Level Sensor Application Module (for FloBoss™ 107 Flow Managers) User Manual

Remote Automation Solutions

EMERSON™
Process Management

Revision Tracking Sheet

June 2009

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	Jun-09

Contents

[This page is intentionally left blank.]

Chapter 1 – Introduction

This chapter describes the structure of this manual and presents an overview of the Level Sensor (LS) Application Module for the FloBoss™ 107 ("FB107"). The LS Application Module provides all the functions necessary to communicate with a level sensor (such as an Advanced Telemetrics 1100LD digital tank gauge or any other level sensor using that protocol), including an onboard communications port that enables module-to-LS communications without using one of the communications ports on the FB107.

The standard APP 485 application module (which includes the LS 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 Level Sensor Application module, which is intended for use in a FloBoss 107 (FB107). This manual describes how to install and configure the Level Sensor Application module (referred to as the "LS 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 Level Sensor Application module enables the FB107 to communicate directly with up to ten level sensors (reporting on oil or

water or both) on the same EIA-485 (RS-485) communications port. (The module provides its own communication for this purpose.) The module serves as an interface between the sensors and the FB107, supporting the Advanced Telemetrics 1100LD or 1100C digital tank gauges or any other level sensor using that protocol. The module polls data from the level sensor, validates that data, and updates the appropriate production totals using that data.

At a scan interval you specify, the module polls each sensor, requesting current tank levels and fluid temperatures. As each sensor responds, the module compares the current tank level value against that sensor's last good level value response.

If the sensor reports a difference (representing a drop in level), the module multiplies that difference by a conversion factor ("strapping value") you define, reflects that change in the accumulated runs, and calculates and updates the closing stock value. For this module, the drop in level value represents a load. The module also determines production values, which represent increases in the level values, using the calculation:

(Closing stock value) + (Accumulated runs) – (Opening stock value)

At the contract hour (which you can either specifically define for the module or default to the contract hour defined on the FB107), the module:

- Copies the total production values for all tanks to yesterday's total production and initializes total production, and
- Copies the closing stock values to the opening stock values and initializes the accumulated runs and production.

1.2.1   Wave Smoothing

The module uses an algorithm to limit the detection of "waves," or false changes in fluid level. You use the Level Sensor Data screen (see *Section 3.2*) to configure the wave smoothing parameters, which include:

- Maximum wave limit (distance in inches above or below the last valid reading).
- Scan periods (the number of times the module reads the level to validate the wave height).
- Wave timeout (the number of scans to determine if level variations are due to liquid movement or "sloshing"). This parameter enables you to validate and count level changes that are smaller than the maximum wave limit.

To assist in the calculations, the module also tracks the following values and displays them on the Level Sensor Data screen:

- Current level (the actual measured level).
- Production accumulation (positive changes in level).
- Load accumulation (negative changes in level).

- Change (sensor level minus production or load level).

Once each scan period, the module reads the sensors and performs wave smoothing calculations. You can configure maximum wave limits (typically 1 inch) and specify the number of scan periods (typically one per second) until the module considers a wave a valid reading (where the wave timeout value = 5) for oil or water.

When the module first reads the sensor, the module stores that value as the production or load level. When the next sensor reading occurs, the module compares the stored production level value to the actual reading and, depending on the amount of change, performs one of three actions:

- **No change**
  If the difference between one reading and the next is **less than or equal to the maximum wave limit value**, the module retains the current value for the specified number of scan periods until wave timeout value expires. At that time the level becomes the production or load level and the module adjusts the accumulators accordingly.
- **Positive change**
  If the difference between one reading and the next is **positive and greater than the maximum wave limit value**, the module adds the change to the production accumulator and the new level becomes the production or load level. The module continues to add positive changes to the production accumulator until there are no more changes outside of the maximum wave limit and the wave timeout value expires. At that time the level becomes the production or load level.
- **Negative change**
  If the difference between one reading and the next is **negative and greater than the maximum wave limit value**, the module adds the change to the load accumulator and continues adding subsequent values to the load accumulator as long as the level continues to drop and the wave timeout value has not expired.

Figure 1 presents a flow chart illustrating this process:
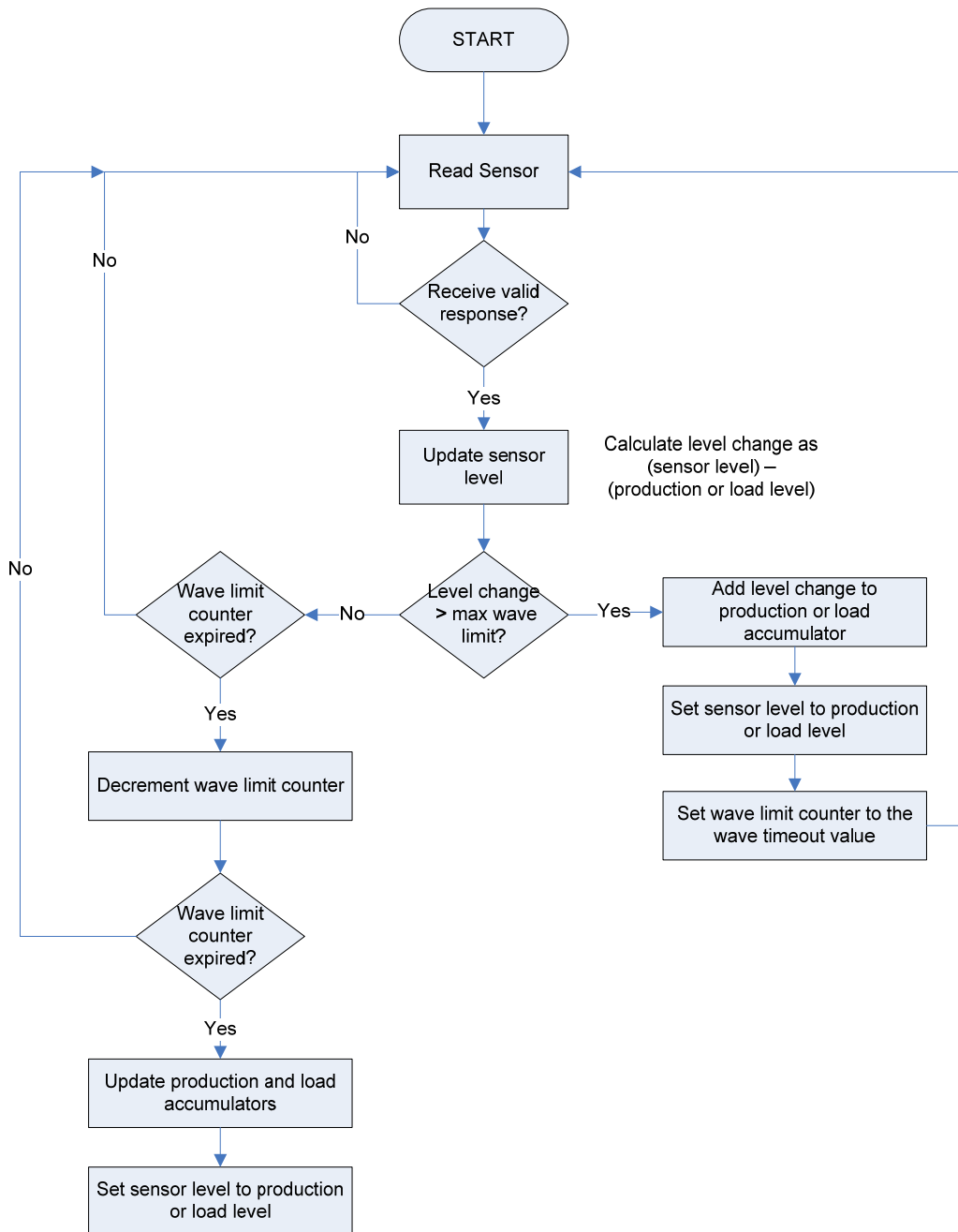
Figure 1. Wave Smoothing

1.2.2 Module Wiring

Connect the sensor(s) to the communications port on the module using between 16 and 24 AWG wiring. *Figure 2* shows example wiring between the module and several sensors.

Note: Level sensors can be either externally powered or obtain power through the sensor wiring itself.
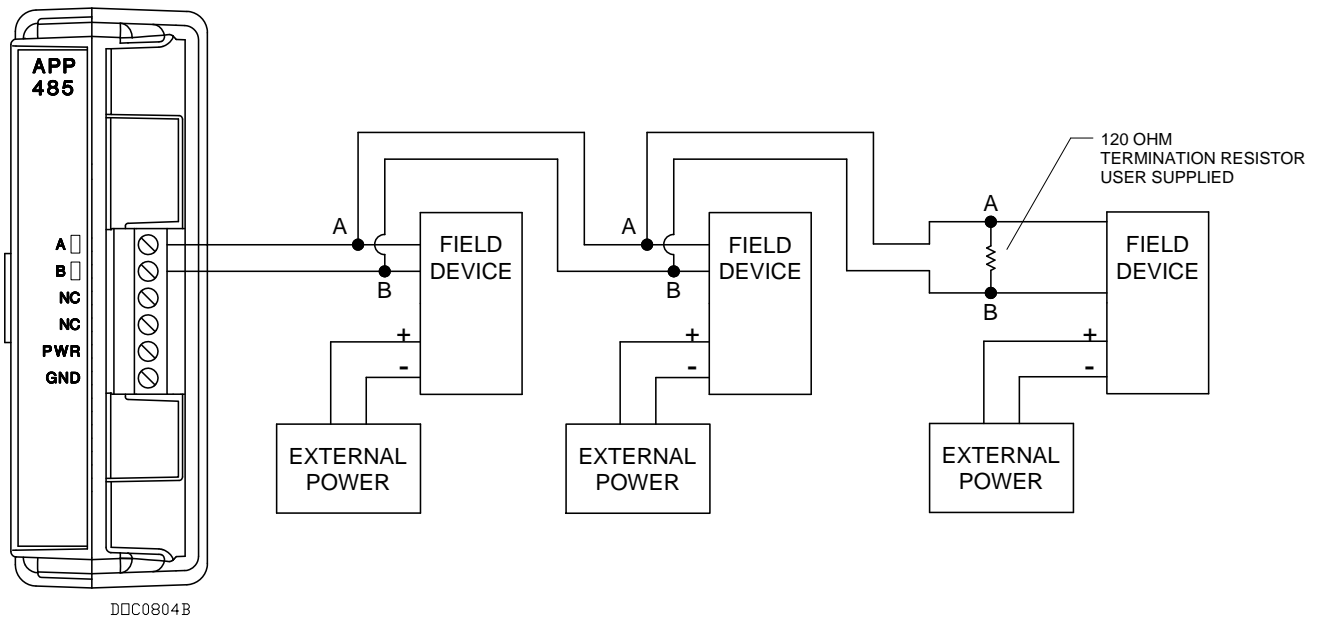
Figure 2. Module Wiring

DO Points   To save power, you can specify a DO point the module controls, which enables you to turn on a level sensor before it is polled and then turn it off after polling. This is typically a DO status point (2,x,3). To accomplish this, you need to connect to a DOR module on the FB107 or supply your own relay.

1.3   Program Requirements

The Level Sensor Application module is compatible with version 1.20 (or greater) of the FB107 firmware and with version 1.82 (or greater) of the ROCLINK 800 software.

[This page is intentionally left blank.]

Chapter 2 – Installation

This chapter provides instructions for installing the LS 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 Level Sensor Application. See *Figure 3*.
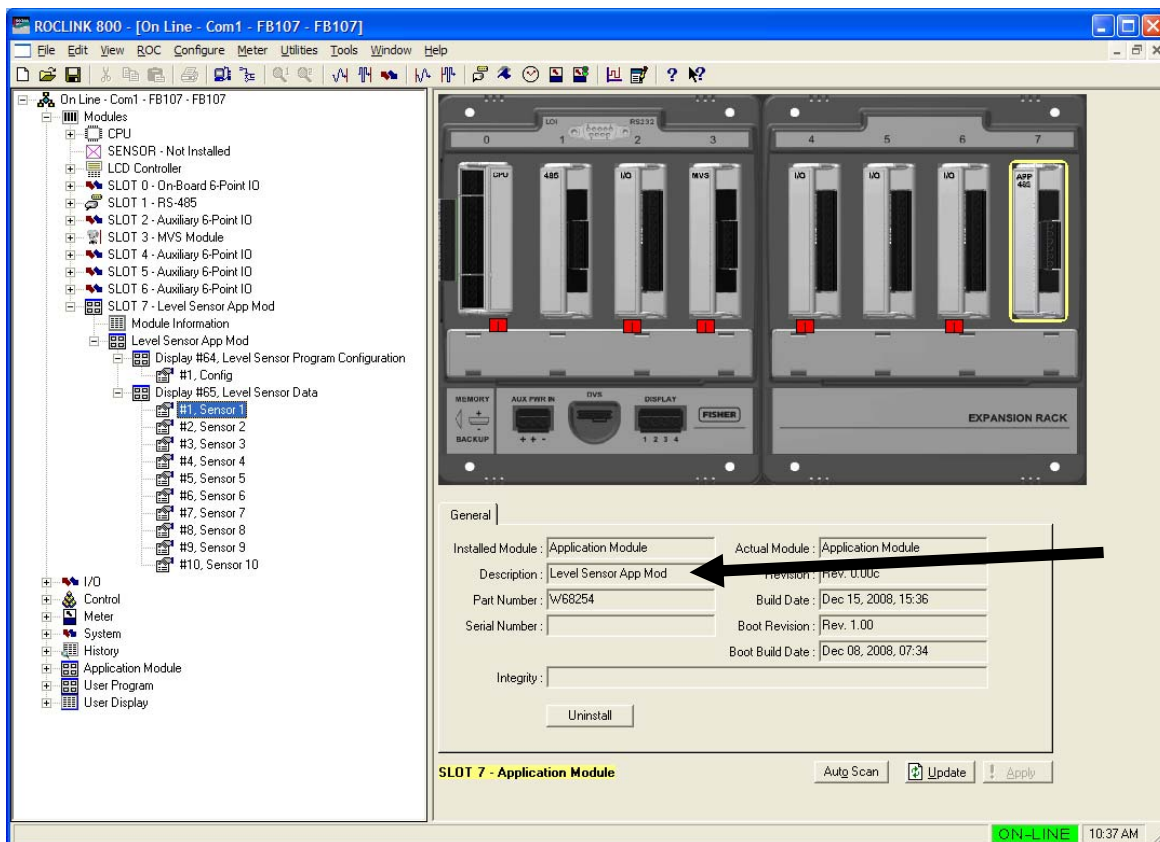
Figure 3. LS Application Module

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

[This page is intentionally left blank.]

Chapter 3 – Configuration

After you have successfully installed the LS Application module in the FB107, you configure the module using two module-specific screens (Level Sensor Program Configuration and Level Sensor Data):

▪ Use the Level Sensor Program Configuration screen to define the number of sensors; assign a DO point to the module, and set scan, polling, and communication parameters.

▪ Use the Level Sensor Data screen to set sensor-specific parameters such as labels, alarms, and wave smoothing values. This screen also displays production information and polling status.

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

You can access all the module-specific screens from the main ROCLINK 800 screen:
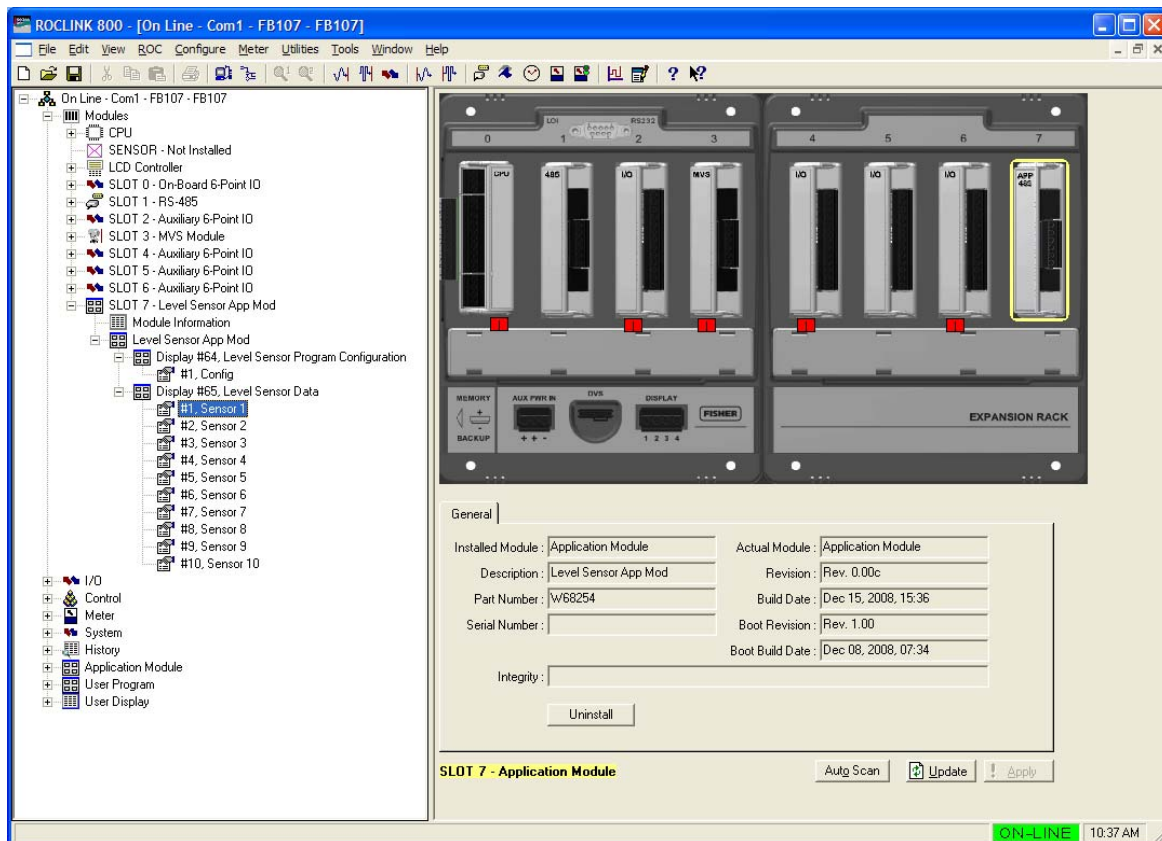
Figure 4. ROCLINK 800

3.1 Level Sensor Configuration Screen

Use this screen to configure communications with one or more level sensors, associate a digital output point with the module, and enable and set polling, scan, and communications parameters. To access this screen:

1. From the Directory Tree, double-click **SLOT X - Level Sensor App Mod** (where **X** is the slot number where the module is installed).

2. Double-click **Level Sensor App Mod**.

3. Double-click **Display #64, Level Sensor Program Configuration**.

4. Double-click **#1, Config**. The Level Sensor Configuration screen displays:
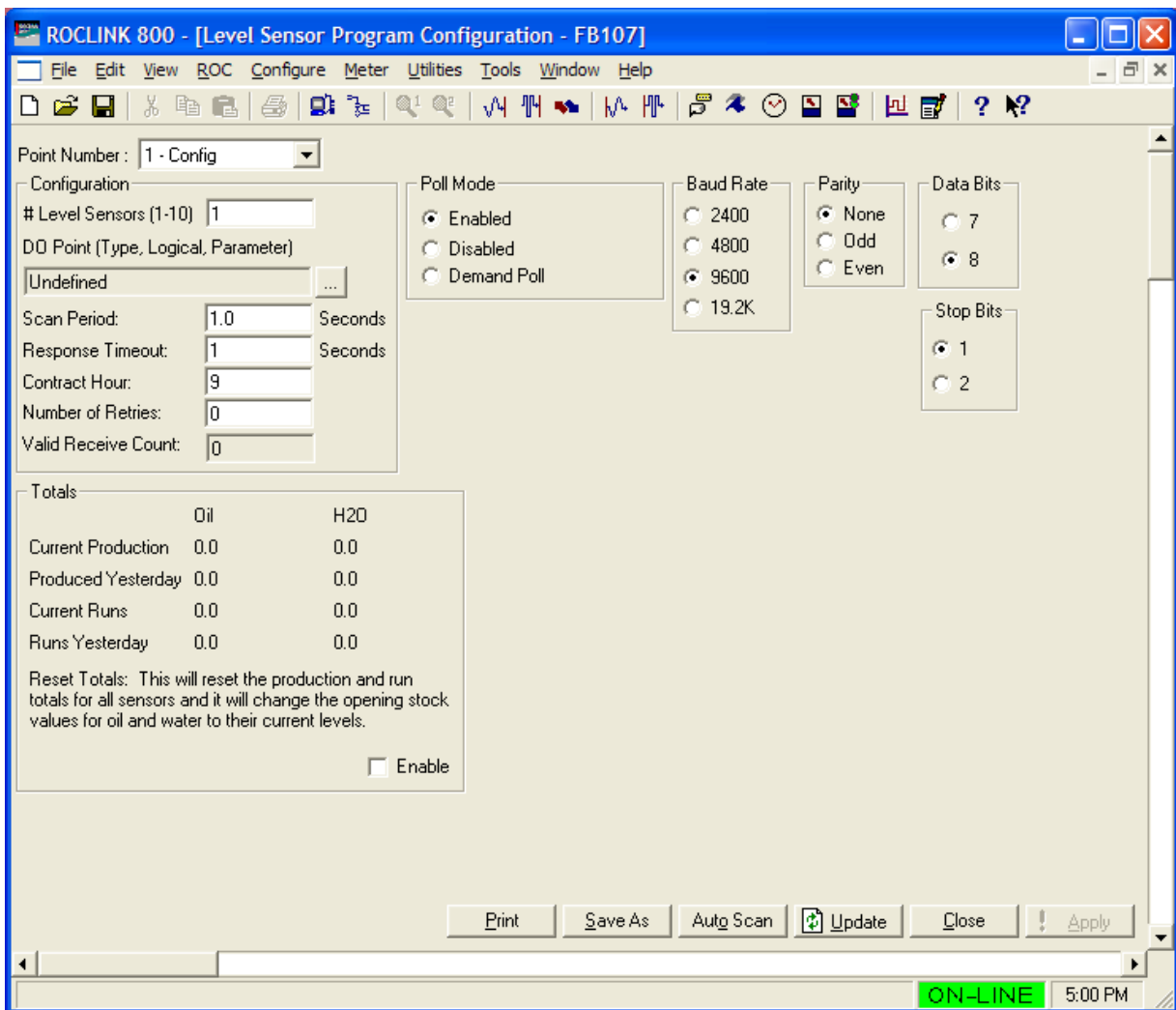
Figure 5. Level Sensor Configuration

5. Review the values in the following fields:

Field	Description
Point Number	Identifies the point number associated with this module. **1 – Config** is the only valid option.
# Level Sensors	Sets the maximum number of level sensors. Valid values are **1** to **10**. The default is **1**.
DO Point (Type, Logical, Parameter)	Sets the digital output TLP associated with the module for power control. Enter either a specific TLP or click [...] to display the Select TLP screen and use it to define the TLP. To save power, you can use this field to specify a DO point the module controls, turning sensors on before they are polled and turning them off after the polling completes.
Scan Period	Sets, in seconds, how often the module scans the sensors for level information. Valid values are **1** to **9999999**. The default is **1.0** second.
Response Timeout	Sets, in seconds, how long the module waits for a response from a level sensor before timing out the connection. Valid values are **0** to **65535**. The default is **1** second.
Contract Hour	Sets the hour (in a 24-hour clock format) at which the module moves production and load totals from current to yesterday's totals. Valid values are **0** (midnight) to **23** (11PM). **Note**: At startup, this value defaults to the contract hour defined in the FB107. You can reset this value specifically for this module.
Number of Retries	Sets how many times the module attempts to poll a level sensor after the initial attempt before timing out. Valid values are **0** to **255**. The default is **0**.
Valid Receive Count	This **read-only** field shows the number of validated responses the module has received from level sensors. This value rolls over after a maximum of 65535 responses.
Totals	These **read-only** fields show, for oil and water, production and run totals for yesterday and today.
Reset Totals	Enables you to reset the production and run totals. **Note**: Selecting this option resets the opening stock values for oil and water to their **current** levels.
Poll Mode	Controls when the module polls the sensors. Valid values are **Enabled** (poll sensors according to the value in the Scan Period field) or **Disabled** (do not poll sensors).

Field	Description
Initiate Demand Poll	Starts a poll of all sensors, regardless of the value in the Scan Period field. The module clears this checkbox after it completes polling and calculates levels and includes those values in the current levels.
	Note: The module ignores the Wave Limit and Wave Limit Counts when you issue an on-demand poll.
Baud Rate	Sets, in bits per second, the communication baud rate. **9600** is the default.
Parity	Sets the communication parity. **None** is the default.
Data Bits	Sets the communication data bits. **8** is the default.
Stop Bits	Sets the communication stop bits. **1** is the default.

6. Click **Apply** to save any changes you have made to this screen.

7. Click **Close** to return to the ROCLINK 800 screen. Proceed to *Section 3.2* to define sensor data for each sensor.

3.2 Level Sensor Data Screen

Use this screen to review level data the FB107 receives from the sensors. The module provides one iteration of this screen for up to 10 defined sensors. You can move between sensor data displays using either the Point Number drop-down box on this screen or from the list on the Directory Tree.

To access this screen:

1. From the Directory Tree, double-click **SLOT X - Level Sensor App Mod** (where **X** is the slot number where the module is installed).

2. Double-click **Level Sensor App Mod**.

3. Double-click **Display #65, Level Sensor Data**.

4. Double-click **#1, Sensor 1**. The Level Sensor Data screen displays:
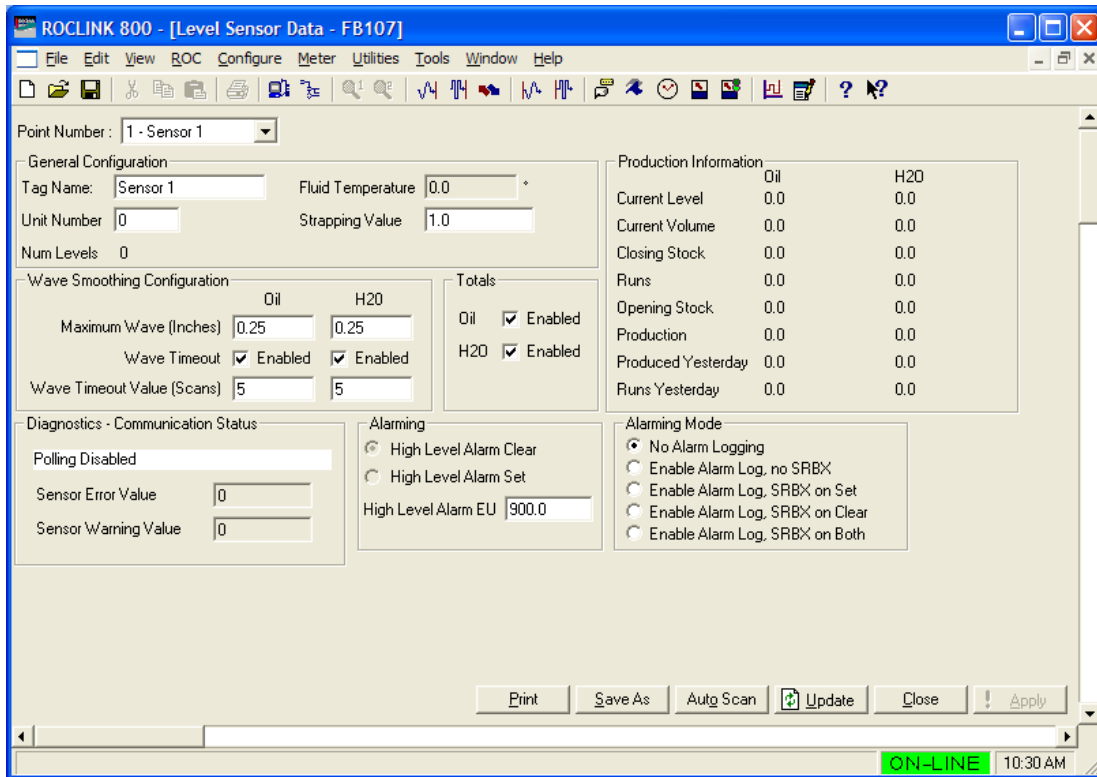
Figure 6. Level Sensor Data

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

Field	Description
Point Number	Identifies the sensor number (up to 10) for this screen. Click ▼ to display all defined sensors.
General Configuration	Sets general information for the selected sensor.
Tag Name	Sets a 10-character label for the selected sensor. The default is **Sensor X (**where **X** is a number between 1 and 10).
Unit Number	Identifies the unit number of the tank associated with this sensor.
Num Levels	This **read-only** field shows the number of levels the sensor reports. Typically, this is two: oil and water.
Fluid Temperature	This **read-only** field shows, in degrees Fahrenheit, the current temperature of the fluid in the tank.
Strapping Value	Sets the conversion factor the module uses to convert linear measurement to volume. The module multiplies the level value by this strapping value to determine the volume of the fluid.
Wave Smoothing Configuration	Sets parameters that average (or smooth) wave variations in fluid (both oil and water) levels.

Field	Description
Maximum Wave	Sets, in inches, a maximum wave height for smoothing. The module ignores level changes less than or equal to this value, attributing them to sloshing in the tank and ignoring them when determining production or accumulated values. Changes in height in excess of this value trigger an alarm.
Wave Timeout	Enables the module, if selected, to process the current oil or water levels after completing the number of polls specified in the Wave Timeout Value field, even if the level change has not exceeded the wave limit for either oil or water.
Wave Timeout Value	Sets the number of polls the module must complete before calculating oil or water levels.
Diagnostics – Communication Status	These **read-only** fields show the status of communications with the sensors. The module displays a variety of messages related to the sensors, which can include: Polling Disabled Valid Response Received Retrying Invalid Message Format Response Timeout Invalid CRC Invalid Unit Number No Level Data No Temperature Data No Error Data and No Warning Data. Messages are color-coded to indicate severity. Red indicates an alarm condition.
Sensor Error Value	This **read-only** field shows the number of errors read from the sensor.
Sensor Warning Value	This **read-only** field shows the number of warnings read from the sensor.
Totals	These fields, if selected, enable the module to calculate the total production and run values for oil and/or water and display those values on the Level Sensor Configuration screen.
High Level Alarm Clear	This **read-only** field indicates that the high level alarm is currently inactive. **Note**: Alarms occur **only** on oil levels.
High Level Alarm Set	This read-only field indicates that the high level alarm is currently active. **Note**: Alarms occur **only** on oil levels.
High Level Alarm EU	Sets the tank level, in engineering units (EUs), above which the high level alarm occurs. **900** is the default.

Field	Description
Alarming Mode	Sets how the program 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.
No Alarm Logging	No logging occurs.
Enable Alarm Log, no SRBX	Logging occurs, but without generating SRBX notifications.
Enable Log, SBRX on Set	Logging occurs, and SRBX notifications occur on alarm set.
Enable Log, SRBX on Clear	Logging occurs, and SRBX notifications occur on alarm clear.
Enable Log, SRBX on Both	Logging occurs, and SRBX notifications occur on both alarm set and alarm clear.
Production Information	These **read-only** fields show the current production totals for both oil and water.

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

7. Click **Close** to return to the ROCLINK 800 screen. Proceed to *Section 3.3* to save your configuration.

3.3   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:
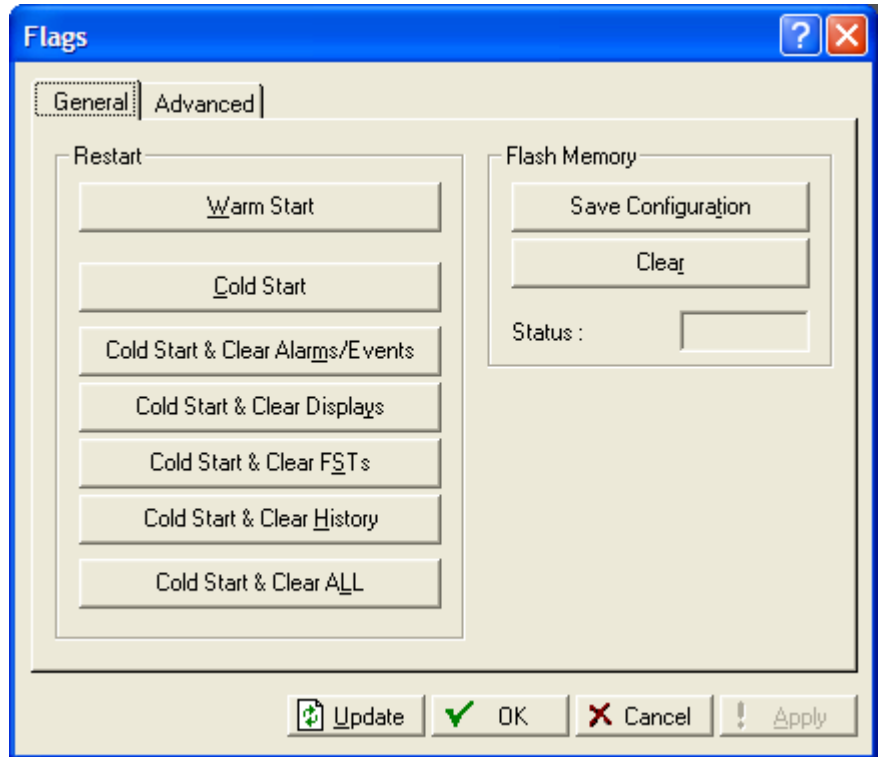
Figure 7. Flags screen

2. Click **Save Configuration**. A verification message displays:
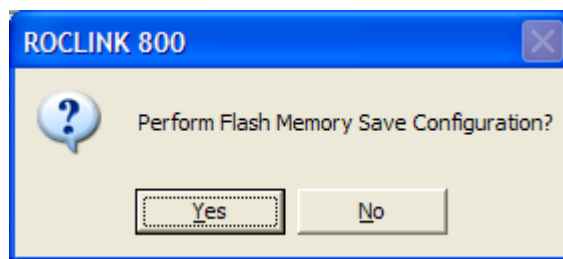
Figure 8. Perform screen

3. Click **Yes** to begin the save process. The Status field on the Flags screen displays *In Progress*. When the process completes, the following message displays:
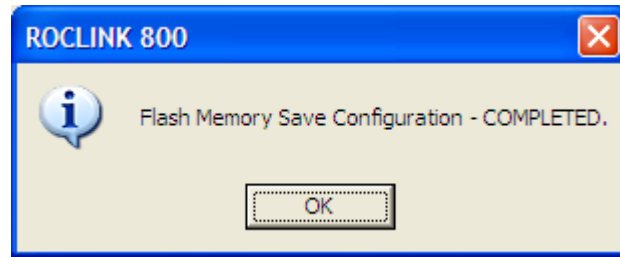
Figure 9. Save Confirmation

4. Click **OK**. The 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.

[This page is intentionally left blank.]

Chapter 4 – Reference Materials

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

- Point Type 63 (Level Sensor Configuration and Status)
- Point Type 64 (Level Sensor Data)

[This page is intentionally left blank.]

4.1   Point Type 63: Level Sensor Configuration and Status

Point type 63 contains the parameters for configuring the Level Sensor Application module and houses the status information from the sensors. The module maintains one logical point of this point type.

Point Type 63: Level Sensor 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	"Config"	1.00	Point Type Description
1	Not Used								
2	Not Used								
3		R/W	Both	UINT8	1	0 → 10	1	1.00	Number of level sensors polled
4	Not Used								
5	DO Point Type	R/W	User	UINT8	1	DO = 2; Softpoint = 17 Disabled = 255	255	1.00	Point type for selected DO
6	DO Logical	R/W	User	UINT8	1	DO = 0-37; Softpoint = 0 - 31 Disabled = 255	255	1.00	Logical for selected DO
7	DO Parameter	R/W	User	FL	4	DO = 3; Softpoint = 1 - 21 Disabled = 255	255	1.00	Parameter for selected DO
8	Poll Mode	R/W	User	UINT8	1	0 → 2	0	1.00	Poll Mode: 0 = Polling Disabled 1 = Normal Poll 2 = Demand Poll
9	Scan Period	R/W	User	FL	4	Any Positive Floating Point Number	1.0	1.00	Scan Period
10	Response Timeout	R/W	User	UINT16	2	0 → 65535	1	1.00	Response Timeout
11	Valid Receive Counter	R/O	System	UINT16	1	0 → 65535	0	1.00	Valid Receive Counter
12	Current Oil Production	R/O	System	FL	4	Any Positive Floating Point Number	0.0	1.00	Current Oil Production

Point Type 63: Level Sensor Application Configuration

Parm #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
13	Current H2O Production	R/O	System	FL	4	Any Positive Floating Point Number	0.0	1.00	Current H2O production
14	Yesterday's Oil Production	R/O	System	FL	4	Any Positive Floating Point Number	0.0	1.00	Yesterday's Oil Production
15	Yesterday's H2O Production	R/O	System	FL	4	Any Positive Floating Point Number	0.0	1.00	Yesterday's H2O Production
16	Current Oil Runs	R/O	System	FL	4	Any Positive Floating Point Number	0.0	1.00	Current Oil Runs
17	Current H2O Runs	R/O	System	FL	4	Any Positive Floating Point Number	0.0	1.00	Current H2O Runs
18	Yesterday's Oil Run	R/O	System	FL	4	Any Positive Floating Point Number	0.0	1.00	Yesterday's Oil Run
19	Yesterday's H2O Run	R/O	System	FL	4	Any Positive Floating Point Number	0.0	1.00	Yesterday's H2O Run
20	Contract Hour	R/W	User	UINT8	1	$0 \rightarrow 23$	0	1.00	Contract Hour
21	Cold Start	R/W	User	UINT8	1	$0 \rightarrow 1$	0	1.00	Cold Start
22	Baud Rate	R/W	User	UINT8	1	$0 \rightarrow 3$	2	1.00	Baud Rate: 0 = 2400 Baud 1 = 4800 Baud 2 = 9600 Baud 3 = 19200 Baud
23	Stop Bits	R/W	User	UINT8	1	$1 \rightarrow 2$	1	1.00	Stop Bits: 1 = 1 Stop Bit 2 = 2 Stop Bits
24	Data Bits	R/W	User	UINT8	1	$7 \rightarrow 8$	8	1.00	Data Bits 7 = 7 Data Bits 8 = 8 Data Bits
25	Parity	R/W	User	UINT8	1	$0 \rightarrow 2$	0	1.00	Parity 0 = No Parity 1 = Odd Parity 2 = Even Parity

Point Type 63: Level Sensor Application Configuration

Parm #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
26	Number of Retries	R/W	User	UINT8	1	1 → 255	0	1.00	Number of Retries

4.2   Point Type 64: Level Sensor Data

Point type 64 contains the parameters for level sensor data. The module maintains 10 logical points of this point type (where logical 0 is sensor 1, logical 1 is sensor 2, and so on).

Point Type 64: Level Sensor Data

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	0x20 → 0x7E for each ASCII character	Logical 0 = "Sensor 1" to Logical 9 = "Sensor 10"	1.00	Tag
1	Not Used								
2	Level Sensor Address	R/W	User	UINT8	1	1 → 99	0	1.00	Level Sensor Address
3	Strap Value	R/W	User	FL	4	Any Positive Floating Point Number	1	1.00	Strap Value
4	Fluid Temperature	R/O	System	FL	4	Valid Floating Point Number	0.0	1.00	Dry Heating Value
5	System Message	R/O	System	UINT8	1	0 → 10	0	1.00	Error: 0 = Polling Disabled 1 = Valid Response Received: 2 = Retrying 3 = Invalid Message Format: 4 = Response Timeout 5 = Invalid CRC 6 = Invalid Unit Number 7 = No Level Data 8 = No Temperature Data 9 = No Error Data 10 = No Warning Data
6	Num Levels	R/O	System	UINT8	1	0 → 2	0	1.00	Num Levels
7	Oil Wave Limit	R/W	User	FL	4	Any Positive Floating Point Number	0.25	1.00	Oil Wave Limit

Point Type 64: Level Sensor Data

Parm #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
8	H2O Wave Limit	R/W	User	FL	4	Any Positive Floating Point Number	0.25	1.00	H2O Wave Limit
9	Oil Wave Limit Count	R/W	User	UINT8	1	$0 \rightarrow 255$	5	1.00	Oil Wave Limit Count
10	H2O Wave Limit Count	R/W	User	UINT8	1	$0 \rightarrow 255$	5	1.00	H2O Wave Limit Count
11	Current Oil Level	R/O	System	FL	4	Valid Floating Point Number	0.0	1.00	Current Oil Level
12	Current H2O Level	R/O	System	FL	4	Valid Floating Point Number	0.0	1.00	Current H2O Level
13	Oil Closing Stock	R/O	System	FL	4	Valid Floating Point Number	0.0	1.00	Oil Closing Stock
14	H2O Closing Stock	R/O	System	FL	4	Valid Floating Point Number	0.0	1.00	H2O Closing Stock
15	Oil Runs	R/O	System	FL	4	Any Positive Floating Point Number	0.0	1.00	Oil Runs
16	H2O Runs	R/O	System	FL	4	Any Positive Floating Point Number	0.0	1.00	H2O Runs
17	Opening Stock Oil	R/O	System	FL	4	Valid Floating Point Number	0.0	1.00	Opening Stock Oil
18	Opening Stock H2O	R/O	System	FL	4	Valid Floating Point Number	0.0	1.00	Opening Stock H2O
19	Oil Production	R/O	System	FL	4	Any Positive Floating Point Number	0.0	1.00	Oil Production
20	H2O Production	R/O	System	FL	4	Any Positive Floating Point Number	0.0	1.00	H2O Production
21	New Oil Level	R/O	System	FL	4	Valid Floating Point Number	0.0	1.00	New Oil Level
22	New H2O Level	R/O	System	FL	4	Valid Floating Point Number	0.0	1.00	New H2O Level
23	Oil Wave Counter	R/O	System	UINT8	1	$0 \rightarrow 255$	0	1.00	Tracks scan periods since the start of the wave.
24	H2O Wave Counter	R/O	System	UINT8	1	$0 \rightarrow 255$	0	1.00	Tracks scan periods since the start of the wave.

Point Type 64: Level Sensor Data

Parm #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
25	Enable Oil Totals	R/W	User	UINT8	1	0 → 1	1	1.00	Enable Oil Totals: 0 = Disable 1 = Enable
26	Enable H2O Totals	R/W	User	UINT8	1	0 → 1	1	1.00	Enable H2O Totals: 0 = Disable 1 = Enable
27	Cold Start	R/W	System	UINT8	1	0 → 1	1	1.00	Cold Start: 0 = Disable 1 = Enable
28	Yesterday's Oil Production	R/O	System	FL	1	Any Positive Floating Point Number	0.0	1.00	Yesterday's Oil Production
29	Yesterday's H2O Production	R/O	System	FL	1	Any Positive Floating Point Number	0.0	1.00	Yesterday's H2O Production
30	Oil Wave Smoothing	R/W	User	UINT8	1	0 → 1	1	1.00	Oil Wave Smoothing: 0 = Disable 1 = Enable
31	H2O Wave Smoothing	R/W	User	UINT8	1	0 → 1	1	1.00	H2O Wave Smoothing: 0 = Disable 1 = Enable
32	Yesterday's Oil Runs	R/O	System	FL	4	Any Positive Floating Point Number	0.0	1.00	Yesterday's Oil Runs
33	Yesterday's H2O Runs	R/O	System	FL	4	Any Positive Floating Point Number	0.0	1.00	Yesterday's H2O Runs
34	Current Oil Volume	R/O	System	FL	4	Valid Floating Point Number	0.0	1.00	Current Oil Volume
35	Current H2O Volume	R/W	System	FL	4	Valid Floating Point Number	0.0	1.00	Current H2O Volume
36	High Level Alarm EU	R/W	System	FL	4	Valid Floating Point Number	900	1.00	High Level Alarm EU

Point Type 64: Level Sensor Data

Parm #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
37	High Level Alarm Enable	R/W	User	UINT8	1	$0 \rightarrow 4$	0	1.00	High Level Alarm Enable:b 0 = Disable Logging 1 = Enable Logging, No SRBX 2 = Enable Logging, SRBX on Set 3 = Enable Logging, SRBX on Clear 4 = Enable Logging, SRBX on both Set and Clear
38	High Level Alarm Indicator	R/O	System	UINT8	1	$0 \rightarrow 1$	0	1.00	High Level Alarm Indicator: 0 = Disable 1 = Enable
39	Sensor Error	R/O	System	UINT8	2	$0 \rightarrow 65535$	0	1.00	Sensor Error
40	Sensor Warning	R/O	System	UINT8	2	$0 \rightarrow 65535$	0	1.00	Sensor Warning

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