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Gas Chromatograph Application Module (for FloBoss™ 107 Flow Managers) User Manual

Remote Automation Solutions

EMERSON.
Process Management

Revision Tracking Sheet

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This manual may be revised periodically to incorporate new or updated information. The revision date of each page appears at the bottom of the page opposite the page number. A change in revision date to any page also changes the date of the manual that appears on the front cover. Listed below is the revision date of each page (if applicable):

Page	Revision
Initial release	Jan-09

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Chapter 1 – Introduction

This chapter describes the structure of this manual and presents an overview of the Gas Chromatograph (GC) Application Module for the FloBoss™ 107 ("FB107"). The GC Application Module provides all the functions necessary to communicate with a gas chromatograph, including an onboard communications port that enables module-to-GC communications without using one of the communications ports on the FB107.

The standard APP 485 application module (which includes the GC Application Module) streamlines the installation process by automatically installing all point types and screens that are part of the application. APP 485 modules can house a variety of applications; for further information about additional APP 485 modules, contact your sales representative.

1.1 Scope and Organization

This document serves as the user manual for the Gas Chromatograph Application module, which is intended for use in a FloBoss 107 (FB107). This manual describes how to install and configure the Gas Chromatograph Application module (referred to as the "GC Application module" or "the module" throughout the rest of this manual). You access and configure this module using ROCLINK™ 800 Configuration Software loaded on a personal computer running Windows® 2000 (with Service Pack 2), Windows XP, or Windows Vista.

The sections in this manual provide information in a sequence appropriate for first-time users. Once you become familiar with the procedures and the software, the manual becomes a reference tool.

This manual has the following major sections:

- *Chapter 1 – Introduction*
- *Chapter 2 – Installation*
- *Chapter 3 – Configuration*
- *Chapter 4 – Reference*

This manual assumes that you are familiar with the FB107 and its configuration. For more information, refer to the *FloBoss 107 Flow Manager Instruction Manual* (Form A6206) or the *ROCLINK 800 Configuration Software User Manual (for FloBoss 107)* (Form A6217).

1.2 Product Overview

The GC Application module enables the FB107 to communicate directly with up to two gas chromatographs (GCs) on the same EIA-485 (RS-485) communications port. (The module provides its own

communication connections for this purpose.) Gas chromatographs supported include the Daniel (Danalyzer) and Rosemount Analytical Models 500, 570, 590, 700, 770, and 1000/1000A. GC controllers supported include the Daniel and Rosemount Analytical Models 2251, 2255, 2350, 2350A, and 2360, as well as the ABB Totalflow Model 8000 BTU. The module communicates directly with the GC using Modbus protocol, in which the module has Master status. The FB107 polls data from the GC, validates that data, and updates the appropriate meter run parameters using that data. The module can poll up to eight GC streams on one GC or up to a total of ten streams on two GCs.

Note: Using MON 2000 software, you set the Daniel GC communications port to the SIM 2251 protocol. For all other parameter configurations, refer to the MON 2000 documentation.

In order to update meter run data in the FB107, you must assign the streams to a meter run in the FB107's database. This allows the FB107 to log the gas component data, heating value, and specific gravity and use these values in volume, mass, and energy calculations. See *Section 3.4*.

1.2.1 Communications Wiring

Connect the GC to the communications port on the module using wiring between 16 and 24 AWG. *Figure 1* shows example wiring between the module and an externally powered GC.

Note: The GC must be **externally** powered. **Do no**t use the power and ground connections on the APP 485 module.

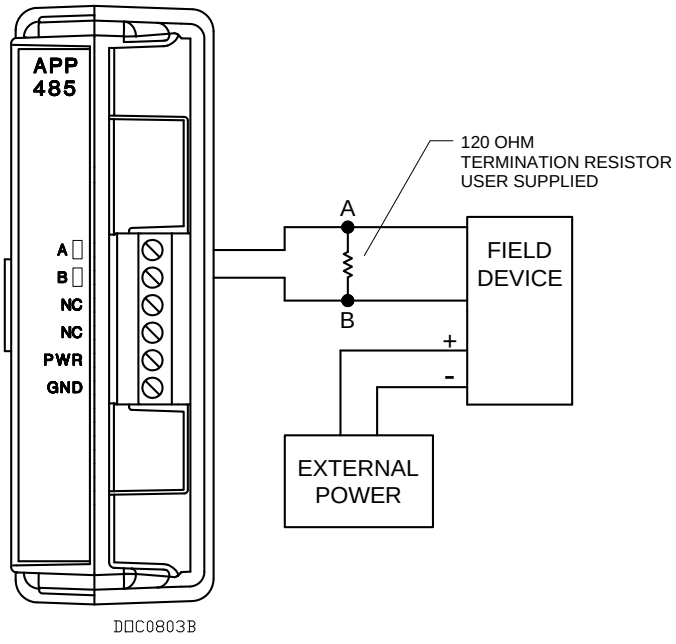

Figure 1. Communications Wiring

1.2.2 Auto-configure

The GC Application module provides an auto-configure option on the GC Configuration screen (see *Figure 4*). This option enables you to automatically configure the module's communication port to the default values required to poll the GC(s). For this option to work, however, you **must first s**pecify (using the GC Configuration screen) the maximum number of streams and the Modbus address for each GC in use.

Note: Auto-configure assumes you connect to a Daniel GC. If you have a GC from another manufacturer, refer to that manufacturer's product documentation for appropriate communication settings (baud rate, parity, etc.). You can set those values on the GC Modbus Configuration screen (*Figure 6*).

The module uses the following pre-defined communication port parameter values:

Parameter	Value
Baud Rate	9600
Parity	None
Data Bits	8
Stop Bits	1
Communication Mode	RTU
Byte Order	MSB First

When the auto-configure process completes, the module disables the auto-configure parameter.

1.2.3 Modbus Registers

The GC module predefines the following Modbus registers for GC data. With the exception of registers 9034 and 9035, you cannot change these values. The module only allows you to **disable** polling for registers 9034 and 9035.

Register	Value
3001–3016	Component IDs, Table 1
3017–3032	Component IDs, Table 2
3034	Current Stream
3035	Mask of Streams associated with Table 1
3045	Cycle Start Time – minutes
3046	GC Alarm 1

Register	Value
3047	GC Alarm 2
3059	Calibration/Analysis Flag
7001–7016	Gas Composition Values Mole % Comp 1–16
7033	BTU (day)
7034	BTU (saturated)
7035	Specific Gravity
7036	Compressibility
7037	Wobbe Index
7038	Total Unnormalized Mole %
7039	Total GPM CF
7040–7044	User Defined Calc Values
7070–7084	User Defined Average
9034	Active Alarm Status
9035	Unacknowledged Alarm Status

1.2.4 Validating GC Data

When the polls are complete, the module validates the data to ensure the polling was successful and the data is correct. This validation occurs **before** the module copies the GC stream data to the meter run. Checks include:

- The Communication Status (Point 121, Parameter 6, 12, 18, etc.) must return valid responses (value of 8) for all registers polled. If errors are present, the meter runs do not update.
- If you disable Bypass Alarm 1 (Point 60, Parameter 11), the Alarm Flag 1 (Point 61, Parameter 18, bits 14 & 15) from the GC is checked for errors. If errors are present, the meter runs do not update.
- If you disable Bypass Alarm 2 (Point 60, Parameter 12), the Alarm Flag 2 (Point 61, Parameter 19, bits 0, 1, 2 & 3) from the GC is checked for errors. If errors are present, the meter runs do not update.
- The module checks the Calibration Flag (Point 61, Parameter 20) to ensure the GC is in the Analysis State. If the GC is not in the Analysis State, the meter runs do not update.
- The Starting Sample Minute value (Point 61, Parameter 17) must be different than the previous value, or the meter runs do not update.
- The Starting Sample Minute value (Point 61, Parameter 17) and Ending Sample Minute value (Point 61, Parameter 16) in the poll must match or the meter runs do not update.
- The current Stream Number (Point 61, Parameter 2) must be assigned to a meter run.
- The Total Un-Normalized Mole % value (Point 61, Parameter 9) must be within plus or minus the Total Mole % Deviation value

(Point 60, Parameter 14) of 100%. If this value is outside of this limit, the meter runs do not update.

- The Mole Sum value (Point 61, Parameter 21) must be within plus or minus the Total Mole % Deviation value (Point 60, Parameter 14) of 100%. If this value is outside of this limit, the meter runs do not update.
- If you enable HV Limits (Point 61, Parameter 90) on the GC Stream Data screen, ensure that the Stream Heating Value is between the Heating Value Low (Point 61, Parameter 91) and Heating Value High (Point 61, Parameter 92).

Note: If you do not enable the HV Limits (which is a per-stream value), the module uses the Heating Value (described below) as a default.

- The Heating Value (Point 60, Parameter 4 or 5, depending on Wet vs. Dry) must be between Heating Value Low (Point 60, Parameter 9) and Heating Value High (Point 60, Parameter 10). If this value is outside the limits, the meter runs do not update.

Note: The Heating Value is the default parameter the module checks first. If you have enabled the HV Limits parameter (which is a per-stream value), that value overrides this one.

- The Specific Gravity (Point 61, Parameter 6) must be between 0.07 and 1.52. If this value is outside of this limit, the meter runs do not update.

Note: The module copies each GC stream component to its corresponding component in the meter run, **with the exception of neo-pentane**. The module adds neo-pentane values to the iso-pentane component and then copies it to the meter run. The module also copies heating and specific gravity values to the appropriate meter run.

1.3 Program Requirements

The GC Application module is compatible with version 1.20 (or greater) of the FB107 firmware and with version 1.81 (or greater) of the ROCLINK 800 software.

Chapter 2 – Installation

This chapter provides instructions for installing the GC Application module. Read *Section 1.3* of this manual for program requirements.

2.1 Installing the Application Module

The application module occupies the standard footprint of a FB107 I/O or communications module. To install the module, place it in an empty slot (1 through 7) on the FB107. To ensure that the FB107 recognizes the module, you must perform a warm start (**ROC** > **Flags** > **Warm Start**).

Note: Although the label on the physical module is **APP 485**, the Description field on the General tab verifies that this module contains the GC Application.

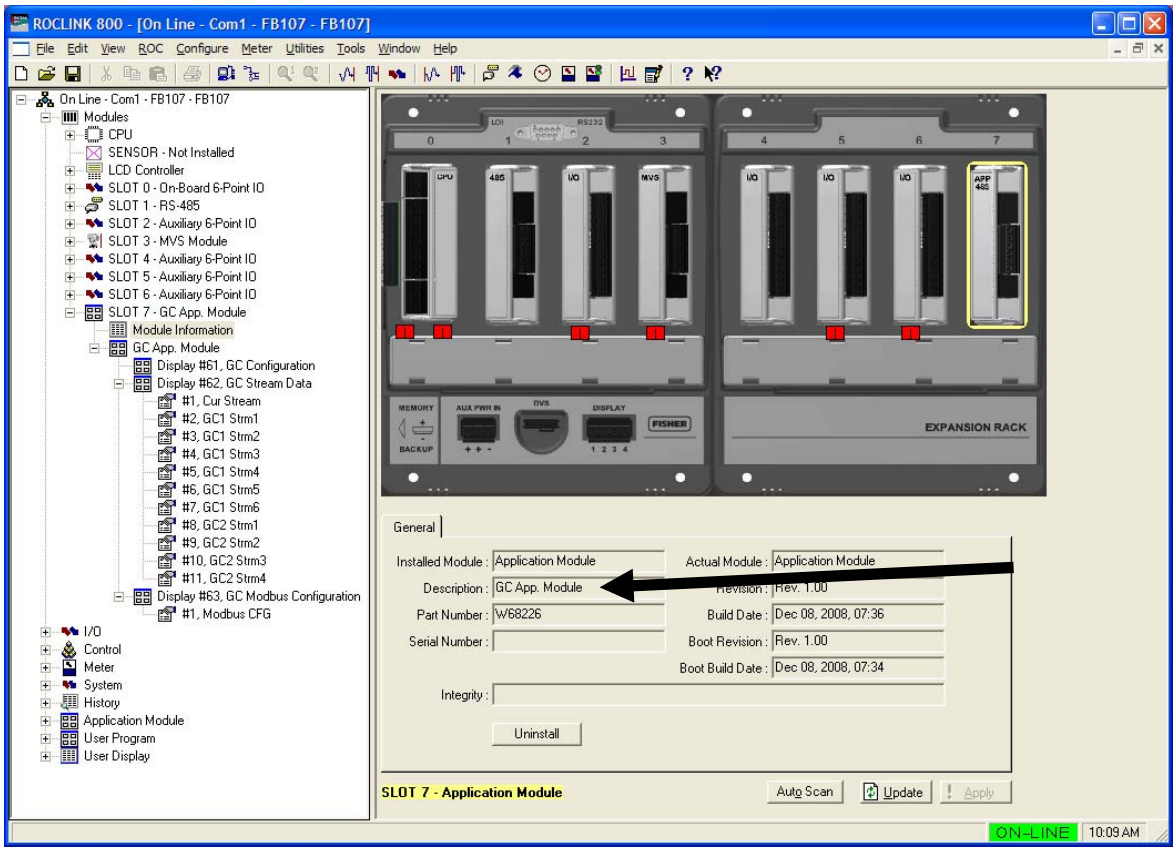

Figure 2. GC Application Module

Once you have verified that the FB107 has recognized the GC Application module, proceed to *Chapter 3* to begin configuring the module.

Chapter 3 – Configuration

After you have successfully installed the GC Application module in the FB107, you configure the module using three module-specific screens (GC Configuration, GC Stream Data, and GC Modbus Configuration) and one ROCLINK 800 screen (Meter Setup):

- Use the GC Configuration screen to define the number of streams; assign GC streams to meter runs; enable GC polling, enable auto-configuration; set GC-specific parameters, including component IDs, GC alarm options, hexane splits, data limits, and heating value adjustment parameters.

  Note: The GC Application module uses an onboard comm port dedicated to GC communications; no definition is required.

- Use the GC Stream Data screen to review stream data for up to 10 streams; enable and define heating value limits; enable and define specific gravity limits, and disable event logging.
- Use the GC Modbus Configuration screen to configure the module's onboard comm port and set Modbus values; define polling timeout and retries; and disable alarm registers.

  Note: If you select Autoconfigure option on the GC Configuration screen, you only need to review the Modbus settings.

- Use the Fluid Properties tab on the ROCLINK 800 Meter Setup screen to indicate the type of heating value read from the GC and to select the "live" gas quality option.

You must configure the module **before** you can establish communications with the GC. To configure the module (after logging onto ROCLINK 800 and successfully installing the module), proceed through the screens as shown in this chapter.

Note: Set the Daniel GC communications port to the SIM 2251 protocol using MON 2000 software. For all other parameter configurations, refer to the MON 2000 documentation.

You can access all the module-specific screens from the main ROCLINK 800 screen:

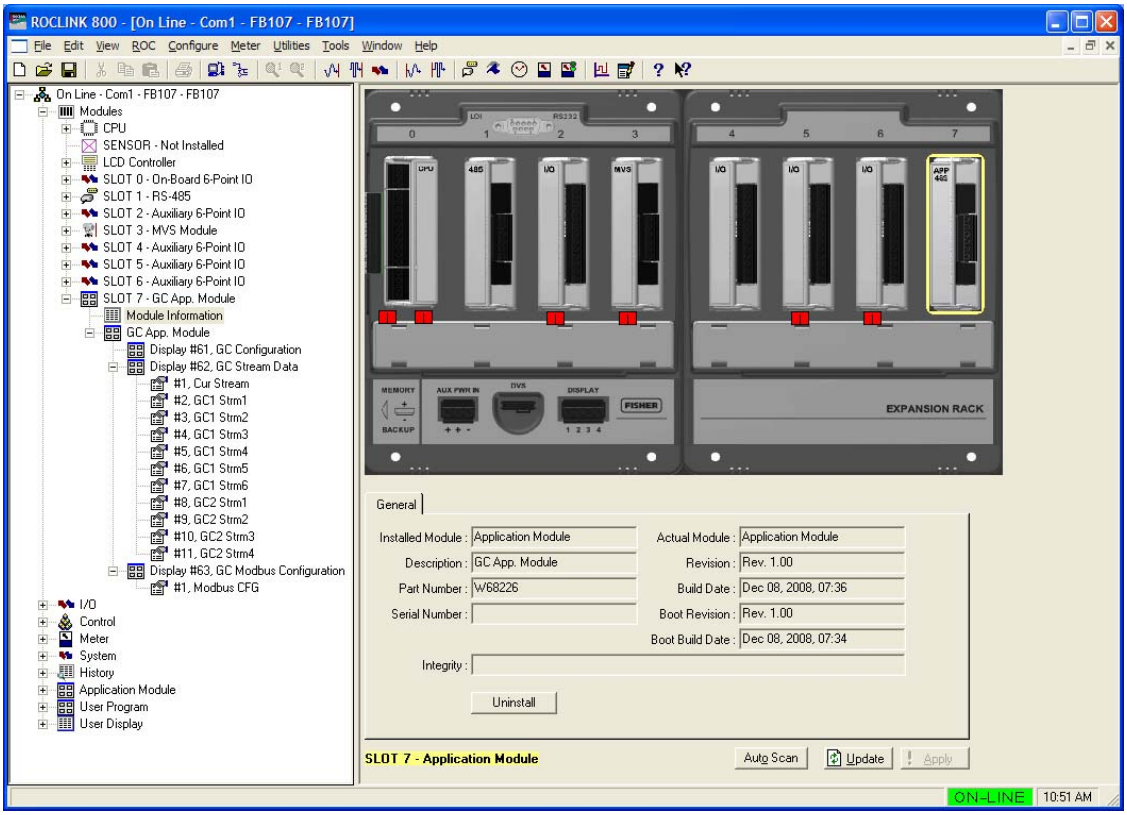

Figure 3. ROCLINK 800

3.1 GC Configuration Screen

Use this screen to configure one or more GC addresses, assign the GC streams to meter runs, enable GC polling, and enable automatic configuration of the communications port. To access this screen:

1. From the Directory Tree, double-click **Application Module**.
2. Double-click **GC Application Module**.
3. Double-click **Display #61, GC Configuration**. The GC Configuration screen displays:

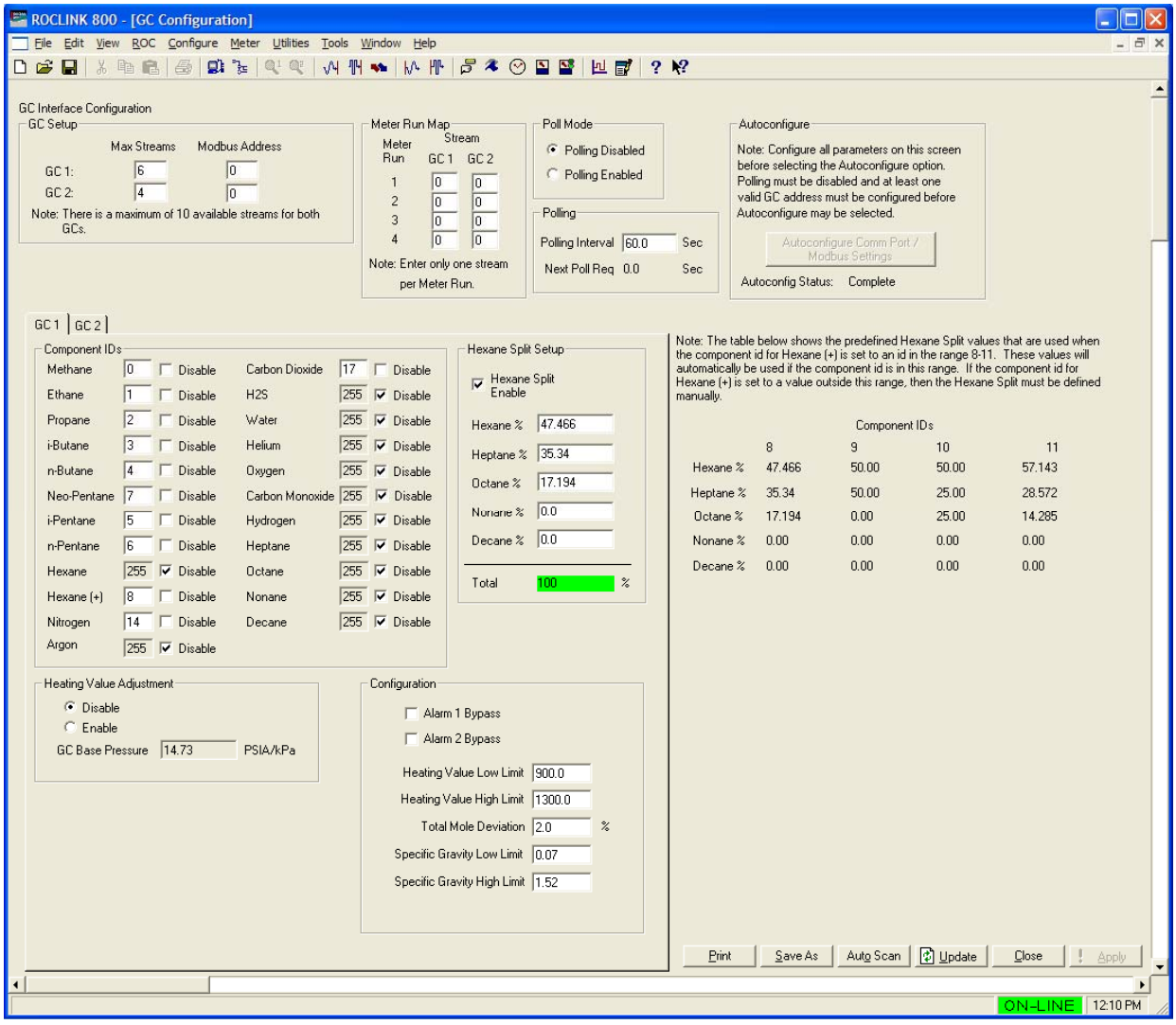

Figure 4. GC Configuration

4. Review the values in the following fields:

Field	Description
Max Streams	Sets the maximum number of streams from the gas chromatograph. Valid values are **1**–**8**. You cannot define more than 10 streams for both GCs.
Meter Run Map	Associates GC streams with configured FB107 meter runs. Valid values are **1**–**8**. Enter **0** to disable meter run updating. You **must** configure this parameter before the module can poll data and write it to the meter run. The module stores the gas composition data for the specified stream in the gas quality parameters of the specified meter run (see *Section 3.4*).
Poll Mode	Enables or disables polling. The default is **Polling Disabled**.
Polling Interval	Sets the delay, in seconds, the module waits before asking the GC for the next set of results. The default is **60.0** seconds. **Note**: The GC typically takes 3 to 6 minutes to update results.
Next Poll Req	This **read-only** field shows the number of seconds remaining until the next polling cycle. After a poll cycle completes, the module resets this field to the value stored in the Polling Interval field.
Autoconfigure	Click to allow the module to automatically determine the configuration values for the onboard communications port and Modbus settings for a Daniel gas chromatograph. You **must disable** polling and configure at least one valid GC address before you can initiate Autoconfigure. See *Section 1.2.2* for further information on auto-configuration.
Component IDs	Assigns each gas component a value in component data tables 1 and 2. Select **Disable** to identify any gases the FB107 supports but for which the gas chromatograph does not provide data.

<table>
<tr><th>Field</th><th>Description</th></tr>
<tr><td>Hexane Split Enable</td><td>Enables you to split the hexane(+) composition among hexane, heptane, octane, nonane, and decane. The module uses a pre-defined split if you set the component ID for hexane(+) to 8, 9, 10, or 11 (see table below).
<table>
<tr><th>ID</th><th>Hexane %</th><th>Heptane %</th><th>Octane %</th><th>Nonane %</th><th>Decane %</th></tr>
<tr><td>8</td><td>47.466</td><td>35.34</td><td>17.194</td><td>0</td><td>0</td></tr>
<tr><td>9</td><td>50</td><td>50</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>10</td><td>50</td><td>25</td><td>25</td><td>0</td><td>0</td></tr>
<tr><td>11</td><td>57.143</td><td>28.572</td><td>14.285</td><td>0</td><td>0</td></tr>
</table></td></tr>
<tr><td>Heating Value Adjustment</td><td>Sets whether the module (in case of differing base pressures between the GC and the meter run point) adjusts the GC’s heating value before storing the value in the meter run parameter.

The default is Disable. If you click Enable, the heating value stored in the meter run equals the GC heating value multiplied by the ratio of the meter run base pressure to the GC’s base pressure.</td></tr>
<tr><td>Alarm 1 Bypass
and
Alarm 2 Bypass</td><td>Allows (if selected) the module to update the meter run values even if the Alarm 1 or Alarm 2 field in the GC displays an alarm.</td></tr>
<tr><td>Heating Value Low Limit</td><td>Sets the minimum heating value the FB107 accepts for a meter run update. The FB107 considers as invalid any heating values the GC sends that are lower than this value and does not forward them to the meter run.</td></tr>
<tr><td>Heating Value High Limit</td><td>Sets the maximum heating value the FB107 accepts for a meter run update. The FB107 considers as invalid any heating values the GC sends that are greater than this value and does not forward them to the meter run.</td></tr>
<tr><td>Total Mole Deviation</td><td>Sets, as a percentage, either the difference plus or minus from 100% that the module allows for Total Unnormalized Mole % or the sum of the component mole percentages. Valid values are 0-100%.

The module subtracts or adds this value to 100% to determine the range. The FB107 considers as invalid any stream gas compositions that exceed this value and does not forward them to the meter run.</td></tr>
<tr><td>Specific Gravity Low Limit</td><td>Sets the minimum specific gravity value the FB107 accepts for a meter run update. The FB107 considers as invalid any specific gravity values the GC sends that are lower than this value and does not forward them to the meter run.</td></tr>
</table>

Field	Description
Specific Gravity High Limit	Sets the maximum specific gravity value the FB107 accepts for a meter run update. The FB107 considers as invalid any specific gravity values the GC sends that are greater than this value and does not forward them to the meter run.

5. Click **Apply** to save any changes you have made to this screen.
6. Click **Close** to return to the ROCLINK 800 screen. Proceed to *Section 3.2* to define GC stream data.

3.2 GC Stream Data Screen

Use this screen to review stream data the FB107 receives from the GC(s). The module provides one iteration of this screen for each active stream in each GC. You can move between stream data displays using either the Point Number drop-down box on this screen or from the list on the Directory Tree.

Note: With the exceptions of the Alarm Logging Mode, HV Limits, Specific Gravity Limits, and Event Logging fields, the fields on this screen are read-only.

To access this screen:

1. From the Directory Tree, double-click **Application Module**.
2. Double-click **GC Application Module**.
3. Double-click **Display #62, GC Stream Data**.
4. Double-click **#1, Cur Stream**. The GC Stream Data screen displays:

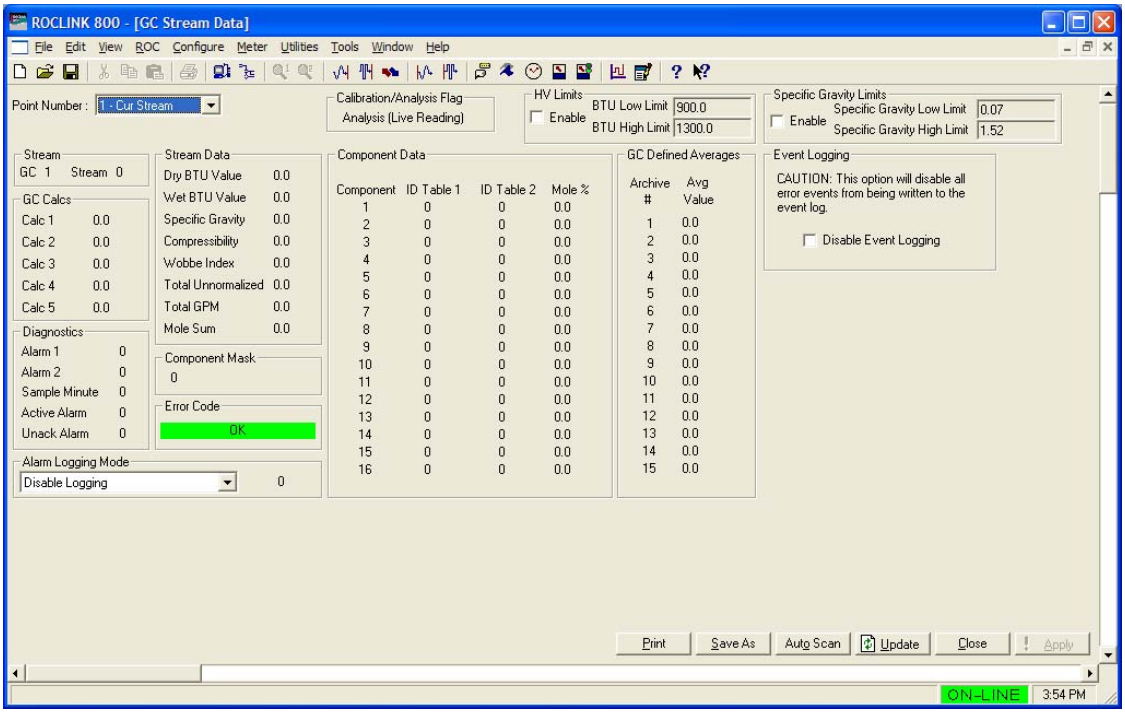

Figure 5. GC Stream Data

5. Review—and change as necessary—the values in the following fields:

Field	Description
Point Number	Identifies the stream number for this screen. Click ▼ to display all defined streams.
Calibration/Analysis Flag	This **read-only** field indicates the chromatograph's status (self-calibration or analysis).
HV Limits	Select the **Enable** checkbox to define Heating Value (HV) limits for the selected run. **Note**: If you enable the HV Limits, these BTU Low/High values override the Heating Value High/Low Limits defined on the GC Configuration screen.
BTU Low Limit	Sets, for the selected run, the minimum heating value that the FB107 accepts for a meter run update. This field is available **only** if you enable the HV limits. The FB107 considers as invalid any heating values the GC sends that are greater than this value and does not forward them to the meter run. **Note:** Values entered in this field override the Heating Value Low Limit set on the GC Configuration screen **only for the selected run**.

Field	Description
BTU High Limit	Sets, for the selected run, the maximum heating value that the FB107 accepts for a meter run update. This field is available **only** if you enable the HV limits. The FB107 considers as invalid any heating values the GC sends that are greater than this value and does not forward them to the meter run. **Note:** Values entered in this field override the Heating Value High Limit set on the GC Configuration screen **only for the selected run**.
Specific Gravity Limits	Select the **Enable** checkbox to define Specific Gravity limits for the selected run. **Note**: If you enable the Specific Gravity Limits, these Low/High values override the Specific Gravity High/Low Limits defined on the GC Configuration screen.
Specific Gravity Low Limit	Sets, for the selected run, the minimum specific gravity value that the FB107 accepts for a meter run update. This field is available **only** if you enable the Specific Gravity limits. The FB107 considers as invalid any specific gravity values the GC sends that are greater than this value and does not forward them to the meter run. **Note:** Values entered in this field override the Specific Gravity Low Limit set on the GC Configuration screen **only for the selected run**.
Specific Gravity High Limit	Sets, for the selected run, the maximum specific gravity value that the FB107 accepts for a meter run update. This field is available **only** if you enable the Specific Gravity limits. The FB107 considers as invalid any specific gravity values the GC sends that are greater than this value and does not forward them to the meter run. **Note:** Values entered in this field override the Specific Gravity High Limit set on the GC Configuration screen **only for the selected run**.
Stream	This **read-only** field shows the selected stream for the GC.
GC Calcs	These **read-only** fields show data the GC returns but the module **does not** use. For more information, refer to the GC manufacturer's user manual.

Field	Description
Diagnostics	These **read-only** fields show any diagnostic codes for the selected stream. **Note**: Active alarms and unacknowledged alarms display for information purposes only.
Stream Data	This **read-only** field shows values for the selected stream.
Component Mask	This **read-only** field shows which of the two Component ID tables each stream uses. Bit 0 of the Component Mask represents stream 1, bit 1 represents stream 2, and so on. If the bit is set, the module uses Component ID table 1. If the bit is not set, the module uses Component ID table 2. **Note**: This value reflects settings from the GC.
Error Code	This **read-only** field provides a color-coded error display. Red indicates an alarm condition.
Alarm Logging Mode	Sets how the module logs alarms with Spontaneous Report by Exception (SRBX) notification. Click ▼ to select a mode (described below). **Note**: The system generates one alarm, regardless of the number of different errors that may occur in the time before the alarm clears. SRBX notification occurs based on the Alarm Logging Mode. For the system to generate an alarm (such as for a Poll Sequence Failure error), you must first enable the Alarm Logging Mode parameter on the current logical stream.
	Disable Logging — No logging occurs.
	Enable Logging, No SRBX — Logging occurs, but without generating SRBX notifications.
	Enable Logging, SBRX in Set — Logging occurs, and SRBX notifications occur on alarm set.
	Enable Logging, SRBX on Clear — Logging occurs, and SRBX notifications occur on alarm clear.
	Enable Logging, SRBX on Both — Logging occurs, and SRBX notifications occur on both alarm set and alarm clear.
Component Data	This **read-only** field shows component values for the selected stream.

Field	Description
GC Defined Averages	This **read-only** field shows data the GC returns but the module **does not** use. For more information, refer to the GC manufacturer's user manual.
Event Logging	Select **Disable** to disable error events from being written to the FB107's event log. **Note:** This option disables logging for **all** error events except parameter change events. For example, an event is not logged if the GC reports an out-of-range specific gravity value and event logging is disabled.

6. Click **Apply** to save your changes.
7. Click **Close** to return to the ROCLINK 800 screen. Proceed to *Section 3.3* to review Modbus parameters for the configuration.

3.3 GC Modbus Configuration Screen

Use this screen to verify the Modbus settings for the GC, to set polling characteristics, and to disable alarm register requests.

Note: If you selected the Autoconfigure option on the GC Configuration screen, you only need to review these Modbus settings.

To access this screen:

1. From the Directory Tree, double-click **Application Module**.
2. Double-click **GC Application Module**.
3. Double-click **Display #63, GC Modbus Configuration**.
4. Double-click **#1, Modbus CFG**. The GC Modbus Configuration screen displays.

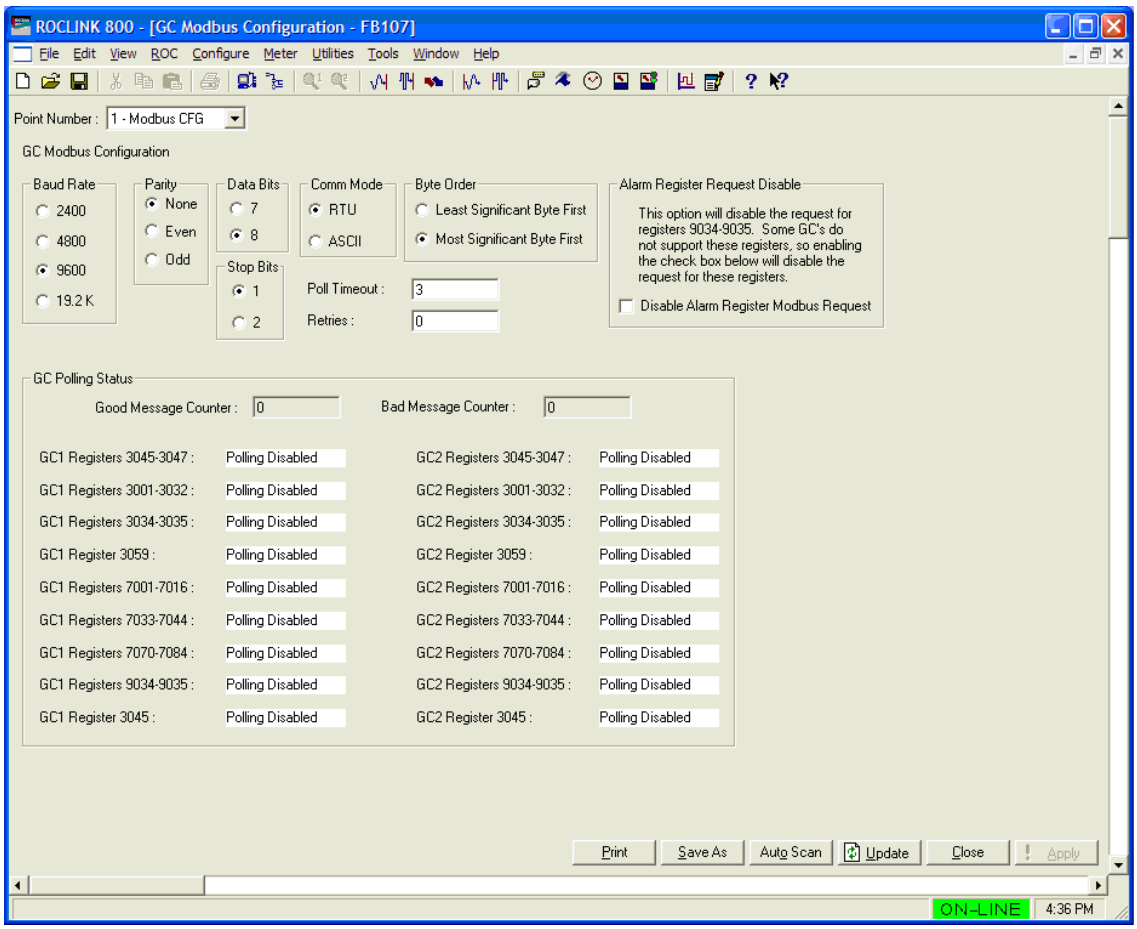

Figure 6. GC Modbus Configuration

5. Review—and change as necessary—the values in the following fields:

Field	Description	
Point Number	Identifies the comm port. 1**- Modbus CFG** is the only supported value for the module.	
GC Modbus Configuration	Set parameters for Modbus communications between the GC and the module. **Note**: Select **Autoconfigure** (on the GC Configuration screen) to enable the module to automatically complete these values.	
	Baud Rate	Sets the baud rate for communications. **9600** is the default.
	Parity	Set the parity for communications. **None** is the default.
	Data Bits	Sets the number of data bits for communications. **8** is the default.
	Stop Bits	Sets the number of stop bits for communications. **1** is the default.
	Comm Mode	Sets the communications mode. **RTU** is the default.
	Byte Order	Sets the order of bytes in a communications string. **Most Significant Byte First** (MSB) is the default.
Poll Timeout	Sets, in seconds, how long the polling device waits before timing out the request.	
Retries	Sets the number of retries the polling device makes before cancelling the polling request.	
Alarm Register Request Disable	Disables polling requests to Modbus registers 9034 and 9035. **Note**: This option is required only if your GC does not support these registers.	
GC Polling Status	These **read-only** fields provide color-coded information (red = bad, green = good, white = disabled, yellow = retry) on the good and bad message counts and the polling status of the Modbus registers assigned to each GC.	

6. Click **Apply** to save your changes.

7. Click **Close** to return to the ROCLINK 800 screen. Proceed to *Section 3.4* to review meter parameters.

3.4 Meter Setup Screen

Use this screen to view the gas mole percentages, heating value, and specific gravity value received from the GC. To access this screen:

1. Select **Meter** > **Setup** from the ROCLINK 800 menu bar.
2. Select the **Fluid Properties** tab. The Fluid Properties tab displays.

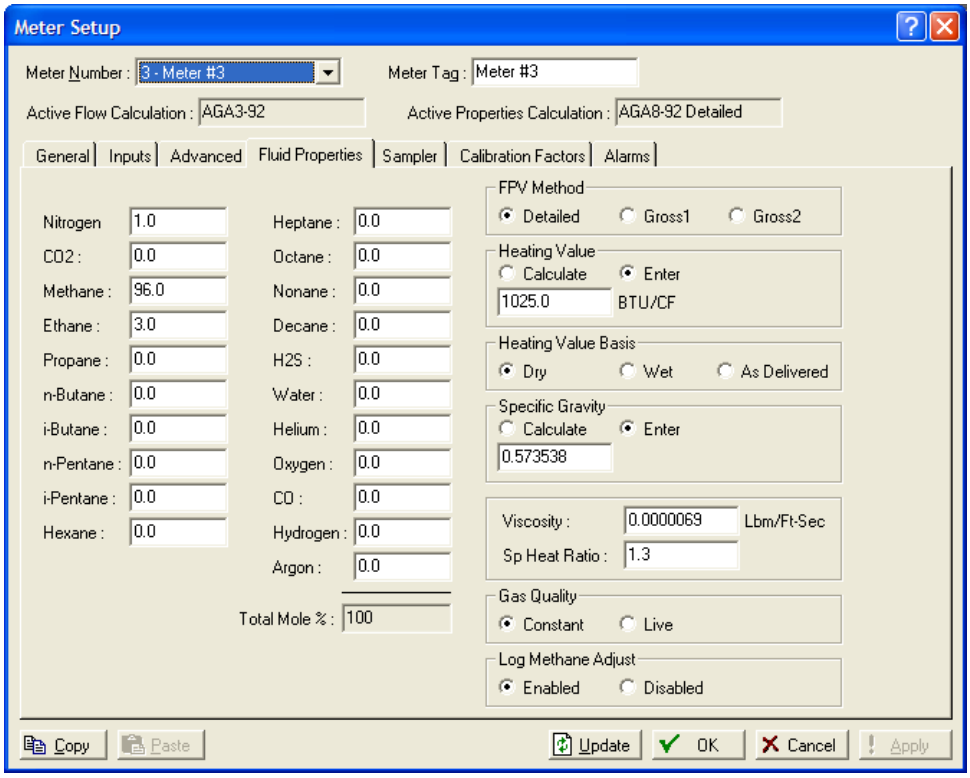

Figure 7. Meter Setup, Fluid Properties tab

3. Review—and change as necessary—the values in the following fields:

Note: These are the only fields you need to review for the GC application.

Field	Description
Meter Number	Select the meter number to which the GC stream has been assigned.
Component Mole %	Indicates the mole percentage of each gas component. The module retrieves these values from the GC.
Heating Value	Indicates the heating value of a specified quantity of gas. The module sets this option to **Enter** and retrieves this value from the GC.

Field	Description
Heating Value Basis	Determines the heating value (dry or saturated) the module copies to the meter run. If you select **Wet**, the module copies the saturated heating value to the meter run. If you select **As Delivered** or **Dry**, the module resets the value to **Dry** and copies the dry heating value to the meter run.
Specific Gravity	Indicates the specific gravity ratio of the molar mass gas to the molar mass of air. The module sets this option to **Enter** and retrieves this value from the GC.
Gas Quality	Indicates the source of the gas quality. The module sets this field to **Live** when it copies data to the meter run.

4. Click **Apply** to save your changes. Proceed to *Section 3.5* to save the configuration.

3.5 Saving the Configuration

Whenever you modify or change the configuration, it is a good practice to save the final configuration to memory. To save the configuration:

1. Select **ROC** > **Flags**. The Flags screen displays:

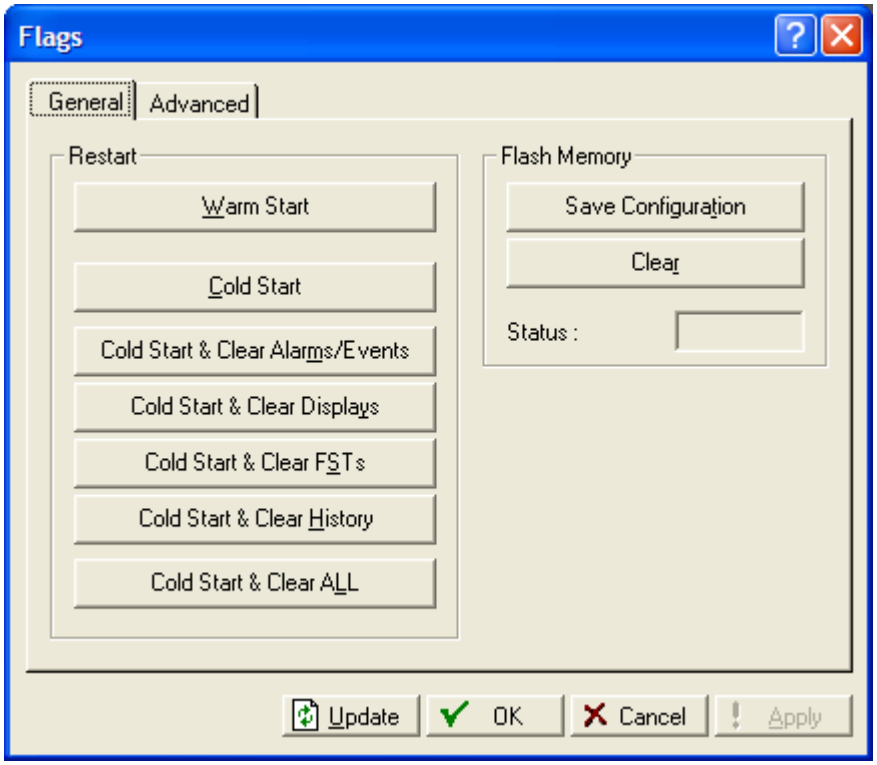

Figure 8. Flags screen

2. Click **Save Configuration**. A verification message displays:

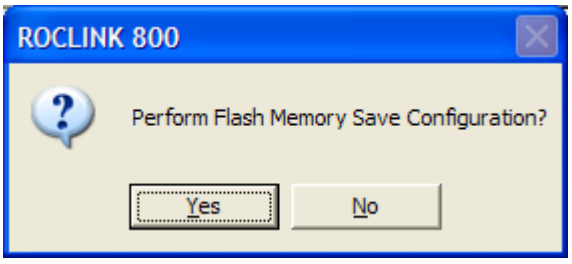

Figure 9. Perform screen

3. Click **Yes** to begin the save process. The Flash Write Status field on the Flags screen displays *In Progress*. The following message displays:

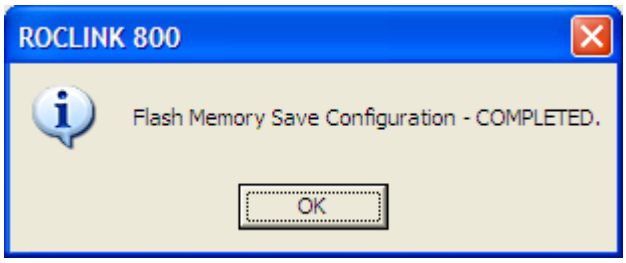

Figure 10. Save Confirmation

4. Click **OK**. The Flash Write Status field on the Flags screen displays *Completed*.
5. Click **Update** on the Flags screen. This completes the process of saving your new configuration.

Note: For archive purposes, you should also save this configuration to your PC's hard drive or a removable media (such as a diskette or a flash drive) using the **File > Save Configuration** option on the ROCLINK 800 menu bar.

Chapter – 4 Reference Materials

This section provides tables of information on the point types the GC Application module uses.

- Point Type 60 (GC Application Configuration)
- Point Type 61 (GC Stream Data)
- Point Type 62 (GC Modbus Configuration)

4.1 Point Type 60: GC Application Configuration

Point type 60 contains the parameters for configuring the GC application module and houses the status information from the gas chromatograph. The module maintains two logical points of this point type.

Point Type 60: GC Application Configuration

Parm #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
0	Point Tag ID	R/W	User	AC	10	0x20 → 0x7E for each ASCII character	"GC Config"	1.00	Point Type Description
1	Not Used								
2	Not Used								
3	Autoconfiguration	R/W	Both	UINT8	1	0 → 1	1	1.00	Auto-configuration 0 = Disabled 1 = Enabled
4	Not Used								
5	GC Address	R/W	User	UINT8	1	0→255	0	1.00	GC Address (Modbus address of GC)
6	Not Used								
7	Polling Interval	R/W	User	FL	4	Any Positive Floating Point Number	60	1.00	Interval, in seconds, at which this module polls the GC for new data
8	Next Poll Request	R/O	System	FL	4	Any Positive Floating Point Number	0	1.00	Amount of time (In Seconds) until the next time the GC will be polled for new data
9	Heating Value Low Limit	R/W	User	FL	4	Any Floating Point Number	900.0	1.00	Heating Value Low Limit. If the Heating Value returned from the GC is less than this value, an alarm will be set.
10	Heating Value High Limit	R/W	User	FL	4	Any Floating Point Number	1300.0	1.00	Heating Value High Limit. If the Heating Value returned from the GC is greater than this value, an alarm will be set.
11	Bypass Alarm 1	R/W	User	UINT8	1	0→1	0	1.00	Bypass Alarm 1 from GC 0 = Alarm Allowed 1 = Alarm Bypassed

Point Type 60: GC Application Configuration

Parm #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
12	Bypass Alarm 2	R/W	User	UINT8	1	0→1	0	1.00	Bypass Alarm 2 from GC 0 = Alarm Allowed 1 = Alarm Bypassed
13	Max Streams	R/W	User	UINT8	1	0→255	6	1.00	Maximum number of streams available from GC
14	Total Mole % Deviation	R/W	User	FL	4	0→5.0	2	1.00	Total Mole % Deviation
15	Hexane Split Enable	R/W	User	UINT8	1	0→1	1	1.00	Enable the Hexane Split functionality of the GC module
16	Communication Timeout	R/W	User	FL	4	0→60.0	45.0	1.00	Amount of time to wait for a response from a GC (In Seconds)
17	Meter Run 1 Stream	R/W	User	UINT8	1	0→8	0	1.00	Meter Run 1 Stream 0 = Disable Meter Run Updating 1-8 = Stream number to use to update meter run's gas composition
18	Meter Run 2 Stream	R/W	User	UINT8	1	0→8	0	1.00	Meter Run 2 Stream 0 = Disable Meter Run Updating 1-8 = Stream number to use to update meter run's gas composition
19	Meter Run 3 Stream	R/W	User	UINT8	1	0→8	0	1.00	Meter Run 3 Stream 0 = Disable Meter Run Updating 1-8 = Stream number to use to update meter run's gas composition
20	Meter Run 4 Stream	R/W	User	UINT8	1	0→8	0	1.00	Meter Run 4 Stream 0 = Disable Meter Run Updating 1-8 = Stream number to use to update meter run's gas composition
21	Not Used								
22	Not Used								
23	Not Used								
24	Not Used								
25	Not Used								

Point Type 60: GC Application Configuration

Parm #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
26	Not Used								
27	Not Used								
28	Not Used								
29	Methane Component ID	R/W	User	UINT8	1	0→255	0	1.00	Methane Component ID. This is the Component ID number that is associated with Methane in the GC.
30	Ethane Component ID	R/W	User	UINT8	1	0→255	1	1.00	Ethane Component ID. This is the Component ID number that is associated with Ethane in the GC.
31	Propane Component ID	R/W	User	UINT8	1	0→255	2	1.00	Propane Component ID. This is the Component ID number that is associated with Propane in the GC.
32	i-Butane Component ID	R/W	User	UINT8	1	0→255	3	1.00	i-Butane Component ID. This is the Component ID number that is associated with i-Butane in the GC.
33	n-Butane Component ID	R/W	User	UINT8	1	0→255	4	1.00	n-Butane Component ID. This is the Component ID number that is associated with n-Butane in the GC.
34	Neo-Pentane Component ID	R/W	User	UINT8	1	0→255	7	1.00	Neo-Pentane Component ID. This is the Component ID number that is associated with Neo-Pentane in the GC.
35	i-Pentane Component ID	R/W	User	UINT8	1	0→255	5	1.00	i-Pentane Component ID. This is the Component ID number that is associated with i-Pentane in the GC.
36	n-Pentane Component ID	R/W	User	UINT8	1	0→255	6	1.00	n-Pentane Component ID. This is the Component ID number that is associated with n-Pentane in the GC.

Point Type 60: GC Application Configuration

Parm #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
37	Hexane Component	R/W	User	UINT8	1	0→255	255	1.00	Hexane Component ID. This is the Component ID number that is associated with Hexane in the GC.
38	Hexane (+) Component ID	R/W	User	UINT8	1	0→255	8	1.00	Hexane (+) Component ID. This is the Component ID number that is associated with Hexane (+) in the GC.
39	Nitrogen Component ID	R/W	User	UINT8	1	0→255	14	1.00	Nitrogen Component ID. This is the Component ID number that is associated with Nitrogen in the GC.
40	Carbon Dioxide Component ID	R/W	User	UINT8	1	0→255	17	1.00	Carbon Dioxide Component ID. This is the Component ID number that is associated with Carbon Dioxide in the GC.
41	H2S Component ID	R/W	User	UINT8	1	0→255	255	1.00	H2S Component ID. This is the Component ID number that is associated with H2S in the GC.
42	Water Component ID	R/W	User	UINT8	1	0→255	255	1.00	Water Component ID. This is the Component ID number that is associated with Water in the GC.
43	Helium Component ID	R/W	User	UINT8	1	0→255	255	1.00	Helium Component ID. This is the Component ID number that is associated with Helium in the GC.
44	Oxygen Component ID	R/W	User	UINT8	1	0→255	255	1.00	Oxygen Component ID. This is the Component ID number that is associated with Oxygen in the GC.
45	Carbon Monoxide Component ID	R/W	User	UINT8	1	0→255	255	1.00	Carbon Monoxide Component ID. This is the Component ID number that is associated with Carbon Monoxide in the GC.
46	Hydrogen Component ID	R/W	User	UINT8	1	0→255	255	1.00	Hydrogen Component ID. This is the Component ID number that is associated with Hydrogen in the GC.

Point Type 60: GC Application Configuration

Parm #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
47	Heptane Component ID	R/W	User	UINT8	1	0→255	255	1.00	Heptane Component ID. This is the Component ID number that is associated with Heptane in the GC.
48	Octane Component ID	R/W	User	UINT8	1	0→255	255	1.00	Octane Component ID. This is the Component ID number that is associated with Octane in the GC.
49	Nonane Component ID	R/W	User	UINT8	1	0→255	255	1.00	Nonane Component ID. This is the Component ID number that is associated with Nonane in the GC.
50	Decane Component ID	R/W	User	UINT8	1	0→255	255	1.00	Decane Component ID. his is the Component ID number that is associated with Decane in the GC.
51	Argon Component ID	R/W	User	UINT8	1	0→255	255	1.00	Argon Component ID. This is the Component ID number that is associated with Argon in the GC.
52	Heating Value Adjust Option	R/W	User	UINT8	1	0→1	0	1.00	Heating Value Adjust Option 0 = Disabled 1 = Enabled
53	GC Base Pressure	R/W	User	FL	4	0→Valid Positive Floating Point Number	14.73	1.00	Base Pressure Configured in GC
54	Poll Mode	R/W	User	UINT8	1	0→1	0	1.00	GC Polling Mode 0 = Disabled 1 = Enabled
55	Hexane Percentage	R/W	Both	FL	4	0→Valid Positive Floating Point Number	47.466	1.00	Hexane Split C6 (Hexane) Component Percentage. This is the percentage of the Hexane (+) value returned from the GC that will be attributed to Hexane.

Point Type 60: GC Application Configuration

Parm #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
56	Heptane Percentage	R/W	Both	FL	4	0→Valid Positive Floating Point Number	35.34	1.00	Hexane Split C7 (Heptane) Component Percentage. This is the percentage of the Hexane (+) value returned from the GC that will be attributed to Heptane.
57	Octane Percentage	R/W	Both	FL	4	0→Valid Positive Floating Point Number	17.194	1.00	Hexane Split C8 (Octane) Component Percentage. This is the percentage of the Hexane (+) value returned from the GC that will be attributed to Octane.
58	Nonane Percentage	R/W	Both	FL	4	0→Valid Positive Floating Point Number	0	1.00	Hexane Split C9 (Nonane) Component Percentage. This is the percentage of the Hexane (+) value returned from the GC that will be attributed to Nonane.
59	Decane Percentage	R/W	Both	FL	4	0→Valid Positive Floating Point Number	0	1.00	Hexane Split C10 (Decane) Component Percentage. This is the percentage of the Hexane (+) value returned from the GC that will be attributed to Decane.
60	Spec. Grav Low Limit	R/W	User	FL	4	0→Valid Positive Floating Point Number	0.07	1.01	Specific Gravity Low Limit. If the specific gravity value returned from the GC is less than this value, an alarm will be set.
61	Spec. Grav High Limit	R/W	User	FL	4	0→Valid Positive Floating Point Number	1.52	1.01	Specific Gravity High Limit. If the specific gravity value returned from the GC is more than this value, an alarm will be set.

4.2 Point Type 61: GC Stream Data

Point type 61 contains the parameters for configuring the GC Application module and houses the status information from the gas chromatograph. The module maintains 11 logical points of this point type. Logical 0 is the current steam, and logical 1 through 10 are mapped to streams on the gas chromatographs, as assigned by the maximum streams per GC (point type 65, parameter 13).

Point Type 61: GC Stream Data

Parm #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
0	Point Tag Id.	R/W	User	AC	10	0x20 → 0x7E for each ASCII character	"Cur Stream" or "Stream #"	1.00	Point Type Description
1	Not Used								
2	Stream Number	R/O	System	UINT16	2	1→8	1-8 depending on logical	1.00	Stream Number
3	Component Table Mask	R/W	System	UINT16	2	0→0xFFFF	0	1.00	Component Table Mask. Each bit corresponds to a stream. A bit value of 1 means that the GC will return data from Table 1 will be used. A bit value of 0 means that the GC will return data from Table 2.
4	Dry Heating Value	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	Dry Heating Value
5	Saturated Heating Value	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	Saturated (Wet) Heating Value
6	Specific Gravity	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	Specific Gravity
7	Compressiblitiy	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	Compressibility
8	Wobbe Index	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	Wobbe Index

Point Type 61: GC Stream Data

Parm #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
9	Total Un-Normalized Mole %	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	Total Un-Normalized Mole %
10	Total GPM	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	Total GPM
11	User Defined Calc 1	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	User Defined Calc 1
12	User Defined Calc 2	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	User Defined Calc 2
13	User Defined Calc 3	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	User Defined Calc 3
14	User Defined Calc 4	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	User Defined Calc 4
15	User Defined Calc 5	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	User Defined Calc 5
16	Sample Minute End	R/W	System	UINT16	2	0→0xFFFF	0xFFFF	1.00	The minute value read from the GC at the end of the module's polling sequence.
17	Sample Minute Start	R/W	System	UINT16	2	0→60	0	1.00	The minute value read from the GC at the start of the module's polling sequence.
18	Alarm 1	R/W	System	UINT16	2	0→ 255	0	1.00	GC Alarm 1
19	Alarm 2	R/W	System	UINT16	2	0→ 255	0	1.00	GC Alarm 2
20	Calibration Flag	R/W	System	UINT16	2	0→ 255	1	1.00	Calibration Flag 0 = Calculation data 1 = Analysis data
21	Mole Sum	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	Mole Sum

Point Type 61: GC Stream Data

Parm #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
22	Error Code	R/W	System	UINT8	1	0→8	0	1.00	Error Code 0 = All Checks Pass 1 = Poll Sequence Failed 2 = Alarm Check Failed 3 = Calibration Check Failed 4 = Sample Minute Changed 5 = Total Un-normalized Mole Percentage Failed 6 = Mole Sum Check Failed 7 = Heating Value Range Check Failed 8 = Specific Gravity Range Check Failed
23	Alarm Logging Mode	R/W	User	UINT8	1		0	1.00	Alarm Logging Mode 0 = Disable Logging 1 = Enable Logging, No SRBX 2 = Enable Logging, SRBX on Set only 3 = Enable Logging, SRBX on Clear only 4 = Enable Logging, SRBX, on both Set and Clear
24	Component Index #1 Table 1	R/W	System	UINT8	1	0→255	0	1.00	Component Index #1 Table 1
25	Component Index #2 Table 1	R/W	System	UINT8	1	0→255	0	1.00	Component Index #2 Table 1
26	Component Index #3 Table 1	R/W	System	UINT8	1	0→255	0	1.00	Component Index #3 Table 1
27	Component Index #4 Table 1	R/W	System	UINT8	1	0→255	0	1.00	Component Index #4 Table 1
28	Component Index #5 Table 1	R/W	System	UINT8	1	0→255	0	1.00	Component Index #5 Table 1
29	Component Index #6 Table 1	R/W	System	UINT8	1	0→255	0	1.00	Component Index #6 Table 1
30	Component Index #7 Table 1	R/W	System	UINT8	1	0→255	0	1.00	Component Index #7 Table 1
31	Component Index #8 Table 1	R/W	System	UINT8	1	0→255	0	1.00	Component Index #8 Table 1
32	Component Index #9 Table 1	R/W	System	UINT8	1	0→255	0	1.00	Component Index #9 Table 1
33	Component Index #10 Table 1	R/W	System	UINT8	1	0→255	0	1.00	Component Index #10 Table 1
34	Component Index #11 Table 1	R/W	System	UINT8	1	0→255	0	1.00	Component Index #11 Table 1
35	Component Index #12 Table 1	R/W	System	UINT8	1	0→255	0	1.00	Component Index #12 Table 1
36	Component Index #13 Table 1	R/W	System	UINT8	1	0→255	0	1.00	Component Index #13 Table 1
37	Component Index #14 Table 1	R/W	System	UINT8	1	0→255	0	1.00	Component Index #14 Table 1

Point Type 61: GC Stream Data

Parm #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
38	Component Index #15 Table 1	R/W	System	UINT8	1	0→255	0	1.00	Component Index #15 Table 1
39	Component Index #16 Table 1	R/W	System	UINT8	1	0→255	0	1.00	Component Index #16 Table 1
40	Component Index #1 Table 2	R/W	System	UINT8	1	0→255	0	1.00	Component Index #1 Table 2
41	Component Index #2 Table 2	R/W	System	UINT8	1	0→255	0	1.00	Component Index #2 Table 2
42	Component Index #3 Table 2	R/W	System	UINT8	1	0→255	0	1.00	Component Index #3 Table 2
43	Component Index #4 Table 2	R/W	System	UINT8	1	0→255	0	1.00	Component Index #4 Table 2
44	Component Index #5 Table 2	R/W	System	UINT8	1	0→255	0	1.00	Component Index #5 Table 2
45	Component Index #6 Table 2	R/W	System	UINT8	1	0→255	0	1.00	Component Index #6 Table 2
46	Component Index #7 Table 2	R/W	System	UINT8	1	0→255	0	1.00	Component Index #7 Table 2
47	Component Index #8 Table 2	R/W	System	UINT8	1	0→255	0	1.00	Component Index #8 Table 2
48	Component Index #9 Table 2	R/W	System	UINT8	1	0→255	0	1.00	Component Index #9 Table 2
49	Component Index #10 Table 2	R/W	System	UINT8	1	0→255	0	1.00	Component Index #10 Table 2
50	Component Index #11 Table 2	R/W	System	UINT8	1	0→255	0	1.00	Component Index #11 Table 2
51	Component Index #12 Table 2	R/W	System	UINT8	1	0→255	0	1.00	Component Index #12 Table 2
52	Component Index #13 Table 2	R/W	System	UINT8	1	0→255	0	1.00	Component Index #13 Table 2
53	Component Index #14 Table 2	R/W	System	UINT8	1	0→255	0	1.00	Component Index #14 Table 2
54	Component Index #15 Table 2	R/W	System	UINT8	1	0→255	0	1.00	Component Index #15 Table 2
55	Component Index #16 Table 2	R/W	System	UINT8	1	0→255	0	1.00	Component Index #16 Table 2
56	Mole % Component #1	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	Mole % Component 1
57	Mole % Component #2	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	Mole % Component 2
58	Mole % Component #3	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	Mole % Component 3
59	Mole % Component #4	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	Mole % Component 4
60	Mole % Component #5	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	Mole % Component 5

Point Type 61: GC Stream Data

Parm #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
61	Mole % Component #6	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	Mole % Component 6
62	Mole % Component #7	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	Mole % Component 7
63	Mole % Component #8	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	Mole % Component 8
64	Mole % Component #9	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	Mole % Component 9
65	Mole % Component #10	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	Mole % Component 10
66	Mole % Component #11	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	Mole % Component 11
67	Mole % Component #12	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	Mole % Component 12
68	Mole % Component #13	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	Mole % Component 13
69	Mole % Component #14	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	Mole % Component 14
70	Mole % Component #15	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	Mole % Component 15
71	Mole % Component #16	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	Mole % Component 16
72	User Defined Avg	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	User Defined Average 1

Point Type 61: GC Stream Data

Parm #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
73	User Defined Avg	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	User Defined Average 2
74	User Defined Avg	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	User Defined Average 3
75	User Defined Avg	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	User Defined Average 4
76	User Defined Avg	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	User Defined Average 5
77	User Defined Avg	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	User Defined Average 6
78	User Defined Avg	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	User Defined Average 7
79	User Defined Avg	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	User Defined Average 8
80	User Defined Avg	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	User Defined Average 9
81	User Defined Avg	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	User Defined Average 10
82	User Defined Avg	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	User Defined Average 11
83	User Defined Avg	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	User Defined Average 12
84	User Defined Avg	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	User Defined Average 13

Point Type 61: GC Stream Data

Parm #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
85	User Defined Avg	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	User Defined Average 14
86	User Defined Avg	R/W	System	FL	4	0→Valid Positive Floating Point Number	0	1.00	User Defined Average 15
87	Active Alarm Status	R/W	System	UINT8	1	0→1	0	1.00	Active Alarm Status (Red light on GC Controller) 0 = Disabled 1 = Enabled
88	Unacknowledged Alarm Status	R/W	System	UINT8	1	0→1	0	1.00	Unacknowledged Alarm Status (Yellow Light on GC Controller) 0 = Disabled 1 = Enabled
89	GC Number	R/W	System	UINT8	1	1→2	1	1.00	GC Number. The data in this stream was received from this GC.
90	Stream Heating Value	R/W	System	UINT8	1	0→1	0	1.00	Stream Heating Value Limits 0 = Disabled 1 = Enabled
91	Heating Value Low Limit	R/W	System	FL	4	0→Valid Positive Floating Point Number	900	1.00	Stream Heating Value Low Limit. If the Stream Heating Value Limits parameter is enabled and the Heating Value in this stream is less than this value, then an alarm will be set.
92	Heating Value High Limit	R/W	System	FL	4	0→Valid Positive Floating Point Number	1300	1.00	Stream Heating Value High Limit. If the Stream Heating Value Limits parameter is enabled and the Heating Value in this stream is greater than this value, then an alarm will be set.
93	Spec Grav Limit	R/W	User	UINT8	1	0→1	0	1.01	Specific Gravity Limit 0 = Disabled 1 = Enabled

Point Type 61: GC Stream Data

Parm #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
94	Spec Grav Low Limit	R/W	User	FL	4	0→Valid Positive Floating Point Number	0.07	1.01	Specific Gravity Low Limit. If the specific gravity value returned from the GC is less than this value, an alarm will be set.
95	Spec Grav Hi Limit	R/W	User	FL	4	0→Valid Positive Floating Point Number	1.52	1.01	Specific Gravity High Limit. If the specific gravity value returned from the GC is more than this value, an alarm will be set.
96	Event Disable	R/W	User	UINT8	1	0→1	0	1.01	Error Event Disable 0 = Error Event Logging Enabled 1 = Error Event Logging Disabled

4.2 Point Type 62: GC Modbus Configuration

Point type 62 contains the parameters for configuring GC Modbus communications parameters. The module maintains 1 logical point for this point type.

Point Type 62: GC Modbus Configuration

Parm #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
0	Tag	R/W	User	AC	10	10 characters	"Modbus CFG"	1.00	Point Type Description
1	Baud Rate	R/W	User	UINT8	1	0 → 3	2	1.00	Baud Rate 0 = 2400 Baud 1 = 4800 Baud 2 = 9600 Baud 3 = 19200 Baud
2	Stop Bits	R/W	User	UINT8	1	1 → 2	1	1.00	Stop Bits 1 = 1 Stop Bit 2 = 2 Stop Bits
3	Data Bits	R/W	User	UINT8	1	7 → 8	8	1.00	Data Bits 7 = 7 Data Bits 8 = 8 Data Bits
4	Parity	R/W	User	UINT8	1	0 → 2	0	1.00	Parity 0 = No Parity 1 = Odd Parity 2 = Even Parity
5	Communications Mode	R/W	User	UINT8	1	0 → 1	0	1.00	Communication Mode 0 = RTU Mode 1 = ASCII Mode
6	Byte Order	R/W	User	UINT8	1	0 → 1	1	1.00	Byte Order 0 = Least Significant Byte First 1 = Most Significant Byte First
7	Poll Timeout	R/W	User	UINT8	1	0 → 255	3	1.00	Poll Timeout
8	Number of Retries	R/W	User	UINT8	1	0 → 255	0	1.00	Number of Retries
9	Good Message Counter	R/O	System	UINT32	4	0 → 4294967295		1.00	Good Message Counter
10	Bad Message Counter	R/O	System	UINT32	4	0 → 4294967295		1.00	Bad Message Counter

Point Type 62: GC Modbus Configuration

Parm #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
11	GC 1 Poll 1 Status	R/O	System	UINT8	1	0 → 9	0	1.00	GC 1 Poll 1 Status 0 = Polling Disabled 1 = Response Received 2 = Retrying 3 = Response Timeout 4 = Invalid CRC 5 = Invalid LRC 6 = Data Write Error 7 = Function Code Error 8 = Invalid Function Code 9 = Data Format Error
12	GC 1 Poll 2 Status	R/O	System	UINT8	1	0 → 9	0	1.00	GC 1 Poll 2 Status 0 = Polling Disabled 1 = Response Received 2 = Retrying 3 = Response Timeout 4 = Invalid CRC 5 = Invalid LRC 6 = Data Write Error 7 = Function Code Error 8 = Invalid Function Code 9 = Data Format Error
13	GC 1 Poll 3 Status	R/O	System	UINT8	1	0 → 9	0	1.00	GC 1 Poll 3 Status 0 = Polling Disabled 1 = Response Received 2 = Retrying 3 = Response Timeout 4 = Invalid CRC 5 = Invalid LRC 6 = Data Write Error 7 = Function Code Error 8 = Invalid Function Code 9 = Data Format Error

Point Type 62: GC Modbus Configuration

Parm #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
14	GC 1 Poll 4 Status	R/O	System	UINT8	1	0 → 9	0	1.00	GC 1 Poll 4 Status 0 = Polling Disabled 1 = Response Received 2 = Retrying 3 = Response Timeout 4 = Invalid CRC 5 = Invalid LRC 6 = Data Write Error 7 = Function Code Error 8 = Invalid Function Code 9 = Data Format Error
15	GC 1 Poll 5 Status	R/O	System	UINT8	1	0 → 9	0	1.00	GC 1 Poll 5 Status 0 = Polling Disabled 1 = Response Received 2 = Retrying 3 = Response Timeout 4 = Invalid CRC 5 = Invalid LRC 6 = Data Write Error 7 = Function Code Error 8 = Invalid Function Code 9 = Data Format Error
16	GC 1 Poll 6 Status	R/O	System	UINT8	1	0 → 9	0	1.00	GC 1 Poll 6 Status 0 = Polling Disabled 1 = Response Received 2 = Retrying 3 = Response Timeout 4 = Invalid CRC 5 = Invalid LRC 6 = Data Write Error 7 = Function Code Error 8 = Invalid Function Code 9 = Data Format Error

Point Type 62: GC Modbus Configuration

Parm #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
17	GC 1 Poll 7 Status	R/O	System	UINT8	1	0 → 9	0	1.00	GC 1 Poll 7 Status 0 = Polling Disabled 1 = Response Received 2 = Retrying 3 = Response Timeout 4 = Invalid CRC 5 = Invalid LRC 6 = Data Write Error 7 = Function Code Error 8 = Invalid Function Code 9 = Data Format Error
18	GC 1 Poll 8 Status	R/O	System	UINT8	1	0 → 9	0	1.00	GC 1 Poll 8 Status 0 = Polling Disabled 1 = Response Received 2 = Retrying 3 = Response Timeout 4 = Invalid CRC 5 = Invalid LRC 6 = Data Write Error 7 = Function Code Error 8 = Invalid Function Code 9 = Data Format Error
19	GC 1 Poll 9 Status	R/O	System	UINT8	1	0 → 9	0	1.00	GC 1 Poll 9 Status 0 = Polling Disabled 1 = Response Received 2 = Retrying 3 = Response Timeout 4 = Invalid CRC 5 = Invalid LRC 6 = Data Write Error 7 = Function Code Error 8 = Invalid Function Code 9 = Data Format Error

Point Type 62: GC Modbus Configuration

Parm #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
20	GC 2 Poll 1 Status	R/O	System	UINT8	1	0 → 9	0	1.00	GC 2 Poll 1 Status 0 = Polling Disabled 1 = Response Received 2 = Retrying 3 = Response Timeout 4 = Invalid CRC 5 = Invalid LRC 6 = Data Write Error 7 = Function Code Error 8 = Invalid Function Code 9 = Data Format Error
21	GC 2 Poll 2 Status	R/O	System	UINT8	1	0 → 9	0	1.00	GC 2 Poll 2 Status 0 = Polling Disabled 1 = Response Received 2 = Retrying 3 = Response Timeout 4 = Invalid CRC 5 = Invalid LRC 6 = Data Write Error 7 = Function Code Error 8 = Invalid Function Code 9 = Data Format Error
22	GC 2 Poll 3 Status	R/O	System	UINT8	1	0 → 9	0	1.00	GC 2 Poll 3 Status 0 = Polling Disabled 1 = Response Received 2 = Retrying 3 = Response Timeout 4 = Invalid CRC 5 = Invalid LRC 6 = Data Write Error 7 = Function Code Error 8 = Invalid Function Code 9 = Data Format Error

Point Type 62: GC Modbus Configuration

Parm #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
23	GC 2 Poll 4 Status	R/O	System	UINT8	1	0 → 9	0	1.00	GC 2 Poll 4 Status 0 = Polling Disabled 1 = Response Received 2 = Retrying 3 = Response Timeout 4 = Invalid CRC 5 = Invalid LRC 6 = Data Write Error 7 = Function Code Error 8 = Invalid Function Code 9 = Data Format Error
24	GC 2 Poll 5 Status	R/O	System	UINT8	1	0 → 9	0	1.00	GC 2 Poll 5 Status 0 = Polling Disabled 1 = Response Received 2 = Retrying 3 = Response Timeout 4 = Invalid CRC 5 = Invalid LRC 6 = Data Write Error 7 = Function Code Error 8 = Invalid Function Code 9 = Data Format Error
25	GC 2 Poll 6 Status	R/O	System	UINT8	1	0 → 9	0	1.00	GC 2 Poll 6 Status 0 = Polling Disabled 1 = Response Received 2 = Retrying 3 = Response Timeout 4 = Invalid CRC 5 = Invalid LRC 6 = Data Write Error 7 = Function Code Error 8 = Invalid Function Code 9 = Data Format Error

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Parm #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
26	GC 2 Poll 7 Status	R/O	System	UINT8	1	0 → 9	0	1.00	GC 2 Poll 7 Status 0 = Polling Disabled 1 = Response Received 2 = Retrying 3 = Response Timeout 4 = Invalid CRC 5 = Invalid LRC 6 = Data Write Error 7 = Function Code Error 8 = Invalid Function Code 9 = Data Format Error
27	GC 2 Poll 8 Status	R/O	System	UINT8	1	0 → 9	0	1.00	GC 2 Poll 8 Status 0 = Polling Disabled 1 = Response Received 2 = Retrying 3 = Response Timeout 4 = Invalid CRC 5 = Invalid LRC 6 = Data Write Error 7 = Function Code Error 8 = Invalid Function Code 9 = Data Format Error
28	GC 2 Poll 9 Status	R/O	System	UINT8	1	0 → 9	0	1.00	GC 2 Poll 9 Status 0 = Polling Disabled 1 = Response Received 2 = Retrying 3 = Response Timeout 4 = Invalid CRC 5 = Invalid LRC 6 = Data Write Error 7 = Function Code Error 8 = Invalid Function Code 9 = Data Format Error
29	Alarm Register Request Disable	R/W	User	UINT8	1	0 → 1	0	1.00	Alarm Register Request Disable

If you have comments or questions regarding this manual, please direct them to your local sales representative or contact:

Emerson Process Management
Remote Automation Solutions
Marshalltown, Iowa 50158 USA
Houston, TX 77065 USA
Pickering, North Yorkshire UK Y018 7JA
Website: www.EmersonProcess.com/Remote