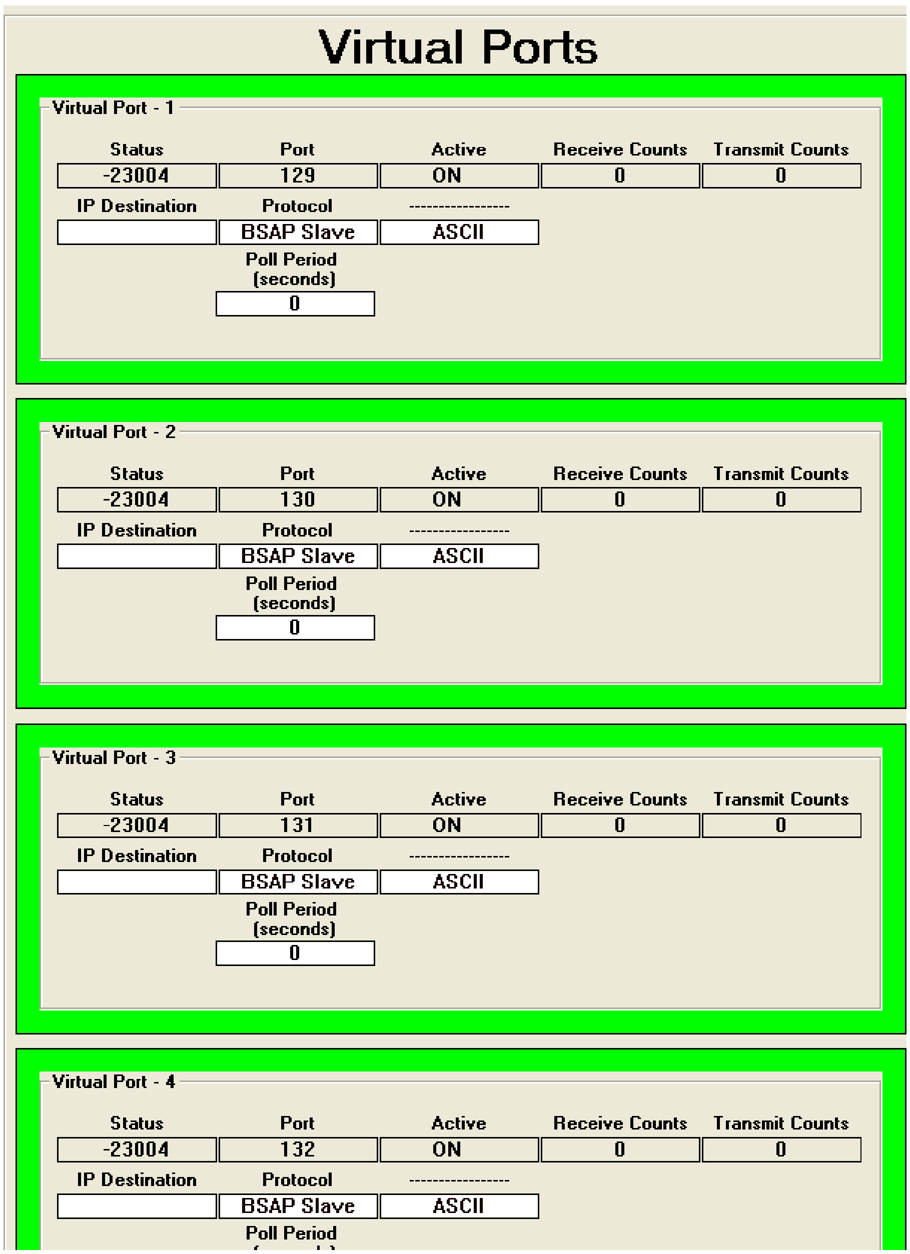


Figure 2-25. Virtual Ports page

Field	Description
Virtual Port *n*	
Status	Shows the virtual port status code. See the ControlWave Designer online help for VIRT_PORT function block to see what these codes mean.
Port	Shows the virtual port number.
Active	Shows whether the virtual port is currently active.
Receive Counts	Shows a count of messages received on the virtual port.
Transmit Counts	Shows a count of messages transmitted on the virtual port.
IP Destination	Shows the IP address of the remote destination.
Protocol	Shows the communication protocol in use on the virtual port.
Poll Period (Seconds)	Shows the polling period in seconds for the virtual port.

2.10 User Defined Screen

This section discusses the mechanics of developing custom TechView screens. You can add or view screens that display signal data to the TechView Session. You can make custom screens with any PDD signal from the Station Manager Application Load.

To create your own customized Station Manager screens, you need the following tools:

Web page editor (HTML) – You can use any standard HTML development environment (Dreamweaver, Microsoft Visual Web Developer 20xx Express Edition, etc.) to develop TechView Web pages.

JavaScript – You can use any standard JavaScript development environment (Dreamweaver, Microsoft Visual Web Developer 20xx Express Edition, etc.) to develop the JavaScript used in the TechView Web pages.

WebBSI SignalView Grids – Use **SigGen_*.js** (an Emerson-provided helper tool) to configure tables of WebBSI SignalView grids. This configures the tables and creates the SignalView ActiveX controls using a comma separated variable (CSV) file as the source for defining the contents of each cell within a table.

Using this tool provides a level of consistency between developers in the way tables are laid out, the appearance of the tables, and defaults for the WebBSI SignalView controls.

Note: You can locate the *.js, *.htm, and *.css files referenced in this appendix in your Station Manager folder.

To access the User Defined Screens page, click the

button on the Measurement tab.

Note: See *Chapter 6* for information on using the legacy User Defined Screen feature.

Web Page Development Tutorial

This section is a tutorial to introduce the techniques used to build the TechView Web pages.

For this tutorial, we are going to build a simple display with a table of data that will look this when we are done:

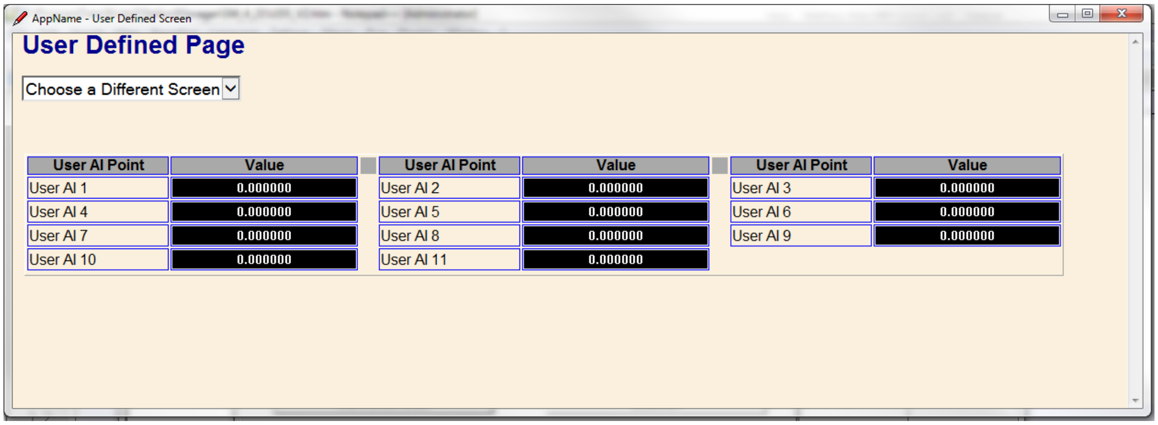


Figure 2-26. User Defined Page

HTML

For developing most web pages, the HTML consists mostly of calling JavaScript functions, which create the HTML tables and populates the tables with text and/or WebBSI ActiveX controls.

Review the **UDS_V2.htm** file.

Observe the first two lines of the file:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0
Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-
transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" >
```

These two lines should be left as is. There is no reason to edit them.

Observe that the HTML Head section has been declared as follows:

```
<head>
<title>User Defined Screen</title>
<link href= "Stylesheets/WebBSI.css" rel="stylesheet"
type="text/css">
</head>
```

The only thing that should be modified in the Head section is the text between the html tags <title></title>. This should be modified to be an appropriate title for the html page. The other line is where the **WebBSI.css** (cascading style sheet) is referenced, and should not be modified, unless a new style sheet file is required.

The next two lines reference external JavaScript files that contain functions common to all web pages.

```
<script language="javascript"
src="scripts/Initialize.js"></script>
```

```
<script language="javaScript"
src="Scripts/SignalGen.js"></script>
```

The next section, between the <script> and </script> html tags, is JavaScript:

```
<script language="JavaScript">
/**********************************************************
*******************************
       * This section of the JavaScript…
      /* End New Instance section
**********************************************************
* */


</script>
```

Review this section and read the comments to understand what each section of the JavaScript is doing.

The body section, between the <body> and </body> html tags, is where the web page layout is defined. The opening body tag (<body>) is shown here:

```
<body  onload="PageInit(); " class="main">
```

On every web page, there will be a need to call an initialization script. It is recommended that this initialization script be named PageInit, and called with an 'onLoad' function, within the <body> tag,

In addition, we want to apply the same styles to the body of every web page. This is done by referencing the class "main" in the <body> tag. The class "main" is defined in the **WebBSI.css** cascading style sheet.

After the opening <body> tag, we have the next two lines:

```
    <p align="left" class="title">User Defined Page</p>
    <p class="tablehead">User AI Points</p>
```

The formats "title" and "tablehead" are defined in the **WebBSI.css** cascading style sheet. When creating a page, it is recommended you use the "title" for the page title, and the "tablehead" if you want to add a label above a table.

These two lines will look like this on a web page:

Next, we have a division (<div>) tag:

```
<div align="left" id="DivSelect">
```

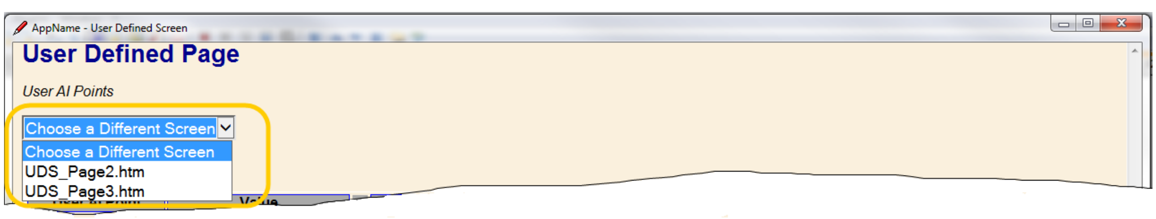
We are aligning everything in this division to the left, we also assigned an id, “DivSelect”, to it so that it can be referenced elsewhere if desired.

Then, we have the following lines:

```
<div align="left" id="DivSelect">
<select id="selectScreen"
onchange="pageChange()"style="font-size: 14pt; font-
weight: bold">
<option value="0"> Choose a Different Screen</option>
</select>

  <p> </p>
</div>
```

This is a standard selection box. In this example, we are choosing to pass a parameter with a value of 0 to n, where n is any number of pages added by the user. The figure shows 0 to 2 pages to select. This will look like this on the page:



Next, we have the following lines:

```
        <script type="text/javascript">

            var AliasArray = new Array(0);

            var SymbolArray = new Array(0);
```

```
            WriteTableWithObjs("UDS_V2.csv", 0, 0,
AliasArray, SymbolArray);
        </script>
  </div>
```

This is the absolute minimum amount of JavaScript code required to create an HTML Table with static text and live values from the RTU.

We do have to declare an AliasArray and a SymbolArray, to be passed into the WriteTableWithObjs function.

The key line of code on this web page is this one:

```
            WriteTableWithObjs("UDS_V2.csv", 0, 0,
AliasArray, SymbolArray);
```

The WriteTableWithObjs function is a function that will read a comma separated variable file, and return a fully formatted HTML table, including static text and live values from the ControlWave Micro.

The CSV file is created using the following rules:

A new table is indicated by starting a line with an asterisk (*). A new cell is created after each comma. If column labels are required, they may be entered in this line. The cell width will be defined in this line. If you want to include both a column label and a width, separate the two with a semicolon.

Example:

```
*User AI Point;width=150,Value;width=200,;width=15,User AI
Point;width=150,Value;width=200,;width=15,User AI
Point;width=150,Value;width=200
```

The above CSV data will create an eight column table. The first row of this table will look like this:

User AI Point	Value		User AI Point	Value		User AI Point	Value

When adding additional lines to the table, the following rules apply:

- No other line in the table can start with an asterisk (*), because that indicates a new table.
- If a cell contains just a label, add the text as you wish it to appear.
- If you want to include a SignalView ActiveX control in a cell, the cell must start with the dollar sign ($) followed immediately by the ControlWave signal name.
- If you want to change the default SignalView ActiveX control properties, the properties must be separated by a semi-colon. Any of

the SignalView ActiveX control properties may be set in the CSV file.

Example:

```
User AI 1
,$IO_1.HWAIs_1.HWAI_86;rights=8;BackColor=000000;ForeColor
=16777215;Format=0;BackColor=000000;ForeColor=16777215,,
User AI 2
,$IO_1.HWAIs_1.HWAI_87;rights=8;BackColor=000000;ForeColor
=16777215;Format=0;BackColor=000000;ForeColor=16777215,,
User AI 3
,$IO_1.HWAIs_1.HWAI_88;rights=8;BackColor=000000;ForeColor
=16777215;Format=0;BackColor=000000;ForeColor=16777215
```

Note: At this time, the WriteTableWithObjs function does not support breaking a line in the CSV file. The above line is wrapped in this document. However, in the original CSV file, this is a single line.

The above CSV (in conjunction with the Table header line) looks like this:

User AI Point	Value		User AI Point	Value		User AI Point	Value
User AI 1	0.000000		User AI 2	0.000000		User AI 3	0.000000

After the end division tag (</div>) we have the remaining code:

```
<div id="Footer">
<script language="javascript" type="text/javascript">

// This function is declared in the SignalGen.js file. It
uses innerHtml to create the footer.
// We pass in an array of links, and the innerHtml will
build the links that we need
var LinksArray = new Array(1);
var Instance = 0;

LinksArray[0] ="<a href=\"UDS_V2.htm?Instance=" + Instance
+ "\"> Template</a>";

CreateFooterLinks(Footer, LinksArray);
</script>
</div>

</body>

</html>
```

This generates the link at the bottom of the page.

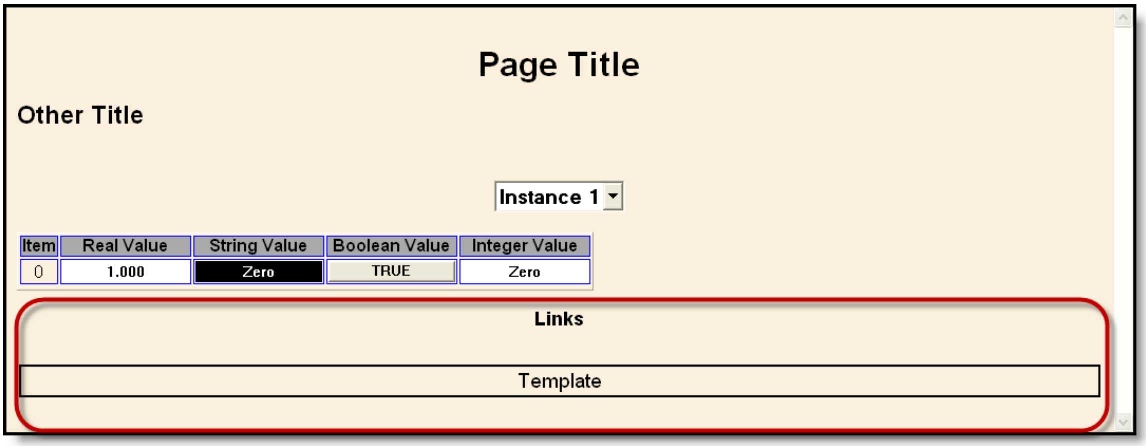


Figure 2-27. Example – Links added to page

In our example, it just reopens the **UDS_V2.htm** page.

As the comment states, the CreateFooterLinks is a JavaScript function in the **SignalGen.js** file. This function has the following parameters - obj, LinksArray)

obj is the document object id, (i our example it is the division tag id - <div id="Footer"> or Footer). This is where the Html is returned.

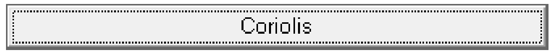
LinksArray is an array of fully-formed Html Links – in our example:

```
Instance=0;
LinksArray[0]="<a href=\"UDS_V2.htm?Instance=”" + Instance
+ "\"> Template</a>";
```

We pass links into the LinksArray, so that we can have a variable number of Links at the bottom of the page. Although we can pass any number of Links into the LinksArray object, the maximum practical number of links is 10, based on web page sizing and table sizing.

The </body> and </html> tags are the end tags required to close the body of the page and the html section of the page.

2.11 Coriolis Modbus Interface (6-Run Version ONLY)

Click the 

button to open this page.

Customers have used the following Coriolis meters with Station Manager:

- Micro Motion Series 1000 Transmitters
- Micro Motion Series 2000 Transmitters

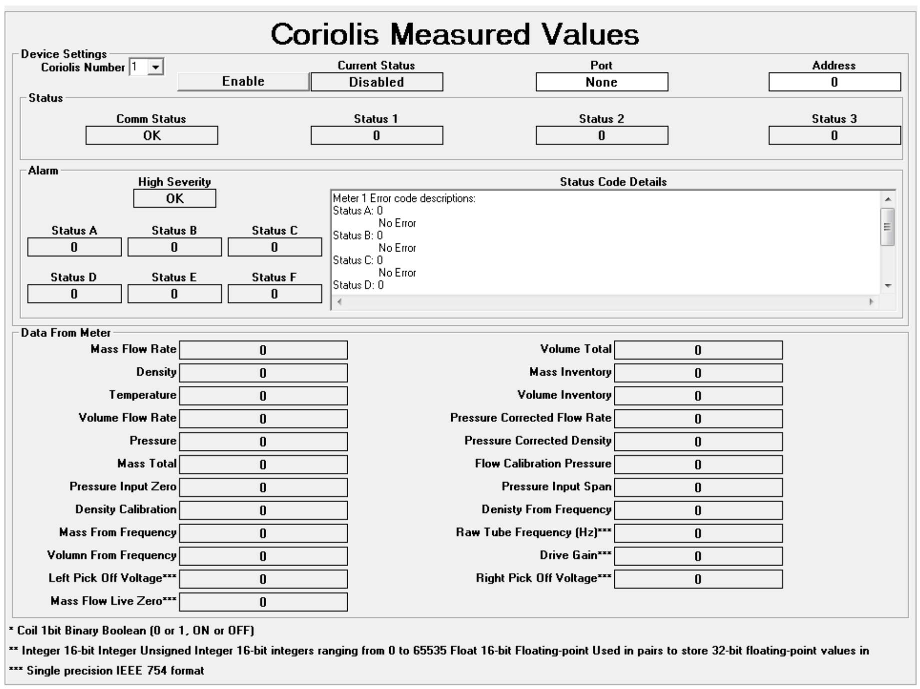


Figure 2-28. Coriolis tab

Field	Description
<u>Device Settings</u>	
Coriolis Number	Select the Coriolis meter number for which you want to view Modbus data.
Enable/Disable	Click **Enable** to enable communications with the coriolis meter. Click **Disable** to disable communications with the coriolis meter.
Current State	Shows the whether communications with the coriolis meter are enabled or disabled.
Port	Shows the port used by the coriolis meter.
Address	Shows the address for this coriolis meter.
<u>Status</u>	

Comm Status	Shows the communication status of the specified coriolis meter.
Status 1	Status of Modbus communications for data block 1.
Status 2	Status of Modbus communications for data block 2.
Status 3	Status of Modbus communications for data block 3.
Alarm	
High Severity	High severity alarm status from Modbus coil address 0069.
Status A	Shows the status code from Modbus register address 0419.

Bit Number	Description
Bit #0	(E)EPROM checksum error, core processor
Bit #1	RAM test error, core processor
Bit #2	Not used
Bit #3	Sensor not vibrating
Bit #4	Temperature sensor out of range
Bit #5	Calibration failure
Bit #6	Other failure occurred
Bit #7	Transmitter initializing/warming up
Bit #8	Primary variable out of limits
Bit #9	Non-primary variable out of limits
Bit #10	Not used
Bit #11	Not used
Bit #12	Watchdog error
Bit #13	Cold start occurred
Bit #14	Transmitter configuration changed (HART bit)
Bit #15	High-severity alarm(s) active

Status B Shows the status code from Modbus register address 0420.

pter 3 – Bit Number	pter 4 – Description
Bit #0	Primary mA output saturated
Bit #1	Secondary mA output saturated
Bit #2	Primary mA output fixed
Bit #3	Secondary mA output fixed
Bit #4	Density overrange
Bit #5	Drive overrange
Bit #6	Not used
Bit #7	External input failure
Bit #8	(E)EPROM checksum failure, core processor
Bit #9	RAM diagnostic failure, core processor
Bit #10	Sensor not responding (no tube interrupt)
Bit #11	Temperature sensor out of range
Bit #12	Input overrange
Bit #13	Frequency/pulse output saturated
Bit #14	Transmitter not characterized (flow calibration factor or sensor type)
Bit #15	Not used

Status C Shows the status code from Modbus register address 0421.

Bit Number	Description
Bit #0	Burst mode enable
Bit #1	Power reset occurred

	Bit #2	Transmitter initializing/warming up
	Bit #3	Sensor/transmitter communication failure (A28)
	Bit #4	Paper out
	Bit #5	Event 2 ON
	Bit #6	Event 1 ON
	Bit #7	Sensor/transmitter communication failure (A26)
	Bit #8	Calibration failure
	Bit #9	Zero value too low
	Bit #10	Zero value too high
	Bit #11	Zero too noisy
	Bit #12	Transmitter electronics failure
	Bit #13	Data loss possible
	Bit #14	Calibration in progress
	Bit #15	Slug flow

Status D Shows the status code from Modbus register address 0422.

Bit Number	Description
Bit #0	API: Temperature outside standard range
Bit #1	API: Density outside standard range
Bit #2	"Line RTD" temperature out of range
Bit #3	"Meter RTD" temperature out of range
Bit #4	Flow direction (0=Forward or Zero flow, 1=Reverse)
Bit #5	Not used
Bit #6	Enhanced density: Unable to fit curve data
Bit #7	Last measured value override active
Bit #8	Enhanced density extrapolation alarm
Bit #9	Transmitter not configured (flow calibration factor)
Bit #10	(E)EPROM checksum error
Bit #11	RAM test error in transmitter
Bit #12	Invalid/unrecognized sensor type (K1 value)
Bit #13	(E)EPROM database corrupt in core processor
Bit #14	(E)EPROM power down totals corrupt in core processor
Bit #15	(E)EPROM program corrupt in core processor

Status E Shows the status code from Modbus register address 0423.

Bit Number	Description
Bit #0	Core processor boot sector fault
Bit #1	Transmitter software upgrade recommended
Bit #2	Frequency output fixed
Bit #3	Not used
Bit #4	DO1 status (0=OFF, 1=ON)
Bit #5	DO2 status (0=OFF, 1=ON)
Bit #6	T-Series D3 calibration in progress
Bit #7	T-Series D4 calibration in progress
Bit #8	DO3 status (0=OFF, 1=ON)
Bit #9	Not used
Bit #10	Temperature slope calibration in progress
Bit #11	Temperature offset calibration in progress
Bit #12	Flowing density calibration in progress
Bit #13	High-density calibration in progress
Bit #14	Low-density calibration in progress
Bit #15	Flowmeter zeroing in progress

Status F Shows the status code from Modbus register address 0420.

Bit Number	Description
Bit #0	Discrete input 1 status (0=OFF, 1=ON)
Bit #1	Discrete input 2 status (0=OFF, 1=ON)
Bit #2	Discrete output 1 fixed
Bit #3	Discrete output 2 fixed
Bit #4	Discrete output 3 fixed
Bit #5	Not used
Bit #6	Security breach
Bit #7	Frequency input saturated
Bit #8	Batch/fill timeout

	Bit #9	Batch/fill in progress
	Bit #10	Batch end warning
	Bit #11	Batch overrun
	Bit #12	Batch pump
	Bit #13	Batch/fill primary valve
	Bit #14	Batch/fill secondary valve
	Bit #15	Not used
Status Code Details	Shows additional information based on the error codes.	
Data From Meter		
Mass Flow Rate	The mass flow rate from Modbus register pair 0247/0248.	
Density	The density from Modbus register pair 0249/0250.	
Temperature	The temperature from Modbus register pair 0251/0252.	
Volume Flow Rate	The volume flow rate from Modbus register pair 0253/0254.	
Pressure	The internally derived pressure from Modbus register pair 0257/0258.	
Mass Total	The mass total from Modbus register pair 0259/0260.	
Pressure Input Zero	The pressure input at 4 mA from Modbus register pair 0273/0274.	
Density Calibration	The density for flowing density calibration from Modbus register pair 0277/0278.	
Mass From Frequency	The mass flow rate meter factor from Modbus register pair 0279/0280.	
Volume From Frequency	The volume flow rate meter factor from Modbus register pair 0281/0282.	
Left Pick Off Voltage	The left pickoff voltage (in millivolts) from Modbus register pair 0287/0288.	
Mass Flow Live Zero	The mass flow live zero flow from Modbus register pair 0293/0294.	
Volume Total	The volume total from Modbus register pair 0261/0262.	
Mass Inventory	The mass inventory from Modbus register pair 0263/0264.	

Volume Inventory	The volume inventory from Modbus register pair 0265/0266.
Pressure Corrected Flow Rate	The pressure correction factor for flow from Modbus register pair 0267/0268.
Pressure Corrected Density	The pressure correction factor for density from Modbus register pair 0269/0270.
Flow Calibration Pressure	The flow calibration pressure from Modbus register pair 0271/0272.
Pressure Input Span	The pressure input at 20 mA from Modbus register pair 0275/0276.
Density From Frequency	The density meter factor from Modbus register pair 0283/0284.
Raw Tube Frequency (Hz)	The raw tube frequency (in Hz) from Modbus register pair 0285/0286.
Drive Gain	The drive gain (in %) from Modbus register pair 0291/0292.
Right Pick Off Voltage	The right pickoff voltage (in millivolts) from Modbus register pair 0289/0290.

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Chapter 3 – Configuring Stations, Runs, and Valves (Measurement Tab)

This chapter discusses configuring the stations and meter runs for the Station Manager application as well as all the measurement functions for the various meter runs. This is accomplished from the Station Manager's Measurement tab.

In This Chapter

3.1 Measurement Tab

Click the Measurement tab to display the measurement options you can configure. We'll discuss each of these in the sections that follow.

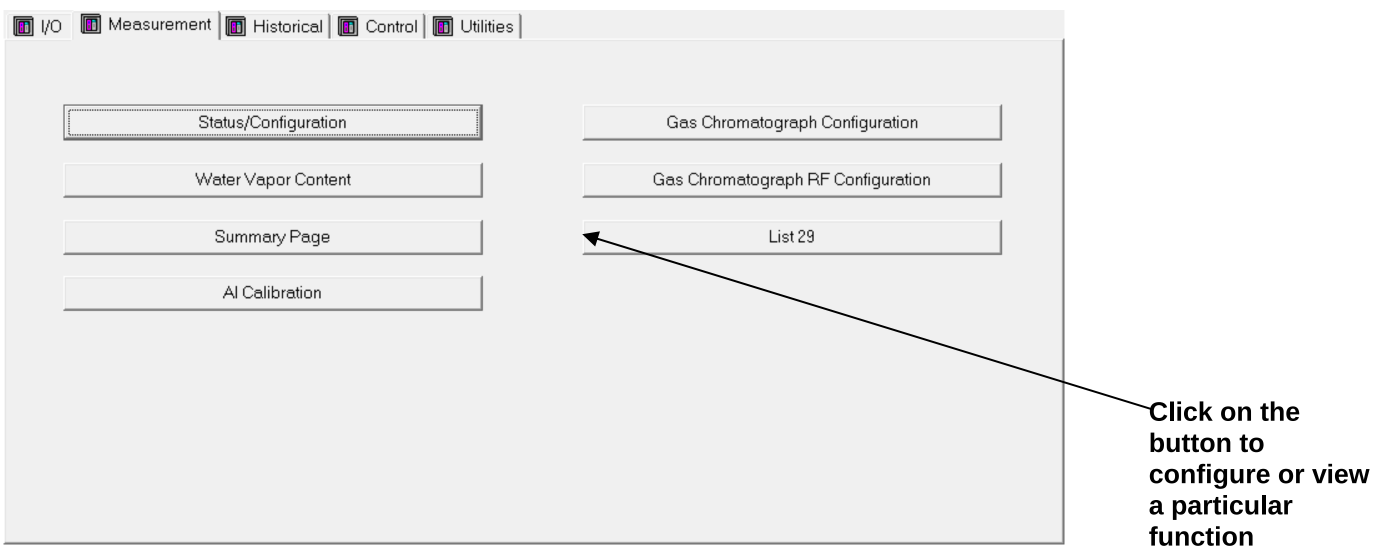


Figure 3-1. Measurement Tab

3.2 Status/Configuration

When you click the 

button on the Measurement tab, Station Manager opens up a tree structure with icons showing the site along with the various station, meter run, and control valves you can potentially configure in the Station Manager.

Which ones you configure vary depending upon your site requirements, the type and number of meter runs, and other local characteristics of your system.

Note: The Status/Configuration button allows you to fully configure a station, meter run, or control valve. The screens it opens are slightly modified versions of those available in previous releases of Station Manager. Modifications were made to reduce screen clutter and improve the ease of configuration in Windows 7. If you have Windows XP, you can also use these screens, or you can continue to use the older Status/Configuration screens accessible through the **Legacy Controls** tab. The older Status/Configuration screens on the Legacy Controls tab do not support use under Windows 7.

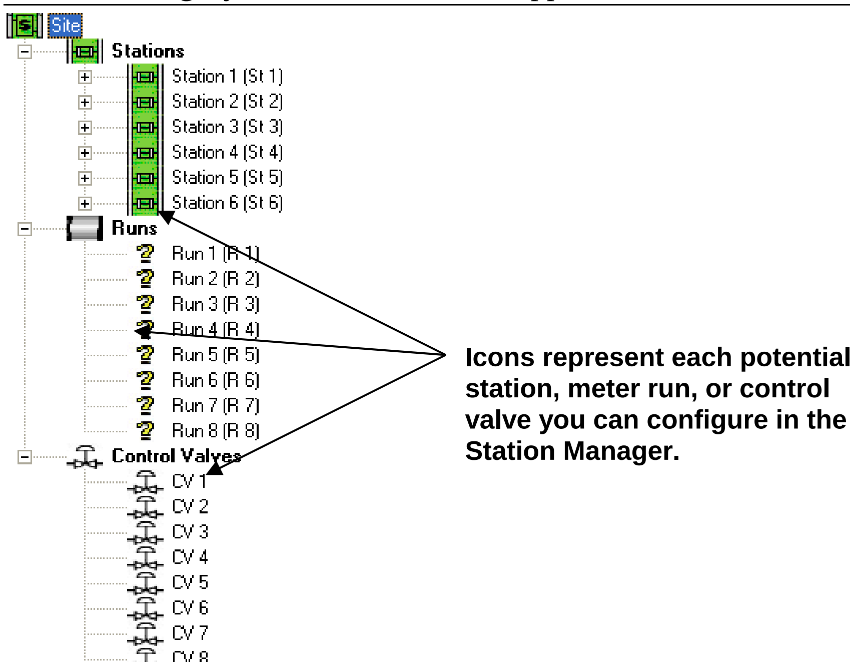
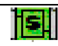
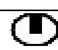
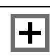
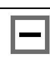


Figure 3-2. Configuration Tree Structure

The tree structure includes several different icons, and icons can change based on your configuration choices. *Table 3-1* shows the icons you may encounter.

Table 3-1. Icons Used in the Configuration Tree

Icon	Represents	Usage
	**Site**	The site icon is for the geographic or organizational site associated with this copy of the Station Manager. The “S” in the icon distinguishes it from the station icon.
	**Station**	Each station controls one or more meter runs, and typically, one or more control valves. Station Manager supports up to six different stations at a site.
	**Runs section of the tree**	The different meter runs you can define appear underneath this branch of the tree.
	**Run with undefined measurement type**	Until you specify a meter type, the run icon is a question mark.
	**Orifice meter run**	If you configure the meter type as **Orifice** you’ll see this icon.
	**Linear meter run**	If you configure any of these meter types, you’ll see this icon. ▪ Turbine (turbine meter) ▪ Auto-adjust (auto-adjust turbine meter) ▪ Ultrasonic (ultra-sonic meter) ▪ PD (positive displacement meter)
	**Coriolis meter run**	If you configure the meter type as **Coriolis** you’ll see this icon.
	**Annubar**	If you configure the meter type as **Annubar** you’ll see this icon.
	**Venturi meter run**	If you configure the meter type as **Venturi** you’ll see this icon.
	**Plus Sign**	Click on to expand the tree item to show more branches of information for an item.
	**Minus Sign**	Click on to hide tree branches to show less information.

Assigning Runs or Valves to a Station using Drag and Drop

Meter runs and control valves cannot exist independently within the Station Manager; you must assign them to a particular station. There are different ways to assign meter runs or control valves to a particular station. One way to do that is to drag and drop the icon for the run or valve onto the station name to which you want to assign it. When you drag, you’ll see a valve or run icon, and you drag it right onto the station name.

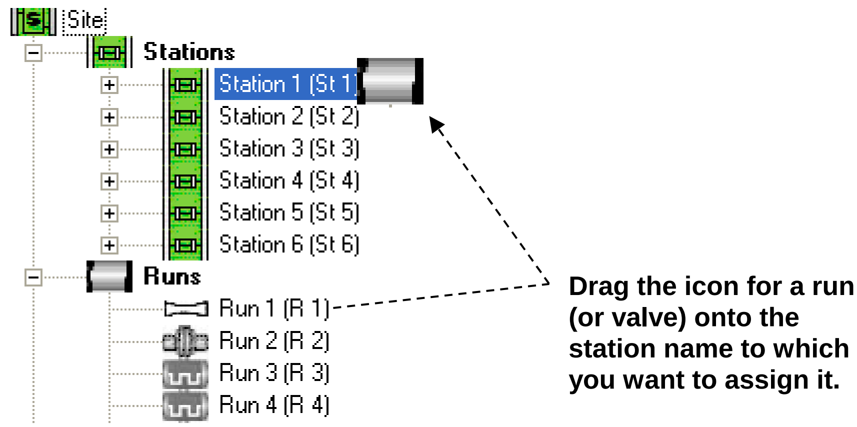


Figure 3-3. Assigning a Run or Valve to a Station Using Drag and Drop

Calling Up Menus

There are different ways you can access pages.

To call up the first page for a particular site, station, run, or control valve, you can just click on its icon, and the first menu opens. Then you can click on page tabs to bring up other configuration pages associated with that site, station, run, or control valve.

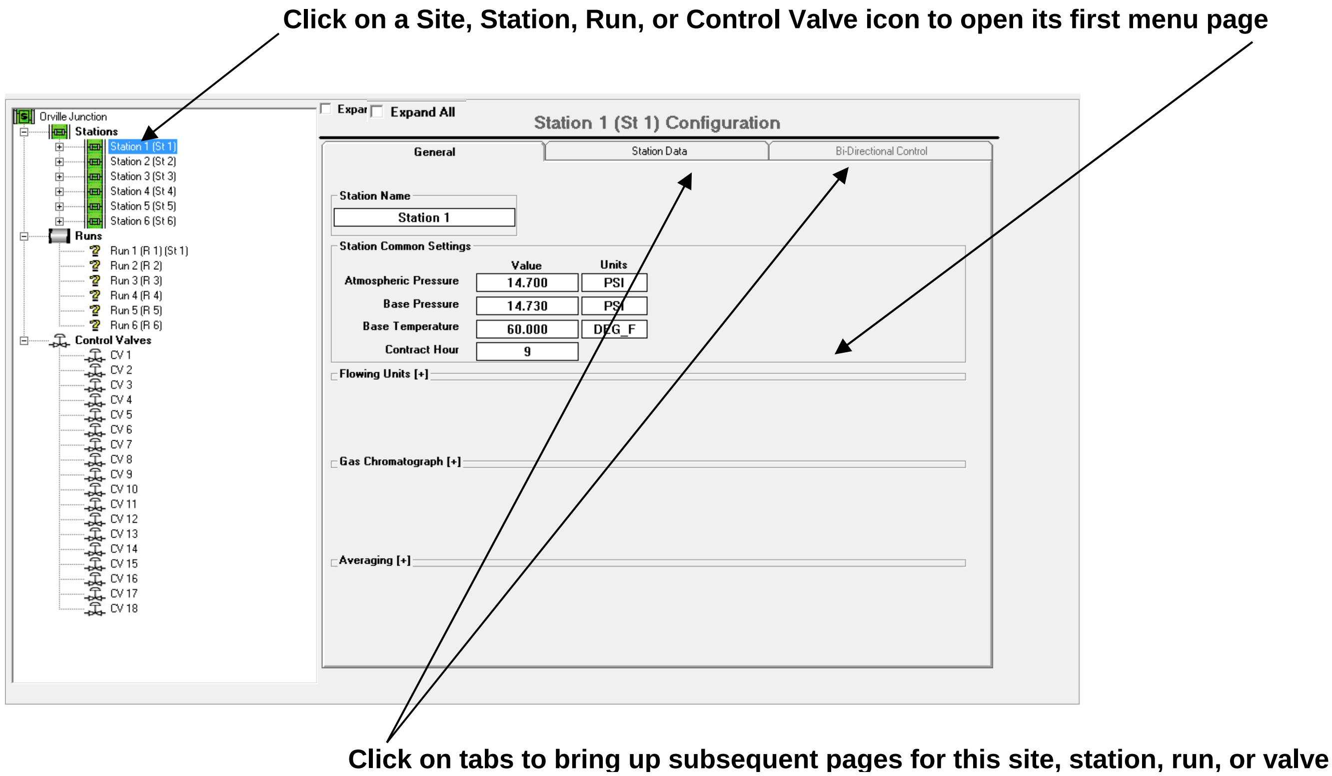


Figure 3-4. Opening Menus by Clicking on a Station

You can also call up the same pages if you *right*-click on the icon for a site, station, run, or control valve, and select an option from the pop-up menus.

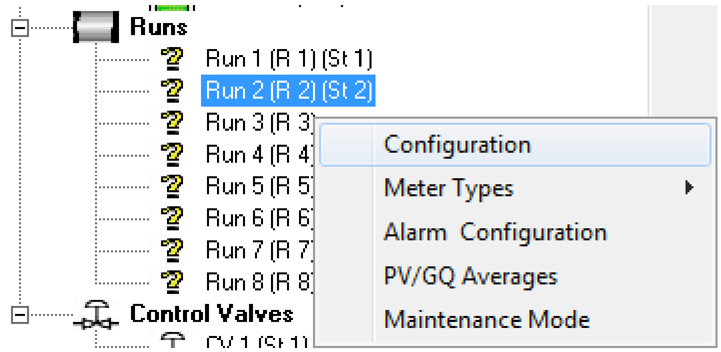


Figure 3-5.Selecting Pages From Pop-up Menus

Showing / Hiding Sections of the Page

Some pages include sections that are initially hidden to reduce screen clutter and allow you to focus on the most important items for the current task at hand.

For example, on the Station Configuration page, the Flowing Units, Gas Chromatograph, and Averaging sections are hidden when you first open the page.

The Flowing Units, Gas Chromatograph and Averaging sections are hidden when you first open the page.

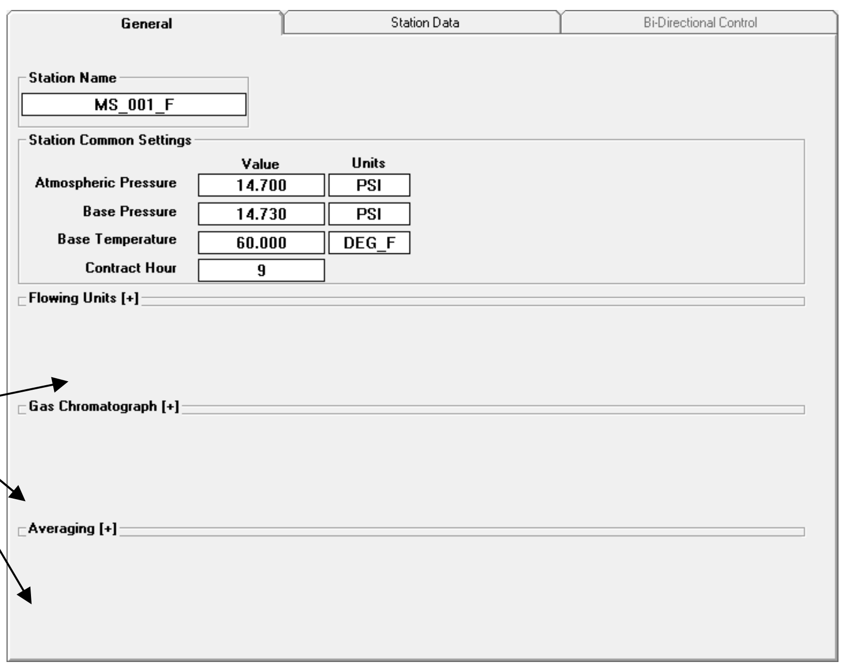


Figure 3-6. Hidden Sections on the Page

To view any of the hidden sections, select the **Expand All** check box 

in the upper left corner of the page. The **Expand All** setting applies until you uncheck it.

Check "Expand All" to view hidden sections; to hide the sections, un-check "Expand All."

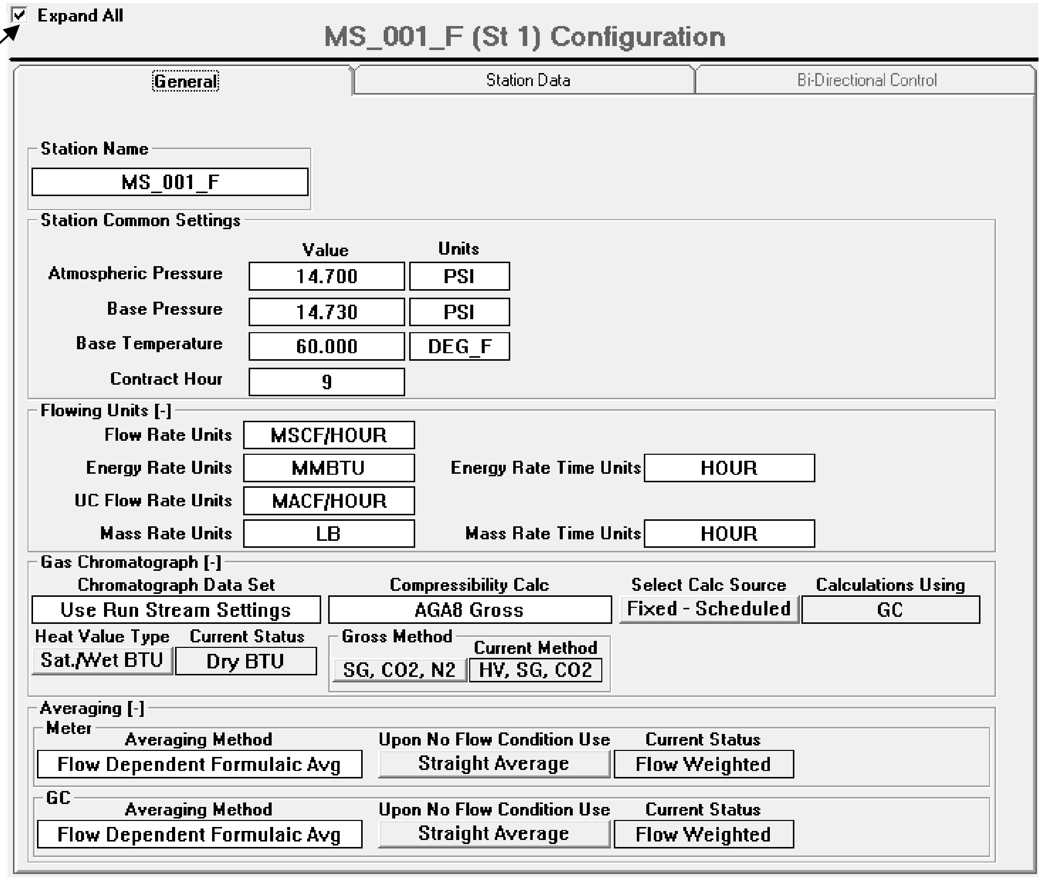
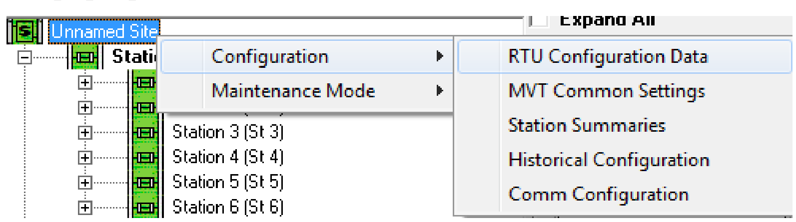


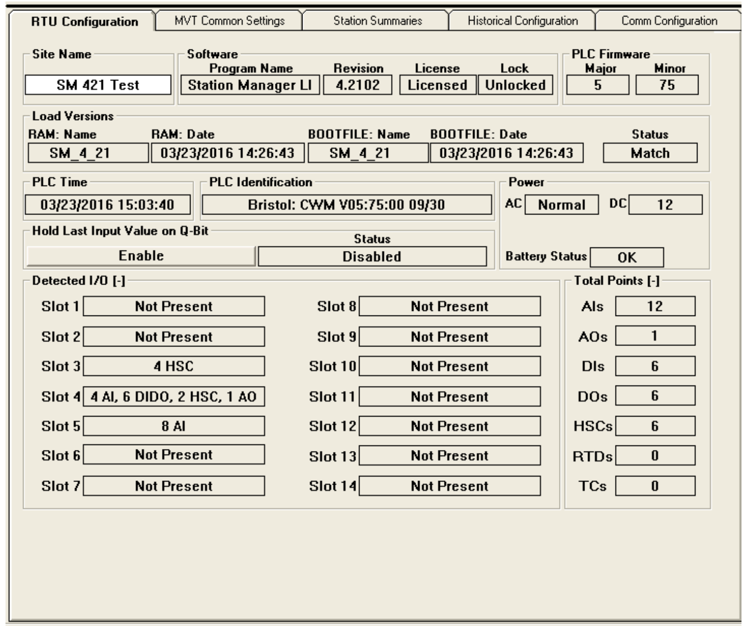
Figure 3-7. Viewing All Fields in a Section

3.2.1 RTU Configuration Tab (Site Configuration)

The RTU Configuration tab shows basic information about the site. You can call it up by clicking on the icon for the site, or right-click on the icon for the site and select **Configuration** > **RTU Configuration Data** from the pop-up menus.



Note: For information about using Maintenance Mode for the site, see *Section 3.2.26*.



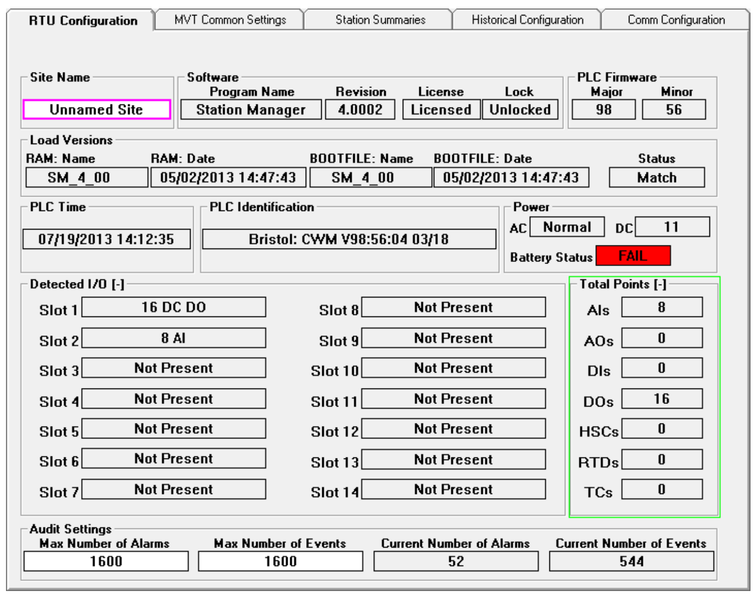


Figure 3-8. RTU Configuration tab (8-Run Top, 6-Run Bottom)

Field	Description
Site Name	The **site** refers to the geographical location or an organizational name associated with this Station Manager controller. You might name the site after the RTU node name or a place. Enter a name and press the **[Enter]** key to save your entry.
Software	
Program Name	This read-only field shows the name of the Station Manager software installed on the RTU.

Revision	This read-only field shows the revision of the Station Manager software running on the RTU. The revision is in the format *V.v* R*nn* Where: *V* is the major version number *v* is the minor version number R*nn* is the revision build number, if this is a revision release of the software.
License	Shows whether your application is licensed.
Lock	Shows whether your application is locked.
<u>PLC Firmware</u>	These fields refer to the ControlWave internal system firmware that controls operation of the ControlWave Micro.
Major	This read-only field shows the major revision number of the system firmware running in the ControlWave Micro.
Minor	This read-only field shows the minor revision number of the system firmware running in the ControlWave Micro.
<u>Load Versions</u>	The load version fields let you compare the revisions of the ControlWave project stored in flash (ControlWave bootproject) and the revision of the ControlWave project currently executing in SDRAM.
RAM: Name	This read-only field shows the name of the ControlWave project executing in the ControlWave Micro's SDRAM.
RAM: Date	This read-only field shows the date and time stamps of the ControlWave project executing in the ControlWave Micro's SDRAM. Dates use the format *mm/dd/yyyy* where *mm* is the two-digit month (01 to 12), *dd* is the two-digit day (01 to 31), and *yyyy* is the four-digit year. Timestamps are in the format *hh:mm:ss* where *hh* is the 2-digit hour (0 to 23), *mm* is the 2-digit minute (0 to 59) and *ss* is the two-digit second (0 to 59).
BOOTFILE: Name	This read-only field shows the name of the ControlWave bootproject stored in FLASH at the ControlWave Micro.
BOOTFILE: Date	This read-only field shows the date and time stamps of the ControlWave bootproject stored in FLASH at the ControlWave Micro. Dates use the format *mm/dd/yyyy* where *mm* is the two-digit month (01 to 12), *dd* is the two-digit day (01 to 31), and *yyyy* is the four-digit year.

	Timestamps are in the format *hh:mm:ss* where *hh* is the 2-digit hour (0 to 23), *mm* is the 2-digit minute (0 to 59) and *ss* is the two-digit second (0 to 59).
Status	This read-only field shows **Match** if the name and date of the ControlWave project executing in SDRAM is identical to that for the bootproject stored in FLASH. If this field shows **Mismatch** this indicates that the ControlWave project executing in SDRAM is **not** the same as the bootproject. This is an error condition because if the unit restarts for any reason, the bootproject overwrites the project executing in SDRAM on restart and you will lose the SDRAM project.
<u>PLC Time</u>	This read-only field shows the current date and time stamps of the ControlWave Micro's real time clock. Dates use the format *mm/dd/yyyy* where *mm* is the two-digit month (01 to 12), *dd* is the two-digit day (01 to 31), and *yyyy* is the four-digit year. Timestamps are in the format *hh:mm:ss* where *hh* is the 2-digit hour (0 to 23), *mm* is the 2-digit minute (0 to 59) and *ss* is the two-digit second (0 to 59).
<u>PLC Identification</u>	This read-only field identifies boot PROM firmware installed in the ControlWave Micro. To use the Station Manager application, your boot PROM firmware must have the prefix **CWM**.
<u>Power</u>	These fields show information about power status at the ControlWave Micro.
AC	This read-only field shows the status of AC power as indicated through a discrete input I/O point.
DC	This read-only field shows the DC voltage level at the ControlWave Micro's power supply sequencer module (PSSM).
Battery Status	This read-only field shows the status of the SRAM backup battery in the ControlWave Micro.
<u>Hold Last Input Value on Q-Bit</u> (8-Run only)	The Hold Last Input Value on Q-Bit setting determines what happens if flow calculation input values become questionable.
Enable/Disable	Click **Enable** if you want to use the last good input value (non-questionable value) in your flow calculations if the questionable data bit comes on for one of the inputs. The **Status** field shows **Enabled** when this option is active. Click **Disable** if you always want to use the current input value in your flow calculations even if the questionable data bit is on for an input. The **Status**

	field shows **Disabled** when this option is active.
Status	This read-only field shows **Disabled** if the system always uses the current input values in flow calculations, even if they have questionable data. The field shows **Enabled** if Station Manager should substitute the last good input value(s) for flow calculation input(s) whenever the questionable data bit is on for those inputs. If the questionable data bit is not on, Station Manager uses the current input values in flow calculations.
<u>Detected I/O</u>	If not shown, click the [+] to display these fields.These fields show the types of I/O modules detected by the Station Manager as being installed in the ControlWave Micro.
Slot *n*	This read-only field shows details of the installed I/O module that the Station Manager detects in this ControlWave Micro slot. The slot number from 1 to 14 refers to slots in the base and expansion housings.
<u>Total Points</u>	If not shown, click the [+] to display these fields.These fields show the total number of different types of I/O points from all the I/O modules detected by the Station Manager application.
AIs	This read-only field shows the total number of analog inputs residing across all I/O modules detected by the Station Manager application.
AOs	This read-only field shows the total number of analog outputs residing across all I/O modules detected by the Station Manager application.
DIs	This read-only field shows the total number of discrete inputs residing across all I/O modules detected by the Station Manager application. **Note:** This count includes all possible DIs, including a DI/DO point configured as a DO.
DOs	This read-only field shows the total number of discrete outputs residing across all I/O modules detected by the Station Manager application. **Note:** This count includes all possible DOs, including a DI/DO point configured as a DI.
HSCs	This read-only field shows the total number of high speed counter inputs residing across all I/O modules detected by the Station Manager application.
RTDs	This read-only field shows the total number of resistance temperature device inputs residing across all I/O modules detected by the Station Manager application.

TCs	This read-only field shows the total number of thermocouple inputs residing across all I/O modules detected by the Station Manager application.
Audit Settings (6-Run only)	These settings configure the number of alarms and events that can be stored in the audit log before the application is locked to prevent further configuration changes. This section also shows counts of the current number of alarms and events in the audit log.
Max Number of Alarms	Specify the maximum number of alarms to be kept in the audit log. When the total number of alarms in the log reaches this number, older alarms must be read from the audit log before further configuration changes can be made.
Max Number of Events	Specify the maximum number of events to be kept in the audit log. When the total number of events in the log reaches this number, older events must be read from the audit log before further configuration changes can be made.
Current Number of Alarms	This shows the current number of alarms in the audit log.
Current Number of Events	This shows the current number of events in the audit log.

3.2.2 MVT Common Settings Tab (Site Configuration)

This page configures details for the multivariable transmitter/transducer (MVT). You can call it up by clicking on the **MVT Common Settings** tab, or right-click on the icon for the site and select **Configuration** > **MVT Common Settings** from the pop-up menus.

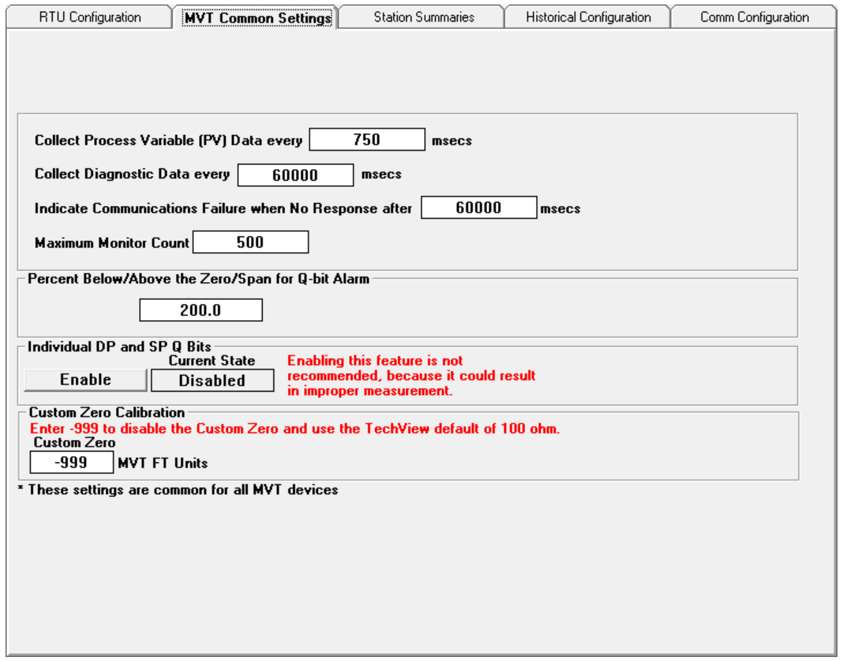


Figure 3-9. MVT Common Settings tab

Field	Description
Collect Process Variable (PV) Data every msecs	Enter how often (in milliseconds) the ControlWave Micro should collect process variable (PV) data. For natural gas measurement in custody transfer applications, the API requires updates no less frequent than 1.0 second (1,000 milliseconds). The ControlWave Micro can communicate with up to eight (8) MVTs per second using a single RS-485 port at 19,200 baud. Press the **[Enter]** key to save your entry.
Collect Diagnostic Data every msecs	Enter how often to collect diagnostic data from the MVT (in milliseconds). You should not set the interval of this collection to be very short, because it may interfere with the higher priority PV data collection. Press the **[Enter]** key to save your entry.
Indicate Communications Failure when No Response after msecs	Enter the period (in milliseconds) that the Station Manager application waits before declaring that a loss in communications to the MVT constitutes a communications timeout.

Maximum Monitor Count	Enter the maximum number of polls that the Station Manager application uses to count good/bad polls and determine the %good.
Percent Below/Above the Zero/Span for Q-bit Alarm	This is the percent of span to use for determining a failed PV.
Individual DP and SP Q Bits Disable/Enable button and **Current State** field	Disables or enables separate DP and SP PV Q (failure) bits. Not recommended as MVTs use common hardware for the DP & SP sensors. The current setting appears in the **Current State** field.
<u>Custom Zero Calibration</u>	
MVT FT	You can enter a custom zero calibration value for the flowing temperature variable in the MVT here. If you want to use the default zero calibration value of 100 ohms (±0.01%), enter **-999** in this field.

3.2.3 Station Summaries Tab (Site Configuration)

The Station Summaries tab shows flow, energy, and volume readings for each configured station. You can call it up by clicking on the **Station Summaries** tab or right-click on the icon for the site and select **Configuration** > **Station Summaries** from the pop-up menus.

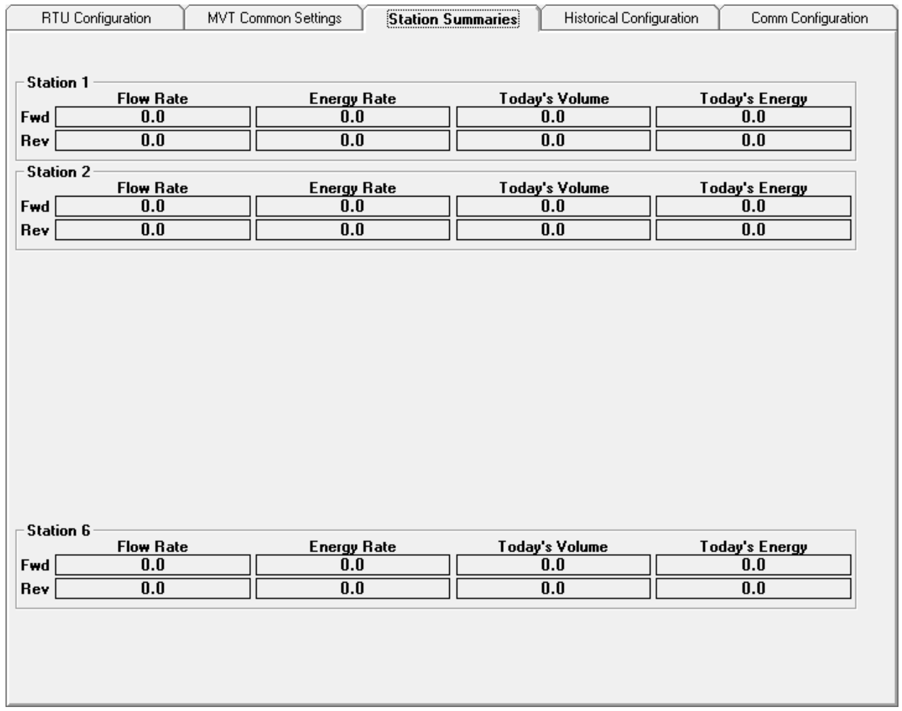


Figure 3-10. Station Summaries tab

Note: Fields appear grayed out if the station is not configured.

Field	Description
Station *n*	Identifies one of the six stations.
Flow Rate Fwd	This read-only field shows the instantaneous flow rate at this station. If this station supports bi-directional flow, this is the instantaneous forward flow rate when flow is in the forward direction (odd) or is the instantaneous reverse flow rate (even).
Flow Rate Rev	This read-only field shows the instantaneous reverse flow rate from the corresponding bi-directional even numbered station when flow is in the reverse direction. (Odd stations only.)
Energy Rate Fwd	This read-only field shows the instantaneous energy rate at this station. If this station supports bi-directional flow, this is the instantaneous forward energy rate when flow is in the forward direction (odd) or is the instantaneous reverse energy rate (even).

Energy Rate Rev	This read-only field shows the instantaneous reverse energy rate from the corresponding bi-directional even numbered station when flow is in the reverse direction. (Odd stations only.)
Today's Volume Fwd	This read-only field shows today's accumulated flow total (volume). If this station supports bi-directional flow, this is the accumulated forward flow total when flow is in the forward direction (odd) or is the accumulated reverse flow total (even).
Today's Volume Rev	This read-only field shows today's accumulated flow total from the corresponding bi-directional even numbered station when flow is in the reverse direction. (Odd stations only.)
Today's Energy Fwd	This read-only field shows today's accumulated energy total. If this station supports bi-directional flow, this is the accumulated forward energy total when flow is in the forward direction (odd) or is the accumulated reverse energy total (even).
Today's Energy Rev	This read-only field shows today's accumulated energy total from the corresponding bi-directional even numbered station when flow is in the reverse direction. (Odd stations only.)

3.2.4 Historical Configuration Tab (Site Configuration)

The Historical Configuration page lets you configure certain settings common to the entire site. You can call it up by clicking on the **Historical Configuration** tab or right-click on the icon for the site and select **Configuration** > **Historical Configuration** from the pop-up menus.

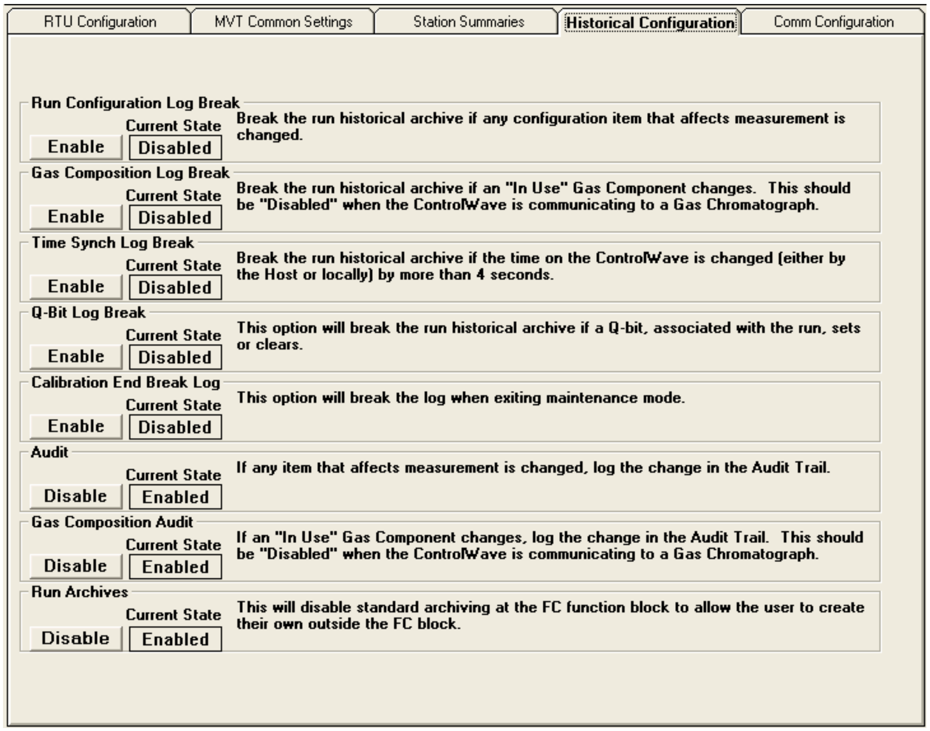


Figure 3-11. Historical Configuration tab

Field	Description
Run Configuration Log Break	If you change a configuration item which affects measurement this would mean that new readings into the historical archive/log would reflect a different configuration; this could cause confusion, therefore you should allow a log break to end the current archive and start a new archive for data reflecting the new configuration.
Enable / Disable	Click **Enable** to allow a log break, or **Disable** to prevent a log break.
Current State	This read-only field shows **Enabled** if a log break is allowed, or **Disabled** if a log break is not allowed.
Gas Composition Log Break	If an “in use” gas component changes, you should allow a log break. The exception to this is if the ControlWave Micro is communicating with a gas

	chromatograph; in that case, disable the log break.
Enable / Disable	Click **Enable** to allow a log break, or **Disable** to prevent a log break.
Current State	This read-only field shows **Enabled** if a log break is allowed, or **Disabled** if a log break is not allowed.
<u>Time Synch Log Break</u>	If the ControlWave Micro’s real time clock changes by more than four seconds, either because it receives a time synchronization message from the network, or someone changes the time locally, you can initiate a log break.
Enable / Disable	Click **Enable** to allow a log break, or **Disable** to prevent a log break.
Current State	This read-only field shows **Enabled** if a log break is allowed, or **Disabled** if a log break is not allowed.
<u>Q-Bit Log Break</u>	If the questionable data flag (Q-bit) status changes to TRUE, indicating incoming data is questionable, you can initiate a log break.
Enable / Disable	Click **Enable** to allow a log break, or **Disable** to prevent a log break.
Current State	This read-only field shows **Enabled** if a log break is allowed, or **Disabled** if a log break is not allowed.
<u>Calibration End Log Break</u>	If you exit calibration mode, you can initiate a log break.
Enable / Disable	Click **Enable** to allow a log break, or **Disable** to prevent a log break.
Current State	This read-only field shows **Enabled** if a log break is allowed, or **Disabled** if a log break is not allowed.
<u>Audit</u>	If any change occurs that affects measurement, you can include an audit message about the change in the audit system.
Enable / Disable	Click **Enable** to allow the system to log an audit entry for changes affecting measurement, or click **Disable** to prevent this logging.
Current State	This read-only field shows **Enabled** if audit logging of changes is allowed, or **Disabled** if audit logging of changes is prevented.

<u>Gas Composition Audit</u>	If any change to an “in use” gas component occurs, you should include an audit message about the change in the audit system. The exception to this is if the ControlWave Micro is communicating with a gas chromatograph; in that case, disable the audit logging for this.
Enable / Disable	Click **Enable** to allow the system to log an audit entry for changes to “in use” gas components, or click **Disable** to prevent this logging.
Current State	This read-only field shows **Enabled** if audit logging of “in use” gas component changes is allowed, or **Disabled** if audit logging of these changes is prevented.
<u>Run Archives</u>	This function lets you optionally turn off the pre-configured FC function block included in the Station Manager application, in order to configure a different ARCHIVE function block according to your own needs.
Enable / Disable	Click **Enable** to allow the system to perform archiving using the pre-configured FC function block. Click **Disable** to prevent this archiving, and instead configure a different ARCHIVE function block according to your own needs.
Current State	This read-only field shows **Enabled** if archiving using the pre-configured FC function block is active or **Disabled** if you have turned OFF the FC function block operation.

3.2.5 Comm Configuration Tab (Site Configuration)

The Comm Configuration page lets you configure communication settings common to the entire site. You can call it up by clicking on the **Comm Configuration** tab or right-click on the icon for the site and select **Configuration > Comm Configuration** from the pop-up menus.

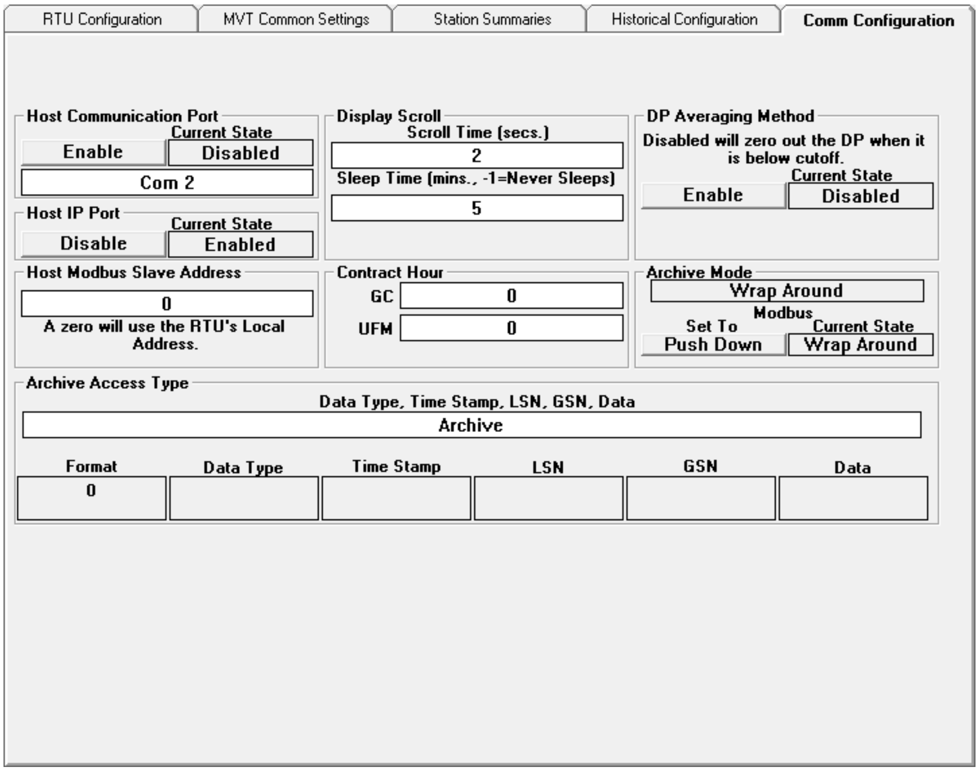


Figure 3-12. Comm Configuration tab

Field	Description
Host Communication Port	
Enable/Disable	Click this button to allow (enable) or prevent (disable) communications to a SCADA host computer.
Current State	This read-only field shows **Enabled** if communications to a host SCADA computer are allowed, or **Disabled** if communications to a host SCADA computer are not allowed.
Com *n*	Use the drop-down menu to select the ControlWave Micro communication port used to communicate with the SCADA host computer and press the **[Enter]** key to save your selection.
Host IP Port	
Enable / Disable	Click this button to allow (enable) or prevent (disable) IP communications to a SCADA host computer.

Current State	This read-only field shows **Enabled** if IP communication to a SCADA host computer is allowed, or **Disabled** if IP communication to a SCADA host computer is not allowed.
Host Modbus Slave Address	Enter a slave address for the Modbus host if you don't want to use the RTU's local address.
<u>Display Scroll</u>	
Scroll Time	Enter the desired time (in seconds) the keypad/display should present a particular screen before scrolling to the next screen here and press the **[Enter]** key to save the value.
Sleep Time	Enter the desired sleep time (in minutes) for the keypad/display. If there is no keypad activity for this length of time, the display shuts off to conserve power. If you set this to "-1" the display does not sleep.
<u>Contract Hour</u>	
GC	Specify the contract hour to start daily GC archives.
UFM	Specify the contract hour to start daily UFM archives.

<u>DP Averaging Method</u>

Enable / Disable	The averaging method for the differential pressure is always flow-dependent time-weighted linear averaging. If the flow falls below a pre-determined cutoff point, you may want to set the collected DP value to zero, rather than attempting to include what may be inaccurate low DP values; to do this, click this button so that **Enabled** shows as the current state. Otherwise, leave it at **Disabled**.
Current State	This read-only field shows **Enabled** if the low flow cutoff DP averaging method is allowed, or **Disabled** if it is not allowed.

<u>Archive Mode</u>

Caution	**Until you configure the archive mode, the Station Manager application cannot store any data.**
Push Down / Wrap Around	This read-only field shows whether the data is archived in push down mode or wrap around mode. In **Push Down Mode** each new record of data pushes the previous records further down into the data structure, and the last record is deleted. In **Wrap Around Mode** each new incoming record of data overwrites the oldest record.
Modbus Set To and **Current State**	Use the button to toggle the archive mode to the one shown on the label of the button:

Click **Wrap Around** to set it to Wrap Around; the **Current State** now shows “Wrap Around” and the label on the button changes to “Push Down.”

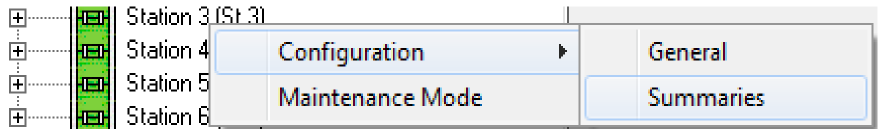
Click **Push Down** to set it to Push Down; the **Current State** now shows “Push Down” and the label on the button changes to “Wrap Around.”

<u>Archive Access Type</u>

Data Type selection box	Choose the type of archive data in the archive you want to view, so Station Manager can display it properly.
Format	Shows the archive mode. For a description of the different modes, see the online help in ControlWave Designer for the ARCHIVE function block.
Data Type	Shows the type of data.
Time Stamp	Shows the time stamp of the archive record.
LSN	Optionally shows the local sequence number of the archive record.
GSN	Optionally shows the global sequence number of the archive record.
Data	Shows the data for the archive record.

3.2.6 Station Configuration Tab (Station Configuration)

Station Manager supports up to six individual stations. Each station supports one or more meter runs. Either left click on a station icon, or right-click on the icon and choose from the pop-up menu to open menus for that station. To access the Station Configuration tab, choose **Configuration** > **General**.



Note: For information on Maintenance Mode for the station, see *Section 3.2.27*

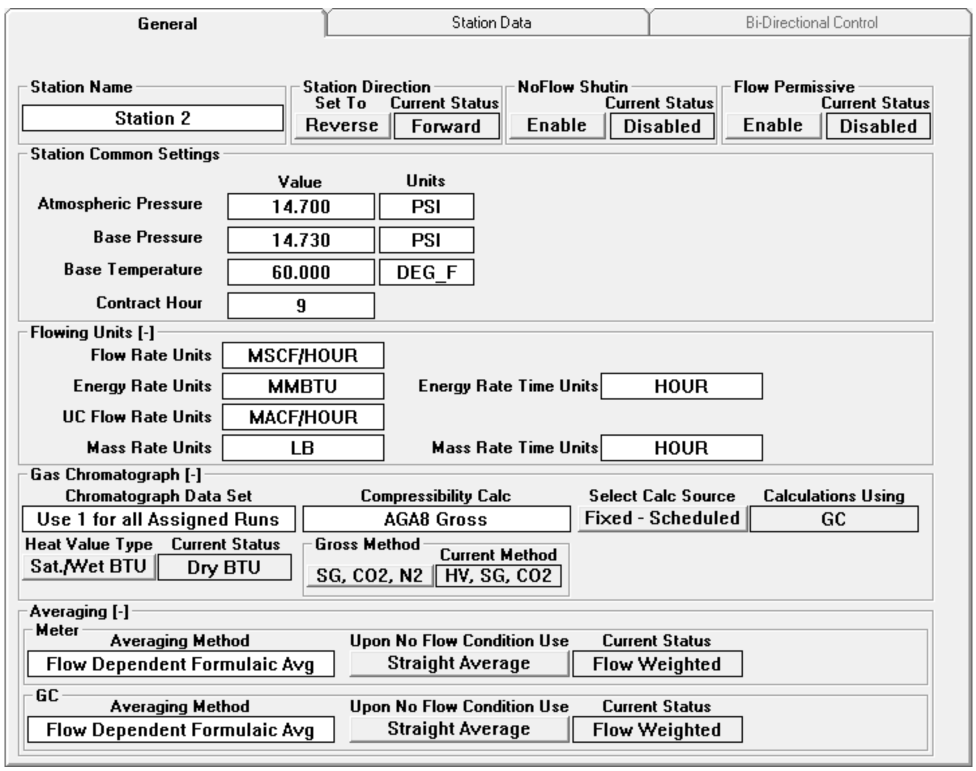


Figure 3-13. Station Configuration tab

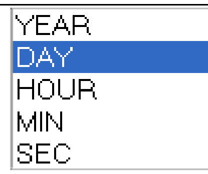
Field	Description
Station Name	The **station** refers to the natural gas measurement station. Each station has one or more meter runs assigned to it. Enter a name and press the **[Enter]** key to save your entry.
Station Direction	The Station Direction fields only appear for even numbered (2, 4, or 6) stations; odd numbered stations are always "Forward" direction.
Set To Reverse /	The current direction for the station is reflected in the

Forward	Current Status field. Click this button to toggle the direction to that shown on the button. It this station is to be an independent station, not part of a bi-directional pair of stations, then select "Forward." If this station is going to be part of a bi-directional pair of stations, select "Reverse." See *Section 3.2.8* for information on bi-directional control.
Current Status Reverse / Forward	Shows the current direction configured for this station.
Noflow Shutin	When NoFlow Shutin is enabled, if no station flow is detected, Station Manager will shut in the station bi-directional block valves.
Enable/Disable	The current status for NoFlow Shutin is reflected in the Current Status field. Click this button to toggle the state to that shown on the button.
Current Status Enabled / Disabled	Shows the current status of NoFlow Shutin for this station.
Flow Permissive	When Flow Permissive is enabled, Station Manager checks for valid flow conditions before changing the direction or enabling PID control.
Enable/Disable	The current status for Flow Permissive is reflected in the Current Status field. Click this button to toggle the state to that shown on the button.
Current Status Enabled / Disabled	Shows the current status of Flow Permissive for this station.
Station Common Settings	
Atmospheric Pressure Value, Units	Enter the standard atmospheric (barometric) pressure for the station in the **Value** field and press **[Enter]** to save your entry. Then select the desired **Units** of measure from the drop-down menu and press **[Enter]** to save your selection. The default is 14.7 PSI. **Note:** Units are absolute pressure units.
Base Pressure Value, Units	Enter the base pressure that the Station Manager application should use when it performs AGA calculations in the **Value** field and press **[Enter]** to save your entry. Then select the desired **Units** of measure from the drop-down menu and press **[Enter]** to save your selection. The default is 14.73 PSI (absolute).
Base Temperature Value, Units	Enter the base temperature that the Station Manager application should use when it performs AGA calculations in the **Value** field and press **[Enter]** to save your entry. Then select the desired **Units** of measure from the drop-down menu and press **[Enter]**

	to save your selection. The default is 60 Deg F.
Contract Hour	The contract hour determines the start of the gas day. This is when the current day totals and averages get rolled over to the previous day totals and averages. The contract hour is based on a 24 hour clock; 1 PM is 13, 2 PM is 14, and so on. Midnight is 00. Enter the desired contract hour and press **[Enter]** to save your entry. The default is 9 (9AM).
Flowing Units	If not shown, click the [+] to display these fields.You can select units for corrected flow (Flow), Uncorrected (UC) Flow, and Energy rates for the combined station flow and energy rates independently of the meter run rates.
Flow Rate Units	Select the desired units of measure for the corrected flow rate from the drop-down menu and press **[Enter]** to save your selection. Flow rate units include:

MSCF/YEAR	Thousands of Standard Cubic Feet per Year
MSCF/DAY	Thousands of Standard Cubic Feet per Day
MSCF/HOUR	Thousands of Standard Cubic Feet per Hour
MSCF/MIN	Thousands of Standard Cubic Feet per Minute
MSCF/SEC	Thousands of Standard Cubic Feet per Second
M3/YEAR	Standard Cubic Meters per Year
M3/DAY	Standard Cubic Meters per Day
M3/HOUR	Standard Cubic Meters per Hour
M3/MIN	Standard Cubic Meters per Minute
M3/SEC	Standard Cubic Meters per Second
MMSCF/YEAR	Millions of Standard Cubic Feet per Year
MMSCF/DAY	Millions of Standard Cubic Feet per Day
MMSCF/HOUR	Millions of Standard Cubic Feet per Hour
MMSCF/MIN	Millions of Standard Cubic Feet per Minute
MMSCF/SEC	Millions of Standard Cubic Feet per Second
MM3/YEAR	Millions of Cubic Meters per Year
MM3/DAY	Millions of Cubic Meters per Day
MM3/HOUR	Millions of Cubic Meters per Hour
MM3/MIN	Millions of Cubic Meters per Minute
MM3/SEC	Millions of Cubic Meters per Second

	CCF/YEAR	Hundreds of Cubic Feet per Year
	CCF/DAY	Hundreds of Cubic Feet per Day
	CCF/HOUR	Hundreds of Cubic Feet per Hour
	CCF/MIN	Hundreds of Cubic Feet per Minute
	CCF/SEC	Hundreds of Cubic Feet per Second
Energy Rate Units	Select the desired units of measure for the energy rate from the drop-down menu and press **[Enter]** to save your selection. Energy rate units include:	
	MMBTU	Millions of British Thermal Units
	MJ	Megajoules
	KJ	Kilojoules
	J	Joules
	ERG	Ergs
	KCAL	Kilocalories
	CAL	Calories
	CHU	Centigrade Heat Unit
	KWH	Kilowatt Hour
	QUAD	short scale quadrillion British Thermal Units
	THERM	Therms
	TONTNT	Tons of TNT
	TONCOAL	Tons of coal
	MMMBTU	Billions of British Thermal Units
	GJ	Gigajoules
	BTU	British Thermal Units
	MMBTU605	Millions of British Thermal Units at 60.5 degrees F.
	MMMBTU605	Billions of British Thermal Units at 60.5 degrees F.
	BTU605	British Thermal Units at 60.5 degrees F.
Energy Rate Time Units	Select the desired units of time to associate with the energy rate units from the drop-down menu and press **[Enter]** to save your selection.	



UC Flow Rate Units

Select the desired units of measure for the uncorrected flow rate from the drop-down menu and press **[Enter]** to save your selection.

Uncorrected flow rate units include:

MACF/YEAR	Thousands of Actual Cubic Feet per Year
MACF/DAY	Thousands of Actual Cubic Feet per Day
MACF/HOUR	Thousands of Actual Cubic Feet per Hour
MACF/MIN	Thousands of Actual Cubic Feet per Minute
MACF/SEC	Thousands of Actual Cubic Feet per Second
M3/YEAR	Actual Cubic Meters per Year
M3/DAY	Actual Cubic Meters per Day
M3/HOUR	Actual Cubic Meters per Hour
M3/MIN	Actual Cubic Meters per Minute
M3/SEC	Actual Cubic Meters per Second
MMACF/YEAR	Millions of Actual Cubic Feet per Year
MMACF/DAY	Millions of Actual Cubic Feet per Day
MMACF/HOUR	Millions of Actual Cubic Feet per Hour
MMACF/MIN	Millions of Actual Cubic Feet per Minute
MMACF/SEC	Millions of Actual Cubic Feet per Second
MM3/YEAR	Millions of Cubic Meters per Year
MM3/DAY	Millions of Cubic Meters per Day
MM3/HOUR	Millions of Cubic Meters per Hour
MM3/MIN	Millions of Cubic Meters per Minute
MM3/SEC	Millions of Cubic Meters per Second
CCF/YEAR	Hundreds of Cubic Feet per Year
CCF/DAY	Hundreds of Cubic Feet per Day
CCF/HOUR	Hundreds of Cubic Feet per Hour
CCF/MIN	Hundreds of Cubic Feet per Minute
CCF/SEC	Hundreds of Cubic Feet per Second

Mass Rate Units

Select the mass rate units. Choices are:

LB	is pounds
MG	is milligrams

KG	is kilograms
G	is grams
USTON	is a United States ton
UKTON	is a United Kingdom ton
MTON	is a metric ton
OZ	is an ounce
TROYOZ	is a troy ounce
GRAIN	is a grain
SLUG	is a slug
CARAT	is a carat

Mass Rate Time Units

Select the mass rate time units. Choices are:

YEAR
DAY
HOUR
MIN
SEC

<u>Gas Chromatograph</u>

If not shown, click the [+] to display these fields.

Heat Value Type Dry BTU / Sat. Wet BTU

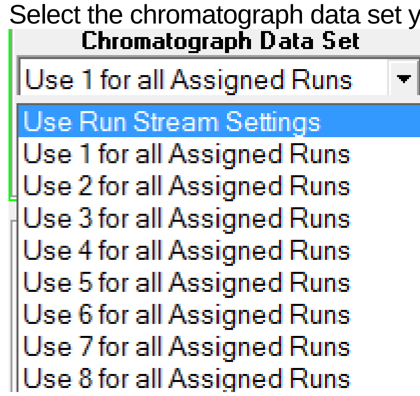
This button toggles the Heat Value type. Click the **Dry BTU** button if you want Station Manager to use the dry BTU value from the gas chromatograph, or click the **Sat. Wet BTU** button if you want Station Manager to use the saturated (wet) BTU value from the gas chromatograph.

Current Status Dry BTU / Sat. Wet BTU

Shows the current BTU Type for this station.

Chromatograph Data Set

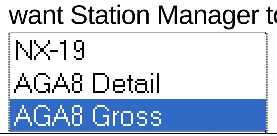
Select the chromatograph data set you want to use.



If you choose "Use Run Stream Settings," a GC settings section shows on the General run configuration tab.

Compressibility Calc

Use the drop-down menu to select the calculation you want Station Manager to use for compressibility.

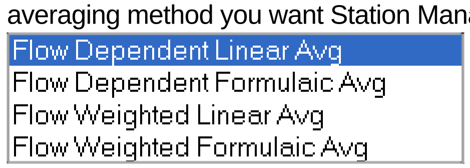


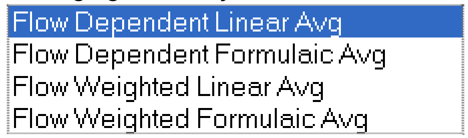
Gross Method SG,CO2, N2 / HV, SG, CO2

If you choose AGA8 Gross for your compressibility calculations select the gross method. The current method shows in the **Current Method** field; to toggle

<table>
<tr><td></td><td>the gross method used to the other method, click the button; the newly chosen method shows in the Current Method field, and the now unused method appears on the label of the button.

Choices include:
<table>
<tr><td>SG, CO2, N2</td><td>The Station Manager application performs calculations using inputs of relative density (specific gravity or SG), and the mole fractions of nitrogen (N2) and carbon dioxide (CO2).</td></tr>
<tr><td>HV, SG, CO2</td><td>The Station Manager application performs calculations using inputs of the heating value (HV), the relative density (specific gravity or SG), and the mole fraction of carbon dioxide (CO2).</td></tr>
<tr><td colspan="2">Note: Station Manager ignores the method setting for calculations other than AGA8 Gross.</td></tr>
</table></td></tr>
<tr><td>Select Calc Source Fixed-Scheduled / GC</td><td>A GC failure could include a communication failure, a range problem and so on.

This button toggles the calculation source used during a GC failure. Click the Fixed - Scheduled button if you want Station Manager to use fixed data during a GC failure. Click the GC button if you want Station Manager to use in-use GC data during a GC failure.</td></tr>
<tr><td>Calculations Using</td><td>Shows the current choice for the calculation source to be used during a GC failure.</td></tr>
<tr><td><u>Averaging</u></td><td>If not shown, click the [+] to display these fields.</td></tr>
<tr><td>Meter Averaging Method</td><td>Use the drop-down menu to select the API 21.1 averaging method you want Station Manager to use.

</td></tr>
<tr><td>Upon No Flow Condition Use</td><td>This button toggles whether the Station Manager application uses a flow weighted average, or a straight average during a no flow condition for meter averaging. Click the Flow Weighted button to use a flow weighted average when there is no flow. Click the Straight Average button to use a straight average when there is no flow.</td></tr>
<tr><td>Current Status</td><td>Shows the current choice for what Station Manager uses for averaging for the meter during a no flow condition.</td></tr>
</table>

GC Averaging Method	Use the drop-down menu to select the **API 21.1** averaging method you want Station Manager to use. 
Upon No Flow Condition Use	This button toggles whether the Station Manager application uses a flow weighted average, or a straight average during a no flow condition for GC averaging. Click the **Flow Weighted** button to use a flow weighted average when there is no flow. Click the **Straight Average** button to use a straight average when there is no flow.
Current Status	Shows the current choice for what Station Manager uses for averaging for the GC during a no flow condition.

3.2.7 Station Data Tab (Station Configuration)

The Station Data tab shows the current station flow, energy and mass rates in the units chosen on the General tab. To access the Station Data tab, right click on the station icon and choose **Configuration** > **Summaries** from the pop-up menus.

Station Accumulations

The current hour, contract day and contract month, and the previous hour, contract day and contract month accumulations are displayed here.

Station Mass Accumulations

The current hour, contract day and contract month, and the previous hour, contract day and contract month mass accumulations are displayed here.

Forward / Reverse

When configuring for bi-directional flow, the stations must be paired (1 and 2; 3 and 4; or 5 and 6).

The odd-numbered stations (1, 3, or 5) are the “forward” flowing stations, and the even-numbered stations (2, 4, or 6) are the “reverse” flowing stations.

When a pair of stations is configured for bi-directional flow, the Station Summary screen for the odd-numbered (forward) stations will indicate flow and energy rates in the “forward” column when flow is in the “forward” direction, and will indicate flow and energy rates in the “reverse” column when flow is in the “reverse” direction.

However, the Station Summary screen for the even-numbered (reverse) stations, will indicate flow and energy rates in the “forward” column when flow for the combined station is in the “reverse” direction, and will always indicate no flow or energy rate in the “reverse” column.

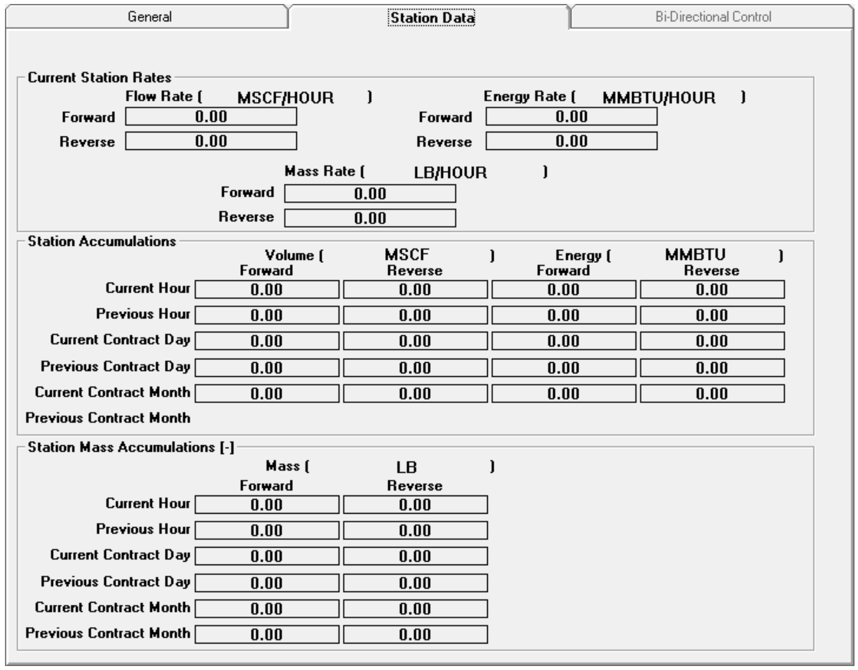


Figure 3-14. Station Data tab

3.2.8 Bi-Directional Control Tab (Station Configuration)

Note: The Bi-directional Control tab is only available on even-numbered (2, 4, or 6) stations, and only when the selected direction is “Reverse.” You set a station to the reverse direction using the “Station Direction” button on the Station Configuration tab; see *Section 3.2.6* for details. To access the Bi-Directional Control tab, right-click on the station icon, then choose **Configuration > Bi-Directional** from the pop-up menus.

The Station Manager application provides bi-directional measurement; that is, one physical run may measure flow in both the “forward” and “reverse” directions. For measurement purposes, flow in the “forward” direction is accounted for in one run, and flow in the “reverse” direction is accounted for in a separate run.

In the Station Manager controller, this is handled by assigning odd-numbered runs (Run 1, 3, 5, or 7) to odd-numbered stations (Station 1, 3, or 5), which will be designated as the “forward” station, and the even-numbered runs (Run 2, 4, 6, or 8) to the even-numbered stations (Station 2, 4, or 6), which will be designated as the “reverse” station.

The Station Manager controller can accommodate bi-directional measurement where the gas physically travels through the meter run in both directions, or where the gas always travels through the run in one direction.

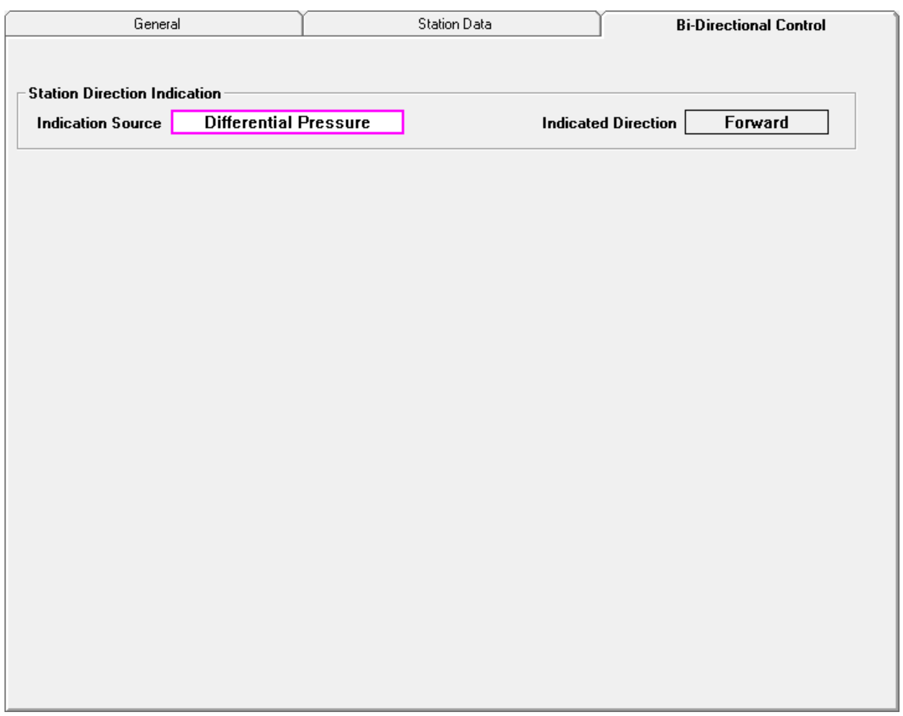


Figure 3-15. Bi-Directional Control tab

Field	Description
Station Direction Indication	
Indication Source	The "Indication Source" selection controls the "Indication Direction." **Your choice determines what variable causes a direction change.** Your choice of "Indication Source" also determines the appearance of the Bi-Directional Control tab. See the sub-sections below which describe the tab fields for the possible indication sources.
Indicated Direction	Shows the currently selected direction ("Forward" or "Reverse") as determined by the Indication Source. **Note:** In earlier versions of Station Manager, this field was called **Detected Direction**.

Indication Source is "Differential Pressure"

When "Differential Pressure" is chosen as the "Indication Source", the following information is available on the screen: The "Indicated Direction" is determined by the value of the differential pressure.

If the differential pressure is positive (greater than or equal to 0.0) the indicated direction will be "Forward".

If the differential pressure is negative (less than 0.0) the indicated direction will be "Reverse".

If there are multiple runs configured, and there is flow through more than one run, direction is determined by a voting scheme. Whatever the majority of the runs indicates determines the station direction. Tie results in unchanged results from previous state.

Indication Source is "Frequency Input"

When "Frequency Input" is chosen as the "Indication Source", the following information is available on the screen: The "Indicated Direction" is determined by the value of the frequency.

If the frequency on a forward run is above the cutoff, the Indicated Direction is "Forward."

If the frequency on a reverse run is above the cutoff, the Indicated Direction is "Reverse."

If there are multiple runs configured, and there is flow through more than one run, direction is determined by a voting scheme. Whatever the majority of the runs indicates determines the station direction. A tie results in unchanged results from the previous state.

Indication Source is "Single Discrete Input"

When "Single Discrete Input" is chosen as the "Indication Source", the following information is available on the screen: The "Indicated Direction" is determined by the state of the digital input assigned to STx Direction Indicator, (where x = 2 , 4, or 6).

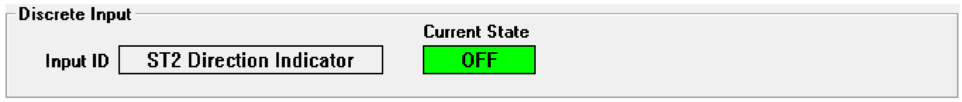


Figure 3-16. Fields on Bi-Directional Control Tab for "Single Discrete Input" Choice

Field	Description
<u>Discrete Input</u>	
Input ID	The input ID will be "ST2 Direction Indicator" for Station 2, "ST4 Direction Indicator" for Station 4 or "ST6 Direction Indicator" for Station 6.
Current State	The "Current State" field shows the state of the digital input. If the state of digital input is OFF (FALSE), the indicated direction will be "Forward". If the state of digital input is ON (TRUE), the indicated direction will be "Reverse".

Indication Source is "Limit Switch / DI Sense"

When "Limit Switch/DI Sense" is chosen as the "Indication Source", the following information is available on the screen: The "Indicated Direction" is determined by the state of multiple digital inputs.

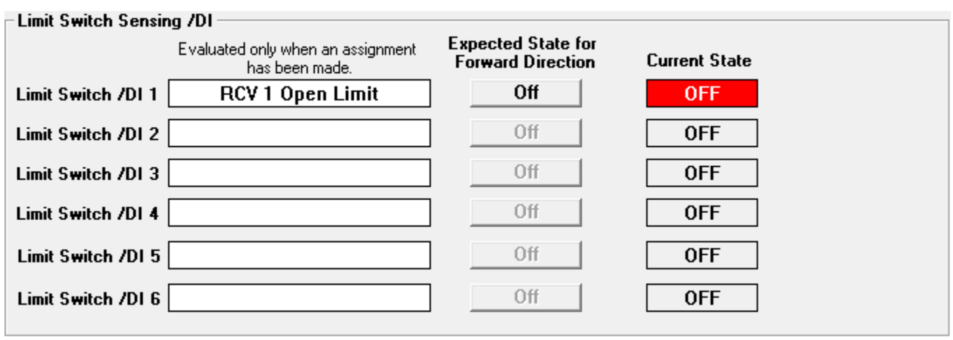


Figure 3-17. Fields on Bi-Directional Control Tab for "Limit Switch / DI Sense" Choice

Field	Description
<u>Limit Switch Sensing / DI</u>	
Limit Switch / DI x	Up to 6 digital inputs may be chosen to be evaluated. These digital inputs may be valve limit switches, or other digital inputs.

Expected State for Forward Direction	In addition to assigning the digital inputs to be evaluated, the state of the digital input (OFF or ON) that indicates "Forward Direction" must be selected.
Current State	The "Current State" field shows the state of each of the digital inputs.

In *Figure 3-18*, there are 6 valve limit switches that determine the direction of flow through the station. When block valves 4, 5, and 6 are open, and the block valves 1, 2, and 3 are closed, there is forward flow through the station.

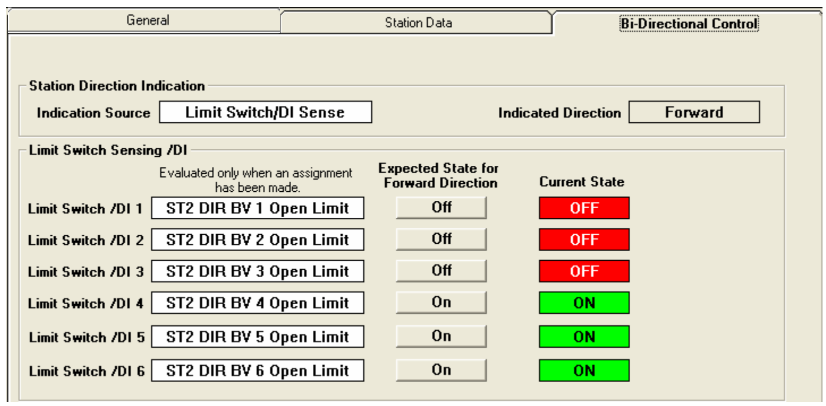


Figure 3-18. Limit Switch / Sensing DI

When block valves 4, 5, and 6 are closed, and the block valves 1, 2, and 3 are open, there is reverse flow through the station.

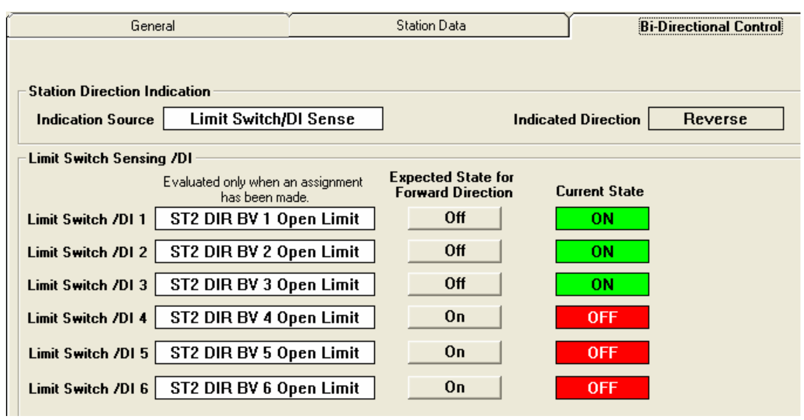


Figure 3-19. Limit Switch Sensing / DI – Reverse Flow

If there is a tie between the various inputs, no change of indicated direction occurs.

Indication Source is "Block Valve Dual LS Sense"

When "Block Valve Dual LS (Limit Switch) Sense" is chosen as the "Indication Source", the following information is available on the screen: The "Indicated Direction" is determined by the state of a pair of limit switches from one or more valves.

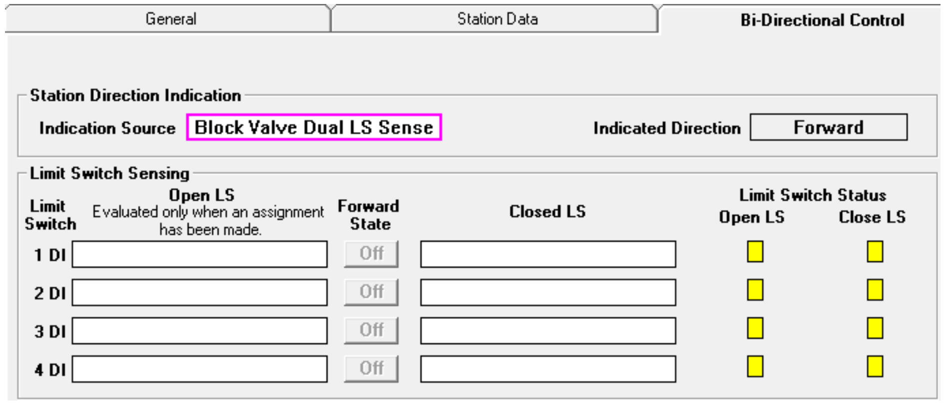
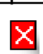
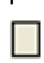


Figure 3-20. Block Valve Dual LS Sense

Field	Description
Limit Switch Sensing I	Four pairs of limit switches may be chosen to be evaluated.
Limit Switch / DI x	Up to 4 pairs of digital inputs may be chosen to be evaluated. These digital inputs may be valve limit switches, or other digital inputs.
Open LS	Select the digital input representing the opened limit switch for this valve.
Closed LS	Select the digital input representing the closed limit switch for this valve.
Forward State	In addition to assigning the limit switches to be evaluated, the state of the digital input (OFF or ON) that indicates "Forward Direction" must be selected for the Open Limit Switch. The opposite state for the Closed Limit Switch is assumed.
Limit Switch Status	The "Current State" field shows the state of each of the limit switches. The "Open LS" and "Close LS" fields show the state of each of the limit switches. Open LS Close LS  .  Opened LS On, Closed LS Off, Valve is Opened.   Opened LS Off, Closed LS On, Valve is Closed.

Opened LS Off, Closed LS Off, Valve is travelling.

Opened LS On, Closed LS On, Valve position unknown.

In *Figure 3-21*, there are two valves used to determine the direction of flow through the station. When block valve 1 for Station 2 is open, and block valve 2 for Station 2 is closed, there is forward flow through the station.

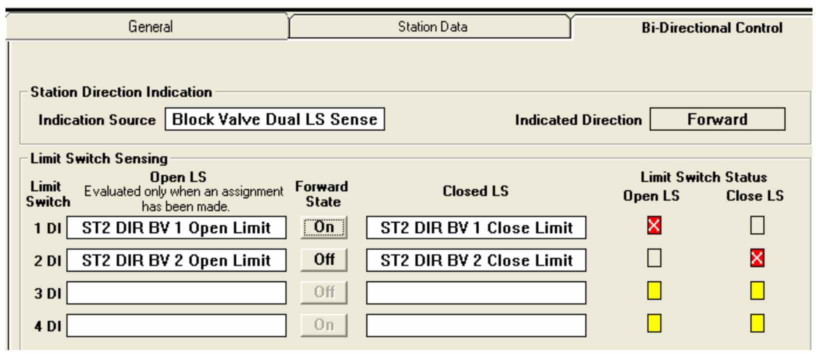


Figure 3-21. Block Valve Dual LS Sense

When the block valve 1 for Station 2 is closed, and block valve 2 for Station 2 is open, there is reverse flow through the station.

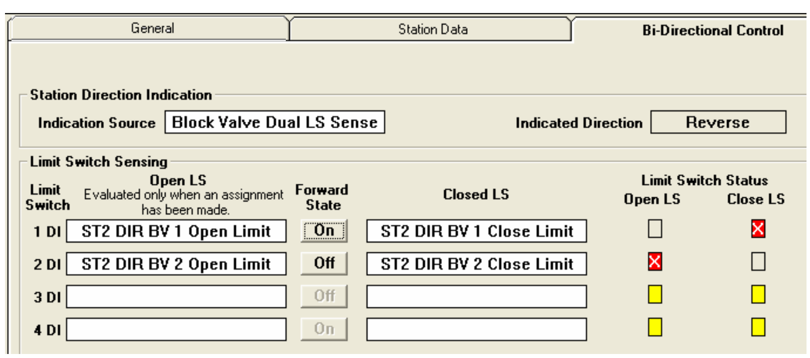


Figure 3-22. Block Valve Dual LS Sense

If there is a tie between the various inputs, then no change of indicated direction occurs.

Indication Source is "Software Switch"

When "Software Switch" is chosen as the "Indication Source", the following information is available on the screen: The "Indicated Direction" is determined by the state of a software switch. This is a variable (BI.STx_DIR, where x = 1 or 5) that may be set through either the local or SCADA interface. This may be changed via the SCADA interface when using either the BSAP protocol or the Enron MODBUS protocol.

If the state of the software switch is "Forward" (OFF), then flow through the station is in the forward direction.

If the state of the software switch is "Reverse" (ON), then flow through the station is in the reverse direction.

Indication Source is "Run Flow Rates"

When "Run Flow Rate" is chosen as the "Indication Source", the following information is available on the screen: The "Indicated Direction" is determined by the value of the run flow rate.

If the run flow rate on a forward run is above the cutoff, the Indicated Direction is "Forward."

If the run flow rate on a reverse run is above the cutoff, the Indicated Direction is "Reverse."

If there are multiple runs configured, and there is flow through more than one run, direction is determined by a voting scheme. Whatever the majority of the runs indicates determines the station direction. A tie results in unchanged results from the previous state.

Indication Source is "Station Flow Rates"

When "Station Flow Rates" is chosen as the "Indication Source" the "Indicated Direction" is determined by the value of the station flow rates.

If the forward station flow rate is greater than the reverse station flow rate, the indicated direction is "forward."

If the reverse station flow rate is greater than the forward station flow rate, the indicated direction is "reverse."

Indication Source is "Programmed Control"

The Station Manager controller can perform the control necessary to reconfigure a station for "forward" or "reverse" flow. This is done by allowing the user to configure the valves to manipulate, and the sequence by which to operate the valves.

To configure the Station Manager controller to perform this control, select "Programmed Control" as the "Indication Source". Once you click the **Click to Expand>>** link, the following will be available from the screen:

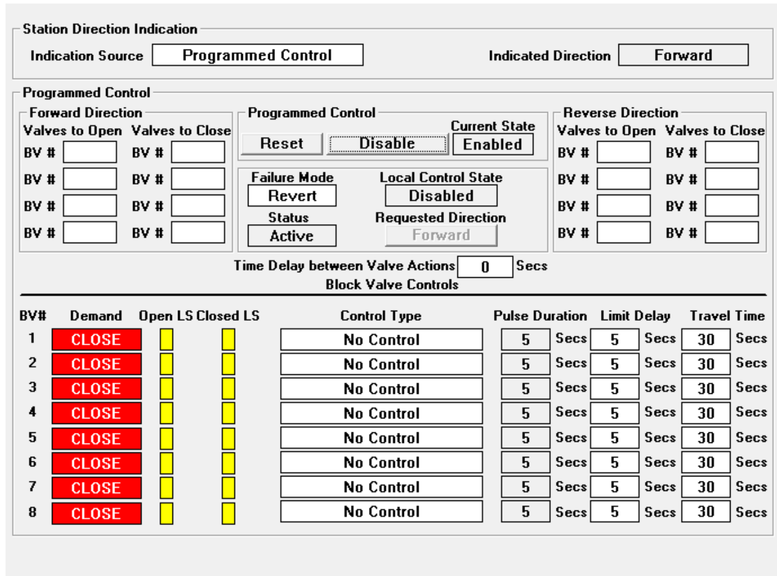


Figure 3-23. Bi-Directional Control Tab – Programmed Control Section

It is possible to select up to 8 valves to be operated, in a user specified sequence, to change the flow direction from Reverse-to-Forward, and select a different sequence to change the flow direction from Forward-to Reverse.

Field	Description
<u>Forward Direction / Reverse Direction I</u>	To configure the sequence of operations from Reverse-to-Forward, select the appropriate valves in the "Forward Direction" table. To configure the sequence of operations from Forward-to- Reverse, select the appropriate valves in the "Reverse Direction" table. **Note**: The two sequences can be independent of each other.
Valves to Open / Valves to Close	Up to 4 valves may be selected to open when changing direction. These valves may be chosen from any of the 8 block valves available for the station. When changing direction, all valves to close will be closed, and then the valves to open will be opened.
Failure Mode	In the event of a failure, that is, a valve is not indicated in the demanded position within the travel time of the valve, there are three modes of action that can be configured: **Revert** The "Revert" failure mode will cause the controller to attempt to return to the previous state in the event of a failure. When commanding the station from the forward-to-reverse direction, if a failure occurs, the valves will

	be commanded back to the “Forward” positions. When commanding the station from the reverse-to-forward direction, if a failure occurs, the valves will be commanded back to the “Reverse” positions. **ESD** The “ESD” or emergency shutdown failure mode will cause the station to be shut-in in the event of a failure. **Pause** The “Pause” failure mode will cause the sequence to halt, and allow the failed valve indication to be rectified, and will then continue.
Status	The following Status will be indicated: **Active** While a “Requested Direction” change is being processed, either until the direction change is successful or a failure occurs, the “Status” indication will be “Active”. **Disabled** When the “Programmed Control” is Disabled, the Status will be “Disabled” **ESD** If a station “ESD” has occurred, the “Status” indication will be ESD. **Failing** If a failure is occuring the “Status” indication will be “Failing” **Fail-ESD** If a failure mode is “ESD” and a failure has occurred, the status indication will be “Fail ESD.” **Fail-PSD** If a failure mode is “Pause” and a failure has occurred, the status indication will be “Fail PSD.” **Fail-Reverted** If a failure mode is “Revert” and a failure has occurred, and the Station Manager has completed going back to the previous state, the status indication will be “Fail-Reverted.” **Idle** When the “Indicated Direction” matches the “Requested Direction” the “Status” indication will be “Idle”. **Reverting** If a failure mode is “Revert” and a failure has occurred, the status will indicate “Reverting” while the Station Manager commands the valves back to

	the previous position.
Local Control State	The “Local Control State” is controlled by the settings on the “Local/Remote Settings” screen. When the “Local Control State” is “Enabled”, local control is enabled, and changing the “Requested Direction” will initiate the control action. When the “Local Control State” is “Disabled”, local control is disabled, changing the “Requested Direction” locally will not initiate the control action. The control action may only be initiated via SCADA, using the BC.STn_RDIR_REQ signal, where n = station number.
Requested Direction Forward / Reverse	When the local control state is enabled, toggling this button between “Forward” and “Reverse” will initiate the control action to change the direction of the station to match the direction indicated on the button.
Reset	If a failure has occurred, no further action will occur until the you click the **Reset** button. The “Enabled” state will be set back to the “Disabled” state when the reset operation is complete.
Programmed Control Enable / Disable	Enable or disable programmed control by toggling this button. Click **Enable** to enable programmed control; click **Disable** to disable programmed control.
Current State	Shows **Enabled** when programmed control is enabled; shows **Disabled** when programmed control is disabled.
Time Delay Between Valve Actions	This will be the amount of time, in seconds, between valve actions. When set to 0, the next valve in the sequence will operate immediately after the current valve command is done being issued. If it is necessary to wait until one valve is done operating until operating the next valve, the “Time Delay between Valve Actions” setting should be made greater than the travel time of the valve.
<u>Block Valve Controls</u>	
BV#	Up to 8 block valves can be configured for each station. The BV# in this field corresponds with the BV# configured in the “Programmed Control” configuration section of this screen.
Control Type	Each block valve may be configured for one of three control types. The settings for each block valve may be made independently of the other block valves. The “Control Type” selection may be one of the following: **Single Maintained Output** This option should be chosen when a single output is energized to change the position of the valve.

Dual Maintained Outputs

This option should be chosen when there are two outputs, one to open the valve, and the other to close the valve, and these outputs should be maintained, even after the appropriate limit switch indicates that the valve is in the demanded position.

Dual Pulsed Outputs

This option should be chosen when there are two outputs, one to open the valve, and the other to close the valve, and these outputs should pulsed until the appropriate limit switch indicates that the valve is in the demanded position. The “Limit Delay” setting can be used to maintain a pulse for some time after the limit switch is made.

Pulse Duration

The “Pulse Duration” is the amount of time to pulse the output. This setting only applies to the “Control Type” is “Dual Pulsed Outputs”, and may only be changed when this control type is selected.

Limit Delay

The “Limit Delay” is the amount of time, in seconds, that the output pulse will be maintained after an opened or closed limit is indicated. This only applies for the “Control Type” of “Dual Pulsed Outputs”.

Travel Time

The “Travel Time” field is the amount of time, in seconds, it takes the valve to fully travel from the open-to-close or close-to-open position. This entry may be changed from this screen.

Demand

The “Demand” field displays the demanded position of the Block Valve.

Open / Close LS

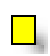
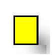
The “Open LS” and “Close LS” fields show the state of each of the limit switches.

Open LS	Close LS
 .	

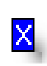
Opened LS On, Closed LS Off, Valve is Opened.

Opened LS Off, Closed LS On, Valve is Closed.

Opened LS Off, Closed LS Off, Valve is travelling.

Opened LS On, Closed LS On, Valve position unknown.

In *Figure 3-24*, there are two valves to be controlled by the Station Manager controller to change flow direction through the station.

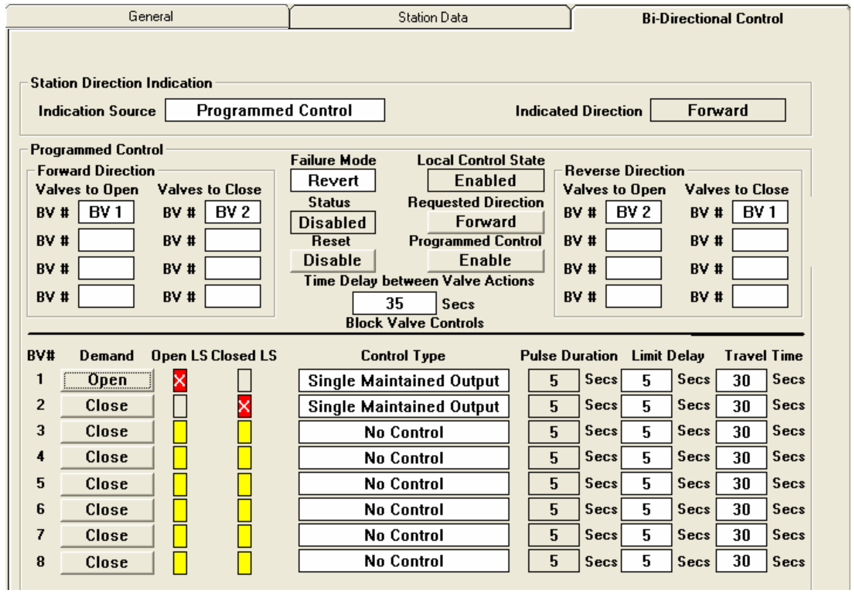


Figure 3-24. Programmed Control – Bi-Directional Control

To direct flow through the station in the "Forward" direction, Block Valve (BV) #1 must be opened, and BV# 2 must be closed.

To change the direction from forward to reverse, the "Programmed Control" must be enabled, and the "Requested Direction" must be set to "Reverse".

The first step is to enable the programmed control:

Immediately upon enabling programmed control, the "Status" indication will go to "Active" for the time delay between valve operations multiplied by the number of valves configured to be operated. In this example, the Status will remain in the "Active" state for 70 seconds.

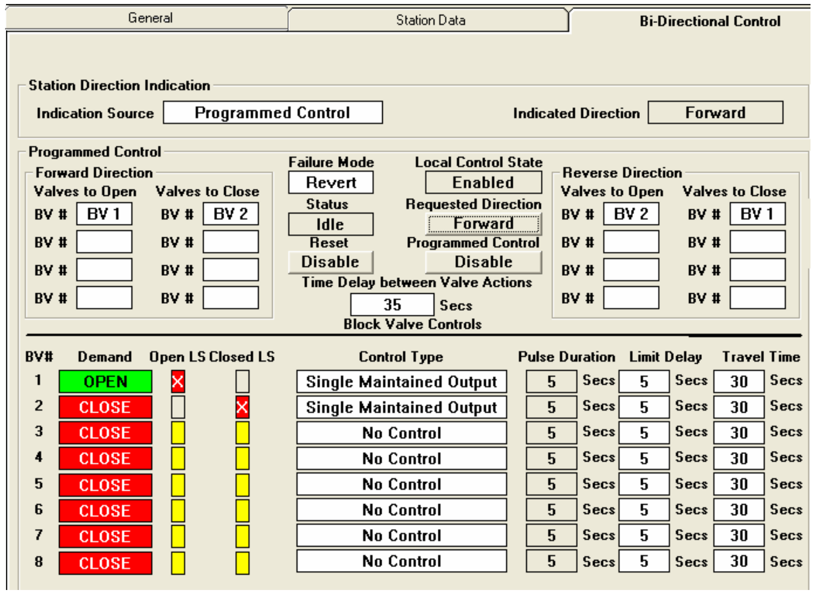


Figure 3-25. Programmed Control – Bi-Directional Control

After this, the “Status” will indicate “Idle”.

Change the “Requested Direction” by toggling the button from “Forward” to “Reverse”.

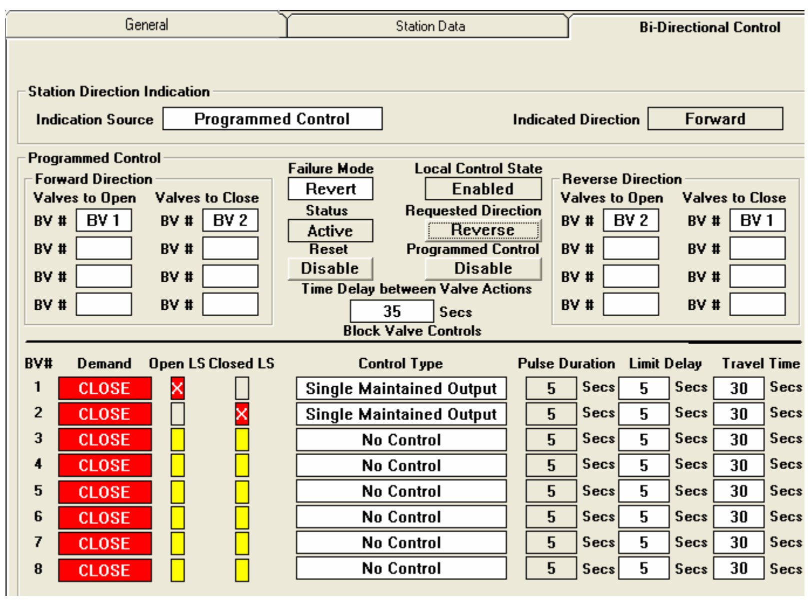


Figure 3-26. Programmed Control – Bi-Directional Control

The “Demand” indication for BV#1 changes to “Close”, since the first valve operation to change flow through the station to “Reverse” is to close BV#1. Block Valve # 1 should start closing.

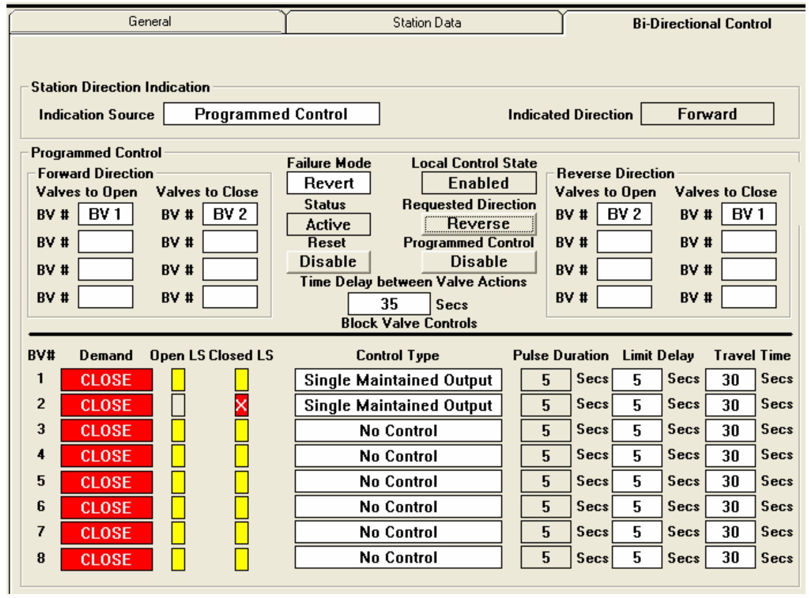


Figure 3-27. Programmed Control – Bi-Directional Control

The indication that the valve is closing should that be both limit switch indicators change to yellow. This indicates both the opened and closed limit switches are Off, and that the valve is traveling.

Block valve 1 should fully close within the travel time entry for the valve,

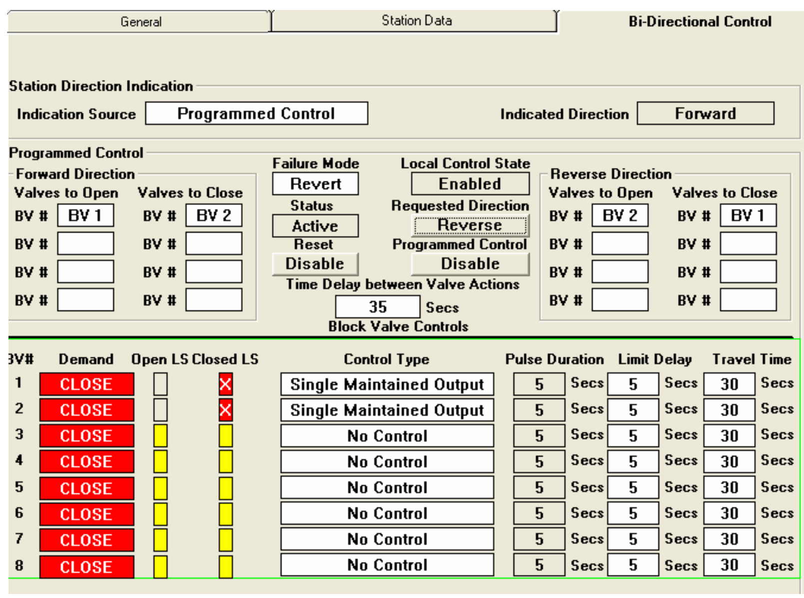


Figure 3-28. Programmed Control – Bi-Directional Control

After BV#1 has fully closed and until the time delay between valve actions has expired, both BV#1 and BV#2 demand should be closed, and the limit switches for both valves should indicate both valves are closed.

After the time delay between valve actions has expired, BV# 2 Demand should change to open.

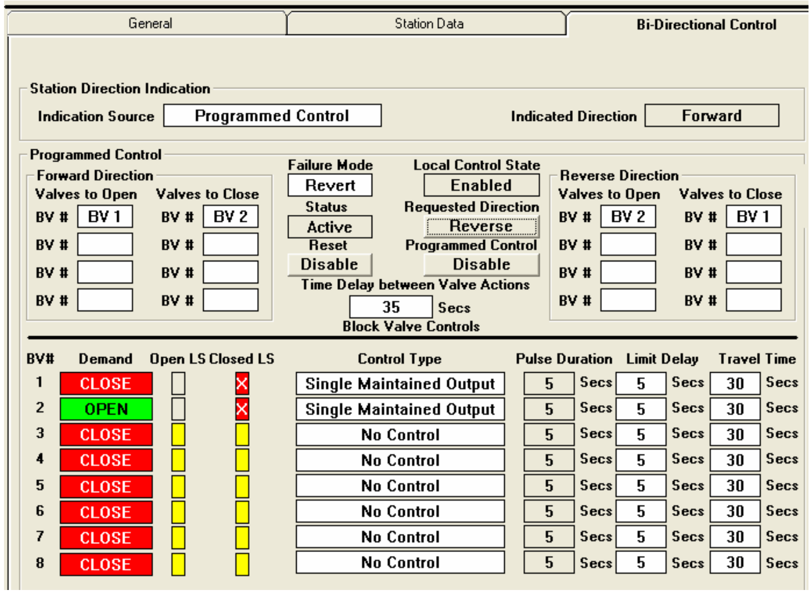


Figure 3-29. Programmed Control – Bi-Directional Control

This is because all of the valves that need to be closed are closed, and BV# 2 is the first valve that is required to be opened.

Block Valve # 2 should start to open.

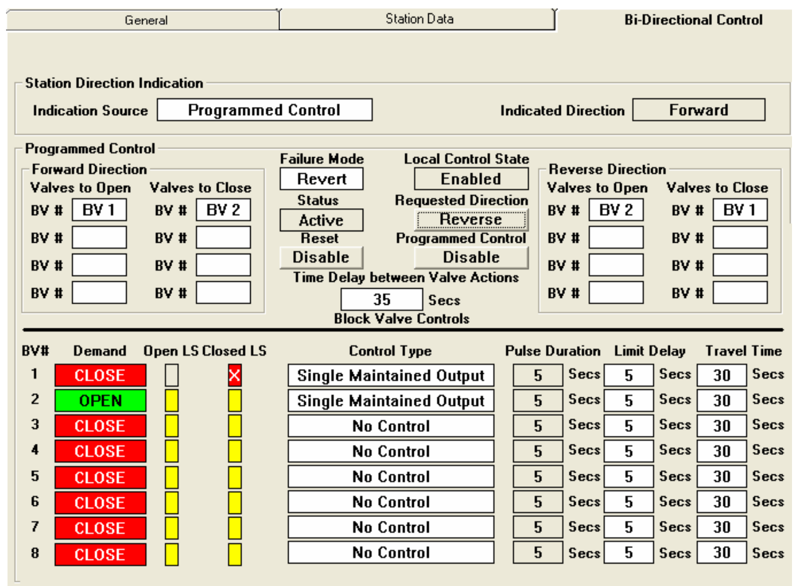


Figure 3-30. Programmed Control – Bi-Directional Control

The indication that the valve is opening should be that both limit switch indicators change to yellow. This indicates both the opened and closed limit switches are Off, and that the valve is traveling.

Block valve 2 should fully open within the travel time entry for the valve.

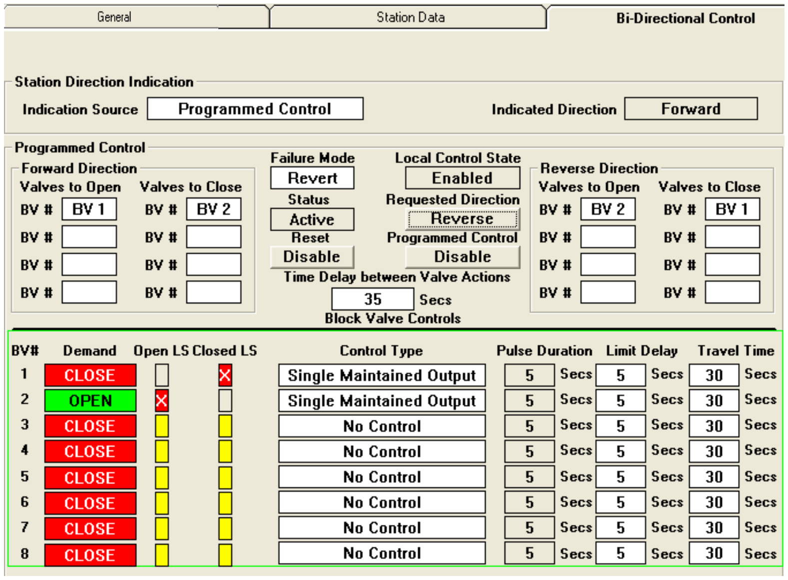


Figure 3-31. Programmed Control – Bi-Directional Control

After BV#2 has fully opened and until the time delay between valve actions has expired, the “Indicated Direction” will indicate “Forward”.

After the time delay between valve actions has expired, the “Indicated Direction” should indicate “Reverse” and the “Status” should indicate Idle.

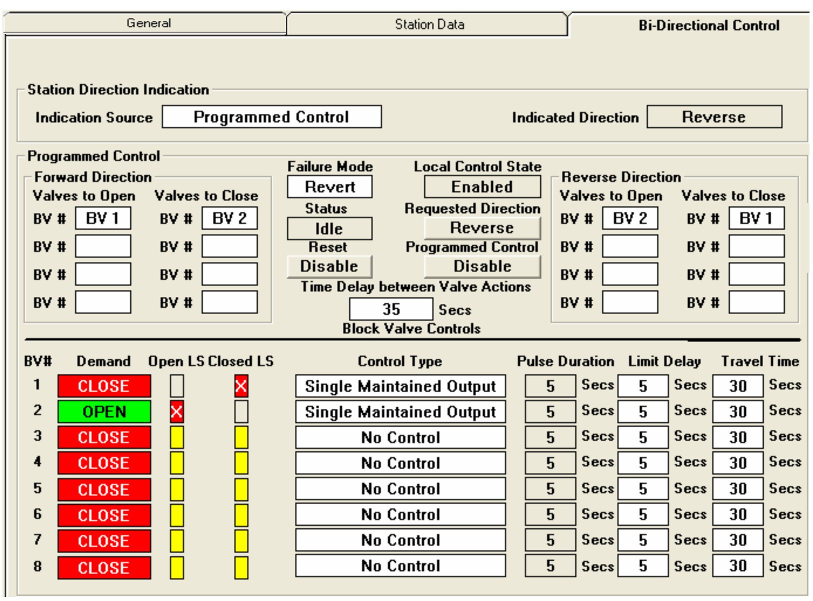


Figure 3-32. Programmed Control – Bi-Directional Control

It is now possible to change the direction from “Reverse” to “Forward”. This would be done by toggling the “Requested Direction” button to “Forward”, and observing similar action as described above, but for the valve sequence required to direct flow in the forward direction.

In this example, block valve #2 would be demanded to close, then 35 seconds after that, if the valve closes successfully, block valve #1 would be demanded to open. If block valve #1 successfully closes and 35 seconds after block valve #1 is demanded closed, the "Indicated Direction" will indicate "Forward" and the "Status" will indicate "Idle". While the valves were being operated, the "Status" would indicate "Active".

Examples for Configuring Bi-Directional Control

The controller may use separate measurement inputs (differential pressure, frequency, static pressure, and flowing temperature) for each direction (isolated transmitters), or it may use the same measurement inputs for both directions (non-isolated transmitters). It is possible to have a combination of isolated and non-isolated transmitters.

What follows are some examples of how to configure bi-directional measurement for some typical cases:

Example 1– Bi-Directional Control with One Orifice Measurement Run, Flow Reverses Direction, Non-Isolated Transmitters

To configure bi-directional measurement for a single physical orifice meter run, where gas flows through the run in both directions, and there are a single set of measurement inputs, follow these steps:

- Run 1 will be configured as an orifice measurement run, assigned to Station 1.
- Run 2 will be configured as an orifice measurement run, assigned to Station 2.
- Station 2 will be configured as a “reverse” measurement station.

Configuring the I/O

Configure the I/O for the odd-numbered (“forward”) run only. In this example, the Run 1 differential pressure, static pressure, and flow temperature inputs are assigned to analog input points 1, 2, and 3 respectively. No assignments are made for the Run 2 measurement inputs.

Inputs

PNT	PV	Zero	Span	Units	Assignment
1	180.7	-150.0	300.0	In/H2O	MID-001 Diff. Pressure
2	436.9	0.0	1000.0	PSI	MID-001 Static Pressure
3	68.8	0.0	140.0	DEG_F	MID-001 Temperature
4	16.7	0.0	100.0		

Figure 3-33. Configuring I/O for Bi-Directional Control (Example 1)

Configuring the Stations

Both Station 1 (the “forward” measurement station) and Station 2 (the “reverse” measurement station) must be configured.

Configure Station 1 by giving it a unique station name, and assigning the other configuration parameters as required.

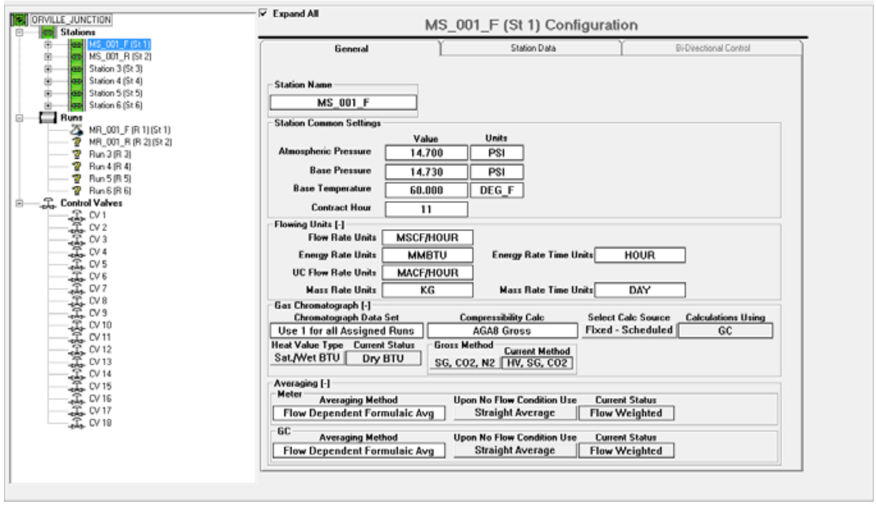


Figure 3-34. Configuring Station 1 for Bi-Directional Control (Example 1)

Configure Station 2 by giving it a unique station name and setting the “Station Direction” to “Reverse”. Assign the other configuration items as required.

In most cases, these configuration settings should be identical to the configuration settings for Station 1. However, it is possible to use a configuration in Station 1 (“forward”) that is different than the configuration in Station 2 (“reverse”).

Notice that after changing the “Station Direction” to “Reverse” that the Bi-Directional Control tab has become available for configuration.

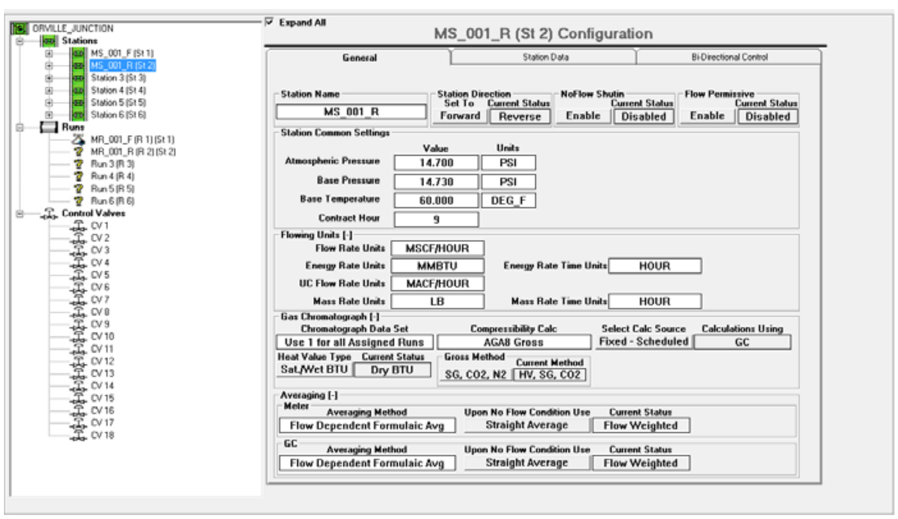


Figure 3-35. Configuring Station 2 for Bi-Directional Control (Example 1)

Configuring the Measurement Runs

Both Run 1 (the “forward” measurement run) and Run 2 (the “reverse” measurement run) must be configured.

On the General tab, configure Run 1 by giving it a unique “Run ID”, selecting a “Measurement Type” of “Orifice”, and making the “Station

Assignment" to Station 1 (MS_001_F in this example). Leave the "Static Pressure" and "Flowing Temperature Source" selected as "Hardware AI", using the "Default AI" as the "AI#". Change other settings as required.

In this example, because there is only a single measurement run, no run staging (also referred to as run switching or tube switching) is possible, so the "Run Staging Rank" may be left at 0.

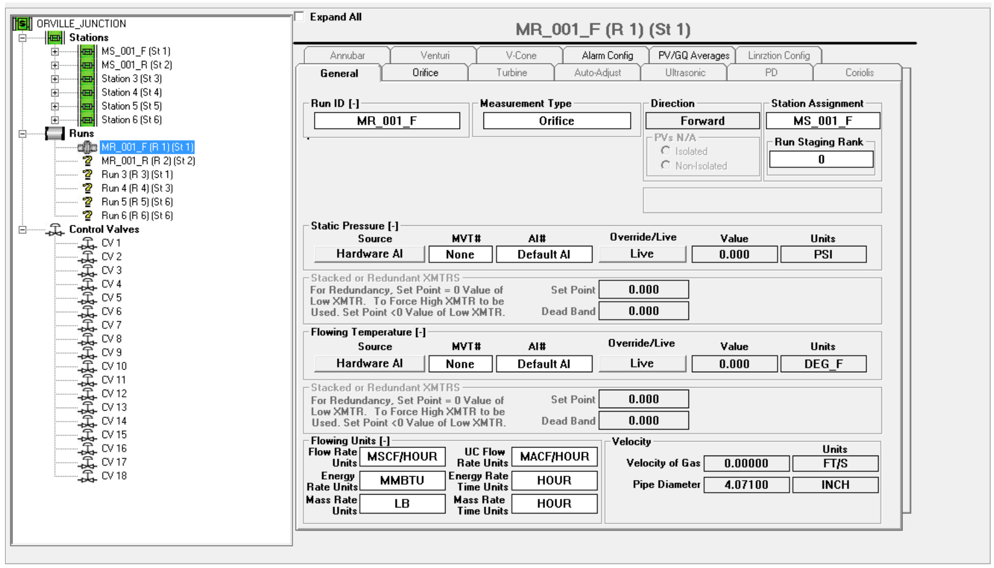


Figure 3-36. Configuring Run 1 for Bi-Directional Control (Example 1)

On the "Orifice" tab for Run 1, leave the "Differential Pressure Source" selected as "Hardware AI", using the "Default AI" as the "AI#". Change other settings as required.

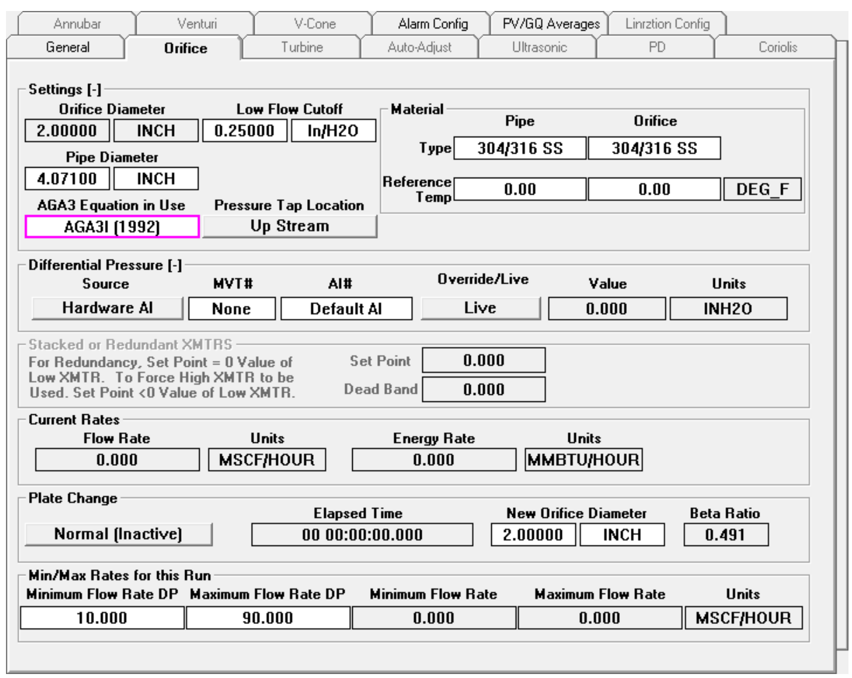


Figure 3-37. Configuring Run 1 Orifice tab for Bi-Directional Control (Example 1)

On the General tab, configure Run 2 by giving it a unique “Run ID”, selecting a “Measurement Type” of “Orifice”, and making the “Station Assignment” to Station 2 (MS_001_R in this example). Leave the “Static Pressure” and “Flowing Temperature Source” selected as “Hardware AI”, using the “Default AI” as the “AI#”. Change other settings as required.

Because Run 2 is assigned to Station 2 (which is configured as a “reverse” station), the “Direction” field changes to “Reverse”, and the items in the “PVs” box become available for configuration. In this example, since the measurement in both directions is being performed with a single set of measurement inputs, the “Non-Isolated” radio button should be selected.

When the “Non-Isolated” radio button is selected, the live input values for static pressure and flowing temperature applied to Run 1 are also applied to Run 2.

Because this run is assigned to a “reverse” measurement station, the option for changing the “Run Staging Rank” is disabled. It is important that the run staging rank for the reverse runs be left at 0.

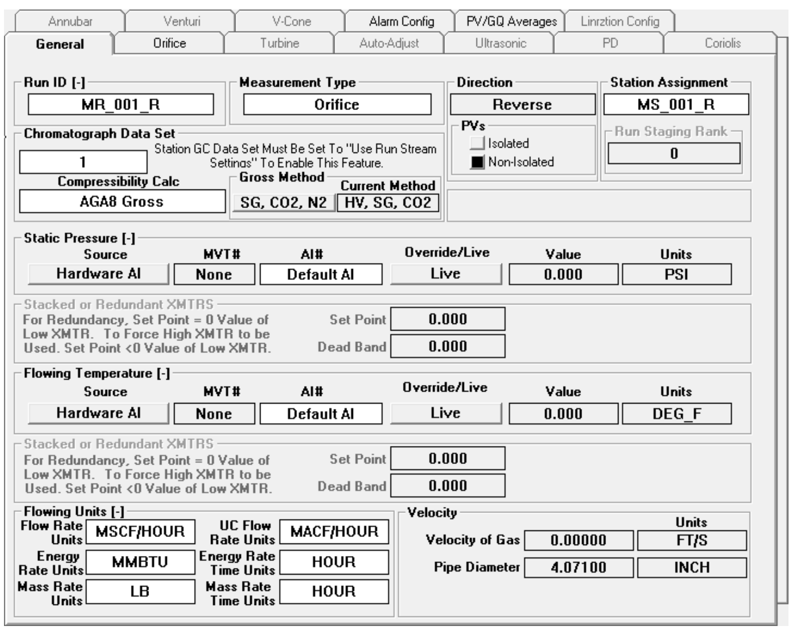


Figure 3-38. Configuring General tab (for Run 2) in Bi-Directional Control (Example 1)

On the “Orifice” tab for Run 2, leave the “Differential Pressure Source” selected as “Hardware AI”, using the “Default AI” as the “AI#”. Change all other settings to the same values as set on Run 1, except for “Pressure Tap Location”. Set the pressure tap location on Run 2 to be the opposite of the pressure tap location on Run 1. For instance, if the pressure tap location on Run 1 is “Upstream,” set the pressure tap location on Run 2 to "Downstream."

Because the "Non-Isolated" PVs radio button was selected on the "General" tab, the live input value for differential pressure from Run 1 is also routed to Run 2. However, the differential pressure value is only applied to Run 2 for measurement when the bi-directional flow indication determines gas is flowing through the physical station in the reverse direction, otherwise, the differential pressure is forced to 0.0.

When the flow direction is indicated as "reverse", the differential pressure will be indicated on Run 2, and the differential pressure for Run 1 will be forced to 0.0.

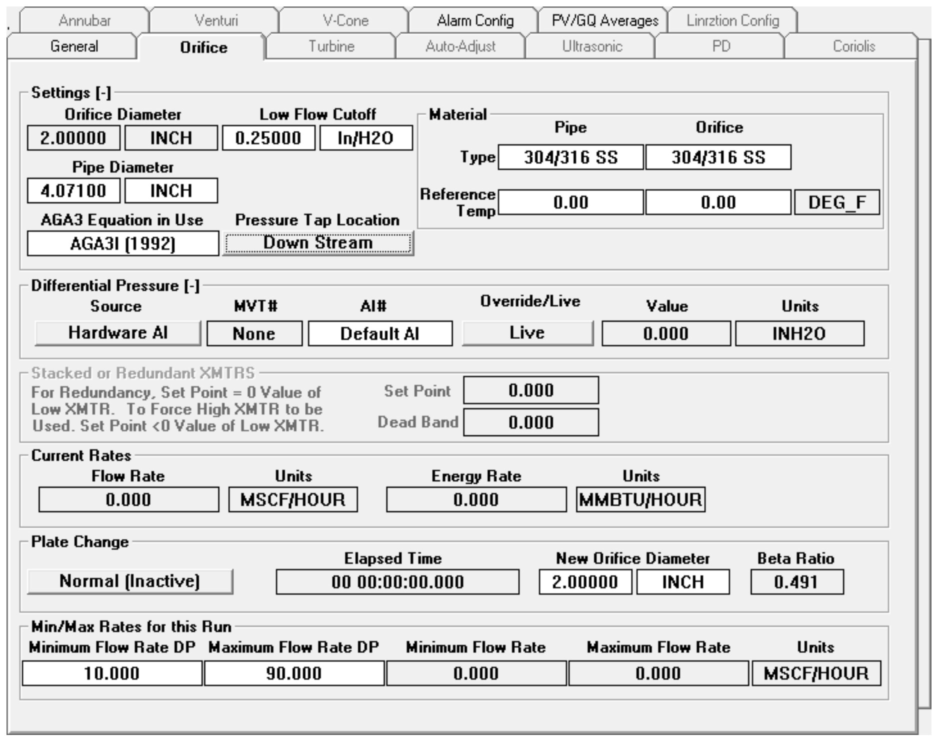


Figure 3-39. Configuring Run 2 Orifice tab for Bi-Directional Control (Example 1)

Example 2– Bi-Directional Control for One Measurement Run, Flow in One Direction, Isolated Transmitters

To configure bi-directional measurement for a single physical orifice meter run, where gas flows through the run in one direction, and there are a single set of measurement inputs, follow these steps:

- Run 1 will be configured as an orifice measurement run, assigned to Station 1.
- Run 2 will be configured as an orifice measurement run, assigned to Station 2.
- Station 2 will be configured as a "reverse" measurement station.

Configuring the I/O

Configure the I/O for the odd-numbered ("forward") run only.

In this example, the Run 1 differential pressure, static pressure, and flow temperature inputs are assigned to shared inputs for DP, SP, and FTemp respectively. No assignments are made for the Run 2 measurement inputs.

Inputs

PNT	PV	Zero	Span	Units	Assignment
1	-862.5	0.0	300.0	In/H2O	Shared DP 1
2	-2874.9	0.0	1000.0	PSI	Shared SP 1
3	-402.5	0.0	140.0	DEG_F	Shared FTemp 1
4	-287.5	0.0	100.0		

Figure 3-40. Configuring I/O for Bi-Directional Control (Example 2)

Configuring the Stations

Both Station 1 (the "forward" measurement station) and Station 2 (the "reverse" measurement station) must be configured.

Configure Station 1 by giving it a unique station name, and assigning the other configuration parameters as required.

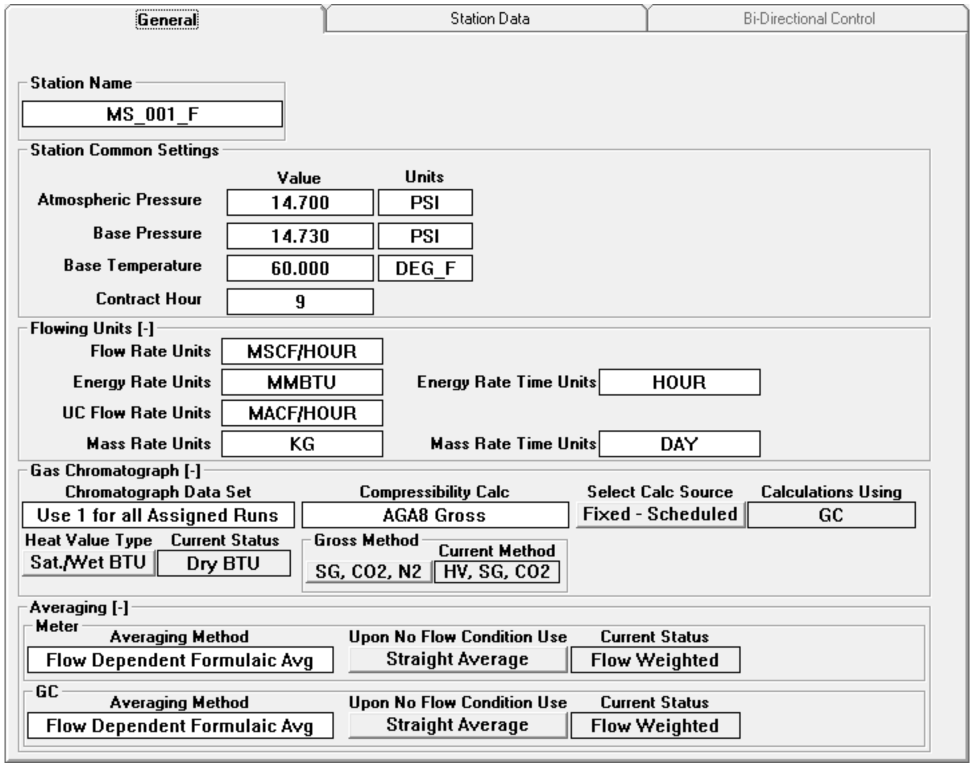


Figure 3-41. Configuring Station 1 for Bi-Directional Control (Example 2)

Configure Station 2 by giving it a unique station name and setting the “Station Direction” to “Reverse”. Assign the other configuration items as required.

In most cases, these configuration settings should be identical to the configuration settings for Station 1. However, it is possible to use a configuration in Station 1 (“forward”) that is different than the configuration in Station 2 (“reverse”).

Notice that after changing the “Station Direction” to “Reverse” that the Bi-Directional Control tab became available for configuration.

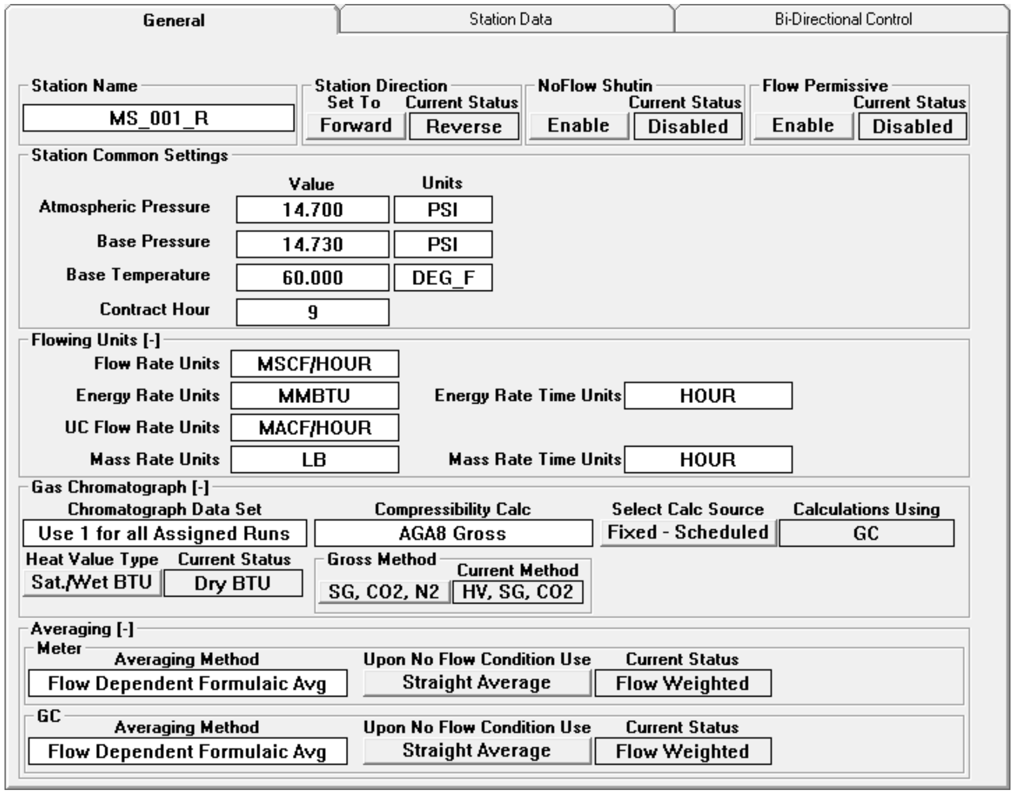


Figure 3-42. Configuring Station 2 for Bi-Directional Control (Example 2)

Configuring the Measurement Runs

Both Run 1 (the “forward” measurement run) and Run 2 (the “reverse” measurement run) must be configured.

On the General tab, configure Run 1 by giving it a unique “Run ID”, selecting a “Measurement Type” of “Orifice”, and making the “Station Assignment” to Station 1 (MS_001_F in this example). Leave the “Static Pressure” and “Flowing Temperature Source” selected as “Hardware AI”, using the “Shared SP 1” and “Shared FT 1” as the “AI#”. Change other settings as required.

In this example, because there is only a single measurement run, no run staging (also referred to as run switching or tube switching) is possible, so the “Run Staging Rank” may be left at 0.

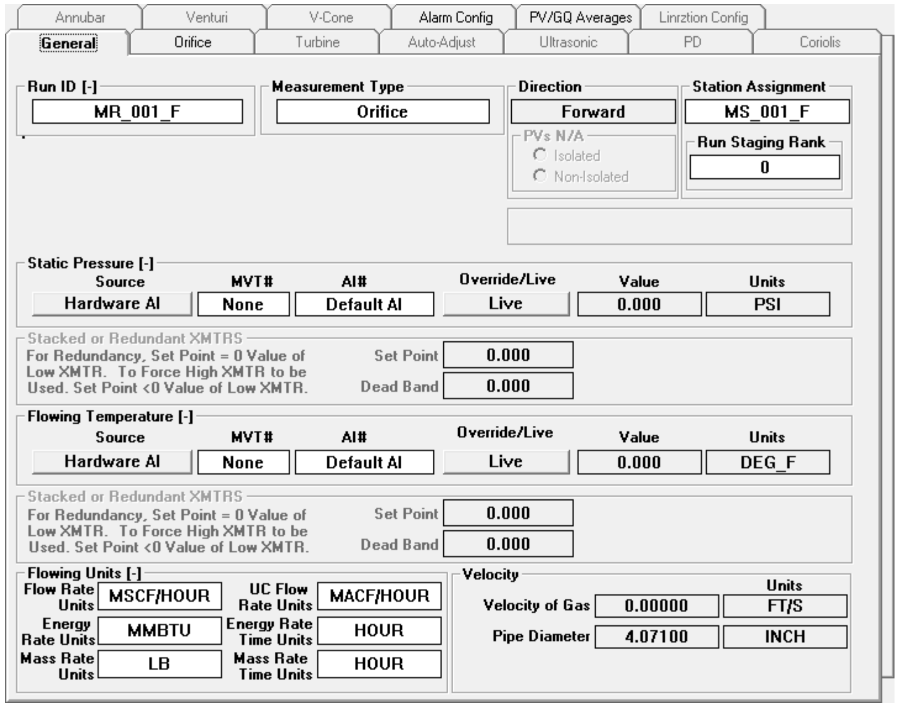


Figure 3-43. Configuring Run 1 for Bi-Directional Control (Example 2)

On the “Orifice” tab for Run 1, leave the “Differential Pressure Source” selected as “Hardware AI”, using the “Shared DP 1” as the “AI#”. Change other settings as required.

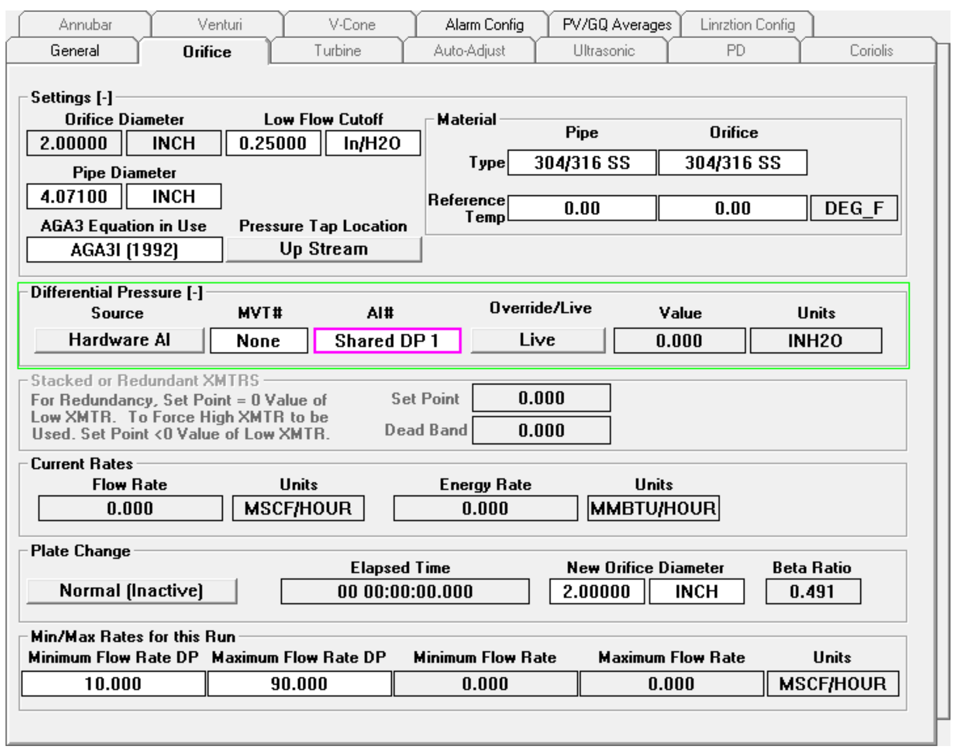


Figure 3-44. Configuring Run 1 Orifice tab for Bi-Directional Control (Example 2)

On the General tab, configure Run 2 by giving it a unique “Run ID”, selecting a “Measurement Type” of “Orifice”, and making the “Station Assignment” to Station 2 (MS_001_R in this example). Leave the “Static Pressure” and “Flowing Temperature Source” selected as “Hardware AI”, using the “Shared SP 1” and “Shared FT 1” as the “AI#”. Change other settings as required.

Because Run 2 is assigned to Station 2 (which is configured as a “reverse” station), the “Direction” field changes to “Reverse”, and the items in the “PVs” box become available for configuration. In this example, since the measurement in both directions is being performed with a unique set of measurement inputs, the “Isolated” radio button should be selected.

Because this run is assigned to a “reverse” measurement station, the option for changing the “Run Staging Rank” is disabled. It is important that the run staging rank for the reverse runs be left at 0.

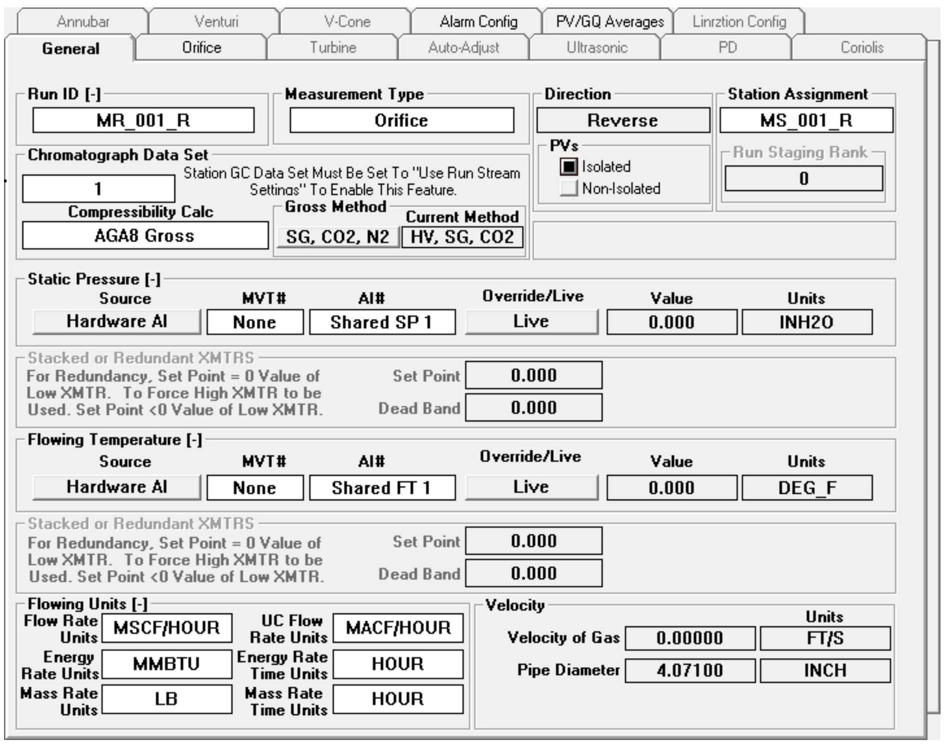


Figure 3-45. Configuring General tab (for Run 2) in Bi-Directional Control (Example 2)

On the "Orifice" tab for Run 2, leave the "Differential Pressure Source" selected as "Hardware AI", using the "Shared DP 1" as the "AI#". Change all other settings to the same values as set on Run 1, including "Pressure Tap Location."

Because the "Isolated" PVs radio button was selected on the "General" tab, the live input values for differential pressure for Run 1 and Run 2 come from independent transmitters.

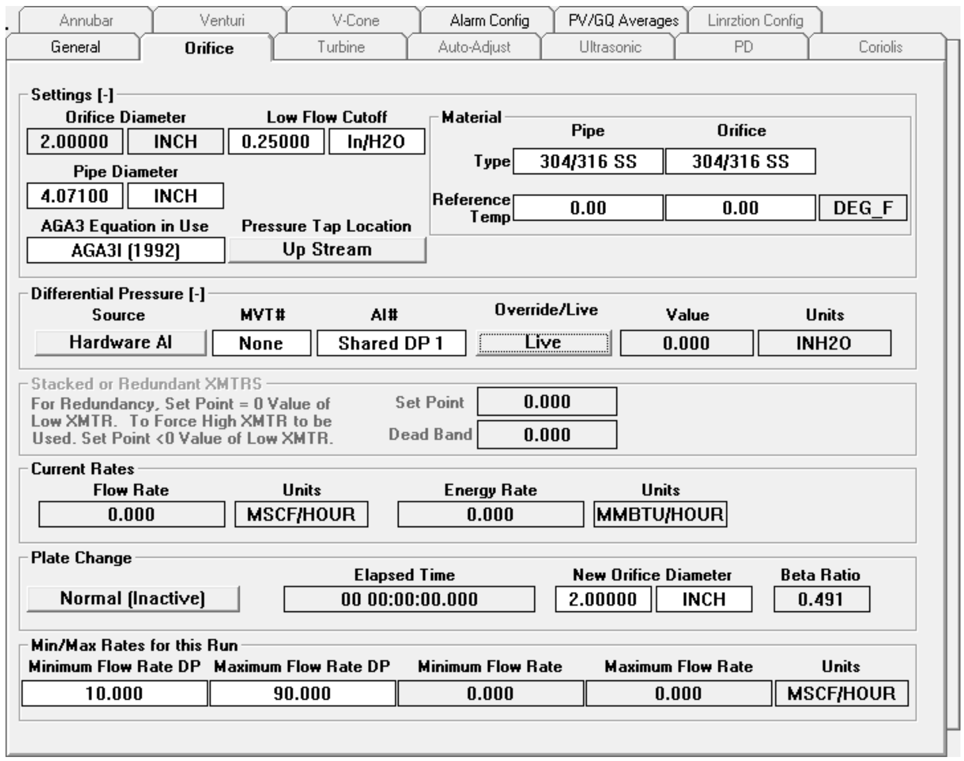


Figure 3-46. Configuring Run 2 Orifice tab for Bi-Directional Control (Example 2)

Example 3– Bi-Directional Control For One Measurement Run, Flow Reverses Direction, Isolated Transmitters

To configure bi-directional measurement for a single physical orifice meter run, where gas flows through the run in both directions, and each run has its own set of measurement inputs, follow these steps:

- Run 1 will be configured as an orifice measurement run, assigned to Station 1.
- Run 2 will be configured as an orifice measurement run, assigned to Station 2.
- Station 2 will be configured as a "reverse" measurement station.

Configuring the I/O

Configure the I/O for both the odd-numbered ("forward") run and the even-numbered ("reverse") run.

In this example, the Run 1 differential pressure, static pressure, and flow temperature inputs are assigned to analog input points 1, 2, and 3 respectively on one I/O card.

Inputs

PNT	PV	Zero	Span	Units	Assignment
1	180.7	0.0	300.0	In/H2O	Run 1 Diff. Pressure
2	436.7	0.0	1000.0	PSI	Run 1 Static Pressure
3	68.8	0.0	140.0	DEG_F	Run 1 Temperature
4	16.7	0.0	100.0		

Figure 3-47. Configuring Run 1 I/O for Bi-Directional Control (Example 3)

The Run 2 differential pressure, static pressure, and flow temperature inputs are assigned to analog input points 1, 2, and 3 respectively on a separate I/O card.

Because there are separate transmitters being used for each direction, the Zeroes, Spans and even Units can vary between the "forward" and "reverse" runs.

(Note – If this example were using 8 point analog input cards, the measurement inputs for both runs could have been assigned to a single I/O card, using 6 of the 8 inputs).

Inputs

PNT	PV	Zero	Span	Units	Assignment
1	90.3	0.0	150.0	In/H2O	Run 2 Diff. Pressure
2	218.4	0.0	500.0	PSI	Run 2 Static Pressure
3	98.2	0.0	200.0	DEG_F	Run 2 Temperature

Figure 3-48. Configuring Run 2 I/O for Bi-Directional Control (Example 3)

Configuring the Stations

Both Station 1 (the "forward" measurement station) and Station 2 (the "reverse" measurement station) must be configured.

Configure Station 1 by giving it a unique station name, and assigning the other configuration parameters as required.

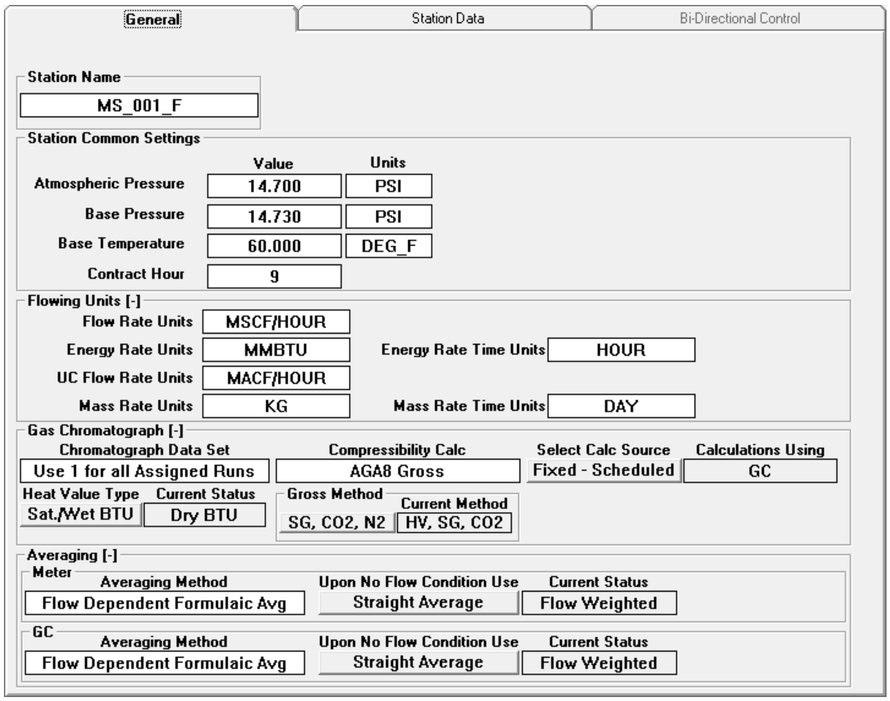


Figure 3-49. Configuring Station 1 for Bi-Directional Control (Example 3)

Configure Station 2 by giving it a unique station name and setting the "Station Direction" to "Reverse". Assign the other configuration items as required.

In most cases, these configuration settings should be identical to the configuration settings for Station 1. However, it is possible to use a configuration in Station 1 ("forward") that is different than the configuration in Station 2 ("reverse").

Notice that after changing the "Station Direction" to "Reverse" that the Bi-Directional Control tab became available for configuration. Later in this section we will need to configure the "Indication Source".

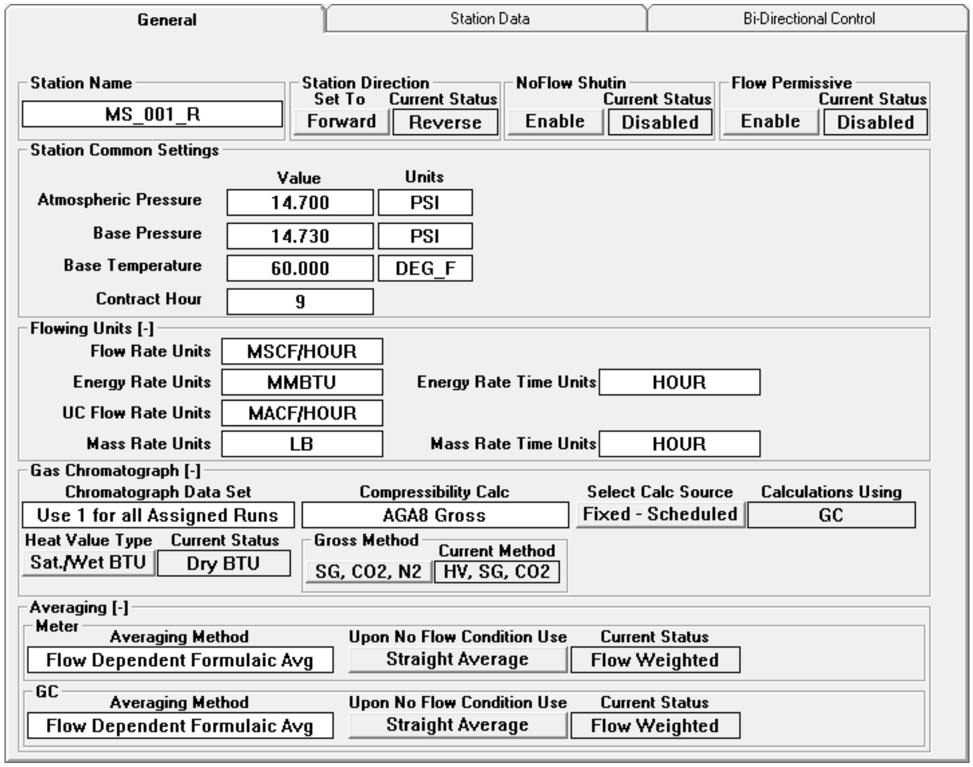


Figure 3-50. Configuring Station 2 for Bi-Directional Control (Example 3)

Configuring the Measurement Runs

Both Run 1 (the “forward” measurement run) and Run 2 (the “reverse” measurement run) must be configured.

On the General tab, configure Run 1 by giving it a unique “Run ID”, selecting a “Measurement Type” of “Orifice”, and making the “Station Assignment” to Station 1 (MS_001_F in this example). Leave the “Static Pressure” and “Flowing Temperature Source” selected as “Hardware AI”, using the “Default AI” as the “AI#”. Change other settings as required.

In this example, because there is only a single measurement run, no run staging (also referred to as run switching or tube switching) is possible, so the “Run Staging Rank” may be left at 0.

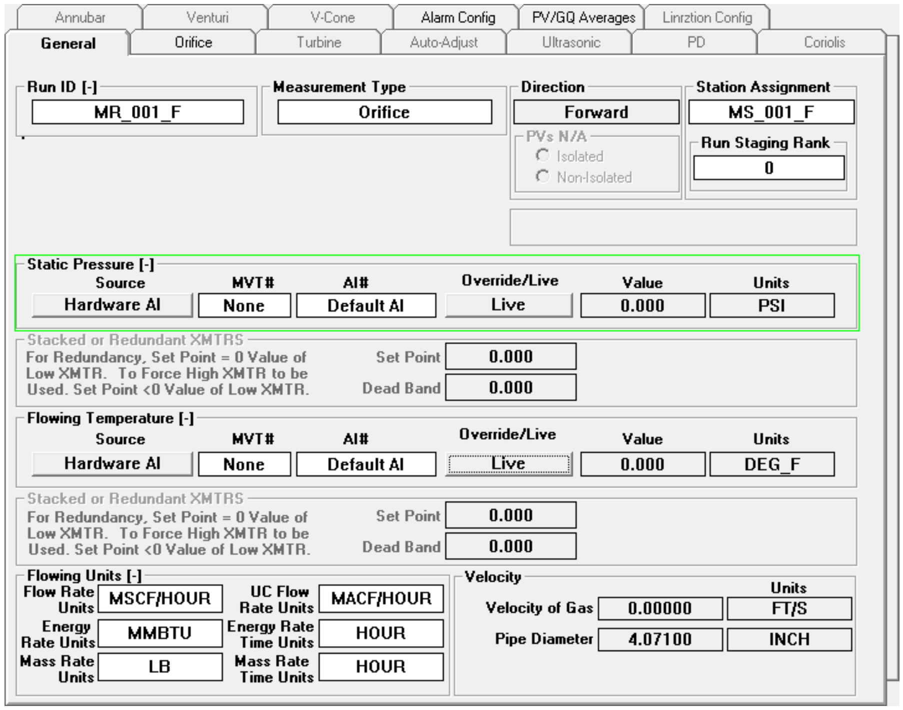


Figure 3-51. Configuring Run 1 for Bi-Directional Control (Example 3)

On the “Orifice” tab for Run 1, leave the “Differential Pressure Source” selected as “Hardware AI”, using the “Default AI” as the “AI#”. Change other settings as required.

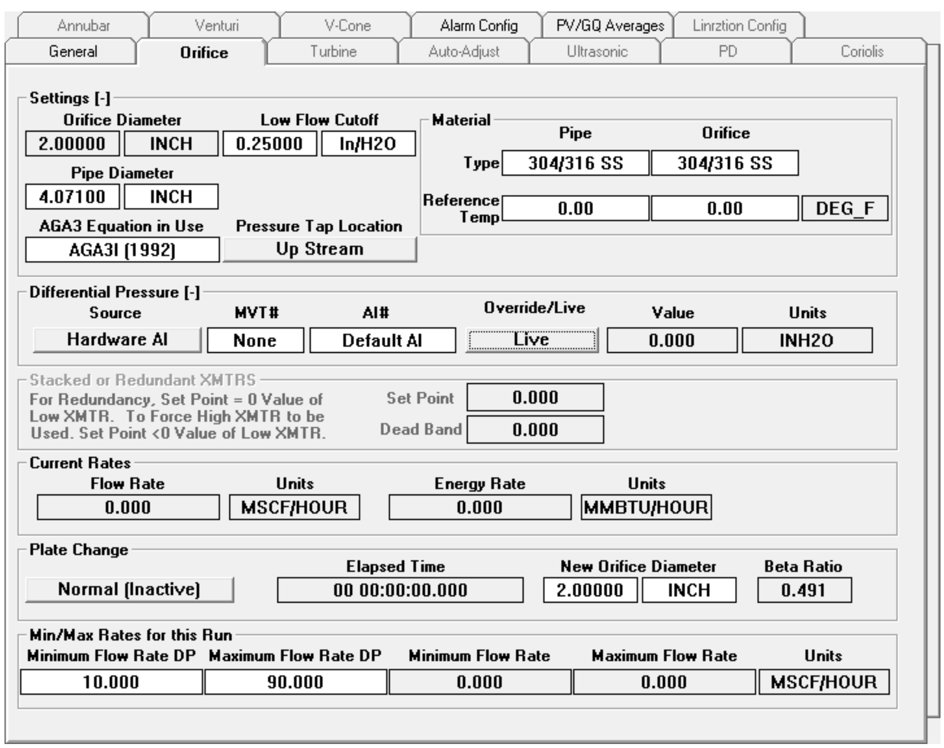


Figure 3-52. Configuring Run 1 Orifice tab for Bi-Directional Control (Example 3)

On the General tab, configure Run 2 by giving it a unique “Run ID”, selecting a “Measurement Type” of “Orifice”, and making the “Station Assignment” to Station 2 (MS_001_R in this example). Leave the “Static Pressure” and “Flowing Temperature Source” selected as “Hardware AI”, using the “Default AI” as the “AI#”. Change other settings as required.

Because Run 2 is assigned to Station 2 (which is configured as a “reverse” station), the “Direction” field changes to “Reverse”, and the items in the “PVs” box become available for configuration. In this example, since the measurement in each direction is being performed with a different set of measurement inputs, the “Isolated” radio button should be selected.

When the “Isolated” radio button is selected, the live input values for static pressure and flowing temperature for Run 2 come from the physical I/O defined for Run 2 in the I/O configuration section.

Because this run is assigned to a “reverse” measurement station, the option for changing the “Run Staging Rank” is disabled. It is important that the run staging rank for the reverse runs be left at 0.

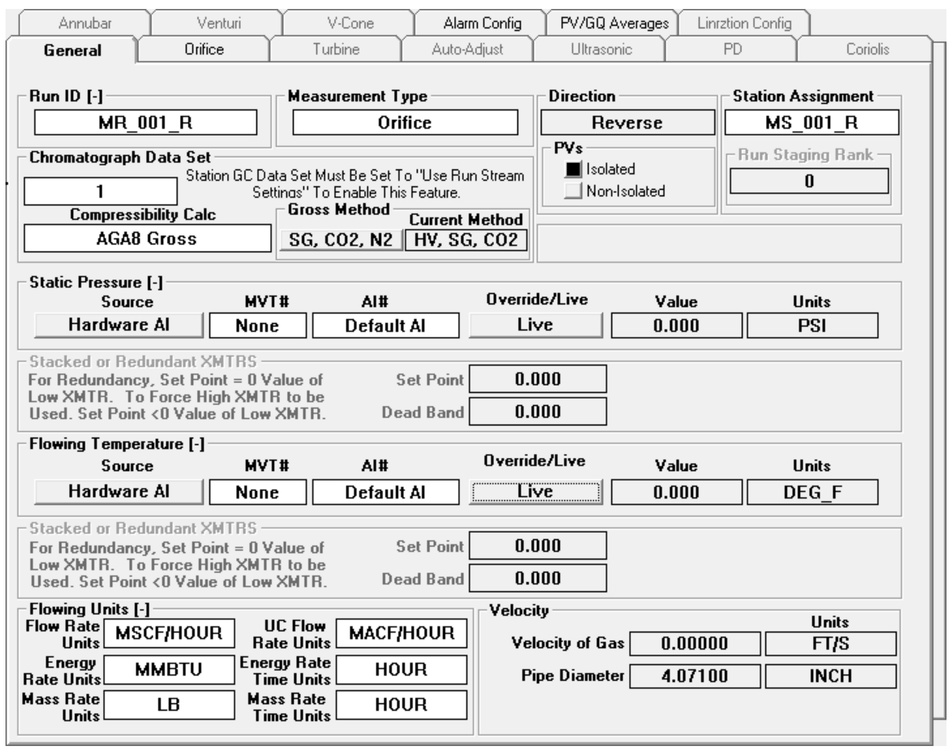


Figure 3-53. Configuring General tab (for Run 2) in Bi-Directional Control (Example 3)

On the “Orifice” tab for Run 2, leave the “Differential Pressure Source” selected as “Hardware AI”, using the “Default AI” as the “AI#”. Change all other settings to the same values as set on Run 1, including “Pressure Tap Location”.

Because the “Isolated” PVs radio button was selected on the “General” tab, the live input value for differential pressure for Run 2 comes from the physical I/O defined for Run 2 in the I/O configuration section. However, the differential pressure value is only applied to Run 2 for measurement when the bi-directional flow indication determines gas is flowing through the physical station in the reverse direction, otherwise, the differential pressure is forced to 0.0.

When the flow direction is indicated as “reverse”, the differential pressure will be indicated on Run 2, and the differential pressure for Run 1 will be forced to 0.0.

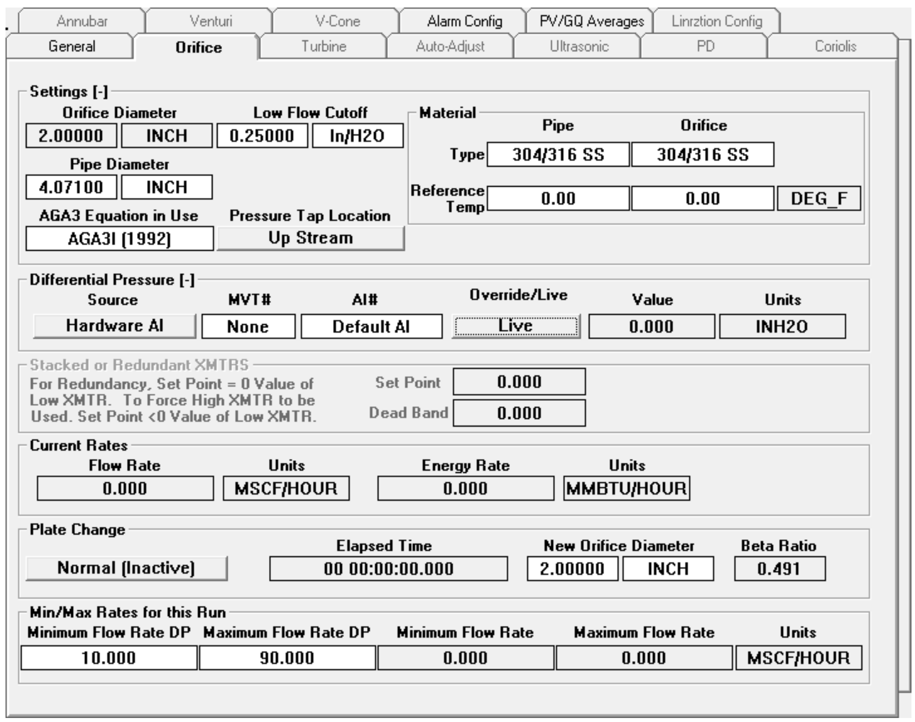


Figure 3-54. Configuring Run 2 Orifice tab for Bi-Directional Control (Example 3)

Example 4– Bi-Directional Control for One Measurement Run, Flow Reverses Direction, Isolated SP and Temp Transmitters, Non-Isolated DP Transmitter

To configure bi-directional measurement for a single physical orifice meter run, where gas flows through the run in both directions, and there is a single differential pressure input, but each run has its own static pressure and temperature inputs, follow these steps:

- Run 1 will be configured as an orifice measurement run, assigned to Station 1.
- Run 2 will be configured as an orifice measurement run, assigned to Station 2.
- Station 2 will be configured as a "reverse" measurement station.

Configuring the I/O

Configure the I/O for the static pressure and flowing temperature for both the odd-numbered ("forward") run and the even-numbered ("reverse") run. Instead of assigning a run specific differential pressure, select a shared differential pressure input.

In this example, the Run 1 static pressure, and flowing temperature inputs are assigned to analog input points 2 and 3 respectively on one I/O card.

Inputs

PNT	PV	Zero	Span	Units	Assignment
1	180.7	0.0	300.0	In/H2O	Shared DP 1
2	437.0	0.0	1000.0	PSI	Run 1 Static Pressure
3	68.8	0.0	140.0	DEG_F	Run 1 Temperature
4	16.7	0.0	100.0		

Figure 3-55. Configuring Run 1 I/O for Bi-Directional Control (Example 4)

The Run 2 static pressure, and flowing temperature inputs are assigned to analog input points 2 and 3 respectively on a separate I/O card.

However, because only one transmitter will be used for differential pressure measurement, the Shared DP 1 is assigned to analog input point 1 on the first I/O card.

Because there are separate static pressure and flowing temperature transmitters being used for each direction, the Zeroes, Spans and even Units can vary between the "forward" and "reverse" runs. Of course, this is not the case with the differential pressure transmitter.

Note: If this example were using 8 point analog input cards, the measurement inputs for both runs could have been assigned to a single I/O card, using 5 of the 8 inputs).

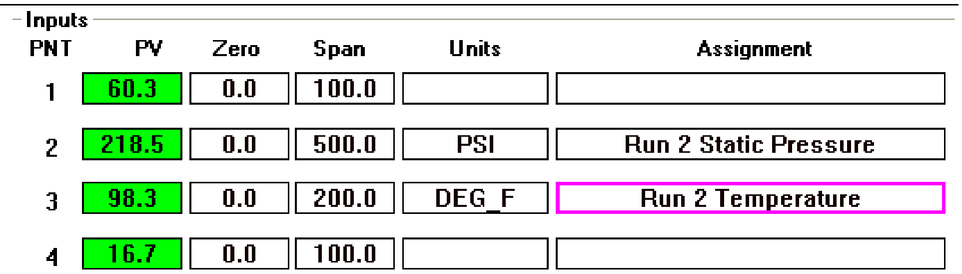


Figure 3-56. Configuring Run 2 I/O for Bi-Directional Control (Example 4)

Configuring the Stations

Both Station 1 (the "forward" measurement station) and Station 2 (the "reverse" measurement station) must be configured.

Configure Station 1 by giving it a unique station name, and assigning the other configuration parameters as required.

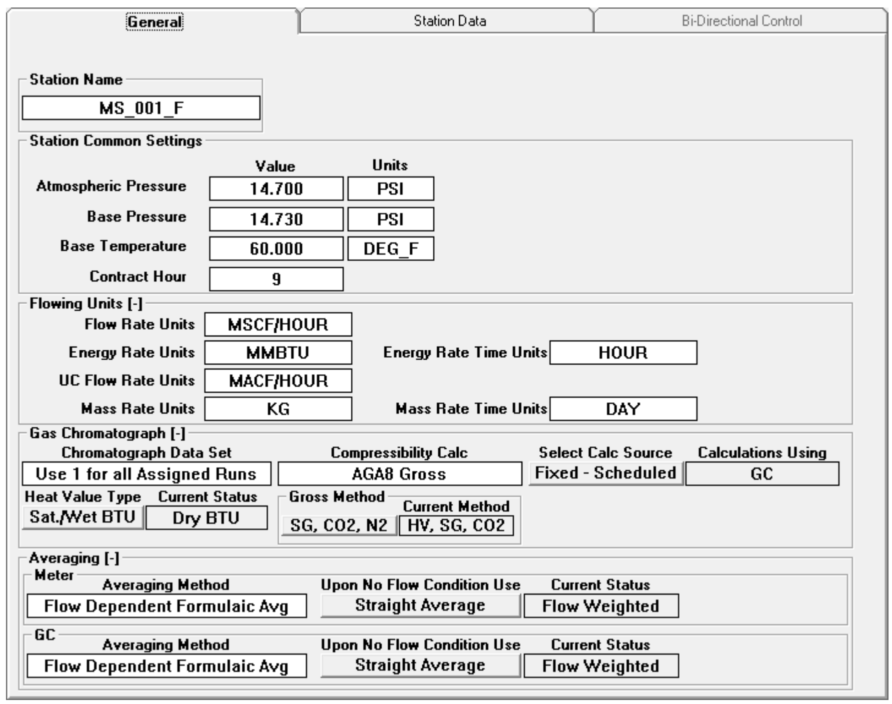


Figure 3-57. Configuring Station 1 for Bi-Directional Control (Example 4)

Configure Station 2 by giving it a unique station name and setting the "Station Direction" to "Reverse". Assign the other configuration items as required.

In most cases, these configuration settings should be identical to the configuration settings for Station 1. However, it is possible to use a configuration in Station 1 ("forward") that is different than the configuration in Station 2 ("reverse").

Notice that after changing the "Station Direction" to "Reverse" that the Bi-Directional Control tab became available for configuration.

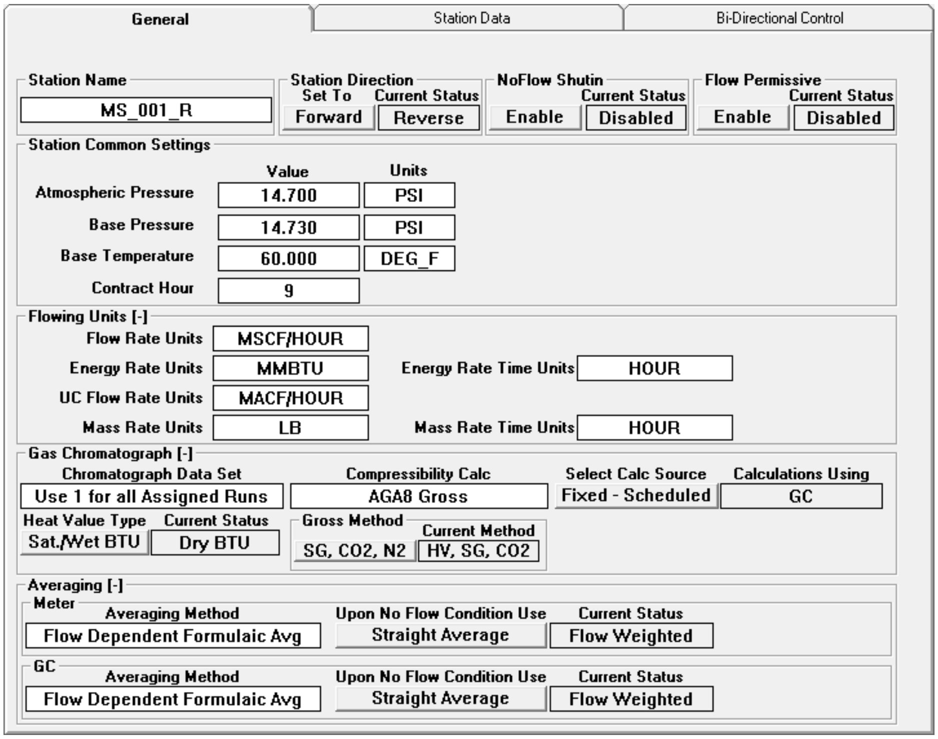


Figure 3-58. Configuring Station 2 for Bi-Directional Control (Example 4)

Configuring the Measurement Runs

Both Run 1 (the “forward” measurement run) and Run 2 (the “reverse” measurement run) must be configured.

On the General tab, configure Run 1 by giving it a unique “Run ID”, selecting a “Measurement Type” of “Orifice”, and making the “Station Assignment” to Station 1 (MS_001_F in this example). Leave the “Static Pressure” and “Flowing Temperature Source” selected as “Hardware AI”, using the “Default AI” as the “AI#”. Change other settings as required.

In this example, because there is only a single measurement run, no run staging (also referred to as run switching or tube switching) is possible, so the “Run Staging Rank” may be left at 0.

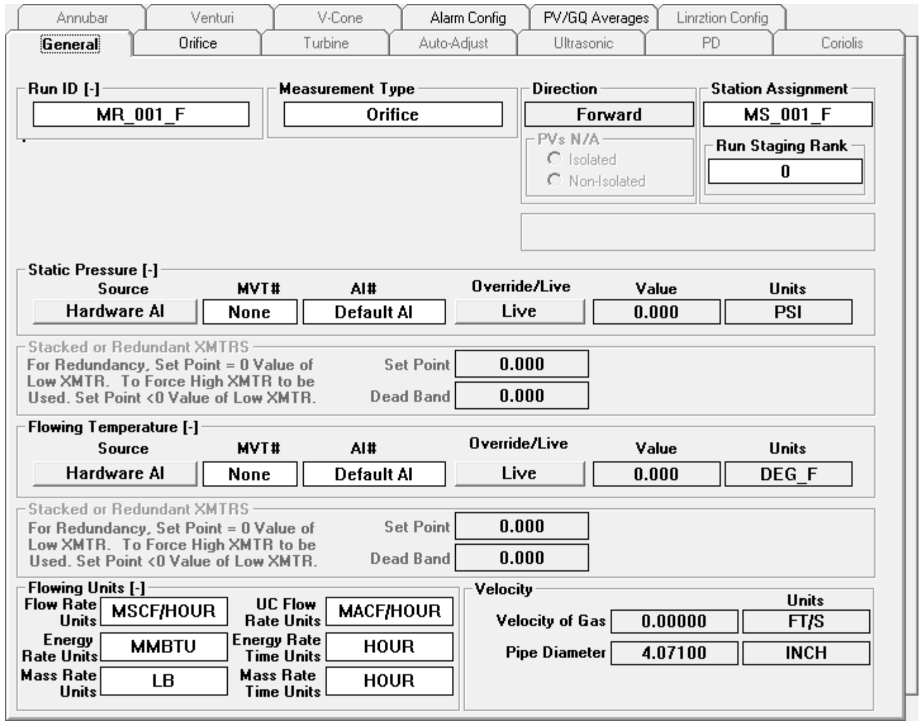


Figure 3-59. Configuring Run 1 for Bi-Directional Control (Example 4)

On the “Orifice” tab for Run 1, leave the “Differential Pressure Source” selected as “Hardware AI” and select Shared DP 1 as the “AI#”. Change other settings as required.

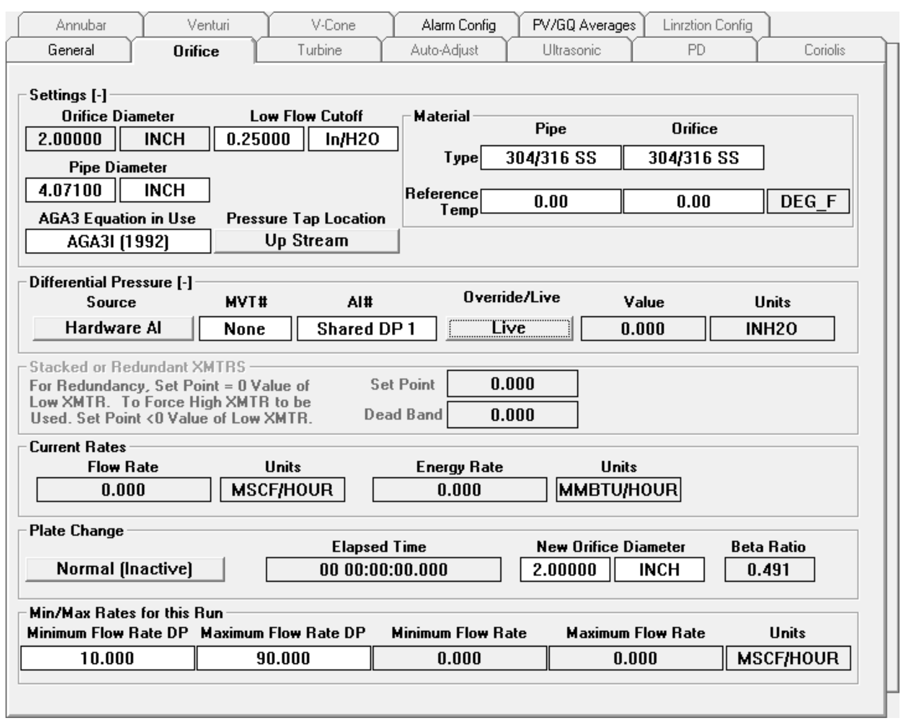


Figure 3-60. Configuring Run 1 Orifice tab for Bi-Directional Control (Example 3)

On the General tab, configure Run 2 by giving it a unique “Run ID”, selecting a “Measurement Type” of “Orifice”, and making the “Station Assignment” to Station 2 (MS_001_R in this example). Leave the “Static Pressure” and “Flowing Temperature Source” selected as “Hardware AI”, using the “Default AI” as the “AI#”. Change other settings as required.

Because Run 2 is assigned to Station 2 (which is configured as a “reverse” station), the “Direction” field changes to “Reverse”, and the items in the “PVs” box become available for configuration. In this example, since the static pressure and temperature measurement in each direction is being performed with a different set of measurement inputs, the “Isolated” radio button should be selected.

When the “Isolated” radio button is selected, the live input values for static pressure and flowing temperature for Run 2 come from the physical I/O defined for Run 2 in the I/O configuration section.

Because this run is assigned to a “reverse” measurement station, the option for changing the “Run Staging Rank” is disabled. It is important that the run staging rank for the reverse runs be left at 0.

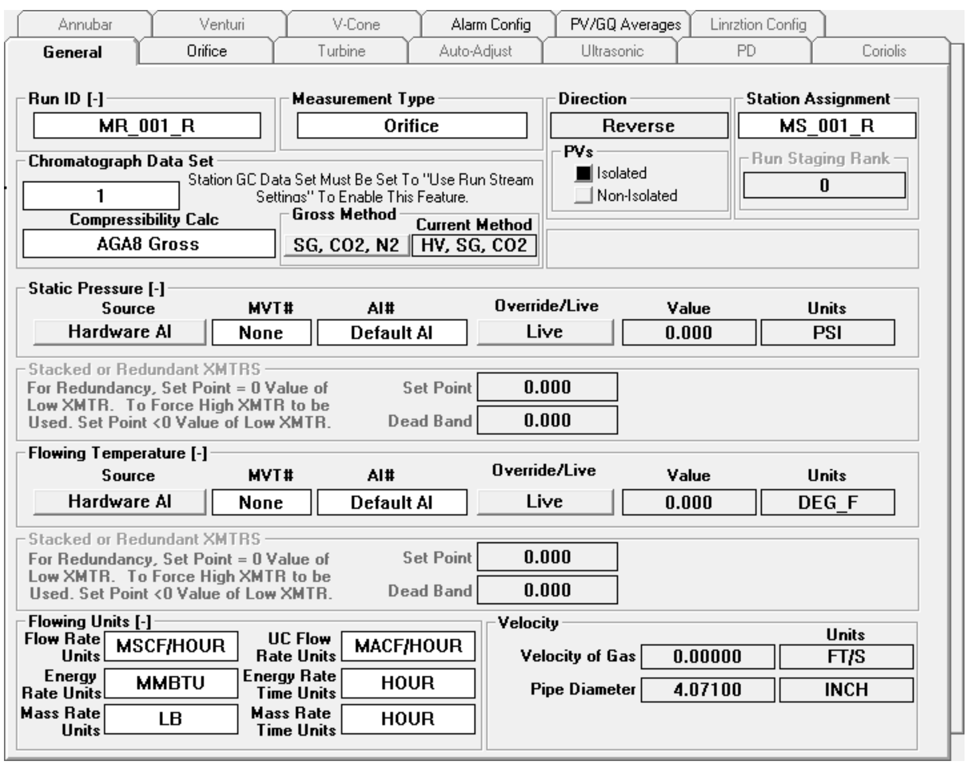


Figure 3-61. Configuring General tab (for Run 2) in Bi-Directional Control (Example 4)

On the “Orifice” tab for Run 2, leave the “Differential Pressure Source” selected as “Hardware AI” and select “Shared DP 1” as the “AI#”. Change all other settings to the same values as set on Run 1, including “Pressure Tap Location”.

Because the "Isolated" PVs radio button was selected on the "General" tab, the live input value for differential pressure for Run 2 comes from the physical I/O defined for the Shared DP 1 in the I/O configuration section. However, the differential pressure value is only applied to Run 2 for measurement when the bi-directional flow indication determines gas is flowing through the physical station in the reverse direction, otherwise, the differential pressure is forced to 0.0.

When the flow direction is indicated as "reverse", the differential pressure will be indicated on Run 2, and the differential pressure for Run 1 will be forced to 0.0.

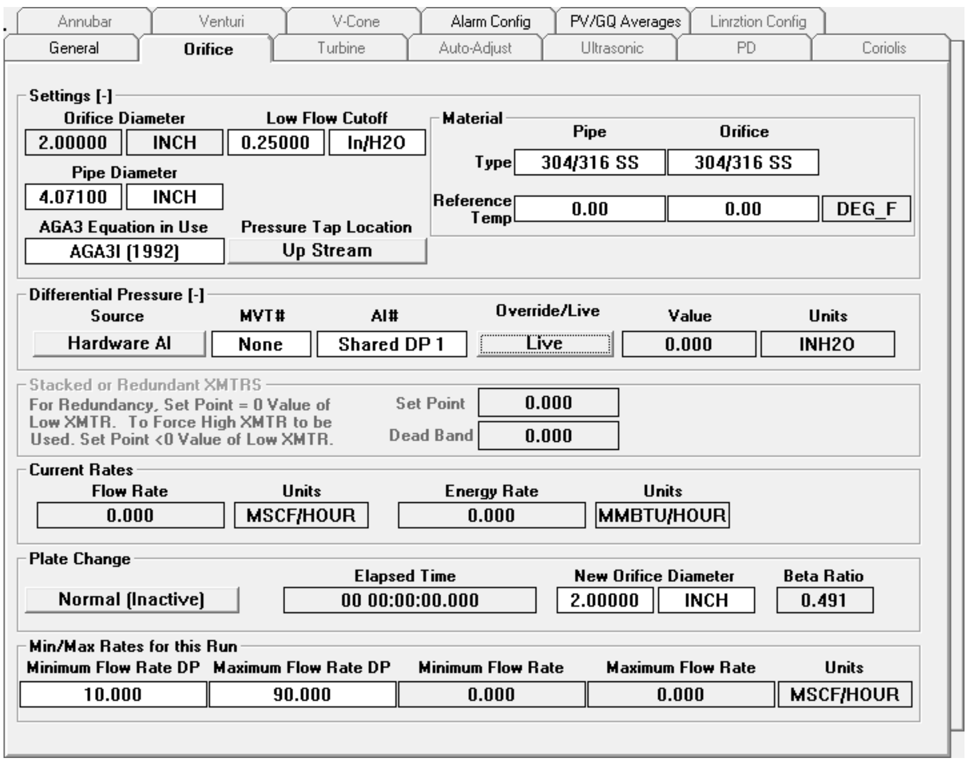


Figure 3-62. Configuring Run 2 Orifice tab for Bi-Directional Control (Example 4)

Example 5– Bi-Directional Control for One Measurement Run, Flow Reverses Direction, Multi-Variable Transmitters (MVTs) Used

To configure bi-directional measurement for a single physical orifice meter run, where gas flows through the run in both directions, and there are single differential pressure, static pressure and temperature inputs, follow these steps:

- Run 1 will be configured as an orifice measurement run, assigned to Station 1.
- Run 2 will be configured as an orifice measurement run, assigned to Station 2.
- Station 2 will be configured as a “reverse” measurement station.

Configuring the Stations

Both Station 1 (the “forward” measurement station) and Station 2 (the “reverse” measurement station) must be configured.

Configure Station 1 by giving it a unique station name, and assigning the other configuration parameters as required.

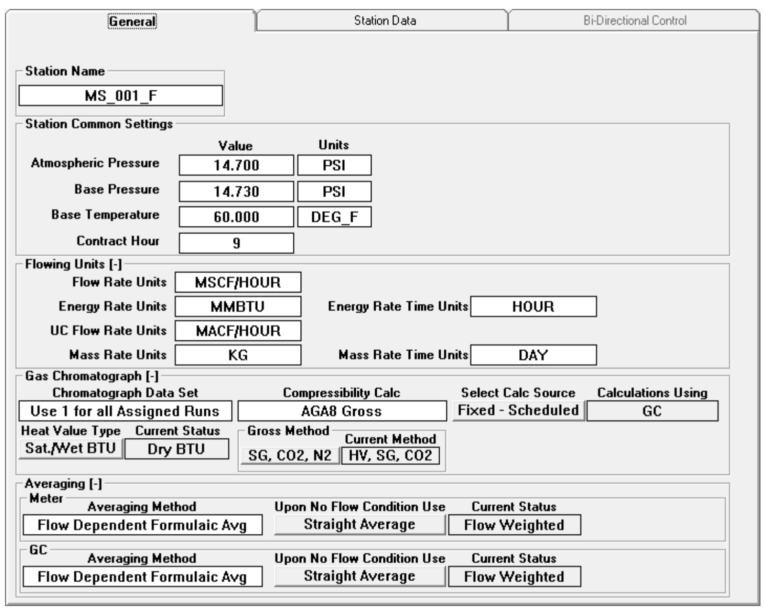


Figure 3-63. Configuring Station 1 for Bi-Directional Control (Example 5)

Configure Station 2 by giving it a unique station name and setting the “Station Direction” to “Reverse.” Assign the other configuration items as required.

In most cases, these configuration settings should be identical to the configuration settings for Station 1. However, it is possible to use a configuration in Station 1 (“forward”) that is different than the configuration in Station 2 (“reverse”).

Notice that after changing the "Station Direction" to "Reverse" that the Bi-Directional Control tab became available for configuration.

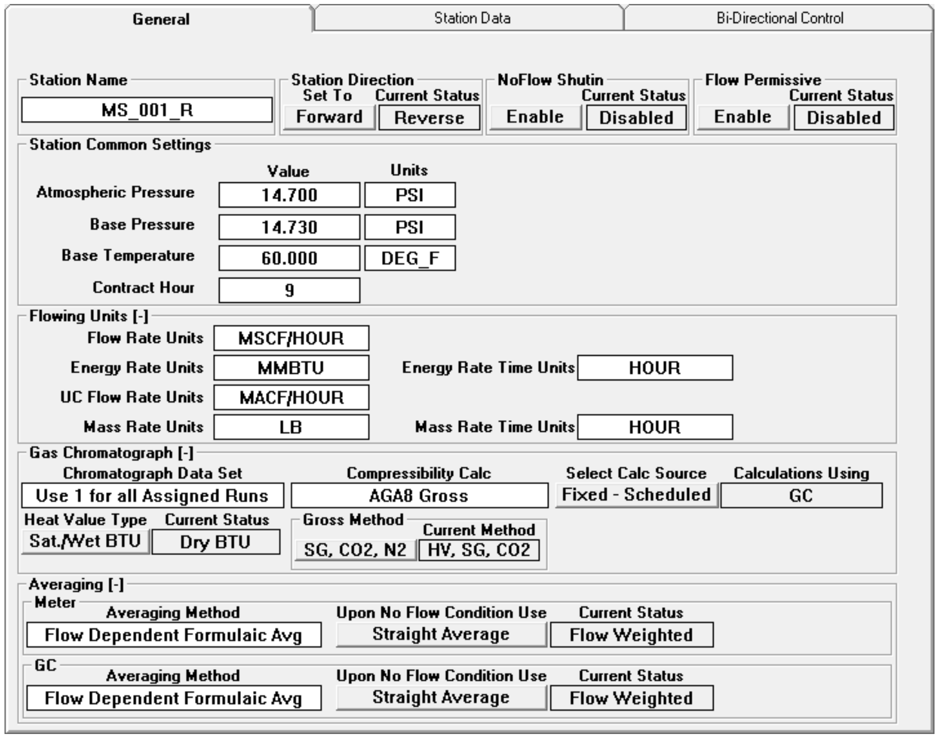


Figure 3-64. Configuring Station 2 for Bi-Directional Control (Example 5)

Configuring the Measurement Runs

Both Run 1 (the "forward" measurement run) and Run 2 (the "reverse" measurement run) must be configured.

On the General tab, configure Run 1 by giving it a unique "Run ID", selecting a "Measurement Type" of "Orifice", and making a "Station Assignment" of Station 1 (MS_001_F in this example). Change the "Static Pressure" and "Flowing Temperature Source" selection to "MVT", and select "MVT 1" as the "MVT#." Change other settings as required.

In this example, because there is only a single measurement run, no run staging (also referred to as run switching or tube switching) is possible, so the "Run Staging Rank" may be left at 0.

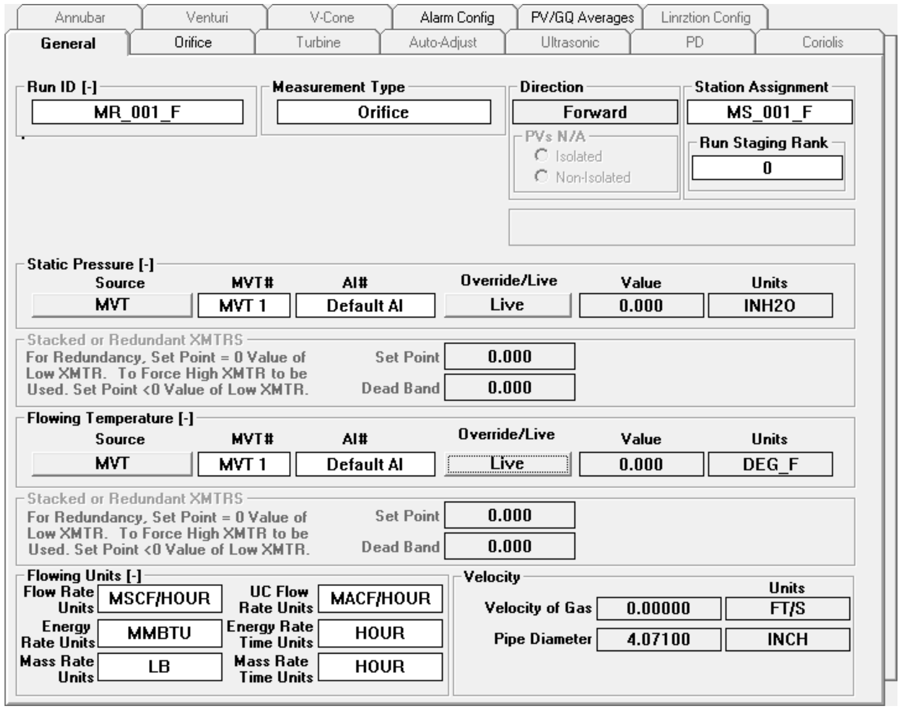


Figure 3-65. Configuring Run 1 for Bi-Directional Control (Example 5)

On the “Orifice” tab for Run 1, change the “Differential Pressure Source” to “MVT” and select “MVT 1” as the “MVT#”. Change other settings as required.

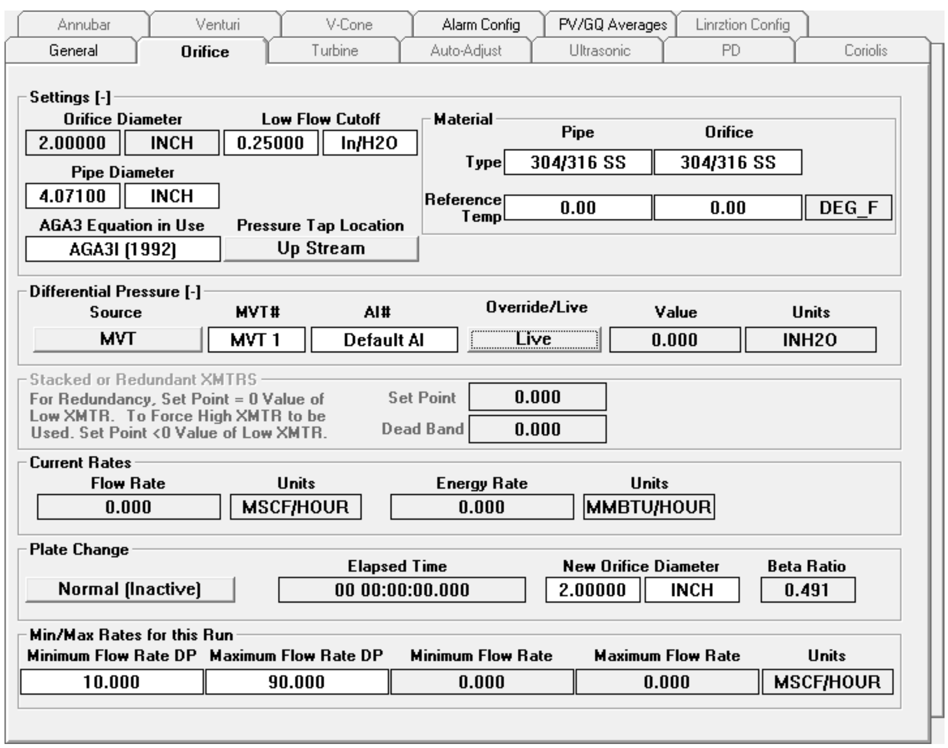


Figure 3-66. Configuring Run 1 Orifice tab for Bi-Directional Control (Example 5)

On the General tab, configure Run 2 by giving it a unique “Run ID”, selecting a “Measurement Type” of “Orifice”, and making a “Station Assignment” of Station 2 (MS_001_R in this example).

Because Run 2 is assigned to Station 2 (which is configured as a “reverse” station), the “Direction” field changes to “Reverse,” and the items in the “PVs” box become available for configuration.

When using a single MVT to measure gas in both directions, as in this example, the “Non-Isolated” radio button should be selected.

When the “Non-Isolated” radio button is selected, the live input values for static pressure and flowing temperature applied to Run 1 are also applied to Run 2.

Because this run is assigned to a “reverse” measurement station, the option for changing the “Run Staging Rank” is disabled. It is important that the run staging rank for the reverse runs be left at 0.

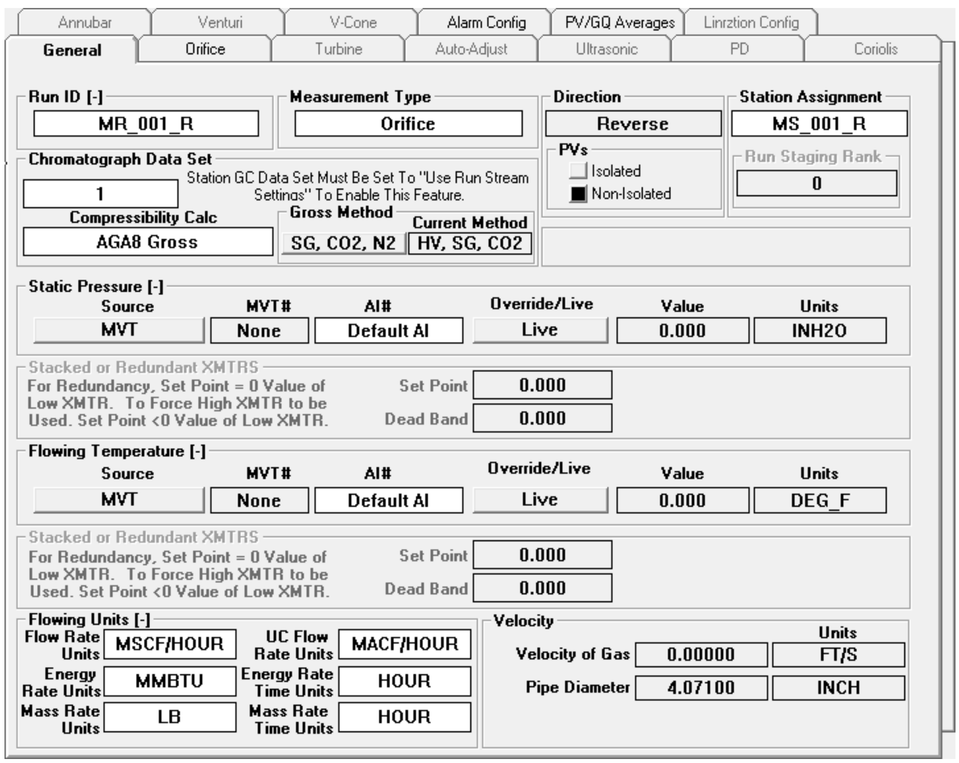


Figure 3-67. Configuring General tab (for Run 2) in Bi-Directional Control (Example 5)

On the Orifice tab for Run 2, change all other settings to the same values as set on Run 1, except for “Pressure Tap Location” which should be set to the opposite of the setting for Run 1.

Because the “Non-Isolated” PVs radio button was selected on the “General” tab, the live input value for differential pressure for Run 2 comes from the MVT defined by the MVT# for Run 1. However, the differential pressure value is only applied to Run 2 for measurement when the bi-directional flow indication determines gas is flowing through the physical station in the reverse direction, otherwise, the differential pressure is forced to 0.0.

When the flow direction is indicated as “reverse”, the differential pressure will be indicated on Run 2, and the differential pressure for Run 1 will be forced to 0.0.

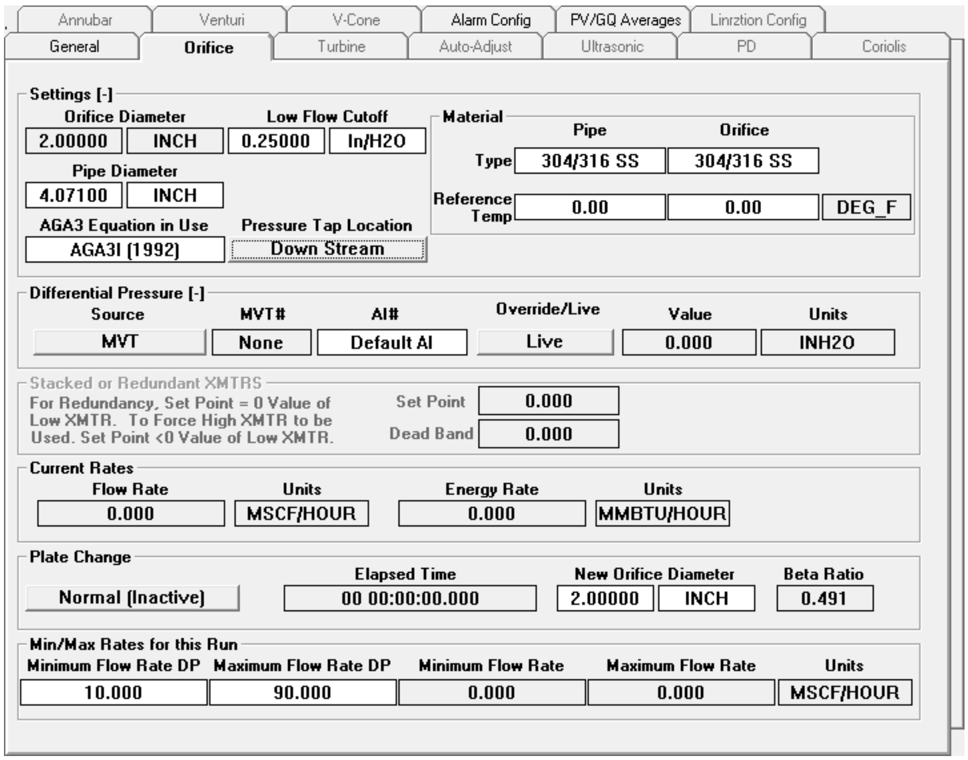


Figure 3-68. Configuring Run 2 Orifice tab for Bi-Directional Control (Example 5)

3.2.9 General tab

Depending on the version, Station Manager supports either six or eight meter runs, each of which you must assign to a station. Either left click on a run icon, or right-click on the icon and choose from the pop-up menu to open menus for that run. To open the General tab, choose **Configuration** from the pop-up menu.

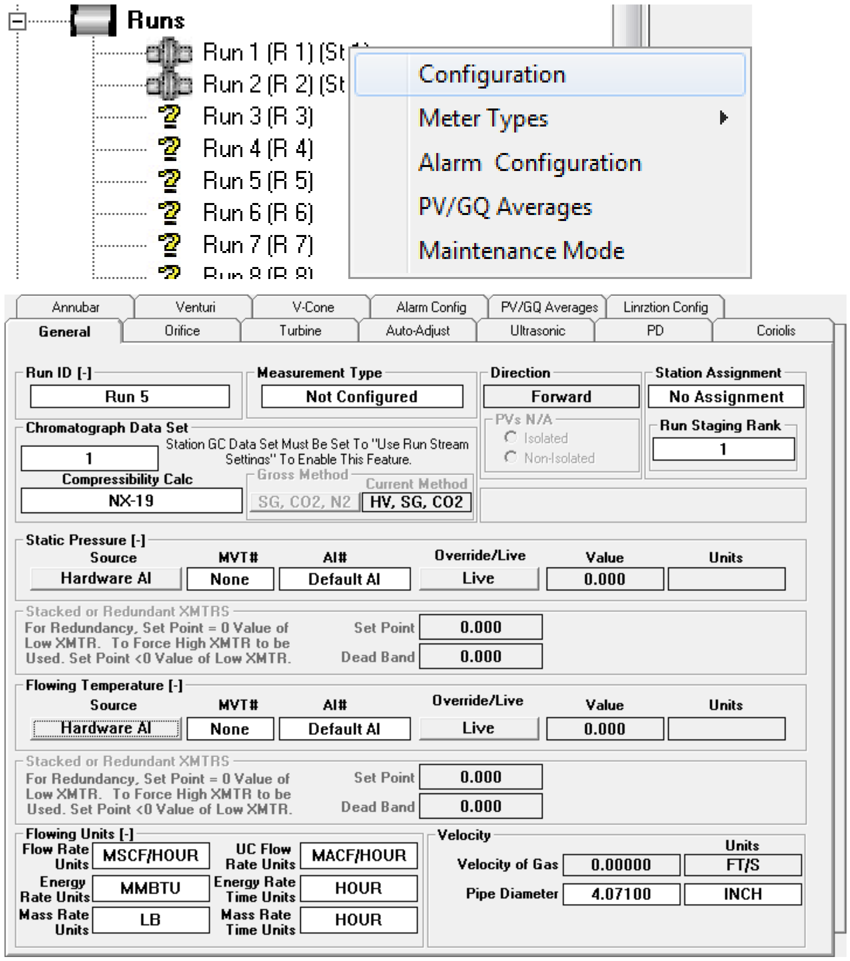
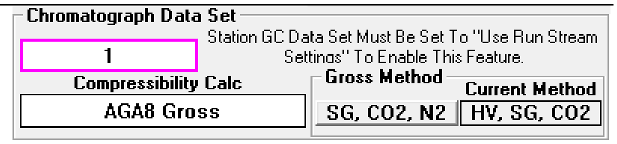


Figure 3-69. General tab (Runs)

Field	Description
Run ID	Enter a name and press the **[Enter]** key to save your entry. The generic Run ID of Run 1 will be replaced by the user specific Run ID.
Measurement Type	Select the measurement type from the drop-down menu.
Chromatograph Data Set	The chromatograph stream used for measurement of this run may be assigned at the Station level, or at the Run level. If a chromatograph stream is assigned at the Station level, the user will be unable to assign the stream at the run level.

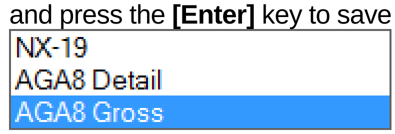


If the chromatograph stream is assigned as 0 at the Station level, the user will be able to assign the stream at the run level.

Note: In order to enable this section, the **Chromatograph Data Set** field on the General station configuration tab must be set to **"Use Run Stream Settings."**

Compressibility Calc

Use the drop-down menu to select the calculation you want Station Manager to use for compressibility, and press the **[Enter]** key to save your selection.



Note: You can only set this at the run level if the Chromatograph Data Set is set at the run level.

Gross Method SG,CO2, N2 / HV, SG, CO2

If you choose AGA8 Gross for your compressibility calculations select the gross method. The current method shows in the **Current Method** field; to toggle the gross method used to the other method, click the button; the newly chosen method shows in the **Current Method** field, and the now unused method appears on the label of the button.

Choices include:

SG, CO2, N2	The Station Manager application performs calculations using inputs relative density (specific gravity or SG), and the mole fractions of nitrogen (N2) and carbon dioxide (CO2).
HV, SG, CO2	The Station Manager application performs calculations using inputs the heating value (HV), the relative density (specific gravity or SG), and the mole fraction of carbon dioxide (CO2).

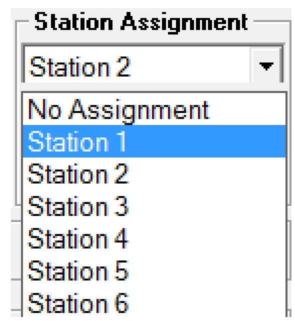
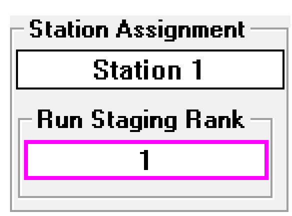
Note: These options are only available for the AGA8 Gross compressibility calculation.

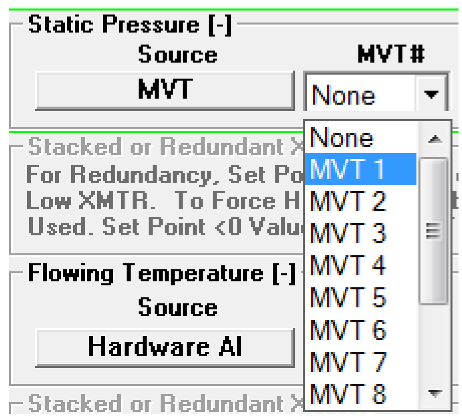
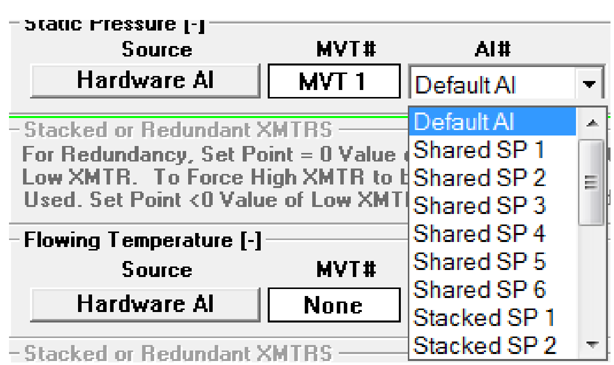
Direction

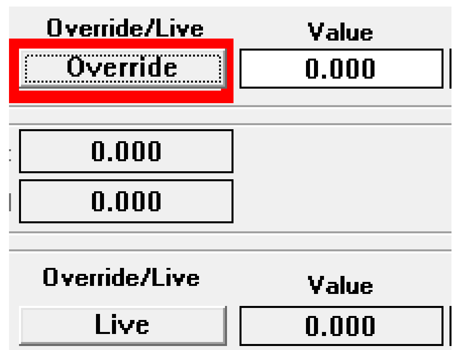
If the run being configured has been assigned to a station configured as a forward flowing station, this will be indicated on this screen as "Forward", and the PV's section will be grayed out.

PVs

If the run being configured has been assigned to a station configured as a reverse flowing station, this will be indicated on this screen as "Reverse." It will then be possible to configure the PVs (Process

	Variables) section. The user may then select between Isolated and Non-Isolated PVs. **Isolated PV** is used when the forward run and reverse run each are using different Input Sources. **Non-Isolated PV** is used when the forward run and reverse run are using the same Input Sources. 
Station Assignment	To assign the run to a station, click on the Station Assignment box.  Select a station from the drop down menu, and press **[Enter]**. (Note, if the Station ID has been changed on the Station Configuration screen, the user defined Station Name will appear in the drop down menu, instead of the generic Station Name.) After assigning a run to a station, the run will appear under the station in the Site Tree.
Run Staging Rank	If there is more than one run assigned to a station, and the station will be configured for Meter Run Staging (or Meter Tube Switching), then the Run Staging Rank may be assigned by entering the rank here. The rank entered should be from 1 to the maximum number of runs assigned to the station. **Note:** If this run is set up for Reverse flow, the Run Staging Rank must be assigned as 0. 

Static Pressure and Flowing Temperature	Every type of measurement requires a static pressure measurement and a temperature measurement.
Source	The source for these measurements may come from either Analog Inputs via the I/O cards (Hardware AI) or via serial communications to the Multi-Variable Transmitters (MVT). The selection of the source is made by clicking on the button.
MVT#	If MVT is chosen, the user may select from any of the 12 MVTs. In the 6-run version, you also may select from 18 HART and 18 WiHART transmitters. 
AI#	If Hardware AI is chosen, the user may select from the Analog Input (AI) to be used from a drop down menu.  The user may select from the Default AI (this would be the "Run X Static Pressure" or "Run X Temperature" selections from the I/O configuration page), or from a Shared Transmitter ("Shared SP X" or "Shared FTemp X" from the I/O configuration page) or a pair of Stacked transmitters ("Stacked

	SP X Lo/Hi" or "Stacked FTemp X Lo/Hi" from the I/O configuration page). If the Default AI or Shared transmitters are chosen, the measurement source configuration is completed. If Stacked transmitters are chosen, see the "Stacked or Redundant XMTRS" section.
Override/Live	The user may override the measurement values in use by selecting Override instead of Live  When Override is selected, the user may enter the desired value for the measurement to be used. When Live is selected, the Value will be driven by the appropriate input value. **Note:** the action of changing from Live to Override or Override to Live is entered in the Audit trail. When in Override, any changes made to the Value are entered in the Audit Trail. **Note:** These overrides are done at the Run Measurement level, not at the I/O level. Because of this, care needs to be taken when overriding runs configured for bi-directional measurement, because the logic overriding the measurement values occurs after the logic for routing the measurement inputs to the proper run. Additionally, any input alarms and conditioning are not performed when Override is active.
Value	The static pressure and flowing temperature values in use are shown here.  When "Live" is selected via the "Override/Live" button, this value is the value coming from the Static Pressure or Flowing Temperature Source. When "Override" is selected via the "Override/Live" button, this value may be entered by the user, and the entered value will be used in the measurement

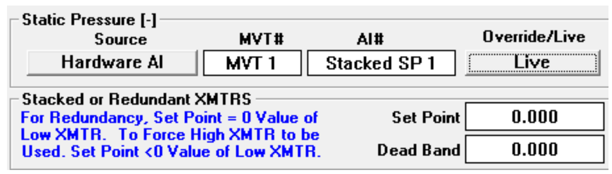
calculation.

Units

The units for the measurement inputs come from the input source.

Stacked or Redundant Transmitters

If Stacked transmitters are chosen, the user must configure the transmitters as Stacked transmitters or Redundant transmitters.



Stacked Transmitters operate such that one transmitter measures at a low range of measurement, and a second transmitter measures at a higher range. When using Stacked Transmitters, the user must enter a set point where the measurement will transition from the low range transmitter to the high range transmitter. A deadband may be entered, that will prevent the measurement from switching back and forth between the high and low transmitters.

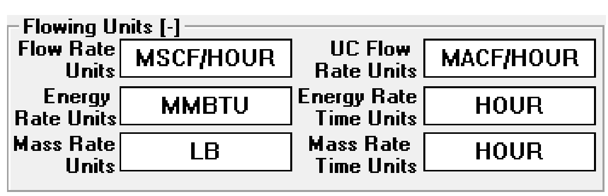
Redundant transmitters operate such that one transmitter is used for measurement all of the time, and the second transmitter is available in case the first transmitter fails.

To configure the stacked transmitters to be used as redundant transmitters, the user must set the Set Point to 0.0. This will set the Stacked SP X Lo (or Stacked FTemp X Lo) to be the primary transmitter, and the Stacked SP X Hi (or Stacked FTemp X Lo) transmitter will only be used if the Lo transmitter indicates a failure.

To force the Hi transmitter to be used, the user must set the Set Point to a value less than 0.0.

Flowing Units

Flow Rate, Energy Rate, and Mass Rate units and time units may be assigned on a per run basis.



Flow Rate Units
MSCF/YEAR
MSCF/DAY
MSCF/HOUR

MSCF/MIN
MSCF/SEC
M3/YEAR
M3/DAY
M3/HOUR
M3/MIN
M3/SEC
MMSCF/YEAR
MMSCF/DAY
MMSCF/HOUR
MMSCF/MIN
MMSCF/SEC
MM3/YEAR
MM3/DAY
MM3/HOUR
MM3/MIN
MM3/SEC
CCF/YEAR
CCF/DAY
CCF/HOUR
CCF/MIN
CCF/SEC

where:
MSCF – Thousands of Standard Cubic Feet
MMSCF – Millions of Standard Cubic Feet
M3 – Standard Cubic Meters
MIN – Minutes
SEC - Seconds
MM3 – Millions of Cubic Meters
CCF – Hundreds of Cubic Feet
<u>Uncorrected (UC) Flow Rate Units</u>
MACF/YEAR
MACF/DAY
MACF/HOUR
MACF/MIN
MACF/SEC
M3/YEAR
M3/DAY
M3/HOUR
M3/MIN
M3/SEC
MMACF/YEAR
MMACF/DAY
MMACF/HOUR
MMACF/MIN
MMACF/SEC
MM3/YEAR
MM3/DAY
MM3/HOUR
MM3/MIN
MM3/SEC
CCF/YEAR
CCF/DAY
CCF/HOUR
CCF/MIN
CCF/SEC

where:
ACF – Actual Cubic Feet
M3 – Actual Cubic Meters
MM3 – Millions of Cubic Meters
CCF – Hundreds of Cubic Feet

Energy Rate Units
MMBTU
MJ
KJ
J
ERG
KCAL
CAL
CHU
KWH
QUAD
THERM
TONTNT
TONCOAL
MMMBTU
GJ
BTU
MMBTU605
MMMBTU605
BTU605

where:
MMBTU – Millions of British Thermal Units
MJ – Mega joules
KJ – Kilojoules
J – Joules
ERG – Ergs
KCAL – Kilocalories
CAL – Calories
CHU - Celsius-heat unit
KWH – Kilowatt Hours
QUAD - short-scale quadrillion
THERM – Therms
TONTNT – Tons of TNT
TONCOAL – Tons of Coal
MMMBTU – Billions of BTU
GJ – Gigajoules
BTU – British Thermal Units
MMBTU605 – Millions of British Thermal Units at 60.5 degrees F.
MMMBTU605 – Billions of British Thermal Units at 60.5 degrees F.
BTU605 – British Thermal Units at 60.5 degrees F.

Mass Rate Units
LB
MG
KG
G
USTON
UKTON
MTON

	OZ TROYOZ GRAIN SLUG CARAT Where: LB is pounds MG is milligrams KG is kilograms G is grams USTON is a United States ton UKTON is a United Kingdom ton MTON is a metric ton OZ is an ounce TROYOZ is a troy ounce GRAIN is a grain SLUG is a slug CARAT is a carat Time Units: YEAR DAY HOUR MIN SEC
Velocity	
Velocity of Gas	The velocity of gas traveling through the pipe.
Units	The engineering units associated with the velocity of gas, and the pipe diameter.
Pipe Diameter	The diameter of the pipe through which the gas flows.

3.2.10 Alarm Config Tab (Run Configuration)

The Station Manager program allows for certain items to be configured as alarms.

When an item is configured as an alarm, then any time the value goes into or out of the alarm state, an entry will be made in the Audit Trail.

In addition, if the Station Manager controller is being used in a BSAP network, then these alarms will be reported to the SCADA host, if the SCADA host supports BSAP alarms.

To configure the alarm limits for run specific data, click on the Alarm Config Tab or right click on the run icon and choose **Alarm Configuration** from the pop-up menu.

This screen opens:

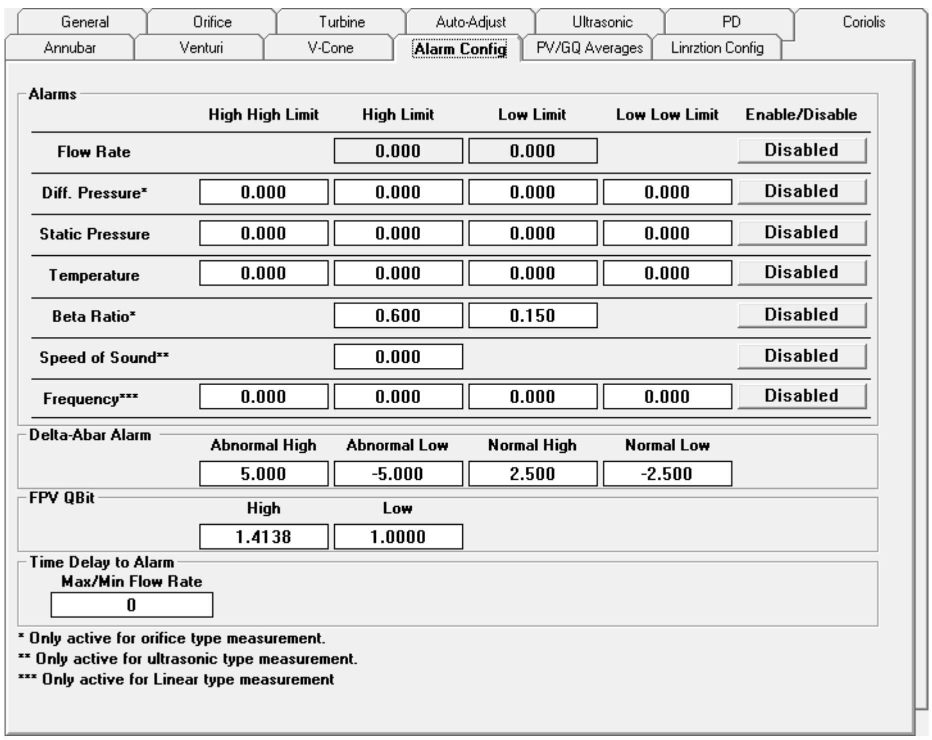


Figure 3-70. Alarm Config tabThe following items may be configured for alarms.

Field	Description
Flow Rate	The High and Low Limits for the flow rate are automatically calculated, based on the Maximum and Minimum flow rates through the meter run.
Diff Pressure	For an orifice meter only, High-High, High, Low, and Low-Low alarm limits may be set for the differential pressure input.

Static Pressure	For all meter types, High-High, High, Low, and Low-Low alarm limits may be set for the static pressure input.
Temperature	For all meter types, High-High, High, Low, and Low-Low alarm limits may be set for the flowing temperature input.
Beta Ratio	For an orifice meter only, High and Low alarm limits may be set for the calculated beta ratio.
Speed of Sound	For an ultrasonic meter only, the High alarm limit for the deviation between the speed of sound as calculated using AGA 10 and the speed of sound reported from the ultrasonic meter may be configured.
Frequency	For linear meter types (ultrasonic, turbine, AutoAdjust, and positive displacement (PD) meters, High-High, High, Low, and Low-Low alarm limits may be set for the frequency input.
Enabled/Disabled	An alarm may be Enabled or Disabled via the Enable/Disable button. By default, the alarms are disabled. When an alarm is disabled, no entries are made into the Audit Trail if the value goes in to or out of alarm.
Delta – Abar Alarm	For auto-adjust meters, this configures the high-high, high, low, and low-low alarm limits. This is only valid where the meter type is auto-adjust.
FPV Q Bit High Low	These fields set the high and low values that trigger the questionable data flag for the FPV calculated using the AGA8 equation. (The questionable data flag shows as a Q in the status grid at the top of the page.)
Time Delay to Alarm Max Min Flow Rate	Specify the amount of time (in seconds) that the flow rate must be continuously above the max value or below the min value to generate the alarm. This acts as a deadband in case the flow should momentarily fluctuate around the min/max limit.

3.2.11 Linearization Config Tab (Run Configuration)

Note: In order to access this tab, you must first configure the measurement type for the meter run to **Turbine**.

The Station Manager program allows for the linearization of the frequency outputs of turbine meters.

To configure the linearization table, click on the Linearization Config tab or right click on the run icon and choose **Meter Types > Turbine > Linearization Configuration** from the pop-up menus.

This screen opens:

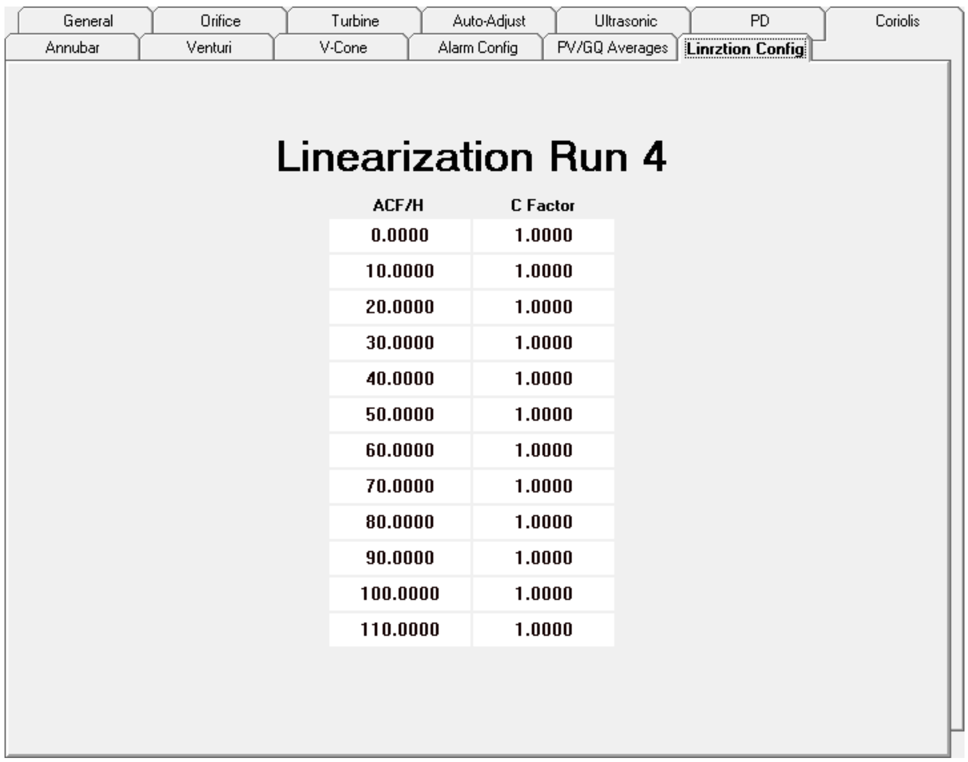


Figure 3-71. Linearization Config tab

This linearization table must be configured by the user. For up to 12 points, the user must enter an uncorrected flow rate in units of Actual Cubic Feet per hour, and an associated correction factor (C factor). The Station Manager program will interpolate between any two points on this table to calculate the C Factor for a specific flow rate.

⚠ Caution **If the user does not configure all 12 points, then the last non-zero entry for ACF/H will be used as the last correction factor. Any uncorrected flow rate above this point will use the correction factor for this point, there will be no interpolation performed.**

3.2.12 PV/GQ Averages Tab (Run Configuration)

The Station Manager program calculates and displays averages for the process values used for measurement, and the gas quality data used by the measurement for each run.

To view the averages for the process variables and gas quality data, click on the PV/GQ Averages tab or right click on the run icon and choose **PV/GQ Averages** from the pop-up menu. This screen opens:

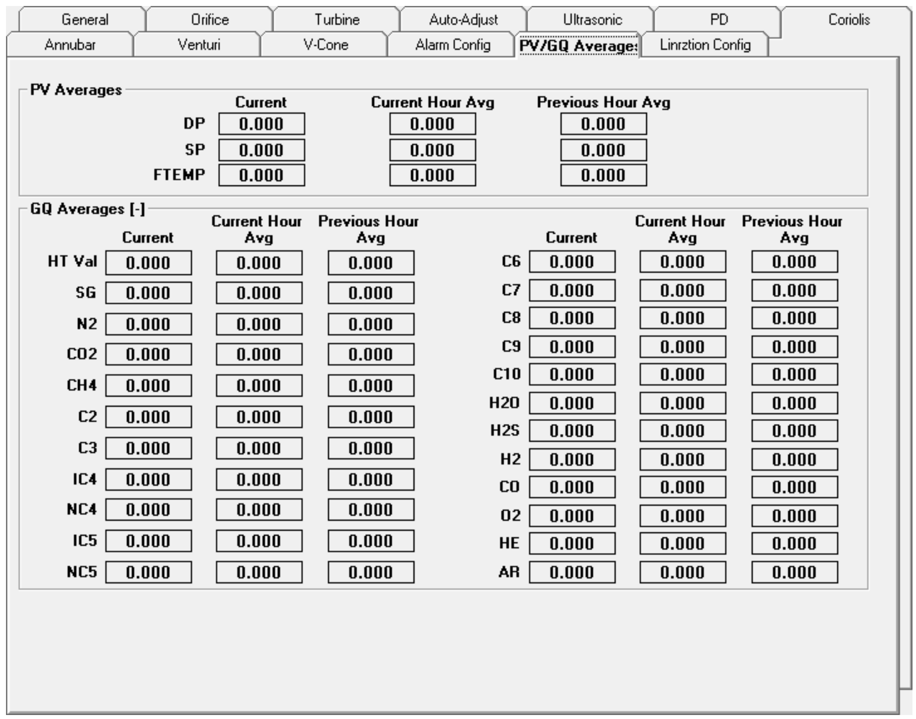


Figure 3-72. PV/GQ Averages tab

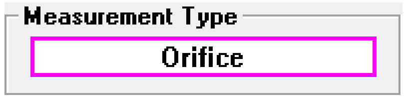
The averaging method for the differential pressure is always flow-dependent time-weighted linear averaging.

The averaging method for the static pressure and flowing temperature may be any of the API averaging methods.

The averaging method for the gas quality data is always time-weighted linear averaging.

3.2.13 Orifice Tab (Run Configuration)

To configure a run as an orifice meter, click on the Measurement Type in the General tab and select Orifice from the drop down menu.



Click the Orifice tab, or right click on the run icon and choose **Meter Types** > **Orifice** from the pop-up menus and the following screen opens:

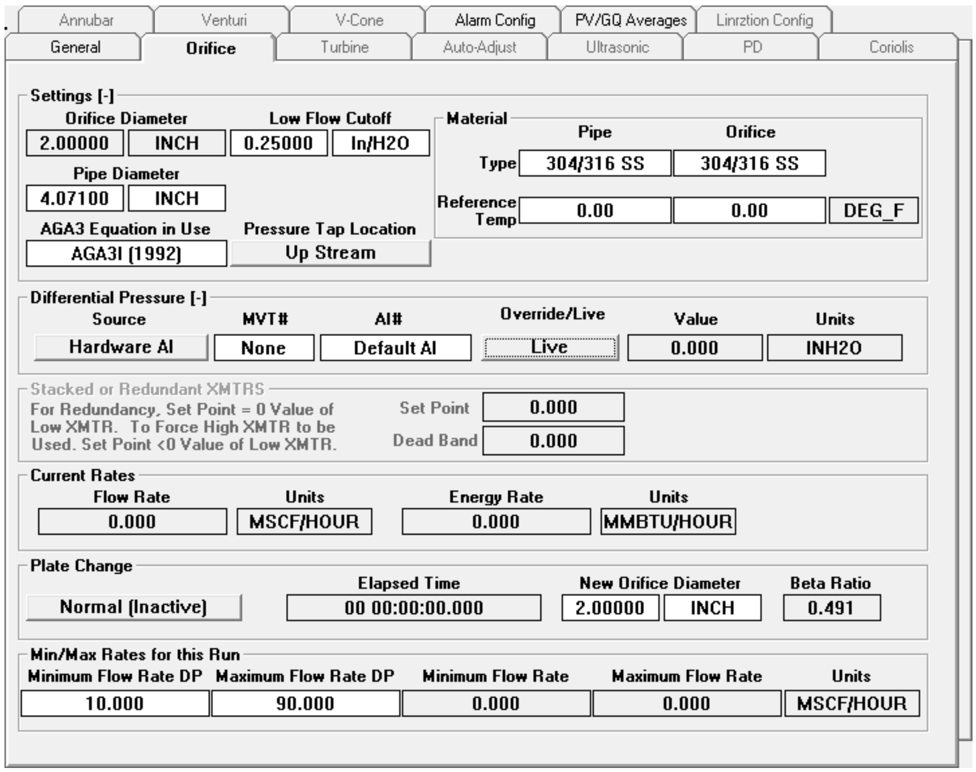
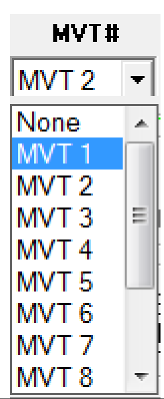


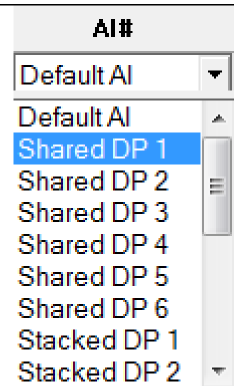
Figure 3-73. Orifice tab

Field	Description
<u>Settings</u>	
Orifice Diameter	The Orifice Diameter in use is displayed in the “Settings” section of this screen. To change the orifice diameter, see the “Plate Change” section.
Pipe Diameter	The pipe diameter change may be made by clicking on the box with the pipe diameter value in it and entering the desired pipe diameter value. When the new value of the pipe diameter is entered, a new beta ratio will be calculated and displayed in the “Plate Change” section.
Low Flow Cutoff	The low flow cutoff is the minimum value for differential pressure where measurement will be performed. If the differential pressure drops below this value, the measured flow will go to zero.

	The user may change the low flow cutoff value by clicking on the box with the low flow cutoff value and entering a new value, and clicking OK. The user may change the units that the low flow cutoff value is measured, by clicking on the units box, and selecting the desired units from the drop down menu.
Pressure Tap Location	The user may change the pressure tap location by clicking on Pressure Tap Location button.
AGA3 Equation in Use	Shows the equation used for AGA3 calculations. In order to use the AGA3 2012 equation, you must have ControlWave Micro firmware 5.6 or newer.
Material	
Pipe Type	Specify the pipe material.
Orifice Type	Specify the orifice material.
Pipe Reference Temp	Specify the reference temperature of pipe measurement.
Orifice Reference Temp	Specify the reference temperature of orifice material.
Differential Pressure	
Source	The source for the Differential Pressure measurement may come from either Analog Inputs via the I/O cards (Hardware AI) or via serial communications to the Multi-Variable Transmitters (MVT). The selection of the source is made via the Hardware AI/MVT button on the screen:
MVT#	If MVT is chosen, the user may select from any of 12 MVTs. In the Station Manager 6-run version, you can also choose from 18 HART and 18 WiHART transmitters.



AI#	If Hardware AI is chosen, the user may select from the Analog Input (AI) to be used from a drop down menu.



The user may select from the Default AI (this would be the “Run X Differential Pressure” selection from the I/O configuration page), or from a Shared Transmitter (“Shared DP X” from the I/O configuration page) or a pair of Stacked transmitters (“Stacked DP X Lo/Hi” from the I/O configuration page).

If the Default AI or Shared transmitters are chosen, the measurement source configuration is completed. If Stacked transmitters are chosen, see the “Stacked or Redundant XMTRS” section.

Override / Live

The user may override the measurement values in use by selecting Override instead of Live

When Override is selected, the user may enter the desired value for the measurement to be used. When Live is selected, the Value will be driven by the appropriate input value.

Note: the action of changing from Live to Override or Override to Live is entered in the Audit trail. When in Override, any changes made to the Value are entered in the Audit Trail.

Note: This override is done at the Run Measurement level, not at the I/O level. Because of this, care needs to be taken when overriding runs configured for bi-directional measurement, because the logic overriding the measurement values occurs after the logic for routing the measurement inputs to the proper run. Additionally, any input alarms and conditioning are not performed when Override is active.

Value

The differential pressure value in use is shown here.

When “Live” is selected via the “Override/Live” button, this value is the value coming from the Differential Pressure Source.

When “Override” is selected via the “Override/Live” button, this value may be entered by the user, and

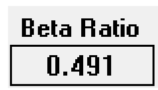
	the entered value will be used in the measurement calculation.
Units	The units for the measurement inputs come from the input source.
<u>Stacked or Redundant XMTRs</u>	If stacked transmitters are chosen, the user must configure the transmitters as Stacked or Redundant transmitters. Stacked Transmitters operate such that one transmitter measures at a low range of measurement, and a second transmitter measures at a higher range. Redundant transmitters operate such that one transmitter is used for measurement all of the time, and the second transmitter is available in case the first transmitter fails.
Set Point	When using Stacked Transmitters, the user must enter a set point where the measurement will transition from the low range transmitter to the high range transmitter. To configure the stacked transmitters to be used as redundant transmitters, the user must set the Set Point to 0.0. This will set the Stacked DP X Lo to be the primary transmitter, and the Stacked DP X Hi transmitter will only be used if the Lo transmitter indicates a failure. To force the Hi transmitter to be used, the user must set the Set Point to a value less than 0.0.
Dead Band	A deadband may be entered, that will prevent the measurement from switching back and forth between the high and low transmitters.
<u>Current Rate</u>	The current flow and energy rates are displayed on this screen. The units of flow and energy rates are set from the General page.
<u>Plate Change</u>	To change the orifice diameter, the user must change the Plate Change mode from Normal (Inactive) to Plate Change (Active) While the Plate Change mode is Active, the Differential Pressure, Static Pressure and Temperature values are frozen.
Elapsed Time	While the Plate Change mode is Active, the elapsed time is displayed.
New Orifice Diameter	The new orifice diameter and orifice diameter units may be entered here.

The orifice diameter in use does not change until the plate change mode changes from “Plate Change (Active)” to “Normal (Inactive)”.

The Orifice Diameter in use appears in the Settings section

Beta Ratio

The beta ratio is the orifice diameter divided by the pipe diameter.



The beta ratio is displayed on this screen. If the beta ratio is out of range, it will appear in red text. The low limit for the beta ratio is 0.15 and the high limit for the beta ratio is 0.60.

<u>Min/Max Rates for this Run</u>

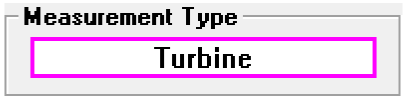
The minimum and maximum flow rates for an orifice run are calculated outputs of the AGA3. The DP minimum is calculated using the Minimum Flow Rate DP setting and the DP maximum is calculated using the Maximum Flow Rate DP setting.

The Minimum Flow Rate DP setting is the DP in inches to use for the minimum flow calculation.

The Maximum Flow Rate DP setting is the percent of DP span to use for the maximum flow calculation.

3.2.14 Turbine Tab (Run Configuration)

To configure a run as a turbine meter, click on the Measurement Type in the General tab and select **Turbine** from the drop down menu.



Click the Turbine tab, or right click on the run icon and choose **Meter Types** > **Turbine** > **General** from the pop-up menus and the following screen opens:

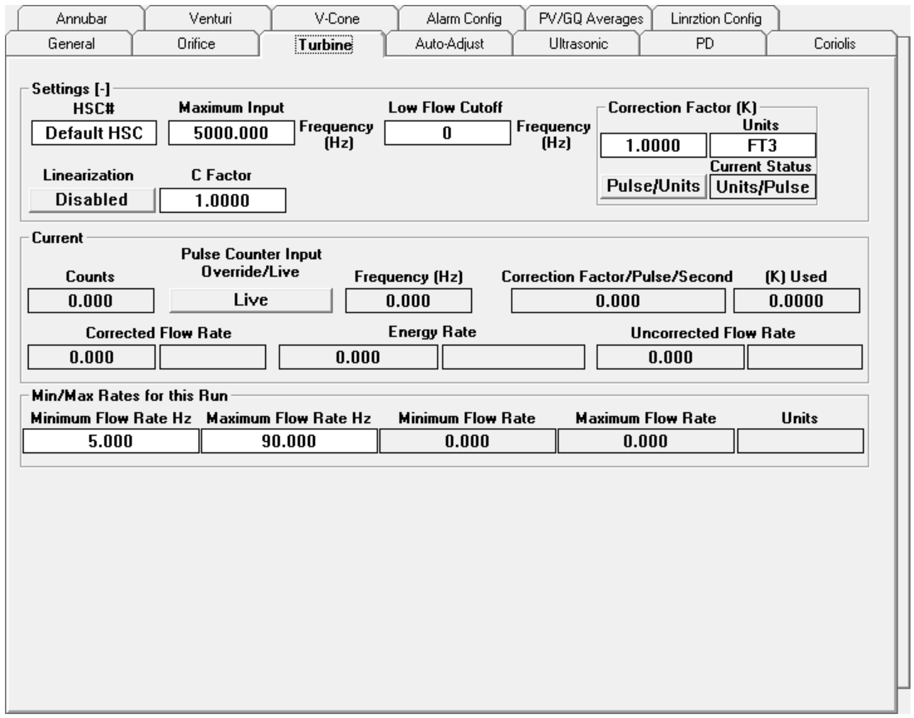
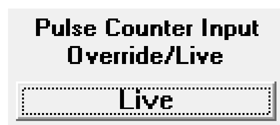
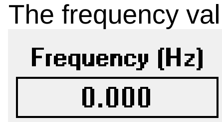


Figure 3-74. Turbine tab

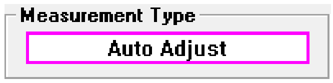
Field	**Description**
<u>Settings</u>	
HSC#	The source for the High Speed Counter (HSC) comes from a High Speed Counter Input via the I/O cards. The user may select from the Default HSC (this would be the “Run X AGA7 Hz” selection from the I/O configuration page), or from a Shared Hz input.
Maximum Input	The maximum input is used to calculate the minimum and maximum flow rates through the meter run.
Low Flow Cutoff	The low flow cutoff is the minimum frequency that will still be considered valid for flow measurement. If the frequency of the inputs from the high speed counter fall below this number, volume will not be measured.

Correction Factor (K)	The correction factor represents either the volume (in Cubic Feet) per pulse, or the number of pulses per volume (in Cubic Feet). The choice is reflected in the **Current Status** field. The K factor value is entered in the box, while the K factor units are selected by using the pushbutton. This information is available from the turbine meter data plate.
Linearization Enabled / Disabled	Enables/disables use of the linearization table.
C Factor	The current linearization factor being used.
Current	
Counts	The "Counts" value represents the total number of events (pulses) in the most recent execution cycle coming from the High Speed Counter Input.
Pulse Counter Input Override / Input	The user may override the measurement values in use by selecting Override instead of Live  When Override is selected, the user may enter the desired value for the frequency to be used. When Live is selected, the Value will be driven by the appropriate high speed counter input value. **Note:** The action of changing from Live to Override or Override to Live is entered in the Audit trail. When in Override, any changes made to the Value are entered in the Audit Trail. **Note:** This override is done at the Run Measurement level, not at the I/O level. Because of this, care needs to be taken when overriding runs configured for bi-directional measurement, because the logic overriding the measurement values occurs after the logic for routing the measurement inputs to the proper run. Additionally, any input alarms and conditioning are not performed when Override is active.
Frequency (Hz)	The frequency value in use is shown here.  When "Live" is selected via the "Override/Live" button, this value is the value coming from the HSC input.

	When “Override” is selected via the “Override/Live” button, this value may be entered by the user. The entered value will be used in the measurement calculation.
Correction Factor / Pulse/ Second	This is the correction factor calculated by the AGA 7 equation.  This correction factor multiplied by the frequency will provide the corrected flow rate.
(K) Used	The AGA 7 calculation requires the K factor to be input in units of Cubic Feet/Pulse. The (K) Used value always represents the K factor in the units of Cubic Feet/Pulse.
Corrected Flow Rate, Energy Rate, Uncorrected Flow Rate	The current corrected flow, energy rate, and uncorrected flow rate are displayed on this screen. The units of flow and energy rates are set from the General page.
<u>Min / Max Rates for this Run</u>	The minimum and maximum flow rates for a turbine meter run are calculated as follows: Minimum Flow Rate = max frequency * AGA7 Factor * (Min /100) Maximum Flow Rate = max frequency * AGA7 Factor * (Max/100) Where: Min defaults to 5 Max defaults to 90 Minimum Flow Rate Hz = The percent of maximum frequency to use for the Minimum Flow calculation. Maximum Flow Rate Hz = The percent of maximum frequency to use for the Maximum Flow calculation.

3.2.15 Auto-Adjust Tab (Run Configuration)

To configure a run as an auto-adjust turbine meter, click on the Measurement Type in the General tab and select **Auto Adjust** from the drop down menu.



Click the Auto-Adjust tab or right click on the run icon and choose **Meter Types** > **Auto-Adjust** from the pop-up menus, and the following screen opens:

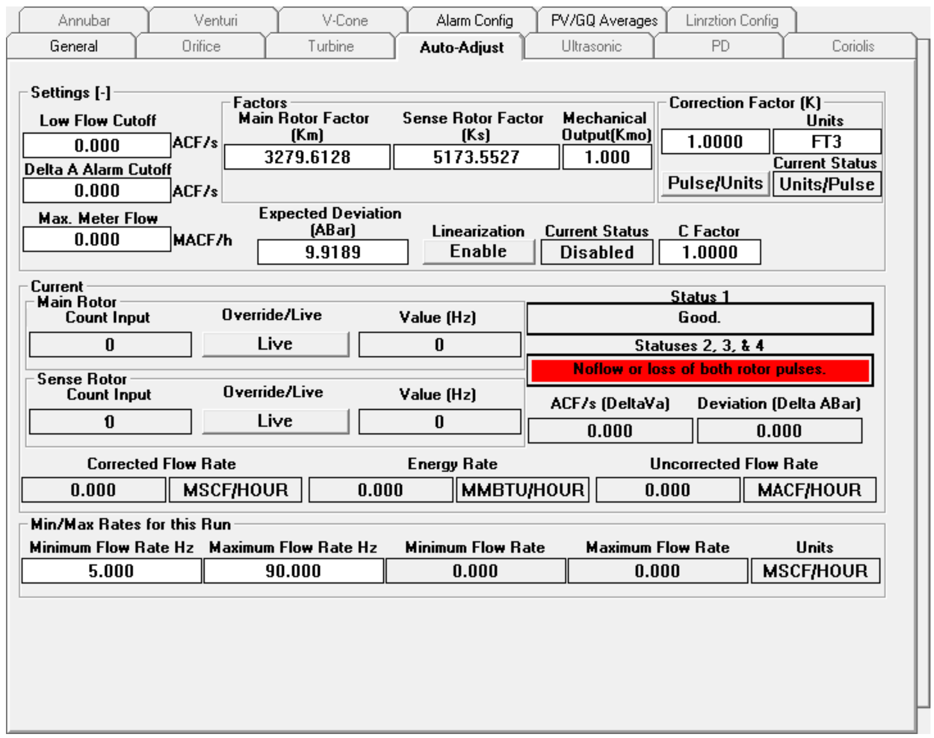


Figure 3-75. Auto-Adjust tab

Field	Description
<u>Settings</u>	
Low Flow Cutoff	The low flow cutoff is the minimum flow, in units of Actual Cubic Feet per second that will still be considered valid for flow measurement. If the flow rate falls below this number, volume will not be measured.
Main Rotor Factor (Km)	The main rotor is the upstream rotor and has a greater blade angle to the flow of gas.
Sense Rotor Factor (Ks)	The sense rotor is the downstream rotor and has a shallower blade angle to the flow of gas.
Mechanical Output (Kmo)	Used to determine unadjusted volume totals with only main rotor pulses. Set to 0 if these are not needed.

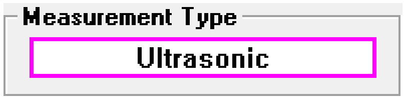
Linearization Enabled / Disabled	Enable / disable use of the linearization table using this button. The **Current Status** field shows whether the linearization table is in use.
Max Meter Flow	The maximum meter flow is the maximum flow rate through the meter, in units of thousands of actual cubic feet per hour. This number is used to calculate the Minimum and maximum flow rate through the meter.
Expected Deviation (Abar)	Average relative adjustment between main and sense rotors.
C Factor	Current linearization factor.
Correction Factor (K)	The correction factor represents either the volume (in Cubic Feet) per pulse, or the number of pulses per volume (in Cubic Feet). The choice is reflected in the **Current Status** field. The K factor value is entered in the box, while the K factor units are selected by using the pushbutton. This information is available from the turbine meter data plate.
<u>Current</u>	
Main Rotor Count Input	Pulse count from main rotor.
Sense Rotor Count Input	Pulse count from sense rotor.
Main Rotor Override / Live,	You can override the measurement value in use by selecting Override instead of Live When Override is selected, you enter the desired value for the frequency to be used in the **Main Rotor Value (Hz)** field. When Live is selected, the value will be driven by the main rotor high speed counter input value. **Note:** The action of changing from Live to Override or Override to Live is entered in the Audit trail. When in Override, any changes made to the Value are entered in the Audit Trail. **Note:** This override is done at the Run Measurement level, not at the I/O level. Because of this, care needs to be taken when overriding runs configured for bi-directional measurement, because the logic overriding the measurement values occurs after the logic for routing the measurement inputs to the proper run. Additionally, any input alarms and conditioning are not performed when Override is active.
Sense Rotor Override / Live	You can override the measurement value in use by selecting Override instead of Live When Override is selected, you enter the desired value for the frequency to be used in the **Sense Rotor Value (Hz)** field.

	When Live is selected, the Value will be driven by the sense rotor high speed counter input value. **Note:** The action of changing from Live to Override or Override to Live is entered in the Audit trail. When in Override, any changes made to the Value are entered in the Audit Trail. **Note:** This override is done at the Run Measurement level, not at the I/O level. Because of this, care needs to be taken when overriding runs configured for bi-directional measurement, because the logic overriding the measurement values occurs after the logic for routing the measurement inputs to the proper run. Additionally, any input alarms and conditioning are not performed when Override is active.
Main Rotor Value (Hz)	In Override mode, you can enter a value to use instead of the actual value from the main rotor.
Sense Rotor Value (Hz)	In Override mode, you can enter a value to use instead of the actual value from the sense rotor.
Status 1	The Auto-Adjust function block status code. See the ControlWave Designer online help for the Auto Adjust function block's **odiStatus** parameter for an explanation of these codes.
Status 2, 3, & 4	The Auto-Adjust function block's abnormal, alarm, and system status codes. See the ControlWave Designer online help for the Auto Adjust function block's **odiStatus2**, **odiStatus3**, **odiStatus4** parameters for an explanation of these codes.
ACF/s (DeltaVa)	The ACF/s (DeltaVa) reading is displayed here.
Deviation (Delta Abar)	The Deviation (Delta ABar) reading is displayed here.
Corrected Flow Rate, Energy Rate, Uncorrected Flow Rate	The current corrected flow, energy rate, and uncorrected flow rate are displayed on this screen. The units of flow and energy rates are set from the Run Configuration page.
<u>Min / Max Rates for this Run</u>	The minimum and maximum flow rates for an auto-adjust meter run are calculated as follows: Minimum Flow Rate = max frequency * AGA7 Factor * (Min /100) Maximum Flow Rate = max frequency * AGA7 Factor * (Max/100) Where: Min defaults to 5 Max defaults to 90 Minimum Flow Rate Hz = The percent of maximum frequency to use for the Minimum Flow calculation.

Field	Description
	Maximum Flow Rate Hz = The percent of maximum frequency to use for the Maximum Flow calculation.

3.2.16 Ultrasonic Tab (Run Configuration)

To configure a run as an ultrasonic meter, click on the Measurement Type in the General tab and select **Ultrasonic** from the drop down menu.



Click the Ultrasonic tab or right click on the run icon and choose **Meter Types** > **Ultrasonic** from the pop-up menus, and the following screen opens:

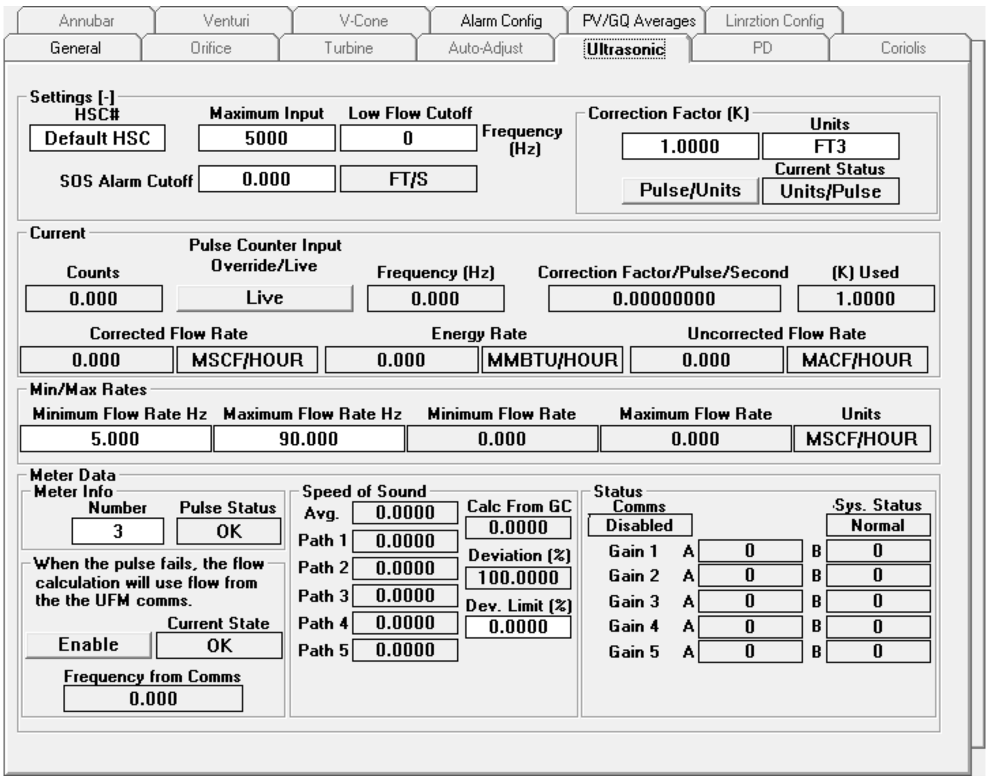


Figure 3-76. Ultrasonic tab

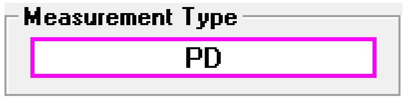
Field	Description
Settings	
HSC#	The source for the Counter input comes from a High Speed Counter Input via the I/O cards. The user may select from the Default HSC (this would be the “Run X AGA7 Hz” selection from the I/O configuration page), or from a Shared Hz input.
Maximum Input	The maximum input is used to calculate the minimum and maximum flow rates through the meter run.

Low Flow Cutoff	The low flow cutoff is the minimum frequency that will still be considered valid for flow measurement. If the frequency of the inputs from the high speed counter fall below this number, volume will not be measured.
Correction Factor (K)	The correction factor represents either the volume (in Cubic Feet) per pulse, or the number of pulses per volume (in Cubic Feet). The choice is reflected in the **Current Status** field. The K factor value is entered in the box, while the K factor units are selected by using the push button. This information is available from the UFM meter data plate.
SOS Alarm Cutoff	If the velocity for the run in feet per second is below this setting, this prevents the SOS (Speed-of-Sound) alarm from turning on.
<u>Current</u>	
Counts	The “Counts” value represents the event (pulse) total during the most recent execution cycle coming from the High Speed Counter Input.
Pulse Counter Input Override / Live	The user may override the measurement values in use by selecting Override instead of Live When Live is selected, the Value will be driven by the appropriate high speed counter input value. **Note:** the action of changing from Live to Override or Override to Live is entered in the Audit trail. When in Override, any changes made to the Value are entered in the Audit Trail. **Note:** This override is done at the Run Measurement level, not at the I/O level. Because of this, care needs to be taken when overriding runs configured for bi-directional measurement, because the logic overriding the measurement values occurs after the logic for routing the measurement inputs to the proper run. Additionally, any input alarms and conditioning are not performed when Override is active.
Frequency (Hz)	When Override is selected, the user may enter the desired value for the frequency to be used.
Correction Factor / Pulse/ Second	This is the correction factor calculated by the AGA 7 equation. This correction factor multiplied by the frequency will provide the corrected flow rate.
(K) Used	The AGA 7 calculation requires the K factor to be input in units of Cubic Feet/Pulse. The (K) Used value always represents the K factor in the units of Cubic Feet/Pulse.
Corrected Flow Rate, Energy Rate, Uncorrected Flow	The current corrected flow, energy rate, and uncorrected flow rate are displayed on this screen. The units of flow and energy rates are set from the Run Configuration page.

Rate	
Min / Max Rates for this Run	The minimum and maximum flow rates for a turbine meter run are calculated as follows: Minimum Flow Rate = max frequency * AGA7 Factor * (Min /100) Maximum Flow Rate = max frequency * AGA7 Factor * (Max/100) Where: Min defaults to 5 Max defaults to 90 Minimum Flow Rate Hz = The percent of maximum frequency to use for the Minimum Flow calculation. Maximum Flow Rate Hz = The percent of maximum frequency to use for the Maximum Flow calculation.
Meter Data	If a MODBUS interface to the ultrasonic meter has been configured from the I/O Configuration section, the data collected from the ultrasonic meter is displayed here.
Meter Info	
Meter Number	To select the ultrasonic meter that data is being collected from, click on the Meter Number box, and enter the appropriate meter number.
Pulse Status	This field shows "OK" if pulses from the UFM are read from the UFM.
When the pulse fails, the flow calculation will use flow from the UFM comms	Click the push button to enable/disable this function. **Current State** shows whether or not this function is enabled.
Frequency From Comms	Shows the current input frequency being read from communications with the UFM.
Speed of Sound	The Speed of Sound (SOS) readings from each path of the ultrasonic meter are displayed, and the average is calculated. At the same time, the Multi-Run Multi-Station controller calculates the Speed of Sound per the AGA 10 equations. The calculated value is compared to the average value from the ultrasonic meter, and if the deviation is greater than the deviation limit, an alarm will be generated. This alarm will be entered into the Audit Trail, and will be available via both the BSAP Slave communications and MODBUS communications interfaces.
Status	Diagnostics information relating to communications with the ultrasonic meter, the gain on each path, and the overall status of the ultrasonic meter is collected and displayed here.

3.2.17 PD Tab (Run Configuration)

Positive displacement (PD) meters are used for measuring very low flow rates. To configure a run as a positive displacement (PD) meter, click on the Measurement Type in the General tab and select **PD** from the drop down menu.



Click the PD tab or right click on the run icon and choose **Meter Types > PD** from the pop-up menus, and the following screen opens:

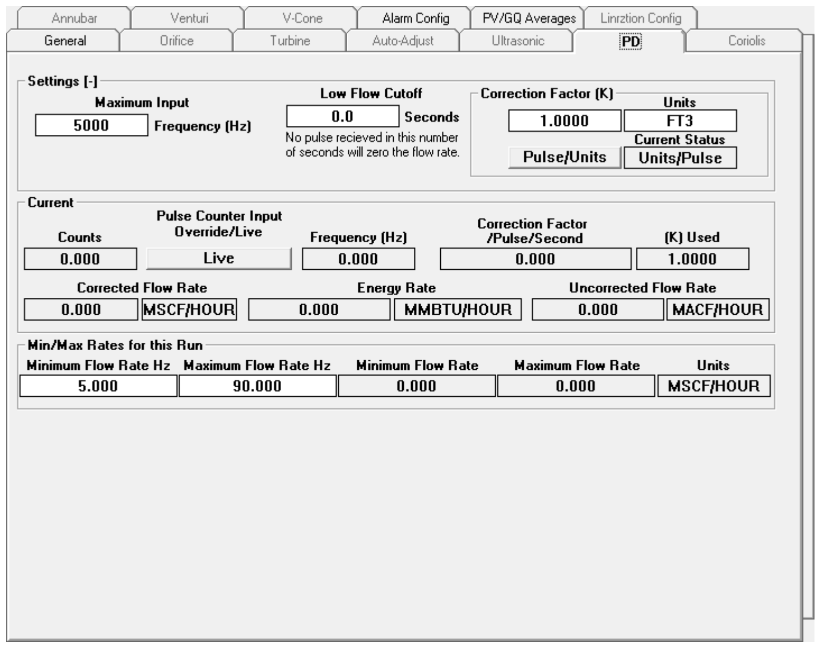


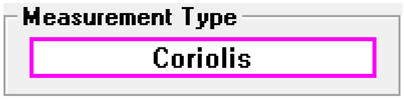
Figure 3-77. PD tab

Field	Description
Settings	
Maximum Input	The maximum input is used to calculate the minimum and maximum flow rates through the meter run.
Low Flow Cutoff	A positive displacement meter typically has very low frequency counts. A valid frequency may be well below 1 Hz, that is, it can be several seconds between pulses. It is not unusual to see 30 seconds or more between pulses from a PD meter, during normal flowing conditions. Therefore, the low flow cutoff for a PD meter is the maximum amount of time allowed between two consecutive pulses before the flow rate is zeroed. However, all pulses received by the Station Manager controller from a PD meter are included in volume totalization for the meter run.
Correction Factor (K)	The correction factor represents either the volume (in Cubic Feet) per pulse, or the number of pulses per volume (in Cubic Feet). The choice is reflected in the **Current Status** field. The K

	factor value is entered in the box, while the K factor units are selected by using the push button. This information is available from the PD meter data plate.
Current	
Counts	This shows the number of pulses received at the high speed counter input.
Pulse Counter Input Override / Live	The user may override the measurement values in use by selecting Override instead of Live. When Override is selected, the user may enter the desired value for the frequency to be used. When Live is selected, the Value will be driven by the appropriate high speed counter input value. **Note:** The action of changing from Live to Override or Override to Live is entered in the Audit trail. When in Override, any changes made to the Value are entered in the Audit Trail. **Note:** This override is done at the Run Measurement level, not at the I/O level. Because of this, care needs to be taken when overriding runs configured for bi-directional measurement, because the logic overriding the measurement values occurs after the logic for routing the measurement inputs to the proper run. Additionally, any input alarms and conditioning are not performed when Override is active.
Frequency (Hz)	This is the derived frequency. Because a positive displacement meter can have very low frequency pulses (< 1 Hz), this number can be a fraction less than 1.0.
Correction Factor / Pulse/ Second	This is the correction factor calculated by the AGA 7 equation. This correction factor multiplied by the frequency will provide the corrected flow rate.
(K) Used	The AGA 7 calculation requires the K factor to be input in units of Cubic Feet/Pulse. The (K) Used value always represents the K factor in the units of Cubic Feet/Pulse.
Corrected Flow Rate, Energy Rate, Uncorrected Flow Rate	The current corrected flow, energy rate, and uncorrected flow rate are displayed on this screen. The units of flow and energy rates are set from the Run Configuration page.
Min / Max Rates for this Run	The minimum and maximum flow rates for a PD meter run are calculated as shown below: Minimum Flow Rate = max freq * (Min /100) * AGA7 Factor Maximum Flow Rate = max freq* (Max /100) * AGA7 Factor Where: Min defaults to 5 Max defaults to 90 Minimum Flow Rate Hz = The percent of maximum frequency to use for the Minimum Flow calculation. Maximum Flow Rate Hz = The percent of maximum frequency to use for the Maximum Flow calculation.

3.2.18 Coriolis Tab (Run Configuration)

To configure a run as a Coriolis meter, click on the Measurement Type in the General tab and select **Coriolis** from the drop down menu.



Click the Coriolis tab or right click on the run icon and choose **Meter Types** > **PD** from the pop-up menus, and the following screen opens:

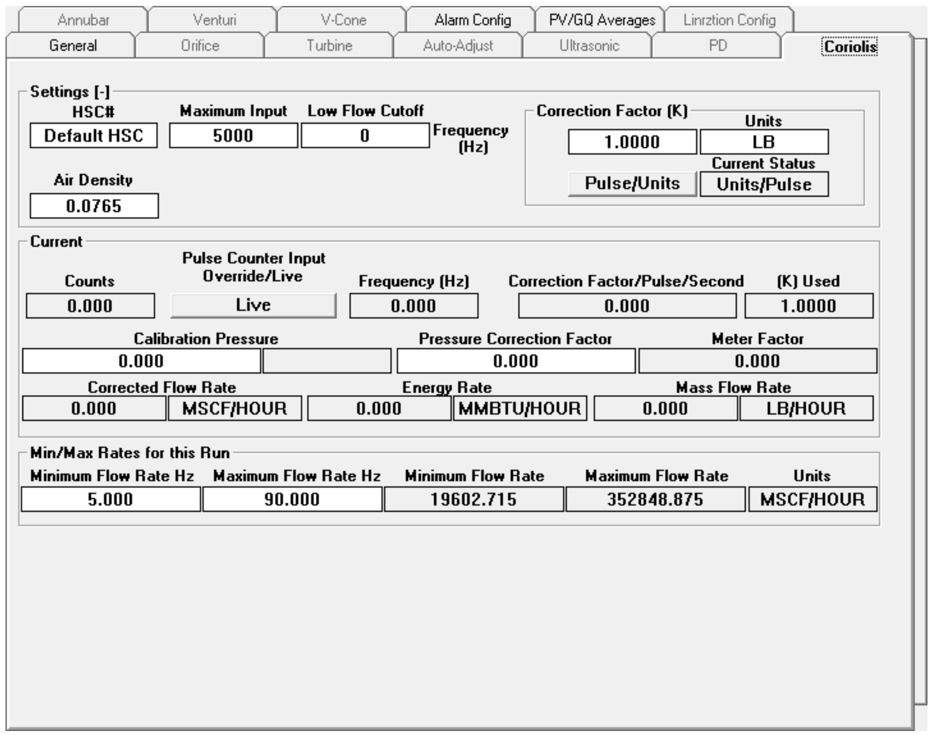


Figure 3-78. Coriolis tab

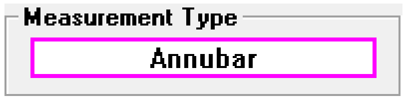
Field	Description
Settings	
HSC#	The source for the Counter input comes from a High Speed Counter Input via the I/O cards. (This would be the "Run X AGA7 Hz" selection from the I/O configuration page.)
Maximum Input	The maximum input is used to calculate the minimum and maximum flow rates through the meter run.
Low Flow Cutoff	The low flow cutoff is the minimum frequency that will still be considered valid for flow measurement. If the frequency of the inputs from the high speed counter fall below this number, volume will not be measured.
Correction Factor (K)	The correction factor represents either the volume (in Cubic Feet) per pulse, or the number of pulses per volume (in Cubic Feet). The choice is reflected in the **Current Status** field.The K factor value is entered in the box, while the K factor units are selected by using the push button.

	This information is available from the Coriolis meter data plate.
Current	
Air Density	The density of air constant.
Counts	The “Counts” value represents the event (pulse) total during the most recent execution cycle coming from the High Speed Counter Input.
Pulse Counter Input Override / Live	The user may override the measurement values in use by selecting Override instead of Live When Live is selected, the Value will be driven by the appropriate high speed counter input value. **Note:** the action of changing from Live to Override or Override to Live is entered in the Audit trail. When in Override, any changes made to the Value are entered in the Audit Trail. **Note:** This override is done at the Run Measurement level, not at the I/O level. Because of this, care needs to be taken when overriding runs configured for bi-directional measurement, because the logic overriding the measurement values occurs after the logic for routing the measurement inputs to the proper run. Additionally, any input alarms and conditioning are not performed when Override is active.
Frequency (Hz)	When Override is selected, the user may enter the desired value for the frequency to be used.
(K) Used	The Coriolis calculation requires the K factor to be input in units of Cubic Feet/Pulse. The (K) Used value always represents the K factor in the units of Cubic Feet/Pulse.
Calibration Pressure	Shows the pressure at which the Coriolis meter was calibrated.
Pressure Correction Factor	Specify the pressure correction factor specified by the manufacturer of the coriolis meter.
Meter Factor	Shows the meter factor specified by the manufacturer of the coriolis meter.
Corrected Flow Rate, Energy Rate, Mass Flow Rate	The current corrected flow, energy rate, and mass flow rate are displayed on this screen. The units of flow and energy rates are set from the General page.

Min / Max Rates for this Run	The minimum and maximum flow rates for a Coriolis meter run are calculated as shown below: Minimum Flow Rate = max freq * (Min /100) * Coriolis Factor Maximum Flow Rate = max freq* (Max /100) * Coriolis Factor Where: Min defaults to 5 Max defaults to 90 Minimum Flow Rate Hz = The percent of maximum frequency to use for the Minimum Flow calculation. Maximum Flow Rate Hz = The percent of maximum frequency to use for the Maximum Flow calculation.

3.2.19 Annubar Tab (Run Configuration)

Annubar meters lower a probe to measure the gas flow. To configure a run as a Annubar meter, click on the Measurement Type in the General tab and select **Annubar** from the drop down menu.



Click the Annubar tab or right click on the run icon and choose **Meter Types** > **Annubar** from the pop-up menus, and the following screen opens:

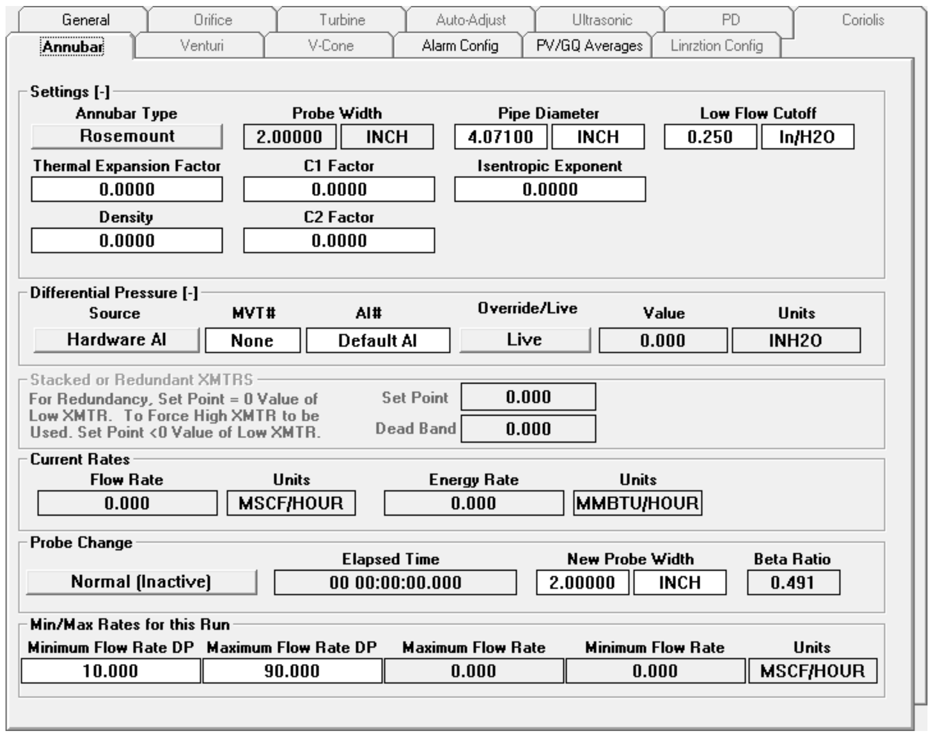


Figure 3-79. Annubar tab

Field	Description
Settings	
Annubar Type	Either Rosemount or Verabar.
Probe Width	Width of the annubar probe.
Pipe Diameter	The diameter of the pipe. The pipe diameter change may be made by clicking on the box with the pipe diameter value in it and entering the desired pipe diameter value. When the new value of the pipe diameter is entered, a new beta ratio will be calculated and displayed in the “Plate Change” section.

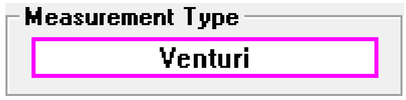
Low Flow Cutoff	The low flow cutoff is the minimum value for differential pressure where measurement will be performed. If the differential pressure drops below this value, the measured flow will go to zero. The user may change the low flow cutoff value by clicking on the box with the low flow cutoff value and entering a new value, and clicking OK. The user may change the units that the low flow cutoff value is measured, by clicking on the units box, and selecting the desired units from the drop down menu.
Thermal Expansion Factor	The annubar thermal expansion factor.
C1 Factor	The annubar constant.
Density	The density of gas to use for the mass flow equation.
C2 Factor	The annubar constant.
Isentropic Exponent	The isentropic exponent of the natural gas being measured.
<u>Differential Pressure</u>	
Source	The source for the Differential Pressure measurement may come from either Analog Inputs via the I/O cards (Hardware AI) or via serial communications to the Multi-Variable Transmitters (MVT). The selection of the source is made via the Hardware AI/MVT button on the screen:
MVT#	If MVT is chosen, the user may select from any of 12 MVTs. In the Station Manager 6-run version, you can also choose from 18 HART and 18 WiHART transmitters.
AI#	If Hardware AI is chosen, the user may select from the Analog Input (AI) to be used from a drop down menu. The user may select from the Default AI (this would be the “Run X Differential Pressure” selection from the I/O configuration page), or from a Shared Transmitter (“Shared DP X” from the I/O configuration page) or a pair of Stacked transmitters (“Stacked DP X Lo/Hi” from the I/O configuration page). If the Default AI or Shared transmitters are chosen, the measurement source configuration is completed. If Stacked transmitters are chosen, see the “Stacked or Redundant XMTRS” section.

Override / Live	The user may override the measurement values in use by selecting Override instead of Live When Override is selected, the user may enter the desired value for the measurement to be used. When Live is selected, the Value will be driven by the appropriate input value. **Note**: the action of changing from Live to Override or Override to Live is entered in the Audit trail. When in Override, any changes made to the Value are entered in the Audit Trail. **Note:** This override is done at the Run Measurement level, not at the I/O level. Because of this, care needs to be taken when overriding runs configured for bi-directional measurement, because the logic overriding the measurement values occurs after the logic for routing the measurement inputs to the proper run. Additionally, any input alarms and conditioning are not performed when Override is active.
Value	The differential pressure value in use is shown here. When “Live” is selected via the “Override/Live” button, this value is the value coming from the Differential Pressure Source. When “Override” is selected via the “Override/Live” button, this value may be entered by the user, and the entered value will be used in the measurement calculation.
Units	The units for the measurement inputs come from the input source.
Stacked or Redundant XMTRs	If stacked transmitters are chosen, the user must configure the transmitters as Stacked or Redundant transmitters. Stacked Transmitters operate such that one transmitter measures at a low range of measurement, and a second transmitter measures at a higher range. Redundant transmitters operate such that one transmitter is used for measurement all of the time, and the second transmitter is available in case the first transmitter fails.
Set Point	When using Stacked Transmitters, the user must enter a set point where the measurement will transition from the low range transmitter to the high range transmitter. To configure the stacked transmitters to be used as redundant transmitters, the user must set the Set Point to 0.0. This will set the Stacked DP X Lo to be the primary

	transmitter, and the Stacked DP X Hi transmitter will only be used if the Lo transmitter indicates a failure. To force the Hi transmitter to be used, the user must set the Set Point to a value less than 0.0.
Dead Band	A deadband may be entered, that will prevent the measurement from switching back and forth between the high and low transmitters.
<u>Current Rate</u>	The current flow and energy rates are displayed on this screen. The units of flow and energy rates are set from the Run Configuration page.
<u>Plate Change</u>	To change the probe diameter, the user must change the plate. Change mode from Normal (Inactive) to Plate Change (Active) While the Plate Change mode is Active, the Differential Pressure, Static Pressure and Temperature values are frozen.
Elapsed Time	While the Plate Change mode is Active, the elapsed time is displayed.
New Probe Width	The new probe width and associated units may be entered here. The probe width in use does not change until the plate change mode changes from “Plate Change (Active)” to “Normal (Inactive)”. The probe width in use appears in the Settings section
Beta Ratio	The beta ratio is the probe width divided by the pipe diameter. The beta ratio is displayed on this screen. If the beta ratio is out of range, it will appear in red text. The low limit for the beta ratio is 0.15 and the high limit for the beta ratio is 0.60.
<u>Min / Max Rates for this Run</u>	The minimum and maximum flow rates for an Annubar run are calculated outputs of the annubar flow equation. The DP minimum is calculated using the Minimum Flow Rate DP setting and the DP maximum is calculated using the Maximum Flow Rate DP setting. Minimum Flow Rate DP setting= The DP in inches to use for the Minimum Flow calculation. Maximum Flow Rate DP setting = The percent of DP span to use for the Maximum Flow calculation.

3.2.20 Venturi (Run Configuration)

Venturi meters force the gas into a narrow tube for measurement. To configure a run as a Venturi-type meter, click on the Measurement Type in the General tab and select **Venturi** from the drop down menu.



Click the Venturi tab, or right click on the run icon and choose **Meter Types** > **Venturi** from the pop-up menus and the following screen opens:

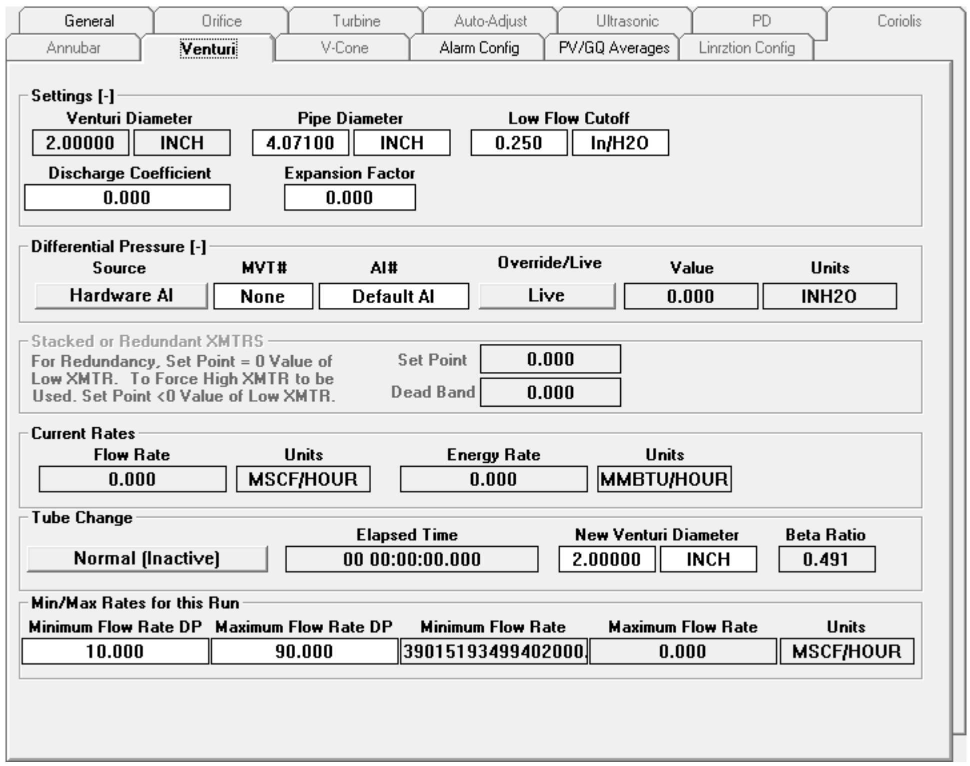


Figure 3-80. Venturi tab

Field	Description
Settings	
Venturi Diameter	The diameter of the venture meter.
Pipe Diameter	The pipe diameter change may be made by clicking on the box with the pipe diameter value in it and entering the desired pipe diameter value. When the new value of the pipe diameter is entered, a new beta ratio will be calculated and displayed in the “Plate Change” section.
Low Flow Cutoff	The low flow cutoff is the minimum value for differential pressure where measurement will be performed. If the differential pressure drops below this value, the measured

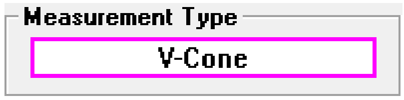
	flow will go to zero. The user may change the low flow cutoff value by clicking on the box with the low flow cutoff value and entering a new value, and clicking OK. The user may change the units that the low flow cutoff value is measured, by clicking on the units box, and selecting the desired units from the drop down menu.
Discharge Coefficient	The discharge coefficient of the Venturi meter.
Expansion Factor	The thermal expansion factor of the Venturi meter.
<u>Differential Pressure</u>	
Source	The source for the Differential Pressure measurement may come from either Analog Inputs via the I/O cards (Hardware AI) or via serial communications to the Multi-Variable Transmitters (MVT). The selection of the source is made via the Hardware AI/MVT button on the screen:
MVT#	If MVT is chosen, the user may select from any of 12 MVTs. In the Station Manager 6-run version, you can also choose from 18 HART and 18 WiHART transmitters.
AI#	If Hardware AI is chosen, the user may select from the Analog Input (AI) to be used from a drop down menu. The user may select from the Default AI (this would be the “Run X Differential Pressure” selection from the I/O configuration page), or from a Shared Transmitter (“Shared DP X” from the I/O configuration page) or a pair of Stacked transmitters (“Stacked DP X Lo/Hi” from the I/O configuration page). If the Default AI or Shared transmitters are chosen, the measurement source configuration is completed. If Stacked transmitters are chosen, see the “Stacked or Redundant XMTRS” section.
Override / Live	The user may override the measurement values in use by selecting Override instead of Live When Override is selected, the user may enter the desired value for the measurement to be used. When Live is selected, the Value will be driven by the appropriate input value. **Note**: the action of changing from Live to Override or

	Override to Live is entered in the Audit trail. When in Override, any changes made to the Value are entered in the Audit Trail. **Note:** This override is done at the Run Measurement level, not at the I/O level. Because of this, care needs to be taken when overriding runs configured for bi-directional measurement, because the logic overriding the measurement values occurs after the logic for routing the measurement inputs to the proper run. Additionally, any input alarms and conditioning are not performed when Override is active.
Value	The differential pressure value in use is shown here. When "Live" is selected via the "Override/Live" button, this value is the value coming from the Differential Pressure Source. When "Override" is selected via the "Override/Live" button, this value may be entered by the user, and the entered value will be used in the measurement calculation.
Units	The units for the measurement inputs come from the input source.
Stacked or Redundant XMTRs	If stacked transmitters are chosen, the user must configure the transmitters as Stacked or Redundant transmitters. Stacked Transmitters operate such that one transmitter measures at a low range of measurement, and a second transmitter measures at a higher range. Redundant transmitters operate such that one transmitter is used for measurement all of the time, and the second transmitter is available in case the first transmitter fails.
Set Point	When using Stacked Transmitters, the user must enter a set point where the measurement will transition from the low range transmitter to the high range transmitter. To configure the stacked transmitters to be used as redundant transmitters, the user must set the Set Point to 0.0. This will set the Stacked DP X Lo to be the primary transmitter, and the Stacked DP X Hi transmitter will only be used if the Lo transmitter indicates a failure. To force the Hi transmitter to be used, the user must set the Set Point to a value less than 0.0.
Dead Band	A deadband may be entered, that will prevent the measurement from switching back and forth between the high and low transmitters.
Current Rate	The current flow and energy rates are displayed on this screen. The units of flow and energy rates are set from the Run Configuration page.

<u>Tube Change</u>	To change the venturi diameter, the user must change the Tube Change mode from Normal (Inactive) to Plate Change (Active) While the Tube Change mode is Active, the Differential Pressure, Static Pressure and Temperature values are frozen.
Elapsed Time	While the Plate Change mode is Active, the elapsed time is displayed.
New Venturi Diameter	The new Venturi diameter and Venturi diameter units may be entered here. The Venturi diameter in use does not change until the plate change mode changes from “Plate Change (Active)” to “Normal (Inactive)”. The Venturi Diameter in use appears in the Settings section
Beta Ratio	The beta ratio is the Venturi diameter divided by the pipe diameter. The beta ratio is displayed on this screen. If the beta ratio is out of range, it will appear in red text. The low limit for the beta ratio is 0.15 and the high limit for the beta ratio is 0.60.
<u>Min / Max Rates for this Run</u>	The minimum and maximum flow rates for a Venturi run are calculated outputs of the Venturi flow equation. The DP minimum is calculated using the Minimum Flow Rate DP setting and the DP maximum is calculated using the Maximum Flow Rate DP setting. Minimum Flow Rate DP setting= The DP in inches to use for the Minimum Flow calculation. Maximum Flow Rate DP setting = The percent of DP span to use for the Maximum Flow calculation.

3.2.21 V-Cone tab (Run Configuration)

To configure a run as a V-Cone-type meter, click on the Measurement Type in the General tab and select **V-Cone** from the drop down menu.



Click the V-Cone tab, or right click on the run icon and choose **Meter Types** > **V-Cone** from the pop-up menus and the following screen opens:

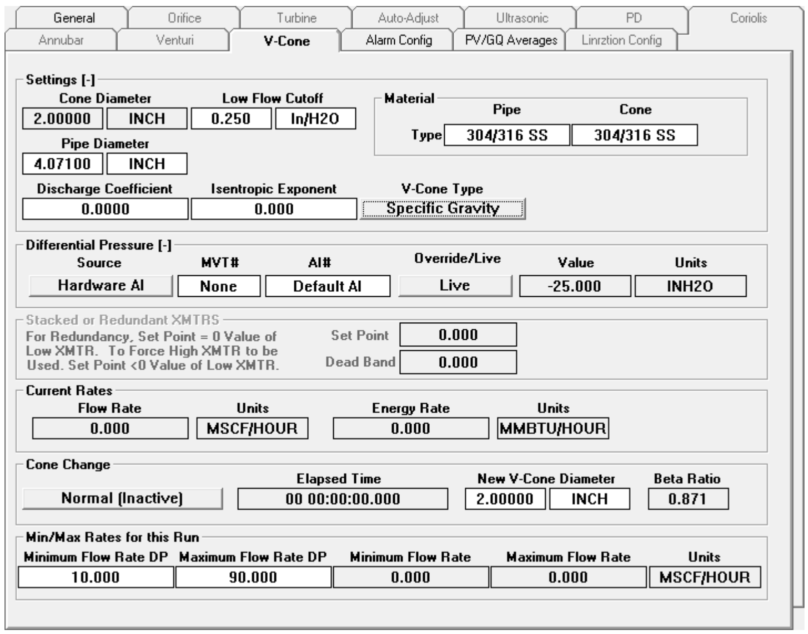


Figure 3-81. V-Cone tab

Field	Description
Settings	
Cone Diameter	The diameter of the cone meter.
Pipe Diameter	The pipe diameter change may be made by clicking on the box with the pipe diameter value in it and entering the desired pipe diameter value. When the new value of the pipe diameter is entered, a new beta ratio will be calculated and displayed in the “Plate Change” section.
Low Flow Cutoff	The low flow cutoff is the minimum value for differential pressure where measurement will be performed. If the differential pressure drops below this value, the measured flow will go to zero. The user may change the low flow cutoff value by clicking on the box with the low flow cutoff value and entering a new value, and clicking OK. The user may change the units that the low flow cutoff

	value is measured, by clicking on the units box, and selecting the desired units from the drop down menu.
Discharge Coefficient	The discharge coefficient of the V-Cone meter.
Isentropic Exponent	The thermal expansion factor of the V-Cone meter.
Material	
Pipe Type	Specify the pipe material.
Cone Type	Specify the cone material.
V Cone Type	This button shows the type of V Cone calculation; click the button to toggle to the other type. The two V Cone calculation types choices are: **Specific Gravity** – The calculation uses the specific gravity from the GC data set assigned to this run. **Molecular Weight** – The calculation uses the summed molecular weight of the GC components from the GC data set assigned to this run.
Differential Pressure	
Source	The source for the Differential Pressure measurement may come from either Analog Inputs via the I/O cards (Hardware AI) or via serial communications to the Multi-Variable Transmitters (MVT). The selection of the source is made via the Hardware AI/MVT button on the screen:
MVT#	If MVT is chosen, the user may select from any of 12 MVTs. In the Station Manager 6-run version, you can also choose from 18 HART and 18 WiHART transmitters.
AI#	If Hardware AI is chosen, the user may select from the Analog Input (AI) to be used from a drop down menu. The user may select from the Default AI (this would be the “Run X Differential Pressure” selection from the I/O configuration page), or from a Shared Transmitter (“Shared DP X” from the I/O configuration page) or a pair of Stacked transmitters (“Stacked DP X Lo/Hi” from the I/O configuration page). If the Default AI or Shared transmitters are chosen, the measurement source configuration is completed. If Stacked transmitters are chosen, see the “Stacked or Redundant XMTRS” section.

Override / Live	The user may override the measurement values in use by selecting Override instead of Live When Override is selected, the user may enter the desired value for the measurement to be used. When Live is selected, the Value will be driven by the appropriate input value. **Note**: the action of changing from Live to Override or Override to Live is entered in the Audit trail. When in Override, any changes made to the Value are entered in the Audit Trail. **Note:** This override is done at the Run Measurement level, not at the I/O level. Because of this, care needs to be taken when overriding runs configured for bi-directional measurement, because the logic overriding the measurement values occurs after the logic for routing the measurement inputs to the proper run. Additionally, any input alarms and conditioning are not performed when Override is active.
Value	The differential pressure value in use is shown here. When “Live” is selected via the “Override/Live” button, this value is the value coming from the Differential Pressure Source. When “Override” is selected via the “Override/Live” button, this value may be entered by the user, and the entered value will be used in the measurement calculation.
Units	The units for the measurement inputs come from the input source.
Stacked or Redundant XMTRs	If stacked transmitters are chosen, the user must configure the transmitters as Stacked or Redundant transmitters. Stacked Transmitters operate such that one transmitter measures at a low range of measurement, and a second transmitter measures at a higher range. Redundant transmitters operate such that one transmitter is used for measurement all of the time, and the second transmitter is available in case the first transmitter fails.
Set Point	When using Stacked Transmitters, the user must enter a set point where the measurement will transition from the low range transmitter to the high range transmitter. To configure the stacked transmitters to be used as redundant transmitters, the user must set the Set Point to 0.0. This will set the Stacked DP X Lo to be the primary transmitter, and the Stacked DP X Hi transmitter will only be used if the Lo transmitter indicates a failure. To force the Hi transmitter to be used, the user must set

	the Set Point to a value less than 0.0.
Dead Band	A deadband may be entered, that will prevent the measurement from switching back and forth between the high and low transmitters.
Current Rate	The current flow and energy rates are displayed on this screen. The units of flow and energy rates are set from the Run Configuration page.
Cone Change	To change the V-Cone diameter, the user must change the Plate Change mode from Normal (Inactive) to Plate Change (Active) While the Plate Change mode is Active, the Differential Pressure, Static Pressure and Temperature values are frozen.
Elapsed Time	While the Plate Change mode is Active, the elapsed time is displayed.
New V-Cone Diameter	The new V-Cone diameter and Cone diameter units may be entered here. The V-Cone diameter in use does not change until the plate change mode changes from “Plate Change (Active)” to “Normal (Inactive)”. The V-Cone Diameter in use appears in the Settings section
Beta Ratio	The beta ratio is the Venturi diameter divided by the pipe diameter. The beta ratio is displayed on this screen. If the beta ratio is out of range, it will appear in red text. The low limit for the beta ratio is 0.15 and the high limit for the beta ratio is 0.60.
Min/Max Rates for this Run	The minimum and maximum flow rates for a V-Cone run are calculated outputs of the V-Cone flow equation. The DP minimum is calculated using the Minimum Flow Rate DP setting and the DP maximum is calculated using the Maximum Flow Rate DP setting. Minimum Flow Rate DP setting= The DP in inches to use for the Minimum Flow calculation. Maximum Flow Rate DP setting = The percent of DP span to use for the Maximum Flow calculation.

3.2.22 Control Valve Config

Either left-click on a valve icon, or right-click on the icon and choose **Configuration** from the pop-up menu to define some basic characteristics of the valve.

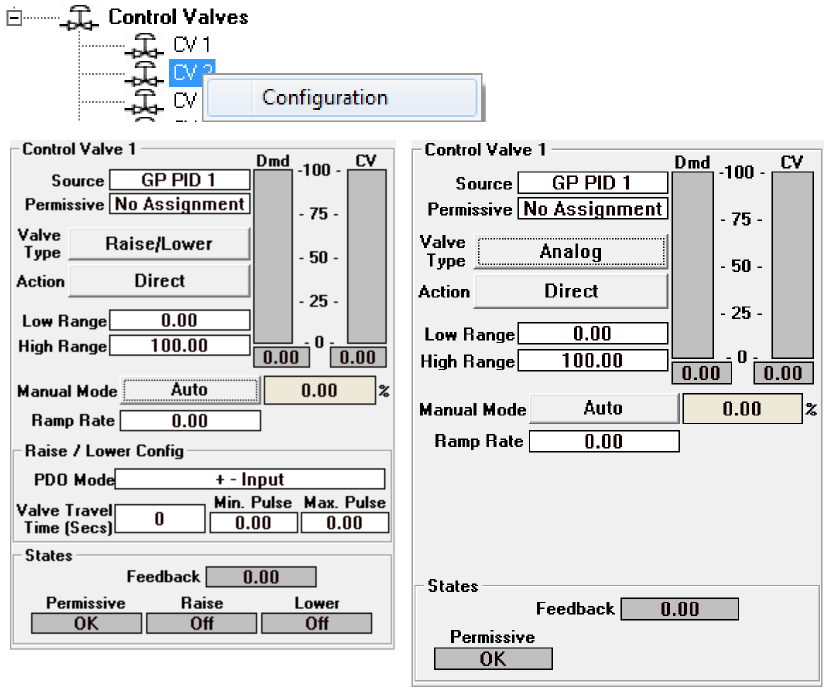


Figure 3-82. Quick Valve Config – Raise Lower (left) or Analog (right)

Field	Description
<u>Control Valve *n*</u>	Station Manager supports up to 18 control valves.
Source	Any one of the six stations or a general purpose (GP) PID loop can control a valve. Select the source from the drop-down menu, then press the **[Enter]** key to save your selection.
Permissive	Normally, you should leave this at **No Assignment** which means that Station Manager can operate the valve at any time. Alternatively, you can specify a run number here; if you do, Station Manager can only operate the valve when the block valve for this run is **OPEN**.
Valve Type	Click this button to select the type of mechanism used to control the valve. If you choose **Raise/Lower** the system sends pulses to open or close the valve based on the demand to and feedback coming from the valve. If you choose **Analog** the system sends an analog signal to open or close the valve based on the demand.

Action	Click this button to select how a percentage change affects the valve. If you choose **Direct**, then a zero calls for 0% request to be sent to the valve. If **Indirect**, then a zero calls for 100% at the valve.
Low Range	The minimum output for the valve. Used to limit or split range the valve.
High Range	The maximum output for the valve. Used to limit or split range the valve.
Manual Mode	Click this button to choose between **Auto** and **Manual** mode for valve operation. In **Manual** mode, you specify the desired percent demand value for the valve. Transfer into **Manual** mode is bumpless. In **Auto** mode, the Station Manager application determines the desired percent demand value for the valve. Transfer into **Auto** mode immediately drives the valve to the desired position as calculated by the Station Manager.
%	Shows (or sets) the desired percentage of the valve. In manual mode, you can set the percentage by entering it, and pressing the **[Enter]** key to save your entry. In automatic mode, this field is read-only and displays the requested percentage of the valve.
Ramp Rate	Enter the maximum allowable percentage change per second for the valve based on the demand.
Dmd	This bar graph and the field below it show the requested demand from the PID loop.
CV	This bar graph and the field below it show the current reported demand percentage for the valve.
<u>Raise/Lower Config</u>	
PDO Mode	This field only applies if the **Valve Type** is **Raise/Lower**. Use the drop-down menu to select the type of feedback the valve provides regarding its position and press the **[Enter]** key to save your selection. Choices are:

Selection	Meaning
+ - Input	The valve operates in Pulse Duration Mode in which the output value is converted into a pulse duration length.
Limit SW	The valve transmits when its position is fully opened or fully closed, but not during any other portion of the range of travel.

	No Feedback	The valve provides no information on its position.
	Analog Feedback	The valve transmits its current position throughout the entire range of travel.

Valve Travel Time (Secs)	This field only applies if the **Valve Type** is **Raise/Lower**. Enter the amount of time (in seconds) it takes for the valve to travel from fully closed to fully open. Press the **[Enter]** key to save your entry. **Note: This is a critical value for the Station Manager in calculating how often to send pulses to the valve, especially in configurations when there is no feedback from the valve.**
Min. Pulse	This field only applies if the **Valve Type** is **Raise/Lower**. All valves have a latency period for responding to a signal and cannot respond to pulses shorter than some duration. Enter the minimum pulse length (in seconds) required to move the valve. Press the **[Enter]** key to save your entry.
Max. Pulse	This field only applies if the **Valve Type** is **Raise/Lower**. Enter the maximum allowable pulse duration. Typically you would set this equal to the **Valve Travel Time** setting. Press the **[Enter]** key to save your entry.
States	
Feedback	This read-only field shows the most recent feedback from the valve on its position (%).
Permissive	This read-only field shows **OK** if this valve can operate or **Blocked** if valve operation is prevented by a block valve setting.
Raise	This read-only field shows **Raise** if Station Manager is asserting this output command.
Lower	This read-only field shows **Lower** if Station Manager is asserting this output command.

3.2.23 Process Values

The purpose of Maintenance Mode is to prevent maintenance activities (calibration, verification) from adversely affecting the running process. When enabled, Maintenance Mode locks process values so that these maintenance activities do not affect the running process.

To view process values for the site, right-click on the icon for the site, and choose **Maintenance Mode > PVs** from the pop-up menu:

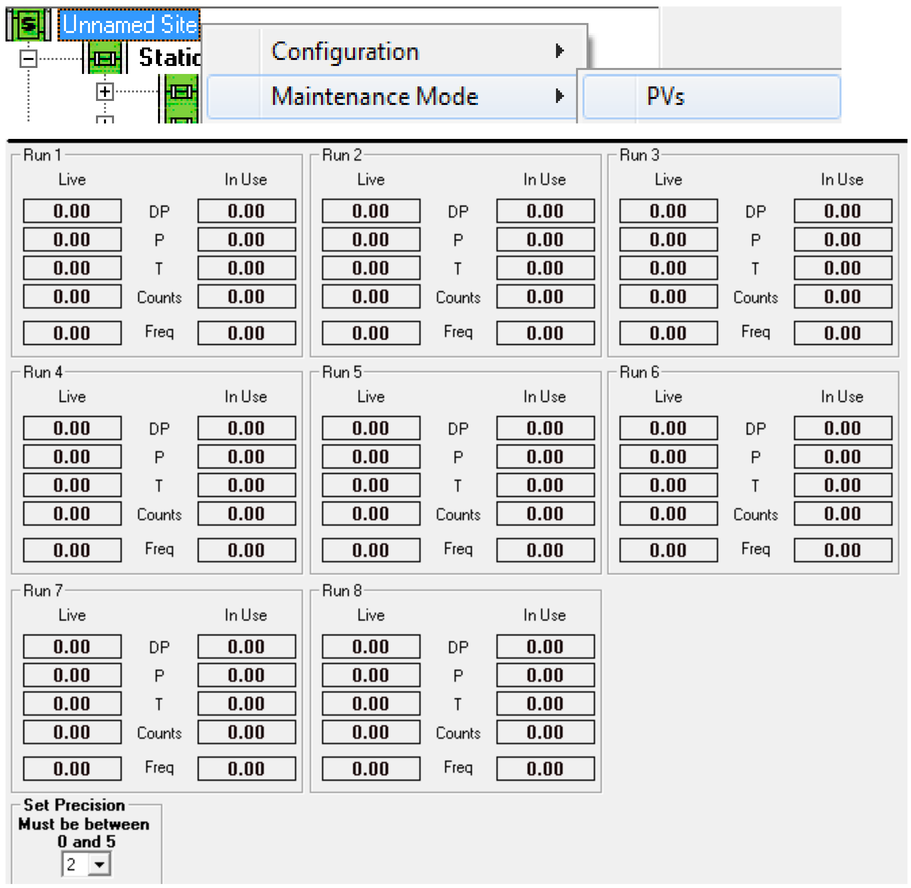


Figure 3-83. Process Values (Station Manager 8-Run screen shown)

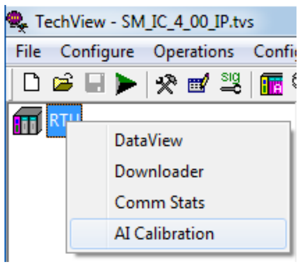
The Live values for a run always show the live value coming into the Station Manager controller (either through an analog input, or a multi-variable transmitter (MVT).

The In Use values are the values currently in use for measurement. You can set the precision (number of digits displayed after the decimal point) from 0 to 5.

3.2.24 AI Calibration

Calibration procedures including the order and type of steps involved vary from organization to organization. Based on the type of process variable you want to calibrate, Station Manager allows you to specify what operation you want to perform in a given calibration step.

To begin the configuration process for calibrating an analog input (AI), right-click on the RTU icon in TechView, and choose **AI Calibration** from the menu.



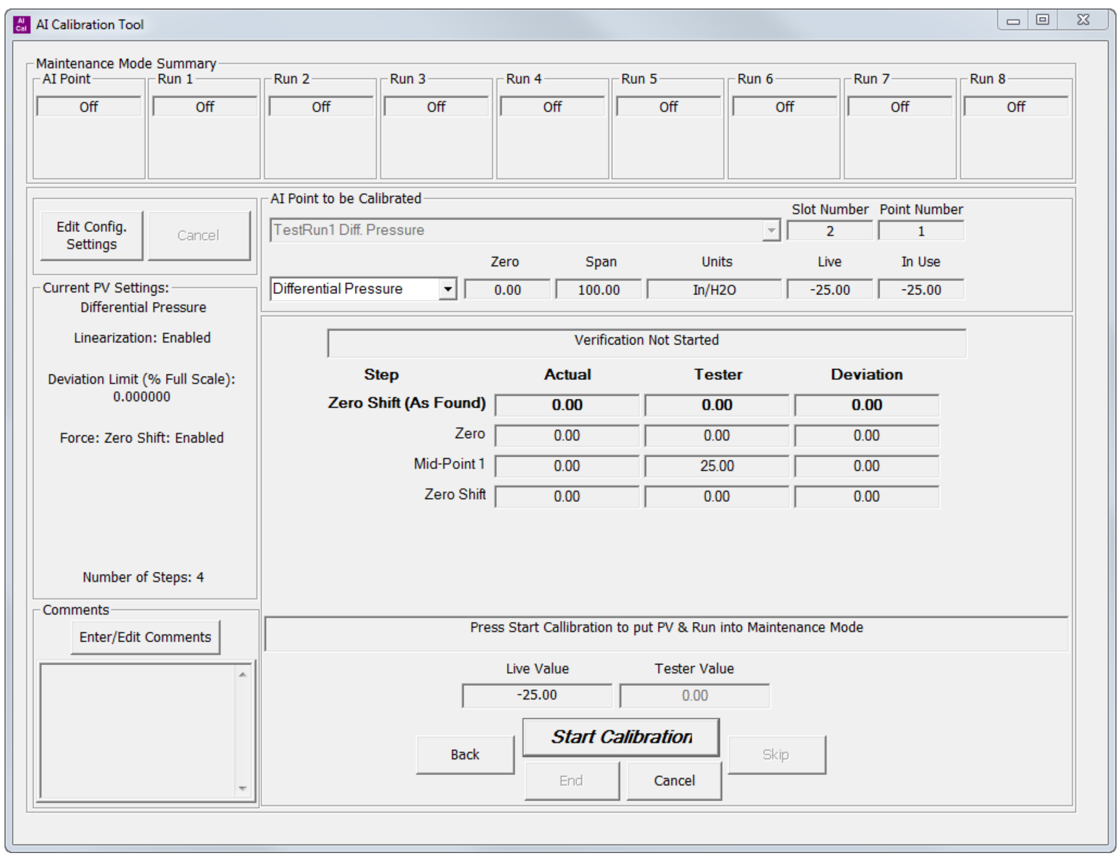


Figure 3-84. AI Calibration

View/Modify the Calibration Procedure for a Type of Input

To view/modify the calibration procedure click **Edit Config Settings**. This displays the **Edit PV Settings** section as well as reset timer selection boxes in the **Maintenance** Summary section for the AI and each meter run. Make changes in these sections as needed, then click **Save Settings & Exit** to save the changes (alternatively, click **Cancel** to discard the changes). Once you save the settings you can start the actual calibration using those new settings.

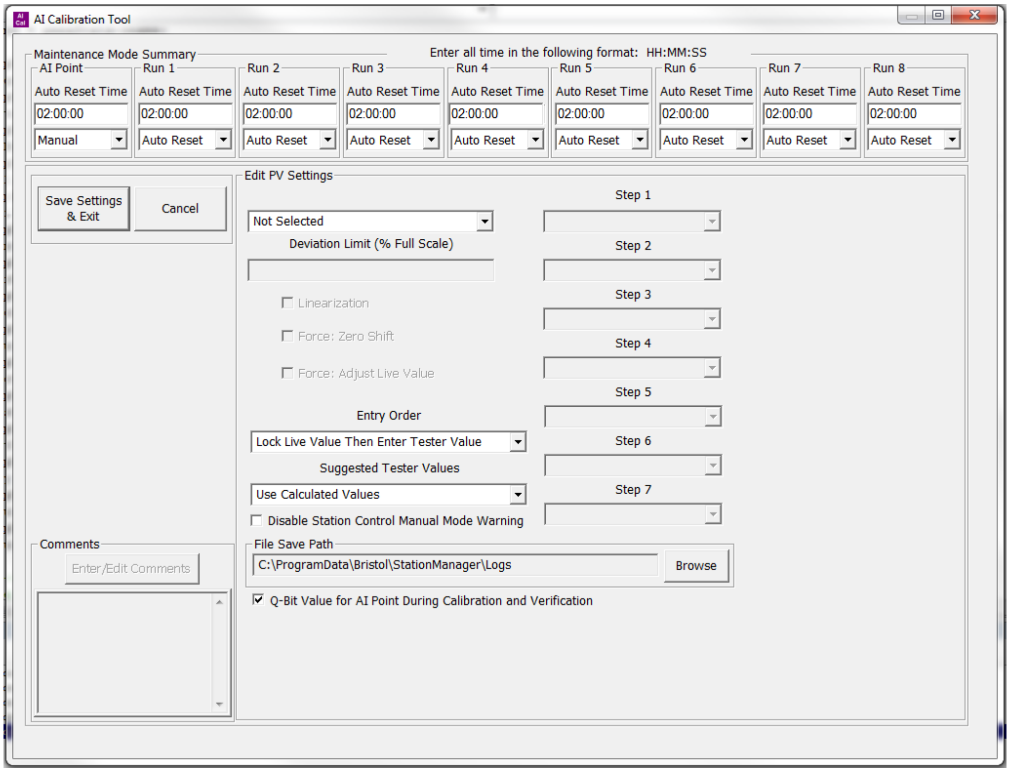
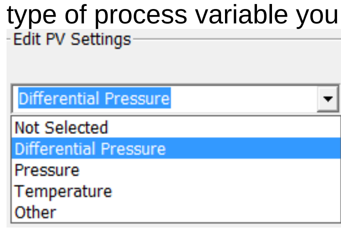
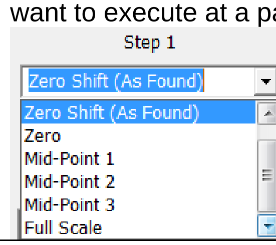
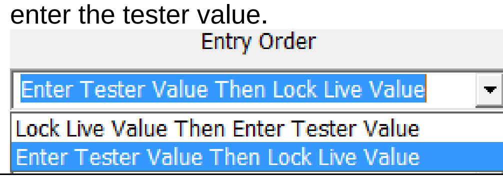
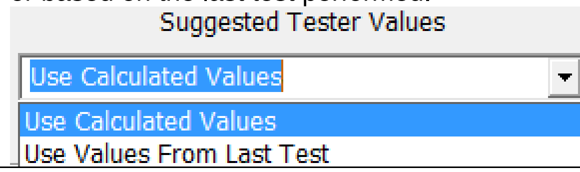
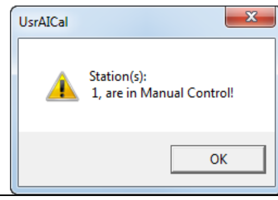
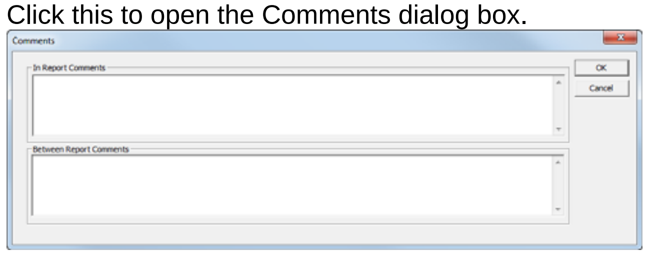


Figure 3-85. – AI Calibration – Configuration Settings

Field	Description
Maintenance Mode Summary	This section shows whether the AI and one or more meter runs are in Maintenance Mode. Maintenance Mode locks process values so that calibration and verification activities do not affect the running process.
AI Point/Run *x*	Shows whether the AI point or meter run are currently in Maintenance Mode. Shows “On” if they are in Maintenance Mode or “Off” if they are not.
Auto Reset Time	When Auto Reset is set ON, the Maintenance Mode Auto Reset Timer specifies how long an AI or meter run remains in maintenance mode before automatically disabling maintenance mode and returning to normal operation. The reset time is in the format DD HH:MM:SS.S Where: DD number of days HH number of hours MM number of minutes SS.S number of seconds (resolution of 10ths) The maximum time allowed for the maintenance mode auto reset timer is:

	24 20:31:23.9 – (24 Days, 20 hours, 31 minutes, 23.9 seconds)
Auto Reset / Manual	This field enables/disables Auto Reset. To enable Auto Reset, select **Auto Reset.** Maintenance mode for the AI input or meter run will be disabled automatically after the specified time expires. To disable Auto Reset, select **Manual.** This means maintenance mode for the AI input or meter run will not be disabled automatically.
Edit PV Settings	This section lets you specify which calibration commands should execute in a particular calibration step, and also lets you set other calibration parameters. To begin, specify the type of process variable you want to calibrate first. 
Deviation Limit (% Full Scale)	Specify the deviation limit (as percent of full scale) which is allowed. This represents maximum allowed difference between the actual value read from the analog input, and the known tester value you apply.
Linearization	Check this box if you want to activate the linearization function during the calibration.
Force: Zero Shift	Check this box if you want to apply a zero shift. Zero shift is a value added or subtracted to the zero value to shift the live value. This is only allowed for the "Differential Pressure" or "Other" type.
Force: Adjust Live Value	You must check the Force Adjust Live Value box in order to use the adjust live value command. The adjust live value command is only allowed in Step 1 of the calibration procedure. Only allowed for the "Temperature" or "Other" type.
Step 1, Step 2, Step 3, Step 4, Step 5, Step 6, Step 7	Use the selection box to choose the calibration command you want to execute at a particular step. 
All PVs	
Entry Order	You can choose to lock the live value either before or after you enter the tester value. 

Suggested Tester Values	You can select suggested tester values based on calculations, or based on the last test performed. 
Disable Station Control Manual Mode Warning	Check this to disable the station control Manual Mode Warning. The warning shows up at the end of the calibration process to remind you the station is still in manual mode. 
File Save Path	Specify the folder where you want to save calibration logs.
Q-Bit Value for AI Point During Calibration and Verification (8-run version only)	When you check this, the questionable data bit (Q-bit) turns ON for all AI process variables whenever calibration or verification operations are in progress. When left unchecked, the questionable data bit (Q-bit) turns OFF for all AI process variables whenever calibration or verification operations are in progress.
AI Point to be Calibrated	Select the AI point you want to calibrate; the **Slot Number** and **Point Number** fields update once you make this selection.
PV Type	Once you select the AI point you want to calibrate; you must specify the type of process variable. If you've previously calibrated the point, the point type defaults to your previous choice.
Raw Value	Check this box to display the raw value in use.
Slot Number	This is the I/O Slot Number to which this point is assigned.
Point Number	This is the I/O point on the I/O slot to which this variable is assigned.
Zero	Shows the Zero value for this AI. This value represents the zero point for the AI.
Span	Shows the Span value for this AI. This represents 100% of span for the AI.
Units	Shows the engineering units for this AI.
Live	Shows the current reading of the analog input.

In Use	Shows the value being used by the Station Manager application. If the value in use is different than the live value, that can be because the AI is in Maintenance Mode (which locks the value).
Step	This column shows the order is which calibration commands will be executed. The first step shows the first calibration command which will execute, the second step shows the second calibration command which will execute, and so on. This order is determined based on selections in the Edit PV section.
Actual	This column records the actual value read from the AI during a particular step.
Tester	This column records the known good value you applied using a test device during this step.
Deviation	This column shows the difference between the actual value and the tester value. If this difference exceeds the deviation limit linearization will not be performed.
Live Value	Shows the current live reading from the AI.
Tester Value	Enter a known good value for the pressure (or temperature) from a test device here.
Start Calibration / Next	Click here to start the calibration process or proceed to the next step.
Back	Click here to go to the previous calibration step.
Skip	Click here to skip a calibration step.
End	Click here to end the calibration process.
Cancel	Click here to cancel the current calibration step.
<u>Comments</u>	This section lets you optionally enter comments in the calibration log files.
Enter / Edit Comments	Click this to open the Comments dialog box.  Text you enter in the **In Report Comments** field gets included in the current calibration log; text you enter in the **Between Report Comments** field gets added after the current calibration log and before the next log. Click **OK** to include the comments or **Cancel** to discard them.

General Calibration Process

Calibration processes and the order of steps vary from organization to organization.

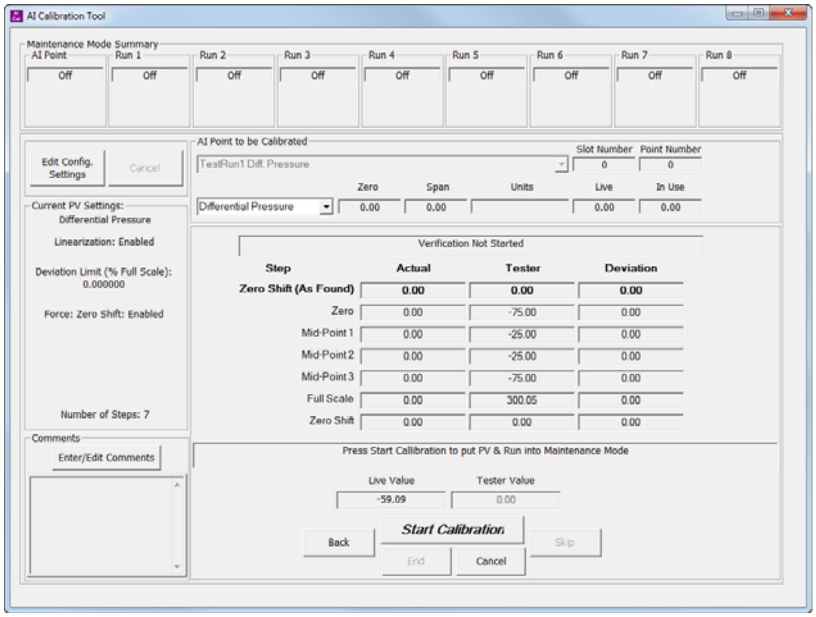


Figure 3-86. AI Calibration – Ready to Start Calibration Process

The general calibration process is as follows:

1. First, select the **AI Point to be Calibrated**.
2. Next, select the type of point you are calibrating.
3. Enter a tester value appropriate for the particular calibration step and click **Start Calibration**. Watch the status bar for information on the process. When the step completes, click **Next** to proceed to the next step and enter tester values as required. Continue this until the last step.
4. When the last step is complete, click **Finish Calibration**.
5. You'll be prompted to provide a name for the report. The default name is the site name. Enter a name and click **OK**.

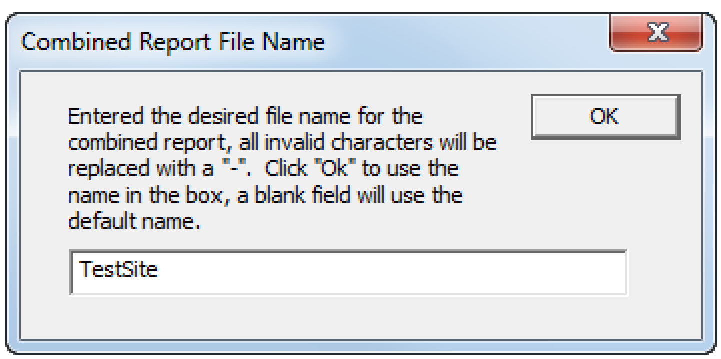
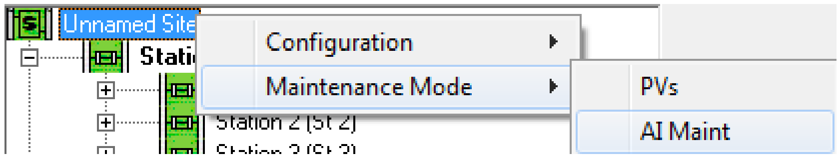


Figure 3-87. Combined Report File Name

3.2.25 AI Maintenance

To put an analog input (AI) into maintenance mode, right-click on the icon for the site, and choose **Maintenance Mode** > **AI Maint** from the pop-up menus:



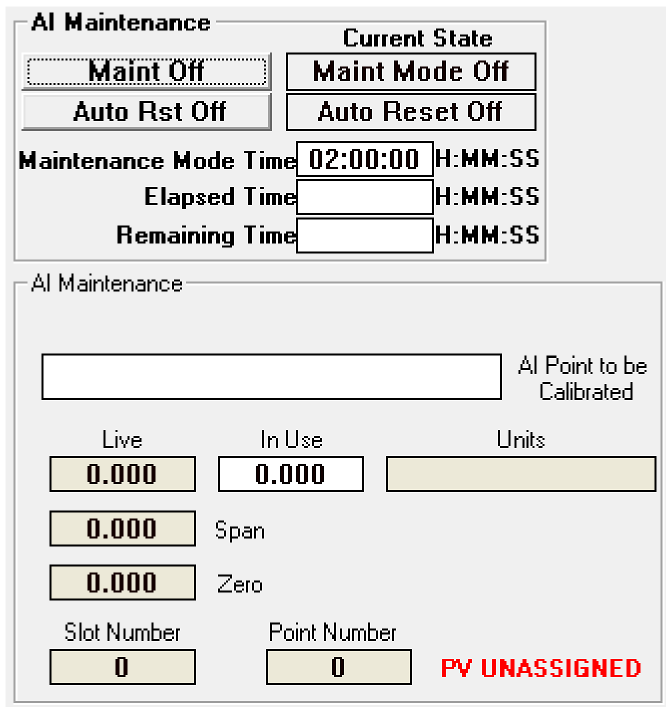


Figure 3-88. AI Maintenance

Field	Description
AI Maintenance	This section of the screen controls the maintenance mode for the selected AI input.
Maint Off / Maintenance	This button takes the AI in and out for maintenance mode. To disable maintenance mode, click **Maint Off**; when maintenance mode is successfully disabled the **Current State** shows Maint Mode Off. To enable maintenance mode, click **Maintenance**; when maintenance mode is successfully enabled the **Current State** shows Maintenance.
Auto Reset / Auto Rst Off	This button enables/disables Auto Reset. To enable Auto Reset, click **Auto Reset**; the **Current State** updates to show Auto Reset is on and maintenance mode for

	the AI input will be disabled automatically after the period set under the **Maintenance Mode Time**. To disable Auto Reset, click **Auto Rst Off**; the **Current State** updates to show Auto Rst Off. This means maintenance mode for the AI input will never be disabled automatically.
Maintenance Mode Time	The Maintenance Mode Auto Reset Timer is in the format DD HH:MM:SS.S Where: DD number of days HH number of hours MM number of minutes SS.S number of seconds (resolution of 10ths) The maximum time allowed for the maintenance mode auto reset timer is 24 20:31:23.9 – (24 Days, 20 hours, 31 minutes, 23.9 seconds)
Elapsed Time	This is the amount of time the AI input has been in maintenance mode.
Remaining Time	When Auto Reset is enabled, this is the time remaining until the maintenance mode is automatically reset. When Auto Reset is disabled, this field remains at 00 00:00:00.0.
AI Point to be Calibrated	Select the AI point to be calibrated from the drop down menu.
Live	The live value, coming from the Analog Input.
In Use	The value in use. When maintenance mode is off, this will be the live value. When maintenance mode is on, this value may be overridden by the user.
Units	This will be the units of the variable, assigned from the I/O configuration page.
Span	This will be span of the variable, assigned from the I/O configuration page
Zero	This will be the zero of the variable, assigned from the I/O configuration page.
Slot Number	This is the I/O Slot Number that this point is assigned to.
Point Number	This is the I/O point on the I/O slot that this variable is assigned to.

3.2.26 Site Maintenance

You can place the entire site in Maintenance Mode. When this occurs, all runs at the site are placed in Maintenance Mode.

To put a site into maintenance mode, right-click on the icon for the site, and choose **Maintenance Mode** > **Site** from the pop-up menu:

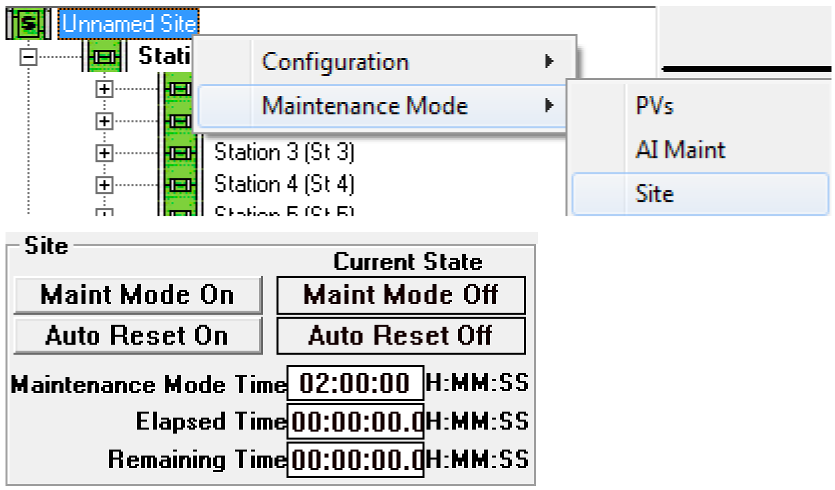


Figure 3-89. Site Maintenance

The following items are available on the Site Maintenance Mode screen.

Field	Description
Site	This section of the screen controls the maintenance mode for the site.
Maint Mode Off / Maint Mode On	If the **Current State** says Maint Mode On, you can disable maintenance mode by clicking the **Maint Mode Off** button. If the **Current State** says Maint Mode Off, you can enable maintenance mode by clicking the **Maint Mode On** button.
Auto Reset On / Auto Rst Off	If the **Current State** says Auto Reset On, you can disable Auto Reset by clicking the **Auto Rst Off** button. This prevents maintenance mode for the site from being disabled automatically. If the **Current State** says Auto Rst Off, you can enable Auto Reset by clicking the **Auto Reset On** button. If Auto Reset is enabled, maintenance mode for the site will be disabled automatically after the period set under the Maintenance Mode Auto Reset Timer **Note**: if Auto Reset is set at the Station level or Run Level, it takes precedence over the setting at the site level. To disable Auto Reset, make certain that it is disabled at the site, station, and run level.

Maintenance Mode Time	The Maintenance Mode Auto Reset Timer is in the format DD HH:MM:SS.S Where: DD number of days HH number of hours MM number of minutes SS.S number of seconds (resolution of 10ths) The maximum time allowed for the maintenance mode auto reset timer is 24 20:31:23.9 – (24 Days, 20 hours, 31 minutes, 23.9 seconds)
Elapsed Time	This is the amount of time the site has been in maintenance mode.
Remaining Time	When Auto Reset is enabled, this is the time remaining until the maintenance mode is automatically reset. When Auto Reset is disabled, this field remains at 00 00:00:00.0.

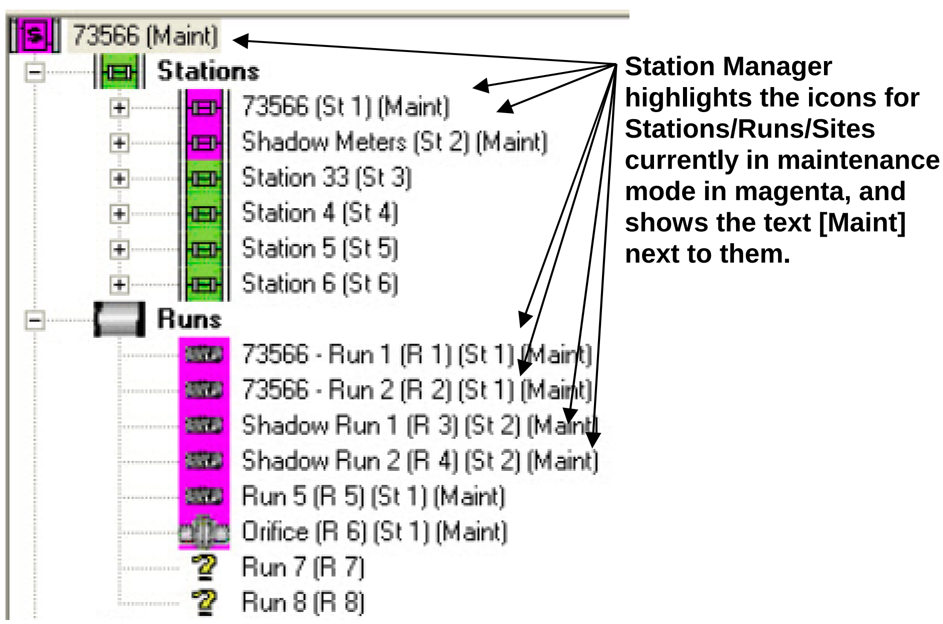
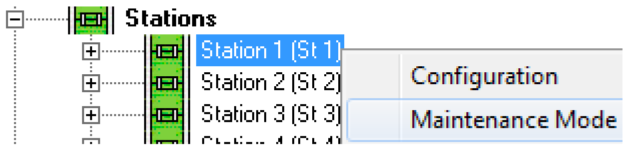


Figure 3-90. Stations, Runs, and Site in Maintenance Mode

3.2.27 Station Maintenance

To put a station into maintenance mode, right-click on the icon for the station, and choose **Maintenance Mode** from the pop-up menu:



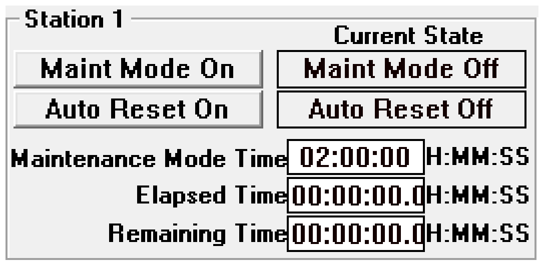


Figure 3-91. Station Maintenance

Field	Description
Station *n*	This section of the screen controls the maintenance mode for the selected station.
Maint Mode Off / Maint Mode On	If the **Current State** says Maint Mode On, you can disable maintenance mode by clicking the **Maint Mode Off** button. If the **Current State** says Maint Mode Off, you can enable maintenance mode by clicking the **Maint Mode On** button.
Auto Reset On / Auto Reset Off	If the **Current State** says Auto Reset On, you can disable Auto Reset by clicking the **Auto Reset Off** button. This prevents maintenance mode for the site from being disabled automatically. If the **Current State** says Auto Reset Off, you can enable Auto Reset by clicking the **Auto Reset On** button. If Auto Reset is enabled, maintenance mode for the site will be disabled automatically after the period set under the Maintenance Mode Auto Reset Timer **Note:** If Auto Reset is set at the Station level, it takes precedence over the setting at the site and run level. To disable Auto Reset, make certain that it is disabled at the site, station, and run level.
Maintenance Mode Time	The Maintenance Mode Auto Reset Timer is in the format DD HH:MM:SS.S Where:

	DD HH MM SS.S The maximum time allowed for the maintenance mode auto reset timer is 24 20:31:23.9 – (24 Days, 20 hours, 31 minutes, 23.9 seconds)
Elapsed Time	This is the amount of time the station has been in maintenance mode.
Remaining Time	When Auto Reset is enabled, this is the time remaining until the maintenance mode is automatically reset. When Auto Reset is disabled, this field remains at 00 00:00:00.0.

To bring up the maintenance mode screen for all six stations simultaneously, right-click on the icon for the site, and choose **Maintenance Mode** > **Stations** from the pop-up menus:

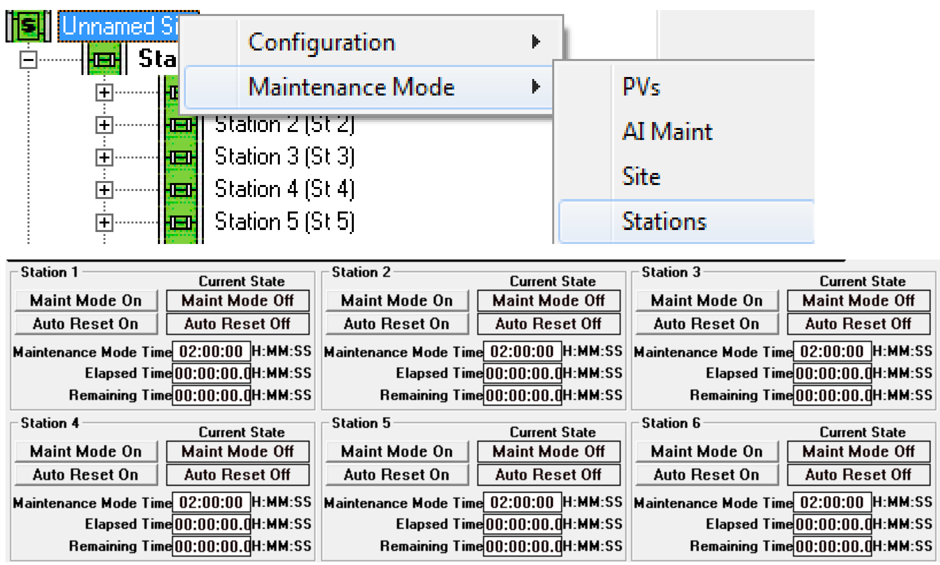
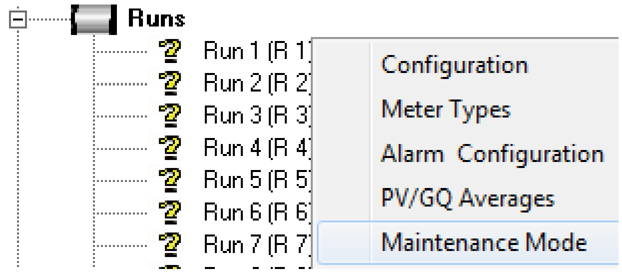


Figure 3-92. All Stations Maintenance

3.2.28 Run Maintenance

To put a meter run into maintenance mode, first right-click on the icon for the meter run, and choose **Maintenance Mode** from the pop-up menu:



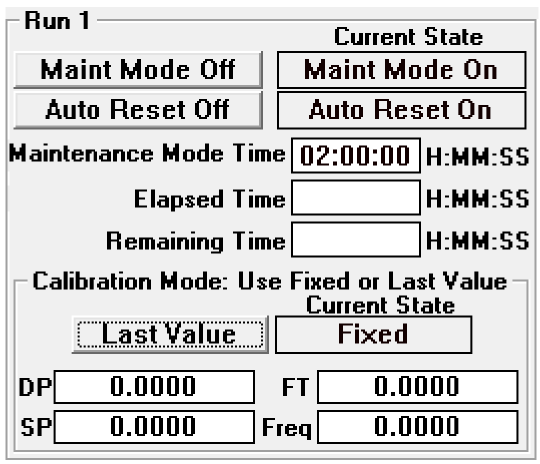


Figure 3-93. Run Maintenance

Field	Description
<u>Run *n*</u>	This section of the screen controls the maintenance mode for the selected run.
Maint Mode Off / Maint Mode On	If the **Current State** says Maint Mode On, you can disable maintenance mode by clicking the **Maint Mode Off** button. If the **Current State** says Maint Mode Off, you can enable maintenance mode by clicking the **Maint Mode On** button.
Auto Reset Off / Auto Reset On	If the **Current State** says Auto Reset On, you can disable Auto Reset by clicking the **Auto Reset Off** button. This prevents maintenance mode for the site from being disabled automatically. If the **Current State** says Auto Reset Off, you can enable Auto Reset by clicking the **Auto Reset On** button. If Auto Reset is enabled, maintenance mode for the site will be disabled automatically after the period set under the Maintenance Mode Auto Reset Timer NOTE – if Auto Reset is set at the Run level, it takes precedence over the setting at the site or station level. To

	disable Auto Reset, make certain that it is disabled at the site, station, and run level.
Maintenance Mode Time	The Maintenance Mode Auto Reset Timer is in the format DD HH:MM:SS.S Where: DD number of days HH number of hours MM number of minutes SS.S number of seconds (resolution of 10ths) The maximum time allowed for the maintenance mode auto reset timer is 24 20:31:23.9 – (24 Days, 20 hours, 31 minutes, 23.9 seconds)
Elapsed Time	This is the amount of time the run has been in maintenance mode.
Remaining Time	When Auto Reset is enabled, this is the time remaining until the maintenance mode is automatically reset. When Auto Reset is disabled, this field remains at 00 00:00:00.0.
<u>Calibration Mode Use Fixed or Last Value</u>	
Fixed / Last Value	If the **Current State** says Fixed, calibration mode uses fixed values; you can force it to use the last value by clicking the **Last Value** button. If the **Current State** says Last Value, calibration mode uses the last values; you can force it to use the fixed values by clicking the **Fixed** button.
DP	When using fixed values for calibration, you specify the fixed value for differential pressure here.
SP	When using fixed values for calibration, you specify the fixed value for static pressure here.
FT	When using fixed values for calibration, you specify the fixed value for flowing temperature here.
Freq	When using fixed values for calibration, you specify the fixed value for frequency here.

To bring up the maintenance mode screen for all meter runs simultaneously, right-click on the icon for the site, and choose **Maintenance Mode** > **Runs** from the pop-up menus:

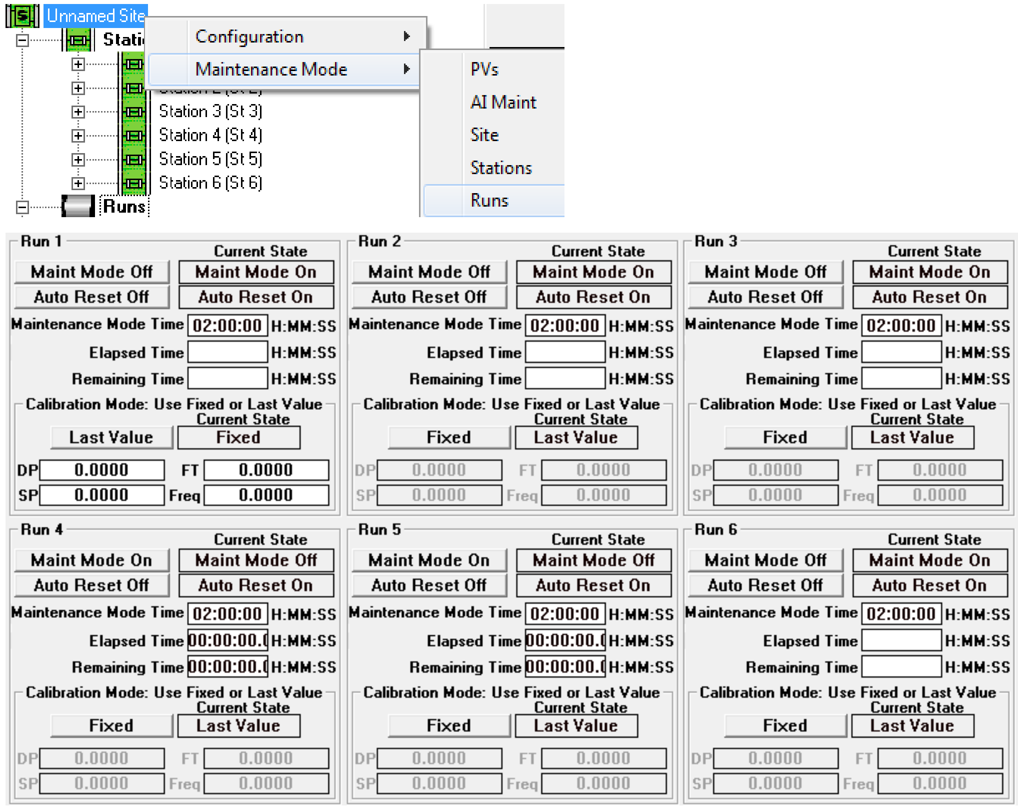


Figure 3-94. All Runs Maintenance (6-Runs Shown)

3.3 Gas Chromatograph Configuration

When you click the Gas Chromatograph Configuration button on the Measurement tab, Station Manager opens up the Gas Chromatograph Configuration pages.

Customers have used Station Manager with the following gas chromatographs:

- Daniel/Rosemount 2350A
- Daniel/Rosemount with El Paso mapping
- Encal Euro 2000
- ABB NGC 8200 series
- COSA HGC 303

The Gas Chromatograph Configuration page includes a general configuration area at the top, and then multiple tabs with additional information.

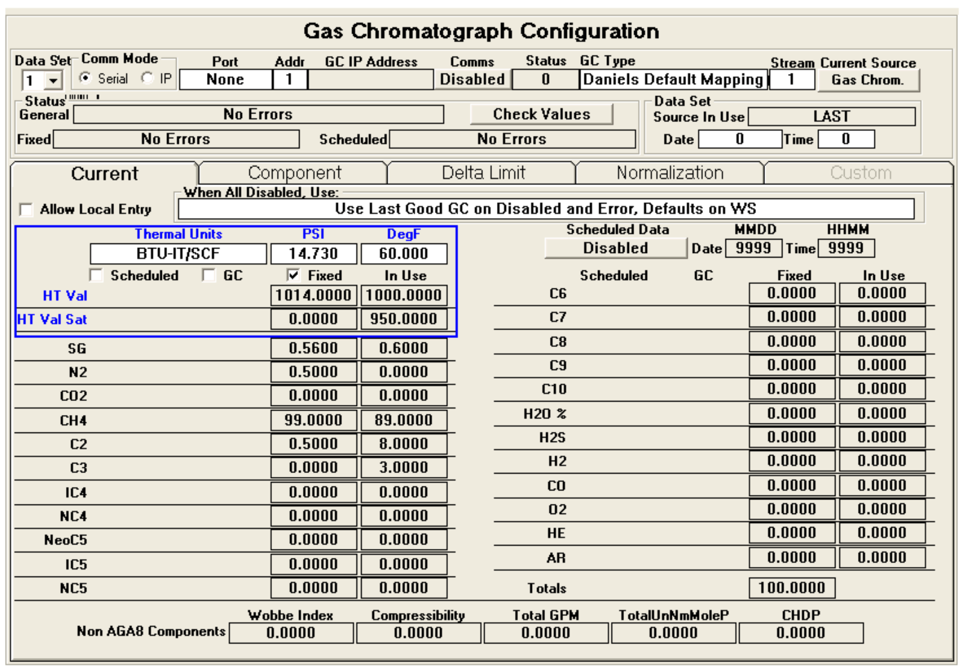


Figure 3-95. Gas Chromatograph Configuration

3.3.1 General

Field	Description
Data Set	The Station Manager can poll from 1 to 8 gas chromatographs (1 to 6 for the 6-run version). The polling can be done for a single stream or multiple streams of data from each chromatograph. Each polled stream is considered a data set. For each data set, the communications mode,

	chromatograph address, data mapping, and stream must be configured. The data set to be configured is selected from the drop down list.
Comm Mode	Communications to the gas chromatograph may be via either a Serial (RS-232 or RS-485) or an IP (Ethernet) connection. For serial communications to the gas chromatograph, the serial port must be configured for the proper protocol, baud rate, etc. via the Flash Configuration Profile communication port settings.
Port	If the serial communication mode is selected, the serial port on the Station Manager controller that will be connected to the gas chromatograph will be specified here. The serial port must be configured for the proper protocol, baud rate, etc. via the Flash Configuration Profile communication port settings.
Addr	The local address of the gas chromatograph will be specified here. Every gas chromatograph will have a local address (from 1 to 255).
GC IP Address	If the IP communications mode is selected, the IP address of the gas chromatograph will be specified here. It is necessary to configure the IP address and routing for the Station Manager controller so that the IP address of the gas chromatograph is reachable.
Comms	This button will be used to enable or disable communications to the gas chromatograph. If communications are disabled, and valid data has never been retrieved from the gas chromatograph for this data set, the default (Fixed) chromatograph values will be seen in the GC column of the Current GC Data section on this page. If communications are disabled, and valid data has been retrieved from the gas chromatograph for this data set, the last valid data will be seen in the GC column of the Current GC Data section on this page.
Status	A status code indicating the health of the communications between the Station Manager controller and the chromatograph will be displayed here. If any code other than 0 is displayed here, see *Appendix E – Troubleshooting*.
GC Type	The Station Manager load is configured to communicate to gas chromatographs that emulate the Daniel 2251 MODBUS communications scheme.

GC Type	Explanation
Daniel Default Mapping	The Daniel 2251 has a default data map, where the gas components are located in a set of specific registers.
Daniel Custom Mapping	The Daniel 2251 and other compatible GCs also allow for a custom data map, where the gas components can be assigned to a user defined set of registers. When the gas chromatograph is configured in this way, the Station Manager controller determines the custom register map automatically. However, a Daniel C9+ chromatograph register assignments cannot be auto-detected.
Daniel User Defined	In the case where the gas chromatograph does not support either the Daniel Default Mapping or the Daniel Custom Mapping, a user defined data map can be configured. If this option is selected, it is then necessary to make the register assignments on the Custom tab. (See *Section 3.3.6* for details on configuring a custom map.)
European Encal 2000	This configuration is rarely used in North America. Most Encal chromatographs deployed in North America support the Daniel 2251 emulation. This communication scheme is necessary for the European version of the Encal 2000 chromatograph because not all of the registers required by the Daniel emulation are supported.
El Paso Mapping	This is a Daniel GC with El Paso data mapping.
User Defined (List)	Import GC data from List 30 which is populated by another source such as a BSAP or Modbus master. If this option is selected, it is then necessary to make the register assignments on the Custom tab. (See *Section 3.3.6* for details on configuring a custom map.)

Stream	Many chromatographs can support multiple gas streams. The gas stream to be collected is specified here.
Current Source	Choose between gas chromatograph (GC) or analog input (AI) for the source.

<u>Status</u>

General	There are a number of failure conditions that can be reported. These failure conditions are either reported by the gas chromatograph, or may be derived by the Station Manager controller. The messages are: No Errors – No errors are reported or detected Checksum Fail – A checksum failure has been reported by the gas chromatograph (GC) Analyzer Fail (GC) – The GC reports an analyzer failure PreAmp Fail (GC) – The GC reports a PreAmp failure Component Out of Range – The Station Manager controller has detected a component out of range. One of the components exceeds the out-of-range limits defined on the Component Ranges screen HtVal Checksum Fail – Heating value checksum failure. The Station Manager controller calculates the expected heating value, based on the mole percent of each gas component. It compares the reported heating value with the calculated heating value, and if the values are not within the configured deadband, a HtVal Checksum Fail is reported. SG Checksum Fail – Specific Gravity checksum failure. The Station Manager controller calculates the expected specific gravity, based on the mole percent of each gas component. It compares the reported specific gravity with the calculated specific value, and if the values are not within the configured deadband, an SG Checksum Fail is reported. Total Out of Range – The mole percent of each component is added. If the value is not 100% +/- some limit, the Total Out-of-Range failure is reported. General Fail – General failure from the GC. This comes from a Modbus register. General Fail DI – General failure from the GC. This comes from a discrete input (DI). Stale Time Fail – If the data from the gas chromatograph has not updated within a specified limit, a Stale Time Failure will be reported. Comm Fail – This indicates a communication failure between the Station Manager controller and the GC. See the “Comm Status Code” section for more details. Delta Fail – This indicates that the change in one or more of the values reported back by the GC have had a change from one poll to the next that is larger than the limit allowed. Fixed Data Fail – This message indicates an error in the

	Fixed Data configured for this data set. The details of this error will be found in the Fixed Properties Status message. Timed Data Fail – This message indicates an error in the Scheduled Data configured for this data set. The details of this error will be found in the Scheduled Data Status message. Calibration Mode – Indicates the gas chromatograph is in calibration mode. While in calibration mode the source for GC data is either from the fixed values, or from the last good GC data, depending upon settings. Stream Error – This indicates a stream number mismatch during an update.
Check Values	You can force the application to detect any existing failure messages without waiting for the next GC poll by clicking on the **[Check Values]** button.
Fixed	The fixed data status message will be reported here. If the fixed data entries are valid, No Errors will be reported. If there is a problem with the fixed data entries, a “Fixed Data Fail” message will be reported as a “GC Failure Message”, and the specific error will be reported here. The errors are: No Errors Value Out of Range – The Station Manager controller has detected a component out of range. One of the components exceeds the out-of-range limits defined on the Component Ranges screen HtVal Check Fail – Heating value checksum failure. The Station Manager controller calculates the expected heating value, based on the mole percent of each gas component. It compares the entered heating value with the calculated heating value, and if the values are not within x %, a HtVal Checksum Fail is reported. SG Check Fail – Specific Gravity checksum failure. The Station Manager controller calculates the expected specific gravity, based on the mole percent of each gas component. It compares the entered specific gravity with the calculated specific value, and if the values are not within x %, an SG Checksum Fail is reported. Value Sum Fail – The mole percent of each component is added. If the value is not 100% +/- some programmable limit, the Value Sum failure is reported.
Scheduled	The scheduled data status message will be reported here. If the scheduled data entries are valid, No Errors will be reported. If there is a problem with the scheduled data entries, a “Timed Data Fail” message will be reported as a “GC Failure Message”, and the specific error will be reported

	here. The errors are: No Errors Value Out of Range – The Station Manager controller has detected a component out of range. One of the components exceeds the out-of-range limits defined on the Component Ranges screen HtVal Check Fail – Heating value checksum failure. The Station Manager controller calculates the expected heating value, based on the mole percent of each gas component. It compares the entered heating value with the calculated heating value, and if the values are not within x %, a HtVal Checksum Fail is reported. SG Check Fail – Specific Gravity checksum failure. The Station Manager controller calculates the expected specific gravity, based on the mole percent of each gas component. It compares the entered specific gravity with the calculated specific value, and if the values are not within x %, an SG Checksum Fail is reported. Value Sum Fail – The mole percent of each component is added. If the value is not 100% +/- some programmable limit, the Value Sum failure is reported.
Data Set	
Source in Use	Shows LAST when the source in use is the last good GC data; shows FIXED when the source is fixed data entries.
Date	The date format is MMDDYYYY.
Time	The time format is hhmmss.

3.3.2 Current Tab (Gas Chromatograph Configuration)

The Current gas chromatograph data is reported on this sub tab.

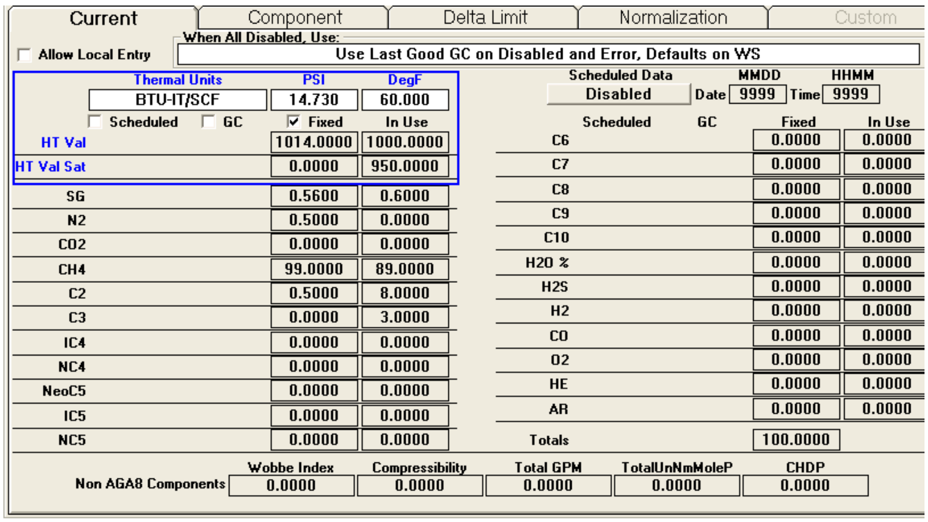


Figure 3-96. Gas Chromatograph Configuration – Current sub-tab

Field	Description
When All Disabled, Use: **(Station Manager 8-Run)**	Select from one of these options: **Use Last Good GC on Disabled and Error, Defaults on Warm Start** Station Manager uses the last good values from the chromatograph if communications to the chromatograph are disabled or if a failure is detected. On warm start, use configured default values. **Use Last Good GC on Disabled, Error and Warm Start** Station Manager uses the last good values from the chromatograph if communications to the chromatograph are disabled, if a failure is detected, or on a warm start. **Used Fixed on Disabled, Error and Warm Start** Station Manager uses Fixed properties if communications to the gas chromatograph are disabled, or if there is a failure detected or on a warm start.
When All Disabled, Use Fixed **(Station Manager 6-Run)**	Enable or Disable the use of fixed data by toggling this button. When Disabled, fixed properties will not be used if communications to the gas chromatograph are disabled, or if there is a failure detected. Instead, the last good values will be used.

	When Enabled, the fixed properties will be used if communications to the gas chromatograph are disabled, or if there is a failure detected.
Allow Local Entry	When the “Allow Local Entry” check box is marked, it is possible to enter the Scheduled and Fixed data locally. When is it not marked, this data may only be downloaded via the SCADA Host, using either the Enron MODBUS or BSAP protocols.
Scheduled Data	It is possible to load gas component data to the Station Manager controller, and then schedule when this data will become the in-use data. Scheduled data is written to the fixed data at the scheduled time. To enable this feature, toggle the Scheduled Data Disabled/Enabled button.
Date, Time	The scheduled data and the Date and Time for the scheduled data to be used may be downloaded via the SCADA Host, using either the Enron MODBUS or BSAP protocols. The data may also be entered locally, if the “Allow Local Entry” check box is marked.
Thermal Units	Select the thermal units appropriate for your chromatograph.
PSI	Specify the base pressure in pounds per square inch (PSI) appropriate for your chromatograph.
DegF	Specify the base temperature in degrees Fahrenheit (DegF) appropriate for your chromatograph.
Scheduled	The Scheduled Data appears when you click this box. When the “Allow Local Entry” box is marked, this data may be entered locally. Otherwise, the data may only be downloaded via the SCADA Host. By default, these values are 0.0. This data will be moved to the In Use data column at the date and time specified in the Scheduled Data Date and Time fields. Format for Date is MMDD, format for Time is hhmm.
GC	The data retrieved from the gas chromatograph appears as shown. When there are no errors from the chromatograph, this data will reflect the most recent data polled from the gas chromatograph. If there are errors from the chromatograph, this data will represent the last good data retrieved from the gas chromatograph. The default values are shown above. If no valid

	communications are ever established with a gas chromatograph, these values will be used.
Component name	The name of the component appears in red if the gas component is out-of-range.
Fixed	The Fixed Data appears as shown. When the “Allow Local Entry” box is marked, this data may be entered locally. Otherwise, the data may only be downloaded via the SCADA Host. The default values are shown. If the Use Fixed Properties state is set to Enabled, this data will be moved to the In Use data column if communications to the gas chromatograph are disabled, or there is a failure indicated with the gas chromatograph. However, if there is an error with the fixed data, this data will not be moved to the In Use data column; instead, the last good values from the gas chromatograph will be used.
In Use	The In Use data appears as shown. The In Use data is the data that will be used for measurement. The In Use data is the validated data from the source specified (GC, Fixed, or Scheduled). If data from the specified source is not valid, the last good data is used.

3.3.3 Component Tab (Gas Chromatograph Configuration)

The minimum and maximum ranges for each of the gas components may be set here.

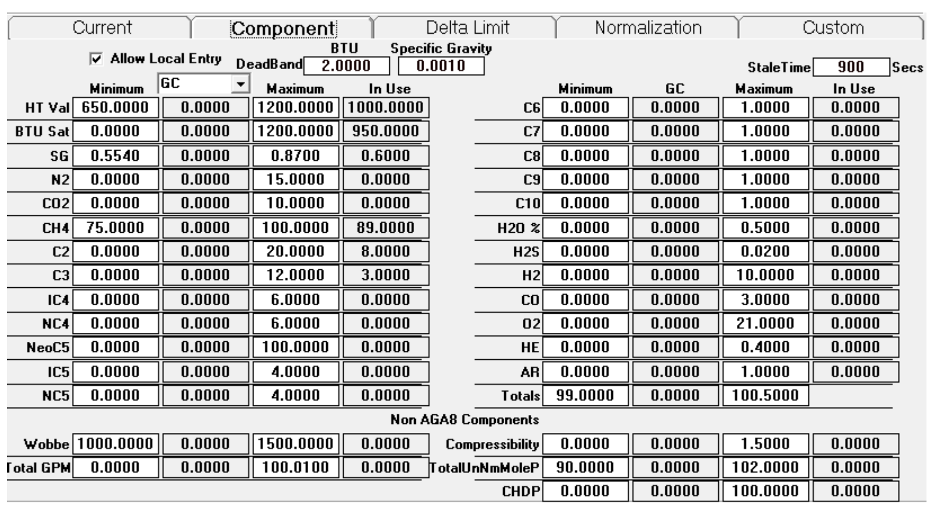


Figure 3-97. Gas Chromatograph Configuration – Component sub-tab

Field	Description

Allow Local Entry	Allow entry when “Fixed” or “Scheduled” is selected.
Deadband BTU	The Deadband to use between GC BTU and Station Manager calculated BTU from GC components. This is an absolute value.
Specific Gravity	The Deadband to use between GC specific gravity and Station Manager calculated specific gravity from GC components. This is an absolute value.
Stale Time	The stale data time limit is entered here. If data from the gas chromatograph has not been updated within this time limit, the data will be declared stale.
Fixed, GC, Scheduled	Choose whether fixed, GC, or scheduled values appear in this column. **Fixed** This data will be moved to the In Use data column if communications to the gas chromatograph are disabled, or there is a failure indicated with the gas chromatograph. However, if there is an error with the fixed data, this data will not be moved to the In Use data column; instead, the last good values from the gas chromatograph will be used. **GC** When there are no errors from the chromatograph, this data will reflect the most recent data polled from the gas chromatograph. If there are errors from the chromatograph, this data will represent the last good data retrieved from the gas chromatograph. If no valid communications are ever established with a gas chromatograph, the default values will be used. **Scheduled** This data will be moved to the In Use data column at the date and time specified for the schedule.
Component name	The name of the component appears in red if the gas component is out-of-range.
Minimum, Maximum	The minimum and maximum values for this gas component
In Use	The In Use data appears as shown. The In Use data is the data that will be used for measurement. The In Use data is the validated data from the source specified (GC, Fixed, or Scheduled). If data from the specified source is not valid, the last good data is used.

3.3.4 Delta Limit Tab (Gas Chromatograph Configuration)

The maximum change allowed (+/-) per component is entered here.

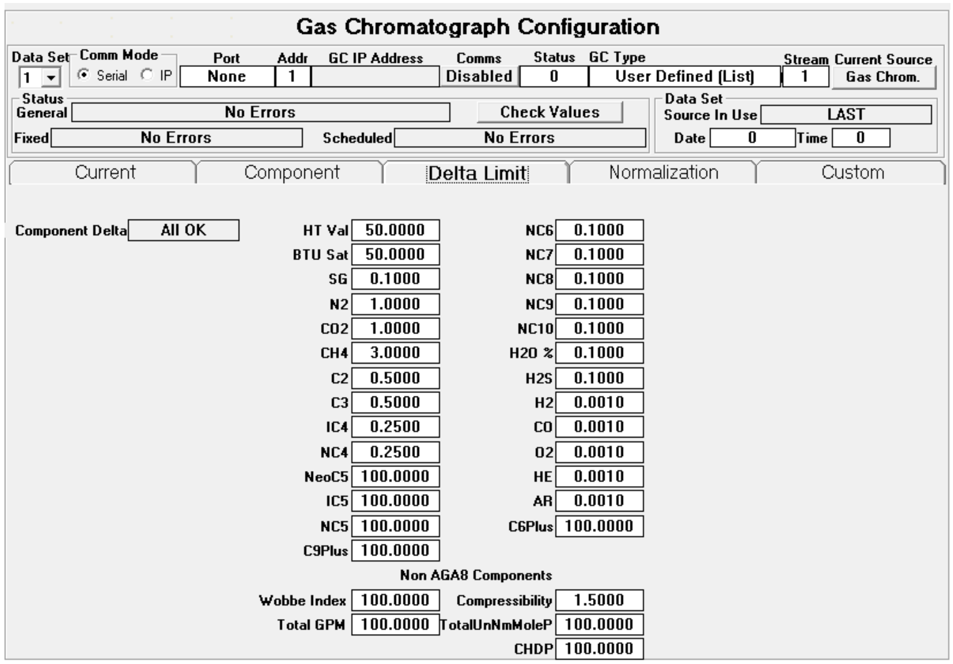


Figure 3-98. Gas Chromatograph Configuration – Delta Limit sub-tab

Field	Description
Delta Limit	If a gas component has changed beyond the delta limit entered here, Station Manager highlights its name in red.
Component Delta	Shows “All OK” if no gas components have changed beyond the delta limit. Otherwise, it shows the most recently detected component that has changed beyond the delta limit.

3.3.5 Normalization Tab (Gas Chromatograph Configuration)

For chromatographs that support C6+ or C6+/C9+, normalization of that data is done here.

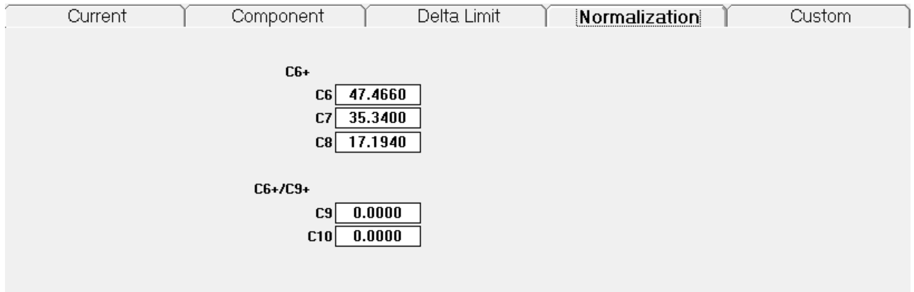


Figure 3-99. Gas Chromatograph Configuration – Normalization sub-tab

The gas chromatograph will report a single value for either C6+ or C6+ and C9+. The percentage applied to each component (C6, C7, C8, C9 and C10) will be how the number reported by the gas chromatograph will be distributed across the components.

3.3.6 Custom Tab (Gas Chromatograph Configuration)

You configure the user defined Custom Data Map here. This map is used when you choose either “Daniel User Defined” or “User Defined (List)” as the **GC Type** on the **Current** tab. (See *Section 3.3.1* for information on setting the GC Type.)

Daniel User Defined

When this is the **GC Type**, click on any gas component and use the drop-down menu to select which Modbus register (7001 to 7016) holds that value. (See *Figure 3-100* below.) Otherwise, leave the component “Unassigned.” Press the **Enter** key after you make each selection.

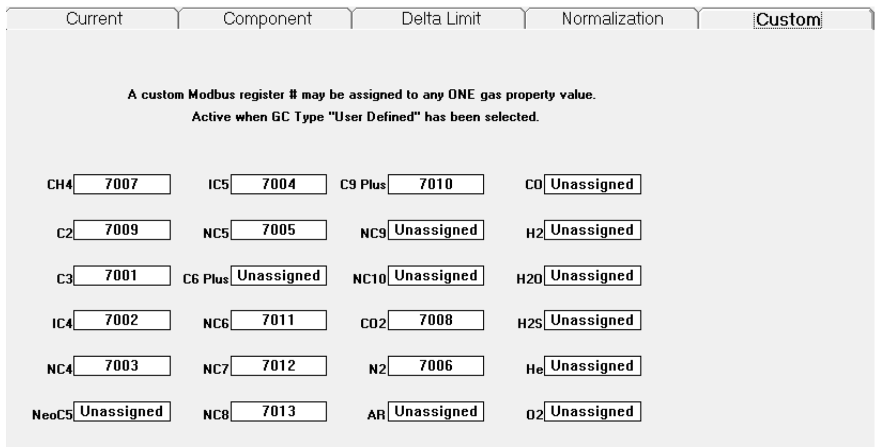


Figure 3-100. Gas Chromatograph Configuration – Custom sub-tab – Daniel User Defined

User Defined (List) When this is the **GC Type**, click on any gas component and enter the list element number (1 to *n* where *n* is the highest numbered list element) which holds that value. (See *Figure 3-101* below.) Otherwise, leave the component as **0** which is equivalent to “Unassigned.” Press the **Enter** key after you make each entry. **The default user defined list is list 30.**

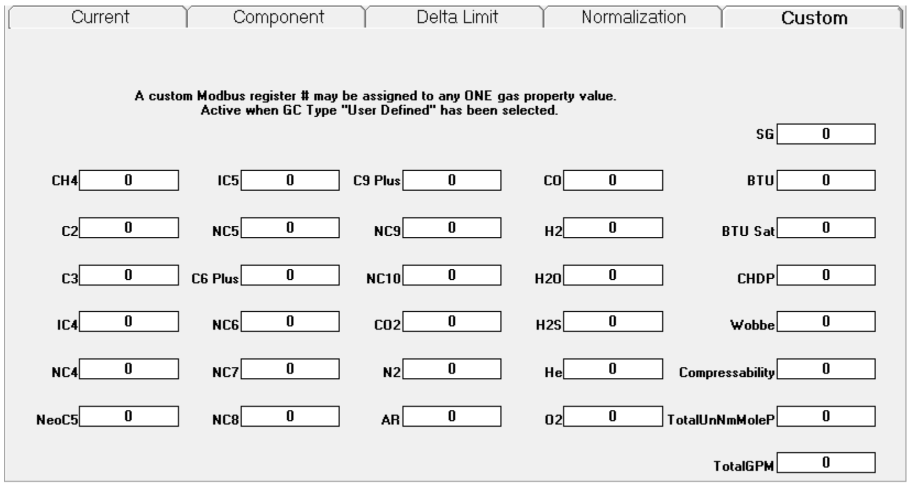


Figure 3-101. Gas Chromatograph Configuration – Custom sub-tab – User Defined (List)

3.4 Gas Chromatograph RF Configuration

To access the Gas Chromatograph Response Factor page, click the Gas Chromatograph RF Configuration button on the Measurement tab.

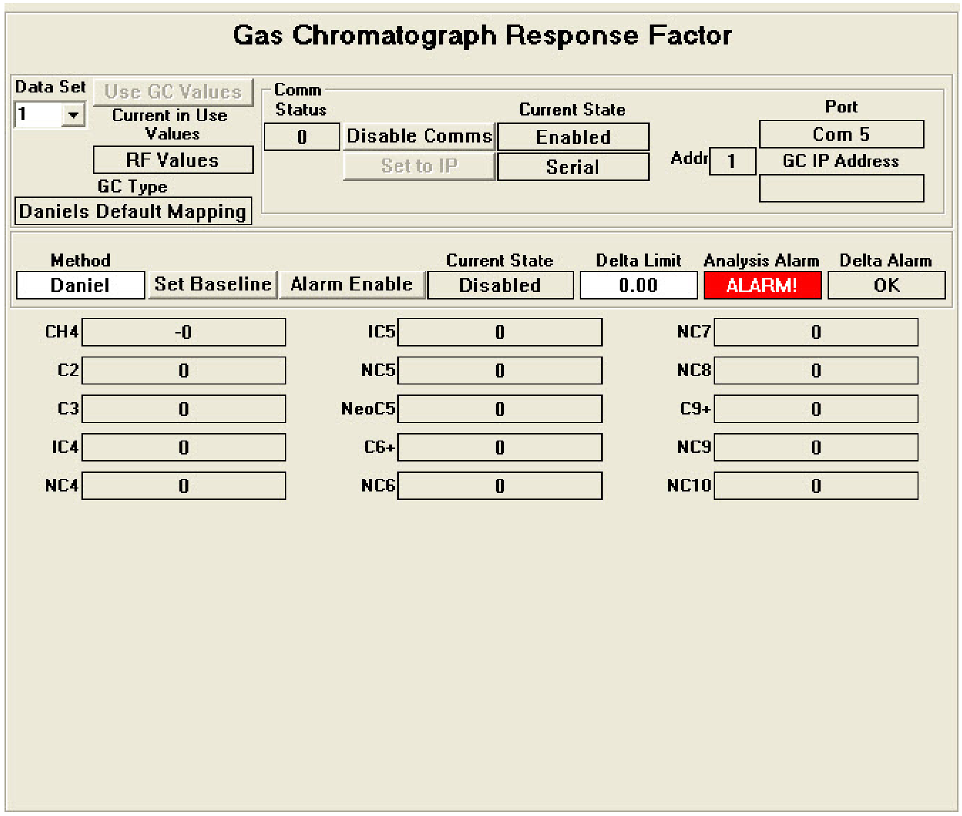


Figure 3-102. Gas Chromatograph Response Factor

Field	Description
Data Set	Select the data set. The number of data sets is 1 to 8 for the 8-run version or 1 to 6 for the 6-run version.
Use GC Values / Use RF Values	Click this button to choose whether values come from the gas chromatograph (GC) or from the entries on this page.
Current in Use Values	Shows the current source for comm. settings; either the chromatograph or the entries you specify on this page.
GC Type	Shows the type of gas chromatograph.
Comm Status	Note: If communications are disabled, data fields for the gas components are not shown.
Comm Status	See the ControlWave Designer online help for the CUSTOM function block for an explanation of these status codes.

Disable Comms/Enable Comms	Click **Disable Comms** to turn off communications to the gas chromatograph. Click **Enable Comms** to turn on communications to the gas chromatograph.
Set to IP / Set to Serial	Click **Set to IP** to use IP communications. Click **Set to Serial** to use serial communications.
Current State	These two fields shows whether communications are enabled or disabled and whether communications are serial or IP.
Addr	Shows the address of the gas chromatograph.
Port	Shows the communication port on the RTU used for the gas chromatograph.
GC IP Addr	Shows the IP address of the gas chromatograph.
Method	Specify the RF evaluation method.
Set Baseline	Set the RF baseline to use for comparison.
Alarm Enable/Disable	Relates to calculation done to see if response factor in bounds. Click **Alarm Enable** to enable the calculation and alarming based on whether the response factor is in bounds. Click **Alarm Disable** to disable the calculation and alarming.
Current State	Shows whether alarming based on the response factor being within bounds is enabled or disabled.
Delta Limit	Specify the limit setting for the delta alarm. This specifies a limit on how much the response factors change; if they exceed the limit it triggers the alarm.
Analysis Alarm	Shows the current state of the RF analysis alarm.
Delta Alarm	Shows the current state of the delta alarm.
CH4	Shows the response factor for the methane component. If no value is shown, communications are disabled.
C2	Shows the response factor for the ethane component. If no value is shown, communications are disabled.
C3	Shows the response factor for the propane component. If no value is shown, communications

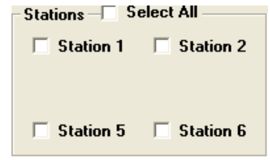
	are disabled.
IC4	Shows the response factor for the I-butane component. If no value is shown, communications are disabled.
NC4	Shows the response factor for the N-butane component. If no value is shown, communications are disabled.
IC5	Shows the response factor for the I-pentane component. If no value is shown, communications are disabled.
NC5	Shows the response factor for the N-pentane component. If no value is shown, communications are disabled.
NeoC5	Shows the response factor for the neo-pentane component. If no value is shown, communications are disabled.
C6+	Shows the response factor for the C6+ component. If no value is shown, communications are disabled.
NC6	Shows the response factor for the N-hexane component. If no value is shown, communications are disabled.
NC7	Shows the response factor for the N-heptane component. If no value is shown, communications are disabled.
NC8	Shows the response factor for the N-octane component. If no value is shown, communications are disabled.
C9+	Shows the response factor for the C9+ component. If no value is shown, communications are disabled.
NC9	Shows the response factor for the N-nonane component. If no value is shown, communications are disabled.
NC10	Shows the response factor for the N-decane component. If no value is shown, communications are disabled.

3.5 Summary Pages

When you click the 

button on the Measurement tab, Station Manager opens up a series of summary pages, which you can access by clicking on its own tabs.

Click on the box(es) for a station you want to view. This displays the basic information for that station, or if you choose "Select All" displays information for all stations for the site.



3.5.1 Measurement Tab

This tab shows information such as the Station Name, the Inlet and Outlet pressures, Flow & Energy rates, Flow Direction, the Run Name, DP or Frequency, SP, FT, and Flow rate. The Run Switching Valve status is displayed as well.

You can click the "Click to Configure" button to bring you to the Measurement Status and Configuration page (see *Section 3.2*).

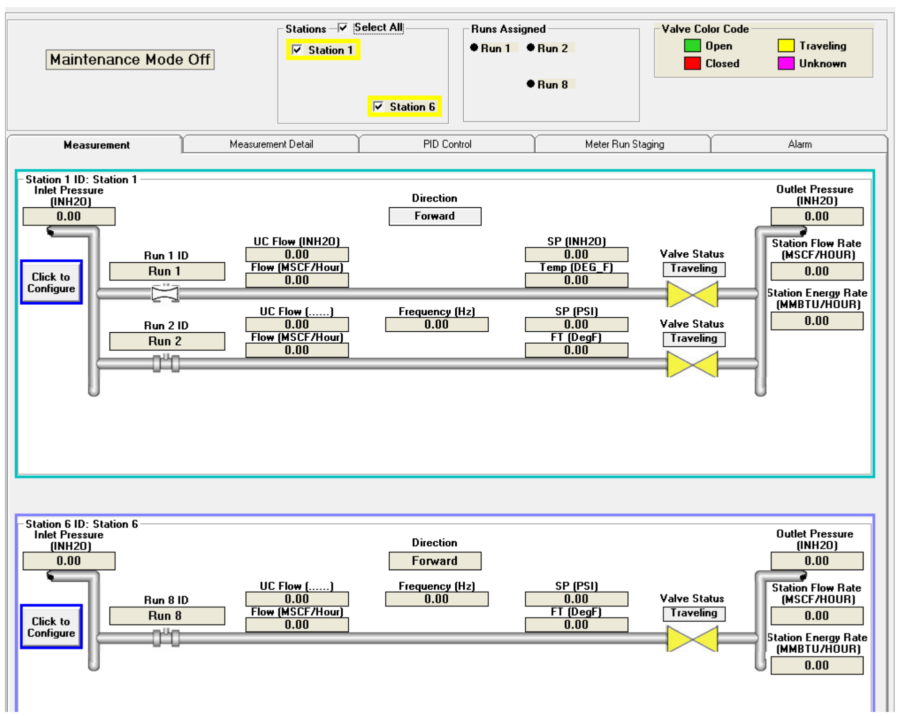


Figure 3-103. Summary Page – Measurement tab

3.5.2 Measurement Detail Tab

The Measurement Detail tab provides detailed information for a station including the station name, the run name, pressure, flow, and temperature, the forward and reverse flow and energy rates, as well as current and previous hour and day totals and non-resettable flow and energy totals.

You can click the “Click to Configure” button to bring you to the Measurement Status and Configuration page (see *Section 3.2*).

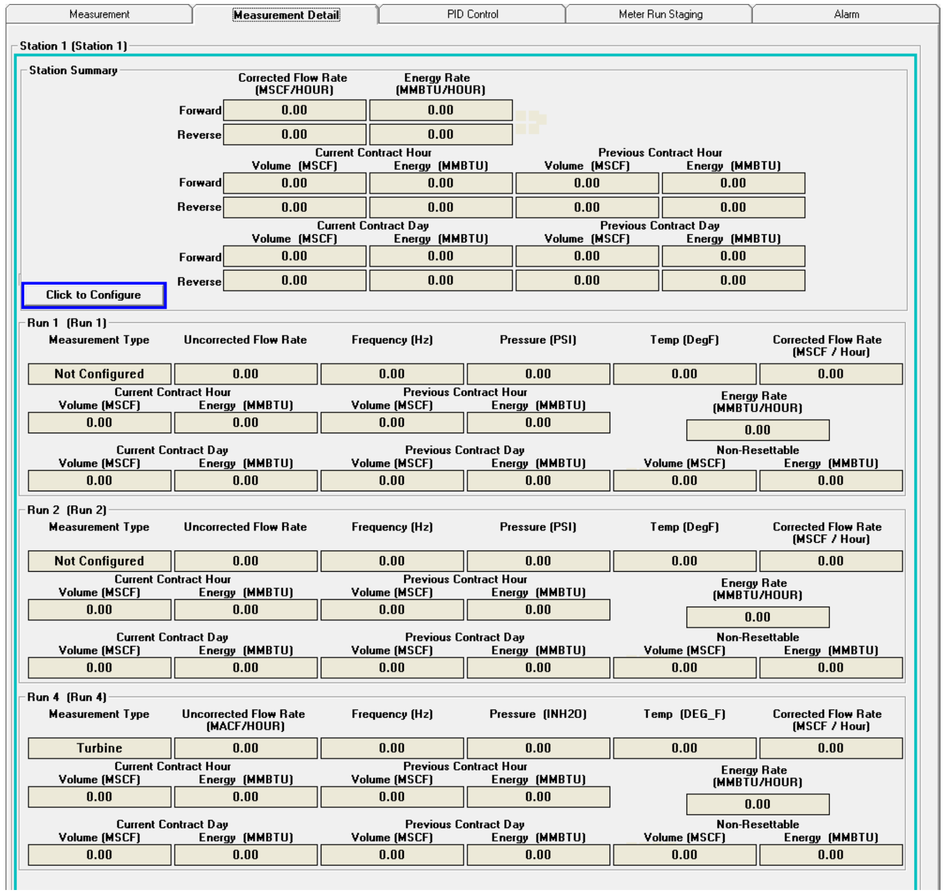


Figure 3-104. Summary Page – Measurement Detail tab

3.5.3 PID Control Tab

The PID Control tab provides information on the Station Control Mode, Inlet and Outlet pressures, Forward and Reverse Flow and Energy rates, and PID output percent.

The “Click to Configure” button brings you to the Station Control Overview page. See *Section 5.4.1*.

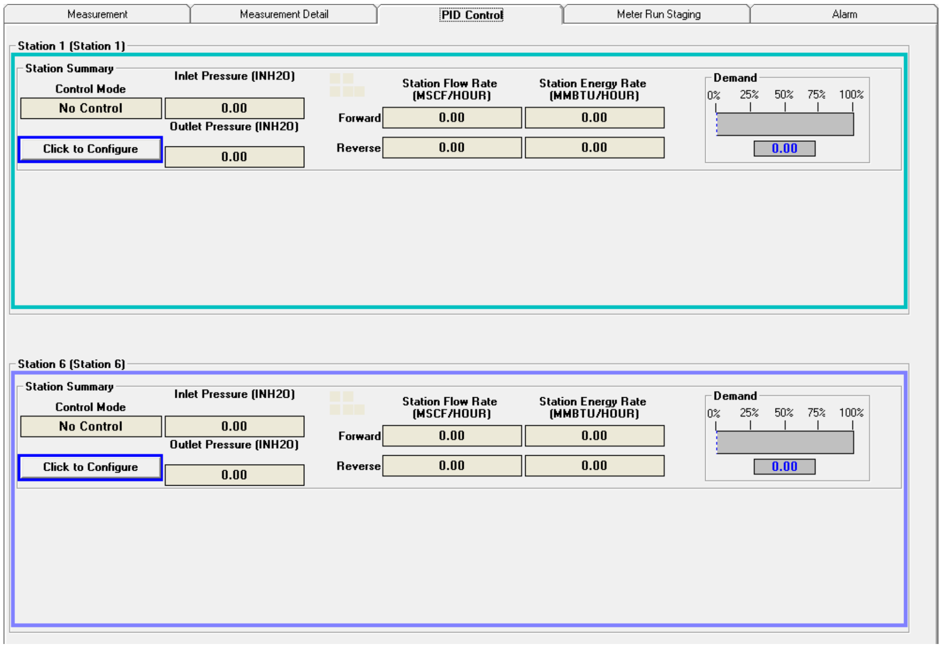


Figure 3-105. Summary Page – PID Control tab

3.5.4 Meter Run Staging Tab

The Meter Run Staging tab provides information on meter run staging.

This includes information on Inlet and Outlet pressures, flow rate, station direction and ranks, tube switching settings and ranks, valve command and status, block valve assignments, and other parameters.

The “Click to Configure” button brings you to the Station Meter Run Staging page. (See *Section 5.5 Meter Run Staging* in *Chapter 5* for more information on meter run staging.)

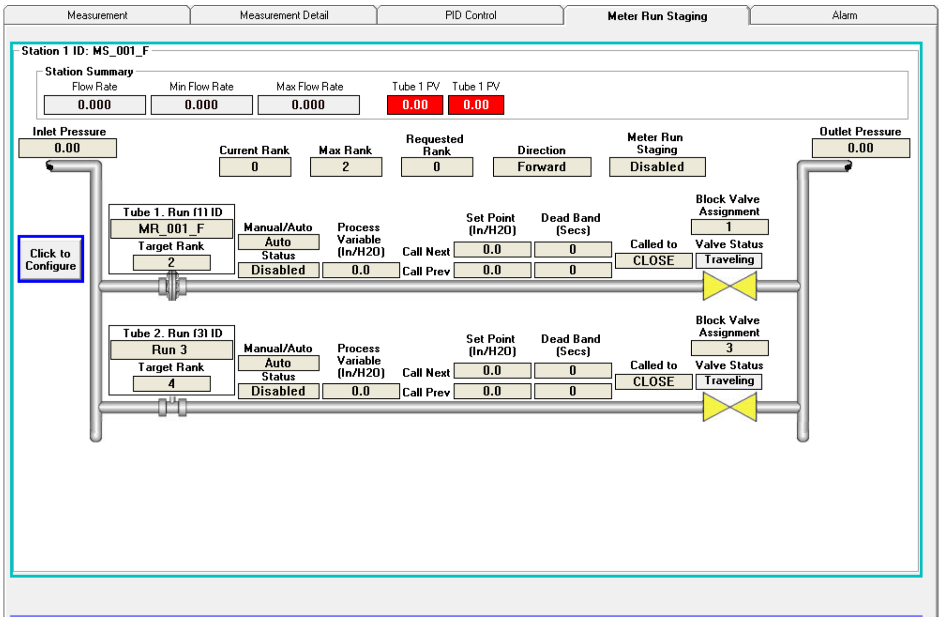


Figure 3-106. Summary Page – Meter Run Staging tab

3.5.5 Alarm Tab

The Alarm tab shows the Run Quality Bit, DP, SP, FT, Beta, Speed of Sound, Delta ABAR, Frequency, and Flow Rate current values and alarm status.

The "Click to Configure" button will bring you to the Measurement Status and Configuration page.

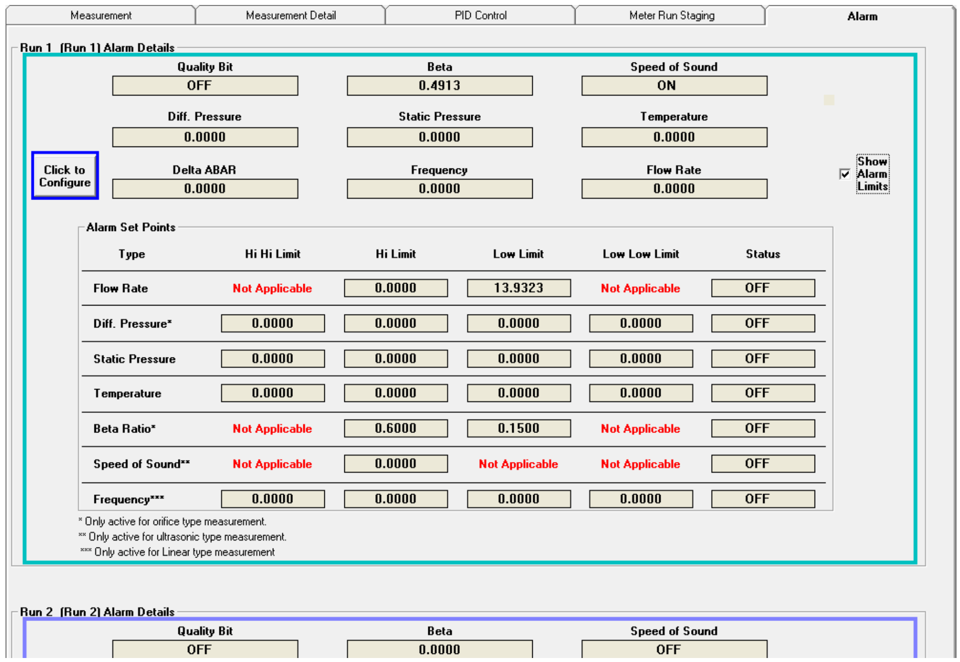


Figure 3-107. Summary Page – Alarm tab

3.6 Water Vapor Content

To go to the Water Vapor Content screen, select the "Measurement" tab, and click on the Water Vapor Content button.

Station Manager calculates the water vapor content of a gas stream using up to six sensors. The 6-run version has up to six streams; the 8-run version has up to eight streams.

The calculation determines the water vapor content of the gas stream using Kahn dew point temperature sensors and the pressure. The equation is from the *Institute of Gas Technology Research Bulletin #8 – "Equilibrium Moisture Content of Natural Gas."*

The equation is:

$W = A / P + B$

where:

W = water content (LBS/MMCF)

P = pressure (PSIA)

A = constant proportional to the vapor pressure

B = constant dependent on temperature and gas

The A and B constants come from a lookup table. This implementation does not limit input pressure and dew point temperature.

The calculation for A is:

$A = PH2O * (18 * 10^6 * Pb) / (10.73 * (459.6 + Tb) * Zb)$

where:

PH2O = vapor pressure in psia of water at dew point temperature

Pb = base pressure (set as a constant of 14.7 psi)

Tb = base temperature (set as a constant 60.0 degrees F)

Zb = 0.988 base compressibility factor

$PH2O = 14.5038 * \mathrm{Exp}(6.3573118 - 8858.843 / ((T + 459.67) / 1.8) + 607.56335 * ((T + 459.67)/1.8)^{-0.6})$

where:

PH2O = vapor pressure in psia of water at dew point temperature

T = dew point temperature in degrees F (from transducer)

$B = \mathrm{Exp}(15.40544 - 7093.73 / (T+459.67))$

Loss of input of either dew point temperature or pressure will result in an output value of -999999.

This performs a calculation every second for each sensor input. There can be from one to six sensors for a given stream of gas.

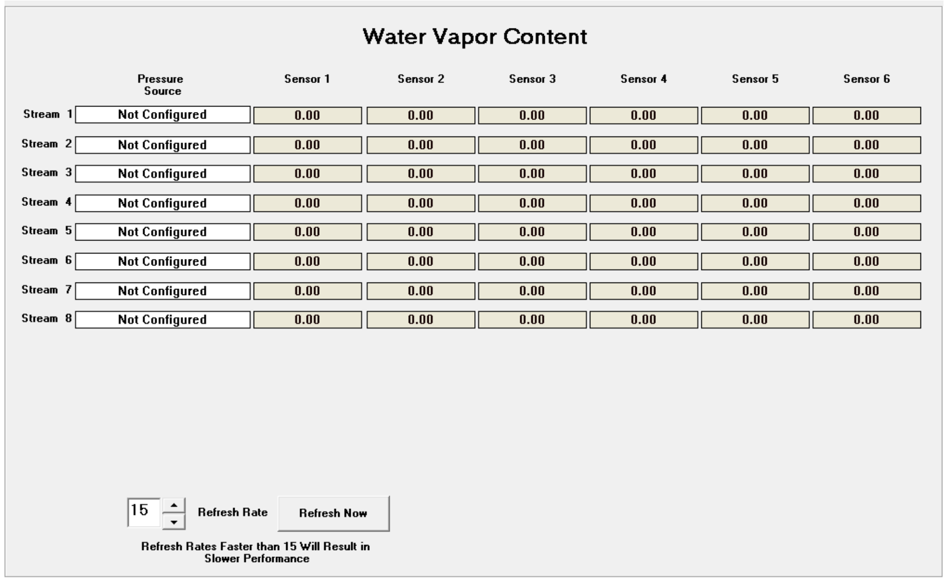


Figure 3-108. Water Vapor Content

For each stream you want to enable, you need to select a pressure source.

For each stream, you can have up to six sensors which are AI inputs.

Once you have a valid pressure source and sensor reading, Station Manager does the calculation for that sensor.

3.7 List 29

To go to the List 29 screen, select the "Measurement" tab, and click on the 

button.

List 29 is a modifiable list, and may be edited using the On-Line Edit tool to add or remove items from the list.

The 6-run version has 6 meter runs in List 29; the 8-run version has 8 meter runs in List 29.

Caution **The math function (described in Chapter 6) references individual elements of this list. If you insert lines in the list before any referenced elements, those positions will change and you must correct the references within the math function to reflect the new positions.**

By default, List 29 includes these values:

Position in the List	Variable Name	Variable Description
1	MVT.MVT_1_DP	MVT 1 Static Pressure
2	MVT.MVT_1_SP	MVT 1 Differential Pressure
3	MVT.MVT_1_FT	MVT 1 Temperature
4	MVT.MVT_2_DP	MVT 2 Static Pressure
5	MVT.MVT_2_SP	MVT 2 Differential Pressure
6	MVT.MVT_2_FT	MVT 2 Temperature
7	MVT.MVT_3_DP	MVT 3 Static Pressure
8	MVT.MVT_3_SP	MVT 3 Differential Pressure
9	MVT.MVT_3_FT	MVT 3 Temperature
10	MVT.MVT_4_DP	MVT 4 Static Pressure
11	MVT.MVT_4_SP	MVT 4 Differential Pressure
12	MVT.MVT_4_FT	MVT 4 Temperature
13	MVT.MVT_5_DP	MVT 5 Static Pressure
14	MVT.MVT_5_SP	MVT 5 Differential Pressure
15	MVT.MVT_5_FT	MVT 5 Temperature
16	MVT.MVT_6_DP	MVT 6 Static Pressure
17	MVT.MVT_6_SP	MVT 6 Differential Pressure
18	MVT.MVT_6_FT	MVT 6 Temperature
19	MVT.MVT_7_DP	MVT 7 Static Pressure
20	MVT.MVT_7_SP	MVT 7 Differential Pressure
21	MVT.MVT_7_FT	MVT 7 Temperature
22	MVT.MVT_8_DP	MVT 8 Static Pressure
23	MVT.MVT_8_SP	MVT 8 Differential Pressure
24	MVT.MVT_8_FT	MVT 8 Temperature
25	MVT.MVT_9_DP	MVT 9 Static Pressure
26	MVT.MVT_9_SP	MVT 9 Differential Pressure
27	MVT.MVT_9_FT	MVT 9 Temperature
28	MVT.MVT_10_DP	MVT 10 Static Pressure
29	MVT.MVT_10_SP	MVT 10 Differential Pressure

30	MVT.MVT_10_FT	MVT 10 Temperature
31	MVT.MVT_11_DP	MVT 11 Static Pressure
32	MVT.MVT_11_SP	MVT 11 Differential Pressure
33	MVT.MVT_11_FT	MVT 11 Temperature
34	MVT.MVT_12_DP	MVT 12 Static Pressure
35	MVT.MVT_12_SP	MVT 12 Differential Pressure
36	MVT.MVT_12_FT	MVT 12 Temperature
37	FC.FC1.OR_FLOW_RATE	Run 1 Flow Rate
38	FC.FC1.OR_UCFLOWRATE	Run 1 Uncorrected Flow Rate
39	FC.FC1.OR_ENERGY_RATE	Run 1 Energy Rate
40	FC.FC2.OR_FLOW_RATE	Run 2 Flow Rate
41	FC.FC2.OR_UCFLOWRATE	Run 2 Uncorrected Flow Rate
42	FC.FC2.OR_ENERGY_RATE	Run 2 Energy Rate
43	FC.FC3.OR_FLOW_RATE	Run 3 Flow Rate
44	FC.FC3.OR_UCFLOWRATE	Run 3 Uncorrected Flow Rate
45	FC.FC3.OR_ENERGY_RATE	Run 3 Energy Rate
46	FC.FC4.OR_FLOW_RATE	Run 4 Flow Rate
47	FC.FC4.OR_UCFLOWRATE	Run 4 Uncorrected Flow Rate
48	FC.FC4.OR_ENERGY_RATE	Run 4 Energy Rate
49	FC.FC5.OR_FLOW_RATE	Run 5 Flow Rate
50	FC.FC5.OR_UCFLOWRATE	Run 5 Uncorrected Flow Rate
51	FC.FC5.OR_ENERGY_RATE	Run 5 Energy Rate
52	FC.FC6.OR_FLOW_RATE	Run 6 Flow Rate
53	FC.FC6.OR_UCFLOWRATE	Run 6 Uncorrected Flow Rate
54	FC.FC6.OR_ENERGY_RATE	Run 6 Energy Rate
55	FC.FC7.OR_FLOW_RATE	Run 7 Flow Rate
56	FC.FC7.OR_UCFLOWRATE	Run 7 Uncorrected Flow Rate
57	FC.FC7.OR_ENERGY_RATE	Run 7 Energy Rate
58	FC.FC8.OR_FLOW_RATE	Run 8 Flow Rate
59	FC.FC8.OR_UCFLOWRATE	Run 8 Uncorrected Flow Rate
60	FC.FC8.OR_ENERGY_RATE	Run 8 Energy Rate
61	FC.STATION_1_FFLOWRATE	Station 1 Forward Flow Rate
62	FC.STATION_1_RFLOWRATE	Station 1 Reverse Flow Rate
63	FC.STATION_1_FENERGYRATE	Station 1 Forward Energy Rate
64	FC.STATION_1_RENERGYRATE	Station 1 Reverse Energy Rate
65	FC.STATION_2_FFLOWRATE	Station 2 Forward Flow Rate
66	FC.STATION_2_RFLOWRATE	Station 2 Reverse Flow Rate
67	FC.STATION_2_FENERGYRATE	Station 2 Forward Energy Rate
68	FC.STATION_2_RENERGYRATE	Station 2 Reverse Energy Rate
69	FC.STATION_3_FFLOWRATE	Station 3 Forward Flow Rate
70	FC.STATION_3_RFLOWRATE	Station 3 Reverse Flow Rate
71	FC.STATION_3_FENERGYRATE	Station 3 Forward Energy Rate
72	FC.STATION_3_RENERGYRATE	Station 3 Reverse Energy Rate
73	FC.STATION_4_FFLOWRATE	Station 4 Forward Flow Rate
74	FC.STATION_4_RFLOWRATE	Station 4 Reverse Flow Rate
75	FC.STATION_4_FENERGYRATE	Station 4 Forward Energy Rate
76	FC.STATION_4_RENERGYRATE	Station 4 Reverse Energy Rate
77	FC.STATION_5_FFLOWRATE	Station 5 Forward Flow Rate
78	FC.STATION_5_RFLOWRATE	Station 5 Reverse Flow Rate

79	FC.STATION_5_FENERGYRATE	Station 5 Forward Energy Rate
80	FC.STATION_5_RENERGYRATE	Station 5 Reverse Energy Rate
81	FC.STATION_6_FFLOWRATE	Station 6 Forward Flow Rate
82	FC.STATION_6_RFLOWRATE	Station 6 Reverse Flow Rate
83	FC.STATION_6_FENERGYRATE	Station 6 Forward Energy Rate
84	FC.STATION_6_RENERGYRATE	Station 6 Reverse Energy Rate
85	SMP.ST1_FFLOWRATE_MSCFH	Station 1 Sampler Forward Flow Rate in MSCFH
86	SMP.ST1_FUCFLOWRATE_MACFH	Station 1 Sampler Forward Uncorrected Flow Rate in MACFH
87	SMP.ST1_FENERGYRATE_MMBTUH	Station 1 Forward Energy Rate in MMBTUH
88	SMP.ST1_RFLOWRATE_MSCFH	Station 1 Reverse Flow Rate in MSCFH
89	SMP.ST1_RUCFLOWRATE_MACFH	Station 1 Reverse Uncorrected Flow Rate in MACFH
90	SMP.ST1_RENERGYRATE_MMBTUH	Station 1 Reverse Energy Rate in MMBTUH
91	SMP.ST1_FLOWRATE_MSCFH	Station 1 Sampler Flow Rate in MSCFH
92	SMP.ST1_UCFLOWRATE_MACFH	Station 1 Sampler Uncorrected Flow Rate in MACF
93	SMP.ST1_ENERGYRATE_MMBTUH	Station 1 Sampler Energy Rate in MMBTUH
94	SMP.ST1_FFLOWRATE_MSCFD	Station 1 Sampler Forward Flow Rate in MSCFD
95	SMP.ST1_FUCFLOWRATE_MACFD	Station 1 Sampler Forward Uncorrected Flow Rate in MACFD
96	SMP.ST1_FENERGYRATE_MMBTUD	Station 1 Sampler Forward Energy Rate in MMBTUD
97	SMP.ST1_RFLOWRATE_MSCFD	Station 1 Sampler Reverse Flow Rate in MSCFD
98	SMP.ST1_RUCFLOWRATE_MACFD	Station 1 Sampler Reverse Uncorrected Flow Rate in MACFD
99	SMP.ST1_RENERGYRATE_MMBTUD	Station 1 Sampler Reverse Energy Rate in MMBTUD
100	SMP.ST1_FLOWRATE_MSCFD	Station 1 Sampler Flow Rate in MSCFD
101	SMP.ST1_UCFLOWRATE_MACFD	Station 1 Sampler Uncorrected Flow Rate in MACFD
102	SMP.ST1_ENERGYRATE_MMBTUD	Station 1 Sampler Energy Rate in MMBTUD
103	SMP.ST2_FFLOWRATE_MSCFH	Station 2 Sampler Forward Flow Rate in MSCFH
104	SMP.ST2_FUCFLOWRATE_MACFH	Station 2 Sampler Forward Uncorrected Flow Rate in MACFH
105	SMP.ST2_FENERGYRATE_MMBTUH	Station 2 Forward Energy Rate in MMBTUH
106	SMP.ST2_RFLOWRATE_MSCFH	Station 2 Reverse Flow Rate in MSCFH
107	SMP.ST2_RUCFLOWRATE_MACFH	Station 2 Reverse Uncorrected Flow Rate in MACFH
108	SMP.ST2_RENERGYRATE_MMBTUH	Station 2 Reverse Energy Rate in MMBTUH
109	SMP.ST2_FLOWRATE_MSCFH	Station 2 Sampler Flow Rate in MSCFH
110	SMP.ST2_UCFLOWRATE_MACFH	Station 2 Sampler Uncorrected Flow Rate in MACF
111	SMP.ST2_ENERGYRATE_MMBTUH	Station 2 Sampler Energy Rate in MMBTUH
112	SMP.ST2_FFLOWRATE_MSCFD	Station 2 Sampler Forward Flow Rate in MSCFD
113	SMP.ST2_FUCFLOWRATE_MACFD	Station 2 Sampler Forward Uncorrected Flow Rate in MACFD

114	SMP.ST2_FENERGYRATE_MMBTUD	Station 2 Sampler Forward Energy Rate in MMBTUD
115	SMP.ST2_RFLOWRATE_MSCFD	Station 2 Sampler Reverse Flow Rate in MSCFD
116	SMP.ST2_RUCFLOWRATE_MACFD	Station 2 Sampler Reverse Uncorrected Flow Rate in MACFD
117	SMP.ST2_RENERGYRATE_MMBTUD	Station 2 Sampler Reverse Energy Rate in MMBTUD
118	SMP.ST2_FLOWRATE_MSCFD	Station 2 Sampler Flow Rate in MSCFD
119	SMP.ST2_UCFLOWRATE_MACFD	Station 2 Sampler Uncorrected Flow Rate in MACFD
120	SMP.ST2_ENERGYRATE_MMBTUD	Station 2 Sampler Energy Rate in MMBTUD
121	SMP.ST3_FFLOWRATE_MSCFH	Station 3 Sampler Forward Flow Rate in MSCFH
122	SMP.ST3_FUCFLOWRATE_MACFH	Station 3 Sampler Forward Uncorrected Flow Rate in MACFH
123	SMP.ST3_FENERGYRATE_MMBTUH	Station 3 Forward Energy Rate in MMBTUH
124	SMP.ST3_RFLOWRATE_MSCFH	Station 3 Reverse Flow Rate in MSCFH
125	SMP.ST3_RUCFLOWRATE_MACFH	Station 3 Reverse Uncorrected Flow Rate in MACFH
126	SMP.ST3_RENERGYRATE_MMBTUH	Station 3 Reverse Energy Rate in MMBTUH
127	SMP.ST3_FLOWRATE_MSCFH	Station 3 Sampler Flow Rate in MSCFH
128	SMP.ST3_UCFLOWRATE_MACFH	Station 3 Sampler Uncorrected Flow Rate in MACF
129	SMP.ST3_ENERGYRATE_MMBTUH	Station 3 Sampler Energy Rate in MMBTUH
130	SMP.ST3_FFLOWRATE_MSCFD	Station 3 Sampler Forward Flow Rate in MSCFD
131	SMP.ST3_FUCFLOWRATE_MACFD	Station 3 Sampler Forward Uncorrected Flow Rate in MACFD
132	SMP.ST3_FENERGYRATE_MMBTUD	Station 3 Sampler Forward Energy Rate in MMBTUD
133	SMP.ST3_RFLOWRATE_MSCFD	Station 3 Sampler Reverse Flow Rate in MSCFD
134	SMP.ST3_RUCFLOWRATE_MACFD	Station 3 Sampler Reverse Uncorrected Flow Rate in MACFD
135	SMP.ST3_RENERGYRATE_MMBTUD	Station 3 Sampler Reverse Energy Rate in MMBTUD
136	SMP.ST3_FLOWRATE_MSCFD	Station 3 Sampler Flow Rate in MSCFD
137	SMP.ST3_UCFLOWRATE_MACFD	Station 3 Sampler Uncorrected Flow Rate in MACFD
138	SMP.ST3_ENERGYRATE_MMBTUD	Station 3 Sampler Energy Rate in MMBTUD
139	SMP.ST4_FFLOWRATE_MSCFH	Station 4 Sampler Forward Flow Rate in MSCFH
140	SMP.ST4_FUCFLOWRATE_MACFH	Station 4 Sampler Forward Uncorrected Flow Rate in MACFH
141	SMP.ST4_FENERGYRATE_MMBTUH	Station 4 Forward Energy Rate in MMBTUH
142	SMP.ST4_RFLOWRATE_MSCFH	Station 4 Reverse Flow Rate in MSCFH
143	SMP.ST4_RUCFLOWRATE_MACFH	Station 4 Reverse Uncorrected Flow Rate in MACFH
144	SMP.ST4_RENERGYRATE_MMBTUH	Station 4 Reverse Energy Rate in MMBTUH
145	SMP.ST4_FLOWRATE_MSCFH	Station 4 Sampler Flow Rate in MSCFH
146	SMP.ST4_UCFLOWRATE_MACFH	Station 4 Sampler Uncorrected Flow Rate in MACF

147	SMP.ST4_ENERGYRATE_MMBTUH	Station 4 Sampler Energy Rate in MMBTUH
148	SMP.ST4_FFLOWRATE_MSCFD	Station 4 Sampler Forward Flow Rate in MSCFD
149	SMP.ST4_FUCFLOWRATE_MACFD	Station 4 Sampler Forward Uncorrected Flow Rate in MACFD
150	SMP.ST4_FENERGYRATE_MMBTUD	Station 4 Sampler Forward Energy Rate in MMBTUD
151	SMP.ST4_RFLOWRATE_MSCFD	Station 4 Sampler Reverse Flow Rate in MSCFD
152	SMP.ST4_RUCFLOWRATE_MACFD	Station 4 Sampler Reverse Uncorrected Flow Rate in MACFD
153	SMP.ST4_RENERGYRATE_MMBTUD	Station 4 Sampler Reverse Energy Rate in MMBTUD
154	SMP.ST4_FLOWRATE_MSCFD	Station 4 Sampler Flow Rate in MSCFD
155	SMP.ST4_UCFLOWRATE_MACFD	Station 4 Sampler Uncorrected Flow Rate in MACFD
156	SMP.ST4_ENERGYRATE_MMBTUD	Station 4 Sampler Energy Rate in MMBTUD
157	SMP.ST5_FFLOWRATE_MSCFH	Station 5 Sampler Forward Flow Rate in MSCFH
158	SMP.ST5_FUCFLOWRATE_MACFH	Station 5 Sampler Forward Uncorrected Flow Rate in MACFH
159	SMP.ST5_FENERGYRATE_MMBTUH	Station 5 Forward Energy Rate in MMBTUH
160	SMP.ST5_RFLOWRATE_MSCFH	Station 5 Reverse Flow Rate in MSCFH
161	SMP.ST5_RUCFLOWRATE_MACFH	Station 5 Reverse Uncorrected Flow Rate in MACFH
162	SMP.ST5_RENERGYRATE_MMBTUH	Station 5 Reverse Energy Rate in MMBTUH
163	SMP.ST5_FLOWRATE_MSCFH	Station 5 Sampler Flow Rate in MSCFH
164	SMP.ST5_UCFLOWRATE_MACFH	Station 5 Sampler Uncorrected Flow Rate in MACF
165	SMP.ST5_ENERGYRATE_MMBTUH	Station 5 Sampler Energy Rate in MMBTUH
166	SMP.ST5_FFLOWRATE_MSCFD	Station 5 Sampler Forward Flow Rate in MSCFD
167	SMP.ST5_FUCFLOWRATE_MACFD	Station 5 Sampler Forward Uncorrected Flow Rate in MACFD
168	SMP.ST5_FENERGYRATE_MMBTUD	Station 5 Sampler Forward Energy Rate in MMBTUD
169	SMP.ST5_RFLOWRATE_MSCFD	Station 5 Sampler Reverse Flow Rate in MSCFD
170	SMP.ST5_RUCFLOWRATE_MACFD	Station 5 Sampler Reverse Uncorrected Flow Rate in MACFD
171	SMP.ST5_RENERGYRATE_MMBTUD	Station 5 Sampler Reverse Energy Rate in MMBTUD
172	SMP.ST5_FLOWRATE_MSCFD	Station 5 Sampler Flow Rate in MSCFD
173	SMP.ST5_UCFLOWRATE_MACFD	Station 5 Sampler Uncorrected Flow Rate in MACFD
174	SMP.ST5_ENERGYRATE_MMBTUD	Station 5 Sampler Energy Rate in MMBTUD
175	SMP.ST6_FFLOWRATE_MSCFH	Station 6 Sampler Forward Flow Rate in MSCFH
176	SMP.ST6_FUCFLOWRATE_MACFH	Station 6 Sampler Forward Uncorrected Flow Rate in MACFH
177	SMP.ST6_FENERGYRATE_MMBTUH	Station 6 Forward Energy Rate in MMBTUH
178	SMP.ST6_RFLOWRATE_MSCFH	Station 6 Reverse Flow Rate in MSCFH
179	SMP.ST6_RUCFLOWRATE_MACFH	Station 6 Reverse Uncorrected Flow Rate in MACFH

180	SMP.ST6_RENERGYRATE_MMBTUH	Station 6 Reverse Energy Rate in MMBTUH
181	SMP.ST6_FLOWRATE_MSCFH	Station 6 Sampler Flow Rate in MSCFH
182	SMP.ST6_UCFLOWRATE_MACFH	Station 6 Sampler Uncorrected Flow Rate in MACF
183	SMP.ST6_ENERGYRATE_MMBTUH	Station 6 Sampler Energy Rate in MMBTUH
184	SMP.ST6_FFLOWRATE_MSCFD	Station 6 Sampler Forward Flow Rate in MSCFD
185	SMP.ST6_FUCFLOWRATE_MACFD	Station 6 Sampler Forward Uncorrected Flow Rate in MACFD
186	SMP.ST6_FENERGYRATE_MMBTUD	Station 6 Sampler Forward Energy Rate in MMBTUD
187	SMP.ST6_RFLOWRATE_MSCFD	Station 6 Sampler Reverse Flow Rate in MSCFD
188	SMP.ST6_RUCFLOWRATE_MACFD	Station 6 Sampler Reverse Uncorrected Flow Rate in MACFD
189	SMP.ST6_RENERGYRATE_MMBTUD	Station 6 Sampler Reverse Energy Rate in MMBTUD
190	SMP.ST6_FLOWRATE_MSCFD	Station 6 Sampler Flow Rate in MSCFD
191	SMP.ST6_UCFLOWRATE_MACFD	Station 6 Sampler Uncorrected Flow Rate in MACFD
192	SMP.ST6_ENERGYRATE_MMBTUD	Station 6 Sampler Energy Rate in MMBTUD
193	MFN.MFN1_BOOL	Math function 1 BOOL
194	MFN.MFN1_REAL	Math function 1 REAL
195	MFN.MFN2_BOOL	Math function 2 BOOL
196	MFN.MFN2_REAL	Math function 2 REAL
197	MFN.MFN3_BOOL	Math function 3 BOOL
198	MFN.MFN3_REAL	Math function 3 REAL
199	MFN.MFN4_BOOL	Math function 4 BOOL
200	MFN.MFN4_REAL	Math function 4 REAL
201	MFN.MFN5_BOOL	Math function 5 BOOL
202	MFN.MFN5_REAL	Math function 5 REAL
203	MFN.MFN6_BOOL	Math function 6 BOOL
204	MFN.MFN6_REAL	Math function 6 REAL
205	MFN.MFN7_BOOL	Math function 7 BOOL
206	MFN.MFN7_REAL	Math function 7 REAL
207	MFN.MFN8_BOOL	Math function 8 BOOL
208	MFN.MFN8_REAL	Math function 8 REAL
209	MFN.MFN9_BOOL	Math function 9 BOOL
210	MFN.MFN9_REAL	Math function 9 REAL
211	MFN.MFN10_BOOL	Math function 10 BOOL
212	MFN.MFN10_REAL	Math function 10 REAL
213	MFN.MFN11_BOOL	Math function 11 BOOL
214	MFN.MFN11_REAL	Math function 11 REAL
215	MFN.MFN12_BOOL	Math function 12 BOOL
216	MFN.MFN12_REAL	Math function 12 REAL
217	STC.ST1_INLET	Station Control Station 1 Inlet Pressure
218	STC.ST1_OUTLET	Station Control Station 1 Outlet Pressure
219	STC.ST2_INLET	Station Control Station 2 Inlet Pressure
220	STC.ST2_OUTLET	Station Control Station 2 Outlet Pressure
221	STC.ST3_INLET	Station Control Station 3 Inlet Pressure

222	STC.ST3_OUTLET	Station Control Station 3 Outlet Pressure
223	STC.ST4_INLET	Station Control Station 4 Inlet Pressure
224	STC.ST4_OUTLET	Station Control Station 4 Outlet Pressure
225	STC.ST5_INLET	Station Control Station 5 Inlet Pressure
226	STC.ST5_OUTLET	Station Control Station 5 Outlet Pressure
227	STC.ST6_INLET	Station Control Station 6 Inlet Pressure
228	STC.ST6_OUTLET	Station Control Station 6 Outlet Pressure
229	STC.ST1_PID_OUT	Station Control Station 1 PID Output
230	STC.ST2_PID_OUT	Station Control Station 2 PID Output
231	STC.ST3_PID_OUT	Station Control Station 3 PID Output
232	STC.ST4_PID_OUT	Station Control Station 4 PID Output
233	STC.ST5_PID_OUT	Station Control Station 5 PID Output
234	STC.ST6_PID_OUT	Station Control Station 6 PID Output
235	MB.SPARE	

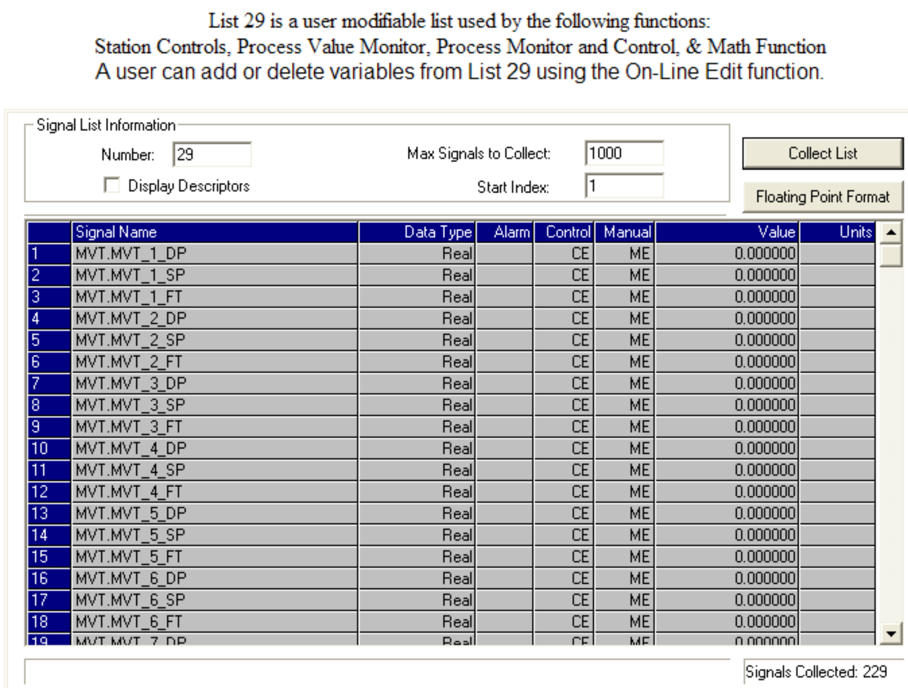


Figure 3-109. List 29

3.8 AI Maintenance

Note: This feature, while still available, has been superceded by the AI Calibration feature. See *Section 3.2.24*.

To access the AI Maintenance page, click the 

button on the Measurement tab.

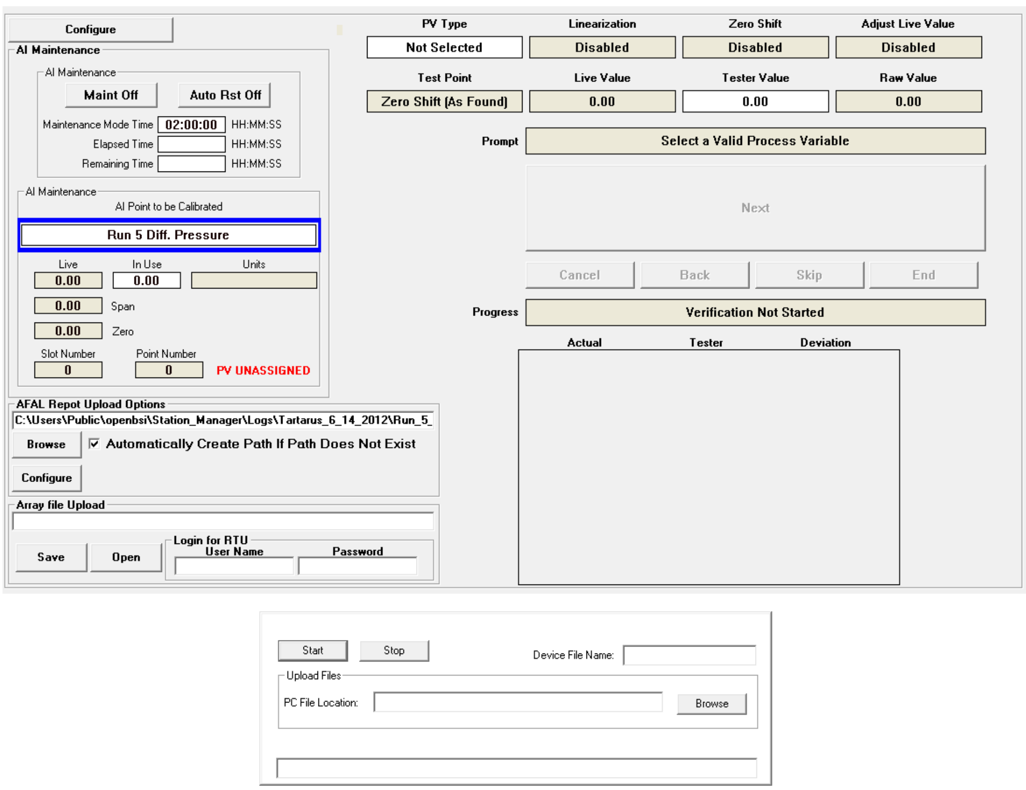


Figure 3-110. AI Maintenance page

Field	Description
<u>AI Maintenance</u>	This section of the screen controls the maintenance mode for the selected AI input.
Maint Off / Maintenance	To disable the maintenance mode, toggle the button to Maint Off. To enable the maintenance mode, toggle the button to Maintenance.
Auto Reset / Auto Rst Off	If Auto Reset is enabled, maintenance mode for the AI input will be disabled automatically after the period set under the Maintenance Mode Auto Reset Timer. If Auto Reset is disabled (Auto Rst Off), maintenance mode for the AI input will never be disabled automatically.

Maintenance Mode Time	The Maintenance Mode Auto Reset Timer is in the format DD HH:MM:SS.S Where: DD number of days HH number of hours MM number of minutes SS.S number of seconds (resolution of 10ths) The maximum time allowed for the maintenance mode auto reset timer is 24 20:31:23.9 – (24 Days, 20 hours, 31 minutes, 23.9 seconds)
Elapsed Time	This is the amount of time the AI input has been in maintenance mode.
Remaining Time	When Auto Reset is enabled, this is the time remaining until the maintenance mode is automatically reset. When Auto Reset is disabled, this field remains at 00 00:00:00.0.
AI Point to be Calibrated	Select the AI point to be calibrated from the drop down menu.
Live	The live value, coming from the Analog Input.
In Use	The value in use. When maintenance mode is off, this will be the live value. When maintenance mode is on, this value may be overridden by the user.
Units	This will be the units of the variable, assigned from the I/O configuration page.
Span	This will be span of the variable, assigned from the I/O configuration page
Zero	This will be the zero of the variable, assigned from the I/O configuration page.
Slot Number	This is the I/O Slot Number that this point is assigned to.
Point Number	This is the I/O point on the I/O slot that this variable is assigned to.
PV Type	Specify the type of AI variable, for example, differential pressure, pressure, pressure, or other.
Linearization	Shows whether linearization is enabled or disabled for the AI.

Zero Shift	Shows whether zero shift is enabled/disabled for the AI.
Adjust Live Value	Shows whether adjustments for the live AI value are allowed (enabled) or prevented (disabled).
Test Point	Shows the current test point.
Live Value	Shows the live value of the AI.
Tester Value	Enter the tester value to be applied.
Raw Value	Shows the raw value in use.
Prompt	Shows a prompt message related to the current step.
Next	Click here to proceed to the next step.
Cancel	Click here to cancel the current step.
Back	Click here to go back to the previous step.
Skip	Click here to skip the current step.
End	Click here to go to the end of the linearization process.
Progress	Shows the progress of the linearization process.
Zero Shift (AF) Actual	Shows the ZS AF actual value read.
Zero Shift (AF) Tester	Shows the ZS AF tester value applied.
Zero Shift (AF) Deviation	Shows the ZS AF difference between the actual value and the tester value.
Zero Actual	Shows the zero actual value read.

Zero Tester	Shows the zero tester value applied.
Zero Deviation	Shows the difference between the zero actual value and the zero tester value.
Mid Point 1 Actual	Shows the mid point 1 actual value read.
Mid Point 1 Tester	Shows the mid point 1 tester value applied.
Mid Point 1 Deviation	Shows the difference between the actual mid point 1 value and the tester mid point 1 value.
Mid Point 2 Actual	Shows the mid point 2 actual value read.
Mid Point 2 Tester	Shows the mid point 2 tester value applied.
Mid Point 2 Deviation	Shows the difference between the actual mid point 2 value and the tester mid point 2 value.
Mid Point 3 Actual	Shows the mid point 3 actual value read.
Mid Point 3 Tester	Shows the mid point 3 tester value applied.
Mid Point 3 Deviation	Shows the difference between the actual mid point 3 value and the tester mid point 3 value.
Full Scale Actual	Shows the full scale actual value read.
Full Scale Tester	Shows the full scale tester value applied.
Full Scale Deviation	Shows the difference between the full scale actual value and the full scale tester value.
Zero Shift Actual	Shows the zero shift actual value read.
Zero Shift Tester	Shows the zero shift tester value applied.
Zero Shift Deviation	Shows the difference between the zero shift actual value and the zero shift tester value.

Save	Click here to save the calibration array.
Open	Click here to open the specified calibration array and load it.
Configure	Click here to specify configuration parameters for AI maintenance. See *AI Configuration* page.

Login for RTU	
User Name	Specify a valid user name for using the Load/Save utility.
Password	Specify the password for the user identified in **User Name**.
Start	This starts the file transfer.
Stop	This aborts the file transfer. Any partial file will remain on the PC.
Device File Name	This is the name of the file to be transferred from the ControlWave to the PC. Only one file can be transferred at a time
Upload Files	
PC File Location	In Upload mode, this is the destination path on the PC where the file uploaded from the ControlWave will be sent. If not set, the default OpenBSI installation directory will be used as the location. You can use the **Browse** button to specify the location.

3.8.1 AI Configuration

You click the **Configure** button on the AI Maintenance screen to bring up the AI Configuration page.

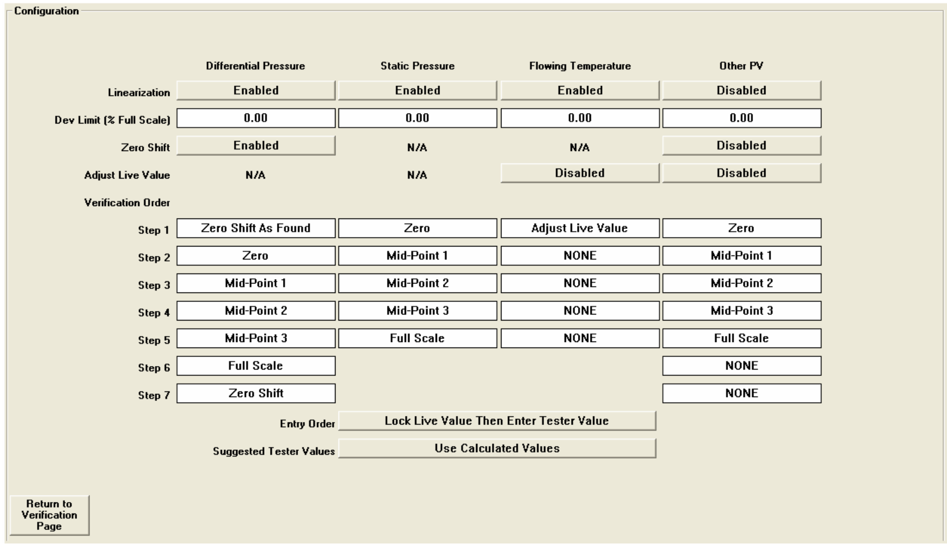


Figure 3-111. AI Configuration page

Field	Description
Linearization Enabled / Disabled	This button shows the current state for linearization. When you click the button you toggle the state. Click **Disabled** to activate the linearization function. The button now displays **Enabled**. Click **Enabled** to turn off the linearization function. The button now displays **Disabled**.
Dev Limit (% of Full Scale)	Set the deviation limit here.
Zero Shift	This button shows whether zero shift is enabled or disabled for this process variable (if applicable). When you click the button you toggle the state. Click **Disabled** to activate zero shift for this process variable. The button now displays **Enabled**. Click **Enabled** to turn off zero shift for this process variable. The button now displays **Disabled**.
Adjust Live Value	This button shows whether adjustments to the live value are enabled or disabled for this process variable (if applicable). When you click the button you toggle the state. Click **Disabled** to allow adjustments to the live value for this process variable. The button now displays **Enabled**.

	Click **Enabled** to prevent adjustments to the live value for this process variable. The button now displays **Disabled**.
Verification Order Step *n*	Use these fields to select the order in which various points along the scale for the AI are verified. Depending upon the process variable you can have up to seven steps for the verification.
Entry Order	This button lets you set the entry order for all process variable types. The button displays the current choice; you toggle the choice by clicking the button. Choices for entry order are: Lock Live Value then Enter Tester Value -or- Enter Tester Value then Lock Live Value.
Suggested Tester Values	This button lets you specify whether the application should use tester values calculated base on the zero and span, or, instead, use the values from the last test performed. The button displays the current choice; you toggle the choice by clicking the button.
Return to Verification Page	Click this button to go back to the verification page.

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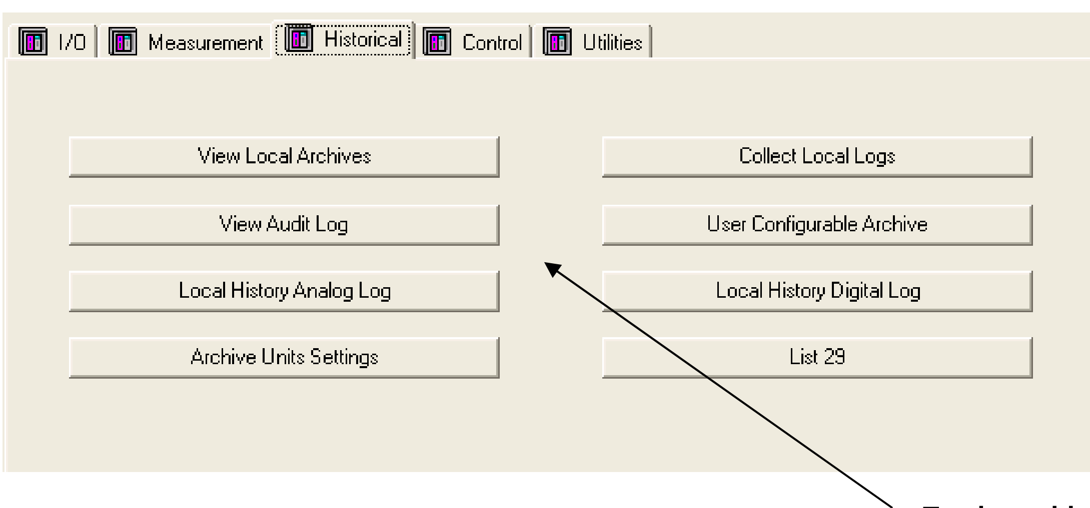
Chapter 4 – Viewing Historical Data (Historical Tab)

This chapter discusses how you can view the historical data that the Station Manager collects. This includes audit data, archive data, and various logs.

In This Chapter

4.1 Historical Tab

Click the Historical tab to display the historical data and logs you can view. We'll discuss each of these in the sections that follow:



To view a historical log, click on its button.

Figure 4-1. Historical Tab in Station Manager

4.2 View Local Archives

Note: To collect the Archives for storage on the PC hard drive, it is recommended that the Collect Local Logs function be used.

The Station Manager controller maintains Hourly Archives (Logs) for each meter run and each gas chromatograph stream. The number of archives varies based on the number of meter runs. To view the Archive, select the Measurement tab, and click on the [View Local Archives] button.

The following screen opens:

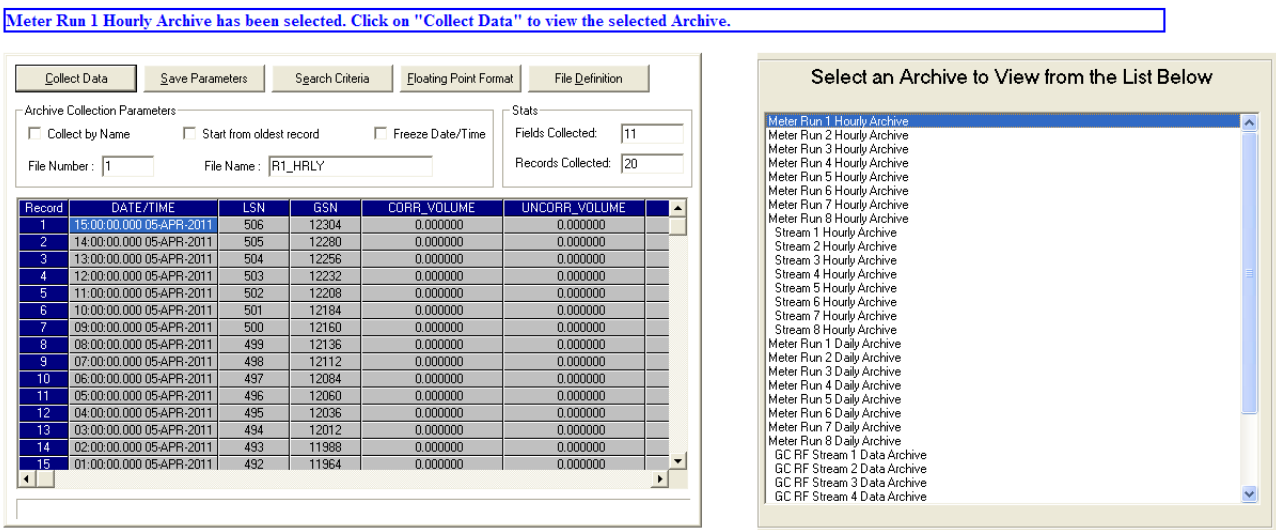


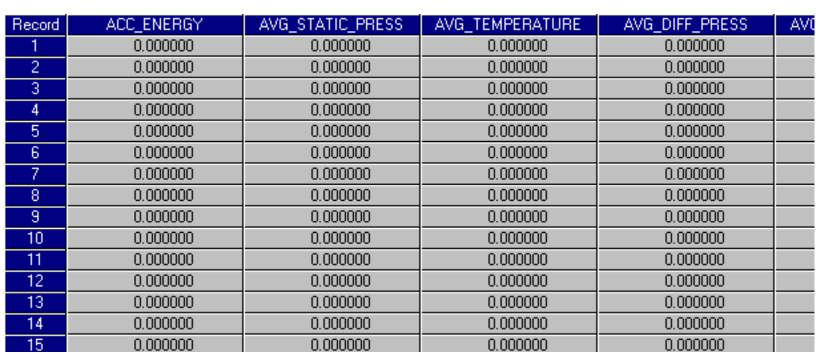
Figure 4-2. Selecting a Log to View

4.2.1 Selecting Logs to View

To view the desired archive:

1. Click on the description for the desired archive in the Select an Archive from the List Below box. This updates the File Number in the Archive Collection Parameters field.

2. Now click the **[Collect Data]** button. (See *Figure 4-2*.)



Record	ACC_ENERGY	AVG_STATIC_PRESS	AVG_TEMPERATURE	AVG_DIFF_PRESS	AV(
1	0.000000	0.000000	0.000000	0.000000	
2	0.000000	0.000000	0.000000	0.000000	
3	0.000000	0.000000	0.000000	0.000000	
4	0.000000	0.000000	0.000000	0.000000	
5	0.000000	0.000000	0.000000	0.000000	
6	0.000000	0.000000	0.000000	0.000000	
7	0.000000	0.000000	0.000000	0.000000	
8	0.000000	0.000000	0.000000	0.000000	
9	0.000000	0.000000	0.000000	0.000000	
10	0.000000	0.000000	0.000000	0.000000	
11	0.000000	0.000000	0.000000	0.000000	
12	0.000000	0.000000	0.000000	0.000000	
13	0.000000	0.000000	0.000000	0.000000	
14	0.000000	0.000000	0.000000	0.000000	
15	0.000000	0.000000	0.000000	0.000000	

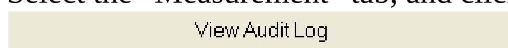
Figure 4-3. Archive

4.3 View Audit Log

Note: To collect the Audit Trail for storage on the PC hard drive, it is recommended that the Collect Local Logs function be used.

The Station Manager controller maintains an Audit Trail. The audit trail includes entries any time a configuration change is made that could affect measurement.

To view the Audit Trail:

1. Select the "Measurement" tab, and click the 

button.
2. The following screen will appear. Click on the **[Collect Data]** button.
3. This will collect the first set of records (typically 24 records). To view additional records, scroll down using the vertical scroll bars

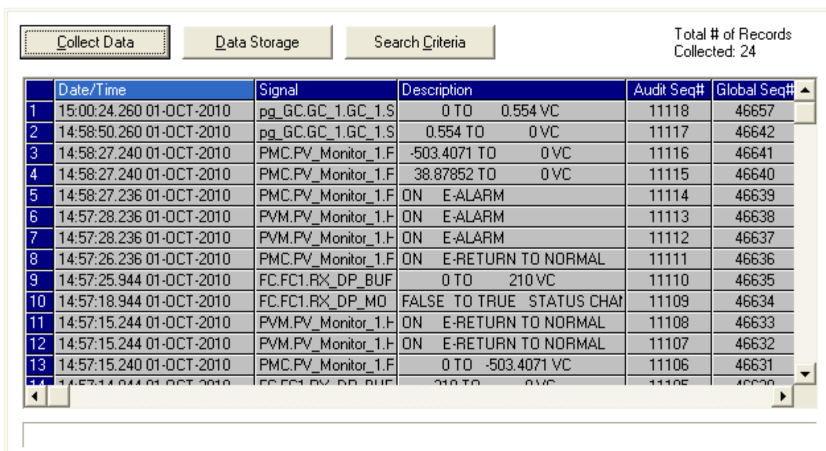


Figure 4-4. Audit Log

The buttons associated with audit collection are.

Field	Description
Collect Data	To view the current entries in the Audit Trail, click on the Collect Data button.
Data Storage	To store the collected data, click on the Data Storage button. **Note:** It is recommended that the "Collect Local Logs" function be used to collect and store Audit Trail data to the PC hard drive, rather than this function, since more features are available for collecting, storing, and viewing the data.

Search Criteria	Click this button to specify search criteria.

4.3.1 Data Storage Parameters dialog box

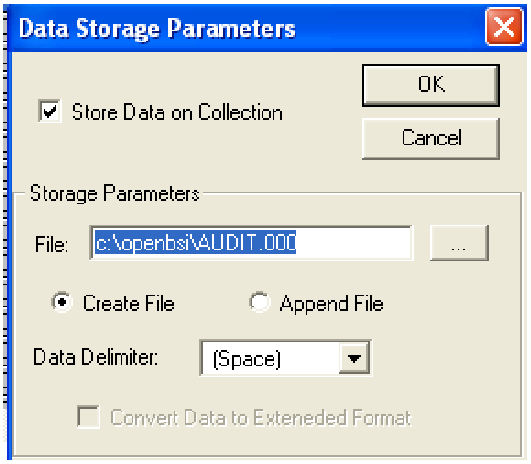


Figure 4-5. Data Storage Parameters dialog box

Field	Description
Store Data on Collection	When this box is checked, the data will be stored automatically on collection. This means as additional data is collected by scrolling down using the vertical scroll bar, this data is automatically written to the PC hard drive.
<u>Storage Parameters</u>	
File	Define the storage location and file name for the collected data.
Create File	If Create File is selected, a new file will be created every time data is collected. If the name of the file is one previously created, all previous data will be lost.
Append File	If Append File is selected, newly collected data will be added to previously collected data, in the file of the same name.
Data Delimiter	The following data delimiters may be selected – Space, Comma, or Semicolon. This will be the delimiter used to separate the data fields (Date/Time, Signal, Description, Audit Seq#, Global Seq#).
Convert Data to Extended Format	Not applicable

4.3.2 Search Data Collection Criteria dialog box

The following search criteria may be applied:

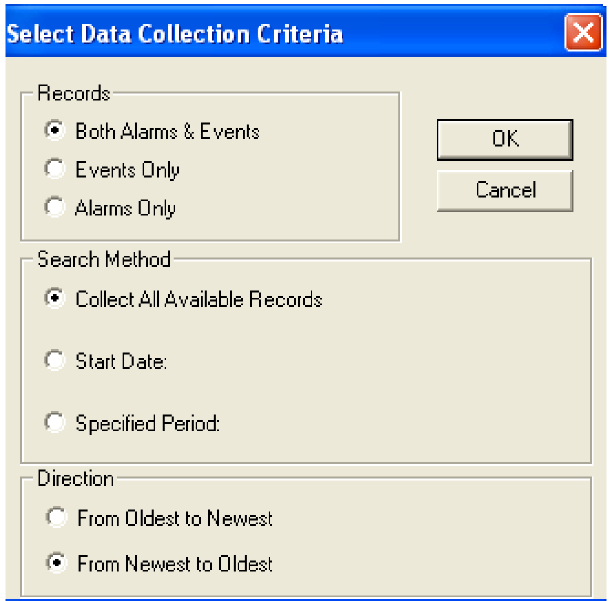


Figure 4-6. Select Data Collection Criteria dialog box

Field	Description
Records	The user may elect to collect to view Alarms and Events, Events Only, or Alarms Only
Search Method	The user may elect to **Collect All Available Records**, or may specify the time period. **Start Date** Enter the start date here. All records that occurred on or after that date will be collected. **Period** The user may specify a period from which to collect the data. The available selections are Today, This Week, or This Month.
Direction	The data may be collected and viewed from the Oldest entry to the Newest entry or from the Newest entry to the Oldest entry.

4.4 Local History Analog Log

The Local History Analog Log performs an on-demand trend for up to ten analog process variables. You can select the items to log from the Process Monitor List (List 29). You can modify this list, as needed. You can also set the logging interval and the number of log records to collect after the log trigger event.

Once logging parameters are set, logging automatically begins at the selected sampling interval and continues until the selected trigger item generates a log event. Logging then continues for the selected number of post-event records, and then stops. You can manually reset the log event trigger to initiate a new cycle.

To configure the Local History Analog Log, click the


button on the Historical tab of the Station Manager. This log is to archive real variables only. If you want to archive Boolean variables, see *Section 4.8*.

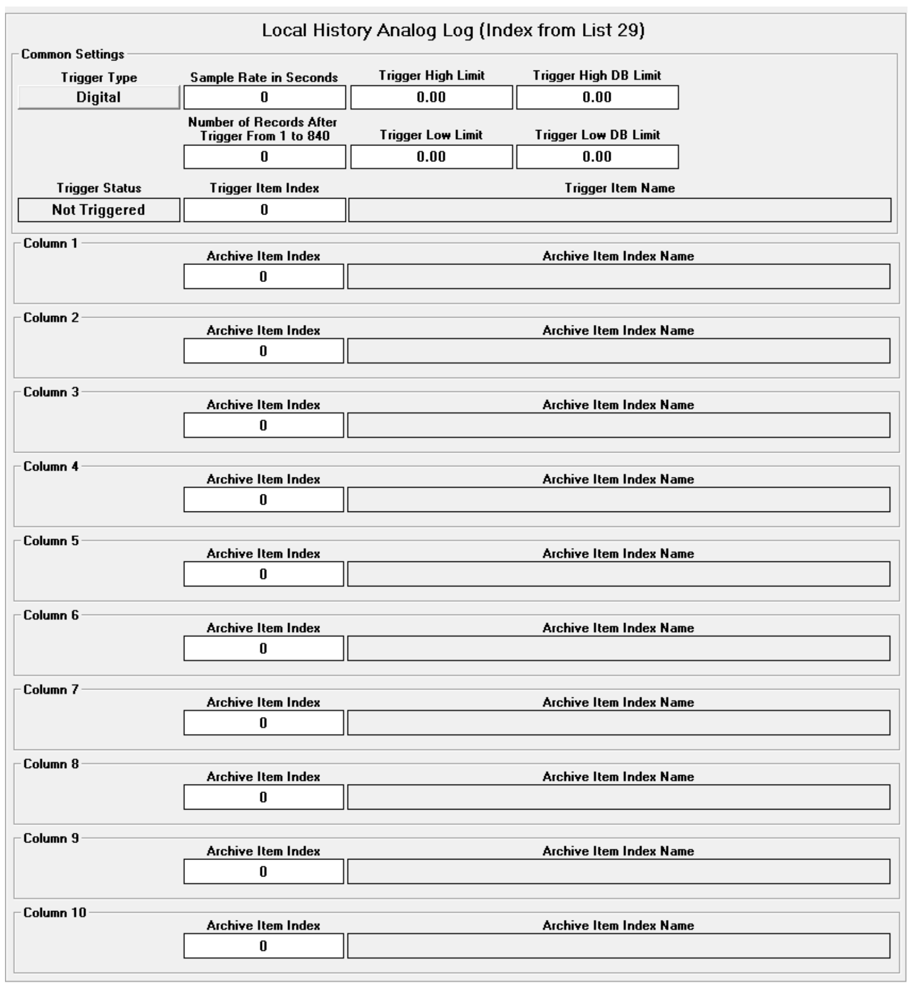


Figure 4-7. Local History Analog Log

The fields to configure this are:

Field	Description
Common Settings	The settings in this section are common to all of the analog variables to be stored. These settings pertain to the trigger mechanism that starts archiving the data and the frequency and amount of data to be stored.
Trigger Type	This selects either digital or analog. If digital is selected, a Boolean variable triggers the log event where 0.0000 = FALSE and any value greater than 0.0000 = TRUE. If analog is selected, an analog variable triggers the log event based on the Trigger High Limit/Trigger Low Limit and the associated high and low deadbands.
Sample Rate in Seconds	Specifies how often the specified variables are logged once triggered. This ranges from 2 to 60. For example, if a rate of 2 is entered then the variables will each be sampled every 2 seconds until the specified number of records is reached.
Trigger High Limit	This value sets the upper threshold for the selected trigger item to generate a log event. When the trigger item value exceeds the trigger high limit, a log event is generated.
Trigger High DB Limit	This value, when subtracted from the trigger high limit value, sets the threshold that releases the trigger item from the log event condition. In order for a new log event to occur, the trigger item value must drop below the release threshold first. If the trigger item value stays above the release threshold, then no new log event can occur.
Trigger Low Limit	This value sets the lower threshold for the selected trigger item to generate a log event. When the trigger item value drops below the trigger low limit, a log event is generated.
Trigger Low DB Limit	This value, when added to the trigger low limit value, sets the threshold that releases the trigger item from the log event condition. In order for a new log event to occur, the trigger item value must rise above the low release threshold first. If the trigger item value stays below the low release threshold, then no new log event can occur.
Number of Records After Trigger From 1 to 840	This value sets the number of log entries that will occur after a log event is triggered. When this number of log numbers is reached, logging stops automatically. The trigger status must then be reset in order to generate a new logging cycle.
Trigger Status	This shows the current status of the log event trigger. Note that logging begins as soon as the user completes the configuration process (select items to

	be logged, select trigger item, set number of records and sampling interval). Logging therefore occurs before a log event is triggered. Once the archive has been triggered it will not automatically trigger again until the trigger is reset. This can be done by setting the following variable to true from within DataView: LHA.TRIGGER_RESET
Trigger Item Index	Set this to the item number in list 29 that is the trigger item for generating a log event.
Trigger Item Name	This field shows the variable name of the selected trigger item.
<u>Column *n*</u>	The items in these sections contain settings and information about each of the columns, where n is 1 of 10 possible column numbers.
Archive Item Index	This specifies the item number for the variable in list 29 to be archived in the column. If the desired item is not in list 29, it can be added using the online edit function. You can select up to ten items.
Archive Item Index Name	This field shows the variable names of the items to be logged.

4.5 List 29

For information on List 29, please see *Section 3.6*.

4.6 Collect Local Logs

One or more Archives, plus the Audit Trail, can be selected for collection. From the Station Manager Measurement tab, click the 

button to begin.

4.6.1 Selecting Archives or Audit for Collection

To select an Archive or the Audit trail for collection click on the desired description in the log collection control. The number of logs/archive varies depending upon the number of meter runs.

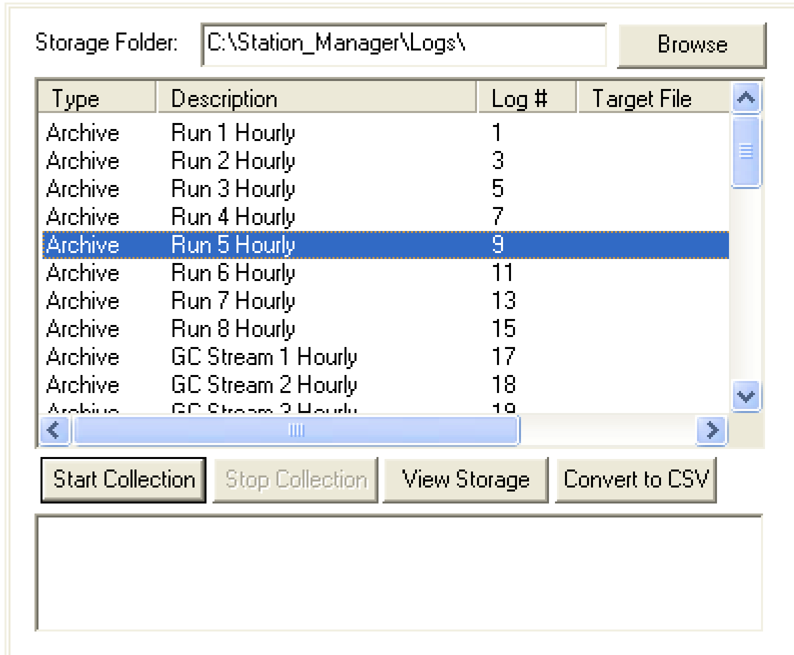


Figure 4-8. Selecting Logs for Collection

4.6.2 Collecting a Single Archive or Audit

To collect one of the Archives, or the Audit Trail, listed for collection, highlight the desired item in the list, then click on the **[Start Collection]** button.

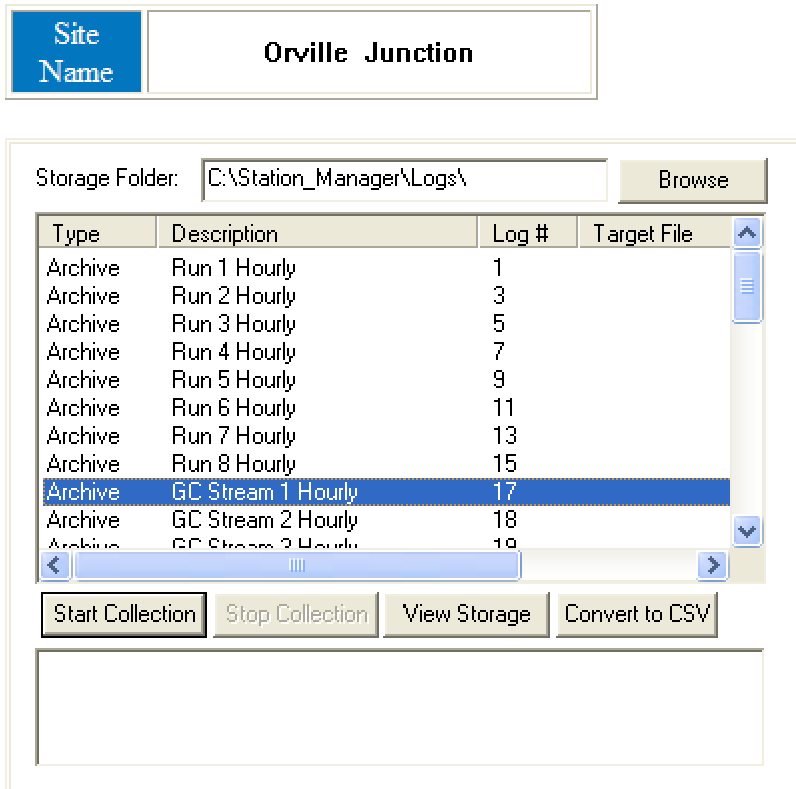


Figure 4-9. Selecting a Single Log for Collection

4.6.3 Collecting Multiple Archives

To collect more than one Archive, and/or the Audit Trail, hold down the **[Ctrl]** key to highlight multiple items, and then click on the "Start Collection" button.

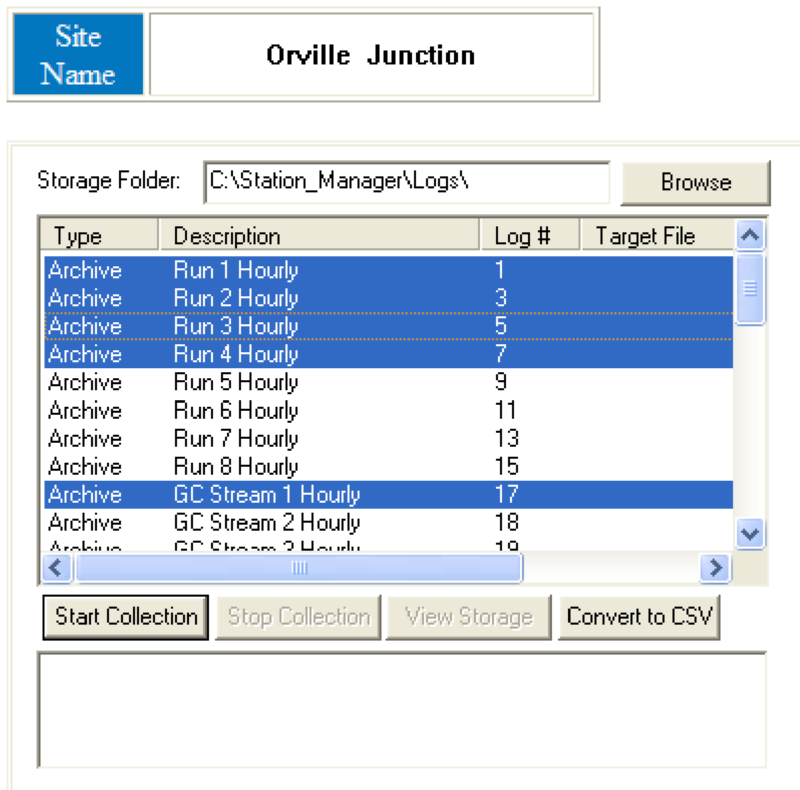


Figure 4-10. Collecting Multiple Archives

4.6.4 Log Collection Parameters

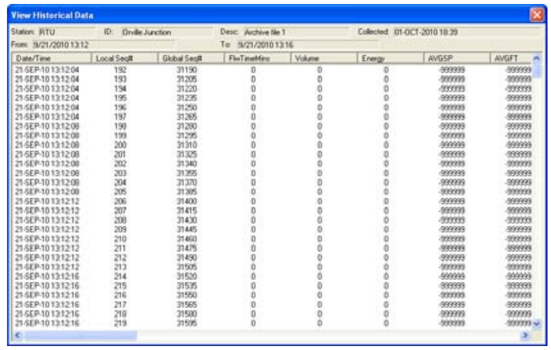
There are several different log collection parameters and read-only fields which govern or report how the log collections operate.

Field	Description
Site Name	The Site Name is defined by the user on the Site Configuration screen, via the Status/Configuration menu item. The Site Name is used as the base name for the files created by the collection and conversion processes.
Storage Folder	By default, the storage folder for the Archive collections is C:\Station_Manager\Logs. This may be changed by clicking on the **Browse** button, and locating a different folder. However, this change is not permanent, and the next time the "Collect Local Logs" screen is opened, the Storage

	Folder will revert to C:\Station_Manager\Logs.
Type	The type of log, either Audit or Archive.
Description	A description of the log.
Log #	The log number is populated automatically, when the Archive or Audit is selected from the "Hourly Logs" table
Target File	The Target File name will be automatically created. The file base name will be the Site Name (in this case "Unamed Site") and the extension will be one of the following: R*nn* Where R indicates an Archive for a measurement run, and *nn* indicates the run number. *Gnn* Where G indicates an Archive for a gas chromatograph stream, and *nn* indicates the stream number AUD Represents the Audit Trail collection. If a file of the same name exists in the Storage Folder, any new Archive data collected since the last Archive data was collected will be appended to the file. The Archive Data will not include duplicate data. However, whenever the Audit Trail is collected, the entire audit trail is collected. If there is an existing Audit Trail file on the PC hard drive, the data from this collection is appended to the existing file. There may be duplicate data in the .AUD file.
Start Collection	Click here to start the log collection.
Stop Collection	While an Archive or the Audit Trail is being collected, the user may stop the collection by clicking on the **Stop Collection** button. The following messages will appear in the message window:
View Storage	It is possible to view the stored data locally. Select the item that includes local data, and then click on "View Storage" button. **Note:** Only one item may be selected for the View Storage feature to be

available.

A screen similar to this one will appear:



Convert to CSV

It is possible to convert the stored data to a comma separated variable (CSV) file.

Select the item that includes local data, and then click on "Convert to CSV" button. **Note**: that only one item may be selected for the Convert to CSV feature to be available.

A message will appear in the message window indicating that the conversion is complete.

A file with an extension of CSV will now be located in the same folder as the stored data. The file name will be of the format

sitename_originalextension.CSV

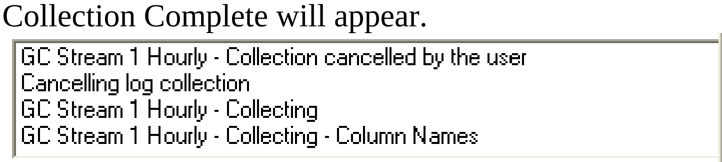
Where:

sitename is the Site Name.

originalextension is the original extension (Rnn, Gnn, or AUD)

Collection Status Messages

While collections are in progress, status messages will be posted in the message window. When the collection is complete, the message "Log Collection Complete will appear.



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4.7 User Configurable Archive

To configure the user-configurable archive click the 

button on the Historical tab of the Station Manager.

The Generic Analog Archive stores the instantaneous, maximum, and minimum value for each of the eight selected List 29 variables.

This is an hourly archive that, by default, is set up to save the last 15 days worth of data.

The variables to be archived are user selected by clicking in the first **Column***x* box and entering an integer representing the position in List 29 of the first variable you want to archive. Press the **[Enter]** key to save your entry. Column 1 of the user configurable archive will log data for this variable. Repeat this process to configure up to eight columns.

Once an index has been set in the left column, the variable name for that item will be displayed in the right column.

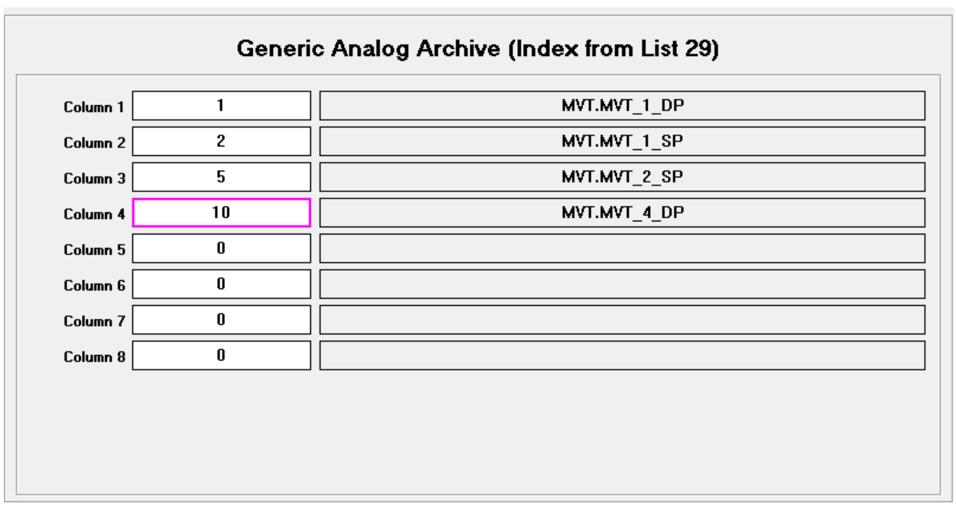

Figure 4-11. User Configurable Archive

4.8 Local History Digital Log

To configure the Local History Digital Log, click the 

button on the Historical tab of the Station Manager.

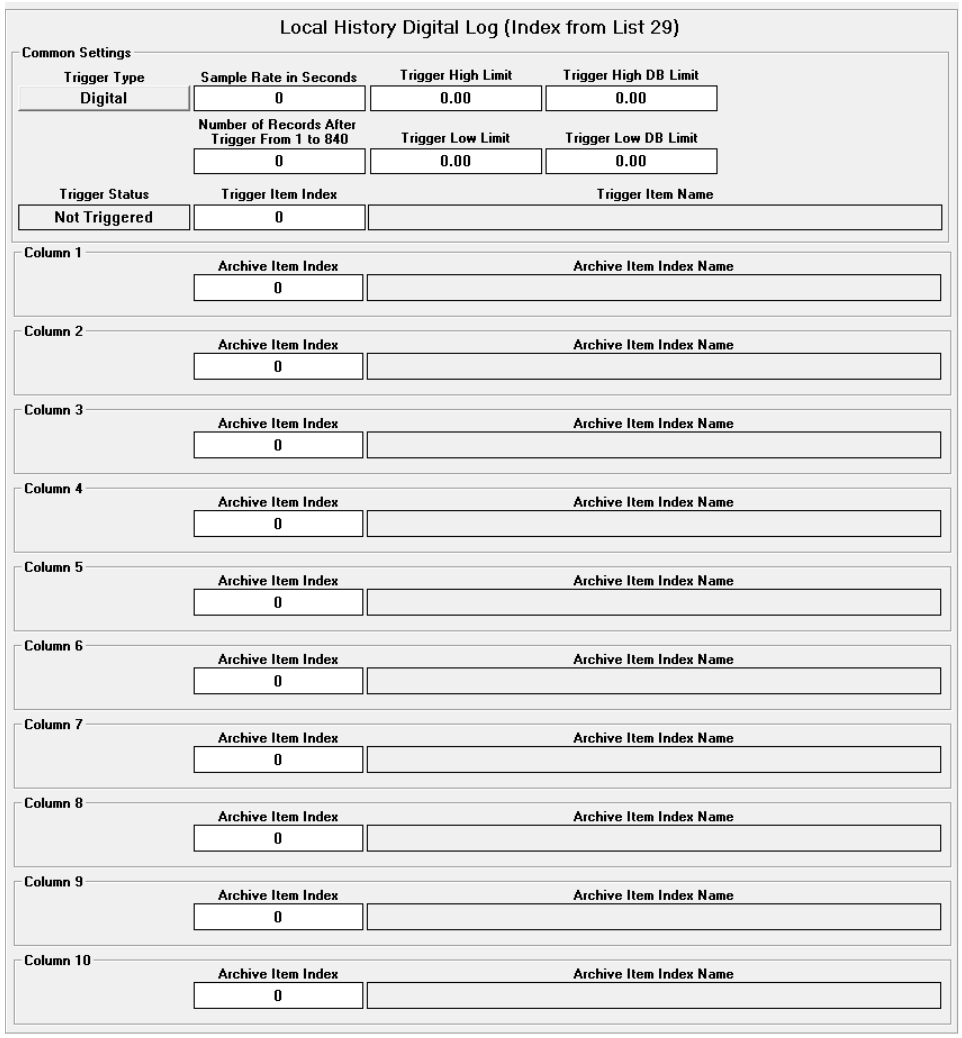

Figure 4-12. Local History Digital Log

The fields to configure this are:

Field	Description
Common Settings	The settings in this section are common to all of the analog variables to be stored. These settings pertain to the trigger mechanism that starts archiving the user specified data and the frequency and amount of data to be stored.
Trigger Type	This can be either digital or analog. If digital is selected, you would typically use a Boolean type variable to trigger data storage. If analog is selected, you would typically use an analog variable to trigger

	the archiving of the specified data.
Sample Rate in Seconds	Specifies how often the specified variables are to be sampled once triggered. For example, if a rate of 2 is entered then the variables will each be sampled every 2 seconds until the specified number of records is reached.
Trigger High Limit	When the Trigger item exceeds this value for longer than the High DB Limit, archiving begins for the specified items. For digital triggers where you wish to initiate archiving on the transition from “True to False” this value should be set to .5.
Trigger High DB Limit	This is the amount of time in seconds that the variable specified by the Trigger Item index must exceed the Trigger High Limit to initiate archiving of the specified items.
Trigger Low Limit	When the Trigger Item is less than the value set here for longer than the specified Trigger Low DB Limit then archiving will begin. For digital triggers where you wish to initiate archiving on the transition from “True to False”, this value should be set to .5.
Trigger Low DB Limit	This is the amount of time in seconds that the variable specified by the Trigger Item Index must be less than the Trigger Low Limit to initiate archiving of the specified items.
Number of Records After Trigger From 1 to 840	This is the number of records to be stored after archiving has been initiated.
Trigger Status	This shows whether or not the archiving has been triggered. Note that once the archive has been triggered it will not automatically trigger again until the trigger is reset. This can be done by setting the following variable to true from within DataView: LDA.TRIGGER_RESET
Trigger Item Index	This common setting sets the index for a list 29 item. This is the variable to be used as the trigger to initiate archiving of the specified variables.
Trigger Item Name	Once the Trigger Item Index is specified, this textbox will display the variable name of the selected Trigger Item.
<u>Column *n*</u>	The items in these sections contain settings and information about each of the columns, where n is 1 of 10 possible column numbers.
Archive Item Index	This specifies the list index from list 29 for the item to be archived in the column. If the desired item is not in list 29, it can be added using the online edit function.
Archive Item Index Name	Once an Archive Item Index is selected, this text box will show the variable name for the selected Item to be archived.

4.9 Archive Units Settings

The Archive Units page allows you to set the engineering units used in archive files.

To configure the archive units, click the 

button on the Historical tab of the Station Manager.

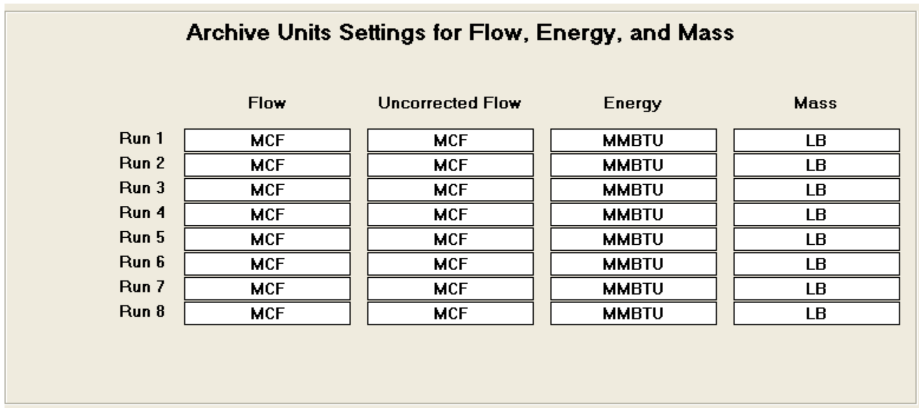

Figure 4-13. Archive Units

Select archive units for flow, uncorrected flow, energy, and mass for each meter run.

Note: Any changes in archive units take effect at the next archive interval. For example, if you change units, the hourly archive will not have the new units for the current hour, but they will be used for the next hour, and all subsequent hours.

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Chapter 5 – Configuring Station Control, Meter Run/Valve Staging, and PID Control (Control Tab)

This chapter discusses configuring the station control, meter run staging, meter run ranking, valve staging, and PID tuning. This is accomplished from the Station Manager's Control tab.

In This Chapter

5.1 Control Tab

Click the Control tab to configure remote control valves, lockouts, and meter run staging. We'll discuss these in the sections which follow.

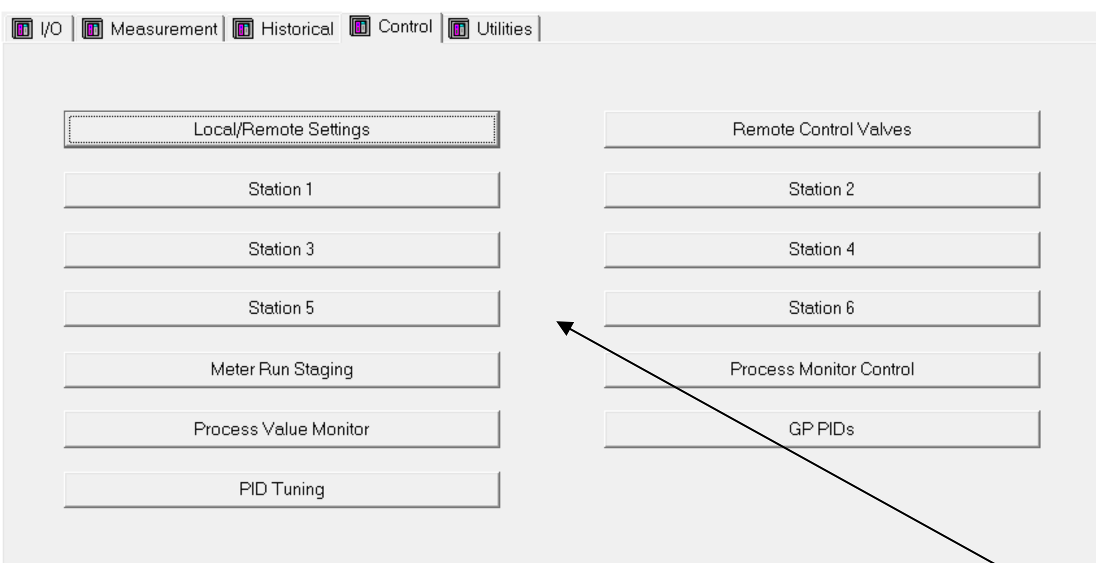


Figure 5-1. Control Tab in Station Manager

Click on the button to configure a particular control function

5.2 Local / Remote Settings

Local/ Remote mode is used to lock out control either locally (onsite using TechView), or remotely (via SCADA).

Click the 

button on the Station Manager Control tab.

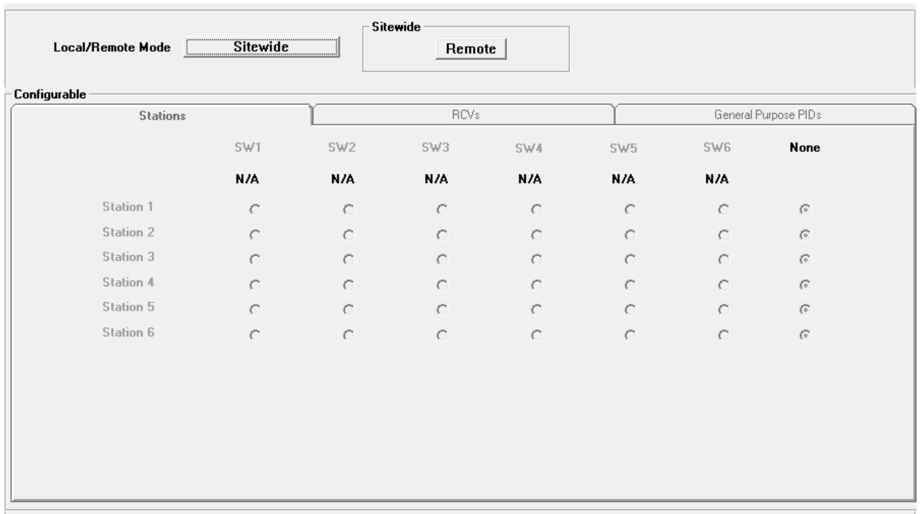


Figure 5-2. Control Tab - Local/Remote Settings

Local / Remote Settings has two available modes – Sitewide, and Configurable.

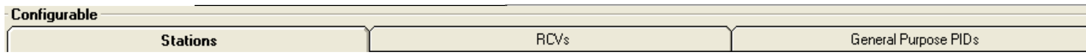
Field	**Description**
Local/Remote Mode	The mode is selected using the button that says either **Sitewide** or **Configurable.**
Sitewide / Configurable	The text displayed on the button indicates which mode it is in. The Sitewide mode is simply a universal lockout. The Remote mode activates additional fields; see the Configurable fields.
Sitewide	The button in the box labeled Sitewide is used to select "Local" or "Remote."
Local / Remote	If "Remote" is displayed, then setpoints can be changed remotely (SCADA), and local changes are locked out. If "Local" is displayed, then setpoints can be changed locally via TechView, but no control is allowed remotely via SCADA. This is the only item to configure in sitewide mode. The switch assignments and tabs below are for Configurable mode and are grayed out and not available in Sitewide mode. The Sitewide Local / Remote button is grayed out and

cannot be used in Configurable mode.

Configurable Tab

The Configurable mode is more complex due to its increased configurability.

Stations, remote control valves (**RCVs**), and **General Purpose PIDs** can be assigned to individual switches from their own sub-tabs.



SW*n*
Local/Remote

In Configurable mode, functions can be assigned to “switches”, SW1 through SW6.

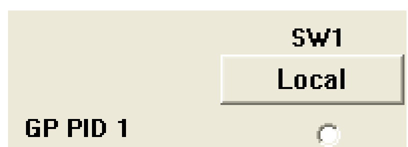
or **Local**

Each switch can then be toggled for **Local** or **Local/Remote**.

Note: In Configurable mode, Local control is never locked out. Your choice is to lock out Remote access, or allow both.

Station *n*
RCV *n*
GP PID *n*

Functions assigned to a switch are then placed in the mode which is selected via that switch.



In the figure, below, Stations 1-6 are assigned to Switches 1-6. This is for the purposes of this example, however any item can be assigned to any switch, and multiple items can be assigned to the same switch.

Switch 1 and 3 are configured as “Local”, indicating that only Local control is allowed – Remote control is locked out. The others are allowing control both locally and remotely.

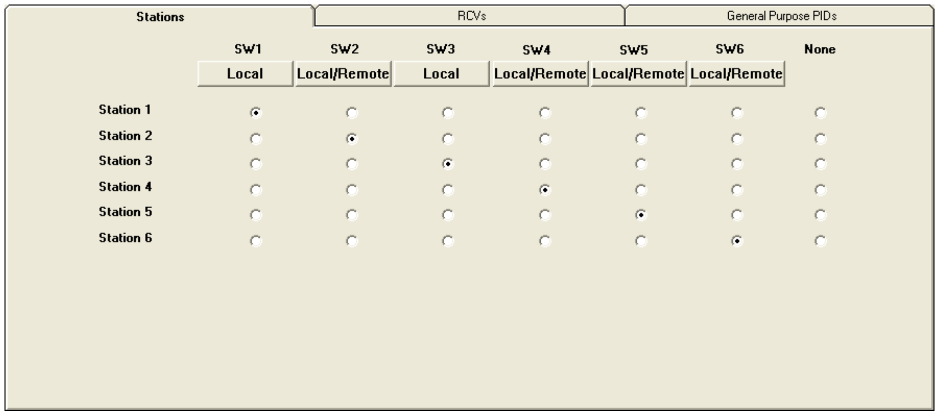


Figure 5-3. Stations sub-tab in Local/Remote Settings

5.3 Remote Control Valves

When you click the Remote Control Valves button on the Control tab, Station Manager shows tabs for groups of valves. Station Manager displays three valves on the screen at one time.

Note: For RCV control to function, **Control Enable** on the Process Monitor Control Configuration and Process Value Monitor Configuration pages must be enabled for the associated alarm.

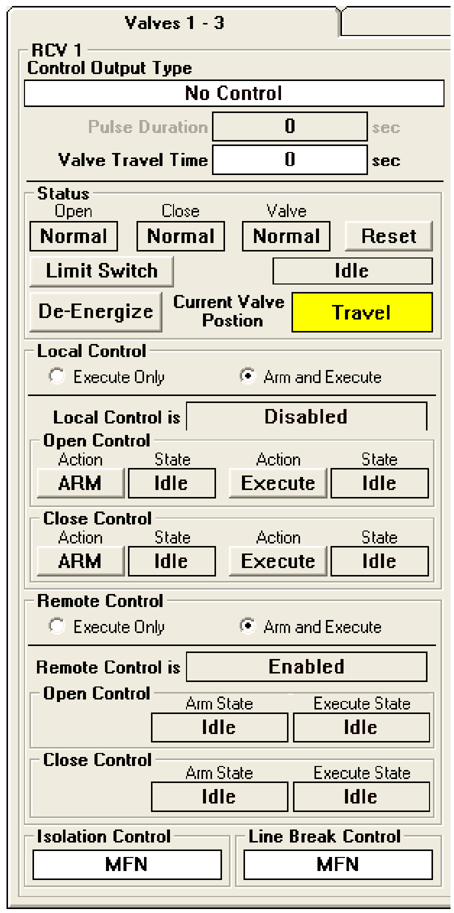


Figure 5-4. Configuring a Valve

Field	Description
RCV*n*	This top section is for configuring the physical characteristics of the valve.
Control Output Type	Choices are No Control (disabled), Single Maintained, Dual Maintained, and Dual Pulsed: **Single Maintained Output** -- This option should be chosen when a single output is energized to change the position of the valve. **Dual Maintained Output** -- This option should be

	chosen when there are two outputs, one to open the valve, and the other to close the valve, and these outputs should be maintained, even after the appropriate limit switch indicates that the valve is in the demanded position. **Dual Pulsed Output** -- This option should be chosen when there are two outputs, one to open the valve, and the other to close the valve, and these outputs should pulsed until the appropriate limit switch indicates that the valve is in the demanded position. The "Limit Delay" setting can be used to maintain a pulse for some time after the limit switch is made.
Pulse Duration	This is the amount of time to pulse the output. This setting only applies if the "Control Type" is "Dual Pulsed Outputs", and may only be changed when this control type is selected.
Valve Travel Time	This field is the amount of time, in seconds, it takes the valve to fully travel from the open-to-close or close-to-open position. This entry may be changed from this screen.
<u>Status</u>	
Open, Close, Valve	Open, Close, and Valve refer to whether the valve is failing limit switches. If the valve is configured as blind, these are not meaningful.
Reset	Reset is used to clear limit switch failures.
Limit Switch / Blind	This button selects between Limit Switch Feedback and Blind (no limit switch feedback)
Current Valve Position	The box labeled Current Valve Position will display Travel, Open, Closed, Unknown, or Fail
Open / Closed / Idle Error	This displays the state of the valve command being sent to the outputs. The states are: Open, Closed, Idle, or Error. Prior to receiving any commands, this field reads Idle. In the case of maintained outputs, once a command is given it remains in either Open or Closed state until the opposite command is issued. In the case of pulsed outputs, when a new command is given this field reads Open or Closed (depending on the command) while the output pulse is active and returns to Idle when the output is de-energized.
De-Energize	Click this to immediately de-energize all signals to the valve.
<u>Local Control</u>	
Execute Only,	Local and Remote can both be configured to be

Arm and Execute	**Execute Only** or **Arm and Execute**. If Arm and Execute is selected, then both Arm and Execute must be activated within 5 seconds of each other. After 5 seconds, they will de-activate.
Local Control is	Shows whether Local Control is Enabled or Disabled.
<u>Open Control</u>	
Action **ARM**	Click here to initiate the ARM signal. After 5 seconds this deactivates.
State **Idle / Armed**	Displays the current state of the ARM function.
Action **Execute**	Click here to initiate an Execute signal After 5 seconds this deactivates.
State **Idle / Execute**	Displays the current state of the Execute function.
<u>Close Control</u>	
Action **ARM**	Click here to initiate the ARM signal. After 5 seconds this deactivates.
State **Idle / Armed**	Displays the current state of the ARM function.
Action **Execute**	Click here to initiate an Execute signal. After 5 seconds this deactivates.
State **Idle / Execute**	Displays the current state of the Execute function.
<u>Remote Control</u>	
Execute Only, **Arm and Execute**	Local and Remote can both be configured to be **Execute Only** or **Arm and Execute**. If Arm and Execute is selected, then both Arm and Execute must be activated within 5 seconds of each other. After 5 seconds, they will de-activate.
Remote Control is	Shows whether Remote Control is Enabled or Disabled.
<u>Open Control</u>	
Arm State	Displays the current state of the ARM function
Execute State	Displays the current state of the Execute function
<u>Close Control</u>	
Arm State	Displays the current state of the ARM function
Execute State	Displays the current state of the Execute function
Isolation Control	You can override valve commands by station isolation (see *Section 5.4.2*). Select which value should drive the valve for isolation. Choices are MFN (math function), Station 1, Station 2, Station 3, Station 4, Station 5, Station 6, PVM1, PVM2, PVM3, and PVM4. If you choose MFN, MFN1 will drive RCV1, MFN2 will drive RCV2, etc. If you choose one of the PVMs, the PVM's output triggers and clears isolation for the assigned RCV; you can assign multiple RCVs to the same PVM. Using this mode, the valve **can** be opened/close manually while the triggering condition occurs. If you don't want to use isolation control, choose "Disabled."
Linebreak Control **(Station Manager 8-Run**	You can override valve commands by station isolation (see *Section 5.4.2*). Select which value should drive the valve for isolation. Choices are MFN (math function), Station 1, Station 2, Station 3,

only)	Station 4, Station 5, Station 6, PVM1, PVM2, PVM3, and PVM4. If you choose MFN, MFN1 will drive RCV1, MFN2 will drive RCV2, etc. If you choose one of the PVMs, the PVM's output triggers and clears isolation for the assigned RCV; you can assign multiple RCVs to the same PVM. Using this mode, the valve **cannot** be opened/close manually while the triggering condition occurs. If you don't want to use linebreak control, choose "Disabled."

5.4 Station *n*

The Station *n* page includes three primary controls and five override controls. Each of these controls can be individually configured and individually enabled.

Primary Controls Primary controls are always active and will open or close the valve as necessary to achieve and maintain the setpoint. At least one primary control must be enabled.

The three primary controls are:

- Flow/Energy Control
- Pressure Control
- Configurable Control

Override Controls Overrides are only active when the setpoint is exceeded. At that point, they take control from the primary controls until the process variable is back within acceptable range. Once that occurs, control is returned to the primary controls.

The five override controls are:

- Maximum Allowable Operating Pressure (MAOP)
- Minimum Outlet Pressure
- Maximum Outlet Pressure / Configurable
- Minimum Inlet Pressure / Configurable
- Meter Protection per run

Note: Minimum outlet pressure forces the valve farther open and takes priority over every other control except MAOP. All other overrides force the valve farther closed.

General Configurable controls can use the default setup, or can select a process variable from an AI or from List 29.

All transfers of control are bumpless. PID tuning may make transfers appear to be abrupt, but this is a tuning issue and may in fact be desirable.

Flow control and Energy control are mutually exclusive – only one of the two can be enabled at a given time.

Meter protection is on a per-run basis and is dependent upon the type of measurement run. The process variable will be DP for a differential run, and uncorrected flow rate for a linear run.

All other controls, including disabled controls, are placed in “track” mode to allow bumpless transfer if it later becomes the active control.

Bi-directional If a station is identified as bidirectional, the inlet and outlet pressures can be configured to be reversed when the station is reversed. If Station 1 is bidirectional, then Station 2 is the reverse station, but only Station 1 must be configured. This is also true for Stations 3 and 4 and Stations 5 and 6.

Scheduled Setpoints Additionally, flow and energy setpoints can be programmed to be applied at a future time. Up to twelve unique future setpoints can be programmed. The format for time and date for the setpoint to be applied is HHMM (hours,minutes), and MMDD (month,day).

Manual Override Station control allows bumpless transfer in and out of manual override. While in manual override, a valve can be placed at a desired percent open. Upon return to automatic control, the control starts at the current valve position.

5.4.1 Station *n* - Overview tab

To configure station control, go to Station Manager's Control tab and click the **Station** *n* button corresponding to the station you want to configure. The following screen should appear:

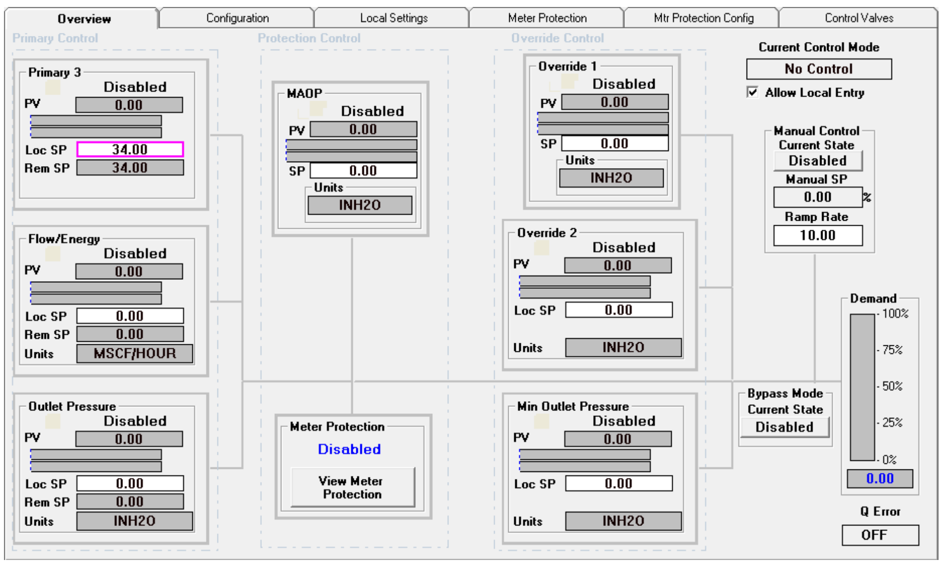


Figure 5-5. Station Overview tab

This first screen is an overview which will indicate which loop is currently in control and displays current setpoints and live values.

In addition, it includes the following fields:

Field	Description
Meter Protection	
View Meter Protection	Selecting this changes the active tab to Meter Protection
Current Control Mode	This field Indicates which PID loop is in control. If the demand is calling for either full open or full closed, this field reads Max / Min Output.
Allow Local Entry	Check this box to allow entry of setpoints and the ramp rate on this page. De-select the box to prevent accidental entries on this page.
Manual Control	
Disabled / Enabled	This button enables or disables manual control of the station control demand. Transfer is bumpless.
Manual SP	Enter the desired station demand when manual control is enabled. This field shows the current station demand when manual control is disabled.
Ramp Rate	Specify the desired rate of change when a manual setpoint is entered. Units are in percent demand per second.
Bypass Mode Current State Enabled / Disabled	If you enable the **Maintenance Bypass** option (from the Local Settings tab) and then enable the **Bypass** here and place the station into Maintenance Mode, Station Manager does **not** place outputs under manual control, instead the following occurs: • Manual control is disabled; however, you can enable it if desired. • The primary control pressure loop continues to execute and automatically controls the station control valve. • All other loops track and cannot override the primary control pressure loop. • After you exit Maintenance Mode, you must disable the Maintenance Bypass option to restore other loops to normal operation. **Note:** If you manually disable the primary control pressure loop, or Station Manager automatically disables it because of a Q (questionable) error, station control locks into manual mode at the current output value, and you must disable manual control after you exit Maintenance Mode to return to automatic operation. **Note:** When you finish maintenance, before you disable the **Bypass**, make sure the control loop PVs have tracked to the setpoints (SP) to avoid excessive valve movement. Then you can disable the **Bypass**.

5.4.2 Station *n* - Configuration tab

The second tab "Configuration" is the place to begin configuring station control:

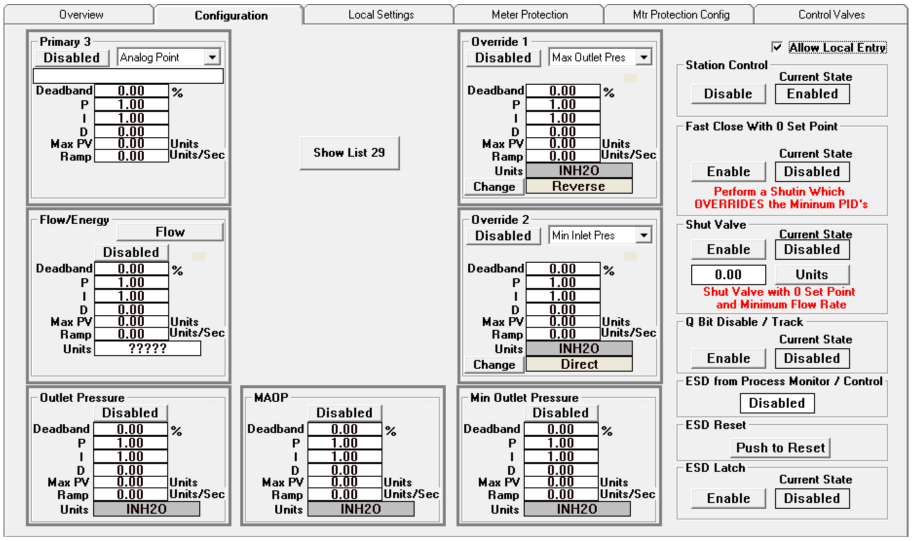


Figure 5-6. Station Configuration tab

Configuring a Loop

Configuring each loop follows the same process:

1. Check the **Allow Local Entry** box.
2. Set **Max PV** to the maximum value that could ever be measured – the span of the transmitter, or the maximum flow through the station, etc. as appropriate for that loop.
3. Set **Ramp**. This is the **Ramp** rate in units/second that a change to the setpoint will be applied. Leaving the value at 0.0 causes the change to be immediately applied in full rather than ramped.
4. Set **P**, **I**, and **D** settings to desired initial values for tuning.
5. Set **Deadband** to desired value. **Deadband** applies to the loop output. A calculated loop output which does not vary by more than the percent selected here will not change the output.
6. **Enable** the loop.

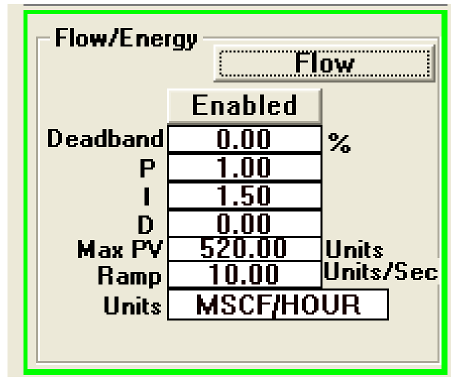


Figure 5-7. Flow/Energy Loop

Repeat this process for each loop that should be controlled. Having completed this, consider some station-wide settings.

Station-wide Settings

First, there are several settings on the right side of the "Configuration" page:

Enable Fast Close with 0 Set Point – If enabled, then upon a 0.0 setpoint on Flow, Energy, or Pressure the station will immediately call for 0% open – in other words, a full close.

Shut Valve – If enabled, then upon receiving a 0.0 setpoint on flow or energy, the station begins to close under PID control until the live reading is less than or equal to the value entered in the field. The units of this value can be selected by the button; choices are "units" or "percent". If units are chosen, the field is represented in the units of the PV. If percent is chosen, the field is represented in percent of Max PV. At that time, the station will call for 0% open – in other words, a full close.

Note: The preceding two modes should not both be enabled simultaneously.

Enable Q Bit Disable / Track – If enabled, then a Q-bit (data invalid) signal on a process variable will result in placing the relevant loop into Track mode, thereby disabling it. The loop will be re-enabled upon the clearing of the Q bit. If this is disabled, then the station control continues regardless of the validity of the data.

ESD from Process Monitor /Control – Options are Disabled, and PM&C 1, 2, 3, or 4, PVM 1, 2, 3, or 4, and MFN 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, or 12.. PM&C refers to the Process Monitor Control described in *Section 5.5.1*; PVM refers to the Process Value Monitor described in *Section 5.7*; and MFN refers to the Math Function described in *Section 6.2*. If one of these is selected, then the process monitor control, process value monitor control, or math function can force the station shut if it goes into an alarm state.

ESD Reset If station ESD (Emergency Shut Down) is set to latch, you can click this button to clear the ESD.

ESD Latch If ESD Latch is enabled; and an emergency shut down occurs; the emergency shut down remains in force, even if the alarm condition that caused it clears. If ESD Latch is disabled, when the alarm condition that caused the ESD clears, normal operation resumes.

Note: For station control ESD to function, **Control Enable** on the Process Monitor Control Configuration and Process Value Monitor Configuration pages must be enabled for the associated alarm.

5.4.3 Station *n* - Meter Protection Config tab

Meter Protection loops are configured from their own page via the tab "Mtr Protection Config."

Notes:

- You must check the **Allow Local Entry** box to enter values on this page.
- Meter Protection is Enabled/Disabled on a station-wide basis.

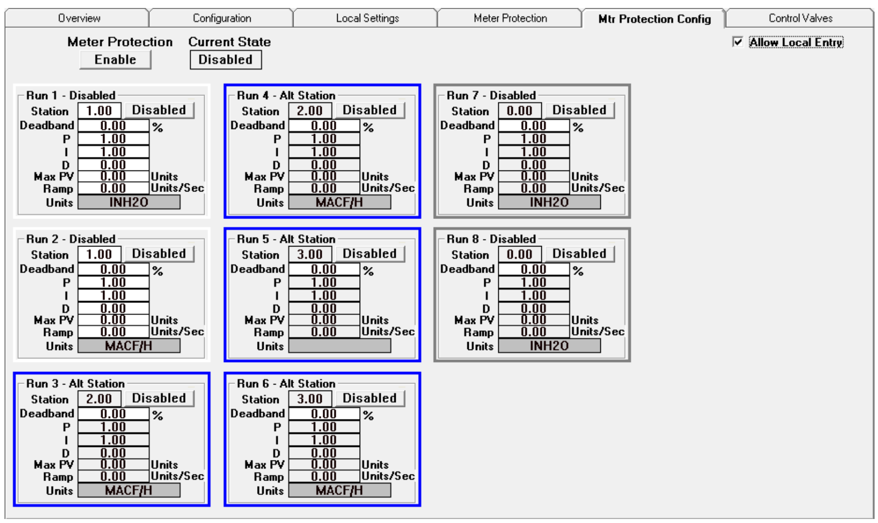


Figure 5-8. Meter Protection Config tab

5.4.4 Station *n* – Local Settings tab

Inlet and Outlet Pressure Configuration Under the Local Settings tab, Inlet and Outlet pressures can be configured as to their source, and action to take upon detection of reverse flow.

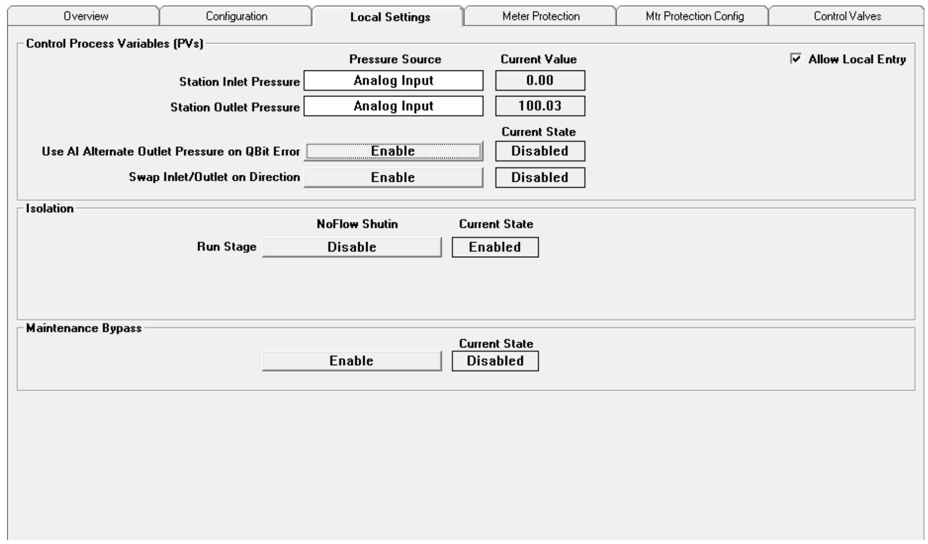


Figure 5-9. Local Settings tab

Field	Description
<u>Control Process Variables (PVs)</u>	
Station Inlet Pressure, Station Outlet Pressure	Choices for Pressure Source are Analog Input, MVT static pressures, or shared values.
Use AI Alternate Outlet Pressure on Qbit Error	If enabled, when the station's primary outlet pressure analog input has a questionable data bit (Qbit) error, the station uses an alternate outlet pressure analog input if that AI does not have a Qbit error. The station operates normally using the alternate AI outlet pressure.
Swap Inlet/Outlet on Direction Enabled / Disabled	If enabled, this will monitor the station for a change in direction of flow. When one is detected, it will automatically redirect the live data from Inlet Pressure to now be Outlet Pressure, and vice versa. If disabled, the Inlet data and Outlet data are not swapped upon a direction change.
Allow Local Entry	Check this box to allow entry of values on this page. De-select the box to prevent accidental entries on this page.
<u>Isolation</u>	
Run Stage Noflow Shutin Enabled / Disabled	If enabled, upon a station NoFlow Shutin condition, all run stage valves for this station will be shut.
Remote Control Valve Noflow Shutin Enabled / Disabled	If enabled, upon a station NoFlow Shutin condition, the corresponding Remote Control valve will be shut.
<u>Maintenance Bypass</u>	

Maintenance Bypass Enabled/Disabled	If you enable the **Maintenance Bypass** feature here, you can then go to the Overview tab to enable/disable the actual bypass used in Maintenance Mode. To enable the Maintenance Bypass feature, click the **Enable** button; the current state changes to **Enabled**, and the button changes to **Disable**. To disable Maintenance Bypass feature, click the **Disable** button; the current state changes to **Disabled**, and the button changes to **Enable**.

5.4.5 Station *n* – Control Valves tab

Finally, control valves must be assigned to the station. This is achieved under the “Control Valves” tab.

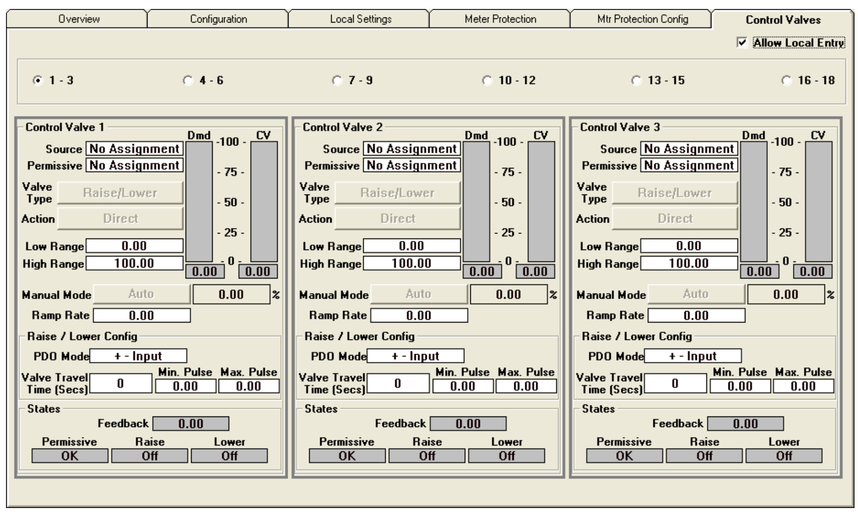


Figure 5-10. Station n Control Valves Sub-tab

There are a total of 18 control valves. Any valve can be assigned to any station, and multiple valves can be assigned to the same station.

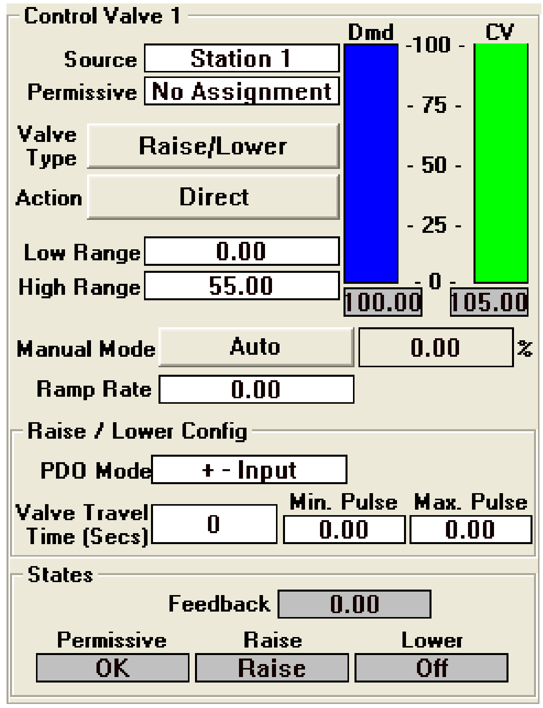


Figure 5-11. Control Valve Configuration

All Valve Types The following fields apply to **all** valve types.

Field	Description
Allow Local Entry	Check this box to allow entry of values on this page. De-select the box to prevent accidental entries on this page.
Source	Choices are Station 1-6 and GPPID 1-3. For information on GPPID, see *Section 5.8*.
Permissive	Choices are No Assignment and any Run. If No Assignment is selected, the valve is always active. If a Run is selected, then the valve will only operate if the block valve for that run is open. Normally this should be left to No Assignment.
Action	Choices are Direct and Indirect. If direct, then a zero calls for 0% request to be sent to the valve. If Indirect, then a zero calls for 100% at the valve. Another common term for this is Normally Closed and Normally Open.
Low Range, High Range	Low Range and High Range will be discussed in the "Valve Staging" section below.
Ramp Rate	Refers to the allowable rate of change to demand from a valve in %/second.
Manual Mode	Choices are Auto and Manual. When in Manual, the output from the station control is ignored and the valve will be in the position configured in the adjacent field. Transfer into manual mode is bumpless. Transfer out of

	manual mode will result in the valve immediately moving to the position called for by the station control.
Valve Type	Choices are Raise/Lower and Analog.

Raise/Lower Valves

The following fields apply to raise/lower valves.

Field	Description
PDO Mode	Not used if valve is analog. If valve is Raise/Lower, then this defines the type of feedback this valve provides. Choices are + - Input, No Feedback, Limit Switches, and Analog Feedback.
Valve Travel Time (secs)	Not used if valve is analog. If valve is Raise/Lower, then this is a critical setting for the action of the valve and refers to the time it takes for the valve to travel from full shut to full open.
Min Pulse	Not used if valve is analog. If valve is Raise/Lower, then this sets the minimum pulse that will be sent to the valve. All valves have a latency to respond to a signal, and pulses shorter than some duration will not result in an actual valve movement.
Max Pulse	Not used if valve is analog. If valve is Raise/Lower, then this sets the maximum allowable pulse duration. Typically this is set to the travel time, but can be configured to be less if desired.

Valve Staging

Valves can be “staged” through configuration of the Low Range and High Range.

Station Control output always is from 0% to 100% open for the station. However, sometimes multiple valves are configured to act over a portion of the range.

In the figure below, valves 1-3 are assigned to Station 1. Valve 1 is configured to operate over the range 0%-33%, Valve 2 over the range 30% to 66%, and Valve 3 from 60% to 100%.

In this example, the Station Control is calling for 48% open.

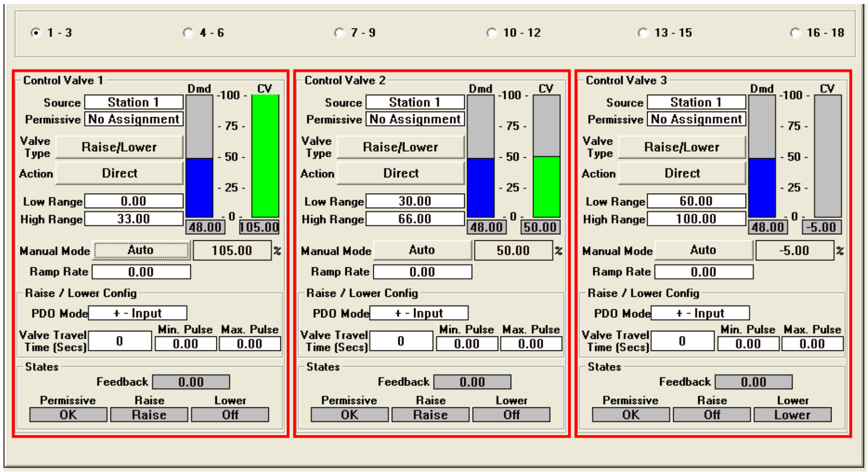


Figure 5-12. Selecting Control Valves

Observe that Valve 1 is full open, Valve 2 is 50% open, and Valve 3 is full shut. You can see that when valves are called to be shut, -5% is applied, and when valves are called to be full open, 105% is applied. This is to ensure full range of action for valves that lose their accuracy over time.

5.4.6 Enabling Station Control

Station Control is Enabled from the button on the Configuration Tab.

Setpoints are set from the Overview Tab.

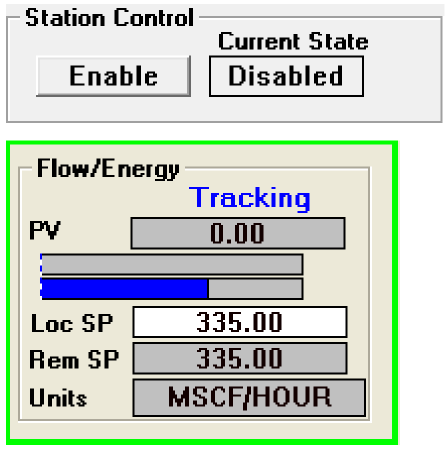


Figure 5-13. Enabling Station Control

Loc SP is for changing the setpoint locally (via TechView). If it is grayed out, then either: a) this loop is not enabled, or b) local control is not allowed.

Section 5.2 discusses Local / Remote lockouts.

Loop Tuning It is recommended to tune one loop at a time with the others disabled. The recommended method for tuning is the Ziegler-Nichols method for initial settings. The tuning can then be made less aggressive as desired from that baseline.

5.5 Meter Run Staging

The Station Manager application can control meter run staging (also referred to as run switching, or tube switching). The number of tubes varies depending upon the Station Manager version (6 run or 8 run).

To configure Meter Run Staging, click the

button from the Station Manager Control tab.

The following screen will appear:

Note: The screen we're showing below is expanded to show tube control settings.

Choose the station you want to configure by clicking on its tab.

Click here to show / hide additional tube control settings.

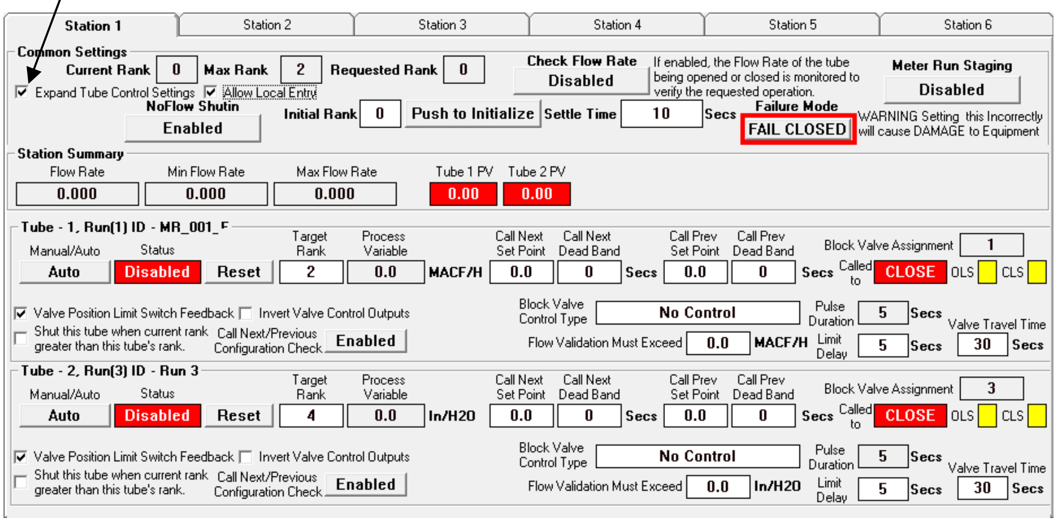


Figure 5-14. Meter Run Staging

Notes:

- To be able to configure meter run staging, more than one run must be assigned to a station and each run must have an assigned rank.
- if the station is a reverse flowing station (Station 2 or Station 4), no meter run staging is configured for that station, instead, the configuration for the forward flow station (Station 1 or Station 3) is used.

In our example, Station 1 has two runs assigned to it. Clicking on Station 3 or Station 4, that have fewer than two runs assigned to them, brings up the following message on the tab:

There are no runs ranked higher than 1 assigned to this station.

The various fields for meter run staging are:

Field	Description
Common Settings	Within the Common Settings section, there are settings and indications common to the station.
Current Rank	The current rank indicates the rank of the highest ranked run that is currently open. The term **Rank** is used throughout the run switching screen. Rank refers to order in which a run is opened or closed, as flow varies through the station. The run ranked 1 will open first, to meet any demand for flow. The runs ranked 2 and higher will open as the flow through the station increases and more runs are required. If a single station had 8 runs assigned to it, the maximum rank would be 8. In this example, with two runs assigned to the station, the maximum rank would be 2. Run switching ranks are set on the Run Config tab of Station/Run Configuration on the Measurement tab (see *Chapter 3, Section 3.3.8*).
Max Rank	The maximum rank is the highest possible ranked run that may be open for this station.
Requested Rank	The requested rank is the highest ranked run that should be open based on existing conditions. It is possible that the Requested Rank and Current Rank are different.
Initial Rank, Push to Initialize	The Initial Rank is the rank that the station will be configured to when the **Push to Initialize** button is pressed.
Settle Time	When opening or closing a run, the flow rate through the runs may momentarily increase or decrease above or below the set points for opening or closing additional runs. During the “Settle Time”, no control actions will occur.
Check Flow Rate Enabled / Disabled	When the **Check Flow Rate** button is enabled, as each meter run is commanded opened, the flow rate through that meter run will be compared to the **Flow Validation Must Exceed** set point (found in the **Expanded Tube Control Settings**). If the flow rate does not exceed the limit, the run will be considered failed, and the next run will be opened.
Meter Run Staging Enabled / Disabled	This button enables or disables Meter Run Staging.

Noflow Shutin Enabled Disabled	If enabled, upon a station NoFlow Shutin condition, all run stage valves for this station will be shut.
Failure Mode	The Failure Mode may be selected as **Fail Open** or **Fail Closed**. It is important to understand the advantages and disadvantages of each mode. This only applies when a Q-bit or measurement error is detected, and only on the highest ranking tube. Any lower ranked tube which fails will be shut. Depending on the purpose of the station, a different fail mode may be appropriate. In cases where keeping gas flowing outweighs other concerns, Fail Open may be desired. A possible example of this is when the station feeds a power station or compressor station. In other cases, in which the delivery is not as critical, safety concerns may result in a decision to let the tube shut. Ultimately, the decision of whether to fail open or fail closed must be carefully considered and can only be determined on a site by site basis.
Expand Tube Control Settings	Checking this box displays additional settings for configuring the individual tubes. Leaving the box unchecked hides the additional settings for each tube.
Allow Local Entry	Check this box to allow entry of values on this page. De-select the box to prevent accidental entries on this page.
<u>Station Summary</u>	The Station Summary shows the flow rate and current process variables through the individual runs. The tubes are displayed in rank order, where the lowest ranked run (rank 1) is on the left, and the highest ranked run (rank 2, in this example) is on the right. The run ranks may be in a different order from the run number, that is, run 1 may have a rank of 3, while run 2 has a rank of 1, and run 3 has a rank of 2.
Flow Rate	This is the flow rate through the station. Units will be in the flow rate units configured on the Station Configuration screen.
Min Flow Rate	Shows the minimum flow rate for this station.
Max Flow Rate	Shows the maximum flow rate for this station.
Tube *n* PV	This is the value of the process variable through the meter. For an orifice meter, this process variable will be differential pressure. For ultrasonic meters, turbine meters, and positive displacement meters, this process variable will be uncorrected flow rate. If the tube is called to open, the background of the PV display

	field will be green. If the tube is called to close, the background of the PV display field will be red.
<u>Tube – n, Run(x)ID – Run ID</u>	The specific tube switching settings for each run are configured on this section of the page.
Manual / Auto	An individual tube may be put into the Auto or Manual mode. When in the auto mode, the “Called to” setting is determined by the tube switching logic. When in the manual mode, the “Called to” setting may be changed from this page.
Status	The following status indications may be displayed for each run: Shutdown – This run has been closed due to a shutdown command. Q-Bit Fail - The Flow Rate value being calculated for the station is questionable. PV Fail – The PV value has failed (the questionable data bit is TRUE). Config Fail – The configuration for tube switching is invalid. This is the case when a run’s low switch point is higher than the previous run’s high switch point. Normal – All data is valid, the configuration of the tube switching is valid, and Meter Run Staging is Enabled. Disabled – All data is valid, the configuration of the tube switching is valid, and Meter Run Staging is Disabled. Maint Mode – The corresponding run is in maintenance mode and Meter Run Staging is disabled.
Reset	If the Status is anything other than Normal or Disabled, the failure must be reset To reset the failure, the failure condition must be cleared. Then, the Reset button may be pressed, and the status will be returned

Target Rank	This is the rank configured for this run. When the requested rank matches the target rank, the run of that target rank will be opened. When the run is opened, the current rank should match the target rank.
Process Variable	This is the value of the process variable being evaluated to determine whether a run should be opened or closed. The process variable for the run that matches the current rank is compared to the “Call Next Set Point” and the “Call Previous Set Point”. If the process variable for the “Current Rank” run exceeds the “Call Next Set Point” value for the number of seconds in the “Call Next Dead Band” setting, then the “Requested Rank” value will be incremented by one, unless the “Current Rank” matches the “Max Rank”. If the process variable for the “Current Rank” run drops below the “Call Prev Set Point” value for the number of seconds in the “Call Prev Dead Band” setting, then the “Requested Rank” value will be decremented by one, unless the “Current Rank” is 1 – in other words the only run open is the first or primary run. The units of the process variable will match the units of the differential pressure measurement for an orifice run, and will be in the uncorrected flow rate units for all linear meter types.
Call Next Set Point	The Next Set Point is in the same units as the process variable and used to determine whether or not to increment the “Requested Rank”.
Call Next Dead Band	The process variable must exceed the value of “Call Next Set Point” for the number of seconds in the “Call Next Dead Band” field before the “Requested Rank” will be changed.
Call Prev. Set Point	The Prev Set Point, is in the same units as the process variable and used to determine whether or not to decrement the “Requested Rank”.
Call Prev. Dead Band	The process variable must be less than the value of “Call Prev Set Point” for the number of seconds in the “Call Prev Dead Band” field before the “Requested Rank” will be changed.
Block Valve Assignment	This is the block valve that is assigned to this run. The assignments are based on the Run number, not the Target Rank. Therefore, the assignments are as shown in the table below:

Run #	DI Assignments (from I/O configuration page)	DO Assignments (from I/O configuration page)	BV Assignment

1	TUBE 1 Open/Close LIMIT	TUBE 1 Open/Close Command	1
2	TUBE 2 Open/Close LIMIT	TUBE 2 Open/Close Command	2
3	TUBE 3 Open/Close LIMIT	TUBE 3 Open/Close Command	3
4	TUBE 4 Open/Close LIMIT	TUBE 4 Open/Close Command	4
5	TUBE 5 Open/Close LIMIT	TUBE 5 Open/Close Command	5
6	TUBE 6 Open/Close LIMIT	TUBE 6 Open/Close Command	6
7	TUBE 7 Open/Close LIMIT	TUBE 7 Open/Close Command	7
8	TUBE 8 Open/Close LIMIT	TUBE 8 Open/Close Command	8

Called to

This is the command to the valve.
When the Tube is in Auto Mode, this command is determined by the tube switching logic.
When the Tube is in Manual Mode, this command may be set by the user.

Open/Close LS

The "Open LS" and "Close LS" fields show the state of each of the limit switches.

Open LS Close LS

Opened LS On, Closed LS Off, Valve is Opened.

Opened LS Off, Closed LS On, Valve is Closed.

Opened LS Off, Closed LS Off, Valve is travelling.

Opened LS On, Closed LS On, Valve position unknown.

Tube – n Expanded Tube Control Settings

Valve Position Limit Switch Feedback	When this box is checked, the valve position limit switch feedback will be processed. The limit switch indications will be compared to the “Called To” field, and if there is a mismatch after the valve travel time, a discrepancy will be reported. The limit switches are not used to determine if a run has failed. When this box is not checked, the valve position limit switch feedback is not processed or indicated.
Invert Valve Control Outputs	This setting will change the operation of the digital output. When this box is checked: An Open Command will set the digital output assigned to the ‘Open Command’ to OFF (or FALSE). If dual outputs are used, the digital output assigned to the “Close Command” will be set ON (or TRUE). A Close Command will set the digital output assigned to the “Open Command” to ON (or TRUE). If dual outputs are used, the digital output assigned to the “Close Command” will be set OFF (or FALSE).
Block Valve Control Type	The user may select from a number of control types for the tube switching block valve. Single Maintained Output This option should be chosen when a single output is energized to change the position of the valve. Dual Maintained Output This option should be chosen when there are two analog outputs, one to open the valve, and the other to close the valve. These outputs should be maintained, even after the appropriate limit switch indicates that the valve is in the demanded position. Dual Pulsed Output This option should be chosen when there are two digital outputs, one to open the valve, and the other to close the valve. These outputs should be pulsed until the appropriate limit switch indicates that the valve is in the demanded position. The “Limit Delay” setting can be used to maintain a pulse for some time after the limit switch is made.
Pulse Duration	The “Pulse Duration” is the amount of time to pulse the output. This setting only applies when the “Control Type” is “Dual Pulsed Outputs”, and may only be changed when this control type is selected.

Valve Travel Time	The "Travel Time" field is the amount of time, in seconds, it takes the valve to fully travel from the open-to-close or close-to-open position. This entry may be changed from this screen.
Limit Delay	The "Limit Delay" is the amount of time, in seconds, that the output pulse will be maintained after an opened or closed limit is indicated. This only applies for the "Control Type" of "Dual Pulsed Outputs".
Flow Validation Must Exceed	If the "Check Flow Rate" feature is Enabled, the process variable must exceed this limit for flow to be validated. In practical terms, when a run is requested to open, the actual rank will not be updated until the flow validation number is exceeded. If it fails to be exceeded prior to the end of the travel time, the run is marked as failed and the next higher run is requested. The units will match the units of the Process variable for the run.
Low Flow Run Shut-in	This setting allows a run to be shut-in, after a higher ranked run is opened. This is typically used where there is a low flow run on the system, and it is necessary to shut this run in when there are high flow conditions. The run will not be allowed to shut until the Actual Rank is increased. This will not occur until flow is established on a higher tube; this means that flow must be greater than the **Flow Validation Must Exceed** limit specified for the higher tube. When the station is shutting in, the higher run will not be allowed to shut until Actual Rank is lower. This will not occur until flow is established on a lower tube; this means that flow must be greater than the **Flow Validation Must Exceed** limit specified for the lower tube.

5.5.1 Clearing and Resetting Meter Staging Errors

If an error occurs in the meter run staging sequence that causes a meter run (or runs) to improperly open or shut, you must reset the staging sequence as follows:

1. Determine the root cause of the error then correct the condition. Typical causes might include invalid DP or counts measurements, or incorrect settings for "next" or "previous."
2. Disable meter run staging.
3. Re-initialize meter run staging.
4. Re-enable meter run staging.

Note: If you cannot determine the cause of the failure, you may not be able to re-enable the staging sequence.

5.6 Process Monitor Control

The Station Manager controller allows up to four (4) process values to be monitored and alarmed. In addition, a digital output may be controlled when a value goes into alarm. The process values to be monitored may be analog or digital (logical) values. Alarms may be generated when the process value exceeds High-High, High, Low, or Low-Low setpoints, or if the rate of change of the process value exceeds some limit.

To view the Process Monitor Control, select the Station Manager Control' tab, and click the 

button

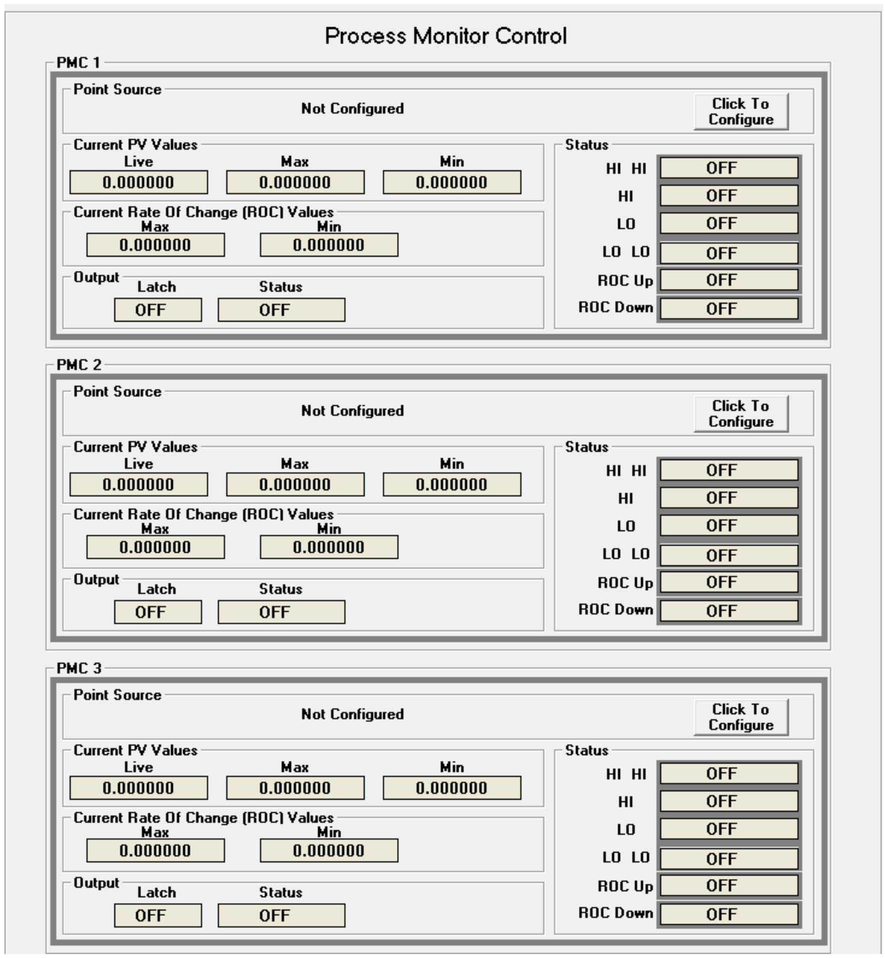


Figure 5-15. Process Monitor Control (Point 4 Not shown)

Field	Description
PMC *n*	
Point Source	Shows the source for this point, or **Not Configured** if no source has been assigned yet.
Click To Configure	Click this button to bring up a screen to configure the point source. See *Section 5.6.1* for more information.
Current PV Values	
Live	Displays the most recent update to this point
Max	Displays the maximum observed value of this point since the last min/max reset.
Min	Displays the minimum observed value of this point since the last min/max reset.
Current Rate of Change (ROC) Values	
Max	Displays the maximum observed (upward) rate of change value of this point since the last min/max reset.
Min	Displays the minimum observed (downward) rate of change value of this point since the last min/max reset.
Output	
Latch	If latching for this output is enabled, shows **ON**, otherwise shows **OFF**.
Status	Shows the current state of the output.
Status	
HI HI	Shows **ON** if the variable is currently in a HI HI alarm state, otherwise shows **OFF**.
HI	Shows **ON** if the variable is currently in a HI alarm state, otherwise shows **OFF**.
LO	Shows **ON** if the variable is currently in a LO alarm state, otherwise shows **OFF**.
LO LO	Shows **ON** if the variable is currently in a LO LO alarm state, otherwise shows **OFF**.
ROC Up	Shows **ON** if a variable is in a rate of change upward alarm state, otherwise shows **OFF.**
ROC Down	Shows **ON** if a variable is in a rate of change downward alarm state, otherwise shows **OFF.**

5.6.1 Process Monitor Control Configuration

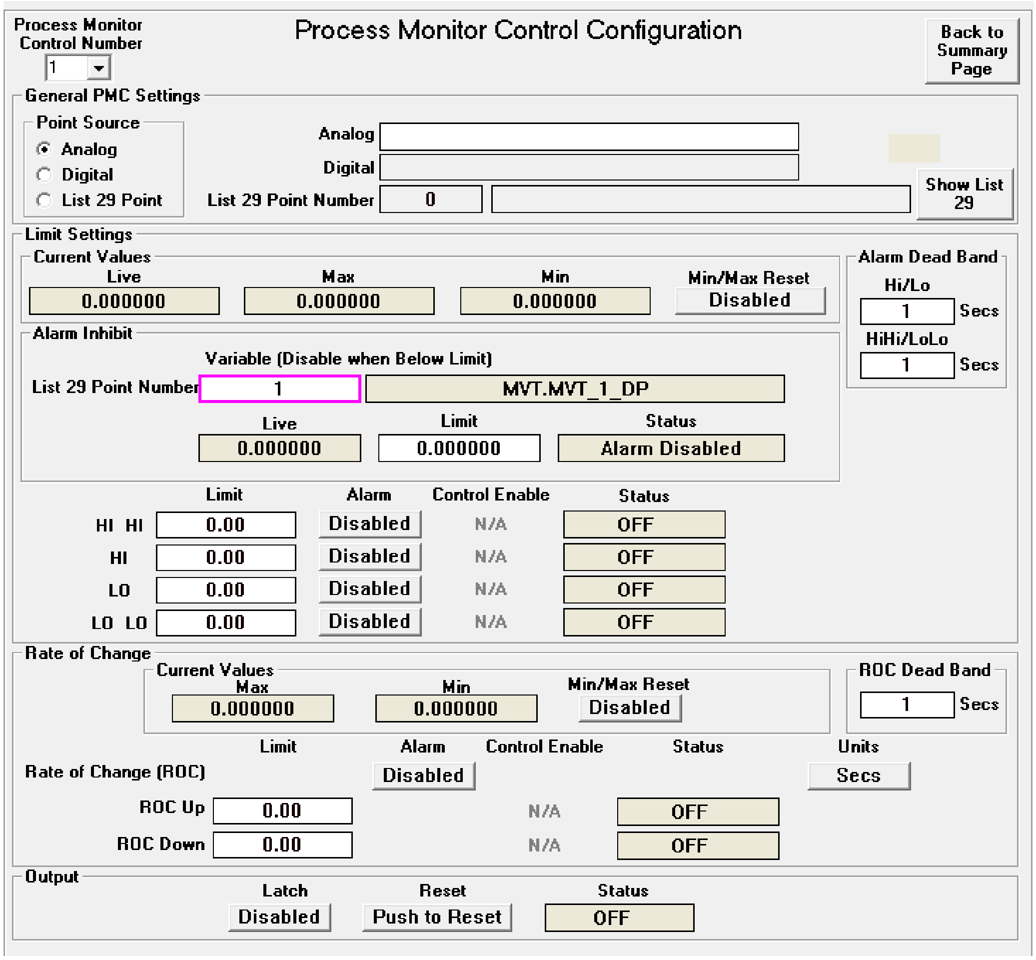


Figure 5-16. Process Monitor Control

Field	Description
Process Monitor Control Number	Select the point to be configured (1 through 4) from the drop down menu. These points correspond to the PMC.PV_Monitor_*n*.PV variables, where *n* = 1 through 4.
<u>General PMC Settings</u>	
<u>Point Source</u>	
Analog	If the value to be mapped to the process value monitor is an analog input, select the desired input from the drop down menu.
Digital	If the value to be mapped to the process value monitor is a digital input, select the desired input from the drop down menu
List 29 Point	If the sampler is to be mapped to some other process variable, rather than an analog/digital input,

	it may be mapped from List 29 After the point number is chosen, the variable name assigned to that element on the list will be displayed List 29 is a modifiable list, and may be edited using the On-Line Edit tool to add or remove items from the list.
Show List 29	Click here to view the contents of List 29.
Back to Summary Page	Click here to return to the Process Monitor Control Summary page. See *Section 5.6.*
<u>Alarm Inhibit</u>	
List 29 Point Number / Variable	Select the variable to use for an alarm inhibit.
Live	Shows the live value of the selected variable.
Limit	Enter the limit to use.
Status	Shows whether alarms are enabled or disabled based on the live value and specified limit.
<u>Limit Settings</u>	Up to four alarm limits are available for each point:
<u>Current Values</u>	
Live	This displays the most recent update of this point.
Max	This displays the maximum observed value of this point since the last min/max reset.
Min	This displays the minimum observed value of this point since the last min/max reset.
Min/Max Reset Enabled / Disabled	This clears the above max / min values (resets to live) and begins updating from there.
<u>Alarm Dead Band</u>	Before an alarm is generated, the alarm condition must be true for the amount of time defined by the alarm dead band, in seconds.
Hi/Lo	This is the deadband to trigger a HI or LO alarm.
HiHi/LoLo	This is the deadband to trigger a HIHI or LOLO alarm.
Limit	For the “Hi” and “Hi Hi” limits, enter the number which the process value must be greater than in order to generate an alarm. For the “Lo” and “Lo Lo” limits, enter the number which the process value must be less than in order to generate an alarm.

Alarm Enable / Disable	Each type of alarm (“Hi Hi”, “Hi”, “Lo”, and “Lo Lo”) may be enabled and disabled independently.
Control Enable	Control for each type of alarm (“Hi Hi”, “Hi”, “Lo”, and “Lo Lo”) may be enabled and disabled independently. However, if the Alarm for that alarm type is not enabled, control cannot be enabled, and the field will show **N/A**. Control must be enabled for station control ESD, Modbus status registers, and RCVs for those functions to work.
Status	Displays whether the corresponding alarm is currently active.

If the process value to be monitored is a digital input, you can enter 0 or 1 for the alarm limits and the system evaluates limits accordingly.

Rate of Change	It is possible to monitor the process value for a rate-of-change alarm. Both an increasing rate-of-change (ROC UP) or decreasing rate-of-change (ROC DOWN) alarm may be generated.
Current Values	Displays the most recent update to this point
Max	Displays the maximum observed (upward) rate of change value of this point since the last min/max reset.
Min	Displays the minimum observed (downward) rate of change value of this point since the last min/max reset.
Min/Max Reset	Clears the above max / min values (resets to current) and begins updating from there.
ROC Dead Band	This is the period of time in seconds that the rate of change setpoint must be exceeded to trigger an alarm.
Rate of Change (ROC) Enabled / Disabled	This button enables/disables monitoring of the process value for a rate-of-change alarm.
Units	This is the time units used as the divisor in the rate of change limit. The choices are seconds (“Secs”) or minutes (Mins).
Limit	The limit is the value of the maximum rate-of-change allowed in the given direction, expressed in units of the process variable units divided by the rate-of-change time units. For example, if the process value chosen was Station 1 Discharge Pressure, in units of PSI, and the Units (Time) selected to evaluate the rate-of-

	change were chosen as minutes, the limit for the ROC UP or ROC DOWN would be entered in units of PSI/MINUTE. If the limit for ROC UP was entered as 5, then the maximum rate-of-change allowed for Station 1 Discharge Pressure would be 5 PSI/Minute. If ROC DOWN is entered, you must include a negative sign (for example, -5 PSI/Minute.)
ROC Up, ROC Down	Both an increasing rate-of-change (ROC UP) or decreasing rate-of-change (ROC DOWN) alarm may be generated.
Alarm Enabled, Disabled	If the alarm for the rate-of-change is enabled, both the ROC UP and ROC DOWN limits will be evaluated. If it is desired that no rate-of-change alarm is reported in one direction, set the ROC limit to some large number, that should never be experienced.
Output	
Latch Enabled / Disabled	When the control for a point is enabled, the output may be latched or unlatched. When “Latch Output” is Disabled, the output will be set to TRUE or ON when any alarm condition is met, and set to FALSE or OFF when no alarm conditions are met. When “Latch Output” is Enabled, the output will be set to TRUE or ON when any alarm condition is met, but will only be set FALSE or OFF when the “Push to Reset” button is pressed.
Push to Reset	This button is used to reset a latched output.
Status	The actual signal being applied to the output.

5.7 Process Value Monitor

The Station Manager controller allows up to four (4) process values to be monitored and alarmed. The process values to be monitored may be analog or digital (logical) values. Alarms may be generated when the process value exceeds High-High, High, Low, or Low-Low setpoints, or if the rate of change of the process value exceeds some limit.

Note: PVM control outputs are soft points and cannot be physical DOs.

To view the Process Value Monitor Summary, select the "Control" tab, and click on the **Process Value Monitor** button.

The following screen will appear:

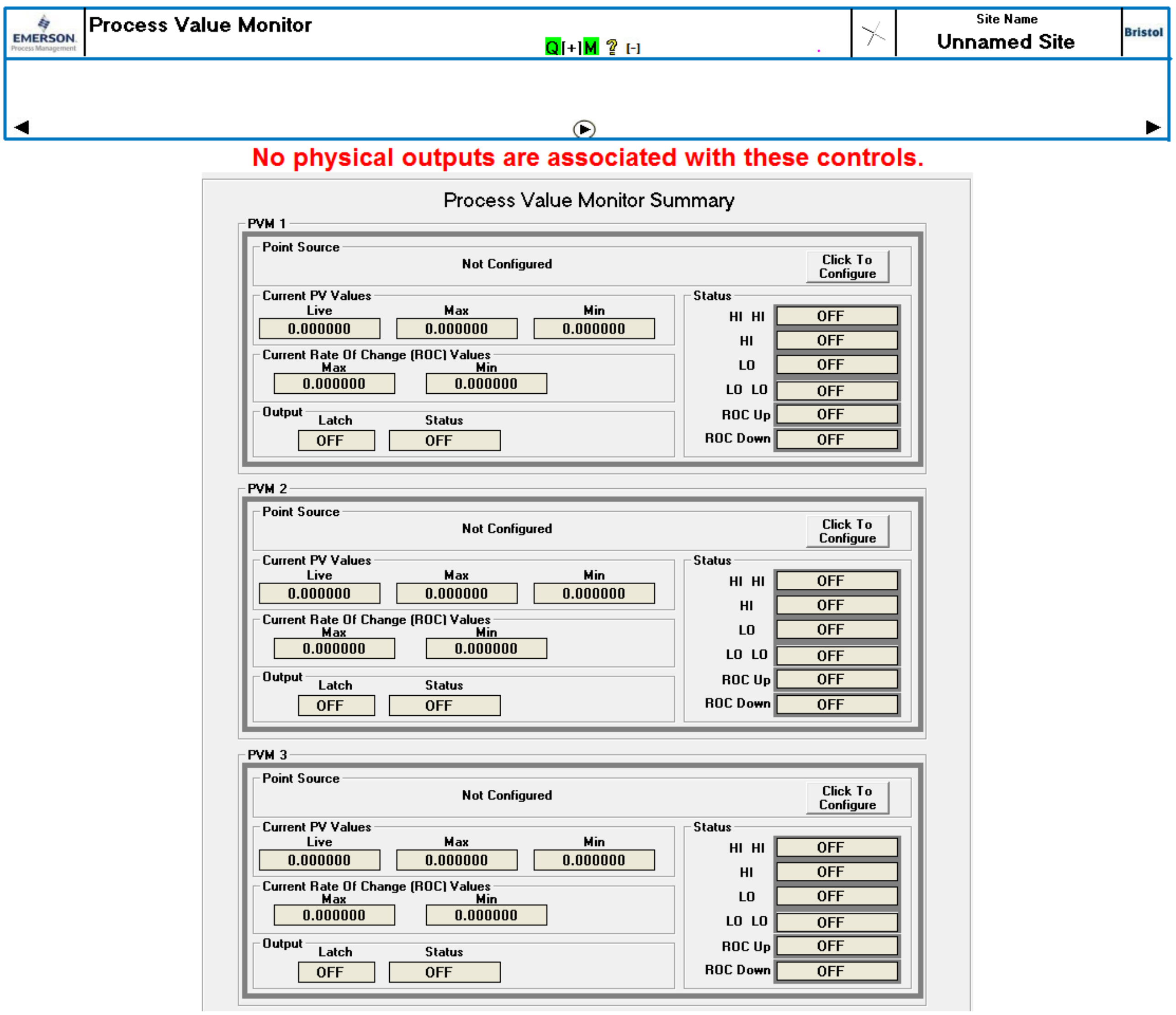


Figure 5-17. Process Value Monitor

Field	Description
PVM *n*	
Point Source	Shows the source for this point, or **Not Configured** if no source has been assigned yet.
Click To Configure	Click this button to bring up a screen to configure the point source. See *Section 5.7.1* for more information.
Current PV Values	
Live	Displays the most recent update to this point
Max	Displays the maximum observed value of this point since the last min/max reset.
Min	Displays the minimum observed value of this point since the last min/max reset.
Current Rate of Change (ROC) Values	
Max	Displays the maximum observed (upward) rate of change value of this point since the last min/max reset.
Min	Displays the minimum observed (downward) rate of change value of this point since the last min/max reset.
Output	
Latch	If latching for this output is enabled, shows **ON**, otherwise shows **OFF**.
Status	Shows the current state of the output.
Status	
HI HI	Shows **ON** if the variable is currently in a HI HI alarm state, otherwise shows **OFF**.
HI	Shows **ON** if the variable is currently in a HI alarm state, otherwise shows **OFF**.
LO	Shows **ON** if the variable is currently in a LO alarm state, otherwise shows **OFF**.
LO LO	Shows **ON** if the variable is currently in a LO LO alarm state, otherwise shows **OFF**.
ROC Up	Shows **ON** if a variable is in a rate of change upward alarm state, otherwise shows **OFF.**
ROC Down	Shows **ON** if a variable is in a rate of change downward alarm state, otherwise shows **OFF.**

5.7.1 Process Value Monitor

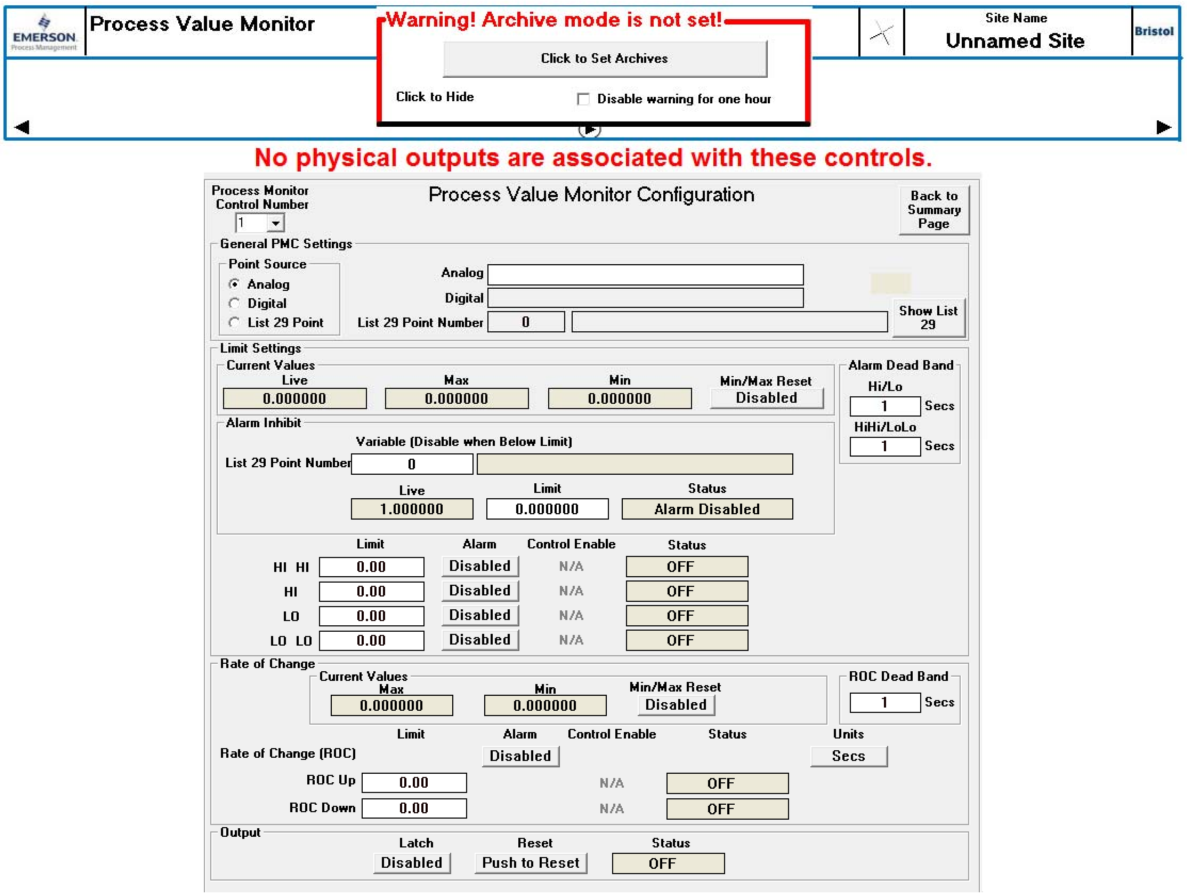


Figure 5-18. Process Value Monitor Configuration

Field	Description
Process Monitor Control Number	Select the point to be configured (1 through 4) from the drop down menu. These points correspond to the PVM.PV_Monitor_*n*.PV variables, where *n* = 1 through 4.
<u>General PMC Settings</u>	
<u>Point Source</u>	
Analog	If the value to be mapped to the process value monitor is an analog input, select the desired input from the drop down menu.
Digital	If the value to be mapped to the process value monitor is a digital input, select the desired input from the drop down menu
List 29 Point	If the sampler is to be mapped to some other process variable, rather than an analog/digital input, it may be mapped from List 29 After the point number is chosen, the variable name

	assigned to that element on the list will be displayed List 29 is a modifiable list, and may be edited using the On-Line Edit tool to add or remove items from the list.
Show List 29	Click here to view the contents of List 29.
Back to Summary Page	Click here to return to the Process Value Monitor Summary page. See *Section 5.7.*
<u>Limit Settings</u>	Up to four alarm limits are available for each point:
<u>Current Values</u>	
Live	This displays the most recent update of this point.
Max	This displays the maximum observed value of this point since the last min/max reset.
Min	This displays the minimum observed value of this point since the last min/max reset.
Min/Max Reset Enabled / Disabled	This clears the above max / min values (resets to live) and begins updating from there.
<u>Alarm Dead Band</u>	Before an alarm is generated, the alarm condition must be true for the amount of time defined by the alarm dead band, in seconds.
Hi/Lo	This is the deadband to trigger a HI or LO alarm.
HiHi/LoLo	This is the deadband to trigger a HIHI or LOLO alarm.
Limit	For the “Hi” and “Hi Hi” limits, enter the number which the process value must be greater than in order to generate an alarm. For the “Lo” and “Lo Lo” limits, enter the number which the process value must be less than in order to generate an alarm.
Alarm Enable / Disable	Each type of alarm (“Hi Hi”, “Hi”, “Lo”, and “Lo Lo”) may be enabled and disabled independently.
Control Enable	Control for each type of alarm (“Hi Hi”, “Hi”, “Lo”, and “Lo Lo”) may be enabled and disabled independently. However, if the Alarm for that alarm type is not enabled, control cannot be enabled, and the field will show **N/A**. Control must be enabled for station control ESD, Modbus status registers, and RCVs for those functions to work.

Status	Displays whether the corresponding alarm is currently active.

If the process value to be monitored is a digital input, you can enter 0 or 1 for the alarm limits and the system evaluates limits accordingly.

Rate of Change It is possible to monitor the process value for a rate-of-change alarm.

Both an increasing rate-of-change (ROC UP) or decreasing rate-of-change (ROC DOWN) alarm may be generated.

Current Values	Displays the most recent update to this point
Max	Displays the maximum observed (upward) rate of change value of this point since the last min/max reset.
Min	Displays the minimum observed (downward) rate of change value of this point since the last min/max reset.
Min/Max Reset	Clears the above max / min values (resets to current) and begins updating from there.
ROC Dead Band	This is the period of time in seconds that the rate of change setpoint must be exceeded to trigger an alarm.
Rate of Change (ROC) Enabled / Disabled	This button enables/disables monitoring of the process value for a rate-of-change alarm.
Units	This is the time units used as the divisor in the rate of change limit. The choices are seconds ("Secs") or minutes (Mins).
Limit	The limit is the value of the maximum rate-of-change allowed in the given direction, expressed in units of the process variable units divided by the rate-of-change time units. For example, if the process value chosen was Station 1 Discharge Pressure, in units of PSI, and the Units (Time) selected to evaluate the rate-of-change were chosen as minutes, the limit for the ROC UP or ROC DOWN would be entered in units of PSI/MINUTE. If the limit for ROC UP was entered as 5, then the maximum rate-of-change allowed for Station 1 Discharge Pressure would be 5 PSI/Minute. If ROC DOWN is entered, you must include a negative sign (for example, -5 PSI/Minute.)

ROC Up, ROC Down	Both an increasing rate-of-change (ROC UP) or decreasing rate-of-change (ROC DOWN) alarm may be generated.
Alarm Enabled, Disabled	If the alarm for the rate-of-change is enabled, both the ROC UP and ROC DOWN limits will be evaluated. If it is desired that no rate-of-change alarm is reported in one direction, set the ROC limit to some large number, that should never be experienced.
<u>Output</u>	
Latch Enabled / Disabled	When the control for a point is enabled, the output may be latched or unlatched. When “Latch Output” is Disabled, the output will be set to TRUE or ON when any alarm condition is met, and set to FALSE or OFF when no alarm conditions are met. When “Latch Output” is Enabled, the output will be set to TRUE or ON when any alarm condition is met, but will only be set FALSE or OFF when the “Push to Reset” button is pressed.
Push to Reset	This button is used to reset a latched output.
Status	The actual signal being applied to the output.

5.8 GP PIDs

To configure the General Purpose (GP) PID loops, select the "Control" tab, and click on the  button.

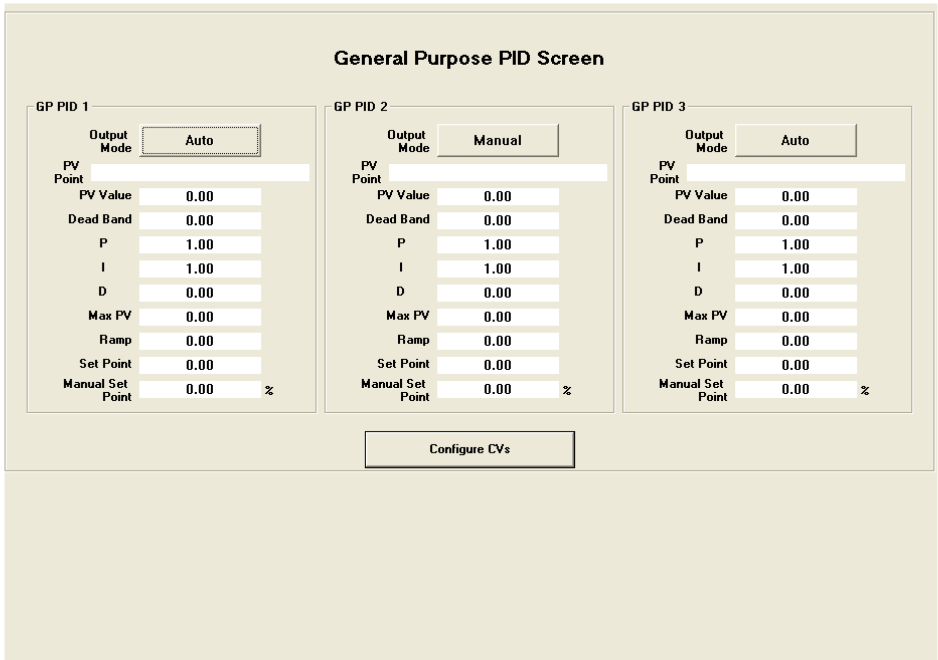


Figure 5-19. General Purpose PID

Field	Description
GP PID *n*	
Output Mode	Click this to choose between Auto and Manual Override
PV Point	Select the AI point used as the process value for the PID.
PV Value	This shows the live reading of the AI point used for control in this PID.
Dead Band	Deadband applies to the loop output. A calculated loop output which does not vary by more than the percent selected here will not change the output.
P	Proportion, also known as Gain, determines the amount of output change that will be produced by a change of error.
I	Integral, establishes the "reset" rate in "repeats-per-minute."

D	Derivative establishes a scale factor to determine how much the rate-of-change of the MV (not error) affects the function block output. The numerical entry for this parameter represents the amount of rate correction in minutes. Any value other than zero **MUST** have a negative polarity assigned to it, regardless of the polarity of the Proportion value.
Max PV	The maximum value the PV can achieve.
Ramp	The rate at which a change in setpoint should be applied to the loop.
Set Point	The value of PV the loop should attempt to maintain.
Manual Set Point	The desired percent of full range for the PID loop output. Valid in manual mode only.

5.9 PID Tuning

To tune the General Purpose (GP) PID loops, select the "Control" tab, and click on the 

button

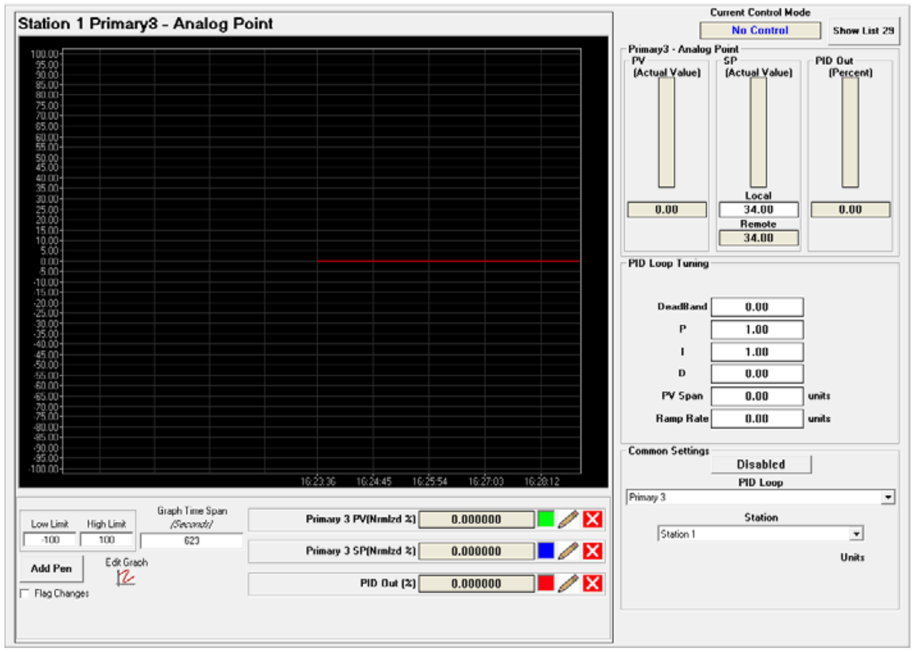
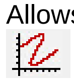


Figure 5-20. PID Tuning

Field	Description
Current Control Mode	
Primary *n* Analog Point	
PV	Process Variable – This displays the live value of the process being controlled.
SP	Setpoint – This displays the value the loop is trying to maintain on the PV.
PID Out	The output of the PID Loop. This varies from 0-100.
Local SP	This allows local entry of the setpoint.
Remote SP	Displays the value of the remote entry for the setpoint
PID Loop Tuning	

DeadBand	Deadband applies to the loop output. A calculated loop output which does not vary by more than the percent selected here will not change the output.
P	Proportion, also known as Gain, determines the amount of output change that will be produced by a change of error
I	Integral, establishes the “reset” rate in “repeats-per-minute”
D	Derivative establishes a scale factor to determine how much the rate-of-change of the MV (not error) affects the function block output. The numerical entry for this parameter represents the amount of rate correction in minutes. Any value other than zero **MUST** have a negative polarity assigned to it, regardless of the polarity of the Proportion value.
PV Span	The maximum value the PV can achieve.
Ramp Rate	The rate at which a change in setpoint should be applied to the loop.
<u>Common Settings</u>	
Disabled / Enabled	Enable / disable the individual loop control.
PID Loop	Selects which loop to tune.
Station	Selects the station for which loops will be tuned.
Low Limit	The lowest value to display on the y axis of the chart.
High Limit	The highest value to display on the y axis of the chart.
Graph Time Span	Selects x axis (time span) to view on the chart.
Add Pen	Click here to add items to the chart.
Flag Changes	When enabled, will place a vertical line on the graph where changes to the graph properties have been made.
Edit Graph	Allows modifications of color schemes for the chart. 

Primary *n* PV	Shows the current value and color for PV on the chart.
Primary *n* SP	Shows the current value and color for SP on the chart.
PID Out	Shows the current value and color for PID on the chart.
	Click on a color block icon to open the color palette and select a color for the pen.
	Click the pencil icon to edit the properties for the pen.
	Click the white “X” to delete a pen.

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Chapter 6 – Math Functions, Sampler (Utilities Tab)

This chapter discusses some special utilities included in the Station Manager application.

In This Chapter

6.1 Utilities Tab

Click the Utilities tab to access the math and sampling functions.

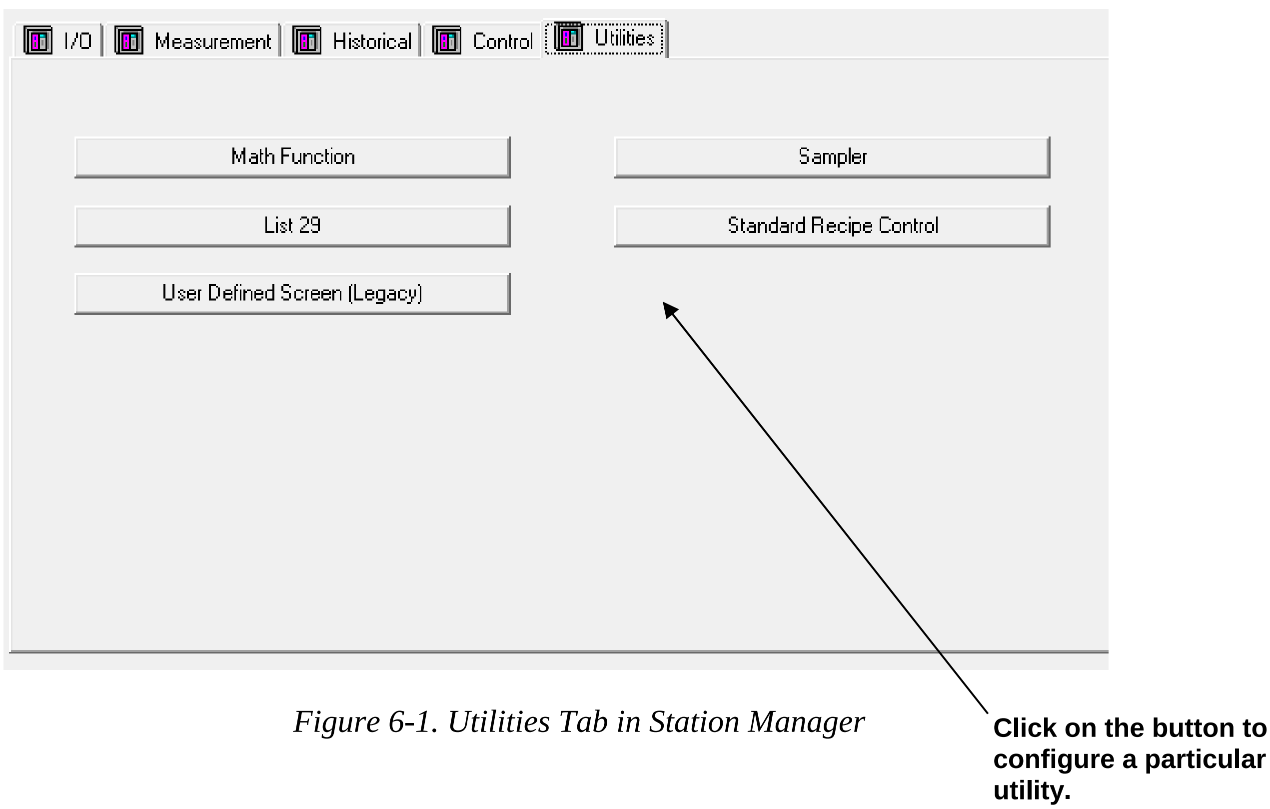


Figure 6-1. Utilities Tab in Station Manager

6.2 Math Function

Click the Math Function button on the Utilities tab to perform basic calculator functions on values from List 29, a Modbus register or a Modbus coil.

Workspace

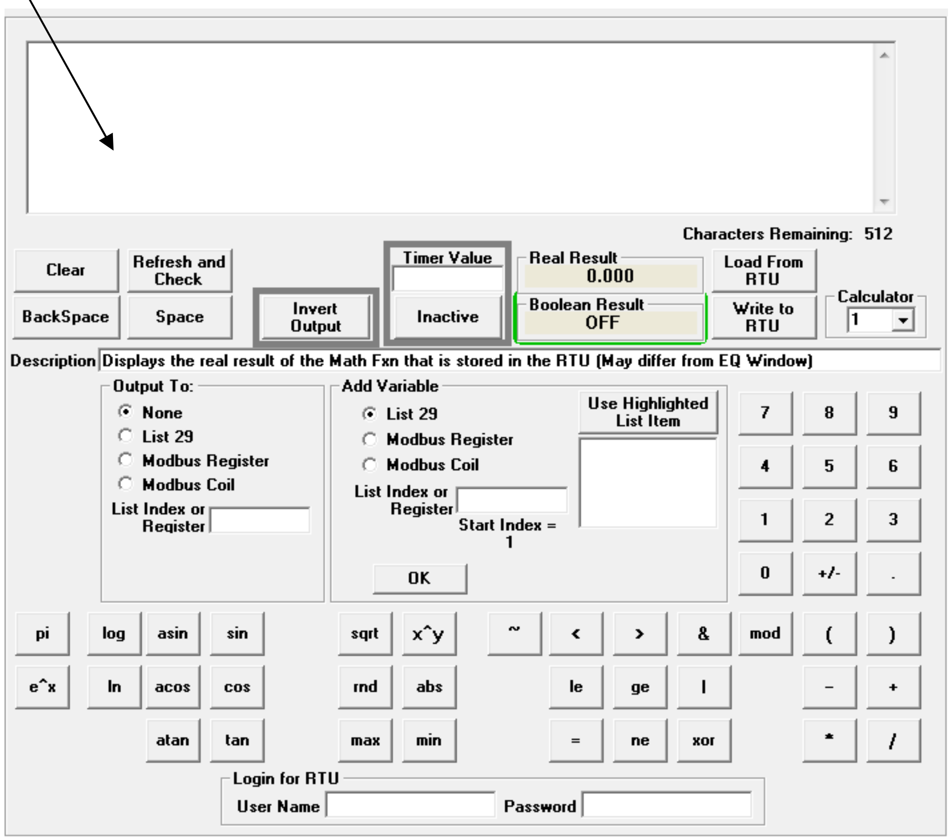


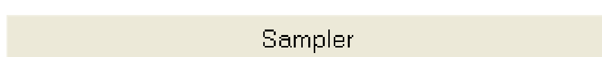
Figure 6-2. Math Function

Field	Description
Characters remaining	Shows the number of characters left for use in the workspace. The maximum number of characters is 512.
Clear	Click this button to empty the contents of the workspace.
Refresh and Check	Evaluate the workspace expression(s) and update the screen.
Backspace	Erase the last character entered in the workspace.
Space	Insert a space at the cursor position in the workspace
Invert Output	Click this to invert the Boolean output.
Timer Value Inactive /	When active, the Boolean and the Real Result will not

Active	change until the expression is true and the Timer Value has expired. The Real Result will be 1.0 if the expression evaluates to anything other than 0, otherwise it will be 0.0.
Real Result	The real result of the evaluated expression.
Boolean Result	The Boolean result of the evaluated expression. Note that the Invert Output and Timer settings affect the Boolean Result. **Note:** If the expression evaluates to anything other than 0 or false it will be true
Load From RTU	Retrieve the expression from RTU memory.
Write to RTU	Write the expression to RTU memory.
Calculator	Select the Math function to be viewed/edited (12 available). The number selected corresponds to the default Math function result variables (MFN.MFNx_BOOL and MFN.MFNx_REAL where x is the value selected in the Calculator dropdown box).
Description	Provides a description of a Math Function feature when the mouse is near the feature.
<u>Output To</u>	Selects whether the output of the Math Function will be written to List 29, a Modbus Register, or a Modbus Coil or only to the default Math Function result variables.
None	If None is selected, the result will only be written to the Math Function Real and Boolean result variables (MFN.MFNx_BOOL and MFN.MFNx_REAL where x is the value selected in the Calculator dropdown box).
List 29	If List 29 is selected, the result will be written to the list 29 variable specified by the value of List Index or Register. The result is also written to the default Math Function result variables (MFN.MFNx_BOOL and MFN.MFNx_REAL where x is the value selected in the Calculator dropdown box).
Modbus Register	If Modbus Register is selected, the result will be written to the Modbus Register variable specified by the value of List Index or Register. The result is also written to the default Math Function result variables (MFN.MFNx_BOOL and MFN.MFNx_REAL where x is the value selected in the Calculator dropdown box).
Modbus Coil	If Modbus Coil is selected, the result will be written to the Modbus Coil variable specified by the value of List Index or Register. The result is also written to the default Math Function result variables (MFN.MFNx_BOOL and MFN.MFNx_REAL where x is the value selected in the Calculator dropdown box).
List Index or Register	Provides the list index that the result is to be written to. For example, if List 29 is selected and the index is 3, then the result will be written to item 3 of list 29.
<u>Add Variable</u>	The settings in this frame provide a way to use a List 29, Modbus Register, or Modbus Coil variable in the expression. When a list is selected, an index specified, and the OK button is clicked, the specified item will be written to the expression window and to the Use Highlighted List Item List box.
List 29	In the Add Variable Frame, if List 29 is selected and a value is specified in the List Index or Register, then the specified item in List 29 will be written to the

	expression window.
Modbus Register	In the Add Variable Frame, if Modbus Register is selected and a value is specified in the List Index or Register, then the specified item in the Modbus Register list will be written to the expression window.
Modbus Coil	In the Add Variable Frame, if Modbus Coil is selected and a value is specified in the List Index or Register, then the specified item in the Modbus Coil list will be written to the expression window.
List Index or Register	In the Add Variable Frame, provides the List Index or register to be used in the expression.
Use Highlighted List Item	Each time a list item is added to the expression it is also added to the Use Highlighted List Item list box. If desired, the user can select a previously used list item from the list box and press the Use Highlighted List Item button to add it to the expression again.
0 – 9, .	Digits and the decimal point for entering integer and real values. These may also be entered directly from the user's keyboard if desired.
+/-	Swap the sign
mod	modulo division
( )	Parentheses (may also be entered from the user's keyboard)
- + * /	Arithmetic functions (subtract, add, multiply, divide)
~ < > & le ge | = ne xor	Logical comparison functions (NOT, less than, greater than, AND, less than or equal, greater than or equal, OR, equal, not equal, exclusive OR.
sqrt, x^y, rnd, abs, max, min	Square root, exponent, round, absolute value, maximum, minimum
pi	Pi
e	E
asin, sin, acos, cos, atan, tan	Trigonometric functions
log, ln	Logarithmic functions
<u>Login for RTU</u>	The user must log in to read/write the math function from/to RTU memory.
User Name	RTU User Name
Password	RTU User Password

6.3 Sampler

Click the  button on the Utilities tab to configure the Sampler.

The Station Manager allows up to 12 outputs (any combination of analog outputs and pulsed digital outputs) to be configured for 'sampling' functions.

When an analog output is configured as a Sampler output, then any analog input or process variable may be mapped to the Sampler output. The analog output will vary as the analog input or process variable varies, depending on the scale factor and the zeroes and spans selected for the inputs and outputs.

When a pulsed digital output is configured as a Sampler output, then a process variable representing some accumulated value (run flow or energy, station flow or energy) should be mapped to the output. Other analog inputs and process variables may be mapped to the pulsed digital output, but it may not make sense to do so.

The following screen will appear:

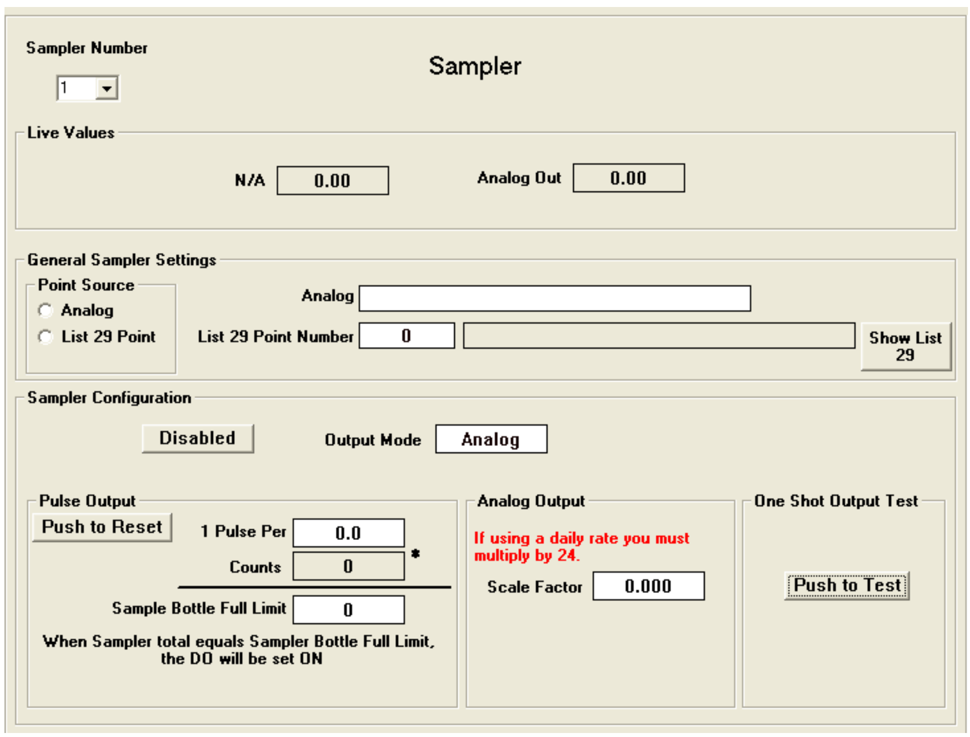


Figure 6-3. Sampler

Field	**Description**
Sampler Number	Select the point to be configured (1 through 12) from the drop down menu. These points correspond to the 'Sampler 1' through 'Sampler 12' selections in the Analog Output and Digital Output assignment screens.
Live Values	This area of the screen displays the live value for the selected point to sample (either analog or List 29 point) and also displays the value of the analog output if Analog is the selected Output Mode.

N/A	This is the label for the Sampler Point source live value text box. The value for this label will change based on the selected Point Source. If List 29 Point is selected then the label changes to Selected List 29 Val and the textbox displays the current live value of the selected List 29 Point. When Analog is selected as the Point Source and an analog source is selected from the Analog dropdown box, the label will change to Selected Analog Val. and the selected analog value will be displayed in the textbox.
Analog Out	This label and textbox will only be displayed when Analog is the selected Output Mode. When displayed, the textbox will show the live value of the sampler's analog output.
General Sampler Settings	These items are used to select the source to be sampled.
Point Source	The items in this frame allow you to select whether the sampler source will be an analog source or a list 29 item.
Analog	Select this radio button if the value to be mapped to the sampler output is an analog input; then select the desired input from the drop down menu next to the Analog label.
List 29 Point	If the sampler is to be mapped to some other process variable, rather than an analog input, it may be mapped from List 29 List 29 is a modifiable list, and may be edited using the On-Line Edit tool to add or remove items from the list.
Sampler Configuration	After the source is configured, the Sampler Configuration itself must be completed. The items in this frame enable the sampler, select the output mode, configure the way the pulse output behaves (if Pulse is the selected Output Mode) and determine scaling.
Disabled / Enabled	The Sampler output is Enabled/Disabled by toggling the button
Output Mode	The output mode may be selected as an analog output (Analog) or pulsed digital output (Pulse).
Pulse Output	If the Output Mode is selected as Pulse, the items in this frame configure the Pulse Output.

Push to Reset	By clicking on the 'Push to Reset' button, the 'Counts' value will be set to 0.
1 Pulse Per	The user is required to enter the ratio of pulses per input quantity. For instance: Assume the pulse output is mapped to the station accumulated volume. The station accumulated volume is in units of MSCF (thousands of standard cubic feet). If the user wants a pulse for every 1.0 MSCF, then the entry should be 1.0 (1 pulse per 1.0 MSCF). If the user wants a pulse for every 100 SCF (100 standard cubic feet), then the entry should be 0.1 (1 pulse per 0.1 MSCF) If the user wants a pulse for every 2.0 MSCF, then the entry should be 2.0 (1 pulse per 2.0 MSCF) If the user wants a pulse for every 200 SCF (200 standard cubic feet), then the entry should be 0.2 (1 pulse per 0.2 MSCF).
Counts	The 'Counts' value represents the total number of pulses output since the last time the 'Push to Reset' button was pressed.
Sample Bottle Full Limit	If the value of this setting is anything other than 0, then the digital output assigned to the sampler will come on and stay on after the Counts = Sample Bottle Full Limit. Note that the value entered in the 1 Pulse Per field must be .5 or greater for this feature to work properly. Note also that the DO and the counts will be reset when the Push to Reset button is clicked.
<u>Analog Output</u>	
Scale Factor	If the Output Mode is selected as analog, then the user must apply a scale factor to the output. If no scaling is required, the scale factor should be set to 1.0. Below are some examples of using the Scale Factor: To convert a flow rate in units of MSCF/Hour to MMSCF/Hour, the scale factor should be 0.001

	(1/1000). To convert a flow rate in units of MMSCF/Hour to MSCF/Hour, the scale factor should be 1000.0. To convert a flow rate in units of MSCF/Hour to MSCF/Day, the scale factor should be 24.0 To convert a flow rate in units of MSCF/Day to MSCF/Hour, the scale factor should be 0.04167 (1/24). Any scale factor needed to perform the proper units conversion may be entered here.
<u>One Shot Output Test</u>	
Push to Test	Click this button to send one pulse to the sampler Digital output. **Note**: This only applies when Pulse is selected at the Output Mode and a DO is assigned to the sampler.

6.4 List 29

For information on List 29, please see *Section 3.6*.

6.5 Standard Recipe Control

Click the Standard Recipe Control button on the Utilities tab to create a recipe.

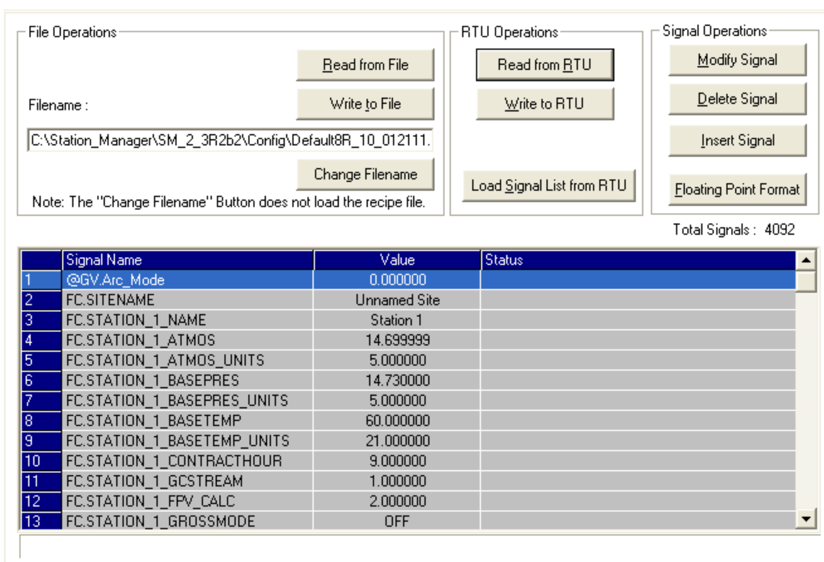


Figure 6-4. Recipe Feature

To create a recipe you must first specify the variables you want included in the recipe. One way to do this is to *either* right-click on the grid in the center of the Recipe page and choose **"Insert Signal"** from the pop-up menu, *or* click the **Insert Signal** button.

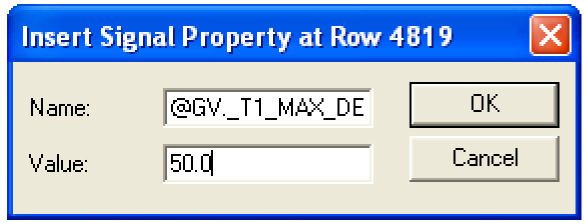


Figure 6-5. Insert Signal Property dialog box

In either case, a dialog box opens and you can enter the variable's name. If desired, you can also enter a value for the variable. Click **OK** when you are finished. Repeat for each additional variable.

If you don't enter values for the variable when you insert it you can load the current values in the Station Manager for all variables in the recipe by clicking on **Read From RTU**.

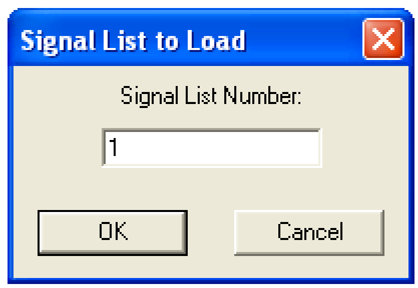


Figure 6-6. Signal List to Load

Another way to specify variables for the recipe is to load the variables from the list. To do this, click the **Load Signal List from RTU** button, then specify the number of the signal list and click **OK**.

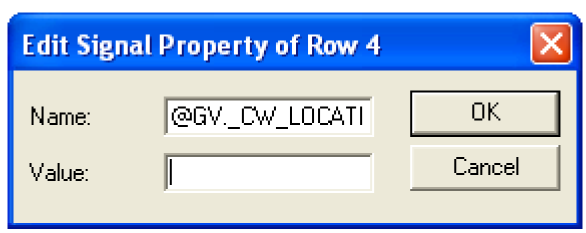


Figure 6-7. Edit Signal Property

If, as you are creating the recipe, you decide you want to change a variable or value for a particular entry, *either* right click on the entry and choose **"Edit Signal"** from the pop-up menu, *or* click the **Modify Signal** button. Make changes, as desired, and click **OK**.

If you want to delete a variable in the recipe, *either* right-click on the line for that variable and choose **"Delete Signal"** from the pop-up menu, *or* click the **Delete Signal** button. You will be prompted to confirm the deletion.

6.5.1 Changing the Floating Point Format in the Recipe

If desired, you can change the format in which values are displayed in the recipe window by clicking on the **Floating Point Format** button.

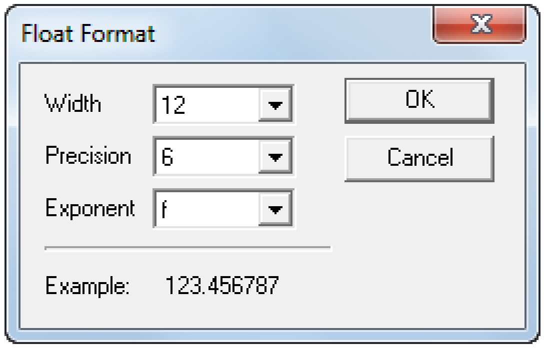


Figure 6-8. Float Format dialog box

Use the **"Width"** list box to specify the total number of characters in the field (including the decimal point) when displaying a floating point number. This can range from 0 to 15. The default is 12.

Use the **"Precision"** list box to choose the number of places to the right of the decimal point which should be displayed. This can range from 0 to 15. The default is 6.

Use the **"Exponent"** list box to choose the floating point format 'f', exponential notation 'e', or choose 'g' to have the Recipe control choose the best fit format.

Click on **OK** when finished.

6.5.2 Saving the Recipe

Type the path and filename for your recipe file in the **"Filename"** field or click **Change Filename** to select a recipe from the default recipe area. Standard recipe files are stored with a file extension of (.RCP). You also have the option of saving the file as a .CFG file (which is intended for use with Coastal Flow Measurement Inc. Flow-Cal™ software.)

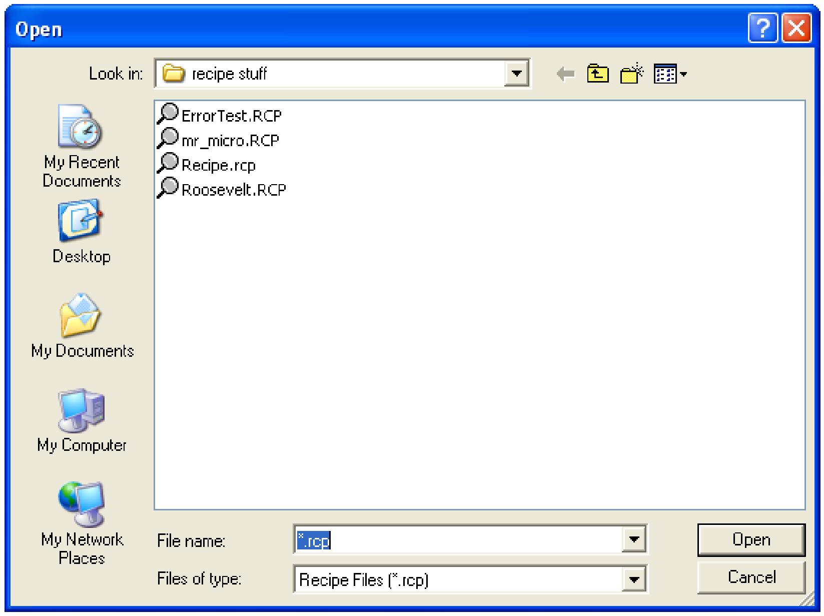


Figure 6-9. Saving the Recipe

Once you have specified the path and filename, click on the **Write to File** button; answer **Yes** to the confirmation prompt, and the control writes the recipe to the specified file.

6.5.3 Recalling a Saved Recipe, and Sending Its Values to the Controller

To recall a recipe which you have saved previously, use the **Change Filename** button to locate it, or type its path and filename in directly in the **"Filename"** field. Finally, click the **Read From File** button, and the recipe will be brought into the web page.

Once the recipe file has been loaded, you can send the recipe values to the controller by clicking on the **Write to RTU** button; answer **Yes** to the confirmation prompt, and the control writes the recipe to the controller.

6.6 User Defined Screen (legacy)

The User Defined Screen lets you display the values for up to thirty variables on the screen.

To do this, first create a text file that uses the following syntax:

! any text following an exclamation point in column 1 is ignored and treated as a comment

Lines that start with text not preceded by an explanation point in column 1 are displayed “as is”

label1; variable; label2; variable2; label3; variable3

:

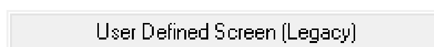
label28; variable28; label29; variable29; label30; variable30

where *label1* to *label*n	refer to text to display to the right of the associated variable. The semicolon “;” marks the end of the label.
*variable1*to *variable*n	refer to ControlWave variable names. Include a semicolon “;” following the variable name unless this is the last variable on the line.

Notes:

- Although the syntax box shows three variables per line, you can include more or less provided they fit within the user defined display.
- Each label and variable pair makes up a column on the screen.
- To display a semicolon on a text line, insert a backslash immediately before it, for example \;

To load the User Defined Screen:

1. Click the 

button on the Utilities tab.
2. Use the **File Select** list box to select the text file you created; if it is not visible in the list, click **Add** and locate it.
3. Once selected the user defined screen will open.

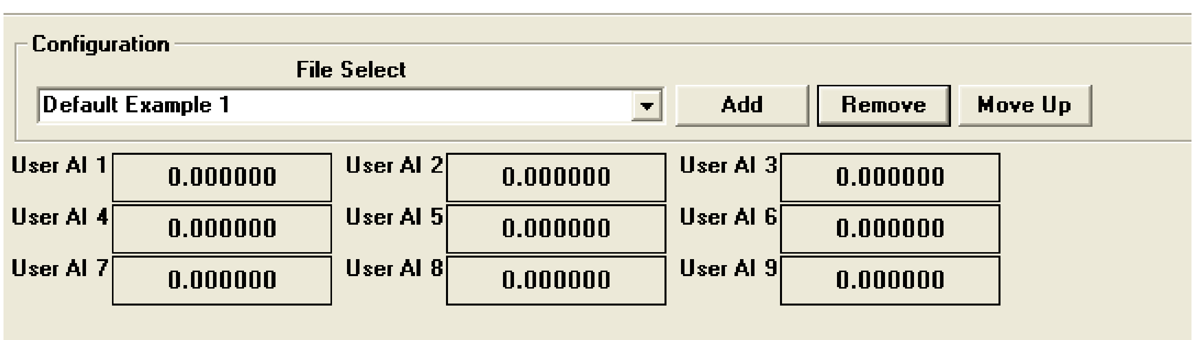


Figure 6-10. User-Defined Screen Configuration

Notes:

- You can optionally delete a text file from the list by highlighting it and clicking **Remove**.
- You can rearrange the file's position in the list using the **Move Up** button.

If you have an example text file called "simple example.txt" that looks like this:

```
!anything following an exclamation point in column 1 is treated as a comment
text starting a line not preceded by an exclamation point is displayed "as is"
My First Label;IO_1.HWAIs_1.HWAI_86;My Second Label;IO_1.HWAIs_1.HWAI_87
My Third Label;IO_1.HWAIs_1.HWAI_88;My Fourth Label;IO_1.HWAIs_1.HWAI_89
here is some more text
My Fourth Label;IO_1.HWAIS_HWAI_90
Here is a semicolon printed as text \;
```

When you load it into the user-defined display, it looks like this.

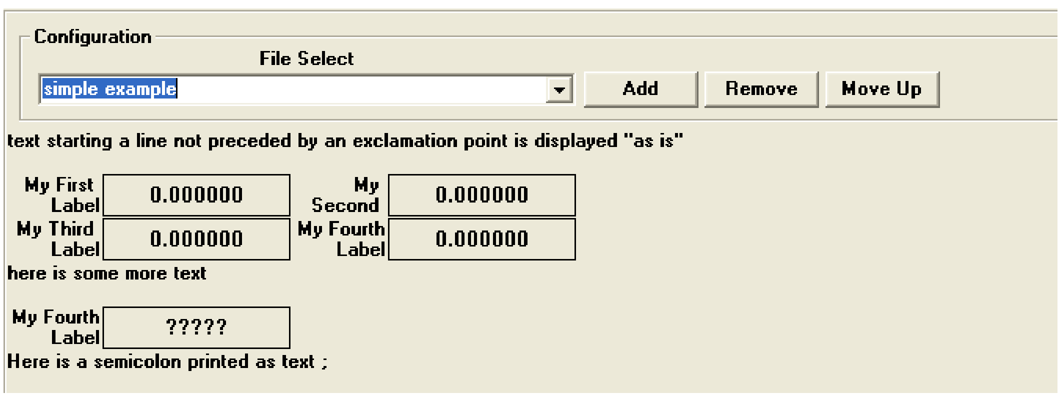


Figure 6-11. User-Defined Screen

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Appendix C – Measurement Canada Inspection

Verifying the Integrity of the Station Manager 6-Run Application

To verify the integrity of the RTU application requires the authentication code generation utility (**bootscan.exe)** and the batch program **AuditSMApplication.bat**. Both of these are provided when you purchase the RTU application.

The Station Manager 6-Run application exists in file form within the RTU as **bootfile.pro**. Within this file are three programs (POUs) that make up the controlled (certified) code. The NOA / MAL documents include the authentication codes for these three programs at the time Measurement Canada approved the application.

To verify the Station Manager 6-Run application:

1. Run the **AuditSMApplication.bat** program.
2. The program uploads **bootfile.pro** from the RTU to your PC and runs the **bootscan** utility to generate the authentication codes, and then opens the file with codes for verification.
3. The program allows you to step through the verification process.

Unlocking the Station Manager 6-Run Application

Once the RTU logs a specified number of events (alarms and or audited signal changes) the Station Manager 6-Run application locks and prevents any additional changes. To “unlock” the RTU, you must recertify it. To do this:

1. Attach a ControlWave Micro serial line to the local com port.
2. Retrieve the audit data:
    - **a.** Go to the **Historical** tab.
    - **b.** Select **Collect Local Logs**.
    - **c.** Specify the desired path to save the Audit file.
    - **d.** Select **Audit** from the list.
    - **e.** Click the **Start Collect** button and wait for it to finish.
    - **f.** Click **Convert to CSV** (this saves the collected Audit data to a CSV format in the folder specified by **Storage Folder**.)
    - **g.** This operation stores a list of corresponding signals in a file called “Modbus MRMS_4_20.xls” located in the documentation folder under the Station Manager folder in the program data section. (Use the link in the start menu short cuts to go there.)
3. Once satisfied, to allow further changes, click the **Measurement** Tab.

4. Select **Status/Configuration**.
5. Select the site name from the tree on the left (root of the tree).
6. On the first page at the bottom click **Reset Audit and Allow Additional Entries**.
7. Click **Continue** on the pop up dialogue box to confirm this is your intention.
8. The Audit and the Alarm counts should now be reset and the dialogue should close.

Identifying Legally Relevant Parameters and Verification Triggering Events (VTEs)

Legally Relevant Parameters refer to parameters which the Station Manager 6-Run application monitors for changes. When you modify any legally relevant parameter, the application stores an event entry in the audit log.

There is a special **subset** of the legally relevant parameters which you cannot modify without generating a Verification Triggering Event (VTE). Under Measurement Canada regulations, if you modify one of these parameters, the application generates a VTE and Measurement Canada must verify the device before it can be used or returned to service.

Legally Relevant Parameters that You Can Modify Without Generating a VTE

When you modify values of any of the Legally Relevant Parameters listed in *Table C-1*, the application stores an event entry in the audit log but does **not** generate a Verification Triggering Event (VTE).

Table C-1. Legally Relevant Parameters that are not Verification Triggering Events

Signal	Description
FC.STATION_1_ATMOS	Station Configuration
FC.STATION_1_ATMOS_UNITS	Station Configuration
FC.STATION_1_BASEPRES	Station Configuration
FC.STATION_1_BASEPRES_UNITS	Station Configuration
FC.STATION_1_BASETEMP	Station Configuration
FC.STATION_1_BASETEMP_UNITS	Station Configuration
FC.STATION_1_GCSTREAM	Station Configuration
FC.STATION_1_ForceFixed	Station Configuration
FC.STATION_2_ATMOS	Station Configuration
FC.STATION_2_ATMOS_UNITS	Station Configuration
FC.STATION_2_BASEPRES	Station Configuration
FC.STATION_2_BASEPRES_UNITS	Station Configuration

Signal	Description
FC.STATION_2_BASETEMP	Station Configuration
FC.STATION_2_BASETEMP_UNITS	Station Configuration
FC.STATION_2_GCSTREAM	Station Configuration
FC.STATION_2_ForceFixed	Station Configuration
FC.STATION_3_ATMOS	Station Configuration
FC.STATION_3_ATMOS_UNITS	Station Configuration
FC.STATION_3_BASEPRES	Station Configuration
FC.STATION_3_BASEPRES_UNITS	Station Configuration
FC.STATION_3_BASETEMP	Station Configuration
FC.STATION_3_BASETEMP_UNITS	Station Configuration
FC.STATION_3_GCSTREAM	Station Configuration
FC.STATION_3_ForceFixed	Station Configuration
FC.STATION_4_ATMOS	Station Configuration
FC.STATION_4_ATMOS_UNITS	Station Configuration
FC.STATION_4_BASEPRES	Station Configuration
FC.STATION_4_BASEPRES_UNITS	Station Configuration
FC.STATION_4_BASETEMP	Station Configuration
FC.STATION_4_BASETEMP_UNITS	Station Configuration
FC.STATION_4_AVGUSEWEIGHT	Station Configuration
FC.STATION_4_ForceFixed	Station Configuration
FC.STATION_5_ATMOS	Station Configuration
FC.STATION_5_ATMOS_UNITS	Station Configuration
FC.STATION_5_BASEPRES	Station Configuration
FC.STATION_5_BASEPRES_UNITS	Station Configuration
FC.STATION_5_BASETEMP	Station Configuration
FC.STATION_5_BASETEMP_UNITS	Station Configuration
FC.STATION_5_GCSTREAM	Station Configuration
FC.STATION_5_ForceFixed	Station Configuration
FC.STATION_6_ATMOS	Station Configuration
FC.STATION_6_ATMOS_UNITS	Station Configuration
FC.STATION_6_BASEPRES	Station Configuration
FC.STATION_6_BASEPRES_UNITS	Station Configuration
FC.STATION_6_BASETEMP	Station Configuration
FC.STATION_6_BASETEMP_UNITS	Station Configuration
FC.STATION_6_GCSTREAM	Station Configuration
FC.STATION_6_ForceFixed	Station Configuration
FC.RUN_1_STATION	Run *n* Station Assignment
FC.FC1.RX_PIPE_DIAM	Run *n* pipe diameter
FC.FC1.RX_PIPE_UNITS	Run *n* pipe diameter units
FC.FC1.RX_PIPE_MTRL	Run *n* pipe material selection
FC.FC1.RX_PIPE_REFTMP	Run *n* pipe material reference temperature
FC.FC1.ORIF_DIAM_INUSE	Run *n* orifice diameter setting

Signal	Description
FC.FC1.RX_DPCUT_VAL	Run *n* differential pressure cutoff
FC.FC1.RX_DPCUT_UNITS	Run *n* differential pressure cutoff units
FC.FC1.RX_ORIF_DIAM	Run *n* orifice diameter setting
FC.FC1.RX_ORIF_UNITS	Run *n* orifice diameter setting units
FC.FC1.RX_ORIF_MTRL	Run *n* orifice material selection
FC.FC1.RX_ORIF_REFTMP	Run *n* orifice material reference temperature
FC.FC1.RX_LCUTOFF	Run *n* Linearization Function enable/disable
FC.FC1.RX_AGA7_CFACTOR	Run *n* AGA7 C factor
FC.FC1.RX_AGA7_KFACTOR	Run *n* AGA7 K factor (pulses/volume or volume/pulse)
FC.FC1.RX_KFACTOR_TYPE	Run *n* AGA7 K factor select (pulses/volume or volume/pulse)
FC.FC1.RX_K	Run *n* K Factor
FC.FC1.RX_VISC	Run *n* Viscosity
FC.FC1.RX_VISC_UNITS	Run *n* Viscosity Units
FC.FC1.RX_FL	Run *n* Fl Factor
FC.FC1.RX_FM	Run *n* Fm Factor
FC.FC1.RX_CPRIME	Run *n* C' Factor
FC.FC1.RX_FEXT	Run *n* F Extension Factor
FC.FC1.RX_OrifTCoef	Run *n* Orifice Temperature Coefficient
FC.FC1.RX_PipeTCoef	Run *n* Pipe Temperature Coefficient
FC.FC1.RX_Point	Tap Construction for Run n
FC.FC1.RX_AA_CUTOFF	Run *n* AutoAdjust low frequency cutoff
FC.AA_1.KM	Run *n* AutoAdjust K factor Main Rotor
FC.AA_1.KS	Run *n* AutoAdjust K factor Sense Rotor
FC.AA_1.KMO	Run *n* AutoAdjust K factor Main Rotor override
FC.RUN_1_AA_MAXACF	Run *n* AutoAdjust maximum actual volume
FC.AA_1.ABAR	Run *n* AutoAdjust a bar
FC.AA_1.BTSF	Run *n* Autoadjust BTSF
FC.AA_1.INCR	Run *n* Autoadjust flow total scaling factor
FC.FC1.RX_SFREQ_DB	Run *n* cutoff value in seconds for low frequency PD meters
FC.FC1.RX_ATMOS	Run *n* atmospheric (barometric) pressure (from FC.STATION_x_ATMOS)
FC.FC1.RX_AP_UNITS	Run *n* atmospheric pressure units (from

Signal	Description
	FC.STATION_x_ATMOS_UNITS)
FC.FC1.RX_PRESBASE	Run *n* base pressure (from FC.STATION_x_BASEPRES)
FC.FC1.RX_PB_UNITS	Run *n* base pressure units (from FC.STATION_x_BASEPRES_UNITS)
FC.FC1.RX_TEMPBASE	Run *n* base temperature (from FC.STATION_x_BASETEMP)
FC.FC1.RX_TB_UNITS	Run *n* base temperature units (from FC.STATION_x_BASETEMP_UNITS)
FC.FC1.RX_ForceFixed	Force Fixed GC Values for Run *n* (from FC.STATION_x_ForceFixed)
FC.FC1.RX_C	Run *n* C Factor
FC.FC1.RX_Fa	Run *n* Fa Factor
FC.FC1.RX_Y	Run *n* Y Factor
FC.FC1.RX_KFactor_Units	Run *n* AGA7 K factor (pulses/volume or volume/pulse) units
FC.FC1.RX_Maint_Fixed	Run *n* Use Fixed Maintenance Values
FC.FC1.UFM_PFail_Enable	Run *n* Pulse Failure Flow Calc Enable
FC.FC1.RX_Cor_CalibPress	Run *n* Coriolis Calibration Pressure
FC.FC1.FCalc.Air_Density_Cnst	Run *n* Air Density Constant
FC.FC1.FCalc.Coriolis_Press_CorrFactor	Run *n* Coriolis Pressure Correction Factor
FC.RUN_2_STATION	Run *n* Station Assignment
FC.FC2.RX_PIPE_DIAM	Run *n* pipe diameter
FC.FC2.RX_PIPE_UNITS	Run *n* pipe diameter units
FC.FC2.RX_PIPE_MTRL	Run *n* pipe material selection
FC.FC2.RX_PIPE_REFTMP	Run n pipe material reference temperature
FC.FC2.ORIF_DIAM_INUSE	Run *n* orifice diameter setting
FC.FC2.RX_DPCUT_VAL	Run *n* differential pressure cutoff
FC.FC2.RX_DPCUT_UNITS	Run *n* differential pressure cutoff units
IO_1.R2_DP_ZERO	Run *n* Differential Pressure Zero
FC.FC2.RX_ORIF_DIAM	Run *n* orifice diameter setting
FC.FC2.RX_ORIF_UNITS	Run *n* orifice diameter setting units
FC.FC2.RX_ORIF_MTRL	Run *n* orifice material selection
FC.FC2.RX_ORIF_REFTMP	Run *n* orifice material reference temperature
FC.FC2.RX_LCUTOFF	Run *n* Linearization Function

Signal	Description
	enable/disable
FC.FC2.RX_AGA7_CFACTOR	Run *n* AGA7 C factor
FC.FC2.RX_AGA7_KFACTOR	Run *n* AGA7 K factor (pulses/volume or volume/pulse)
FC.FC2.RX_KFACTOR_TYPE	Run *n* AGA7 K factor select (pulses/volume or volume/pulse)
FC.FC2.RX_K	Run *n* K Factor
FC.FC2.RX_VISC	Run *n* Viscosity
FC.FC2.RX_VISC_UNITS	Run *n* Viscosity Units
FC.FC2.RX_FL	Run *n* Fl Factor
FC.FC2.RX_FM	Run *n* Fm Factor
FC.FC2.RX_CPRIME	Run *n* C' Factor
FC.FC2.RX_FEXT	Run *n* F Extension Factor
FC.FC2.RX_OrifTCoef	Run *n* Orifice Temperature Coefficient
FC.FC2.RX_PipeTCoef	Run *n* Pipe Temperature Coefficient
FC.FC2.RX_Point	Tap Construction for Run *n*
FC.FC2.RX_AA_CUTOFF	Run *n* AutoAdjust low frequency cutoff
FC.AA_2.KM	Run *n* AutoAdjust K factor Main Rotor
FC.AA_2.KS	Run *n* AutoAdjust K factor Sense Rotor
FC.AA_2.KMO	Run *n* AutoAdjust K factor Main Rotor override
FC.RUN_2_AA_MAXACF	Run *n* AutoAdjust maximum actual volume
FC.AA_2.ABAR	Run *n* AutoAdjust a bar
FC.AA_2.BTSF	Run *n* Autoadjust BTSF
FC.AA_2.INCR	Run *n* Autoadjust flow total scaling factor
FC.FC2.RX_SFREQ_DB	Run *n* cutoff value in seconds for low frequency PD meters
FC.FC2.RX_ATMOS	Run *n* atmospheric (barometric) pressure (from FC.STATION_x_ATMOS)
FC.FC2.RX_AP_UNITS	Run *n* atmospheric pressure units (from FC.STATION_x_ATMOS_UNITS)
FC.FC2.RX_PRESBASE	Run *n* base pressure (from FC.STATION_x_BASEPRES)
FC.FC2.RX_PB_UNITS	Run *n* base pressure units (from FC.STATION_x_BASEPRES_UNITS)
FC.FC2.RX_TEMPBASE	Run *n* base temperature (from FC.STATION_x_BASETEMP)
FC.FC2.RX_TB_UNITS	Run *n* base temperature units

Signal	Description
	(from FC.STATION_x_BASETEMP_UNITS)
FC.FC2.RX_ForceFixed	Force Fixed GC Values for Run *n* (from FC.STATION_x_ForceFixed)
FC.FC2.RX_C	Run *n* C Factor
FC.FC2.RX_Fa	Run *n* Fa Factor
FC.FC2.RX_Y	Run *n* Y Factor
FC.FC2.RX_KFactor_Units	Run *n* AGA7 K factor (pulses/volume or volume/pulse) units
FC.FC2.RX_Maint_Fixed	Run *n* Use Fixed Maintenance Values
FC.FC2.UFM_PFail_Enable	Run *n* Pulse Failure Flow Calc Enable
FC.FC2.RX_Cor_CalibPress	Run *n* Coriolis Calibration Pressure
FC.FC2.FCalc.Air_Density_Cnst	Run *n* Air Density Constant
FC.FC2.FCalc.Coriolis_Press_CorrFactor	Run *n* Coriolis Pressure Correction Factor
FC.RUN_3_STATION	Run *n* Station Assignment
FC.FC3.RX_PIPE_DIAM	Run *n* pipe diameter
FC.FC3.RX_PIPE_UNITS	*Run n* pipe diameter units
FC.FC3.RX_PIPE_MTRL	Run *n* pipe material selection
FC.FC3.RX_PIPE_REFTMP	Run *n* pipe material reference temperature
FC.FC3.ORIF_DIAM_INUSE	Run *n* orifice diameter setting
FC.FC3.RX_DPCUT_VAL	Run *n* differential pressure cutoff
FC.FC3.RX_DPCUT_UNITS	Run *n* differential pressure cutoff units
IO_1.R3_DP_ZERO	Run *n* Differential Pressure Zero
FC.FC3.RX_ORIF_DIAM	Run *n* orifice diameter setting
FC.FC3.RX_ORIF_UNITS	Run *n* orifice diameter setting units
FC.FC3.RX_ORIF_MTRL	Run *n* orifice material selection
FC.FC3.RX_ORIF_REFTMP	Run *n* orifice material reference temperature
FC.FC3.RX_LCUTOFF	Run *n* Linearization Function enable/disable
FC.FC3.RX_AGA7_CFACTOR	Run *n* AGA7 C factor
FC.FC3.RX_AGA7_KFACTOR	Run *n* AGA7 K factor (pulses/volume or volume/pulse)
FC.FC3.RX_KFACTOR_TYPE	Run *n* AGA7 K factor select (pulses/volume or volume/pulse)
FC.FC3.RX_K	Run *n* K Factor
FC.FC3.RX_VISC	Run *n* Viscosity

Signal	Description
FC.FC3.RX_VISC_UNITS	Run *n* Viscosity Units
FC.FC3.RX_FL	Run *n* Fl Factor
FC.FC3.RX_FM	Run *n* Fm Factor
FC.FC3.RX_CPRIME	Run *n* C' Factor
FC.FC3.RX_FEXT	Run *n* F Extension Factor
FC.FC3.RX_OrifTCoef	Run *n* Orifice Temperature Coefficient
FC.FC3.RX_PipeTCoef	Run *n* Pipe Temperature Coefficient
FC.FC3.RX_Point	Tap Construction for Run n
FC.FC3.RX_AA_CUTOFF	Run *n* AutoAdjust low frequency cutoff
FC.AA_3.KM	Run *n* AutoAdjust K factor Main Rotor
FC.AA_3.KS	Run *n* AutoAdjust K factor Sense Rotor
FC.AA_3.KMO	Run *n* AutoAdjust K factor Main Rotor override
FC.RUN_3_AA_MAXACF	Run *n* AutoAdjust maximum actual volume
FC.AA_3.ABAR	Run *n* AutoAdjust a bar
FC.AA_2.BTSF	Run *n* Autoadjust BTSF
FC.AA_3.INCR	Run *n* Autoadjust flow total scaling factor
FC.FC3.RX_SFREQ_DB	Run *n* cutoff value in seconds for low frequency PD meters
FC.FC3.RX_ATMOS	Run *n* atmospheric (barometric) pressure (from FC.STATION_x_ATMOS)
FC.FC3.RX_AP_UNITS	Run *n* atmospheric pressure units (from FC.STATION_x_ATMOS_UNITS)
FC.FC3.RX_PRESBASE	Run *n* base pressure (from FC.STATION_x_BASEPRES)
FC.FC3.RX_PB_UNITS	Run *n* base pressure units (from FC.STATION_x_BASEPRES_UNITS)
FC.FC3.RX_TEMPBASE	Run *n* base temperature (from FC.STATION_x_BASETEMP)
FC.FC3.RX_TB_UNITS	Run *n* base temperature units (from FC.STATION_x_BASETEMP_UNITS)
FC.FC3.RX_ForceFixed	Force Fixed GC Values for Run *n* (from FC.STATION_x_ForceFixed)
FC.FC3.RX_C	Run *n* C Factor
FC.FC3.RX_Fa	Run *n* Fa Factor
FC.FC3.RX_Y	Run *n* Y Factor
FC.FC3.RX_KFactor_Units	Run *n* AGA7 K factor

Signal	**Description**
	(pulses/volume or volume/pulse) units
FC.FC3.RX_Maint_Fixed	Run *n* Use Fixed Maintenance Values
FC.FC3.UFM_PFail_Enable	Run *n* Pulse Failure Flow Calc Enable
FC.FC3.RX_Cor_CalibPress	Run *n* Coriolis Calibration Pressure
FC.FC3.FCalc.Air_Density_Cnst	Run *n* Air Density Constant
FC.FC3.FCalc.Coriolis_Press_CorrFactor	Run *n* Coriolis Pressure Correction Factor
FC.RUN_4_STATION	Run *n* Station Assignment
FC.FC4.RX_PIPE_DIAM	Run *n* pipe diameter
FC.FC4.RX_PIPE_UNITS	Run *n* pipe diameter units
FC.FC4.RX_PIPE_MTRL	Run *n* pipe material selection
FC.FC4.RX_PIPE_REFTMP	Run *n* pipe material reference temperature
FC.FC4.ORIF_DIAM_INUSE	Run *n* orifice diameter setting
FC.FC4.RX_DPCUT_VAL	Run *n* differential pressure cutoff
FC.FC4.RX_DPCUT_UNITS	Run *n* differential pressure cutoff units
IO_1.R4_DP_ZERO	Run *n* Differential Pressure Zero
FC.FC4.RX_ORIF_DIAM	Run *n* orifice diameter setting
FC.FC4.RX_ORIF_UNITS	Run *n* orifice diameter setting units
FC.FC4.RX_ORIF_MTRL	Run *n* orifice material selection
FC.FC4.RX_ORIF_REFTMP	Run *n* orifice material reference temperature
FC.FC4.RX_LCUTOFF	Run *n* Linearization Function enable/disable
FC.FC4.RX_AGA7_CFACTOR	Run *n* AGA7 C factor
FC.FC4.RX_AGA7_KFACTOR	Run *n* AGA7 K factor (pulses/volume or volume/pulse)
FC.FC4.RX_KFACTOR_TYPE	Run *n* AGA7 K factor select (pulses/volume or volume/pulse)
FC.FC4.RX_K	Run *n* K Factor
FC.FC4.RX_VISC	Run *n* Viscosity
FC.FC4.RX_VISC_UNITS	Run *n* Viscosity Units
FC.FC4.RX_FL	Run *n* Fl Factor
FC.FC4.RX_FM	Run *n* Fm Factor
FC.FC4.RX_CPRIME	Run *n* C' Factor
FC.FC4.RX_FEXT	Run *n* F Extension Factor
FC.FC4.RX_OrifTCoef	Run *n* Orifice Temperature Coefficient
FC.FC4.RX_PipeTCoef	Run *n* Pipe Temperature Coefficient

Signal	Description
FC.FC4.RX_Point	Tap Construction for Run n
FC.FC4.RX_AA_CUTOFF	Run *n* AutoAdjust low frequency cutoff
FC.AA_4.KM	Run *n* AutoAdjust K factor Main Rotor
FC.AA_4.KS	Run *n* AutoAdjust K factor Sense Rotor
FC.AA_4.KMO	Run *n* AutoAdjust K factor Main Rotor override
FC.RUN_4_AA_MAXACF	Run *n* AutoAdjust maximum actual volume
FC.AA_4.ABAR	Run *n* AutoAdjust a bar
FC.AA_4.BTSF	Run *n* Autoadjust BTSF
FC.AA_4.INCR	Run *n* Autoadjust flow total scaling factor
FC.FC4.RX_SFREQ_DB	Run *n* cutoff value in seconds for low frequency PD meters
FC.FC4.RX_ATMOS	Run *n* atmospheric (barometric) pressure (from FC.STATION_x_ATMOS)
FC.FC4.RX_AP_UNITS	Run *n* atmospheric pressure units (from FC.STATION_x_ATMOS_UNITS)
FC.FC4.RX_PRESBASE	Run *n* base pressure (from FC.STATION_x_BASEPRES)
FC.FC4.RX_PB_UNITS	Run *n* base pressure units (from FC.STATION_x_BASEPRES_UNITS)
FC.FC4.RX_TEMPBASE	Run *n* base temperature (from FC.STATION_x_BASETEMP)
FC.FC4.RX_TB_UNITS	Run *n* base temperature units (from FC.STATION_x_BASETEMP_UNITS)
FC.FC4.RX_ForceFixed	Force Fixed GC Values for Run *n* (from FC.STATION_x_ForceFixed)
FC.FC4.RX_C	Run *n* C Factor
FC.FC4.RX_Fa	Run *n* Fa Factor
FC.FC4.RX_Y	Run *n* Y Factor
FC.FC4.RX_KFactor_Units	Run *n* AGA7 K factor (pulses/volume or volume/pulse) units
FC.FC4.RX_Maint_Fixed	Run *n* Use Fixed Maintenance Values
FC.FC4.UFM_PFail_Enable	Run *n* Pulse Failure Flow Calc Enable
FC.FC4.RX_Cor_CalibPress	Run *n* Coriolis Calibration Pressure
FC.FC4.FCalc.Air_Density_Cnst	Run *n* Air Density Constant
FC.FC4.FCalc.Coriolis_Press_CorrFactor	Run *n* Coriolis Pressure Correction Factor

Signal	Description
FC.RUN_5_STATION	Run *n* Station Assignment
FC.FC5.RX_PIPE_DIAM	Run *n* pipe diameter
FC.FC5.RX_PIPE_UNITS	Run *n* pipe diameter units
FC.FC5.RX_PIPE_MTRL	Run *n* pipe material selection
FC.FC5.RX_PIPE_REFTMP	Run *n* pipe material reference temperature
FC.FC5.ORIF_DIAM_INUSE	Run *n* orifice diameter setting
FC.FC5.RX_DPCUT_VAL	Run *n* differential pressure cutoff
FC.FC5.RX_DPCUT_UNITS	Run *n* differential pressure cutoff units
IO_1.R5_DP_ZERO	Run *n* Differential Pressure Zero
FC.FC5.RX_ORIF_DIAM	Run *n* orifice diameter setting
FC.FC5.RX_ORIF_UNITS	Run *n* orifice diameter setting units
FC.FC5.RX_ORIF_MTRL	Run *n* orifice material selection
FC.FC5.RX_ORIF_REFTMP	Run *n* orifice material reference temperature
FC.FC5.RX_LCUTOFF	Run *n* Linearization Function enable/disable
FC.FC5.RX_AGA7_CFACTOR	Run *n* AGA7 C factor
FC.FC5.RX_AGA7_KFACTOR	Run *n* AGA7 K factor (pulses/volume or volume/pulse)
FC.FC5.RX_KFACTOR_TYPE	Run *n* AGA7 K factor select (pulses/volume or volume/pulse)
FC.FC5.RX_K	Run *n* K Factor
FC.FC5.RX_VISC	Run *n* Viscosity
FC.FC5.RX_VISC_UNITS	Run *n* Viscosity Units
FC.FC5.RX_FL	Run *n* Fl Factor
FC.FC5.RX_FM	Run *n* Fm Factor
FC.FC5.RX_CPRIME	Run *n* C' Factor
FC.FC5.RX_FEXT	Run *n* F Extension Factor
FC.FC5.RX_OrifTCoef	Run *n* Orifice Temperature Coefficient
FC.FC5.RX_PipeTCoef	Run *n* Pipe Temperature Coefficient
FC.FC5.RX_Point	Tap Construction for Run *n*
FC.FC5.RX_AA_CUTOFF	Run *n* AutoAdjust low frequency cutoff
FC.AA_5.KM	Run *n* AutoAdjust K factor Main Rotor
FC.AA_5.KS	Run *n* AutoAdjust K factor Sense Rotor
FC.AA_5.KMO	Run *n* AutoAdjust K factor Main Rotor override
FC.RUN_5_AA_MAXACF	Run *n* AutoAdjust maximum actual volume

Signal	Description
FC.AA_5.ABAR	Run *n* AutoAdjust a bar
FC.AA_5.BTSF	Run *n* Autoadjust BTSF
FC.AA_5.INCR	Run *n* Autoadjust flow total scaling factor
FC.FC5.RX_SFREQ_DB	Run *n* cutoff value in seconds for low frequency PD meters
FC.FC5.RX_ATMOS	Run *n* atmospheric (barometric) pressure (from FC.STATION_x_ATMOS)
FC.FC5.RX_AP_UNITS	Run *n* atmospheric pressure units (from FC.STATION_x_ATMOS_UNITS)
FC.FC5.RX_PRESBASE	Run *n* base pressure (from FC.STATION_x_BASEPRES)
FC.FC5.RX_PB_UNITS	Run *n* base pressure units (from FC.STATION_x_BASEPRES_UNITS)
FC.FC5.RX_TEMPBASE	Run *n* base temperature (from FC.STATION_x_BASETEMP)
FC.FC5.RX_TB_UNITS	Run *n* base temperature units (from FC.STATION_x_BASETEMP_UNITS)
FC.FC5.RX_ForceFixed	Force Fixed GC Values for Run *n* (from FC.STATION_x_ForceFixed)
FC.FC5.RX_C	Run *n* C Factor
FC.FC5.RX_Fa	Run *n* Fa Factor
FC.FC5.RX_Y	Run *n* Y Factor
FC.FC5.RX_KFactor_Units	Run *n* AGA7 K factor (pulses/volume or volume/pulse) units
FC.FC5.RX_Maint_Fixed	Run *n* Use Fixed Maintenance Values
FC.FC5.UFM_PFail_Enable	Run *n* Pulse Failure Flow Calc Enable
FC.FC5.RX_Cor_CalibPress	Run *n* Coriolis Calibration Pressure
FC.FC5.FCalc.Air_Density_Cnst	Run *n* Air Density Constant
FC.FC5.FCalc.Coriolis_Press_CorrFactor	Run *n* Coriolis Pressure Correction Factor
FC.RUN_6_STATION	Run *n* Station Assignment
FC.FC6.RX_PIPE_DIAM	Run *n* pipe diameter
FC.FC6.RX_PIPE_UNITS	Run *n* pipe diameter units
FC.FC6.RX_PIPE_MTRL	Run *n* pipe material selection
FC.FC6.RX_PIPE_REFTMP	Run *n* pipe material reference temperature
FC.FC6.ORIF_DIAM_INUSE	Run *n* orifice diameter setting
FC.FC6.RX_DPCUT_VAL	Run *n* differential pressure cutoff

Signal	Description
FC.FC6.RX_DPCUT_UNITS	Run *n* differential pressure cutoff units
IO_1.R6_DP_ZERO	Run *n* Differential Pressure Zero
FC.FC6.RX_ORIF_DIAM	Run *n* orifice diameter setting
FC.FC6.RX_ORIF_UNITS	Run *n* orifice diameter setting units
FC.FC6.RX_ORIF_MTRL	Run *n* orifice material selection
FC.FC6.RX_ORIF_REFTMP	Run *n* orifice material reference temperature
FC.FC6.RX_LCUTOFF	Run *n* Linearization Function enable/disable
FC.FC6.RX_AGA7_CFACTOR	Run *n* AGA7 C factor
FC.FC6.RX_AGA7_KFACTOR	Run *n* AGA7 K factor (pulses/volume or volume/pulse)
FC.FC6.RX_KFACTOR_TYPE	Run *n* AGA7 K factor select (pulses/volume or volume/pulse)
FC.FC6.RX_K	Run *n* K Factor
FC.FC6.RX_VISC	Run *n* Viscosity
FC.FC6.RX_VISC_UNITS	Run *n* Viscosity Units
FC.FC6.RX_FL	Run *n* Fl Factor
FC.FC6.RX_FM	Run *n* Fm Factor
FC.FC6.RX_CPRIME	Run *n* C' Factor
FC.FC6.RX_FEXT	Run *n* F Extension Factor
FC.FC6.RX_OrifTCoef	Run *n* Orifice Temperature Coefficient
FC.FC6.RX_PipeTCoef	Run *n* Pipe Temperature Coefficient
FC.FC6.RX_Point	Tap Construction for Run n
FC.FC6.RX_AA_CUTOFF	Run *n* AutoAdjust low frequency cutoff
FC.AA_6.KM	Run *n* AutoAdjust K factor Main Rotor
FC.AA_6.KS	Run *n* AutoAdjust K factor Sense Rotor
FC.AA_6.KMO	Run *n* AutoAdjust K factor Main Rotor override
FC.RUN_6_AA_MAXACF	Run *n* AutoAdjust maximum actual volume
FC.AA_6.ABAR	Run *n* AutoAdjust a bar
FC.AA_6.BTSF	Run *n* Autoadjust BTSF
FC.AA_6.INCR	Run *n* Autoadjust flow total scaling factor
FC.FC6.RX_SFREQ_DB	Run *n* cutoff value in seconds for low frequency PD meters
FC.FC6.RX_ATMOS	Run *n* atmospheric (barometric) pressure (from FC.STATION_x_ATMOS)
FC.FC6.RX_AP_UNITS	Run *n* atmospheric pressure units (from

Signal	**Description**
	FC.STATION_x_ATMOS_UNITS)
FC.FC6.RX_PRESBASE	Run *n* base pressure (from FC.STATION_x_BASEPRES)
FC.FC6.RX_PB_UNITS	Run *n* base pressure units (from FC.STATION_x_BASEPRES_UNITS)
FC.FC6.RX_TEMPBASE	Run *n* base temperature (from FC.STATION_x_BASETEMP)
FC.FC6.RX_TB_UNITS	Run *n* base temperature units (from FC.STATION_x_BASETEMP_UNITS)
FC.FC6.RX_ForceFixed	Force Fixed GC Values for Run *n* (from FC.STATION_x_ForceFixed)
FC.FC6.RX_C	Run *n* C Factor
FC.FC6.RX_Fa	Run *n* Fa Factor
FC.FC6.RX_Y	Run *n* Y Factor
FC.FC6.RX_KFactor_Units	Run *n* AGA7 K factor (pulses/volume or volume/pulse) units
FC.FC6.RX_Maint_Fixed	Run *n* Use Fixed Maintenance Values
FC.FC6.UFM_PFail_Enable	Run *n* Pulse Failure Flow Calc Enable
FC.FC6.RX_Cor_CalibPress	Run *n* Coriolis Calibration Pressure
FC.FC6.FCalc.Air_Density_Cnst	Run *n* Air Density Constant
FC.FC6.FCalc.Coriolis_Press_CorrFactor	Run *n* Coriolis Pressure Correction Factor
FC.FC1.RX_FLOW_RATE_UNITS	Run Configuration
FC.FC1.RX_ENERGY_RATE_UNITS	Run Configuration
FC.FC1.RX_ENERGY_RATE_TIME	Run Configuration
FC.FC1.RX_UCFLOW_RATE_UNITS	Run Configuration
FC.FC1.RX_MASS_RATE_Units	Run Configuration
FC.FC1.RX_MASS_RATE_Time	Run Configuration
FC.FC2.RX_FLOW_RATE_UNITS	Run Configuration
FC.FC2.RX_ENERGY_RATE_UNITS	Run Configuration
FC.FC2.RX_ENERGY_RATE_TIME	Run Configuration
FC.FC2.RX_UCFLOW_RATE_UNITS	Run Configuration
FC.FC2.RX_MASS_RATE_Units	Run Configuration
FC.FC2.RX_MASS_RATE_Time	Run Configuration
FC.FC3.RX_FLOW_RATE_UNITS	Run Configuration
FC.FC3.RX_ENERGY_RATE_UNITS	Run Configuration
FC.FC3.RX_ENERGY_RATE_TIME	Run Configuration
FC.FC3.RX_UCFLOW_RATE_UNITS	Run Configuration
FC.FC3.RX_MASS_RATE_Units	Run Configuration

Signal	Description
FC.FC3.RX_MASS_RATE_Time	Run Configuration
FC.FC4.RX_FLOW_RATE_UNITS	Run Configuration
FC.FC4.RX_ENERGY_RATE_UNITS	Run Configuration
FC.FC4.RX_ENERGY_RATE_TIME	Run Configuration
FC.FC4.RX_UCFLOW_RATE_UNITS	Run Configuration
FC.FC4.RX_MASS_RATE_Units	Run Configuration
FC.FC4.RX_MASS_RATE_Time	Run Configuration
FC.FC5.RX_FLOW_RATE_UNITS	Run Configuration
FC.FC5.RX_ENERGY_RATE_UNITS	Run Configuration
FC.FC5.RX_ENERGY_RATE_TIME	Run Configuration
FC.FC5.RX_UCFLOW_RATE_UNITS	Run Configuration
FC.FC5.RX_MASS_RATE_Units	Run Configuration
FC.FC5.RX_MASS_RATE_Time	Run Configuration
FC.FC6.RX_FLOW_RATE_UNITS	Run Configuration
FC.FC6.RX_ENERGY_RATE_UNITS	Run Configuration
FC.FC6.RX_ENERGY_RATE_TIME	Run Configuration
FC.FC6.RX_UCFLOW_RATE_UNITS	Run Configuration
FC.FC6.RX_MASS_RATE_Units	Run Configuration
FC.FC6.RX_MASS_RATE_Time	Run Configuration
FC.ST1_Flow_Rate_Units	Station Configuration
FC.ST1_Energy_Rate_Units	Station Configuration
FC.ST1_Energy_Rate_Time	Station Configuration
FC.ST1_UCFlow_Rate_Units	Station Configuration
FC.ST2_Flow_Rate_Units	Station Configuration
FC.ST2_Energy_Rate_Units	Station Configuration
FC.ST2_Energy_Rate_Time	Station Configuration
FC.ST2_UCFlow_Rate_Units	Station Configuration
FC.ST3_Flow_Rate_Units	Station Configuration
FC.ST3_Energy_Rate_Units	Station Configuration
FC.ST3_Energy_Rate_Time	Station Configuration
FC.ST3_UCFlow_Rate_Units	Station Configuration
FC.ST4_Flow_Rate_Units	Station Configuration
FC.ST4_Energy_Rate_Units	Station Configuration
FC.ST4_Energy_Rate_Time	Station Configuration
FC.ST4_UCFlow_Rate_Units	Station Configuration
FC.ST5_Flow_Rate_Units	Station Configuration
FC.ST5_Energy_Rate_Units	Station Configuration
FC.ST5_Energy_Rate_Time	Station Configuration
FC.ST5_UCFlow_Rate_Units	Station Configuration
FC.ST6_Flow_Rate_Units	Station Configuration
FC.ST6_Energy_Rate_Units	Station Configuration
FC.ST6_Energy_Rate_Time	Station Configuration

Signal	Description
FC.ST6_UCFlow_Rate_Units	Station Configuration
PG_GC.GC_1.GC_1.FIXED_BTU	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.FIXED_SG	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.FIXED_N2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.FIXED_CO2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.FIXED_CH4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.FIXED_C2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.FIXED_C3	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.FIXED_IC4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.FIXED_NC4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.FIXED_IC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.FIXED_NC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.FIXED_NC6	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.FIXED_NC7	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.FIXED_NC8	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.FIXED_NC9	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.FIXED_NC10	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.FIXED_H2O	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.FIXED_H2S	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.FIXED_H2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.FIXED_CO	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.FIXED_O2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.FIXED_HE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.FIXED_AR	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.FIXED_C6PLUS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.FIXED_C9PLUS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.FIXED_BTUSAT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.FIXED_BTU	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_2.FIXED_SG	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.FIXED_N2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.FIXED_CO2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.FIXED_CH4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.FIXED_C2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.FIXED_C3	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.FIXED_IC4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.FIXED_NC4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.FIXED_IC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.FIXED_NC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.FIXED_NC6	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.FIXED_NC7	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.FIXED_NC8	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.FIXED_NC9	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.FIXED_NC10	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.FIXED_H2O	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.FIXED_H2S	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.FIXED_H2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.FIXED_CO	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.FIXED_O2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.FIXED_HE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.FIXED_AR	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.FIXED_C6PLUS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.FIXED_C9PLUS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.FIXED_BTUSAT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.FIXED_BTU	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.FIXED_SG	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.FIXED_N2	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_3.FIXED_CO2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.FIXED_CH4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.FIXED_C2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.FIXED_C3	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.FIXED_IC4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.FIXED_NC4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.FIXED_IC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.FIXED_NC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.FIXED_NC6	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.FIXED_NC7	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.FIXED_NC8	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.FIXED_NC9	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.FIXED_NC10	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.FIXED_H2O	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.FIXED_H2S	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.FIXED_H2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.FIXED_CO	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.FIXED_O2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.FIXED_HE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.FIXED_AR	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.FIXED_C6PLUS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.FIXED_C9PLUS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.FIXED_BTUSAT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.FIXED_BTU	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.FIXED_SG	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.FIXED_N2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.FIXED_CO2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.FIXED_CH4	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_4.FIXED_C2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.FIXED_C3	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.FIXED_IC4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.FIXED_NC4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.FIXED_IC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.FIXED_NC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.FIXED_NC6	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.FIXED_NC7	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.FIXED_NC8	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.FIXED_NC9	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.FIXED_NC10	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.FIXED_H2O	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.FIXED_H2S	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.FIXED_H2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.FIXED_CO	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.FIXED_O2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.FIXED_HE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.FIXED_AR	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.FIXED_C6PLUS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.FIXED_C9PLUS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.FIXED_BTUSAT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.FIXED_BTU	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.FIXED_SG	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.FIXED_N2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.FIXED_CO2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.FIXED_CH4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.FIXED_C2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.FIXED_C3	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_5.FIXED_IC4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.FIXED_NC4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.FIXED_IC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.FIXED_NC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.FIXED_NC6	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.FIXED_NC7	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.FIXED_NC8	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.FIXED_NC9	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.FIXED_NC10	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.FIXED_H2O	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.FIXED_H2S	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.FIXED_H2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.FIXED_CO	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.FIXED_O2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.FIXED_HE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.FIXED_AR	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.FIXED_C6PLUS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.FIXED_C9PLUS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.FIXED_BTUSAT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.FIXED_BTU	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.FIXED_SG	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.FIXED_N2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.FIXED_CO2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.FIXED_CH4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.FIXED_C2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.FIXED_C3	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.FIXED_IC4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.FIXED_NC4	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_6.FIXED_IC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.FIXED_NC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.FIXED_NC6	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.FIXED_NC7	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.FIXED_NC8	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.FIXED_NC9	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.FIXED_NC10	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.FIXED_H2O	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.FIXED_H2S	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.FIXED_H2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.FIXED_CO	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.FIXED_O2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.FIXED_HE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.FIXED_AR	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.FIXED_C6PLUS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.FIXED_C9PLUS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.FIXED_BTUSAT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMED_AR	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMED_BTU	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMED_BTUSAT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMED_C2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMED_C3	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMED_C6PLUS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMED_C9PLUS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMED_CH4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMED_CO	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMED_CO2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMED_H2	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_1.TIMED_H2O	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMED_H2S	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMED_HE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMED_IC4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMED_IC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMED_N2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMED_NC10	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMED_NC4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMED_NC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMED_NC6	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMED_NC7	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMED_NC8	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMED_NC9	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMED_NEOC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMED_O2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMED_SG	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMED_AR	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMED_BTU	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMED_BTUSAT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMED_C2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMED_C3	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMED_C6PLUS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMED_C9PLUS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMED_CH4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMED_CO	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMED_CO2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMED_H2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMED_H2O	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_2.TIMED_H2S	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMED_HE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMED_IC4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMED_IC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMED_N2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMED_NC10	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMED_NC4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMED_NC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMED_NC6	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMED_NC7	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMED_NC8	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMED_NC9	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMED_NEOC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMED_O2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMED_SG	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMED_AR	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMED_BTU	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMED_BTUSAT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMED_C2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMED_C3	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMED_C6PLUS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMED_C9PLUS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMED_CH4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMED_CO	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMED_CO2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMED_H2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMED_H2O	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMED_H2S	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_3.TIMED_HE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMED_IC4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMED_IC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMED_N2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMED_NC10	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMED_NC4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMED_NC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMED_NC6	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMED_NC7	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMED_NC8	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMED_NC9	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMED_NEOC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMED_O2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMED_SG	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMED_AR	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMED_BTU	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMED_BTUSAT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMED_C2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMED_C3	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMED_C6PLUS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMED_C9PLUS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMED_CH4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMED_CO	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMED_CO2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMED_H2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMED_H2O	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMED_H2S	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMED_HE	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_4.TIMED_IC4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMED_IC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMED_N2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMED_NC10	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMED_NC4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMED_NC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMED_NC6	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMED_NC7	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMED_NC8	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMED_NC9	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMED_NEOC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMED_O2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMED_SG	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMED_AR	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMED_BTU	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMED_BTUSAT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMED_C2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMED_C3	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMED_C6PLUS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMED_C9PLUS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMED_CH4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMED_CO	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMED_CO2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMED_H2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMED_H2O	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMED_H2S	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMED_HE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMED_IC4	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_5.TIMED_IC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMED_N2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMED_NC10	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMED_NC4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMED_NC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMED_NC6	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMED_NC7	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMED_NC8	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMED_NC9	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMED_NEOC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMED_O2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMED_SG	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMED_AR	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMED_BTU	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMED_BTUSAT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMED_C2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMED_C3	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMED_C6PLUS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMED_C9PLUS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMED_CH4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMED_CO	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMED_CO2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMED_H2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMED_H2O	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMED_H2S	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMED_HE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMED_IC4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMED_IC5	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_6.TIMED_N2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMED_NC10	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMED_NC4	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMED_NC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMED_NC6	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMED_NC7	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMED_NC8	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMED_NC9	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMED_NEOC5	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMED_O2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMED_SG	Gas Chromatograph Configuration
PG_GC.GC_1.USER1CODE_AR	Gas Chromatograph Configuration
PG_GC.GC_1.USER1CODE_C2	Gas Chromatograph Configuration
PG_GC.GC_1.USER1CODE_C3	Gas Chromatograph Configuration
PG_GC.GC_1.USER1CODE_C6PLUS	Gas Chromatograph Configuration
PG_GC.GC_1.USER1CODE_C9PLUS	Gas Chromatograph Configuration
PG_GC.GC_1.USER1CODE_CH4	Gas Chromatograph Configuration
PG_GC.GC_1.USER1CODE_CO	Gas Chromatograph Configuration
PG_GC.GC_1.USER1CODE_CO2	Gas Chromatograph Configuration
PG_GC.GC_1.USER1CODE_H2	Gas Chromatograph Configuration
PG_GC.GC_1.USER1CODE_H2O	Gas Chromatograph Configuration
PG_GC.GC_1.USER1CODE_H2S	Gas Chromatograph Configuration
PG_GC.GC_1.USER1CODE_HE	Gas Chromatograph Configuration
PG_GC.GC_1.USER1CODE_IC4	Gas Chromatograph Configuration
PG_GC.GC_1.USER1CODE_IC5	Gas Chromatograph Configuration
PG_GC.GC_1.USER1CODE_N2	Gas Chromatograph Configuration
PG_GC.GC_1.USER1CODE_NC10	Gas Chromatograph Configuration
PG_GC.GC_1.USER1CODE_NC4	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.USER1CODE_NC5	Gas Chromatograph Configuration
PG_GC.GC_1.USER1CODE_NC6	Gas Chromatograph Configuration
PG_GC.GC_1.USER1CODE_NC7	Gas Chromatograph Configuration
PG_GC.GC_1.USER1CODE_NC8	Gas Chromatograph Configuration
PG_GC.GC_1.USER1CODE_NC9	Gas Chromatograph Configuration
PG_GC.GC_1.USER1CODE_NEOC5	Gas Chromatograph Configuration
PG_GC.GC_1.USER1CODE_O2	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TOTAL_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TOTAL_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_BTU_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_BTU_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_SG_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_SG_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_N2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_N2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_CO2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_CO2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_CH4_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_CH4_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_C2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_C2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_C3_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_C3_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_IC4_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_IC4_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_NC4_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_NC4_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_NEOC5_MIN	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_1.S1_NEOC5_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_IC5_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_IC5_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_NC5_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_NC5_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_NC6_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_NC6_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_NC7_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_NC7_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_NC8_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_NC8_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_NC9_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_NC9_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_NC10_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_NC10_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_H2O_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_H2O_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_H2S_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_H2S_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_H2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_H2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_CO_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_CO_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_O2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_O2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_HE_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_HE_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_AR_MIN	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_1.S1_AR_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_C6plus_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_C6plus_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_BTUSat_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_BTUSat_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_Wobbe_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_Wobbe_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_C9plus_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_C9plus_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_CHDP_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_CHDP_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_Compressability_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_Compressability_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_TotalUnNmMoleP_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_TotalUnNmMoleP_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_TotalGPM_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_TotalGPM_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TOTAL_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TOTAL_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_BTU_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_BTU_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_SG_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_SG_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_N2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_N2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_CO2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_CO2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_CH4_MIN	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_2.S1_CH4_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_C2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_C2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_C3_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_C3_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_IC4_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_IC4_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_NC4_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_NC4_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_NEOC5_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_NEOC5_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_IC5_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_IC5_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_NC5_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_NC5_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_NC6_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_NC6_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_NC7_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_NC7_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_NC8_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_NC8_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_NC9_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_NC9_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_NC10_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_NC10_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_H2O_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_H2O_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_H2S_MIN	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_2.S1_H2S_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_H2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_H2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_CO_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_CO_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_O2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_O2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_HE_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_HE_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_AR_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_AR_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_C6plus_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_C6plus_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_BTUSat_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_BTUSat_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_Wobbe_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_Wobbe_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_C9plus_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_C9plus_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_CHDP_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_CHDP_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_Compressability_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_Compressability_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_TotalUnNmMoleP_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_TotalUnNmMoleP_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_TotalGPM_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_TotalGPM_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TOTAL_MIN	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_3.TOTAL_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_BTU_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_BTU_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_SG_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_SG_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_N2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_N2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_CO2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_CO2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_CH4_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_CH4_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_C2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_C2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_C3_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_C3_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_IC4_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_IC4_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_NC4_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_NC4_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_NEOC5_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_NEOC5_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_IC5_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_IC5_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_NC5_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_NC5_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_NC6_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_NC6_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_NC7_MIN	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_3.S1_NC7_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_NC8_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_NC8_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_NC9_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_NC9_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_NC10_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_NC10_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_H2O_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_H2O_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_H2S_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_H2S_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_H2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_H2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_CO_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_CO_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_O2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_O2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_HE_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_HE_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_AR_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_AR_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_C6plus_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_C6plus_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_BTUSat_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_BTUSat_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_Wobbe_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_Wobbe_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_C9plus_MIN	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_3.S1_C9plus_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_CHDP_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_CHDP_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_Compressability_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_Compressability_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_TotalUnNmMoleP_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_TotalUnNmMoleP_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_TotalGPM_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_TotalGPM_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TOTAL_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TOTAL_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_BTU_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_BTU_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_SG_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_SG_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_N2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_N2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_CO2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_CO2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_CH4_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_CH4_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_C2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_C2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_C3_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_C3_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_IC4_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_IC4_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_NC4_MIN	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_4.S1_NC4_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_NEOC5_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_NEOC5_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_IC5_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_IC5_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_NC5_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_NC5_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_NC6_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_NC6_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_NC7_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_NC7_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_NC8_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_NC8_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_NC9_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_NC9_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_NC10_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_NC10_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_H2O_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_H2O_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_H2S_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_H2S_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_H2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_H2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_CO_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_CO_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_O2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_O2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_HE_MIN	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_4.S1_HE_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_AR_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_AR_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_C6plus_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_C6plus_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_BTUSat_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_BTUSat_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_Wobbe_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_Wobbe_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_C9plus_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_C9plus_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_CHDP_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_CHDP_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_Compressability_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_Compressability_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_TotalUnNmMoleP_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_TotalUnNmMoleP_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_TotalGPM_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_TotalGPM_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TOTAL_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TOTAL_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_BTU_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_BTU_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_SG_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_SG_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_N2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_N2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_CO2_MIN	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_5.S1_CO2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_CH4_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_CH4_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_C2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_C2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_C3_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_C3_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_IC4_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_IC4_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_NC4_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_NC4_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_NEOC5_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_NEOC5_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_IC5_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_IC5_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_NC5_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_NC5_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_NC6_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_NC6_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_NC7_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_NC7_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_NC8_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_NC8_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_NC9_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_NC9_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_NC10_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_NC10_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_H2O_MIN	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_5.S1_H2O_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_H2S_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_H2S_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_H2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_H2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_CO_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_CO_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_O2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_O2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_HE_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_HE_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_AR_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_AR_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_C6plus_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_C6plus_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_BTUSat_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_BTUSat_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_Wobbe_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_Wobbe_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_C9plus_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_C9plus_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_CHDP_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_CHDP_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_Compressability_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_Compressability_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_TotalUnNmMoleP_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_TotalUnNmMoleP_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_TotalGPM_MIN	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_5.S1_TotalGPM_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TOTAL_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TOTAL_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_BTU_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_BTU_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_SG_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_SG_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_N2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_N2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_CO2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_CO2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_CH4_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_CH4_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_C2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_C2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_C3_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_C3_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_IC4_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_IC4_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_NC4_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_NC4_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_NEOC5_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_NEOC5_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_IC5_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_IC5_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_NC5_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_NC5_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_NC6_MIN	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_6.S1_NC6_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_NC7_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_NC7_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_NC8_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_NC8_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_NC9_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_NC9_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_NC10_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_NC10_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_H2O_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_H2O_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_H2S_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_H2S_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_H2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_H2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_CO_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_CO_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_O2_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_O2_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_HE_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_HE_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_AR_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_AR_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_C6plus_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_C6plus_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_BTUSat_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_BTUSat_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_Wobbe_MIN	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_6.S1_Wobbe_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_C9plus_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_C9plus_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_CHDP_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_CHDP_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_Compressability_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_Compressability_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_TotalUnNmMoleP_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_TotalUnNmMoleP_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_TotalGPM_MIN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_TotalGPM_MAX	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.IPMODE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.IICOMMPORT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.SLAVEADDRESS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.IPADDR	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.GC_TYPE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_GC_STREAM	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.USE_FIXED	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.MODE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMER_EN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMED_DATE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.TIMED_TIME	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.HTVAL_DB	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.SG_DB	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.Skip_General_Fail	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.Skip_Delta_Fail	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.IPMODE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.IICOMMPORT	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_2.SLAVEADDRESS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.IPADDR	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.GC_TYPE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_GC_STREAM	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.USE_FIXED	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.MODE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMER_EN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMED_DATE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.TIMED_TIME	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.HTVAL_DB	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.SG_DB	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.Skip_General_Fail	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.Skip_Delta_Fail	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.IPMODE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.IICOMMPORT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.SLAVEADDRESS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.IPADDR	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.GC_TYPE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_GC_STREAM	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.USE_FIXED	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.MODE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMER_EN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMED_DATE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.TIMED_TIME	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.HTVAL_DB	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.SG_DB	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.Skip_General_Fail	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.Skip_Delta_Fail	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_4.IPMODE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.IICOMMPORT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.SLAVEADDRESS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.IPADDR	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.GC_TYPE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_GC_STREAM	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.USE_FIXED	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.MODE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMER_EN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMED_DATE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.TIMED_TIME	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.HTVAL_DB	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.SG_DB	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.Skip_General_Fail	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.Skip_Delta_Fail	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.IPMODE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.IICOMMPORT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.SLAVEADDRESS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.IPADDR	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.GC_TYPE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_GC_STREAM	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.USE_FIXED	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.MODE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMER_EN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMED_DATE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.TIMED_TIME	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.HTVAL_DB	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.SG_DB	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_5.Skip_General_Fail	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.Skip_Delta_Fail	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.IPMODE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.IICOMMPORT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.SLAVEADDRESS	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.IPADDR	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.GC_TYPE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_GC_STREAM	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.USE_FIXED	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.MODE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMER_EN	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMED_DATE	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.TIMED_TIME	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.HTVAL_DB	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.SG_DB	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.Skip_General_Fail	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.Skip_Delta_Fail	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.Stale_Time	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.Stale_Time	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.Stale_Time	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.Stale_Time	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.Stale_Time	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.Stale_Time	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_NC6_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_NC7_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_NC8_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_NC9_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.S1_NC10_FACT	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_2.S1_NC6_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_NC7_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_NC8_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_NC9_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.S1_NC10_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_NC6_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_NC7_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_NC8_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_NC9_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.S1_NC10_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_NC6_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_NC7_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_NC8_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_NC9_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.S1_NC10_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_NC6_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_NC7_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_NC8_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_NC9_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.S1_NC10_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_NC6_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_NC7_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_NC8_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_NC9_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.S1_NC10_FACT	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.HTVAL_Units	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.HTVAL_PB	Gas Chromatograph Configuration
PG_GC.GC_1.GC_1.HTVAL_TB	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.GC_2.HTVAL_Units	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.HTVAL_PB	Gas Chromatograph Configuration
PG_GC.GC_1.GC_2.HTVAL_TB	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.HTVAL_Units	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.HTVAL_PB	Gas Chromatograph Configuration
PG_GC.GC_1.GC_3.HTVAL_TB	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.HTVAL_Units	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.HTVAL_PB	Gas Chromatograph Configuration
PG_GC.GC_1.GC_4.HTVAL_TB	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.HTVAL_Units	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.HTVAL_PB	Gas Chromatograph Configuration
PG_GC.GC_1.GC_5.HTVAL_TB	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.HTVAL_Units	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.HTVAL_PB	Gas Chromatograph Configuration
PG_GC.GC_1.GC_6.HTVAL_TB	Gas Chromatograph Configuration
PG_GC.GC_1.Default_Ar	Gas Chromatograph Configuration
PG_GC.GC_1.Default_CO	Gas Chromatograph Configuration
PG_GC.GC_1.Default_H2	Gas Chromatograph Configuration
PG_GC.GC_1.Default_H2O	Gas Chromatograph Configuration
PG_GC.GC_1.Default_H2S	Gas Chromatograph Configuration
PG_GC.GC_1.Default_He	Gas Chromatograph Configuration
PG_GC.GC_1.Default_O2	Gas Chromatograph Configuration
PG_GC.GC_1.Default_BTU	Gas Chromatograph Configuration
PG_GC.GC_1.Default_C2	Gas Chromatograph Configuration
PG_GC.GC_1.Default_C3	Gas Chromatograph Configuration
PG_GC.GC_1.Default_CH4	Gas Chromatograph Configuration
PG_GC.GC_1.Default_CO2	Gas Chromatograph Configuration
PG_GC.GC_1.Default_IC4	Gas Chromatograph Configuration

Signal	Description
PG_GC.GC_1.Default_IC5	Gas Chromatograph Configuration
PG_GC.GC_1.Default_N2	Gas Chromatograph Configuration
PG_GC.GC_1.Default_NC4	Gas Chromatograph Configuration
PG_GC.GC_1.Default_NC5	Gas Chromatograph Configuration
PG_GC.GC_1.Default_NC6	Gas Chromatograph Configuration
PG_GC.GC_1.Default_NC7	Gas Chromatograph Configuration
PG_GC.GC_1.Default_NC8	Gas Chromatograph Configuration
PG_GC.GC_1.Default_NC9	Gas Chromatograph Configuration
PG_GC.GC_1.Default_NC10	Gas Chromatograph Configuration
PG_GC.GC_1.Default_SG	Gas Chromatograph Configuration
PG_GC.GC_1.Default_NeoC5	Gas Chromatograph Configuration
PG_GC.GC_1.Default_BTUSat	Gas Chromatograph Configuration
PG_GC.GC_1.Default_Wobbe	Gas Chromatograph Configuration
PG_GC.GC_1.Default_C6Plus	Gas Chromatograph Configuration
PG_GC.GC_1.Default_C9Plus	Gas Chromatograph Configuration
PG_GC.GC_1.Default_CHDP	Gas Chromatograph Configuration
PG_GC.GC_1.Default_Compressability	Gas Chromatograph Configuration
PG_GC.GC_1.Default_TotalUnNmMoleP	Gas Chromatograph Configuration
PG_GC.GC_1.Default_TotalGPM	Gas Chromatograph Configuration

Verification Triggering Events (VTEs)

Under Measurement Canada regulations, if you modify certain parameters in the Station Manager application running in the device you automatically generate a Verification Triggering Event (VTE). When a VTE occurs, Measurement Canada must verify the device before it can be used or returned to service.

Modification of any of the signals shown in *Table C-2* generates a Verification Triggering Event (VTE) which requires Measurement Canada to verify the device before you use it or return it to service. All VTEs generate an event that is stored in the audit log.

Table C-2. Modification of These Signals Constitutes a Verification Triggering Event

Signal	Description
FC.FC1.RX_CFG_TYPE	Run *n* configuration type 0=Not Configured 1=Orifice 2=Turbine 3=Auto Adjust 4=Ultrasonic 5=PD 6=Coriolis 7=Annubar 8=Venturi 9=V-Cone
FC.FC1.RX_GCSTREAM	GC Data Set Assignment for Run x (from FC.STATION_x_GCSTREAM)
FC.FC2.RX_CFG_TYPE	Run *n* configuration type 0=Not Configured 1=Orifice 2=Turbine 3=Auto Adjust 4=Ultrasonic 5=PD 6=Coriolis 7=Annubar 8=Venturi 9=V-Cone
FC.FC2.RX_GCSTREAM	GC Data Set Assignment for Run x (from FC.STATION_x_GCSTREAM)
FC.FC3.RX_CFG_TYPE	Run *n* configuration type 0=Not Configured 1=Orifice 2=Turbine 3=Auto Adjust 4=Ultrasonic 5=PD 6=Coriolis 7=Annubar 8=Venturi 9=V-Cone
FC.FC3.RX_GCSTREAM	GC Data Set Assignment for Run x (from FC.STATION_x_GCSTREAM)
FC.FC4.RX_CFG_TYPE	Run *n* configuration type 0=Not Configured 1=Orifice 2=Turbine 3=Auto Adjust 4=Ultrasonic 5=PD 6=Coriolis 7=Annubar 8=Venturi 9=V-Cone
FC.FC4.RX_GCSTREAM	GC Data Set Assignment for Run x (from FC.STATION_x_GCSTREAM)
FC.FC5.RX_CFG_TYPE	Run *n* configuration type 0=Not Configured 1=Orifice 2=Turbine 3=Auto Adjust 4=Ultrasonic 5=PD 6=Coriolis 7=Annubar 8=Venturi 9=V-Cone
FC.FC5.RX_GCSTREAM	GC Data Set Assignment for Run x (from FC.STATION_x_GCSTREAM)
FC.FC6.RX_CFG_TYPE	Run *n* configuration type 0=Not Configured 1=Orifice 2=Turbine 3=Auto Adjust 4=Ultrasonic 5=PD 6=Coriolis 7=Annubar 8=Venturi 9=V-Cone
FC.FC6.RX_GCSTREAM	GC Data Set Assignment for Run x (from FC.STATION_x_GCSTREAM)
FC.R1_AIID_DP	Run Configuration
FC.R1_AISP_DP	Run Configuration
FC.R1_AIDB_DP	Run Configuration
FC.R1_AIID_SP	Run Configuration

Signal	Description
FC.R1_AISP_SP	Run Configuration
FC.R1_AIDB_SP	Run Configuration
FC.R1_AIID_FT	Run Configuration
FC.R1_AISP_FT	Run Configuration
FC.R1_AIDB_FT	Run Configuration
FC.R2_AIID_DP	Run Configuration
FC.R2_AISP_DP	Run Configuration
FC.R2_AIDB_DP	Run Configuration
FC.R2_AIID_SP	Run Configuration
FC.R2_AISP_SP	Run Configuration
FC.R2_AIDB_SP	Run Configuration
FC.R2_AIID_FT	Run Configuration
FC.R2_AISP_FT	Run Configuration
FC.R2_AIDB_FT	Run Configuration
FC.R3_AIID_DP	Run Configuration
FC.R3_AISP_DP	Run Configuration
FC.R3_AIDB_DP	Run Configuration
FC.R3_AIID_SP	Run Configuration
FC.R3_AISP_SP	Run Configuration
FC.R3_AIDB_SP	Run Configuration
FC.R3_AIID_FT	Run Configuration
FC.R3_AISP_FT	Run Configuration
FC.R3_AIDB_FT	Run Configuration
FC.R4_AIID_DP	Run Configuration
FC.R4_AISP_DP	Run Configuration
FC.R4_AIDB_DP	Run Configuration
FC.R4_AIID_SP	Run Configuration
FC.R4_AISP_SP	Run Configuration
FC.R4_AIDB_SP	Run Configuration
FC.R4_AIID_FT	Run Configuration
FC.R4_AISP_FT	Run Configuration
FC.R4_AIDB_FT	Run Configuration
FC.R5_AIID_DP	Run Configuration
FC.R5_AISP_DP	Run Configuration
FC.R5_AIDB_DP	Run Configuration
FC.R5_AIID_SP	Run Configuration
FC.R5_AISP_SP	Run Configuration
FC.R5_AIDB_SP	Run Configuration
FC.R5_AIID_FT	Run Configuration
FC.R5_AISP_FT	Run Configuration
FC.R5_AIDB_FT	Run Configuration
FC.R6_AIID_DP	Run Configuration

Signal	Description
FC.R6_AISP_DP	Run Configuration
FC.R6_AIDB_DP	Run Configuration
FC.R6_AIID_SP	Run Configuration
FC.R6_AISP_SP	Run Configuration
FC.R6_AIDB_SP	Run Configuration
FC.R6_AIID_FT	Run Configuration
FC.R6_AISP_FT	Run Configuration
FC.R6_AIDB_FT	Run Configuration
FC.R1_MAINT_MODE	Run Configuration
FC.STATION_1_FPV_CALC	Station Configuration
FC.STATION_1_GROSSMODE	Station Configuration
FC.STATION_1_UseBTUSat	Station Configuration
FC.STATION_2_FPV_CALC	Station Configuration
FC.STATION_2_GROSSMODE	Station Configuration
FC.STATION_2_UseBTUSat	Station Configuration
FC.STATION_3_FPV_CALC	Station Configuration
FC.STATION_3_GROSSMODE	Station Configuration
FC.STATION_3_UseBTUSat	Station Configuration
FC.STATION_4_GCSTREAM	Station Configuration
FC.STATION_4_FPV_CALC	Station Configuration
FC.STATION_4_UseBTUSat	Station Configuration
FC.STATION_5_FPV_CALC	Station Configuration
FC.STATION_5_GROSSMODE	Station Configuration
FC.STATION_5_UseBTUSat	Station Configuration
FC.STATION_6_FPV_CALC	Station Configuration
FC.STATION_6_GROSSMODE	Station Configuration
FC.STATION_6_UseBTUSat	Station Configuration
FC.FC1.RX_FLOWEQN_SELECT	Run *n* AGA3 equation select (1985,1992,2012)
FC.RUN_1_SPSOURCE	Run *n* static pressure source
FC.R1_MVTID_SP	Run *n* MVT ID for static pressure
IO_1.R1_SP_INP_Units	Run *n* Static Pressure Units
FC.R1_SP_ZERO	Run *n* Static Pressure Zero
FC.R1_SP_SPAN	Run *n* Static Pressure Span
FC.FC1.RX_SP_MO	Static Pressure Manual Override for Run *n*
FC.FC1.RX_SP_BUF	Static Pressure Manual Override Value for Run n
FC.RUN_1_FTSOURCE	Run *n* temperature source
FC.R1_MVTID_FT	Run *n* MVT ID for temperature
IO_1.R1_FTEMP_INP_Units	Run *n* Flowing Temperature Units
FC.R1_FT_ZERO	Run *n* Flowing Temperature Zero
FC.R1_FT_SPAN	Run *n* Flowing Temperature Span
FC.FC1.RX_FTEMP_MO	Flowing Temperature Manual

Signal	Description
	Override for Run *n*
FC.FC1.RX_FTEMP_BUF	Flowing Temperature Manual Override Value for Run *n*
FC.RUN_1_DPSOURCE	Run *n* static pressure source
FC.R1_MVTID_DP	Run *n* MVT ID for differential pressure
FC.FC1.RX_DP_MO	Differential Pressure Manual Override for Run *n*
FC.FC1.RX_DP_BUF	Differential Pressure Manual Override Value for Run *n*
IO_1.R1_DP_INP_Units	Run *n* Differential Pressure Units
IO_1.R1_DP_ZERO	Run *n* Differential Pressure Zero
IO_1.R1_DP_SPAN	Run *n* Differential Pressure Span
FC.FC1.RX_TAP_LOC	Tap Location Up/DownStream for Run *n*
FC.FC1.RX_TAP_TYPE	Tap Type for Run *n*
FC.AA_1.MainRotor_MO	Run *n* AutoAdjust Main Rotor frequency override
FC.AA_1.SensRotor_MO	Run *n* AutoAdjust Sense Rotor frequency override
FC.FC1.RX_LIN_FUNC	Run *n* Linearization Function enable/disable
FC.FC1.RX_CSelect	Run *n* FPV calculatoin method (from FC.STATION_x_FPV_CALC)
FC.FC1.RX_UseBTUSat	Use BTU Saturated GC Value for Run *n* (from FC.STATION_1_UseBTUSat)
FC.FC1.RX_AGA8_GRMTHD	Run *n* AGA 8 Gross Method (from FC.STATION_x_GROSSMODE)
FC.FC1.RX_VCone_Type	Run *n* Vcone calculation (SG/MW)
FC.FC2.RX_FLOWEQN_SELECT	Run *n* AGA3 equation select (1985,1992,2012)
FC.RUN_2_SPSOURCE	Run *n* static pressure source
FC.R2_MVTID_SP	Run *n* MVT ID for static pressure
IO_1.R2_SP_INP_Units	Run *n* Static Pressure Units
FC.R2_SP_ZERO	Run *n* Static Pressure Zero
FC.R2_SP_SPAN	Run *n* Static Pressure Span
FC.FC2.RX_SP_MO	Static Pressure Manual Override for Run *n*
FC.FC2.RX_SP_BUF	Static Pressure Manual Override Value for Run *n*
FC.RUN_2_FTSOURCE	Run *n* temperature source
FC.R2_MVTID_FT	Run *n* MVT ID for temperature
IO_1.R2_FTEMP_INP_Units	Run *n* Flowing Temperature Units
FC.R2_FT_ZERO	Run *n* Flowing Temperature Zero
FC.R2_FT_SPAN	Run *n* Flowing Temperature Span
FC.FC2.RX_FTEMP_MO	Flowing Temperature Manual Override for Run *n*
FC.FC2.RX_FTEMP_BUF	Flowing Temperature Manual

Signal	Description
	Override Value for Run *n*
FC.RUN_2_DPSOURCE	Run *n* static pressure source
FC.R2_MVTID_DP	Run *n* MVT ID for differential pressure
IO_1.R2_DP_INP_Units	Run *n* Differential Pressure Units
IO_1.R2_DP_SPAN	Run *n* Differential Pressure Span
FC.FC2.RX_DP_MO	Differential Pressure Manual Override for Run *n*
FC.FC2.RX_DP_BUF	Differential Pressure Manual Override Value for Run *n*
FC.FC2.RX_TAP_LOC	Tap Location Up/DownStream for Run *n*
FC.FC2.RX_TAP_TYPE	Tap Type for Run *n*
FC.AA_2.MainRotor_MO	Run *n* AutoAdjust Main Rotor frequency override
FC.AA_2.SensRotor_MO	Run *n* AutoAdjust Sense Rotor frequency override
FC.FC2.RX_LIN_FUNC	Run *n* Linearization Function enable/disable
FC.FC2.RX_CSelect	Run *n* FPV calculatoin method (from FC.STATION_x_FPV_CALC)
FC.FC2.RX_UseBTUSat	Use BTU Saturated GC Value for Run *n* (from FC.STATION_2_UseBTUSat)
FC.FC2.RX_AGA8_GRMTHD	Run *n* AGA 8 Gross Method (from FC.STATION_x_GROSSMODE)
FC.FC2.RX_VCone_Type	Run *n* Vcone calculation (SG/MW)
FC.FC3.RX_FLOWEQN_SELECT	Run *n* AGA3 equation select (1985,1992,2012)
FC.RUN_3_SPSOURCE	Run *n* static pressure source
FC.R3_MVTID_SP	Run *n* MVT ID for static pressure
IO_1.R3_SP_INP_Units	Run *n* Static Pressure Units
FC.R3_SP_ZERO	Run *n* Static Pressure Zero
FC.R3_SP_SPAN	Run *n* Static Pressure Span
FC.FC3.RX_SP_MO	Static Pressure Manual Override for Run *n*
FC.FC3.RX_SP_BUF	Static Pressure Manual Override Value for Run *n*
FC.RUN_3_FTSOURCE	Run *n* temperature source
FC.R3_MVTID_FT	Run *n* MVT ID for temperature
IO_1.R3_FTEMP_INP_Units	Run *n* Flowing Temperature Units
FC.R3_FT_ZERO	Run *n* Flowing Temperature Zero
FC.R3_FT_SPAN	Run *n* Flowing Temperature Span
FC.FC3.RX_FTEMP_MO	Flowing Temperature Manual Override for Run *n*
FC.FC3.RX_FTEMP_BUF	Flowing Temperature Manual Override Value for Run *n*
FC.RUN_3_DPSOURCE	Run *n* static pressure source
FC.R3_MVTID_DP	Run *n* MVT ID for differential

Signal	Description
	pressure
IO_1.R3_DP_INP_Units	Run *n* Differential Pressure Units
IO_1.R3_DP_SPAN	Run *n* Differential Pressure Span
FC.FC3.RX_DP_MO	Differential Pressure Manual Override for Run *n*
FC.FC3.RX_DP_BUF	Differential Pressure Manual Override Value for Run *n*
FC.FC3.RX_TAP_LOC	Tap Location Up/DownStream for Run *n*
FC.FC3.RX_TAP_TYPE	Tap Type for Run *n*
FC.AA_3.MainRotor_MO	Run *n* AutoAdjust Main Rotor frequency override
FC.AA_3.SensRotor_MO	Run *n* AutoAdjust Sense Rotor frequency override
FC.FC3.RX_LIN_FUNC	Run *n* Linearization Function enable/disable
FC.FC3.RX_CSelect	Run *n* FPV calculatoin method (from FC.STATION_x_FPV_CALC)
FC.FC3.RX_UseBTUSat	Use BTU Saturated GC Value for Run *n* (from FC.STATION_3_UseBTUSat)
FC.FC3.RX_AGA8_GRMTHD	Run *n* AGA 8 Gross Method (from FC.STATION_x_GROSSMODE)
FC.FC3.RX_VCone_Type	Run *n* Vcone calculation (SG/MW)
FC.FC4.RX_FLOWEQN_SELECT	Run *n* AGA3 equation select (1985,1992,2012)
FC.RUN_4_SPSOURCE	Run *n* static pressure source
FC.R4_MVTID_SP	Run *n* MVT ID for static pressure
IO_1.R4_SP_INP_Units	Run *n* Static Pressure Units
FC.R4_SP_ZERO	Run *n* Static Pressure Zero
FC.R4_SP_SPAN	Run *n* Static Pressure Span
FC.FC4.RX_SP_MO	Static Pressure Manual Override for Run *n*
FC.FC4.RX_SP_BUF	Static Pressure Manual Override Value for Run *n*
FC.RUN_4_FTSOURCE	Run *n* temperature source
FC.R4_MVTID_FT	Run *n* MVT ID for temperature
IO_1.R4_FTEMP_INP_Units	Run *n* Flowing Temperature Units
FC.R4_FT_ZERO	Run *n* Flowing Temperature Zero
FC.R4_FT_SPAN	Run *n* Flowing Temperature Span
FC.FC4.RX_FTEMP_MO	Flowing Temperature Manual Override for Run *n*
FC.FC4.RX_FTEMP_BUF	Flowing Temperature Manual Override Value for Run *n*
FC.RUN_4_DPSOURCE	Run *n* static pressure source
FC.R4_MVTID_DP	Run *n* MVT ID for differential pressure
IO_1.R4_DP_INP_Units	Run *n* Differential Pressure Units
IO_1.R4_DP_SPAN	Run *n* Differential Pressure Span

Signal	Description
FC.FC4.RX_DP_MO	Differential Pressure Manual Override for Run *n*
FC.FC4.RX_DP_BUF	Differential Pressure Manual Override Value for Run *n*
FC.FC4.RX_TAP_LOC	Tap Location Up/DownStream for Run *n*
FC.FC4.RX_TAP_TYPE	Tap Type for Run *n*
FC.AA_4.MainRotor_MO	Run *n* AutoAdjust Main Rotor frequency override
FC.AA_4.SensRotor_MO	Run *n* AutoAdjust Sense Rotor frequency override
FC.FC4.RX_LIN_FUNC	Run *n* Linearization Function enable/disable
FC.FC4.RX_CSelect	Run *n* FPV calculatoin method (from FC.STATION_x_FPV_CALC)
FC.FC4.RX_UseBTUSat	Use BTU Saturated GC Value for Run *n* (from FC.STATION_4_UseBTUSat)
FC.FC4.RX_AGA8_GRMTHD	Run *n* AGA 8 Gross Method (from FC.STATION_x_GROSSMODE)
FC.FC4.RX_VCone_Type	Run *n* Vcone calculation (SG/MW)
FC.FC5.RX_FLOWEQN_SELECT	Run *n* AGA3 equation select (1985,1992,2012)
FC.RUN_5_SPSOURCE	Run *n* static pressure source
FC.R5_MVTID_SP	Run *n* MVT ID for static pressure
IO_1.R5_SP_INP_Units	Run *n* Static Pressure Units
FC.R5_SP_ZERO	Run *n* Static Pressure Zero
FC.R5_SP_SPAN	Run *n* Static Pressure Span
FC.FC5.RX_SP_MO	Static Pressure Manual Override for Run *n*
FC.FC5.RX_SP_BUF	Static Pressure Manual Override Value for Run *n*
FC.RUN_5_FTSOURCE	Run *n* temperature source
FC.R5_MVTID_FT	Run *n* MVT ID for temperature
IO_1.R5_FTEMP_INP_Units	Run *n* Flowing Temperature Units
FC.R5_FT_ZERO	Run *n* Flowing Temperature Zero
FC.R5_FT_SPAN	Run *n* Flowing Temperature Span
FC.FC5.RX_FTEMP_MO	Flowing Temperature Manual Override for Run n
FC.FC5.RX_FTEMP_BUF	Flowing Temperature Manual Override Value for Run n
FC.RUN_5_DPSOURCE	Run *n* static pressure source
FC.R5_MVTID_DP	Run *n* MVT ID for differential pressure
IO_1.R5_DP_INP_Units	Run *n* Differential Pressure Units
IO_1.R5_DP_SPAN	Run *n* Differential Pressure Span
FC.FC5.RX_DP_MO	Differential Pressure Manual Override for Run n
FC.FC5.RX_DP_BUF	Differential Pressure Manual Override Value for Run n

Signal	Description
FC.FC5.RX_TAP_LOC	Tap Location Up/DownStream for Run n
FC.FC5.RX_TAP_TYPE	Tap Type for Run n
FC.AA_5.MainRotor_MO	Run *n* AutoAdjust Main Rotor frequency override
FC.AA_5.SensRotor_MO	Run *n* AutoAdjust Sense Rotor frequency override
FC.FC5.RX_LIN_FUNC	Run *n* Linearization Function enable/disable
FC.FC5.RX_CSelect	Run *n* FPV calculatoin method (from FC.STATION_x_FPV_CALC)
FC.FC5.RX_UseBTUSat	Use BTU Saturated GC Value for Run *n* (from FC.STATION_5_UseBTUSat)
FC.FC5.RX_AGA8_GRMTHD	Run *n* AGA 8 Gross Method (from FC.STATION_x_GROSSMODE)
FC.FC5.RX_VCone_Type	Run *n* Vcone calculation (SG/MW)
FC.FC6.RX_FLOWEQN_SELECT	Run *n* AGA3 equation select (1985,1992,2012)
FC.RUN_6_SPSOURCE	Run *n* static pressure source
FC.R6_MVTID_SP	Run *n* MVT ID for static pressure
IO_1.R6_SP_INP_Units	Run *n* Static Pressure Units
FC.R6_SP_ZERO	Run *n* Static Pressure Zero
FC.R6_SP_SPAN	Run *n* Static Pressure Span
FC.FC6.RX_SP_MO	Static Pressure Manual Override for Run n
FC.FC6.RX_SP_BUF	Static Pressure Manual Override Value for Run n
FC.RUN_6_FTSOURCE	Run *n* temperature source
FC.R6_MVTID_FT	Run *n* MVT ID for temperature
IO_1.R6_FTEMP_INP_Units	Run *n* Flowing Temperature Units
FC.R6_FT_ZERO	Run *n* Flowing Temperature Zero
FC.R6_FT_SPAN	Run *n* Flowing Temperature Span
FC.FC6.RX_FTEMP_MO	Flowing Temperature Manual Override for Run n
FC.FC6.RX_FTEMP_BUF	Flowing Temperature Manual Override Value for Run n
FC.RUN_6_DPSOURCE	Run *n* static pressure source
FC.R6_MVTID_DP	Run *n* MVT ID for differential pressure
IO_1.R6_DP_INP_Units	Run *n* Differential Pressure Units
IO_1.R6_DP_SPAN	Run *n* Differential Pressure Span
FC.FC6.RX_DP_MO	Differential Pressure Manual Override for Run *n*
FC.FC6.RX_DP_BUF	Differential Pressure Manual Override Value for Run *n*
FC.FC6.RX_TAP_LOC	Tap Location Up/DownStream for Run *n*
FC.FC6.RX_TAP_TYPE	Tap Type for Run *n*

Signal	Description
FC.AA_6.MainRotor_MO	Run *n* AutoAdjust Main Rotor frequency override
FC.AA_6.SensRotor_MO	Run *n* AutoAdjust Sense Rotor frequency override
FC.FC6.RX_LIN_FUNC	Run *n* Linearization Function enable/disable
FC.FC6.RX_CSelect	Run *n* FPV calculatoin method (from FC.STATION_x_FPV_CALC)
FC.FC6.RX_UseBTUSat	Use BTU Saturated GC Value for Run *n* (from FC.STATION_6_UseBTUSat)
FC.FC6.RX_AGA8_GRMTHD	Run *n* AGA 8 Gross Method (from FC.STATION_x_GROSSMODE)
FC.FC6.RX_VCone_Type	Run *n* Vcone calculation (SG/MW)
FC.R2_MAINT_MODE	Run Configuration
FC.R3_MAINT_MODE	Run Configuration
FC.R4_MAINT_MODE	Run Configuration
FC.R5_MAINT_MODE	Run Configuration
FC.R6_MAINT_MODE	Run Configuration
FC.R1_HSCID	Run Configuration
FC.R2_HSCID	Run Configuration
FC.R3_HSCID	Run Configuration
FC.R4_HSCID	Run Configuration
FC.R5_HSCID	Run Configuration
FC.R6_HSCID	Run Configuration
MVT.MVT_PVINT	Poll interval for Process variables from the MVT, in millisecond
MVT.MVT_DIAGINT	Poll interval for Diagnostics data from the MVT, in millisecond
MVT.MVT_TIMEOUT	Communication Timeout for MVT's
MVT.MVT_1_PORT	CWM Master Port connected to MVT *n*
MVT.MVT_1_ADDRESS	Address of MVT *n*
MVT.MVT_1_MRTYPE	Transmitter Type of MVT *n* 0=None 1=DP/P/T 2=GP/T 3=T
MVT.MVT_1_FB.MB_PVS.REGSET	Register Set to be polled from MVT - FALSE or 0 = 40000, TRUE or 1 = 7000
MVT.MVT_2_PORT	CWM Master Port connected to MVT *n*
MVT.MVT_2_ADDRESS	Address of MVT *n*
MVT.MVT_2_MRTYPE	Transmitter Type of MVT *n* 0=None 1=DP/P/T 2=GP/T 3=T
MVT.MVT_2_FB.MB_PVS.REGSET	Register Set to be polled from MVT - FALSE or 0 = 40000, TRUE or 1 = 7000
MVT.MVT_3_PORT	CWM Master Port connected to MVT *n*
MVT.MVT_3_ADDRESS	Address of MVT *n*

Signal	Description
MVT.MVT_3_MRTYPE	Transmitter Type of MVT *n* 0=None 1=DP/P/T 2=GP/T 3=T
MVT.MVT_3_FB.MB_PVS.REGSET	Register Set to be polled from MVT - FALSE or 0 = 40000, TRUE or 1 = 7000
MVT.MVT_4_PORT	CWM Master Port connected to MVT *n*
MVT.MVT_4_ADDRESS	Address of MVT *n*
MVT.MVT_4_MRTYPE	Transmitter Type of MVT *n* 0=None 1=DP/P/T 2=GP/T 3=T
MVT.MVT_4_FB.MB_PVS.REGSET	Register Set to be polled from MVT - FALSE or 0 = 40000, TRUE or 1 = 7000
MVT.MVT_5_PORT	CWM Master Port connected to MVT *n*
MVT.MVT_5_ADDRESS	Address of MVT n
MVT.MVT_5_MRTYPE	Transmitter Type of MVT *n* 0=None 1=DP/P/T 2=GP/T 3=T
MVT.MVT_5_FB.MB_PVS.REGSET	Register Set to be polled from MVT - FALSE or 0 = 40000, TRUE or 1 = 7000
MVT.MVT_6_PORT	CWM Master Port connected to MVT *n*
MVT.MVT_6_ADDRESS	Address of MVT *n*
MVT.MVT_6_MRTYPE	Transmitter Type of MVT *n* 0=None 1=DP/P/T 2=GP/T 3=T
MVT.MVT_6_FB.MB_PVS.REGSET	Register Set to be polled from MVT - FALSE or 0 = 40000, TRUE or 1 = 7000
MVT.MVT_7_PORT	CWM Master Port connected to MVT *n*
MVT.MVT_7_ADDRESS	Address of MVT *n*
MVT.MVT_7_MRTYPE	Transmitter Type of MVT *n* 0=None 1=DP/P/T 2=GP/T 3=T
MVT.MVT_7_FB.MB_PVS.REGSET	Register Set to be polled from MVT - FALSE or 0 = 40000, TRUE or 1 = 7000
MVT.MVT_8_PORT	CWM Master Port connected to MVT *n*
MVT.MVT_8_ADDRESS	Address of MVT *n*
MVT.MVT_8_MRTYPE	Transmitter Type of MVT *n* 0=None 1=DP/P/T 2=GP/T 3=T
MVT.MVT_8_FB.MB_PVS.REGSET	Register Set to be polled from MVT - FALSE or 0 = 40000, TRUE or 1 = 7000
MVT.MVT_9_PORT	CWM Master Port connected to MVT *n*
MVT.MVT_9_ADDRESS	Address of MVT *n*
MVT.MVT_9_MRTYPE	Transmitter Type of MVT *n* 0=None 1=DP/P/T 2=GP/T 3=T
MVT.MVT_9_FB.MB_PVS.REGSET	Register Set to be polled from MVT - FALSE or 0 = 40000, TRUE or 1 = 7000
MVT.MVT_10_PORT	CWM Master Port connected to

Signal	Description
	MVT *n*
MVT.MVT_10_ADDRESS	Address of MVT *n*
MVT.MVT_10_MRTYPE	Transmitter Type of MVT *n* 0=None 1=DP/P/T 2=GP/T 3=T
MVT.MVT_10_FB.MB_PVS.REGSET	Register Set to be polled from MVT - FALSE or 0 = 40000, TRUE or 1 = 7000
MVT.MVT_11_PORT	CWM Master Port connected to MVT *n*
MVT.MVT_11_ADDRESS	Address of MVT *n*
MVT.MVT_11_MRTYPE	Transmitter Type of MVT *n* 0=None 1=DP/P/T 2=GP/T 3=T
MVT.MVT_11_FB.MB_PVS.REGSET	Register Set to be polled from MVT - FALSE or 0 = 40000, TRUE or 1 = 7000
MVT.MVT_12_PORT	CWM Master Port connected to MVT *n*
MVT.MVT_12_ADDRESS	Address of MVT *n*
MVT.MVT_12_MRTYPE	Transmitter Type of MVT *n* 0=None 1=DP/P/T 2=GP/T 3=T
MVT.MVT_12_FB.MB_PVS.REGSET	Register Set to be polled from MVT - FALSE or 0 = 40000, TRUE or 1 = 7000
MVT.MVT_1_ENABLE	Enable Communication for MVT *n*
MVT.MVT_2_ENABLE	Enable Communication for MVT *n*
MVT.MVT_3_ENABLE	Enable Communication for MVT *n*
MVT.MVT_4_ENABLE	Enable Communication for MVT *n*
MVT.MVT_5_ENABLE	Enable Communication for MVT *n*
MVT.MVT_6_ENABLE	Enable Communication for MVT *n*
MVT.MVT_7_ENABLE	Enable Communication for MVT *n*
MVT.MVT_8_ENABLE	Enable Communication for MVT *n*
MVT.MVT_9_ENABLE	Enable Communication for MVT *n*
MVT.MVT_10_ENABLE	Enable Communication for MVT *n*
MVT.MVT_11_ENABLE	Enable Communication for MVT *n*
MVT.MVT_12_ENABLE	Enable Communication for MVT *n*
HRT.HART_1_Enable	Enable Communication for HART *n*
HRT.HART_1_TagName	Tag Name of HART *n*
HRT.HART_1_CommMode	Communications Mode of HART *n* 1 = Point to Point communications through I/O board.2 = Multi-drop communications through I/O board.3 = Point to Point communications through serial COM Port.4 = Multi-drop communications through serial COM Port.
HRT.HART_1_Device	I/O Board Slot number or COM Port number of HART *n*
HRT.HART_1_Channel	channel number within the I/O

Signal	Description
	board of HART *n*
HRT.HART_1_Retries	Number of Retries of HART *n*
HRT.HART_1_Type	Transmitter Type of HART *n* 0=None 1=DP/P/T 2=GP/T 3=T
HRT.HART_2_Enable	Enable Communication for HART *n*
HRT.HART_2_TagName	Tag Name of HART *n*
HRT.HART_2_CommMode	Communications Mode of HART *n* 1 = Point to Point communications through I/O board.2 = Multi-drop communications through I/O board.3 = Point to Point communications through serial COM Port.4 = Multi-drop communications through serial COM Port.
HRT.HART_2_Device	I/O Board Slot number or COM Port number of HART *n*
HRT.HART_2_Channel	channel number within the I/O board of HART *n*
HRT.HART_2_Retries	Number of Retries of HART *n*
HRT.HART_2_Type	Transmitter Type of HART *n* 0=None 1=DP/P/T 2=GP/T 3=T
HRT.HART_3_Enable	Enable Communication for HART *n*
HRT.HART_3_TagName	Tag Name of HART *n*
HRT.HART_3_CommMode	Communications Mode of HART *n* 1 = Point to Point communications through I/O board.2 = Multi-drop communications through I/O board.3 = Point to Point communications through serial COM Port.4 = Multi-drop communications through serial COM Port.
HRT.HART_3_Device	I/O Board Slot number or COM Port number of HART *n*
HRT.HART_3_Channel	channel number within the I/O board of HART *n*
HRT.HART_3_Retries	Number of Retries of HART *n*
HRT.HART_3_Type	Transmitter Type of HART *n* 0=None 1=DP/P/T 2=GP/T 3=T
HRT.HART_4_Enable	Enable Communication for HART *n*
HRT.HART_4_TagName	Tag Name of HART *n*
HRT.HART_4_CommMode	Communications Mode of HART *n* 1 = Point to Point communications through I/O board.2 = Multi-drop communications through I/O board.3 = Point to Point communications through serial COM Port.4 = Multi-drop communications through serial COM Port.

Signal	Description
HRT.HART_4_Device	I/O Board Slot number or COM Port number of HART *n*
HRT.HART_4_Channel	channel number within the I/O board of HART *n*
HRT.HART_4_Retries	Number of Retries of HART *n*
HRT.HART_4_Type	Transmitter Type of HART *n* 0=None 1=DP/P/T 2=GP/T 3=T
HRT.HART_5_Enable	Enable Communication for HART *n*
HRT.HART_5_TagName	Tag Name of HART *n*
HRT.HART_5_CommMode	Communications Mode of HART *n* 1 = Point to Point communications through I/O board.2 = Multi-drop communications through I/O board.3 = Point to Point communications through serial COM Port.4 = Multi-drop communications through serial COM Port.
HRT.HART_5_Device	I/O Board Slot number or COM Port number of HART *n*
HRT.HART_5_Channel	channel number within the I/O board of HART *n*
HRT.HART_5_Retries	Number of Retries of HART *n*
HRT.HART_5_Type	Transmitter Type of HART *n* 0=None 1=DP/P/T 2=GP/T 3=T
HRT.HART_6_Enable	Enable Communication for HART n
HRT.HART_6_TagName	Tag Name of HART *n*
HRT.HART_6_CommMode	Communications Mode of HART *n* 1 = Point to Point communications through I/O board.2 = Multi-drop communications through I/O board.3 = Point to Point communications through serial COM Port.4 = Multi-drop communications through serial COM Port.
HRT.HART_6_Device	I/O Board Slot number or COM Port number of HART *n*
HRT.HART_6_Channel	channel number within the I/O board of HART *n*
HRT.HART_6_Retries	Number of Retries of HART *n*
HRT.HART_6_Type	Transmitter Type of HART *n* 0=None 1=DP/P/T 2=GP/T 3=T
HRT.HART_7_Enable	Enable Communication for HART *n*
HRT.HART_7_TagName	Tag Name of HART *n*
HRT.HART_7_CommMode	Communications Mode of HART *n* 1 = Point to Point communications through I/O board.2 = Multi-drop communications through I/O board.3 = Point to Point communications through serial

Signal	Description
	COM Port.4 = Multi-drop communications through serial COM Port.
HRT.HART_7_Device	I/O Board Slot number or COM Port number of HART *n*
HRT.HART_7_Channel	channel number within the I/O board of HART *n*
HRT.HART_7_Retries	Number of Retries of HART *n*
HRT.HART_7_Type	Transmitter Type of HART *n* 0=None 1=DP/P/T 2=GP/T 3=T
HRT.HART_8_Enable	Enable Communication for HART *n*
HRT.HART_8_TagName	Tag Name of HART *n*
HRT.HART_8_CommMode	Communications Mode of HART *n* 1 = Point to Point communications through I/O board.2 = Multi-drop communications through I/O board.3 = Point to Point communications through serial COM Port.4 = Multi-drop communications through serial COM Port.
HRT.HART_8_Device	I/O Board Slot number or COM Port number of HART *n*
HRT.HART_8_Channel	channel number within the I/O board of HART *n*
HRT.HART_8_Retries	Number of Retries of HART *n*
HRT.HART_8_Type	Transmitter Type of HART *n* 0=None 1=DP/P/T 2=GP/T 3=T
HRT.HART_9_Enable	Enable Communication for HART *n*
HRT.HART_9_TagName	Tag Name of HART *n*
HRT.HART_9_CommMode	Communications Mode of HART *n* 1 = Point to Point communications through I/O board.2 = Multi-drop communications through I/O board.3 = Point to Point communications through serial COM Port.4 = Multi-drop communications through serial COM Port.
HRT.HART_9_Device	I/O Board Slot number or COM Port number of HART *n*
HRT.HART_9_Channel	channel number within the I/O board of HART *n*
HRT.HART_9_Retries	Number of Retries of HART *n*
HRT.HART_9_Type	Transmitter Type of HART *n* 0=None 1=DP/P/T 2=GP/T 3=T
HRT.HART_10_Enable	Enable Communication for HART *n*
HRT.HART_10_TagName	Tag Name of HART *n*
HRT.HART_10_CommMode	Communications Mode of HART *n* 1 = Point to Point communications through I/O board.2 = Multi-drop

Signal	Description
	communications through I/O board.3 = Point to Point communications through serial COM Port.4 = Multi-drop communications through serial COM Port.
HRT.HART_10_Device	I/O Board Slot number or COM Port number of HART *n*
HRT.HART_10_Channel	channel number within the I/O board of HART *n*
HRT.HART_10_Retries	Number of Retries of HART *n*
HRT.HART_10_Type	Transmitter Type of HART *n* 0=None 1=DP/P/T 2=GP/T 3=T
HRT.HART_11_Enable	Enable Communication for HART *n*
HRT.HART_11_TagName	Tag Name of HART *n*
HRT.HART_11_CommMode	Communications Mode of HART *n* 1 = Point to Point communications through I/O board.2 = Multi-drop communications through I/O board.3 = Point to Point communications through serial COM Port.4 = Multi-drop communications through serial COM Port.
HRT.HART_11_Device	I/O Board Slot number or COM Port number of HART *n*
HRT.HART_11_Channel	channel number within the I/O board of HART *n*
HRT.HART_11_Retries	Number of Retries of HART *n*
HRT.HART_11_Type	Transmitter Type of HART *n* 0=None 1=DP/P/T 2=GP/T 3=T
HRT.HART_12_Enable	Enable Communication for HART *n*
HRT.HART_12_TagName	Tag Name of HART *n*
HRT.HART_12_CommMode	Communications Mode of HART *n* 1 = Point to Point communications through I/O board.2 = Multi-drop communications through I/O board.3 = Point to Point communications through serial COM Port.4 = Multi-drop communications through serial COM Port.
HRT.HART_12_Device	I/O Board Slot number or COM Port number of HART *n*
HRT.HART_12_Channel	channel number within the I/O board of HART *n*
HRT.HART_12_Retries	Number of Retries of HART *n*
HRT.HART_12_Type	Transmitter Type of HART *n* 0=None 1=DP/P/T 2=GP/T 3=T
HRT.HART_13_Enable	Enable Communication for HART *n*
HRT.HART_13_TagName	Tag Name of HART *n*

Signal	Description
HRT.HART_13_CommMode	Communications Mode of HART *n* 1 = Point to Point communications through I/O board.2 = Multi-drop communications through I/O board.3 = Point to Point communications through serial COM Port.4 = Multi-drop communications through serial COM Port.
HRT.HART_13_Device	I/O Board Slot number or COM Port number of HART *n*
HRT.HART_13_Channel	channel number within the I/O board of HART *n*
HRT.HART_13_Retries	Number of Retries of HART *n*
HRT.HART_13_Type	Transmitter Type of HART *n* 0=None 1=DP/P/T 2=GP/T 3=T
HRT.HART_14_Enable	Enable Communication for HART *n*
HRT.HART_14_TagName	Tag Name of HART *n*
HRT.HART_14_CommMode	Communications Mode of HART *n* 1 = Point to Point communications through I/O board.2 = Multi-drop communications through I/O board.3 = Point to Point communications through serial COM Port.4 = Multi-drop communications through serial COM Port.
HRT.HART_14_Device	I/O Board Slot number or COM Port number of HART *n*
HRT.HART_14_Channel	channel number within the I/O board of HART *n*
HRT.HART_14_Retries	Number of Retries of HART *n*
HRT.HART_14_Type	Transmitter Type of HART *n* 0=None 1=DP/P/T 2=GP/T 3=T
HRT.HART_15_Enable	Enable Communication for HART *n*
HRT.HART_15_TagName	Tag Name of HART *n*
HRT.HART_15_CommMode	Communications Mode of HART *n* 1 = Point to Point communications through I/O board.2 = Multi-drop communications through I/O board.3 = Point to Point communications through serial COM Port.4 = Multi-drop communications through serial COM Port.
HRT.HART_15_Device	I/O Board Slot number or COM Port number of HART *n*
HRT.HART_15_Channel	channel number within the I/O board of HART *n*
HRT.HART_15_Retries	Number of Retries of HART *n*
HRT.HART_15_Type	Transmitter Type of HART *n* 0=None 1=DP/P/T 2=GP/T 3=T

Signal	**Description**
HRT.HART_16_Enable	Enable Communication for HART *n*
HRT.HART_16_TagName	Tag Name of HART *n*
HRT.HART_16_CommMode	Communications Mode of HART *n* 1 = Point to Point communications through I/O board.2 = Multi-drop communications through I/O board.3 = Point to Point communications through serial COM Port.4 = Multi-drop communications through serial COM Port.
HRT.HART_16_Device	I/O Board Slot number or COM Port number of HART *n*
HRT.HART_16_Channel	channel number within the I/O board of HART *n*
HRT.HART_16_Retries	Number of Retries of HART *n*
HRT.HART_16_Type	Transmitter Type of HART *n* 0=None 1=DP/P/T 2=GP/T 3=T
HRT.HART_17_Enable	Enable Communication for HART *n*
HRT.HART_17_TagName	Tag Name of HART *n*
HRT.HART_17_CommMode	Communications Mode of HART *n* 1 = Point to Point communications through I/O board.2 = Multi-drop communications through I/O board.3 = Point to Point communications through serial COM Port.4 = Multi-drop communications through serial COM Port.
HRT.HART_17_Device	I/O Board Slot number or COM Port number of HART *n*
HRT.HART_17_Channel	channel number within the I/O board of HART *n*
HRT.HART_17_Retries	Number of Retries of HART *n*
HRT.HART_17_Type	Transmitter Type of HART *n* 0=None 1=DP/P/T 2=GP/T 3=T
HRT.HART_18_Enable	Enable Communication for HART *n*
HRT.HART_18_TagName	Tag Name of HART *n*
HRT.HART_18_CommMode	Communications Mode of HART *n* 1 = Point to Point communications through I/O board.2 = Multi-drop communications through I/O board.3 = Point to Point communications through serial COM Port.4 = Multi-drop communications through serial COM Port.
HRT.HART_18_Device	I/O Board Slot number or COM Port number of HART *n*
HRT.HART_18_Channel	channel number within the I/O board of HART *n*

Signal	Description
HRT.HART_18_Retries	Number of Retries of HART *n*
HRT.HART_18_Type	Transmitter Type of HART *n* 0=None 1=DP/P/T 2=GP/T 3=T

Audit Log Interpreter

The Audit logs in the ControlWave Micro store VTEs, legally relevant and non-relevant parameter changes, HMI events, and System events. Use the AuditLogInterpreter.exe utility to create a CSV file that shows only the changes to VTE signals, and their descriptions.

1. Attach a ControlWave Micro serial line to the local communication port.
2. Retrieve the audit data:
    - a. Go to the **Historical** tab.
    - b. Select **Collect Local Logs**.
    - c. Specify the desired path to save the Audit file.
    - d. Select **Audit** from the list.
    - e. Click **Start Collect** and wait for it to finish.
    - f. Click **Convert to CSV** (this saves the collected Audit data to a CSV format in the folder specified by **Storage Folder**.)
3. Return to the main menu of TechView.
4. Right click on the RTU.
5. Select the **AuditLogInterpreter.exe** application from the dropdown menu.
6. Click the browse button to find the previously saved CSV file (it will be named in the following format “<Site Name>_Aud.csv”).
7. There will be two new files created in the same location of the original CSV file.

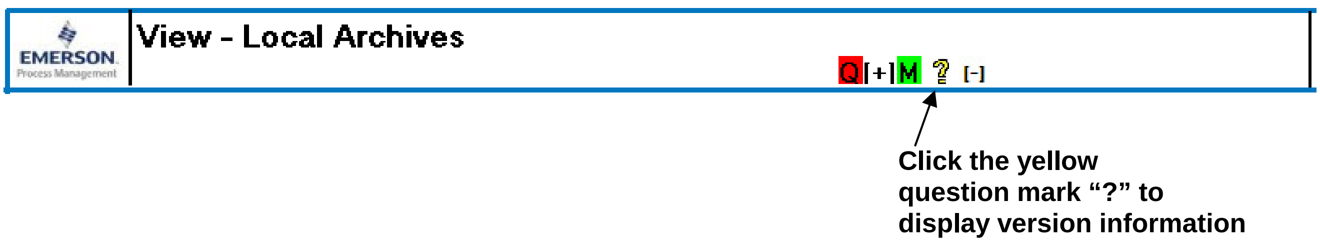
The two new files have the same name as the original CSV with the addition of the suffixes “_New” and “_VTEs” prior to the .CSV extension. The file with the “_New” will be exactly the same as the original Audit CSV file except its ordering puts the newest events first. The file with “VTEs” in the name lists any VTEs that have occurred and remain in the audit trail. The newest VTEs are at the top of the list. Any new VTE triggered after the last sealing of the site requires notification to Measurement Canada so they can verify and re-seal it.

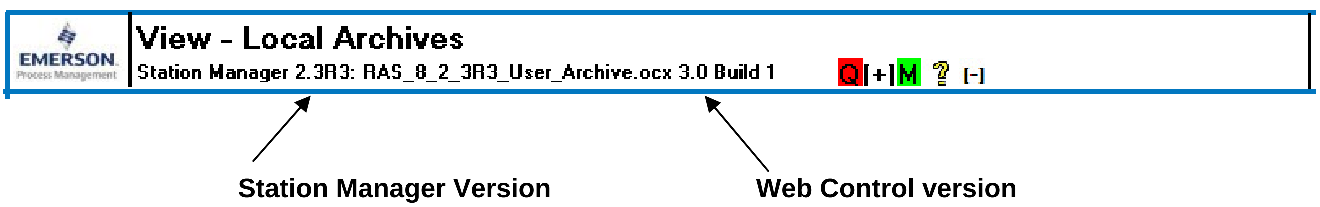
Appendix E - Troubleshooting

Determining Versions of Station Manager and Web Page Controls

If you need to call for technical support one of the first things the technical support person needs to know is the version of Station Manager you are running. This is especially true if you have a beta (test and evaluation) version,

To determine the version of Station Manager, click on the yellow question mark at the top of any page containing web controls. You'll see the Station Manager version, along with the version and build number of the web page control for that page.





Error Codes

Error Code(s)	Possible Remedy
-8001 Mode not supported **-8002 Invalid mode for serial port**	These codes indicate that the serial port is not configured properly in the Flash Configuration Profile. ▪ Verify that the MODE for the serial port connected to the gas chromatograph is configured as a MODBUS Master.
-8006 Invalid Slave address	This code indicates that the Addr setting is incorrect. typically, this means it is less than 1 or greater than 255 ▪ Set the "Addr" value to the proper local slave address of the gas chromatograph, which should be a number from 1 to 255.
-8017 Invalid response received from slave	This code indicates that the gas chromatograph is responding with data, however, the response message cannot be interpreted properly.

	▪ For a serial connection, verify that the data bits, stop bits, and parity are configured to match the settings on the chromatograph. ▪ For an RS-485 connection, verify that the “Ignore Echo” setting is set to TRUE. Verify that terminating and biasing resistors are set properly.
-8018 Timeout waiting for response from slave.	▪ Verify the gas chromatograph is turned on. ▪ Verify that the communications cables between the-Station Manager controller and the gas chromatograph are wired correctly and connected at both ends. ▪ If this is an IP (Ethernet connection), verify that both the gas chromatograph and the controller can be pinged at the IP addresses assigned to them. ▪ Verify the gas chromatograph supports the MODBUS Slave protocol. ▪ Verify that the baud rate, data bits, stop bits, and parity settings on the serial port of the controller match the settings on the gas chromatograph.
-8020 Communication Port failure.	The following message indicates that no data is being received from the gas chromatograph ▪ Verify the communication port is physically installed on the Station Manager controller. ▪ Replace the CPU or Communications Expansion Card with a known good card. If the same error is indicated, replace the ControlWave Micro chassis with a known good chassis.

Appendix M – Modbus Register Maps

These tables show the correspondence between Modbus registers and the variables in the Station Manager application.

Table M-1. Modbus Coil Map – BOOL Variables

Coil#	Variable	Description	Off State	On State
1001	MVT.MVT_1_ENABLE	MVT 1 - Comms Enabled	Disabled	Enabled
1002	MVT.MVT_2_ENABLE	MVT 2 - Comms Enabled	Disabled	Enabled
1003	MVT.MVT_3_ENABLE	MVT 3 - Comms Enabled	Disabled	Enabled
1004	MVT.MVT_4_ENABLE	MVT 4 - Comms Enabled	Disabled	Enabled
1005	MVT.MVT_5_ENABLE	MVT 5 - Comms Enabled	Disabled	Enabled
1006	MVT.MVT_8_ENABLE	MVT 6 - Comms Enabled	Disabled	Enabled
1007	MVT.MVT_7_ENABLE	MVT 7 - Comms Enabled	Disabled	Enabled
1008	MVT.MVT_8_ENABLE	MVT 8 - Comms Enabled	Disabled	Enabled
1009	MVT.MVT_9_ENABLE	MVT 9 - Comms Enabled	Disabled	Enabled
1010	MVT.MVT_10_ENABLE	MVT 10 - Comms Enabled	Disabled	Enabled
1011	MVT.MVT_11_ENABLE	MVT 11 - Comms Enabled	Disabled	Enabled
1012	MVT.MVT_12_ENABLE	MVT 12 - Comms Enabled	Disabled	Enabled
1013	FC.FC1.RX_SP_MO	Run 1 - Static Pressure Manual Override	Live	Override
1014	FC.FC1.RX_FTEMP_MO	Run 1 - Flowing Temperature Manual Override	Live	Override
1015	FC.FC1.RX_DP_MO	Run 1 - Differential Pressure Manual Override	Live	Override
1016	FC.R1_MAINT_MODE	Run 1 - Maintenance Mode	Normal	Maintenance
1017	FC.FC1.RX_TAP_LOC	Run 1 - Tap Location	Downstream	Upstream
1018	FC.FC1.RX_KFACTOR_TYPE	Run 1 - K Factor Type	CuFT/Pulse	Pulse/CuFT
1019	FC.FC1.RX_RATE_ALARM_ENABLE	Run 1 - Flow Rate Alarm Enable	Disabled	Enabled
1020	FC.FC1.RX_DP_INP_ALARM_ENABLE	Run 1 - Differential Input Alarm Enable	Disabled	Enabled
1021	FC.FC1.RX_SP_INP_ALARM_ENABLE	Run 1 - Static Pressure Alarm Enable	Disabled	Enabled
1022	FC.FC1.RX_FTEMP_ALARM_ENABLE	Run 1 - Flowing Temperature Alarm Enable	Disabled	Enabled
1023	FC.FC1.RX_BETA_ALARM_ENABLE	Run 1 - Beta Ratio Alarm Enable	Disabled	Enabled
1024	FC.FC1.RX_SOS_ALRM_ENABLE	Run 1 - Speed of Sound Alarm Enable	Disabled	Enabled
1025	FC.FC2.RX_SP_MO	Run 2 - Static Pressure Manual Override	Live	Override
1026	FC.FC2.RX_FTEMP_MO	Run 2 - Flowing Temperature Manual Override	Live	Override
1027	FC.FC2.RX_DP_MO	Run 2 - Differential Pressure Manual Override	Live	Override
1028	FC.R2_MAINT_MODE	Run 2 - Maintenance Mode	Normal	Maintenance
1029	FC.FC2.RX_TAP_LOC	Run 2 - Tap Location	Downstream	Upstream
1030	FC.FC2.RX_KFACTOR_TYPE	Run 2 - K Factor Type	CuFT/Pulse	Pulse/CuFT
1031	FC.FC2.RX_RATE_ALARM_ENABLE	Run 2 - Flow Rate Alarm Enable	Disabled	Enabled
1032	FC.FC2.RX_DP_INP_ALARM_ENABLE	Run 2 - Differential Input Alarm Enable	Disabled	Enabled
1033	FC.FC2.RX_SP_INP_ALARM_ENABLE	Run 2 - Static Pressure Alarm Enable	Disabled	Enabled
1034	FC.FC2.RX_FTEMP_ALARM_ENABLE	Run 2 - Flowing Temperature Alarm Enable	Disabled	Enabled
1035	FC.FC2.RX_BETA_ALARM_ENABLE	Run 2 - Beta Ratio Alarm Enable	Disabled	Enabled
1036	FC.FC2.RX_SOS_ALRM_ENABLE	Run 2 - Speed of Sound Alarm Enable	Disabled	Enabled
1037	FC.FC3.RX_SP_MO	Run 3 - Static Pressure Manual Override	Live	Override
1038	FC.FC3.RX_FTEMP_MO	Run 3 - Flowing Temperature Manual Override	Live	Override
1039	FC.FC3.RX_DP_MO	Run 3 - Differential Pressure Manual Override	Live	Override
1040	FC.R3_MAINT_MODE	Run 3 - Maintenance Mode	Normal	Maintenance
1041	FC.FC3.RX_TAP_LOC	Run 3 - Tap Location	Downstream	Upstream

Coil#	Variable	Description	Off State	On State
1042	FC.FC3.RX_KFACTOR_TYPE	Run 3 - K Factor Type	CuFT/Pulse	Pulse/CuFT
1043	FC.FC3.RX_RATE_ALARM_ENABLE	Run 3 - Flow Rate Alarm Enable	Disabled	Enabled
1044	FC.FC3.RX_DP_INP_ALARM_ENABLE	Run 3 - Differential Input Alarm Enable	Disabled	Enabled
1045	FC.FC3.RX_SP_INP_ALARM_ENABLE	Run 3 - Static Pressure Alarm Enable	Disabled	Enabled
1046	FC.FC3.RX_FTEMP_ALARM_ENABLE	Run 3 - Flowing Temperature Alarm Enable	Disabled	Enabled
1047	FC.FC3.RX_BETA_ALARM_ENABLE	Run 3 - Beta Ratio Alarm Enable	Disabled	Enabled
1048	FC.FC3.RX_SOS_ALRM_ENABLE	Run 3 - Speed of Sound Alarm Enable	Disabled	Enabled
1049	FC.FC4.RX_SP_MO	Run 4 - Static Pressure Manual Override	Live	Override
1050	FC.FC4.RX_FTEMP_MO	Run 4 - Flowing Temperature Manual Override	Live	Override
1051	FC.FC4.RX_DP_MO	Run 4 - Differential Pressure Manual Override	Live	Override
1052	FC.R4_MAINT_MODE	Run 4 - Maintenance Mode	Normal	Maintenance
1053	FC.FC4.RX_TAP_LOC	Run 4 - Tap Location	Downstream	Upstream
1054	FC.FC4.RX_KFACTOR_TYPE	Run 4 - K Factor Type	CuFT/Pulse	Pulse/CuFT
1055	FC.FC4.RX_RATE_ALARM_ENABLE	Run 4 - Flow Rate Alarm Enable	Disabled	Enabled
1056	FC.FC4.RX_DP_INP_ALARM_ENABLE	Run 4 - Differential Input Alarm Enable	Disabled	Enabled
1057	FC.FC4.RX_SP_INP_ALARM_ENABLE	Run 4 - Static Pressure Alarm Enable	Disabled	Enabled
1058	FC.FC4.RX_FTEMP_ALARM_ENABLE	Run 4 - Flowing Temperature Alarm Enable	Disabled	Enabled
1059	FC.FC4.RX_BETA_ALARM_ENABLE	Run 4 - Beta Ratio Alarm Enable	Disabled	Enabled
1060	FC.FC4.RX_SOS_ALRM_ENABLE	Run 4 - Speed of Sound Alarm Enable	Disabled	Enabled
1061	FC.FC5.RX_SP_MO	Run 5 - Static Pressure Manual Override	Live	Override
1062	FC.FC5.RX_FTEMP_MO	Run 5 - Flowing Temperature Manual Override	Live	Override
1063	FC.FC5.RX_DP_MO	Run 5 - Differential Pressure Manual Override	Live	Override
1064	FC.R5_MAINT_MODE	Run 5 - Maintenance Mode	Normal	Maintenance
1065	FC.FC5.RX_TAP_LOC	Run 5 - Tap Location	Downstream	Upstream
1066	FC.FC5.RX_KFACTOR_TYPE	Run 5 - K Factor Type	CuFT/Pulse	Pulse/CuFT
1067	FC.FC5.RX_RATE_ALARM_ENABLE	Run 5 - Flow Rate Alarm Enable	Disabled	Enabled
1068	FC.FC5.RX_DP_INP_ALARM_ENABLE	Run 5 - Differential Input Alarm Enable	Disabled	Enabled
1069	FC.FC5.RX_SP_INP_ALARM_ENABLE	Run 5 - Static Pressure Alarm Enable	Disabled	Enabled
1070	FC.FC5.RX_FTEMP_ALARM_ENABLE	Run 5 - Flowing Temperature Alarm Enable	Disabled	Enabled
1071	FC.FC5.RX_BETA_ALARM_ENABLE	Run 5 - Beta Ratio Alarm Enable	Disabled	Enabled
1072	FC.FC5.RX_SOS_ALRM_ENABLE	Run 5 - Speed of Sound Alarm Enable	Disabled	Enabled
1073	FC.FC6.RX_SP_MO	Run 6 - Static Pressure Manual Override	Live	Override
1074	FC.FC6.RX_FTEMP_MO	Run 6 - Flowing Temperature Manual Override	Live	Override
1075	FC.FC6.RX_DP_MO	Run 6 - Differential Pressure Manual Override	Live	Override
1076	FC.R6_MAINT_MODE	Run 6 - Maintenance Mode	Normal	Maintenance
1077	FC.FC6.RX_TAP_LOC	Run 6 - Tap Location	Downstream	Upstream
1078	FC.FC6.RX_KFACTOR_TYPE	Run 6 - K Factor Type	CuFT/Pulse	Pulse/CuFT
1079	FC.FC6.RX_RATE_ALARM_ENABLE	Run 6 - Flow Rate Alarm Enable	Disabled	Enabled
1080	FC.FC6.RX_DP_INP_ALARM_ENABLE	Run 6 - Differential Input Alarm Enable	Disabled	Enabled
1081	FC.FC6.RX_SP_INP_ALARM_ENABLE	Run 6 - Static Pressure Alarm Enable	Disabled	Enabled
1082	FC.FC6.RX_FTEMP_ALARM_ENABLE	Run 6 - Flowing Temperature Alarm Enable	Disabled	Enabled
1083	FC.FC6.RX_BETA_ALARM_ENABLE	Run 6 - Beta Ratio Alarm Enable	Disabled	Enabled
1084	FC.FC6.RX_SOS_ALRM_ENABLE	Run 6 - Speed of Sound Alarm Enable	Disabled	Enabled
1085	FC.FC7.RX_SP_MO	Run 7 - Static Pressure Manual Override	Live	Override
1086	FC.FC7.RX_FTEMP_MO	Run 7 - Flowing Temperature Manual Override	Live	Override
1087	FC.FC7.RX_DP_MO	Run 7 - Differential Pressure Manual Override	Live	Override
1088	FC.R7_MAINT_MODE	Run 7 - Maintenance Mode	Normal	Maintenance
1089	FC.FC7.RX_TAP_LOC	Run 7 - Tap Location	Downstream	Upstream
1090	FC.FC7.RX_KFACTOR_TYPE	Run 7 - K Factor Type	CuFT/Pulse	Pulse/CuFT

Coil#	Variable	Description	Off State	On State
1091	FC.FC7.RX_RATE_ALARM_ENABLE	Run 7 - Flow Rate Alarm Enable	Disabled	Enabled
1092	FC.FC7.RX_DP_INP_ALARM_ENABLE	Run 7 - Differential Input Alarm Enable	Disabled	Enabled
1093	FC.FC7.RX_SP_INP_ALARM_ENABLE	Run 7 - Static Pressure Alarm Enable	Disabled	Enabled
1094	FC.FC7.RX_FTEMP_ALARM_ENABLE	Run 7 - Flowing Temperature Alarm Enable	Disabled	Enabled
1095	FC.FC7.RX_BETA_ALARM_ENABLE	Run 7 - Beta Ratio Alarm Enable	Disabled	Enabled
1096	FC.FC7.RX_SOS_ALRM_ENABLE	Run 7 - Speed of Sound Alarm Enable	Disabled	Enabled
1097	FC.FC8.RX_SP_MO	Run 8 - Static Pressure Manual Override	Live	Override
1098	FC.FC8.RX_FTEMP_MO	Run 8 - Flowing Temperature Manual Override	Live	Override
1099	FC.FC8.RX_DP_MO	Run 8 - Differential Pressure Manual Override	Live	Override
1100	FC.R8_MAINT_MODE	Run 8 - Maintenance Mode	Normal	Maintenance
1101	FC.FC8.RX_TAP_LOC	Run 8 - Tap Location	Downstream	Upstream
1102	FC.FC8.RX_KFACTOR_TYPE	Run 8 - K Factor Type	CuFT/Pulse	Pulse/CuFT
1103	FC.FC8.RX_RATE_ALARM_ENABLE	Run 8 - Flow Rate Alarm Enable	Disabled	Enabled
1104	FC.FC8.RX_DP_INP_ALARM_ENABLE	Run 8 - Differential Input Alarm Enable	Disabled	Enabled
1105	FC.FC8.RX_SP_INP_ALARM_ENABLE	Run 8 - Static Pressure Alarm Enable	Disabled	Enabled
1106	FC.FC8.RX_FTEMP_ALARM_ENABLE	Run 8 - Flowing Temperature Alarm Enable	Disabled	Enabled
1107	FC.FC8.RX_BETA_ALARM_ENABLE	Run 8 - Beta Ratio Alarm Enable	Disabled	Enabled
1108	FC.FC8.RX_SOS_ALRM_ENABLE	Run 8 - Speed of Sound Alarm Enable	Disabled	Enabled
1109	UFM.UFM_1_ENABLE	Ultrasonic Flow Meter 1 - Communications Enabled	Disabled	Enabled
1110	UFM.UFM_1_COMMSTATUS	Ultrasonic Flow Meter 1 - Communications Status	Normal	Fail
1111	UFM.UFM_2_ENABLE	Ultrasonic Flow Meter 2 - Communications Enabled	Disabled	Enabled
1112	UFM.UFM_2_COMMSTATUS	Ultrasonic Flow Meter 2 - Communications Status	Normal	Fail
1113	UFM.UFM_3_ENABLE	Ultrasonic Flow Meter 3 - Communications Enabled	Disabled	Enabled
1114	UFM.UFM_3_COMMSTATUS	Ultrasonic Flow Meter 3 - Communications Status	Normal	Fail
1115	UFM.UFM_4_ENABLE	Ultrasonic Flow Meter 4 - Communications Enabled	Disabled	Enabled
1116	UFM.UFM_4_COMMSTATUS	Ultrasonic Flow Meter 4 - Communications Status	Normal	Fail
1117	UFM.UFM_5_ENABLE	Ultrasonic Flow Meter 5 - Communications Enabled	Disabled	Enabled
1118	UFM.UFM_5_COMMSTATUS	Ultrasonic Flow Meter 5 - Communications Status	Normal	Fail
1119	UFM.UFM_6_ENABLE	Ultrasonic Flow Meter 6 - Communications Enabled	Disabled	Enabled
1120	UFM.UFM_6_COMMSTATUS	Ultrasonic Flow Meter 6 - Communications Status	Normal	Fail
1121	PG_GC.GC_1.GC_1.TIMER_EN	GC Data Set 1 - Scheduled Data Disabled/Enabled	Disabled	Enabled
1122	PG_GC.GC_1.GC_2.TIMER_EN	GC Data Set 2 - Scheduled Data Disabled/Enabled	Disabled	Enabled
1123	PG_GC.GC_1.GC_3.TIMER_EN	GC Data Set 3 - Scheduled Data Disabled/Enabled	Disabled	Enabled
1124	PG_GC.GC_1.GC_4.TIMER_EN	GC Data Set 4 - Scheduled Data Disabled/Enabled	Disabled	Enabled
1125	PG_GC.GC_1.GC_5.TIMER_EN	GC Data Set 5 - Scheduled Data Disabled/Enabled	Disabled	Enabled
1126	PG_GC.GC_1.GC_6.TIMER_EN	GC Data Set 6 - Scheduled Data Disabled/Enabled	Disabled	Enabled
1127	PG_GC.GC_1.GC_7.TIMER_EN	GC Data Set 7 - Scheduled Data Disabled/Enabled	Disabled	Enabled
1128	PG_GC.GC_1.GC_8.TIMER_EN	GC Data Set 8 - Scheduled Data Disabled/Enabled	Disabled	Enabled
1129	UFM.UFM_7_ENABLE			
1130	UFM.UFM_7_COMMSTATUS			
1131	UFM.UFM_8_ENABLE			
1132	UFM.UFM_8_COMMSTATUS			
1133	PG_GC.GC_1.GC_1.IPMODE	GC Data Set 1 - Comm Mode Serial / IP	Serial	IP

Coil#	Variable	Description	Off State	On State
1134	PG_GC.GC_1.GC_1.USE_FIXED	GC Data Set 1 - Use Fixed or Last Good GC Data	Last Good GC	Use Fixed
1135	PG_GC.GC_1.GC_1.MODE	GC Data Set 1 - Comm Enabled / Disabled	Disabled	Enabled
1136	PG_GC.GC_1.GC_2.IPMODE	GC Data Set 2 - Comm Mode Serial / IP	Serial	IP
1137	PG_GC.GC_1.GC_2.USE_FIXED	GC Data Set 2 - Use Fixed or Last Good GC Data	Last Good GC	Use Fixed
1138	PG_GC.GC_1.GC_2.MODE	GC Data Set 2 - Comm Enabled / Disabled	Disabled	Enabled
1139	PG_GC.GC_1.GC_3.IPMODE	GC Data Set 3 - Comm Mode Serial / IP	Serial	IP
1140	PG_GC.GC_1.GC_3.USE_FIXED	GC Data Set 3 - Use Fixed or Last Good GC Data	Last Good GC	Use Fixed
1141	PG_GC.GC_1.GC_3.MODE	GC Data Set 3 - Comm Enabled / Disabled	Disabled	Enabled
1142	PG_GC.GC_1.GC_4.IPMODE	GC Data Set 4 - Comm Mode Serial / IP	Serial	IP
1143	PG_GC.GC_1.GC_4.USE_FIXED	GC Data Set 4 - Use Fixed or Last Good GC Data	Last Good GC	Use Fixed
1144	PG_GC.GC_1.GC_4.MODE	GC Data Set 4 - Comm Enabled / Disabled	Disabled	Enabled
1145	PG_GC.GC_1.GC_5.IPMODE	GC Data Set 5 - Comm Mode Serial / IP	Serial	IP
1146	PG_GC.GC_1.GC_5.USE_FIXED	GC Data Set 5 - Use Fixed or Last Good GC Data	Last Good GC	Use Fixed
1147	PG_GC.GC_1.GC_5.MODE	GC Data Set 5 - Comm Enabled / Disabled	Disabled	Enabled
1148	PG_GC.GC_1.GC_6.IPMODE	GC Data Set 6 - Comm Mode Serial / IP	Serial	IP
1149	PG_GC.GC_1.GC_6.USE_FIXED	GC Data Set 6 - Use Fixed or Last Good GC Data	Last Good GC	Use Fixed
1150	PG_GC.GC_1.GC_6.MODE	GC Data Set 6 - Comm Enabled / Disabled	Disabled	Enabled
1151	PG_GC.GC_1.GC_7.IPMODE	GC Data Set 7 - Comm Mode Serial / IP	Serial	IP
1152	PG_GC.GC_1.GC_7.USE_FIXED	GC Data Set 7 - Use Fixed or Last Good GC Data	Last Good GC	Use Fixed
1153	PG_GC.GC_1.GC_7.MODE	GC Data Set 7 - Comm Enabled / Disabled	Disabled	Enabled
1154	PG_GC.GC_1.GC_8.IPMODE	GC Data Set 8 - Comm Mode Serial / IP	Serial	IP
1155	PG_GC.GC_1.GC_8.USE_FIXED	GC Data Set 8 - Use Fixed or Last Good GC Data	Last Good GC	Use Fixed
1156	PG_GC.GC_1.GC_8.MODE	GC Data Set 8 - Comm Enabled / Disabled	Disabled	Enabled
1157	MB.Spare			
1158	MB.Spare			
1159	MB.Spare			
1160	MB.Spare			
1161	MB.Spare			
1162	MB.Spare			
1163	MB.Spare			
1164	MB.Spare			
1165	MB.Spare			
1166	MB.Spare			
1167	MB.Spare			
1168	MB.Spare			
1169	RC.RCV_1.BLIND	Remote Control Valve 1 - Limit Switch / Blind	Limit Switch	Blind
1170	RC.RCV_1.ONESTEPLOCAL	Remote Control Valve 1 - Execute Only / Arm and Execute - Local	Arm and Execute	Execute Only
1171	RC.RCV_1.ONESTEPREMOTE	Remote Control Valve 1 - Execute Only / Arm and Execute - Remote	Arm and Execute	Execute Only
1172	RC.RCV_1.ARM_OPEN_REMOTE	Remote Control Valve 1 - Open Control Arm State - Remote	Idle	Armed
1173	RC.RCV_1.EXECUTE_OPEN_REMOTE	Remote Control Valve 1 - Open Control Execute State - Remote	Idle	Execute
1174	RC.RCV_1.ARM_CLOSE_REMOTE	Remote Control Valve 1 - Close Control Arm State - Remote	Idle	Armed
1175	RC.RCV_1.EXECUTE_CLOSE_REMOTE	Remote Control Valve 1 - Close Control Execute State - Remote	Idle	Execute
1176	RC.RCV_1.OPENFAIL	Remote Control Valve 1 - Status - Open	Normal	Fail

Coil#	Variable	Description	Off State	On State
1177	RC.RCV_1.CLOSEFAIL	Remote Control Valve 1 - Status - Close	Normal	Fail
1178	RC.RCV_1.VALVEFAIL	Remote Control Valve 1 - Status - Valve	Normal	Fail
1179	RC.RCV_1.RESETFAIL	Remote Control Valve 1 - Status - Reset	Off	Reset
1180	RC.RCV_2.BLIND	Remote Control Valve 2 - Limit Switch / Blind	Limit Switch	Blind
1181	RC.RCV_2.ONESTEPLOCAL	Remote Control Valve 2 - Execute Only / Arm and Execute - Local	Arm and Execute	Execute Only
1182	RC.RCV_2.ONESTEPREMOTE	Remote Control Valve 2 - Execute Only / Arm and Execute - Remote	Arm and Execute	Execute Only
1183	RC.RCV_2.ARM_OPEN_REMOTE	Remote Control Valve 2 - Open Control Arm State - Remote	Idle	Armed
1184	RC.RCV_2.EXECUTE_OPEN_REMOTE	Remote Control Valve 2 - Open Control Execute State - Remote	Idle	Execute
1185	RC.RCV_2.ARM_CLOSE_REMOTE	Remote Control Valve 2 - Close Control Arm State - Remote	Idle	Armed
1186	RC.RCV_2.EXECUTE_CLOSE_REMOTE	Remote Control Valve 2 - Close Control Execute State - Remote	Idle	Execute
1187	RC.RCV_2.OPENFAIL	Remote Control Valve 2 - Status - Open	Normal	Fail
1188	RC.RCV_2.CLOSEFAIL	Remote Control Valve 2 - Status - Close	Normal	Fail
1189	RC.RCV_2.VALVEFAIL	Remote Control Valve 2 - Status - Valve	Normal	Fail
1190	RC.RCV_2.RESETFAIL	Remote Control Valve 2 - Status - Reset	Off	Reset
1191	RC.RCV_3.BLIND	Remote Control Valve 3 - Limit Switch / Blind	Limit Switch	Blind
1192	RC.RCV_3.ONESTEPLOCAL	Remote Control Valve 3 - Execute Only / Arm and Execute - Local	Arm and Execute	Execute Only
1193	RC.RCV_3.ONESTEPREMOTE	Remote Control Valve 3 - Execute Only / Arm and Execute - Remote	Arm and Execute	Execute Only
1194	RC.RCV_3.ARM_OPEN_REMOTE	Remote Control Valve 3 - Open Control Arm State - Remote	Idle	Armed
1195	RC.RCV_3.EXECUTE_OPEN_REMOTE	Remote Control Valve 3 - Open Control Execute State - Remote	Idle	Execute
1196	RC.RCV_3.ARM_CLOSE_REMOTE	Remote Control Valve 3 - Close Control Arm State - Remote	Idle	Armed
1197	RC.RCV_3.EXECUTE_CLOSE_REMOTE	Remote Control Valve 3 - Close Control Execute State - Remote	Idle	Execute
1198	RC.RCV_3.OPENFAIL	Remote Control Valve 3 - Status - Open	Normal	Fail
1199	RC.RCV_3.CLOSEFAIL	Remote Control Valve 3 - Status - Close	Normal	Fail
1200	RC.RCV_3.VALVEFAIL	Remote Control Valve 3 - Status - Valve	Normal	Fail
1201	RC.RCV_3.RESETFAIL	Remote Control Valve 3 - Status - Reset	Off	Reset
1202	RC.RCV_4.BLIND	Remote Control Valve 4 - Limit Switch / Blind	Limit Switch	Blind
1203	RC.RCV_4.ONESTEPLOCAL	Remote Control Valve 4 - Execute Only / Arm and Execute - Local	Arm and Execute	Execute Only
1204	RC.RCV_4.ONESTEPREMOTE	Remote Control Valve 4 - Execute Only / Arm and Execute - Remote	Arm and Execute	Execute Only
1205	RC.RCV_4.ARM_OPEN_REMOTE	Remote Control Valve 4 - Open Control Arm State - Remote	Idle	Armed
1206	RC.RCV_4.EXECUTE_OPEN_REMOTE	Remote Control Valve 4 - Open Control Execute State - Remote	Idle	Execute
1207	RC.RCV_4.ARM_CLOSE_REMOTE	Remote Control Valve 4 - Close Control Arm State - Remote	Idle	Armed
1208	RC.RCV_4.EXECUTE_CLOSE_REMOTE	Remote Control Valve 4 - Close Control Execute State - Remote	Idle	Execute
1209	RC.RCV_4.OPENFAIL	Remote Control Valve 4 - Status - Open	Normal	Fail
1210	RC.RCV_4.CLOSEFAIL	Remote Control Valve 4 - Status - Close	Normal	Fail
1211	RC.RCV_4.VALVEFAIL	Remote Control Valve 4 - Status - Valve	Normal	Fail
1212	RC.RCV_4.RESETFAIL	Remote Control Valve 4 - Status - Reset	Off	Reset
1213	RC.RCV_5.BLIND	Remote Control Valve 5 - Limit Switch / Blind	Limit Switch	Blind
1214	RC.RCV_5.ONESTEPLOCAL	Remote Control Valve 5 - Execute Only / Arm and Execute - Local	Arm and Execute	Execute Only
1215	RC.RCV_5.ONESTEPREMOTE	Remote Control Valve 5 - Execute Only / Arm and Execute - Remote	Arm and Execute	Execute Only
1216	RC.RCV_5.ARM_OPEN_REMOTE	Remote Control Valve 5 - Open Control Arm State - Remote	Idle	Armed

Coil#	Variable	Description	Off State	On State
1217	RC.RCV_5.EXECUTE_OPEN_REMOTE	Remote Control Valve 5 - Open Control Execute State - Remote	Idle	Execute
1218	RC.RCV_5.ARM_CLOSE_REMOTE	Remote Control Valve 5 - Close Control Arm State - Remote	Idle	Armed
1219	RC.RCV_5.EXECUTE_CLOSE_REMOTE	Remote Control Valve 5 - Close Control Execute State - Remote	Idle	Execute
1220	RC.RCV_5.OPENFAIL	Remote Control Valve 5 - Status - Open	Normal	Fail
1221	RC.RCV_5.CLOSEFAIL	Remote Control Valve 5 - Status - Close	Normal	Fail
1222	RC.RCV_5.VALVEFAIL	Remote Control Valve 5 - Status - Valve	Normal	Fail
1223	RC.RCV_5.RESETFAIL	Remote Control Valve 5 - Status - Reset	Off	Reset
1224	RC.RCV_6.BLIND	Remote Control Valve 6 - Limit Switch / Blind	Limit Switch	Blind
1225	RC.RCV_6.ONESTEPLOCAL	Remote Control Valve 6 - Execute Only / Arm and Execute - Local	Arm and Execute	Execute Only
1226	RC.RCV_6.ONESTEPREMOTE	Remote Control Valve 6 - Execute Only / Arm and Execute - Remote	Arm and Execute	Execute Only
1227	RC.RCV_6.ARM_OPEN_REMOTE	Remote Control Valve 6 - Open Control Arm State - Remote	Idle	Armed
1228	RC.RCV_6.EXECUTE_OPEN_REMOTE	Remote Control Valve 6 - Open Control Execute State - Remote	Idle	Execute
1229	RC.RCV_6.ARM_CLOSE_REMOTE	Remote Control Valve 6 - Close Control Arm State - Remote	Idle	Armed
1230	RC.RCV_6.EXECUTE_CLOSE_REMOTE	Remote Control Valve 6 - Close Control Execute State - Remote	Idle	Execute
1231	RC.RCV_6.OPENFAIL	Remote Control Valve 6 - Status - Open	Normal	Fail
1232	RC.RCV_6.CLOSEFAIL	Remote Control Valve 6 - Status - Close	Normal	Fail
1233	RC.RCV_6.VALVEFAIL	Remote Control Valve 6 - Status - Valve	Normal	Fail
1234	RC.RCV_6.RESETFAIL	Remote Control Valve 6 - Status - Reset	Off	Reset
1235	RC.RCV_7.BLIND	Remote Control Valve 7 - Limit Switch / Blind	Limit Switch	Blind
1236	RC.RCV_7.ONESTEPLOCAL	Remote Control Valve 7 - Execute Only / Arm and Execute - Local	Arm and Execute	Execute Only
1237	RC.RCV_7.ONESTEPREMOTE	Remote Control Valve 7 - Execute Only / Arm and Execute - Remote	Arm and Execute	Execute Only
1238	RC.RCV_7.ARM_OPEN_REMOTE	Remote Control Valve 7 - Open Control Arm State - Remote	Idle	Armed
1239	RC.RCV_7.EXECUTE_OPEN_REMOTE	Remote Control Valve 7 - Open Control Execute State - Remote	Idle	Execute
1240	RC.RCV_7.ARM_CLOSE_REMOTE	Remote Control Valve 7 - Close Control Arm State - Remote	Idle	Armed
1241	RC.RCV_7.EXECUTE_CLOSE_REMOTE	Remote Control Valve 7 - Close Control Execute State - Remote	Idle	Execute
1242	RC.RCV_7.OPENFAIL	Remote Control Valve 7 - Status - Open	Normal	Fail
1243	RC.RCV_7.CLOSEFAIL	Remote Control Valve 7 - Status - Close	Normal	Fail
1244	RC.RCV_7.VALVEFAIL	Remote Control Valve 7 - Status - Valve	Normal	Fail
1245	RC.RCV_7.RESETFAIL	Remote Control Valve 7 - Status - Reset	Off	Reset
1246	RC.RCV_8.BLIND	Remote Control Valve 8 - Limit Switch / Blind	Limit Switch	Blind
1247	RC.RCV_8.ONESTEPLOCAL	Remote Control Valve 8 - Execute Only / Arm and Execute - Local	Arm and Execute	Execute Only
1248	RC.RCV_8.ONESTEPREMOTE	Remote Control Valve 8 - Execute Only / Arm and Execute - Remote	Arm and Execute	Execute Only
1249	RC.RCV_8.ARM_OPEN_REMOTE	Remote Control Valve 8 - Open Control Arm State - Remote	Idle	Armed
1250	RC.RCV_8.EXECUTE_OPEN_REMOTE	Remote Control Valve 8 - Open Control Execute State - Remote	Idle	Execute
1251	RC.RCV_8.ARM_CLOSE_REMOTE	Remote Control Valve 8 - Close Control Arm State - Remote	Idle	Armed
1252	RC.RCV_8.EXECUTE_CLOSE_REMOTE	Remote Control Valve 8 - Close Control Execute State - Remote	Idle	Execute
1253	RC.RCV_8.OPENFAIL	Remote Control Valve 8 - Status - Open	Normal	Fail
1254	RC.RCV_8.CLOSEFAIL	Remote Control Valve 8 - Status - Close	Normal	Fail
1255	RC.RCV_8.VALVEFAIL	Remote Control Valve 8 - Status - Valve	Normal	Fail
1256	RC.RCV_8.RESETFAIL	Remote Control Valve 8 - Status - Reset	Off	Reset

Coil#	Variable	Description	Off State	On State
1257	RC.RCV_9.BLIND	Remote Control Valve 9 - Limit Switch / Blind	Limit Switch	Blind
1258	RC.RCV_9.ONESTEPLOCAL	Remote Control Valve 9 - Execute Only / Arm and Execute - Local	Arm and Execute	Execute Only
1259	RC.RCV_9.ONESTEPREMOTE	Remote Control Valve 9 - Execute Only / Arm and Execute - Remote	Arm and Execute	Execute Only
1260	RC.RCV_9.ARM_OPEN_REMOTE	Remote Control Valve 9 - Open Control Arm State - Remote	Idle	Armed
1261	RC.RCV_9.EXECUTE_OPEN_REMOTE	Remote Control Valve 9 - Open Control Execute State - Remote	Idle	Execute
1262	RC.RCV_9.ARM_CLOSE_REMOTE	Remote Control Valve 9 - Close Control Arm State - Remote	Idle	Armed
1263	RC.RCV_9.EXECUTE_CLOSE_REMOTE	Remote Control Valve 9 - Close Control Execute State - Remote	Idle	Execute
1264	RC.RCV_9.OPENFAIL	Remote Control Valve 9 - Status - Open	Normal	Fail
1265	RC.RCV_9.CLOSEFAIL	Remote Control Valve 9 - Status - Close	Normal	Fail
1266	RC.RCV_9.VALVEFAIL	Remote Control Valve 9 - Status - Valve	Normal	Fail
1267	RC.RCV_9.RESETFAIL	Remote Control Valve 9 - Status - Reset	Off	Reset
1268	RC.RCV_10.BLIND	Remote Control Valve 10 - Limit Switch / Blind	Limit Switch	Blind
1269	RC.RCV_10.ONESTEPLOCAL	Remote Control Valve 10 - Execute Only / Arm and Execute - Local	Arm and Execute	Execute Only
1270	RC.RCV_10.ONESTEPREMOTE	Remote Control Valve 10 - Execute Only / Arm and Execute - Remote	Arm and Execute	Execute Only
1271	RC.RCV_10.ARM_OPEN_REMOTE	Remote Control Valve 10 - Open Control Arm State - Remote	Idle	Armed
1272	RC.RCV_10.EXECUTE_OPEN_REMOTE	Remote Control Valve 10 - Open Control Execute State - Remote	Idle	Execute
1273	RC.RCV_10.ARM_CLOSE_REMOTE	Remote Control Valve 10 - Close Control Arm State - Remote	Idle	Armed
1274	RC.RCV_10.EXECUTE_CLOSE_REMOTE	Remote Control Valve 10 - Close Control Execute State - Remote	Idle	Execute
1275	RC.RCV_10.OPENFAIL	Remote Control Valve 10 - Status - Open	Normal	Fail
1276	RC.RCV_10.CLOSEFAIL	Remote Control Valve 10 - Status - Close	Normal	Fail
1277	RC.RCV_10.VALVEFAIL	Remote Control Valve 10 - Status - Valve	Normal	Fail
1278	RC.RCV_10.RESETFAIL	Remote Control Valve 10 - Status - Reset	Off	Reset
1279	RC.RCV_11.BLIND	Remote Control Valve 11 - Limit Switch / Blind	Limit Switch	Blind
1280	RC.RCV_11.ONESTEPLOCAL	Remote Control Valve 11 - Execute Only / Arm and Execute - Local	Arm and Execute	Execute Only
1281	RC.RCV_11.ONESTEPREMOTE	Remote Control Valve 11 - Execute Only / Arm and Execute - Remote	Arm and Execute	Execute Only
1282	RC.RCV_11.ARM_OPEN_REMOTE	Remote Control Valve 11 - Open Control Arm State - Remote	Idle	Armed
1283	RC.RCV_11.EXECUTE_OPEN_REMOTE	Remote Control Valve 11 - Open Control Execute State - Remote	Idle	Execute
1284	RC.RCV_11.ARM_CLOSE_REMOTE	Remote Control Valve 11 - Close Control Arm State - Remote	Idle	Armed
1285	RC.RCV_11.EXECUTE_CLOSE_REMOTE	Remote Control Valve 11 - Close Control Execute State - Remote	Idle	Execute
1286	RC.RCV_11.OPENFAIL	Remote Control Valve 11 - Status - Open	Normal	Fail
1287	RC.RCV_11.CLOSEFAIL	Remote Control Valve 11 - Status - Close	Normal	Fail
1288	RC.RCV_11.VALVEFAIL	Remote Control Valve 11 - Status - Valve	Normal	Fail
1289	RC.RCV_11.RESETFAIL	Remote Control Valve 11 - Status - Reset	Off	Reset
1290	RC.RCV_12.BLIND	Remote Control Valve 12 - Limit Switch / Blind	Limit Switch	Blind
1291	RC.RCV_12.ONESTEPLOCAL	Remote Control Valve 12 - Execute Only / Arm and Execute - Local	Arm and Execute	Execute Only
1292	RC.RCV_12.ONESTEPREMOTE	Remote Control Valve 12 - Execute Only / Arm and Execute - Remote	Arm and Execute	Execute Only
1293	RC.RCV_12.ARM_OPEN_REMOTE	Remote Control Valve 12 - Open Control Arm State - Remote	Idle	Armed
1294	RC.RCV_12.EXECUTE_OPEN_REMOTE	Remote Control Valve 12 - Open Control Execute State - Remote	Idle	Execute
1295	RC.RCV_12.ARM_CLOSE_REMOTE	Remote Control Valve 12 - Close Control Arm State - Remote	Idle	Armed

Coil#	Variable	Description	Off State	On State
1296	RC.RCV_12.EXECUTE_CLOSE_REMOTE	Remote Control Valve 12 - Close Control Execute State - Remote	Idle	Execute
1297	RC.RCV_12.OPENFAIL	Remote Control Valve 12 - Status - Open	Normal	Fail
1298	RC.RCV_12.CLOSEFAIL	Remote Control Valve 12 - Status - Close	Normal	Fail
1299	RC.RCV_12.VALVEFAIL	Remote Control Valve 12 - Status - Valve	Normal	Fail
1300	RC.RCV_12.RESETFAIL	Remote Control Valve 12 - Status - Reset	Off	Reset
1301	@GV._P1_IGNORE_ECHO	Comm Port 1 - Ignore Echo	Off	Ignore Echo
1302	@GV._P1_DIAL_PORT	Comm Port 1 - Enable dialing from this port - BSAP Slave Only	Off	Dial Enabled
1303	@GV._P1_AUTO_DTR	Comm Port 1 - Enable Auto DTR set on this port - BSAP Slave Only	Off	Auto DTR Enabled
1304	@GV._P1_TS_DIS	Comm Port 1 - Time Synch Disabled through this port	Off	Time Synch Disabled
1305	@GV._P1_TS_FORCE	Comm Port 1 - Force a Time Synch to be sent to this port - BSAP Slave Only	Off	Time Synch Forced
1306	@GV._P1_NRT_DIS	Comm Port 1 - Node Routing Table Disabled through this port - BSAP Slave Only	Off	Node Routing Table Disabled
1307	@GV._P1_ALM_DIS	Comm Port 1 - Disable alarms being reported through this port - BSAP Slave Only	Alarms will be reported	Alarms will be disabled
1308	@GV._P1_IMM_DIS	Comm Port 1 - Disable Immediate Response Mode on this port - BSAP Slave Only	Immediate Response Mode Enabled	Immediate Response Mode Disabled
1309	@GV._P1_IDLE_POLL	Comm Port 1 - Enable Idle Polling on this port - BSAP Master Only	Idle Polling Disabled	Idle Polling Enabled
1310	@GV._P2_IGNORE_ECHO	Comm Port 2 - Ignore Echo	Off	Ignore Echo
1311	@GV._P2_DIAL_PORT	Comm Port 2 - Enable dialing from this port - BSAP Slave Only	Off	Dial Enabled
1312	@GV._P2_AUTO_DTR	Comm Port 2 - Enable Auto DTR set on this port - BSAP Slave Only	Off	Auto DTR Enabled
1313	@GV._P2_TS_DIS	Comm Port 2 - Time Synch Disabled through this port	Off	Time Synch Disabled
1314	@GV._P2_TS_FORCE	Comm Port 2 - Force a Time Synch to be sent to this port - BSAP Slave Only	Off	Time Synch Forced
1315	@GV._P2_NRT_DIS	Comm Port 2 - Node Routing Table Disabled through this port - BSAP Slave Only	Off	Node Routing Table Disabled
1316	@GV._P2_ALM_DIS	Comm Port 2 - Disable alarms being reported through this port - BSAP Slave Only	Alarms will be reported	Alarms will be disabled
1317	@GV._P2_IMM_DIS	Comm Port 2 - Disable Immediate Response Mode on this port - BSAP Slave Only	Immediate Response Mode Enabled	Immediate Response Mode Disabled
1318	@GV._P2_IDLE_POLL	Comm Port 2 - Enable Idle Polling on this port - BSAP Master Only	Idle Polling Disabled	Idle Polling Enabled
1319	@GV._P3_IGNORE_ECHO	Comm Port 3 - Ignore Echo	Off	Ignore Echo
1320	@GV._P3_DIAL_PORT	Comm Port 3 - Enable dialing from this port - BSAP Slave Only	Off	Dial Enabled
1321	@GV._P3_AUTO_DTR	Comm Port 3 - Enable Auto DTR set on this port - BSAP Slave Only	Off	Auto DTR Enabled
1322	@GV._P3_TS_DIS	Comm Port 3 - Time Synch Disabled through this port	Off	Time Synch Disabled
1323	@GV._P3_TS_FORCE	Comm Port 3 - Force a Time Synch to be sent to this port - BSAP Slave Only	Off	Time Synch Forced
1324	@GV._P3_NRT_DIS	Comm Port 3 - Node Routing Table Disabled through this port - BSAP Slave Only	Off	Node Routing Table Disabled
1325	@GV._P3_ALM_DIS	Comm Port 3 - Disable alarms being reported through this port - BSAP Slave Only	Alarms will be reported	Alarms will be disabled
1326	@GV._P3_IMM_DIS	Comm Port 3 - Disable Immediate Response Mode on this port - BSAP Slave Only	Immediate Response Mode Enabled	Immediate Response Mode Disabled

Coil#	Variable	Description	Off State	On State
1327	@GV._P3_IDLE_POLL	Comm Port 3 - Enable Idle Polling on this port - BSAP Master Only	Idle Polling Disabled	Idle Polling Enabled
1328	@GV._P4_IGNORE_ECHO	Comm Port 4 - Ignore Echo	Off	Ignore Echo
1329	@GV._P4_DIAL_PORT	Comm Port 4 - Enable dialing from this port - BSAP Slave Only	Off	Dial Enabled
1330	@GV._P4_AUTO_DTR	Comm Port 4 - Enable Auto DTR set on this port - BSAP Slave Only	Off	Auto DTR Enabled
1331	@GV._P4_TS_DIS	Comm Port 4 - Time Synch Disabled through this port	Off	Time Synch Disabled
1332	@GV._P4_TS_FORCE	Comm Port 4 - Force a Time Synch to be sent to this port - BSAP Slave Only	Off	Time Synch Forced
1333	@GV._P4_NRT_DIS	Comm Port 4 - Node Routing Table Disabled through this port - BSAP Slave Only	Off	Node Routing Table Disabled
1334	@GV._P4_ALM_DIS	Comm Port 4 - Disable alarms being reported through this port - BSAP Slave Only	Alarms will be reported	Alarms will be disabled
1335	@GV._P4_IMM_DIS	Comm Port 4 - Disable Immediate Response Mode on this port - BSAP Slave Only	Immediate Response Mode Enabled	Immediate Response Mode Disabled
1336	@GV._P4_IDLE_POLL	Comm Port 4 - Enable Idle Polling on this port - BSAP Master Only	Idle Polling Disabled	Idle Polling Enabled
1337	@GV._P5_IGNORE_ECHO	Comm Port 5 - Ignore Echo	Off	Ignore Echo
1338	@GV._P5_DIAL_PORT	Comm Port 5 - Enable dialing from this port - BSAP Slave Only	Off	Dial Enabled
1339	@GV._P5_AUTO_DTR	Comm Port 5 - Enable Auto DTR set on this port - BSAP Slave Only	Off	Auto DTR Enabled
1340	@GV._P5_TS_DIS	Comm Port 5 - Time Synch Disabled through this port	Off	Time Synch Disabled
1341	@GV._P5_TS_FORCE	Comm Port 5 - Force a Time Synch to be sent to this port - BSAP Slave Only	Off	Time Synch Forced
1342	@GV._P5_NRT_DIS	Comm Port 5 - Node Routing Table Disabled through this port - BSAP Slave Only	Off	Node Routing Table Disabled
1343	@GV._P5_ALM_DIS	Comm Port 5 - Disable alarms being reported through this port - BSAP Slave Only	Alarms will be reported	Alarms will be disabled
1344	@GV._P5_IMM_DIS	Comm Port 5 - Disable Immediate Response Mode on this port - BSAP Slave Only	Immediate Response Mode Enabled	Immediate Response Mode Disabled
1345	@GV._P5_IDLE_POLL	Comm Port 5 - Enable Idle Polling on this port - BSAP Master Only	Idle Polling Disabled	Idle Polling Enabled
1346	@GV._P6_IGNORE_ECHO	Comm Port 6 - Ignore Echo	Off	Ignore Echo
1347	@GV._P6_DIAL_PORT	Comm Port 6 - Enable dialing from this port - BSAP Slave Only	Off	Dial Enabled
1348	@GV._P6_AUTO_DTR	Comm Port 6 - Enable Auto DTR set on this port - BSAP Slave Only	Off	Auto DTR Enabled
1349	@GV._P6_TS_DIS	Comm Port 6 - Time Synch Disabled through this port	Off	Time Synch Disabled
1350	@GV._P6_TS_FORCE	Comm Port 6 - Force a Time Synch to be sent to this port - BSAP Slave Only	Off	Time Synch Forced
1351	@GV._P6_NRT_DIS	Comm Port 6 - Node Routing Table Disabled through this port - BSAP Slave Only	Off	Node Routing Table Disabled
1352	@GV._P6_ALM_DIS	Comm Port 6 - Disable alarms being reported through this port - BSAP Slave Only	Alarms will be reported	Alarms will be disabled
1353	@GV._P6_IMM_DIS	Comm Port 6 - Disable Immediate Response Mode on this port - BSAP Slave Only	Immediate Response Mode Enabled	Immediate Response Mode Disabled
1354	@GV._P6_IDLE_POLL	Comm Port 6 - Enable Idle Polling on this port - BSAP Master Only	Idle Polling Disabled	Idle Polling Enabled
1355	@GV._P7_IGNORE_ECHO	Comm Port 7 - Ignore Echo	Off	Ignore Echo
1356	@GV._P7_DIAL_PORT	Comm Port 7 - Enable dialing from this port - BSAP Slave Only	Off	Dial Enabled

Coil#	Variable	Description	Off State	On State
1357	@GV._P7_AUTO_DTR	Comm Port 7 - Enable Auto DTR set on this port - BSAP Slave Only	Off	Auto DTR Enabled
1358	@GV._P7_TS_DIS	Comm Port 7 - Time Synch Disabled through this port	Off	Time Synch Disabled
1359	@GV._P7_TS_FORCE	Comm Port 7 - Force a Time Synch to be sent to this port - BSAP Slave Only	Off	Time Synch Forced
1360	@GV._P7_NRT_DIS	Comm Port 7 - Node Routing Table Disabled through this port - BSAP Slave Only	Off	Node Routing Table Disabled
1361	@GV._P7_ALM_DIS	Comm Port 7 - Disable alarms being reported through this port - BSAP Slave Only	Alarms will be reported	Alarms will be disabled
1362	@GV._P7_IMM_DIS	Comm Port 7 - Disable Immediate Response Mode on this port - BSAP Slave Only	Immediate Response Mode Enabled	Immediate Response Mode Disabled
1363	@GV._P7_IDLE_POLL	Comm Port 7 - Enable Idle Polling on this port - BSAP Master Only	Idle Polling Disabled	Idle Polling Enabled
1364	@GV._P8_IGNORE_ECHO	Comm Port 8 - Ignore Echo	Off	Ignore Echo
1365	@GV._P8_DIAL_PORT	Comm Port 8 - Enable dialing from this port - BSAP Slave Only	Off	Dial Enabled
1366	@GV._P8_AUTO_DTR	Comm Port 8 - Enable Auto DTR set on this port - BSAP Slave Only	Off	Auto DTR Enabled
1367	@GV._P8_TS_DIS	Comm Port 8 - Time Synch Disabled through this port	Off	Time Synch Disabled
1368	@GV._P8_TS_FORCE	Comm Port 8 - Force a Time Synch to be sent to this port - BSAP Slave Only	Off	Time Synch Forced
1369	@GV._P8_NRT_DIS	Comm Port 8 - Node Routing Table Disabled through this port - BSAP Slave Only	Off	Node Routing Table Disabled
1370	@GV._P8_ALM_DIS	Comm Port 8 - Disable alarms being reported through this port - BSAP Slave Only	Alarms will be reported	Alarms will be disabled
1371	@GV._P8_IMM_DIS	Comm Port 8 - Disable Immediate Response Mode on this port - BSAP Slave Only	Immediate Response Mode Enabled	Immediate Response Mode Disabled
1372	@GV._P8_IDLE_POLL	Comm Port 8 - Enable Idle Polling on this port - BSAP Master Only	Idle Polling Disabled	Idle Polling Enabled
1373	@GV._P9_IGNORE_ECHO	Comm Port 9 - Ignore Echo	Off	Ignore Echo
1374	@GV._P9_DIAL_PORT	Comm Port 9 - Enable dialing from this port - BSAP Slave Only	Off	Dial Enabled
1375	@GV._P9_AUTO_DTR	Comm Port 9 - Enable Auto DTR set on this port - BSAP Slave Only	Off	Auto DTR Enabled
1376	@GV._P9_TS_DIS	Comm Port 9 - Time Synch Disabled through this port	Off	Time Synch Disabled
1377	@GV._P9_TS_FORCE	Comm Port 9 - Force a Time Synch to be sent to this port - BSAP Slave Only	Off	Time Synch Forced
1378	@GV._P9_NRT_DIS	Comm Port 9 - Node Routing Table Disabled through this port - BSAP Slave Only	Off	Node Routing Table Disabled
1379	@GV._P9_ALM_DIS	Comm Port 9 - Disable alarms being reported through this port - BSAP Slave Only	Alarms will be reported	Alarms will be disabled
1380	@GV._P9_IMM_DIS	Comm Port 9 - Disable Immediate Response Mode on this port - BSAP Slave Only	Immediate Response Mode Enabled	Immediate Response Mode Disabled
1381	@GV._P9_IDLE_POLL	Comm Port 9 - Enable Idle Polling on this port - BSAP Master Only	Idle Polling Disabled	Idle Polling Enabled
1382	@GV._P10_IGNORE_ECHO	Comm Port 10 - Ignore Echo	Off	Ignore Echo
1383	@GV._P10_DIAL_PORT	Comm Port 10 - Enable dialing from this port - BSAP Slave Only	Off	Dial Enabled
1384	@GV._P10_AUTO_DTR	Comm Port 10 - Enable Auto DTR set on this port - BSAP Slave Only	Off	Auto DTR Enabled
1385	@GV._P10_TS_DIS	Comm Port 10 - Time Synch Disabled through this port	Off	Time Synch Disabled
1386	@GV._P10_TS_FORCE	Comm Port 10 - Force a Time Synch to be sent to	Off	Time Synch

Coil#	Variable	Description	Off State	On State
		this port - BSAP Slave Only		Forced
1387	@GV._P10_NRT_DIS	Comm Port 10 - Node Routing Table Disabled through this port - BSAP Slave Only	Off	Node Routing Table Disabled
1388	@GV._P10_ALM_DIS	Comm Port 10 - Disable alarms being reported through this port - BSAP Slave Only	Alarms will be reported	Alarms will be disabled
1389	@GV._P10_IMM_DIS	Comm Port 10 - Disable Immediate Response Mode on this port - BSAP Slave Only	Immediate Response Mode Enabled	Immediate Response Mode Disabled
1390	@GV._P10_IDLE_POLL	Comm Port 10 - Enable Idle Polling on this port - BSAP Master Only	Idle Polling Disabled	Idle Polling Enabled
1391	@GV._P11_IGNORE_ECHO	Comm Port 11 - Ignore Echo	Off	Ignore Echo
1392	@GV._P11_DIAL_PORT	Comm Port 11 - Enable dialing from this port - BSAP Slave Only	Off	Dial Enabled
1393	@GV._P11_AUTO_DTR	Comm Port 11 - Enable Auto DTR set on this port - BSAP Slave Only	Off	Auto DTR Enabled
1394	@GV._P11_TS_DIS	Comm Port 11 - Time Synch Disabled through this port	Off	Time Synch Disabled
1395	@GV._P11_TS_FORCE	Comm Port 11 - Force a Time Synch to be sent to this port - BSAP Slave Only	Off	Time Synch Forced
1396	@GV._P11_NRT_DIS	Comm Port 11 - Node Routing Table Disabled through this port - BSAP Slave Only	Off	Node Routing Table Disabled
1397	@GV._P11_ALM_DIS	Comm Port 11 - Disable alarms being reported through this port - BSAP Slave Only	Alarms will be reported	Alarms will be disabled
1398	@GV._P11_IMM_DIS	Comm Port 11 - Disable Immediate Response Mode on this port - BSAP Slave Only	Immediate Response Mode Enabled	Immediate Response Mode Disabled
1399	@GV._P11_IDLE_POLL	Comm Port 11 - Enable Idle Polling on this port - BSAP Master Only	Idle Polling Disabled	Idle Polling Enabled
1400	IO_1.HWDIs_1.HWDI_1	HWDI,RCV 1 Open Limit	Off	On
1401	IO_1.HWDIs_1.HWDI_2	HWDI,RCV 1 Close Limit	Off	On
1402	IO_1.HWDIs_1.HWDI_3	HWDI,RCV 2 Open Limit	Off	On
1403	IO_1.HWDIs_1.HWDI_4	HWDI,RCV 2 Close Limit	Off	On
1404	IO_1.HWDIs_1.HWDI_5	HWDI,RCV 3 Open Limit	Off	On
1405	IO_1.HWDIs_1.HWDI_6	HWDI,RCV 3 Close Limit	Off	On
1406	IO_1.HWDIs_1.HWDI_7	HWDI,RCV 4 Open Limit	Off	On
1407	IO_1.HWDIs_1.HWDI_8	HWDI,RCV 4 Close Limit	Off	On
1408	IO_1.HWDIs_1.HWDI_9	HWDI,RCV 5 Open Limit	Off	On
1409	IO_1.HWDIs_1.HWDI_10	HWDI,RCV 5 Close Limit	Off	On
1410	IO_1.HWDIs_1.HWDI_11	HWDI,RCV 6 Open Limit	Off	On
1411	IO_1.HWDIs_1.HWDI_12	HWDI,RCV 6 Close Limit	Off	On
1412	IO_1.HWDIs_1.HWDI_13	HWDI,RCV 7 Open Limit	Off	On
1413	IO_1.HWDIs_1.HWDI_14	HWDI,RCV 7 Close Limit	Off	On
1414	IO_1.HWDIs_1.HWDI_15	HWDI,RCV 8 Open Limit	Off	On
1415	IO_1.HWDIs_1.HWDI_16	HWDI,RCV 8 Close Limit	Off	On
1416	IO_1.HWDIs_1.HWDI_17	HWDI,RCV 9 Open Limit	Off	On
1417	IO_1.HWDIs_1.HWDI_18	HWDI,RCV 9 Close Limit	Off	On
1418	IO_1.HWDIs_1.HWDI_19	HWDI,RCV 10 Open Limit	Off	On
1419	IO_1.HWDIs_1.HWDI_20	HWDI,RCV 10 Close Limit	Off	On
1420	IO_1.HWDIs_1.HWDI_21	HWDI,RCV 11 Open Limit	Off	On
1421	IO_1.HWDIs_1.HWDI_22	HWDI,RCV 11 Close Limit	Off	On
1422	IO_1.HWDIs_1.HWDI_23	HWDI,RCV 12 Open Limit	Off	On
1423	IO_1.HWDIs_1.HWDI_24	HWDI,RCV 12 Close Limit	Off	On
1424	IO_1.HWDIs_1.HWDI_25	HWDI,TUBE 1 Open Limit	Off	On

Coil#	Variable	Description	Off State	On State
1425	IO_1.HWDIs_1.HWDI_26	HWDI,TUBE 1 Close Limit	Off	On
1426	IO_1.HWDIs_1.HWDI_27	HWDI,TUBE 2 Open Limit	Off	On
1427	IO_1.HWDIs_1.HWDI_28	HWDI,TUBE 2 Close Limit	Off	On
1428	IO_1.HWDIs_1.HWDI_29	HWDI,TUBE 3 Open Limit	Off	On
1429	IO_1.HWDIs_1.HWDI_30	HWDI,TUBE 3 Close Limit	Off	On
1430	IO_1.HWDIs_1.HWDI_31	HWDI,TUBE 4 Open Limit	Off	On
1431	IO_1.HWDIs_1.HWDI_32	HWDI,TUBE 4 Close Limit	Off	On
1432	IO_1.HWDIs_1.HWDI_33	HWDI,TUBE 5 Open Limit	Off	On
1433	IO_1.HWDIs_1.HWDI_34	HWDI,TUBE 5 Close Limit	Off	On
1434	IO_1.HWDIs_1.HWDI_35	HWDI,TUBE 6 Open Limit	Off	On
1435	IO_1.HWDIs_1.HWDI_36	HWDI,TUBE 6 Close Limit	Off	On
1436	IO_1.HWDIs_1.HWDI_37	HWDI,TUBE 7 Open Limit	Off	On
1437	IO_1.HWDIs_1.HWDI_38	HWDI,TUBE 7 Close Limit	Off	On
1438	IO_1.HWDIs_1.HWDI_39	HWDI,TUBE 8 Open Limit	Off	On
1439	IO_1.HWDIs_1.HWDI_40	HWDI,TUBE 8 Close Limit	Off	On
1440	IO_1.HWDIs_1.HWDI_41	HWDI,TUBE 9 Open Limit	Off	On
1441	IO_1.HWDIs_1.HWDI_42	HWDI,TUBE 9 Close Limit	Off	On
1442	IO_1.HWDIs_1.HWDI_43	HWDI,TUBE 10 Open Limit	Off	On
1443	IO_1.HWDIs_1.HWDI_44	HWDI,TUBE 10 Close Limit	Off	On
1444	IO_1.HWDIs_1.HWDI_45	HWDI,TUBE 11 Open Limit	Off	On
1445	IO_1.HWDIs_1.HWDI_46	HWDI,TUBE 11 Close Limit	Off	On
1446	IO_1.HWDIs_1.HWDI_47	HWDI,TUBE 12 Open Limit	Off	On
1447	IO_1.HWDIs_1.HWDI_48	HWDI,TUBE 12 Close Limit	Off	On
1448	IO_1.HWDIs_1.HWDI_49	HWDI,CV 1 Open Limit	Off	On
1449	IO_1.HWDIs_1.HWDI_50	HWDI,CV 1 Close Limit	Off	On
1450	IO_1.HWDIs_1.HWDI_51	HWDI,CV 2 Open Limit	Off	On
1451	IO_1.HWDIs_1.HWDI_52	HWDI,CV 2 Close Limit	Off	On
1452	IO_1.HWDIs_1.HWDI_53	HWDI,CV 3 Open Limit	Off	On
1453	IO_1.HWDIs_1.HWDI_54	HWDI,CV 3 Close Limit	Off	On
1454	IO_1.HWDIs_1.HWDI_55	HWDI,CV 4 Open Limit	Off	On
1455	IO_1.HWDIs_1.HWDI_56	HWDI,CV 4 Close Limit	Off	On
1456	IO_1.HWDIs_1.HWDI_57	HWDI,CV 5 Open Limit	Off	On
1457	IO_1.HWDIs_1.HWDI_58	HWDI,CV 5 Close Limit	Off	On
1458	IO_1.HWDIs_1.HWDI_59	HWDI,CV 6 Open Limit	Off	On
1459	IO_1.HWDIs_1.HWDI_60	HWDI,CV 6 Close Limit	Off	On
1460	IO_1.HWDIs_1.HWDI_61	HWDI,CV 7 Open Limit	Off	On
1461	IO_1.HWDIs_1.HWDI_62	HWDI,CV 7 Close Limit	Off	On
1462	IO_1.HWDIs_1.HWDI_63	HWDI,CV 8 Open Limit	Off	On
1463	IO_1.HWDIs_1.HWDI_64	HWDI,CV 8 Close Limit	Off	On
1464	IO_1.HWDIs_1.HWDI_65	HWDI,CV 9 Open Limit	Off	On
1465	IO_1.HWDIs_1.HWDI_66	HWDI,CV 9 Close Limit	Off	On
1466	IO_1.HWDIs_1.HWDI_67	HWDI,CV 10 Open Limit	Off	On
1467	IO_1.HWDIs_1.HWDI_68	HWDI,CV 10 Close Limit	Off	On
1468	IO_1.HWDIs_1.HWDI_69	HWDI,CV 11 Open Limit	Off	On
1469	IO_1.HWDIs_1.HWDI_70	HWDI,CV 11 Close Limit	Off	On
1470	IO_1.HWDIs_1.HWDI_71	HWDI,CV 12 Open Limit	Off	On
1471	IO_1.HWDIs_1.HWDI_72	HWDI,CV 12 Close Limit	Off	On
1472	IO_1.HWDIs_1.HWDI_73	HWDI,GP PID 1 Open Limit	Off	On
1473	IO_1.HWDIs_1.HWDI_74	HWDI,GP PID 1 Close Limit	Off	On

Coil#	Variable	Description	Off State	On State
1474	IO_1.HWDIs_1.HWDI_75	HWDI,GP PID 2 Open Limit	Off	On
1475	IO_1.HWDIs_1.HWDI_76	HWDI,GP PID 2 Close Limit	Off	On
1476	IO_1.HWDIs_1.HWDI_77	HWDI,GP PID 3 Open Limit	Off	On
1477	IO_1.HWDIs_1.HWDI_78	HWDI,GP PID 3 Close Limit	Off	On
1478	IO_1.HWDIs_1.HWDI_79	HWDI,BV 1 Open Limit	Off	On
1479	IO_1.HWDIs_1.HWDI_80	HWDI,BV 1 Close Limit	Off	On
1480	IO_1.HWDIs_1.HWDI_81	HWDI,BV 2 Open Limit	Off	On
1481	IO_1.HWDIs_1.HWDI_82	HWDI,Bv 2 Close Limit	Off	On
1482	IO_1.HWDIs_1.HWDI_83	HWDI,BV 3 Open Limit	Off	On
1483	IO_1.HWDIs_1.HWDI_84	HWDI,BV 3 Close Limit	Off	On
1484	IO_1.HWDIs_1.HWDI_85	HWDI,BV 4 Open Limit	Off	On
1485	IO_1.HWDIs_1.HWDI_86	HWDI,BV 4 Close Limit	Off	On
1486	IO_1.HWDIs_1.HWDI_87	HWDI,BV 5 Open Limit	Off	On
1487	IO_1.HWDIs_1.HWDI_88	HWDI,BV 5 Close Limit	Off	On
1488	IO_1.HWDIs_1.HWDI_89	HWDI,BV 6 Open Limit	Off	On
1489	IO_1.HWDIs_1.HWDI_90	HWDI,BV 6 Close Limit	Off	On
1490	IO_1.HWDIs_1.HWDI_91	HWDI,BV 7 Open Limit	Off	On
1491	IO_1.HWDIs_1.HWDI_92	HWDI,BV 7 Close Limit	Off	On
1492	IO_1.HWDIs_1.HWDI_93	HWDI,BV 8 Open Limit	Off	On
1493	IO_1.HWDIs_1.HWDI_94	HWDI,BV 8 Close Limit	Off	On
1494	IO_1.HWDIs_1.HWDI_95	HWDI,ST2 DIR BV 1 Open Limit	Off	On
1495	IO_1.HWDIs_1.HWDI_96	HWDI,ST2 DIR BV 1 Close Limit	Off	On
1496	IO_1.HWDIs_1.HWDI_97	HWDI,ST2 DIR BV 2 Open Limit	Off	On
1497	IO_1.HWDIs_1.HWDI_98	HWDI,ST2 DIR BV 2 Close Limit	Off	On
1498	IO_1.HWDIs_1.HWDI_99	HWDI,ST2 DIR BV 3 Open Limit	Off	On
1499	IO_1.HWDIs_1.HWDI_100	HWDI,ST2 DIR BV 3 Close Limit	Off	On
1500	IO_1.HWDIs_1.HWDI_101	HWDI,ST2 DIR BV 4 Open Limit	Off	On
1501	IO_1.HWDIs_1.HWDI_102	HWDI,ST2 DIR BV 4 Close Limit	Off	On
1502	IO_1.HWDIs_1.HWDI_103	HWDI,ST2 DIR BV 5 Open Limit	Off	On
1503	IO_1.HWDIs_1.HWDI_104	HWDI,ST2 DIR BV 5 Close Limit	Off	On
1504	IO_1.HWDIs_1.HWDI_105	HWDI,ST2 DIR BV 6 Open Limit	Off	On
1505	IO_1.HWDIs_1.HWDI_106	HWDI,ST2 DIR BV 6 Close Limit	Off	On
1506	IO_1.HWDIs_1.HWDI_107	HWDI,ST2 DIR BV 7 Open Limit	Off	On
1507	IO_1.HWDIs_1.HWDI_108	HWDI,ST2 DIR BV 7 Close Limit	Off	On
1508	IO_1.HWDIs_1.HWDI_109	HWDI,ST2 DIR BV 8 Open Limit	Off	On
1509	IO_1.HWDIs_1.HWDI_110	HWDI,ST2 DIR BV 8 Close Limit	Off	On
1510	IO_1.HWDIs_1.HWDI_111	HWDI,OPP 1 Open Limit	Off	On
1511	IO_1.HWDIs_1.HWDI_112	HWDI,OPP 1 Close Limit	Off	On
1512	IO_1.HWDIs_1.HWDI_113	HWDI,OPP 2 Open Limit	Off	On
1513	IO_1.HWDIs_1.HWDI_114	HWDI,OPP 2 Close Limit	Off	On
1514	IO_1.HWDIs_1.HWDI_115	HWDI,OPP 3 Open Limit	Off	On
1515	IO_1.HWDIs_1.HWDI_116	HWDI,OPP 3 Close Limit	Off	On
1516	IO_1.HWDIs_1.HWDI_117	HWDI,OPP 4 Open Limit	Off	On
1517	IO_1.HWDIs_1.HWDI_118	HWDI,OPP 4 Close Limit	Off	On
1518	IO_1.HWDIs_1.HWDI_119	HWDI,OPP 5 Open Limit	Off	On
1519	IO_1.HWDIs_1.HWDI_120	HWDI,OPP 5 Close Limit	Off	On
1520	IO_1.HWDIs_1.HWDI_121	HWDI,OPP 6 Open Limit	Off	On
1521	IO_1.HWDIs_1.HWDI_122	HWDI,OPP 6 Close Limit	Off	On
1522	IO_1.HWDIs_1.HWDI_123	HWDI,OPP 7 Open Limit	Off	On

Coil#	Variable	Description	Off State	On State
1523	IO_1.HWDIs_1.HWDI_124	HWDI,OPP 7 Close Limit	Off	On
1524	IO_1.HWDIs_1.HWDI_125	HWDI,OPP 8 Open Limit	Off	On
1525	IO_1.HWDIs_1.HWDI_126	HWDI,OPP 8 Close Limit	Off	On
1526	IO_1.HWDIs_1.HWDI_127	HWDI,ST4 DIR BV 1 Open Limit	Off	On
1527	IO_1.HWDIs_1.HWDI_128	HWDI,ST4 DIR BV 1 Close Limit	Off	On
1528	IO_1.HWDIs_1.HWDI_129	HWDI,ST4 DIR BV 2 Open Limit	Off	On
1529	IO_1.HWDIs_1.HWDI_130	HWDI,ST4 DIR BV 2 Close Limit	Off	On
1530	IO_1.HWDIs_1.HWDI_131	HWDI,ST4 DIR BV 3 Open Limit	Off	On
1531	IO_1.HWDIs_1.HWDI_132	HWDI,ST4 DIR BV 3 Close Limit	Off	On
1532	IO_1.HWDIs_1.HWDI_133	HWDI,ST4 DIR BV 4 Open Limit	Off	On
1533	IO_1.HWDIs_1.HWDI_134	HWDI,ST4 DIR BV 4 Close Limit	Off	On
1534	IO_1.HWDIs_1.HWDI_135	HWDI,ST4 DIR BV 5 Open Limit	Off	On
1535	IO_1.HWDIs_1.HWDI_136	HWDI,ST4 DIR BV 5 Close Limit	Off	On
1536	IO_1.HWDIs_1.HWDI_137	HWDI,ST4 DIR BV 6 Open Limit	Off	On
1537	IO_1.HWDIs_1.HWDI_138	HWDI,ST4 DIR BV 6 Close Limit	Off	On
1538	IO_1.HWDIs_1.HWDI_139	HWDI,ST4 DIR BV 7 Open Limit	Off	On
1539	IO_1.HWDIs_1.HWDI_140	HWDI,ST4 DIR BV 7 Close Limit	Off	On
1540	IO_1.HWDIs_1.HWDI_141	HWDI,ST4 DIR BV 8 Open Limit	Off	On
1541	IO_1.HWDIs_1.HWDI_142	HWDI,ST4 DIR BV 8 Close Limit	Off	On
1542	IO_1.HWDIs_1.HWDI_143	HWDI,BV 9 Open Limit	Off	On
1543	IO_1.HWDIs_1.HWDI_144	HWDI,BV 9 Close Limit	Off	On
1544	IO_1.HWDIs_1.HWDI_145	HWDI,BV 10 Open Limit	Off	On
1545	IO_1.HWDIs_1.HWDI_146	HWDI,BV 10 Close Limit	Off	On
1546	IO_1.HWDIs_1.HWDI_147	HWDI,BV 11 Open Limit	Off	On
1547	IO_1.HWDIs_1.HWDI_148	HWDI,BV 11 Close Limit	Off	On
1548	IO_1.HWDIs_1.HWDI_149	HWDI,BV 12 Open Limit	Off	On
1549	IO_1.HWDIs_1.HWDI_150	HWDI,BV 12 Close Limit	Off	On
1550	IO_1.HWDIs_1.HWDI_151	HWDI,OPP 9 Open Limit	Off	On
1551	IO_1.HWDIs_1.HWDI_152	HWDI,OPP 9 Close Limit	Off	On
1552	IO_1.HWDIs_1.HWDI_153	HWDI,OPP 10 Open Limit	Off	On
1553	IO_1.HWDIs_1.HWDI_154	HWDI,OPP 10 Close Limit	Off	On
1554	IO_1.HWDIs_1.HWDI_155	HWDI,OPP 11 Open Limit	Off	On
1555	IO_1.HWDIs_1.HWDI_156	HWDI,OPP 11 Close Limit	Off	On
1556	IO_1.HWDIs_1.HWDI_157	HWDI,OPP 12 Open Limit	Off	On
1557	IO_1.HWDIs_1.HWDI_158	HWDI,OPP 12 Close Limit	Off	On
1558	IO_1.HWDIs_1.HWDI_159	HWDI,ST6 DIR BV 1 Open Limit	Off	On
1559	IO_1.HWDIs_1.HWDI_160	HWDI,ST6 DIR BV 1 Close Limit	Off	On
1560	IO_1.HWDIs_1.HWDI_161	HWDI,ST6 DIR BV 2 Open Limit	Off	On
1561	IO_1.HWDIs_1.HWDI_162	HWDI,ST6 DIR BV 2 Close Limit	Off	On
1562	IO_1.HWDIs_1.HWDI_163	HWDI,ST6 DIR BV 3 Open Limit	Off	On
1563	IO_1.HWDIs_1.HWDI_164	HWDI,ST6 DIR BV 3 Close Limit	Off	On
1564	IO_1.HWDIs_1.HWDI_165	HWDI,ST6 DIR BV 4 Open Limit	Off	On
1565	IO_1.HWDIs_1.HWDI_166	HWDI,ST6 DIR BV 4 Close Limit	Off	On
1566	IO_1.HWDIs_1.HWDI_167	HWDI,ST6 DIR BV 5 Open Limit	Off	On
1567	IO_1.HWDIs_1.HWDI_168	HWDI,ST6 DIR BV 5 Close Limit	Off	On
1568	IO_1.HWDIs_1.HWDI_169	HWDI,ST6 DIR BV 6 Open Limit	Off	On
1569	IO_1.HWDIs_1.HWDI_170	HWDI,ST6 DIR BV 6 Close Limit	Off	On
1570	IO_1.HWDIs_1.HWDI_171	HWDI,ST6 DIR BV 7 Open Limit	Off	On
1571	IO_1.HWDIs_1.HWDI_172	HWDI,ST6 DIR BV 7 Close Limit	Off	On

Coil#	Variable	Description	Off State	On State
1572	IO_1.HWDIs_1.HWDI_173	HWDI,ST6 DIR BV 8 Open Limit	Off	On
1573	IO_1.HWDIs_1.HWDI_174	HWDI,ST6 DIR BV 8 Close Limit	Off	On
1574	IO_1.HWDIs_1.HWDI_175	HWDI,ST1 Direction Indicator	Off	On
1575	IO_1.HWDIs_1.HWDI_176	HWDI,ST2 Direction Indicator	Off	On
1576	IO_1.HWDIs_1.HWDI_177	HWDI,ST3 Direction Indicator	Off	On
1577	IO_1.HWDIs_1.HWDI_178	HWDI,ST4 Direction Indicator	Off	On
1578	IO_1.HWDIs_1.HWDI_179	HWDI,ST5 Direction Indicator	Off	On
1579	IO_1.HWDIs_1.HWDI_180	HWDI,ST6 Direction Indicator	Off	On
1580	IO_1.HWDIs_1.HWDI_181	HWDI,Loss of AC Power	Off	On
1581	IO_1.HWDIs_1.HWDI_182	HWDI,Hazardous Gas Level 1 HIGH	Off	On
1582	IO_1.HWDIs_1.HWDI_183	HWDI,Hazardous Gas Level 1 HIGH HIGH	Off	On
1583	IO_1.HWDIs_1.HWDI_184	HWDI,Gas Detector Failure 1	Off	On
1584	IO_1.HWDIs_1.HWDI_185	HWDI,Fire Alarm 1	Off	On
1585	IO_1.HWDIs_1.HWDI_186	HWDI,Fire Detector Failure 1	Off	On
1586	IO_1.HWDIs_1.HWDI_187	HWDI,Smoke Alarm 1	Off	On
1587	IO_1.HWDIs_1.HWDI_188	HWDI,Smoke Detector Failure 1	Off	On
1588	IO_1.HWDIs_1.HWDI_189	HWDI,Hazardous Gas Level 2 HIGH	Off	On
1589	IO_1.HWDIs_1.HWDI_190	HWDI,Hazardous Gas Level 2 HIGH HIGH	Off	On
1590	IO_1.HWDIs_1.HWDI_191	HWDI,Gas Detector Failure 2	Off	On
1591	IO_1.HWDIs_1.HWDI_192	HWDI,Fire Alarm 2	Off	On
1592	IO_1.HWDIs_1.HWDI_193	HWDI,Fire Detector Failure 2	Off	On
1593	IO_1.HWDIs_1.HWDI_194	HWDI,Smoke Alarm 2	Off	On
1594	IO_1.HWDIs_1.HWDI_195	HWDI,Smoke Detector Failure 2	Off	On
1595	IO_1.HWDIs_1.HWDI_196	HWDI,Hazardous Gas Level 3 HIGH	Off	On
1596	IO_1.HWDIs_1.HWDI_197	HWDI,Hazardous Gas Level 3 HIGH HIGH	Off	On
1597	IO_1.HWDIs_1.HWDI_198	HWDI,Gas Detector Failure 3	Off	On
1598	IO_1.HWDIs_1.HWDI_199	HWDI,Fire Alarm 3	Off	On
1599	IO_1.HWDIs_1.HWDI_200	HWDI,Fire Detector Failure 3	Off	On
1600	IO_1.HWDIs_1.HWDI_201	HWDI,Smoke Alarm 3	Off	On
1601	IO_1.HWDIs_1.HWDI_202	HWDI,Smoke Detector Failure 3	Off	On
1602	IO_1.HWDIs_1.HWDI_203	HWDI,Hazardous Gas Level 4 HIGH	Off	On
1603	IO_1.HWDIs_1.HWDI_204	HWDI,Hazardous Gas Level 4 HIGH HIGH	Off	On
1604	IO_1.HWDIs_1.HWDI_205	HWDI,Gas Detector Failure 4	Off	On
1605	IO_1.HWDIs_1.HWDI_206	HWDI,Fire Alarm 4	Off	On
1606	IO_1.HWDIs_1.HWDI_207	HWDI,Fire Detector Failure 4	Off	On
1607	IO_1.HWDIs_1.HWDI_208	HWDI,Smoke Alarm 4	Off	On
1608	IO_1.HWDIs_1.HWDI_209	HWDI,Smoke Detector Failure 4	Off	On
1609	IO_1.HWDIs_1.HWDI_210	HWDI,Building Entry 1	Off	On
1610	IO_1.HWDIs_1.HWDI_211	HWDI,Building Entry 2	Off	On
1611	IO_1.HWDIs_1.HWDI_212	HWDI,Building Entry 3	Off	On
1612	IO_1.HWDIs_1.HWDI_213	HWDI,Building Entry 4	Off	On
1613	IO_1.HWDIs_1.HWDI_214	HWDI,Building Entry 5	Off	On
1614	IO_1.HWDIs_1.HWDI_215	HWDI,Building Entry 6	Off	On
1615	IO_1.HWDIs_1.HWDI_216	HWDI,Low DC Failure Battery Charger	Off	On
1616	IO_1.HWDIs_1.HWDI_217	HWDI,High DC Failure Battery Charger	Off	On
1617	IO_1.HWDIs_1.HWDI_218	HWDI,Battery Charger Alarm	Off	On
1618	IO_1.HWDIs_1.HWDI_219	HWDI,RCV Interposing Panel Fuse Blown	Off	On
1619	IO_1.HWDIs_1.HWDI_220	HWDI,Fall Back Pneumatic System Active	Off	On
1620	IO_1.HWDIs_1.HWDI_221	HWDI,High H2S Level	Off	On

Coil#	Variable	Description	Off State	On State
1621	IO_1.HWDIs_1.HWDI_222	HWDI,H2S Analyzer Failure	Off	On
1622	IO_1.HWDIs_1.HWDI_223	HWDI,H2S Shut-in Alarm	Off	On
1623	IO_1.HWDIs_1.HWDI_224	HWDI,High H2O Level	Off	On
1624	IO_1.HWDIs_1.HWDI_225	HWDI,H2O Analyzer Failure	Off	On
1625	IO_1.HWDIs_1.HWDI_226	HWDI,Gas Odorizer Alarm Low Level	Off	On
1626	IO_1.HWDIs_1.HWDI_227	HWDI,Gas Odorizer Pump Alarm	Off	On
1627	IO_1.HWDIs_1.HWDI_228	HWDI,Corrosion Inhibitor Low Level	Off	On
1628	IO_1.HWDIs_1.HWDI_229	HWDI,Corrosion Inhibitor Pump Alarm	Off	On
1629	IO_1.HWDIs_1.HWDI_230	HWDI,Filter/Separator 1 Hi Tank Level	Off	On
1630	IO_1.HWDIs_1.HWDI_231	HWDI,Filter/Separator 2 Hi Tank Level	Off	On
1631	IO_1.HWDIs_1.HWDI_232	HWDI,Filter/Separator 3 Hi Tank Level	Off	On
1632	IO_1.HWDIs_1.HWDI_233	HWDI,Filter/Separator 1 Hi Differential Press	Off	On
1633	IO_1.HWDIs_1.HWDI_234	HWDI,Filter/Separator 2 Hi Differential Press	Off	On
1634	IO_1.HWDIs_1.HWDI_235	HWDI,Filter/Separator 3 Hi Differential Press	Off	On
1635	IO_1.HWDIs_1.HWDI_236	HWDI,Filter/Separator 4 Hi Differential Press	Off	On
1636	IO_1.HWDIs_1.HWDI_237	HWDI,Filter/Separator 5 Hi Differential Press	Off	On
1637	IO_1.HWDIs_1.HWDI_238	HWDI,Filter/Separator 6 Hi Differential Press	Off	On
1638	IO_1.HWDIs_1.HWDI_239	HWDI,Filter/Separator 1 Hi Sump	Off	On
1639	IO_1.HWDIs_1.HWDI_240	HWDI,Filter/Separator 2 Hi Sump	Off	On
1640	IO_1.HWDIs_1.HWDI_241	HWDI,Filter/Separator 3 Hi Sump	Off	On
1641	IO_1.HWDIs_1.HWDI_242	HWDI,Filter/Separator 4 Hi Sump	Off	On
1642	IO_1.HWDIs_1.HWDI_243	HWDI,Filter/Separator 5 Hi Sump	Off	On
1643	IO_1.HWDIs_1.HWDI_244	HWDI,Filter/Separator 6 Hi Sump	Off	On
1644	IO_1.HWDIs_1.HWDI_245	HWDI,Filter/Separator 7 Hi Sump	Off	On
1645	IO_1.HWDIs_1.HWDI_246	HWDI,Filter/Separator 8 Hi Sump	Off	On
1646	IO_1.HWDIs_1.HWDI_247	HWDI,Filter/Separator 9 Hi Sump	Off	On
1647	IO_1.HWDIs_1.HWDI_248	HWDI,Filter/Separator 10 Hi Sump	Off	On
1648	IO_1.HWDIs_1.HWDI_249	HWDI,Filter/Separator 11 Hi Sump	Off	On
1649	IO_1.HWDIs_1.HWDI_250	HWDI,Filter/Separator 12 Hi Sump	Off	On
1650	IO_1.HWDIs_1.HWDI_251	HWDI,Filter/Separator 1 Hi Hi Sump	Off	On
1651	IO_1.HWDIs_1.HWDI_252	HWDI,Filter/Separator 2 Hi Hi Sump	Off	On
1652	IO_1.HWDIs_1.HWDI_253	HWDI,Filter/Separator 3 Hi Hi Sump	Off	On
1653	IO_1.HWDIs_1.HWDI_254	HWDI,Filter/Separator 4 Hi Hi Sump	Off	On
1654	IO_1.HWDIs_1.HWDI_255	HWDI,Filter/Separator 5 Hi Hi Sump	Off	On
1655	IO_1.HWDIs_1.HWDI_256	HWDI,Filter/Separator 6 Hi Hi Sump	Off	On
1656	IO_1.HWDIs_1.HWDI_257	HWDI,Filter/Separator 7 Hi Hi Sump	Off	On
1657	IO_1.HWDIs_1.HWDI_258	HWDI,Filter/Separator 8 Hi Hi Sump	Off	On
1658	IO_1.HWDIs_1.HWDI_259	HWDI,Filter/Separator 9 Hi Hi Sump	Off	On
1659	IO_1.HWDIs_1.HWDI_260	HWDI,ilter/Separator 10 Hi Hi Sump	Off	On
1660	IO_1.HWDIs_1.HWDI_261	HWDI,Filter/Separator 11 Hi Hi Sump	Off	On
1661	IO_1.HWDIs_1.HWDI_262	HWDI,Filter/Separator 12 Hi Hi Sump	Off	On
1662	IO_1.HWDIs_1.HWDI_263	HWDI,Turbine Meter HIGH Differential	Off	On
1663	IO_1.HWDIs_1.HWDI_264	HWDI,Rotary Meter HIGH Differential BYPASS	Off	On
1664	IO_1.HWDIs_1.HWDI_265	HWDI,Auto Adjust Turbine 1 Alarm	Off	On
1665	IO_1.HWDIs_1.HWDI_266	HWDI,Auto Adjust Turbine 2 Alarm	Off	On
1666	IO_1.HWDIs_1.HWDI_267	HWDI,Auto Adjust Turbine 3 Alarm	Off	On
1667	IO_1.HWDIs_1.HWDI_268	HWDI,Auto Adjust Turbine 4 Alarm	Off	On
1668	IO_1.HWDIs_1.HWDI_269	HWDI,Auto Adjust Turbine 5 Alarm	Off	On
1669	IO_1.HWDIs_1.HWDI_270	HWDI,Auto Adjust Turbine 6 Alarm	Off	On

Coil#	Variable	Description	Off State	On State
1670	IO_1.HWDIs_1.HWDI_271	HWDI,Auto Adjust Turbine 7 Alarm	Off	On
1671	IO_1.HWDIs_1.HWDI_272	HWDI,Auto Adjust Turbine 8 Alarm	Off	On
1672	IO_1.HWDIs_1.HWDI_273	HWDI,Auto Adjust Turbine 9 Alarm	Off	On
1673	IO_1.HWDIs_1.HWDI_274	HWDI,Auto Adjust Turbine 10 Alarm	Off	On
1674	IO_1.HWDIs_1.HWDI_275	HWDI,Auto Adjust Turbine 11 Alarm	Off	On
1675	IO_1.HWDIs_1.HWDI_276	HWDI,Auto Adjust Turbine 12 Alarm	Off	On
1676	IO_1.HWDIs_1.HWDI_277	HWDI,Ultrasonic 1 DATA not Valid	Off	On
1677	IO_1.HWDIs_1.HWDI_278	HWDI,Ultrasonic 2 DATA not Valid	Off	On
1678	IO_1.HWDIs_1.HWDI_279	HWDI,Ultrasonic 3 DATA not Valid	Off	On
1679	IO_1.HWDIs_1.HWDI_280	HWDI,Ultrasonic 4 DATA not Valid	Off	On
1680	IO_1.HWDIs_1.HWDI_281	HWDI,Ultrasonic 5 DATA not Valid	Off	On
1681	IO_1.HWDIs_1.HWDI_282	HWDI,Ultrasonic 6 DATA not Valid	Off	On
1682	IO_1.HWDIs_1.HWDI_283	HWDI,Ultrasonic 7 DATA not Valid	Off	On
1683	IO_1.HWDIs_1.HWDI_284	HWDI,Ultrasonic 8 DATA not Valid	Off	On
1684	IO_1.HWDIs_1.HWDI_285	HWDI,Ultrasonic 9 DATA not Valid	Off	On
1685	IO_1.HWDIs_1.HWDI_286	HWDI,Ultrasonic 10 DATA not Valid	Off	On
1686	IO_1.HWDIs_1.HWDI_287	HWDI,Ultrasonic 11 DATA not Valid	Off	On
1687	IO_1.HWDIs_1.HWDI_288	HWDI,Ultrasonic 12 DATA not Valid	Off	On
1688	IO_1.HWDIs_1.HWDI_289	HWDI,Ultrasonic Meter Partial Failure	Off	On
1689	IO_1.HWDIs_1.HWDI_290	HWDI,Chromatograph Alarm	Off	On
1690	IO_1.HWDIs_1.HWDI_291	HWDI,User DI 1	Off	On
1691	IO_1.HWDIs_1.HWDI_292	HWDI,User DI 2	Off	On
1692	IO_1.HWDIs_1.HWDI_293	HWDI,User DI 3	Off	On
1693	IO_1.HWDIs_1.HWDI_294	HWDI,User DI 4	Off	On
1694	IO_1.HWDIs_1.HWDI_295	HWDI,User DI 5	Off	On
1695	IO_1.HWDIs_1.HWDI_296	HWDI,User DI 6	Off	On
1696	IO_1.HWDIs_1.HWDI_297	HWDI,User DI 7	Off	On
1697	IO_1.HWDIs_1.HWDI_298	HWDI,User DI 8	Off	On
1698	IO_1.HWDIs_1.HWDI_299	HWDI,User DI 9	Off	On
1699	IO_1.HWDIs_1.HWDI_300	HWDI,User DI 10	Off	On
1700	IO_1.HWDIs_1.HWDI_301	HWDI,User DI 11	Off	On
1701	IO_1.HWDIs_1.HWDI_302	HWDI,User DI 12	Off	On
1702	IO_1.HWDIs_1.HWDI_303	HWDI,User DI 13	Off	On
1703	IO_1.HWDIs_1.HWDI_304	HWDI,User DI 14	Off	On
1704	IO_1.HWDIs_1.HWDI_305	HWDI,User DI 15	Off	On
1705	IO_1.HWDIs_1.HWDI_306	HWDI,User DI 16	Off	On
1706	IO_1.HWDIs_1.HWDI_307	HWDI,User DI 17	Off	On
1707	IO_1.HWDIs_1.HWDI_308	HWDI,User DI 18	Off	On
1708	IO_1.HWDIs_1.HWDI_309	HWDI,User DI 19	Off	On
1709	IO_1.HWDIs_1.HWDI_310	HWDI,User DI 20	Off	On
1710	STC.STC_1.PID_SEL_1.ST_EN	Station 1 Control - Station Control Enabled	Disabled	Enabled
1711	STC.STC_1.PID_Pmry3.ENABLE	Station 1 Control - Flow Control Enabled	Disabled	Enabled
1712	STC.STC_1.PID_FLOW.ENABLE	Station 1 Control - Primary 3 Control Enabled	Disabled	Enabled
1713	STC.STC_1.PID_POVRD.ENABLE	Station 1 Control - Pressure Override Control Enabled	Disabled	Enabled
1714	STC.STC_1.PID_MAOP.ENABLE	Station 1 Control - Maximum Allowable Operating Pressure Protection Control Enabled	Disabled	Enabled
1715	STC.STC_1.PID_Ovrd1.ENABLE	Station 1 Control - Override Loop 1 Control Enabled	Disabled	Enabled
1716	STC.STC_1.PID_OUTLO.ENABLE	Station 1 Control - Minimum Outlet Pressure Override Control Enabled	Disabled	Enabled

Coil#	Variable	Description	Off State	On State
1717	STC.STC_1.PID_Ovrd2.ENABLE	Station 1 Control - Override Loop 2 Control Enabled	Disabled	Enabled
1718	STC.STC_1.MANMODE	Station 1 Control - Station Control Manual Control	Disabled	Enabled
1719	STC.STC_2.PID_SEL_1.ST_EN	Station 2 Control - Station Control Enabled	Disabled	Enabled
1720	STC.STC_2.PID_Pmry3.ENABLE	Station 2 Control - Flow Control Enabled	Disabled	Enabled
1721	STC.STC_2.PID_FLOW.ENABLE	Station 2 Control - Primary 3 Control Enabled	Disabled	Enabled
1722	STC.STC_2.PID_POVRD.ENABLE	Station 2 Control - Pressure Override Control Enabled	Disabled	Enabled
1723	STC.STC_2.PID_MAOP.ENABLE	Station 2 Control - Maximum Allowable Operating Pressure Protection Control Enabled	Disabled	Enabled
1724	STC.STC_2.PID_Ovrd1.ENABLE	Station 2 Control - Override Loop 1 Control Enabled	Disabled	Enabled
1725	STC.STC_2.PID_OUTLO.ENABLE	Station 2 Control - Minimum Outlet Pressure Override Control Enabled	Disabled	Enabled
1726	STC.STC_2.PID_Ovrd2.ENABLE	Station 2 Control - Override Loop 2 Control Enabled	Disabled	Enabled
1727	STC.STC_2.MANMODE	Station 2 Control - Station Control Manual Control	Disabled	Enabled
1728	STC.STC_3.PID_SEL_1.ST_EN	Station 3 Control - Station Control Enabled	Disabled	Enabled
1729	STC.STC_3.PID_Pmry3.ENABLE	Station 3 Control - Flow Control Enabled	Disabled	Enabled
1730	STC.STC_3.PID_FLOW.ENABLE	Station 3 Control - Primary 3 Control Enabled	Disabled	Enabled
1731	STC.STC_3.PID_POVRD.ENABLE	Station 3 Control - Pressure Override Control Enabled	Disabled	Enabled
1732	STC.STC_3.PID_MAOP.ENABLE	Station 3 Control - Maximum Allowable Operating Pressure Protection Control Enabled	Disabled	Enabled
1733	STC.STC_3.PID_Ovrd1.ENABLE	Station 3 Control - Override Loop 1 Control Enabled	Disabled	Enabled
1734	STC.STC_3.PID_OUTLO.ENABLE	Station 3 Control - Minimum Outlet Pressure Override Control Enabled	Disabled	Enabled
1735	STC.STC_3.PID_Ovrd2.ENABLE	Station 3 Control - Override Loop 2 Control Enabled	Disabled	Enabled
1736	STC.STC_3.MANMODE	Station 3 Control - Station Control Manual Control	Disabled	Enabled
1737	STC.STC_4.PID_SEL_1.ST_EN	Station 4 Control - Station Control Enabled	Disabled	Enabled
1738	STC.STC_4.PID_Pmry3.ENABLE	Station 4 Control - Flow Control Enabled	Disabled	Enabled
1739	STC.STC_4.PID_FLOW.ENABLE	Station 4 Control - Primary 3 Control Enabled	Disabled	Enabled
1740	STC.STC_4.PID_POVRD.ENABLE	Station 4 Control - Pressure Override Control Enabled	Disabled	Enabled
1741	STC.STC_4.PID_MAOP.ENABLE	Station 4 Control - Maximum Allowable Operating Pressure Protection Control Enabled	Disabled	Enabled
1742	STC.STC_4.PID_Ovrd1.ENABLE	Station 4 Control - Override Loop 1 Control Enabled	Disabled	Enabled
1743	STC.STC_4.PID_OUTLO.ENABLE	Station 4 Control - Minimum Outlet Pressure Override Control Enabled	Disabled	Enabled
1744	STC.STC_4.PID_Ovrd2.ENABLE	Station 4 Control - Override Loop 2 Control Enabled	Disabled	Enabled
1745	STC.STC_4.MANMODE	Station 4 Control - Station Control Manual Control	Disabled	Enabled
1746	STC.STC_5.PID_SEL_1.ST_EN	Station 5 Control - Station Control Enabled	Disabled	Enabled
1747	STC.STC_5.PID_Pmry3.ENABLE	Station 5 Control - Flow Control Enabled	Disabled	Enabled
1748	STC.STC_5.PID_FLOW.ENABLE	Station 5 Control - Primary 3 Control Enabled	Disabled	Enabled
1749	STC.STC_5.PID_POVRD.ENABLE	Station 5 Control - Pressure Override Control Enabled	Disabled	Enabled
1750	STC.STC_5.PID_MAOP.ENABLE	Station 5 Control - Maximum Allowable Operating Pressure Protection Control Enabled	Disabled	Enabled
1751	STC.STC_5.PID_Ovrd1.ENABLE	Station 5 Control - Override Loop 1 Control Enabled	Disabled	Enabled
1752	STC.STC_5.PID_OUTLO.ENABLE	Station 5 Control - Minimum Outlet Pressure Override Control Enabled	Disabled	Enabled
1753	STC.STC_5.PID_Ovrd2.ENABLE	Station 5 Control - Override Loop 2 Control Enabled	Disabled	Enabled
1754	STC.STC_5.MANMODE	Station 5 Control - Station Control Manual Control	Disabled	Enabled
1755	STC.STC_6.PID_SEL_1.ST_EN	Station 6 Control - Station Control Enabled	Disabled	Enabled
1756	STC.STC_6.PID_Pmry3.ENABLE	Station 6 Control - Flow Control Enabled	Disabled	Enabled

Coil#	Variable	Description	Off State	On State
1757	STC.STC_6.PID_FLOW.ENABLE	Station 6 Control - Primary 3 Control Enabled	Disabled	Enabled
1758	STC.STC_6.PID_POVRD.ENABLE	Station 6 Control - Pressure Override Control Enabled	Disabled	Enabled
1759	STC.STC_6.PID_MAOP.ENABLE	Station 6 Control - Maximum Allowable Operating Pressure Protection Control Enabled	Disabled	Enabled
1760	STC.STC_6.PID_Ovrd1.ENABLE	Station 6 Control - Override Loop 1 Control Enabled	Disabled	Enabled
1761	STC.STC_6.PID_OUTLO.ENABLE	Station 6 Control - Minimum Outlet Pressure Override Control Enabled	Disabled	Enabled
1762	STC.STC_6.PID_Ovrd2.ENABLE	Station 6 Control - Override Loop 2 Control Enabled	Disabled	Enabled
1763	STC.STC_6.MANMODE	Station 6 Control - Station Control Manual Control	Disabled	Enabled
1764	MB.SPARE	****** RESERVED FOR FUTURE USE ******		
1765	MB.SPARE	****** RESERVED FOR FUTURE USE ******		
1766	MB.SPARE	****** RESERVED FOR FUTURE USE ******		
1767	MB.SPARE	****** RESERVED FOR FUTURE USE ******		
1768	MB.SPARE	****** RESERVED FOR FUTURE USE ******		
1769	MB.SPARE	****** RESERVED FOR FUTURE USE ******		
1770	MB.SPARE	****** RESERVED FOR FUTURE USE ******		
1771	MB.SPARE	****** RESERVED FOR FUTURE USE ******		
1772	MB.SPARE	****** RESERVED FOR FUTURE USE ******		
1773	MB.SPARE	****** RESERVED FOR FUTURE USE ******		
1774	MB.SPARE	****** RESERVED FOR FUTURE USE ******		
1775	MB.SPARE	****** RESERVED FOR FUTURE USE ******		
1776	MB.SPARE	****** RESERVED FOR FUTURE USE ******		
1777	MB.SPARE	****** RESERVED FOR FUTURE USE ******		
1778	MB.SPARE	****** RESERVED FOR FUTURE USE ******		
1779	MB.SPARE	****** RESERVED FOR FUTURE USE ******		
1780	MB.SPARE	****** RESERVED FOR FUTURE USE ******		
1781	MB.SPARE	****** RESERVED FOR FUTURE USE ******		
1782	TS.BV_1.MANPOS	Run Switching - Run n - Block Valve 1 - Valve Position Command	Close	Open
1783	TS.BV_1.BLIND	Run Switching - Run n - Block Valve 1 - Valve Position Limit Switch Feedback	Blind	Limit Switch
1784	TS.BV_1.IBOLS	Run Switching - Run n - Block Valve 1 - Open Limit Switch	Off	Opened
1785	TS.BV_1.IBCLS	Run Switching - Run n - Block Valve 1 - Close Limit Switch	Off	Closed
1786	TS.BV_1.INVRT	Run Switching - Run n - Block Valve 1 - Invert Valve Control Outputs	Off	Invert
1787	TS.BV_2.MANPOS	Run Switching - Run n - Block Valve 2 - Valve Position Command	Close	Open
1788	TS.BV_2.BLIND	Run Switching - Run n - Block Valve 2 - Valve Position Limit Switch Feedback	Blind	Limit Switch
1789	TS.BV_2.IBOLS	Run Switching - Run n - Block Valve 2 - Open Limit Switch	Off	Opened
1790	TS.BV_2.IBCLS	Run Switching - Run n - Block Valve 2 - Close Limit Switch	Off	Closed
1791	TS.BV_2.INVRT	Run Switching - Run n - Block Valve 2 - Invert Valve Control Outputs	Off	Invert
1792	TS.BV_3.MANPOS	Run Switching - Run n - Block Valve 3 - Valve Position Command	Close	Open
1793	TS.BV_3.BLIND	Run Switching - Run n - Block Valve 3 - Valve Position Limit Switch Feedback	Blind	Limit Switch
1794	TS.BV_3.IBOLS	Run Switching - Run n - Block Valve 3 - Open Limit Switch	Off	Opened
1795	TS.BV_3.IBCLS	Run Switching - Run n - Block Valve 3 - Close Limit Switch	Off	Closed
1796	TS.BV_3.INVRT	Run Switching - Run n - Block Valve 3 - Invert Valve Control Outputs	Off	Invert
1797	TS.BV_4.MANPOS	Run Switching - Run n - Block Valve 4 - Valve	Close	Open

Coil#	Variable	Description	Off State	On State
		Position Command		
1798	TS.BV_4.BLIND	Run Switching - Run n - Block Valve 4 - Valve Position Limit Switch Feedback	Blind	Limit Switch
1799	TS.BV_4.IBOLS	Run Switching - Run n - Block Valve 4 - Open Limit Switch	Off	Opened
1800	TS.BV_4.IBCLS	Run Switching - Run n - Block Valve 4 - Close Limit Switch	Off	Closed
1801	TS.BV_4.INVRT	Run Switching - Run n - Block Valve 4 - Invert Valve Control Outputs	Off	Invert
1802	TS.BV_5.MANPOS	Run Switching - Run n - Block Valve 5 - Valve Position Command	Close	Open
1803	TS.BV_5.BLIND	Run Switching - Run n - Block Valve 5 - Valve Position Limit Switch Feedback	Blind	Limit Switch
1804	TS.BV_5.IBOLS	Run Switching - Run n - Block Valve 5 - Open Limit Switch	Off	Opened
1805	TS.BV_5.IBCLS	Run Switching - Run n - Block Valve 5 - Close Limit Switch	Off	Closed
1806	TS.BV_5.INVRT	Run Switching - Run n - Block Valve 5 - Invert Valve Control Outputs	Off	Invert
1807	TS.BV_6.MANPOS	Run Switching - Run n - Block Valve 6 - Valve Position Command	Close	Open
1808	TS.BV_6.BLIND	Run Switching - Run n - Block Valve 6 - Valve Position Limit Switch Feedback	Blind	Limit Switch
1809	TS.BV_6.IBOLS	Run Switching - Run n - Block Valve 6 - Open Limit Switch	Off	Opened
1810	TS.BV_6.IBCLS	Run Switching - Run n - Block Valve 6 - Close Limit Switch	Off	Closed
1811	TS.BV_6.INVRT	Run Switching - Run n - Block Valve 6 - Invert Valve Control Outputs	Off	Invert
1812	TS.BV_7.MANPOS	Run Switching - Run n - Block Valve 7 - Valve Position Command	Close	Open
1813	TS.BV_7.BLIND	Run Switching - Run n - Block Valve 7 - Valve Position Limit Switch Feedback	Blind	Limit Switch
1814	TS.BV_7.IBOLS	Run Switching - Run n - Block Valve 7 - Open Limit Switch	Off	Opened
1815	TS.BV_7.IBCLS	Run Switching - Run n - Block Valve 7 - Close Limit Switch	Off	Closed
1816	TS.BV_7.INVRT	Run Switching - Run n - Block Valve 7 - Invert Valve Control Outputs	Off	Invert
1817	TS.BV_8.MANPOS	Run Switching - Run n - Block Valve 8 - Valve Position Command	Close	Open
1818	TS.BV_8.BLIND	Run Switching - Run n - Block Valve 8 - Valve Position Limit Switch Feedback	Blind	Limit Switch
1819	TS.BV_8.IBOLS	Run Switching - Run n - Block Valve 8 - Open Limit Switch	Off	Opened
1820	TS.BV_8.IBCLS	Run Switching - Run n - Block Valve 8 - Close Limit Switch	Off	Closed
1821	TS.BV_8.INVRT	Run Switching - Run n - Block Valve 8 - Invert Valve Control Outputs	Off	Invert
1822	TS.TC_1.ST1_TS_CHKFLOW	Run Switching - Station 1 - Check Flow Rate Enabled / Disabled	Disabled	Enabled
1823	TS.TC_1.ST1_TS_EN	Run Switching - Station 1 - Meter Run Staging Enabled / Disabled	Disabled	Enabled
1824	TS.TC_1.ST2_TS_CHKFLOW	Run Switching - Station 2 - Check Flow Rate Enabled / Disabled	Disabled	Enabled
1825	TS.TC_1.ST2_TS_EN	Run Switching - Station 2 - Meter Run Staging Enabled / Disabled	Disabled	Enabled
1826	TS.TC_1.ST3_TS_CHKFLOW	Run Switching - Station 3 - Check Flow Rate Enabled / Disabled	Disabled	Enabled
1827	TS.TC_1.ST3_TS_EN	Run Switching - Station 3 - Meter Run Staging Enabled / Disabled	Disabled	Enabled
1828	TS.TC_1.ST4_TS_CHKFLOW	Run Switching - Station 4 - Check Flow Rate Enabled / Disabled	Disabled	Enabled
1829	TS.TC_1.ST4_TS_EN	Run Switching - Station 4 - Meter Run Staging Enabled / Disabled	Disabled	Enabled
1830	TS.TC_1.ST5_TS_CHKFLOW	Run Switching - Station 5 - Check Flow Rate Enabled / Disabled	Disabled	Enabled
1831	TS.TC_1.ST5_TS_EN	Run Switching - Station 5 - Meter Run Staging Enabled / Disabled	Disabled	Enabled

Coil#	Variable	Description	Off State	On State
1832	TS.TC_1.ST6_TS_CHKFLOW	Run Switching - Station 6 - Check Flow Rate Enabled / Disabled	Disabled	Enabled
1833	TS.TC_1.ST6_TS_EN	Run Switching - Station 6 - Meter Run Staging Enabled / Disabled	Disabled	Enabled
1834	TS.TC_1.TSO_1.CLEARFAIL	Run Switching - Run n - Block Valve 1 - Clear Failure	Off	Reset
1835	TS.TC_1.TSO_1.FAIL	Run Switching - Run n - Block Valve 1 - Valve Failed	Normal	Fail
1836	TS.TC_1.TSO_1.MANMODE	Run Switching - Run n - Block Valve 1 - Manual / Auto Mode	Auto	Manual
1837	TS.TC_1.TSO_1.TUBEOPEN	Run Switching - Run n - Block Valve 1 - Tube is open	Off	Open
1838	TS.TC_1.TSO_2.CLEARFAIL	Run Switching - Run n - Block Valve 2 - Clear Failure	Off	Reset
1839	TS.TC_1.TSO_2.FAIL	Run Switching - Run n - Block Valve 2 - Valve Failed	Normal	Fail
1840	TS.TC_1.TSO_2.MANMODE	Run Switching - Run n - Block Valve 2 - Manual / Auto Mode	Auto	Manual
1841	TS.TC_1.TSO_2.TUBEOPEN	Run Switching - Run n - Block Valve 2 - Tube is open	Off	Open
1842	TS.TC_1.TSO_3.CLEARFAIL	Run Switching - Run n - Block Valve 3 - Clear Failure	Off	Reset
1843	TS.TC_1.TSO_3.FAIL	Run Switching - Run n - Block Valve 3 - Valve Failed	Normal	Fail
1844	TS.TC_1.TSO_3.MANMODE	Run Switching - Run n - Block Valve 3 - Manual / Auto Mode	Auto	Manual
1845	TS.TC_1.TSO_3.TUBEOPEN	Run Switching - Run n - Block Valve 3 - Tube is open	Off	Open
1846	TS.TC_1.TSO_4.CLEARFAIL	Run Switching - Run n - Block Valve 4 - Clear Failure	Off	Reset
1847	TS.TC_1.TSO_4.FAIL	Run Switching - Run n - Block Valve 4 - Valve Failed	Normal	Fail
1848	TS.TC_1.TSO_4.MANMODE	Run Switching - Run n - Block Valve 4 - Manual / Auto Mode	Auto	Manual
1849	TS.TC_1.TSO_4.TUBEOPEN	Run Switching - Run n - Block Valve 4 - Tube is open	Off	Open
1850	TS.TC_1.TSO_5.CLEARFAIL	Run Switching - Run n - Block Valve 5 - Clear Failure	Off	Reset
1851	TS.TC_1.TSO_5.FAIL	Run Switching - Run n - Block Valve 5 - Valve Failed	Normal	Fail
1852	TS.TC_1.TSO_5.MANMODE	Run Switching - Run n - Block Valve 5 - Manual / Auto Mode	Auto	Manual
1853	TS.TC_1.TSO_5.TUBEOPEN	Run Switching - Run n - Block Valve 5 - Tube is open	Off	Open
1854	TS.TC_1.TSO_6.CLEARFAIL	Run Switching - Run n - Block Valve 6 - Clear Failure	Off	Reset
1855	TS.TC_1.TSO_6.FAIL	Run Switching - Run n - Block Valve 6 - Valve Failed	Normal	Fail
1856	TS.TC_1.TSO_6.MANMODE	Run Switching - Run n - Block Valve 6 - Manual / Auto Mode	Auto	Manual
1857	TS.TC_1.TSO_6.TUBEOPEN	Run Switching - Run n - Block Valve 6 - Tube is open	Off	Open
1858	TS.TC_1.TSO_7.CLEARFAIL	Run Switching - Run n - Block Valve 7 - Clear Failure	Off	Reset
1859	TS.TC_1.TSO_7.FAIL	Run Switching - Run n - Block Valve 7 - Valve Failed	Normal	Fail
1860	TS.TC_1.TSO_7.MANMODE	Run Switching - Run n - Block Valve 7 - Manual / Auto Mode	Auto	Manual
1861	TS.TC_1.TSO_7.TUBEOPEN	Run Switching - Run n - Block Valve 7 - Tube is open	Off	Open
1862	TS.TC_1.TSO_8.CLEARFAIL	Run Switching - Run n - Block Valve 8 - Clear Failure	Off	Reset
1863	TS.TC_1.TSO_8.FAIL	Run Switching - Run n - Block Valve 8 - Valve Failed	Normal	Fail
1864	TS.TC_1.TSO_8.MANMODE	Run Switching - Run n - Block Valve 8 - Manual / Auto Mode	Auto	Manual
1865	TS.TC_1.TSO_8.TUBEOPEN	Run Switching - Run n - Block Valve 8 - Tube is open	Off	Open
1866	MB.Spare			

Coil#	Variable	Description	Off State	On State
1867	MB.Spare			
1868	MB.Spare			
1869	MB.Spare			
1870	MB.Spare			
1871	MB.Spare			
1872	MB.Spare			
1873	MB.Spare			
1874	MB.Spare			
1875	MB.Spare			
1876	MB.Spare			
1877	MB.Spare			
1878	MB.Spare			
1879	MB.Spare			
1880	MB.Spare			
1881	MB.Spare			
1882	BI.ST1_DIR	Station n + 1 - Indicated Direction - n = 1, 3,	Forward	Reverse
1883	BI.ST2_OLS3_STATE	Station 2 - Block Valve 1 - Required Closed State for forward direction	Off	On
1884	BI.ST2_OLS4_STATE	Station 2 - Block Valve 2 - Required Closed State for forward direction	Off	On
1885	BI.ST2_OLS1_STATE	Station 2 - Block Valve 1 - Required Opened State for forward direction	Off	On
1886	BI.ST2_OLS2_STATE	Station 2 - Block Valve 2 - Required Opened State for forward direction	Off	On
1887	BI.ST2_CLS1_STATUS	Station 2 - Block Valve 1 - Closed Status	Off	Closed
1888	BI.ST2_CLS2_STATUS	Station 2 - Block Valve 2 - Closed Status	Off	Closed
1889	BI.ST2_OLS1_STATUS	Station 2 - Block Valve 1 - Opened Status	Off	Opened
1890	BI.ST2_OLS2_STATUS	Station 2 - Block Valve 2 - Opened Status	Off	Opened
1891	BC.ST2_BIDIR_EN	Station 2 - Programmed Control Requested Direction	Forward	Reverse
1892	BC.ST_BIDIR_CTL_2.BV1.MANPOS	Bi-directional Control - Station 2 - Block Valve 1 - Valve Position Command	Close	Open
1893	BC.ST_BIDIR_CTL_2.BV1.IBOLS	Bi-directional Control - Station 2 - Block Valve 1 - Valve Position Open Limit Switch	Off	Opened
1894	BC.ST_BIDIR_CTL_2.BV1.IBCLS	Bi-directional Control - Station 2 - Block Valve 1 - Valve Position Close Limit Switch	Off	Closed
1895	BC.ST_BIDIR_CTL_2.BV2.MANPOS	Bi-directional Control - Station 2 - Block Valve 2 - Valve Position Command	Close	Open
1896	BC.ST_BIDIR_CTL_2.BV2.IBOLS	Bi-directional Control - Station 2 - Block Valve 2 - Valve Position Open Limit Switch	Off	Opened
1897	BC.ST_BIDIR_CTL_2.BV2.IBCLS	Bi-directional Control - Station 2 - Block Valve 2 - Valve Position Close Limit Switch	Off	Closed
1898	BC.ST_BIDIR_CTL_2.BV3.MANPOS	Bi-directional Control - Station 2 - Block Valve 3 - Valve Position Command	Close	Open
1899	BC.ST_BIDIR_CTL_2.BV3.IBOLS	Bi-directional Control - Station 2 - Block Valve 3 - Valve Position Open Limit Switch	Off	Opened
1900	BC.ST_BIDIR_CTL_2.BV3.IBCLS	Bi-directional Control - Station 2 - Block Valve 3 - Valve Position Close Limit Switch	Off	Closed
1901	BC.ST_BIDIR_CTL_2.BV4.MANPOS	Bi-directional Control - Station 2 - Block Valve 4 - Valve Position Command	Close	Open
1902	BC.ST_BIDIR_CTL_2.BV4.IBOLS	Bi-directional Control - Station 2 - Block Valve 4 - Valve Position Open Limit Switch	Off	Opened
1903	BC.ST_BIDIR_CTL_2.BV4.IBCLS	Bi-directional Control - Station 2 - Block Valve 4 - Valve Position Close Limit Switch	Off	Closed
1904	BC.ST_BIDIR_CTL_2.BV5.MANPOS	Bi-directional Control - Station 2 - Block Valve 5 - Valve Position Command	Close	Open
1905	BC.ST_BIDIR_CTL_2.BV5.IBOLS	Bi-directional Control - Station 2 - Block Valve 5 - Valve Position Open Limit Switch	Off	Opened
1906	BC.ST_BIDIR_CTL_2.BV5.IBCLS	Bi-directional Control - Station 2 - Block Valve 5 - Valve Position Close Limit Switch	Off	Closed
1907	BC.ST_BIDIR_CTL_2.BV6.MANPOS	Bi-directional Control - Station 2 - Block Valve 6 -	Close	Open

Coil#	Variable	Description	Off State	On State
		Valve Position Command		
1908	BC.ST_BIDIR_CTL_2.BV6.IBOLS	Bi-directional Control - Station 2 - Block Valve 6 - Valve Position Open Limit Switch	Off	Opened
1909	BC.ST_BIDIR_CTL_2.BV6.IBCLS	Bi-directional Control - Station 2 - Block Valve 6 - Valve Position Close Limit Switch	Off	Closed
1910	BC.ST_BIDIR_CTL_2.BV7.MANPOS	Bi-directional Control - Station 2 - Block Valve 7 - Valve Position Command	Close	Open
1911	BC.ST_BIDIR_CTL_2.BV7.IBOLS	Bi-directional Control - Station 2 - Block Valve 7 - Valve Position Open Limit Switch	Off	Opened
1912	BC.ST_BIDIR_CTL_2.BV7.IBCLS	Bi-directional Control - Station 2 - Block Valve 7 - Valve Position Close Limit Switch	Off	Closed
1913	BC.ST_BIDIR_CTL_2.BV8.MANPOS	Bi-directional Control - Station 2 - Block Valve 8 - Valve Position Command	Close	Open
1914	BC.ST_BIDIR_CTL_2.BV8.IBOLS	Bi-directional Control - Station 2 - Block Valve 8 - Valve Position Open Limit Switch	Off	Opened
1915	BC.ST_BIDIR_CTL_2.BV8.IBCLS	Bi-directional Control - Station 2 - Block Valve 8 - Valve Position Close Limit Switch	Off	Closed
1916	BI.ST3_DIR	Station n + 1 - Indicated Direction - n = 1, 3, 5	Forward	Reverse
1917	BI.ST4_OLS3_STATE	Station 4 - Block Valve 1 - Required Closed State for forward direction	Off	On
1918	BI.ST4_OLS4_STATE	Station 4 - Block Valve 2 - Required Closed State for forward direction	Off	On
1919	BI.ST4_OLS1_STATE	Station 4 - Block Valve 1 - Required Opened State for forward direction	Off	On
1920	BI.ST4_OLS2_STATE	Station 4 - Block Valve 2 - Required Opened State for forward direction	Off	On
1921	BI.ST4_CLS1_STATUS	Station 4 - Block Valve 1 - Closed Status	Off	Closed
1922	BI.ST4_CLS2_STATUS	Station 4 - Block Valve 2 - Closed Status	Off	Closed
1923	BI.ST4_OLS1_STATUS	Station 4 - Block Valve 1 - Opened Status	Off	Opened
1924	BI.ST4_OLS2_STATUS	Station 4 - Block Valve 2 - Opened Status	Off	Opened
1925	BC.ST4_BIDIR_EN	Station 4 - Programmed Control Requested Direction	Forward	Reverse
1926	BC.ST_BIDIR_CTL_4.BV1.MANPOS	Bi-directional Control - Station 4 - Block Valve 1 - Valve Position Command	Close	Open
1927	BC.ST_BIDIR_CTL_4.BV1.IBOLS	Bi-directional Control - Station 4 - Block Valve 1 - Valve Position Open Limit Switch	Off	Opened
1928	BC.ST_BIDIR_CTL_4.BV1.IBCLS	Bi-directional Control - Station 4 - Block Valve 1 - Valve Position Close Limit Switch	Off	Closed
1929	BC.ST_BIDIR_CTL_4.BV2.MANPOS	Bi-directional Control - Station 4 - Block Valve 2 - Valve Position Command	Close	Open
1930	BC.ST_BIDIR_CTL_4.BV2.IBOLS	Bi-directional Control - Station 4 - Block Valve 2 - Valve Position Open Limit Switch	Off	Opened
1931	BC.ST_BIDIR_CTL_4.BV2.IBCLS	Bi-directional Control - Station 4 - Block Valve 2 - Valve Position Close Limit Switch	Off	Closed
1932	BC.ST_BIDIR_CTL_4.BV3.MANPOS	Bi-directional Control - Station 4 - Block Valve 3 - Valve Position Command	Close	Open
1933	BC.ST_BIDIR_CTL_4.BV3.IBOLS	Bi-directional Control - Station 4 - Block Valve 3 - Valve Position Open Limit Switch	Off	Opened
1934	BC.ST_BIDIR_CTL_4.BV3.IBCLS	Bi-directional Control - Station 4 - Block Valve 3 - Valve Position Close Limit Switch	Off	Closed
1935	BC.ST_BIDIR_CTL_4.BV4.MANPOS	Bi-directional Control - Station 4 - Block Valve 4 - Valve Position Command	Close	Open
1936	BC.ST_BIDIR_CTL_4.BV4.IBOLS	Bi-directional Control - Station 4 - Block Valve 4 - Valve Position Open Limit Switch	Off	Opened
1937	BC.ST_BIDIR_CTL_4.BV4.IBCLS	Bi-directional Control - Station 4 - Block Valve 4 - Valve Position Close Limit Switch	Off	Closed
1938	BC.ST_BIDIR_CTL_4.BV5.MANPOS	Bi-directional Control - Station 4 - Block Valve 5 - Valve Position Command	Close	Open
1939	BC.ST_BIDIR_CTL_4.BV5.IBOLS	Bi-directional Control - Station 4 - Block Valve 5 - Valve Position Open Limit Switch	Off	Opened
1940	BC.ST_BIDIR_CTL_4.BV5.IBCLS	Bi-directional Control - Station 4 - Block Valve 5 - Valve Position Close Limit Switch	Off	Closed
1941	BC.ST_BIDIR_CTL_4.BV6.MANPOS	Bi-directional Control - Station 4 - Block Valve 6 - Valve Position Command	Close	Open
1942	BC.ST_BIDIR_CTL_4.BV6.IBOLS	Bi-directional Control - Station 4 - Block Valve 6 - Valve Position Open Limit Switch	Off	Opened
1943	BC.ST_BIDIR_CTL_4.BV6.IBCLS	Bi-directional Control - Station 4 - Block Valve 6 -	Off	Closed

Coil#	Variable	Description	Off State	On State
		Valve Position Close Limit Switch		
1944	BC.ST_BIDIR_CTL_4.BV7.MANPOS	Bi-directional Control - Station 4 - Block Valve 7 - Valve Position Command	Close	Open
1945	BC.ST_BIDIR_CTL_4.BV7.IBOLS	Bi-directional Control - Station 4 - Block Valve 7 - Valve Position Open Limit Switch	Off	Opened
1946	BC.ST_BIDIR_CTL_4.BV7.IBCLS	Bi-directional Control - Station 4 - Block Valve 7 - Valve Position Close Limit Switch	Off	Closed
1947	BC.ST_BIDIR_CTL_4.BV8.MANPOS	Bi-directional Control - Station 4 - Block Valve 8 - Valve Position Command	Close	Open
1948	BC.ST_BIDIR_CTL_4.BV8.IBOLS	Bi-directional Control - Station 4 - Block Valve 8 - Valve Position Open Limit Switch	Off	Opened
1949	BC.ST_BIDIR_CTL_4.BV8.IBCLS	Bi-directional Control - Station 4 - Block Valve 8 - Valve Position Close Limit Switch	Off	Closed
1950	BI.ST5_DIR	Station n + 1 - Indicated Direction - n = 1, 3, 5	Forward	Reverse
1951	BI.ST6_OLS3_STATE	Station 6 - Block Valve 1 - Required Closed State for forward direction	Off	On
1952	BI.ST6_OLS4_STATE	Station 6 - Block Valve 2 - Required Closed State for forward direction	Off	On
1953	BI.ST6_OLS1_STATE	Station 6 - Block Valve 1 - Required Opened State for forward direction	Off	On
1954	BI.ST6_OLS2_STATE	Station 6 - Block Valve 2 - Required Opened State for forward direction	Off	On
1955	BI.ST6_CLS1_STATUS	Station 6 - Block Valve 1 - Closed Status	Off	Closed
1956	BI.ST6_CLS2_STATUS	Station 6 - Block Valve 2 - Closed Status	Off	Closed
1957	BI.ST6_OLS1_STATUS	Station 6 - Block Valve 1 - Opened Status	Off	Opened
1958	BI.ST6_OLS2_STATUS	Station 6 - Block Valve 2 - Opened Status	Off	Opened
1959	BC.ST6_BIDIR_EN	Station 6 - Programmed Control Requested Direction	Forward	Reverse
1960	BC.ST_BIDIR_CTL_6.BV1.MANPOS	Bi-directional Control - Station 6 - Block Valve 1 - Valve Position Command	Close	Open
1961	BC.ST_BIDIR_CTL_6.BV1.IBOLS	Bi-directional Control - Station 6 - Block Valve 1 - Valve Position Open Limit Switch	Off	Opened
1962	BC.ST_BIDIR_CTL_6.BV1.IBCLS	Bi-directional Control - Station 6 - Block Valve 1 - Valve Position Close Limit Switch	Off	Closed
1963	BC.ST_BIDIR_CTL_6.BV2.MANPOS	Bi-directional Control - Station 6 - Block Valve 2 - Valve Position Command	Close	Open
1964	BC.ST_BIDIR_CTL_6.BV2.IBOLS	Bi-directional Control - Station 6 - Block Valve 2 - Valve Position Open Limit Switch	Off	Opened
1965	BC.ST_BIDIR_CTL_6.BV2.IBCLS	Bi-directional Control - Station 6 - Block Valve 2 - Valve Position Close Limit Switch	Off	Closed
1966	BC.ST_BIDIR_CTL_6.BV3.MANPOS	Bi-directional Control - Station 6 - Block Valve 3 - Valve Position Command	Close	Open
1967	BC.ST_BIDIR_CTL_6.BV3.IBOLS	Bi-directional Control - Station 6 - Block Valve 3 - Valve Position Open Limit Switch	Off	Opened
1968	BC.ST_BIDIR_CTL_6.BV3.IBCLS	Bi-directional Control - Station 6 - Block Valve 3 - Valve Position Close Limit Switch	Off	Closed
1969	BC.ST_BIDIR_CTL_6.BV4.MANPOS	Bi-directional Control - Station 6 - Block Valve 4 - Valve Position Command	Close	Open
1970	BC.ST_BIDIR_CTL_6.BV4.IBOLS	Bi-directional Control - Station 6 - Block Valve 4 - Valve Position Open Limit Switch	Off	Opened
1971	BC.ST_BIDIR_CTL_6.BV4.IBCLS	Bi-directional Control - Station 6 - Block Valve 4 - Valve Position Close Limit Switch	Off	Closed
1972	BC.ST_BIDIR_CTL_6.BV5.MANPOS	Bi-directional Control - Station 6 - Block Valve 5 - Valve Position Command	Close	Open
1973	BC.ST_BIDIR_CTL_6.BV5.IBOLS	Bi-directional Control - Station 6 - Block Valve 5 - Valve Position Open Limit Switch	Off	Opened
1974	BC.ST_BIDIR_CTL_6.BV5.IBCLS	Bi-directional Control - Station 6 - Block Valve 5 - Valve Position Close Limit Switch	Off	Closed
1975	BC.ST_BIDIR_CTL_6.BV6.MANPOS	Bi-directional Control - Station 6 - Block Valve 6 - Valve Position Command	Close	Open
1976	BC.ST_BIDIR_CTL_6.BV6.IBOLS	Bi-directional Control - Station 6 - Block Valve 6 - Valve Position Open Limit Switch	Off	Opened
1977	BC.ST_BIDIR_CTL_6.BV6.IBCLS	Bi-directional Control - Station 6 - Block Valve 6 - Valve Position Close Limit Switch	Off	Closed
1978	BC.ST_BIDIR_CTL_6.BV7.MANPOS	Bi-directional Control - Station 6 - Block Valve 7 - Valve Position Command	Close	Open
1979	BC.ST_BIDIR_CTL_6.BV7.IBOLS	Bi-directional Control - Station 6 - Block Valve 7 -	Off	Opened

Coil#	Variable	Description	Off State	On State
		Valve Position Open Limit Switch		
1980	BC.ST_BIDIR_CTL_6.BV7.IBCLS	Bi-directional Control - Station 6 - Block Valve 7 - Valve Position Close Limit Switch	Off	Closed
1981	BC.ST_BIDIR_CTL_6.BV8.MANPOS	Bi-directional Control - Station 6 - Block Valve 8 - Valve Position Command	Close	Open
1982	BC.ST_BIDIR_CTL_6.BV8.IBOLS	Bi-directional Control - Station 6 - Block Valve 8 - Valve Position Open Limit Switch	Off	Opened
1983	BC.ST_BIDIR_CTL_6.BV8.IBCLS	Bi-directional Control - Station 6 - Block Valve 8 - Valve Position Close Limit Switch	Off	Closed
1984	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
1985	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
1986	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
1987	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
1988	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
1989	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
1990	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
1991	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
1992	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
1993	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
1994	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
1995	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
1996	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
1997	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
1998	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
1999	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2000	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2001	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2002	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2003	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2004	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2005	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2006	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2007	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2008	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2009	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2010	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2011	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2012	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2013	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2014	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2015	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2016	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2017	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2018	STC.Ctl_Profile_1.Execute	Station Control - Station 1 - Execute Setpoint Change	Off	On
2019	STC.Ctl_Profile_2.Execute	Station Control - Station 2 - Execute Setpoint Change	Off	On
2020	STC.Ctl_Profile_3.Execute	Station Control - Station 3 - Execute Setpoint Change	Off	On
2021	STC.Ctl_Profile_4.Execute	Station Control - Station 4 - Execute Setpoint Change	Off	On
2022	STC.Ctl_Profile_5.Execute	Station Control - Station 5 - Execute Setpoint Change	Off	On
2023	STC.Ctl_Profile_6.Execute	Station Control - Station 6 - Execute Setpoint Change	Off	On

Coil#	Variable	Description	Off State	On State
2024	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2025	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2026	MVT.MVT_1_CFail	Multi-Variable Transmitter 1 Comm Fail	Off	Fail
2027	MVT.MVT_2_CFail	Multi-Variable Transmitter 2 Comm Fail	Off	Fail
2028	MVT.MVT_3_CFail	Multi-Variable Transmitter 3 Comm Fail	Off	Fail
2029	MVT.MVT_4_CFail	Multi-Variable Transmitter 4 Comm Fail	Off	Fail
2030	MVT.MVT_5_CFail	Multi-Variable Transmitter 5 Comm Fail	Off	Fail
2031	MVT.MVT_6_CFail	Multi-Variable Transmitter 6 Comm Fail	Off	Fail
2032	MVT.MVT_7_CFail	Multi-Variable Transmitter 7 Comm Fail	Off	Fail
2033	MVT.MVT_8_CFail	Multi-Variable Transmitter 8 Comm Fail	Off	Fail
2034	MVT.MVT_9_CFail	Multi-Variable Transmitter 9 Comm Fail	Off	Fail
2035	MVT.MVT_10_CFail	Multi-Variable Transmitter 10 Comm Fail	Off	Fail
2036	MVT.MVT_11_CFail	Multi-Variable Transmitter 11 Comm Fail	Off	Fail
2037	MVT.MVT_12_CFail	Multi-Variable Transmitter 12 Comm Fail	Off	Fail
2038	@GV.ST1_L_EN	Station 1 Local Enable	Off	Local
2039	@GV.ST2_L_EN	Station 2 Local Enable	Off	Local
2040	@GV.ST3_L_EN	Station 3 Local Enable	Off	Local
2041	@GV.ST4_L_EN	Station 4 Local Enable	Off	Local
2042	@GV.ST5_L_EN	Station 5 Local Enable	Off	Local
2043	@GV.ST6_L_EN	Station 6 Local Enable	Off	Local
2044	@GV.ST1_R_EN	Station 1 Remote Enable	Off	Remote
2045	@GV.ST2_R_EN	Station 2 Remote Enable	Off	Remote
2046	@GV.ST3_R_EN	Station 3 Remote Enable	Off	Remote
2047	@GV.ST4_R_EN	Station 4 Remote Enable	Off	Remote
2048	@GV.ST5_R_EN	Station 5 Remote Enable	Off	Remote
2049	@GV.ST6_R_EN	Station 6 Remote Enable	Off	Remote
2050	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2051	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2052	@GV.RCV1_L_EN	Remote Control Valve 1 Local Enable	Off	Local
2053	@GV.RCV2_L_EN	Remote Control Valve 2 Local Enable	Off	Local
2054	@GV.RCV3_L_EN	Remote Control Valve 3 Local Enable	Off	Local
2055	@GV.RCV4_L_EN	Remote Control Valve 4 Local Enable	Off	Local
2056	@GV.RCV5_L_EN	Remote Control Valve 5 Local Enable	Off	Local
2057	@GV.RCV6_L_EN	Remote Control Valve 6 Local Enable	Off	Local
2058	@GV.RCV7_L_EN	Remote Control Valve 7 Local Enable	Off	Local
2059	@GV.RCV8_L_EN	Remote Control Valve 8 Local Enable	Off	Local
2060	@GV.RCV9_L_EN	Remote Control Valve 9 Local Enable	Off	Local
2061	@GV.RCV10_L_EN	Remote Control Valve 10 Local Enable	Off	Local
2062	@GV.RCV11_L_EN	Remote Control Valve 11 Local Enable	Off	Local
2063	@GV.RCV12_L_EN	Remote Control Valve 12 Local Enable	Off	Local
2064	@GV.RCV1_R_EN	Remote Control Valve 1 Remote Enable	Off	Remote
2065	@GV.RCV2_R_EN	Remote Control Valve 2 Remote Enable	Off	Remote
2066	@GV.RCV3_R_EN	Remote Control Valve 3 Remote Enable	Off	Remote
2067	@GV.RCV4_R_EN	Remote Control Valve 4 Remote Enable	Off	Remote
2068	@GV.RCV5_R_EN	Remote Control Valve 5 Remote Enable	Off	Remote
2069	@GV.RCV6_R_EN	Remote Control Valve 6 Remote Enable	Off	Remote
2070	@GV.RCV7_R_EN	Remote Control Valve 7 Remote Enable	Off	Remote
2071	@GV.RCV8_R_EN	Remote Control Valve 8 Remote Enable	Off	Remote
2072	@GV.RCV9_R_EN	Remote Control Valve 9 Remote Enable	Off	Remote

Coil#	Variable	Description	Off State	On State
2073	@GV.RCV10_R_EN	Remote Control Valve 10 Remote Enable	Off	Remote
2074	@GV.RCV11_R_EN	Remote Control Valve 11 Remote Enable	Off	Remote
2075	@GV.RCV12_R_EN	Remote Control Valve 12 Remote Enable	Off	Remote
2076	@GV.GPPID1_L_EN	General Purpose PID 1 Local Enable	Off	Local
2077	@GV.GPPID2_L_EN	General Purpose PID 2 Local Enable	Off	Local
2078	@GV.GPPID3_L_EN	General Purpose PID 3 Local Enable	Off	Local
2079	@GV.GPPID1_R_EN	General Purpose PID 1 Remote Enable	Off	Remote
2080	@GV.GPPID2_R_EN	General Purpose PID 2 Remote Enable	Off	Remote
2081	@GV.GPPID3_R_EN	General Purpose PID 3 Remote Enable	Off	Remote
2082	LR.Local_Sw_Mode	Local Remote Sitewide/Local Switch	Sitewide	Configurable
2083	LR.Local_Sw1	Local Remote Switch 1 - Local/Remote or Local	Local/Remote	Local
2084	LR.Local_Sw2	Local Remote Switch 2 - Local/Remote or Local	Local/Remote	Local
2085	LR.Local_Sw3	Local Remote Switch 3 - Local/Remote or Local	Local/Remote	Local
2086	LR.Local_Sw4	Local Remote Switch 4 - Local/Remote or Local	Local/Remote	Local
2087	LR.Local_Sw5	Local Remote Switch 5 - Local/Remote or Local	Local/Remote	Local
2088	LR.Local_Sw6	Local Remote Switch 6 - Local/Remote or Local	Local/Remote	Local
2089	MB.DI_1	MODBUS DI 1 - These are variables that can be written to by SCADA, and used in the program (PMC, PVM, and Math Function) - n = 1 through 16.	OFF	ON
2090	MB.DI_2	MODBUS DI 2 - These are variables that can be written to by SCADA, and used in the program (PMC, PVM, and Math Function) - n = 1 through 16.	OFF	ON
2091	MB.DI_3	MODBUS DI 3 - These are variables that can be written to by SCADA, and used in the program (PMC, PVM, and Math Function) - n = 1 through 16.	OFF	ON
2092	MB.DI_4	MODBUS DI 4 - These are variables that can be written to by SCADA, and used in the program (PMC, PVM, and Math Function) - n = 1 through 16.	OFF	ON
2093	MB.DI_5	MODBUS DI 5 - These are variables that can be written to by SCADA, and used in the program (PMC, PVM, and Math Function) - n = 1 through 16.	OFF	ON
2094	MB.DI_6	MODBUS DI 6 - These are variables that can be written to by SCADA, and used in the program (PMC, PVM, and Math Function) - n = 1 through 16.	OFF	ON
2095	MB.DI_7	MODBUS DI 7 - These are variables that can be written to by SCADA, and used in the program (PMC, PVM, and Math Function) - n = 1 through 16.	OFF	ON
2096	MB.DI_8	MODBUS DI 8 - These are variables that can be written to by SCADA, and used in the program (PMC, PVM, and Math Function) - n = 1 through 16.	OFF	ON
2097	MB.DI_9	MODBUS DI 9 - These are variables that can be written to by SCADA, and used in the program (PMC, PVM, and Math Function) - n = 1 through 16.	OFF	ON
2098	MB.DI_10	MODBUS DI 10 - These are variables that can be written to by SCADA, and used in the program (PMC, PVM, and Math Function) - n = 1 through 16.	OFF	ON
2099	MB.DI_11	MODBUS DI 11 - These are variables that can be written to by SCADA, and used in the program (PMC, PVM, and Math Function) - n = 1 through 16.	OFF	ON

Coil#	Variable	Description	Off State	On State
2100	MB.DI_12	MODBUS DI 12 - These are variables that can be written to by SCADA, and used in the program (PMC, PVM, and Math Function) - n = 1 through 16.	OFF	ON
2101	MB.DI_13	MODBUS DI 13 - These are variables that can be written to by SCADA, and used in the program (PMC, PVM, and Math Function) - n = 1 through 16.	OFF	ON
2102	MB.DI_14	MODBUS DI 14 - These are variables that can be written to by SCADA, and used in the program (PMC, PVM, and Math Function) - n = 1 through 16.	OFF	ON
2103	MB.DI_15	MODBUS DI 15 - These are variables that can be written to by SCADA, and used in the program (PMC, PVM, and Math Function) - n = 1 through 16.	OFF	ON
2104	MB.DI_16	MODBUS DI 16 - These are variables that can be written to by SCADA, and used in the program (PMC, PVM, and Math Function) - n = 1 through 16.	OFF	ON
2105	BC.ST1_RDIR_REQ	Station 1 - Reverse Direction Requested	Forward	Reverse
2106	BC.ST2_RDIR_REQ	Station 2 - Reverse Direction Requested	Forward	Reverse
2107	BC.ST3_RDIR_REQ	Station 3 - Reverse Direction Requested	Forward	Reverse
2108	BC.ST4_RDIR_REQ	Station 4 - Reverse Direction Requested	Forward	Reverse
2109	BC.ST5_RDIR_REQ	Station 5 - Reverse Direction Requested	Forward	Reverse
2110	BC.ST6_RDIR_REQ	Station 6 - Reverse Direction Requested	Forward	Reverse
2111	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2112	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2113	STC.STC_1.PID_SEL_1.ESD_EN	Station Control 1 Enable Fast Close with 0 Set Point	Disabled	Enabled
2114	STC.STC_2.PID_SEL_1.ESD_EN	Station Control 2 Enable Fast Close with 0 Set Point	Disabled	Enabled
2115	STC.STC_3.PID_SEL_1.ESD_EN	Station Control 3 Enable Fast Close with 0 Set Point	Disabled	Enabled
2116	STC.STC_4.PID_SEL_1.ESD_EN	Station Control 4 Enable Fast Close with 0 Set Point	Disabled	Enabled
2117	STC.STC_5.PID_SEL_1.ESD_EN	Station Control 5 Enable Fast Close with 0 Set Point	Disabled	Enabled
2118	STC.STC_6.PID_SEL_1.ESD_EN	Station Control 6 Enable Fast Close with 0 Set Point	Disabled	Enabled
2119	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2120	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2121	TS.sd1	Run Switching - Station 1 - No Flow Shut In Enabled / Disabled	Disabled	Enabled
2122	TS.sd2	Run Switching - Station 2 - No Flow Shut In Enabled / Disabled	Disabled	Enabled
2123	TS.sd3	Run Switching - Station 3 - No Flow Shut In Enabled / Disabled	Disabled	Enabled
2124	TS.sd4	Run Switching - Station 4 - No Flow Shut In Enabled / Disabled	Disabled	Enabled
2125	TS.sd5	Run Switching - Station 5 - No Flow Shut In Enabled / Disabled	Disabled	Enabled
2126	TS.sd6	Run Switching - Station 6 - No Flow Shut In Enabled / Disabled	Disabled	Enabled
2127	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2128	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2129	MB.SPARE			
2130	MB.SPARE			
2131	MB.SPARE			
2132	MB.SPARE			
2133	MB.SPARE			
2134	MB.SPARE			

Coil#	Variable	Description	Off State	On State
2135	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2136	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2137	FC.FC1.RX_SOS_ALRM	Run 1 - Speed of Sound Alarm Enable	Disabled	Enabled
2138	FC.FC2.RX_SOS_ALRM	Run 2 - Speed of Sound Alarm Enable	Disabled	Enabled
2139	FC.FC3.RX_SOS_ALRM	Run 3 - Speed of Sound Alarm Enable	Disabled	Enabled
2140	FC.FC4.RX_SOS_ALRM	Run 4 - Speed of Sound Alarm Enable	Disabled	Enabled
2141	FC.FC5.RX_SOS_ALRM	Run 5 - Speed of Sound Alarm Enable	Disabled	Enabled
2142	FC.FC6.RX_SOS_ALRM	Run 6 - Speed of Sound Alarm Enable	Disabled	Enabled
2143	FC.FC7.RX_SOS_ALRM	Run 7 - Speed of Sound Alarm Enable	Disabled	Enabled
2144	FC.FC8.RX_SOS_ALRM	Run 8 - Speed of Sound Alarm Enable	Disabled	Enabled
2145	FC.STATION_1_ForceFixed	Station 1 use values from the GC column, or always used fixed GC variables from the data stream	GC	Fixed - Scheduled
2146	FC.STATION_1_UseBTUSat	Station 1 use saturated BTU from the GC data stream	Dry BTU	Sat./Wet BTU
2147	FC.STATION_2_ForceFixed	Station 2 use values from the GC column, or always used fixed GC variables from the data stream	GC	Fixed - Scheduled
2148	FC.STATION_2_UseBTUSat	Station 2 use saturated BTU from the GC data stream	Dry BTU	Sat./Wet BTU
2149	FC.STATION_3_ForceFixed	Station 3 use values from the GC column, or always used fixed GC variables from the data stream	GC	Fixed - Scheduled
2150	FC.STATION_3_UseBTUSat	Station 3 use saturated BTU from the GC data stream	Dry BTU	Sat./Wet BTU
2151	FC.STATION_4_ForceFixed	Station 4 use values from the GC column, or always used fixed GC variables from the data stream	GC	Fixed - Scheduled
2152	FC.STATION_4_UseBTUSat	Station 4 use saturated BTU from the GC data stream	Dry BTU	Sat./Wet BTU
2153	FC.STATION_5_ForceFixed	Station 5 use values from the GC column, or always used fixed GC variables from the data stream	GC	Fixed - Scheduled
2154	FC.STATION_5_UseBTUSat	Station 5 use saturated BTU from the GC data stream	Dry BTU	Sat./Wet BTU
2155	FC.STATION_6_ForceFixed	Station 6 use values from the GC column, or always used fixed GC variables from the data stream	GC	Fixed - Scheduled
2156	FC.STATION_6_UseBTUSat	Station 6 use saturated BTU from the GC data stream	Dry BTU	Sat./Wet BTU
2157	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2158	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2159	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2160	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2161	PG_GC.GC_1.GC_1.obAlrm	GC Data Stream 1 general alarm	OK	Alarm
2162	PG_GC.GC_1.GC_2.obAlrm	GC Data Stream 2 general alarm	OK	Alarm
2163	PG_GC.GC_1.GC_3.obAlrm	GC Data Stream 3 general alarm	OK	Alarm
2164	PG_GC.GC_1.GC_4.obAlrm	GC Data Stream 4 general alarm	OK	Alarm
2165	PG_GC.GC_1.GC_5.obAlrm	GC Data Stream 5 general alarm	OK	Alarm
2166	PG_GC.GC_1.GC_6.obAlrm	GC Data Stream 6 general alarm	OK	Alarm
2167	PG_GC.GC_1.GC_7.obAlrm	GC Data Stream 7 general alarm	OK	Alarm
2168	PG_GC.GC_1.GC_8.obAlrm	GC Data Stream 8 general alarm	OK	Alarm
2169	MB.Spare			
2170	MB.Spare			
2171	MB.Spare			
2172	MB.Spare			
2173	MB.SPARE			
2174	MB.SPARE			

Coil#	Variable	Description	Off State	On State
2175	MB.SPARE			
2176	MB.SPARE			
2177	PMC.PV_Monitor_1.HiHiEnable	Process Monitor Control 1 High High Alarm enabled	Disabled	Enabled
2178	PMC.PV_Monitor_1.ROC_EN	Process Monitor Control 1 Rate of Change alarm enabled	Disabled	Enabled
2179	PMC.PV_Monitor_1.ROC_Units	Process Monitor Control 1 Rate of Change time units	Seconds	Minutes
2180	PMC.PV_Monitor_1.LoLoEnable	Process Monitor Control 1 Low Low Alarm enabled	Disabled	Enabled
2181	PMC.PV_Monitor_1.LoEnable	Process Monitor Control 1 Low Alarm enabled	Disabled	Enabled
2182	PMC.PV_Monitor_1.HiEnable	Process Monitor Control 1 High Alarm enabled	Disabled	Enabled
2183	PMC.PV_Monitor_1.HH_Ctl_En	Process Monitor Control 1 Control Output on High High Alarm enabled	Disabled	Enabled
2184	PMC.PV_Monitor_1.H_Ctl_En	Process Monitor Control 1 Control Output on High Alarm enabled	Disabled	Enabled
2185	PMC.PV_Monitor_1.L_Ctl_En	Process Monitor Control 1 Control Output on Low Alarm enabled	Disabled	Enabled
2186	PMC.PV_Monitor_1.LL_Ctl_En	Process Monitor Control 1 Control Output on Low Low Alarm enabled	Disabled	Enabled
2187	PMC.PV_Monitor_1.ROCup_Ctl_En	Process Monitor Control 1 Control Output on Rate of Change up enabled	Disabled	Enabled
2188	PMC.PV_Monitor_1.ROCdn_Ctl_En	Process Monitor Control 1 Control Output on Rate of Change Down enabled	Disabled	Enabled
2189	PMC.PV_Monitor_1.Ctl_Latch	Process Monitor Control 1 Alarm Control Output Latched	Unlatched	Latched
2190	PMC.PV_Monitor_1.Ctl_Reset	Process Monitor Control 1 Rate of Change Control Output Latched	Unlatched	Latched
2191	PMC.PV_Monitor_2.HiHiEnable	Process Monitor Control 2 High High Alarm enabled	Disabled	Enabled
2192	PMC.PV_Monitor_2.ROC_EN	Process Monitor Control 2 Rate of Change alarm enabled	Disabled	Enabled
2193	PMC.PV_Monitor_2.ROC_Units	Process Monitor Control 2 Rate of Change time units	Seconds	Minutes
2194	PMC.PV_Monitor_2.LoLoEnable	Process Monitor Control 2 Low Low Alarm enabled	Disabled	Enabled
2195	PMC.PV_Monitor_2.LoEnable	Process Monitor Control 2 Low Alarm enabled	Disabled	Enabled
2196	PMC.PV_Monitor_2.HiEnable	Process Monitor Control 2 High Alarm enabled	Disabled	Enabled
2197	PMC.PV_Monitor_2.HH_Ctl_En	Process Monitor Control 2 Control Output on High High Alarm enabled	Disabled	Enabled
2198	PMC.PV_Monitor_2.H_Ctl_En	Process Monitor Control 2 Control Output on High Alarm enabled	Disabled	Enabled
2199	PMC.PV_Monitor_2.L_Ctl_En	Process Monitor Control 2 Control Output on Low Alarm enabled	Disabled	Enabled
2200	PMC.PV_Monitor_2.LL_Ctl_En	Process Monitor Control 2 Control Output on Low Low Alarm enabled	Disabled	Enabled
2201	PMC.PV_Monitor_2.ROCup_Ctl_En	Process Monitor Control 2 Control Output on Rate of Change up enabled	Disabled	Enabled
2202	PMC.PV_Monitor_2.ROCdn_Ctl_En	Process Monitor Control 2 Control Output on Rate of Change Down enabled	Disabled	Enabled
2203	PMC.PV_Monitor_2.Ctl_Latch	Process Monitor Control 2 Alarm Control Output Latched	Unlatched	Latched
2204	PMC.PV_Monitor_2.Ctl_Reset	Process Monitor Control 2 Rate of Change Control Output Latched	Unlatched	Latched
2205	PMC.PV_Monitor_3.HiHiEnable	Process Monitor Control 3 High High Alarm enabled	Disabled	Enabled
2206	PMC.PV_Monitor_3.ROC_EN	Process Monitor Control 3 Rate of Change alarm enabled	Disabled	Enabled
2207	PMC.PV_Monitor_3.ROC_Units	Process Monitor Control 3 Rate of Change time units	Seconds	Minutes
2208	PMC.PV_Monitor_3.LoLoEnable	Process Monitor Control 3 Low Low Alarm enabled	Disabled	Enabled
2209	PMC.PV_Monitor_3.LoEnable	Process Monitor Control 3 Low Alarm enabled	Disabled	Enabled
2210	PMC.PV_Monitor_3.HiEnable	Process Monitor Control 3 High Alarm enabled	Disabled	Enabled
2211	PMC.PV_Monitor_3.HH_Ctl_En	Process Monitor Control 3 Control Output on High High Alarm enabled	Disabled	Enabled

Coil#	Variable	Description	Off State	On State
2212	PMC.PV_Monitor_3.H_Ctl_En	Process Monitor Control 3 Control Output on High Alarm enabled	Disabled	Enabled
2213	PMC.PV_Monitor_3.L_Ctl_En	Process Monitor Control 3 Control Output on Low Alarm enabled	Disabled	Enabled
2214	PMC.PV_Monitor_3.LL_Ctl_En	Process Monitor Control 3 Control Output on Low Low Alarm enabled	Disabled	Enabled
2215	PMC.PV_Monitor_3.ROCup_Ctl_En	Process Monitor Control 3 Control Output on Rate of Change up enabled	Disabled	Enabled
2216	PMC.PV_Monitor_3.ROCdn_Ctl_En	Process Monitor Control 3 Control Output on Rate of Change Down enabled	Disabled	Enabled
2217	PMC.PV_Monitor_3.Ctl_Latch	Process Monitor Control 3 Alarm Control Output Latched	Unlatched	Latched
2218	PMC.PV_Monitor_3.Ctl_Reset	Process Monitor Control 3 Rate of Change Control Output Latched	Unlatched	Latched
2219	PMC.PV_Monitor_4.HiHiEnable	Process Monitor Control 4 High High Alarm enabled	Disabled	Enabled
2220	PMC.PV_Monitor_4.ROC_EN	Process Monitor Control 4 Rate of Change alarm enabled	Disabled	Enabled
2221	PMC.PV_Monitor_4.ROC_Units	Process Monitor Control 4 Rate of Change time units	Seconds	Minutes
2222	PMC.PV_Monitor_4.LoLoEnable	Process Monitor Control 4 Low Low Alarm enabled	Disabled	Enabled
2223	PMC.PV_Monitor_4.LoEnable	Process Monitor Control 4 Low Alarm enabled	Disabled	Enabled
2224	PMC.PV_Monitor_4.HiEnable	Process Monitor Control 4 High Alarm enabled	Disabled	Enabled
2225	PMC.PV_Monitor_4.HH_Ctl_En	Process Monitor Control 4 Control Output on High High Alarm enabled	Disabled	Enabled
2226	PMC.PV_Monitor_4.H_Ctl_En	Process Monitor Control 4 Control Output on High Alarm enabled	Disabled	Enabled
2227	PMC.PV_Monitor_4.L_Ctl_En	Process Monitor Control 4 Control Output on Low Alarm enabled	Disabled	Enabled
2228	PMC.PV_Monitor_4.LL_Ctl_En	Process Monitor Control 4 Control Output on Low Low Alarm enabled	Disabled	Enabled
2229	PMC.PV_Monitor_4.ROCup_Ctl_En	Process Monitor Control 4 Control Output on Rate of Change up enabled	Disabled	Enabled
2230	PMC.PV_Monitor_4.ROCdn_Ctl_En	Process Monitor Control 4 Control Output on Rate of Change Down enabled	Disabled	Enabled
2231	PMC.PV_Monitor_4.Ctl_Latch	Process Monitor Control 4 Alarm Control Output Latched	Unlatched	Latched
2232	PMC.PV_Monitor_4.Ctl_Reset	Process Monitor Control 4 Rate of Change Control Output Latched	Unlatched	Latched
2233	MB.SPARE			
2234	MB.SPARE			
2235	MB.SPARE			
2236	MB.SPARE			
2237	PVM.PV_Monitor_1.HiHiEnable	Process Value Monitor 1 High High Alarm enabled	Disabled	Enabled
2238	PVM.PV_Monitor_1.ROC_EN	Process Value Monitor 1 Rate of Change alarm enabled	Disabled	Enabled
2239	PVM.PV_Monitor_1.ROC_Units	Process Value Monitor 1 Rate of Change time units	Seconds	Minutes
2240	PVM.PV_Monitor_1.LoLoEnable	Process Value Monitor 1 Low Low Alarm enabled	Disabled	Enabled
2241	PVM.PV_Monitor_1.LoEnable	Process Value Monitor 1 Low Alarm enabled	Disabled	Enabled
2242	PVM.PV_Monitor_1.HiEnable	Process Value Monitor 1 High Alarm enabled	Disabled	Enabled
2243	PVM.PV_Monitor_2.HiHiEnable	Process Value Monitor 2 High High Alarm enabled	Disabled	Enabled
2244	PVM.PV_Monitor_2.ROC_EN	Process Value Monitor 2 Rate of Change alarm enabled	Disabled	Enabled
2245	PVM.PV_Monitor_2.ROC_Units	Process Value Monitor 2 Rate of Change time units	Seconds	Minutes
2246	PVM.PV_Monitor_2.LoLoEnable	Process Value Monitor 2 Low Low Alarm enabled	Disabled	Enabled
2247	PVM.PV_Monitor_2.LoEnable	Process Value Monitor 2 Low Alarm enabled	Disabled	Enabled
2248	PVM.PV_Monitor_2.HiEnable	Process Value Monitor 2 High Alarm enabled	Disabled	Enabled
2249	PVM.PV_Monitor_3.HiHiEnable	Process Value Monitor 3 High High Alarm enabled	Disabled	Enabled
2250	PVM.PV_Monitor_3.ROC_EN	Process Value Monitor 3 Rate of Change alarm enabled	Disabled	Enabled

Coil#	Variable	Description	Off State	On State
2251	PVM.PV_Monitor_3.ROC_Units	Process Value Monitor 3 Rate of Change time units	Seconds	Minutes
2252	PVM.PV_Monitor_3.LoLoEnable	Process Value Monitor 3 Low Low Alarm enabled	Disabled	Enabled
2253	PVM.PV_Monitor_3.LoEnable	Process Value Monitor 3 Low Alarm enabled	Disabled	Enabled
2254	PVM.PV_Monitor_3.HiEnable	Process Value Monitor 3 High Alarm enabled	Disabled	Enabled
2255	PVM.PV_Monitor_4.HiHiEnable	Process Value Monitor 4 High High Alarm enabled	Disabled	Enabled
2256	PVM.PV_Monitor_4.ROC_EN	Process Value Monitor 4 Rate of Change alarm enabled	Disabled	Enabled
2257	PVM.PV_Monitor_4.ROC_Units	Process Value Monitor 4 Rate of Change time units	Seconds	Minutes
2258	PVM.PV_Monitor_4.LoLoEnable	Process Value Monitor 4 Low Low Alarm enabled	Disabled	Enabled
2259	PVM.PV_Monitor_4.LoEnable	Process Value Monitor 4 Low Alarm enabled	Disabled	Enabled
2260	PVM.PV_Monitor_4.HiEnable	Process Value Monitor 4 High Alarm enabled	Disabled	Enabled
2261	SMP.Sampler_1_Enable			
2262	SMP.Sampler_1_Reset			
2263	SMP.Sampler_2_Enable			
2264	SMP.Sampler_2_Reset			
2265	SMP.Sampler_3_Enable			
2266	SMP.Sampler_3_Reset			
2267	SMP.Sampler_4_Enable			
2268	SMP.Sampler_4_Reset			
2269	SMP.Sampler_5_Enable			
2270	SMP.Sampler_5_Reset			
2271	SMP.Sampler_6_Enable			
2272	SMP.Sampler_6_Reset			
2273	SMP.Sampler_7_Enable			
2274	SMP.Sampler_7_Reset			
2275	SMP.Sampler_8_Enable			
2276	SMP.Sampler_8_Reset			
2277	SMP.Sampler_9_Enable			
2278	SMP.Sampler_9_Reset			
2279	SMP.Sampler_10_Enable			
2280	SMP.Sampler_10_Reset			
2281	SMP.Sampler_11_Enable			
2282	SMP.Sampler_11_Reset			
2283	SMP.Sampler_12_Enable			
2284	SMP.Sampler_12_Reset			
2285	GPPID.PID1_ManMode	General Purpose PID 1 Manual Mode enabled	Auto	Manual
2286	GPPID.PID2_ManMode	General Purpose PID 2 Manual Mode enabled	Auto	Manual
2287	GPPID.PID3_ManMode	General Purpose PID 3 Manual Mode enabled	Auto	Manual
2288	STC.Ctl_Profile_1.Flow_Exct	Station 1 execute remote Flow setpoint change, written from SCADA, set to Off automatically	Off	Execute
2289	STC.Ctl_Profile_1.Energy_Exct	Station 1 execute remote Energy setpoint change, written from SCADA, set to Off automatically	Off	Execute
2290	STC.Ctl_Profile_1.Pressure_Exct	Station 1 execute remote Outlet Pressure setpoint change, written from SCADA, set to Off automatically	Off	Execute
2291	STC.Ctl_Profile_1.Pmry3_Exct	Station 1 execute remote Primary 3 setpoint change, written from SCADA, set to Off automatically	Off	Execute
2292	STC.STC_1.Energy_Ctl	Station 1 Energy PID loop is selected, versus flow	Flow	Energy
2293	STC.Ctl_Profile_2.Flow_Exct	Station 2 execute remote Flow setpoint change, written from SCADA, set to Off automatically	Off	Execute
2294	STC.Ctl_Profile_2.Energy_Exct	Station 2 execute remote Energy setpoint change, written from SCADA, set to Off automatically	Off	Execute

Coil#	Variable	Description	Off State	On State
2295	STC.Ctl_Profile_2.Pressure_Exct	Station 2 execute remote Outlet Pressure setpoint change, written from SCADA, set to Off automatically	Off	Execute
2296	STC.Ctl_Profile_2.Pmry3_Exct	Station 2 execute remote Primary 3 setpoint change, written from SCADA, set to Off automatically	Off	Execute
2297	STC.STC_2.Energy_Ctl	Station 2 Energy PID loop is selected, versus flow	Flow	Energy
2298	STC.Ctl_Profile_3.Flow_Exct	Station 3 execute remote Flow setpoint change, written from SCADA, set to Off automatically	Off	Execute
2299	STC.Ctl_Profile_3.Energy_Exct	Station 3 execute remote Energy setpoint change, written from SCADA, set to Off automatically	Off	Execute
2300	STC.Ctl_Profile_3.Pressure_Exct	Station 3 execute remote Outlet Pressure setpoint change, written from SCADA, set to Off automatically	Off	Execute
2301	STC.Ctl_Profile_3.Pmry3_Exct	Station 3 execute remote Primary 3 setpoint change, written from SCADA, set to Off automatically	Off	Execute
2302	STC.STC_3.Energy_Ctl	Station 3 Energy PID loop is selected, versus flow	Flow	Energy
2303	STC.Ctl_Profile_4.Flow_Exct	Station 4 execute remote Flow setpoint change, written from SCADA, set to Off automatically	Off	Execute
2304	STC.Ctl_Profile_4.Energy_Exct	Station 4 execute remote Energy setpoint change, written from SCADA, set to Off automatically	Off	Execute
2305	STC.Ctl_Profile_4.Pressure_Exct	Station 4 execute remote Outlet Pressure setpoint change, written from SCADA, set to Off automatically	Off	Execute
2306	STC.Ctl_Profile_4.Pmry3_Exct	Station 4 execute remote Primary 3 setpoint change, written from SCADA, set to Off automatically	Off	Execute
2307	STC.STC_4.Energy_Ctl	Station 4 Energy PID loop is selected, versus flow	Flow	Energy
2308	STC.Ctl_Profile_5.Flow_Exct	Station 5 execute remote Flow setpoint change, written from SCADA, set to Off automatically	Off	Execute
2309	STC.Ctl_Profile_5.Energy_Exct	Station 5 execute remote Energy setpoint change, written from SCADA, set to Off automatically	Off	Execute
2310	STC.Ctl_Profile_5.Pressure_Exct	Station 5 execute remote Outlet Pressure setpoint change, written from SCADA, set to Off automatically	Off	Execute
2311	STC.Ctl_Profile_5.Pmry3_Exct	Station 5 execute remote Primary 3 setpoint change, written from SCADA, set to Off automatically	Off	Execute
2312	STC.STC_5.Energy_Ctl	Station 5 Energy PID loop is selected, versus flow	Flow	Energy
2313	STC.Ctl_Profile_6.Flow_Exct	Station 6 execute remote Flow setpoint change, written from SCADA, set to Off automatically	Off	Execute
2314	STC.Ctl_Profile_6.Energy_Exct	Station 6 execute remote Energy setpoint change, written from SCADA, set to Off automatically	Off	Execute
2315	STC.Ctl_Profile_6.Pressure_Exct	Station 6 execute remote Outlet Pressure setpoint change, written from SCADA, set to Off automatically	Off	Execute
2316	STC.Ctl_Profile_6.Pmry3_Exct	Station 6 execute remote Primary 3 setpoint change, written from SCADA, set to Off automatically	Off	Execute
2317	STC.STC_6.Energy_Ctl	Station 6 Energy PID loop is selected, versus flow	Flow	Energy
2318	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2319	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2320	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2321	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2322	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2323	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2324	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2325	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2326	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2327	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2328	STC.ST1_Isolated	Station 1 is isolated	Off	Isolated
2329	STC.ST2_Isolated	Station 2 is isolated	Off	Isolated

Coil#	Variable	Description	Off State	On State
2330	STC.ST3_Isolated	Station 3 is isolated	Off	Isolated
2331	STC.ST4_Isolated	Station 4 is isolated	Off	Isolated
2332	STC.ST5_Isolated	Station 5 is isolated	Off	Isolated
2333	STC.ST6_Isolated	Station 6 is isolated	Off	Isolated
2334	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2335	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2336	STC.STC_1.SHUTIN	Station 1 Shut Valve with 0 setpoint and minimum flow rate	Disabled	Enabled
2337	STC.STC_2.SHUTIN	Station 2 Shut Valve with 0 setpoint and minimum flow rate	Disabled	Enabled
2338	STC.STC_3.SHUTIN	Station 3 Shut Valve with 0 setpoint and minimum flow rate	Disabled	Enabled
2339	STC.STC_4.SHUTIN	Station 4 Shut Valve with 0 setpoint and minimum flow rate	Disabled	Enabled
2340	STC.STC_5.SHUTIN	Station 5 Shut Valve with 0 setpoint and minimum flow rate	Disabled	Enabled
2341	STC.STC_6.SHUTIN	Station 6 Shut Valve with 0 setpoint and minimum flow rate	Disabled	Enabled
2342	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2343	MB.SPARE	***** RESERVED FOR FUTURE USE ******		
2344	IO_1.HWDIs_1.HWDI_327			
2345	IO_1.HWDIs_1.HWDI_328			
2346	IO_1.HWDIs_1.HWDI_329			
2347	IO_1.HWDIs_1.HWDI_330			
2348	IO_1.HWDIs_1.HWDI_331			
2349	IO_1.HWDIs_1.HWDI_332			
2350	IO_1.HWDIs_1.HWDI_333			
2351	IO_1.HWDIs_1.HWDI_334			
2352	IO_1.HWDIs_1.HWDI_335			
2353	IO_1.HWDIs_1.HWDI_336			
2354	IO_1.HWDIs_1.HWDI_337			
2355	IO_1.HWDIs_1.HWDI_338			
2356	IO_1.HWDIs_1.HWDI_339			
2357	IO_1.HWDIs_1.HWDI_340			
2358	IO_1.HWDIs_1.HWDI_341			
2359	IO_1.HWDIs_1.HWDI_342			
2360	IO_1.HWDIs_1.HWDI_343			
2361	IO_1.HWDIs_1.HWDI_344			
2362	MB.SPARE			
2363	MB.SPARE			
2364	@GV._QUEST_DATE	Real Time Clock battery failure	OK	Fail
2365	@GV._BAT_OK	RAM Battery on ControlWave Micro is OK	OK	Fail
2366	MB.Enron_S_Enable			
2367	MB.Enron_IP_enable			
2368	Modbus DO 1			
2369	Modbus DO 2			
2370	Modbus DO 3			
2371	Modbus DO 4			
2372	Modbus DO 5			
2373	Modbus DO 6			
2374	Modbus DO 7			
2375	Modbus DO 8			
2376	Modbus DO 9			

Coil#	Variable	Description	Off State	On State
2377	Modbus DO 10			
2378	Modbus DO 11			
2379	Modbus DO 12			
2370	Modbus DO 13			
2381	Modbus DO 14			
2382	Modbus DO 15			
2383	Modbus DO 16			
2384	pg_GC.GC_1.RF1_Enable			
2385	pg_GC.GC_1.GC_RF_Data_1.IPMode			
2386	pg_GC.GC_1.GC_RF_Data_1.Alarm_Dsbl			
2387	pg_GC.GC_1.GC_RF_Data_1.SetBaseline			
2388	pg_GC.GC_1.GC_RF_Data_1.Anlys_Alrm			
2389	pg_GC.GC_1.GC_RF_Data_1.Delta_Alrm			
2390	pg_GC.GC_1.RF2_Enable			
2391	pg_GC.GC_1.GC_RF_Data_2.IPMode			
2392	pg_GC.GC_1.GC_RF_Data_2.Alarm_Dsbl			
2393	pg_GC.GC_1.GC_RF_Data_2.SetBaseline			
2394	pg_GC.GC_1.GC_RF_Data_2.Anlys_Alrm			
2395	pg_GC.GC_1.GC_RF_Data_2.Delta_Alrm			
2396	pg_GC.GC_1.RF3_Enable			
2397	pg_GC.GC_1.GC_RF_Data_3.IPMode			
2398	pg_GC.GC_1.GC_RF_Data_3.Alarm_Dsbl			
2399	pg_GC.GC_1.GC_RF_Data_3.SetBaseline			
2400	pg_GC.GC_1.GC_RF_Data_3.Anlys_Alrm			
2401	pg_GC.GC_1.GC_RF_Data_3.Delta_Alrm			
2402	pg_GC.GC_1.RF4_Enable			
2403	pg_GC.GC_1.GC_RF_Data_4.IPMode			
2404	pg_GC.GC_1.GC_RF_Data_4.Alarm_Dsbl			
2405	pg_GC.GC_1.GC_RF_Data_4.SetBaseline			
2406	pg_GC.GC_1.GC_RF_Data_4.Anlys_Alrm			
2407	pg_GC.GC_1.GC_RF_Data_4.Delta_Alrm			
2408	pg_GC.GC_1.RF5_Enable			
2409	pg_GC.GC_1.GC_RF_Data_5.IPMode			
2410	pg_GC.GC_1.GC_RF_Data_5.Alarm_Dsbl			
2411	pg_GC.GC_1.GC_RF_Data_5.SetBaseline			
2412	pg_GC.GC_1.GC_RF_Data_5.Anlys_Alrm			
2413	pg_GC.GC_1.GC_RF_Data_5.Delta_Alrm			
2414	pg_GC.GC_1.RF6_Enable			
2415	pg_GC.GC_1.GC_RF_Data_6.IPMode			
2416	pg_GC.GC_1.GC_RF_Data_6.Alarm_Dsbl			
2417	pg_GC.GC_1.GC_RF_Data_6.SetBaseline			
2418	pg_GC.GC_1.GC_RF_Data_6.Anlys_Alrm			
2419	pg_GC.GC_1.GC_RF_Data_6.Delta_Alrm			
2420	pg_GC.GC_1.RF7_Enable			
2421	pg_GC.GC_1.GC_RF_Data_7.IPMode			
2422	pg_GC.GC_1.GC_RF_Data_7.Alarm_Dsbl			
2423	pg_GC.GC_1.GC_RF_Data_7.SetBaseline			
2424	pg_GC.GC_1.GC_RF_Data_7.Anlys_Alrm			
2425	pg_GC.GC_1.GC_RF_Data_7.Delta_Alrm			

Coil#	Variable	Description	Off State	On State
2426	pg_GC.GC_1.RF8_Enable			
2427	pg_GC.GC_1.GC_RF_Data_8.IPMode			
2428	pg_GC.GC_1.GC_RF_Data_8.Alarm_Dsbl			
2429	pg_GC.GC_1.GC_RF_Data_8.SetBaseline			
2430	pg_GC.GC_1.GC_RF_Data_8.Anlys_Alrm			
2431	pg_GC.GC_1.GC_RF_Data_8.Delta_Alrm			
2432	UFM.UFM_1.AlrmDsbl			
2433	UFM.UFM_1.OOR			
2434	UFM_UFM_1.Reset_Stats			
2435	UFM_UFM_1.DataChk.CHKSUM_FAIL			
2436	UFM_UFM_1.DataChk.STATUS_C			
2437	UFM_UFM_1.DataChk.STATUS_V			
2438	UFM_UFM_1.DataChk.STATUS_SYS			
2439	UFM_UFM_1.DataChk.ZF_Check			
2440	UFM_UFM_1.DataChk.ZF_Bias			
2441	UFM_UFM_1.DataChk.AvgFlowVel_Dvtn			
2442	UFM_UFM_1.DataChk.Auto_Alarm			
2443	UFM_UFM_1.SI_Units			
2444	UFM.UFM_2.AlrmDsbl			
2445	UFM.UFM_2.OOR			
2446	UFM_UFM_2.Reset_Stats			
2447	UFM_UFM_2.DataChk.CHKSUM_FAIL			
2448	UFM_UFM_2.DataChk.STATUS_C			
2449	UFM_UFM_2.DataChk.STATUS_V			
2450	UFM_UFM_2.DataChk.STATUS_SYS			
2451	UFM_UFM_2.DataChk.ZF_Check			
2452	UFM_UFM_2.DataChk.ZF_Bias			
2453	UFM_UFM_2.DataChk.AvgFlowVel_Dvtn			
2454	UFM_UFM_2.DataChk.Auto_Alarm			
2455	UFM_UFM_2.SI_Units			
2456	UFM.UFM_3.AlrmDsbl			
2457	UFM.UFM_3.OOR			
2458	UFM_UFM_3.Reset_Stats			
2459	UFM_UFM_3.DataChk.CHKSUM_FAIL			
2460	UFM_UFM_3.DataChk.STATUS_C			
2461	UFM_UFM_3.DataChk.STATUS_V			
2462	UFM_UFM_3.DataChk.STATUS_SYS			
2463	UFM_UFM_3.DataChk.ZF_Check			
2464	UFM_UFM_3.DataChk.ZF_Bias			
2465	UFM_UFM_3.DataChk.AvgFlowVel_Dvtn			
2466	UFM_UFM_3.DataChk.Auto_Alarm			
2467	UFM_UFM_3.SI_Units			
2468	UFM.UFM_4.AlrmDsbl			
2469	UFM.UFM_4.OOR			
2470	UFM_UFM_4.Reset_Stats			
2471	UFM_UFM_4.DataChk.CHKSUM_FAIL			
2472	UFM_UFM_4.DataChk.STATUS_C			
2473	UFM_UFM_4.DataChk.STATUS_V			
2474	UFM_UFM_4.DataChk.STATUS_SYS			

Coil#	Variable	Description	Off State	On State
2475	UFM_UFM_4.DataChk.ZF_Check			
2476	UFM_UFM_4.DataChk.ZF_Bias			
2477	UFM_UFM_4.DataChk.AvgFlowVel_Dvtn			
2478	UFM_UFM_4.DataChk.Auto_Alarm			
2479	UFM_UFM_4.SI_Units			
2480	UFM.UFM_5.AlrmDsbl			
2481	UFM.UFM_5.OOR			
2482	UFM_UFM_5.Reset_Stats			
2483	UFM_UFM_5.DataChk.CHKSUM_FAIL			
2484	UFM_UFM_5.DataChk.STATUS_C			
2485	UFM_UFM_5.DataChk.STATUS_V			
2486	UFM_UFM_5.DataChk.STATUS_SYS			
2487	UFM_UFM_5.DataChk.ZF_Check			
2488	UFM_UFM_5.DataChk.ZF_Bias			
2489	UFM_UFM_5.DataChk.AvgFlowVel_Dvtn			
2490	UFM_UFM_5.DataChk.Auto_Alarm			
2491	UFM_UFM_5.SI_Units			
2492	UFM.UFM_6.AlrmDsbl			
2493	UFM.UFM_6.OOR			
2494	UFM_UFM_6.Reset_Stats			
2495	UFM_UFM_6.DataChk.CHKSUM_FAIL			
2496	UFM_UFM_6.DataChk.STATUS_C			
2497	UFM_UFM_6.DataChk.STATUS_V			
2498	UFM_UFM_6.DataChk.STATUS_SYS			
2499	UFM_UFM_6.DataChk.ZF_Check			
2500	UFM_UFM_6.DataChk.ZF_Bias			
2501	UFM_UFM_6.DataChk.AvgFlowVel_Dvtn			
2502	UFM_UFM_6.DataChk.Auto_Alarm			
2503	UFM_UFM_6.SI_Units			
2504	UFM.UFM_7.AlrmDsbl			
2505	UFM.UFM_7.OOR			
2506	UFM_UFM_7.Reset_Stats			
2507	UFM_UFM_7.DataChk.CHKSUM_FAIL			
2508	UFM_UFM_7.DataChk.STATUS_C			
2509	UFM_UFM_7.DataChk.STATUS_V			
2510	UFM_UFM_7.DataChk.STATUS_SYS			
2511	UFM_UFM_7.DataChk.ZF_Check			
2512	UFM_UFM_7.DataChk.ZF_Bias			
2513	UFM_UFM_7.DataChk.AvgFlowVel_Dvtn			
2514	UFM_UFM_7.DataChk.Auto_Alarm			
2515	UFM_UFM_7.SI_Units			
2516	UFM.UFM_8.AlrmDsbl			
2517	UFM.UFM_8.OOR			
2518	UFM_UFM_8.Reset_Stats			
2519	UFM_UFM_8.DataChk.CHKSUM_FAIL			
2520	UFM_UFM_8.DataChk.STATUS_C			
2521	UFM_UFM_8.DataChk.STATUS_V			
2522	UFM_UFM_8.DataChk.STATUS_SYS			
2523	UFM_UFM_8.DataChk.ZF_Check			

Coil#	Variable	Description	Off State	On State
2524	UFM_UFM_8.DataChk.ZF_Bias			
2525	UFM_UFM_8.DataChk.AvgFlowVel_Dvtn			
2526	UFM_UFM_8.DataChk.Auto_Alarm			
2527	UFM_UFM_8.SI_Units			
2528	FC.AA_1_TabNorm			
2529	FC.AA_2_TabNorm			
2530	FC.AA_3_TabNorm			
2531	FC.AA_4_TabNorm			
2532	FC.AA_5_TabNorm			
2533	FC.AA_6_TabNorm			
2534	FC.AA_7_TabNorm			
2535	FC.AA_8_TabNorm			
2536	MB.Spare			
2537	MB.Spare			
2538	MB.Spare			
2539	MB.Spare			
2540	pg_GC.GC_1.GC_1.GC_Alrm			
2541	pg_GC.GC_1.GC_1.Stream_Alrm			
2542	pg_GC.GC_1.GC_1.Fixed_Alrm			
2543	pg_GC.GC_1.GC_1.TimedFixed_Alrm			
2544	pg_GC.GC_1.GC_2.GC_Alrm			
2545	pg_GC.GC_1.GC_2.Stream_Alrm			
2546	pg_GC.GC_1.GC_2.Fixed_Alrm			
2547	pg_GC.GC_1.GC_2.TimedFixed_Alrm			
2548	pg_GC.GC_1.GC_3.GC_Alrm			
2549	pg_GC.GC_1.GC_3.Stream_Alrm			
2550	pg_GC.GC_1.GC_3.Fixed_Alrm			
2551	pg_GC.GC_1.GC_3.TimedFixed_Alrm			
2552	pg_GC.GC_1.GC_4.GC_Alrm			
2553	pg_GC.GC_1.GC_4.Stream_Alrm			
2554	pg_GC.GC_1.GC_4.Fixed_Alrm			
2555	pg_GC.GC_1.GC_4.TimedFixed_Alrm			
2556	pg_GC.GC_1.GC_5.GC_Alrm			
2557	pg_GC.GC_1.GC_5.Stream_Alrm			
2558	pg_GC.GC_1.GC_5.Fixed_Alrm			
2559	pg_GC.GC_1.GC_5.TimedFixed_Alrm			
2560	pg_GC.GC_1.GC_6.GC_Alrm			
2561	pg_GC.GC_1.GC_6.Stream_Alrm			
2562	pg_GC.GC_1.GC_6.Fixed_Alrm			
2563	pg_GC.GC_1.GC_6.TimedFixed_Alrm			
2564	pg_GC.GC_1.GC_7.GC_Alrm			
2565	pg_GC.GC_1.GC_7.Stream_Alrm			
2566	pg_GC.GC_1.GC_7.Fixed_Alrm			
2567	pg_GC.GC_1.GC_7.TimedFixed_Alrm			
2568	pg_GC.GC_1.GC_8.GC_Alrm			
2569	pg_GC.GC_1.GC_8.Stream_Alrm			
2570	pg_GC.GC_1.GC_8.Fixed_Alrm			
2571	pg_GC.GC_1.GC_8.TimedFixed_Alrm			
2572	HRT.HART_1_Enable			

Coil#	Variable	Description	Off State	On State
2573	HRT.HART_2_Enable			
2574	HRT.HART_3_Enable			
2575	HRT.HART_4_Enable			
2576	HRT.HART_5_Enable			
2577	HRT.HART_6_Enable			
2578	HRT.HART_7_Enable			
2579	HRT.HART_8_Enable			
2580	HRT.HART_9_Enable			
2581	HRT.HART_10_Enable			
2582	HRT.HART_11_Enable			
2583	HRT.HART_12_Enable			
2584	HRT.HART_13_Enable			
2585	HRT.HART_14_Enable			
2586	HRT.HART_15_Enable			
2587	HRT.HART_16_Enable			
2588	HRT.HART_17_Enable			
2589	HRT.HART_18_Enable			
2590	WHRT.WHART_Enable			

Table M-2 Modbus Register Map – REAL Variables

Reg#	Variable	Description
7001	MVT.MVT_PVINT	Poll interval for Process variables from the MVT, in millisecond
7002	MVT.MVT_DIAGINT	Poll interval for Diagnostics data from the MVT, in millisecond
7003	MVT.MVT_TIMEOUT	
7004	MVT.MVT_1_PORT	CWM Master Port connected to MVT 1
7005	MVT.MVT_1_ADDRESS	Address of MVT 1
7006	MVT.MVT_1_MRTYPE	
7007	MVT.MVT_1_FB.MB_PVS.REGSET	Register Set to be polled from MVT - FALSE or 0 = 40000, TRUE or 1 = 7000
7008	MVT.MVT_2_PORT	CWM Master Port connected to MVT 2
7009	MVT.MVT_2_ADDRESS	Address of MVT 2
7010	MVT.MVT_2_MRTYPE	
7011	MVT.MVT_2_FB.MB_PVS.REGSET	Register Set to be polled from MVT - FALSE or 0 = 40000, TRUE or 1 = 7000
7012	MVT.MVT_3_PORT	CWM Master Port connected to MVT 3
7013	MVT.MVT_3_ADDRESS	Address of MVT 3
7014	MVT.MVT_3_MRTYPE	
7015	MVT.MVT_3_FB.MB_PVS.REGSET	Register Set to be polled from MVT - FALSE or 0 = 40000, TRUE or 1 = 7000
7016	MVT.MVT_4_PORT	CWM Master Port connected to MVT 4
7017	MVT.MVT_4_ADDRESS	Address of MVT 4
7018	MVT.MVT_4_MRTYPE	
7019	MVT.MVT_4_FB.MB_PVS.REGSET	Register Set to be polled from MVT - FALSE or 0 = 40000, TRUE or 1 = 7000
7020	MVT.MVT_5_PORT	CWM Master Port connected to MVT 5
7021	MVT.MVT_5_ADDRESS	Address of MVT 5
7022	MVT.MVT_5_MRTYPE	

Reg#	Variable	Description
7023	MVT.MVT_5_FB.MB_PVS.REGSET	Register Set to be polled from MVT - FALSE or 0 = 40000, TRUE or 1 = 7000
7024	MVT.MVT_6_PORT	CWM Master Port connected to MVT 6
7025	MVT.MVT_6_ADDRESS	Address of MVT 6
7026	MVT.MVT_6_MRTYPE	
7027	MVT.MVT_6_FB.MB_PVS.REGSET	Register Set to be polled from MVT - FALSE or 0 = 40000, TRUE or 1 = 7000
7028	MVT.MVT_7_PORT	CWM Master Port connected to MVT 7
7029	MVT.MVT_7_ADDRESS	Address of MVT 7
7030	MVT.MVT_7_MRTYPE	
7031	MVT.MVT_7_FB.MB_PVS.REGSET	Register Set to be polled from MVT - FALSE or 0 = 40000, TRUE or 1 = 7000
7032	MVT.MVT_8_PORT	CWM Master Port connected to MVT 8
7033	MVT.MVT_8_ADDRESS	Address of MVT 8
7034	MVT.MVT_8_MRTYPE	
7035	MVT.MVT_8_FB.MB_PVS.REGSET	Register Set to be polled from MVT - FALSE or 0 = 40000, TRUE or 1 = 7000
7036	MVT.MVT_9_PORT	CWM Master Port connected to MVT 9
7037	MVT.MVT_9_ADDRESS	Address of MVT 9
7038	MVT.MVT_9_MRTYPE	
7039	MVT.MVT_9_FB.MB_PVS.REGSET	Register Set to be polled from MVT - FALSE or 0 = 40000, TRUE or 1 = 7000
7040	MVT.MVT_10_PORT	CWM Master Port connected to MVT 10
7041	MVT.MVT_10_ADDRESS	Address of MVT 10
7042	MVT.MVT_10_MRTYPE	
7043	MVT.MVT_10_FB.MB_PVS.REGSET	Register Set to be polled from MVT - FALSE or 0 = 40000, TRUE or 1 = 7000
7044	MVT.MVT_11_PORT	CWM Master Port connected to MVT 11
7045	MVT.MVT_11_ADDRESS	Address of MVT 11
7046	MVT.MVT_11_MRTYPE	
7047	MVT.MVT_11_FB.MB_PVS.REGSET	Register Set to be polled from MVT - FALSE or 0 = 40000, TRUE or 1 = 7000
7048	MVT.MVT_12_PORT	CWM Master Port connected to MVT 12
7049	MVT.MVT_12_ADDRESS	Address of MVT 12
7050	MVT.MVT_12_MRTYPE	
7051	MVT.MVT_12_FB.MB_PVS.REGSET	Register Set to be polled from MVT - FALSE or 0 = 40000, TRUE or 1 = 7000
7052	FC.STATION_1_ATMOS	Station 1 atmospheric (barometric) pressure
7053	FC.STATION_1_ATMOS_UNITS	Station 1 atmospheric pressure units
7054	FC.STATION_1_BASEPRES	Station 1 base pressure
7055	FC.STATION_1_BASEPRES_UNITS	Station 1 base pressure units
7056	FC.STATION_1_BASETEMP	Station 1 base temperature
7057	FC.STATION_1_BASETEMP_UNITS	Station 1 base temperature units
7058	FC.STATION_1_CONTRACTHOUR	Station 1 contract hour
7059	FC.STATION_1_GCSTREAM	Station 1 GC Data set to be used
7060	FC.STATION_1_FPV_CALC	Station 1 FPV calculation method
7061	FC.STATION_1_GROSSMODE	Station 1 AGA 8 Gross Method
7062	FC.STATION_1_VOLUMEUNITS	Station 1 volume units
7063	FC.STATION_1_ENERGYVOLUNITS	Station 1 energy units
7064	FC.STATION_1_FFLOWRATE	Station 1 forward flow rate
7065	FC.STATION_1_RFLOWRATE	Station 1 reverse flow rate
7066	FC.STATION_1_FENERGYRATE	Station 1 forward energy rate

Reg#	Variable	Description
7067	FC.STATION_1_RENERGYRATE	Station 1 reverse energy rate
7068	FC.STATION_1_CH_FVOLUME	Station 1 forward volume current hour
7069	FC.STATION_1_CH_RVOLUME	Station 1 reverse volume current hour
7070	FC.STATION_1_LH_FVOLUME	Station 1 forward volume previous hour
7071	FC.STATION_1_LH_RVOLUME	Station 1 reverse volume previous hour
7072	FC.STATION_1_CD_FVOLUME	Station 1 forward volume current day
7073	FC.STATION_1_CD_RVOLUME	Station 1 reverse volume current day
7074	FC.STATION_1_LD_FVOLUME	Station 1 forward volume previous day
7075	FC.STATION_1_LD_RVOLUME	Station 1 reverse volume previous day
7076	FC.STATION_1_CM_FVOLUME	Station 1 forward volume current month
7077	FC.STATION_1_CM_RVOLUME	Station 1 reverse volume current month
7078	FC.STATION_1_LM_FVOLUME	Station 1 forward volume previous month
7079	FC.STATION_1_LM_RVOLUME	Station 1 reverse volume previous month
7080	FC.STATION_1_CH_FENERGY	Station 1 forward energy current hour
7081	FC.STATION_1_CH_RENERGY	Station 1 reverse energy current hour
7082	FC.STATION_1_LH_FENERGY	Station 1 forward energy previous hour
7083	FC.STATION_1_LH_RENERGY	Station 1 reverse energy previous hour
7084	FC.STATION_1_CD_FENERGY	Station 1 forward energy current day
7085	FC.STATION_1_CD_RENERGY	Station 1 reverse energy current day
7086	FC.STATION_1_LD_FENERGY	Station 1 forward energy previous day
7087	FC.STATION_1_LD_RENERGY	Station 1 reverse energy previous day
7088	FC.STATION_1_CM_FENERGY	Station 1 forward energy current month
7089	FC.STATION_1_CM_RENERGY	Station 1 reverse energy current month
7090	FC.STATION_1_LM_FENERGY	Station 1 forward energy previous month
7091	FC.STATION_1_LM_RENERGY	Station 1 reverse energy previous month
7092	FC.STATION_2_ATMOS	Station 2 atmospheric (barometric) pressure
7093	FC.STATION_2_ATMOS_UNITS	Station 2 atmospheric pressure units
7094	FC.STATION_2_BASEPRES	Station 2 base pressure
7095	FC.STATION_2_BASEPRES_UNITS	Station 2 base pressure units
7096	FC.STATION_2_BASETEMP	Station 2 base temperature
7097	FC.STATION_2_BASETEMP_UNITS	Station 2 base temperature units
7098	FC.STATION_2_CONTRACTHOUR	Station 2 contract hour
7099	FC.STATION_2_GCSTREAM	Station 2 GC Data set to be used
7100	FC.STATION_2_FPV_CALC	Station 2 FPV calculation method
7101	FC.STATION_2_GROSSMODE	Station 2 AGA 8 Gross Method
7102	FC.STATION_2_VOLUMEUNITS	Station 2 volume units
7103	FC.STATION_2_ENERGYVOLUNITS	Station 2 energy units
7104	FC.STATION_2_FFLOWRATE	Station 2 forward flow rate
7105	FC.STATION_2_RFLOWRATE	Station 2 reverse flow rate
7106	FC.STATION_2_FENERGYRATE	Station 2 forward energy rate
7107	FC.STATION_2_RENERGYRATE	Station 2 reverse energy rate
7108	FC.STATION_2_CH_FVOLUME	Station 2 forward volume current hour
7109	FC.STATION_2_CH_RVOLUME	Station 2 reverse volume current hour
7110	FC.STATION_2_LH_FVOLUME	Station 2 forward volume previous hour
7111	FC.STATION_2_LH_RVOLUME	Station 2 reverse volume previous hour
7112	FC.STATION_2_CD_FVOLUME	Station 2 forward volume current day
7113	FC.STATION_2_CD_RVOLUME	Station 2 reverse volume current day
7114	FC.STATION_2_LD_FVOLUME	Station 2 forward volume previous day
7115	FC.STATION_2_LD_RVOLUME	Station 2 reverse volume previous day
7116	FC.STATION_2_CM_FVOLUME	Station 2 forward volume current month

Reg#	Variable	Description
7117	FC.STATION_2_CM_RVOLUME	Station 2 reverse volume current month
7118	FC.STATION_2_LM_FVOLUME	Station 2 forward volume previous month
7119	FC.STATION_2_LM_RVOLUME	Station 2 reverse volume previous month
7120	FC.STATION_2_CH_FENERGY	Station 2 forward energy current hour
7121	FC.STATION_2_CH_RENERGY	Station 2 reverse energy current hour
7122	FC.STATION_2_LH_FENERGY	Station 2 forward energy previous hour
7123	FC.STATION_2_LH_RENERGY	Station 2 reverse energy previous hour
7124	FC.STATION_2_CD_FENERGY	Station 2 forward energy current day
7125	FC.STATION_2_CD_RENERGY	Station 2 reverse energy current day
7126	FC.STATION_2_LD_FENERGY	Station 2 forward energy previous day
7127	FC.STATION_2_LD_RENERGY	Station 2 reverse energy previous day
7128	FC.STATION_2_CM_FENERGY	Station 2 forward energy current month
7129	FC.STATION_2_CM_RENERGY	Station 2 reverse energy current month
7130	FC.STATION_2_LM_FENERGY	Station 2 forward energy previous month
7131	FC.STATION_2_LM_RENERGY	Station 2 reverse energy previous month
7132	FC.STATION_3_ATMOS	Station 3 atmospheric (barometric) pressure
7133	FC.STATION_3_ATMOS_UNITS	Station 3 atmospheric pressure units
7134	FC.STATION_3_BASEPRES	Station 3 base pressure
7135	FC.STATION_3_BASEPRES_UNITS	Station 3 base pressure units
7136	FC.STATION_3_BASETEMP	Station 3 base temperature
7137	FC.STATION_3_BASETEMP_UNITS	Station 3 base temperature units
7138	FC.STATION_3_CONTRACTHOUR	Station 3 contract hour
7139	FC.STATION_3_GCSTREAM	Station 3 GC Data set to be used
7140	FC.STATION_3_FPV_CALC	Station 3 FPV calculation method
7141	FC.STATION_3_GROSSMODE	Station 3 AGA 8 Gross Method
7142	FC.STATION_3_VOLUMEUNITS	Station 3 volume units
7143	FC.STATION_3_ENERGYVOLUNITS	Station 3 energy units
7144	FC.STATION_3_FFLOWRATE	Station 3 forward flow rate
7145	FC.STATION_3_RFLOWRATE	Station 3 reverse flow rate
7146	FC.STATION_3_FENERGYRATE	Station 3 forward energy rate
7147	FC.STATION_3_RENERGYRATE	Station 3 reverse energy rate
7148	FC.STATION_3_CH_FVOLUME	Station 3 forward volume current hour
7149	FC.STATION_3_CH_RVOLUME	Station 3 reverse volume current hour
7150	FC.STATION_3_LH_FVOLUME	Station 3 forward volume previous hour
7151	FC.STATION_3_LH_RVOLUME	Station 3 reverse volume previous hour
7152	FC.STATION_3_CD_FVOLUME	Station 3 forward volume current day
7153	FC.STATION_3_CD_RVOLUME	Station 3 reverse volume current day
7154	FC.STATION_3_LD_FVOLUME	Station 3 forward volume previous day
7155	FC.STATION_3_LD_RVOLUME	Station 3 reverse volume previous day
7156	FC.STATION_3_CM_FVOLUME	Station 3 forward volume current month
7157	FC.STATION_3_CM_RVOLUME	Station 3 reverse volume current month
7158	FC.STATION_3_LM_FVOLUME	Station 3 forward volume previous month
7159	FC.STATION_3_LM_RVOLUME	Station 3 reverse volume previous month
7160	FC.STATION_3_CH_FENERGY	Station 3 forward energy current hour
7161	FC.STATION_3_CH_RENERGY	Station 3 reverse energy current hour
7162	FC.STATION_3_LH_FENERGY	Station 3 forward energy previous hour
7163	FC.STATION_3_LH_RENERGY	Station 3 reverse energy previous hour
7164	FC.STATION_3_CD_FENERGY	Station 3 forward energy current day
7165	FC.STATION_3_CD_RENERGY	Station 3 reverse energy current day
7166	FC.STATION_3_LD_FENERGY	Station 3 forward energy previous day

Reg#	Variable	Description
7167	FC.STATION_3_LD_RENERGY	Station 3 reverse energy previous day
7168	FC.STATION_3_CM_FENERGY	Station 3 forward energy current month
7169	FC.STATION_3_CM_RENERGY	Station 3 reverse energy current month
7170	FC.STATION_3_LM_FENERGY	Station 3 forward energy previous month
7171	FC.STATION_3_LM_RENERGY	Station 3 reverse energy previous month
7172	FC.STATION_4_ATMOS	Station 4 atmospheric (barometric) pressure
7173	FC.STATION_4_ATMOS_UNITS	Station 4 atmospheric pressure units
7174	FC.STATION_4_BASEPRES	Station 4 base pressure
7175	FC.STATION_4_BASEPRES_UNITS	Station 4 base pressure units
7176	FC.STATION_4_BASETEMP	Station 4 base temperature
7177	FC.STATION_4_BASETEMP_UNITS	Station 4 base temperature units
7178	FC.STATION_4_CONTRACTHOUR	Station 4 contract hour
7179	FC.STATION_4_GCSTREAM	Station 4 GC Data set to be used
7180	FC.STATION_4_FPV_CALC	Station 4 FPV calculation method
7181	FC.STATION_4_GROSSMODE	Station 4 AGA 8 Gross Method
7182	FC.STATION_4_VOLUMEUNITS	Station 4 volume units
7183	FC.STATION_4_ENERGYVOLUNITS	Station 4 energy units
7184	FC.STATION_4_FFLOWRATE	Station 4 forward flow rate
7185	FC.STATION_4_RFLOWRATE	Station 4 reverse flow rate
7186	FC.STATION_4_FENERGYRATE	Station 4 forward energy rate
7187	FC.STATION_4_RENERGYRATE	Station 4 reverse energy rate
7188	FC.STATION_4_CH_FVOLUME	Station 4 forward volume current hour
7189	FC.STATION_4_CH_RVOLUME	Station 4 reverse volume current hour
7190	FC.STATION_4_LH_FVOLUME	Station 4 forward volume previous hour
7191	FC.STATION_4_LH_RVOLUME	Station 4 reverse volume previous hour
7192	FC.STATION_4_CD_FVOLUME	Station 4 forward volume current day
7193	FC.STATION_4_CD_RVOLUME	Station 4 reverse volume current day
7194	FC.STATION_4_LD_FVOLUME	Station 4 forward volume previous day
7195	FC.STATION_4_LD_RVOLUME	Station 4 reverse volume previous day
7196	FC.STATION_4_CM_FVOLUME	Station 4 forward volume current month
7197	FC.STATION_4_CM_RVOLUME	Station 4 reverse volume current month
7198	FC.STATION_4_LM_FVOLUME	Station 4 forward volume previous month
7199	FC.STATION_4_LM_RVOLUME	Station 4 reverse volume previous month
7200	FC.STATION_4_CH_FENERGY	Station 4 forward energy current hour
7201	FC.STATION_4_CH_RENERGY	Station 4 reverse energy current hour
7202	FC.STATION_4_LH_FENERGY	Station 4 forward energy previous hour
7203	FC.STATION_4_LH_RENERGY	Station 4 reverse energy previous hour
7204	FC.STATION_4_CD_FENERGY	Station 4 forward energy current day
7205	FC.STATION_4_CD_RENERGY	Station 4 reverse energy current day
7206	FC.STATION_4_LD_FENERGY	Station 4 forward energy previous day
7207	FC.STATION_4_LD_RENERGY	Station 4 reverse energy previous day
7208	FC.STATION_4_CM_FENERGY	Station 4 forward energy current month
7209	FC.STATION_4_CM_RENERGY	Station 4 reverse energy current month
7210	FC.STATION_4_LM_FENERGY	Station 4 forward energy previous month
7211	FC.STATION_4_LM_RENERGY	Station 4 reverse energy previous month
7212	FC.STATION_5_ATMOS	Station 5 atmospheric (barometric) pressure
7213	FC.STATION_5_ATMOS_UNITS	Station 5 atmospheric pressure units
7214	FC.STATION_5_BASEPRES	Station 5 base pressure
7215	FC.STATION_5_BASEPRES_UNITS	Station 5 base pressure units
7216	FC.STATION_5_BASETEMP	Station 5 base temperature

Reg#	Variable	Description
7217	FC.STATION_5_BASETEMP_UNITS	Station 5 base temperature units
7218	FC.STATION_5_CONTRACTHOUR	Station 5 contract hour
7219	FC.STATION_5_GCSTREAM	Station 5 GC Data set to be used
7220	FC.STATION_5_FPV_CALC	Station 5 FPV calculation method
7221	FC.STATION_5_GROSSMODE	Station 5 AGA 8 Gross Method
7222	FC.STATION_5_VOLUMEUNITS	Station 5 volume units
7223	FC.STATION_5_ENERGYVOLUNITS	Station 5 energy units
7224	FC.STATION_5_FFLOWRATE	Station 5 forward flow rate
7225	FC.STATION_5_RFLOWRATE	Station 5 reverse flow rate
7226	FC.STATION_5_FENERGYRATE	Station 5 forward energy rate
7227	FC.STATION_5_RENERGYRATE	Station 5 reverse energy rate
7228	FC.STATION_5_CH_FVOLUME	Station 5 forward volume current hour
7229	FC.STATION_5_CH_RVOLUME	Station 5 reverse volume current hour
7230	FC.STATION_5_LH_FVOLUME	Station 5 forward volume previous hour
7231	FC.STATION_5_LH_RVOLUME	Station 5 reverse volume previous hour
7232	FC.STATION_5_CD_FVOLUME	Station 5 forward volume current day
7233	FC.STATION_5_CD_RVOLUME	Station 5 reverse volume current day
7234	FC.STATION_5_LD_FVOLUME	Station 5 forward volume previous day
7235	FC.STATION_5_LD_RVOLUME	Station 5 reverse volume previous day
7236	FC.STATION_5_CM_FVOLUME	Station 5 forward volume current month
7237	FC.STATION_5_CM_RVOLUME	Station 5 reverse volume current month
7238	FC.STATION_5_LM_FVOLUME	Station 5 forward volume previous month
7239	FC.STATION_5_LM_RVOLUME	Station 5 reverse volume previous month
7240	FC.STATION_5_CH_FENERGY	Station 5 forward energy current hour
7241	FC.STATION_5_CH_RENERGY	Station 5 reverse energy current hour
7242	FC.STATION_5_LH_FENERGY	Station 5 forward energy previous hour
7243	FC.STATION_5_LH_RENERGY	Station 5 reverse energy previous hour
7244	FC.STATION_5_CD_FENERGY	Station 5 forward energy current day
7245	FC.STATION_5_CD_RENERGY	Station 5 reverse energy current day
7246	FC.STATION_5_LD_FENERGY	Station 5 forward energy previous day
7247	FC.STATION_5_LD_RENERGY	Station 5 reverse energy previous day
7248	FC.STATION_5_CM_FENERGY	Station 5 forward energy current month
7249	FC.STATION_5_CM_RENERGY	Station 5 reverse energy current month
7250	FC.STATION_5_LM_FENERGY	Station 5 forward energy previous month
7251	FC.STATION_5_LM_RENERGY	Station 5 reverse energy previous month
7252	FC.STATION_6_ATMOS	Station 6 atmospheric (barometric) pressure
7253	FC.STATION_6_ATMOS_UNITS	Station 6 atmospheric pressure units
7254	FC.STATION_6_BASEPRES	Station 6 base pressure
7255	FC.STATION_6_BASEPRES_UNITS	Station 6 base pressure units
7256	FC.STATION_6_BASETEMP	Station 6 base temperature
7257	FC.STATION_6_BASETEMP_UNITS	Station 6 base temperature units
7258	FC.STATION_6_CONTRACTHOUR	Station 6 contract hour
7259	FC.STATION_6_GCSTREAM	Station 6 GC Data set to be used
7260	FC.STATION_6_FPV_CALC	Station 6 FPV calculation method
7261	FC.STATION_6_GROSSMODE	Station 6 AGA 8 Gross Method
7262	FC.STATION_6_VOLUMEUNITS	Station 6 volume units
7263	FC.STATION_6_ENERGYVOLUNITS	Station 6 energy units
7264	FC.STATION_6_FFLOWRATE	Station 6 forward flow rate
7265	FC.STATION_6_RFLOWRATE	Station 6 reverse flow rate
7266	FC.STATION_6_FENERGYRATE	Station 6 forward energy rate

Reg#	Variable	Description
7267	FC.STATION_6_RENERGYRATE	Station 6 reverse energy rate
7268	FC.STATION_6_CH_FVOLUME	Station 6 forward volume current hour
7269	FC.STATION_6_CH_RVOLUME	Station 6 reverse volume current hour
7270	FC.STATION_6_LH_FVOLUME	Station 6 forward volume previous hour
7271	FC.STATION_6_LH_RVOLUME	Station 6 reverse volume previous hour
7272	FC.STATION_6_CD_FVOLUME	Station 6 forward volume current day
7273	FC.STATION_6_CD_RVOLUME	Station 6 reverse volume current day
7274	FC.STATION_6_LD_FVOLUME	Station 6 forward volume previous day
7275	FC.STATION_6_LD_RVOLUME	Station 6 reverse volume previous day
7276	FC.STATION_6_CM_FVOLUME	Station 6 forward volume current month
7277	FC.STATION_6_CM_RVOLUME	Station 6 reverse volume current month
7278	FC.STATION_6_LM_FVOLUME	Station 6 forward volume previous month
7279	FC.STATION_6_LM_RVOLUME	Station 6 reverse volume previous month
7280	FC.STATION_6_CH_FENERGY	Station 6 forward energy current hour
7281	FC.STATION_6_CH_RENERGY	Station 6 reverse energy current hour
7282	FC.STATION_6_LH_FENERGY	Station 6 forward energy previous hour
7283	FC.STATION_6_LH_RENERGY	Station 6 reverse energy previous hour
7284	FC.STATION_6_CD_FENERGY	Station 6 forward energy current day
7285	FC.STATION_6_CD_RENERGY	Station 6 reverse energy current day
7286	FC.STATION_6_LD_FENERGY	Station 6 forward energy previous day
7287	FC.STATION_6_LD_RENERGY	Station 6 reverse energy previous day
7288	FC.STATION_6_CM_FENERGY	Station 6 forward energy current month
7289	FC.STATION_6_CM_RENERGY	Station 6 reverse energy current month
7290	FC.STATION_6_LM_FENERGY	Station 6 forward energy previous month
7291	FC.STATION_6_LM_RENERGY	Station 6 reverse energy previous month
7292	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7293	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7294	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7295	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7296	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7297	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7298	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7299	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7300	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7301	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7302	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7303	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7304	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7305	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7306	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7307	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7308	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7309	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7310	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7311	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7312	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7313	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7314	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7315	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7316	MB.SPARE	*** RESERVED FOR FUTURE USE ***

Reg#	Variable	Description
7317	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7318	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7319	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7320	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7321	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7322	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7323	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7324	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7325	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7326	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7327	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7328	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7329	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7330	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7331	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7332	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7333	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7334	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7335	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7336	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7337	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7338	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7339	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7340	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7341	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7342	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7343	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7344	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7345	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7346	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7347	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7348	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7349	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7350	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7351	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7352	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7353	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7354	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7355	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7356	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7357	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7358	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7359	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7360	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7361	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7362	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7363	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7364	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7365	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7366	MB.SPARE	*** RESERVED FOR FUTURE USE ***

Reg#	Variable	Description
7367	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7368	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7369	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7370	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7371	MB.SPARE	*** RESERVED FOR FUTURE USE ***
7372	FC.FC1.RX_CFG_TYPE	Run 1 configuration type
7373	FC.RUN_1_STATION	Run 1 station assignment
7374	FC.RUN_1_DIRECTION	Run 1 direction
7375	FC.RUN_1_SPSOURCE	Run 1 static pressure source
7376	FC.R1_MVTID_SP	Run 1 MVT ID for static pressure
7377	FC.FC1.RX_SP_BUF	Run 1 static pressure value
7378	FC.RUN_1_FTSOURCE	Run 1 temperature source
7379	FC.R1_MVTID_FT	Run 1 MVT ID for temperature
7380	FC.FC1.RX_FTEMP_BUF	Run 1 temperature value
7381	FC.FC1.RX_PIPE_DIAM	Run 1 pipe diameter
7382	FC.FC1.ORIF_DIAM_INUSE	Run 1 orifice diameter in use
7383	FC.FC1.RX_DPCUT_VAL	Run 1 differential pressure cutoff
7384	FC.RUN_1_DPSOURCE	Run 1 differential pressure source
7385	FC.R1_MVTID_DP	Run 1 MVT ID for differential pressure
7386	FC.FC1.RX_DP_BUF	Run 1 differential pressure value
7387	FC.FC1.OR_FLOW_RATE	Run 1 flow rate
7388	FC.FC1.RX_FRATE_ARCHUNITS	Run 1 flow rate units
7389	FC.FC1.OR_ENERGY_RATE	Run 1 energy rate
7390	FC.FC1.RX_ERATE_ARCHUNITS	Run 1 energy rate units
7391	FC.FC1.RX_ORIF_DIAM	Run 1 orifice diameter setting
7392	FC.FC1.RX_ORIF_UNITS	Run 1 orifice diameter units
7393	FC.FC1.RX_BETA	Run 1 beta ratio
7394	FC.FC1.OR_MINFLOWRATE	Run 1 minimum flow rate
7395	FC.FC1.OR_MAXFLOWRATE	Run 1 maximum flow rate
7396	FC.RUN_1_MAXFREQ	Run 1 maximum frequency
7397	FC.FC1.RX_LCUTOFF	Run 1 low frequency cutoff
7398	FC.FC1.RX_AGA7_KFACTOR	Run 1 AGA7 K factor (pulses/volume or volume/pulse)
7399	FC.FC1.IUDI_COUNT	Run 1 Counts from HSC
7400	FC.FC1.RX_PPS	Run 1 pulses per second (filtered frequency)
7401	FC.FC1.RX_AGA7_FACTOR	Run 1 AGA7 correction factor
7402	FC.FC1.RX_KFACTOR_USED	Run 1 AGA7 K factor used
7403	FC.FC1.OR_UCFLOWRATE	Run 1 uncorrected flow rate
7404	FC.FC1.RX_AA_CUTOFF	Run 1 AutoAdjust low frequency cutoff
7405	FC.AA_1.KM	Run 1 AutoAdjust K factor Main Rotor
7406	FC.AA_1.KS	Run 1 AutoAdjust K factor Sense Rotor
7407	FC.RUN_1_AA_MAXACF	Run 1 AutoAdjust maximum actual volume
7408	FC.AA_1.ABAR	Run 1 AutoAdjust a bar
7409	FC.FC1.RX_AA_DEVLIMIT	Run 1 AutoAdjust deviation limit
7410	FC.AA_1.IUDI_MAIN_ROTOR	Run 1 AutoAdjust delta counts from HSC to Main Rotor
7411	FC.AA_1.IUDI_SENS_ROTOR	Run 1 AutoAdjust delta counts from HSC to Sense Rotor
7412	FC.FC1.IR_AAVOLUME	Run 1 AutoAdjust adjusted volume into the Flow Computer FB
7413	FC.AA_1_DELTAABAR	Run 1 AutoAdjust delta a bar

Reg#	Variable	Description
7414	FC.FC1.RX_AGA10_SOS	Run 1 Speed of Sound calculated by AGA 10
7415	FC.FC1.RX_SOS_PCT_DIFF	Run 1 Speed of Sound percentage difference between calculated and Ultrasonic
7416	FC.FC1.RX_SOS_LIMIT	Run 1 Speed of Sound percentage difference limit
7417	FC.FC1.RX_SFREQ_DB	Run 1 cutoff value in seconds for low frequency PD meters
7418	FC.FC1.RX_DP_LLAL	Run 1 differential pressure low-low alarm limits
7419	FC.FC1.RX_DP_LAL	Run 1 differential pressure low alarm limits
7420	FC.FC1.RX_DP_HAL	Run 1 differential pressure high alarm limits
7421	FC.FC1.RX_DP_HHAL	Run 1 differential pressure high-high alarm limits
7422	FC.FC1.RX_SP_LLAL	Run 1 static pressure low-low alarm limits
7423	FC.FC1.RX_SP_LAL	Run 1 static pressure low alarm limits
7424	FC.FC1.RX_SP_HAL	Run 1 static pressure high alarm limits
7425	FC.FC1.RX_SP_HHAL	Run 1 static pressure high-high alarm limits
7426	FC.FC1.RX_FTEMP_LLAL	Run 1 temperature low-low alarm limits
7427	FC.FC1.RX_FTEMP_LAL	Run 1 temperature low alarm limits
7428	FC.FC1.RX_FTEMP_HAL	Run 1 temperature high alarm limits
7429	FC.FC1.RX_FTEMP_HHAL	Run 1 temperature high-high alarm limits
7430	FC.FC1.RX_BETA_HILIMIT	Run 1 beta ratio high alarm limits
7431	FC.FC1.RX_BETA_LOLIMIT	Run 1 beta ratio low alarm limits
7432	FC.FC1.RX_DP_INP	Run 1 differential pressure input to the Flow Computer function block
7433	FC.FC1.DP_CH_AVG	Run 1 differential pressure current hour average
7434	FC.FC1.DP_PH_AVG	Run 1 differential pressure previous hour average
7435	FC.FC1.RX_SP_INP	Run 1 static pressure input to the Flow Computer function block
7436	FC.FC1.SP_CH_AVG	Run 1 static pressure current hour average
7437	FC.FC1.SP_PH_AVG	Run 1 static pressure previous hour average
7438	FC.FC1.RX_FTEMP_INP	Run 1 temperature input to the Flow Computer function block
7439	FC.FC1.FTEMP_CH_AVG	Run 1 temperature current hour average
7440	FC.FC1.FTEMP_PH_AVG	Run 1 temperature previous hour average
7441	FC.FC1.RX_HTVAL_GC	Run 1 heating value input to the Flow Computer function block
7442	FC.FC1.HTVAL_CH_AVG	Run 1 heating value current hour average
7443	FC.FC1.HTVAL_PH_AVG	Run 1 heating value previous hour average
7444	FC.FC1.RX_GRAVITY_LIVE	Run 1 specific gravity input to the Flow Computer function block
7445	FC.FC1.SG_CH_AVG	Run 1 specific gravity current hour average
7446	FC.FC1.SG_PH_AVG	Run 1 specific gravity previous hour average
7447	FC.FC1.RX_N2_LIVE	Run 1 Nitrogen input to the Flow Computer function block
7448	FC.FC1.N2_CH_AVG	Run 1 Nitrogen current hour average
7449	FC.FC1.N2_PH_AVG	Run 1 Nitrogen previous hour average
7450	FC.FC1.RX_CO2_LIVE	Run 1 Carbon Dioxide (CO2) input to the Flow Computer function block
7451	FC.FC1.CO2_CH_AVG	Run 1 Carbon Dioxide (CO2) current hour average
7452	FC.FC1.CO2_PH_AVG	Run 1 Carbon Dioxide (CO2) previous hour average
7453	FC.FC1.RX_CH4_LIVE	Run 1 Methane (CH4) input to the Flow Computer function block
7454	FC.FC1.CH4_CH_AVG	Run 1 Methane (CH4) current hour average
7455	FC.FC1.CH4_PH_AVG	Run 1 Methane (CH4) previous hour average

Reg#	Variable	Description
7456	FC.FC1.RX_C2_LIVE	Run 1 Ethane (C2) input to the Flow Computer function block
7457	FC.FC1.C2_CH_AVG	Run 1 Ethane (C2) current hour average
7458	FC.FC1.C2_PH_AVG	Run 1 Ethane (C2) previous hour average
7459	FC.FC1.RX_C3_LIVE	Run 1 Propane (C3) input to the Flow Computer function block
7460	FC.FC1.C3_CH_AVG	Run 1 Propane (C3) current hour average
7461	FC.FC1.C3_PH_AVG	Run 1 Propane (C3) previous hour average
7462	FC.FC1.RX_IC4_LIVE	Run 1 I-Butane (I-C4) input to the Flow Computer function block
7463	FC.FC1.IC4_CH_AVG	Run 1 I-Butane (I-C4) current hour average
7464	FC.FC1.IC4_PH_AVG	Run 1 I-Butane (I-C4) previous hour average
7465	FC.FC1.RX_NC4_LIVE	Run 1 N-Butane (N-C4) input to the Flow Computer function block
7466	FC.FC1.NC4_CH_AVG	Run 1 N-Butane (N-C4) current hour average
7467	FC.FC1.NC4_PH_AVG	Run 1 N-Butane (N-C4) previous hour average
7468	FC.FC1.RX_IC5_LIVE	Run 1 heating value input to the Flow Computer function block
7469	FC.FC1.IC5_CH_AVG	Run 1 heating value current hour average
7470	FC.FC1.IC5_PH_AVG	Run 1 heating value previous hour average
7471	FC.FC1.RX_NC5_LIVE	Run 1 Pentane (CH5) input to the Flow Computer function block
7472	FC.FC1.NC5_CH_AVG	Run 1 Pentane (CH5) current hour average
7473	FC.FC1.NC5_PH_AVG	Run 1 Pentane (CH5) previous hour average
7474	FC.FC1.RX_C6_LIVE	Run 1 Hexane (C6) input to the Flow Computer function block
7475	FC.FC1.C6_CH_AVG	Run 1 Hexane (C6) current hour average
7476	FC.FC1.C6_PH_AVG	Run 1 Hexane (C6) previous hour average
7477	FC.FC1.RX_C7_LIVE	Run 1 Heptane (C7) input to the Flow Computer function block
7478	FC.FC1.C7_CH_AVG	Run 1 Heptane (C7) current hour average
7479	FC.FC1.C7_PH_AVG	Run 1 Heptane (C7) previous hour average
7480	FC.FC1.RX_C8_LIVE	Run 1 Octane (C8) input to the Flow Computer function block
7481	FC.FC1.C8_CH_AVG	Run 1 Octane (C8) current hour average
7482	FC.FC1.C8_PH_AVG	Run 1 Octane (C8) previous hour average
7483	FC.FC1.RX_C9_LIVE	Run 1 Nonane (C9) input to the Flow Computer function block
7484	FC.FC1.C9_CH_AVG	Run 1 Nonane (C9) current hour average
7485	FC.FC1.C9_PH_AVG	Run 1 Nonane (C9) previous hour average
7486	FC.FC1.RX_C10_LIVE	Run 1 Decane (C10) input to the Flow Computer function block
7487	FC.FC1.C10_CH_AVG	Run 1 Decane (C10) current hour average
7488	FC.FC1.C10_PH_AVG	Run 1 Decane (C10) previous hour average
7489	FC.FC1.RX_H2O_PCT	Run 1 Water content (H2O) input to the Flow Computer function block
7490	FC.FC1.H2O_CH_AVG	Run 1 Water content (H2O) current hour average
7491	FC.FC1.H2O_PH_AVG	Run 1 Water content (H2O) previous hour average
7492	FC.FC1.RX_H2S_PCT	Run 1 Hydrogen sulfide (H2S) input to the Flow Computer function block
7493	FC.FC1.H2S_CH_AVG	Run 1 Hydrogen sulfide (H2S) current hour average
7494	FC.FC1.H2S_PH_AVG	Run 1 Hydrogen sulfide (H2S) previous hour average
7495	FC.FC1.RX_H2_PCT	Run 1 Hydrogen (H2) input to the Flow Computer

Reg#	Variable	Description
		function block
7496	FC.FC1.H2_CH_AVG	Run 1 Hydrogen (H2) current hour average
7497	FC.FC1.H2_PH_AVG	Run 1 Hydrogen (H2) previous hour average
7498	FC.FC1.RX_CO_PCT	Run 1 Carbon Monoxide (CO) input to the Flow Computer function block
7499	FC.FC1.CO_CH_AVG	Run 1 Carbon Monoxide (CO) current hour average
7500	FC.FC1.CO_PH_AVG	Run 1 Carbon Monoxide (CO) previous hour average
7501	FC.FC1.RX_O2_PCT	Run 1 Oxygen (O2) input to the Flow Computer function block
7502	FC.FC1.O2_CH_AVG	Run 1 Oxygen (O2) current hour average
7503	FC.FC1.O2_PH_AVG	Run 1 Oxygen (O2) previous hour average
7504	FC.FC1.RX_HE_PCT	Run 1 Helium (H2) input to the Flow Computer function block
7505	FC.FC1.HE_CH_AVG	Run 1 Helium (H2) current hour average
7506	FC.FC1.HE_PH_AVG	Run 1 Helium (H2) previous hour average
7507	FC.FC1.RX_AR_PCT	Run 1 Argon (AR) input to the Flow Computer function block
7508	FC.FC1.AR_CH_AVG	Run 1 Argon (AR) current hour average
7509	FC.FC1.AR_PH_AVG	Run 1 Argon (AR) previous hour average
7510	FC.FC2.RX_CFG_TYPE	Run 2 configuration type
7511	FC.RUN_2_STATION	Run 2 station assignment
7512	FC.RUN_2_DIRECTION	Run 2 direction
7513	FC.RUN_2_SPSOURCE	Run 2 static pressure source
7514	FC.R2_MVTID_SP	Run 2 MVT ID for static pressure
7515	FC.FC2.RX_SP_BUF	Run 2 static pressure value
7516	FC.RUN_2_FTSOURCE	Run 2 temperature source
7517	FC.R2_MVTID_FT	Run 2 MVT ID for temperature
7518	FC.FC2.RX_FTEMP_BUF	Run 2 temperature value
7519	FC.FC2.RX_PIPE_DIAM	Run 2 pipe diameter
7520	FC.FC2.ORIF_DIAM_INUSE	Run 2 orifice diameter in use
7521	FC.FC2.RX_DPCUT_VAL	Run 2 differential pressure cutoff
7522	FC.RUN_2_DPSOURCE	Run 2 differential pressure source
7523	FC.R2_MVTID_DP	Run 2 MVT ID for differential pressure
7524	FC.FC2.RX_DP_BUF	Run 2 differential pressure value
7525	FC.FC2.OR_FLOW_RATE	Run 2 flow rate
7526	FC.FC2.RX_FRATE_ARCHUNITS	Run 2 flow rate units
7527	FC.FC2.OR_ENERGY_RATE	Run 2 energy rate
7528	FC.FC2.RX_ERATE_ARCHUNITS	Run 2 energy rate units
7529	FC.FC2.RX_ORIF_DIAM	Run 2 orifice diameter setting
7530	FC.FC2.RX_ORIF_UNITS	Run 2 orifice diameter units
7531	FC.FC2.RX_BETA	Run 2 beta ratio
7532	FC.FC2.OR_MINFLOWRATE	Run 2 minimum flow rate
7533	FC.FC2.OR_MAXFLOWRATE	Run 2 maximum flow rate
7534	FC.RUN_2_MAXFREQ	Run 2 maximum frequency
7535	FC.FC2.RX_LCUTOFF	Run 2 low frequency cutoff
7536	FC.FC2.RX_AGA7_KFACTOR	Run 2 AGA7 K factor (pulses/volume or volume/pulse)
7537	FC.FC2.IUDI_COUNT	Run 2 Counts from HSC
7538	FC.FC2.RX_PPS	Run 2 pulses per second (filtered frequency)
7539	FC.FC2.RX_AGA7_FACTOR	Run 2 AGA7 correction factor

Reg#	Variable	Description
7540	FC.FC2.RX_KFACTOR_USED	Run 2 AGA7 K factor used
7541	FC.FC2.OR_UCFLOWRATE	Run 2 uncorrected flow rate
7542	FC.FC2.RX_AA_CUTOFF	Run 2 AutoAdjust low frequency cutoff
7543	FC.AA_2.KM	Run 2 AutoAdjust K factor Main Rotor
7544	FC.AA_2.KS	Run 2 AutoAdjust K factor Sense Rotor
7545	FC.RUN_2_AA_MAXACF	Run 2 AutoAdjust maximum actual volume
7546	FC.AA_2.ABAR	Run 2 AutoAdjust a bar
7547	FC.FC2.RX_AA_DEVLIMIT	Run 2 AutoAdjust deviation limit
7548	FC.AA_2.IUDI_MAIN_ROTOR	Run 2 AutoAdjust delta counts from HSC to Main Rotor
7549	FC.AA_2.IUDI_SENS_ROTOR	Run 2 AutoAdjust delta counts from HSC to Sense Rotor
7550	FC.FC2.IR_AAVOLUME	Run 2 AutoAdjust adjusted volume into the Flow Computer FB
7551	FC.AA_2_DELTAABAR	Run 2 AutoAdjust delta a bar
7552	FC.FC2.RX_AGA10_SOS	Run 2 Speed of Sound calculated by AGA 10
7553	FC.FC2.RX_SOS_PCT_DIFF	Run 2 Speed of Sound percentage difference between calculated and Ultrasonic
7554	FC.FC2.RX_SOS_LIMIT	Run 2 Speed of Sound percentage difference limit
7555	FC.FC2.RX_SFREQ_DB	Run 2 cutoff value in seconds for low frequency PD meters
7556	FC.FC2.RX_DP_LLAL	Run 2 differential pressure low-low alarm limits
7557	FC.FC2.RX_DP_LAL	Run 2 differential pressure low alarm limits
7558	FC.FC2.RX_DP_HAL	Run 2 differential pressure high alarm limits
7559	FC.FC2.RX_DP_HHAL	Run 2 differential pressure high-high alarm limits
7560	FC.FC2.RX_SP_LLAL	Run 2 static pressure low-low alarm limits
7561	FC.FC2.RX_SP_LAL	Run 2 static pressure low alarm limits
7562	FC.FC2.RX_SP_HAL	Run 2 static pressure high alarm limits
7563	FC.FC2.RX_SP_HHAL	Run 2 static pressure high-high alarm limits
7564	FC.FC2.RX_FTEMP_LLAL	Run 2 temperature low-low alarm limits
7565	FC.FC2.RX_FTEMP_LAL	Run 2 temperature low alarm limits
7566	FC.FC2.RX_FTEMP_HAL	Run 2 temperature high alarm limits
7567	FC.FC2.RX_FTEMP_HHAL	Run 2 temperature high-high alarm limits
7568	FC.FC2.RX_BETA_HILIMIT	Run 2 beta ratio high alarm limits
7569	FC.FC2.RX_BETA_LOLIMIT	Run 2 beta ratio low alarm limits
7570	FC.FC2.RX_DP_INP	Run 2 differential pressure input to the Flow Computer function block
7571	FC.FC2.DP_CH_AVG	Run 2 differential pressure current hour average
7572	FC.FC2.DP_PH_AVG	Run 2 differential pressure previous hour average
7573	FC.FC2.RX_SP_INP	Run 2 static pressure input to the Flow Computer function block
7574	FC.FC2.SP_CH_AVG	Run 2 static pressure current hour average
7575	FC.FC2.SP_PH_AVG	Run 2 static pressure previous hour average
7576	FC.FC2.RX_FTEMP_INP	Run 2 temperature input to the Flow Computer function block
7577	FC.FC2.FTEMP_CH_AVG	Run 2 temperature current hour average
7578	FC.FC2.FTEMP_PH_AVG	Run 2 temperature previous hour average
7579	FC.FC2.RX_HTVAL_GC	Run 2 heating value input to the Flow Computer function block
7580	FC.FC2.HTVAL_CH_AVG	Run 2 heating value current hour average
7581	FC.FC2.HTVAL_PH_AVG	Run 2 heating value previous hour average
7582	FC.FC2.RX_GRAVITY_LIVE	Run 2 specific gravity input to the Flow Computer function block

Reg#	Variable	Description
7583	FC.FC2.SG_CH_AVG	Run 2 specific gravity current hour average
7584	FC.FC2.SG_PH_AVG	Run 2 specific gravity previous hour average
7585	FC.FC2.RX_N2_LIVE	Run 2 Nitrogen input to the Flow Computer function block
7586	FC.FC2.N2_CH_AVG	Run 2 Nitrogen current hour average
7587	FC.FC2.N2_PH_AVG	Run 2 Nitrogen previous hour average
7588	FC.FC2.RX_CO2_LIVE	Run 2 Carbon Dioxide (CO2) input to the Flow Computer function block
7589	FC.FC2.CO2_CH_AVG	Run 2 Carbon Dioxide (CO2) current hour average
7590	FC.FC2.CO2_PH_AVG	Run 2 Carbon Dioxide (CO2) previous hour average
7591	FC.FC2.RX_CH4_LIVE	Run 2 Methane (CH4) input to the Flow Computer function block
7592	FC.FC2.CH4_CH_AVG	Run 2 Methane (CH4) current hour average
7593	FC.FC2.CH4_PH_AVG	Run 2 Methane (CH4) previous hour average
7594	FC.FC2.RX_C2_LIVE	Run 2 Ethane (C2) input to the Flow Computer function block
7595	FC.FC2.C2_CH_AVG	Run 2 Ethane (C2) current hour average
7596	FC.FC2.C2_PH_AVG	Run 2 Ethane (C2) previous hour average
7597	FC.FC2.RX_C3_LIVE	Run 2 Propane (C3) input to the Flow Computer function block
7598	FC.FC2.C3_CH_AVG	Run 2 Propane (C3) current hour average
7599	FC.FC2.C3_PH_AVG	Run 2 Propane (C3) previous hour average
7600	FC.FC2.RX_IC4_LIVE	Run 2 I-Butane (I-C4) input to the Flow Computer function block
7601	FC.FC2.IC4_CH_AVG	Run 2 I-Butane (I-C4) current hour average
7602	FC.FC2.IC4_PH_AVG	Run 2 I-Butane (I-C4) previous hour average
7603	FC.FC2.RX_NC4_LIVE	Run 2 N-Butane (N-C4) input to the Flow Computer function block
7604	FC.FC2.NC4_CH_AVG	Run 2 N-Butane (N-C4) current hour average
7605	FC.FC2.NC4_PH_AVG	Run 2 N-Butane (N-C4) previous hour average
7606	FC.FC2.RX_IC5_LIVE	Run 2 heating value input to the Flow Computer function block
7607	FC.FC2.IC5_CH_AVG	Run 2 heating value current hour average
7608	FC.FC2.IC5_PH_AVG	Run 2 heating value previous hour average
7609	FC.FC2.RX_NC5_LIVE	Run 2 Pentane (CH5) input to the Flow Computer function block
7610	FC.FC2.NC5_CH_AVG	Run 2 Pentane (CH5) current hour average
7611	FC.FC2.NC5_PH_AVG	Run 2 Pentane (CH5) previous hour average
7612	FC.FC2.RX_C6_LIVE	Run 2 Hexane (C6) input to the Flow Computer function block
7613	FC.FC2.C6_CH_AVG	Run 2 Hexane (C6) current hour average
7614	FC.FC2.C6_PH_AVG	Run 2 Hexane (C6) previous hour average
7615	FC.FC2.RX_C7_LIVE	Run 2 Heptane (C7) input to the Flow Computer function block
7616	FC.FC2.C7_CH_AVG	Run 2 Heptane (C7) current hour average
7617	FC.FC2.C7_PH_AVG	Run 2 Heptane (C7) previous hour average
7618	FC.FC2.RX_C8_LIVE	Run 2 Octane (C8) input to the Flow Computer function block
7619	FC.FC2.C8_CH_AVG	Run 2 Octane (C8) current hour average
7620	FC.FC2.C8_PH_AVG	Run 2 Octane (C8) previous hour average
7621	FC.FC2.RX_C9_LIVE	Run 2 Nonane (C9) input to the Flow Computer function block
7622	FC.FC2.C9_CH_AVG	Run 2 Nonane (C9) current hour average
7623	FC.FC2.C9_PH_AVG	Run 2 Nonane (C9) previous hour average

Reg#	Variable	Description
7624	FC.FC2.RX_C10_LIVE	Run 2 Decane (C10) input to the Flow Computer function block
7625	FC.FC2.C10_CH_AVG	Run 2 Decane (C10) current hour average
7626	FC.FC2.C10_PH_AVG	Run 2 Decane (C10) previous hour average
7627	FC.FC2.RX_H2O_PCT	Run 2 Water content (H2O) input to the Flow Computer function block
7628	FC.FC2.H2O_CH_AVG	Run 2 Water content (H2O) current hour average
7629	FC.FC2.H2O_PH_AVG	Run 2 Water content (H2O) previous hour average
7630	FC.FC2.RX_H2S_PCT	Run 2 Hydrogen sulfide (H2S) input to the Flow Computer function block
7631	FC.FC2.H2S_CH_AVG	Run 2 Hydrogen sulfide (H2S) current hour average
7632	FC.FC2.H2S_PH_AVG	Run 2 Hydrogen sulfide (H2S) previous hour average
7633	FC.FC2.RX_H2_PCT	Run 2 Hydrogen (H2) input to the Flow Computer function block
7634	FC.FC2.H2_CH_AVG	Run 2 Hydrogen (H2) current hour average
7635	FC.FC2.H2_PH_AVG	Run 2 Hydrogen (H2) previous hour average
7636	FC.FC2.RX_CO_PCT	Run 2 Carbon Monoxide (CO) input to the Flow Computer function block
7637	FC.FC2.CO_CH_AVG	Run 2 Carbon Monoxide (CO) current hour average
7638	FC.FC2.CO_PH_AVG	Run 2 Carbon Monoxide (CO) previous hour average
7639	FC.FC2.RX_O2_PCT	Run 2 Oxygen (O2) input to the Flow Computer function block
7640	FC.FC2.O2_CH_AVG	Run 2 Oxygen (O2) current hour average
7641	FC.FC2.O2_PH_AVG	Run 2 Oxygen (O2) previous hour average
7642	FC.FC2.RX_HE_PCT	Run 2 Helium (H2) input to the Flow Computer function block
7643	FC.FC2.HE_CH_AVG	Run 2 Helium (H2) current hour average
7644	FC.FC2.HE_PH_AVG	Run 2 Helium (H2) previous hour average
7645	FC.FC2.RX_AR_PCT	Run 2 Argon (AR) input to the Flow Computer function block
7646	FC.FC2.AR_CH_AVG	Run 2 Argon (AR) current hour average
7647	FC.FC2.AR_PH_AVG	Run 2 Argon (AR) previous hour average
7648	FC.FC3.RX_CFG_TYPE	Run 3 configuration type
7649	FC.RUN_3_STATION	Run 3 station assignment
7650	FC.RUN_3_DIRECTION	Run 3 direction
7651	FC.RUN_3_SPSOURCE	Run 3 static pressure source
7652	FC.R3_MVTID_SP	Run 3 MVT ID for static pressure
7653	FC.FC3.RX_SP_BUF	Run 3 static pressure value
7654	FC.RUN_3_FTSOURCE	Run 3 temperature source
7655	FC.R3_MVTID_FT	Run 3 MVT ID for temperature
7656	FC.FC3.RX_FTEMP_BUF	Run 3 temperature value
7657	FC.FC3.RX_PIPE_DIAM	Run 3 pipe diameter
7658	FC.FC3.ORIF_DIAM_INUSE	Run 3 orifice diameter in use
7659	FC.FC3.RX_DPCUT_VAL	Run 3 differential pressure cutoff
7660	FC.RUN_3_DPSOURCE	Run 3 differential pressure source
7661	FC.R3_MVTID_DP	Run 3 MVT ID for differential pressure
7662	FC.FC3.RX_DP_BUF	Run 3 differential pressure value
7663	FC.FC3.OR_FLOW_RATE	Run 3 flow rate
7664	FC.FC3.RX_FRATE_ARCHUNITS	Run 3 flow rate units
7665	FC.FC3.OR_ENERGY_RATE	Run 3 energy rate

Reg#	Variable	Description
7666	FC.FC3.RX_ERATE_ARCHUNITS	Run 3 energy rate units
7667	FC.FC3.RX_ORIF_DIAM	Run 3 orifice diameter setting
7668	FC.FC3.RX_ORIF_UNITS	Run 3 orifice diameter units
7669	FC.FC3.RX_BETA	Run 3 beta ratio
7670	FC.FC3.OR_MINFLOWRATE	Run 3 minimum flow rate
7671	FC.FC3.OR_MAXFLOWRATE	Run 3 maximum flow rate
7672	FC.RUN_3_MAXFREQ	Run 3 maximum frequency
7673	FC.FC3.RX_LCUTOFF	Run 3 low frequency cutoff
7674	FC.FC3.RX_AGA7_KFACTOR	Run 3 AGA7 K factor (pulses/volume or volume/pulse)
7675	FC.FC3.IUDI_COUNT	Run 3 Counts from HSC
7676	FC.FC3.RX_PPS	Run 3 pulses per second (filtered frequency)
7677	FC.FC3.RX_AGA7_FACTOR	Run 3 AGA7 correction factor
7678	FC.FC3.RX_KFACTOR_USED	Run 3 AGA7 K factor used
7679	FC.FC3.OR_UCFLOWRATE	Run 3 uncorrected flow rate
7680	FC.FC3.RX_AA_CUTOFF	Run 3 AutoAdjust low frequency cutoff
7681	FC.AA_3.KM	Run 3 AutoAdjust K factor Main Rotor
7682	FC.AA_3.KS	Run 3 AutoAdjust K factor Sense Rotor
7683	FC.RUN_3_AA_MAXACF	Run 3 AutoAdjust maximum actual volume
7684	FC.AA_3.ABAR	Run 3 AutoAdjust a bar
7685	FC.FC3.RX_AA_DEVLIMIT	Run 3 AutoAdjust deviation limit
7686	FC.AA_3.IUDI_MAIN_ROTOR	Run 3 AutoAdjust delta counts from HSC to Main Rotor
7687	FC.AA_3.IUDI_SENS_ROTOR	Run 3 AutoAdjust delta counts from HSC to Sense Rotor
7688	FC.FC3.IR_AAVOLUME	Run 3 AutoAdjust adjusted volume into the Flow Computer FB
7689	FC.AA_3_DELTAABAR	Run 3 AutoAdjust delta a bar
7690	FC.FC3.RX_AGA10_SOS	Run 3 Speed of Sound calculated by AGA 10
7691	FC.FC3.RX_SOS_PCT_DIFF	Run 3 Speed of Sound percentage difference between calculated and Ultrasonic
7692	FC.FC3.RX_SOS_LIMIT	Run 3 Speed of Sound percentage difference limit
7693	FC.FC3.RX_SFREQ_DB	Run 3 cutoff value in seconds for low frequency PD meters
7694	FC.FC3.RX_DP_LLAL	Run 3 differential pressure low-low alarm limits
7695	FC.FC3.RX_DP_LAL	Run 3 differential pressure low alarm limits
7696	FC.FC3.RX_DP_HAL	Run 3 differential pressure high alarm limits
7697	FC.FC3.RX_DP_HHAL	Run 3 differential pressure high-high alarm limits
7698	FC.FC3.RX_SP_LLAL	Run 3 static pressure low-low alarm limits
7699	FC.FC3.RX_SP_LAL	Run 3 static pressure low alarm limits
7700	FC.FC3.RX_SP_HAL	Run 3 static pressure high alarm limits
7701	FC.FC3.RX_SP_HHAL	Run 3 static pressure high-high alarm limits
7702	FC.FC3.RX_FTEMP_LLAL	Run 3 temperature low-low alarm limits
7703	FC.FC3.RX_FTEMP_LAL	Run 3 temperature low alarm limits
7704	FC.FC3.RX_FTEMP_HAL	Run 3 temperature high alarm limits
7705	FC.FC3.RX_FTEMP_HHAL	Run 3 temperature high-high alarm limits
7706	FC.FC3.RX_BETA_HILIMIT	Run 3 beta ratio high alarm limits
7707	FC.FC3.RX_BETA_LOLIMIT	Run 3 beta ratio low alarm limits
7708	FC.FC3.RX_DP_INP	Run 3 differential pressure input to the Flow Computer function block
7709	FC.FC3.DP_CH_AVG	Run 3 differential pressure current hour average
7710	FC.FC3.DP_PH_AVG	Run 3 differential pressure previous hour average

Reg#	Variable	Description
7711	FC.FC3.RX_SP_INP	Run 3 static pressure input to the Flow Computer function block
7712	FC.FC3.SP_CH_AVG	Run 3 static pressure current hour average
7713	FC.FC3.SP_PH_AVG	Run 3 static pressure previous hour average
7714	FC.FC3.RX_FTEMP_INP	Run 3 temperature input to the Flow Computer function block
7715	FC.FC3.FTEMP_CH_AVG	Run 3 temperature current hour average
7716	FC.FC3.FTEMP_PH_AVG	Run 3 temperature previous hour average
7717	FC.FC3.RX_HTVAL_GC	Run 3 heating value input to the Flow Computer function block
7718	FC.FC3.HTVAL_CH_AVG	Run 3 heating value current hour average
7719	FC.FC3.HTVAL_PH_AVG	Run 3 heating value previous hour average
7720	FC.FC3.RX_GRAVITY_LIVE	Run 3 specific gravity input to the Flow Computer function block
7721	FC.FC3.SG_CH_AVG	Run 3 specific gravity current hour average
7722	FC.FC3.SG_PH_AVG	Run 3 specific gravity previous hour average
7723	FC.FC3.RX_N2_LIVE	Run 3 Nitrogen input to the Flow Computer function block
7724	FC.FC3.N2_CH_AVG	Run 3 Nitrogen current hour average
7725	FC.FC3.N2_PH_AVG	Run 3 Nitrogen previous hour average
7726	FC.FC3.RX_CO2_LIVE	Run 3 Carbon Dioxide (CO2) input to the Flow Computer function block
7727	FC.FC3.CO2_CH_AVG	Run 3 Carbon Dioxide (CO2) current hour average
7728	FC.FC3.CO2_PH_AVG	Run 3 Carbon Dioxide (CO2) previous hour average
7729	FC.FC3.RX_CH4_LIVE	Run 3 Methane (CH4) input to the Flow Computer function block
7730	FC.FC3.CH4_CH_AVG	Run 3 Methane (CH4) current hour average
7731	FC.FC3.CH4_PH_AVG	Run 3 Methane (CH4) previous hour average
7732	FC.FC3.RX_C2_LIVE	Run 3 Ethane (C2) input to the Flow Computer function block
7733	FC.FC3.C2_CH_AVG	Run 3 Ethane (C2) current hour average
7734	FC.FC3.C2_PH_AVG	Run 3 Ethane (C2) previous hour average
7735	FC.FC3.RX_C3_LIVE	Run 3 Propane (C3) input to the Flow Computer function block
7736	FC.FC3.C3_CH_AVG	Run 3 Propane (C3) current hour average
7737	FC.FC3.C3_PH_AVG	Run 3 Propane (C3) previous hour average
7738	FC.FC3.RX_IC4_LIVE	Run 3 I-Butane (I-C4) input to the Flow Computer function block
7739	FC.FC3.IC4_CH_AVG	Run 3 I-Butane (I-C4) current hour average
7740	FC.FC3.IC4_PH_AVG	Run 3 I-Butane (I-C4) previous hour average
7741	FC.FC3.RX_NC4_LIVE	Run 3 N-Butane (N-C4) input to the Flow Computer function block
7742	FC.FC3.NC4_CH_AVG	Run 3 N-Butane (N-C4) current hour average
7743	FC.FC3.NC4_PH_AVG	Run 3 N-Butane (N-C4) previous hour average
7744	FC.FC3.RX_IC5_LIVE	Run 3 heating value input to the Flow Computer function block
7745	FC.FC3.IC5_CH_AVG	Run 3 heating value current hour average
7746	FC.FC3.IC5_PH_AVG	Run 3 heating value previous hour average
7747	FC.FC3.RX_NC5_LIVE	Run 3 Pentane (CH5) input to the Flow Computer function block
7748	FC.FC3.NC5_CH_AVG	Run 3 Pentane (CH5) current hour average
7749	FC.FC3.NC5_PH_AVG	Run 3 Pentane (CH5) previous hour average
7750	FC.FC3.RX_C6_LIVE	Run 3 Hexane (C6) input to the Flow Computer function block

Reg#	Variable	Description
7751	FC.FC3.C6_CH_AVG	Run 3 Hexane (C6) current hour average
7752	FC.FC3.C6_PH_AVG	Run 3 Hexane (C6) previous hour average
7753	FC.FC3.RX_C7_LIVE	Run 3 Heptane (C7) input to the Flow Computer function block
7754	FC.FC3.C7_CH_AVG	Run 3 Heptane (C7) current hour average
7755	FC.FC3.C7_PH_AVG	Run 3 Heptane (C7) previous hour average
7756	FC.FC3.RX_C8_LIVE	Run 3 Octane (C8) input to the Flow Computer function block
7757	FC.FC3.C8_CH_AVG	Run 3 Octane (C8) current hour average
7758	FC.FC3.C8_PH_AVG	Run 3 Octane (C8) previous hour average
7759	FC.FC3.RX_C9_LIVE	Run 3 Nonane (C9) input to the Flow Computer function block
7760	FC.FC3.C9_CH_AVG	Run 3 Nonane (C9) current hour average
7761	FC.FC3.C9_PH_AVG	Run 3 Nonane (C9) previous hour average
7762	FC.FC3.RX_C10_LIVE	Run 3 Decane (C10) input to the Flow Computer function block
7763	FC.FC3.C10_CH_AVG	Run 3 Decane (C10) current hour average
7764	FC.FC3.C10_PH_AVG	Run 3 Decane (C10) previous hour average
7765	FC.FC3.RX_H2O_PCT	Run 3 Water content (H2O) input to the Flow Computer function block
7766	FC.FC3.H2O_CH_AVG	Run 3 Water content (H2O) current hour average
7767	FC.FC3.H2O_PH_AVG	Run 3 Water content (H2O) previous hour average
7768	FC.FC3.RX_H2S_PCT	Run 3 Hydrogen sulfide (H2S) input to the Flow Computer function block
7769	FC.FC3.H2S_CH_AVG	Run 3 Hydrogen sulfide (H2S) current hour average
7770	FC.FC3.H2S_PH_AVG	Run 3 Hydrogen sulfide (H2S) previous hour average
7771	FC.FC3.RX_H2_PCT	Run 3 Hydrogen (H2) input to the Flow Computer function block
7772	FC.FC3.H2_CH_AVG	Run 3 Hydrogen (H2) current hour average
7773	FC.FC3.H2_PH_AVG	Run 3 Hydrogen (H2) previous hour average
7774	FC.FC3.RX_CO_PCT	Run 3 Carbon Monoxide (CO) input to the Flow Computer function block
7775	FC.FC3.CO_CH_AVG	Run 3 Carbon Monoxide (CO) current hour average
7776	FC.FC3.CO_PH_AVG	Run 3 Carbon Monoxide (CO) previous hour average
7777	FC.FC3.RX_O2_PCT	Run 3 Oxygen (O2) input to the Flow Computer function block
7778	FC.FC3.O2_CH_AVG	Run 3 Oxygen (O2) current hour average
7779	FC.FC3.O2_PH_AVG	Run 3 Oxygen (O2) previous hour average
7780	FC.FC3.RX_HE_PCT	Run 3 Helium (H2) input to the Flow Computer function block
7781	FC.FC3.HE_CH_AVG	Run 3 Helium (H2) current hour average
7782	FC.FC3.HE_PH_AVG	Run 3 Helium (H2) previous hour average
7783	FC.FC3.RX_AR_PCT	Run 3 Argon (AR) input to the Flow Computer function block
7784	FC.FC3.AR_CH_AVG	Run 3 Argon (AR) current hour average
7785	FC.FC3.AR_PH_AVG	Run 3 Argon (AR) previous hour average
7786	FC.FC4.RX_CFG_TYPE	Run 4 configuration type
7787	FC.RUN_4_STATION	Run 4 station assignment
7788	FC.RUN_4_DIRECTION	Run 4 direction
7789	FC.RUN_4_SPSOURCE	Run 4 static pressure source
7790	FC.R4_MVTID_SP	Run 4 MVT ID for static pressure

Reg#	Variable	Description
7791	FC.FC4.RX_SP_BUF	Run 4 static pressure value
7792	FC.RUN_4_FTSOURCE	Run 4 temperature source
7793	FC.R4_MVTID_FT	Run 4 MVT ID for temperature
7794	FC.FC4.RX_FTEMP_BUF	Run 4 temperature value
7795	FC.FC4.RX_PIPE_DIAM	Run 4 pipe diameter
7796	FC.FC4.ORIF_DIAM_INUSE	Run 4 orifice diameter in use
7797	FC.FC4.RX_DPCUT_VAL	Run 4 differential pressure cutoff
7798	FC.RUN_4_DPSOURCE	Run 4 differential pressure source
7799	FC.R4_MVTID_DP	Run 4 MVT ID for differential pressure
7800	FC.FC4.RX_DP_BUF	Run 4 differential pressure value
7801	FC.FC4.OR_FLOW_RATE	Run 4 flow rate
7802	FC.FC4.RX_FRATE_ARCHUNITS	Run 4 flow rate units
7803	FC.FC4.OR_ENERGY_RATE	Run 4 energy rate
7804	FC.FC4.RX_ERATE_ARCHUNITS	Run 4 energy rate units
7805	FC.FC4.RX_ORIF_DIAM	Run 4 orifice diameter setting
7806	FC.FC4.RX_ORIF_UNITS	Run 4 orifice diameter units
7807	FC.FC4.RX_BETA	Run 4 beta ratio
7808	FC.FC4.OR_MINFLOWRATE	Run 4 minimum flow rate
7809	FC.FC4.OR_MAXFLOWRATE	Run 4 maximum flow rate
7810	FC.RUN_4_MAXFREQ	Run 4 maximum frequency
7811	FC.FC4.RX_LCUTOFF	Run 4 low frequency cutoff
7812	FC.FC4.RX_AGA7_KFACTOR	Run 4 AGA7 K factor (pulses/volume or volume/pulse)
7813	FC.FC4.IUDI_COUNT	Run 4 Counts from HSC
7814	FC.FC4.RX_PPS	Run 4 pulses per second (filtered frequency)
7815	FC.FC4.RX_AGA7_FACTOR	Run 4 AGA7 correction factor
7816	FC.FC4.RX_KFACTOR_USED	Run 4 AGA7 K factor used
7817	FC.FC4.OR_UCFLOWRATE	Run 4 uncorrected flow rate
7818	FC.FC4.RX_AA_CUTOFF	Run 4 AutoAdjust low frequency cutoff
7819	FC.AA_4.KM	Run 4 AutoAdjust K factor Main Rotor
7820	FC.AA_4.KS	Run 4 AutoAdjust K factor Sense Rotor
7821	FC.RUN_4_AA_MAXACF	Run 4 AutoAdjust maximum actual volume
7822	FC.AA_4.ABAR	Run 4 AutoAdjust a bar
7823	FC.FC4.RX_AA_DEVLIMIT	Run 4 AutoAdjust deviation limit
7824	FC.AA_4.IUDI_MAIN_ROTOR	Run 4 AutoAdjust delta counts from HSC to Main Rotor
7825	FC.AA_4.IUDI_SENS_ROTOR	Run 4 AutoAdjust delta counts from HSC to Sense Rotor
7826	FC.FC4.IR_AAVOLUME	Run 4 AutoAdjust adjusted volume into the Flow Computer FB
7827	FC.AA_4_DELTAABAR	Run 4 AutoAdjust delta a bar
7828	FC.FC4.RX_AGA10_SOS	Run 4 Speed of Sound calculated by AGA 10
7829	FC.FC4.RX_SOS_PCT_DIFF	Run 4 Speed of Sound percentage difference between calculated and Ultrasonic
7830	FC.FC4.RX_SOS_LIMIT	Run 4 Speed of Sound percentage difference limit
7831	FC.FC4.RX_SFREQ_DB	Run 4 cutoff value in seconds for low frequency PD meters
7832	FC.FC4.RX_DP_LLAL	Run 4 differential pressure low-low alarm limits
7833	FC.FC4.RX_DP_LAL	Run 4 differential pressure low alarm limits
7834	FC.FC4.RX_DP_HAL	Run 4 differential pressure high alarm limits
7835	FC.FC4.RX_DP_HHAL	Run 4 differential pressure high-high alarm limits

Reg#	Variable	Description
7836	FC.FC4.RX_SP_LLAL	Run 4 static pressure low-low alarm limits
7837	FC.FC4.RX_SP_LAL	Run 4 static pressure low alarm limits
7838	FC.FC4.RX_SP_HAL	Run 4 static pressure high alarm limits
7839	FC.FC4.RX_SP_HHAL	Run 4 static pressure high-high alarm limits
7840	FC.FC4.RX_FTEMP_LLAL	Run 4 temperature low-low alarm limits
7841	FC.FC4.RX_FTEMP_LAL	Run 4 temperature low alarm limits
7842	FC.FC4.RX_FTEMP_HAL	Run 4 temperature high alarm limits
7843	FC.FC4.RX_FTEMP_HHAL	Run 4 temperature high-high alarm limits
7844	FC.FC4.RX_BETA_HILIMIT	Run 4 beta ratio high alarm limits
7845	FC.FC4.RX_BETA_LOLIMIT	Run 4 beta ratio low alarm limits
7846	FC.FC4.RX_DP_INP	Run 4 differential pressure input to the Flow Computer function block
7847	FC.FC4.DP_CH_AVG	Run 4 differential pressure current hour average
7848	FC.FC4.DP_PH_AVG	Run 4 differential pressure previous hour average
7849	FC.FC4.RX_SP_INP	Run 4 static pressure input to the Flow Computer function block
7850	FC.FC4.SP_CH_AVG	Run 4 static pressure current hour average
7851	FC.FC4.SP_PH_AVG	Run 4 static pressure previous hour average
7852	FC.FC4.RX_FTEMP_INP	Run 4 temperature input to the Flow Computer function block
7853	FC.FC4.FTEMP_CH_AVG	Run 4 temperature current hour average
7854	FC.FC4.FTEMP_PH_AVG	Run 4 temperature previous hour average
7855	FC.FC4.RX_HTVAL_GC	Run 4 heating value input to the Flow Computer function block
7856	FC.FC4.HTVAL_CH_AVG	Run 4 heating value current hour average
7857	FC.FC4.HTVAL_PH_AVG	Run 4 heating value previous hour average
7858	FC.FC4.RX_GRAVITY_LIVE	Run 4 specific gravity input to the Flow Computer function block
7859	FC.FC4.SG_CH_AVG	Run 4 specific gravity current hour average
7860	FC.FC4.SG_PH_AVG	Run 4 specific gravity previous hour average
7861	FC.FC4.RX_N2_LIVE	Run 4 Nitrogen input to the Flow Computer function block
7862	FC.FC4.N2_CH_AVG	Run 4 Nitrogen current hour average
7863	FC.FC4.N2_PH_AVG	Run 4 Nitrogen previous hour average
7864	FC.FC4.RX_CO2_LIVE	Run 4 Carbon Dioxide (CO2) input to the Flow Computer function block
7865	FC.FC4.CO2_CH_AVG	Run 4 Carbon Dioxide (CO2) current hour average
7866	FC.FC4.CO2_PH_AVG	Run 4 Carbon Dioxide (CO2) previous hour average
7867	FC.FC4.RX_CH4_LIVE	Run 4 Methane (CH4) input to the Flow Computer function block
7868	FC.FC4.CH4_CH_AVG	Run 4 Methane (CH4) current hour average
7869	FC.FC4.CH4_PH_AVG	Run 4 Methane (CH4) previous hour average
7870	FC.FC4.RX_C2_LIVE	Run 4 Ethane (C2) input to the Flow Computer function block
7871	FC.FC4.C2_CH_AVG	Run 4 Ethane (C2) current hour average
7872	FC.FC4.C2_PH_AVG	Run 4 Ethane (C2) previous hour average
7873	FC.FC4.RX_C3_LIVE	Run 4 Propane (C3) input to the Flow Computer function block
7874	FC.FC4.C3_CH_AVG	Run 4 Propane (C3) current hour average
7875	FC.FC4.C3_PH_AVG	Run 4 Propane (C3) previous hour average
7876	FC.FC4.RX_IC4_LIVE	Run 4 I-Butane (I-C4) input to the Flow Computer function block
7877	FC.FC4.IC4_CH_AVG	Run 4 I-Butane (I-C4) current hour average

Reg#	Variable	Description
7878	FC.FC4.IC4_PH_AVG	Run 4 I-Butane (I-C4) previous hour average
7879	FC.FC4.RX_NC4_LIVE	Run 4 N-Butane (N-C4) input to the Flow Computer function block
7880	FC.FC4.NC4_CH_AVG	Run 4 N-Butane (N-C4) current hour average
7881	FC.FC4.NC4_PH_AVG	Run 4 N-Butane (N-C4) previous hour average
7882	FC.FC4.RX_IC5_LIVE	Run 4 heating value input to the Flow Computer function block
7883	FC.FC4.IC5_CH_AVG	Run 4 heating value current hour average
7884	FC.FC4.IC5_PH_AVG	Run 4 heating value previous hour average
7885	FC.FC4.RX_NC5_LIVE	Run 4 Pentane (CH5) input to the Flow Computer function block
7886	FC.FC4.NC5_CH_AVG	Run 4 Pentane (CH5) current hour average
7887	FC.FC4.NC5_PH_AVG	Run 4 Pentane (CH5) previous hour average
7888	FC.FC4.RX_C6_LIVE	Run 4 Hexane (C6) input to the Flow Computer function block
7889	FC.FC4.C6_CH_AVG	Run 4 Hexane (C6) current hour average
7890	FC.FC4.C6_PH_AVG	Run 4 Hexane (C6) previous hour average
7891	FC.FC4.RX_C7_LIVE	Run 4 Heptane (C7) input to the Flow Computer function block
7892	FC.FC4.C7_CH_AVG	Run 4 Heptane (C7) current hour average
7893	FC.FC4.C7_PH_AVG	Run 4 Heptane (C7) previous hour average
7894	FC.FC4.RX_C8_LIVE	Run 4 Octane (C8) input to the Flow Computer function block
7895	FC.FC4.C8_CH_AVG	Run 4 Octane (C8) current hour average
7896	FC.FC4.C8_PH_AVG	Run 4 Octane (C8) previous hour average
7897	FC.FC4.RX_C9_LIVE	Run 4 Nonane (C9) input to the Flow Computer function block
7898	FC.FC4.C9_CH_AVG	Run 4 Nonane (C9) current hour average
7899	FC.FC4.C9_PH_AVG	Run 4 Nonane (C9) previous hour average
7900	FC.FC4.RX_C10_LIVE	Run 4 Decane (C10) input to the Flow Computer function block
7901	FC.FC4.C10_CH_AVG	Run 4 Decane (C10) current hour average
7902	FC.FC4.C10_PH_AVG	Run 4 Decane (C10) previous hour average
7903	FC.FC4.RX_H2O_PCT	Run 4 Water content (H2O) input to the Flow Computer function block
7904	FC.FC4.H2O_CH_AVG	Run 4 Water content (H2O) current hour average
7905	FC.FC4.H2O_PH_AVG	Run 4 Water content (H2O) previous hour average
7906	FC.FC4.RX_H2S_PCT	Run 4 Hydrogen sulfide (H2S) input to the Flow Computer function block
7907	FC.FC4.H2S_CH_AVG	Run 4 Hydrogen sulfide (H2S) current hour average
7908	FC.FC4.H2S_PH_AVG	Run 4 Hydrogen sulfide (H2S) previous hour average
7909	FC.FC4.RX_H2_PCT	Run 4 Hydrogen (H2) input to the Flow Computer function block
7910	FC.FC4.H2_CH_AVG	Run 4 Hydrogen (H2) current hour average
7911	FC.FC4.H2_PH_AVG	Run 4 Hydrogen (H2) previous hour average
7912	FC.FC4.RX_CO_PCT	Run 4 Carbon Monoxide (CO) input to the Flow Computer function block
7913	FC.FC4.CO_CH_AVG	Run 4 Carbon Monoxide (CO) current hour average
7914	FC.FC4.CO_PH_AVG	Run 4 Carbon Monoxide (CO) previous hour average
7915	FC.FC4.RX_O2_PCT	Run 4 Oxygen (O2) input to the Flow Computer function block
7916	FC.FC4.O2_CH_AVG	Run 4 Oxygen (O2) current hour average

Reg#	Variable	Description
7917	FC.FC4.O2_PH_AVG	Run 4 Oxygen (O2) previous hour average
7918	FC.FC4.RX_HE_PCT	Run 4 Helium (H2) input to the Flow Computer function block
7919	FC.FC4.HE_CH_AVG	Run 4 Helium (H2) current hour average
7920	FC.FC4.HE_PH_AVG	Run 4 Helium (H2) previous hour average
7921	FC.FC4.RX_AR_PCT	Run 4 Argon (AR) input to the Flow Computer function block
7922	FC.FC4.AR_CH_AVG	Run 4 Argon (AR) current hour average
7923	FC.FC4.AR_PH_AVG	Run 4 Argon (AR) previous hour average
7924	FC.FC5.RX_CFG_TYPE	Run 5 configuration type
7925	FC.RUN_5_STATION	Run 5 station assignment
7926	FC.RUN_5_DIRECTION	Run 5 direction
7927	FC.RUN_5_SPSOURCE	Run 5 static pressure source
7928	FC.R5_MVTID_SP	Run 5 MVT ID for static pressure
7929	FC.FC5.RX_SP_BUF	Run 5 static pressure value
7930	FC.RUN_5_FTSOURCE	Run 5 temperature source
7931	FC.R5_MVTID_FT	Run 5 MVT ID for temperature
7932	FC.FC5.RX_FTEMP_BUF	Run 5 temperature value
7933	FC.FC5.RX_PIPE_DIAM	Run 5 pipe diameter
7934	FC.FC5.ORIF_DIAM_INUSE	Run 5 orifice diameter in use
7935	FC.FC5.RX_DPCUT_VAL	Run 5 differential pressure cutoff
7936	FC.RUN_5_DPSOURCE	Run 5 differential pressure source
7937	FC.R5_MVTID_DP	Run 5 MVT ID for differential pressure
7938	FC.FC5.RX_DP_BUF	Run 5 differential pressure value
7939	FC.FC5.OR_FLOW_RATE	Run 5 flow rate
7940	FC.FC5.RX_FRATE_ARCHUNITS	Run 5 flow rate units
7941	FC.FC5.OR_ENERGY_RATE	Run 5 energy rate
7942	FC.FC5.RX_ERATE_ARCHUNITS	Run 5 energy rate units
7943	FC.FC5.RX_ORIF_DIAM	Run 5 orifice diameter setting
7944	FC.FC5.RX_ORIF_UNITS	Run 5 orifice diameter units
7945	FC.FC5.RX_BETA	Run 5 beta ratio
7946	FC.FC5.OR_MINFLOWRATE	Run 5 minimum flow rate
7947	FC.FC5.OR_MAXFLOWRATE	Run 5 maximum flow rate
7948	FC.RUN_5_MAXFREQ	Run 5 maximum frequency
7949	FC.FC5.RX_LCUTOFF	Run 5 low frequency cutoff
7950	FC.FC5.RX_AGA7_KFACTOR	Run 5 AGA7 K factor (pulses/volume or volume/pulse)
7951	FC.FC5.IUDI_COUNT	Run 5 Counts from HSC
7952	FC.FC5.RX_PPS	Run 5 pulses per second (filtered frequency)
7953	FC.FC5.RX_AGA7_FACTOR	Run 5 AGA7 correction factor
7954	FC.FC5.RX_KFACTOR_USED	Run 5 AGA7 K factor used
7955	FC.FC5.OR_UCFLOWRATE	Run 5 uncorrected flow rate
7956	FC.FC5.RX_AA_CUTOFF	Run 5 AutoAdjust low frequency cutoff
7957	FC.AA_5.KM	Run 5 AutoAdjust K factor Main Rotor
7958	FC.AA_5.KS	Run 5 AutoAdjust K factor Sense Rotor
7959	FC.RUN_5_AA_MAXACF	Run 5 AutoAdjust maximum actual volume
7960	FC.AA_5.ABAR	Run 5 AutoAdjust a bar
7961	FC.FC5.RX_AA_DEVLIMIT	Run 5 AutoAdjust deviation limit
7962	FC.AA_5.IUDI_MAIN_ROTOR	Run 5 AutoAdjust delta counts from HSC to Main Rotor
7963	FC.AA_5.IUDI_SENS_ROTOR	Run 5 AutoAdjust delta counts from HSC to Sense Rotor

Reg#	Variable	Description
7964	FC.FC5.IR_AAVOLUME	Run 5 AutoAdjust adjusted volume into the Flow Computer FB
7965	FC.AA_5_DELTAABAR	Run 5 AutoAdjust delta a bar
7966	FC.FC5.RX_AGA10_SOS	Run 5 Speed of Sound calculated by AGA 10
7967	FC.FC5.RX_SOS_PCT_DIFF	Run 5 Speed of Sound percentage difference between calculated and Ultrasonic
7968	FC.FC5.RX_SOS_LIMIT	Run 5 Speed of Sound percentage difference limit
7969	FC.FC5.RX_SFREQ_DB	Run 5 cutoff value in seconds for low frequency PD meters
7970	FC.FC5.RX_DP_LLAL	Run 5 differential pressure low-low alarm limits
7971	FC.FC5.RX_DP_LAL	Run 5 differential pressure low alarm limits
7972	FC.FC5.RX_DP_HAL	Run 5 differential pressure high alarm limits
7973	FC.FC5.RX_DP_HHAL	Run 5 differential pressure high-high alarm limits
7974	FC.FC5.RX_SP_LLAL	Run 5 static pressure low-low alarm limits
7975	FC.FC5.RX_SP_LAL	Run 5 static pressure low alarm limits
7976	FC.FC5.RX_SP_HAL	Run 5 static pressure high alarm limits
7977	FC.FC5.RX_SP_HHAL	Run 5 static pressure high-high alarm limits
7978	FC.FC5.RX_FTEMP_LLAL	Run 5 temperature low-low alarm limits
7979	FC.FC5.RX_FTEMP_LAL	Run 5 temperature low alarm limits
7980	FC.FC5.RX_FTEMP_HAL	Run 5 temperature high alarm limits
7981	FC.FC5.RX_FTEMP_HHAL	Run 5 temperature high-high alarm limits
7982	FC.FC5.RX_BETA_HILIMIT	Run 5 beta ratio high alarm limits
7983	FC.FC5.RX_BETA_LOLIMIT	Run 5 beta ratio low alarm limits
7984	FC.FC5.RX_DP_INP	Run 5 differential pressure input to the Flow Computer function block
7985	FC.FC5.DP_CH_AVG	Run 5 differential pressure current hour average
7986	FC.FC5.DP_PH_AVG	Run 5 differential pressure previous hour average
7987	FC.FC5.RX_SP_INP	Run 5 static pressure input to the Flow Computer function block
7988	FC.FC5.SP_CH_AVG	Run 5 static pressure current hour average
7989	FC.FC5.SP_PH_AVG	Run 5 static pressure previous hour average
7990	FC.FC5.RX_FTEMP_INP	Run 5 temperature input to the Flow Computer function block
7991	FC.FC5.FTEMP_CH_AVG	Run 5 temperature current hour average
7992	FC.FC5.FTEMP_PH_AVG	Run 5 temperature previous hour average
7993	FC.FC5.RX_HTVAL_GC	Run 5 heating value input to the Flow Computer function block
7994	FC.FC5.HTVAL_CH_AVG	Run 5 heating value current hour average
7995	FC.FC5.HTVAL_PH_AVG	Run 5 heating value previous hour average
7996	FC.FC5.RX_GRAVITY_LIVE	Run 5 specific gravity input to the Flow Computer function block
7997	FC.FC5.SG_CH_AVG	Run 5 specific gravity current hour average
7998	FC.FC5.SG_PH_AVG	Run 5 specific gravity previous hour average
7999	FC.FC5.RX_N2_LIVE	Run 5 Nitrogen input to the Flow Computer function block
8000	FC.FC5.N2_CH_AVG	Run 5 Nitrogen current hour average
8001	FC.FC5.N2_PH_AVG	Run 5 Nitrogen previous hour average
8002	FC.FC5.RX_CO2_LIVE	Run 5 Carbon Dioxide (CO2) input to the Flow Computer function block
8003	FC.FC5.CO2_CH_AVG	Run 5 Carbon Dioxide (CO2) current hour average
8004	FC.FC5.CO2_PH_AVG	Run 5 Carbon Dioxide (CO2) previous hour average
8005	FC.FC5.RX_CH4_LIVE	Run 5 Methane (CH4) input to the Flow

Reg#	Variable	Description
		Computer function block
8006	FC.FC5.CH4_CH_AVG	Run 5 Methane (CH4) current hour average
8007	FC.FC5.CH4_PH_AVG	Run 5 Methane (CH4) previous hour average
8008	FC.FC5.RX_C2_LIVE	Run 5 Ethane (C2) input to the Flow Computer function block
8009	FC.FC5.C2_CH_AVG	Run 5 Ethane (C2) current hour average
8010	FC.FC5.C2_PH_AVG	Run 5 Ethane (C2) previous hour average
8011	FC.FC5.RX_C3_LIVE	Run 5 Propane (C3) input to the Flow Computer function block
8012	FC.FC5.C3_CH_AVG	Run 5 Propane (C3) current hour average
8013	FC.FC5.C3_PH_AVG	Run 5 Propane (C3) previous hour average
8014	FC.FC5.RX_IC4_LIVE	Run 5 I-Butane (I-C4) input to the Flow Computer function block
8015	FC.FC5.IC4_CH_AVG	Run 5 I-Butane (I-C4) current hour average
8016	FC.FC5.IC4_PH_AVG	Run 5 I-Butane (I-C4) previous hour average
8017	FC.FC5.RX_NC4_LIVE	Run 5 N-Butane (N-C4) input to the Flow Computer function block
8018	FC.FC5.NC4_CH_AVG	Run 5 N-Butane (N-C4) current hour average
8019	FC.FC5.NC4_PH_AVG	Run 5 N-Butane (N-C4) previous hour average
8020	FC.FC5.RX_IC5_LIVE	Run 5 heating value input to the Flow Computer function block
8021	FC.FC5.IC5_CH_AVG	Run 5 heating value current hour average
8022	FC.FC5.IC5_PH_AVG	Run 5 heating value previous hour average
8023	FC.FC5.RX_NC5_LIVE	Run 5 Pentane (CH5) input to the Flow Computer function block
8024	FC.FC5.NC5_CH_AVG	Run 5 Pentane (CH5) current hour average
8025	FC.FC5.NC5_PH_AVG	Run 5 Pentane (CH5) previous hour average
8026	FC.FC5.RX_C6_LIVE	Run 5 Hexane (C6) input to the Flow Computer function block
8027	FC.FC5.C6_CH_AVG	Run 5 Hexane (C6) current hour average
8028	FC.FC5.C6_PH_AVG	Run 5 Hexane (C6) previous hour average
8029	FC.FC5.RX_C7_LIVE	Run 5 Heptane (C7) input to the Flow Computer function block
8030	FC.FC5.C7_CH_AVG	Run 5 Heptane (C7) current hour average
8031	FC.FC5.C7_PH_AVG	Run 5 Heptane (C7) previous hour average
8032	FC.FC5.RX_C8_LIVE	Run 5 Octane (C8) input to the Flow Computer function block
8033	FC.FC5.C8_CH_AVG	Run 5 Octane (C8) current hour average
8034	FC.FC5.C8_PH_AVG	Run 5 Octane (C8) previous hour average
8035	FC.FC5.RX_C9_LIVE	Run 5 Nonane (C9) input to the Flow Computer function block
8036	FC.FC5.C9_CH_AVG	Run 5 Nonane (C9) current hour average
8037	FC.FC5.C9_PH_AVG	Run 5 Nonane (C9) previous hour average
8038	FC.FC5.RX_C10_LIVE	Run 5 Decane (C10) input to the Flow Computer function block
8039	FC.FC5.C10_CH_AVG	Run 5 Decane (C10) current hour average
8040	FC.FC5.C10_PH_AVG	Run 5 Decane (C10) previous hour average
8041	FC.FC5.RX_H2O_PCT	Run 5 Water content (H2O) input to the Flow Computer function block
8042	FC.FC5.H2O_CH_AVG	Run 5 Water content (H2O) current hour average
8043	FC.FC5.H2O_PH_AVG	Run 5 Water content (H2O) previous hour average
8044	FC.FC5.RX_H2S_PCT	Run 5 Hydrogen sulfide (H2S) input to the Flow Computer function block
8045	FC.FC5.H2S_CH_AVG	Run 5 Hydrogen sulfide (H2S) current hour average

Reg#	Variable	Description
8046	FC.FC5.H2S_PH_AVG	Run 5 Hydrogen sulfide (H2S) previous hour average
8047	FC.FC5.RX_H2_PCT	Run 5 Hydrogen (H2) input to the Flow Computer function block
8048	FC.FC5.H2_CH_AVG	Run 5 Hydrogen (H2) current hour average
8049	FC.FC5.H2_PH_AVG	Run 5 Hydrogen (H2) previous hour average
8050	FC.FC5.RX_CO_PCT	Run 5 Carbon Monoxide (CO) input to the Flow Computer function block
8051	FC.FC5.CO_CH_AVG	Run 5 Carbon Monoxide (CO) current hour average
8052	FC.FC5.CO_PH_AVG	Run 5 Carbon Monoxide (CO) previous hour average
8053	FC.FC5.RX_O2_PCT	Run 5 Oxygen (O2) input to the Flow Computer function block
8054	FC.FC5.O2_CH_AVG	Run 5 Oxygen (O2) current hour average
8055	FC.FC5.O2_PH_AVG	Run 5 Oxygen (O2) previous hour average
8056	FC.FC5.RX_HE_PCT	Run 5 Helium (H2) input to the Flow Computer function block
8057	FC.FC5.HE_CH_AVG	Run 5 Helium (H2) current hour average
8058	FC.FC5.HE_PH_AVG	Run 5 Helium (H2) previous hour average
8059	FC.FC5.RX_AR_PCT	Run 5 Argon (AR) input to the Flow Computer function block
8060	FC.FC5.AR_CH_AVG	Run 5 Argon (AR) current hour average
8061	FC.FC5.AR_PH_AVG	Run 5 Argon (AR) previous hour average
8062	FC.FC6.RX_CFG_TYPE	Run 6 configuration type
8063	FC.RUN_6_STATION	Run 6 station assignment
8064	FC.RUN_6_DIRECTION	Run 6 direction
8065	FC.RUN_6_SPSOURCE	Run 6 static pressure source
8066	FC.R6_MVTID_SP	Run 6 MVT ID for static pressure
8067	FC.FC6.RX_SP_BUF	Run 6 static pressure value
8068	FC.RUN_6_FTSOURCE	Run 6 temperature source
8069	FC.R6_MVTID_FT	Run 6 MVT ID for temperature
8070	FC.FC6.RX_FTEMP_BUF	Run 6 temperature value
8071	FC.FC6.RX_PIPE_DIAM	Run 6 pipe diameter
8072	FC.FC6.ORIF_DIAM_INUSE	Run 6 orifice diameter in use
8073	FC.FC6.RX_DPCUT_VAL	Run 6 differential pressure cutoff
8074	FC.RUN_6_DPSOURCE	Run 6 differential pressure source
8075	FC.R6_MVTID_DP	Run 6 MVT ID for differential pressure
8076	FC.FC6.RX_DP_BUF	Run 6 differential pressure value
8077	FC.FC6.OR_FLOW_RATE	Run 6 flow rate
8078	FC.FC6.RX_FRATE_ARCHUNITS	Run 6 flow rate units
8079	FC.FC6.OR_ENERGY_RATE	Run 6 energy rate
8080	FC.FC6.RX_ERATE_ARCHUNITS	Run 6 energy rate units
8081	FC.FC6.RX_ORIF_DIAM	Run 6 orifice diameter setting
8082	FC.FC6.RX_ORIF_UNITS	Run 6 orifice diameter units
8083	FC.FC6.RX_BETA	Run 6 beta ratio
8084	FC.FC6.OR_MINFLOWRATE	Run 6 minimum flow rate
8085	FC.FC6.OR_MAXFLOWRATE	Run 6 maximum flow rate
8086	FC.RUN_6_MAXFREQ	Run 6 maximum frequency
8087	FC.FC6.RX_LCUTOFF	Run 6 low frequency cutoff
8088	FC.FC6.RX_AGA7_KFACTOR	Run 6 AGA7 K factor (pulses/volume or volume/pulse)
8089	FC.FC6.IUDI_COUNT	Run 6 Counts from HSC

Reg#	Variable	Description
8090	FC.FC6.RX_PPS	Run 6 pulses per second (filtered frequency)
8091	FC.FC6.RX_AGA7_FACTOR	Run 6 AGA7 correction factor
8092	FC.FC6.RX_KFACTOR_USED	Run 6 AGA7 K factor used
8093	FC.FC6.OR_UCFLOWRATE	Run 6 uncorrected flow rate
8094	FC.FC6.RX_AA_CUTOFF	Run 6 AutoAdjust low frequency cutoff
8095	FC.AA_6.KM	Run 6 AutoAdjust K factor Main Rotor
8096	FC.AA_6.KS	Run 6 AutoAdjust K factor Sense Rotor
8097	FC.RUN_6_AA_MAXACF	Run 6 AutoAdjust maximum actual volume
8098	FC.AA_6.ABAR	Run 6 AutoAdjust a bar
8099	FC.FC6.RX_AA_DEVLIMIT	Run 6 AutoAdjust deviation limit
8100	FC.AA_6.IUDI_MAIN_ROTOR	Run 6 AutoAdjust delta counts from HSC to Main Rotor
8101	FC.AA_6.IUDI_SENS_ROTOR	Run 6 AutoAdjust delta counts from HSC to Sense Rotor
8102	FC.FC6.IR_AAVOLUME	Run 6 AutoAdjust adjusted volume into the Flow Computer FB
8103	FC.AA_6_DELTAABAR	Run 6 AutoAdjust delta a bar
8104	FC.FC6.RX_AGA10_SOS	Run 6 Speed of Sound calculated by AGA 10
8105	FC.FC6.RX_SOS_PCT_DIFF	Run 6 Speed of Sound percentage difference between calculated and Ultrasonic
8106	FC.FC6.RX_SOS_LIMIT	Run 6 Speed of Sound percentage difference limit
8107	FC.FC6.RX_SFREQ_DB	Run 6 cutoff value in seconds for low frequency PD meters
8108	FC.FC6.RX_DP_LLAL	Run 6 differential pressure low-low alarm limits
8109	FC.FC6.RX_DP_LAL	Run 6 differential pressure low alarm limits
8110	FC.FC6.RX_DP_HAL	Run 6 differential pressure high alarm limits
8111	FC.FC6.RX_DP_HHAL	Run 6 differential pressure high-high alarm limits
8112	FC.FC6.RX_SP_LLAL	Run 6 static pressure low-low alarm limits
8113	FC.FC6.RX_SP_LAL	Run 6 static pressure low alarm limits
8114	FC.FC6.RX_SP_HAL	Run 6 static pressure high alarm limits
8115	FC.FC6.RX_SP_HHAL	Run 6 static pressure high-high alarm limits
8116	FC.FC6.RX_FTEMP_LLAL	Run 6 temperature low-low alarm limits
8117	FC.FC6.RX_FTEMP_LAL	Run 6 temperature low alarm limits
8118	FC.FC6.RX_FTEMP_HAL	Run 6 temperature high alarm limits
8119	FC.FC6.RX_FTEMP_HHAL	Run 6 temperature high-high alarm limits
8120	FC.FC6.RX_BETA_HILIMIT	Run 6 beta ratio high alarm limits
8121	FC.FC6.RX_BETA_LOLIMIT	Run 6 beta ratio low alarm limits
8122	FC.FC6.RX_DP_INP	Run 6 differential pressure input to the Flow Computer function block
8123	FC.FC6.DP_CH_AVG	Run 6 differential pressure current hour average
8124	FC.FC6.DP_PH_AVG	Run 6 differential pressure previous hour average
8125	FC.FC6.RX_SP_INP	Run 6 static pressure input to the Flow Computer function block
8126	FC.FC6.SP_CH_AVG	Run 6 static pressure current hour average
8127	FC.FC6.SP_PH_AVG	Run 6 static pressure previous hour average
8128	FC.FC6.RX_FTEMP_INP	Run 6 temperature input to the Flow Computer function block
8129	FC.FC6.FTEMP_CH_AVG	Run 6 temperature current hour average
8130	FC.FC6.FTEMP_PH_AVG	Run 6 temperature previous hour average
8131	FC.FC6.RX_HTVAL_GC	Run 6 heating value input to the Flow Computer function block
8132	FC.FC6.HTVAL_CH_AVG	Run 6 heating value current hour average
8133	FC.FC6.HTVAL_PH_AVG	Run 6 heating value previous hour average

Reg#	Variable	Description
8134	FC.FC6.RX_GRAVITY_LIVE	Run 6 specific gravity input to the Flow Computer function block
8135	FC.FC6.SG_CH_AVG	Run 6 specific gravity current hour average
8136	FC.FC6.SG_PH_AVG	Run 6 specific gravity previous hour average
8137	FC.FC6.RX_N2_LIVE	Run 6 Nitrogen input to the Flow Computer function block
8138	FC.FC6.N2_CH_AVG	Run 6 Nitrogen current hour average
8139	FC.FC6.N2_PH_AVG	Run 6 Nitrogen previous hour average
8140	FC.FC6.RX_CO2_LIVE	Run 6 Carbon Dioxide (CO2) input to the Flow Computer function block
8141	FC.FC6.CO2_CH_AVG	Run 6 Carbon Dioxide (CO2) current hour average
8142	FC.FC6.CO2_PH_AVG	Run 6 Carbon Dioxide (CO2) previous hour average
8143	FC.FC6.RX_CH4_LIVE	Run 6 Methane (CH4) input to the Flow Computer function block
8144	FC.FC6.CH4_CH_AVG	Run 6 Methane (CH4) current hour average
8145	FC.FC6.CH4_PH_AVG	Run 6 Methane (CH4) previous hour average
8146	FC.FC6.RX_C2_LIVE	Run 6 Ethane (C2) input to the Flow Computer function block
8147	FC.FC6.C2_CH_AVG	Run 6 Ethane (C2) current hour average
8148	FC.FC6.C2_PH_AVG	Run 6 Ethane (C2) previous hour average
8149	FC.FC6.RX_C3_LIVE	Run 6 Propane (C3) input to the Flow Computer function block
8150	FC.FC6.C3_CH_AVG	Run 6 Propane (C3) current hour average
8151	FC.FC6.C3_PH_AVG	Run 6 Propane (C3) previous hour average
8152	FC.FC6.RX_IC4_LIVE	Run 6 I-Butane (I-C4) input to the Flow Computer function block
8153	FC.FC6.IC4_CH_AVG	Run 6 I-Butane (I-C4) current hour average
8154	FC.FC6.IC4_PH_AVG	Run 6 I-Butane (I-C4) previous hour average
8155	FC.FC6.RX_NC4_LIVE	Run 6 N-Butane (N-C4) input to the Flow Computer function block
8156	FC.FC6.NC4_CH_AVG	Run 6 N-Butane (N-C4) current hour average
8157	FC.FC6.NC4_PH_AVG	Run 6 N-Butane (N-C4) previous hour average
8158	FC.FC6.RX_IC5_LIVE	Run 6 heating value input to the Flow Computer function block
8159	FC.FC6.IC5_CH_AVG	Run 6 heating value current hour average
8160	FC.FC6.IC5_PH_AVG	Run 6 heating value previous hour average
8161	FC.FC6.RX_NC5_LIVE	Run 6 Pentane (CH5) input to the Flow Computer function block
8162	FC.FC6.NC5_CH_AVG	Run 6 Pentane (CH5) current hour average
8163	FC.FC6.NC5_PH_AVG	Run 6 Pentane (CH5) previous hour average
8164	FC.FC6.RX_C6_LIVE	Run 6 Hexane (C6) input to the Flow Computer function block
8165	FC.FC6.C6_CH_AVG	Run 6 Hexane (C6) current hour average
8166	FC.FC6.C6_PH_AVG	Run 6 Hexane (C6) previous hour average
8167	FC.FC6.RX_C7_LIVE	Run 6 Heptane (C7) input to the Flow Computer function block
8168	FC.FC6.C7_CH_AVG	Run 6 Heptane (C7) current hour average
8169	FC.FC6.C7_PH_AVG	Run 6 Heptane (C7) previous hour average
8170	FC.FC6.RX_C8_LIVE	Run 6 Octane (C8) input to the Flow Computer function block
8171	FC.FC6.C8_CH_AVG	Run 6 Octane (C8) current hour average
8172	FC.FC6.C8_PH_AVG	Run 6 Octane (C8) previous hour average
8173	FC.FC6.RX_C9_LIVE	Run 6 Nonane (C9) input to the Flow Computer function block

Reg#	Variable	Description
8174	FC.FC6.C9_CH_AVG	Run 6 Nonane (C9) current hour average
8175	FC.FC6.C9_PH_AVG	Run 6 Nonane (C9) previous hour average
8176	FC.FC6.RX_C10_LIVE	Run 6 Decane (C10) input to the Flow Computer function block
8177	FC.FC6.C10_CH_AVG	Run 6 Decane (C10) current hour average
8178	FC.FC6.C10_PH_AVG	Run 6 Decane (C10) previous hour average
8179	FC.FC6.RX_H2O_PCT	Run 6 Water content (H2O) input to the Flow Computer function block
8180	FC.FC6.H2O_CH_AVG	Run 6 Water content (H2O) current hour average
8181	FC.FC6.H2O_PH_AVG	Run 6 Water content (H2O) previous hour average
8182	FC.FC6.RX_H2S_PCT	Run 6 Hydrogen sulfide (H2S) input to the Flow Computer function block
8183	FC.FC6.H2S_CH_AVG	Run 6 Hydrogen sulfide (H2S) current hour average
8184	FC.FC6.H2S_PH_AVG	Run 6 Hydrogen sulfide (H2S) previous hour average
8185	FC.FC6.RX_H2_PCT	Run 6 Hydrogen (H2) input to the Flow Computer function block
8186	FC.FC6.H2_CH_AVG	Run 6 Hydrogen (H2) current hour average
8187	FC.FC6.H2_PH_AVG	Run 6 Hydrogen (H2) previous hour average
8188	FC.FC6.RX_CO_PCT	Run 6 Carbon Monoxide (CO) input to the Flow Computer function block
8189	FC.FC6.CO_CH_AVG	Run 6 Carbon Monoxide (CO) current hour average
8190	FC.FC6.CO_PH_AVG	Run 6 Carbon Monoxide (CO) previous hour average
8191	FC.FC6.RX_O2_PCT	Run 6 Oxygen (O2) input to the Flow Computer function block
8192	FC.FC6.O2_CH_AVG	Run 6 Oxygen (O2) current hour average
8193	FC.FC6.O2_PH_AVG	Run 6 Oxygen (O2) previous hour average
8194	FC.FC6.RX_HE_PCT	Run 6 Helium (H2) input to the Flow Computer function block
8195	FC.FC6.HE_CH_AVG	Run 6 Helium (H2) current hour average
8196	FC.FC6.HE_PH_AVG	Run 6 Helium (H2) previous hour average
8197	FC.FC6.RX_AR_PCT	Run 6 Argon (AR) input to the Flow Computer function block
8198	FC.FC6.AR_CH_AVG	Run 6 Argon (AR) current hour average
8199	FC.FC6.AR_PH_AVG	Run 6 Argon (AR) previous hour average
8200	FC.FC7.RX_CFG_TYPE	Run 7 configuration type
8201	FC.RUN_7_STATION	Run 7 station assignment
8202	FC.RUN_7_DIRECTION	Run 7 direction
8203	FC.RUN_7_SPSOURCE	Run 7 static pressure source
8204	FC.R7_MVTID_SP	Run 7 MVT ID for static pressure
8205	FC.FC7.RX_SP_BUF	Run 7 static pressure value
8206	FC.RUN_7_FTSOURCE	Run 7 temperature source
8207	FC.R7_MVTID_FT	Run 7 MVT ID for temperature
8208	FC.FC7.RX_FTEMP_BUF	Run 7 temperature value
8209	FC.FC7.RX_PIPE_DIAM	Run 7 pipe diameter
8210	FC.FC7.ORIF_DIAM_INUSE	Run 7 orifice diameter in use
8211	FC.FC7.RX_DPCUT_VAL	Run 7 differential pressure cutoff
8212	FC.RUN_7_DPSOURCE	Run 7 differential pressure source
8213	FC.R7_MVTID_DP	Run 7 MVT ID for differential pressure
8214	FC.FC7.RX_DP_BUF	Run 7 differential pressure value
8215	FC.FC7.OR_FLOW_RATE	Run 7 flow rate

Reg#	Variable	Description
8216	FC.FC7.RX_FRATE_ARCHUNITS	Run 7 flow rate units
8217	FC.FC7.OR_ENERGY_RATE	Run 7 energy rate
8218	FC.FC7.RX_ERATE_ARCHUNITS	Run 7 energy rate units
8219	FC.FC7.RX_ORIF_DIAM	Run 7 orifice diameter setting
8220	FC.FC7.RX_ORIF_UNITS	Run 7 orifice diameter units
8221	FC.FC7.RX_BETA	Run 7 beta ratio
8222	FC.FC7.OR_MINFLOWRATE	Run 7 minimum flow rate
8223	FC.FC7.OR_MAXFLOWRATE	Run 7 maximum flow rate
8224	FC.RUN_7_MAXFREQ	Run 7 maximum frequency
8225	FC.FC7.RX_LCUTOFF	Run 7 low frequency cutoff
8226	FC.FC7.RX_AGA7_KFACTOR	Run 7 AGA7 K factor (pulses/volume or volume/pulse)
8227	FC.FC7.IUDI_COUNT	Run 7 Counts from HSC
8228	FC.FC7.RX_PPS	Run 7 pulses per second (filtered frequency)
8229	FC.FC7.RX_AGA7_FACTOR	Run 7 AGA7 correction factor
8230	FC.FC7.RX_KFACTOR_USED	Run 7 AGA7 K factor used
8231	FC.FC7.OR_UCFLOWRATE	Run 7 uncorrected flow rate
8232	FC.FC7.RX_AA_CUTOFF	Run 7 AutoAdjust low frequency cutoff
8233	FC.AA_7.KM	Run 7 AutoAdjust K factor Main Rotor
8234	FC.AA_7.KS	Run 7 AutoAdjust K factor Sense Rotor
8235	FC.RUN_7_AA_MAXACF	Run 7 AutoAdjust maximum actual volume
8236	FC.AA_7.ABAR	Run 7 AutoAdjust a bar
8237	FC.FC7.RX_AA_DEVLIMIT	Run 7 AutoAdjust deviation limit
8238	FC.AA_7.IUDI_MAIN_ROTOR	Run 7 AutoAdjust delta counts from HSC to Main Rotor
8239	FC.AA_7.IUDI_SENS_ROTOR	Run 7 AutoAdjust delta counts from HSC to Sense Rotor
8240	FC.FC7.IR_AAVOLUME	Run 7 AutoAdjust adjusted volume into the Flow Computer FB
8241	FC.AA_7_DELTAABAR	Run 7 AutoAdjust delta a bar
8242	FC.FC7.RX_AGA10_SOS	Run 7 Speed of Sound calculated by AGA 10
8243	FC.FC7.RX_SOS_PCT_DIFF	Run 7 Speed of Sound percentage difference between calculated and Ultrasonic
8244	FC.FC7.RX_SOS_LIMIT	Run 7 Speed of Sound percentage difference limit
8245	FC.FC7.RX_SFREQ_DB	Run 7 cutoff value in seconds for low frequency PD meters
8246	FC.FC7.RX_DP_LLAL	Run 7 differential pressure low-low alarm limits
8247	FC.FC7.RX_DP_LAL	Run 7 differential pressure low alarm limits
8248	FC.FC7.RX_DP_HAL	Run 7 differential pressure high alarm limits
8249	FC.FC7.RX_DP_HHAL	Run 7 differential pressure high-high alarm limits
8250	FC.FC7.RX_SP_LLAL	Run 7 static pressure low-low alarm limits
8251	FC.FC7.RX_SP_LAL	Run 7 static pressure low alarm limits
8252	FC.FC7.RX_SP_HAL	Run 7 static pressure high alarm limits
8253	FC.FC7.RX_SP_HHAL	Run 7 static pressure high-high alarm limits
8254	FC.FC7.RX_FTEMP_LLAL	Run 7 temperature low-low alarm limits
8255	FC.FC7.RX_FTEMP_LAL	Run 7 temperature low alarm limits
8256	FC.FC7.RX_FTEMP_HAL	Run 7 temperature high alarm limits
8257	FC.FC7.RX_FTEMP_HHAL	Run 7 temperature high-high alarm limits
8258	FC.FC7.RX_BETA_HILIMIT	Run 7 beta ratio high alarm limits
8259	FC.FC7.RX_BETA_LOLIMIT	Run 7 beta ratio low alarm limits
8260	FC.FC7.RX_DP_INP	Run 7 differential pressure input to the Flow Computer function block

Reg#	Variable	Description
8261	FC.FC7.DP_CH_AVG	Run 7 differential pressure current hour average
8262	FC.FC7.DP_PH_AVG	Run 7 differential pressure previous hour average
8263	FC.FC7.RX_SP_INP	Run 7 static pressure input to the Flow Computer function block
8264	FC.FC7.SP_CH_AVG	Run 7 static pressure current hour average
8265	FC.FC7.SP_PH_AVG	Run 7 static pressure previous hour average
8266	FC.FC7.RX_FTEMP_INP	Run 7 temperature input to the Flow Computer function block
8267	FC.FC7.FTEMP_CH_AVG	Run 7 temperature current hour average
8268	FC.FC7.FTEMP_PH_AVG	Run 7 temperature previous hour average
8269	FC.FC7.RX_HTVAL_GC	Run 7 heating value input to the Flow Computer function block
8270	FC.FC7.HTVAL_CH_AVG	Run 7 heating value current hour average
8271	FC.FC7.HTVAL_PH_AVG	Run 7 heating value previous hour average
8272	FC.FC7.RX_GRAVITY_LIVE	Run 7 specific gravity input to the Flow Computer function block
8273	FC.FC7.SG_CH_AVG	Run 7 specific gravity current hour average
8274	FC.FC7.SG_PH_AVG	Run 7 specific gravity previous hour average
8275	FC.FC7.RX_N2_LIVE	Run 7 Nitrogen input to the Flow Computer function block
8276	FC.FC7.N2_CH_AVG	Run 7 Nitrogen current hour average
8277	FC.FC7.N2_PH_AVG	Run 7 Nitrogen previous hour average
8278	FC.FC7.RX_CO2_LIVE	Run 7 Carbon Dioxide (CO2) input to the Flow Computer function block
8279	FC.FC7.CO2_CH_AVG	Run 7 Carbon Dioxide (CO2) current hour average
8280	FC.FC7.CO2_PH_AVG	Run 7 Carbon Dioxide (CO2) previous hour average
8281	FC.FC7.RX_CH4_LIVE	Run 7 Methane (CH4) input to the Flow Computer function block
8282	FC.FC7.CH4_CH_AVG	Run 7 Methane (CH4) current hour average
8283	FC.FC7.CH4_PH_AVG	Run 7 Methane (CH4) previous hour average
8284	FC.FC7.RX_C2_LIVE	Run 7 Ethane (C2) input to the Flow Computer function block
8285	FC.FC7.C2_CH_AVG	Run 7 Ethane (C2) current hour average
8286	FC.FC7.C2_PH_AVG	Run 7 Ethane (C2) previous hour average
8287	FC.FC7.RX_C3_LIVE	Run 7 Propane (C3) input to the Flow Computer function block
8288	FC.FC7.C3_CH_AVG	Run 7 Propane (C3) current hour average
8289	FC.FC7.C3_PH_AVG	Run 7 Propane (C3) previous hour average
8290	FC.FC7.RX_IC4_LIVE	Run 7 I-Butane (I-C4) input to the Flow Computer function block
8291	FC.FC7.IC4_CH_AVG	Run 7 I-Butane (I-C4) current hour average
8292	FC.FC7.IC4_PH_AVG	Run 7 I-Butane (I-C4) previous hour average
8293	FC.FC7.RX_NC4_LIVE	Run 7 N-Butane (N-C4) input to the Flow Computer function block
8294	FC.FC7.NC4_CH_AVG	Run 7 N-Butane (N-C4) current hour average
8295	FC.FC7.NC4_PH_AVG	Run 7 N-Butane (N-C4) previous hour average
8296	FC.FC7.RX_IC5_LIVE	Run 7 heating value input to the Flow Computer function block
8297	FC.FC7.IC5_CH_AVG	Run 7 heating value current hour average
8298	FC.FC7.IC5_PH_AVG	Run 7 heating value previous hour average
8299	FC.FC7.RX_NC5_LIVE	Run 7 Pentane (CH5) input to the Flow Computer function block
8300	FC.FC7.NC5_CH_AVG	Run 7 Pentane (CH5) current hour average
8301	FC.FC7.NC5_PH_AVG	Run 7 Pentane (CH5) previous hour average

Reg#	Variable	Description
8302	FC.FC7.RX_C6_LIVE	Run 7 Hexane (C6) input to the Flow Computer function block
8303	FC.FC7.C6_CH_AVG	Run 7 Hexane (C6) current hour average
8304	FC.FC7.C6_PH_AVG	Run 7 Hexane (C6) previous hour average
8305	FC.FC7.RX_C7_LIVE	Run 7 Heptane (C7) input to the Flow Computer function block
8306	FC.FC7.C7_CH_AVG	Run 7 Heptane (C7) current hour average
8307	FC.FC7.C7_PH_AVG	Run 7 Heptane (C7) previous hour average
8308	FC.FC7.RX_C8_LIVE	Run 7 Octane (C8) input to the Flow Computer function block
8309	FC.FC7.C8_CH_AVG	Run 7 Octane (C8) current hour average
8310	FC.FC7.C8_PH_AVG	Run 7 Octane (C8) previous hour average
8311	FC.FC7.RX_C9_LIVE	Run 7 Nonane (C9) input to the Flow Computer function block
8312	FC.FC7.C9_CH_AVG	Run 7 Nonane (C9) current hour average
8313	FC.FC7.C9_PH_AVG	Run 7 Nonane (C9) previous hour average
8314	FC.FC7.RX_C10_LIVE	Run 7 Decane (C10) input to the Flow Computer function block
8315	FC.FC7.C10_CH_AVG	Run 7 Decane (C10) current hour average
8316	FC.FC7.C10_PH_AVG	Run 7 Decane (C10) previous hour average
8317	FC.FC7.RX_H2O_PCT	Run 7 Water content (H2O) input to the Flow Computer function block
8318	FC.FC7.H2O_CH_AVG	Run 7 Water content (H2O) current hour average
8319	FC.FC7.H2O_PH_AVG	Run 7 Water content (H2O) previous hour average
8320	FC.FC7.RX_H2S_PCT	Run 7 Hydrogen sulfide (H2S) input to the Flow Computer function block
8321	FC.FC7.H2S_CH_AVG	Run 7 Hydrogen sulfide (H2S) current hour average
8322	FC.FC7.H2S_PH_AVG	Run 7 Hydrogen sulfide (H2S) previous hour average
8323	FC.FC7.RX_H2_PCT	Run 7 Hydrogen (H2) input to the Flow Computer function block
8324	FC.FC7.H2_CH_AVG	Run 7 Hydrogen (H2) current hour average
8325	FC.FC7.H2_PH_AVG	Run 7 Hydrogen (H2) previous hour average
8326	FC.FC7.RX_CO_PCT	Run 7 Carbon Monoxide (CO) input to the Flow Computer function block
8327	FC.FC7.CO_CH_AVG	Run 7 Carbon Monoxide (CO) current hour average
8328	FC.FC7.CO_PH_AVG	Run 7 Carbon Monoxide (CO) previous hour average
8329	FC.FC7.RX_O2_PCT	Run 7 Oxygen (O2) input to the Flow Computer function block
8330	FC.FC7.O2_CH_AVG	Run 7 Oxygen (O2) current hour average
8331	FC.FC7.O2_PH_AVG	Run 7 Oxygen (O2) previous hour average
8332	FC.FC7.RX_HE_PCT	Run 7 Helium (H2) input to the Flow Computer function block
8333	FC.FC7.HE_CH_AVG	Run 7 Helium (H2) current hour average
8334	FC.FC7.HE_PH_AVG	Run 7 Helium (H2) previous hour average
8335	FC.FC7.RX_AR_PCT	Run 7 Argon (AR) input to the Flow Computer function block
8336	FC.FC7.AR_CH_AVG	Run 7 Argon (AR) current hour average
8337	FC.FC7.AR_PH_AVG	Run 7 Argon (AR) previous hour average
8338	FC.FC8.RX_CFG_TYPE	Run 8 configuration type
8339	FC.RUN_8_STATION	Run 8 station assignment
8340	FC.RUN_8_DIRECTION	Run 8 direction

Reg#	Variable	Description
8341	FC.RUN_8_SPSOURCE	Run 8 static pressure source
8342	FC.R8_MVTID_SP	Run 8 MVT ID for static pressure
8343	FC.FC8.RX_SP_BUF	Run 8 static pressure value
8344	FC.RUN_8_FTSOURCE	Run 8 temperature source
8345	FC.R8_MVTID_FT	Run 8 MVT ID for temperature
8346	FC.FC8.RX_FTEMP_BUF	Run 8 temperature value
8347	FC.FC8.RX_PIPE_DIAM	Run 8 pipe diameter
8348	FC.FC8.ORIF_DIAM_INUSE	Run 8 orifice diameter in use
8349	FC.FC8.RX_DPCUT_VAL	Run 8 differential pressure cutoff
8350	FC.RUN_8_DPSOURCE	Run 8 differential pressure source
8351	FC.R8_MVTID_DP	Run 8 MVT ID for differential pressure
8352	FC.FC8.RX_DP_BUF	Run 8 differential pressure value
8353	FC.FC8.OR_FLOW_RATE	Run 8 flow rate
8354	FC.FC8.RX_FRATE_ARCHUNITS	Run 8 flow rate units
8355	FC.FC8.OR_ENERGY_RATE	Run 8 energy rate
8356	FC.FC8.RX_ERATE_ARCHUNITS	Run 8 energy rate units
8357	FC.FC8.RX_ORIF_DIAM	Run 8 orifice diameter setting
8358	FC.FC8.RX_ORIF_UNITS	Run 8 orifice diameter units
8359	FC.FC8.RX_BETA	Run 8 beta ratio
8360	FC.FC8.OR_MINFLOWRATE	Run 8 minimum flow rate
8361	FC.FC8.OR_MAXFLOWRATE	Run 8 maximum flow rate
8362	FC.RUN_8_MAXFREQ	Run 8 maximum frequency
8363	FC.FC8.RX_LCUTOFF	Run 8 low frequency cutoff
8364	FC.FC8.RX_AGA7_KFACTOR	Run 8 AGA7 K factor (pulses/volume or volume/pulse)
8365	FC.FC8.IUDI_COUNT	Run 8 Counts from HSC
8366	FC.FC8.RX_PPS	Run 8 pulses per second (filtered frequency)
8367	FC.FC8.RX_AGA7_FACTOR	Run 8 AGA7 correction factor
8368	FC.FC8.RX_KFACTOR_USED	Run 8 AGA7 K factor used
8369	FC.FC8.OR_UCFLOWRATE	Run 8 uncorrected flow rate
8370	FC.FC8.RX_AA_CUTOFF	Run 8 AutoAdjust low frequency cutoff
8371	FC.AA_8.KM	Run 8 AutoAdjust K factor Main Rotor
8372	FC.AA_8.KS	Run 8 AutoAdjust K factor Sense Rotor
8373	FC.RUN_8_AA_MAXACF	Run 8 AutoAdjust maximum actual volume
8374	FC.AA_8.ABAR	Run 8 AutoAdjust a bar
8375	FC.FC8.RX_AA_DEVLIMIT	Run 8 AutoAdjust deviation limit
8376	FC.AA_8.IUDI_MAIN_ROTOR	Run 8 AutoAdjust delta counts from HSC to Main Rotor
8377	FC.AA_8.IUDI_SENS_ROTOR	Run 8 AutoAdjust delta counts from HSC to Sense Rotor
8378	FC.FC8.IR_AAVOLUME	Run 8 AutoAdjust adjusted volume into the Flow Computer FB
8379	FC.AA_8_DELTAABAR	Run 8 AutoAdjust delta a bar
8380	FC.FC8.RX_AGA10_SOS	Run 8 Speed of Sound calculated by AGA 10
8381	FC.FC8.RX_SOS_PCT_DIFF	Run 8 Speed of Sound percentage difference between calculated and Ultrasonic
8382	FC.FC8.RX_SOS_LIMIT	Run 8 Speed of Sound percentage difference limit
8383	FC.FC8.RX_SFREQ_DB	Run 8 cutoff value in seconds for low frequency PD meters
8384	FC.FC8.RX_DP_LLAL	Run 8 differential pressure low-low alarm limits
8385	FC.FC8.RX_DP_LAL	Run 8 differential pressure low alarm limits

Reg#	Variable	Description
8386	FC.FC8.RX_DP_HAL	Run 8 differential pressure high alarm limits
8387	FC.FC8.RX_DP_HHAL	Run 8 differential pressure high-high alarm limits
8388	FC.FC8.RX_SP_LLAL	Run 8 static pressure low-low alarm limits
8389	FC.FC8.RX_SP_LAL	Run 8 static pressure low alarm limits
8390	FC.FC8.RX_SP_HAL	Run 8 static pressure high alarm limits
8391	FC.FC8.RX_SP_HHAL	Run 8 static pressure high-high alarm limits
8392	FC.FC8.RX_FTEMP_LLAL	Run 8 temperature low-low alarm limits
8393	FC.FC8.RX_FTEMP_LAL	Run 8 temperature low alarm limits
8394	FC.FC8.RX_FTEMP_HAL	Run 8 temperature high alarm limits
8395	FC.FC8.RX_FTEMP_HHAL	Run 8 temperature high-high alarm limits
8396	FC.FC8.RX_BETA_HILIMIT	Run 8 beta ratio high alarm limits
8397	FC.FC8.RX_BETA_LOLIMIT	Run 8 beta ratio low alarm limits
8398	FC.FC8.RX_DP_INP	Run 8 differential pressure input to the Flow Computer function block
8399	FC.FC8.DP_CH_AVG	Run 8 differential pressure current hour average
8400	FC.FC8.DP_PH_AVG	Run 8 differential pressure previous hour average
8401	FC.FC8.RX_SP_INP	Run 8 static pressure input to the Flow Computer function block
8402	FC.FC8.SP_CH_AVG	Run 8 static pressure current hour average
8403	FC.FC8.SP_PH_AVG	Run 8 static pressure previous hour average
8404	FC.FC8.RX_FTEMP_INP	Run 8 temperature input to the Flow Computer function block
8405	FC.FC8.FTEMP_CH_AVG	Run 8 temperature current hour average
8406	FC.FC8.FTEMP_PH_AVG	Run 8 temperature previous hour average
8407	FC.FC8.RX_HTVAL_GC	Run 8 heating value input to the Flow Computer function block
8408	FC.FC8.HTVAL_CH_AVG	Run 8 heating value current hour average
8409	FC.FC8.HTVAL_PH_AVG	Run 8 heating value previous hour average
8410	FC.FC8.RX_GRAVITY_LIVE	Run 8 specific gravity input to the Flow Computer function block
8411	FC.FC8.SG_CH_AVG	Run 8 specific gravity current hour average
8412	FC.FC8.SG_PH_AVG	Run 8 specific gravity previous hour average
8413	FC.FC8.RX_N2_LIVE	Run 8 Nitrogen input to the Flow Computer function block
8414	FC.FC8.N2_CH_AVG	Run 8 Nitrogen current hour average
8415	FC.FC8.N2_PH_AVG	Run 8 Nitrogen previous hour average
8416	FC.FC8.RX_CO2_LIVE	Run 8 Carbon Dioxide (CO2) input to the Flow Computer function block
8417	FC.FC8.CO2_CH_AVG	Run 8 Carbon Dioxide (CO2) current hour average
8418	FC.FC8.CO2_PH_AVG	Run 8 Carbon Dioxide (CO2) previous hour average
8419	FC.FC8.RX_CH4_LIVE	Run 8 Methane (CH4) input to the Flow Computer function block
8420	FC.FC8.CH4_CH_AVG	Run 8 Methane (CH4) current hour average
8421	FC.FC8.CH4_PH_AVG	Run 8 Methane (CH4) previous hour average
8422	FC.FC8.RX_C2_LIVE	Run 8 Ethane (C2) input to the Flow Computer function block
8423	FC.FC8.C2_CH_AVG	Run 8 Ethane (C2) current hour average
8424	FC.FC8.C2_PH_AVG	Run 8 Ethane (C2) previous hour average
8425	FC.FC8.RX_C3_LIVE	Run 8 Propane (C3) input to the Flow Computer function block
8426	FC.FC8.C3_CH_AVG	Run 8 Propane (C3) current hour average
8427	FC.FC8.C3_PH_AVG	Run 8 Propane (C3) previous hour average

Reg#	Variable	Description
8428	FC.FC8.RX_IC4_LIVE	Run 8 I-Butane (I-C4) input to the Flow Computer function block
8429	FC.FC8.IC4_CH_AVG	Run 8 I-Butane (I-C4) current hour average
8430	FC.FC8.IC4_PH_AVG	Run 8 I-Butane (I-C4) previous hour average
8431	FC.FC8.RX_NC4_LIVE	Run 8 N-Butane (N-C4) input to the Flow Computer function block
8432	FC.FC8.NC4_CH_AVG	Run 8 N-Butane (N-C4) current hour average
8433	FC.FC8.NC4_PH_AVG	Run 8 N-Butane (N-C4) previous hour average
8434	FC.FC8.RX_IC5_LIVE	Run 8 heating value input to the Flow Computer function block
8435	FC.FC8.IC5_CH_AVG	Run 8 heating value current hour average
8436	FC.FC8.IC5_PH_AVG	Run 8 heating value previous hour average
8437	FC.FC8.RX_NC5_LIVE	Run 8 Pentane (CH5) input to the Flow Computer function block
8438	FC.FC8.NC5_CH_AVG	Run 8 Pentane (CH5) current hour average
8439	FC.FC8.NC5_PH_AVG	Run 8 Pentane (CH5) previous hour average
8440	FC.FC8.RX_C6_LIVE	Run 8 Hexane (C6) input to the Flow Computer function block
8441	FC.FC8.C6_CH_AVG	Run 8 Hexane (C6) current hour average
8442	FC.FC8.C6_PH_AVG	Run 8 Hexane (C6) previous hour average
8443	FC.FC8.RX_C7_LIVE	Run 8 Heptane (C7) input to the Flow Computer function block
8444	FC.FC8.C7_CH_AVG	Run 8 Heptane (C7) current hour average
8445	FC.FC8.C7_PH_AVG	Run 8 Heptane (C7) previous hour average
8446	FC.FC8.RX_C8_LIVE	Run 8 Octane (C8) input to the Flow Computer function block
8447	FC.FC8.C8_CH_AVG	Run 8 Octane (C8) current hour average
8448	FC.FC8.C8_PH_AVG	Run 8 Octane (C8) previous hour average
8449	FC.FC8.RX_C9_LIVE	Run 8 Nonane (C9) input to the Flow Computer function block
8450	FC.FC8.C9_CH_AVG	Run 8 Nonane (C9) current hour average
8451	FC.FC8.C9_PH_AVG	Run 8 Nonane (C9) previous hour average
8452	FC.FC8.RX_C10_LIVE	Run 8 Decane (C10) input to the Flow Computer function block
8453	FC.FC8.C10_CH_AVG	Run 8 Decane (C10) current hour average
8454	FC.FC8.C10_PH_AVG	Run 8 Decane (C10) previous hour average
8455	FC.FC8.RX_H2O_PCT	Run 8 Water content (H2O) input to the Flow Computer function block
8456	FC.FC8.H2O_CH_AVG	Run 8 Water content (H2O) current hour average
8457	FC.FC8.H2O_PH_AVG	Run 8 Water content (H2O) previous hour average
8458	FC.FC8.RX_H2S_PCT	Run 8 Hydrogen sulfide (H2S) input to the Flow Computer function block
8459	FC.FC8.H2S_CH_AVG	Run 8 Hydrogen sulfide (H2S) current hour average
8460	FC.FC8.H2S_PH_AVG	Run 8 Hydrogen sulfide (H2S) previous hour average
8461	FC.FC8.RX_H2_PCT	Run 8 Hydrogen (H2) input to the Flow Computer function block
8462	FC.FC8.H2_CH_AVG	Run 8 Hydrogen (H2) current hour average
8463	FC.FC8.H2_PH_AVG	Run 8 Hydrogen (H2) previous hour average
8464	FC.FC8.RX_CO_PCT	Run 8 Carbon Monoxide (CO) input to the Flow Computer function block
8465	FC.FC8.CO_CH_AVG	Run 8 Carbon Monoxide (CO) current hour average
8466	FC.FC8.CO_PH_AVG	Run 8 Carbon Monoxide (CO) previous hour average

Reg#	Variable	Description
8467	FC.FC8.RX_O2_PCT	Run 8 Oxygen (O2) input to the Flow Computer function block
8468	FC.FC8.O2_CH_AVG	Run 8 Oxygen (O2) current hour average
8469	FC.FC8.O2_PH_AVG	Run 8 Oxygen (O2) previous hour average
8470	FC.FC8.RX_HE_PCT	Run 8 Helium (H2) input to the Flow Computer function block
8471	FC.FC8.HE_CH_AVG	Run 8 Helium (H2) current hour average
8472	FC.FC8.HE_PH_AVG	Run 8 Helium (H2) previous hour average
8473	FC.FC8.RX_AR_PCT	Run 8 Argon (AR) input to the Flow Computer function block
8474	FC.FC8.AR_CH_AVG	Run 8 Argon (AR) current hour average
8475	FC.FC8.AR_PH_AVG	Run 8 Argon (AR) previous hour average
8476	UFM.UFM_1_PORT	CWM Master Port connected to Ultrasonic Meter 1
8477	UFM.UFM_1_ADDRESS	Address of Ultrasonic Meter 1
8478	UFM.UFM_1_TYPE	Ultrasonic Meter 1 Type
8479	UFM.UFM_1_AVGSOS	Ultrasonic Meter 1 average Speed of Sound (SOS) - all paths
8480	UFM.UFM_1_SOS1	Ultrasonic Meter 1 Speed of Sound (SOS) path 1
8481	UFM.UFM_1_SOS2	Ultrasonic Meter 1 Speed of Sound (SOS) path 2
8482	UFM.UFM_1_SOS3	Ultrasonic Meter 1 Speed of Sound (SOS) path 3
8483	UFM.UFM_1_SOS4	Ultrasonic Meter 1 Speed of Sound (SOS) path 4
8484	UFM.UFM_1_SOS5	Ultrasonic Meter 1 Speed of Sound (SOS) path 5
8485	MB.SPARE	Ultrasonic Meter n Profile
8486	UFM.UFM_1_SYSSTATUS	Ultrasonic Meter status
8487	UFM.UFM_1_GAIN1A	Ultrasonic Meter gain A path 1
8488	UFM.UFM_1_GAIN2A	Ultrasonic Meter gain A path 2
8489	UFM.UFM_1_GAIN3A	Ultrasonic Meter gain A path 3
8490	UFM.UFM_1_GAIN4A	Ultrasonic Meter gain A path 4
8491	UFM.UFM_1_GAIN5A	Ultrasonic Meter gain A path 5
8492	UFM.UFM_1_GAIN1B	Ultrasonic Meter gain B path 1
8493	UFM.UFM_1_GAIN2B	Ultrasonic Meter gain B path 2
8494	UFM.UFM_1_GAIN3B	Ultrasonic Meter gain B path 3
8495	UFM.UFM_1_GAIN4B	Ultrasonic Meter gain B path 4
8496	UFM.UFM_1_GAIN5B	Ultrasonic Meter gain B path 5
8497	UFM.UFM_2_PORT	CWM Master Port connected to Ultrasonic Meter 2
8498	UFM.UFM_2_ADDRESS	Address of Ultrasonic Meter 2
8499	UFM.UFM_2_TYPE	Ultrasonic Meter 2 Type
8500	UFM.UFM_2_AVGSOS	Ultrasonic Meter 2 average Speed of Sound (SOS) - all paths
8501	UFM.UFM_2_SOS1	Ultrasonic Meter 2 Speed of Sound (SOS) path 1
8502	UFM.UFM_2_SOS2	Ultrasonic Meter 2 Speed of Sound (SOS) path 2
8503	UFM.UFM_2_SOS3	Ultrasonic Meter 2 Speed of Sound (SOS) path 3
8504	UFM.UFM_2_SOS4	Ultrasonic Meter 2 Speed of Sound (SOS) path 4
8505	UFM.UFM_2_SOS5	Ultrasonic Meter 2 Speed of Sound (SOS) path 5
8506	MB.SPARE	Ultrasonic Meter n Profile
8507	UFM.UFM_2_SYSSTATUS	Ultrasonic Meter status
8508	UFM.UFM_2_GAIN1A	Ultrasonic Meter gain A path 1
8509	UFM.UFM_2_GAIN2A	Ultrasonic Meter gain A path 2
8510	UFM.UFM_2_GAIN3A	Ultrasonic Meter gain A path 3
8511	UFM.UFM_2_GAIN4A	Ultrasonic Meter gain A path 4

Reg#	Variable	Description
8512	UFM.UFM_2_GAIN5A	Ultrasonic Meter gain A path 5
8513	UFM.UFM_2_GAIN1B	Ultrasonic Meter gain B path 1
8514	UFM.UFM_2_GAIN2B	Ultrasonic Meter gain B path 2
8515	UFM.UFM_2_GAIN3B	Ultrasonic Meter gain B path 3
8516	UFM.UFM_2_GAIN4B	Ultrasonic Meter gain B path 4
8517	UFM.UFM_2_GAIN5B	Ultrasonic Meter gain B path 5
8518	UFM.UFM_3_PORT	CWM Master Port connected to Ultrasonic Meter 3
8519	UFM.UFM_3_ADDRESS	Address of Ultrasonic Meter 3
8520	UFM.UFM_3_TYPE	Ultrasonic Meter 3 Type
8521	UFM.UFM_3_AVGSOS	Ultrasonic Meter 3 average Speed of Sound (SOS) - all paths
8522	UFM.UFM_3_SOS1	Ultrasonic Meter 3 Speed of Sound (SOS) path 1
8523	UFM.UFM_3_SOS2	Ultrasonic Meter 3 Speed of Sound (SOS) path 2
8524	UFM.UFM_3_SOS3	Ultrasonic Meter 3 Speed of Sound (SOS) path 3
8525	UFM.UFM_3_SOS4	Ultrasonic Meter 3 Speed of Sound (SOS) path 4
8526	UFM.UFM_3_SOS5	Ultrasonic Meter 3 Speed of Sound (SOS) path 5
8527	MB.SPARE	Ultrasonic Meter n Profile
8528	UFM.UFM_3_SYSSTATUS	Ultrasonic Meter status
8529	UFM.UFM_3_GAIN1A	Ultrasonic Meter gain A path 1
8530	UFM.UFM_3_GAIN2A	Ultrasonic Meter gain A path 2
8531	UFM.UFM_3_GAIN3A	Ultrasonic Meter gain A path 3
8532	UFM.UFM_3_GAIN4A	Ultrasonic Meter gain A path 4
8533	UFM.UFM_3_GAIN5A	Ultrasonic Meter gain A path 5
8534	UFM.UFM_3_GAIN1B	Ultrasonic Meter gain B path 1
8535	UFM.UFM_3_GAIN2B	Ultrasonic Meter gain B path 2
8536	UFM.UFM_3_GAIN3B	Ultrasonic Meter gain B path 3
8537	UFM.UFM_3_GAIN4B	Ultrasonic Meter gain B path 4
8538	UFM.UFM_3_GAIN5B	Ultrasonic Meter gain B path 5
8539	UFM.UFM_4_PORT	CWM Master Port connected to Ultrasonic Meter 4
8540	UFM.UFM_4_ADDRESS	Address of Ultrasonic Meter 4
8541	UFM.UFM_4_TYPE	Ultrasonic Meter 4 Type
8542	UFM.UFM_4_AVGSOS	Ultrasonic Meter 4 average Speed of Sound (SOS) - all paths
8543	UFM.UFM_4_SOS1	Ultrasonic Meter 4 Speed of Sound (SOS) path 1
8544	UFM.UFM_4_SOS2	Ultrasonic Meter 4 Speed of Sound (SOS) path 2
8545	UFM.UFM_4_SOS3	Ultrasonic Meter 4 Speed of Sound (SOS) path 3
8546	UFM.UFM_4_SOS4	Ultrasonic Meter 4 Speed of Sound (SOS) path 4
8547	UFM.UFM_4_SOS5	Ultrasonic Meter 4 Speed of Sound (SOS) path 5
8548	MB.SPARE	Ultrasonic Meter n Profile
8549	UFM.UFM_4_SYSSTATUS	Ultrasonic Meter status
8550	UFM.UFM_4_GAIN1A	Ultrasonic Meter gain A path 1
8551	UFM.UFM_4_GAIN2A	Ultrasonic Meter gain A path 2
8552	UFM.UFM_4_GAIN3A	Ultrasonic Meter gain A path 3
8553	UFM.UFM_4_GAIN4A	Ultrasonic Meter gain A path 4
8554	UFM.UFM_4_GAIN5A	Ultrasonic Meter gain A path 5
8555	UFM.UFM_4_GAIN1B	Ultrasonic Meter gain B path 1
8556	UFM.UFM_4_GAIN2B	Ultrasonic Meter gain B path 2
8557	UFM.UFM_4_GAIN3B	Ultrasonic Meter gain B path 3
8558	UFM.UFM_4_GAIN4B	Ultrasonic Meter gain B path 4

Reg#	Variable	Description
8559	UFM.UFM_4_GAIN5B	Ultrasonic Meter gain B path 5
8560	UFM.UFM_5_PORT	CWM Master Port connected to Ultrasonic Meter 5
8561	UFM.UFM_5_ADDRESS	Address of Ultrasonic Meter 5
8562	UFM.UFM_5_TYPE	Ultrasonic Meter 5 Type
8563	UFM.UFM_5_AVGSOS	Ultrasonic Meter 5 average Speed of Sound (SOS) - all paths
8564	UFM.UFM_5_SOS1	Ultrasonic Meter 5 Speed of Sound (SOS) path 1
8565	UFM.UFM_5_SOS2	Ultrasonic Meter 5 Speed of Sound (SOS) path 2
8566	UFM.UFM_5_SOS3	Ultrasonic Meter 5 Speed of Sound (SOS) path 3
8567	UFM.UFM_5_SOS4	Ultrasonic Meter 5 Speed of Sound (SOS) path 4
8568	UFM.UFM_5_SOS5	Ultrasonic Meter 5 Speed of Sound (SOS) path 5
8569	MB.SPARE	Ultrasonic Meter n Profile
8570	UFM.UFM_5_SYSSTATUS	Ultrasonic Meter status
8571	UFM.UFM_5_GAIN1A	Ultrasonic Meter gain A path 1
8572	UFM.UFM_5_GAIN2A	Ultrasonic Meter gain A path 2
8573	UFM.UFM_5_GAIN3A	Ultrasonic Meter gain A path 3
8574	UFM.UFM_5_GAIN4A	Ultrasonic Meter gain A path 4
8575	UFM.UFM_5_GAIN5A	Ultrasonic Meter gain A path 5
8576	UFM.UFM_5_GAIN1B	Ultrasonic Meter gain B path 1
8577	UFM.UFM_5_GAIN2B	Ultrasonic Meter gain B path 2
8578	UFM.UFM_5_GAIN3B	Ultrasonic Meter gain B path 3
8579	UFM.UFM_5_GAIN4B	Ultrasonic Meter gain B path 4
8580	UFM.UFM_5_GAIN5B	Ultrasonic Meter gain B path 5
8581	UFM.UFM_6_PORT	CWM Master Port connected to Ultrasonic Meter 6
8582	UFM.UFM_6_ADDRESS	Address of Ultrasonic Meter 6
8583	UFM.UFM_6_TYPE	Ultrasonic Meter 6 Type
8584	UFM.UFM_6_AVGSOS	Ultrasonic Meter 6 average Speed of Sound (SOS) - all paths
8585	UFM.UFM_6_SOS1	Ultrasonic Meter 6 Speed of Sound (SOS) path 1
8586	UFM.UFM_6_SOS2	Ultrasonic Meter 6 Speed of Sound (SOS) path 2
8587	UFM.UFM_6_SOS3	Ultrasonic Meter 6 Speed of Sound (SOS) path 3
8588	UFM.UFM_6_SOS4	Ultrasonic Meter 6 Speed of Sound (SOS) path 4
8589	UFM.UFM_6_SOS5	Ultrasonic Meter 6 Speed of Sound (SOS) path 5
8590	MB.SPARE	Ultrasonic Meter n Profile
8591	UFM.UFM_6_SYSSTATUS	Ultrasonic Meter status
8592	UFM.UFM_6_GAIN1A	Ultrasonic Meter gain A path 1
8593	UFM.UFM_6_GAIN2A	Ultrasonic Meter gain A path 2
8594	UFM.UFM_6_GAIN3A	Ultrasonic Meter gain A path 3
8595	UFM.UFM_6_GAIN4A	Ultrasonic Meter gain A path 4
8596	UFM.UFM_6_GAIN5A	Ultrasonic Meter gain A path 5
8597	UFM.UFM_6_GAIN1B	Ultrasonic Meter gain B path 1
8598	UFM.UFM_6_GAIN2B	Ultrasonic Meter gain B path 2
8599	UFM.UFM_6_GAIN3B	Ultrasonic Meter gain B path 3
8600	UFM.UFM_6_GAIN4B	Ultrasonic Meter gain B path 4
8601	UFM.UFM_6_GAIN5B	Ultrasonic Meter gain B path 5
8602	PG_GC.GC_1.GC_1.FIXED_BTU	GC Dataset 1 Fixed BTU
8603	PG_GC.GC_1.GC_1.FIXED_SG	GC Dataset 1 Fixed Specific Gravity
8604	PG_GC.GC_1.GC_1.FIXED_N2	GC Dataset 1 Fixed N2
8605	PG_GC.GC_1.GC_1.FIXED_CO2	GC Dataset 1 Fixed CO2

Reg#	Variable	Description
8606	PG_GC.GC_1.GC_1.FIXED_CH4	GC Dataset 1 Fixed CH4
8607	PG_GC.GC_1.GC_1.FIXED_C2	GC Dataset 1 Fixed C2
8608	PG_GC.GC_1.GC_1.FIXED_C3	GC Dataset 1 Fixed C3
8609	PG_GC.GC_1.GC_1.FIXED_IC4	GC Dataset 1 Fixed IC4
8610	PG_GC.GC_1.GC_1.FIXED_NC4	GC Dataset 1 Fixed NC4
8611	PG_GC.GC_1.GC_1.FIXED_IC5	GC Dataset 1 Fixed IC5
8612	PG_GC.GC_1.GC_1.FIXED_NC5	GC Dataset 1 Fixed NC5
8613	PG_GC.GC_1.GC_1.FIXED_NC6	GC Dataset 1 Fixed NC6
8614	PG_GC.GC_1.GC_1.FIXED_NC7	GC Dataset 1 Fixed NC7
8615	PG_GC.GC_1.GC_1.FIXED_NC8	GC Dataset 1 Fixed NC8
8616	PG_GC.GC_1.GC_1.FIXED_NC9	GC Dataset 1 Fixed NC9
8617	PG_GC.GC_1.GC_1.FIXED_NC10	GC Dataset 1 Fixed NC10
8618	PG_GC.GC_1.GC_1.FIXED_H2O	GC Dataset 1 Fixed H2O
8619	PG_GC.GC_1.GC_1.FIXED_H2S	GC Dataset 1 Fixed H2S
8620	PG_GC.GC_1.GC_1.FIXED_H2	GC Dataset 1 Fixed H2
8621	PG_GC.GC_1.GC_1.FIXED_CO	GC Dataset 1 Fixed CO
8622	PG_GC.GC_1.GC_1.FIXED_O2	GC Dataset 1 Fixed O2
8623	PG_GC.GC_1.GC_1.FIXED_HE	GC Dataset 1 Fixed He
8624	PG_GC.GC_1.GC_1.FIXED_AR	GC Dataset 1 Fixed Ar
8625	PG_GC.GC_1.GC_1.FIXED_C6PLUS	GC Dataset 1 Fixed C6 Plus
8626	PG_GC.GC_1.GC_1.FIXED_C9PLUS	GC Dataset 1 Fixed C9 Plus
8627	PG_GC.GC_1.GC_1.FIXED_BTUSAT	GC Dataset 1 Fixed Saturated BTU
8628	PG_GC.GC_1.GC_2.FIXED_BTU	GC Dataset 2 Fixed BTU
8629	PG_GC.GC_1.GC_2.FIXED_SG	GC Dataset 2 Fixed Specific Gravity
8630	PG_GC.GC_1.GC_2.FIXED_N2	GC Dataset 2 Fixed N2
8631	PG_GC.GC_1.GC_2.FIXED_CO2	GC Dataset 2 Fixed CO2
8632	PG_GC.GC_1.GC_2.FIXED_CH4	GC Dataset 2 Fixed CH4
8633	PG_GC.GC_1.GC_2.FIXED_C2	GC Dataset 2 Fixed C2
8634	PG_GC.GC_1.GC_2.FIXED_C3	GC Dataset 2 Fixed C3
8635	PG_GC.GC_1.GC_2.FIXED_IC4	GC Dataset 2 Fixed IC4
8636	PG_GC.GC_1.GC_2.FIXED_NC4	GC Dataset 2 Fixed NC4
8637	PG_GC.GC_1.GC_2.FIXED_IC5	GC Dataset 2 Fixed IC5
8638	PG_GC.GC_1.GC_2.FIXED_NC5	GC Dataset 2 Fixed NC5
8639	PG_GC.GC_1.GC_2.FIXED_NC6	GC Dataset 2 Fixed NC6
8640	PG_GC.GC_1.GC_2.FIXED_NC7	GC Dataset 2 Fixed NC7
8641	PG_GC.GC_1.GC_2.FIXED_NC8	GC Dataset 2 Fixed NC8
8642	PG_GC.GC_1.GC_2.FIXED_NC9	GC Dataset 2 Fixed NC9
8643	PG_GC.GC_1.GC_2.FIXED_NC10	GC Dataset 2 Fixed NC10
8644	PG_GC.GC_1.GC_2.FIXED_H2O	GC Dataset 2 Fixed H2O
8645	PG_GC.GC_1.GC_2.FIXED_H2S	GC Dataset 2 Fixed H2S
8646	PG_GC.GC_1.GC_2.FIXED_H2	GC Dataset 2 Fixed H2
8647	PG_GC.GC_1.GC_2.FIXED_CO	GC Dataset 2 Fixed CO
8648	PG_GC.GC_1.GC_2.FIXED_O2	GC Dataset 2 Fixed O2
8649	PG_GC.GC_1.GC_2.FIXED_HE	GC Dataset 2 Fixed He
8650	PG_GC.GC_1.GC_2.FIXED_AR	GC Dataset 2 Fixed Ar
8651	PG_GC.GC_1.GC_2.FIXED_C6PLUS	GC Dataset 2 Fixed C6 Plus
8652	PG_GC.GC_1.GC_2.FIXED_C9PLUS	GC Dataset 2 Fixed C9 Plus
8653	PG_GC.GC_1.GC_2.FIXED_BTUSAT	GC Dataset 2 Fixed Saturated BTU
8654	PG_GC.GC_1.GC_3.FIXED_BTU	GC Dataset 3 Fixed BTU
8655	PG_GC.GC_1.GC_3.FIXED_SG	GC Dataset 3 Fixed Specific Gravity

Reg#	Variable	Description
8656	PG_GC.GC_1.GC_3.FIXED_N2	GC Dataset 3 Fixed N2
8657	PG_GC.GC_1.GC_3.FIXED_CO2	GC Dataset 3 Fixed CO2
8658	PG_GC.GC_1.GC_3.FIXED_CH4	GC Dataset 3 Fixed CH4
8659	PG_GC.GC_1.GC_3.FIXED_C2	GC Dataset 3 Fixed C2
8660	PG_GC.GC_1.GC_3.FIXED_C3	GC Dataset 3 Fixed C3
8661	PG_GC.GC_1.GC_3.FIXED_IC4	GC Dataset 3 Fixed IC4
8662	PG_GC.GC_1.GC_3.FIXED_NC4	GC Dataset 3 Fixed NC4
8663	PG_GC.GC_1.GC_3.FIXED_IC5	GC Dataset 3 Fixed IC5
8664	PG_GC.GC_1.GC_3.FIXED_NC5	GC Dataset 3 Fixed NC5
8665	PG_GC.GC_1.GC_3.FIXED_NC6	GC Dataset 3 Fixed NC6
8666	PG_GC.GC_1.GC_3.FIXED_NC7	GC Dataset 3 Fixed NC7
8667	PG_GC.GC_1.GC_3.FIXED_NC8	GC Dataset 3 Fixed NC8
8668	PG_GC.GC_1.GC_3.FIXED_NC9	GC Dataset 3 Fixed NC9
8669	PG_GC.GC_1.GC_3.FIXED_NC10	GC Dataset 3 Fixed NC10
8670	PG_GC.GC_1.GC_3.FIXED_H2O	GC Dataset 3 Fixed H2O
8671	PG_GC.GC_1.GC_3.FIXED_H2S	GC Dataset 3 Fixed H2S
8672	PG_GC.GC_1.GC_3.FIXED_H2	GC Dataset 3 Fixed H2
8673	PG_GC.GC_1.GC_3.FIXED_CO	GC Dataset 3 Fixed CO
8674	PG_GC.GC_1.GC_3.FIXED_O2	GC Dataset 3 Fixed O2
8675	PG_GC.GC_1.GC_3.FIXED_HE	GC Dataset 3 Fixed He
8676	PG_GC.GC_1.GC_3.FIXED_AR	GC Dataset 3 Fixed Ar
8677	PG_GC.GC_1.GC_3.FIXED_C6PLUS	GC Dataset 3 Fixed C6 Plus
8678	PG_GC.GC_1.GC_3.FIXED_C9PLUS	GC Dataset 3 Fixed C9 Plus
8679	PG_GC.GC_1.GC_3.FIXED_BTUSAT	GC Dataset 3 Fixed Saturated BTU
8680	PG_GC.GC_1.GC_4.FIXED_BTU	GC Dataset 4 Fixed BTU
8681	PG_GC.GC_1.GC_4.FIXED_SG	GC Dataset 4 Fixed Specific Gravity
8682	PG_GC.GC_1.GC_4.FIXED_N2	GC Dataset 4 Fixed N2
8683	PG_GC.GC_1.GC_4.FIXED_CO2	GC Dataset 4 Fixed CO2
8684	PG_GC.GC_1.GC_4.FIXED_CH4	GC Dataset 4 Fixed CH4
8685	PG_GC.GC_1.GC_4.FIXED_C2	GC Dataset 4 Fixed C2
8686	PG_GC.GC_1.GC_4.FIXED_C3	GC Dataset 4 Fixed C3
8687	PG_GC.GC_1.GC_4.FIXED_IC4	GC Dataset 4 Fixed IC4
8688	PG_GC.GC_1.GC_4.FIXED_NC4	GC Dataset 4 Fixed NC4
8689	PG_GC.GC_1.GC_4.FIXED_IC5	GC Dataset 4 Fixed IC5
8690	PG_GC.GC_1.GC_4.FIXED_NC5	GC Dataset 4 Fixed NC5
8691	PG_GC.GC_1.GC_4.FIXED_NC6	GC Dataset 4 Fixed NC6
8692	PG_GC.GC_1.GC_4.FIXED_NC7	GC Dataset 4 Fixed NC7
8693	PG_GC.GC_1.GC_4.FIXED_NC8	GC Dataset 4 Fixed NC8
8694	PG_GC.GC_1.GC_4.FIXED_NC9	GC Dataset 4 Fixed NC9
8695	PG_GC.GC_1.GC_4.FIXED_NC10	GC Dataset 4 Fixed NC10
8696	PG_GC.GC_1.GC_4.FIXED_H2O	GC Dataset 4 Fixed H2O
8697	PG_GC.GC_1.GC_4.FIXED_H2S	GC Dataset 4 Fixed H2S
8698	PG_GC.GC_1.GC_4.FIXED_H2	GC Dataset 4 Fixed H2
8699	PG_GC.GC_1.GC_4.FIXED_CO	GC Dataset 4 Fixed CO
8700	PG_GC.GC_1.GC_4.FIXED_O2	GC Dataset 4 Fixed O2
8701	PG_GC.GC_1.GC_4.FIXED_HE	GC Dataset 4 Fixed He
8702	PG_GC.GC_1.GC_4.FIXED_AR	GC Dataset 4 Fixed Ar
8703	PG_GC.GC_1.GC_4.FIXED_C6PLUS	GC Dataset 4 Fixed C6 Plus
8704	PG_GC.GC_1.GC_4.FIXED_C9PLUS	GC Dataset 4 Fixed C9 Plus
8705	PG_GC.GC_1.GC_4.FIXED_BTUSAT	GC Dataset 4 Fixed Saturated BTU

Reg#	Variable	Description
8706	PG_GC.GC_1.GC_5.FIXED_BTU	GC Dataset 5 Fixed BTU
8707	PG_GC.GC_1.GC_5.FIXED_SG	GC Dataset 5 Fixed Specific Gravity
8708	PG_GC.GC_1.GC_5.FIXED_N2	GC Dataset 5 Fixed N2
8709	PG_GC.GC_1.GC_5.FIXED_CO2	GC Dataset 5 Fixed CO2
8710	PG_GC.GC_1.GC_5.FIXED_CH4	GC Dataset 5 Fixed CH4
8711	PG_GC.GC_1.GC_5.FIXED_C2	GC Dataset 5 Fixed C2
8712	PG_GC.GC_1.GC_5.FIXED_C3	GC Dataset 5 Fixed C3
8713	PG_GC.GC_1.GC_5.FIXED_IC4	GC Dataset 5 Fixed IC4
8714	PG_GC.GC_1.GC_5.FIXED_NC4	GC Dataset 5 Fixed NC4
8715	PG_GC.GC_1.GC_5.FIXED_IC5	GC Dataset 5 Fixed IC5
8716	PG_GC.GC_1.GC_5.FIXED_NC5	GC Dataset 5 Fixed NC5
8717	PG_GC.GC_1.GC_5.FIXED_NC6	GC Dataset 5 Fixed NC6
8718	PG_GC.GC_1.GC_5.FIXED_NC7	GC Dataset 5 Fixed NC7
8719	PG_GC.GC_1.GC_5.FIXED_NC8	GC Dataset 5 Fixed NC8
8720	PG_GC.GC_1.GC_5.FIXED_NC9	GC Dataset 5 Fixed NC9
8721	PG_GC.GC_1.GC_5.FIXED_NC10	GC Dataset 5 Fixed NC10
8722	PG_GC.GC_1.GC_5.FIXED_H2O	GC Dataset 5 Fixed H2O
8723	PG_GC.GC_1.GC_5.FIXED_H2S	GC Dataset 5 Fixed H2S
8724	PG_GC.GC_1.GC_5.FIXED_H2	GC Dataset 5 Fixed H2
8725	PG_GC.GC_1.GC_5.FIXED_CO	GC Dataset 5 Fixed CO
8726	PG_GC.GC_1.GC_5.FIXED_O2	GC Dataset 5 Fixed O2
8727	PG_GC.GC_1.GC_5.FIXED_HE	GC Dataset 5 Fixed He
8728	PG_GC.GC_1.GC_5.FIXED_AR	GC Dataset 5 Fixed Ar
8729	PG_GC.GC_1.GC_5.FIXED_C6PLUS	GC Dataset 5 Fixed C6 Plus
8730	PG_GC.GC_1.GC_5.FIXED_C9PLUS	GC Dataset 5 Fixed C9 Plus
8731	PG_GC.GC_1.GC_5.FIXED_BTUSAT	GC Dataset 5 Fixed Saturated BTU
8732	PG_GC.GC_1.GC_6.FIXED_BTU	GC Dataset 6 Fixed BTU
8733	PG_GC.GC_1.GC_6.FIXED_SG	GC Dataset 6 Fixed Specific Gravity
8734	PG_GC.GC_1.GC_6.FIXED_N2	GC Dataset 6 Fixed N2
8735	PG_GC.GC_1.GC_6.FIXED_CO2	GC Dataset 6 Fixed CO2
8736	PG_GC.GC_1.GC_6.FIXED_CH4	GC Dataset 6 Fixed CH4
8737	PG_GC.GC_1.GC_6.FIXED_C2	GC Dataset 6 Fixed C2
8738	PG_GC.GC_1.GC_6.FIXED_C3	GC Dataset 6 Fixed C3
8739	PG_GC.GC_1.GC_6.FIXED_IC4	GC Dataset 6 Fixed IC4
8740	PG_GC.GC_1.GC_6.FIXED_NC4	GC Dataset 6 Fixed NC4
8741	PG_GC.GC_1.GC_6.FIXED_IC5	GC Dataset 6 Fixed IC5
8742	PG_GC.GC_1.GC_6.FIXED_NC5	GC Dataset 6 Fixed NC5
8743	PG_GC.GC_1.GC_6.FIXED_NC6	GC Dataset 6 Fixed NC6
8744	PG_GC.GC_1.GC_6.FIXED_NC7	GC Dataset 6 Fixed NC7
8745	PG_GC.GC_1.GC_6.FIXED_NC8	GC Dataset 6 Fixed NC8
8746	PG_GC.GC_1.GC_6.FIXED_NC9	GC Dataset 6 Fixed NC9
8747	PG_GC.GC_1.GC_6.FIXED_NC10	GC Dataset 6 Fixed NC10
8748	PG_GC.GC_1.GC_6.FIXED_H2O	GC Dataset 6 Fixed H2O
8749	PG_GC.GC_1.GC_6.FIXED_H2S	GC Dataset 6 Fixed H2S
8750	PG_GC.GC_1.GC_6.FIXED_H2	GC Dataset 6 Fixed H2
8751	PG_GC.GC_1.GC_6.FIXED_CO	GC Dataset 6 Fixed CO
8752	PG_GC.GC_1.GC_6.FIXED_O2	GC Dataset 6 Fixed O2
8753	PG_GC.GC_1.GC_6.FIXED_HE	GC Dataset 6 Fixed He
8754	PG_GC.GC_1.GC_6.FIXED_AR	GC Dataset 6 Fixed Ar
8755	PG_GC.GC_1.GC_6.FIXED_C6PLUS	GC Dataset 6 Fixed C6 Plus

Reg#	Variable	Description
8756	PG_GC.GC_1.GC_6.FIXED_C9PLUS	GC Dataset 6 Fixed C9 Plus
8757	PG_GC.GC_1.GC_6.FIXED_BTUSAT	GC Dataset 6 Fixed Saturated BTU
8758	PG_GC.GC_1.GC_7.FIXED_BTU	GC Dataset 7 Fixed BTU
8759	PG_GC.GC_1.GC_7.FIXED_SG	GC Dataset 7 Fixed Specific Gravity
8760	PG_GC.GC_1.GC_7.FIXED_N2	GC Dataset 7 Fixed N2
8761	PG_GC.GC_1.GC_7.FIXED_CO2	GC Dataset 7 Fixed CO2
8762	PG_GC.GC_1.GC_7.FIXED_CH4	GC Dataset 7 Fixed CH4
8763	PG_GC.GC_1.GC_7.FIXED_C2	GC Dataset 7 Fixed C2
8764	PG_GC.GC_1.GC_7.FIXED_C3	GC Dataset 7 Fixed C3
8765	PG_GC.GC_1.GC_7.FIXED_IC4	GC Dataset 7 Fixed IC4
8766	PG_GC.GC_1.GC_7.FIXED_NC4	GC Dataset 7 Fixed NC4
8767	PG_GC.GC_1.GC_7.FIXED_IC5	GC Dataset 7 Fixed IC5
8768	PG_GC.GC_1.GC_7.FIXED_NC5	GC Dataset 7 Fixed NC5
8769	PG_GC.GC_1.GC_7.FIXED_NC6	GC Dataset 7 Fixed NC6
8770	PG_GC.GC_1.GC_7.FIXED_NC7	GC Dataset 7 Fixed NC7
8771	PG_GC.GC_1.GC_7.FIXED_NC8	GC Dataset 7 Fixed NC8
8772	PG_GC.GC_1.GC_7.FIXED_NC9	GC Dataset 7 Fixed NC9
8773	PG_GC.GC_1.GC_7.FIXED_NC10	GC Dataset 7 Fixed NC10
8774	PG_GC.GC_1.GC_7.FIXED_H2O	GC Dataset 7 Fixed H2O
8775	PG_GC.GC_1.GC_7.FIXED_H2S	GC Dataset 7 Fixed H2S
8776	PG_GC.GC_1.GC_7.FIXED_H2	GC Dataset 7 Fixed H2
8777	PG_GC.GC_1.GC_7.FIXED_CO	GC Dataset 7 Fixed CO
8778	PG_GC.GC_1.GC_7.FIXED_O2	GC Dataset 7 Fixed O2
8779	PG_GC.GC_1.GC_7.FIXED_HE	GC Dataset 7 Fixed He
8780	PG_GC.GC_1.GC_7.FIXED_AR	GC Dataset 7 Fixed Ar
8781	PG_GC.GC_1.GC_7.FIXED_C6PLUS	GC Dataset 7 Fixed C6 Plus
8782	PG_GC.GC_1.GC_7.FIXED_C9PLUS	GC Dataset 7 Fixed C9 Plus
8783	PG_GC.GC_1.GC_7.FIXED_BTUSAT	GC Dataset 7 Fixed Saturated BTU
8784	PG_GC.GC_1.GC_8.FIXED_BTU	GC Dataset 8 Fixed BTU
8785	PG_GC.GC_1.GC_8.FIXED_SG	GC Dataset 8 Fixed Specific Gravity
8786	PG_GC.GC_1.GC_8.FIXED_N2	GC Dataset 8 Fixed N2
8787	PG_GC.GC_1.GC_8.FIXED_CO2	GC Dataset 8 Fixed CO2
8788	PG_GC.GC_1.GC_8.FIXED_CH4	GC Dataset 8 Fixed CH4
8789	PG_GC.GC_1.GC_8.FIXED_C2	GC Dataset 8 Fixed C2
8790	PG_GC.GC_1.GC_8.FIXED_C3	GC Dataset 8 Fixed C3
8791	PG_GC.GC_1.GC_8.FIXED_IC4	GC Dataset 8 Fixed IC4
8792	PG_GC.GC_1.GC_8.FIXED_NC4	GC Dataset 8 Fixed NC4
8793	PG_GC.GC_1.GC_8.FIXED_IC5	GC Dataset 8 Fixed IC5
8794	PG_GC.GC_1.GC_8.FIXED_NC5	GC Dataset 8 Fixed NC5
8795	PG_GC.GC_1.GC_8.FIXED_NC6	GC Dataset 8 Fixed NC6
8796	PG_GC.GC_1.GC_8.FIXED_NC7	GC Dataset 8 Fixed NC7
8797	PG_GC.GC_1.GC_8.FIXED_NC8	GC Dataset 8 Fixed NC8
8798	PG_GC.GC_1.GC_8.FIXED_NC9	GC Dataset 8 Fixed NC9
8799	PG_GC.GC_1.GC_8.FIXED_NC10	GC Dataset 8 Fixed NC10
8800	PG_GC.GC_1.GC_8.FIXED_H2O	GC Dataset 8 Fixed H2O
8801	PG_GC.GC_1.GC_8.FIXED_H2S	GC Dataset 8 Fixed H2S
8802	PG_GC.GC_1.GC_8.FIXED_H2	GC Dataset 8 Fixed H2
8803	PG_GC.GC_1.GC_8.FIXED_CO	GC Dataset 8 Fixed CO
8804	PG_GC.GC_1.GC_8.FIXED_O2	GC Dataset 8 Fixed O2
8805	PG_GC.GC_1.GC_8.FIXED_HE	GC Dataset 8 Fixed He

Reg#	Variable	Description
8806	PG_GC.GC_1.GC_8.FIXED_AR	GC Dataset 8 Fixed Ar
8807	PG_GC.GC_1.GC_8.FIXED_C6PLUS	GC Dataset 8 Fixed C6 Plus
8808	PG_GC.GC_1.GC_8.FIXED_C9PLUS	GC Dataset 8 Fixed C9 Plus
8809	PG_GC.GC_1.GC_8.FIXED_BTUSAT	GC Dataset 8 Fixed Saturated BTU
8810	MB.SPARE	
8811	MB.SPARE	
8812	MB.SPARE	
8813	MB.SPARE	
8814	MB.SPARE	
8815	MB.SPARE	
8816	MB.SPARE	
8817	MB.SPARE	
8818	MB.SPARE	
8819	MB.SPARE	
8820	MB.SPARE	
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Reg#	Variable	Description
8856	MB.SPARE	
8857	MB.SPARE	
8858	MB.SPARE	
8859	MB.SPARE	
8860	MB.SPARE	
8861	MB.SPARE	
8862	MB.SPARE	
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8897	MB.SPARE	
8898	MB.SPARE	
8899	MB.SPARE	
8900	MB.SPARE	
8901	MB.SPARE	
8902	MB.SPARE	
8903	MB.SPARE	
8904	MB.SPARE	
8905	MB.SPARE	

Reg#	Variable	Description
8906	MB.SPARE	
8907	MB.SPARE	
8908	MB.SPARE	
8909	MB.SPARE	
8910	MB.SPARE	
8911	MB.SPARE	
8912	MB.SPARE	
8913	MB.SPARE	
8914	PG_GC.GC_1.GC_1.TIMED_AR	GC Dataset 1 Timed Ar
8915	PG_GC.GC_1.GC_1.TIMED_BTU	GC Dataset 1 Timed BTU
8916	PG_GC.GC_1.GC_1.TIMED_BTUSAT	GC Dataset 1 Timed Saturated BTU
8917	PG_GC.GC_1.GC_1.TIMED_C2	GC Dataset 1 Timed C2
8918	PG_GC.GC_1.GC_1.TIMED_C3	GC Dataset 1 Timed C3
8919	PG_GC.GC_1.GC_1.TIMED_C6PLUS	GC Dataset 1 Timed C6 Plus
8920	PG_GC.GC_1.GC_1.TIMED_C9PLUS	GC Dataset 1 Timed C9 Plus
8921	PG_GC.GC_1.GC_1.TIMED_CH4	GC Dataset 1 Timed CH4
8922	PG_GC.GC_1.GC_1.TIMED_CO	GC Dataset 1 Timed CO
8923	PG_GC.GC_1.GC_1.TIMED_CO2	GC Dataset 1 Timed CO2
8924	PG_GC.GC_1.GC_1.TIMED_H2	GC Dataset 1 Timed H2
8925	PG_GC.GC_1.GC_1.TIMED_H2O	GC Dataset 1 Timed H2O
8926	PG_GC.GC_1.GC_1.TIMED_H2S	GC Dataset 1 Timed H2S
8927	PG_GC.GC_1.GC_1.TIMED_HE	GC Dataset 1 Timed He
8928	PG_GC.GC_1.GC_1.TIMED_IC4	GC Dataset 1 Timed IC4
8929	PG_GC.GC_1.GC_1.TIMED_IC5	GC Dataset 1 Timed IC5
8930	PG_GC.GC_1.GC_1.TIMED_N2	GC Dataset 1 Timed N2
8931	PG_GC.GC_1.GC_1.TIMED_NC10	GC Dataset 1 Timed NC10
8932	PG_GC.GC_1.GC_1.TIMED_NC4	GC Dataset 1 Timed NC4
8933	PG_GC.GC_1.GC_1.TIMED_NC5	GC Dataset 1 Timed NC5
8934	PG_GC.GC_1.GC_1.TIMED_NC6	GC Dataset 1 Timed NC6
8935	PG_GC.GC_1.GC_1.TIMED_NC7	GC Dataset 1 Timed NC7
8936	PG_GC.GC_1.GC_1.TIMED_NC8	GC Dataset 1 Timed NC8
8937	PG_GC.GC_1.GC_1.TIMED_NC9	GC Dataset 1 Timed NC9
8938	PG_GC.GC_1.GC_1.TIMED_NEOC5	GC Dataset 1 Timed Neo C5
8939	PG_GC.GC_1.GC_1.TIMED_O2	GC Dataset 1 Timed O2
8940	PG_GC.GC_1.GC_1.TIMED_SG	GC Dataset 1 Timed Specific Gravity
8941	MB.SPARE	Spare Register
8942	PG_GC.GC_1.GC_1.TIMED_DATE	GC Dataset 1 Date for Timed Registers to be copied to in use data
8943	PG_GC.GC_1.GC_1.TIMED_TIME	GC Dataset 1 Time for Timed Registers to be copied to in use data
8944	PG_GC.GC_1.GC_2.TIMED_AR	GC Dataset 2 Timed Ar
8945	PG_GC.GC_1.GC_2.TIMED_BTU	GC Dataset 2 Timed BTU
8946	PG_GC.GC_1.GC_2.TIMED_BTUSAT	GC Dataset 2 Timed Saturated BTU
8947	PG_GC.GC_1.GC_2.TIMED_C2	GC Dataset 2 Timed C2
8948	PG_GC.GC_1.GC_2.TIMED_C3	GC Dataset 2 Timed C3
8949	PG_GC.GC_1.GC_2.TIMED_C6PLUS	GC Dataset 2 Timed C6 Plus
8950	PG_GC.GC_1.GC_2.TIMED_C9PLUS	GC Dataset 2 Timed C9 Plus
8951	PG_GC.GC_1.GC_2.TIMED_CH4	GC Dataset 2 Timed CH4
8952	PG_GC.GC_1.GC_2.TIMED_CO	GC Dataset 2 Timed CO
8953	PG_GC.GC_1.GC_2.TIMED_CO2	GC Dataset 2 Timed CO2

Reg#	Variable	Description
8954	PG_GC.GC_1.GC_2.TIMED_H2	GC Dataset 2 Timed H2
8955	PG_GC.GC_1.GC_2.TIMED_H2O	GC Dataset 2 Timed H2O
8956	PG_GC.GC_1.GC_2.TIMED_H2S	GC Dataset 2 Timed H2S
8957	PG_GC.GC_1.GC_2.TIMED_HE	GC Dataset 2 Timed He
8958	PG_GC.GC_1.GC_2.TIMED_IC4	GC Dataset 2 Timed IC4
8959	PG_GC.GC_1.GC_2.TIMED_IC5	GC Dataset 2 Timed IC5
8960	PG_GC.GC_1.GC_2.TIMED_N2	GC Dataset 2 Timed N2
8961	PG_GC.GC_1.GC_2.TIMED_NC10	GC Dataset 2 Timed NC10
8962	PG_GC.GC_1.GC_2.TIMED_NC4	GC Dataset 2 Timed NC4
8963	PG_GC.GC_1.GC_2.TIMED_NC5	GC Dataset 2 Timed NC5
8964	PG_GC.GC_1.GC_2.TIMED_NC6	GC Dataset 2 Timed NC6
8965	PG_GC.GC_1.GC_2.TIMED_NC7	GC Dataset 2 Timed NC7
8966	PG_GC.GC_1.GC_2.TIMED_NC8	GC Dataset 2 Timed NC8
8967	PG_GC.GC_1.GC_2.TIMED_NC9	GC Dataset 2 Timed NC9
8968	PG_GC.GC_1.GC_2.TIMED_NEOC5	GC Dataset 2 Timed Neo C5
8969	PG_GC.GC_1.GC_2.TIMED_O2	GC Dataset 2 Timed O2
8970	PG_GC.GC_1.GC_2.TIMED_SG	GC Dataset 2 Timed Specific Gravity
8971	MB.SPARE	Spare Register
8972	PG_GC.GC_1.GC_2.TIMED_DATE	GC Dataset 2 Date for Timed Registers to be copied to in use data
8973	PG_GC.GC_1.GC_2.TIMED_TIME	GC Dataset 2 Time for Timed Registers to be copied to in use data
8974	PG_GC.GC_1.GC_3.TIMED_AR	GC Dataset 3 Timed Ar
8975	PG_GC.GC_1.GC_3.TIMED_BTU	GC Dataset 3 Timed BTU
8976	PG_GC.GC_1.GC_3.TIMED_BTUSAT	GC Dataset 3 Timed Saturated BTU
8977	PG_GC.GC_1.GC_3.TIMED_C2	GC Dataset 3 Timed C2
8978	PG_GC.GC_1.GC_3.TIMED_C3	GC Dataset 3 Timed C3
8979	PG_GC.GC_1.GC_3.TIMED_C6PLUS	GC Dataset 3 Timed C6 Plus
8980	PG_GC.GC_1.GC_3.TIMED_C9PLUS	GC Dataset 3 Timed C9 Plus
8981	PG_GC.GC_1.GC_3.TIMED_CH4	GC Dataset 3 Timed CH4
8982	PG_GC.GC_1.GC_3.TIMED_CO	GC Dataset 3 Timed CO
8983	PG_GC.GC_1.GC_3.TIMED_CO2	GC Dataset 3 Timed CO2
8984	PG_GC.GC_1.GC_3.TIMED_H2	GC Dataset 3 Timed H2
8985	PG_GC.GC_1.GC_3.TIMED_H2O	GC Dataset 3 Timed H2O
8986	PG_GC.GC_1.GC_3.TIMED_H2S	GC Dataset 3 Timed H2S
8987	PG_GC.GC_1.GC_3.TIMED_HE	GC Dataset 3 Timed He
8988	PG_GC.GC_1.GC_3.TIMED_IC4	GC Dataset 3 Timed IC4
8989	PG_GC.GC_1.GC_3.TIMED_IC5	GC Dataset 3 Timed IC5
8990	PG_GC.GC_1.GC_3.TIMED_N2	GC Dataset 3 Timed N2
8991	PG_GC.GC_1.GC_3.TIMED_NC10	GC Dataset 3 Timed NC10
8992	PG_GC.GC_1.GC_3.TIMED_NC4	GC Dataset 3 Timed NC4
8993	PG_GC.GC_1.GC_3.TIMED_NC5	GC Dataset 3 Timed NC5
8994	PG_GC.GC_1.GC_3.TIMED_NC6	GC Dataset 3 Timed NC6
8995	PG_GC.GC_1.GC_3.TIMED_NC7	GC Dataset 3 Timed NC7
8996	PG_GC.GC_1.GC_3.TIMED_NC8	GC Dataset 3 Timed NC8
8997	PG_GC.GC_1.GC_3.TIMED_NC9	GC Dataset 3 Timed NC9
8998	PG_GC.GC_1.GC_3.TIMED_NEOC5	GC Dataset 3 Timed Neo C5
8999	PG_GC.GC_1.GC_3.TIMED_O2	GC Dataset 3 Timed O2
9000	PG_GC.GC_1.GC_3.TIMED_SG	GC Dataset 3 Timed Specific Gravity
9001	MB.SPARE	Spare Register

Reg#	Variable	Description
9002	PG_GC.GC_1.GC_3.TIMED_DATE	GC Dataset 3 Date for Timed Registers to be copied to in use data
9003	PG_GC.GC_1.GC_3.TIMED_TIME	GC Dataset 3 Time for Timed Registers to be copied to in use data
9004	PG_GC.GC_1.GC_4.TIMED_AR	GC Dataset 4 Timed Ar
9005	PG_GC.GC_1.GC_4.TIMED_BTU	GC Dataset 4 Timed BTU
9006	PG_GC.GC_1.GC_4.TIMED_BTUSAT	GC Dataset 4 Timed Saturated BTU
9007	PG_GC.GC_1.GC_4.TIMED_C2	GC Dataset 4 Timed C2
9008	PG_GC.GC_1.GC_4.TIMED_C3	GC Dataset 4 Timed C3
9009	PG_GC.GC_1.GC_4.TIMED_C6PLUS	GC Dataset 4 Timed C6 Plus
9010	PG_GC.GC_1.GC_4.TIMED_C9PLUS	GC Dataset 4 Timed C9 Plus
9011	PG_GC.GC_1.GC_4.TIMED_CH4	GC Dataset 4 Timed CH4
9012	PG_GC.GC_1.GC_4.TIMED_CO	GC Dataset 4 Timed CO
9013	PG_GC.GC_1.GC_4.TIMED_CO2	GC Dataset 4 Timed CO2
9014	PG_GC.GC_1.GC_4.TIMED_H2	GC Dataset 4 Timed H2
9015	PG_GC.GC_1.GC_4.TIMED_H2O	GC Dataset 4 Timed H2O
9016	PG_GC.GC_1.GC_4.TIMED_H2S	GC Dataset 4 Timed H2S
9017	PG_GC.GC_1.GC_4.TIMED_HE	GC Dataset 4 Timed He
9018	PG_GC.GC_1.GC_4.TIMED_IC4	GC Dataset 4 Timed IC4
9019	PG_GC.GC_1.GC_4.TIMED_IC5	GC Dataset 4 Timed IC5
9020	PG_GC.GC_1.GC_4.TIMED_N2	GC Dataset 4 Timed N2
9021	PG_GC.GC_1.GC_4.TIMED_NC10	GC Dataset 4 Timed NC10
9022	PG_GC.GC_1.GC_4.TIMED_NC4	GC Dataset 4 Timed NC4
9023	PG_GC.GC_1.GC_4.TIMED_NC5	GC Dataset 4 Timed NC5
9024	PG_GC.GC_1.GC_4.TIMED_NC6	GC Dataset 4 Timed NC6
9025	PG_GC.GC_1.GC_4.TIMED_NC7	GC Dataset 4 Timed NC7
9026	PG_GC.GC_1.GC_4.TIMED_NC8	GC Dataset 4 Timed NC8
9027	PG_GC.GC_1.GC_4.TIMED_NC9	GC Dataset 4 Timed NC9
9028	PG_GC.GC_1.GC_4.TIMED_NEOC5	GC Dataset 4 Timed Neo C5
9029	PG_GC.GC_1.GC_4.TIMED_O2	GC Dataset 4 Timed O2
9030	PG_GC.GC_1.GC_4.TIMED_SG	GC Dataset 4 Timed Specific Gravity
9031	MB.SPARE	Spare Register
9032	PG_GC.GC_1.GC_4.TIMED_DATE	GC Dataset 4 Date for Timed Registers to be copied to in use data
9033	PG_GC.GC_1.GC_4.TIMED_TIME	GC Dataset 4 Time for Timed Registers to be copied to in use data
9034	PG_GC.GC_1.GC_5.TIMED_AR	GC Dataset 5 Timed Ar
9035	PG_GC.GC_1.GC_5.TIMED_BTU	GC Dataset 5 Timed BTU
9036	PG_GC.GC_1.GC_5.TIMED_BTUSAT	GC Dataset 5 Timed Saturated BTU
9037	PG_GC.GC_1.GC_5.TIMED_C2	GC Dataset 5 Timed C2
9038	PG_GC.GC_1.GC_5.TIMED_C3	GC Dataset 5 Timed C3
9039	PG_GC.GC_1.GC_5.TIMED_C6PLUS	GC Dataset 5 Timed C6 Plus
9040	PG_GC.GC_1.GC_5.TIMED_C9PLUS	GC Dataset 5 Timed C9 Plus
9041	PG_GC.GC_1.GC_5.TIMED_CH4	GC Dataset 5 Timed CH4
9042	PG_GC.GC_1.GC_5.TIMED_CO	GC Dataset 5 Timed CO
9043	PG_GC.GC_1.GC_5.TIMED_CO2	GC Dataset 5 Timed CO2
9044	PG_GC.GC_1.GC_5.TIMED_H2	GC Dataset 5 Timed H2
9045	PG_GC.GC_1.GC_5.TIMED_H2O	GC Dataset 5 Timed H2O
9046	PG_GC.GC_1.GC_5.TIMED_H2S	GC Dataset 5 Timed H2S
9047	PG_GC.GC_1.GC_5.TIMED_HE	GC Dataset 5 Timed He
9048	PG_GC.GC_1.GC_5.TIMED_IC4	GC Dataset 5 Timed IC4

Reg#	Variable	Description
9049	PG_GC.GC_1.GC_5.TIMED_IC5	GC Dataset 5 Timed IC5
9050	PG_GC.GC_1.GC_5.TIMED_N2	GC Dataset 5 Timed N2
9051	PG_GC.GC_1.GC_5.TIMED_NC10	GC Dataset 5 Timed NC10
9052	PG_GC.GC_1.GC_5.TIMED_NC4	GC Dataset 5 Timed NC4
9053	PG_GC.GC_1.GC_5.TIMED_NC5	GC Dataset 5 Timed NC5
9054	PG_GC.GC_1.GC_5.TIMED_NC6	GC Dataset 5 Timed NC6
9055	PG_GC.GC_1.GC_5.TIMED_NC7	GC Dataset 5 Timed NC7
9056	PG_GC.GC_1.GC_5.TIMED_NC8	GC Dataset 5 Timed NC8
9057	PG_GC.GC_1.GC_5.TIMED_NC9	GC Dataset 5 Timed NC9
9058	PG_GC.GC_1.GC_5.TIMED_NEOC5	GC Dataset 5 Timed Neo C5
9059	PG_GC.GC_1.GC_5.TIMED_O2	GC Dataset 5 Timed O2
9060	PG_GC.GC_1.GC_5.TIMED_SG	GC Dataset 5 Timed Specific Gravity
9061	MB.SPARE	Spare Register
9062	PG_GC.GC_1.GC_5.TIMED_DATE	GC Dataset 5 Date for Timed Registers to be copied to in use data
9063	PG_GC.GC_1.GC_5.TIMED_TIME	GC Dataset 5 Time for Timed Registers to be copied to in use data
9064	PG_GC.GC_1.GC_6.TIMED_AR	GC Dataset 6 Timed Ar
9065	PG_GC.GC_1.GC_6.TIMED_BTU	GC Dataset 6 Timed BTU
9066	PG_GC.GC_1.GC_6.TIMED_BTUSAT	GC Dataset 6 Timed Saturated BTU
9067	PG_GC.GC_1.GC_6.TIMED_C2	GC Dataset 6 Timed C2
9068	PG_GC.GC_1.GC_6.TIMED_C3	GC Dataset 6 Timed C3
9069	PG_GC.GC_1.GC_6.TIMED_C6PLUS	GC Dataset 6 Timed C6 Plus
9070	PG_GC.GC_1.GC_6.TIMED_C9PLUS	GC Dataset 6 Timed C9 Plus
9071	PG_GC.GC_1.GC_6.TIMED_CH4	GC Dataset 6 Timed CH4
9072	PG_GC.GC_1.GC_6.TIMED_CO	GC Dataset 6 Timed CO
9073	PG_GC.GC_1.GC_6.TIMED_CO2	GC Dataset 6 Timed CO2
9074	PG_GC.GC_1.GC_6.TIMED_H2	GC Dataset 6 Timed H2
9075	PG_GC.GC_1.GC_6.TIMED_H2O	GC Dataset 6 Timed H2O
9076	PG_GC.GC_1.GC_6.TIMED_H2S	GC Dataset 6 Timed H2S
9077	PG_GC.GC_1.GC_6.TIMED_HE	GC Dataset 6 Timed He
9078	PG_GC.GC_1.GC_6.TIMED_IC4	GC Dataset 6 Timed IC4
9079	PG_GC.GC_1.GC_6.TIMED_IC5	GC Dataset 6 Timed IC5
9080	PG_GC.GC_1.GC_6.TIMED_N2	GC Dataset 6 Timed N2
9081	PG_GC.GC_1.GC_6.TIMED_NC10	GC Dataset 6 Timed NC10
9082	PG_GC.GC_1.GC_6.TIMED_NC4	GC Dataset 6 Timed NC4
9083	PG_GC.GC_1.GC_6.TIMED_NC5	GC Dataset 6 Timed NC5
9084	PG_GC.GC_1.GC_6.TIMED_NC6	GC Dataset 6 Timed NC6
9085	PG_GC.GC_1.GC_6.TIMED_NC7	GC Dataset 6 Timed NC7
9086	PG_GC.GC_1.GC_6.TIMED_NC8	GC Dataset 6 Timed NC8
9087	PG_GC.GC_1.GC_6.TIMED_NC9	GC Dataset 6 Timed NC9
9088	PG_GC.GC_1.GC_6.TIMED_NEOC5	GC Dataset 6 Timed Neo C5
9089	PG_GC.GC_1.GC_6.TIMED_O2	GC Dataset 6 Timed O2
9090	PG_GC.GC_1.GC_6.TIMED_SG	GC Dataset 6 Timed Specific Gravity
9091	MB.SPARE	Spare Register
9092	PG_GC.GC_1.GC_6.TIMED_DATE	GC Dataset 6 Date for Timed Registers to be copied to in use data
9093	PG_GC.GC_1.GC_6.TIMED_TIME	GC Dataset 6 Time for Timed Registers to be copied to in use data
9094	PG_GC.GC_1.GC_7.TIMED_AR	GC Dataset 7 Timed Ar
9095	PG_GC.GC_1.GC_7.TIMED_BTU	GC Dataset 7 Timed BTU

Reg#	Variable	Description
9096	PG_GC.GC_1.GC_7.TIMED_BTUSAT	GC Dataset 7 Timed Saturated BTU
9097	PG_GC.GC_1.GC_7.TIMED_C2	GC Dataset 7 Timed C2
9098	PG_GC.GC_1.GC_7.TIMED_C3	GC Dataset 7 Timed C3
9099	PG_GC.GC_1.GC_7.TIMED_C6PLUS	GC Dataset 7 Timed C6 Plus
9100	PG_GC.GC_1.GC_7.TIMED_C9PLUS	GC Dataset 7 Timed C9 Plus
9101	PG_GC.GC_1.GC_7.TIMED_CH4	GC Dataset 7 Timed CH4
9102	PG_GC.GC_1.GC_7.TIMED_CO	GC Dataset 7 Timed CO
9103	PG_GC.GC_1.GC_7.TIMED_CO2	GC Dataset 7 Timed CO2
9104	PG_GC.GC_1.GC_7.TIMED_H2	GC Dataset 7 Timed H2
9105	PG_GC.GC_1.GC_7.TIMED_H2O	GC Dataset 7 Timed H2O
9106	PG_GC.GC_1.GC_7.TIMED_H2S	GC Dataset 7 Timed H2S
9107	PG_GC.GC_1.GC_7.TIMED_HE	GC Dataset 7 Timed He
9108	PG_GC.GC_1.GC_7.TIMED_IC4	GC Dataset 7 Timed IC4
9109	PG_GC.GC_1.GC_7.TIMED_IC5	GC Dataset 7 Timed IC5
9110	PG_GC.GC_1.GC_7.TIMED_N2	GC Dataset 7 Timed N2
9111	PG_GC.GC_1.GC_7.TIMED_NC10	GC Dataset 7 Timed NC10
9112	PG_GC.GC_1.GC_7.TIMED_NC4	GC Dataset 7 Timed NC4
9113	PG_GC.GC_1.GC_7.TIMED_NC5	GC Dataset 7 Timed NC5
9114	PG_GC.GC_1.GC_7.TIMED_NC6	GC Dataset 7 Timed NC6
9115	PG_GC.GC_1.GC_7.TIMED_NC7	GC Dataset 7 Timed NC7
9116	PG_GC.GC_1.GC_7.TIMED_NC8	GC Dataset 7 Timed NC8
9117	PG_GC.GC_1.GC_7.TIMED_NC9	GC Dataset 7 Timed NC9
9118	PG_GC.GC_1.GC_7.TIMED_NEOC5	GC Dataset 7 Timed Neo C5
9119	PG_GC.GC_1.GC_7.TIMED_O2	GC Dataset 7 Timed O2
9120	PG_GC.GC_1.GC_7.TIMED_SG	GC Dataset 7 Timed Specific Gravity
9121	MB.SPARE	Spare Register
9122	PG_GC.GC_1.GC_7.TIMED_DATE	GC Dataset 7 Date for Timed Registers to be copied to in use data
9123	PG_GC.GC_1.GC_7.TIMED_TIME	GC Dataset 7 Time for Timed Registers to be copied to in use data
9124	PG_GC.GC_1.GC_8.TIMED_AR	GC Dataset 8 Timed Ar
9125	PG_GC.GC_1.GC_8.TIMED_BTU	GC Dataset 8 Timed BTU
9126	PG_GC.GC_1.GC_8.TIMED_BTUSAT	GC Dataset 8 Timed Saturated BTU
9127	PG_GC.GC_1.GC_8.TIMED_C2	GC Dataset 8 Timed C2
9128	PG_GC.GC_1.GC_8.TIMED_C3	GC Dataset 8 Timed C3
9129	PG_GC.GC_1.GC_8.TIMED_C6PLUS	GC Dataset 8 Timed C6 Plus
9130	PG_GC.GC_1.GC_8.TIMED_C9PLUS	GC Dataset 8 Timed C9 Plus
9131	PG_GC.GC_1.GC_8.TIMED_CH4	GC Dataset 8 Timed CH4
9132	PG_GC.GC_1.GC_8.TIMED_CO	GC Dataset 8 Timed CO
9133	PG_GC.GC_1.GC_8.TIMED_CO2	GC Dataset 8 Timed CO2
9134	PG_GC.GC_1.GC_8.TIMED_H2	GC Dataset 8 Timed H2
9135	PG_GC.GC_1.GC_8.TIMED_H2O	GC Dataset 8 Timed H2O
9136	PG_GC.GC_1.GC_8.TIMED_H2S	GC Dataset 8 Timed H2S
9137	PG_GC.GC_1.GC_8.TIMED_HE	GC Dataset 8 Timed He
9138	PG_GC.GC_1.GC_8.TIMED_IC4	GC Dataset 8 Timed IC4
9139	PG_GC.GC_1.GC_8.TIMED_IC5	GC Dataset 8 Timed IC5
9140	PG_GC.GC_1.GC_8.TIMED_N2	GC Dataset 8 Timed N2
9141	PG_GC.GC_1.GC_8.TIMED_NC10	GC Dataset 8 Timed NC10
9142	PG_GC.GC_1.GC_8.TIMED_NC4	GC Dataset 8 Timed NC4
9143	PG_GC.GC_1.GC_8.TIMED_NC5	GC Dataset 8 Timed NC5

Reg#	Variable	Description
9144	PG_GC.GC_1.GC_8.TIMED_NC6	GC Dataset 8 Timed NC6
9145	PG_GC.GC_1.GC_8.TIMED_NC7	GC Dataset 8 Timed NC7
9146	PG_GC.GC_1.GC_8.TIMED_NC8	GC Dataset 8 Timed NC8
9147	PG_GC.GC_1.GC_8.TIMED_NC9	GC Dataset 8 Timed NC9
9148	PG_GC.GC_1.GC_8.TIMED_NEOC5	GC Dataset 8 Timed Neo C5
9149	PG_GC.GC_1.GC_8.TIMED_O2	GC Dataset 8 Timed O2
9150	PG_GC.GC_1.GC_8.TIMED_SG	GC Dataset 8 Timed Specific Gravity
9151	MB.SPARE	Spare Register
9152	PG_GC.GC_1.GC_8.TIMED_DATE	GC Dataset 8 Date for Timed Registers to be copied to in use data
9153	PG_GC.GC_1.GC_8.TIMED_TIME	GC Dataset 8 Time for Timed Registers to be copied to in use data
9154	MB.SPARE	
9155	MB.SPARE	
9156	MB.SPARE	
9157	MB.SPARE	
9158	MB.SPARE	
9159	MB.SPARE	
9160	MB.SPARE	
9161	MB.SPARE	
9162	MB.SPARE	
9163	MB.SPARE	
9164	MB.SPARE	
9165	MB.SPARE	
9166	MB.SPARE	
9167	MB.SPARE	
9168	MB.SPARE	
9169	MB.SPARE	
9170	MB.SPARE	
9171	MB.SPARE	
9172	MB.SPARE	
9173	MB.SPARE	
9174	MB.SPARE	
9175	MB.SPARE	
9176	MB.SPARE	
9177	MB.SPARE	
9178	MB.SPARE	
9179	MB.SPARE	
9180	MB.SPARE	
9181	MB.SPARE	
9182	MB.SPARE	
9183	MB.SPARE	
9184	MB.SPARE	
9185	MB.SPARE	
9186	MB.SPARE	
9187	MB.SPARE	
9188	MB.SPARE	
9189	MB.SPARE	
9190	MB.SPARE	
9191	MB.SPARE	

Reg#	Variable	Description
9192	MB.SPARE	
9193	MB.SPARE	
9194	MB.SPARE	
9195	MB.SPARE	
9196	MB.SPARE	
9197	MB.SPARE	
9198	MB.SPARE	
9199	MB.SPARE	
9200	MB.SPARE	
9201	MB.SPARE	
9202	MB.SPARE	
9203	MB.SPARE	
9204	MB.SPARE	
9205	MB.SPARE	
9206	MB.SPARE	
9207	MB.SPARE	
9208	MB.SPARE	
9209	MB.SPARE	
9210	MB.SPARE	
9211	MB.SPARE	
9212	MB.SPARE	
9213	MB.SPARE	
9214	MB.SPARE	
9215	MB.SPARE	
9216	MB.SPARE	
9217	MB.SPARE	
9218	MB.SPARE	
9219	MB.SPARE	
9220	MB.SPARE	
9221	MB.SPARE	
9222	MB.SPARE	
9223	MB.SPARE	
9224	MB.SPARE	
9225	MB.SPARE	
9226	MB.SPARE	
9227	MB.SPARE	
9228	MB.SPARE	
9229	MB.SPARE	
9230	MB.SPARE	
9231	MB.SPARE	
9232	MB.SPARE	
9233	MB.SPARE	
9234	MB.SPARE	
9235	MB.SPARE	
9236	MB.SPARE	
9237	MB.SPARE	
9238	MB.SPARE	
9239	MB.SPARE	
9240	MB.SPARE	
9241	MB.SPARE	

Reg#	Variable	Description
9242	MB.SPARE	
9243	MB.SPARE	
9244	MB.SPARE	
9245	MB.SPARE	
9246	MB.SPARE	
9247	MB.SPARE	
9248	MB.SPARE	
9249	MB.SPARE	
9250	MB.SPARE	
9251	MB.SPARE	
9252	MB.SPARE	
9253	MB.SPARE	
9254	MB.SPARE	
9255	MB.SPARE	
9256	MB.SPARE	
9257	MB.SPARE	
9258	MB.SPARE	
9259	MB.SPARE	
9260	MB.SPARE	
9261	MB.SPARE	
9262	MB.SPARE	
9263	MB.SPARE	
9264	MB.SPARE	
9265	MB.SPARE	
9266	MB.SPARE	
9267	MB.SPARE	
9268	MB.SPARE	
9269	MB.SPARE	
9270	MB.SPARE	
9271	MB.SPARE	
9272	MB.SPARE	
9273	MB.SPARE	
9274	PG_GC.GC_1.USER1CODE_AR	
9275	MB.SPARE	
9276	MB.SPARE	
9277	PG_GC.GC_1.USER1CODE_C2	
9278	PG_GC.GC_1.USER1CODE_C3	
9279	PG_GC.GC_1.USER1CODE_C6PLUS	
9280	PG_GC.GC_1.USER1CODE_C9PLUS	
9281	PG_GC.GC_1.USER1CODE_CH4	
9282	PG_GC.GC_1.USER1CODE_CO	
9283	PG_GC.GC_1.USER1CODE_CO2	
9284	PG_GC.GC_1.USER1CODE_H2	
9285	PG_GC.GC_1.USER1CODE_H2O	
9286	PG_GC.GC_1.USER1CODE_H2S	
9287	PG_GC.GC_1.USER1CODE_HE	
9288	PG_GC.GC_1.USER1CODE_IC4	
9289	PG_GC.GC_1.USER1CODE_IC5	
9290	PG_GC.GC_1.USER1CODE_N2	
9291	PG_GC.GC_1.USER1CODE_NC10	

Reg#	Variable	Description
9292	PG_GC.GC_1.USER1CODE_NC4	
9293	PG_GC.GC_1.USER1CODE_NC5	
9294	PG_GC.GC_1.USER1CODE_NC6	
9295	PG_GC.GC_1.USER1CODE_NC7	
9296	PG_GC.GC_1.USER1CODE_NC8	
9297	PG_GC.GC_1.USER1CODE_NC9	
9298	PG_GC.GC_1.USER1CODE_NEOC5	
9299	PG_GC.GC_1.USER1CODE_O2	
9300	MB.SPARE	
9301	MB.SPARE	
9302	PG_GC.GC_1.GC_1.TOTAL_MIN	GC Dataset 1 Minimum Limit for total sum of all components
9303	PG_GC.GC_1.GC_1.TOTAL_MAX	GC Dataset 1 Maximum Limit for total sum of all components
9304	PG_GC.GC_1.GC_1.S1_BTU_MIN	GC Dataset 1 Minimum Limit for BTU
9305	PG_GC.GC_1.GC_1.S1_BTU_MAX	GC Dataset 1 Maximum Limit for BTU
9306	PG_GC.GC_1.GC_1.S1_SG_MIN	GC Dataset 1 Minimum Limit for Specifc Gravity
9307	PG_GC.GC_1.GC_1.S1_SG_MAX	GC Dataset 1 Maximum Limit for Specifc Gravity
9308	PG_GC.GC_1.GC_1.S1_N2_MIN	GC Dataset 1 Minimum Limit for Nitrogen
9309	PG_GC.GC_1.GC_1.S1_N2_MAX	GC Dataset 1 Maximum Limit for Nitrogen
9310	PG_GC.GC_1.GC_1.S1_CO2_MIN	GC Dataset 1 Minimum Limit for CO2
9311	PG_GC.GC_1.GC_1.S1_CO2_MAX	GC Dataset 1 Maximum Limit for CO2
9312	PG_GC.GC_1.GC_1.S1_CH4_MIN	GC Dataset 1 Minimum Limit for Methane
9313	PG_GC.GC_1.GC_1.S1_CH4_MAX	GC Dataset 1 Maximum Limit for Methane
9314	PG_GC.GC_1.GC_1.S1_C2_MIN	GC Dataset 1 Minimum Limit for C2
9315	PG_GC.GC_1.GC_1.S1_C2_MAX	GC Dataset 1 Maximum Limit for C2
9316	PG_GC.GC_1.GC_1.S1_C3_MIN	GC Dataset 1 Minimum Limit for C3
9317	PG_GC.GC_1.GC_1.S1_C3_MAX	GC Dataset 1 Maximum Limit for C3
9318	PG_GC.GC_1.GC_1.S1_IC4_MIN	GC Dataset 1 Minimum Limit for IC4
9319	PG_GC.GC_1.GC_1.S1_IC4_MAX	GC Dataset 1 Maximum Limit for IC4
9320	PG_GC.GC_1.GC_1.S1_NC4_MIN	GC Dataset 1 Minimum Limit for NC4
9321	PG_GC.GC_1.GC_1.S1_NC4_MAX	GC Dataset 1 Maximum Limit for NC4
9322	PG_GC.GC_1.GC_1.S1_NEOC5_MIN	GC Dataset 1 Minimum Limit for Neo C5
9323	PG_GC.GC_1.GC_1.S1_NEOC5_MAX	GC Dataset 1 Maximum Limit for Neo C5
9324	PG_GC.GC_1.GC_1.S1_IC5_MIN	GC Dataset 1 Minimum Limit for IC5
9325	PG_GC.GC_1.GC_1.S1_IC5_MAX	GC Dataset 1 Maximum Limit for IC5
9326	PG_GC.GC_1.GC_1.S1_NC5_MIN	GC Dataset 1 Minimum Limit for NC5
9327	PG_GC.GC_1.GC_1.S1_NC5_MAX	GC Dataset 1 Maximum Limit for NC5
9328	PG_GC.GC_1.GC_1.S1_NC6_MIN	GC Dataset 1 Minimum Limit for NC6
9329	PG_GC.GC_1.GC_1.S1_NC6_MAX	GC Dataset 1 Maximum Limit for NC6
9330	PG_GC.GC_1.GC_1.S1_NC7_MIN	GC Dataset 1 Minimum Limit for NC7
9331	PG_GC.GC_1.GC_1.S1_NC7_MAX	GC Dataset 1 Maximum Limit for NC7
9332	PG_GC.GC_1.GC_1.S1_NC8_MIN	GC Dataset 1 Minimum Limit for NC8
9333	PG_GC.GC_1.GC_1.S1_NC8_MAX	GC Dataset 1 Maximum Limit for NC8
9334	PG_GC.GC_1.GC_1.S1_NC9_MIN	GC Dataset 1 Minimum Limit for NC9
9335	PG_GC.GC_1.GC_1.S1_NC9_MAX	GC Dataset 1 Maximum Limit for NC9
9336	PG_GC.GC_1.GC_1.S1_NC10_MIN	GC Dataset 1 Minimum Limit for NC10
9337	PG_GC.GC_1.GC_1.S1_NC10_MAX	GC Dataset 1 Maximum Limit for NC10
9338	PG_GC.GC_1.GC_1.S1_H2O_MIN	GC Dataset 1 Minimum Limit for H2O
9339	PG_GC.GC_1.GC_1.S1_H2O_MAX	GC Dataset 1 Maximum Limit for H2O

Reg#	Variable	Description
9340	PG_GC.GC_1.GC_1.S1_H2S_MIN	GC Dataset 1 Minimum Limit for H2S
9341	PG_GC.GC_1.GC_1.S1_H2S_MAX	GC Dataset 1 Maximum Limit for H2S
9342	PG_GC.GC_1.GC_1.S1_H2_MIN	GC Dataset 1 Minimum Limit for H2
9343	PG_GC.GC_1.GC_1.S1_H2_MAX	GC Dataset 1 Maximum Limit for H2
9344	PG_GC.GC_1.GC_1.S1_CO_MIN	GC Dataset 1 Minimum Limit for CO
9345	PG_GC.GC_1.GC_1.S1_CO_MAX	GC Dataset 1 Maximum Limit for CO
9346	PG_GC.GC_1.GC_1.S1_O2_MIN	GC Dataset 1 Minimum Limit for O2
9347	PG_GC.GC_1.GC_1.S1_O2_MAX	GC Dataset 1 Maximum Limit for O2
9348	PG_GC.GC_1.GC_1.S1_HE_MIN	GC Dataset 1 Minimum Limit for He
9349	PG_GC.GC_1.GC_1.S1_HE_MAX	GC Dataset 1 Maximum Limit for He
9350	PG_GC.GC_1.GC_1.S1_AR_MIN	GC Dataset 1 Minimum Limit for Ar
9351	PG_GC.GC_1.GC_1.S1_AR_MAX	GC Dataset 1 Maximum Limit for Ar
9352	PG_GC.GC_1.GC_2.TOTAL_MIN	GC Dataset 2 Minimum Limit for total sum of all components
9353	PG_GC.GC_1.GC_2.TOTAL_MAX	GC Dataset 2 Maximum Limit for total sum of all components
9354	PG_GC.GC_1.GC_2.S1_BTU_MIN	GC Dataset 2 Minimum Limit for BTU
9355	PG_GC.GC_1.GC_2.S1_BTU_MAX	GC Dataset 2 Maximum Limit for BTU
9356	PG_GC.GC_1.GC_2.S1_SG_MIN	GC Dataset 2 Minimum Limit for Specifc Gravity
9357	PG_GC.GC_1.GC_2.S1_SG_MAX	GC Dataset 2 Maximum Limit for Specifc Gravity
9358	PG_GC.GC_1.GC_2.S1_N2_MIN	GC Dataset 2 Minimum Limit for Nitrogen
9359	PG_GC.GC_1.GC_2.S1_N2_MAX	GC Dataset 2 Maximum Limit for Nitrogen
9360	PG_GC.GC_1.GC_2.S1_CO2_MIN	GC Dataset 2 Minimum Limit for CO2
9361	PG_GC.GC_1.GC_2.S1_CO2_MAX	GC Dataset 2 Maximum Limit for CO2
9362	PG_GC.GC_1.GC_2.S1_CH4_MIN	GC Dataset 2 Minimum Limit for Methane
9363	PG_GC.GC_1.GC_2.S1_CH4_MAX	GC Dataset 2 Maximum Limit for Methane
9364	PG_GC.GC_1.GC_2.S1_C2_MIN	GC Dataset 2 Minimum Limit for C2
9365	PG_GC.GC_1.GC_2.S1_C2_MAX	GC Dataset 2 Maximum Limit for C2
9366	PG_GC.GC_1.GC_2.S1_C3_MIN	GC Dataset 2 Minimum Limit for C3
9367	PG_GC.GC_1.GC_2.S1_C3_MAX	GC Dataset 2 Maximum Limit for C3
9368	PG_GC.GC_1.GC_2.S1_IC4_MIN	GC Dataset 2 Minimum Limit for IC4
9369	PG_GC.GC_1.GC_2.S1_IC4_MAX	GC Dataset 2 Maximum Limit for IC4
9370	PG_GC.GC_1.GC_2.S1_NC4_MIN	GC Dataset 2 Minimum Limit for NC4
9371	PG_GC.GC_1.GC_2.S1_NC4_MAX	GC Dataset 2 Maximum Limit for NC4
9372	PG_GC.GC_1.GC_2.S1_NEOC5_MIN	GC Dataset 2 Minimum Limit for Neo C5
9373	PG_GC.GC_1.GC_2.S1_NEOC5_MAX	GC Dataset 2 Maximum Limit for Neo C5
9374	PG_GC.GC_1.GC_2.S1_IC5_MIN	GC Dataset 2 Minimum Limit for IC5
9375	PG_GC.GC_1.GC_2.S1_IC5_MAX	GC Dataset 2 Maximum Limit for IC5
9376	PG_GC.GC_1.GC_2.S1_NC5_MIN	GC Dataset 2 Minimum Limit for NC5
9377	PG_GC.GC_1.GC_2.S1_NC5_MAX	GC Dataset 2 Maximum Limit for NC5
9378	PG_GC.GC_1.GC_2.S1_NC6_MIN	GC Dataset 2 Minimum Limit for NC6
9379	PG_GC.GC_1.GC_2.S1_NC6_MAX	GC Dataset 2 Maximum Limit for NC6
9380	PG_GC.GC_1.GC_2.S1_NC7_MIN	GC Dataset 2 Minimum Limit for NC7
9381	PG_GC.GC_1.GC_2.S1_NC7_MAX	GC Dataset 2 Maximum Limit for NC7
9382	PG_GC.GC_1.GC_2.S1_NC8_MIN	GC Dataset 2 Minimum Limit for NC8
9383	PG_GC.GC_1.GC_2.S1_NC8_MAX	GC Dataset 2 Maximum Limit for NC8
9384	PG_GC.GC_1.GC_2.S1_NC9_MIN	GC Dataset 2 Minimum Limit for NC9
9385	PG_GC.GC_1.GC_2.S1_NC9_MAX	GC Dataset 2 Maximum Limit for NC9
9386	PG_GC.GC_1.GC_2.S1_NC10_MIN	GC Dataset 2 Minimum Limit for NC10
9387	PG_GC.GC_1.GC_2.S1_NC10_MAX	GC Dataset 2 Maximum Limit for NC10

Reg#	Variable	Description
9388	PG_GC.GC_1.GC_2.S1_H2O_MIN	GC Dataset 2 Minimum Limit for H2O
9389	PG_GC.GC_1.GC_2.S1_H2O_MAX	GC Dataset 2 Maximum Limit for H2O
9390	PG_GC.GC_1.GC_2.S1_H2S_MIN	GC Dataset 2 Minimum Limit for H2S
9391	PG_GC.GC_1.GC_2.S1_H2S_MAX	GC Dataset 2 Maximum Limit for H2S
9392	PG_GC.GC_1.GC_2.S1_H2_MIN	GC Dataset 2 Minimum Limit for H2
9393	PG_GC.GC_1.GC_2.S1_H2_MAX	GC Dataset 2 Maximum Limit for H2
9394	PG_GC.GC_1.GC_2.S1_CO_MIN	GC Dataset 2 Minimum Limit for CO
9395	PG_GC.GC_1.GC_2.S1_CO_MAX	GC Dataset 2 Maximum Limit for CO
9396	PG_GC.GC_1.GC_2.S1_O2_MIN	GC Dataset 2 Minimum Limit for O2
9397	PG_GC.GC_1.GC_2.S1_O2_MAX	GC Dataset 2 Maximum Limit for O2
9398	PG_GC.GC_1.GC_2.S1_HE_MIN	GC Dataset 2 Minimum Limit for He
9399	PG_GC.GC_1.GC_2.S1_HE_MAX	GC Dataset 2 Maximum Limit for He
9400	PG_GC.GC_1.GC_2.S1_AR_MIN	GC Dataset 2 Minimum Limit for Ar
9401	PG_GC.GC_1.GC_2.S1_AR_MAX	GC Dataset 2 Maximum Limit for Ar
9402	PG_GC.GC_1.GC_3.TOTAL_MIN	GC Dataset 3 Minimum Limit for total sum of all components
9403	PG_GC.GC_1.GC_3.TOTAL_MAX	GC Dataset 3 Maximum Limit for total sum of all components
9404	PG_GC.GC_1.GC_3.S1_BTU_MIN	GC Dataset 3 Minimum Limit for BTU
9405	PG_GC.GC_1.GC_3.S1_BTU_MAX	GC Dataset 3 Maximum Limit for BTU
9406	PG_GC.GC_1.GC_3.S1_SG_MIN	GC Dataset 3 Minimum Limit for Specifc Gravity
9407	PG_GC.GC_1.GC_3.S1_SG_MAX	GC Dataset 3 Maximum Limit for Specifc Gravity
9408	PG_GC.GC_1.GC_3.S1_N2_MIN	GC Dataset 3 Minimum Limit for Nitrogen
9409	PG_GC.GC_1.GC_3.S1_N2_MAX	GC Dataset 3 Maximum Limit for Nitrogen
9410	PG_GC.GC_1.GC_3.S1_CO2_MIN	GC Dataset 3 Minimum Limit for CO2
9411	PG_GC.GC_1.GC_3.S1_CO2_MAX	GC Dataset 3 Maximum Limit for CO2
9412	PG_GC.GC_1.GC_3.S1_CH4_MIN	GC Dataset 3 Minimum Limit for Methane
9413	PG_GC.GC_1.GC_3.S1_CH4_MAX	GC Dataset 3 Maximum Limit for Methane
9414	PG_GC.GC_1.GC_3.S1_C2_MIN	GC Dataset 3 Minimum Limit for C2
9415	PG_GC.GC_1.GC_3.S1_C2_MAX	GC Dataset 3 Maximum Limit for C2
9416	PG_GC.GC_1.GC_3.S1_C3_MIN	GC Dataset 3 Minimum Limit for C3
9417	PG_GC.GC_1.GC_3.S1_C3_MAX	GC Dataset 3 Maximum Limit for C3
9418	PG_GC.GC_1.GC_3.S1_IC4_MIN	GC Dataset 3 Minimum Limit for IC4
9419	PG_GC.GC_1.GC_3.S1_IC4_MAX	GC Dataset 3 Maximum Limit for IC4
9420	PG_GC.GC_1.GC_3.S1_NC4_MIN	GC Dataset 3 Minimum Limit for NC4
9421	PG_GC.GC_1.GC_3.S1_NC4_MAX	GC Dataset 3 Maximum Limit for NC4
9422	PG_GC.GC_1.GC_3.S1_NEOC5_MIN	GC Dataset 3 Minimum Limit for Neo C5
9423	PG_GC.GC_1.GC_3.S1_NEOC5_MAX	GC Dataset 3 Maximum Limit for Neo C5
9424	PG_GC.GC_1.GC_3.S1_IC5_MIN	GC Dataset 3 Minimum Limit for IC5
9425	PG_GC.GC_1.GC_3.S1_IC5_MAX	GC Dataset 3 Maximum Limit for IC5
9426	PG_GC.GC_1.GC_3.S1_NC5_MIN	GC Dataset 3 Minimum Limit for NC5
9427	PG_GC.GC_1.GC_3.S1_NC5_MAX	GC Dataset 3 Maximum Limit for NC5
9428	PG_GC.GC_1.GC_3.S1_NC6_MIN	GC Dataset 3 Minimum Limit for NC6
9429	PG_GC.GC_1.GC_3.S1_NC6_MAX	GC Dataset 3 Maximum Limit for NC6
9430	PG_GC.GC_1.GC_3.S1_NC7_MIN	GC Dataset 3 Minimum Limit for NC7
9431	PG_GC.GC_1.GC_3.S1_NC7_MAX	GC Dataset 3 Maximum Limit for NC7
9432	PG_GC.GC_1.GC_3.S1_NC8_MIN	GC Dataset 3 Minimum Limit for NC8
9433	PG_GC.GC_1.GC_3.S1_NC8_MAX	GC Dataset 3 Maximum Limit for NC8
9434	PG_GC.GC_1.GC_3.S1_NC9_MIN	GC Dataset 3 Minimum Limit for NC9
9435	PG_GC.GC_1.GC_3.S1_NC9_MAX	GC Dataset 3 Maximum Limit for NC9

Reg#	Variable	Description
9436	PG_GC.GC_1.GC_3.S1_NC10_MIN	GC Dataset 3 Minimum Limit for NC10
9437	PG_GC.GC_1.GC_3.S1_NC10_MAX	GC Dataset 3 Maximum Limit for NC10
9438	PG_GC.GC_1.GC_3.S1_H2O_MIN	GC Dataset 3 Minimum Limit for H2O
9439	PG_GC.GC_1.GC_3.S1_H2O_MAX	GC Dataset 3 Maximum Limit for H2O
9440	PG_GC.GC_1.GC_3.S1_H2S_MIN	GC Dataset 3 Minimum Limit for H2S
9441	PG_GC.GC_1.GC_3.S1_H2S_MAX	GC Dataset 3 Maximum Limit for H2S
9442	PG_GC.GC_1.GC_3.S1_H2_MIN	GC Dataset 3 Minimum Limit for H2
9443	PG_GC.GC_1.GC_3.S1_H2_MAX	GC Dataset 3 Maximum Limit for H2
9444	PG_GC.GC_1.GC_3.S1_CO_MIN	GC Dataset 3 Minimum Limit for CO
9445	PG_GC.GC_1.GC_3.S1_CO_MAX	GC Dataset 3 Maximum Limit for CO
9446	PG_GC.GC_1.GC_3.S1_O2_MIN	GC Dataset 3 Minimum Limit for O2
9447	PG_GC.GC_1.GC_3.S1_O2_MAX	GC Dataset 3 Maximum Limit for O2
9448	PG_GC.GC_1.GC_3.S1_HE_MIN	GC Dataset 3 Minimum Limit for He
9449	PG_GC.GC_1.GC_3.S1_HE_MAX	GC Dataset 3 Maximum Limit for He
9450	PG_GC.GC_1.GC_3.S1_AR_MIN	GC Dataset 3 Minimum Limit for Ar
9451	PG_GC.GC_1.GC_3.S1_AR_MAX	GC Dataset 3 Maximum Limit for Ar
9452	PG_GC.GC_1.GC_4.TOTAL_MIN	GC Dataset 4 Minimum Limit for total sum of all components
9453	PG_GC.GC_1.GC_4.TOTAL_MAX	GC Dataset 4 Maximum Limit for total sum of all components
9454	PG_GC.GC_1.GC_4.S1_BTU_MIN	GC Dataset 4 Minimum Limit for BTU
9455	PG_GC.GC_1.GC_4.S1_BTU_MAX	GC Dataset 4 Maximum Limit for BTU
9456	PG_GC.GC_1.GC_4.S1_SG_MIN	GC Dataset 4 Minimum Limit for Specifc Gravity
9457	PG_GC.GC_1.GC_4.S1_SG_MAX	GC Dataset 4 Maximum Limit for Specifc Gravity
9458	PG_GC.GC_1.GC_4.S1_N2_MIN	GC Dataset 4 Minimum Limit for Nitrogen
9459	PG_GC.GC_1.GC_4.S1_N2_MAX	GC Dataset 4 Maximum Limit for Nitrogen
9460	PG_GC.GC_1.GC_4.S1_CO2_MIN	GC Dataset 4 Minimum Limit for CO2
9461	PG_GC.GC_1.GC_4.S1_CO2_MAX	GC Dataset 4 Maximum Limit for CO2
9462	PG_GC.GC_1.GC_4.S1_CH4_MIN	GC Dataset 4 Minimum Limit for Methane
9463	PG_GC.GC_1.GC_4.S1_CH4_MAX	GC Dataset 4 Maximum Limit for Methane
9464	PG_GC.GC_1.GC_4.S1_C2_MIN	GC Dataset 4 Minimum Limit for C2
9465	PG_GC.GC_1.GC_4.S1_C2_MAX	GC Dataset 4 Maximum Limit for C2
9466	PG_GC.GC_1.GC_4.S1_C3_MIN	GC Dataset 4 Minimum Limit for C3
9467	PG_GC.GC_1.GC_4.S1_C3_MAX	GC Dataset 4 Maximum Limit for C3
9468	PG_GC.GC_1.GC_4.S1_IC4_MIN	GC Dataset 4 Minimum Limit for IC4
9469	PG_GC.GC_1.GC_4.S1_IC4_MAX	GC Dataset 4 Maximum Limit for IC4
9470	PG_GC.GC_1.GC_4.S1_NC4_MIN	GC Dataset 4 Minimum Limit for NC4
9471	PG_GC.GC_1.GC_4.S1_NC4_MAX	GC Dataset 4 Maximum Limit for NC4
9472	PG_GC.GC_1.GC_4.S1_NEOC5_MIN	GC Dataset 4 Minimum Limit for Neo C5
9473	PG_GC.GC_1.GC_4.S1_NEOC5_MAX	GC Dataset 4 Maximum Limit for Neo C5
9474	PG_GC.GC_1.GC_4.S1_IC5_MIN	GC Dataset 4 Minimum Limit for IC5
9475	PG_GC.GC_1.GC_4.S1_IC5_MAX	GC Dataset 4 Maximum Limit for IC5
9476	PG_GC.GC_1.GC_4.S1_NC5_MIN	GC Dataset 4 Minimum Limit for NC5
9477	PG_GC.GC_1.GC_4.S1_NC5_MAX	GC Dataset 4 Maximum Limit for NC5
9478	PG_GC.GC_1.GC_4.S1_NC6_MIN	GC Dataset 4 Minimum Limit for NC6
9479	PG_GC.GC_1.GC_4.S1_NC6_MAX	GC Dataset 4 Maximum Limit for NC6
9480	PG_GC.GC_1.GC_4.S1_NC7_MIN	GC Dataset 4 Minimum Limit for NC7
9481	PG_GC.GC_1.GC_4.S1_NC7_MAX	GC Dataset 4 Maximum Limit for NC7
9482	PG_GC.GC_1.GC_4.S1_NC8_MIN	GC Dataset 4 Minimum Limit for NC8
9483	PG_GC.GC_1.GC_4.S1_NC8_MAX	GC Dataset 4 Maximum Limit for NC8

Reg#	Variable	Description
9484	PG_GC.GC_1.GC_4.S1_NC9_MIN	GC Dataset 4 Minimum Limit for NC9
9485	PG_GC.GC_1.GC_4.S1_NC9_MAX	GC Dataset 4 Maximum Limit for NC9
9486	PG_GC.GC_1.GC_4.S1_NC10_MIN	GC Dataset 4 Minimum Limit for NC10
9487	PG_GC.GC_1.GC_4.S1_NC10_MAX	GC Dataset 4 Maximum Limit for NC10
9488	PG_GC.GC_1.GC_4.S1_H2O_MIN	GC Dataset 4 Minimum Limit for H2O
9489	PG_GC.GC_1.GC_4.S1_H2O_MAX	GC Dataset 4 Maximum Limit for H2O
9490	PG_GC.GC_1.GC_4.S1_H2S_MIN	GC Dataset 4 Minimum Limit for H2S
9491	PG_GC.GC_1.GC_4.S1_H2S_MAX	GC Dataset 4 Maximum Limit for H2S
9492	PG_GC.GC_1.GC_4.S1_H2_MIN	GC Dataset 4 Minimum Limit for H2
9493	PG_GC.GC_1.GC_4.S1_H2_MAX	GC Dataset 4 Maximum Limit for H2
9494	PG_GC.GC_1.GC_4.S1_CO_MIN	GC Dataset 4 Minimum Limit for CO
9495	PG_GC.GC_1.GC_4.S1_CO_MAX	GC Dataset 4 Maximum Limit for CO
9496	PG_GC.GC_1.GC_4.S1_O2_MIN	GC Dataset 4 Minimum Limit for O2
9497	PG_GC.GC_1.GC_4.S1_O2_MAX	GC Dataset 4 Maximum Limit for O2
9498	PG_GC.GC_1.GC_4.S1_HE_MIN	GC Dataset 4 Minimum Limit for He
9499	PG_GC.GC_1.GC_4.S1_HE_MAX	GC Dataset 4 Maximum Limit for He
9500	PG_GC.GC_1.GC_4.S1_AR_MIN	GC Dataset 4 Minimum Limit for Ar
9501	PG_GC.GC_1.GC_4.S1_AR_MAX	GC Dataset 4 Maximum Limit for Ar
9502	PG_GC.GC_1.GC_5.TOTAL_MIN	GC Dataset 5 Minimum Limit for total sum of all components
9503	PG_GC.GC_1.GC_5.TOTAL_MAX	GC Dataset 5 Maximum Limit for total sum of all components
9504	PG_GC.GC_1.GC_5.S1_BTU_MIN	GC Dataset 5 Minimum Limit for BTU
9505	PG_GC.GC_1.GC_5.S1_BTU_MAX	GC Dataset 5 Maximum Limit for BTU
9506	PG_GC.GC_1.GC_5.S1_SG_MIN	GC Dataset 5 Minimum Limit for Specifc Gravity
9507	PG_GC.GC_1.GC_5.S1_SG_MAX	GC Dataset 5 Maximum Limit for Specifc Gravity
9508	PG_GC.GC_1.GC_5.S1_N2_MIN	GC Dataset 5 Minimum Limit for Nitrogen
9509	PG_GC.GC_1.GC_5.S1_N2_MAX	GC Dataset 5 Maximum Limit for Nitrogen
9510	PG_GC.GC_1.GC_5.S1_CO2_MIN	GC Dataset 5 Minimum Limit for CO2
9511	PG_GC.GC_1.GC_5.S1_CO2_MAX	GC Dataset 5 Maximum Limit for CO2
9512	PG_GC.GC_1.GC_5.S1_CH4_MIN	GC Dataset 5 Minimum Limit for Methane
9513	PG_GC.GC_1.GC_5.S1_CH4_MAX	GC Dataset 5 Maximum Limit for Methane
9514	PG_GC.GC_1.GC_5.S1_C2_MIN	GC Dataset 5 Minimum Limit for C2
9515	PG_GC.GC_1.GC_5.S1_C2_MAX	GC Dataset 5 Maximum Limit for C2
9516	PG_GC.GC_1.GC_5.S1_C3_MIN	GC Dataset 5 Minimum Limit for C3
9517	PG_GC.GC_1.GC_5.S1_C3_MAX	GC Dataset 5 Maximum Limit for C3
9518	PG_GC.GC_1.GC_5.S1_IC4_MIN	GC Dataset 5 Minimum Limit for IC4
9519	PG_GC.GC_1.GC_5.S1_IC4_MAX	GC Dataset 5 Maximum Limit for IC4
9520	PG_GC.GC_1.GC_5.S1_NC4_MIN	GC Dataset 5 Minimum Limit for NC4
9521	PG_GC.GC_1.GC_5.S1_NC4_MAX	GC Dataset 5 Maximum Limit for NC4
9522	PG_GC.GC_1.GC_5.S1_NEOC5_MIN	GC Dataset 5 Minimum Limit for Neo C5
9523	PG_GC.GC_1.GC_5.S1_NEOC5_MAX	GC Dataset 5 Maximum Limit for Neo C5
9524	PG_GC.GC_1.GC_5.S1_IC5_MIN	GC Dataset 5 Minimum Limit for IC5
9525	PG_GC.GC_1.GC_5.S1_IC5_MAX	GC Dataset 5 Maximum Limit for IC5
9526	PG_GC.GC_1.GC_5.S1_NC5_MIN	GC Dataset 5 Minimum Limit for NC5
9527	PG_GC.GC_1.GC_5.S1_NC5_MAX	GC Dataset 5 Maximum Limit for NC5
9528	PG_GC.GC_1.GC_5.S1_NC6_MIN	GC Dataset 5 Minimum Limit for NC6
9529	PG_GC.GC_1.GC_5.S1_NC6_MAX	GC Dataset 5 Maximum Limit for NC6
9530	PG_GC.GC_1.GC_5.S1_NC7_MIN	GC Dataset 5 Minimum Limit for NC7
9531	PG_GC.GC_1.GC_5.S1_NC7_MAX	GC Dataset 5 Maximum Limit for NC7

Reg#	Variable	Description
9532	PG_GC.GC_1.GC_5.S1_NC8_MIN	GC Dataset 5 Minimum Limit for NC8
9533	PG_GC.GC_1.GC_5.S1_NC8_MAX	GC Dataset 5 Maximum Limit for NC8
9534	PG_GC.GC_1.GC_5.S1_NC9_MIN	GC Dataset 5 Minimum Limit for NC9
9535	PG_GC.GC_1.GC_5.S1_NC9_MAX	GC Dataset 5 Maximum Limit for NC9
9536	PG_GC.GC_1.GC_5.S1_NC10_MIN	GC Dataset 5 Minimum Limit for NC10
9537	PG_GC.GC_1.GC_5.S1_NC10_MAX	GC Dataset 5 Maximum Limit for NC10
9538	PG_GC.GC_1.GC_5.S1_H2O_MIN	GC Dataset 5 Minimum Limit for H2O
9539	PG_GC.GC_1.GC_5.S1_H2O_MAX	GC Dataset 5 Maximum Limit for H2O
9540	PG_GC.GC_1.GC_5.S1_H2S_MIN	GC Dataset 5 Minimum Limit for H2S
9541	PG_GC.GC_1.GC_5.S1_H2S_MAX	GC Dataset 5 Maximum Limit for H2S
9542	PG_GC.GC_1.GC_5.S1_H2_MIN	GC Dataset 5 Minimum Limit for H2
9543	PG_GC.GC_1.GC_5.S1_H2_MAX	GC Dataset 5 Maximum Limit for H2
9544	PG_GC.GC_1.GC_5.S1_CO_MIN	GC Dataset 5 Minimum Limit for CO
9545	PG_GC.GC_1.GC_5.S1_CO_MAX	GC Dataset 5 Maximum Limit for CO
9546	PG_GC.GC_1.GC_5.S1_O2_MIN	GC Dataset 5 Minimum Limit for O2
9547	PG_GC.GC_1.GC_5.S1_O2_MAX	GC Dataset 5 Maximum Limit for O2
9548	PG_GC.GC_1.GC_5.S1_HE_MIN	GC Dataset 5 Minimum Limit for He
9549	PG_GC.GC_1.GC_5.S1_HE_MAX	GC Dataset 5 Maximum Limit for He
9550	PG_GC.GC_1.GC_5.S1_AR_MIN	GC Dataset 5 Minimum Limit for Ar
9551	PG_GC.GC_1.GC_5.S1_AR_MAX	GC Dataset 5 Maximum Limit for Ar
9552	PG_GC.GC_1.GC_6.TOTAL_MIN	GC Dataset 6 Minimum Limit for total sum of all components
9553	PG_GC.GC_1.GC_6.TOTAL_MAX	GC Dataset 6 Maximum Limit for total sum of all components
9554	PG_GC.GC_1.GC_6.S1_BTU_MIN	GC Dataset 6 Minimum Limit for BTU
9555	PG_GC.GC_1.GC_6.S1_BTU_MAX	GC Dataset 6 Maximum Limit for BTU
9556	PG_GC.GC_1.GC_6.S1_SG_MIN	GC Dataset 6 Minimum Limit for Specifc Gravity
9557	PG_GC.GC_1.GC_6.S1_SG_MAX	GC Dataset 6 Maximum Limit for Specifc Gravity
9558	PG_GC.GC_1.GC_6.S1_N2_MIN	GC Dataset 6 Minimum Limit for Nitrogen
9559	PG_GC.GC_1.GC_6.S1_N2_MAX	GC Dataset 6 Maximum Limit for Nitrogen
9560	PG_GC.GC_1.GC_6.S1_CO2_MIN	GC Dataset 6 Minimum Limit for CO2
9561	PG_GC.GC_1.GC_6.S1_CO2_MAX	GC Dataset 6 Maximum Limit for CO2
9562	PG_GC.GC_1.GC_6.S1_CH4_MIN	GC Dataset 6 Minimum Limit for Methane
9563	PG_GC.GC_1.GC_6.S1_CH4_MAX	GC Dataset 6 Maximum Limit for Methane
9564	PG_GC.GC_1.GC_6.S1_C2_MIN	GC Dataset 6 Minimum Limit for C2
9565	PG_GC.GC_1.GC_6.S1_C2_MAX	GC Dataset 6 Maximum Limit for C2
9566	PG_GC.GC_1.GC_6.S1_C3_MIN	GC Dataset 6 Minimum Limit for C3
9567	PG_GC.GC_1.GC_6.S1_C3_MAX	GC Dataset 6 Maximum Limit for C3
9568	PG_GC.GC_1.GC_6.S1_IC4_MIN	GC Dataset 6 Minimum Limit for IC4
9569	PG_GC.GC_1.GC_6.S1_IC4_MAX	GC Dataset 6 Maximum Limit for IC4
9570	PG_GC.GC_1.GC_6.S1_NC4_MIN	GC Dataset 6 Minimum Limit for NC4
9571	PG_GC.GC_1.GC_6.S1_NC4_MAX	GC Dataset 6 Maximum Limit for NC4
9572	PG_GC.GC_1.GC_6.S1_NEOC5_MIN	GC Dataset 6 Minimum Limit for Neo C5
9573	PG_GC.GC_1.GC_6.S1_NEOC5_MAX	GC Dataset 6 Maximum Limit for Neo C5
9574	PG_GC.GC_1.GC_6.S1_IC5_MIN	GC Dataset 6 Minimum Limit for IC5
9575	PG_GC.GC_1.GC_6.S1_IC5_MAX	GC Dataset 6 Maximum Limit for IC5
9576	PG_GC.GC_1.GC_6.S1_NC5_MIN	GC Dataset 6 Minimum Limit for NC5
9577	PG_GC.GC_1.GC_6.S1_NC5_MAX	GC Dataset 6 Maximum Limit for NC5
9578	PG_GC.GC_1.GC_6.S1_NC6_MIN	GC Dataset 6 Minimum Limit for NC6
9579	PG_GC.GC_1.GC_6.S1_NC6_MAX	GC Dataset 6 Maximum Limit for NC6

Reg#	Variable	Description
9580	PG_GC.GC_1.GC_6.S1_NC7_MIN	GC Dataset 6 Minimum Limit for NC7
9581	PG_GC.GC_1.GC_6.S1_NC7_MAX	GC Dataset 6 Maximum Limit for NC7
9582	PG_GC.GC_1.GC_6.S1_NC8_MIN	GC Dataset 6 Minimum Limit for NC8
9583	PG_GC.GC_1.GC_6.S1_NC8_MAX	GC Dataset 6 Maximum Limit for NC8
9584	PG_GC.GC_1.GC_6.S1_NC9_MIN	GC Dataset 6 Minimum Limit for NC9
9585	PG_GC.GC_1.GC_6.S1_NC9_MAX	GC Dataset 6 Maximum Limit for NC9
9586	PG_GC.GC_1.GC_6.S1_NC10_MIN	GC Dataset 6 Minimum Limit for NC10
9587	PG_GC.GC_1.GC_6.S1_NC10_MAX	GC Dataset 6 Maximum Limit for NC10
9588	PG_GC.GC_1.GC_6.S1_H2O_MIN	GC Dataset 6 Minimum Limit for H2O
9589	PG_GC.GC_1.GC_6.S1_H2O_MAX	GC Dataset 6 Maximum Limit for H2O
9590	PG_GC.GC_1.GC_6.S1_H2S_MIN	GC Dataset 6 Minimum Limit for H2S
9591	PG_GC.GC_1.GC_6.S1_H2S_MAX	GC Dataset 6 Maximum Limit for H2S
9592	PG_GC.GC_1.GC_6.S1_H2_MIN	GC Dataset 6 Minimum Limit for H2
9593	PG_GC.GC_1.GC_6.S1_H2_MAX	GC Dataset 6 Maximum Limit for H2
9594	PG_GC.GC_1.GC_6.S1_CO_MIN	GC Dataset 6 Minimum Limit for CO
9595	PG_GC.GC_1.GC_6.S1_CO_MAX	GC Dataset 6 Maximum Limit for CO
9596	PG_GC.GC_1.GC_6.S1_O2_MIN	GC Dataset 6 Minimum Limit for O2
9597	PG_GC.GC_1.GC_6.S1_O2_MAX	GC Dataset 6 Maximum Limit for O2
9598	PG_GC.GC_1.GC_6.S1_HE_MIN	GC Dataset 6 Minimum Limit for He
9599	PG_GC.GC_1.GC_6.S1_HE_MAX	GC Dataset 6 Maximum Limit for He
9600	PG_GC.GC_1.GC_6.S1_AR_MIN	GC Dataset 6 Minimum Limit for Ar
9601	PG_GC.GC_1.GC_6.S1_AR_MAX	GC Dataset 6 Maximum Limit for Ar
9602	PG_GC.GC_1.GC_7.TOTAL_MIN	GC Dataset 7 Minimum Limit for total sum of all components
9603	PG_GC.GC_1.GC_7.TOTAL_MAX	GC Dataset 7 Maximum Limit for total sum of all components
9604	PG_GC.GC_1.GC_7.S1_BTU_MIN	GC Dataset 7 Minimum Limit for BTU
9605	PG_GC.GC_1.GC_7.S1_BTU_MAX	GC Dataset 7 Maximum Limit for BTU
9606	PG_GC.GC_1.GC_7.S1_SG_MIN	GC Dataset 7 Minimum Limit for Specifc Gravity
9607	PG_GC.GC_1.GC_7.S1_SG_MAX	GC Dataset 7 Maximum Limit for Specifc Gravity
9608	PG_GC.GC_1.GC_7.S1_N2_MIN	GC Dataset 7 Minimum Limit for Nitrogen
9609	PG_GC.GC_1.GC_7.S1_N2_MAX	GC Dataset 7 Maximum Limit for Nitrogen
9610	PG_GC.GC_1.GC_7.S1_CO2_MIN	GC Dataset 7 Minimum Limit for CO2
9611	PG_GC.GC_1.GC_7.S1_CO2_MAX	GC Dataset 7 Maximum Limit for CO2
9612	PG_GC.GC_1.GC_7.S1_CH4_MIN	GC Dataset 7 Minimum Limit for Methane
9613	PG_GC.GC_1.GC_7.S1_CH4_MAX	GC Dataset 7 Maximum Limit for Methane
9614	PG_GC.GC_1.GC_7.S1_C2_MIN	GC Dataset 7 Minimum Limit for C2
9615	PG_GC.GC_1.GC_7.S1_C2_MAX	GC Dataset 7 Maximum Limit for C2
9616	PG_GC.GC_1.GC_7.S1_C3_MIN	GC Dataset 7 Minimum Limit for C3
9617	PG_GC.GC_1.GC_7.S1_C3_MAX	GC Dataset 7 Maximum Limit for C3
9618	PG_GC.GC_1.GC_7.S1_IC4_MIN	GC Dataset 7 Minimum Limit for IC4
9619	PG_GC.GC_1.GC_7.S1_IC4_MAX	GC Dataset 7 Maximum Limit for IC4
9620	PG_GC.GC_1.GC_7.S1_NC4_MIN	GC Dataset 7 Minimum Limit for NC4
9621	PG_GC.GC_1.GC_7.S1_NC4_MAX	GC Dataset 7 Maximum Limit for NC4
9622	PG_GC.GC_1.GC_7.S1_NEOC5_MIN	GC Dataset 7 Minimum Limit for Neo C5
9623	PG_GC.GC_1.GC_7.S1_NEOC5_MAX	GC Dataset 7 Maximum Limit for Neo C5
9624	PG_GC.GC_1.GC_7.S1_IC5_MIN	GC Dataset 7 Minimum Limit for IC5
9625	PG_GC.GC_1.GC_7.S1_IC5_MAX	GC Dataset 7 Maximum Limit for IC5
9626	PG_GC.GC_1.GC_7.S1_NC5_MIN	GC Dataset 7 Minimum Limit for NC5
9627	PG_GC.GC_1.GC_7.S1_NC5_MAX	GC Dataset 7 Maximum Limit for NC5

Reg#	Variable	Description
9628	PG_GC.GC_1.GC_7.S1_NC6_MIN	GC Dataset 7 Minimum Limit for NC6
9629	PG_GC.GC_1.GC_7.S1_NC6_MAX	GC Dataset 7 Maximum Limit for NC6
9630	PG_GC.GC_1.GC_7.S1_NC7_MIN	GC Dataset 7 Minimum Limit for NC7
9631	PG_GC.GC_1.GC_7.S1_NC7_MAX	GC Dataset 7 Maximum Limit for NC7
9632	PG_GC.GC_1.GC_7.S1_NC8_MIN	GC Dataset 7 Minimum Limit for NC8
9633	PG_GC.GC_1.GC_7.S1_NC8_MAX	GC Dataset 7 Maximum Limit for NC8
9634	PG_GC.GC_1.GC_7.S1_NC9_MIN	GC Dataset 7 Minimum Limit for NC9
9635	PG_GC.GC_1.GC_7.S1_NC9_MAX	GC Dataset 7 Maximum Limit for NC9
9636	PG_GC.GC_1.GC_7.S1_NC10_MIN	GC Dataset 7 Minimum Limit for NC10
9637	PG_GC.GC_1.GC_7.S1_NC10_MAX	GC Dataset 7 Maximum Limit for NC10
9638	PG_GC.GC_1.GC_7.S1_H2O_MIN	GC Dataset 7 Minimum Limit for H2O
9639	PG_GC.GC_1.GC_7.S1_H2O_MAX	GC Dataset 7 Maximum Limit for H2O
9640	PG_GC.GC_1.GC_7.S1_H2S_MIN	GC Dataset 7 Minimum Limit for H2S
9641	PG_GC.GC_1.GC_7.S1_H2S_MAX	GC Dataset 7 Maximum Limit for H2S
9642	PG_GC.GC_1.GC_7.S1_H2_MIN	GC Dataset 7 Minimum Limit for H2
9643	PG_GC.GC_1.GC_7.S1_H2_MAX	GC Dataset 7 Maximum Limit for H2
9644	PG_GC.GC_1.GC_7.S1_CO_MIN	GC Dataset 7 Minimum Limit for CO
9645	PG_GC.GC_1.GC_7.S1_CO_MAX	GC Dataset 7 Maximum Limit for CO
9646	PG_GC.GC_1.GC_7.S1_O2_MIN	GC Dataset 7 Minimum Limit for O2
9647	PG_GC.GC_1.GC_7.S1_O2_MAX	GC Dataset 7 Maximum Limit for O2
9648	PG_GC.GC_1.GC_7.S1_HE_MIN	GC Dataset 7 Minimum Limit for He
9649	PG_GC.GC_1.GC_7.S1_HE_MAX	GC Dataset 7 Maximum Limit for He
9650	PG_GC.GC_1.GC_7.S1_AR_MIN	GC Dataset 7 Minimum Limit for Ar
9651	PG_GC.GC_1.GC_7.S1_AR_MAX	GC Dataset 7 Maximum Limit for Ar
9652	PG_GC.GC_1.GC_8.TOTAL_MIN	GC Dataset 8 Minimum Limit for total sum of all components
9653	PG_GC.GC_1.GC_8.TOTAL_MAX	GC Dataset 8 Maximum Limit for total sum of all components
9654	PG_GC.GC_1.GC_8.S1_BTU_MIN	GC Dataset 8 Minimum Limit for BTU
9655	PG_GC.GC_1.GC_8.S1_BTU_MAX	GC Dataset 8 Maximum Limit for BTU
9656	PG_GC.GC_1.GC_8.S1_SG_MIN	GC Dataset 8 Minimum Limit for Specifc Gravity
9657	PG_GC.GC_1.GC_8.S1_SG_MAX	GC Dataset 8 Maximum Limit for Specifc Gravity
9658	PG_GC.GC_1.GC_8.S1_N2_MIN	GC Dataset 8 Minimum Limit for Nitrogen
9659	PG_GC.GC_1.GC_8.S1_N2_MAX	GC Dataset 8 Maximum Limit for Nitrogen
9660	PG_GC.GC_1.GC_8.S1_CO2_MIN	GC Dataset 8 Minimum Limit for CO2
9661	PG_GC.GC_1.GC_8.S1_CO2_MAX	GC Dataset 8 Maximum Limit for CO2
9662	PG_GC.GC_1.GC_8.S1_CH4_MIN	GC Dataset 8 Minimum Limit for Methane
9663	PG_GC.GC_1.GC_8.S1_CH4_MAX	GC Dataset 8 Maximum Limit for Methane
9664	PG_GC.GC_1.GC_8.S1_C2_MIN	GC Dataset 8 Minimum Limit for C2
9665	PG_GC.GC_1.GC_8.S1_C2_MAX	GC Dataset 8 Maximum Limit for C2
9666	PG_GC.GC_1.GC_8.S1_C3_MIN	GC Dataset 8 Minimum Limit for C3
9667	PG_GC.GC_1.GC_8.S1_C3_MAX	GC Dataset 8 Maximum Limit for C3
9668	PG_GC.GC_1.GC_8.S1_IC4_MIN	GC Dataset 8 Minimum Limit for IC4
9669	PG_GC.GC_1.GC_8.S1_IC4_MAX	GC Dataset 8 Maximum Limit for IC4
9670	PG_GC.GC_1.GC_8.S1_NC4_MIN	GC Dataset 8 Minimum Limit for NC4
9671	PG_GC.GC_1.GC_8.S1_NC4_MAX	GC Dataset 8 Maximum Limit for NC4
9672	PG_GC.GC_1.GC_8.S1_NEOC5_MIN	GC Dataset 8 Minimum Limit for Neo C5
9673	PG_GC.GC_1.GC_8.S1_NEOC5_MAX	GC Dataset 8 Maximum Limit for Neo C5
9674	PG_GC.GC_1.GC_8.S1_IC5_MIN	GC Dataset 8 Minimum Limit for IC5
9675	PG_GC.GC_1.GC_8.S1_IC5_MAX	GC Dataset 8 Maximum Limit for IC5

Reg#	Variable	Description
9676	PG_GC.GC_1.GC_8.S1_NC5_MIN	GC Dataset 8 Minimum Limit for NC5
9677	PG_GC.GC_1.GC_8.S1_NC5_MAX	GC Dataset 8 Maximum Limit for NC5
9678	PG_GC.GC_1.GC_8.S1_NC6_MIN	GC Dataset 8 Minimum Limit for NC6
9679	PG_GC.GC_1.GC_8.S1_NC6_MAX	GC Dataset 8 Maximum Limit for NC6
9680	PG_GC.GC_1.GC_8.S1_NC7_MIN	GC Dataset 8 Minimum Limit for NC7
9681	PG_GC.GC_1.GC_8.S1_NC7_MAX	GC Dataset 8 Maximum Limit for NC7
9682	PG_GC.GC_1.GC_8.S1_NC8_MIN	GC Dataset 8 Minimum Limit for NC8
9683	PG_GC.GC_1.GC_8.S1_NC8_MAX	GC Dataset 8 Maximum Limit for NC8
9684	PG_GC.GC_1.GC_8.S1_NC9_MIN	GC Dataset 8 Minimum Limit for NC9
9685	PG_GC.GC_1.GC_8.S1_NC9_MAX	GC Dataset 8 Maximum Limit for NC9
9686	PG_GC.GC_1.GC_8.S1_NC10_MIN	GC Dataset 8 Minimum Limit for NC10
9687	PG_GC.GC_1.GC_8.S1_NC10_MAX	GC Dataset 8 Maximum Limit for NC10
9688	PG_GC.GC_1.GC_8.S1_H2O_MIN	GC Dataset 8 Minimum Limit for H2O
9689	PG_GC.GC_1.GC_8.S1_H2O_MAX	GC Dataset 8 Maximum Limit for H2O
9690	PG_GC.GC_1.GC_8.S1_H2S_MIN	GC Dataset 8 Minimum Limit for H2S
9691	PG_GC.GC_1.GC_8.S1_H2S_MAX	GC Dataset 8 Maximum Limit for H2S
9692	PG_GC.GC_1.GC_8.S1_H2_MIN	GC Dataset 8 Minimum Limit for H2
9693	PG_GC.GC_1.GC_8.S1_H2_MAX	GC Dataset 8 Maximum Limit for H2
9694	PG_GC.GC_1.GC_8.S1_CO_MIN	GC Dataset 8 Minimum Limit for CO
9695	PG_GC.GC_1.GC_8.S1_CO_MAX	GC Dataset 8 Maximum Limit for CO
9696	PG_GC.GC_1.GC_8.S1_O2_MIN	GC Dataset 8 Minimum Limit for O2
9697	PG_GC.GC_1.GC_8.S1_O2_MAX	GC Dataset 8 Maximum Limit for O2
9698	PG_GC.GC_1.GC_8.S1_HE_MIN	GC Dataset 8 Minimum Limit for He
9699	PG_GC.GC_1.GC_8.S1_HE_MAX	GC Dataset 8 Maximum Limit for He
9700	PG_GC.GC_1.GC_8.S1_AR_MIN	GC Dataset 8 Minimum Limit for Ar
9701	PG_GC.GC_1.GC_8.S1_AR_MAX	GC Dataset 8 Maximum Limit for Ar
9702	MB.SPARE	
9703	MB.SPARE	
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Reg#	Variable	Description
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9727	MB.SPARE	
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9748	MB.SPARE	
9749	MB.SPARE	
9750	MB.SPARE	
9751	MB.SPARE	
9752	MB.SPARE	
9753	MB.SPARE	
9754	MB.SPARE	
9755	MB.SPARE	
9756	MB.SPARE	
9757	MB.SPARE	
9758	MB.SPARE	
9759	MB.SPARE	
9760	MB.SPARE	
9761	MB.SPARE	
9762	MB.SPARE	
9763	MB.SPARE	
9764	MB.SPARE	
9765	MB.SPARE	
9766	MB.SPARE	
9767	MB.SPARE	
9768	MB.SPARE	
9769	MB.SPARE	
9770	MB.SPARE	
9771	MB.SPARE	
9772	MB.SPARE	
9773	MB.SPARE	
9774	MB.SPARE	
9775	MB.SPARE	

Reg#	Variable	Description
9776	MB.SPARE	
9777	MB.SPARE	
9778	MB.SPARE	
9779	MB.SPARE	
9780	MB.SPARE	
9781	MB.SPARE	
9782	MB.SPARE	
9783	MB.SPARE	
9784	MB.SPARE	
9785	MB.SPARE	
9786	MB.SPARE	
9787	MB.SPARE	
9788	MB.SPARE	
9789	MB.SPARE	
9790	MB.SPARE	
9791	MB.SPARE	
9792	MB.SPARE	
9793	MB.SPARE	
9794	MB.SPARE	
9795	MB.SPARE	
9796	MB.SPARE	
9797	MB.SPARE	
9798	MB.SPARE	
9799	MB.SPARE	
9800	MB.SPARE	
9801	MB.SPARE	
9802	MB.SPARE	
9803	MB.SPARE	
9804	MB.SPARE	
9805	MB.SPARE	
9806	MB.SPARE	
9807	MB.SPARE	
9808	MB.SPARE	
9809	MB.SPARE	
9810	MB.SPARE	
9811	MB.SPARE	
9812	MB.SPARE	
9813	MB.SPARE	
9814	MB.SPARE	
9815	MB.SPARE	
9816	MB.SPARE	
9817	MB.SPARE	
9818	MB.SPARE	
9819	MB.SPARE	
9820	MB.SPARE	
9821	MB.SPARE	
9822	MB.SPARE	
9823	MB.SPARE	
9824	MB.SPARE	
9825	MB.SPARE	

Reg#	Variable	Description
9826	MB.SPARE	
9827	MB.SPARE	
9828	MB.SPARE	
9829	MB.SPARE	
9830	MB.SPARE	
9831	MB.SPARE	
9832	MB.SPARE	
9833	MB.SPARE	
9834	MB.SPARE	
9835	MB.SPARE	
9836	MB.SPARE	
9837	MB.SPARE	
9838	MB.SPARE	
9839	MB.SPARE	
9840	MB.SPARE	
9841	MB.SPARE	
9842	MB.SPARE	
9843	MB.SPARE	
9844	MB.SPARE	
9845	MB.SPARE	
9846	MB.SPARE	
9847	MB.SPARE	
9848	MB.SPARE	
9849	MB.SPARE	
9850	MB.SPARE	
9851	MB.SPARE	
9852	MB.SPARE	
9853	MB.SPARE	
9854	MB.SPARE	
9855	MB.SPARE	
9856	MB.SPARE	
9857	MB.SPARE	
9858	MB.SPARE	
9859	MB.SPARE	
9860	MB.SPARE	
9861	MB.SPARE	
9862	MB.SPARE	
9863	MB.SPARE	
9864	MB.SPARE	
9865	MB.SPARE	
9866	MB.SPARE	
9867	MB.SPARE	
9868	MB.SPARE	
9869	MB.SPARE	
9870	MB.SPARE	
9871	MB.SPARE	
9872	MB.SPARE	
9873	MB.SPARE	
9874	MB.SPARE	
9875	MB.SPARE	

Reg#	Variable	Description
9876	MB.SPARE	
9877	MB.SPARE	
9878	MB.SPARE	
9879	MB.SPARE	
9880	MB.SPARE	
9881	MB.SPARE	
9882	MB.SPARE	
9883	MB.SPARE	
9884	MB.SPARE	
9885	MB.SPARE	
9886	MB.SPARE	
9887	MB.SPARE	
9888	MB.SPARE	
9889	MB.SPARE	
9890	MB.SPARE	
9891	MB.SPARE	
9892	MB.SPARE	
9893	MB.SPARE	
9894	MB.SPARE	
9895	MB.SPARE	
9896	MB.SPARE	
9897	MB.SPARE	
9898	MB.SPARE	
9899	MB.SPARE	
9900	MB.SPARE	
9901	MB.SPARE	
9902	PG_GC.GC_1.GC_1.IICOMMPORT	GC Dataset 1 - ControlWave Master Port to GC
9903	PG_GC.GC_1.GC_1.SLAVEADDRESS	GC Dataset 1 - GC MODBUS Slave Address
9904	PG_GC.GC_1.GC_1.GC_TYPE	GC Dataset 1 - GC Type
9905	PG_GC.GC_1.GC_1.S1_GC_STREAM	GC Dataset 1 - Stream to be polled form this GC for this Dataset
9906	PG_GC.GC_1.GC_2.IICOMMPORT	GC Dataset 2 - ControlWave Master Port to GC
9907	PG_GC.GC_1.GC_2.SLAVEADDRESS	GC Dataset 2 - GC MODBUS Slave Address
9908	PG_GC.GC_1.GC_2.GC_TYPE	GC Dataset 2 - GC Type
9909	PG_GC.GC_1.GC_2.S1_GC_STREAM	GC Dataset 2 - Stream to be polled form this GC for this Dataset
9910	PG_GC.GC_1.GC_3.IICOMMPORT	GC Dataset 3 - ControlWave Master Port to GC
9911	PG_GC.GC_1.GC_3.SLAVEADDRESS	GC Dataset 3 - GC MODBUS Slave Address
9912	PG_GC.GC_1.GC_3.GC_TYPE	GC Dataset 3 - GC Type
9913	PG_GC.GC_1.GC_3.S1_GC_STREAM	GC Dataset 3 - Stream to be polled form this GC for this Dataset
9914	PG_GC.GC_1.GC_4.IICOMMPORT	GC Dataset 4 - ControlWave Master Port to GC
9915	PG_GC.GC_1.GC_4.SLAVEADDRESS	GC Dataset 4 - GC MODBUS Slave Address
9916	PG_GC.GC_1.GC_4.GC_TYPE	GC Dataset 4 - GC Type
9917	PG_GC.GC_1.GC_4.S1_GC_STREAM	GC Dataset 4 - Stream to be polled form this GC for this Dataset
9918	PG_GC.GC_1.GC_5.IICOMMPORT	GC Dataset 5 - ControlWave Master Port to GC
9919	PG_GC.GC_1.GC_5.SLAVEADDRESS	GC Dataset 5 - GC MODBUS Slave Address
9920	PG_GC.GC_1.GC_5.GC_TYPE	GC Dataset 5 - GC Type
9921	PG_GC.GC_1.GC_5.S1_GC_STREAM	GC Dataset 5 - Stream to be polled form this GC for this Dataset
9922	PG_GC.GC_1.GC_6.IICOMMPORT	GC Dataset 6 - ControlWave Master Port to GC

Reg#	Variable	Description
9923	PG_GC.GC_1.GC_6.SLAVEADDRESS	GC Dataset 6 - GC MODBUS Slave Address
9924	PG_GC.GC_1.GC_6.GC_TYPE	GC Dataset 6 - GC Type
9925	PG_GC.GC_1.GC_6.S1_GC_STREAM	GC Dataset 6 - Stream to be polled form this GC for this Dataset
9926	PG_GC.GC_1.GC_7.IICOMMPORT	GC Dataset 7 - ControlWave Master Port to GC
9927	PG_GC.GC_1.GC_7.SLAVEADDRESS	GC Dataset 7 - GC MODBUS Slave Address
9928	PG_GC.GC_1.GC_7.GC_TYPE	GC Dataset 7 - GC Type
9929	PG_GC.GC_1.GC_7.S1_GC_STREAM	GC Dataset 7 - Stream to be polled form this GC for this Dataset
9930	PG_GC.GC_1.GC_8.IICOMMPORT	GC Dataset 8 - ControlWave Master Port to GC
9931	PG_GC.GC_1.GC_8.SLAVEADDRESS	GC Dataset 8 - GC MODBUS Slave Address
9932	PG_GC.GC_1.GC_8.GC_TYPE	GC Dataset 8 - GC Type
9933	PG_GC.GC_1.GC_8.S1_GC_STREAM	GC Dataset 8 - Stream to be polled form this GC for this Dataset
9934	MB.SPARE	
9935	MB.SPARE	
9936	MB.SPARE	
9937	MB.SPARE	
9938	MB.SPARE	
9939	MB.SPARE	
9940	MB.SPARE	
9941	MB.SPARE	
9942	MB.SPARE	
9943	MB.SPARE	
9944	MB.SPARE	
9945	MB.SPARE	
9946	MB.SPARE	
9947	MB.SPARE	
9948	MB.SPARE	
9949	MB.SPARE	
9950	GM.GMBM_1.MB1_PORT	Generic MODBUS 1 Master 1 CWM Port
9951	GM.GMBM_1.MB1_MODE	Generic MODBUS 1 Master MODE
9952	GM.GMBM_1.MB1_IP_ADDR	Generic MODBUS 1 IP Address to poll
9953	GM.GMBM_1.MB1_SLAVE_ADDR	Generic MODBUS 1 Slave Address to poll
9954	GM.GMBM_1.MB1_WORD_ORDER	Generic MODBUS 1 Master Word Order
9955	GM.GMBM_1.MB1_BYTE_ORDER	Generic MODBUS 1 Master Byte Order
9956	GM.GMBM_1.MB1_BIT_ORDER	Generic MODBUS 1 Master Bit Order
9957	GM.GMBM_1.MB1_DATA_SIZE	Generic MODBUS 1 Master Data Size
9958	GM.GMBM_1.MB1_DELAY_MODE	Generic MODBUS 1 Master Delay Mode
9959	GM.GMBM_1.MB1_RTS_CTS_DELAY	Generic MODBUS 1 Master RTS/CTS Delay
9960	GM.GMBM_1.MB1_TIMEOUT	Generic MODBUS 1 Master Timeout
9961	GM.GMBM_1.MB1_REPEAT	Generic MODBUS 1 Master Repeat
9962	GM.GMBM_1.MB1_START_REG	Generic MODBUS 1 Master Start Register
9963	GM.GMBM_1.MB1_REG_COUNT	Generic MODBUS 1 Master Register Count
9964	GM.GMBM_1.MB1_ENABLED	Generic MODBUS 1 Master Enabled
9965	GM.GMBM_2.MB1_PORT	Generic MODBUS 2 Master 1 CWM Port
9966	GM.GMBM_2.MB1_MODE	Generic MODBUS 2 Master MODE
9967	GM.GMBM_2.MB1_IP_ADDR	Generic MODBUS 2 IP Address to poll
9968	GM.GMBM_2.MB1_SLAVE_ADDR	Generic MODBUS 2 Slave Address to poll
9969	GM.GMBM_2.MB1_WORD_ORDER	Generic MODBUS 2 Master Word Order
9970	GM.GMBM_2.MB1_BYTE_ORDER	Generic MODBUS 2 Master Byte Order

Reg#	Variable	Description
9971	GM.GMBM_2.MB1_BIT_ORDER	Generic MODBUS 2 Master Bit Order
9972	GM.GMBM_2.MB1_DATA_SIZE	Generic MODBUS 2 Master Data Size
9973	GM.GMBM_2.MB1_DELAY_MODE	Generic MODBUS 2 Master Delay Mode
9974	GM.GMBM_2.MB1_RTS_CTS_DELAY	Generic MODBUS 2 Master RTS/CTS Delay
9975	GM.GMBM_2.MB1_TIMEOUT	Generic MODBUS 2 Master Timeout
9976	GM.GMBM_2.MB1_REPEAT	Generic MODBUS 2 Master Repeat
9977	GM.GMBM_2.MB1_START_REG	Generic MODBUS 2 Master Start Register
9978	GM.GMBM_2.MB1_REG_COUNT	Generic MODBUS 2 Master Register Count
9979	GM.GMBM_2.MB1_ENABLED	Generic MODBUS 2 Master Enabled
9980	GM.GMBM_3.MB1_PORT	Generic MODBUS 3 Master 1 CWM Port
9981	GM.GMBM_3.MB1_MODE	Generic MODBUS 3 Master MODE
9982	GM.GMBM_3.MB1_IP_ADDR	Generic MODBUS 3 IP Address to poll
9983	GM.GMBM_3.MB1_SLAVE_ADDR	Generic MODBUS 3 Slave Address to poll
9984	GM.GMBM_3.MB1_WORD_ORDER	Generic MODBUS 3 Master Word Order
9985	GM.GMBM_3.MB1_BYTE_ORDER	Generic MODBUS 3 Master Byte Order
9986	GM.GMBM_3.MB1_BIT_ORDER	Generic MODBUS 3 Master Bit Order
9987	GM.GMBM_3.MB1_DATA_SIZE	Generic MODBUS 3 Master Data Size
9988	GM.GMBM_3.MB1_DELAY_MODE	Generic MODBUS 3 Master Delay Mode
9989	GM.GMBM_3.MB1_RTS_CTS_DELAY	Generic MODBUS 3 Master RTS/CTS Delay
9990	GM.GMBM_3.MB1_TIMEOUT	Generic MODBUS 3 Master Timeout
9991	GM.GMBM_3.MB1_REPEAT	Generic MODBUS 3 Master Repeat
9992	GM.GMBM_3.MB1_START_REG	Generic MODBUS 3 Master Start Register
9993	GM.GMBM_3.MB1_REG_COUNT	Generic MODBUS 3 Master Register Count
9994	GM.GMBM_3.MB1_ENABLED	Generic MODBUS 3 Master Enabled
9995	GM.GMBM_4.MB1_PORT	Generic MODBUS 4 Master 1 CWM Port
9996	GM.GMBM_4.MB1_MODE	Generic MODBUS 4 Master MODE
9997	GM.GMBM_4.MB1_IP_ADDR	Generic MODBUS 4 IP Address to poll
9998	GM.GMBM_4.MB1_SLAVE_ADDR	Generic MODBUS 4 Slave Address to poll
9999	GM.GMBM_4.MB1_WORD_ORDER	Generic MODBUS 4 Master Word Order
10000	GM.GMBM_4.MB1_BYTE_ORDER	Generic MODBUS 4 Master Byte Order
10001	GM.GMBM_4.MB1_BIT_ORDER	Generic MODBUS 4 Master Bit Order
10002	GM.GMBM_4.MB1_DATA_SIZE	Generic MODBUS 4 Master Data Size
10003	GM.GMBM_4.MB1_DELAY_MODE	Generic MODBUS 4 Master Delay Mode
10004	GM.GMBM_4.MB1_RTS_CTS_DELAY	Generic MODBUS 4 Master RTS/CTS Delay
10005	GM.GMBM_4.MB1_TIMEOUT	Generic MODBUS 4 Master Timeout
10006	GM.GMBM_4.MB1_REPEAT	Generic MODBUS 4 Master Repeat
10007	GM.GMBM_4.MB1_START_REG	Generic MODBUS 4 Master Start Register
10008	GM.GMBM_4.MB1_REG_COUNT	Generic MODBUS 4 Master Register Count
10009	GM.GMBM_4.MB1_ENABLED	Generic MODBUS 4 Master Enabled
10010	GM.GMBM_5.MB1_PORT	Generic MODBUS 5 Master 1 CWM Port
10011	GM.GMBM_5.MB1_MODE	Generic MODBUS 5 Master MODE
10012	GM.GMBM_5.MB1_IP_ADDR	Generic MODBUS 5 IP Address to poll
10013	GM.GMBM_5.MB1_SLAVE_ADDR	Generic MODBUS 5 Slave Address to poll
10014	GM.GMBM_5.MB1_WORD_ORDER	Generic MODBUS 5 Master Word Order
10015	GM.GMBM_5.MB1_BYTE_ORDER	Generic MODBUS 5 Master Byte Order
10016	GM.GMBM_5.MB1_BIT_ORDER	Generic MODBUS 5 Master Bit Order
10017	GM.GMBM_5.MB1_DATA_SIZE	Generic MODBUS 5 Master Data Size
10018	GM.GMBM_5.MB1_DELAY_MODE	Generic MODBUS 5 Master Delay Mode
10019	GM.GMBM_5.MB1_RTS_CTS_DELAY	Generic MODBUS 5 Master RTS/CTS Delay
10020	GM.GMBM_5.MB1_TIMEOUT	Generic MODBUS 5 Master Timeout

Reg#	Variable	Description
10021	GM.GMBM_5.MB1_REPEAT	Generic MODBUS 5 Master Repeat
10022	GM.GMBM_5.MB1_START_REG	Generic MODBUS 5 Master Start Register
10023	GM.GMBM_5.MB1_REG_COUNT	Generic MODBUS 5 Master Register Count
10024	GM.GMBM_5.MB1_ENABLED	Generic MODBUS 5 Master Enabled
10025	CMB1.CMB_S_PORT	Customer MODBUS n Slave 1 CWM Port
10026	CMB1.CMB_S_MBADDR	Customer MODBUS n Slave MODE
10027	CMB2.CMB_S_PORT	Customer MODBUS n Slave 2 CWM Port
10028	CMB2.CMB_S_MBADDR	Customer MODBUS n Slave MODE
10029	CMB3.CMB_S_PORT	Customer MODBUS n Slave 3 CWM Port
10030	CMB3.CMB_S_MBADDR	Customer MODBUS n Slave MODE
10031	CMB4.CMB_S_PORT	Customer MODBUS n Slave 4 CWM Port
10032	CMB4.CMB_S_MBADDR	Customer MODBUS n Slave MODE
10033	CMB5.CMB_S_PORT	Customer MODBUS n Slave 5 CWM Port
10034	CMB5.CMB_S_MBADDR	Customer MODBUS n Slave MODE
10035	RC.RCV_1.MODE	Remote Control Valve 1 mode
10036	RC.RCV_1.PULSETIME	Remote Control Valve 1 pulse time
10037	RC.RCV_1.TRAVEL	Remote Control Valve 1 travel time
10038	RC.RCV_2.MODE	Remote Control Valve 2 mode
10039	RC.RCV_2.PULSETIME	Remote Control Valve 2 pulse time
10040	RC.RCV_2.TRAVEL	Remote Control Valve 2 travel time
10041	RC.RCV_3.MODE	Remote Control Valve 3 mode
10042	RC.RCV_3.PULSETIME	Remote Control Valve 3 pulse time
10043	RC.RCV_3.TRAVEL	Remote Control Valve 3 travel time
10044	RC.RCV_4.MODE	Remote Control Valve 4 mode
10045	RC.RCV_4.PULSETIME	Remote Control Valve 4 pulse time
10046	RC.RCV_4.TRAVEL	Remote Control Valve 4 travel time
10047	RC.RCV_5.MODE	Remote Control Valve 5 mode
10048	RC.RCV_5.PULSETIME	Remote Control Valve 5 pulse time
10049	RC.RCV_5.TRAVEL	Remote Control Valve 5 travel time
10050	RC.RCV_6.MODE	Remote Control Valve 6 mode
10051	RC.RCV_6.PULSETIME	Remote Control Valve 6 pulse time
10052	RC.RCV_6.TRAVEL	Remote Control Valve 6 travel time
10053	RC.RCV_7.MODE	Remote Control Valve 7 mode
10054	RC.RCV_7.PULSETIME	Remote Control Valve 7 pulse time
10055	RC.RCV_7.TRAVEL	Remote Control Valve 7 travel time
10056	RC.RCV_8.MODE	Remote Control Valve 8 mode
10057	RC.RCV_8.PULSETIME	Remote Control Valve 8 pulse time
10058	RC.RCV_8.TRAVEL	Remote Control Valve 8 travel time
10059	RC.RCV_9.MODE	Remote Control Valve 9 mode
10060	RC.RCV_9.PULSETIME	Remote Control Valve 9 pulse time
10061	RC.RCV_9.TRAVEL	Remote Control Valve 9 travel time
10062	RC.RCV_10.MODE	Remote Control Valve 10 mode
10063	RC.RCV_10.PULSETIME	Remote Control Valve 10 pulse time
10064	RC.RCV_10.TRAVEL	Remote Control Valve 10 travel time
10065	RC.RCV_11.MODE	Remote Control Valve 11 mode
10066	RC.RCV_11.PULSETIME	Remote Control Valve 11 pulse time
10067	RC.RCV_11.TRAVEL	Remote Control Valve 11 travel time
10068	RC.RCV_12.MODE	Remote Control Valve 12 mode
10069	RC.RCV_12.PULSETIME	Remote Control Valve 12 pulse time
10070	RC.RCV_12.TRAVEL	Remote Control Valve 12 travel time

Reg#	Variable	Description
10071	@GV._P1_POLL_PER	ControlWave Micro Com Port 1 Poll Period
10072	@GV._P1_WRITE_DEL	ControlWave Micro Com Port 1 Write Delay
10073	@GV._P1_WRITE_TMO	ControlWave Micro Com Port 1 Write Timeout
10074	@GV._P1_PAD_FRONT	ControlWave Micro Com Port 1 number of null spaces to pad the front of the message
10075	@GV._P1_PAD_BACK	ControlWave Micro Com Port 1 number of null spaces to pad the back of the message
10076	@GV._P1_CYCLE_INT	ControlWave Micro Com Port 1 Fast Poll Cycle Interval
10077	@GV._P1_CYCLE_TIMEO	ControlWave Micro Com Port 1 Fast Poll Cycle Timeout Period
10078	@GV._P1_LOCAL_PORT	ControlWave Micro Com Port 1 - this port is the slave port
10079	@GV._P1_VSAT_MIN_RESP	ControlWave Micro Com Port 1 VSAT minimum response time
10080	@GV._P1_VSAT_MAX_RESP	ControlWave Micro Com Port 1 VSAT maximum response time
10081	@GV._P1_RETRIES	ControlWave Micro Com Port 1 number of comm retries (BSAP Master Only)
10082	@GV._P1_TIMEOUT	ControlWave Micro Com Port 1 reply message timeout from slave
10083	@GV._P1_VSAT_UP_ACK_WAIT	ControlWave Micro Com Port 1 VSAT up acknowledgement wait period
10084	@GV._P2_POLL_PER	ControlWave Micro Com Port 2 Poll Period
10085	@GV._P2_WRITE_DEL	ControlWave Micro Com Port 2 Write Delay
10086	@GV._P2_WRITE_TMO	ControlWave Micro Com Port 2 Write Timeout
10087	@GV._P2_PAD_FRONT	ControlWave Micro Com Port 2 number of null spaces to pad the front of the message
10088	@GV._P2_PAD_BACK	ControlWave Micro Com Port 2 number of null spaces to pad the back of the message
10089	@GV._P2_CYCLE_INT	ControlWave Micro Com Port 2 Fast Poll Cycle Interval
10090	@GV._P2_CYCLE_TIMEO	ControlWave Micro Com Port 2 Fast Poll Cycle Timeout Period
10091	@GV._P2_LOCAL_PORT	ControlWave Micro Com Port 2 - this port is the slave port
10092	@GV._P2_VSAT_MIN_RESP	ControlWave Micro Com Port 2 VSAT minimum response time
10093	@GV._P2_VSAT_MAX_RESP	ControlWave Micro Com Port 2 VSAT maximum response time
10094	@GV._P2_RETRIES	ControlWave Micro Com Port 2 number of comm retries (BSAP Master Only)
10095	@GV._P2_TIMEOUT	ControlWave Micro Com Port 2 reply message timeout from slave
10096	@GV._P2_VSAT_UP_ACK_WAIT	ControlWave Micro Com Port 2 VSAT up acknowledgement wait period
10097	@GV._P3_POLL_PER	ControlWave Micro Com Port 3 Poll Period
10098	@GV._P3_WRITE_DEL	ControlWave Micro Com Port 3 Write Delay
10099	@GV._P3_WRITE_TMO	ControlWave Micro Com Port 3 Write Timeout
10100	@GV._P3_PAD_FRONT	ControlWave Micro Com Port 3 number of null spaces to pad the front of the message
10101	@GV._P3_PAD_BACK	ControlWave Micro Com Port 3 number of null spaces to pad the back of the message
10102	@GV._P3_CYCLE_INT	ControlWave Micro Com Port 3 Fast Poll Cycle Interval
10103	@GV._P3_CYCLE_TIMEO	ControlWave Micro Com Port 3 Fast Poll Cycle Timeout Period
10104	@GV._P3_LOCAL_PORT	ControlWave Micro Com Port 3 - this port is the slave port
10105	@GV._P3_VSAT_MIN_RESP	ControlWave Micro Com Port 3 VSAT minimum

Reg#	Variable	Description
		response time
10106	@GV._P3_VSAT_MAX_RESP	ControlWave Micro Com Port 3 VSAT maximum response time
10107	@GV._P3_RETRIES	ControlWave Micro Com Port 3 number of comm retries (BSAP Master Only)
10108	@GV._P3_TIMEOUT	ControlWave Micro Com Port 3 reply message timeout from slave
10109	@GV._P3_VSAT_UP_ACK_WAIT	ControlWave Micro Com Port 3 VSAT up acknowledgement wait period
10110	@GV._P4_POLL_PER	ControlWave Micro Com Port 4 Poll Period
10111	@GV._P4_WRITE_DEL	ControlWave Micro Com Port 4 Write Delay
10112	@GV._P4_WRITE_TMO	ControlWave Micro Com Port 4 Write Timeout
10113	@GV._P4_PAD_FRONT	ControlWave Micro Com Port 4 number of null spaces to pad the front of the message
10114	@GV._P4_PAD_BACK	ControlWave Micro Com Port 4 number of null spaces to pad the back of the message
10115	@GV._P4_CYCLE_INT	ControlWave Micro Com Port 4 Fast Poll Cycle Interval
10116	@GV._P4_CYCLE_TIMEO	ControlWave Micro Com Port 4 Fast Poll Cycle Timeout Period
10117	@GV._P4_LOCAL_PORT	ControlWave Micro Com Port 4 - this port is the slave port
10118	@GV._P4_VSAT_MIN_RESP	ControlWave Micro Com Port 4 VSAT minimum response time
10119	@GV._P4_VSAT_MAX_RESP	ControlWave Micro Com Port 4 VSAT maximum response time
10120	@GV._P4_RETRIES	ControlWave Micro Com Port 4 number of comm retries (BSAP Master Only)
10121	@GV._P4_TIMEOUT	ControlWave Micro Com Port 4 reply message timeout from slave
10122	@GV._P4_VSAT_UP_ACK_WAIT	ControlWave Micro Com Port 4 VSAT up acknowledgement wait period
10123	@GV._P5_POLL_PER	ControlWave Micro Com Port 5 Poll Period
10124	@GV._P5_WRITE_DEL	ControlWave Micro Com Port 5 Write Delay
10125	@GV._P5_WRITE_TMO	ControlWave Micro Com Port 5 Write Timeout
10126	@GV._P5_PAD_FRONT	ControlWave Micro Com Port 5 number of null spaces to pad the front of the message
10127	@GV._P5_PAD_BACK	ControlWave Micro Com Port 5 number of null spaces to pad the back of the message
10128	@GV._P5_CYCLE_INT	ControlWave Micro Com Port 5 Fast Poll Cycle Interval
10129	@GV._P5_CYCLE_TIMEO	ControlWave Micro Com Port 5 Fast Poll Cycle Timeout Period
10130	@GV._P5_LOCAL_PORT	ControlWave Micro Com Port 5 - this port is the slave port
10131	@GV._P5_VSAT_MIN_RESP	ControlWave Micro Com Port 5 VSAT minimum response time
10132	@GV._P5_VSAT_MAX_RESP	ControlWave Micro Com Port 5 VSAT maximum response time
10133	@GV._P5_RETRIES	ControlWave Micro Com Port 5 number of comm retries (BSAP Master Only)
10134	@GV._P5_TIMEOUT	ControlWave Micro Com Port 5 reply message timeout from slave
10135	@GV._P5_VSAT_UP_ACK_WAIT	ControlWave Micro Com Port 5 VSAT up acknowledgement wait period
10136	@GV._P6_POLL_PER	ControlWave Micro Com Port 6 Poll Period
10137	@GV._P6_WRITE_DEL	ControlWave Micro Com Port 6 Write Delay
10138	@GV._P6_WRITE_TMO	ControlWave Micro Com Port 6 Write Timeout
10139	@GV._P6_PAD_FRONT	ControlWave Micro Com Port 6 number of null spaces to pad the front of the message

Reg#	Variable	Description
10140	@GV._P6_PAD_BACK	ControlWave Micro Com Port 6 number of null spaces to pad the back of the message
10141	@GV._P6_CYCLE_INT	ControlWave Micro Com Port 6 Fast Poll Cycle Interval
10142	@GV._P6_CYCLE_TIMEO	ControlWave Micro Com Port 6 Fast Poll Cycle Timeout Period
10143	@GV._P6_LOCAL_PORT	ControlWave Micro Com Port 6 - this port is the slave port
10144	@GV._P6_VSAT_MIN_RESP	ControlWave Micro Com Port 6 VSAT minimum response time
10145	@GV._P6_VSAT_MAX_RESP	ControlWave Micro Com Port 6 VSAT maximum response time
10146	@GV._P6_RETRIES	ControlWave Micro Com Port 6 number of comm retries (BSAP Master Only)
10147	@GV._P6_TIMEOUT	ControlWave Micro Com Port 6 reply message timeout from slave
10148	@GV._P6_VSAT_UP_ACK_WAIT	ControlWave Micro Com Port 6 VSAT up acknowledgement wait period
10149	@GV._P7_POLL_PER	ControlWave Micro Com Port 7 Poll Period
10150	@GV._P7_WRITE_DEL	ControlWave Micro Com Port 7 Write Delay
10151	@GV._P7_WRITE_TMO	ControlWave Micro Com Port 7 Write Timeout
10152	@GV._P7_PAD_FRONT	ControlWave Micro Com Port 7 number of null spaces to pad the front of the message
10153	@GV._P7_PAD_BACK	ControlWave Micro Com Port 7 number of null spaces to pad the back of the message
10154	@GV._P7_CYCLE_INT	ControlWave Micro Com Port 7 Fast Poll Cycle Interval
10155	@GV._P7_CYCLE_TIMEO	ControlWave Micro Com Port 7 Fast Poll Cycle Timeout Period
10156	@GV._P7_LOCAL_PORT	ControlWave Micro Com Port 7 - this port is the slave port
10157	@GV._P7_VSAT_MIN_RESP	ControlWave Micro Com Port 7 VSAT minimum response time
10158	@GV._P7_VSAT_MAX_RESP	ControlWave Micro Com Port 7 VSAT maximum response time
10159	@GV._P7_RETRIES	ControlWave Micro Com Port 7 number of comm retries (BSAP Master Only)
10160	@GV._P7_TIMEOUT	ControlWave Micro Com Port 7 reply message timeout from slave
10161	@GV._P7_VSAT_UP_ACK_WAIT	ControlWave Micro Com Port 7 VSAT up acknowledgement wait period
10162	@GV._P8_POLL_PER	ControlWave Micro Com Port 8 Poll Period
10163	@GV._P8_WRITE_DEL	ControlWave Micro Com Port 8 Write Delay
10164	@GV._P8_WRITE_TMO	ControlWave Micro Com Port 8 Write Timeout
10165	@GV._P8_PAD_FRONT	ControlWave Micro Com Port 8 number of null spaces to pad the front of the message
10166	@GV._P8_PAD_BACK	ControlWave Micro Com Port 8 number of null spaces to pad the back of the message
10167	@GV._P8_CYCLE_INT	ControlWave Micro Com Port 8 Fast Poll Cycle Interval
10168	@GV._P8_CYCLE_TIMEO	ControlWave Micro Com Port 8 Fast Poll Cycle Timeout Period
10169	@GV._P8_LOCAL_PORT	ControlWave Micro Com Port 8 - this port is the slave port
10170	@GV._P8_VSAT_MIN_RESP	ControlWave Micro Com Port 8 VSAT minimum response time
10171	@GV._P8_VSAT_MAX_RESP	ControlWave Micro Com Port 8 VSAT maximum response time
10172	@GV._P8_RETRIES	ControlWave Micro Com Port 8 number of comm retries (BSAP Master Only)

Reg#	Variable	Description
10173	@GV._P8_TIMEOUT	ControlWave Micro Com Port 8 reply message timeout from slave
10174	@GV._P8_VSAT_UP_ACK_WAIT	ControlWave Micro Com Port 8 VSAT up acknowledgement wait period
10175	@GV._P9_POLL_PER	ControlWave Micro Com Port 9 Poll Period
10176	@GV._P9_WRITE_DEL	ControlWave Micro Com Port 9 Write Delay
10177	@GV._P9_WRITE_TMO	ControlWave Micro Com Port 9 Write Timeout
10178	@GV._P9_PAD_FRONT	ControlWave Micro Com Port 9 number of null spaces to pad the front of the message
10179	@GV._P9_PAD_BACK	ControlWave Micro Com Port 9 number of null spaces to pad the back of the message
10180	@GV._P9_CYCLE_INT	ControlWave Micro Com Port 9 Fast Poll Cycle Interval
10181	@GV._P9_CYCLE_TIMEO	ControlWave Micro Com Port 9 Fast Poll Cycle Timeout Period
10182	@GV._P9_LOCAL_PORT	ControlWave Micro Com Port 9 - this port is the slave port
10183	@GV._P9_VSAT_MIN_RESP	ControlWave Micro Com Port 9 VSAT minimum response time
10184	@GV._P9_VSAT_MAX_RESP	ControlWave Micro Com Port 9 VSAT maximum response time
10185	@GV._P9_RETRIES	ControlWave Micro Com Port 9 number of comm retries (BSAP Master Only)
10186	@GV._P9_TIMEOUT	ControlWave Micro Com Port 9 reply message timeout from slave
10187	@GV._P9_VSAT_UP_ACK_WAIT	ControlWave Micro Com Port 9 VSAT up acknowledgement wait period
10188	@GV._P10_POLL_PER	ControlWave Micro Com Port 10 Poll Period
10189	@GV._P10_WRITE_DEL	ControlWave Micro Com Port 10 Write Delay
10190	@GV._P10_WRITE_TMO	ControlWave Micro Com Port 10 Write Timeout
10191	@GV._P10_PAD_FRONT	ControlWave Micro Com Port 10 number of null spaces to pad the front of the message
10192	@GV._P10_PAD_BACK	ControlWave Micro Com Port 10 number of null spaces to pad the back of the message
10193	@GV._P10_CYCLE_INT	ControlWave Micro Com Port 10 Fast Poll Cycle Interval
10194	@GV._P10_CYCLE_TIMEO	ControlWave Micro Com Port 10 Fast Poll Cycle Timeout Period
10195	@GV._P10_LOCAL_PORT	ControlWave Micro Com Port 10 - this port is the slave port
10196	@GV._P10_VSAT_MIN_RESP	ControlWave Micro Com Port 10 VSAT minimum response time
10197	@GV._P10_VSAT_MAX_RESP	ControlWave Micro Com Port 10 VSAT maximum response time
10198	@GV._P10_RETRIES	ControlWave Micro Com Port 10 number of comm retries (BSAP Master Only)
10199	@GV._P10_TIMEOUT	ControlWave Micro Com Port 10 reply message timeout from slave
10200	@GV._P10_VSAT_UP_ACK_WAIT	ControlWave Micro Com Port 10 VSAT up acknowledgement wait period
10201	@GV._P11_POLL_PER	ControlWave Micro Com Port 11 Poll Period
10202	@GV._P11_WRITE_DEL	ControlWave Micro Com Port 11 Write Delay
10203	@GV._P11_WRITE_TMO	ControlWave Micro Com Port 11 Write Timeout
10204	@GV._P11_PAD_FRONT	ControlWave Micro Com Port 11 number of null spaces to pad the front of the message
10205	@GV._P11_PAD_BACK	ControlWave Micro Com Port 11 number of null spaces to pad the back of the message
10206	@GV._P11_CYCLE_INT	ControlWave Micro Com Port 11 Fast Poll Cycle Interval

Reg#	Variable	Description
10207	@GV._P11_CYCLE_TIMEO	ControlWave Micro Com Port 11 Fast Poll Cycle Timeout Period
10208	@GV._P11_LOCAL_PORT	ControlWave Micro Com Port 11 - this port is the slave port
10209	@GV._P11_VSAT_MIN_RESP	ControlWave Micro Com Port 11 VSAT minimum response time
10210	@GV._P11_VSAT_MAX_RESP	ControlWave Micro Com Port 11 VSAT maximum response time
10211	@GV._P11_RETRIES	ControlWave Micro Com Port 11 number of comm retries (BSAP Master Only)
10212	@GV._P11_TIMEOUT	ControlWave Micro Com Port 11 reply message timeout from slave
10213	@GV._P11_VSAT_UP_ACK_WAIT	ControlWave Micro Com Port 11 VSAT up acknowledgement wait period
10214	IO_1.HWAIs_1.HWAI_1	Hardware AI 1, the 1st AI point installed on the ControlWave Micro
10215	IO_1.HWAIs_1.HWAI_2	Hardware AI 2, the 2nd AI point installed on the ControlWave Micro
10216	IO_1.HWAIs_1.HWAI_3	Hardware AI 3, the 3rd AI point installed on the ControlWave Micro
10217	IO_1.HWAIs_1.HWAI_4	Hardware AI 4, the 4th AI point installed on the ControlWave Micro
10218	IO_1.HWAIs_1.HWAI_5	Hardware AI 5, the 5th AI point installed on the ControlWave Micro
10219	IO_1.HWAIs_1.HWAI_6	Hardware AI 6, the 6th AI point installed on the ControlWave Micro
10220	IO_1.HWAIs_1.HWAI_7	Hardware AI 7, the 7th AI point installed on the ControlWave Micro
10221	IO_1.HWAIs_1.HWAI_8	Hardware AI 8, the 8th AI point installed on the ControlWave Micro
10222	IO_1.HWAIs_1.HWAI_9	Hardware AI 9, the 9th AI point installed on the ControlWave Micro
10223	IO_1.HWAIs_1.HWAI_10	Hardware AI 10, the 10th AI point installed on the ControlWave Micro
10224	IO_1.HWAIs_1.HWAI_11	Hardware AI 11, the 11th AI point installed on the ControlWave Micro
10225	IO_1.HWAIs_1.HWAI_12	Hardware AI 12, the 12th AI point installed on the ControlWave Micro
10226	IO_1.HWAIs_1.HWAI_13	Hardware AI 13, the 13th AI point installed on the ControlWave Micro
10227	IO_1.HWAIs_1.HWAI_14	Hardware AI 14, the 14th AI point installed on the ControlWave Micro
10228	IO_1.HWAIs_1.HWAI_15	Hardware AI 15, the 15th AI point installed on the ControlWave Micro
10229	IO_1.HWAIs_1.HWAI_16	Hardware AI 16, the 16th AI point installed on the ControlWave Micro
10230	IO_1.HWAIs_1.HWAI_17	Hardware AI 17, the 17th AI point installed on the ControlWave Micro
10231	IO_1.HWAIs_1.HWAI_18	Hardware AI 18, the 18th AI point installed on the ControlWave Micro
10232	IO_1.HWAIs_1.HWAI_19	Hardware AI 19, the 19th AI point installed on the ControlWave Micro
10233	IO_1.HWAIs_1.HWAI_20	Hardware AI 20, the 20th AI point installed on the ControlWave Micro
10234	IO_1.HWAIs_1.HWAI_21	Hardware AI 21, the 21st AI point installed on the ControlWave Micro
10235	IO_1.HWAIs_1.HWAI_22	Hardware AI 22, the 22nd AI point installed on the ControlWave Micro
10236	IO_1.HWAIs_1.HWAI_23	Hardware AI 23, the 23rd AI point installed on the ControlWave Micro
10237	IO_1.HWAIs_1.HWAI_24	Hardware AI 24, the 24th AI point installed on the ControlWave Micro

Reg#	Variable	Description
10238	IO_1.HWAIs_1.HWAI_25	Hardware AI 25, the 25th AI point installed on the ControlWave Micro
10239	IO_1.HWAIs_1.HWAI_26	Hardware AI 26, the 26th AI point installed on the ControlWave Micro
10240	IO_1.HWAIs_1.HWAI_27	Hardware AI 27, the 27th AI point installed on the ControlWave Micro
10241	IO_1.HWAIs_1.HWAI_28	Hardware AI 28, the 28th AI point installed on the ControlWave Micro
10242	IO_1.HWAIs_1.HWAI_29	Hardware AI 29, the 29th AI point installed on the ControlWave Micro
10243	IO_1.HWAIs_1.HWAI_30	Hardware AI 30, the 30th AI point installed on the ControlWave Micro
10244	IO_1.HWAIs_1.HWAI_31	Hardware AI 31, the 31st AI point installed on the ControlWave Micro
10245	IO_1.HWAIs_1.HWAI_32	Hardware AI 32, the 32nd AI point installed on the ControlWave Micro
10246	IO_1.HWAIs_1.HWAI_33	Hardware AI 33, the 33rd AI point installed on the ControlWave Micro
10247	IO_1.HWAIs_1.HWAI_34	Hardware AI 34, the 34th AI point installed on the ControlWave Micro
10248	IO_1.HWAIs_1.HWAI_35	Hardware AI 35, the 35th AI point installed on the ControlWave Micro
10249	IO_1.HWAIs_1.HWAI_36	Hardware AI 36, the 36th AI point installed on the ControlWave Micro
10250	IO_1.HWAIs_1.HWAI_37	Hardware AI 37, the 37th AI point installed on the ControlWave Micro
10251	IO_1.HWAIs_1.HWAI_38	Hardware AI 38, the 38th AI point installed on the ControlWave Micro
10252	IO_1.HWAIs_1.HWAI_39	Hardware AI 39, the 39th AI point installed on the ControlWave Micro
10253	IO_1.HWAIs_1.HWAI_40	Hardware AI 40, the 40th AI point installed on the ControlWave Micro
10254	IO_1.HWAIs_1.HWAI_41	Hardware AI 41, the 41st AI point installed on the ControlWave Micro
10255	IO_1.HWAIs_1.HWAI_42	Hardware AI 42, the 42nd AI point installed on the ControlWave Micro
10256	IO_1.HWAIs_1.HWAI_43	Hardware AI 43, the 43rd AI point installed on the ControlWave Micro
10257	IO_1.HWAIs_1.HWAI_44	Hardware AI 44, the 44th AI point installed on the ControlWave Micro
10258	IO_1.HWAIs_1.HWAI_45	Hardware AI 45, the 45th AI point installed on the ControlWave Micro
10259	IO_1.HWAIs_1.HWAI_46	Hardware AI 46, the 46th AI point installed on the ControlWave Micro
10260	IO_1.HWAIs_1.HWAI_47	Hardware AI 47, the 47th AI point installed on the ControlWave Micro
10261	IO_1.HWAIs_1.HWAI_48	Hardware AI 48, the 48th AI point installed on the ControlWave Micro
10262	IO_1.HWAIs_1.HWAI_49	Hardware AI 49, the 49th AI point installed on the ControlWave Micro
10263	IO_1.HWAIs_1.HWAI_50	Hardware AI 50, the 50th AI point installed on the ControlWave Micro
10264	IO_1.HWAIs_1.HWAI_51	Hardware AI 51, the 51st AI point installed on the ControlWave Micro
10265	IO_1.HWAIs_1.HWAI_52	Hardware AI 52, the 52nd AI point installed on the ControlWave Micro
10266	IO_1.HWAIs_1.HWAI_53	Hardware AI 53, the 53rd AI point installed on the ControlWave Micro
10267	IO_1.HWAIs_1.HWAI_54	Hardware AI 54, the 54th AI point installed on the ControlWave Micro
10268	IO_1.HWAIs_1.HWAI_55	Hardware AI 55, the 55th AI point installed on the ControlWave Micro

Reg#	Variable	Description
10269	IO_1.HWAIs_1.HWAI_56	Hardware AI 56, the 56th AI point installed on the ControlWave Micro
10270	IO_1.HWAIs_1.HWAI_57	Hardware AI 57, the 57th AI point installed on the ControlWave Micro
10271	IO_1.HWAIs_1.HWAI_58	Hardware AI 58, the 58th AI point installed on the ControlWave Micro
10272	IO_1.HWAIs_1.HWAI_59	Hardware AI 59, the 59th AI point installed on the ControlWave Micro
10273	IO_1.HWAIs_1.HWAI_60	Hardware AI 60, the 60th AI point installed on the ControlWave Micro
10274	IO_1.HWAIs_1.HWAI_61	Hardware AI 61, the 61st AI point installed on the ControlWave Micro
10275	IO_1.HWAIs_1.HWAI_62	Hardware AI 62, the 62nd AI point installed on the ControlWave Micro
10276	IO_1.HWAIs_1.HWAI_63	Hardware AI 63, the 63rd AI point installed on the ControlWave Micro
10277	IO_1.HWAIs_1.HWAI_64	Hardware AI 64, the 64th AI point installed on the ControlWave Micro
10278	IO_1.HWAIs_1.HWAI_65	Hardware AI 65, the 65th AI point installed on the ControlWave Micro
10279	IO_1.HWAIs_1.HWAI_66	Hardware AI 66, the 66th AI point installed on the ControlWave Micro
10280	IO_1.HWAIs_1.HWAI_67	Hardware AI 67, the 67th AI point installed on the ControlWave Micro
10281	IO_1.HWAIs_1.HWAI_68	Hardware AI 68, the 68th AI point installed on the ControlWave Micro
10282	IO_1.HWAIs_1.HWAI_69	Hardware AI 69, the 69th AI point installed on the ControlWave Micro
10283	IO_1.HWAIs_1.HWAI_70	Hardware AI 70, the 70th AI point installed on the ControlWave Micro
10284	IO_1.HWAIs_1.HWAI_71	Hardware AI 71, the 71st AI point installed on the ControlWave Micro
10285	IO_1.HWAIs_1.HWAI_72	Hardware AI 72, the 72nd AI point installed on the ControlWave Micro
10286	IO_1.HWAIs_1.HWAI_73	Hardware AI 73, the 73rd AI point installed on the ControlWave Micro
10287	IO_1.HWAIs_1.HWAI_74	Hardware AI 74, the 74th AI point installed on the ControlWave Micro
10288	IO_1.HWAIs_1.HWAI_75	Hardware AI 75, the 75th AI point installed on the ControlWave Micro
10289	IO_1.HWAIs_1.HWAI_76	Hardware AI 76, the 76th AI point installed on the ControlWave Micro
10290	IO_1.HWAIs_1.HWAI_77	Hardware AI 77, the 77th AI point installed on the ControlWave Micro
10291	IO_1.HWAIs_1.HWAI_78	Hardware AI 78, the 78th AI point installed on the ControlWave Micro
10292	IO_1.HWAIs_1.HWAI_79	Hardware AI 79, the 79th AI point installed on the ControlWave Micro
10293	IO_1.HWAIs_1.HWAI_80	Hardware AI 80, the 80th AI point installed on the ControlWave Micro
10294	IO_1.HWAIs_1.HWAI_81	Hardware AI 81, the 81st AI point installed on the ControlWave Micro
10295	IO_1.HWAIs_1.HWAI_82	Hardware AI 82, the 82nd AI point installed on the ControlWave Micro
10296	IO_1.HWAIs_1.HWAI_83	Hardware AI 83, the 83rd AI point installed on the ControlWave Micro
10297	IO_1.HWAIs_1.HWAI_84	Hardware AI 84, the 84th AI point installed on the ControlWave Micro
10298	IO_1.HWAIs_1.HWAI_85	Hardware AI 85, the 85th AI point installed on the ControlWave Micro
10299	IO_1.HWAIs_1.HWAI_86	Hardware AI 86, the 86th AI point installed on the ControlWave Micro

Reg#	Variable	Description
10300	IO_1.HWAIs_1.HWAI_87	Hardware AI 87, the 87th AI point installed on the ControlWave Micro
10301	IO_1.HWAIs_1.HWAI_88	Hardware AI 88, the 88th AI point installed on the ControlWave Micro
10302	IO_1.HWAIs_1.HWAI_89	Hardware AI 89, the 89th AI point installed on the ControlWave Micro
10303	IO_1.HWAIs_1.HWAI_90	Hardware AI 90, the 90th AI point installed on the ControlWave Micro
10304	IO_1.HWAIs_1.HWAI_91	Hardware AI 91, the 91st AI point installed on the ControlWave Micro
10305	IO_1.HWAIs_1.HWAI_92	Hardware AI 92, the 92nd AI point installed on the ControlWave Micro
10306	IO_1.HWAIs_1.HWAI_93	Hardware AI 93, the 93rd AI point installed on the ControlWave Micro
10307	IO_1.HWAIs_1.HWAI_94	Hardware AI 94, the 94th AI point installed on the ControlWave Micro
10308	IO_1.HWAIs_1.HWAI_95	Hardware AI 95, the 95th AI point installed on the ControlWave Micro
10309	IO_1.HWAIs_1.HWAI_96	Hardware AI 96, the 96th AI point installed on the ControlWave Micro
10310	IO_1.HWAIs_1.HWAI_97	Hardware AI 97, the 97th AI point installed on the ControlWave Micro
10311	IO_1.HWAIs_1.HWAI_98	Hardware AI 98, the 98th AI point installed on the ControlWave Micro
10312	IO_1.HWAIs_1.HWAI_99	Hardware AI 99, the 99th AI point installed on the ControlWave Micro
10313	STC.DP_PID_1.PV_SPAN	Station DP PID process variable span for station n, where PID_n = run number
10314	STC.DP_PID_1.GAIN	Station DP PID gain for station n, where PID_n = run number
10315	STC.DP_PID_1.INTGRL	Station DP PID integral for station n, where PID_n = run number
10316	STC.DP_PID_1.DERIV	Station DP PID septoint ramp rate for station n, where PID_n = run number
10317	STC.DP_PID_1.SP_RAMPRATE	Station DP PID derivative for station n, where PID_n = run number
10318	STC.DP_PID_2.PV_SPAN	Station DP PID process variable span for station n, where PID_n = run number
10319	STC.DP_PID_2.GAIN	Station DP PID gain for station n, where PID_n = run number
10320	STC.DP_PID_2.INTGRL	Station DP PID integral for station n, where PID_n = run number
10321	STC.DP_PID_2.DERIV	Station DP PID septoint ramp rate for station n, where PID_n = run number
10322	STC.DP_PID_2.SP_RAMPRATE	Station DP PID derivative for station n, where PID_n = run number
10323	STC.DP_PID_3.PV_SPAN	Station DP PID process variable span for station n, where PID_n = run number
10324	STC.DP_PID_3.GAIN	Station DP PID gain for station n, where PID_n = run number
10325	STC.DP_PID_3.INTGRL	Station DP PID integral for station n, where PID_n = run number
10326	STC.DP_PID_3.DERIV	Station DP PID septoint ramp rate for station n, where PID_n = run number
10327	STC.DP_PID_3.SP_RAMPRATE	Station DP PID derivative for station n, where PID_n = run number
10328	STC.DP_PID_4.PV_SPAN	Station DP PID process variable span for station n, where PID_n = run number
10329	STC.DP_PID_4.GAIN	Station DP PID gain for station n, where PID_n = run number
10330	STC.DP_PID_4.INTGRL	Station DP PID integral for station n, where PID_n = run number

Reg#	Variable	Description
10331	STC.DP_PID_4.DERIV	Station DP PID septoint ramp rate for station n, where PID_n = run number
10332	STC.DP_PID_4.SP_RAMPRATE	Station DP PID derivative for station n, where PID_n = run number
10333	STC.DP_PID_5.PV_SPAN	Station DP PID process variable span for station n, where PID_n = run number
10334	STC.DP_PID_5.GAIN	Station DP PID gain for station n, where PID_n = run number
10335	STC.DP_PID_5.INTGRL	Station DP PID integral for station n, where PID_n = run number
10336	STC.DP_PID_5.DERIV	Station DP PID septoint ramp rate for station n, where PID_n = run number
10337	STC.DP_PID_5.SP_RAMPRATE	Station DP PID derivative for station n, where PID_n = run number
10338	STC.DP_PID_6.PV_SPAN	Station DP PID process variable span for station n, where PID_n = run number
10339	STC.DP_PID_6.GAIN	Station DP PID gain for station n, where PID_n = run number
10340	STC.DP_PID_6.INTGRL	Station DP PID integral for station n, where PID_n = run number
10341	STC.DP_PID_6.DERIV	Station DP PID septoint ramp rate for station n, where PID_n = run number
10342	STC.DP_PID_6.SP_RAMPRATE	Station DP PID derivative for station n, where PID_n = run number
10343	STC.DP_PID_7.PV_SPAN	Station DP PID process variable span for station n, where PID_n = run number
10344	STC.DP_PID_7.GAIN	Station DP PID gain for station n, where PID_n = run number
10345	STC.DP_PID_7.INTGRL	Station DP PID integral for station n, where PID_n = run number
10346	STC.DP_PID_7.DERIV	Station DP PID septoint ramp rate for station n, where PID_n = run number
10347	STC.DP_PID_7.SP_RAMPRATE	Station DP PID derivative for station n, where PID_n = run number
10348	STC.DP_PID_8.PV_SPAN	Station DP PID process variable span for station n, where PID_n = run number
10349	STC.DP_PID_8.GAIN	Station DP PID gain for station n, where PID_n = run number
10350	STC.DP_PID_8.INTGRL	Station DP PID integral for station n, where PID_n = run number
10351	STC.DP_PID_8.DERIV	Station DP PID septoint ramp rate for station n, where PID_n = run number
10352	STC.DP_PID_8.SP_RAMPRATE	Station DP PID derivative for station n, where PID_n = run number
10353	STC.DP_PID_1.IRPV	Station DP PID process variable input for station n, where PID_n = run number
10354	STC.DP_PID_1.SETPT	Station DP PID setpoint for station n, where PID_n = run number
10355	STC.DP_PID_2.IRPV	Station DP PID process variable input for station n, where PID_n = run number
10356	STC.DP_PID_2.SETPT	Station DP PID setpoint for station n, where PID_n = run number
10357	STC.DP_PID_3.IRPV	Station DP PID process variable input for station n, where PID_n = run number
10358	STC.DP_PID_3.SETPT	Station DP PID setpoint for station n, where PID_n = run number
10359	STC.DP_PID_4.IRPV	Station DP PID process variable input for station n, where PID_n = run number
10360	STC.DP_PID_4.SETPT	Station DP PID setpoint for station n, where PID_n = run number
10361	STC.DP_PID_5.IRPV	Station DP PID process variable input for station n, where PID_n = run number

Reg#	Variable	Description
10362	STC.DP_PID_5.SETPT	Station DP PID setpoint for station n, where PID_n = run number
10363	STC.DP_PID_6.IRPV	Station DP PID process variable input for station n, where PID_n = run number
10364	STC.DP_PID_6.SETPT	Station DP PID setpoint for station n, where PID_n = run number
10365	STC.DP_PID_7.IRPV	Station DP PID process variable input for station n, where PID_n = run number
10366	STC.DP_PID_7.SETPT	Station DP PID setpoint for station n, where PID_n = run number
10367	STC.DP_PID_8.IRPV	Station DP PID process variable input for station n, where PID_n = run number
10368	STC.DP_PID_8.SETPT	Station DP PID setpoint for station n, where PID_n = run number
10369	STC.CTL_SIGNALMAP_1.INSRC	Station Control - Station 1 Inlet Pressure value source - Process Variable Span
10370	STC.ST1_INLET	Station Control - Station 1 Inlet Pressure value used for control - Process Variable Span
10371	STC.CTL_SIGNALMAP_1.OUTSRC	Station Control - Station 1 Outlet Pressure value source - Process Variable Span
10372	STC.ST1_OUTLET	Station Control - Station 1 Outlet Pressure value used for control - Process Variable Span
10373	STC.STC_1.PID_Pmry3.PV_SPAN	Station 1 Primary3 PID process variable span
10374	STC.STC_1.PID_Pmry3.GAIN	Station 1 Primary3 PID gain
10375	STC.STC_1.PID_Pmry3.INTGRL	Station 1 Primary3 PID integral
10376	STC.STC_1.PID_Pmry3.DERIV	Station 1 Primary3 PID derivative
10377	STC.STC_1.PID_Pmry3.SP_RAMPRATE	Station 1 Primary3 PID septoint ramp rate
10378	STC.STC_1.PID_FLOW.PV_SPAN	Station 1 Flow/Energy PID process variable span
10379	STC.STC_1.PID_FLOW.GAIN	Station 1 Flow/Energy PID gain
10380	STC.STC_1.PID_FLOW.INTGRL	Station 1 Flow/Energy PID integral
10381	STC.STC_1.PID_FLOW.DERIV	Station 1 Flow/Energy PID derivative
10382	STC.STC_1.PID_FLOW.SP_RAMPRATE	Station 1 Flow/Energy PID septoint ramp rate
10383	STC.STC_1.PID_POVRD.PV_SPAN	Station 1 Pressure Override PID process variable span
10384	STC.STC_1.PID_POVRD.GAIN	Station 1 Pressure Override PID gain
10385	STC.STC_1.PID_POVRD.INTGRL	Station 1 Pressure Override PID integral
10386	STC.STC_1.PID_POVRD.DERIV	Station 1 Pressure Override PID derivative
10387	STC.STC_1.PID_POVRD.SP_RAMPRATE	Station 1 Pressure Override PID septoint ramp rate
10388	STC.STC_1.PID_MAOP.PV_SPAN	Station 1 MAOP PID process variable span
10389	STC.STC_1.PID_MAOP.GAIN	Station 1 MAOP PID gain
10390	STC.STC_1.PID_MAOP.INTGRL	Station 1 MAOP PID integral
10391	STC.STC_1.PID_MAOP.DERIV	Station 1 MAOP PID derivative
10392	STC.STC_1.PID_MAOP.SP_RAMPRATE	Station 1 MAOP PID septoint ramp rate
10393	STC.STC_1.PID_Ovrd1.PV_SPAN	Station 1 Override1 PID process variable span
10394	STC.STC_1.PID_Ovrd1.GAIN	Station 1 Override1 PID gain
10395	STC.STC_1.PID_Ovrd1.INTGRL	Station 1 Override1 PID integral
10396	STC.STC_1.PID_Ovrd1.DERIV	Station 1 Override1 PID derivative
10397	STC.STC_1.PID_Ovrd1.SP_RAMPRATE	Station 1 Override1 PID septoint ramp rate
10398	STC.STC_1.PID_OUTLO.PV_SPAN	Station 1 Outlet Pressure Minimum PID process variable span
10399	STC.STC_1.PID_OUTLO.GAIN	Station 1 Outlet Pressure Minimum PID gain
10400	STC.STC_1.PID_OUTLO.INTGRL	Station 1 Outlet Pressure Minimum PID integral
10401	STC.STC_1.PID_OUTLO.DERIV	Station 1 Outlet Pressure Minimum PID derivative
10402	STC.STC_1.PID_OUTLO.SP_RAMPRATE	Station 1 Outlet Pressure Minimum PID septoint

Reg#	Variable	Description
		ramp rate
10403	STC.STC_1.PID_Ovrd2.PV_SPAN	Station 1 Override2 PID process variable span
10404	STC.STC_1.PID_Ovrd2.GAIN	Station 1 Override2 PID gain
10405	STC.STC_1.PID_Ovrd2.INTGRL	Station 1 Override2 PID integral
10406	STC.STC_1.PID_Ovrd2.DERIV	Station 1 Override2 PID derivative
10407	STC.STC_1.PID_Ovrd2.SP_RAMPRATE	Station 1 Override2 PID septoint ramp rate
10408	STC.STC_1.PID_Pmry3.IRPV	Station 1 Primary 3 Control - Process Variable Input, un-normalized
10409	STC.CTL_PROFILE_1.L_ENERGY_SETPT	Station Control - Station 1 Energy Control Local Setpoint - Process Variable Span
10410	STC.STC_1.PID_FLOW.IRPV	Station Control - Station 1 Flow Control - Process Variable Input, un-normalized
10411	STC.CTL_PROFILE_1.L_FLOW_SETPT	Station Control - Station 1 Flow Control Local Setpoint - Process Variable Span
10412	STC.STC_1.PID_POVRD.IRPV	Station Control - Station 1 Pressure Override Control - Process Variable Input, un-normalized
10413	STC.CTL_PROFILE_1.L_PRESSURE_SETPT	Station Control - Station 1 Outlet Pressure Control Local Setpoint - Process Variable Span
10414	STC.STC_1.PID_MAOP.IRPV	Station Control - Station 1 Maximum Allowable Operating Pressure Override Control - Process Variable Input, un-normalized
10415	STC.STC_1.PID_MAOP.SETPT	Station Control - Station 1 Outlet Pressure Control Setpoint - Process Variable Span
10416	STC.STC_1.PID_Ovrd1.IRPV	Station Control - Station 1 Override 1 Control - Process Variable Input, un-normalized
10417	STC.STC_1.Ovrd_STPT1	Station Control - Station 1 Override 1 Control Setpoint - Process Variable Span
10418	STC.STC_1.PID_OUTLO.IRPV	Station Control - Station 1 Minumum Outlet Pressure Control - Process Variable Input, un-normalized
10419	STC.CTL_PROFILE_1.L_OUTMIN_SETPT	Station Control - Station 1 Primary 3 Control Local Setpoint - Process Variable Span
10420	STC.STC_1.PID_Ovrd2.IRPV	Station Control - Station 1 Override 2 Control - Process Variable Input, un-normalized
10421	STC.STC_1.Ovrd_STPT2	Station Control - Station 1 Override 2 Control Setpoint - Process Variable Span
10422	STC.STC_1.MAN_POS	Station Control - Station 1 Manual Position - Process Variable Span
10423	STC.STC_1.MAN_RAMP	Station Control - Station 1 Manual Ramp Rate - Process Variable Span
10424	STC.ST1_PID_OUT	Station Control - Station 1 PID Output- Process Variable Span
10425	STC.STC_1.ACTIVE_PID	Station Control - Active PID Loop 1 - Process Variable Span
10426	STC.CTL_SIGNALMAP_2.INSRC	Station Control - Station 2 Inlet Pressure value source - Process Variable Span
10427	STC.ST2_INLET	Station Control - Station 2 Inlet Pressure value used for control - Process Variable Span
10428	STC.CTL_SIGNALMAP_2.OUTSRC	Station Control - Station 2 Outlet Pressure value source - Process Variable Span
10429	STC.ST2_OUTLET	Station Control - Station 2 Outlet Pressure value used for control - Process Variable Span
10430	STC.STC_2.PID_Pmry3.PV_SPAN	Station 2 Primary3 PID process variable span
10431	STC.STC_2.PID_Pmry3.GAIN	Station 2 Primary3 PID gain
10432	STC.STC_2.PID_Pmry3.INTGRL	Station 2 Primary3 PID integral
10433	STC.STC_2.PID_Pmry3.DERIV	Station 2 Primary3 PID derivative
10434	STC.STC_2.PID_Pmry3.SP_RAMPRATE	Station 2 Primary3 PID septoint ramp rate
10435	STC.STC_2.PID_FLOW.PV_SPAN	Station 2 Flow/Energy PID process variable span
10436	STC.STC_2.PID_FLOW.GAIN	Station 2 Flow/Energy PID gain

Reg#	Variable	Description
10437	STC.STC_2.PID_FLOW.INTGRL	Station 2 Flow/Energy PID integral
10438	STC.STC_2.PID_FLOW.DERIV	Station 2 Flow/Energy PID derivative
10439	STC.STC_2.PID_FLOW.SP_RAMPRATE	Station 2 Flow/Energy PID septoint ramp rate
10440	STC.STC_2.PID_POVRD.PV_SPAN	Station 2 Pressure Override PID process variable span
10441	STC.STC_2.PID_POVRD.GAIN	Station 2 Pressure Override PID gain
10442	STC.STC_2.PID_POVRD.INTGRL	Station 2 Pressure Override PID integral
10443	STC.STC_2.PID_POVRD.DERIV	Station 2 Pressure Override PID derivative
10444	STC.STC_2.PID_POVRD.SP_RAMPRATE	Station 2 Pressure Override PID septoint ramp rate
10445	STC.STC_2.PID_MAOP.PV_SPAN	Station 2 MAOP PID process variable span
10446	STC.STC_2.PID_MAOP.GAIN	Station 2 MAOP PID gain
10447	STC.STC_2.PID_MAOP.INTGRL	Station 2 MAOP PID integral
10448	STC.STC_2.PID_MAOP.DERIV	Station 2 MAOP PID derivative
10449	STC.STC_2.PID_MAOP.SP_RAMPRATE	Station 2 MAOP PID septoint ramp rate
10450	STC.STC_2.PID_Ovrd1.PV_SPAN	Station 2 Override1 PID process variable span
10451	STC.STC_2.PID_Ovrd1.GAIN	Station 2 Override1 PID gain
10452	STC.STC_2.PID_Ovrd1.INTGRL	Station 2 Override1 PID integral
10453	STC.STC_2.PID_Ovrd1.DERIV	Station 2 Override1 PID derivative
10454	STC.STC_2.PID_Ovrd1.SP_RAMPRATE	Station 2 Override1 PID septoint ramp rate
10455	STC.STC_2.PID_OUTLO.PV_SPAN	Station 2 Outlet Pressure Minimum PID process variable span
10456	STC.STC_2.PID_OUTLO.GAIN	Station 2 Outlet Pressure Minimum PID gain
10457	STC.STC_2.PID_OUTLO.INTGRL	Station 2 Outlet Pressure Minimum PID integral
10458	STC.STC_2.PID_OUTLO.DERIV	Station 2 Outlet Pressure Minimum PID derivative
10459	STC.STC_2.PID_OUTLO.SP_RAMPRATE	Station 2 Outlet Pressure Minimum PID septoint ramp rate
10460	STC.STC_2.PID_Ovrd2.PV_SPAN	Station 2 Override2 PID process variable span
10461	STC.STC_2.PID_Ovrd2.GAIN	Station 2 Override2 PID gain
10462	STC.STC_2.PID_Ovrd2.INTGRL	Station 2 Override2 PID integral
10463	STC.STC_2.PID_Ovrd2.DERIV	Station 2 Override2 PID derivative
10464	STC.STC_2.PID_Ovrd2.SP_RAMPRATE	Station 2 Override2 PID septoint ramp rate
10465	STC.STC_2.PID_Pmry3.IRPV	Station Control - Station 2 Primary 3 Control - Process Variable Input, un-normalized
10466	STC.CTL_PROFILE_2.L_ENERGY_SETPT	Station Control - Station 2 Energy Control Local Setpoint - Process Variable Span
10467	STC.STC_2.PID_FLOW.IRPV	Station Control - Station 2 Flow Control - Process Variable Input, un-normalized
10468	STC.CTL_PROFILE_2.L_FLOW_SETPT	Station Control - Station 2 Flow Control Local Setpoint - Process Variable Span
10469	STC.STC_2.PID_POVRD.IRPV	Station Control - Station 2 Pressure Override Control - Process Variable Input, un-normalized
10470	STC.CTL_PROFILE_2.L_PRESSURE_SETPT	Station Control - Station 2 Outlet Pressure Control Local Setpoint - Process Variable Span
10471	STC.STC_2.PID_MAOP.IRPV	Station Control - Station 2 Maximum Allowable Operating Pressure Override Control - Process Variable Input, un-normalized
10472	STC.STC_2.PID_MAOP.SETPT	Station Control - Station 2 Outlet Pressure Control Setpoint - Process Variable Span
10473	STC.STC_2.PID_Ovrd1.IRPV	Station Control - Station 2 Override 1 Control - Process Variable Input, un-normalized
10474	STC.STC_2.Ovrd_STPT1	Station Control - Station 2 Override 1 Control Setpoint - Process Variable Span
10475	STC.STC_2.PID_OUTLO.IRPV	Station Control - Station 2 Minumum Outlet Pressure Control - Process Variable Input, un-

Reg#	Variable	Description
		normalized
10476	STC.CTL_PROFILE_2.L_OUTMIN_SETPT	Station Control - Station 2 Primary 3 Control Local Setpoint - Process Variable Span
10477	STC.STC_2.PID_Ovrd2.IRPV	Station Control - Station 2 Override 2 Control - Process Variable Input, un-normalized
10478	STC.STC_2.Ovrd_STPT2	Station Control - Station 2 Override 2 Control Setpoint - Process Variable Span
10479	STC.STC_2.MAN_POS	Station Control - Station 2 Manual Position - Process Variable Span
10480	STC.STC_2.MAN_RAMP	Station Control - Station 2 Manual Ramp Rate - Process Variable Span
10481	STC.ST2_PID_OUT	Station Control - Station 2 PID Output- Process Variable Span
10482	STC.STC_2.ACTIVE_PID	Station Control - Active PID Loop 2 - Process Variable Span
10483	STC.CTL_SIGNALMAP_3.INSRC	Station Control - Station 3 Inlet Pressure value source - Process Variable Span
10484	STC.ST3_INLET	Station Control - Station 3 Inlet Pressure value used for control - Process Variable Span
10485	STC.CTL_SIGNALMAP_3.OUTSRC	Station Control - Station 3 Outlet Pressure value source - Process Variable Span
10486	STC.ST3_OUTLET	Station Control - Station 3 Outlet Pressure value used for control - Process Variable Span
10487	STC.STC_3.PID_Pmry3.PV_SPAN	Station 3 Primary3 PID process variable span
10488	STC.STC_3.PID_Pmry3.GAIN	Station 3 Primary3 PID gain
10489	STC.STC_3.PID_Pmry3.INTGRL	Station 3 Primary3 PID integral
10490	STC.STC_3.PID_Pmry3.DERIV	Station 3 Primary3 PID derivative
10491	STC.STC_3.PID_Pmry3.SP_RAMPRATE	Station 3 Primary3 PID septoint ramp rate
10492	STC.STC_3.PID_FLOW.PV_SPAN	Station 3 Flow/Energy PID process variable span
10493	STC.STC_3.PID_FLOW.GAIN	Station 3 Flow/Energy PID gain
10494	STC.STC_3.PID_FLOW.INTGRL	Station 3 Flow/Energy PID integral
10495	STC.STC_3.PID_FLOW.DERIV	Station 3 Flow/Energy PID derivative
10496	STC.STC_3.PID_FLOW.SP_RAMPRATE	Station 3 Flow/Energy PID septoint ramp rate
10497	STC.STC_3.PID_POVRD.PV_SPAN	Station 3 Pressure Override PID process variable span
10498	STC.STC_3.PID_POVRD.GAIN	Station 3 Pressure Override PID gain
10499	STC.STC_3.PID_POVRD.INTGRL	Station 3 Pressure Override PID integral
10500	STC.STC_3.PID_POVRD.DERIV	Station 3 Pressure Override PID derivative
10501	STC.STC_3.PID_POVRD.SP_RAMPRATE	Station 3 Pressure Override PID septoint ramp rate
10502	STC.STC_3.PID_MAOP.PV_SPAN	Station 3 MAOP PID process variable span
10503	STC.STC_3.PID_MAOP.GAIN	Station 3 MAOP PID gain
10504	STC.STC_3.PID_MAOP.INTGRL	Station 3 MAOP PID integral
10505	STC.STC_3.PID_MAOP.DERIV	Station 3 MAOP PID derivative
10506	STC.STC_3.PID_MAOP.SP_RAMPRATE	Station 3 MAOP PID septoint ramp rate
10507	STC.STC_3.PID_Ovrd1.PV_SPAN	Station 3 Override1 PID process variable span
10508	STC.STC_3.PID_Ovrd1.GAIN	Station 3 Override1 PID gain
10509	STC.STC_3.PID_Ovrd1.INTGRL	Station 3 Override1 PID integral
10510	STC.STC_3.PID_Ovrd1.DERIV	Station 3 Override1 PID derivative
10511	STC.STC_3.PID_Ovrd1.SP_RAMPRATE	Station 3 Override1 PID septoint ramp rate
10512	STC.STC_3.PID_OUTLO.PV_SPAN	Station 3 Outlet Pressure Minimum PID process variable span
10513	STC.STC_3.PID_OUTLO.GAIN	Station 3 Outlet Pressure Minimum PID gain
10514	STC.STC_3.PID_OUTLO.INTGRL	Station 3 Outlet Pressure Minimum PID integral
10515	STC.STC_3.PID_OUTLO.DERIV	Station 3 Outlet Pressure Minimum PID derivative

Reg#	Variable	Description
10516	STC.STC_3.PID_OUTLO.SP_RAMPRATE	Station 3 Outlet Pressure Minimum PID septoint ramp rate
10517	STC.STC_3.PID_Ovrd2.PV_SPAN	Station 3 Override2 PID process variable span
10518	STC.STC_3.PID_Ovrd2.GAIN	Station 3 Override2 PID gain
10519	STC.STC_3.PID_Ovrd2.INTGRL	Station 3 Override2 PID integral
10520	STC.STC_3.PID_Ovrd2.DERIV	Station 3 Override2 PID derivative
10521	STC.STC_3.PID_Ovrd2.SP_RAMPRATE	Station 3 Override2 PID septoint ramp rate
10522	STC.STC_3.PID_Pmry3.IRPV	Station Control - Station 3 Primary 3 Control - Process Variable Input, un-normalized
10523	STC.CTL_PROFILE_3.L_ENERGY_SETPT	Station Control - Station 3 Energy Control Local Setpoint - Process Variable Span
10524	STC.STC_3.PID_FLOW.IRPV	Station Control - Station 3 Flow Control - Process Variable Input, un-normalized
10525	STC.CTL_PROFILE_3.L_FLOW_SETPT	Station Control - Station 3 Flow Control Local Setpoint - Process Variable Span
10526	STC.STC_3.PID_POVRD.IRPV	Station Control - Station 3 Pressure Override Control - Process Variable Input, un-normalized
10527	STC.CTL_PROFILE_3.L_PRESSURE_SETPT	Station Control - Station 3 Outlet Pressure Control Local Setpoint - Process Variable Span
10528	STC.STC_3.PID_MAOP.IRPV	Station Control - Station 3 Maximum Allowable Operating Pressure Override Control - Process Variable Input, un-normalized
10529	STC.STC_3.PID_MAOP.SETPT	Station Control - Station 3 Outlet Pressure Control Setpoint - Process Variable Span
10530	STC.STC_3.PID_Ovrd1.IRPV	Station Control - Station 3 Override 1 Control - Process Variable Input, un-normalized
10531	STC.STC_3.Ovrd_STPT1	Station Control - Station 3 Override 1 Control Setpoint - Process Variable Span
10532	STC.STC_3.PID_OUTLO.IRPV	Station Control - Station 3 Minumum Outlet Pressure Control - Process Variable Input, un-normalized
10533	STC.CTL_PROFILE_3.L_OUTMIN_SETPT	Station Control - Station 3 Primary 3 Control Local Setpoint - Process Variable Span
10534	STC.STC_3.PID_Ovrd2.IRPV	Station Control - Station 3 Override 2 Control - Process Variable Input, un-normalized
10535	STC.STC_3.Ovrd_STPT2	Station Control - Station 3 Override 2 Control Setpoint - Process Variable Span
10536	STC.STC_3.MAN_POS	Station Control - Station 3 Manual Position - Process Variable Span
10537	STC.STC_3.MAN_RAMP	Station Control - Station 3 Manual Ramp Rate - Process Variable Span
10538	STC.ST3_PID_OUT	Station Control - Station 3 PID Output- Process Variable Span
10539	STC.STC_3.ACTIVE_PID	Station Control - Active PID Loop 3 - Process Variable Span
10540	STC.CTL_SIGNALMAP_4.INSRC	Station Control - Station 4 Inlet Pressure value source - Process Variable Span
10541	STC.ST4_INLET	Station Control - Station 4 Inlet Pressure value used for control - Process Variable Span
10542	STC.CTL_SIGNALMAP_4.OUTSRC	Station Control - Station 4 Outlet Pressure value source - Process Variable Span
10543	STC.ST4_OUTLET	Station Control - Station 4 Outlet Pressure value used for control - Process Variable Span
10544	STC.STC_4.PID_Pmry3.PV_SPAN	Station 4 Primary3 PID process variable span
10545	STC.STC_4.PID_Pmry3.GAIN	Station 4 Primary3 PID gain
10546	STC.STC_4.PID_Pmry3.INTGRL	Station 4 Primary3 PID integral
10547	STC.STC_4.PID_Pmry3.DERIV	Station 4 Primary3 PID derivative
10548	STC.STC_4.PID_Pmry3.SP_RAMPRATE	Station 4 Primary3 PID septoint ramp rate
10549	STC.STC_4.PID_FLOW.PV_SPAN	Station 4 Flow/Energy PID process variable span

Reg#	Variable	Description
10550	STC.STC_4.PID_FLOW.GAIN	Station 4 Flow/Energy PID gain
10551	STC.STC_4.PID_FLOW.INTGRL	Station 4 Flow/Energy PID integral
10552	STC.STC_4.PID_FLOW.DERIV	Station 4 Flow/Energy PID derivative
10553	STC.STC_4.PID_FLOW.SP_RAMPRATE	Station 4 Flow/Energy PID septoint ramp rate
10554	STC.STC_4.PID_POVRD.PV_SPAN	Station 4 Pressure Override PID process variable span
10555	STC.STC_4.PID_POVRD.GAIN	Station 4 Pressure Override PID gain
10556	STC.STC_4.PID_POVRD.INTGRL	Station 4 Pressure Override PID integral
10557	STC.STC_4.PID_POVRD.DERIV	Station 4 Pressure Override PID derivative
10558	STC.STC_4.PID_POVRD.SP_RAMPRATE	Station 4 Pressure Override PID septoint ramp rate
10559	STC.STC_4.PID_MAOP.PV_SPAN	Station 4 MAOP PID process variable span
10560	STC.STC_4.PID_MAOP.GAIN	Station 4 MAOP PID gain
10561	STC.STC_4.PID_MAOP.INTGRL	Station 4 MAOP PID integral
10562	STC.STC_4.PID_MAOP.DERIV	Station 4 MAOP PID derivative
10563	STC.STC_4.PID_MAOP.SP_RAMPRATE	Station 4 MAOP PID septoint ramp rate
10564	STC.STC_4.PID_Ovrd1.PV_SPAN	Station 4 Override1 PID process variable span
10565	STC.STC_4.PID_Ovrd1.GAIN	Station 4 Override1 PID gain
10566	STC.STC_4.PID_Ovrd1.INTGRL	Station 4 Override1 PID integral
10567	STC.STC_4.PID_Ovrd1.DERIV	Station 4 Override1 PID derivative
10568	STC.STC_4.PID_Ovrd1.SP_RAMPRATE	Station 4 Override1 PID septoint ramp rate
10569	STC.STC_4.PID_OUTLO.PV_SPAN	Station 4 Outlet Pressure Minimum PID process variable span
10570	STC.STC_4.PID_OUTLO.GAIN	Station 4 Outlet Pressure Minimum PID gain
10571	STC.STC_4.PID_OUTLO.INTGRL	Station 4 Outlet Pressure Minimum PID integral
10572	STC.STC_4.PID_OUTLO.DERIV	Station 4 Outlet Pressure Minimum PID derivative
10573	STC.STC_4.PID_OUTLO.SP_RAMPRATE	Station 4 Outlet Pressure Minimum PID septoint ramp rate
10574	STC.STC_4.PID_Ovrd2.PV_SPAN	Station 4 Override2 PID process variable span
10575	STC.STC_4.PID_Ovrd2.GAIN	Station 4 Override2 PID gain
10576	STC.STC_4.PID_Ovrd2.INTGRL	Station 4 Override2 PID integral
10577	STC.STC_4.PID_Ovrd2.DERIV	Station 4 Override2 PID derivative
10578	STC.STC_4.PID_Ovrd2.SP_RAMPRATE	Station 4 Override2 PID septoint ramp rate
10579	STC.STC_4.PID_Pmry3.IRPV	Station Control - Station 4 Primary 3 Control - Process Variable Input, un-normalized
10580	STC.CTL_PROFILE_4.L_ENERGY_SETPT	Station Control - Station 4 Energy Control Local Setpoint - Process Variable Span
10581	STC.STC_4.PID_FLOW.IRPV	Station Control - Station 4 Flow Control - Process Variable Input, un-normalized
10582	STC.CTL_PROFILE_4.L_FLOW_SETPT	Station Control - Station 4 Flow Control Local Setpoint - Process Variable Span
10583	STC.STC_4.PID_POVRD.IRPV	Station Control - Station 4 Pressure Override Control - Process Variable Input, un-normalized
10584	STC.CTL_PROFILE_4.L_PRESSURE_SETPT	Station Control - Station 4 Outlet Pressure Control Local Setpoint - Process Variable Span
10585	STC.STC_4.PID_MAOP.IRPV	Station Control - Station 4 Maximum Allowable Operating Pressure Override Control - Process Variable Input, un-normalized
10586	STC.STC_4.PID_MAOP.SETPT	Station Control - Station 4 Outlet Pressure Control Setpoint - Process Variable Span
10587	STC.STC_4.PID_Ovrd1.IRPV	Station Control - Station 4 Override 1 Control - Process Variable Input, un-normalized
10588	STC.STC_4.Ovrd_STPT1	Station Control - Station 4 Override 1 Control Setpoint - Process Variable Span
10589	STC.STC_4.PID_OUTLO.IRPV	Station Control - Station 4 Minumum Outlet

Reg#	Variable	Description
		Pressure Control - Process Variable Input, un-normalized
10590	STC.CTL_PROFILE_4.L_OUTMIN_SETPT	Station Control - Station 4 Primary 3 Control Local Setpoint - Process Variable Span
10591	STC.STC_4.PID_Ovrd2.IRPV	Station Control - Station 4 Override 2 Control - Process Variable Input, un-normalized
10592	STC.STC_4.Ovrd_STPT2	Station Control - Station 4 Override 2 Control Setpoint - Process Variable Span
10593	STC.STC_4.MAN_POS	Station Control - Station 4 Manual Position - Process Variable Span
10594	STC.STC_4.MAN_RAMP	Station Control - Station 4 Manual Ramp Rate - Process Variable Span
10595	STC.ST4_PID_OUT	Station Control - Station 4 PID Output- Process Variable Span
10596	STC.STC_4.ACTIVE_PID	Station Control - Active PID Loop 4 - Process Variable Span
10597	STC.CTL_SIGNALMAP_5.INSRC	Station Control - Station 4 Inlet Pressure value source - Process Variable Span
10598	STC.ST5_INLET	Station Control - Station 4 Inlet Pressure value used for control - Process Variable Span
10599	STC.CTL_SIGNALMAP_5.OUTSRC	Station Control - Station 4 Outlet Pressure value source - Process Variable Span
10600	STC.ST5_OUTLET	Station Control - Station 4 Outlet Pressure value used for control - Process Variable Span
10601	STC.STC_5.PID_Pmry3.PV_SPAN	Station 5 Primary3 PID process variable span
10602	STC.STC_5.PID_Pmry3.GAIN	Station 5 Primary3 PID gain
10603	STC.STC_5.PID_Pmry3.INTGRL	Station 5 Primary3 PID integral
10604	STC.STC_5.PID_Pmry3.DERIV	Station 5 Primary3 PID derivative
10605	STC.STC_5.PID_Pmry3.SP_RAMPRATE	Station 5 Primary3 PID septoint ramp rate
10606	STC.STC_5.PID_FLOW.PV_SPAN	Station 5 Flow/Energy PID process variable span
10607	STC.STC_5.PID_FLOW.GAIN	Station 5 Flow/Energy PID gain
10608	STC.STC_5.PID_FLOW.INTGRL	Station 5 Flow/Energy PID integral
10609	STC.STC_5.PID_FLOW.DERIV	Station 5 Flow/Energy PID derivative
10610	STC.STC_5.PID_FLOW.SP_RAMPRATE	Station 5 Flow/Energy PID septoint ramp rate
10611	STC.STC_5.PID_POVRD.PV_SPAN	Station 5 Pressure Override PID process variable span
10612	STC.STC_5.PID_POVRD.GAIN	Station 5 Pressure Override PID gain
10613	STC.STC_5.PID_POVRD.INTGRL	Station 5 Pressure Override PID integral
10614	STC.STC_5.PID_POVRD.DERIV	Station 5 Pressure Override PID derivative
10615	STC.STC_5.PID_POVRD.SP_RAMPRATE	Station 5 Pressure Override PID septoint ramp rate
10616	STC.STC_5.PID_MAOP.PV_SPAN	Station 5 MAOP PID process variable span
10617	STC.STC_5.PID_MAOP.GAIN	Station 5 MAOP PID gain
10618	STC.STC_5.PID_MAOP.INTGRL	Station 5 MAOP PID integral
10619	STC.STC_5.PID_MAOP.DERIV	Station 5 MAOP PID derivative
10620	STC.STC_5.PID_MAOP.SP_RAMPRATE	Station 5 MAOP PID septoint ramp rate
10621	STC.STC_5.PID_Ovrd1.PV_SPAN	Station 5 Override1 PID process variable span
10622	STC.STC_5.PID_Ovrd1.GAIN	Station 5 Override1 PID gain
10623	STC.STC_5.PID_Ovrd1.INTGRL	Station 5 Override1 PID integral
10624	STC.STC_5.PID_Ovrd1.DERIV	Station 5 Override1 PID derivative
10625	STC.STC_5.PID_Ovrd1.SP_RAMPRATE	Station 5 Override1 PID septoint ramp rate
10626	STC.STC_5.PID_OUTLO.PV_SPAN	Station 5 Outlet Pressure Minimum PID process variable span
10627	STC.STC_5.PID_OUTLO.GAIN	Station 5 Outlet Pressure Minimum PID gain
10628	STC.STC_5.PID_OUTLO.INTGRL	Station 5 Outlet Pressure Minimum PID integral
10629	STC.STC_5.PID_OUTLO.DERIV	Station 5 Outlet Pressure Minimum PID

Reg#	Variable	Description
		derivative
10630	STC.STC_5.PID_OUTLO.SP_RAMPRATE	Station 5 Outlet Pressure Minimum PID septoint ramp rate
10631	STC.STC_5.PID_Ovrd2.PV_SPAN	Station 5 Override2 PID process variable span
10632	STC.STC_5.PID_Ovrd2.GAIN	Station 5 Override2 PID gain
10633	STC.STC_5.PID_Ovrd2.INTGRL	Station 5 Override2 PID integral
10634	STC.STC_5.PID_Ovrd2.DERIV	Station 5 Override2 PID derivative
10635	STC.STC_5.PID_Ovrd2.SP_RAMPRATE	Station 5 Override2 PID septoint ramp rate
10636	STC.STC_5.PID_Pmry3.IRPV	Station Control - Station 5 Primary 3 Control - Process Variable Input, un-normalized
10637	STC.CTL_PROFILE_5.L_ENERGY_SETPT	Station Control - Station 5 Energy Control Local Setpoint - Process Variable Span
10638	STC.STC_5.PID_FLOW.IRPV	Station Control - Station 5 Flow Control - Process Variable Input, un-normalized
10639	STC.CTL_PROFILE_5.L_FLOW_SETPT	Station Control - Station 5 Flow Control Local Setpoint - Process Variable Span
10640	STC.STC_5.PID_POVRD.IRPV	Station Control - Station 5 Pressure Override Control - Process Variable Input, un-normalized
10641	STC.CTL_PROFILE_5.L_PRESSURE_SETPT	Station Control - Station 5 Outlet Pressure Control Local Setpoint - Process Variable Span
10642	STC.STC_5.PID_MAOP.IRPV	Station Control - Station 5 Maximum Allowable Operating Pressure Override Control - Process Variable Input, un-normalized
10643	STC.STC_5.PID_MAOP.SETPT	Station Control - Station 5 Outlet Pressure Control Setpoint - Process Variable Span
10644	STC.STC_5.PID_Ovrd1.IRPV	Station Control - Station 5 Override 1 Control - Process Variable Input, un-normalized
10645	STC.STC_5.Ovrd_STPT1	Station Control - Station 5 Override 1 Control Setpoint - Process Variable Span
10646	STC.STC_5.PID_OUTLO.IRPV	Station Control - Station 5 Minumum Outlet Pressure Control - Process Variable Input, un-normalized
10647	STC.CTL_PROFILE_5.L_OUTMIN_SETPT	Station Control - Station 5 Primary 3 Control Local Setpoint - Process Variable Span
10648	STC.STC_5.PID_Ovrd2.IRPV	Station Control - Station 5 Override 2 Control - Process Variable Input, un-normalized
10649	STC.STC_5.Ovrd_STPT1	Station Control - Station 5 Override 2 Control Setpoint - Process Variable Span
10650	STC.STC_5.MAN_POS	Station Control - Station 5 Manual Position - Process Variable Span
10651	STC.STC_5.MAN_RAMP	Station Control - Station 5 Manual Ramp Rate - Process Variable Span
10652	STC.ST5_PID_OUT	Station Control - Station 5 PID Output- Process Variable Span
10653	STC.STC_5.ACTIVE_PID	Station Control - Active PID Loop 5 - Process Variable Span
10654	STC.CTL_SIGNALMAP_6.INSRC	Station Control - Station 6 Inlet Pressure value source - Process Variable Span
10655	STC.ST6_INLET	Station Control - Station 6 Inlet Pressure value used for control - Process Variable Span
10656	STC.CTL_SIGNALMAP_6.OUTSRC	Station Control - Station 6 Outlet Pressure value source - Process Variable Span
10657	STC.ST6_OUTLET	Station Control - Station 6 Outlet Pressure value used for control - Process Variable Span
10658	STC.STC_6.PID_Pmry3.PV_SPAN	Station 6 Primary3 PID process variable span
10659	STC.STC_6.PID_Pmry3.GAIN	Station 6 Primary3 PID gain
10660	STC.STC_6.PID_Pmry3.INTGRL	Station 6 Primary3 PID integral
10661	STC.STC_6.PID_Pmry3.DERIV	Station 6 Primary3 PID derivative
10662	STC.STC_6.PID_Pmry3.SP_RAMPRATE	Station 6 Primary3 PID septoint ramp rate

Reg#	Variable	Description
10663	STC.STC_6.PID_FLOW.PV_SPAN	Station 6 Flow/Energy PID process variable span
10664	STC.STC_6.PID_FLOW.GAIN	Station 6 Flow/Energy PID gain
10665	STC.STC_6.PID_FLOW.INTGRL	Station 6 Flow/Energy PID integral
10666	STC.STC_6.PID_FLOW.DERIV	Station 6 Flow/Energy PID derivative
10667	STC.STC_6.PID_FLOW.SP_RAMPRATE	Station 6 Flow/Energy PID septoint ramp rate
10668	STC.STC_6.PID_POVRD.PV_SPAN	Station 6 Pressure Override PID process variable span
10669	STC.STC_6.PID_POVRD.GAIN	Station 6 Pressure Override PID gain
10670	STC.STC_6.PID_POVRD.INTGRL	Station 6 Pressure Override PID integral
10671	STC.STC_6.PID_POVRD.DERIV	Station 6 Pressure Override PID derivative
10672	STC.STC_6.PID_POVRD.SP_RAMPRATE	Station 6 Pressure Override PID septoint ramp rate
10673	STC.STC_6.PID_MAOP.PV_SPAN	Station 6 MAOP PID process variable span
10674	STC.STC_6.PID_MAOP.GAIN	Station 6 MAOP PID gain
10675	STC.STC_6.PID_MAOP.INTGRL	Station 6 MAOP PID integral
10676	STC.STC_6.PID_MAOP.DERIV	Station 6 MAOP PID derivative
10677	STC.STC_6.PID_MAOP.SP_RAMPRATE	Station 6 MAOP PID septoint ramp rate
10678	STC.STC_6.PID_Ovrd1.PV_SPAN	Station 6 Override1 PID process variable span
10679	STC.STC_6.PID_Ovrd1.GAIN	Station 6 Override1 PID gain
10680	STC.STC_6.PID_Ovrd1.INTGRL	Station 6 Override1 PID integral
10681	STC.STC_6.PID_Ovrd1.DERIV	Station 6 Override1 PID derivative
10682	STC.STC_6.PID_Ovrd1.SP_RAMPRATE	Station 6 Override1 PID septoint ramp rate
10683	STC.STC_6.PID_OUTLO.PV_SPAN	Station 6 Outlet Pressure Minimum PID process variable span
10684	STC.STC_6.PID_OUTLO.GAIN	Station 6 Outlet Pressure Minimum PID gain
10685	STC.STC_6.PID_OUTLO.INTGRL	Station 6 Outlet Pressure Minimum PID integral
10686	STC.STC_6.PID_OUTLO.DERIV	Station 6 Outlet Pressure Minimum PID derivative
10687	STC.STC_6.PID_OUTLO.SP_RAMPRATE	Station 6 Outlet Pressure Minimum PID septoint ramp rate
10688	STC.STC_6.PID_Ovrd2.PV_SPAN	Station 6 Override2 PID process variable span
10689	STC.STC_6.PID_Ovrd2.GAIN	Station 6 Override2 PID gain
10690	STC.STC_6.PID_Ovrd2.INTGRL	Station 6 Override2 PID integral
10691	STC.STC_6.PID_Ovrd2.DERIV	Station 6 Override2 PID derivative
10692	STC.STC_6.PID_Ovrd2.SP_RAMPRATE	Station 6 Override2 PID septoint ramp rate
10693	STC.STC_6.PID_Pmry3.IRPV	Station Control - Station 6 Primary 3 Control - Process Variable Input, un-normalized
10694	STC.CTL_PROFILE_6.L_ENERGY_SETPT	Station Control - Station 6 Energy Control Local Setpoint - Process Variable Span
10695	STC.STC_6.PID_FLOW.IRPV	Station Control - Station 6 Flow Control - Process Variable Input, un-normalized
10696	STC.CTL_PROFILE_6.L_FLOW_SETPT	Station Control - Station 6 Flow Control Local Setpoint - Process Variable Span
10697	STC.STC_6.PID_POVRD.IRPV	Station Control - Station 6 Pressure Override Control - Process Variable Input, un-normalized
10698	STC.CTL_PROFILE_6.L_PRESSURE_SETPT	Station Control - Station 6 Outlet Pressure Control Local Setpoint - Process Variable Span
10699	STC.STC_6.PID_MAOP.IRPV	Station Control - Station 6 Maximum Allowable Operating Pressure Override Control - Process Variable Input, un-normalized
10700	STC.STC_6.PID_MAOP.SETPT	Station Control - Station 6 Outlet Pressure Control Setpoint - Process Variable Span
10701	STC.STC_6.PID_Ovrd1.IRPV	Station Control - Station 6 Override 1 Control - Process Variable Input, un-normalized
10702	STC.STC_6.Ovrd_STPT1	Station Control - Station 6 Override 1 Control Setpoint - Process Variable Span

Reg#	Variable	Description
10703	STC.STC_6.PID_OUTLO.IRPV	Station Control - Station 6 Minumum Outlet Pressure Control - Process Variable Input, un-normalized
10704	STC.CTL_PROFILE_6.L_OUTMIN_SETPT	Station Control - Station 6 Primary 3 Control Local Setpoint - Process Variable Span
10705	STC.STC_6.PID_Ovrd2.IRPV	Station Control - Station 6 Override 2 Control - Process Variable Input, un-normalized
10706	STC.STC_6.Ovrd_STPT1	Station Control - Station 6 Override 2 Control Setpoint - Process Variable Span
10707	STC.STC_6.MAN_POS	Station Control - Station 6 Manual Position - Process Variable Span
10708	STC.STC_6.MAN_RAMP	Station Control - Station 6 Manual Ramp Rate - Process Variable Span
10709	STC.ST6_PID_OUT	Station Control - Station 6 PID Output- Process Variable Span
10710	STC.STC_6.ACTIVE_PID	Station Control - Active PID Loop 6 - Process Variable Span
10711	MB.SPARE	***** RESERVED FOR FUTURE USE *****
10712	MB.SPARE	***** RESERVED FOR FUTURE USE *****
10713	MB.SPARE	***** RESERVED FOR FUTURE USE *****
10714	MB.SPARE	***** RESERVED FOR FUTURE USE *****
10715	MB.SPARE	***** RESERVED FOR FUTURE USE *****
10716	MB.SPARE	***** RESERVED FOR FUTURE USE *****
10717	MB.SPARE	***** RESERVED FOR FUTURE USE *****
10718	MB.SPARE	***** RESERVED FOR FUTURE USE *****
10719	MB.SPARE	***** RESERVED FOR FUTURE USE *****
10720	MB.SPARE	***** RESERVED FOR FUTURE USE ******
10721	MB.SPARE	***** RESERVED FOR FUTURE USE ******
10722	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10723	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10724	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10725	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10726	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10727	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10728	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10729	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10730	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10731	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10732	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10733	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10734	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10735	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10736	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10737	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10738	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10739	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10740	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10741	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10742	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10743	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10744	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10745	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10746	MB.SPARE	*** RESERVED FOR FUTURE USE ***

Reg#	Variable	Description
10747	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10748	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10749	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10750	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10751	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10752	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10753	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10754	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10755	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10756	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10757	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10758	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10759	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10760	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10761	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10762	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10763	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10764	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10765	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10766	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10767	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10768	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10769	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10770	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10771	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10772	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10773	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10774	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10775	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10776	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10777	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10778	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10779	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10780	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10781	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10782	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10783	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10784	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10785	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10786	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10787	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10788	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10789	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10790	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10791	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10792	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10793	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10794	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10795	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10796	MB.SPARE	*** RESERVED FOR FUTURE USE ***

Reg#	Variable	Description
10797	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10798	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10799	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10800	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10801	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10802	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10803	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10804	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10805	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10806	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10807	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10808	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10809	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10810	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10811	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10812	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10813	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10814	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10815	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10816	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10817	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10818	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10819	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10820	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10821	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10822	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10823	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10824	MB.SPARE	*** RESERVED FOR FUTURE USE ***
10825	TS.BV_1.MODE	Tube Switching - Block Valve 1 Operating Mode
10826	TS.BV_1.TRAVELTIME	Tube Switching - Block Valve 1 Travel Time
10827	TS.BV_1.PULSETIME	Tube Switching - Block Valve 1 Pulse Time
10828	TS.BV_2.MODE	Tube Switching - Block Valve 2 Operating Mode
10829	TS.BV_2.TRAVELTIME	Tube Switching - Block Valve 2 Travel Time
10830	TS.BV_2.PULSETIME	Tube Switching - Block Valve 2 Pulse Time
10831	TS.BV_3.MODE	Tube Switching - Block Valve 3 Operating Mode
10832	TS.BV_3.TRAVELTIME	Tube Switching - Block Valve 3 Travel Time
10833	TS.BV_3.PULSETIME	Tube Switching - Block Valve 3 Pulse Time
10834	TS.BV_4.MODE	Tube Switching - Block Valve 4 Operating Mode
10835	TS.BV_4.TRAVELTIME	Tube Switching - Block Valve 4 Travel Time
10836	TS.BV_4.PULSETIME	Tube Switching - Block Valve 4 Pulse Time
10837	TS.BV_5.MODE	Tube Switching - Block Valve 5 Operating Mode
10838	TS.BV_5.TRAVELTIME	Tube Switching - Block Valve 5 Travel Time
10839	TS.BV_5.PULSETIME	Tube Switching - Block Valve 5 Pulse Time
10840	TS.BV_6.MODE	Tube Switching - Block Valve 6 Operating Mode
10841	TS.BV_6.TRAVELTIME	Tube Switching - Block Valve 6 Travel Time
10842	TS.BV_6.PULSETIME	Tube Switching - Block Valve 6 Pulse Time
10843	TS.BV_7.MODE	Tube Switching - Block Valve 7 Operating Mode
10844	TS.BV_7.TRAVELTIME	Tube Switching - Block Valve 7 Travel Time
10845	TS.BV_7.PULSETIME	Tube Switching - Block Valve 7 Pulse Time
10846	TS.BV_8.MODE	Tube Switching - Block Valve 8 Operating Mode

Reg#	Variable	Description
10847	TS.BV_8.TRAVELTIME	Tube Switching - Block Valve 8 Travel Time
10848	TS.BV_8.PULSETIME	Tube Switching - Block Valve 8 Pulse Time
10849	TS.TC_1.ST1_ACTUAL_RANK	Tube Switching - Station 1 - Actual Rank of station
10850	TS.TC_1.ST1_MAXRANK	Tube Switching - Station 1 - Maximum Rank available at station
10851	TS.TC_1.ST1_REQ_RANK	Tube Switching - Station 1 - Requested Rank of station
10852	TS.ST1_T1_TSO	Tube Switching - Station 1 - Run assigned to Tube Ranked 1
10853	TS.ST1_T2_TSO	Tube Switching - Station 1 - Run assigned to Tube Ranked 2
10854	TS.ST1_T3_TSO	Tube Switching - Station 1 - Run assigned to Tube Ranked 3
10855	TS.ST1_T4_TSO	Tube Switching - Station 1 - Run assigned to Tube Ranked 4
10856	TS.ST1_T5_TSO	Tube Switching - Station 1 - Run assigned to Tube Ranked 5
10857	TS.ST1_T6_TSO	Tube Switching - Station 1 - Run assigned to Tube Ranked 6
10858	TS.ST1_T7_TSO	Tube Switching - Station 1 - Run assigned to Tube Ranked 7
10859	TS.ST1_T8_TSO	Tube Switching - Station 1 - Run assigned to Tube Ranked 8
10860	TS.TC_1.ST2_ACTUAL_RANK	Tube Switching - Station 2 - Actual Rank of station
10861	TS.TC_1.ST2_MAXRANK	Tube Switching - Station 2 - Maximum Rank available at station
10862	TS.TC_1.ST2_REQ_RANK	Tube Switching - Station 2 - Requested Rank of station
10863	TS.ST2_T1_TSO	Tube Switching - Station 2 - Run assigned to Tube Ranked 1
10864	TS.ST2_T2_TSO	Tube Switching - Station 2 - Run assigned to Tube Ranked 2
10865	TS.ST2_T3_TSO	Tube Switching - Station 2 - Run assigned to Tube Ranked 3
10866	TS.ST2_T4_TSO	Tube Switching - Station 2 - Run assigned to Tube Ranked 4
10867	TS.ST2_T5_TSO	Tube Switching - Station 2 - Run assigned to Tube Ranked 5
10868	TS.ST2_T6_TSO	Tube Switching - Station 2 - Run assigned to Tube Ranked 6
10869	TS.ST2_T7_TSO	Tube Switching - Station 2 - Run assigned to Tube Ranked 7
10870	TS.ST2_T8_TSO	Tube Switching - Station 2 - Run assigned to Tube Ranked 8
10871	TS.TC_1.ST3_ACTUAL_RANK	Tube Switching - Station 3 - Actual Rank of station
10872	TS.TC_1.ST3_MAXRANK	Tube Switching - Station 3 - Maximum Rank available at station
10873	TS.TC_1.ST3_REQ_RANK	Tube Switching - Station 3 - Requested Rank of station
10874	TS.ST3_T1_TSO	Tube Switching - Station 3 - Run assigned to Tube Ranked 1
10875	TS.ST3_T2_TSO	Tube Switching - Station 3 - Run assigned to Tube Ranked 2
10876	TS.ST3_T3_TSO	Tube Switching - Station 3 - Run assigned to Tube Ranked 3
10877	TS.ST3_T4_TSO	Tube Switching - Station 3 - Run assigned to Tube Ranked 4
10878	TS.ST3_T5_TSO	Tube Switching - Station 3 - Run assigned to Tube Ranked 5

Reg#	Variable	Description
10879	TS.ST3_T6_TSO	Tube Switching - Station 3 - Run assigned to Tube Ranked 6
10880	TS.ST3_T7_TSO	Tube Switching - Station 3 - Run assigned to Tube Ranked 7
10881	TS.ST3_T8_TSO	Tube Switching - Station 3 - Run assigned to Tube Ranked 8
10882	TS.TC_1.ST4_ACTUAL_RANK	Tube Switching - Station 4 - Actual Rank of station
10883	TS.TC_1.ST4_MAXRANK	Tube Switching - Station 4 - Maximum Rank available at station
10884	TS.TC_1.ST4_REQ_RANK	Tube Switching - Station 4 - Requested Rank of station
10885	TS.ST4_T1_TSO	Tube Switching - Station 4 - Run assigned to Tube Ranked 1
10886	TS.ST4_T2_TSO	Tube Switching - Station 4 - Run assigned to Tube Ranked 2
10887	TS.ST4_T3_TSO	Tube Switching - Station 4 - Run assigned to Tube Ranked 3
10888	TS.ST4_T4_TSO	Tube Switching - Station 4 - Run assigned to Tube Ranked 4
10889	TS.ST4_T5_TSO	Tube Switching - Station 4 - Run assigned to Tube Ranked 5
10890	TS.ST4_T6_TSO	Tube Switching - Station 4 - Run assigned to Tube Ranked 6
10891	TS.ST4_T7_TSO	Tube Switching - Station 4 - Run assigned to Tube Ranked 7
10892	TS.ST4_T8_TSO	Tube Switching - Station 4 - Run assigned to Tube Ranked 8
10893	TS.TC_1.ST5_ACTUAL_RANK	Tube Switching - Station 5 - Actual Rank of station
10894	TS.TC_1.ST5_MAXRANK	Tube Switching - Station 5 - Maximum Rank available at station
10895	TS.TC_1.ST5_REQ_RANK	Tube Switching - Station 5 - Requested Rank of station
10896	TS.ST5_T1_TSO	Tube Switching - Station 5 - Run assigned to Tube Ranked 1
10897	TS.ST5_T2_TSO	Tube Switching - Station 5 - Run assigned to Tube Ranked 2
10898	TS.ST5_T3_TSO	Tube Switching - Station 5 - Run assigned to Tube Ranked 3
10899	TS.ST5_T4_TSO	Tube Switching - Station 5 - Run assigned to Tube Ranked 4
10900	TS.ST5_T5_TSO	Tube Switching - Station 5 - Run assigned to Tube Ranked 5
10901	TS.ST5_T6_TSO	Tube Switching - Station 5 - Run assigned to Tube Ranked 6
10902	TS.ST5_T7_TSO	Tube Switching - Station 5 - Run assigned to Tube Ranked 7
10903	TS.ST5_T8_TSO	Tube Switching - Station 5 - Run assigned to Tube Ranked 8
10904	TS.TC_1.ST6_ACTUAL_RANK	Tube Switching - Station 6 - Actual Rank of station
10905	TS.TC_1.ST6_MAXRANK	Tube Switching - Station 6 - Maximum Rank available at station
10906	TS.TC_1.ST6_REQ_RANK	Tube Switching - Station 6 - Requested Rank of station
10907	TS.ST6_T1_TSO	Tube Switching - Station 6 - Run assigned to Tube Ranked 1
10908	TS.ST6_T2_TSO	Tube Switching - Station 6 - Run assigned to Tube Ranked 2
10909	TS.ST6_T3_TSO	Tube Switching - Station 6 - Run assigned to Tube Ranked 3

Reg#	Variable	Description
10910	TS.ST6_T4_TSO	Tube Switching - Station 6 - Run assigned to Tube Ranked 4
10911	TS.ST6_T5_TSO	Tube Switching - Station 6 - Run assigned to Tube Ranked 5
10912	TS.ST6_T6_TSO	Tube Switching - Station 6 - Run assigned to Tube Ranked 6
10913	TS.ST6_T7_TSO	Tube Switching - Station 6 - Run assigned to Tube Ranked 7
10914	TS.ST6_T8_TSO	Tube Switching - Station 6 - Run assigned to Tube Ranked 8
10915	TS.TC_1.TSO_1.HISWITCH	Tube Switching - Station n - Rank x Call next setpoint - n = 1 through 12, x = 1 through 12
10916	TS.TC_1.TSO_1.HIDB	Tube Switching - Station n - Rank x Call next deadband - n = 1 through 12, x = 1 through 12
10917	TS.TC_1.TSO_1.LOSWITCH	Tube Switching - Station n - Rank x Call previous setpoint - n = 1 through 12, x = 1 through 12
10918	TS.TC_1.TSO_1.LODB	Tube Switching - Station n - Rank x Call previous deadband - n = 1 through 12, x = 1 through 12
10919	TS.TC_1.TSO_1.PV	Tube Switching - Station n - Rank x Process Variable - n = 1 through 12, x = 1 through 12
10920	TS.TC_1.TSO_2.HISWITCH	Tube Switching - Station n - Rank x Call next setpoint - n = 1 through 12, x = 1 through 12
10921	TS.TC_1.TSO_2.HIDB	Tube Switching - Station n - Rank x Call next deadband - n = 1 through 12, x = 1 through 12
10922	TS.TC_1.TSO_2.LOSWITCH	Tube Switching - Station n - Rank x Call previous setpoint - n = 1 through 12, x = 1 through 12
10923	TS.TC_1.TSO_2.LODB	Tube Switching - Station n - Rank x Call previous deadband - n = 1 through 12, x = 1 through 12
10924	TS.TC_1.TSO_2.PV	Tube Switching - Station n - Rank x Process Variable - n = 1 through 12, x = 1 through 12
10925	TS.TC_1.TSO_3.HISWITCH	Tube Switching - Station n - Rank x Call next setpoint - n = 1 through 12, x = 1 through 12
10926	TS.TC_1.TSO_3.HIDB	Tube Switching - Station n - Rank x Call next deadband - n = 1 through 12, x = 1 through 12
10927	TS.TC_1.TSO_3.LOSWITCH	Tube Switching - Station n - Rank x Call previous setpoint - n = 1 through 12, x = 1 through 12
10928	TS.TC_1.TSO_3.LODB	Tube Switching - Station n - Rank x Call previous deadband - n = 1 through 12, x = 1 through 12
10929	TS.TC_1.TSO_3.PV	Tube Switching - Station n - Rank x Process Variable - n = 1 through 12, x = 1 through 12
10930	TS.TC_1.TSO_4.HISWITCH	Tube Switching - Station n - Rank x Call next setpoint - n = 1 through 12, x = 1 through 12
10931	TS.TC_1.TSO_4.HIDB	Tube Switching - Station n - Rank x Call next deadband - n = 1 through 12, x = 1 through 12
10932	TS.TC_1.TSO_4.LOSWITCH	Tube Switching - Station n - Rank x Call previous setpoint - n = 1 through 12, x = 1 through 12
10933	TS.TC_1.TSO_4.LODB	Tube Switching - Station n - Rank x Call previous deadband - n = 1 through 12, x = 1 through 12
10934	TS.TC_1.TSO_4.PV	Tube Switching - Station n - Rank x Process Variable - n = 1 through 12, x = 1 through 12
10935	TS.TC_1.TSO_5.HISWITCH	Tube Switching - Station n - Rank x Call next setpoint - n = 1 through 12, x = 1 through 12
10936	TS.TC_1.TSO_5.HIDB	Tube Switching - Station n - Rank x Call next deadband - n = 1 through 12, x = 1 through 12
10937	TS.TC_1.TSO_5.LOSWITCH	Tube Switching - Station n - Rank x Call previous setpoint - n = 1 through 12, x = 1 through 12
10938	TS.TC_1.TSO_5.LODB	Tube Switching - Station n - Rank x Call previous deadband - n = 1 through 12, x = 1 through 12
10939	TS.TC_1.TSO_5.PV	Tube Switching - Station n - Rank x Process Variable - n = 1 through 12, x = 1 through 12
10940	TS.TC_1.TSO_6.HISWITCH	Tube Switching - Station n - Rank x Call next setpoint - n = 1 through 12, x = 1 through 12

Reg#	Variable	Description
10941	TS.TC_1.TSO_6.HIDB	Tube Switching - Station n - Rank x Call next deadband - n = 1 through 12, x = 1 through 12
10942	TS.TC_1.TSO_6.LOSWITCH	Tube Switching - Station n - Rank x Call previous setpoint - n = 1 through 12, x = 1 through 12
10943	TS.TC_1.TSO_6.LODB	Tube Switching - Station n - Rank x Call previous deadband - n = 1 through 12, x = 1 through 12
10944	TS.TC_1.TSO_6.PV	Tube Switching - Station n - Rank x Process Variable - n = 1 through 12, x = 1 through 12
10945	TS.TC_1.TSO_7.HISWITCH	Tube Switching - Station n - Rank x Call next setpoint - n = 1 through 12, x = 1 through 12
10946	TS.TC_1.TSO_7.HIDB	Tube Switching - Station n - Rank x Call next deadband - n = 1 through 12, x = 1 through 12
10947	TS.TC_1.TSO_7.LOSWITCH	Tube Switching - Station n - Rank x Call previous setpoint - n = 1 through 12, x = 1 through 12
10948	TS.TC_1.TSO_7.LODB	Tube Switching - Station n - Rank x Call previous deadband - n = 1 through 12, x = 1 through 12
10949	TS.TC_1.TSO_7.PV	Tube Switching - Station n - Rank x Process Variable - n = 1 through 12, x = 1 through 12
10950	TS.TC_1.TSO_8.HISWITCH	Tube Switching - Station n - Rank x Call next setpoint - n = 1 through 12, x = 1 through 12
10951	TS.TC_1.TSO_8.HIDB	Tube Switching - Station n - Rank x Call next deadband - n = 1 through 12, x = 1 through 12
10952	TS.TC_1.TSO_8.LOSWITCH	Tube Switching - Station n - Rank x Call previous setpoint - n = 1 through 12, x = 1 through 12
10953	TS.TC_1.TSO_8.LODB	Tube Switching - Station n - Rank x Call previous deadband - n = 1 through 12, x = 1 through 12
10954	TS.TC_1.TSO_8.PV	Tube Switching - Station n - Rank x Process Variable - n = 1 through 12, x = 1 through 12
10955	MB.SPARE	
10956	MB.SPARE	
10957	MB.SPARE	
10958	MB.SPARE	
10959	MB.SPARE	
10960	MB.SPARE	
10961	MB.SPARE	
10962	MB.SPARE	
10963	MB.SPARE	
10964	MB.SPARE	
10965	MB.SPARE	
10966	MB.SPARE	
10967	MB.SPARE	
10968	MB.SPARE	
10969	MB.SPARE	
10970	MB.SPARE	
10971	MB.SPARE	
10972	MB.SPARE	
10973	MB.SPARE	
10974	MB.SPARE	
10975	BI.ST2_DIR_IND	Bidirectional Control - Station 2 Direction Indicator selected
10976	BI.ST2_CLS1	Bidirectional Control - Station 2 Limit Switch Indication Limit Switch 1 Close Limit Switch source selected
10977	BI.ST2_CLS2	Bidirectional Control - Station 2 Limit Switch Indication Limit Switch 2 Close Limit Switch source selected
10978	BI.ST2_OLS1	Bidirectional Control - Station 2 Limit Switch

Reg#	Variable	Description
		Indication Limit Switch 1 Open Limit Switch source selected
10979	BI.ST2_OLS2	Bidirectional Control - Station 2 Limit Switch Indication Limit Switch 2 Open Limit Switch source selected
10980	BC.ST_BIDIR_CTL_2.BIDIRVLVCTL_1.FWD_OPEN1	Bidirectional Control - Station 2 Programmed Control, BV to open 1st in Forward Direction
10981	BC.ST_BIDIR_CTL_2.BIDIRVLVCTL_1.FWD_OPEN2	Bidirectional Control - Station 2 Programmed Control, BV to open 2nd in Forward Direction
10982	BC.ST_BIDIR_CTL_2.BIDIRVLVCTL_1.FWD_OPEN3	Bidirectional Control - Station 2 Programmed Control, BV to open 3rd in Forward Direction
10983	BC.ST_BIDIR_CTL_2.BIDIRVLVCTL_1.FWD_OPEN4	Bidirectional Control - Station 2 Programmed Control, BV to open 4th in Forward Direction
10984	BC.ST_BIDIR_CTL_2.BIDIRVLVCTL_1.FWD_CLOSE1	Bidirectional Control - Station 2 Programmed Control, BV to close 1st in Forward Direction
10985	BC.ST_BIDIR_CTL_2.BIDIRVLVCTL_1.FWD_CLOSE2	Bidirectional Control - Station 2 Programmed Control, BV to close 2nd in Forward Direction
10986	BC.ST_BIDIR_CTL_2.BIDIRVLVCTL_1.FWD_CLOSE3	Bidirectional Control - Station 2 Programmed Control, BV to close 3rd in Forward Direction
10987	BC.ST_BIDIR_CTL_2.BIDIRVLVCTL_1.FWD_CLOSE4	Bidirectional Control - Station 2 Programmed Control, BV to close 4th in Forward Direction
10988	BC.ST_BIDIR_CTL_2.BIDIRVLVCTL_1.REV_OPEN1	Bidirectional Control - Station 2 Programmed Control, BV to open 1st in Reverse Direction
10989	BC.ST_BIDIR_CTL_2.BIDIRVLVCTL_1.REV_OPEN2	Bidirectional Control - Station 2 Programmed Control, BV to open 2nd in Reverse Direction
10990	BC.ST_BIDIR_CTL_2.BIDIRVLVCTL_1.REV_OPEN3	Bidirectional Control - Station 2 Programmed Control, BV to open 3rd in Reverse Direction
10991	BC.ST_BIDIR_CTL_2.BIDIRVLVCTL_1.REV_OPEN4	Bidirectional Control - Station 2 Programmed Control, BV to open 4th in Reverse Direction
10992	BC.ST_BIDIR_CTL_2.BIDIRVLVCTL_1.REV_CLOSE1	Bidirectional Control - Station 2 Programmed Control, BV to close 1st in Reverse Direction
10993	BC.ST_BIDIR_CTL_2.BIDIRVLVCTL_1.REV_CLOSE2	Bidirectional Control - Station 2 Programmed Control, BV to close 2nd in Reverse Direction
10994	BC.ST_BIDIR_CTL_2.BIDIRVLVCTL_1.REV_CLOSE3	Bidirectional Control - Station 2 Programmed Control, BV to close 3rd in Reverse Direction
10995	BC.ST_BIDIR_CTL_2.BIDIRVLVCTL_1.REV_CLOSE4	Bidirectional Control - Station 2 Programmed Control, BV to close 4th in Reverse Direction
10996	BC.ST_BIDIR_CTL_2.BIDIRVLVCTL_1.TIMEDLY	Bidirectional Control - Station 2 Programmed Control, Time delay between valve actions
10997	BC.ST_BIDIR_CTL_2.BV1.MODE	Bidirectional Control - Block Valve 1 Operating Mode, Station 2
10998	BC.ST_BIDIR_CTL_2.BV1.PULSETIME	Bidirectional Control - Block Valve 1 Pulse Time, Station 2
10999	BC.ST_BIDIR_CTL_2.BV1.TRAVELTIME	Bidirectional Control - Block Valve 1 Travel Time, Station 2
11000	BC.ST_BIDIR_CTL_2.BV2.MODE	Bidirectional Control - Block Valve 2 Operating Mode, Station 2
11001	BC.ST_BIDIR_CTL_2.BV2.PULSETIME	Bidirectional Control - Block Valve 2 Pulse Time, Station 2
11002	BC.ST_BIDIR_CTL_2.BV2.TRAVELTIME	Bidirectional Control - Block Valve 2 Travel Time, Station 2
11003	BC.ST_BIDIR_CTL_2.BV3.MODE	Bidirectional Control - Block Valve 3 Operating Mode, Station 2
11004	BC.ST_BIDIR_CTL_2.BV3.PULSETIME	Bidirectional Control - Block Valve 3 Pulse Time, Station 2
11005	BC.ST_BIDIR_CTL_2.BV3.TRAVELTIME	Bidirectional Control - Block Valve 3 Travel Time, Station 2
11006	BC.ST_BIDIR_CTL_2.BV4.MODE	Bidirectional Control - Block Valve 4 Operating Mode, Station 2
11007	BC.ST_BIDIR_CTL_2.BV4.PULSETIME	Bidirectional Control - Block Valve 4 Pulse Time, Station 2
11008	BC.ST_BIDIR_CTL_2.BV4.TRAVELTIME	Bidirectional Control - Block Valve 4 Travel Time,

Reg#	Variable	Description
		Station 2
11009	BC.ST_BIDIR_CTL_2.BV5.MODE	Bidirectional Control - Block Valve 5 Operating Mode, Station 2
11010	BC.ST_BIDIR_CTL_2.BV5.PULSETIME	Bidirectional Control - Block Valve 5 Pulse Time, Station 2
11011	BC.ST_BIDIR_CTL_2.BV5.TRAVELTIME	Bidirectional Control - Block Valve 5 Travel Time, Station 2
11012	BC.ST_BIDIR_CTL_2.BV6.MODE	Bidirectional Control - Block Valve 6 Operating Mode, Station 2
11013	BC.ST_BIDIR_CTL_2.BV6.PULSETIME	Bidirectional Control - Block Valve 6 Pulse Time, Station 2
11014	BC.ST_BIDIR_CTL_2.BV6.TRAVELTIME	Bidirectional Control - Block Valve 6 Travel Time, Station 2
11015	BC.ST_BIDIR_CTL_2.BV7.MODE	Bidirectional Control - Block Valve 7 Operating Mode, Station 2
11016	BC.ST_BIDIR_CTL_2.BV7.PULSETIME	Bidirectional Control - Block Valve 7 Pulse Time, Station 2
11017	BC.ST_BIDIR_CTL_2.BV7.TRAVELTIME	Bidirectional Control - Block Valve 7 Travel Time, Station 2
11018	BC.ST_BIDIR_CTL_2.BV8.MODE	Bidirectional Control - Block Valve 8 Operating Mode, Station 2
11019	BC.ST_BIDIR_CTL_2.BV8.PULSETIME	Bidirectional Control - Block Valve 8 Pulse Time, Station 2
11020	BC.ST_BIDIR_CTL_2.BV8.TRAVELTIME	Bidirectional Control - Block Valve 8 Travel Time, Station 2
11021	BI.ST4_DIR_IND	Bidirectional Control - Station 4 Direction Indicator selected
11022	BI.ST4_CLS1	Bidirectional Control - Station 4 Limit Switch Indication Limit Switch 1 Close Limit Switch source selected
11023	BI.ST4_CLS2	Bidirectional Control - Station 4 Limit Switch Indication Limit Switch 2 Close Limit Switch source selected
11024	BI.ST4_OLS1	Bidirectional Control - Station 4 Limit Switch Indication Limit Switch 1 Open Limit Switch source selected
11025	BI.ST4_OLS2	Bidirectional Control - Station 4 Limit Switch Indication Limit Switch 2 Open Limit Switch source selected
11026	BC.ST_BIDIR_CTL_4.BIDIRVLVCTL_1.FWD_OPEN1	Bidirectional Control - Station 4 Programmed Control, BV to open 1st in Forward Direction
11027	BC.ST_BIDIR_CTL_4.BIDIRVLVCTL_1.FWD_OPEN2	Bidirectional Control - Station 4 Programmed Control, BV to open 2nd in Forward Direction
11028	BC.ST_BIDIR_CTL_4.BIDIRVLVCTL_1.FWD_OPEN3	Bidirectional Control - Station 4 Programmed Control, BV to open 3rd in Forward Direction
11029	BC.ST_BIDIR_CTL_4.BIDIRVLVCTL_1.FWD_OPEN4	Bidirectional Control - Station 4 Programmed Control, BV to open 4th in Forward Direction
11030	BC.ST_BIDIR_CTL_4.BIDIRVLVCTL_1.FWD_CLOSE1	Bidirectional Control - Station 4 Programmed Control, BV to close 1st in Forward Direction
11031	BC.ST_BIDIR_CTL_4.BIDIRVLVCTL_1.FWD_CLOSE2	Bidirectional Control - Station 4 Programmed Control, BV to close 2nd in Forward Direction
11032	BC.ST_BIDIR_CTL_4.BIDIRVLVCTL_1.FWD_CLOSE3	Bidirectional Control - Station 4 Programmed Control, BV to close 3rd in Forward Direction
11033	BC.ST_BIDIR_CTL_4.BIDIRVLVCTL_1.FWD_CLOSE4	Bidirectional Control - Station 4 Programmed Control, BV to close 4th in Forward Direction
11034	BC.ST_BIDIR_CTL_4.BIDIRVLVCTL_1.REV_OPEN1	Bidirectional Control - Station 4 Programmed Control, BV to open 1st in Reverse Direction
11035	BC.ST_BIDIR_CTL_4.BIDIRVLVCTL_1.REV_OPEN2	Bidirectional Control - Station 4 Programmed Control, BV to open 2nd in Reverse Direction
11036	BC.ST_BIDIR_CTL_4.BIDIRVLVCTL_1.REV_OPEN3	Bidirectional Control - Station 4 Programmed Control, BV to open 3rd in Reverse Direction
11037	BC.ST_BIDIR_CTL_4.BIDIRVLVCTL_1.REV_OPEN4	Bidirectional Control - Station 4 Programmed

Reg#	Variable	Description
		Control, BV to open 4th in Reverse Direction
11038	BC.ST_BIDIR_CTL_4.BIDIRVLVCTL_1.REV_CLOSE1	Bidirectional Control - Station 4 Programmed Control, BV to close 1st in Reverse Direction
11039	BC.ST_BIDIR_CTL_4.BIDIRVLVCTL_1.REV_CLOSE2	Bidirectional Control - Station 4 Programmed Control, BV to close 2nd in Reverse Direction
11040	BC.ST_BIDIR_CTL_4.BIDIRVLVCTL_1.REV_CLOSE3	Bidirectional Control - Station 4 Programmed Control, BV to close 3rd in Reverse Direction
11041	BC.ST_BIDIR_CTL_4.BIDIRVLVCTL_1.REV_CLOSE4	Bidirectional Control - Station 4 Programmed Control, BV to close 4th in Reverse Direction
11042	BC.ST_BIDIR_CTL_4.BIDIRVLVCTL_1.TIMEDLY	Bidirectional Control - Station 4 Programmed Control, Time delay between valve actions
11043	BC.ST_BIDIR_CTL_4.BV1.MODE	Bidirectional Control - Block Valve 1 Operating Mode, Station 4
11044	BC.ST_BIDIR_CTL_4.BV1.PULSETIME	Bidirectional Control - Block Valve 1 Pulse Time, Station 4
11045	BC.ST_BIDIR_CTL_4.BV1.TRAVELTIME	Bidirectional Control - Block Valve 1 Travel Time, Station 4
11046	BC.ST_BIDIR_CTL_4.BV2.MODE	Bidirectional Control - Block Valve 2 Operating Mode, Station 4
11047	BC.ST_BIDIR_CTL_4.BV2.PULSETIME	Bidirectional Control - Block Valve 2 Pulse Time, Station 4
11048	BC.ST_BIDIR_CTL_4.BV2.TRAVELTIME	Bidirectional Control - Block Valve 2 Travel Time, Station 4
11049	BC.ST_BIDIR_CTL_4.BV3.MODE	Bidirectional Control - Block Valve 3 Operating Mode, Station 4
11050	BC.ST_BIDIR_CTL_4.BV3.PULSETIME	Bidirectional Control - Block Valve 3 Pulse Time, Station 4
11051	BC.ST_BIDIR_CTL_4.BV3.TRAVELTIME	Bidirectional Control - Block Valve 3 Travel Time, Station 4
11052	BC.ST_BIDIR_CTL_4.BV4.MODE	Bidirectional Control - Block Valve 4 Operating Mode, Station 4
11053	BC.ST_BIDIR_CTL_4.BV4.PULSETIME	Bidirectional Control - Block Valve 4 Pulse Time, Station 4
11054	BC.ST_BIDIR_CTL_4.BV4.TRAVELTIME	Bidirectional Control - Block Valve 4 Travel Time, Station 4
11055	BC.ST_BIDIR_CTL_4.BV5.MODE	Bidirectional Control - Block Valve 5 Operating Mode, Station 4
11056	BC.ST_BIDIR_CTL_4.BV5.PULSETIME	Bidirectional Control - Block Valve 5 Pulse Time, Station 4
11057	BC.ST_BIDIR_CTL_4.BV5.TRAVELTIME	Bidirectional Control - Block Valve 5 Travel Time, Station 4
11058	BC.ST_BIDIR_CTL_4.BV6.MODE	Bidirectional Control - Block Valve 6 Operating Mode, Station 4
11059	BC.ST_BIDIR_CTL_4.BV6.PULSETIME	Bidirectional Control - Block Valve 6 Pulse Time, Station 4
11060	BC.ST_BIDIR_CTL_4.BV6.TRAVELTIME	Bidirectional Control - Block Valve 6 Travel Time, Station 4
11061	BC.ST_BIDIR_CTL_4.BV7.MODE	Bidirectional Control - Block Valve 7 Operating Mode, Station 4
11062	BC.ST_BIDIR_CTL_4.BV7.PULSETIME	Bidirectional Control - Block Valve 7 Pulse Time, Station 4
11063	BC.ST_BIDIR_CTL_4.BV7.TRAVELTIME	Bidirectional Control - Block Valve 7 Travel Time, Station 4
11064	BC.ST_BIDIR_CTL_4.BV8.MODE	Bidirectional Control - Block Valve 8 Operating Mode, Station 4
11065	BC.ST_BIDIR_CTL_4.BV8.PULSETIME	Bidirectional Control - Block Valve 8 Pulse Time, Station 4
11066	BC.ST_BIDIR_CTL_4.BV8.TRAVELTIME	Bidirectional Control - Block Valve 8 Travel Time, Station 4
11067	BI.ST6_DIR_IND	Bidirectional Control - Station 6 Direction Indicator selected
11068	BI.ST6_CLS1	Bidirectional Control - Station 6 Limit Switch

Reg#	Variable	Description
		Indication Limit Switch 1 Close Limit Switch source selected
11069	BI.ST6_CLS2	Bidirectional Control - Station 6 Limit Switch Indication Limit Switch 2 Close Limit Switch source selected
11070	BI.ST6_OLS1	Bidirectional Control - Station 6 Limit Switch Indication Limit Switch 1 Open Limit Switch source selected
11071	BI.ST6_OLS2	Bidirectional Control - Station 6 Limit Switch Indication Limit Switch 2 Open Limit Switch source selected
11072	BC.ST_BIDIR_CTL_6.BIDIRVLVCTL_1.FWD_OPEN1	Bidirectional Control - Station 6 Programmed Control, BV to open 1st in Forward Direction
11073	BC.ST_BIDIR_CTL_6.BIDIRVLVCTL_1.FWD_OPEN2	Bidirectional Control - Station 6 Programmed Control, BV to open 2nd in Forward Direction
11074	BC.ST_BIDIR_CTL_6.BIDIRVLVCTL_1.FWD_OPEN3	Bidirectional Control - Station 6 Programmed Control, BV to open 3rd in Forward Direction
11075	BC.ST_BIDIR_CTL_6.BIDIRVLVCTL_1.FWD_OPEN4	Bidirectional Control - Station 6 Programmed Control, BV to open 4th in Forward Direction
11076	BC.ST_BIDIR_CTL_6.BIDIRVLVCTL_1.FWD_CLOSE1	Bidirectional Control - Station 6 Programmed Control, BV to close 1st in Forward Direction
11077	BC.ST_BIDIR_CTL_6.BIDIRVLVCTL_1.FWD_CLOSE2	Bidirectional Control - Station 6 Programmed Control, BV to close 2nd in Forward Direction
11078	BC.ST_BIDIR_CTL_6.BIDIRVLVCTL_1.FWD_CLOSE3	Bidirectional Control - Station 6 Programmed Control, BV to close 3rd in Forward Direction
11079	BC.ST_BIDIR_CTL_6.BIDIRVLVCTL_1.FWD_CLOSE4	Bidirectional Control - Station 6 Programmed Control, BV to close 4th in Forward Direction
11080	BC.ST_BIDIR_CTL_6.BIDIRVLVCTL_1.REV_OPEN1	Bidirectional Control - Station 6 Programmed Control, BV to open 1st in Reverse Direction
11081	BC.ST_BIDIR_CTL_6.BIDIRVLVCTL_1.REV_OPEN2	Bidirectional Control - Station 6 Programmed Control, BV to open 2nd in Reverse Direction
11082	BC.ST_BIDIR_CTL_6.BIDIRVLVCTL_1.REV_OPEN3	Bidirectional Control - Station 6 Programmed Control, BV to open 3rd in Reverse Direction
11083	BC.ST_BIDIR_CTL_6.BIDIRVLVCTL_1.REV_OPEN4	Bidirectional Control - Station 6 Programmed Control, BV to open 4th in Reverse Direction
11084	BC.ST_BIDIR_CTL_6.BIDIRVLVCTL_1.REV_CLOSE1	Bidirectional Control - Station 6 Programmed Control, BV to close 1st in Reverse Direction
11085	BC.ST_BIDIR_CTL_6.BIDIRVLVCTL_1.REV_CLOSE2	Bidirectional Control - Station 6 Programmed Control, BV to close 2nd in Reverse Direction
11086	BC.ST_BIDIR_CTL_6.BIDIRVLVCTL_1.REV_CLOSE3	Bidirectional Control - Station 6 Programmed Control, BV to close 3rd in Reverse Direction
11087	BC.ST_BIDIR_CTL_6.BIDIRVLVCTL_1.REV_CLOSE4	Bidirectional Control - Station 6 Programmed Control, BV to close 4th in Reverse Direction
11088	BC.ST_BIDIR_CTL_6.BIDIRVLVCTL_1.TIMEDLY	Bidirectional Control - Station 6 Programmed Control, Time delay between valve actions
11089	BC.ST_BIDIR_CTL_6.BV1.MODE	Bidirectional Control - Block Valve 1 Operating Mode, Station 6
11090	BC.ST_BIDIR_CTL_6.BV1.PULSETIME	Bidirectional Control - Block Valve 1 Pulse Time, Station 6
11091	BC.ST_BIDIR_CTL_6.BV1.TRAVELTIME	Bidirectional Control - Block Valve 1 Travel Time, Station 6
11092	BC.ST_BIDIR_CTL_6.BV2.MODE	Bidirectional Control - Block Valve 2 Operating Mode, Station 6
11093	BC.ST_BIDIR_CTL_6.BV2.PULSETIME	Bidirectional Control - Block Valve 2 Pulse Time, Station 6
11094	BC.ST_BIDIR_CTL_6.BV2.TRAVELTIME	Bidirectional Control - Block Valve 2 Travel Time, Station 6
11095	BC.ST_BIDIR_CTL_6.BV3.MODE	Bidirectional Control - Block Valve 3 Operating Mode, Station 6
11096	BC.ST_BIDIR_CTL_6.BV3.PULSETIME	Bidirectional Control - Block Valve 3 Pulse Time, Station 6
11097	BC.ST_BIDIR_CTL_6.BV3.TRAVELTIME	Bidirectional Control - Block Valve 3 Travel Time,

Reg#	Variable	Description
		Station 6
11098	BC.ST_BIDIR_CTL_6.BV4.MODE	Bidirectional Control - Block Valve 4 Operating Mode, Station 6
11099	BC.ST_BIDIR_CTL_6.BV4.PULSETIME	Bidirectional Control - Block Valve 4 Pulse Time, Station 6
11100	BC.ST_BIDIR_CTL_6.BV4.TRAVELTIME	Bidirectional Control - Block Valve 4 Travel Time, Station 6
11101	BC.ST_BIDIR_CTL_6.BV5.MODE	Bidirectional Control - Block Valve 5 Operating Mode, Station 6
11102	BC.ST_BIDIR_CTL_6.BV5.PULSETIME	Bidirectional Control - Block Valve 5 Pulse Time, Station 6
11103	BC.ST_BIDIR_CTL_6.BV5.TRAVELTIME	Bidirectional Control - Block Valve 5 Travel Time, Station 6
11104	BC.ST_BIDIR_CTL_6.BV6.MODE	Bidirectional Control - Block Valve 6 Operating Mode, Station 6
11105	BC.ST_BIDIR_CTL_6.BV6.PULSETIME	Bidirectional Control - Block Valve 6 Pulse Time, Station 6
11106	BC.ST_BIDIR_CTL_6.BV6.TRAVELTIME	Bidirectional Control - Block Valve 6 Travel Time, Station 6
11107	BC.ST_BIDIR_CTL_6.BV7.MODE	Bidirectional Control - Block Valve 7 Operating Mode, Station 6
11108	BC.ST_BIDIR_CTL_6.BV7.PULSETIME	Bidirectional Control - Block Valve 7 Pulse Time, Station 6
11109	BC.ST_BIDIR_CTL_6.BV7.TRAVELTIME	Bidirectional Control - Block Valve 7 Travel Time, Station 6
11110	BC.ST_BIDIR_CTL_6.BV8.MODE	Bidirectional Control - Block Valve 8 Operating Mode, Station 6
11111	BC.ST_BIDIR_CTL_6.BV8.PULSETIME	Bidirectional Control - Block Valve 8 Pulse Time, Station 6
11112	BC.ST_BIDIR_CTL_6.BV8.TRAVELTIME	Bidirectional Control - Block Valve 8 Travel Time, Station 6
11113	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11114	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11115	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11116	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11117	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11118	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11119	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11120	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11121	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11122	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11123	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11124	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11125	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11126	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11127	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11128	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11129	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11130	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11131	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11132	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11133	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11134	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11135	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11136	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11137	MB.SPARE	*** RESERVED FOR FUTURE USE ***

Reg#	Variable	Description
11138	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11139	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11140	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11141	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11142	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11143	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11144	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11145	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11146	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11147	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11148	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11149	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11150	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11151	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11152	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11153	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11154	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11155	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11156	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11157	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11158	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11159	pg_GC.GC_1.GC_1.S1_BTU_Raw	GC Dataset 1 Raw BTU
11160	pg_GC.GC_1.GC_1.S1_BTUSat_Raw	GC Dataset 1 Raw Saturated BTU
11161	pg_GC.GC_1.GC_1.S1_C2_Raw	GC Dataset 1 Raw C2
11162	pg_GC.GC_1.GC_1.S1_C3_Raw	GC Dataset 1 Raw C3
11163	pg_GC.GC_1.GC_1.S1_C6plus_Raw	GC Dataset 1 Raw C6 Plus
11164	pg_GC.GC_1.GC_1.S1_C9Plus_Raw	GC Dataset 1 Raw C9 Plus
11165	pg_GC.GC_1.GC_1.S1_CH4_Raw	GC Dataset 1 Raw CH4
11166	pg_GC.GC_1.GC_1.S1_CHDP_Raw	GC Dataset 1 Raw CHDP
11167	pg_GC.GC_1.GC_1.S1_CO_Raw	GC Dataset 1 Raw CO
11168	pg_GC.GC_1.GC_1.S1_CO2_Raw	GC Dataset 1 Raw CO2
11169	pg_GC.GC_1.GC_1.S1_IC4_Raw	GC Dataset 1 Raw IC4
11170	pg_GC.GC_1.GC_1.S1_IC5_Raw	GC Dataset 1 Raw IC5
11171	pg_GC.GC_1.GC_1.S1_N2_Raw	GC Dataset 1 Raw N2
11172	pg_GC.GC_1.GC_1.S1_NC10_Raw	GC Dataset 1 Raw NC10
11173	pg_GC.GC_1.GC_1.S1_NC4_Raw	GC Dataset 1 Raw NC4
11174	pg_GC.GC_1.GC_1.S1_NC5_Raw	GC Dataset 1 Raw NC5
11175	pg_GC.GC_1.GC_1.S1_NC6_Raw	GC Dataset 1 Raw NC6
11176	pg_GC.GC_1.GC_1.S1_NC7_Raw	GC Dataset 1 Raw NC7
11177	pg_GC.GC_1.GC_1.S1_NC8_Raw	GC Dataset 1 Raw NC8
11178	pg_GC.GC_1.GC_1.S1_NC9_Raw	GC Dataset 1 Raw NC9
11179	pg_GC.GC_1.GC_1.S1_NeoC5_Raw	GC Dataset 1 Raw NeoC5
11180	pg_GC.GC_1.GC_1.S1_SG_Raw	GC Dataset 1 Raw Specific Gravity
11181	pg_GC.GC_1.GC_1.S1_Wobbe_Raw	GC Dataset 1 Raw Wobbe Index
11182	pg_GC.GC_1.GC_2.S1_BTU_Raw	GC Dataset 2 Raw BTU
11183	pg_GC.GC_1.GC_2.S1_BTUSat_Raw	GC Dataset 2 Raw Saturated BTU
11184	pg_GC.GC_1.GC_2.S1_C2_Raw	GC Dataset 2 Raw C2
11185	pg_GC.GC_1.GC_2.S1_C3_Raw	GC Dataset 2 Raw C3
11186	pg_GC.GC_1.GC_2.S1_C6plus_Raw	GC Dataset 2 Raw C6 Plus
11187	pg_GC.GC_1.GC_2.S1_C9Plus_Raw	GC Dataset 2 Raw C9 Plus

Reg#	Variable	Description
11188	pg_GC.GC_1.GC_2.S1_CH4_Raw	GC Dataset 2 Raw CH4
11189	pg_GC.GC_1.GC_2.S1_CHDP_Raw	GC Dataset 2 Raw CHDP
11190	pg_GC.GC_1.GC_2.S1_CO_Raw	GC Dataset 2 Raw CO
11191	pg_GC.GC_1.GC_2.S1_CO2_Raw	GC Dataset 2 Raw CO2
11192	pg_GC.GC_1.GC_2.S1_IC4_Raw	GC Dataset 2 Raw IC4
11193	pg_GC.GC_1.GC_2.S1_IC5_Raw	GC Dataset 2 Raw IC5
11194	pg_GC.GC_1.GC_2.S1_N2_Raw	GC Dataset 2 Raw N2
11195	pg_GC.GC_1.GC_2.S1_NC10_Raw	GC Dataset 2 Raw NC10
11196	pg_GC.GC_1.GC_2.S1_NC4_Raw	GC Dataset 2 Raw NC4
11197	pg_GC.GC_1.GC_2.S1_NC5_Raw	GC Dataset 2 Raw NC5
11198	pg_GC.GC_1.GC_2.S1_NC6_Raw	GC Dataset 2 Raw NC6
11199	pg_GC.GC_1.GC_2.S1_NC7_Raw	GC Dataset 2 Raw NC7
11200	pg_GC.GC_1.GC_2.S1_NC8_Raw	GC Dataset 2 Raw NC8
11201	pg_GC.GC_1.GC_2.S1_NC9_Raw	GC Dataset 2 Raw NC9
11202	pg_GC.GC_1.GC_2.S1_NeoC5_Raw	GC Dataset 2 Raw NeoC5
11203	pg_GC.GC_1.GC_2.S1_SG_Raw	GC Dataset 2 Raw Specific Gravity
11204	pg_GC.GC_1.GC_2.S1_Wobbe_Raw	GC Dataset 2 Raw Wobbe Index
11205	pg_GC.GC_1.GC_3.S1_BTU_Raw	GC Dataset 3 Raw BTU
11206	pg_GC.GC_1.GC_3.S1_BTUSat_Raw	GC Dataset 3 Raw Saturated BTU
11207	pg_GC.GC_1.GC_3.S1_C2_Raw	GC Dataset 3 Raw C2
11208	pg_GC.GC_1.GC_3.S1_C3_Raw	GC Dataset 3 Raw C3
11209	pg_GC.GC_1.GC_3.S1_C6plus_Raw	GC Dataset 3 Raw C6 Plus
11210	pg_GC.GC_1.GC_3.S1_C9Plus_Raw	GC Dataset 3 Raw C9 Plus
11211	pg_GC.GC_1.GC_3.S1_CH4_Raw	GC Dataset 3 Raw CH4
11212	pg_GC.GC_1.GC_3.S1_CHDP_Raw	GC Dataset 3 Raw CHDP
11213	pg_GC.GC_1.GC_3.S1_CO_Raw	GC Dataset 3 Raw CO
11214	pg_GC.GC_1.GC_3.S1_CO2_Raw	GC Dataset 3 Raw CO2
11215	pg_GC.GC_1.GC_3.S1_IC4_Raw	GC Dataset 3 Raw IC4
11216	pg_GC.GC_1.GC_3.S1_IC5_Raw	GC Dataset 3 Raw IC5
11217	pg_GC.GC_1.GC_3.S1_N2_Raw	GC Dataset 3 Raw N2
11218	pg_GC.GC_1.GC_3.S1_NC10_Raw	GC Dataset 3 Raw NC10
11219	pg_GC.GC_1.GC_3.S1_NC4_Raw	GC Dataset 3 Raw NC4
11220	pg_GC.GC_1.GC_3.S1_NC5_Raw	GC Dataset 3 Raw NC5
11221	pg_GC.GC_1.GC_3.S1_NC6_Raw	GC Dataset 3 Raw NC6
11222	pg_GC.GC_1.GC_3.S1_NC7_Raw	GC Dataset 3 Raw NC7
11223	pg_GC.GC_1.GC_3.S1_NC8_Raw	GC Dataset 3 Raw NC8
11224	pg_GC.GC_1.GC_3.S1_NC9_Raw	GC Dataset 3 Raw NC9
11225	pg_GC.GC_1.GC_3.S1_NeoC5_Raw	GC Dataset 3 Raw NeoC5
11226	pg_GC.GC_1.GC_3.S1_SG_Raw	GC Dataset 3 Raw Specific Gravity
11227	pg_GC.GC_1.GC_3.S1_Wobbe_Raw	GC Dataset 3 Raw Wobbe Index
11228	pg_GC.GC_1.GC_4.S1_BTU_Raw	GC Dataset 4 Raw BTU
11229	pg_GC.GC_1.GC_4.S1_BTUSat_Raw	GC Dataset 4 Raw Saturated BTU
11230	pg_GC.GC_1.GC_4.S1_C2_Raw	GC Dataset 4 Raw C2
11231	pg_GC.GC_1.GC_4.S1_C3_Raw	GC Dataset 4 Raw C3
11232	pg_GC.GC_1.GC_4.S1_C6plus_Raw	GC Dataset 4 Raw C6 Plus
11233	pg_GC.GC_1.GC_4.S1_C9Plus_Raw	GC Dataset 4 Raw C9 Plus
11234	pg_GC.GC_1.GC_4.S1_CH4_Raw	GC Dataset 4 Raw CH4
11235	pg_GC.GC_1.GC_4.S1_CHDP_Raw	GC Dataset 4 Raw CHDP
11236	pg_GC.GC_1.GC_4.S1_CO_Raw	GC Dataset 4 Raw CO
11237	pg_GC.GC_1.GC_4.S1_CO2_Raw	GC Dataset 4 Raw CO2

Reg#	Variable	Description
11238	pg_GC.GC_1.GC_4.S1_IC4_Raw	GC Dataset 4 Raw IC4
11239	pg_GC.GC_1.GC_4.S1_IC5_Raw	GC Dataset 4 Raw IC5
11240	pg_GC.GC_1.GC_4.S1_N2_Raw	GC Dataset 4 Raw N2
11241	pg_GC.GC_1.GC_4.S1_NC10_Raw	GC Dataset 4 Raw NC10
11242	pg_GC.GC_1.GC_4.S1_NC4_Raw	GC Dataset 4 Raw NC4
11243	pg_GC.GC_1.GC_4.S1_NC5_Raw	GC Dataset 4 Raw NC5
11244	pg_GC.GC_1.GC_4.S1_NC6_Raw	GC Dataset 4 Raw NC6
11245	pg_GC.GC_1.GC_4.S1_NC7_Raw	GC Dataset 4 Raw NC7
11246	pg_GC.GC_1.GC_4.S1_NC8_Raw	GC Dataset 4 Raw NC8
11247	pg_GC.GC_1.GC_4.S1_NC9_Raw	GC Dataset 4 Raw NC9
11248	pg_GC.GC_1.GC_4.S1_NeoC5_Raw	GC Dataset 4 Raw NeoC5
11249	pg_GC.GC_1.GC_4.S1_SG_Raw	GC Dataset 4 Raw Specific Gravity
11250	pg_GC.GC_1.GC_4.S1_Wobbe_Raw	GC Dataset 4 Raw Wobbe Index
11251	pg_GC.GC_1.GC_5.S1_BTU_Raw	GC Dataset 5 Raw BTU
11252	pg_GC.GC_1.GC_5.S1_BTUSat_Raw	GC Dataset 5 Raw Saturated BTU
11253	pg_GC.GC_1.GC_5.S1_C2_Raw	GC Dataset 5 Raw C2
11254	pg_GC.GC_1.GC_5.S1_C3_Raw	GC Dataset 5 Raw C3
11255	pg_GC.GC_1.GC_5.S1_C6plus_Raw	GC Dataset 5 Raw C6 Plus
11256	pg_GC.GC_1.GC_5.S1_C9Plus_Raw	GC Dataset 5 Raw C9 Plus
11257	pg_GC.GC_1.GC_5.S1_CH4_Raw	GC Dataset 5 Raw CH4
11258	pg_GC.GC_1.GC_5.S1_CHDP_Raw	GC Dataset 5 Raw CHDP
11259	pg_GC.GC_1.GC_5.S1_CO_Raw	GC Dataset 5 Raw CO
11260	pg_GC.GC_1.GC_5.S1_CO2_Raw	GC Dataset 5 Raw CO2
11261	pg_GC.GC_1.GC_5.S1_IC4_Raw	GC Dataset 5 Raw IC4
11262	pg_GC.GC_1.GC_5.S1_IC5_Raw	GC Dataset 5 Raw IC5
11263	pg_GC.GC_1.GC_5.S1_N2_Raw	GC Dataset 5 Raw N2
11264	pg_GC.GC_1.GC_5.S1_NC10_Raw	GC Dataset 5 Raw NC10
11265	pg_GC.GC_1.GC_5.S1_NC4_Raw	GC Dataset 5 Raw NC4
11266	pg_GC.GC_1.GC_5.S1_NC5_Raw	GC Dataset 5 Raw NC5
11267	pg_GC.GC_1.GC_5.S1_NC6_Raw	GC Dataset 5 Raw NC6
11268	pg_GC.GC_1.GC_5.S1_NC7_Raw	GC Dataset 5 Raw NC7
11269	pg_GC.GC_1.GC_5.S1_NC8_Raw	GC Dataset 5 Raw NC8
11270	pg_GC.GC_1.GC_5.S1_NC9_Raw	GC Dataset 5 Raw NC9
11271	pg_GC.GC_1.GC_5.S1_NeoC5_Raw	GC Dataset 5 Raw NeoC5
11272	pg_GC.GC_1.GC_5.S1_SG_Raw	GC Dataset 5 Raw Specific Gravity
11273	pg_GC.GC_1.GC_5.S1_Wobbe_Raw	GC Dataset 5 Raw Wobbe Index
11274	pg_GC.GC_1.GC_6.S1_BTU_Raw	GC Dataset 6 Raw BTU
11275	pg_GC.GC_1.GC_6.S1_BTUSat_Raw	GC Dataset 6 Raw Saturated BTU
11276	pg_GC.GC_1.GC_6.S1_C2_Raw	GC Dataset 6 Raw C2
11277	pg_GC.GC_1.GC_6.S1_C3_Raw	GC Dataset 6 Raw C3
11278	pg_GC.GC_1.GC_6.S1_C6plus_Raw	GC Dataset 6 Raw C6 Plus
11279	pg_GC.GC_1.GC_6.S1_C9Plus_Raw	GC Dataset 6 Raw C9 Plus
11280	pg_GC.GC_1.GC_6.S1_CH4_Raw	GC Dataset 6 Raw CH4
11281	pg_GC.GC_1.GC_6.S1_CHDP_Raw	GC Dataset 6 Raw CHDP
11282	pg_GC.GC_1.GC_6.S1_CO_Raw	GC Dataset 6 Raw CO
11283	pg_GC.GC_1.GC_6.S1_CO2_Raw	GC Dataset 6 Raw CO2
11284	pg_GC.GC_1.GC_6.S1_IC4_Raw	GC Dataset 6 Raw IC4
11285	pg_GC.GC_1.GC_6.S1_IC5_Raw	GC Dataset 6 Raw IC5
11286	pg_GC.GC_1.GC_6.S1_N2_Raw	GC Dataset 6 Raw N2
11287	pg_GC.GC_1.GC_6.S1_NC10_Raw	GC Dataset 6 Raw NC10

Reg#	Variable	Description
11288	pg_GC.GC_1.GC_6.S1_NC4_Raw	GC Dataset 6 Raw NC4
11289	pg_GC.GC_1.GC_6.S1_NC5_Raw	GC Dataset 6 Raw NC5
11290	pg_GC.GC_1.GC_6.S1_NC6_Raw	GC Dataset 6 Raw NC6
11291	pg_GC.GC_1.GC_6.S1_NC7_Raw	GC Dataset 6 Raw NC7
11292	pg_GC.GC_1.GC_6.S1_NC8_Raw	GC Dataset 6 Raw NC8
11293	pg_GC.GC_1.GC_6.S1_NC9_Raw	GC Dataset 6 Raw NC9
11294	pg_GC.GC_1.GC_6.S1_NeoC5_Raw	GC Dataset 6 Raw NeoC5
11295	pg_GC.GC_1.GC_6.S1_SG_Raw	GC Dataset 6 Raw Specific Gravity
11296	pg_GC.GC_1.GC_6.S1_Wobbe_Raw	GC Dataset 6 Raw Wobbe Index
11297	pg_GC.GC_1.GC_7.S1_BTU_Raw	GC Dataset 7 Raw BTU
11298	pg_GC.GC_1.GC_7.S1_BTUSat_Raw	GC Dataset 7 Raw Saturated BTU
11299	pg_GC.GC_1.GC_7.S1_C2_Raw	GC Dataset 7 Raw C2
11300	pg_GC.GC_1.GC_7.S1_C3_Raw	GC Dataset 7 Raw C3
11301	pg_GC.GC_1.GC_7.S1_C6plus_Raw	GC Dataset 7 Raw C6 Plus
11302	pg_GC.GC_1.GC_7.S1_C9Plus_Raw	GC Dataset 7 Raw C9 Plus
11303	pg_GC.GC_1.GC_7.S1_CH4_Raw	GC Dataset 7 Raw CH4
11304	pg_GC.GC_1.GC_7.S1_CHDP_Raw	GC Dataset 7 Raw CHDP
11305	pg_GC.GC_1.GC_7.S1_CO_Raw	GC Dataset 7 Raw CO
11306	pg_GC.GC_1.GC_7.S1_CO2_Raw	GC Dataset 7 Raw CO2
11307	pg_GC.GC_1.GC_7.S1_IC4_Raw	GC Dataset 7 Raw IC4
11308	pg_GC.GC_1.GC_7.S1_IC5_Raw	GC Dataset 7 Raw IC5
11309	pg_GC.GC_1.GC_7.S1_N2_Raw	GC Dataset 7 Raw N2
11310	pg_GC.GC_1.GC_7.S1_NC10_Raw	GC Dataset 7 Raw NC10
11311	pg_GC.GC_1.GC_7.S1_NC4_Raw	GC Dataset 7 Raw NC4
11312	pg_GC.GC_1.GC_7.S1_NC5_Raw	GC Dataset 7 Raw NC5
11313	pg_GC.GC_1.GC_7.S1_NC6_Raw	GC Dataset 7 Raw NC6
11314	pg_GC.GC_1.GC_7.S1_NC7_Raw	GC Dataset 7 Raw NC7
11315	pg_GC.GC_1.GC_7.S1_NC8_Raw	GC Dataset 7 Raw NC8
11316	pg_GC.GC_1.GC_7.S1_NC9_Raw	GC Dataset 7 Raw NC9
11317	pg_GC.GC_1.GC_7.S1_NeoC5_Raw	GC Dataset 7 Raw NeoC5
11318	pg_GC.GC_1.GC_7.S1_SG_Raw	GC Dataset 7 Raw Specific Gravity
11319	pg_GC.GC_1.GC_7.S1_Wobbe_Raw	GC Dataset 7 Raw Wobbe Index
11320	pg_GC.GC_1.GC_8.S1_BTU_Raw	GC Dataset 8 Raw BTU
11321	pg_GC.GC_1.GC_8.S1_BTUSat_Raw	GC Dataset 8 Raw Saturated BTU
11322	pg_GC.GC_1.GC_8.S1_C2_Raw	GC Dataset 8 Raw C2
11323	pg_GC.GC_1.GC_8.S1_C3_Raw	GC Dataset 8 Raw C3
11324	pg_GC.GC_1.GC_8.S1_C6plus_Raw	GC Dataset 8 Raw C6 Plus
11325	pg_GC.GC_1.GC_8.S1_C9Plus_Raw	GC Dataset 8 Raw C9 Plus
11326	pg_GC.GC_1.GC_8.S1_CH4_Raw	GC Dataset 8 Raw CH4
11327	pg_GC.GC_1.GC_8.S1_CHDP_Raw	GC Dataset 8 Raw CHDP
11328	pg_GC.GC_1.GC_8.S1_CO_Raw	GC Dataset 8 Raw CO
11329	pg_GC.GC_1.GC_8.S1_CO2_Raw	GC Dataset 8 Raw CO2
11330	pg_GC.GC_1.GC_8.S1_IC4_Raw	GC Dataset 8 Raw IC4
11331	pg_GC.GC_1.GC_8.S1_IC5_Raw	GC Dataset 8 Raw IC5
11332	pg_GC.GC_1.GC_8.S1_N2_Raw	GC Dataset 8 Raw N2
11333	pg_GC.GC_1.GC_8.S1_NC10_Raw	GC Dataset 8 Raw NC10
11334	pg_GC.GC_1.GC_8.S1_NC4_Raw	GC Dataset 8 Raw NC4
11335	pg_GC.GC_1.GC_8.S1_NC5_Raw	GC Dataset 8 Raw NC5
11336	pg_GC.GC_1.GC_8.S1_NC6_Raw	GC Dataset 8 Raw NC6
11337	pg_GC.GC_1.GC_8.S1_NC7_Raw	GC Dataset 8 Raw NC7

Reg#	Variable	Description
11338	pg_GC.GC_1.GC_8.S1_NC8_Raw	GC Dataset 8 Raw NC8
11339	pg_GC.GC_1.GC_8.S1_NC9_Raw	GC Dataset 8 Raw NC9
11340	pg_GC.GC_1.GC_8.S1_NeoC5_Raw	GC Dataset 8 Raw NeoC5
11341	pg_GC.GC_1.GC_8.S1_SG_Raw	GC Dataset 8 Raw Specific Gravity
11342	pg_GC.GC_1.GC_8.S1_Wobbe_Raw	GC Dataset 8 Raw Wobbe Index
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Reg#	Variable	Description
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11434	MB.SPARE	
11435	STC.CTL_PROFILE_1.R_ENERGY_SETPT	Station Control - Station 1 Energy Control Remote Setpoint - Process Variable Span
11436	STC.CTL_PROFILE_1.R_FLOW_SETPT	Station Control - Station 1 Flow Control Remote

Reg#	Variable	Description
		Setpoint - Process Variable Span
11437	STC.CTL_PROFILE_1.R_PRESSURE_SETPT	Station Control - Station 1 Outlet Pressure Control Remote Setpoint - Process Variable Span
11438	STC.CTL_PROFILE_2.R_ENERGY_SETPT	Station Control - Station 2 Energy Control Remote Setpoint - Process Variable Span
11439	STC.CTL_PROFILE_2.R_FLOW_SETPT	Station Control - Station 2 Flow Control Remote Setpoint - Process Variable Span
11440	STC.CTL_PROFILE_2.R_PRESSURE_SETPT	Station Control - Station 2 Outlet Pressure Control Remote Setpoint - Process Variable Span
11441	STC.CTL_PROFILE_3.R_ENERGY_SETPT	Station Control - Station 3 Energy Control Remote Setpoint - Process Variable Span
11442	STC.CTL_PROFILE_3.R_FLOW_SETPT	Station Control - Station 3 Flow Control Remote Setpoint - Process Variable Span
11443	STC.CTL_PROFILE_3.R_PRESSURE_SETPT	Station Control - Station 3 Outlet Pressure Control Remote Setpoint - Process Variable Span
11444	STC.CTL_PROFILE_4.R_ENERGY_SETPT	Station Control - Station 4 Energy Control Remote Setpoint - Process Variable Span
11445	STC.CTL_PROFILE_4.R_FLOW_SETPT	Station Control - Station 4 Flow Control Remote Setpoint - Process Variable Span
11446	STC.CTL_PROFILE_4.R_PRESSURE_SETPT	Station Control - Station 4 Outlet Pressure Control Remote Setpoint - Process Variable Span
11447	STC.CTL_PROFILE_5.R_ENERGY_SETPT	Station Control - Station 5 Energy Control Remote Setpoint - Process Variable Span
11448	STC.CTL_PROFILE_5.R_FLOW_SETPT	Station Control - Station 5 Flow Control Remote Setpoint - Process Variable Span
11449	STC.CTL_PROFILE_5.R_PRESSURE_SETPT	Station Control - Station 5 Outlet Pressure Control Remote Setpoint - Process Variable Span
11450	STC.CTL_PROFILE_6.R_ENERGY_SETPT	Station Control - Station 6 Energy Control Remote Setpoint - Process Variable Span
11451	STC.CTL_PROFILE_6.R_FLOW_SETPT	Station Control - Station 6 Flow Control Remote Setpoint - Process Variable Span
11452	STC.CTL_PROFILE_6.R_PRESSURE_SETPT	Station Control - Station 6 Outlet Pressure Control Remote Setpoint - Process Variable Span
11453	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11454	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11455	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11456	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11457	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11458	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11459	MVT.MVT_1_SerialNum	MVT 1 Serial number
11460	MVT.MVT_1_XCode	MVT 1 Diagnostic Code for the transmitter
11461	MVT.MVT_1_DPCode	MVT 1 Diagnostic Code for Differential Pressure
11462	MVT.MVT_1_SPCode	MVT 1 Diagnostic Code for Static Pressure
11463	MVT.MVT_1_FTCode	MVT 1 Diagnostic Code for Flowing Temperature
11464	MVT.MVT_2_SerialNum	MVT 2 Serial number
11465	MVT.MVT_2_XCode	MVT 2 Diagnostic Code for the transmitter
11466	MVT.MVT_2_DPCode	MVT 2 Diagnostic Code for Differential Pressure
11467	MVT.MVT_2_SPCode	MVT 2 Diagnostic Code for Static Pressure
11468	MVT.MVT_2_FTCode	MVT 2 Diagnostic Code for Flowing Temperature
11469	MVT.MVT_3_SerialNum	MVT 3 Serial number
11470	MVT.MVT_3_XCode	MVT 3 Diagnostic Code for the transmitter

Reg#	Variable	Description
11471	MVT.MVT_3_DPCode	MVT 3 Diagnostic Code for Differential Pressure
11472	MVT.MVT_3_SPCode	MVT 3 Diagnostic Code for Static Pressure
11473	MVT.MVT_3_FTCode	MVT 3 Diagnostic Code for Flowing Temperature
11474	MVT.MVT_4_SerialNum	MVT 4 Serial number
11475	MVT.MVT_4_XCode	MVT 4 Diagnostic Code for the transmitter
11476	MVT.MVT_4_DPCode	MVT 4 Diagnostic Code for Differential Pressure
11477	MVT.MVT_4_SPCode	MVT 4 Diagnostic Code for Static Pressure
11478	MVT.MVT_4_FTCode	MVT 4 Diagnostic Code for Flowing Temperature
11479	MVT.MVT_5_SerialNum	MVT 5 Serial number
11480	MVT.MVT_5_XCode	MVT 5 Diagnostic Code for the transmitter
11481	MVT.MVT_5_DPCode	MVT 5 Diagnostic Code for Differential Pressure
11482	MVT.MVT_5_SPCode	MVT 5 Diagnostic Code for Static Pressure
11483	MVT.MVT_5_FTCode	MVT 5 Diagnostic Code for Flowing Temperature
11484	MVT.MVT_6_SerialNum	MVT 6 Serial number
11485	MVT.MVT_6_XCode	MVT 6 Diagnostic Code for the transmitter
11486	MVT.MVT_6_DPCode	MVT 6 Diagnostic Code for Differential Pressure
11487	MVT.MVT_6_SPCode	MVT 6 Diagnostic Code for Static Pressure
11488	MVT.MVT_6_FTCode	MVT 6 Diagnostic Code for Flowing Temperature
11489	MVT.MVT_7_SerialNum	MVT 7 Serial number
11490	MVT.MVT_7_XCode	MVT 7 Diagnostic Code for the transmitter
11491	MVT.MVT_7_DPCode	MVT 7 Diagnostic Code for Differential Pressure
11492	MVT.MVT_7_SPCode	MVT 7 Diagnostic Code for Static Pressure
11493	MVT.MVT_7_FTCode	MVT 7 Diagnostic Code for Flowing Temperature
11494	MVT.MVT_8_SerialNum	MVT 8 Serial number
11495	MVT.MVT_8_XCode	MVT 8 Diagnostic Code for the transmitter
11496	MVT.MVT_8_DPCode	MVT 8 Diagnostic Code for Differential Pressure
11497	MVT.MVT_8_SPCode	MVT 8 Diagnostic Code for Static Pressure
11498	MVT.MVT_8_FTCode	MVT 8 Diagnostic Code for Flowing Temperature
11499	MVT.MVT_9_SerialNum	MVT 9 Serial number
11500	MVT.MVT_9_XCode	MVT 9 Diagnostic Code for the transmitter
11501	MVT.MVT_9_DPCode	MVT 9 Diagnostic Code for Differential Pressure
11502	MVT.MVT_9_SPCode	MVT 9 Diagnostic Code for Static Pressure
11503	MVT.MVT_9_FTCode	MVT 9 Diagnostic Code for Flowing Temperature
11504	MVT.MVT_10_SerialNum	MVT 10 Serial number
11505	MVT.MVT_10_XCode	MVT 10 Diagnostic Code for the transmitter
11506	MVT.MVT_10_DPCode	MVT 10 Diagnostic Code for Differential Pressure
11507	MVT.MVT_10_SPCode	MVT 10 Diagnostic Code for Static Pressure
11508	MVT.MVT_10_FTCode	MVT 10 Diagnostic Code for Flowing Temperature
11509	MVT.MVT_11_SerialNum	MVT 11 Serial number
11510	MVT.MVT_11_XCode	MVT 11 Diagnostic Code for the transmitter
11511	MVT.MVT_11_DPCode	MVT 11 Diagnostic Code for Differential Pressure
11512	MVT.MVT_11_SPCode	MVT 11 Diagnostic Code for Static Pressure
11513	MVT.MVT_11_FTCode	MVT 11 Diagnostic Code for Flowing Temperature
11514	MVT.MVT_12_SerialNum	MVT 12 Serial number
11515	MVT.MVT_12_XCode	MVT 12 Diagnostic Code for the transmitter
11516	MVT.MVT_12_DPCode	MVT 12 Diagnostic Code for Differential Pressure
11517	MVT.MVT_12_SPCode	MVT 12 Diagnostic Code for Static Pressure
11518	MVT.MVT_12_FTCode	MVT 12 Diagnostic Code for Flowing Temperature

Reg#	Variable	Description
11519	MB.RTUDate	RTU Date - MMDDYY.0
11520	MB.RTUTime	RTU Time - HHMMSS.0
11521	CV.CTL_VLV_1.VLV_DMND	Station Control - Control Valve 1 Valve Demand
11522	CV.CTL_VLV_2.VLV_DMND	Station Control - Control Valve 2 Valve Demand
11523	CV.CTL_VLV_3.VLV_DMND	Station Control - Control Valve 3 Valve Demand
11524	CV.CTL_VLV_4.VLV_DMND	Station Control - Control Valve 4 Valve Demand
11525	CV.CTL_VLV_5.VLV_DMND	Station Control - Control Valve 5 Valve Demand
11526	CV.CTL_VLV_6.VLV_DMND	Station Control - Control Valve 6 Valve Demand
11527	CV.CTL_VLV_7.VLV_DMND	Station Control - Control Valve 7 Valve Demand
11528	CV.CTL_VLV_8.VLV_DMND	Station Control - Control Valve 8 Valve Demand
11529	CV.CTL_VLV_9.VLV_DMND	Station Control - Control Valve 9 Valve Demand
11530	CV.CTL_VLV_10.VLV_DMND	Station Control - Control Valve 10 Valve Demand
11531	CV.CTL_VLV_11.VLV_DMND	Station Control - Control Valve 11 Valve Demand
11532	CV.CTL_VLV_12.VLV_DMND	Station Control - Control Valve 12 Valve Demand
11533	CV.CTL_VLV_13.VLV_DMND	Station Control - Control Valve 13 Valve Demand
11534	CV.CTL_VLV_14.VLV_DMND	Station Control - Control Valve 14 Valve Demand
11535	CV.CTL_VLV_15.VLV_DMND	Station Control - Control Valve 15 Valve Demand
11536	CV.CTL_VLV_16.VLV_DMND	Station Control - Control Valve 16 Valve Demand
11537	CV.CTL_VLV_17.VLV_DMND	Station Control - Control Valve 17 Valve Demand
11538	CV.CTL_VLV_18.VLV_DMND	Station Control - Control Valve 18 Valve Demand
11539	LR.ST1_SwNum	Local Remote Settings - Station Controls - Switch number Station 1 assigned to
11540	LR.ST2_SwNum	Local Remote Settings - Station Controls - Switch number Station 2 assigned to
11541	LR.ST3_SwNum	Local Remote Settings - Station Controls - Switch number Station 3 assigned to
11542	LR.ST4_SwNum	Local Remote Settings - Station Controls - Switch number Station 4 assigned to
11543	LR.ST5_SwNum	Local Remote Settings - Station Controls - Switch number Station 5 assigned to
11544	LR.ST6_SwNum	Local Remote Settings - Station Controls - Switch number Station 6 assigned to
11545	LR.RCV1_SwNum	Local Remote Settings - Remote Control Valves - Switch number Remote Control Valve 1 assigned to
11546	LR.RCV2_SwNum	Local Remote Settings - Remote Control Valves - Switch number Remote Control Valve 2 assigned to
11547	LR.RCV3_SwNum	Local Remote Settings - Remote Control Valves - Switch number Remote Control Valve 3 assigned to
11548	LR.RCV4_SwNum	Local Remote Settings - Remote Control Valves - Switch number Remote Control Valve 4 assigned to
11549	LR.RCV5_SwNum	Local Remote Settings - Remote Control Valves - Switch number Remote Control Valve 5 assigned to
11550	LR.RCV6_SwNum	Local Remote Settings - Remote Control Valves - Switch number Remote Control Valve 6 assigned to
11551	LR.RCV7_SwNum	Local Remote Settings - Remote Control Valves - Switch number Remote Control Valve 7 assigned to
11552	LR.RCV8_SwNum	Local Remote Settings - Remote Control Valves - Switch number Remote Control Valve 8 assigned to
11553	LR.RCV9_SwNum	Local Remote Settings - Remote Control Valves -

Reg#	Variable	Description
		Switch number Remote Control Valve 9 assigned to
11554	LR.RCV10_SwNum	Local Remote Settings - Remote Control Valves - Switch number Remote Control Valve 10 assigned to
11555	LR.RCV11_SwNum	Local Remote Settings - Remote Control Valves - Switch number Remote Control Valve 11 assigned to
11556	LR.RCV12_SwNum	Local Remote Settings - Remote Control Valves - Switch number Remote Control Valve 12 assigned to
11557	LR.GPPID1_SwNum	Local Remote Settings - General Purpose PID - Switch number PID Loop 1
11558	LR.GPPID2_SwNum	Local Remote Settings - General Purpose PID - Switch number PID Loop 2
11559	LR.GPPID3_SwNum	Local Remote Settings - General Purpose PID - Switch number PID Loop 3
11560	MB.AI_1	MODBUS AI - Analog value 1 that is brought into the program via MODBUS, not via physical I/O
11561	MB.AI_2	MODBUS AI - Analog value 2 that is brought into the program via MODBUS, not via physical I/O
11562	MB.AI_3	MODBUS AI - Analog value 3 that is brought into the program via MODBUS, not via physical I/O
11563	MB.AI_4	MODBUS AI - Analog value 4 that is brought into the program via MODBUS, not via physical I/O
11564	MB.AI_5	MODBUS AI - Analog value 5 that is brought into the program via MODBUS, not via physical I/O
11565	MB.AI_6	MODBUS AI - Analog value 6 that is brought into the program via MODBUS, not via physical I/O
11566	MB.AI_7	MODBUS AI - Analog value 7 that is brought into the program via MODBUS, not via physical I/O
11567	MB.AI_8	MODBUS AI - Analog value 8 that is brought into the program via MODBUS, not via physical I/O
11568	MB.AI_9	MODBUS AI - Analog value 9 that is brought into the program via MODBUS, not via physical I/O
11569	MB.AI_10	MODBUS AI - Analog value 10 that is brought into the program via MODBUS, not via physical I/O
11570	MB.AI_11	MODBUS AI - Analog value 11 that is brought into the program via MODBUS, not via physical I/O
11571	MB.AI_12	MODBUS AI - Analog value 12 that is brought into the program via MODBUS, not via physical I/O
11572	MB.AI_13	MODBUS AI - Analog value 13 that is brought into the program via MODBUS, not via physical I/O
11573	MB.AI_14	MODBUS AI - Analog value 14 that is brought into the program via MODBUS, not via physical I/O
11574	MB.AI_15	MODBUS AI - Analog value 15 that is brought into the program via MODBUS, not via physical I/O
11575	MB.AI_16	MODBUS AI - Analog value 16 that is brought into the program via MODBUS, not via physical I/O
11576	@GV.BA_155_STATUS	RTU - Battery Status - converted to @GV._BAT_OK
11577	@GV.BA_155_READING	RTU - DC Input
11578	TS.TC_1.ST1_SettleTime	Tube Switching - settle time between actions before next evaluation occurs
11579	TS.TC_1.TSO_1.FLOW_FAIL_ACTION	Tube Switching - Action to occur if flow failure

Reg#	Variable	Description
		detected on Tube Ranked 1
11580	TS.TC_1.TSO_2.FLOW_FAIL_ACTION	Tube Switching - Action to occur if flow failure detected on Tube Ranked 2
11581	TS.TC_1.TSO_3.FLOW_FAIL_ACTION	Tube Switching - Action to occur if flow failure detected on Tube Ranked 3
11582	TS.TC_1.TSO_4.FLOW_FAIL_ACTION	Tube Switching - Action to occur if flow failure detected on Tube Ranked 4
11583	TS.TC_1.TSO_5.FLOW_FAIL_ACTION	Tube Switching - Action to occur if flow failure detected on Tube Ranked 5
11584	TS.TC_1.TSO_6.FLOW_FAIL_ACTION	Tube Switching - Action to occur if flow failure detected on Tube Ranked 6
11585	TS.TC_1.TSO_7.FLOW_FAIL_ACTION	Tube Switching - Action to occur if flow failure detected on Tube Ranked 7
11586	TS.TC_1.TSO_8.FLOW_FAIL_ACTION	Tube Switching - Action to occur if flow failure detected on Tube Ranked 8
11587	MB.SPARE	
11588	MB.SPARE	
11589	MB.SPARE	
11590	MB.SPARE	
11591	STC.CTL_PROFILE_1.L_PMRY3_SETPT	Station Control - Station 1 Primary 3 Control Local Setpoint - Process Variable Span
11592	STC.CTL_PROFILE_1.R_PMRY3_SETPT	Station Control - Station 1 Primary 3 Control Remote Setpoint - Process Variable Span
11593	STC.CTL_PROFILE_2.L_PMRY3_SETPT	Station Control - Station 2 Primary 3 Control Local Setpoint - Process Variable Span
11594	STC.CTL_PROFILE_2.R_PMRY3_SETPT	Station Control - Station 2 Primary 3 Control Remote Setpoint - Process Variable Span
11595	STC.CTL_PROFILE_3.L_PMRY3_SETPT	Station Control - Station 3 Primary 3 Control Local Setpoint - Process Variable Span
11596	STC.CTL_PROFILE_3.R_PMRY3_SETPT	Station Control - Station 3 Primary 3 Control Remote Setpoint - Process Variable Span
11597	STC.CTL_PROFILE_4.L_PMRY3_SETPT	Station Control - Station 4 Primary 3 Control Local Setpoint - Process Variable Span
11598	STC.CTL_PROFILE_4.R_PMRY3_SETPT	Station Control - Station 4 Primary 3 Control Remote Setpoint - Process Variable Span
11599	STC.CTL_PROFILE_5.L_PMRY3_SETPT	Station Control - Station 5 Primary 3 Control Local Setpoint - Process Variable Span
11600	STC.CTL_PROFILE_5.R_PMRY3_SETPT	Station Control - Station 5 Primary 3 Control Remote Setpoint - Process Variable Span
11601	STC.CTL_PROFILE_6.L_PMRY3_SETPT	Station Control - Station 6 Primary 3 Control Local Setpoint - Process Variable Span
11602	STC.CTL_PROFILE_6.R_PMRY3_SETPT	Station Control - Station 6 Primary 3 Control Remote Setpoint - Process Variable Span
11603	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11604	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11605	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11606	MB.SPARE	*** RESERVED FOR FUTURE USE ***
11607	FC.FC1.RX_GCSTREAM	Run 1 - GC Dataset assigned to this run
11608	FC.FC2.RX_GCSTREAM	Run 2 - GC Dataset assigned to this run
11609	FC.FC3.RX_GCSTREAM	Run 3 - GC Dataset assigned to this run
11610	FC.FC4.RX_GCSTREAM	Run 4 - GC Dataset assigned to this run
11611	FC.FC5.RX_GCSTREAM	Run 5 - GC Dataset assigned to this run
11612	FC.FC6.RX_GCSTREAM	Run 6 - GC Dataset assigned to this run
11613	FC.FC7.RX_GCSTREAM	Run 7 - GC Dataset assigned to this run
11614	FC.FC8.RX_GCSTREAM	Run 8 - GC Dataset assigned to this run
11615	PG_GC.GC_1.GC_1.odiGCStatus	GC Dataset 1 general status
11616	PG_GC.GC_1.GC_2.odiGCStatus	GC Dataset 2 general status

Reg#	Variable	Description
11617	PG_GC.GC_1.GC_3.odiGCStatus	GC Dataset 3 general status
11618	PG_GC.GC_1.GC_4.odiGCStatus	GC Dataset 4 general status
11619	PG_GC.GC_1.GC_5.odiGCStatus	GC Dataset 5 general status
11620	PG_GC.GC_1.GC_6.odiGCStatus	GC Dataset 6 general status
11621	PG_GC.GC_1.GC_7.odiGCStatus	GC Dataset 7 general status
11622	PG_GC.GC_1.GC_8.odiGCStatus	GC Dataset 8 general status
11623	MB.SPARE	
11624	MB.SPARE	
11625	MB.SPARE	
11626	MB.SPARE	
11627	PG_GC.GC_1.GC_1.odiStatus	GC Dataset 1 Comm status
11628	PG_GC.GC_1.GC_2.odiStatus	GC Dataset 2 Comm status
11629	PG_GC.GC_1.GC_3.odiStatus	GC Dataset n Comm status
11630	PG_GC.GC_1.GC_4.odiStatus	GC Dataset 4 Comm status
11631	PG_GC.GC_1.GC_5.odiStatus	GC Dataset 5 Comm status
11632	PG_GC.GC_1.GC_6.odiStatus	GC Dataset 6 Comm status
11633	PG_GC.GC_1.GC_7.odiStatus	GC Dataset 7 Comm status
11634	PG_GC.GC_1.GC_8.odiStatus	GC Dataset 8 Comm status
11635	MB.SPARE	
11636	MB.SPARE	
11637	MB.SPARE	
11638	MB.SPARE	
11639	STC.Ctl_SignalMap_1.ESD_Point	Station Control - Station 1 Process Monitor Control point assiged to ESD
11640	STC.Ctl_SignalMap_2.ESD_Point	Station Control - Station 2 Process Monitor Control point assiged to ESD
11641	STC.Ctl_SignalMap_3.ESD_Point	Station Control - Station 3 Process Monitor Control point assiged to ESD
11642	STC.Ctl_SignalMap_4.ESD_Point	Station Control - Station 4 Process Monitor Control point assiged to ESD
11643	STC.Ctl_SignalMap_5.ESD_Point	Station Control - Station 5 Process Monitor Control point assiged to ESD
11644	STC.Ctl_SignalMap_6.ESD_Point	Station Control - Station 6 Process Monitor Control point assiged to ESD
11645	PMC.Monitor_AI_Point1	Process Monitor and Control - AI Point to be monitored from PMC 1
11646	PMC.Monitor_AI_Point2	Process Monitor and Control - AI Point to be monitored from PMC 2
11647	PMC.Monitor_AI_Point3	Process Monitor and Control - AI Point to be monitored from PMC 3
11648	PMC.Monitor_AI_Point4	Process Monitor and Control - AI Point to be monitored from PMC 4
11649	PMC.Monitor_DI_Point1	Process Monitor and Control - DI Point to be monitored from PMC 1
11650	PMC.Monitor_DI_Point2	Process Monitor and Control - DI Point to be monitored from PMC 2
11651	PMC.Monitor_DI_Point3	Process Monitor and Control - DI Point to be monitored from PMC 3
11652	PMC.Monitor_DI_Point4	Process Monitor and Control - DI Point to be monitored from PMC 4
11653	PMC.Monitor_List_Point1	Process Monitor and Control - List 29 Point to be monitored from PMC 1
11654	PMC.Monitor_List_Point2	Process Monitor and Control - List 29 Point to be monitored from PMC 2
11655	PMC.Monitor_List_Point3	Process Monitor and Control - List 29 Point to be monitored from PMC 3

Reg#	Variable	Description
11656	PMC.Monitor_List_Point4	Process Monitor and Control - List 29 Point to be monitored from PMC 4
11657	PMC.PV_Monitor_1.DB_Secs	Process Monitor and Control - Deadband in Seconds for Alarm processing on PMC 1
11658	PMC.PV_Monitor_1.HiHI_Lim	Process Monitor and Control - High High Alarm limit on PMC 1
11659	PMC.PV_Monitor_1.ROC_Up	Process Monitor and Control - Rate of Change Increasing Alarm limit on PMC 1
11660	PMC.PV_Monitor_1.ROC_Dn	Process Monitor and Control - Rate of Change Decreasing Alarm limit on PMC 1
11661	PMC.PV_Monitor_1.LoLo_Lim	Process Monitor and Control - Low Low Alarm limit on PMC 1
11662	PMC.PV_Monitor_1.Lo_Lim	Process Monitor and Control - Low Alarm limit on PMC 1
11663	PMC.PV_Monitor_1.HI_Lim	Process Monitor and Control - High Alarm limit on PMC 1
11664	PMC.PV_Monitor_2.DB_Secs	Process Monitor and Control - Deadband in Seconds for Alarm processing on PMC 2
11665	PMC.PV_Monitor_2.HiHI_Lim	Process Monitor and Control - High High Alarm limit on PMC 2
11666	PMC.PV_Monitor_2.ROC_Up	Process Monitor and Control - Rate of Change Increasing Alarm limit on PMC 2
11667	PMC.PV_Monitor_2.ROC_Dn	Process Monitor and Control - Rate of Change Decreasing Alarm limit on PMC 2
11668	PMC.PV_Monitor_2.LoLo_Lim	Process Monitor and Control - Low Low Alarm limit on PMC 2
11669	PMC.PV_Monitor_2.Lo_Lim	Process Monitor and Control - Low Alarm limit on PMC 2
11670	PMC.PV_Monitor_2.HI_Lim	Process Monitor and Control - High Alarm limit on PMC 2
11671	PMC.PV_Monitor_3.DB_Secs	Process Monitor and Control - Deadband in Seconds for Alarm processing on PMC 3
11672	PMC.PV_Monitor_3.HiHI_Lim	Process Monitor and Control - High High Alarm limit on PMC 3
11673	PMC.PV_Monitor_3.ROC_Up	Process Monitor and Control - Rate of Change Increasing Alarm limit on PMC 3
11674	PMC.PV_Monitor_3.ROC_Dn	Process Monitor and Control - Rate of Change Decreasing Alarm limit on PMC 3
11675	PMC.PV_Monitor_3.LoLo_Lim	Process Monitor and Control - Low Low Alarm limit on PMC 3
11676	PMC.PV_Monitor_3.Lo_Lim	Process Monitor and Control - Low Alarm limit on PMC 3
11677	PMC.PV_Monitor_3.HI_Lim	Process Monitor and Control - High Alarm limit on PMC 3
11678	PMC.PV_Monitor_4.DB_Secs	Process Monitor and Control - Deadband in Seconds for Alarm processing on PMC 4
11679	PMC.PV_Monitor_4.HiHI_Lim	Process Monitor and Control - High High Alarm limit on PMC 4
11680	PMC.PV_Monitor_4.ROC_Up	Process Monitor and Control - Rate of Change Increasing Alarm limit on PMC 4
11681	PMC.PV_Monitor_4.ROC_Dn	Process Monitor and Control - Rate of Change Decreasing Alarm limit on PMC 4
11682	PMC.PV_Monitor_4.LoLo_Lim	Process Monitor and Control - Low Low Alarm limit on PMC 4
11683	PMC.PV_Monitor_4.Lo_Lim	Process Monitor and Control - Low Alarm limit on PMC 4
11684	PMC.PV_Monitor_4.HI_Lim	Process Monitor and Control - High Alarm limit on PMC 4
11685	PVM.Monitor_AI_Point1	Process Value Monitor - AI Point to be monitored from PVM 1
11686	PVM.Monitor_AI_Point2	Process Value Monitor - AI Point to be monitored from PVM 2

Reg#	Variable	Description
11687	PVM.Monitor_AI_Point3	Process Value Monitor - AI Point to be monitored from PVM 3
11688	PVM.Monitor_AI_Point4	Process Value Monitor - AI Point to be monitored from PVM 4
11689	PVM.Monitor_DI_Point1	Process Value Monitor - DI Point to be monitored from PVM 1
11690	PVM.Monitor_DI_Point2	Process Value Monitor - DI Point to be monitored from PVM 2
11691	PVM.Monitor_DI_Point3	Process Value Monitor - DI Point to be monitored from PVM 3
11692	PVM.Monitor_DI_Point4	Process Value Monitor - DI Point to be monitored from PVM 4
11693	PVM.Monitor_List_Point1	Process Value Monitor - List 29 Point to be monitored from PVM 1
11694	PVM.Monitor_List_Point2	Process Value Monitor - List 29 Point to be monitored from PVM 2
11695	PVM.Monitor_List_Point3	Process Value Monitor - List 29 Point to be monitored from PVM 3
11696	PVM.Monitor_List_Point4	Process Value Monitor - List 29 Point to be monitored from PVM 4
11697	PVM.PV_Monitor_1.DB_Secs	Process Value Monitor - Deadband in Seconds for Alarm processing on PVM 1
11698	PVM.PV_Monitor_1.HiHI_Lim	Process Value Monitor - High High Alarm limit on PVM 1
11699	PVM.PV_Monitor_1.ROC_Up	Process Value Monitor - Rate of Change Increasing Alarm limit on PVM 1
11700	PVM.PV_Monitor_1.ROC_Dn	Process Value Monitor - Rate of Change Decreasing Alarm limit on PVM 1
11701	PVM.PV_Monitor_1.LoLo_Lim	Process Value Monitor - Low Low Alarm limit on PVM 1
11702	PVM.PV_Monitor_1.Lo_Lim	Process Value Monitor - Low Alarm limit on PVM 1
11703	PVM.PV_Monitor_1.HI_Lim	Process Value Monitor - High Alarm limit on PVM 1
11704	PVM.PV_Monitor_2.DB_Secs	Process Value Monitor - Deadband in Seconds for Alarm processing on PVM 2
11705	PVM.PV_Monitor_2.HiHI_Lim	Process Value Monitor - High High Alarm limit on PVM 2
11706	PVM.PV_Monitor_2.ROC_Up	Process Value Monitor - Rate of Change Increasing Alarm limit on PVM 2
11707	PVM.PV_Monitor_2.ROC_Dn	Process Value Monitor - Rate of Change Decreasing Alarm limit on PVM 2
11708	PVM.PV_Monitor_2.LoLo_Lim	Process Value Monitor - Low Low Alarm limit on PVM 2
11709	PVM.PV_Monitor_2.Lo_Lim	Process Value Monitor - Low Alarm limit on PVM 2
11710	PVM.PV_Monitor_2.HI_Lim	Process Value Monitor - High Alarm limit on PVM 2
11711	PVM.PV_Monitor_3.DB_Secs	Process Value Monitor - Deadband in Seconds for Alarm processing on PVM 3
11712	PVM.PV_Monitor_3.HiHI_Lim	Process Value Monitor - High High Alarm limit on PVM 3
11713	PVM.PV_Monitor_3.ROC_Up	Process Value Monitor - Rate of Change Increasing Alarm limit on PVM 3
11714	PVM.PV_Monitor_3.ROC_Dn	Process Value Monitor - Rate of Change Decreasing Alarm limit on PVM 3
11715	PVM.PV_Monitor_3.LoLo_Lim	Process Value Monitor - Low Low Alarm limit on PVM 3
11716	PVM.PV_Monitor_3.Lo_Lim	Process Value Monitor - Low Alarm limit on PVM 3
11717	PVM.PV_Monitor_3.HI_Lim	Process Value Monitor - High Alarm limit on PVM 3

Reg#	Variable	Description
11718	PVM.PV_Monitor_4.DB_Secs	Process Value Monitor - Deadband in Seconds for Alarm processing on PVM 4
11719	PVM.PV_Monitor_4.HiHI_Lim	Process Value Monitor - High High Alarm limit on PVM 4
11720	PVM.PV_Monitor_4.ROC_Up	Process Value Monitor - Rate of Change Increasing Alarm limit on PVM 4
11721	PVM.PV_Monitor_4.ROC_Dn	Process Value Monitor - Rate of Change Decreasing Alarm limit on PVM 4
11722	PVM.PV_Monitor_4.LoLo_Lim	Process Value Monitor - Low Low Alarm limit on PVM 4
11723	PVM.PV_Monitor_4.Lo_Lim	Process Value Monitor - Low Alarm limit on PVM 4
11724	PVM.PV_Monitor_4.HI_Lim	Process Value Monitor - High Alarm limit on PVM 4
11725	SMP.Sampler_AI_Point1	Sampler - AI Point to be used for Sampler 1
11726	SMP.Sampler_List_Point1	Sampler - List 29 Point to be used for Sampler 1
11727	SMP.Sampler_1_Mode	Sampler - Output Mode be used for Sampler 1
11728	SMP.Sampler_1_ScaleF	Sampler - Scale Factor to be used for Sampler 1 analog output
11729	SMP.Sampler_1_PulseR	Sampler - Pulse Factor (1 pulse per Engineering Unit of Input) to be used for Sampler 1 digital output
11730	SMP.Sampler_AI_Point2	Sampler - AI Point to be used for Sampler 2
11731	SMP.Sampler_List_Point2	Sampler - List 29 Point to be used for Sampler 2
11732	SMP.Sampler_2_Mode	Sampler - Output Mode be used for Sampler 2
11733	SMP.Sampler_2_ScaleF	Sampler - Scale Factor to be used for Sampler 2 analog output
11734	SMP.Sampler_2_PulseR	Sampler - Pulse Factor (1 pulse per Engineering Unit of Input) to be used for Sampler 2 digital output
11735	SMP.Sampler_AI_Point3	Sampler - AI Point to be used for Sampler 3
11736	SMP.Sampler_List_Point3	Sampler - List 29 Point to be used for Sampler 3
11737	SMP.Sampler_3_Mode	Sampler - Output Mode be used for Sampler 3
11738	SMP.Sampler_3_ScaleF	Sampler - Scale Factor to be used for Sampler 3 analog output
11739	SMP.Sampler_3_PulseR	Sampler - Pulse Factor (1 pulse per Engineering Unit of Input) to be used for Sampler 3 digital output
11740	SMP.Sampler_AI_Point4	Sampler - AI Point to be used for Sampler 4
11741	SMP.Sampler_List_Point4	Sampler - List 29 Point to be used for Sampler 4
11742	SMP.Sampler_4_Mode	Sampler - Output Mode be used for Sampler 4
11743	SMP.Sampler_4_ScaleF	Sampler - Scale Factor to be used for Sampler 4 analog output
11744	SMP.Sampler_4_PulseR	Sampler - Pulse Factor (1 pulse per Engineering Unit of Input) to be used for Sampler 4 digital output
11745	SMP.Sampler_AI_Point5	Sampler - AI Point to be used for Sampler 5
11746	SMP.Sampler_List_Point5	Sampler - List 29 Point to be used for Sampler 5
11747	SMP.Sampler_5_Mode	Sampler - Output Mode be used for Sampler 5
11748	SMP.Sampler_5_ScaleF	Sampler - Scale Factor to be used for Sampler 5 analog output
11749	SMP.Sampler_5_PulseR	Sampler - Pulse Factor (1 pulse per Engineering Unit of Input) to be used for Sampler 5 digital output
11750	SMP.Sampler_AI_Point6	Sampler - AI Point to be used for Sampler 6
11751	SMP.Sampler_List_Point6	Sampler - List 29 Point to be used for Sampler 6
11752	SMP.Sampler_6_Mode	Sampler - Output Mode be used for Sampler 6

Reg#	Variable	Description
11753	SMP.Sampler_6_ScaleF	Sampler - Scale Factor to be used for Sampler 6 analog output
11754	SMP.Sampler_6_PulseR	Sampler - Pulse Factor (1 pulse per Engineering Unit of Input) to be used for Sampler 6 digital output
11755	SMP.Sampler_AI_Point7	Sampler - AI Point to be used for Sampler 7
11756	SMP.Sampler_List_Point7	Sampler - List 29 Point to be used for Sampler 7
11757	SMP.Sampler_7_Mode	Sampler - Output Mode be used for Sampler 7
11758	SMP.Sampler_7_ScaleF	Sampler - Scale Factor to be used for Sampler 7 analog output
11759	SMP.Sampler_7_PulseR	Sampler - Pulse Factor (1 pulse per Engineering Unit of Input) to be used for Sampler 7 digital output
11760	SMP.Sampler_AI_Point8	Sampler - AI Point to be used for Sampler 8
11761	SMP.Sampler_List_Point8	Sampler - List 29 Point to be used for Sampler 8
11762	SMP.Sampler_8_Mode	Sampler - Output Mode be used for Sampler 8
11763	SMP.Sampler_8_ScaleF	Sampler - Scale Factor to be used for Sampler 8 analog output
11764	SMP.Sampler_8_PulseR	Sampler - Pulse Factor (1 pulse per Engineering Unit of Input) to be used for Sampler 8 digital output
11765	SMP.Sampler_AI_Point9	Sampler - AI Point to be used for Sampler 9
11766	SMP.Sampler_List_Point9	Sampler - List 29 Point to be used for Sampler 9
11767	SMP.Sampler_9_Mode	Sampler - Output Mode be used for Sampler 9
11768	SMP.Sampler_9_ScaleF	Sampler - Scale Factor to be used for Sampler 9 analog output
11769	SMP.Sampler_9_PulseR	Sampler - Pulse Factor (1 pulse per Engineering Unit of Input) to be used for Sampler 9 digital output
11770	SMP.Sampler_AI_Point10	Sampler - AI Point to be used for Sampler 10
11771	SMP.Sampler_List_Point10	Sampler - List 29 Point to be used for Sampler 10
11772	SMP.Sampler_10_Mode	Sampler - Output Mode be used for Sampler 10
11773	SMP.Sampler_10_ScaleF	Sampler - Scale Factor to be used for Sampler 10 analog output
11774	SMP.Sampler_10_PulseR	Sampler - Pulse Factor (1 pulse per Engineering Unit of Input) to be used for Sampler 10 digital output
11775	SMP.Sampler_AI_Point11	Sampler - AI Point to be used for Sampler 11
11776	SMP.Sampler_List_Point11	Sampler - List 29 Point to be used for Sampler 11
11777	SMP.Sampler_11_Mode	Sampler - Output Mode be used for Sampler 11
11778	SMP.Sampler_11_ScaleF	Sampler - Scale Factor to be used for Sampler 11 analog output
11779	SMP.Sampler_11_PulseR	Sampler - Pulse Factor (1 pulse per Engineering Unit of Input) to be used for Sampler 11 digital output
11780	SMP.Sampler_AI_Point12	Sampler - AI Point to be used for Sampler 12
11781	SMP.Sampler_List_Point12	Sampler - List 29 Point to be used for Sampler 12
11782	SMP.Sampler_12_Mode	Sampler - Output Mode be used for Sampler 12
11783	SMP.Sampler_12_ScaleF	Sampler - Scale Factor to be used for Sampler 12 analog output
11784	SMP.Sampler_12_PulseR	Sampler - Pulse Factor (1 pulse per Engineering Unit of Input) to be used for Sampler 12 digital output
11785	GPPID.PID1_ManSetpt	General Purpose PID - Manual Setpoint for GP PID Loop 1
11786	GPPID.PID1_PV_SEL	General Purpose PID - Process Variable selected for GP PID Loop 1
11787	GPPID.PID_Loop_1.PV_SPAN	General Purpose PID - Process Variable Span

Reg#	Variable	Description
		for GP PID Loop 1
11788	GPPID.PID_Loop_1.SP_RAMPRATE	General Purpose PID - Setpoint ramprate for GP PID Loop 1
11789	GPPID.PID_Loop_1.SETPT	General Purpose PID - Setpoint for GP PID Loop 1
11790	GPPID.PID_Loop_1.DB	General Purpose PID - Deadband for GP PID Loop 1
11791	GPPID.PID_Loop_1.INTGRL	General Purpose PID - Integral for GP PID Loop 1
11792	GPPID.PID_Loop_1.DERIV	General Purpose PID - Derivative for GP PID Loop 1
11793	GPPID.PID_Loop_1.GAIN	General Purpose PID - Proportional Gain for GP PID Loop 1
11794	GPPID.PID2_ManSetpt	General Purpose PID - Manual Setpoint for GP PID Loop 2
11795	GPPID.PID2_PV_SEL	General Purpose PID - Process Variable selected for GP PID Loop 2
11796	GPPID.PID_Loop_2.PV_SPAN	General Purpose PID - Process Variable Span for GP PID Loop 2
11797	GPPID.PID_Loop_2.SP_RAMPRATE	General Purpose PID - Setpoint ramprate for GP PID Loop 2
11798	GPPID.PID_Loop_2.SETPT	General Purpose PID - Setpoint for GP PID Loop 2
11799	GPPID.PID_Loop_2.DB	General Purpose PID - Deadband for GP PID Loop 2
11800	GPPID.PID_Loop_2.INTGRL	General Purpose PID - Integral for GP PID Loop 2
11801	GPPID.PID_Loop_2.DERIV	General Purpose PID - Derivative for GP PID Loop 2
11802	GPPID.PID_Loop_2.GAIN	General Purpose PID - Proportional Gain for GP PID Loop 2
11803	GPPID.PID3_ManSetpt	General Purpose PID - Manual Setpoint for GP PID Loop 3
11804	GPPID.PID3_PV_SEL	General Purpose PID - Process Variable selected for GP PID Loop 3
11805	GPPID.PID_Loop_3.PV_SPAN	General Purpose PID - Process Variable Span for GP PID Loop 3
11806	GPPID.PID_Loop_3.SP_RAMPRATE	General Purpose PID - Setpoint ramprate for GP PID Loop 3
11807	GPPID.PID_Loop_3.SETPT	General Purpose PID - Setpoint for GP PID Loop 3
11808	GPPID.PID_Loop_3.DB	General Purpose PID - Deadband for GP PID Loop 3
11809	GPPID.PID_Loop_3.INTGRL	General Purpose PID - Integral for GP PID Loop 3
11810	GPPID.PID_Loop_3.DERIV	General Purpose PID - Derivative for GP PID Loop 3
11811	GPPID.PID_Loop_3.GAIN	General Purpose PID - Proportional Gain for GP PID Loop 3
11812	UFM.UFM_1_AvgFlowVel	Ultrasonic Meter 1 - Average Flow Velocity
11813	UFM.UFM_1_FlowVel1	Ultrasonic Meter 1 - Flow Velocity path 1
11814	UFM.UFM_1_FlowVel2	Ultrasonic Meter 1 - Flow Velocity path 2
11815	UFM.UFM_1_FlowVel3	Ultrasonic Meter 1 - Flow Velocity path 3
11816	UFM.UFM_1_FlowVel4	Ultrasonic Meter 1 - Flow Velocity path 4
11817	UFM.UFM_1_FlowVel5	Ultrasonic Meter 1 - Flow Velocity path 5
11818	UFM.UFM_2_AvgFlowVel	Ultrasonic Meter 2 - Average Flow Velocity
11819	UFM.UFM_2_FlowVel1	Ultrasonic Meter 2 - Flow Velocity path 1
11820	UFM.UFM_2_FlowVel2	Ultrasonic Meter 2 - Flow Velocity path 2
11821	UFM.UFM_2_FlowVel3	Ultrasonic Meter 2 - Flow Velocity path 3

Reg#	Variable	Description
11822	UFM.UFM_2_FlowVel4	Ultrasonic Meter 2 - Flow Velocity path 4
11823	UFM.UFM_2_FlowVel5	Ultrasonic Meter 2 - Flow Velocity path 5
11824	UFM.UFM_3_AvgFlowVel	Ultrasonic Meter 3 - Average Flow Velocity
11825	UFM.UFM_3_FlowVel1	Ultrasonic Meter 3 - Flow Velocity path 1
11826	UFM.UFM_3_FlowVel2	Ultrasonic Meter 3 - Flow Velocity path 2
11827	UFM.UFM_3_FlowVel3	Ultrasonic Meter 3 - Flow Velocity path 3
11828	UFM.UFM_3_FlowVel4	Ultrasonic Meter 3 - Flow Velocity path 4
11829	UFM.UFM_3_FlowVel5	Ultrasonic Meter 3 - Flow Velocity path 5
11830	UFM.UFM_4_AvgFlowVel	Ultrasonic Meter 4 - Average Flow Velocity
11831	UFM.UFM_4_FlowVel1	Ultrasonic Meter 4 - Flow Velocity path 1
11832	UFM.UFM_4_FlowVel2	Ultrasonic Meter 4 - Flow Velocity path 2
11833	UFM.UFM_4_FlowVel3	Ultrasonic Meter 4 - Flow Velocity path 3
11834	UFM.UFM_4_FlowVel4	Ultrasonic Meter 4 - Flow Velocity path 4
11835	UFM.UFM_4_FlowVel5	Ultrasonic Meter 4 - Flow Velocity path 5
11836	UFM.UFM_5_AvgFlowVel	Ultrasonic Meter 5 - Average Flow Velocity
11837	UFM.UFM_5_FlowVel1	Ultrasonic Meter 5 - Flow Velocity path 1
11838	UFM.UFM_5_FlowVel2	Ultrasonic Meter 5 - Flow Velocity path 2
11839	UFM.UFM_5_FlowVel3	Ultrasonic Meter 5 - Flow Velocity path 3
11840	UFM.UFM_5_FlowVel4	Ultrasonic Meter 5 - Flow Velocity path 4
11841	UFM.UFM_5_FlowVel5	Ultrasonic Meter 5 - Flow Velocity path 5
11842	UFM.UFM_6_AvgFlowVel	Ultrasonic Meter 6 - Average Flow Velocity
11843	UFM.UFM_6_FlowVel1	Ultrasonic Meter 6 - Flow Velocity path 1
11844	UFM.UFM_6_FlowVel2	Ultrasonic Meter 6 - Flow Velocity path 2
11845	UFM.UFM_6_FlowVel3	Ultrasonic Meter 6 - Flow Velocity path 3
11846	UFM.UFM_6_FlowVel4	Ultrasonic Meter 6 - Flow Velocity path 4
11847	UFM.UFM_6_FlowVel5	Ultrasonic Meter 6 - Flow Velocity path 5
11848	UFM.UFM_7_AvgFlowVel	Ultrasonic Meter 7 - Average Flow Velocity
11849	UFM.UFM_7_FlowVel1	Ultrasonic Meter 7 - Flow Velocity path 1
11850	UFM.UFM_7_FlowVel2	Ultrasonic Meter 7 - Flow Velocity path 2
11851	UFM.UFM_7_FlowVel3	Ultrasonic Meter 7 - Flow Velocity path 3
11852	UFM.UFM_7_FlowVel4	Ultrasonic Meter 7 - Flow Velocity path 4
11853	UFM.UFM_7_FlowVel5	Ultrasonic Meter 7 - Flow Velocity path 5
11854	UFM.UFM_8_AvgFlowVel	Ultrasonic Meter 8 - Average Flow Velocity
11855	UFM.UFM_8_FlowVel1	Ultrasonic Meter 8 - Flow Velocity path 1
11856	UFM.UFM_8_FlowVel2	Ultrasonic Meter 8 - Flow Velocity path 2
11857	UFM.UFM_8_FlowVel3	Ultrasonic Meter 8 - Flow Velocity path 3
11858	UFM.UFM_8_FlowVel4	Ultrasonic Meter 8 - Flow Velocity path 4
11859	UFM.UFM_8_FlowVel5	Ultrasonic Meter 8 - Flow Velocity path 5
11860	IO_1.HWAIs_1.HWAI_100	HWAI, Reserved
11861	IO_1.HWAIs_1.HWAI_101	HWAI, Shared DP 1
11862	IO_1.HWAIs_1.HWAI_102	HWAI, Shared DP 2
11863	IO_1.HWAIs_1.HWAI_103	HWAI, Shared DP 3
11864	IO_1.HWAIs_1.HWAI_104	HWAI, Shared DP 4
11865	IO_1.HWAIs_1.HWAI_105	HWAI, Shared DP 5
11866	IO_1.HWAIs_1.HWAI_106	HWAI, Shared DP 6
11867	IO_1.HWAIs_1.HWAI_107	HWAI, Shared SP 1
11868	IO_1.HWAIs_1.HWAI_108	HWAI, Shared SP 2
11869	IO_1.HWAIs_1.HWAI_109	HWAI, Shared SP 3
11870	IO_1.HWAIs_1.HWAI_110	HWAI, Shared SP 4
11871	IO_1.HWAIs_1.HWAI_111	HWAI, Shared SP 5

Reg#	Variable	Description
11872	IO_1.HWAIs_1.HWAI_112	HWAI, Shared SP 6
11873	IO_1.HWAIs_1.HWAI_113	HWAI, Shared FTemp 1
11874	IO_1.HWAIs_1.HWAI_114	HWAI, Shared FTemp 2
11875	IO_1.HWAIs_1.HWAI_115	HWAI, Shared FTemp 3
11876	IO_1.HWAIs_1.HWAI_116	HWAI, Shared FTemp 4
11877	IO_1.HWAIs_1.HWAI_117	HWAI, Shared FTemp 5
11878	IO_1.HWAIs_1.HWAI_118	HWAI, Shared FTemp 6
11879	IO_1.HWAIs_1.HWAI_119	HWAI, Reserved
11880	IO_1.HWAIs_1.HWAI_120	HWAI, Reserved
11881	IO_1.HWAIs_1.HWAI_121	HWAI, Stacked DP 1 Lo
11882	IO_1.HWAIs_1.HWAI_122	HWAI, Stacked DP 1 Hi
11883	IO_1.HWAIs_1.HWAI_123	HWAI, Stacked DP 2 Lo
11884	IO_1.HWAIs_1.HWAI_124	HWAI, Stacked DP 2 Hi
11885	IO_1.HWAIs_1.HWAI_125	HWAI, Stacked DP 3 Lo
11886	IO_1.HWAIs_1.HWAI_126	HWAI, Stacked DP 3 Hi
11887	IO_1.HWAIs_1.HWAI_127	HWAI, Stacked DP 4 Lo
11888	IO_1.HWAIs_1.HWAI_128	HWAI, Stacked DP 4 Hi
11889	IO_1.HWAIs_1.HWAI_129	HWAI, Stacked DP 5 Lo
11890	IO_1.HWAIs_1.HWAI_130	HWAI, Stacked DP 5 Hi
11891	IO_1.HWAIs_1.HWAI_131	HWAI, Stacked DP 6 Lo
11892	IO_1.HWAIs_1.HWAI_132	HWAI, Stacked DP 6 Hi
11893	IO_1.HWAIs_1.HWAI_133	HWAI, Stacked DP 7 Lo
11894	IO_1.HWAIs_1.HWAI_134	HWAI, Stacked DP 7 Hi
11895	IO_1.HWAIs_1.HWAI_135	HWAI, Stacked DP 8 Lo
11896	IO_1.HWAIs_1.HWAI_136	HWAI, Stacked DP 8 Hi
11897	IO_1.HWAIs_1.HWAI_137	HWAI, Stacked DP 9 Lo
11898	IO_1.HWAIs_1.HWAI_138	HWAI, Stacked DP 9 Hi
11899	IO_1.HWAIs_1.HWAI_139	HWAI, Stacked DP 10 Lo
11900	IO_1.HWAIs_1.HWAI_140	HWAI, Stacked DP 10 Hi
11901	IO_1.HWAIs_1.HWAI_141	HWAI, Stacked DP 11 Lo
11902	IO_1.HWAIs_1.HWAI_142	HWAI, Stacked DP 11 Hi
11903	IO_1.HWAIs_1.HWAI_143	HWAI, Stacked DP 12 Lo
11904	IO_1.HWAIs_1.HWAI_144	HWAI, Stacked DP 12 Hi
11905	IO_1.HWAIs_1.HWAI_145	HWAI, Stacked SP 1 Lo
11906	IO_1.HWAIs_1.HWAI_146	HWAI, Stacked SP 1 Hi
11907	IO_1.HWAIs_1.HWAI_147	HWAI, Stacked SP 2 Lo
11908	IO_1.HWAIs_1.HWAI_148	HWAI, Stacked SP 2 Hi
11909	IO_1.HWAIs_1.HWAI_149	HWAI, Stacked SP 3 Lo
11910	IO_1.HWAIs_1.HWAI_150	HWAI, Stacked SP 3 Hi
11911	IO_1.HWAIs_1.HWAI_151	HWAI, Stacked SP 4 Lo
11912	IO_1.HWAIs_1.HWAI_152	HWAI, Stacked SP 4 Hi
11913	IO_1.HWAIs_1.HWAI_153	HWAI, Stacked SP 5 Lo
11914	IO_1.HWAIs_1.HWAI_154	HWAI, Stacked SP 5 Hi
11915	IO_1.HWAIs_1.HWAI_155	HWAI, Stacked SP 6 Lo
11916	IO_1.HWAIs_1.HWAI_156	HWAI, Stacked SP 6 Hi
11917	IO_1.HWAIs_1.HWAI_157	HWAI, Stacked SP 7 Lo
11918	IO_1.HWAIs_1.HWAI_158	HWAI, Stacked SP 7 Hi
11919	IO_1.HWAIs_1.HWAI_159	HWAI, Stacked SP 8 Lo
11920	IO_1.HWAIs_1.HWAI_160	HWAI, Stacked SP 8 Hi
11921	IO_1.HWAIs_1.HWAI_161	HWAI, Stacked SP 9 Lo

Reg#	Variable	Description
11922	IO_1.HWAIs_1.HWAI_162	HWAI, Stacked SP 9 Hi
11923	IO_1.HWAIs_1.HWAI_163	HWAI, Stacked SP 10 Lo
11924	IO_1.HWAIs_1.HWAI_164	HWAI, Stacked SP 10 Hi
11925	IO_1.HWAIs_1.HWAI_165	HWAI, Stacked SP 11 Lo
11926	IO_1.HWAIs_1.HWAI_166	HWAI, Stacked SP 11 Hi
11927	IO_1.HWAIs_1.HWAI_167	HWAI, Stacked SP 12 Lo
11928	IO_1.HWAIs_1.HWAI_168	HWAI, Stacked SP 12 Hi
11929	IO_1.HWAIs_1.HWAI_169	HWAI, Stacked FTemp 1 Lo
11930	IO_1.HWAIs_1.HWAI_170	HWAI, Stacked FTemp 1 Hi
11931	IO_1.HWAIs_1.HWAI_171	HWAI, Stacked FTemp 2 Lo
11932	IO_1.HWAIs_1.HWAI_172	HWAI, Stacked FTemp 2 Hi
11933	IO_1.HWAIs_1.HWAI_173	HWAI, Stacked FTemp 3 Lo
11934	IO_1.HWAIs_1.HWAI_174	HWAI, Stacked FTemp 3 Hi
11935	IO_1.HWAIs_1.HWAI_175	HWAI, Stacked FTemp 4 Lo
11936	IO_1.HWAIs_1.HWAI_176	HWAI, Stacked FTemp 4 Hi
11937	IO_1.HWAIs_1.HWAI_177	HWAI, Stacked FTemp 5 Lo
11938	IO_1.HWAIs_1.HWAI_178	HWAI, Stacked FTemp 5 Hi
11939	IO_1.HWAIs_1.HWAI_179	HWAI, Stacked FTemp 6 Lo
11940	IO_1.HWAIs_1.HWAI_180	HWAI, Stacked FTemp 6 Hi
11941	IO_1.HWAIs_1.HWAI_181	HWAI, Stacked FTemp 7 Lo
11942	IO_1.HWAIs_1.HWAI_182	HWAI, Stacked FTemp 7 Hi
11943	IO_1.HWAIs_1.HWAI_183	HWAI, Stacked FTemp 8 Lo
11944	IO_1.HWAIs_1.HWAI_184	HWAI, Stacked FTemp 8 Hi
11945	IO_1.HWAIs_1.HWAI_185	HWAI, Stacked FTemp 9 Lo
11946	IO_1.HWAIs_1.HWAI_186	HWAI, Stacked FTemp 9 Hi
11947	IO_1.HWAIs_1.HWAI_187	HWAI, Stacked FTemp 10 Lo
11948	IO_1.HWAIs_1.HWAI_188	HWAI, Stacked FTemp 10 Hi
11949	IO_1.HWAIs_1.HWAI_189	HWAI, Stacked FTemp 11 Lo
11950	IO_1.HWAIs_1.HWAI_190	HWAI, Stacked FTemp 11 Hi
11951	IO_1.HWAIs_1.HWAI_191	HWAI, Stacked FTemp 12 Lo
11952	IO_1.HWAIs_1.HWAI_192	HWAI, Stacked FTemp 12 Hi
11953	IO_1.HWAIs_1.HWAI_193	HWAI, Shared Inlet 1
11954	IO_1.HWAIs_1.HWAI_194	HWAI, Shared Inlet 2
11955	IO_1.HWAIs_1.HWAI_195	HWAI, Shared Inlet 3
11956	IO_1.HWAIs_1.HWAI_196	HWAI, Shared Outlet 1
11957	IO_1.HWAIs_1.HWAI_197	HWAI, Shared Outlet 2
11958	IO_1.HWAIs_1.HWAI_198	HWAI, Shared Outlet 3
11959	IO_1.HWAIs_1.HWAI_215	HWAI, S1 Spec Grav
11960	IO_1.HWAIs_1.HWAI_216	HWAI, S1 BTU
11961	IO_1.HWAIs_1.HWAI_217	HWAI, S1 N2
11962	IO_1.HWAIs_1.HWAI_218	HWAI, S1 CO2
11963	IO_1.HWAIs_1.HWAI_219	HWAI, S2 Spec Grav
11964	IO_1.HWAIs_1.HWAI_220	HWAI, S2 BTU
11965	IO_1.HWAIs_1.HWAI_221	HWAI, S2 N2
11966	IO_1.HWAIs_1.HWAI_222	HWAI, S2 CO2
11967	IO_1.HWAIs_1.HWAI_223	HWAI, S3 Spec Grav
11968	IO_1.HWAIs_1.HWAI_224	HWAI, S3 BTU
11969	IO_1.HWAIs_1.HWAI_225	HWAI, S3 N2
11970	IO_1.HWAIs_1.HWAI_226	HWAI, S3 CO2
11971	IO_1.HWAIs_1.HWAI_227	HWAI, S4 Spec Grav

Reg#	Variable	Description
11972	IO_1.HWAIs_1.HWAI_228	HWAI, S4 BTU
11973	IO_1.HWAIs_1.HWAI_229	HWAI, S4 N2
11974	IO_1.HWAIs_1.HWAI_230	HWAI, S4 CO2
11975	IO_1.HWAIs_1.HWAI_231	HWAI, S5 Spec Grav
11976	IO_1.HWAIs_1.HWAI_232	HWAI, S5 BTU
11977	IO_1.HWAIs_1.HWAI_233	HWAI, S5 N2
11978	IO_1.HWAIs_1.HWAI_234	HWAI, S5 CO2
11979	IO_1.HWAIs_1.HWAI_235	HWAI, S6 Spec Grav
11980	IO_1.HWAIs_1.HWAI_236	HWAI, S6 BTU
11981	IO_1.HWAIs_1.HWAI_237	HWAI, S6 N2
11982	IO_1.HWAIs_1.HWAI_238	HWAI, S6 CO2
11983	IO_1.HWAIs_1.HWAI_239	HWAI, S7 Spec Grav
11984	IO_1.HWAIs_1.HWAI_240	HWAI, S7 BTU
11985	IO_1.HWAIs_1.HWAI_241	HWAI, S7 N2
11986	IO_1.HWAIs_1.HWAI_242	HWAI, S7 CO2
11987	IO_1.HWAIs_1.HWAI_243	HWAI, S8 Spec Grav
11988	IO_1.HWAIs_1.HWAI_244	HWAI, S8 BTU
11989	IO_1.HWAIs_1.HWAI_245	HWAI, S8 N2
11990	IO_1.HWAIs_1.HWAI_246	HWAI, S8 CO2
11991	IO_1.HWAIs_1.HWAI_247	HWAI, S9 Spec Grav
11992	IO_1.HWAIs_1.HWAI_248	HWAI, S9 BTU
11993	IO_1.HWAIs_1.HWAI_249	HWAI, S9 N2
11994	IO_1.HWAIs_1.HWAI_250	HWAI, S9 CO2
11995	IO_1.HWAIs_1.HWAI_251	HWAI, S10 Spec Grav
11996	IO_1.HWAIs_1.HWAI_252	HWAI, S10 BTU
11997	IO_1.HWAIs_1.HWAI_253	HWAI, S10 N2
11998	IO_1.HWAIs_1.HWAI_254	HWAI, S10 CO2
11999	IO_1.HWAIs_1.HWAI_255	HWAI, S11 Spec Grav
12000	IO_1.HWAIs_1.HWAI_256	HWAI, S11 BTU
12001	IO_1.HWAIs_1.HWAI_257	HWAI, S11 N2
12002	IO_1.HWAIs_1.HWAI_258	HWAI, S11 CO2
12003	IO_1.HWAIs_1.HWAI_259	HWAI, S12 Spec Grav
12004	IO_1.HWAIs_1.HWAI_260	HWAI, S12 BTU
12005	IO_1.HWAIs_1.HWAI_261	HWAI, S12 N2
12006	IO_1.HWAIs_1.HWAI_262	HWAI, S12 CO2
12007	IO_1.HWAIs_1.HWAI_263	HWAI, Stream 1 H2O VC Sensor 1
12008	IO_1.HWAIs_1.HWAI_264	HWAI, Stream 1 H2O VC Sensor 2
12009	IO_1.HWAIs_1.HWAI_265	HWAI, Stream 1 H2O VC Sensor 3
12010	IO_1.HWAIs_1.HWAI_266	HWAI, Stream 1 H2O VC Sensor 4
12011	IO_1.HWAIs_1.HWAI_267	HWAI, Stream 1 H2O VC Sensor 5
12012	IO_1.HWAIs_1.HWAI_268	HWAI, Stream 1 H2O VC Sensor 6
12013	IO_1.HWAIs_1.HWAI_269	HWAI, Stream 2 H2O VC Sensor 1
12014	IO_1.HWAIs_1.HWAI_270	HWAI, Stream 2 H2O VC Sensor 2
12015	IO_1.HWAIs_1.HWAI_271	HWAI, Stream 2 H2O VC Sensor 3
12016	IO_1.HWAIs_1.HWAI_272	HWAI, Stream 2 H2O VC Sensor 4
12017	IO_1.HWAIs_1.HWAI_273	HWAI, Stream 2 H2O VC Sensor 5
12018	IO_1.HWAIs_1.HWAI_274	HWAI, Stream 2 H2O VC Sensor 6
12019	IO_1.HWAIs_1.HWAI_275	HWAI, Stream 3 H2O VC Sensor 1
12020	IO_1.HWAIs_1.HWAI_276	HWAI, Stream 3 H2O VC Sensor 2
12021	IO_1.HWAIs_1.HWAI_277	HWAI, Stream 3 H2O VC Sensor 3

Reg#	Variable	Description
12022	IO_1.HWAIs_1.HWAI_278	HWAI, Stream 3 H2O VC Sensor 4
12023	IO_1.HWAIs_1.HWAI_279	HWAI, Stream 3 H2O VC Sensor 5
12024	IO_1.HWAIs_1.HWAI_280	HWAI, Stream 3 H2O VC Sensor 6
12025	IO_1.HWAIs_1.HWAI_281	HWAI, Stream 4 H2O VC Sensor 1
12026	IO_1.HWAIs_1.HWAI_282	HWAI, Stream 4 H2O VC Sensor 2
12027	IO_1.HWAIs_1.HWAI_283	HWAI, Stream 4 H2O VC Sensor 3
12028	IO_1.HWAIs_1.HWAI_284	HWAI, Stream 4 H2O VC Sensor 4
12029	IO_1.HWAIs_1.HWAI_285	HWAI, Stream 4 H2O VC Sensor 5
12030	IO_1.HWAIs_1.HWAI_286	HWAI, Stream 4 H2O VC Sensor 6
12031	IO_1.HWAIs_1.HWAI_287	HWAI, Stream 5 H2O VC Sensor 1
12032	IO_1.HWAIs_1.HWAI_288	HWAI, Stream 5 H2O VC Sensor 2
12033	IO_1.HWAIs_1.HWAI_289	HWAI, Stream 5 H2O VC Sensor 3
12034	IO_1.HWAIs_1.HWAI_290	HWAI, Stream 5 H2O VC Sensor 4
12035	IO_1.HWAIs_1.HWAI_291	HWAI, Stream 5 H2O VC Sensor 5
12036	IO_1.HWAIs_1.HWAI_292	HWAI, Stream 5 H2O VC Sensor 6
12037	IO_1.HWAIs_1.HWAI_293	HWAI, Stream 6 H2O VC Sensor 1
12038	IO_1.HWAIs_1.HWAI_294	HWAI, Stream 6 H2O VC Sensor 2
12039	IO_1.HWAIs_1.HWAI_295	HWAI, Stream 6 H2O VC Sensor 3
12040	IO_1.HWAIs_1.HWAI_296	HWAI, Stream 6 H2O VC Sensor 4
12041	IO_1.HWAIs_1.HWAI_297	HWAI, Stream 6 H2O VC Sensor 5
12042	IO_1.HWAIs_1.HWAI_298	HWAI, Stream 6 H2O VC Sensor 6
12043	IO_1.HWAIs_1.HWAI_299	HWAI, Stream 7 H2O VC Sensor 1
12044	IO_1.HWAIs_1.HWAI_300	HWAI, Stream 7 H2O VC Sensor 2
12045	IO_1.HWAIs_1.HWAI_301	HWAI, Stream 7 H2O VC Sensor 3
12046	IO_1.HWAIs_1.HWAI_302	HWAI, Stream 7 H2O VC Sensor 4
12047	IO_1.HWAIs_1.HWAI_303	HWAI, Stream 7 H2O VC Sensor 5
12048	IO_1.HWAIs_1.HWAI_304	HWAI, Stream 7 H2O VC Sensor 6
12049	IO_1.HWAIs_1.HWAI_305	HWAI, Stream 8 H2O VC Sensor 1
12050	IO_1.HWAIs_1.HWAI_306	HWAI, Stream 8 H2O VC Sensor 2
12051	IO_1.HWAIs_1.HWAI_307	HWAI, Stream 8 H2O VC Sensor 3
12052	IO_1.HWAIs_1.HWAI_308	HWAI, Stream 8 H2O VC Sensor 4
12053	IO_1.HWAIs_1.HWAI_309	HWAI, Stream 8 H2O VC Sensor 5
12054	IO_1.HWAIs_1.HWAI_310	HWAI, Stream 8 H2O VC Sensor 6
12055	IO_1.HWAIs_1.HWAI_311	HWAI, Stream 9 H2O VC Sensor 1
12056	IO_1.HWAIs_1.HWAI_312	HWAI, Stream 9 H2O VC Sensor 2
12057	IO_1.HWAIs_1.HWAI_313	HWAI, Stream 9 H2O VC Sensor 3
12058	IO_1.HWAIs_1.HWAI_314	HWAI, Stream 9 H2O VC Sensor 4
12059	IO_1.HWAIs_1.HWAI_315	HWAI, Stream 9 H2O VC Sensor 5
12060	IO_1.HWAIs_1.HWAI_316	HWAI, Stream 9 H2O VC Sensor 6
12061	IO_1.HWAIs_1.HWAI_317	HWAI, Stream 10 H2O VC Sensor 1
12062	IO_1.HWAIs_1.HWAI_318	HWAI, Stream 10 H2O VC Sensor 2
12063	IO_1.HWAIs_1.HWAI_319	HWAI, Stream 10 H2O VC Sensor 3
12064	IO_1.HWAIs_1.HWAI_320	HWAI, Stream 10 H2O VC Sensor 4
12065	IO_1.HWAIs_1.HWAI_321	HWAI, Stream 10 H2O VC Sensor 5
12066	IO_1.HWAIs_1.HWAI_322	HWAI, Stream 10 H2O VC Sensor 6
12067	IO_1.HWAIs_1.HWAI_323	HWAI, Stream 11 H2O VC Sensor 1
12068	IO_1.HWAIs_1.HWAI_324	HWAI, Stream 11 H2O VC Sensor 2
12069	IO_1.HWAIs_1.HWAI_325	HWAI, Stream 11 H2O VC Sensor 3
12070	IO_1.HWAIs_1.HWAI_326	HWAI, Stream 11 H2O VC Sensor 4
12071	IO_1.HWAIs_1.HWAI_327	HWAI, Stream 11 H2O VC Sensor 5

Reg#	Variable	Description
12072	IO_1.HWAIs_1.HWAI_328	HWAI, Stream 11 H2O VC Sensor 6
12073	IO_1.HWAIs_1.HWAI_329	HWAI, Stream 12 H2O VC Sensor 1
12074	IO_1.HWAIs_1.HWAI_330	HWAI, Stream 12 H2O VC Sensor 2
12075	IO_1.HWAIs_1.HWAI_331	HWAI, Stream 12 H2O VC Sensor 3
12076	IO_1.HWAIs_1.HWAI_332	HWAI, Stream 12 H2O VC Sensor 4
12077	IO_1.HWAIs_1.HWAI_333	HWAI, Stream 12 H2O VC Sensor 5
12078	IO_1.HWAIs_1.HWAI_334	HWAI, Stream 12 H2O VC Sensor 6
12079	IO_1.HWAIs_1.HWAI_335	HWAI, CV 13 Position
12080	IO_1.HWAIs_1.HWAI_336	HWAI, CV 14 Position
12081	IO_1.HWAIs_1.HWAI_337	HWAI, CV 15 Position
12082	IO_1.HWAIs_1.HWAI_338	HWAI, CV 16 Position
12083	IO_1.HWAIs_1.HWAI_339	HWAI, CV 17 Position
12084	IO_1.HWAIs_1.HWAI_340	HWAI, CV 18 Position
12085	PG_GC.GC_1.GC_1.S1_BTUSAT_MIN	GC Dataset 1 Minimum Limit for Saturated BTU
12086	PG_GC.GC_1.GC_1.S1_BTUSAT_MAX	GC Dataset 1 Maximum Limit for Saturated BTU
12087	PG_GC.GC_1.GC_2.S1_BTUSAT_MIN	GC Dataset 2 Minimum Limit for Saturated BTU
12088	PG_GC.GC_1.GC_2.S1_BTUSAT_MAX	GC Dataset 2 Maximum Limit for Saturated BTU
12089	PG_GC.GC_1.GC_3.S1_BTUSAT_MIN	GC Dataset 3 Minimum Limit for Saturated BTU
12090	PG_GC.GC_1.GC_3.S1_BTUSAT_MAX	GC Dataset 3 Maximum Limit for Saturated BTU
12091	PG_GC.GC_1.GC_4.S1_BTUSAT_MIN	GC Dataset 4 Minimum Limit for Saturated BTU
12092	PG_GC.GC_1.GC_4.S1_BTUSAT_MAX	GC Dataset 4 Maximum Limit for Saturated BTU
12093	PG_GC.GC_1.GC_5.S1_BTUSAT_MIN	GC Dataset 5 Minimum Limit for Saturated BTU
12094	PG_GC.GC_1.GC_5.S1_BTUSAT_MAX	GC Dataset 5 Maximum Limit for Saturated BTU
12095	PG_GC.GC_1.GC_6.S1_BTUSAT_MIN	GC Dataset 6 Minimum Limit for Saturated BTU
12096	PG_GC.GC_1.GC_6.S1_BTUSAT_MAX	GC Dataset 6 Maximum Limit for Saturated BTU
12097	PG_GC.GC_1.GC_7.S1_BTUSAT_MIN	GC Dataset 7 Minimum Limit for Saturated BTU
12098	PG_GC.GC_1.GC_7.S1_BTUSAT_MAX	GC Dataset 7 Maximum Limit for Saturated BTU
12099	PG_GC.GC_1.GC_8.S1_BTUSAT_MIN	GC Dataset 8 Minimum Limit for Saturated BTU
12100	PG_GC.GC_1.GC_8.S1_BTUSAT_MAX	GC Dataset 8 Maximum Limit for Saturated BTU
12101	MB.Spare	
12102	MB.Spare	
12103	MB.Spare	
12104	MB.Spare	
12105	MB.Spare	
12106	MB.Spare	
12107	MB.Spare	
12108	MB.Spare	
12109	pg_GC.GC_1.GC_1.S1_Compressability_Raw	GC Dataset 1 results of internal compressiblity calculation
12110	pg_GC.GC_1.GC_1.S1_TotalUnNmMoleP_Raw	GC Dataset 1 total unnormalized Mole Percent of all components
12111	pg_GC.GC_1.GC_1.S1_TotalGPM_Raw	GC Dataset 1 grams per mole of gas
12112	pg_GC.GC_1.GC_2.S1_Compressability_Raw	GC Dataset 2 results of internal compressiblity calculation
12113	pg_GC.GC_1.GC_2.S1_TotalUnNmMoleP_Raw	GC Dataset 2 total unnormalized Mole Percent of all components
12114	pg_GC.GC_1.GC_2.S1_TotalGPM_Raw	GC Dataset 2 grams per mole of gas
12115	pg_GC.GC_1.GC_3.S1_Compressability_Raw	GC Dataset 3 results of internal compressiblity calculation
12116	pg_GC.GC_1.GC_3.S1_TotalUnNmMoleP_Raw	GC Dataset 3 total unnormalized Mole Percent of all components
12117	pg_GC.GC_1.GC_3.S1_TotalGPM_Raw	GC Dataset 3 grams per mole of gas

Reg#	Variable	Description
12118	pg_GC.GC_1.GC_4.S1_Compressability_Raw	GC Dataset 4 results of internal compressiblity calculation
12119	pg_GC.GC_1.GC_4.S1_TotalUnNmMoleP_Raw	GC Dataset 4 total unnormalized Mole Percent of all components
12120	pg_GC.GC_1.GC_4.S1_TotalGPM_Raw	GC Dataset 4 grams per mole of gas
12121	pg_GC.GC_1.GC_5.S1_Compressability_Raw	GC Dataset 5 results of internal compressiblity calculation
12122	pg_GC.GC_1.GC_5.S1_TotalUnNmMoleP_Raw	GC Dataset 5 total unnormalized Mole Percent of all components
12123	pg_GC.GC_1.GC_5.S1_TotalGPM_Raw	GC Dataset 5 grams per mole of gas
12124	pg_GC.GC_1.GC_6.S1_Compressability_Raw	GC Dataset 6 results of internal compressiblity calculation
12125	pg_GC.GC_1.GC_6.S1_TotalUnNmMoleP_Raw	GC Dataset 6 total unnormalized Mole Percent of all components
12126	pg_GC.GC_1.GC_6.S1_TotalGPM_Raw	GC Dataset 6 grams per mole of gas
12127	pg_GC.GC_1.GC_7.S1_Compressability_Raw	GC Dataset 7 results of internal compressiblity calculation
12128	pg_GC.GC_1.GC_7.S1_TotalUnNmMoleP_Raw	GC Dataset 7 total unnormalized Mole Percent of all components
12129	pg_GC.GC_1.GC_7.S1_TotalGPM_Raw	GC Dataset 7 grams per mole of gas
12130	pg_GC.GC_1.GC_8.S1_Compressability_Raw	GC Dataset 8 results of internal compressiblity calculation
12131	pg_GC.GC_1.GC_8.S1_TotalUnNmMoleP_Raw	GC Dataset 8 total unnormalized Mole Percent of all components
12132	pg_GC.GC_1.GC_8.S1_TotalGPM_Raw	GC Dataset 8 grams per mole of gas
12133	MB.Spare	
12134	MB.Spare	
12135	MB.Spare	
12136	MB.Spare	
12137	MB.Spare	
12138	MB.Spare	
12139	MB.Spare	
12140	MB.Spare	
12141	MB.Spare	
12142	MB.Spare	
12143	MB.Spare	
12144	MB.Spare	
12145	pg_GC.GC_1.GC_1.S1_NC6_Fact	GC Dataset 1 normalization factor for NC6, when using a C6+ GC
12146	pg_GC.GC_1.GC_1.S1_NC7_Fact	GC Dataset 1 normalization factor for NC7, when using a C6+ GC
12147	pg_GC.GC_1.GC_1.S1_NC8_Fact	GC Dataset 1 normalization factor for NC8, when using a C6+ GC
12148	pg_GC.GC_1.GC_1.S1_NC9_Fact	GC Dataset 1 normalization factor for NC9, when using a C6+ or C9+ GC
12149	pg_GC.GC_1.GC_1.S1_NC10_Fact	GC Dataset 1 normalization factor for NC10, when using a C6+ or C9+ GC
12150	pg_GC.GC_1.GC_2.S1_NC6_Fact	GC Dataset 2 normalization factor for NC6, when using a C6+ GC
12151	pg_GC.GC_1.GC_2.S1_NC7_Fact	GC Dataset 2 normalization factor for NC7, when using a C6+ GC
12152	pg_GC.GC_1.GC_2.S1_NC8_Fact	GC Dataset 2 normalization factor for NC8, when using a C6+ GC
12153	pg_GC.GC_1.GC_2.S1_NC9_Fact	GC Dataset 2 normalization factor for NC9, when using a C6+ or C9+ GC
12154	pg_GC.GC_1.GC_2.S1_NC10_Fact	GC Dataset 2 normalization factor for NC10, when using a C6+ or C9+ GC
12155	pg_GC.GC_1.GC_3.S1_NC6_Fact	GC Dataset 3 normalization factor for NC6, when

Reg#	Variable	Description
		using a C6+ GC
12156	pg_GC.GC_1.GC_3.S1_NC7_Fact	GC Dataset 3 normalization factor for NC7, when using a C6+ GC
12157	pg_GC.GC_1.GC_3.S1_NC8_Fact	GC Dataset 3 normalization factor for NC8, when using a C6+ GC
12158	pg_GC.GC_1.GC_3.S1_NC9_Fact	GC Dataset 3 normalization factor for NC9, when using a C6+ or C9+ GC
12159	pg_GC.GC_1.GC_3.S1_NC10_Fact	GC Dataset 3 normalization factor for NC10, when using a C6+ or C9+ GC
12160	pg_GC.GC_1.GC_4.S1_NC6_Fact	GC Dataset 4 normalization factor for NC6, when using a C6+ GC
12161	pg_GC.GC_1.GC_4.S1_NC7_Fact	GC Dataset 4 normalization factor for NC7, when using a C6+ GC
12162	pg_GC.GC_1.GC_4.S1_NC8_Fact	GC Dataset 4 normalization factor for NC8, when using a C6+ GC
12163	pg_GC.GC_1.GC_4.S1_NC9_Fact	GC Dataset 4 normalization factor for NC9, when using a C6+ or C9+ GC
12164	pg_GC.GC_1.GC_4.S1_NC10_Fact	GC Dataset 4 normalization factor for NC10, when using a C6+ or C9+ GC
12165	pg_GC.GC_1.GC_5.S1_NC6_Fact	GC Dataset 5 normalization factor for NC6, when using a C6+ GC
12166	pg_GC.GC_1.GC_5.S1_NC7_Fact	GC Dataset 5 normalization factor for NC7, when using a C6+ GC
12167	pg_GC.GC_1.GC_5.S1_NC8_Fact	GC Dataset 5 normalization factor for NC8, when using a C6+ GC
12168	pg_GC.GC_1.GC_5.S1_NC9_Fact	GC Dataset 5 normalization factor for NC9, when using a C6+ or C9+ GC
12169	pg_GC.GC_1.GC_5.S1_NC10_Fact	GC Dataset 5 normalization factor for NC10, when using a C6+ or C9+ GC
12170	pg_GC.GC_1.GC_6.S1_NC6_Fact	GC Dataset 6 normalization factor for NC6, when using a C6+ GC
12171	pg_GC.GC_1.GC_6.S1_NC7_Fact	GC Dataset 6 normalization factor for NC7, when using a C6+ GC
12172	pg_GC.GC_1.GC_6.S1_NC8_Fact	GC Dataset 6 normalization factor for NC8, when using a C6+ GC
12173	pg_GC.GC_1.GC_6.S1_NC9_Fact	GC Dataset 6 normalization factor for NC9, when using a C6+ or C9+ GC
12174	pg_GC.GC_1.GC_6.S1_NC10_Fact	GC Dataset 6 normalization factor for NC10, when using a C6+ or C9+ GC
12175	pg_GC.GC_1.GC_7.S1_NC6_Fact	GC Dataset 7 normalization factor for NC6, when using a C6+ GC
12176	pg_GC.GC_1.GC_7.S1_NC7_Fact	GC Dataset 7 normalization factor for NC7, when using a C6+ GC
12177	pg_GC.GC_1.GC_7.S1_NC8_Fact	GC Dataset 7 normalization factor for NC8, when using a C6+ GC
12178	pg_GC.GC_1.GC_7.S1_NC9_Fact	GC Dataset 7 normalization factor for NC9, when using a C6+ or C9+ GC
12179	pg_GC.GC_1.GC_7.S1_NC10_Fact	GC Dataset 7 normalization factor for NC10, when using a C6+ or C9+ GC
12180	pg_GC.GC_1.GC_8.S1_NC6_Fact	GC Dataset 8 normalization factor for NC6, when using a C6+ GC
12181	pg_GC.GC_1.GC_8.S1_NC7_Fact	GC Dataset 8 normalization factor for NC7, when using a C6+ GC
12182	pg_GC.GC_1.GC_8.S1_NC8_Fact	GC Dataset 8 normalization factor for NC8, when using a C6+ GC
12183	pg_GC.GC_1.GC_8.S1_NC9_Fact	GC Dataset 8 normalization factor for NC9, when using a C6+ or C9+ GC
12184	pg_GC.GC_1.GC_8.S1_NC10_Fact	GC Dataset 8 normalization factor for NC10, when using a C6+ or C9+ GC
12185	MB.Spare	
12186	MB.Spare	

Reg#	Variable	Description
12187	MB.Spare	
12188	MB.Spare	
12189	MB.Spare	
12190	MB.Spare	
12191	MB.Spare	
12192	MB.Spare	
12193	MB.Spare	
12194	MB.Spare	
12195	MB.Spare	
12196	MB.Spare	
12197	MB.Spare	
12198	MB.Spare	
12199	MB.Spare	
12200	MB.Spare	
12201	MB.Spare	
12202	MB.Spare	
12203	MB.Spare	
12204	MB.Spare	
12205	MB.FW_Version	Firmware version
12206	@GV.App_Version	CWM12R Desginer Project Version Number - Format V.vvbb - where V = major version, vv = minor version, and bb = beta version
12207	IO_1.HWAIs_1.HWRTD_1	
12208	IO_1.HWAIs_1.HWRTD_2	
12209	IO_1.HWAIs_1.HWRTD_3	
12210	IO_1.HWAIs_1.HWRTD_4	
12211	IO_1.HWAIs_1.HWRTD_5	
12212	IO_1.HWAIs_1.HWRTD_6	
12213	IO_1.HWAIs_1.HWRTD_7	
12214	IO_1.HWAIs_1.HWRTD_8	
12215	IO_1.HWAIs_1.HWRTD_9	
12216	IO_1.HWAIs_1.HWRTD_10	
12217	IO_1.HWAIs_1.HWRTD_11	
12218	IO_1.HWAIs_1.HWRTD_12	
12219	IO_1.HWAIs_1.HWRTD_13	
12220	IO_1.HWAIs_1.HWRTD_14	
12221	IO_1.HWAIs_1.HWRTD_15	
12222	IO_1.HWAIs_1.HWRTD_16	
12223	IO_1.HWAIs_1.HWRTD_17	
12224	IO_1.HWAIs_1.HWRTD_18	
12225	IO_1.HWAIs_1.HWRTD_19	
12226	IO_1.HWAIs_1.HWRTD_20	
12227	IO_1.HWAIs_1.HWRTD_21	
12228	IO_1.HWAIs_1.HWRTD_22	
12229	IO_1.HWAIs_1.HWRTD_23	
12230	IO_1.HWAIs_1.HWRTD_24	
12231	IO_1.HWAIs_1.HWRTD_25	
12232	IO_1.HWAIs_1.HWRTD_26	
12233	IO_1.HWAIs_1.HWRTD_27	
12234	IO_1.HWAIs_1.HWRTD_28	

Reg#	Variable	Description
12235	IO_1.HWAIs_1.HWRTD_29	
12236	IO_1.HWAIs_1.HWRTD_30	
12237	IO_1.HWAIs_1.HWTC_1	HWTC, Run 1 Temperature
12238	IO_1.HWAIs_1.HWTC_2	HWTC, Run 2 Temperature
12239	IO_1.HWAIs_1.HWTC_3	HWTC, Run 3 Temperature
12240	IO_1.HWAIs_1.HWTC_4	HWTC, Run 4 Temperature
12241	IO_1.HWAIs_1.HWTC_5	HWTC, Run 5 Temperature
12242	IO_1.HWAIs_1.HWTC_6	HWTC, Run 6 Temperature
12243	IO_1.HWAIs_1.HWTC_7	HWTC, Run 7 Temperature
12244	IO_1.HWAIs_1.HWTC_8	HWTC, Run 8 Temperature
12245	IO_1.HWAIs_1.HWTC_9	HWTC, Run 9 Temperature
12246	IO_1.HWAIs_1.HWTC_10	HWTC, Run 10 Temperature
12247	IO_1.HWAIs_1.HWTC_11	HWTC, Run 11 Temperature
12248	IO_1.HWAIs_1.HWTC_12	HWTC, Run 12 Temperature
12249	IO_1.HWAIs_1.HWTC_13	HWTC, Station 1 Inlet Temperature
12250	IO_1.HWAIs_1.HWTC_14	HWTC, Station 2 Inlet Temperature
12251	IO_1.HWAIs_1.HWTC_15	HWTC, Station 3 Inlet Temperature
12252	IO_1.HWAIs_1.HWTC_16	HWTC, Station 4 Inlet Temperature
12253	IO_1.HWAIs_1.HWTC_17	HWTC, Station 5 Inlet Temperature
12254	IO_1.HWAIs_1.HWTC_18	HWTC, Station 6 Inlet Temperature
12255	IO_1.HWAIs_1.HWTC_19	HWTC, Station 1 Outlet Temperature
12256	IO_1.HWAIs_1.HWTC_20	HWTC, Station 2 Outlet Temperature
12257	IO_1.HWAIs_1.HWTC_21	HWTC, Station 3 Outlet Temperature
12258	IO_1.HWAIs_1.HWTC_22	HWTC, Station 4 Outlet Temperature
12259	IO_1.HWAIs_1.HWTC_23	HWTC, Station 5 Outlet Temperature
12260	IO_1.HWAIs_1.HWTC_24	HWTC, Station 6 Outlet Temperature
12261	IO_1.HWAIs_1.HWTC_25	HWTC, Shared FTemp 1
12262	IO_1.HWAIs_1.HWTC_26	HWTC, Shared FTemp 2
12263	IO_1.HWAIs_1.HWTC_27	HWTC, Shared FTemp 3
12264	IO_1.HWAIs_1.HWTC_28	HWTC, Shared FTemp 4
12265	IO_1.HWAIs_1.HWTC_29	HWTC, Shared FTemp 5
12266	IO_1.HWAIs_1.HWTC_30	HWTC, Shared FTemp 6
12267	BC.ST_BiDir_Ctl_2.BiDirVlvCtl_1.Status	Bidirectional Control - Station 2 Programmed Control, Status
12268	BC.ST_BiDir_Ctl_4.BiDirVlvCtl_1.Status	Bidirectional Control - Station 4 Programmed Control, Status
12269	BC.ST_BiDir_Ctl_6.BiDirVlvCtl_1.Status	Bidirectional Control - Station 6 Programmed Control, Status
12270	IO_1.HWAIs_1.HWAI_341	
12271	IO_1.HWAIs_1.HWAI_342	
12272	IO_1.HWAIs_1.HWAI_343	
12273	IO_1.HWAIs_1.HWAI_344	
12274	IO_1.HWAIs_1.HWAI_345	
12275	IO_1.HWAIs_1.HWAI_346	
12276	IO_1.HWAIs_1.HWAI_347	
12277	IO_1.HWAIs_1.HWAI_348	
12278	IO_1.HWAIs_1.HWAI_349	
12279	Modbus AO 1	
12280	Modbus AO 2	
12281	Modbus AO 3	
12282	Modbus AO 4	

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12283	Modbus AO 5	
12284	Modbus AO 6	
12285	Modbus AO 7	
12286	Modbus AO 8	
12287	Modbus AO 9	
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12289	Modbus AO 11	
12290	Modbus AO 12	
12291	Modbus AO 13	
12292	Modbus AO 14	
12293	Modbus AO 15	
12294	Modbus AO 16	
12295	MVT.MVT_1_DP	
12296	MVT.MVT_1_SP	
12297	MVT.MVT_1_FT	
12298	MVT.MVT_2_DP	
12299	MVT.MVT_2_SP	
12300	MVT.MVT_2_FT	
12301	MVT.MVT_3_DP	
12302	MVT.MVT_3_SP	
12303	MVT.MVT_3_FT	
12304	MVT.MVT_4_DP	
12305	MVT.MVT_4_SP	
12306	MVT.MVT_4_FT	
12307	MVT.MVT_5_DP	
12308	MVT.MVT_5_SP	
12309	MVT.MVT_5_FT	
12310	MVT.MVT_6_DP	
12311	MVT.MVT_6_SP	
12312	MVT.MVT_6_FT	
12313	MVT.MVT_7_DP	
12314	MVT.MVT_7_SP	
12315	MVT.MVT_7_FT	
12316	MVT.MVT_8_DP	
12317	MVT.MVT_8_SP	
12318	MVT.MVT_8_FT	
12319	MVT.MVT_9_DP	
12320	MVT.MVT_9_SP	
12321	MVT.MVT_9_FT	
12322	MVT.MVT_10_DP	
12323	MVT.MVT_10_SP	
12324	MVT.MVT_10_FT	
12325	MVT.MVT_11_DP	
12326	MVT.MVT_11_SP	
12327	MVT.MVT_11_FT	
12328	MVT.MVT_12_DP	
12329	MVT.MVT_12_SP	
12330	MVT.MVT_12_FT	

12331	pg_GC.GC_1.GC_RF_Data_1.SlaveAddress	
12332	pg_GC.GC_1.GC_RF_Data_1.IPAddr	
12333	pg_GC.GC_1.GC_RF_Data_1.CommPort	
12334	pg_GC.GC_1.GC_RF_Data_1.GC_Type	
12335	pg_GC.GC_1.GC_RF_Data_1.Method	
12336	pg_GC.GC_1.GC_RF_Data_1.Delta_Lim	
12337	pg_GC.GC_1.GC_RF_Data_2.SlaveAddress	
12338	pg_GC.GC_1.GC_RF_Data_2.IPAddr	
12339	pg_GC.GC_1.GC_RF_Data_2.CommPort	
12340	pg_GC.GC_1.GC_RF_Data_2.GC_Type	
12341	pg_GC.GC_1.GC_RF_Data_2.Method	
12342	pg_GC.GC_1.GC_RF_Data_2.Delta_Lim	
12343	pg_GC.GC_1.GC_RF_Data_3.SlaveAddress	
12344	pg_GC.GC_1.GC_RF_Data_3.IPAddr	
12345	pg_GC.GC_1.GC_RF_Data_3.CommPort	
12346	pg_GC.GC_1.GC_RF_Data_3.GC_Type	
12347	pg_GC.GC_1.GC_RF_Data_3.Method	
12348	pg_GC.GC_1.GC_RF_Data_3.Delta_Lim	
12349	pg_GC.GC_1.GC_RF_Data_4.SlaveAddress	
12350	pg_GC.GC_1.GC_RF_Data_4.IPAddr	
12351	pg_GC.GC_1.GC_RF_Data_4.CommPort	
12352	pg_GC.GC_1.GC_RF_Data_4.GC_Type	
12353	pg_GC.GC_1.GC_RF_Data_4.Method	
12354	pg_GC.GC_1.GC_RF_Data_4.Delta_Lim	
12355	pg_GC.GC_1.GC_RF_Data_5.SlaveAddress	
12356	pg_GC.GC_1.GC_RF_Data_5.IPAddr	
12357	pg_GC.GC_1.GC_RF_Data_5.CommPort	
12358	pg_GC.GC_1.GC_RF_Data_5.GC_Type	
12359	pg_GC.GC_1.GC_RF_Data_5.Method	
12360	pg_GC.GC_1.GC_RF_Data_5.Delta_Lim	
12361	pg_GC.GC_1.GC_RF_Data_6.SlaveAddress	
12362	pg_GC.GC_1.GC_RF_Data_6.IPAddr	
12363	pg_GC.GC_1.GC_RF_Data_6.CommPort	
12364	pg_GC.GC_1.GC_RF_Data_6.GC_Type	
12365	pg_GC.GC_1.GC_RF_Data_6.Method	
12366	pg_GC.GC_1.GC_RF_Data_6.Delta_Lim	
12367	pg_GC.GC_1.GC_RF_Data_7.SlaveAddress	

12368	pg_GC.GC_1.GC_RF_Data_7.IPAddr	
12369	pg_GC.GC_1.GC_RF_Data_7.CommPort	
12370	pg_GC.GC_1.GC_RF_Data_7.GC_Type	
12371	pg_GC.GC_1.GC_RF_Data_7.Method	
12372	pg_GC.GC_1.GC_RF_Data_7.Delta_Lim	
12373	pg_GC.GC_1.GC_RF_Data_8.SlaveAddress	
12374	pg_GC.GC_1.GC_RF_Data_8.IPAddr	
12375	pg_GC.GC_1.GC_RF_Data_8.CommPort	
12376	pg_GC.GC_1.GC_RF_Data_8.GC_Type	
12377	pg_GC.GC_1.GC_RF_Data_8.Method	
12378	pg_GC.GC_1.GC_RF_Data_8.Delta_Lim	
12379	UFM.UFM_1.Kfact	
12380	UFM.UFM_1.SwirlAngle	
12381	UFM.UFM_1.SNR1A	
12382	UFM.UFM_1.SNR1B	
12383	UFM.UFM_1.SNR2A	
12384	UFM.UFM_1.SNR2B	
12385	UFM.UFM_1.SNR3A	
12386	UFM.UFM_1.SNR3B	
12387	UFM.UFM_1.SNR4A	
12388	UFM.UFM_1.SNR4B	
12389	UFM.UFM_1.SNR5A	
12390	UFM.UFM_1.SNR5B	
12391	UFM.UFM_1.UCFlow_MCFD	
12392	UFM.UFM_1.InstType	
12393	UFM.UFM_1.Paths	
12394	UFM.UFM_1.SampleRate	
12395	UFM.UFM_1.VSamplesL1	
12396	UFM.UFM_1.VSamplesL2	
12397	UFM.UFM_1.VSamplesL3	
12398	UFM.UFM_1.VSamplesL4	
12399	UFM.UFM_1.VSamplesL5	
12400	UFM.UFM_1.GainLim1A	
12401	UFM.UFM_1.GainLim1B	
12402	UFM.UFM_1.GainLim2A	
12403	UFM.UFM_1.GainLim2B	
12404	UFM.UFM_1.GainLim3A	

12405	UFM.UFM_1.GainLim3B	
12406	UFM.UFM_1.GainLim4A	
12407	UFM.UFM_1.GainLim4B	
12408	UFM.UFM_1.GainLim5A	
12409	UFM.UFM_1.GainLim5B	
12410	UFM.UFM_1.SysStatusV	
12411	UFM.UFM_1.SysStatusC	
12412	UFM.UFM_1.CheckSum	
12413	UFM.UFM_1.Mode	
12414	UFM.UFM_1.CFlow_MCFD	
12415	UFM.UFM_1.FailureRate1	
12416	UFM.UFM_1.FailureRate2	
12417	UFM.UFM_1.FailureRate3	
12418	UFM.UFM_1.FailureRate4	
12419	UFM.UFM_1.PctGoodA1	
12420	UFM.UFM_1.PctGoodB1	
12421	UFM.UFM_1.PctGoodC1	
12422	UFM.UFM_1.PctGoodD1	
12423	UFM.UFM_1.PctGoodA2	
12424	UFM.UFM_1.PctGoodB2	
12425	UFM.UFM_1.PctGoodC2	
12426	UFM.UFM_1.PctGoodD2	
12427	UFM.UFM_1.Delay	
12428	UFM.UFM_1.Turbulence1	
12429	UFM.UFM_1.Turbulence2	
12430	UFM.UFM_1.Turbulence3	
12431	UFM.UFM_1.Turbulence4	
12432	UFM.UFM_1.Monitor_Count	
12433	UFM.UFM_1.PCT_Good	
12434	UFM.UFM_1.Good_Polls	
12435	UFM.UFM_1.Bad_Polls	
12436	UFM.UFM_1.DataChk.VALID1_PCT	
12437	UFM.UFM_1.DataChk.VALID2_PCT	
12438	UFM.UFM_1.DataChk.VALID3_PCT	
12439	UFM.UFM_1.DataChk.VALID4_PCT	
12440	UFM.UFM_1.DataChk.VALID5_PCT	
12441	UFM.UFM_1.DataChk.FLWVEL_L1	

12442	UFM.UFM_1.DataChk.FLWVEL_L2	
12443	UFM.UFM_1.DataChk.FLWVEL_L3	
12444	UFM.UFM_1.DataChk.FLWVEL_L4	
12445	UFM.UFM_1.DataChk.FLWVEL_L5	
12446	UFM.UFM_1.DataChk.SNR1AB	
12447	UFM.UFM_1.DataChk.SNR2AB	
12448	UFM.UFM_1.DataChk.SNR3AB	
12449	UFM.UFM_1.DataChk.SNR4AB	
12450	UFM.UFM_1.DataChk.SNR5AB	
12451	UFM.UFM_1.DataChk.SNDSPD_L1	
12452	UFM.UFM_1.DataChk.SNDSPD_L2	
12453	UFM.UFM_1.DataChk.SNDSPD_L3	
12454	UFM.UFM_1.DataChk.SNDSPD_L4	
12455	UFM.UFM_1.DataChk.SNDSPD_L5	
12456	UFM.UFM_1.DataChk.ANGLE_ALRM	
12457	UFM.UFM_1.DataChk.NUM_AQRD	
12458	UFM.UFM_1.DataChk.PF_ALRM	
12459	UFM.UFM_1.DataChk.SYMMTRY_ALRM	
12460	UFM.UFM_1.DataChk.S1_Diff	
12461	UFM.UFM_1.DataChk.S2_Diff	
12462	UFM.UFM_1.DataChk.S3_Diff	
12463	UFM.UFM_1.DataChk.S4_Diff	
12464	UFM.UFM_1.DataChk.S5_Diff	
12465	UFM.UFM_1.DataChk.FLWVEL_R1	
12466	UFM.UFM_1.DataChk.FLWVEL_R2	
12467	UFM.UFM_1.DataChk.FLWVEL_R3	
12468	UFM.UFM_1.DataChk.FLWVEL_R4	
12469	UFM.UFM_1.DataChk.FLWVEL_R5	
12470	UFM.UFM_1.DataChk.ZF_Test	
12471	UFM.UFM_1.DataChk.Path1_Status	
12472	UFM.UFM_1.DataChk.Path2_Status	
12473	UFM.UFM_1.DataChk.Path3_Status	
12474	UFM.UFM_1.DataChk.Path4_Status	
12475	UFM.UFM_1.DataChk.Path5_Status	
12476	UFM.UFM_1.DataChk.Meter_Status	
12477	UFM.UFM_1.DataChk.Meter_Prfrmnc	
12478	UFM.UFM_1.DataChk.Meter_Stable	

12479	UFM.UFM_1.DataChk.AGC13_DLTA	
12480	UFM.UFM_1.DataChk.AGC15_DLTA	
12481	UFM.UFM_1.DataChk.AGC24_DLTA	
12482	UFM.UFM_1.DataChk.AGC35_DLTA	
12483	UFM.UFM_1.DataChk.AGCDLT_1A1B	
12484	UFM.UFM_1.DataChk.AGCDLT_2A2B	
12485	UFM.UFM_1.DataChk.AGCDLT_3A3B	
12486	UFM.UFM_1.DataChk.AGCDLT_4A4B	
12487	UFM.UFM_1.DataChk.AGCDLT_5A5B	
12488	UFM.UFM_1.DataChk.AVGAGC_1A1B	
12489	UFM.UFM_1.DataChk.AVGAGC_2A2B	
12490	UFM.UFM_1.DataChk.AVGAGC_3A3B	
12491	UFM.UFM_1.DataChk.AVGAGC_4A4B	
12492	UFM.UFM_1.DataChk.AVGAGC_5A5B	
12493	UFM.UFM_1.DataChk.PF_Hi	
12494	UFM.UFM_1.DataChk.PF_Lo	
12495	UFM.UFM_1.DataChk.SYMMTRY_Hi	
12496	UFM.UFM_1.DataChk.SYMMTRY_Lo	
12497	UFM.UFM_1.DataChk.ANGLE_Hi	
12498	UFM.UFM_1.DataChk.ANGLE_Lo	
12499	UFM.UFM_1.DataChk.VALPCT_L	
12500	UFM.UFM_1.DataChk.SNR_Lo	
12501	UFM.UFM_1.DataChk.AGCIA_Hi	
12502	UFM.UFM_1.DataChk.AGCOS_Hi	
12503	UFM.UFM_1.DataChk.SOS_Hi	
12504	UFM.UFM_1.DataChk.SOS_Lo	
12505	UFM.UFM_1.DataChk.VoG_Hi	
12506	UFM.UFM_1.DataChk.VoG_Lo	
12507	UFM.UFM_1.DataChk.SOSDiff_Hi	
12508	UFM.UFM_1.DataChk.ZF_Test_Hi	
12509	UFM.UFM_1.DataChk.TrblncI_Hi	
12510	UFM.UFM_1.DataChk.TrblncO_Hi	
12511	UFM.UFM_1.DataChk.Comm_Lo	
12512	UFM.UFM_1.DataChk.AvgFlowVel_MaxChng	
12513	UFM.UFM_1.DataValid_Cutoff	
12514	UFM.UFM_2.Kfact	
12515	UFM.UFM_2.SwirlAngle	

12516	UFM.UFM_2.SNR1A	
12517	UFM.UFM_2.SNR1B	
12518	UFM.UFM_2.SNR2A	
12519	UFM.UFM_2.SNR2B	
12520	UFM.UFM_2.SNR3A	
12521	UFM.UFM_2.SNR3B	
12522	UFM.UFM_2.SNR4A	
12523	UFM.UFM_2.SNR4B	
12524	UFM.UFM_2.SNR5A	
12525	UFM.UFM_2.SNR5B	
12526	UFM.UFM_2.UCFlow_MCFD	
12527	UFM.UFM_2.InstType	
12528	UFM.UFM_2.Paths	
12529	UFM.UFM_2.SampleRate	
12530	UFM.UFM_2.VSamplesL1	
12531	UFM.UFM_2.VSamplesL2	
12532	UFM.UFM_2.VSamplesL3	
12533	UFM.UFM_2.VSamplesL4	
12534	UFM.UFM_2.VSamplesL5	
12535	UFM.UFM_2.GainLim1A	
12536	UFM.UFM_2.GainLim1B	
12537	UFM.UFM_2.GainLim2A	
12538	UFM.UFM_2.GainLim2B	
12539	UFM.UFM_2.GainLim3A	
12540	UFM.UFM_2.GainLim3B	
12541	UFM.UFM_2.GainLim4A	
12542	UFM.UFM_2.GainLim4B	
12543	UFM.UFM_2.GainLim5A	
12544	UFM.UFM_2.GainLim5B	
12545	UFM.UFM_2.SysStatusV	
12546	UFM.UFM_2.SysStatusC	
12547	UFM.UFM_2.CheckSum	
12548	UFM.UFM_2.Mode	
12549	UFM.UFM_2.CFlow_MCFD	
12550	UFM.UFM_2.FailureRate1	
12551	UFM.UFM_2.FailureRate2	
12552	UFM.UFM_2.FailureRate3	

12553	UFM.UFM_2.FailureRate4	
12554	UFM.UFM_2.PctGoodA1	
12555	UFM.UFM_2.PctGoodB1	
12556	UFM.UFM_2.PctGoodC1	
12557	UFM.UFM_2.PctGoodD1	
12558	UFM.UFM_2.PctGoodA2	
12559	UFM.UFM_2.PctGoodB2	
12560	UFM.UFM_2.PctGoodC2	
12561	UFM.UFM_2.PctGoodD2	
12562	UFM.UFM_2.Delay	
12563	UFM.UFM_2.Turbulence1	
12564	UFM.UFM_2.Turbulence2	
12565	UFM.UFM_2.Turbulence3	
12566	UFM.UFM_2.Turbulence4	
12567	UFM.UFM_2.Monitor_Count	
12568	UFM.UFM_2.PCT_Good	
12569	UFM.UFM_2.Good_Polls	
12570	UFM.UFM_2.Bad_Polls	
12571	UFM.UFM_2.DataChk.VALID1_PCT	
12572	UFM.UFM_2.DataChk.VALID2_PCT	
12573	UFM.UFM_2.DataChk.VALID3_PCT	
12574	UFM.UFM_2.DataChk.VALID4_PCT	
12575	UFM.UFM_2.DataChk.VALID5_PCT	
12576	UFM.UFM_2.DataChk.FLWVEL_L1	
12577	UFM.UFM_2.DataChk.FLWVEL_L2	
12578	UFM.UFM_2.DataChk.FLWVEL_L3	
12579	UFM.UFM_2.DataChk.FLWVEL_L4	
12580	UFM.UFM_2.DataChk.FLWVEL_L5	
12581	UFM.UFM_2.DataChk.SNR1AB	
12582	UFM.UFM_2.DataChk.SNR2AB	
12583	UFM.UFM_2.DataChk.SNR3AB	
12584	UFM.UFM_2.DataChk.SNR4AB	
12585	UFM.UFM_2.DataChk.SNR5AB	
12586	UFM.UFM_2.DataChk.SNDSPD_L1	
12587	UFM.UFM_2.DataChk.SNDSPD_L2	
12588	UFM.UFM_2.DataChk.SNDSPD_L3	
12589	UFM.UFM_2.DataChk.SNDSPD_L4	

12590	UFM.UFM_2.DataChk.SNDSPD_L5	
12591	UFM.UFM_2.DataChk.ANGLE_ALRM	
12592	UFM.UFM_2.DataChk.NUM_AQRD	
12593	UFM.UFM_2.DataChk.PF_ALRM	
12594	UFM.UFM_2.DataChk.SYMMTRY_ALRM	
12595	UFM.UFM_2.DataChk.S1_Diff	
12596	UFM.UFM_2.DataChk.S2_Diff	
12597	UFM.UFM_2.DataChk.S3_Diff	
12598	UFM.UFM_2.DataChk.S4_Diff	
12599	UFM.UFM_2.DataChk.S5_Diff	
12600	UFM.UFM_2.DataChk.FLWVEL_R1	
12601	UFM.UFM_2.DataChk.FLWVEL_R2	
12602	UFM.UFM_2.DataChk.FLWVEL_R3	
12603	UFM.UFM_2.DataChk.FLWVEL_R4	
12604	UFM.UFM_2.DataChk.FLWVEL_R5	
12605	UFM.UFM_2.DataChk.ZF_Test	
12606	UFM.UFM_2.DataChk.Path1_Status	
12607	UFM.UFM_2.DataChk.Path2_Status	
12608	UFM.UFM_2.DataChk.Path3_Status	
12609	UFM.UFM_2.DataChk.Path4_Status	
12610	UFM.UFM_2.DataChk.Path5_Status	
12611	UFM.UFM_2.DataChk.Meter_Status	
12612	UFM.UFM_2.DataChk.Meter_Prfrmnc	
12613	UFM.UFM_2.DataChk.Meter_Stable	
12614	UFM.UFM_2.DataChk.AGC13_DLTA	
12615	UFM.UFM_2.DataChk.AGC15_DLTA	
12616	UFM.UFM_2.DataChk.AGC24_DLTA	
12617	UFM.UFM_2.DataChk.AGC35_DLTA	
12618	UFM.UFM_2.DataChk.AGCDLT_1A1B	
12619	UFM.UFM_2.DataChk.AGCDLT_2A2B	
12620	UFM.UFM_2.DataChk.AGCDLT_3A3B	
12621	UFM.UFM_2.DataChk.AGCDLT_4A4B	
12622	UFM.UFM_2.DataChk.AGCDLT_5A5B	
12623	UFM.UFM_2.DataChk.AVGAGC_1A1B	
12624	UFM.UFM_2.DataChk.AVGAGC_2A2B	
12625	UFM.UFM_2.DataChk.AVGAGC_3A3B	
12626	UFM.UFM_2.DataChk.AVGAGC_4A4B	

12627	UFM.UFM_2.DataChk.AVGAGC_5A5B	
12628	UFM.UFM_2.DataChk.PF_Hi	
12629	UFM.UFM_2.DataChk.PF_Lo	
12630	UFM.UFM_2.DataChk.SYMMTRY_Hi	
12631	UFM.UFM_2.DataChk.SYMMTRY_Lo	
12632	UFM.UFM_2.DataChk.ANGLE_Hi	
12633	UFM.UFM_2.DataChk.ANGLE_Lo	
12634	UFM.UFM_2.DataChk.VALPCT_L	
12635	UFM.UFM_2.DataChk.SNR_Lo	
12636	UFM.UFM_2.DataChk.AGCIA_Hi	
12637	UFM.UFM_2.DataChk.AGCOS_Hi	
12638	UFM.UFM_2.DataChk.SOS_Hi	
12639	UFM.UFM_2.DataChk.SOS_Lo	
12640	UFM.UFM_2.DataChk.VoG_Hi	
12641	UFM.UFM_2.DataChk.VoG_Lo	
12642	UFM.UFM_2.DataChk.SOSDiff_Hi	
12643	UFM.UFM_2.DataChk.ZF_Test_Hi	
12644	UFM.UFM_2.DataChk.TrblncI_Hi	
12645	UFM.UFM_2.DataChk.TrblncO_Hi	
12646	UFM.UFM_2.DataChk.Comm_Lo	
12647	UFM.UFM_2.DataChk.AvgFlowVel_MaxChng	
12648	UFM.UFM_2.DataValid_Cutoff	
12649	UFM.UFM_3.Kfact	
12650	UFM.UFM_3.SwirlAngle	
12651	UFM.UFM_3.SNR1A	
12652	UFM.UFM_3.SNR1B	
12653	UFM.UFM_3.SNR2A	
12654	UFM.UFM_3.SNR2B	
12655	UFM.UFM_3.SNR3A	
12656	UFM.UFM_3.SNR3B	
12657	UFM.UFM_3.SNR4A	
12658	UFM.UFM_3.SNR4B	
12659	UFM.UFM_3.SNR5A	
12660	UFM.UFM_3.SNR5B	
12661	UFM.UFM_3.UCFlow_MCFD	
12662	UFM.UFM_3.InstType	
12663	UFM.UFM_3.Paths	

12664	UFM.UFM_3.SampleRate	
12665	UFM.UFM_3.VSamplesL1	
12666	UFM.UFM_3.VSamplesL2	
12667	UFM.UFM_3.VSamplesL3	
12668	UFM.UFM_3.VSamplesL4	
12669	UFM.UFM_3.VSamplesL5	
12670	UFM.UFM_3.GainLim1A	
12671	UFM.UFM_3.GainLim1B	
12672	UFM.UFM_3.GainLim2A	
12673	UFM.UFM_3.GainLim2B	
12674	UFM.UFM_3.GainLim3A	
12675	UFM.UFM_3.GainLim3B	
12676	UFM.UFM_3.GainLim4A	
12677	UFM.UFM_3.GainLim4B	
12678	UFM.UFM_3.GainLim5A	
12679	UFM.UFM_3.GainLim5B	
12680	UFM.UFM_3.SysStatusV	
12681	UFM.UFM_3.SysStatusC	
12682	UFM.UFM_3.CheckSum	
12683	UFM.UFM_3.Mode	
12684	UFM.UFM_3.CFlow_MCFD	
12685	UFM.UFM_3.FailureRate1	
12686	UFM.UFM_3.FailureRate2	
12687	UFM.UFM_3.FailureRate3	
12688	UFM.UFM_3.FailureRate4	
12689	UFM.UFM_3.PctGoodA1	
12690	UFM.UFM_3.PctGoodB1	
12691	UFM.UFM_3.PctGoodC1	
12692	UFM.UFM_3.PctGoodD1	
12693	UFM.UFM_3.PctGoodA2	
12694	UFM.UFM_3.PctGoodB2	
12695	UFM.UFM_3.PctGoodC2	
12696	UFM.UFM_3.PctGoodD2	
12697	UFM.UFM_3.Delay	
12698	UFM.UFM_3.Turbulence1	
12699	UFM.UFM_3.Turbulence2	
12700	UFM.UFM_3.Turbulence3	

12701	UFM.UFM_3.Turbulence4	
12702	UFM.UFM_3.Monitor_Count	
12703	UFM.UFM_3.PCT_Good	
12704	UFM.UFM_3.Good_Polls	
12705	UFM.UFM_3.Bad_Polls	
12706	UFM.UFM_3.DataChk.VALID1_PCT	
12707	UFM.UFM_3.DataChk.VALID2_PCT	
12708	UFM.UFM_3.DataChk.VALID3_PCT	
12709	UFM.UFM_3.DataChk.VALID4_PCT	
12710	UFM.UFM_3.DataChk.VALID5_PCT	
12711	UFM.UFM_3.DataChk.FLWVEL_L1	
12712	UFM.UFM_3.DataChk.FLWVEL_L2	
12713	UFM.UFM_3.DataChk.FLWVEL_L3	
12714	UFM.UFM_3.DataChk.FLWVEL_L4	
12715	UFM.UFM_3.DataChk.FLWVEL_L5	
12716	UFM.UFM_3.DataChk.SNR1AB	
12717	UFM.UFM_3.DataChk.SNR2AB	
12718	UFM.UFM_3.DataChk.SNR3AB	
12719	UFM.UFM_3.DataChk.SNR4AB	
12720	UFM.UFM_3.DataChk.SNR5AB	
12721	UFM.UFM_3.DataChk.SNDSPD_L1	
12722	UFM.UFM_3.DataChk.SNDSPD_L2	
12723	UFM.UFM_3.DataChk.SNDSPD_L3	
12724	UFM.UFM_3.DataChk.SNDSPD_L4	
12725	UFM.UFM_3.DataChk.SNDSPD_L5	
12726	UFM.UFM_3.DataChk.ANGLE_ALRM	
12727	UFM.UFM_3.DataChk.NUM_AQRD	
12728	UFM.UFM_3.DataChk.PF_ALRM	
12729	UFM.UFM_3.DataChk.SYMMTRY_ALRM	
12730	UFM.UFM_3.DataChk.S1_Diff	
12731	UFM.UFM_3.DataChk.S2_Diff	
12732	UFM.UFM_3.DataChk.S3_Diff	
12733	UFM.UFM_3.DataChk.S4_Diff	
12734	UFM.UFM_3.DataChk.S5_Diff	
12735	UFM.UFM_3.DataChk.FLWVEL_R1	
12736	UFM.UFM_3.DataChk.FLWVEL_R2	
12737	UFM.UFM_3.DataChk.FLWVEL_R3	

12738	UFM.UFM_3.DataChk.FLWVEL_R4	
12739	UFM.UFM_3.DataChk.FLWVEL_R5	
12740	UFM.UFM_3.DataChk.ZF_Test	
12741	UFM.UFM_3.DataChk.Path1_Status	
12742	UFM.UFM_3.DataChk.Path2_Status	
12743	UFM.UFM_3.DataChk.Path3_Status	
12744	UFM.UFM_3.DataChk.Path4_Status	
12745	UFM.UFM_3.DataChk.Path5_Status	
12746	UFM.UFM_3.DataChk.Meter_Status	
12747	UFM.UFM_3.DataChk.Meter_Prfrmnc	
12748	UFM.UFM_3.DataChk.Meter_Stable	
12749	UFM.UFM_3.DataChk.AGC13_DLTA	
12750	UFM.UFM_3.DataChk.AGC15_DLTA	
12751	UFM.UFM_3.DataChk.AGC24_DLTA	
12752	UFM.UFM_3.DataChk.AGC35_DLTA	
12753	UFM.UFM_3.DataChk.AGCDLT_1A1B	
12754	UFM.UFM_3.DataChk.AGCDLT_2A2B	
12755	UFM.UFM_3.DataChk.AGCDLT_3A3B	
12756	UFM.UFM_3.DataChk.AGCDLT_4A4B	
12757	UFM.UFM_3.DataChk.AGCDLT_5A5B	
12758	UFM.UFM_3.DataChk.AVGAGC_1A1B	
12759	UFM.UFM_3.DataChk.AVGAGC_2A2B	
12760	UFM.UFM_3.DataChk.AVGAGC_3A3B	
12761	UFM.UFM_3.DataChk.AVGAGC_4A4B	
12762	UFM.UFM_3.DataChk.AVGAGC_5A5B	
12763	UFM.UFM_3.DataChk.PF_Hi	
12764	UFM.UFM_3.DataChk.PF_Lo	
12765	UFM.UFM_3.DataChk.SYMMTRY_Hi	
12766	UFM.UFM_3.DataChk.SYMMTRY_Lo	
12767	UFM.UFM_3.DataChk.ANGLE_Hi	
12768	UFM.UFM_3.DataChk.ANGLE_Lo	
12769	UFM.UFM_3.DataChk.VALPCT_L	
12770	UFM.UFM_3.DataChk.SNR_Lo	
12771	UFM.UFM_3.DataChk.AGCIA_Hi	
12772	UFM.UFM_3.DataChk.AGCOS_Hi	
12773	UFM.UFM_3.DataChk.SOS_Hi	
12774	UFM.UFM_3.DataChk.SOS_Lo	

12775	UFM.UFM_3.DataChk.VoG_Hi	
12776	UFM.UFM_3.DataChk.VoG_Lo	
12777	UFM.UFM_3.DataChk.SOSDiff_Hi	
12778	UFM.UFM_3.DataChk.ZF_Test_Hi	
12779	UFM.UFM_3.DataChk.TrblncI_Hi	
12780	UFM.UFM_3.DataChk.TrblncO_Hi	
12781	UFM.UFM_3.DataChk.Comm_Lo	
12782	UFM.UFM_3.DataChk.AvgFlowVel_MaxChng	
12783	UFM.UFM_3.DataValid_Cutoff	
12784	UFM.UFM_4.Kfact	
12785	UFM.UFM_4.SwirlAngle	
12786	UFM.UFM_4.SNR1A	
12787	UFM.UFM_4.SNR1B	
12788	UFM.UFM_4.SNR2A	
12789	UFM.UFM_4.SNR2B	
12790	UFM.UFM_4.SNR3A	
12791	UFM.UFM_4.SNR3B	
12792	UFM.UFM_4.SNR4A	
12793	UFM.UFM_4.SNR4B	
12794	UFM.UFM_4.SNR5A	
12795	UFM.UFM_4.SNR5B	
12796	UFM.UFM_4.UCFlow_MCFD	
12797	UFM.UFM_4.InstType	
12798	UFM.UFM_4.Paths	
12799	UFM.UFM_4.SampleRate	
12800	UFM.UFM_4.VSamplesL1	
12801	UFM.UFM_4.VSamplesL2	
12802	UFM.UFM_4.VSamplesL3	
12803	UFM.UFM_4.VSamplesL4	
12804	UFM.UFM_4.VSamplesL5	
12805	UFM.UFM_4.GainLim1A	
12806	UFM.UFM_4.GainLim1B	
12807	UFM.UFM_4.GainLim2A	
12808	UFM.UFM_4.GainLim2B	
12809	UFM.UFM_4.GainLim3A	
12810	UFM.UFM_4.GainLim3B	
12811	UFM.UFM_4.GainLim4A	

12812	UFM.UFM_4.GainLim4B	
12813	UFM.UFM_4.GainLim5A	
12814	UFM.UFM_4.GainLim5B	
12815	UFM.UFM_4.SysStatusV	
12816	UFM.UFM_4.SysStatusC	
12817	UFM.UFM_4.CheckSum	
12818	UFM.UFM_4.Mode	
12819	UFM.UFM_4.CFlow_MCFD	
12820	UFM.UFM_4.FailureRate1	
12821	UFM.UFM_4.FailureRate2	
12822	UFM.UFM_4.FailureRate3	
12823	UFM.UFM_4.FailureRate4	
12824	UFM.UFM_4.PctGoodA1	
12825	UFM.UFM_4.PctGoodB1	
12826	UFM.UFM_4.PctGoodC1	
12827	UFM.UFM_4.PctGoodD1	
12828	UFM.UFM_4.PctGoodA2	
12829	UFM.UFM_4.PctGoodB2	
12830	UFM.UFM_4.PctGoodC2	
12831	UFM.UFM_4.PctGoodD2	
12832	UFM.UFM_4.Delay	
12833	UFM.UFM_4.Turbulence1	
12834	UFM.UFM_4.Turbulence2	
12835	UFM.UFM_4.Turbulence3	
12836	UFM.UFM_4.Turbulence4	
12837	UFM.UFM_4.Monitor_Count	
12838	UFM.UFM_4.PCT_Good	
12839	UFM.UFM_4.Good_Polls	
12840	UFM.UFM_4.Bad_Polls	
12841	UFM.UFM_4.DataChk.VALID1_PCT	
12842	UFM.UFM_4.DataChk.VALID2_PCT	
12843	UFM.UFM_4.DataChk.VALID3_PCT	
12844	UFM.UFM_4.DataChk.VALID4_PCT	
12845	UFM.UFM_4.DataChk.VALID5_PCT	
12846	UFM.UFM_4.DataChk.FLWVEL_L1	
12847	UFM.UFM_4.DataChk.FLWVEL_L2	
12848	UFM.UFM_4.DataChk.FLWVEL_L3	

12849	UFM.UFM_4.DataChk.FLWVEL_L4	
12850	UFM.UFM_4.DataChk.FLWVEL_L5	
12851	UFM.UFM_4.DataChk.SNR1AB	
12852	UFM.UFM_4.DataChk.SNR2AB	
12853	UFM.UFM_4.DataChk.SNR3AB	
12854	UFM.UFM_4.DataChk.SNR4AB	
12855	UFM.UFM_4.DataChk.SNR5AB	
12856	UFM.UFM_4.DataChk.SNDSPD_L1	
12857	UFM.UFM_4.DataChk.SNDSPD_L2	
12858	UFM.UFM_4.DataChk.SNDSPD_L3	
12859	UFM.UFM_4.DataChk.SNDSPD_L4	
12860	UFM.UFM_4.DataChk.SNDSPD_L5	
12861	UFM.UFM_4.DataChk.ANGLE_ALRM	
12862	UFM.UFM_4.DataChk.NUM_AQRD	
12863	UFM.UFM_4.DataChk.PF_ALRM	
12864	UFM.UFM_4.DataChk.SYMMTRY_ALRM	
12865	UFM.UFM_4.DataChk.S1_Diff	
12866	UFM.UFM_4.DataChk.S2_Diff	
12867	UFM.UFM_4.DataChk.S3_Diff	
12868	UFM.UFM_4.DataChk.S4_Diff	
12869	UFM.UFM_4.DataChk.S5_Diff	
12870	UFM.UFM_4.DataChk.FLWVEL_R1	
12871	UFM.UFM_4.DataChk.FLWVEL_R2	
12872	UFM.UFM_4.DataChk.FLWVEL_R3	
12873	UFM.UFM_4.DataChk.FLWVEL_R4	
12874	UFM.UFM_4.DataChk.FLWVEL_R5	
12875	UFM.UFM_4.DataChk.ZF_Test	
12876	UFM.UFM_4.DataChk.Path1_Status	
12877	UFM.UFM_4.DataChk.Path2_Status	
12878	UFM.UFM_4.DataChk.Path3_Status	
12879	UFM.UFM_4.DataChk.Path4_Status	
12880	UFM.UFM_4.DataChk.Path5_Status	
12881	UFM.UFM_4.DataChk.Meter_Status	
12882	UFM.UFM_4.DataChk.Meter_Prfrmnc	
12883	UFM.UFM_4.DataChk.Meter_Stable	
12884	UFM.UFM_4.DataChk.AGC13_DLTA	
12885	UFM.UFM_4.DataChk.AGC15_DLTA	

12886	UFM.UFM_4.DataChk.AGC24_DLTA	
12887	UFM.UFM_4.DataChk.AGC35_DLTA	
12888	UFM.UFM_4.DataChk.AGCDLT_1A1B	
12889	UFM.UFM_4.DataChk.AGCDLT_2A2B	
12890	UFM.UFM_4.DataChk.AGCDLT_3A3B	
12891	UFM.UFM_4.DataChk.AGCDLT_4A4B	
12892	UFM.UFM_4.DataChk.AGCDLT_5A5B	
12893	UFM.UFM_4.DataChk.AVGAGC_1A1B	
12894	UFM.UFM_4.DataChk.AVGAGC_2A2B	
12895	UFM.UFM_4.DataChk.AVGAGC_3A3B	
12896	UFM.UFM_4.DataChk.AVGAGC_4A4B	
12897	UFM.UFM_4.DataChk.AVGAGC_5A5B	
12898	UFM.UFM_4.DataChk.PF_Hi	
12899	UFM.UFM_4.DataChk.PF_Lo	
12900	UFM.UFM_4.DataChk.SYMMTRY_Hi	
12901	UFM.UFM_4.DataChk.SYMMTRY_Lo	
12902	UFM.UFM_4.DataChk.ANGLE_Hi	
12903	UFM.UFM_4.DataChk.ANGLE_Lo	
12904	UFM.UFM_4.DataChk.VALPCT_L	
12905	UFM.UFM_4.DataChk.SNR_Lo	
12906	UFM.UFM_4.DataChk.AGCIA_Hi	
12907	UFM.UFM_4.DataChk.AGCOS_Hi	
12908	UFM.UFM_4.DataChk.SOS_Hi	
12909	UFM.UFM_4.DataChk.SOS_Lo	
12910	UFM.UFM_4.DataChk.VoG_Hi	
12911	UFM.UFM_4.DataChk.VoG_Lo	
12912	UFM.UFM_4.DataChk.SOSDiff_Hi	
12913	UFM.UFM_4.DataChk.ZF_Test_Hi	
12914	UFM.UFM_4.DataChk.TrblncI_Hi	
12915	UFM.UFM_4.DataChk.TrblncO_Hi	
12916	UFM.UFM_4.DataChk.Comm_Lo	
12917	UFM.UFM_4.DataChk.AvgFlowVel_MaxChng	
12918	UFM.UFM_4.DataValid_Cutoff	
12919	UFM.UFM_5.Kfact	
12920	UFM.UFM_5.SwirlAngle	
12921	UFM.UFM_5.SNR1A	
12922	UFM.UFM_5.SNR1B	

12923	UFM.UFM_5.SNR2A	
12924	UFM.UFM_5.SNR2B	
12925	UFM.UFM_5.SNR3A	
12926	UFM.UFM_5.SNR3B	
12927	UFM.UFM_5.SNR4A	
12928	UFM.UFM_5.SNR4B	
12929	UFM.UFM_5.SNR5A	
12930	UFM.UFM_5.SNR5B	
12931	UFM.UFM_5.UCFlow_MCFD	
12932	UFM.UFM_5.InstType	
12933	UFM.UFM_5.Paths	
12934	UFM.UFM_5.SampleRate	
12935	UFM.UFM_5.VSamplesL1	
12936	UFM.UFM_5.VSamplesL2	
12937	UFM.UFM_5.VSamplesL3	
12938	UFM.UFM_5.VSamplesL4	
12939	UFM.UFM_5.VSamplesL5	
12940	UFM.UFM_5.GainLim1A	
12941	UFM.UFM_5.GainLim1B	
12942	UFM.UFM_5.GainLim2A	
12943	UFM.UFM_5.GainLim2B	
12944	UFM.UFM_5.GainLim3A	
12945	UFM.UFM_5.GainLim3B	
12946	UFM.UFM_5.GainLim4A	
12947	UFM.UFM_5.GainLim4B	
12948	UFM.UFM_5.GainLim5A	
12949	UFM.UFM_5.GainLim5B	
12950	UFM.UFM_5.SysStatusV	
12951	UFM.UFM_5.SysStatusC	
12952	UFM.UFM_5.CheckSum	
12953	UFM.UFM_5.Mode	
12954	UFM.UFM_5.CFlow_MCFD	
12955	UFM.UFM_5.FailureRate1	
12956	UFM.UFM_5.FailureRate2	
12957	UFM.UFM_5.FailureRate3	
12958	UFM.UFM_5.FailureRate4	
12959	UFM.UFM_5.PctGoodA1	

12960	UFM.UFM_5.PctGoodB1	
12961	UFM.UFM_5.PctGoodC1	
12962	UFM.UFM_5.PctGoodD1	
12963	UFM.UFM_5.PctGoodA2	
12964	UFM.UFM_5.PctGoodB2	
12965	UFM.UFM_5.PctGoodC2	
12966	UFM.UFM_5.PctGoodD2	
12967	UFM.UFM_5.Delay	
12968	UFM.UFM_5.Turbulence1	
12969	UFM.UFM_5.Turbulence2	
12970	UFM.UFM_5.Turbulence3	
12971	UFM.UFM_5.Turbulence4	
12972	UFM.UFM_5.Monitor_Count	
12973	UFM.UFM_5.PCT_Good	
12974	UFM.UFM_5.Good_Polls	
12975	UFM.UFM_5.Bad_Polls	
12976	UFM.UFM_5.DataChk.VALID1_PCT	
12977	UFM.UFM_5.DataChk.VALID2_PCT	
12978	UFM.UFM_5.DataChk.VALID3_PCT	
12979	UFM.UFM_5.DataChk.VALID4_PCT	
12980	UFM.UFM_5.DataChk.VALID5_PCT	
12981	UFM.UFM_5.DataChk.FLWVEL_L1	
12982	UFM.UFM_5.DataChk.FLWVEL_L2	
12983	UFM.UFM_5.DataChk.FLWVEL_L3	
12984	UFM.UFM_5.DataChk.FLWVEL_L4	
12985	UFM.UFM_5.DataChk.FLWVEL_L5	
12986	UFM.UFM_5.DataChk.SNR1AB	
12987	UFM.UFM_5.DataChk.SNR2AB	
12988	UFM.UFM_5.DataChk.SNR3AB	
12989	UFM.UFM_5.DataChk.SNR4AB	
12990	UFM.UFM_5.DataChk.SNR5AB	
12991	UFM.UFM_5.DataChk.SNDSPD_L1	
12992	UFM.UFM_5.DataChk.SNDSPD_L2	
12993	UFM.UFM_5.DataChk.SNDSPD_L3	
12994	UFM.UFM_5.DataChk.SNDSPD_L4	
12995	UFM.UFM_5.DataChk.SNDSPD_L5	
12996	UFM.UFM_5.DataChk.ANGLE_ALRM	

12997	UFM.UFM_5.DataChk.NUM_AQRD	
12998	UFM.UFM_5.DataChk.PF_ALRM	
12999	UFM.UFM_5.DataChk.SYMMTRY_ALRM	
13000	UFM.UFM_5.DataChk.S1_Diff	
13001	UFM.UFM_5.DataChk.S2_Diff	
13002	UFM.UFM_5.DataChk.S3_Diff	
13003	UFM.UFM_5.DataChk.S4_Diff	
13004	UFM.UFM_5.DataChk.S5_Diff	
13005	UFM.UFM_5.DataChk.FLWVEL_R1	
13006	UFM.UFM_5.DataChk.FLWVEL_R2	
13007	UFM.UFM_5.DataChk.FLWVEL_R3	
13008	UFM.UFM_5.DataChk.FLWVEL_R4	
13009	UFM.UFM_5.DataChk.FLWVEL_R5	
13010	UFM.UFM_5.DataChk.ZF_Test	
13011	UFM.UFM_5.DataChk.Path1_Status	
13012	UFM.UFM_5.DataChk.Path2_Status	
13013	UFM.UFM_5.DataChk.Path3_Status	
13014	UFM.UFM_5.DataChk.Path4_Status	
13015	UFM.UFM_5.DataChk.Path5_Status	
13016	UFM.UFM_5.DataChk.Meter_Status	
13017	UFM.UFM_5.DataChk.Meter_Prfrmnc	
13018	UFM.UFM_5.DataChk.Meter_Stable	
13019	UFM.UFM_5.DataChk.AGC13_DLTA	
13020	UFM.UFM_5.DataChk.AGC15_DLTA	
13021	UFM.UFM_5.DataChk.AGC24_DLTA	
13022	UFM.UFM_5.DataChk.AGC35_DLTA	
13023	UFM.UFM_5.DataChk.AGCDLT_1A1B	
13024	UFM.UFM_5.DataChk.AGCDLT_2A2B	
13025	UFM.UFM_5.DataChk.AGCDLT_3A3B	
13026	UFM.UFM_5.DataChk.AGCDLT_4A4B	
13027	UFM.UFM_5.DataChk.AGCDLT_5A5B	
13028	UFM.UFM_5.DataChk.AVGAGC_1A1B	
13029	UFM.UFM_5.DataChk.AVGAGC_2A2B	
13030	UFM.UFM_5.DataChk.AVGAGC_3A3B	
13031	UFM.UFM_5.DataChk.AVGAGC_4A4B	
13032	UFM.UFM_5.DataChk.AVGAGC_5A5B	
13033	UFM.UFM_5.DataChk.PF_Hi	

13034	UFM.UFM_5.DataChk.PF_Lo	
13035	UFM.UFM_5.DataChk.SYMMTRY_Hi	
13036	UFM.UFM_5.DataChk.SYMMTRY_Lo	
13037	UFM.UFM_5.DataChk.ANGLE_Hi	
13038	UFM.UFM_5.DataChk.ANGLE_Lo	
13039	UFM.UFM_5.DataChk.VALPCT_L	
13040	UFM.UFM_5.DataChk.SNR_Lo	
13041	UFM.UFM_5.DataChk.AGCIA_Hi	
13042	UFM.UFM_5.DataChk.AGCOS_Hi	
13043	UFM.UFM_5.DataChk.SOS_Hi	
13044	UFM.UFM_5.DataChk.SOS_Lo	
13045	UFM.UFM_5.DataChk.VoG_Hi	
13046	UFM.UFM_5.DataChk.VoG_Lo	
13047	UFM.UFM_5.DataChk.SOSDiff_Hi	
13048	UFM.UFM_5.DataChk.ZF_Test_Hi	
13049	UFM.UFM_5.DataChk.TrblncI_Hi	
13050	UFM.UFM_5.DataChk.TrblncO_Hi	
13051	UFM.UFM_5.DataChk.Comm_Lo	
13052	UFM.UFM_5.DataChk.AvgFlowVel_MaxChng	
13053	UFM.UFM_6.DataValid_Cutoff	
13054	UFM.UFM_6.Kfact	
13055	UFM.UFM_6.SwirlAngle	
13056	UFM.UFM_6.SNR1A	
13057	UFM.UFM_6.SNR1B	
13058	UFM.UFM_6.SNR2A	
13059	UFM.UFM_6.SNR2B	
13060	UFM.UFM_6.SNR3A	
13061	UFM.UFM_6.SNR3B	
13062	UFM.UFM_6.SNR4A	
13063	UFM.UFM_6.SNR4B	
13064	UFM.UFM_6.SNR5A	
13065	UFM.UFM_6.SNR5B	
13066	UFM.UFM_6.UCFlow_MCFD	
13067	UFM.UFM_6.InstType	
13068	UFM.UFM_6.Paths	
13069	UFM.UFM_6.SampleRate	
13070	UFM.UFM_6.VSamplesL1	

13071	UFM.UFM_6.VSamplesL2	
13072	UFM.UFM_6.VSamplesL3	
13073	UFM.UFM_6.VSamplesL4	
13074	UFM.UFM_6.VSamplesL5	
13075	UFM.UFM_6.GainLim1A	
13076	UFM.UFM_6.GainLim1B	
13077	UFM.UFM_6.GainLim2A	
13078	UFM.UFM_6.GainLim2B	
13079	UFM.UFM_6.GainLim3A	
13080	UFM.UFM_6.GainLim3B	
13081	UFM.UFM_6.GainLim4A	
13082	UFM.UFM_6.GainLim4B	
13083	UFM.UFM_6.GainLim5A	
13084	UFM.UFM_6.GainLim5B	
13085	UFM.UFM_6.SysStatusV	
13086	UFM.UFM_6.SysStatusC	
13087	UFM.UFM_6.CheckSum	
13088	UFM.UFM_6.Mode	
13089	UFM.UFM_6.CFlow_MCFD	
13090	UFM.UFM_6.FailureRate1	
13091	UFM.UFM_6.FailureRate2	
13092	UFM.UFM_6.FailureRate3	
13093	UFM.UFM_6.FailureRate4	
13094	UFM.UFM_6.PctGoodA1	
13095	UFM.UFM_6.PctGoodB1	
13096	UFM.UFM_6.PctGoodC1	
13097	UFM.UFM_6.PctGoodD1	
13098	UFM.UFM_6.PctGoodA2	
13099	UFM.UFM_6.PctGoodB2	
13100	UFM.UFM_6.PctGoodC2	
13101	UFM.UFM_6.PctGoodD2	
13102	UFM.UFM_6.Delay	
13103	UFM.UFM_6.Turbulence1	
13104	UFM.UFM_6.Turbulence2	
13105	UFM.UFM_6.Turbulence3	
13106	UFM.UFM_6.Turbulence4	
13107	UFM.UFM_6.Monitor_Count	

13108	UFM.UFM_6.PCT_Good	
13109	UFM.UFM_6.Good_Polls	
13110	UFM.UFM_6.Bad_Polls	
13111	UFM.UFM_6.DataChk.VALID1_PCT	
13112	UFM.UFM_6.DataChk.VALID2_PCT	
13113	UFM.UFM_6.DataChk.VALID3_PCT	
13114	UFM.UFM_6.DataChk.VALID4_PCT	
13115	UFM.UFM_6.DataChk.VALID5_PCT	
13116	UFM.UFM_6.DataChk.FLWVEL_L1	
13117	UFM.UFM_6.DataChk.FLWVEL_L2	
13118	UFM.UFM_6.DataChk.FLWVEL_L3	
13119	UFM.UFM_6.DataChk.FLWVEL_L4	
13120	UFM.UFM_6.DataChk.FLWVEL_L5	
13121	UFM.UFM_6.DataChk.SNR1AB	
13122	UFM.UFM_6.DataChk.SNR2AB	
13123	UFM.UFM_6.DataChk.SNR3AB	
13124	UFM.UFM_6.DataChk.SNR4AB	
13125	UFM.UFM_6.DataChk.SNR5AB	
13126	UFM.UFM_6.DataChk.SNDSPD_L1	
13127	UFM.UFM_6.DataChk.SNDSPD_L2	
13128	UFM.UFM_6.DataChk.SNDSPD_L3	
13129	UFM.UFM_6.DataChk.SNDSPD_L4	
13130	UFM.UFM_6.DataChk.SNDSPD_L5	
13131	UFM.UFM_6.DataChk.ANGLE_ALRM	
13132	UFM.UFM_6.DataChk.NUM_AQRD	
13133	UFM.UFM_6.DataChk.PF_ALRM	
13134	UFM.UFM_6.DataChk.SYMMTRY_ALRM	
13135	UFM.UFM_6.DataChk.S1_Diff	
13136	UFM.UFM_6.DataChk.S2_Diff	
13137	UFM.UFM_6.DataChk.S3_Diff	
13138	UFM.UFM_6.DataChk.S4_Diff	
13139	UFM.UFM_6.DataChk.S5_Diff	
13140	UFM.UFM_6.DataChk.FLWVEL_R1	
13141	UFM.UFM_6.DataChk.FLWVEL_R2	
13142	UFM.UFM_6.DataChk.FLWVEL_R3	
13143	UFM.UFM_6.DataChk.FLWVEL_R4	
13144	UFM.UFM_6.DataChk.FLWVEL_R5	

13145	UFM.UFM_6.DataChk.ZF_Test	
13146	UFM.UFM_6.DataChk.Path1_Status	
13147	UFM.UFM_6.DataChk.Path2_Status	
13148	UFM.UFM_6.DataChk.Path3_Status	
13149	UFM.UFM_6.DataChk.Path4_Status	
13150	UFM.UFM_6.DataChk.Path5_Status	
13151	UFM.UFM_6.DataChk.Meter_Status	
13152	UFM.UFM_6.DataChk.Meter_Prfrmnc	
13153	UFM.UFM_6.DataChk.Meter_Stable	
13154	UFM.UFM_6.DataChk.AGC13_DLTA	
13155	UFM.UFM_6.DataChk.AGC15_DLTA	
13156	UFM.UFM_6.DataChk.AGC24_DLTA	
13157	UFM.UFM_6.DataChk.AGC35_DLTA	
13158	UFM.UFM_6.DataChk.AGCDLT_1A1B	
13159	UFM.UFM_6.DataChk.AGCDLT_2A2B	
13160	UFM.UFM_6.DataChk.AGCDLT_3A3B	
13161	UFM.UFM_6.DataChk.AGCDLT_4A4B	
13162	UFM.UFM_6.DataChk.AGCDLT_5A5B	
13163	UFM.UFM_6.DataChk.AVGAGC_1A1B	
13164	UFM.UFM_6.DataChk.AVGAGC_2A2B	
13165	UFM.UFM_6.DataChk.AVGAGC_3A3B	
13166	UFM.UFM_6.DataChk.AVGAGC_4A4B	
13167	UFM.UFM_6.DataChk.AVGAGC_5A5B	
13168	UFM.UFM_6.DataChk.PF_Hi	
13169	UFM.UFM_6.DataChk.PF_Lo	
13170	UFM.UFM_6.DataChk.SYMMTRY_Hi	
13171	UFM.UFM_6.DataChk.SYMMTRY_Lo	
13172	UFM.UFM_6.DataChk.ANGLE_Hi	
13173	UFM.UFM_6.DataChk.ANGLE_Lo	
13174	UFM.UFM_6.DataChk.VALPCT_L	
13175	UFM.UFM_6.DataChk.SNR_Lo	
13176	UFM.UFM_6.DataChk.AGCIA_Hi	
13177	UFM.UFM_6.DataChk.AGCOS_Hi	
13178	UFM.UFM_6.DataChk.SOS_Hi	
13179	UFM.UFM_6.DataChk.SOS_Lo	
13180	UFM.UFM_6.DataChk.VoG_Hi	
13181	UFM.UFM_6.DataChk.VoG_Lo	

13182	UFM.UFM_6.DataChk.SOSDiff_Hi	
13183	UFM.UFM_6.DataChk.ZF_Test_Hi	
13184	UFM.UFM_6.DataChk.TrblncI_Hi	
13185	UFM.UFM_6.DataChk.TrblncO_Hi	
13186	UFM.UFM_6.DataChk.Comm_Lo	
13187	UFM.UFM_6.DataChk.AvgFlowVel_MaxChng	
13188	UFM.UFM_6.DataValid_Cutoff	
13189	UFM.UFM_7_PORT	CWM Master Port connected to Ultrasonic Meter n
13190	UFM.UFM_7_ADDRESS	Address of Ultrasonic Meter n
13191	UFM.UFM_7_TYPE	Ultrasonic Meter n Type
13192	UFM.UFM_7.AVGSOS	Ultrasonic Meter n average Speed of Sound (SOS) - all paths
13193	UFM.UFM_7.SOS1	Ultrasonic Meter n Speed of Sound (SOS) path 1
13194	UFM.UFM_7.SOS2	Ultrasonic Meter n Speed of Sound (SOS) path 2
13195	UFM.UFM_7.SOS3	Ultrasonic Meter n Speed of Sound (SOS) path 3
13196	UFM.UFM_7.SOS4	Ultrasonic Meter n Speed of Sound (SOS) path 4
13197	UFM.UFM_7.SOS5	Ultrasonic Meter n Speed of Sound (SOS) path 5
13198	MB.SPARE	Ultrasonic Meter n Profile
13199	UFM.UFM_7.SYSTEMSTATUS	Ultrasonic Meter status
13200	UFM.UFM_7.GAIN1A	Ultrasonic Meter gain A path 1
13201	UFM.UFM_7.GAIN2A	Ultrasonic Meter gain A path 2
13202	UFM.UFM_7.GAIN3A	Ultrasonic Meter gain A path 3
13203	UFM.UFM_7.GAIN4A	Ultrasonic Meter gain A path 4
13204	UFM.UFM_7.GAIN5A	Ultrasonic Meter gain A path 5
13205	UFM.UFM_7.GAIN1B	Ultrasonic Meter gain B path 1
13206	UFM.UFM_7.GAIN2B	Ultrasonic Meter gain B path 2
13207	UFM.UFM_7.GAIN3B	Ultrasonic Meter gain B path 3
13208	UFM.UFM_7.GAIN4B	Ultrasonic Meter gain B path 4
13209	UFM.UFM_7.GAIN5B	Ultrasonic Meter gain B path 5
13210	UFM.UFM_8_PORT	CWM Master Port connected to Ultrasonic Meter n
13211	UFM.UFM_8_ADDRESS	Address of Ultrasonic Meter n
13212	UFM.UFM_8_TYPE	Ultrasonic Meter n Type
13213	UFM.UFM_8.AVGSOS	Ultrasonic Meter n average Speed of Sound

		(SOS) - all paths
13214	UFM.UFM_8.SOS1	Ultrasonic Meter n Speed of Sound (SOS) path 1
13215	UFM.UFM_8.SOS2	Ultrasonic Meter n Speed of Sound (SOS) path 2
13216	UFM.UFM_8.SOS3	Ultrasonic Meter n Speed of Sound (SOS) path 3
13217	UFM.UFM_8.SOS4	Ultrasonic Meter n Speed of Sound (SOS) path 4
13218	UFM.UFM_8.SOS5	Ultrasonic Meter n Speed of Sound (SOS) path 5
13219	MB.SPARE	Ultrasonic Meter n Profile
13220	UFM.UFM_8.SYSTEMSTATUS	Ultrasonic Meter status
13221	UFM.UFM_8.GAIN1A	Ultrasonic Meter gain A path 1
13222	UFM.UFM_8.GAIN2A	Ultrasonic Meter gain A path 2
13223	UFM.UFM_8.GAIN3A	Ultrasonic Meter gain A path 3
13224	UFM.UFM_8.GAIN4A	Ultrasonic Meter gain A path 4
13225	UFM.UFM_8.GAIN5A	Ultrasonic Meter gain A path 5
13226	UFM.UFM_8.GAIN1B	Ultrasonic Meter gain B path 1
13227	UFM.UFM_8.GAIN2B	Ultrasonic Meter gain B path 2
13228	UFM.UFM_8.GAIN3B	Ultrasonic Meter gain B path 3
13229	UFM.UFM_8.GAIN4B	Ultrasonic Meter gain B path 4
13230	UFM.UFM_8.GAIN5B	Ultrasonic Meter gain B path 5
13231	UFM.UFM_7.Kfact	
13232	UFM.UFM_7.SwirlAngle	
13233	UFM.UFM_7.SNR1A	
13234	UFM.UFM_7.SNR1B	
13235	UFM.UFM_7.SNR2A	
13236	UFM.UFM_7.SNR2B	
13237	UFM.UFM_7.SNR3A	
13238	UFM.UFM_7.SNR3B	
13239	UFM.UFM_7.SNR4A	
13240	UFM.UFM_7.SNR4B	
13241	UFM.UFM_7.SNR5A	
13242	UFM.UFM_7.SNR5B	
13243	UFM.UFM_7.UCFlow_MCFD	
13244	UFM.UFM_7.InstType	
13245	UFM.UFM_7.Paths	
13246	UFM.UFM_7.SampleRate	

13247	UFM.UFM_7.VSamplesL1	
13248	UFM.UFM_7.VSamplesL2	
13249	UFM.UFM_7.VSamplesL3	
13250	UFM.UFM_7.VSamplesL4	
13251	UFM.UFM_7.VSamplesL5	
13252	UFM.UFM_7.GainLim1A	
13253	UFM.UFM_7.GainLim1B	
13254	UFM.UFM_7.GainLim2A	
13255	UFM.UFM_7.GainLim2B	
13256	UFM.UFM_7.GainLim3A	
13257	UFM.UFM_7.GainLim3B	
13258	UFM.UFM_7.GainLim4A	
13259	UFM.UFM_7.GainLim4B	
13260	UFM.UFM_7.GainLim5A	
13261	UFM.UFM_7.GainLim5B	
13262	UFM.UFM_7.SysStatusV	
13263	UFM.UFM_7.SysStatusC	
13264	UFM.UFM_7.CheckSum	
13265	UFM.UFM_7.Mode	
13266	UFM.UFM_7.CFlow_MCFD	
13267	UFM.UFM_7.FailureRate1	
13268	UFM.UFM_7.FailureRate2	
13269	UFM.UFM_7.FailureRate3	
13270	UFM.UFM_7.FailureRate4	
13271	UFM.UFM_7.PctGoodA1	
13272	UFM.UFM_7.PctGoodB1	
13273	UFM.UFM_7.PctGoodC1	
13274	UFM.UFM_7.PctGoodD1	
13275	UFM.UFM_7.PctGoodA2	
13276	UFM.UFM_7.PctGoodB2	
13277	UFM.UFM_7.PctGoodC2	
13278	UFM.UFM_7.PctGoodD2	
13279	UFM.UFM_7.Delay	
13280	UFM.UFM_7.Turbulence1	
13281	UFM.UFM_7.Turbulence2	
13282	UFM.UFM_7.Turbulence3	
13283	UFM.UFM_7.Turbulence4	

13284	UFM.UFM_7.Monitor_Count	
13285	UFM.UFM_7.PCT_Good	
13286	UFM.UFM_7.Good_Polls	
13287	UFM.UFM_7.Bad_Polls	
13288	UFM.UFM_7.DataChk.VALID1_PCT	
13289	UFM.UFM_7.DataChk.VALID2_PCT	
13290	UFM.UFM_7.DataChk.VALID3_PCT	
13291	UFM.UFM_7.DataChk.VALID4_PCT	
13292	UFM.UFM_7.DataChk.VALID5_PCT	
13293	UFM.UFM_7.DataChk.FLWVEL_L1	
13294	UFM.UFM_7.DataChk.FLWVEL_L2	
13295	UFM.UFM_7.DataChk.FLWVEL_L3	
13296	UFM.UFM_7.DataChk.FLWVEL_L4	
13297	UFM.UFM_7.DataChk.FLWVEL_L5	
13298	UFM.UFM_7.DataChk.SNR1AB	
13299	UFM.UFM_7.DataChk.SNR2AB	
13300	UFM.UFM_7.DataChk.SNR3AB	
13301	UFM.UFM_7.DataChk.SNR4AB	
13302	UFM.UFM_7.DataChk.SNR5AB	
13303	UFM.UFM_7.DataChk.SNDSPD_L1	
13304	UFM.UFM_7.DataChk.SNDSPD_L2	
13305	UFM.UFM_7.DataChk.SNDSPD_L3	
13306	UFM.UFM_7.DataChk.SNDSPD_L4	
13307	UFM.UFM_7.DataChk.SNDSPD_L5	
13308	UFM.UFM_7.DataChk.ANGLE_ALRM	
13309	UFM.UFM_7.DataChk.NUM_AQRD	
13310	UFM.UFM_7.DataChk.PF_ALRM	
13311	UFM.UFM_7.DataChk.SYMMTRY_ALRM	
13312	UFM.UFM_7.DataChk.S1_Diff	
13313	UFM.UFM_7.DataChk.S2_Diff	
13314	UFM.UFM_7.DataChk.S3_Diff	
13315	UFM.UFM_7.DataChk.S4_Diff	
13316	UFM.UFM_7.DataChk.S5_Diff	
13317	UFM.UFM_7.DataChk.FLWVEL_R1	
13318	UFM.UFM_7.DataChk.FLWVEL_R2	
13319	UFM.UFM_7.DataChk.FLWVEL_R3	
13320	UFM.UFM_7.DataChk.FLWVEL_R4	

13321	UFM.UFM_7.DataChk.FLWVEL_R5	
13322	UFM.UFM_7.DataChk.ZF_Test	
13323	UFM.UFM_7.DataChk.Path1_Status	
13324	UFM.UFM_7.DataChk.Path2_Status	
13325	UFM.UFM_7.DataChk.Path3_Status	
13326	UFM.UFM_7.DataChk.Path4_Status	
13327	UFM.UFM_7.DataChk.Path5_Status	
13328	UFM.UFM_7.DataChk.Meter_Status	
13329	UFM.UFM_7.DataChk.Meter_Prfrmnc	
13330	UFM.UFM_7.DataChk.Meter_Stable	
13331	UFM.UFM_7.DataChk.AGC13_DLTA	
13332	UFM.UFM_7.DataChk.AGC15_DLTA	
13333	UFM.UFM_7.DataChk.AGC24_DLTA	
13334	UFM.UFM_7.DataChk.AGC35_DLTA	
13335	UFM.UFM_7.DataChk.AGCDLT_1A1B	
13336	UFM.UFM_7.DataChk.AGCDLT_2A2B	
13337	UFM.UFM_7.DataChk.AGCDLT_3A3B	
13338	UFM.UFM_7.DataChk.AGCDLT_4A4B	
13339	UFM.UFM_7.DataChk.AGCDLT_5A5B	
13340	UFM.UFM_7.DataChk.AVGAGC_1A1B	
13341	UFM.UFM_7.DataChk.AVGAGC_2A2B	
13342	UFM.UFM_7.DataChk.AVGAGC_3A3B	
13343	UFM.UFM_7.DataChk.AVGAGC_4A4B	
13344	UFM.UFM_7.DataChk.AVGAGC_5A5B	
13345	UFM.UFM_7.DataChk.PF_Hi	
13346	UFM.UFM_7.DataChk.PF_Lo	
13347	UFM.UFM_7.DataChk.SYMMTRY_Hi	
13348	UFM.UFM_7.DataChk.SYMMTRY_Lo	
13349	UFM.UFM_7.DataChk.ANGLE_Hi	
13350	UFM.UFM_7.DataChk.ANGLE_Lo	
13351	UFM.UFM_7.DataChk.VALPCT_L	
13352	UFM.UFM_7.DataChk.SNR_Lo	
13353	UFM.UFM_7.DataChk.AGCIA_Hi	
13354	UFM.UFM_7.DataChk.AGCOS_Hi	
13355	UFM.UFM_7.DataChk.SOS_Hi	
13356	UFM.UFM_7.DataChk.SOS_Lo	
13357	UFM.UFM_7.DataChk.VoG_Hi	

13358	UFM.UFM_7.DataChk.VoG_Lo	
13359	UFM.UFM_7.DataChk.SOSDiff_Hi	
13360	UFM.UFM_7.DataChk.ZF_Test_Hi	
13361	UFM.UFM_7.DataChk.TrblncI_Hi	
13362	UFM.UFM_7.DataChk.TrblncO_Hi	
13363	UFM.UFM_7.DataChk.Comm_Lo	
13364	UFM.UFM_7.DataChk.AvgFlowVel_MaxChng	
13365	UFM.UFM_7.DataValid_Cutoff	
13366	UFM.UFM_8.Kfact	
13367	UFM.UFM_8.SwirlAngle	
13368	UFM.UFM_8.SNR1A	
13369	UFM.UFM_8.SNR1B	
13370	UFM.UFM_8.SNR2A	
13371	UFM.UFM_8.SNR2B	
13372	UFM.UFM_8.SNR3A	
13373	UFM.UFM_8.SNR3B	
13374	UFM.UFM_8.SNR4A	
13375	UFM.UFM_8.SNR4B	
13376	UFM.UFM_8.SNR5A	
13377	UFM.UFM_8.SNR5B	
13378	UFM.UFM_8.UCFlow_MCFD	
13379	UFM.UFM_8.InstType	
13380	UFM.UFM_8.Paths	
13381	UFM.UFM_8.SampleRate	
13382	UFM.UFM_8.VSamplesL1	
13383	UFM.UFM_8.VSamplesL2	
13384	UFM.UFM_8.VSamplesL3	
13385	UFM.UFM_8.VSamplesL4	
13386	UFM.UFM_8.VSamplesL5	
13387	UFM.UFM_8.GainLim1A	
13388	UFM.UFM_8.GainLim1B	
13389	UFM.UFM_8.GainLim2A	
13390	UFM.UFM_8.GainLim2B	
13391	UFM.UFM_8.GainLim3A	
13392	UFM.UFM_8.GainLim3B	
13393	UFM.UFM_8.GainLim4A	
13394	UFM.UFM_8.GainLim4B	

13395	UFM.UFM_8.GainLim5A	
13396	UFM.UFM_8.GainLim5B	
13397	UFM.UFM_8.SysStatusV	
13398	UFM.UFM_8.SysStatusC	
13399	UFM.UFM_8.CheckSum	
13400	UFM.UFM_8.Mode	
13401	UFM.UFM_8.CFlow_MCFD	
13402	UFM.UFM_8.FailureRate1	
13403	UFM.UFM_8.FailureRate2	
13404	UFM.UFM_8.FailureRate3	
13405	UFM.UFM_8.FailureRate4	
13406	UFM.UFM_8.PctGoodA1	
13407	UFM.UFM_8.PctGoodB1	
13408	UFM.UFM_8.PctGoodC1	
13409	UFM.UFM_8.PctGoodD1	
13410	UFM.UFM_8.PctGoodA2	
13411	UFM.UFM_8.PctGoodB2	
13412	UFM.UFM_8.PctGoodC2	
13413	UFM.UFM_8.PctGoodD2	
13414	UFM.UFM_8.Delay	
13415	UFM.UFM_8.Turbulence1	
13416	UFM.UFM_8.Turbulence2	
13417	UFM.UFM_8.Turbulence3	
13418	UFM.UFM_8.Turbulence4	
13419	UFM.UFM_8.Monitor_Count	
13420	UFM.UFM_8.PCT_Good	
13421	UFM.UFM_8.Good_Polls	
13422	UFM.UFM_8.Bad_Polls	
13423	UFM.UFM_8.DataChk.VALID1_PCT	
13424	UFM.UFM_8.DataChk.VALID2_PCT	
13425	UFM.UFM_8.DataChk.VALID3_PCT	
13426	UFM.UFM_8.DataChk.VALID4_PCT	
13427	UFM.UFM_8.DataChk.VALID5_PCT	
13428	UFM.UFM_8.DataChk.FLWVEL_L1	
13429	UFM.UFM_8.DataChk.FLWVEL_L2	
13430	UFM.UFM_8.DataChk.FLWVEL_L3	
13431	UFM.UFM_8.DataChk.FLWVEL_L4	

13432	UFM.UFM_8.DataChk.FLWVEL_L5	
13433	UFM.UFM_8.DataChk.SNR1AB	
13434	UFM.UFM_8.DataChk.SNR2AB	
13435	UFM.UFM_8.DataChk.SNR3AB	
13436	UFM.UFM_8.DataChk.SNR4AB	
13437	UFM.UFM_8.DataChk.SNR5AB	
13438	UFM.UFM_8.DataChk.SNDSPD_L1	
13439	UFM.UFM_8.DataChk.SNDSPD_L2	
13440	UFM.UFM_8.DataChk.SNDSPD_L3	
13441	UFM.UFM_8.DataChk.SNDSPD_L4	
13442	UFM.UFM_8.DataChk.SNDSPD_L5	
13443	UFM.UFM_8.DataChk.ANGLE_ALRM	
13444	UFM.UFM_8.DataChk.NUM_AQRD	
13445	UFM.UFM_8.DataChk.PF_ALRM	
13446	UFM.UFM_8.DataChk.SYMMTRY_ALRM	
13447	UFM.UFM_8.DataChk.S1_Diff	
13448	UFM.UFM_8.DataChk.S2_Diff	
13449	UFM.UFM_8.DataChk.S3_Diff	
13450	UFM.UFM_8.DataChk.S4_Diff	
13451	UFM.UFM_8.DataChk.S5_Diff	
13452	UFM.UFM_8.DataChk.FLWVEL_R1	
13453	UFM.UFM_8.DataChk.FLWVEL_R2	
13454	UFM.UFM_8.DataChk.FLWVEL_R3	
13455	UFM.UFM_8.DataChk.FLWVEL_R4	
13456	UFM.UFM_8.DataChk.FLWVEL_R5	
13457	UFM.UFM_8.DataChk.ZF_Test	
13458	UFM.UFM_8.DataChk.Path1_Status	
13459	UFM.UFM_8.DataChk.Path2_Status	
13460	UFM.UFM_8.DataChk.Path3_Status	
13461	UFM.UFM_8.DataChk.Path4_Status	
13462	UFM.UFM_8.DataChk.Path5_Status	
13463	UFM.UFM_8.DataChk.Meter_Status	
13464	UFM.UFM_8.DataChk.Meter_Prfrmnc	
13465	UFM.UFM_8.DataChk.Meter_Stable	
13466	UFM.UFM_8.DataChk.AGC13_DLTA	
13467	UFM.UFM_8.DataChk.AGC15_DLTA	
13468	UFM.UFM_8.DataChk.AGC24_DLTA	

13469	UFM.UFM_8.DataChk.AGC35_DLTA	
13470	UFM.UFM_8.DataChk.AGCDLT_1A1B	
13471	UFM.UFM_8.DataChk.AGCDLT_2A2B	
13472	UFM.UFM_8.DataChk.AGCDLT_3A3B	
13473	UFM.UFM_8.DataChk.AGCDLT_4A4B	
13474	UFM.UFM_8.DataChk.AGCDLT_5A5B	
13475	UFM.UFM_8.DataChk.AVGAGC_1A1B	
13476	UFM.UFM_8.DataChk.AVGAGC_2A2B	
13477	UFM.UFM_8.DataChk.AVGAGC_3A3B	
13478	UFM.UFM_8.DataChk.AVGAGC_4A4B	
13479	UFM.UFM_8.DataChk.AVGAGC_5A5B	
13480	UFM.UFM_8.DataChk.PF_Hi	
13481	UFM.UFM_8.DataChk.PF_Lo	
13482	UFM.UFM_8.DataChk.SYMMTRY_Hi	
13483	UFM.UFM_8.DataChk.SYMMTRY_Lo	
13484	UFM.UFM_8.DataChk.ANGLE_Hi	
13485	UFM.UFM_8.DataChk.ANGLE_Lo	
13486	UFM.UFM_8.DataChk.VALPCT_L	
13487	UFM.UFM_8.DataChk.SNR_Lo	
13488	UFM.UFM_8.DataChk.AGCIA_Hi	
13489	UFM.UFM_8.DataChk.AGCOS_Hi	
13490	UFM.UFM_8.DataChk.SOS_Hi	
13491	UFM.UFM_8.DataChk.SOS_Lo	
13492	UFM.UFM_8.DataChk.VoG_Hi	
13493	UFM.UFM_8.DataChk.VoG_Lo	
13494	UFM.UFM_8.DataChk.SOSDiff_Hi	
13495	UFM.UFM_8.DataChk.ZF_Test_Hi	
13496	UFM.UFM_8.DataChk.TrblncI_Hi	
13497	UFM.UFM_8.DataChk.TrblncO_Hi	
13498	UFM.UFM_8.DataChk.Comm_Lo	
13499	UFM.UFM_8.DataChk.AvgFlowVel_MaxChng	
13500	UFM.UFM_8.DataValid_Cutoff	
13501	CRR.MB_Corr1.StatusA	
13502	CRR.MB_Corr1.StatusB	
13503	CRR.MB_Corr1.StatusC	
13504	CRR.MB_Corr1.StatusD	
13505	CRR.MB_Corr1.StatusE	

13506	CRR.MB_Corr1.StatusF	
13507	CRR.MB_Corr1.HighSvrtyAlrm	
13508	CRR.MB_Corr1.MassFlowRate	
13509	CRR.MB_Corr1.Density	
13510	CRR.MB_Corr1.Temp	
13511	CRR.MB_Corr1.VolFlowRate	
13512	CRR.MB_Corr1.Press	
13513	CRR.MB_Corr1.MassTotal	
13514	CRR.MB_Corr1.VolTotal	
13515	CRR.MB_Corr1.MassInvtry	
13516	CRR.MB_Corr1.VolInvtry	
13517	CRR.MB_Corr1.PressCorrFlow	
13518	CRR.MB_Corr1.PressCorrDens	
13519	CRR.MB_Corr1.FlowCalibPress	
13520	CRR.MB_Corr1.PressInpZero	
13521	CRR.MB_Corr1.PressInpSpan	
13522	CRR.MB_Corr1.DensityCalib	
13523	CRR.MB_Corr1.MassFRMF	
13524	CRR.MB_Corr1.VolFRMF	
13525	CRR.MB_Corr1.DensityMF	
13526	CRR.MB_Corr1.RawTubeFreq	
13527	CRR.MB_Corr1.LeftPickVolt	
13528	CRR.MB_Corr1.RghtPickVolt	
13529	CRR.MB_Corr1.DriveGain	
13530	CRR.MB_Corr1.MassFlowZero	
13531	CRR.MB_Corr2.StatusA	
13532	CRR.MB_Corr2.StatusB	
13533	CRR.MB_Corr2.StatusC	
13534	CRR.MB_Corr2.StatusD	
13535	CRR.MB_Corr2.StatusE	
13536	CRR.MB_Corr2.StatusF	
13537	CRR.MB_Corr2.HighSvrtyAlrm	
13538	CRR.MB_Corr2.MassFlowRate	
13539	CRR.MB_Corr2.Density	
13540	CRR.MB_Corr2.Temp	
13541	CRR.MB_Corr2.VolFlowRate	
13542	CRR.MB_Corr2.Press	

13543	CRR.MB_Corr2.MassTotal	
13544	CRR.MB_Corr2.VolTotal	
13545	CRR.MB_Corr2.MassInvtry	
13546	CRR.MB_Corr2.VolInvtry	
13547	CRR.MB_Corr2.PressCorrFlow	
13548	CRR.MB_Corr2.PressCorrDens	
13549	CRR.MB_Corr2.FlowCalibPress	
13550	CRR.MB_Corr2.PressInpZero	
13551	CRR.MB_Corr2.PressInpSpan	
13552	CRR.MB_Corr2.DensityCalib	
13553	CRR.MB_Corr2.MassFRMF	
13554	CRR.MB_Corr2.VolFRMF	
13555	CRR.MB_Corr2.DensityMF	
13556	CRR.MB_Corr2.RawTubeFreq	
13557	CRR.MB_Corr2.LeftPickVolt	
13558	CRR.MB_Corr2.RghtPickVolt	
13559	CRR.MB_Corr2.DriveGain	
13560	CRR.MB_Corr2.MassFlowZero	
13561	CRR.MB_Corr3.StatusA	
13562	CRR.MB_Corr3.StatusB	
13563	CRR.MB_Corr3.StatusC	
13564	CRR.MB_Corr3.StatusD	
13565	CRR.MB_Corr3.StatusE	
13566	CRR.MB_Corr3.StatusF	
13567	CRR.MB_Corr3.HighSvrtyAlrm	
13568	CRR.MB_Corr3.MassFlowRate	
13569	CRR.MB_Corr3.Density	
13570	CRR.MB_Corr3.Temp	
13571	CRR.MB_Corr3.VolFlowRate	
13572	CRR.MB_Corr3.Press	
13573	CRR.MB_Corr3.MassTotal	
13574	CRR.MB_Corr3.VolTotal	
13575	CRR.MB_Corr3.MassInvtry	
13576	CRR.MB_Corr3.VolInvtry	
13577	CRR.MB_Corr3.PressCorrFlow	
13578	CRR.MB_Corr3.PressCorrDens	
13579	CRR.MB_Corr3.FlowCalibPress	

13580	CRR.MB_Corr3.PressInpZero	
13581	CRR.MB_Corr3.PressInpSpan	
13582	CRR.MB_Corr3.DensityCalib	
13583	CRR.MB_Corr3.MassFRMF	
13584	CRR.MB_Corr3.VolFRMF	
13585	CRR.MB_Corr3.DensityMF	
13586	CRR.MB_Corr3.RawTubeFreq	
13587	CRR.MB_Corr3.LeftPickVolt	
13588	CRR.MB_Corr3.RghtPickVolt	
13589	CRR.MB_Corr3.DriveGain	
13590	CRR.MB_Corr3.MassFlowZero	
13591	CRR.MB_Corr4.StatusA	
13592	CRR.MB_Corr4.StatusB	
13593	CRR.MB_Corr4.StatusC	
13594	CRR.MB_Corr4.StatusD	
13595	CRR.MB_Corr4.StatusE	
13596	CRR.MB_Corr4.StatusF	
13597	CRR.MB_Corr4.HighSvrtyAlrm	
13598	CRR.MB_Corr4.MassFlowRate	
13599	CRR.MB_Corr4.Density	
13600	CRR.MB_Corr4.Temp	
13601	CRR.MB_Corr4.VolFlowRate	
13602	CRR.MB_Corr4.Press	
13603	CRR.MB_Corr4.MassTotal	
13604	CRR.MB_Corr4.VolTotal	
13605	CRR.MB_Corr4.MassInvtry	
13606	CRR.MB_Corr4.VolInvtry	
13607	CRR.MB_Corr4.PressCorrFlow	
13608	CRR.MB_Corr4.PressCorrDens	
13609	CRR.MB_Corr4.FlowCalibPress	
13610	CRR.MB_Corr4.PressInpZero	
13611	CRR.MB_Corr4.PressInpSpan	
13612	CRR.MB_Corr4.DensityCalib	
13613	CRR.MB_Corr4.MassFRMF	
13614	CRR.MB_Corr4.VolFRMF	
13615	CRR.MB_Corr4.DensityMF	
13616	CRR.MB_Corr4.RawTubeFreq	

13617	CRR.MB_Corr4.LeftPickVolt	
13618	CRR.MB_Corr4.RghtPickVolt	
13619	CRR.MB_Corr4.DriveGain	
13620	CRR.MB_Corr4.MassFlowZero	
13621	CRR.MB_Corr5.StatusA	
13622	CRR.MB_Corr5.StatusB	
13623	CRR.MB_Corr5.StatusC	
13624	CRR.MB_Corr5.StatusD	
13625	CRR.MB_Corr5.StatusE	
13626	CRR.MB_Corr5.StatusF	
13627	CRR.MB_Corr5.HighSvrtyAlrm	
13628	CRR.MB_Corr5.MassFlowRate	
13629	CRR.MB_Corr5.Density	
13630	CRR.MB_Corr5.Temp	
13631	CRR.MB_Corr5.VolFlowRate	
13632	CRR.MB_Corr5.Press	
13633	CRR.MB_Corr5.MassTotal	
13634	CRR.MB_Corr5.VolTotal	
13635	CRR.MB_Corr5.MassInvtry	
13636	CRR.MB_Corr5.VolInvtry	
13637	CRR.MB_Corr5.PressCorrFlow	
13638	CRR.MB_Corr5.PressCorrDens	
13639	CRR.MB_Corr5.FlowCalibPress	
13640	CRR.MB_Corr5.PressInpZero	
13641	CRR.MB_Corr5.PressInpSpan	
13642	CRR.MB_Corr5.DensityCalib	
13643	CRR.MB_Corr5.MassFRMF	
13644	CRR.MB_Corr5.VolFRMF	
13645	CRR.MB_Corr5.DensityMF	
13646	CRR.MB_Corr5.RawTubeFreq	
13647	CRR.MB_Corr5.LeftPickVolt	
13648	CRR.MB_Corr5.RghtPickVolt	
13649	CRR.MB_Corr5.DriveGain	
13650	CRR.MB_Corr5.MassFlowZero	
13651	CRR.MB_Corr6.StatusA	
13652	CRR.MB_Corr6.StatusB	
13653	CRR.MB_Corr6.StatusC	

13654	CRR.MB_Corr6.StatusD	
13655	CRR.MB_Corr6.StatusE	
13656	CRR.MB_Corr6.StatusF	
13657	CRR.MB_Corr6.HighSvrtyAlrm	
13658	CRR.MB_Corr6.MassFlowRate	
13659	CRR.MB_Corr6.Density	
13660	CRR.MB_Corr6.Temp	
13661	CRR.MB_Corr6.VolFlowRate	
13662	CRR.MB_Corr6.Press	
13663	CRR.MB_Corr6.MassTotal	
13664	CRR.MB_Corr6.VolTotal	
13665	CRR.MB_Corr6.MassInvtry	
13666	CRR.MB_Corr6.VolInvtry	
13667	CRR.MB_Corr6.PressCorrFlow	
13668	CRR.MB_Corr6.PressCorrDens	
13669	CRR.MB_Corr6.FlowCalibPress	
13670	CRR.MB_Corr6.PressInpZero	
13671	CRR.MB_Corr6.PressInpSpan	
13672	CRR.MB_Corr6.DensityCalib	
13673	CRR.MB_Corr6.MassFRMF	
13674	CRR.MB_Corr6.VolFRMF	
13675	CRR.MB_Corr6.DensityMF	
13676	CRR.MB_Corr6.RawTubeFreq	
13677	CRR.MB_Corr6.LeftPickVolt	
13678	CRR.MB_Corr6.RghtPickVolt	
13679	CRR.MB_Corr6.DriveGain	
13680	CRR.MB_Corr6.MassFlowZero	****** RESERVED FOR ******
13681	MB.Spare	****** RESERVED FOR ******
13682	MB.Spare	****** RESERVED FOR ******
13683	MB.Spare	****** RESERVED FOR ******
13684	MB.Spare	****** RESERVED FOR ******
13685	MB.Spare	****** RESERVED FOR ******
13686	MB.Spare	****** RESERVED FOR ******
13687	MB.Spare	****** RESERVED FOR ******
13688	MB.Spare	****** RESERVED FOR ******
13689	MB.Spare	****** RESERVED FOR ******
13690	MB.Spare	****** RESERVED FOR ******

13691	MB.Spare	****** RESERVED FOR ******
13692	MB.Spare	****** RESERVED FOR ******
13693	MB.Spare	****** RESERVED FOR ******
13694	MB.Spare	****** RESERVED FOR ******
13695	MB.Spare	****** RESERVED FOR ******
13696	MB.Spare	****** RESERVED FOR ******
13697	MB.Spare	****** RESERVED FOR ******
13698	MB.Spare	****** RESERVED FOR ******
13699	MB.Spare	****** RESERVED FOR ******
13700	MB.Spare	****** RESERVED FOR ******
13701	MB.Spare	****** RESERVED FOR ******
13702	MB.Spare	****** RESERVED FOR ******
13703	MB.Spare	****** RESERVED FOR ******
13704	MB.Spare	****** RESERVED FOR ******
13705	MB.Spare	****** RESERVED FOR ******
13706	MB.Spare	****** RESERVED FOR ******
13707	MB.Spare	****** RESERVED FOR ******
13708	MB.Spare	****** RESERVED FOR ******
13709	MB.Spare	****** RESERVED FOR ******
13710	MB.Spare	****** RESERVED FOR ******
13711	MB.Spare	****** RESERVED FOR ******
13712	MB.Spare	****** RESERVED FOR ******
13713	MB.Spare	****** RESERVED FOR ******
13714	MB.Spare	****** RESERVED FOR ******
13715	MB.Spare	****** RESERVED FOR ******
13716	MB.Spare	****** RESERVED FOR ******
13717	MB.Spare	****** RESERVED FOR ******
13718	MB.Spare	****** RESERVED FOR ******
13719	MB.Spare	****** RESERVED FOR ******
13720	MB.Spare	****** RESERVED FOR ******
13721	MB.Spare	****** RESERVED FOR ******
13722	MB.Spare	****** RESERVED FOR ******
13723	MB.Spare	****** RESERVED FOR ******
13724	MB.Spare	****** RESERVED FOR ******
13725	MB.Spare	****** RESERVED FOR ******
13726	MB.Spare	****** RESERVED FOR ******
13727	MB.Spare	****** RESERVED FOR ******

13728	MB.Spare	****** RESERVED FOR ******
13729	MB.Spare	****** RESERVED FOR ******
13730	MB.Spare	****** RESERVED FOR ******
13731	MB.Spare	****** RESERVED FOR ******
13732	MB.Spare	****** RESERVED FOR ******
13733	MB.Spare	****** RESERVED FOR ******
13734	MB.Spare	****** RESERVED FOR ******
13735	MB.Spare	****** RESERVED FOR ******
13736	MB.Spare	****** RESERVED FOR ******
13737	MB.Spare	****** RESERVED FOR ******
13738	MB.Spare	****** RESERVED FOR ******
13739	MB.Spare	****** RESERVED FOR ******
13740	MB.Spare	****** RESERVED FOR ******
13741	HRT.IHARTFB_1.orPV	
13742	HRT.IHARTFB_2.orPV	
13743	HRT.IHARTFB_3.orPV	
13744	HRT.IHARTFB_4.orPV	
13745	HRT.IHARTFB_5.orPV	
13746	HRT.IHARTFB_6.orPV	
13747	HRT.IHARTFB_7.orPV	
13748	HRT.IHARTFB_8.orPV	
13749	HRT.IHARTFB_9.orPV	
13750	HRT.IHARTFB_10.orPV	
13751	HRT.IHARTFB_11.orPV	
13752	HRT.IHARTFB_12.orPV	
13753	HRT.IHARTFB_13.orPV	
13754	HRT.IHARTFB_14.orPV	
13755	HRT.IHARTFB_15.orPV	
13756	HRT.IHARTFB_16.orPV	
13757	HRT.IHARTFB_17.orPV	
13758	HRT.IHARTFB_18.orPV	
13759	WHRT.WHARTFB_1.orPV1	
13760	WHRT.WHARTFB_1.orPV2	
13761	WHRT.WHARTFB_1.orPV3	
13762	WHRT.WHARTFB_1.orPV4	
13763	WHRT.WHARTFB_1.orPV5	
13764	WHRT.WHARTFB_1.orPV6	

13765	WHRT.WHARTFB_1.orPV7	
13766	WHRT.WHARTFB_1.orPV8	
13767	WHRT.WHARTFB_1.orPV9	
13768	WHRT.WHARTFB_1.orPV10	
13769	WHRT.WHARTFB_1.orPV11	
13770	WHRT.WHARTFB_1.orPV12	
13771	WHRT.WHARTFB_1.orPV13	
13772	WHRT.WHARTFB_1.orPV14	
13773	WHRT.WHARTFB_1.orPV15	
13774	WHRT.WHARTFB_1.orPV16	
13775	WHRT.WHARTFB_1.orPV17	
13776	WHRT.WHARTFB_1.orPV18	

Table M-3 Modbus Register Map – SINT Variables

Reg#	Variable	Description
3001	MB.Spare	(Reserved for Modbus Special Functions!)
3002	MB.Spare	(Reserved for Modbus Special Functions!)
3003	MB.Spare	(Reserved for Modbus Special Functions!)
3004	MB.Spare	(Reserved for Modbus Special Functions!)
3005	FC.FC1.RX_HourlyNewestRec	Run 1 - newest record number in hourly archive
3006	FC.FC2.RX_HourlyNewestRec	Run 2 - newest record number in hourly archive
3007	FC.FC3.RX_HourlyNewestRec	Run 3 - newest record number in hourly archive
3008	FC.FC4.RX_HourlyNewestRec	Run 4 - newest record number in hourly archive
3009	FC.FC5.RX_HourlyNewestRec	Run 5 - newest record number in hourly archive
3010	FC.FC6.RX_HourlyNewestRec	Run 6 - newest record number in hourly archive
3011	FC.FC7.RX_HourlyNewestRec	Run 7 - newest record number in hourly archive
3012	FC.FC8.RX_HourlyNewestRec	Run 8 - newest record number in hourly archive
3013	MB.Spare	Run n - newest record number in hourly archive, n = 1 through 12
3014	MB.Spare	Run n - newest record number in hourly archive, n = 1 through 12
3015	MB.Spare	Run n - newest record number in hourly archive, n = 1 through 12
3016	MB.Spare	Run n - newest record number in hourly archive, n = 1 through 12
3017	FC.FC1.RX_DailyNewestRec	Run 1 - newest record number in daily archive
3018	FC.FC2.RX_DailyNewestRec	Run 2 - newest record number in daily archive
3019	FC.FC3.RX_DailyNewestRec	Run 3 - newest record number in daily archive
3020	FC.FC4.RX_DailyNewestRec	Run 4 - newest record number in daily archive
3021	FC.FC5.RX_DailyNewestRec	Run 5 - newest record number in daily archive
3022	FC.FC6.RX_DailyNewestRec	Run 6 - newest record number in daily archive
3023	FC.FC7.RX_DailyNewestRec	Run 7 - newest record number in daily archive

Reg#	Variable	Description
3024	FC.FC8.RX_DailyNewestRec	Run 8 - newest record number in daily archive
3025	MB.Spare	Run n - newest record number in daily archive, n = 1 through 12
3026	MB.Spare	Run n - newest record number in daily archive, n = 1 through 12
3027	MB.Spare	Run n - newest record number in daily archive, n = 1 through 12
3028	MB.Spare	Run n - newest record number in daily archive, n = 1 through 12
3029	MB.Enron_AuditCount	Number of audit records available via Enron MODBUS
3030	MB.Enron_Date	Register where Date is available via Enron, if not default
3031	MB.Enron_Time	Register where Time is available via Enron, if not default
3032	MB.Enron_FirmWareID	Firmware ID available via Enron MODBUS
3033	MB.Enron_EAudit	The Modbus register address number that will cause the special function for Enhanced Audit access to be executed.
3034	IO_1.Timeset.Encode_Load	Load the current RTU Time and Date values to Enron MODBUS Registers
3035	IO_1.Timeset.Encode_Write	Write the current RTU Time and Date values to Enron MODBUS Registers
3036	IO_1.cfg_Year	Year value for setting time/date via Enron MODBUS
3037	IO_1.cfg_Month	Month value for setting time/date via Enron MODBUS
3038	IO_1.cfg_Day	Day value for setting time/date via Enron MODBUS
3039	IO_1.cfg_Hour	Hour value for setting time/date via Enron MODBUS
3040	IO_1.cfg_Min	Minutes value for setting time/date via Enron MODBUS
3041	IO_1.cfg_Sec	Seconds value for setting time/date via Enron MODBUS
3042	IO_1.DLST.BM	Daylight Savings time - beginning month
3043	IO_1.DLST.Begin_Sunday	Daylight Savings time - beginning Sunday
3044	IO_1.DLST.EM	Daylight Savings time - ending month
3045	IO_1.DLST.End_Sunday	Daylight Savings time - ending Sunday
3046	IO_1.DLST_Enable	Daylight Savings time - enable automatic adjustment of Daylight Savings time
3047	MB.HourRecord	Enron MODBUS, latests hourly record
3048	MB.DayRecord	Enron MODBUS, latests Daily record
3049	@GV.FW_Major	Firmware version - major version number
3050	@GV.FW_Minor	Firmware version - minor version number
3051	@GV.MB_Cryout1	
3052	MB.HourRecord1	
3053	MB.HourRecord2	
3054	MB.HourRecord3	
3055	MB.HourRecord4	
3056	MB.HourRecord5	
3057	MB.HourRecord6	
3058	MB.HourRecord7	
3059	MB.HourRecord8	
3060	MB.Spare	
3061	MB.Spare	
3062	MB.Spare	
3063	MB.Spare	
3064	MB.DayRecord1	
3065	MB.DayRecord2	
3066	MB.DayRecord3	

Reg#	Variable	Description
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3068	MB.DayRecord5	
3069	MB.DayRecord6	
3070	MB.DayRecord7	
3071	MB.DayRecord8	
3072	MB.Spare	
3073	MB.Spare	
3074	MB.Spare	
3075	MB.Spare	
3076	MB.GCRecord1	
3077	MB.GCRecord2	
3078	MB.GCRecord3	
3079	MB.GCRecord4	
3080	MB.GCRecord5	
3081	MB.GCRecord6	
3082	MB.GCRecord7	
3083	MB.GCRecord8	
3084	MB.Spare	
3085	MB.Spare	
3086	MB.Spare	
3087	MB.Spare	
3088	MB.RFRecord1	
3089	MB.RFRecord2	
3090	MB.RFRecord3	
3091	MB.RFRecord4	
3092	MB.RFRecord5	
3093	MB.RFRecord6	
3094	MB.RFRecord7	
3095	MB.RFRecord8	
3096	MB.Spare	
3097	MB.Spare	
3098	MB.Spare	
3099	MB.Spare	
3100	MB.UFM_HourRecord1	
3101	MB.UFM_HourRecord2	
3102	MB.UFM_HourRecord3	
3103	MB.UFM_HourRecord4	
3104	MB.UFM_HourRecord5	
3105	MB.UFM_HourRecord6	
3106	MB.UFM_HourRecord7	
3107	MB.UFM_HourRecord8	
3108	MB.UFM_DayRecord1	
3109	MB.UFM_DayRecord2	
3110	MB.UFM_DayRecord3	
3111	MB.UFM_DayRecord4	
3112	MB.UFM_DayRecord5	
3113	MB.UFM_DayRecord6	
3114	MB.UFM_DayRecord7	
3115	MB.UFM_DayRecord8	
3116	MB.Spare	

Reg#	Variable	Description
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3118	MB.Spare	
3119	MB.Spare	
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3121	MB.Spare	
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Reg#	Variable	Description
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Reg#	Variable	Description
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Reg#	Variable	Description
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Reg#	Variable	Description
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Reg#	Variable	Description
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Reg#	Variable	Description
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Reg#	Variable	Description
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Reg#	Variable	Description
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Reg#	Variable	Description
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Reg#	Variable	Description
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Reg#	Variable	Description
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Reg#	Variable	Description
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Reg#	Variable	Description
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Reg#	Variable	Description
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3998	MB.Spare	
3999	MB.Spare	
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4001	MB.UNP_Version	
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4003	MB.Spare	
4004	MB.Spare	
4005	MB.Spare	
4006	MB.Spare	
4007	MB.Spare	
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4009	MB.Spare	
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4013	MB.UNP3	
4014	MB.UNP4	
4015	MB.UNP5	
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Reg#	Variable	Description
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4114	MB.UNP104	
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4163	WHRT.WHART_10_TYPE	
4164	WHRT.WHART_11_TYPE	
4165	WHRT.WHART_12_TYPE	
4166	WHRT.WHART_13_TYPE	

Reg#	Variable	Description
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4169	WHRT.WHART_16_TYPE	
4170	WHRT.WHART_17_TYPE	
4171	WHRT.WHART_18_TYPE	

Appendix X – Using the External Measurement (XT) Version of the Station Manager Application

The main difference between the Station Manager application described throughout this manual, and the "External Measurement" **XT** version of the Station Manager application is that measurement data in the XT version comes from ControlWave XFC or ControlWave GFC flow computers instead of from I/O modules in the ControlWave Micro.

You must be a SupportNet™ user to download the self-extracting zip file that includes the ControlWave project (application) which supports the Station Manager XT version for your device. The installers place the ControlWave project in the proper sub-folder of C:\OpenBSI on the OpenBSI workstation; you must then download the project into the ControlWave GFC or XFC. The ControlWave project versions required are:

- **ControlWave GFC Version 2.29 (or newer)**
- **ControlWave XFC Version 1.59 (or newer)**

These are versions that include the Station Manager interface LIST, the SERVER function block for RTU to RTU communications, and allow selection for direction change indication.

This appendix outlines the differences in station configuration for the XT version.

In This Appendix

X.1 Turning on Polling to ControlWave XFC/GFC Flow Computers

The external measurement (XT) version of the Station Manager application includes up to six stations and up to eight meter runs.

You must configure the XFCs/GFCs for meter run measurement and connect them to the ControlWave Micro running the XT Station Manager application via BSAP serial communication ports.

When you configure the BSAP master serial port at the ControlWave Micro, we recommend you use DataView to set the port configuration variables (where *x*=port number) using the following characteristics:

- _P*x*_POLL_PER = 5
- _P*x*_WRITE_DEL = 0

- _P*x*_WRITE_TMO = 2500
- _P*x*_IGNORE_ECHO = TRUE
- _P*x*_RETRIES = 3
- _P*x*_TIMEOUT = 500
- _P*x*_AUTO_DTR = ON
- _P*x*_TYPE = 2

In addition, the BSAP local address of the ControlWave XFC/GFC must reside in the range defined by _P*x*_LOW_SL and _P*x*_HIGH_SL variables in the ControlWave Micro.

1. To start polling a connected XFC/GFC for data, click the Measurement tab from the main TechView session and then click the [Status/Configuration] button as shown in the screen shot below.

From the "Measurement" tab, click the "Status/Configuration" button.

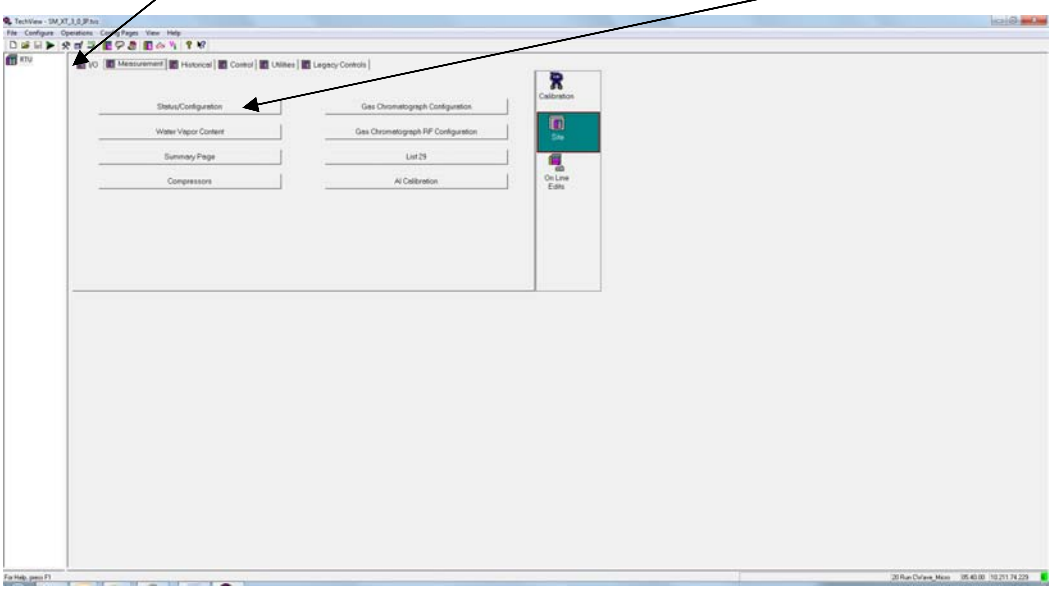


Figure X-1. Measurement Tab

2. The Status Configuration screen opens. Click on the first run you want to set up, normally this would be Run 1.

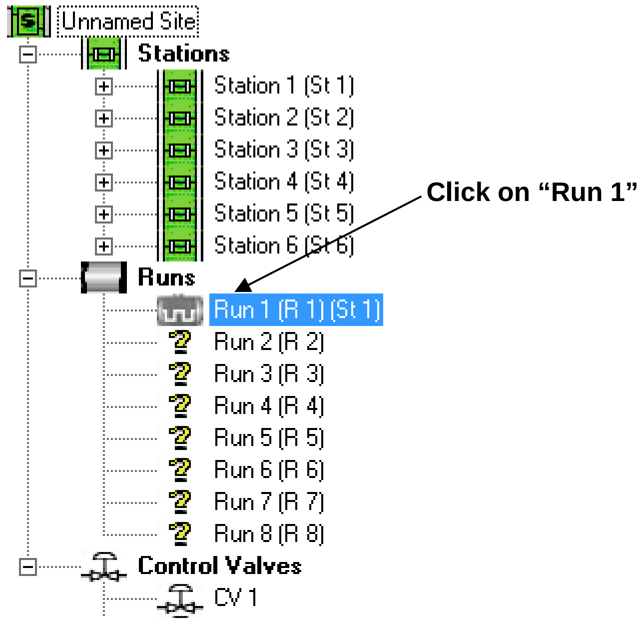
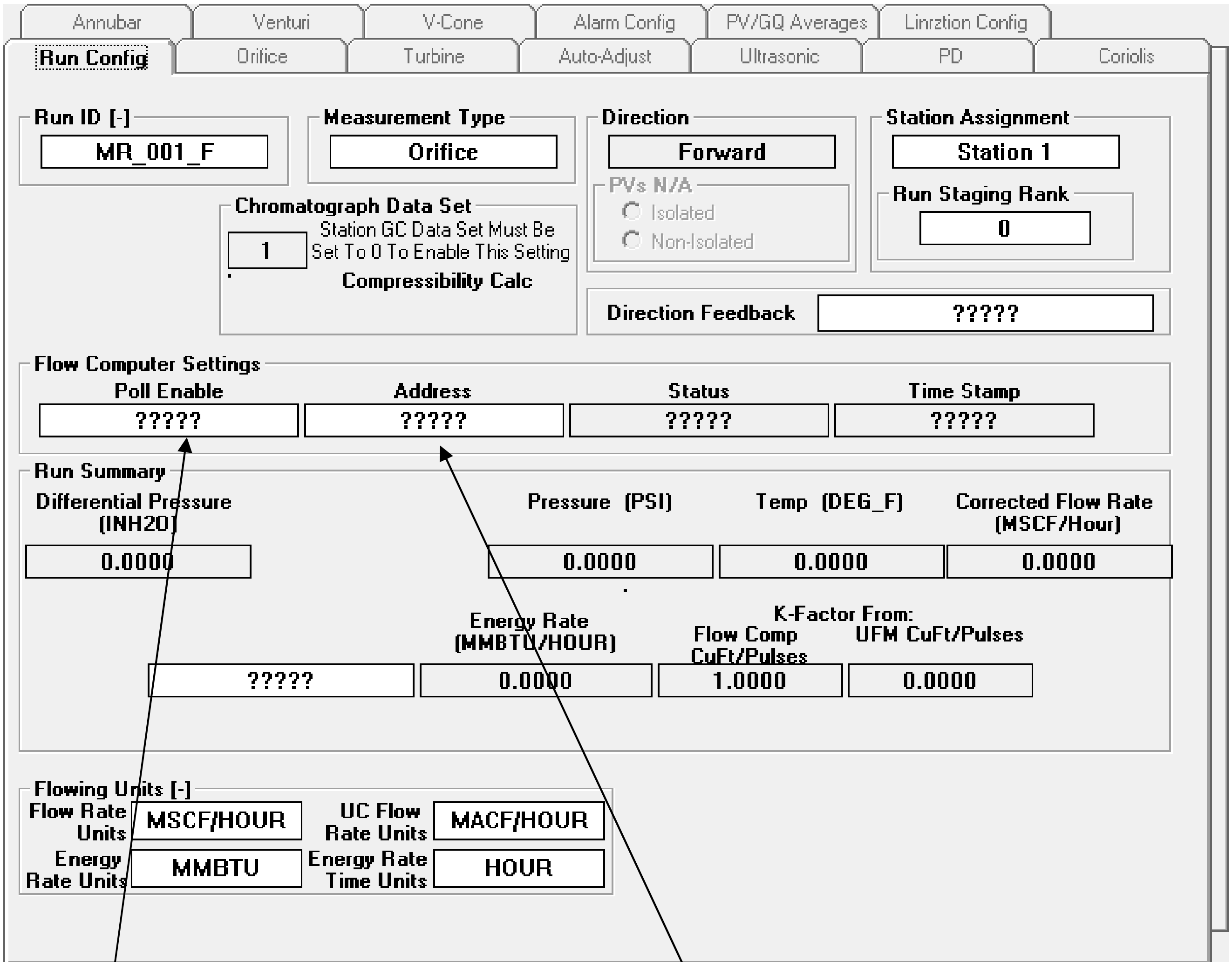


Figure X-2. Choosing the Run

3. The Run Config tab opens. From the "Flow Computer Settings" section of the screen, specify the BSAP local address of the ControlWave XFC/GFC used for this run in the **Address** field, then click the **Poll Enabled/Disabled** button to enable polling.



Click here to enable polling for the external flow computer (XFC, GFC)

Enter the BSAP local address of the external flow computer (XFC, GFC)

Figure X-3. External Flow Computer Settings (XT)

4. Once you click the Poll Enable button, Station Manager updates several fields on the Run Configuration tab:

- The **Time Stamp** field shows a timestamp from the XFC/GFC.
- The meter ID defined in the XFC/GFC shows in the **Run ID** text box.
- The **Status** field should show **0**. If the **Status** field shows something other than zero, it indicates a configuration error.

X.2 Assigning a Run to a Station

Once you can successfully communicate with your external flow computers (XFCs/GFCs), you can assign them to a station. You do this from the same page where you turn on polling to the external flow computer. Click the **Station Assignment** field to assign the run to a station as shown in the screen shot below.

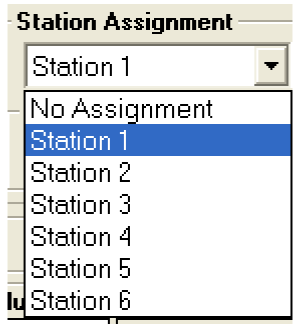


Figure X-4. Selecting the Station

X.3 Setting Direction Feedback for the Meter Run

For a bi-directional run, you need to tell the XFC/GFC how to determine which direction the gas flows.

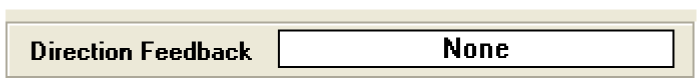


Figure X-5. Direction Feedback field

To do this, set the **Direction Feedback** field on the Run Config tab. Choices are:

None This is the default. It allows the XFC/GFC to determine its own direction based on either DP, pulse inputs, or a digital input. You need to configure these for this to work. **Note: Leave set to None if this run is not bi-directional.**

I/O Choose this if the XFC/GFC gets its flow direction from one of its digital inputs. If you select this you must ensure that you assign a digital input in the XFC/GFC and connect a direction switch to that point.

Comms This option means that the Station Manager program sends the XFC/GFC the flow direction via BSAP communications. If you use Station Manager to control valves for bi-directional control then this is most likely the setting you need to use.

X.4 Assigning a Gas Chromatograph (GC) Dataset to a Run

More than likely, if your station has a GC, all the runs for the station receive GC data from the same GC stream. In Station Manager, each stream is called a data set. If you want to set different runs assigned to a station to different data sets you must set the station's data set to 0. To access this setting from the main TechView session, click the Measurement tab and then click the 

button as seen in the screen shot below.

From the "Measurement" tab, click the "Status/Configuration" button.

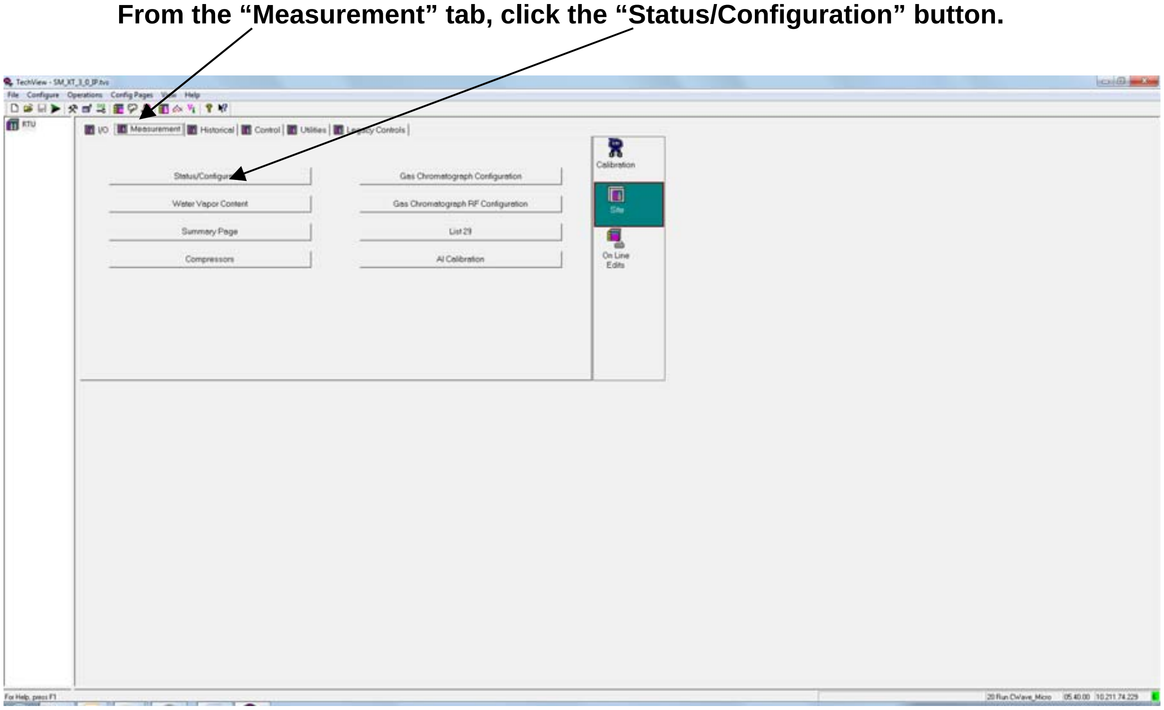


Figure X-6. Measurement tab

From the Status Configuration screen, click the station that includes the GC. In this example, we use Station 1.

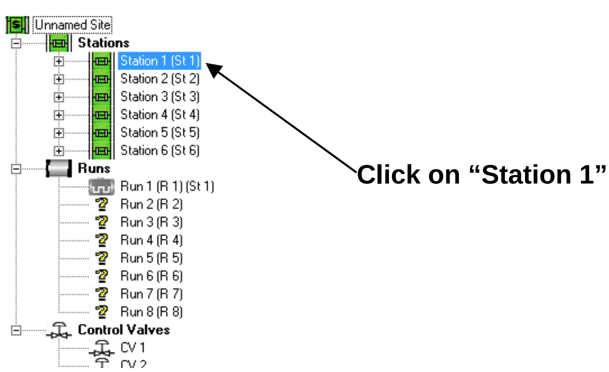


Figure X-7. Selecting the Station

To be able to assign individual GC data sets to individual runs you must first assign the station's Chromatograph Data Set setting to 0 as shown below.

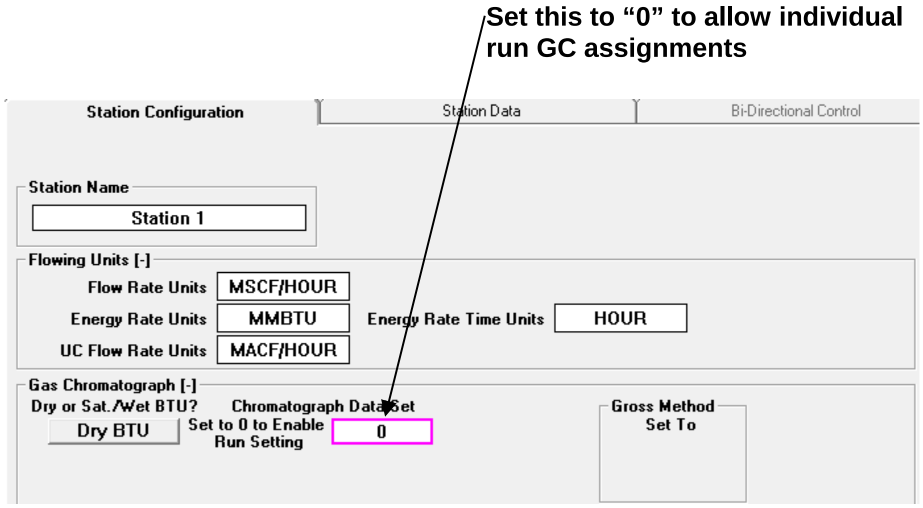


Figure X-8. Chromatograph Data Set on Station Configuration tab

Once this is done, click on the desired run to go to the run config page as shown below.

Click here to go to the Run Config page.

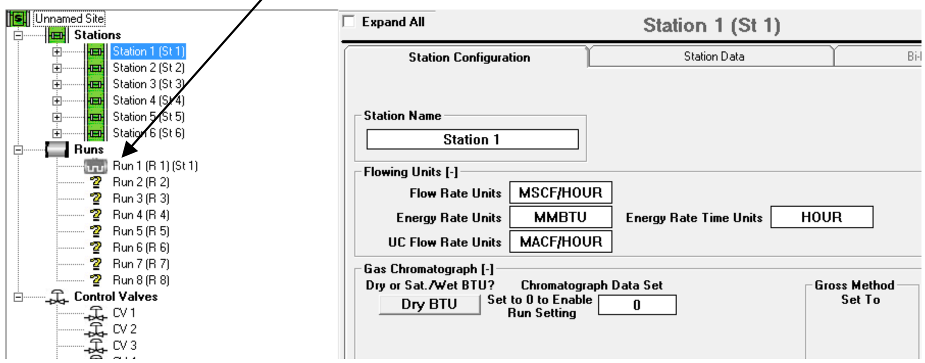
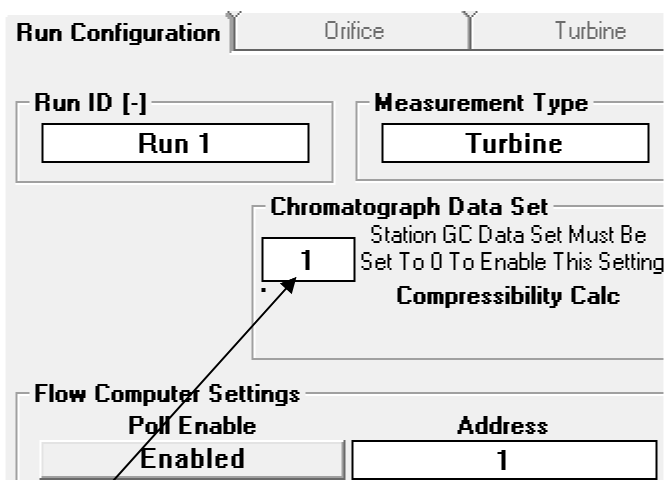


Figure X-9. Choosing the Run

From the run config page you can assign the desired GC data set to the run.



Assign the GC data set here.

Figure X-10. Chromatograph Data Set

You would repeat this process for each run assigned to the station until all runs are assigned to the desired data set.

X.5 Configuring Compressor Control

The XT version of the Station Manager application can control and report on up to four compressor units.

You access the Compressor Control page by clicking on the 

button on the Measurement tab.

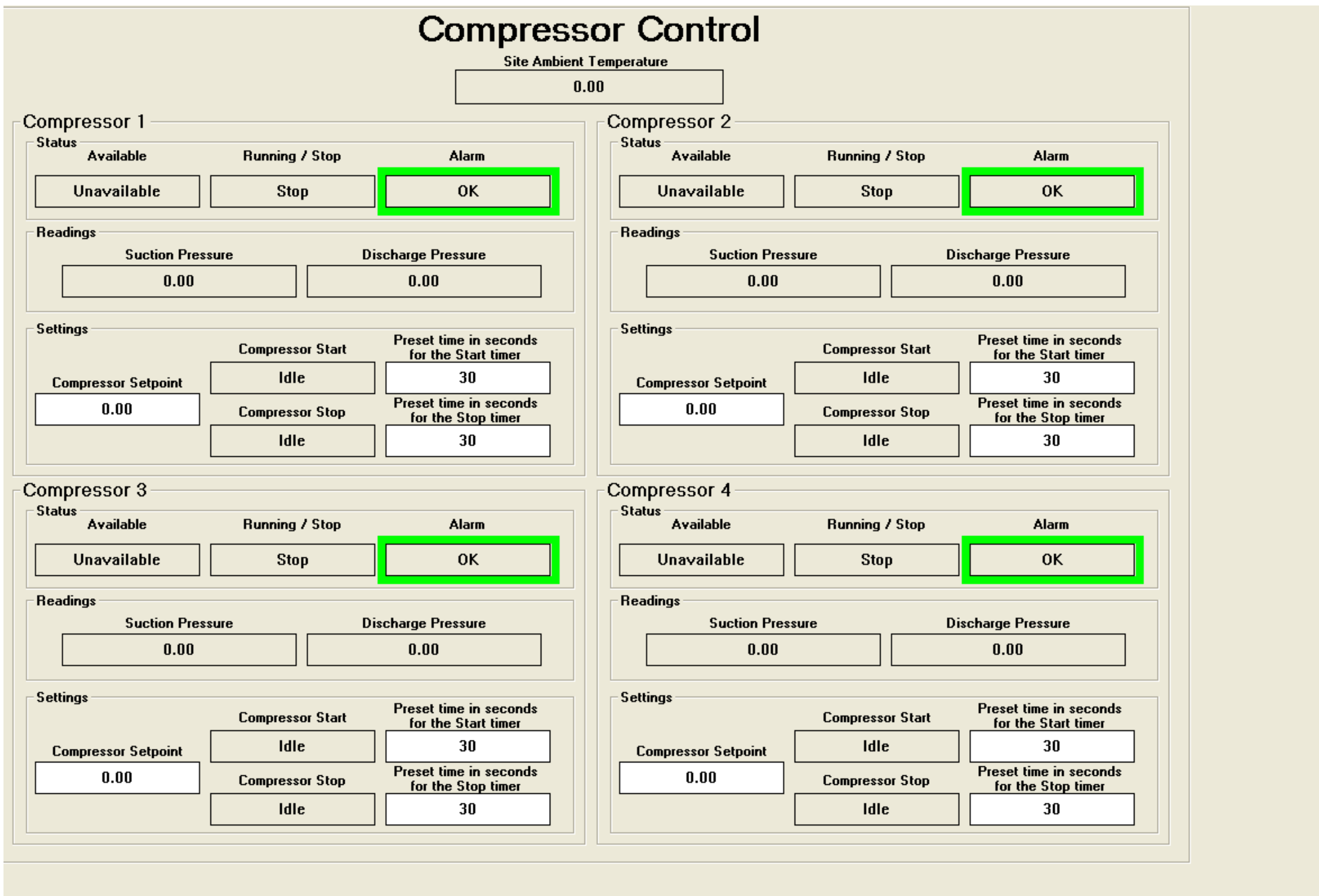


Figure X-11. Compressor Control page

Field	Description
Site Ambient Temperature	This indicates the outside air temperature at the site as reported from a hard wired AI point.
Status	
Available	This indicates if the compressor is available for use. A hard-wired DI point provides this status.
Running/Stop	This indicates if the compressor is running or stopped. A hard-wired DI point provides this status.

Alarm	This indicates if the compressor is in an alarm state. A hard-wired DI point provides this status.
Readings	
Suction Pressure	This indicates the pressure at the inlet of the compressor as reported from a hard wired AI point.
Discharge Pressure	This indicates the pressure at the outlet of the compressor as reported from a hard wired AI point.
Settings	
Compressor Setpoint	You can enter an analog value to control the compressor to this value. A hard wired AO point sends out this value.
Compressor Start	This indicates the status of the compressor start command.
Preset time in seconds for the Start timer	This setting determines the length of the pulse for the Start Command on the hard wired DO point.
Compressor Stop	This indicates the status of the compressor stop command.
Preset time in seconds for the Stop timer	This setting determines the length of the pulse for the Stop Command on the hard wired DO point.

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