Fast History Program User Manual (For the ROC800-Series)

QER 07Q019

Remote Automation Solutions

EMERSON

Process Management
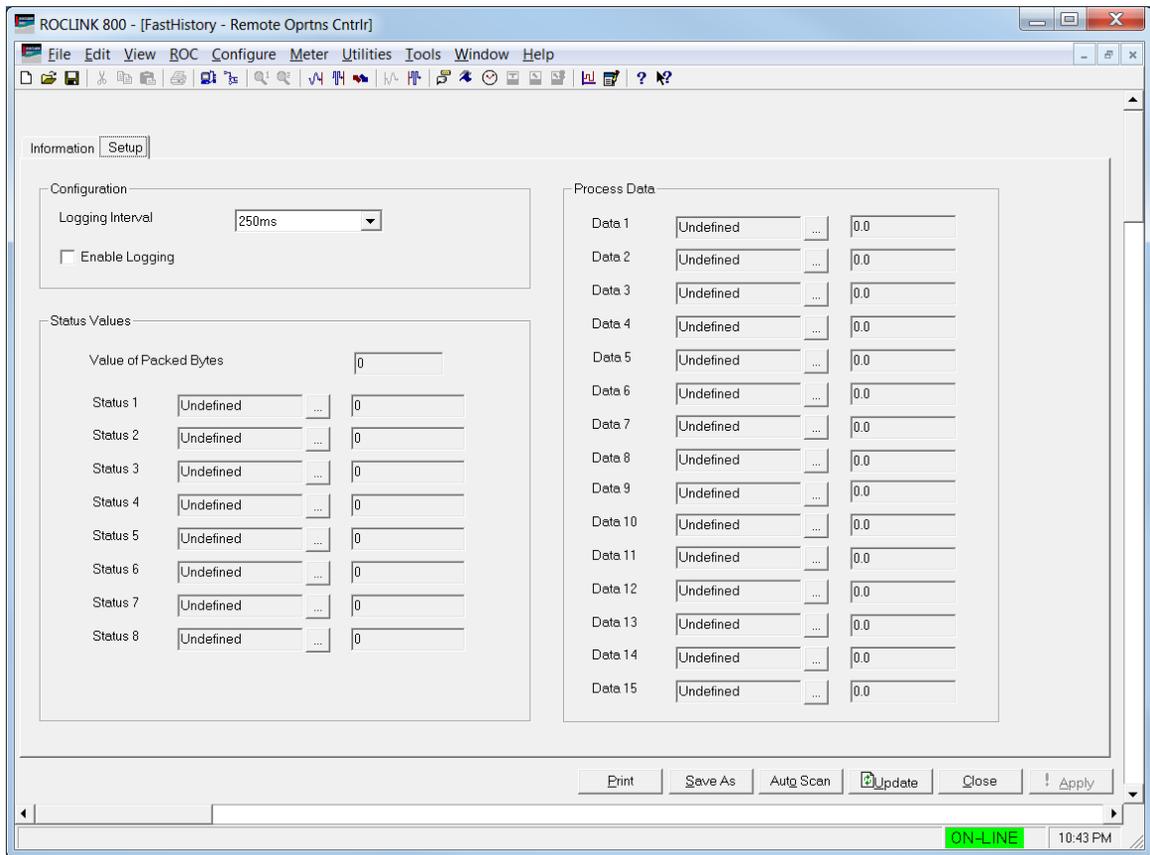
Revision Tracking Sheet
Jan-2016

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

Page	Revision
All pages	Jan-2016
All pages	May-2015
All pages	Mar-2012
Initial release	Feb-2007

Contents

[This page is intentionally left blank.]

Chapter 1 – **Introduction**

This chapter describes the structure of the manual and presents an overview of the Fast History Program for the ROC800-Series Remote Operations Controller.

1.1   Scope and Organization

This document serves as the user manual for the Fast History Program, which is intended for use in the ROC800-Series Remote Operations Controllers. This manual describes how to download, install, and configure the Fast History Program (referred to as the "Fast History" or "the program" throughout the rest of this manual). You can access and configure this program using ROCLINK™ 800 Configuration Software installed on a personal computer (PC) running Microsoft® Windows® XP (with Service Pack 3), Vista (32-bit) or Windows 7 (32-bit).

The sections in this manual are arranged to provide information in the order in which it is needed for first-time users. Once you become familiar with the procedures and the software running in the ROC, the manual may be used as a reference tool.

The manual has the following major chapters:

- *Chapter 1, Introduction*
- *Chapter 2, Installation*
- *Chapter 3, Configuration*
- *Chapter 4, Reference Materials*

This manual assumes that you are familiar with the ROC800-Series and its configuration. For more information, refer to the following manuals:

- *ROC800-Series Remote Operations Controller Instruction Manual* (part D301217X012).
- *ROCLINK 800 Configuration Software User Manual (for ROC800-Series* (part D301250X012).

1.2   Product Overview

The Fast History program gives the ROC800-Series product family the capability to log user-defined parameters to a database at a much quicker rate than is normally allowed.

Standard firmware based history allows for a time period as low as 1 sample per minute. The Fast History program enables data sampling at intervals of 30 seconds, 15 seconds, 10 seconds, 5 seconds, 1 second, 500 ms, 250 ms, 200 ms, or 100 ms. The program can record data at this rate for 15 floating point values, and 8 discrete values packed into a single byte. This rate of sampling creates large amounts of data, and cannot run indefinitely. Therefore, you can enable or disable logging, as necessary.

Requiring the use of History Segment 1, the configured program (rather than the standard firmware) populates that history segment.

1.3   Program Requirements

The Fast History program (QER 07Q019) version 1.03 is compatible with ROC800 Series 2 firmware version 3.61 (or higher), and version 2.41 (or higher) of ROCLINK 800 software. The software requires you to install a hardware license key.

Program specifics include:

Notes:

▪ Two versions of the program are included. Installation and operation are identical between the two programs, which use different point type locations and different display numbers. You can load the program into the slot of your choice on the ROC800.

▪ This document demonstrates the installation of FastHistory.64.tar. The installation process and functionality is the same for either version of the program.

File Name	Target Unit/ Version	User Defined Point (UDP)	Flash Used (in bytes)	SRAM Used (in bytes)	DRAM Used (in bytes)	ROCLINK 800 Version	Display Number
FastHistory.64.tar	Series 1: 2.16 Series 2: 3.61	64	18,346	154	69,632	2.41	64
FastHistory.65.tar	Series 1: 2.16 Series 2: 3.61	65	18,353	154	73,728	2.41	65

Note: You must connect a PC to the ROC's LOI port **before** starting the download.

For information on viewing the memory allocation of user programs, refer to *Section 9.4* of the *ROCLINK 800 Configuration Software User Manual (for ROC800-Series)* (part D301250X012).

1.3.1 License Keys

License keys, when matched with valid license codes, grant access to applications such as the Fast History program.

The term "license key" refers to the physical piece of hardware that can contain up to seven different licenses (refer to *Figure 1*). Each ROC800-Series can have none, one, or two license keys installed. If you remove a license key after enabling an application, the firmware disables the task from running. This prevents unauthorized execution of protected applications in a ROC.
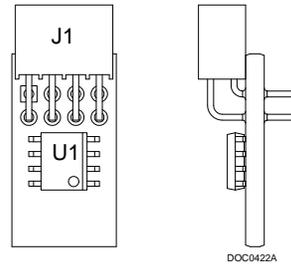
Figure 1. License Key

[This page is intentionally left blank.]

Chapter 2 – **Installation**

This section provides instructions for installing the user program into the ROC800-Series. Read *Section 1.3* of the manual for program requirements.

The downloadable program name is FastHistory.64.tar or FastHistory.65.tar.

Note: You must connect a PC to the Local Operator Interface (LOI) port before you begin the download.

2.1 Installing the License Key

If you order the Fast History program for a new ROC, your device is delivered with the license key installed. Go to *Section 2.2*.

If you order the program for an existing ROC800-Series, you must install the license key yourself.

⚠ **Caution** **Failure to exercise proper electrostatic discharge precautions, such as wearing a grounded wrist strap may reset the processor or damage electronic components, resulting in interrupted operations.**

When working on units located in a hazardous area (where explosive gases may be present), make sure the area is in a non-hazardous state before performing these procedures. Performing these procedures in a hazardous area could result in personal injury or property damage.

To install a license key:

1. Remove power from the ROC800-Series.

2. If necessary, remove the wire channel cover.

3. Unscrew the screws from the Central Processing Unit (CPU) faceplate.

4. Remove the CPU faceplate.

5. Place the license key in the appropriate terminal slot (P4 or P6) in the CPU.
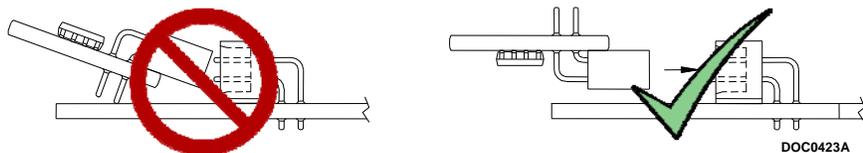
Figure 2. License Key Installation

Note: When using a single license key, install it in **slot P4**.

6. Press the license key into the terminal until it is firmly seated (refer to *Figure 2*).

7. Re-attach the CPU faceplate.

8. Re-attach the screws on the CPU faceplate.

9. If necessary, re-attach the wire channel cover.

10. Restore power to the ROC800-Series.

2.1.1 Verifying the License Key Installation

After you install the license key, you can verify whether the ROC800-Series recognizes the key. From the ROCLINK 800 screen, select **Utilities** > **License Key Administrator**. The License Key Administrator screen displays:
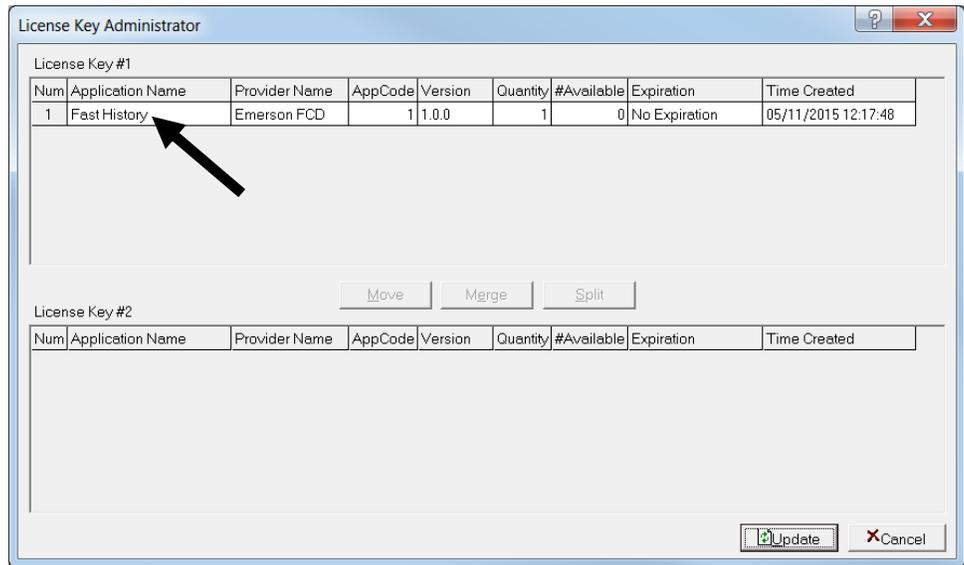
Figure 3. License Key Administrator

Fast History appears in the Application Name column. (For further information on the License Key Administrator screen, refer to *Section 9.24* of the *ROCLINK 800 Configuration Software User Manual (for ROC800-Series)* (part D301250X012).)

After you verify that the license key is correctly installed and recognized, proceed to *Section 2.2* to download the user program.

2.2 Downloading the FastHistory.65.tar Program

This section provides instructions for installing the FastHistory.65.tar program file into the Flash memory on the ROC800.

To download the program using ROCLINK 800 software:

1. Connect the ROC to your computer using the LOI port.

2. Start and logon to ROCLINK 800.

3. Select **Utilities** > **User Program Administrator** from the ROCLINK menu bar. The User Program Administrator screen displays (see *Figure 4*):
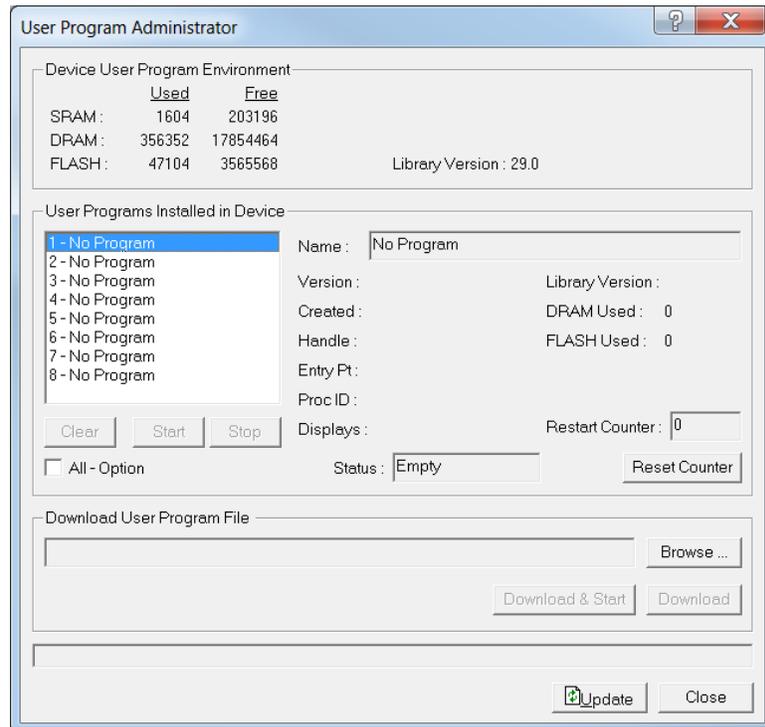
Figure 4. User Program Administrator

4. Select any empty program number (in this case, number 1) into which to download the program.

5. Click **Browse** in the Download User Program File frame. The Select User Program File screen displays (see *Figure 5*).

6. Select the path and user program file to download from the CD-ROM. (Program files are typically located in the Program Files folder on the CD-ROM.) As *Figure 5* shows, the screen lists all valid user program files with the .TAR extension:
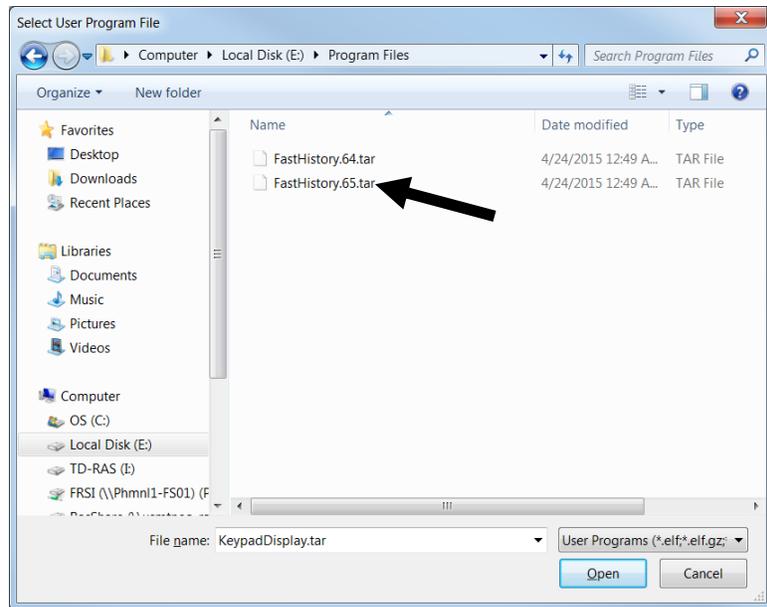
Figure 5. Select User Program File

7. Click **Open** to select the program file. The User Program Administrator screen displays. As shown in *Figure 6*, note that the Download User Program File frame identifies the selected program and that the **Download & Start** button is active:
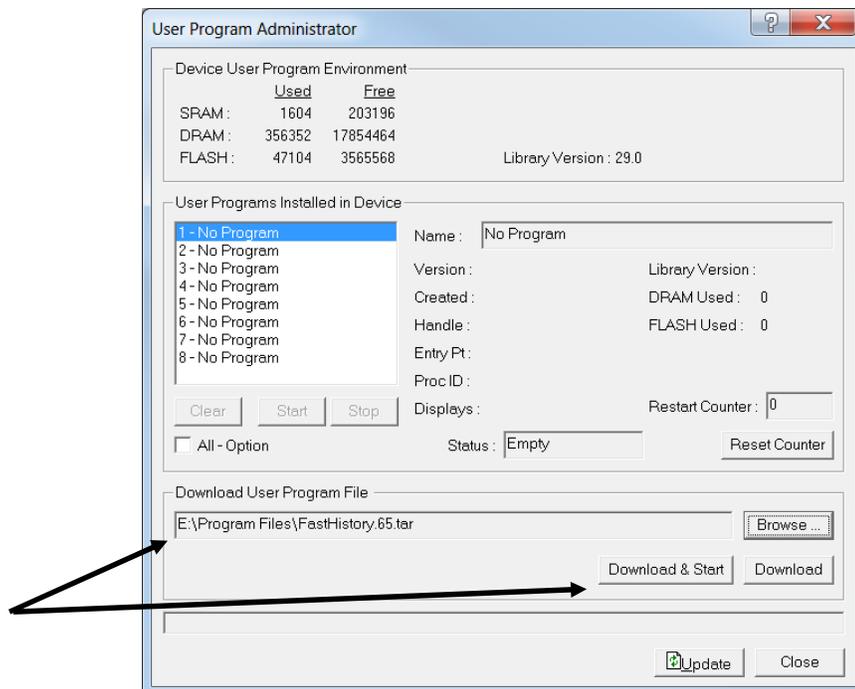
Figure 6. User Program Administrator

8. Click **Download & Start** to begin loading the selected program. The following message displays:
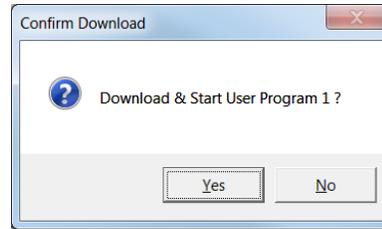
Figure 7. Confirm Download

9. Click **Yes** to begin the download. When the download completes, the following message displays:
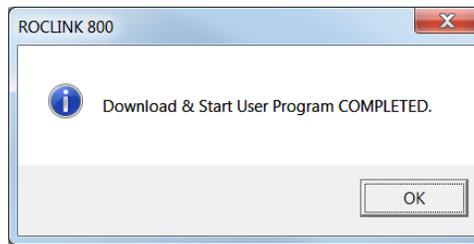
Figure 8. ROCLINK 800 Download Confirmation

10. Click **OK**. The User Program Administrator screen displays (see *Figure 9*). Note that:

  ▪ The Device User Program Environment frame reflects the use of system memory.
  ▪ The User Programs Installed in Device frame identifies the installed program(s).
  ▪ The Status field indicates that the program is running.
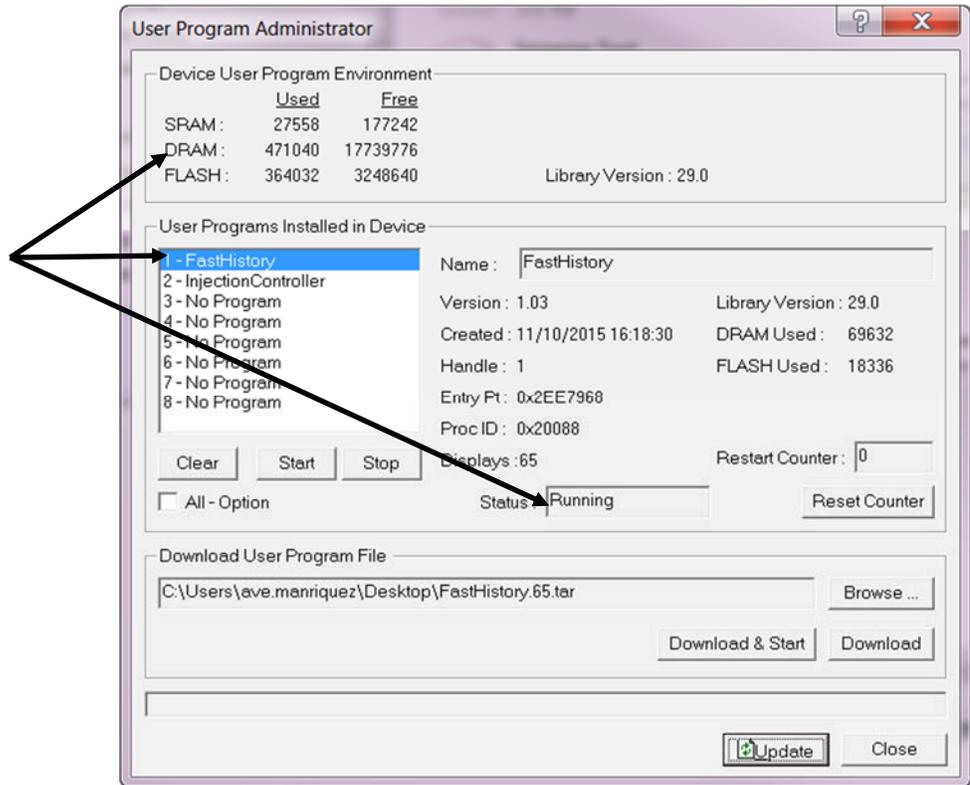
Figure 9. User Program Administrator

11. Click **Close** and proceed to *Chapter 3* to configure the program.

Chapter 3 – **Configuration**

After you have downloaded and started the Fast History program, you must make changes to ROCLINK 800 before you configure the program. Access all screens from the main ROCLINK 800 screen

Use the Fast History screen to view information on the proper operation of the Fast History program and to define the logging interval, status inputs, and process data that is recorded by the program.
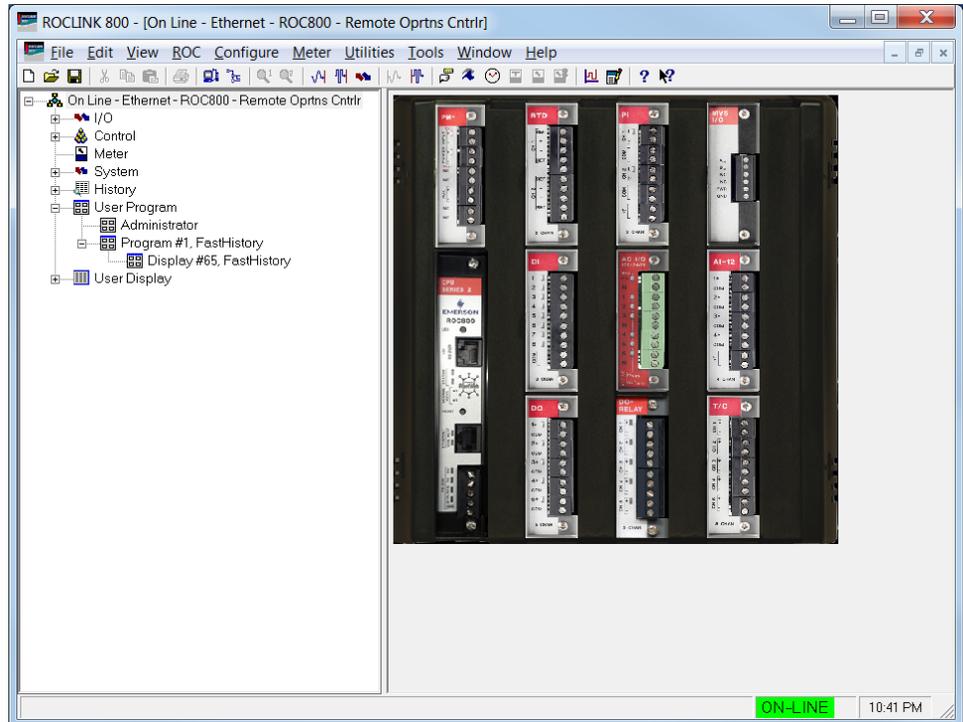
Figure 10. Main ROCLINK 800 screen (with Configuration Tree)

3.1   Configuring ROCLINK 800

Before configuring the user program, you must make changes to ROCLINK 800. In addition to the parameters normally configured in ROCLINK 800, you also need to configure or verify the History Segment Configuration and History Segment Point Configuration screens.

3.1.1 Configuring History Segments

Use the History Segment Configuration screen to adjust the number of points ROCLINK 800 uses.

To access this screen:

1. **Login** to ROCLINK 800 and **connect** to the ROC800-Series device.

2. Select **Configure** > **History Segments** from the ROCLINK 800 menu bar.
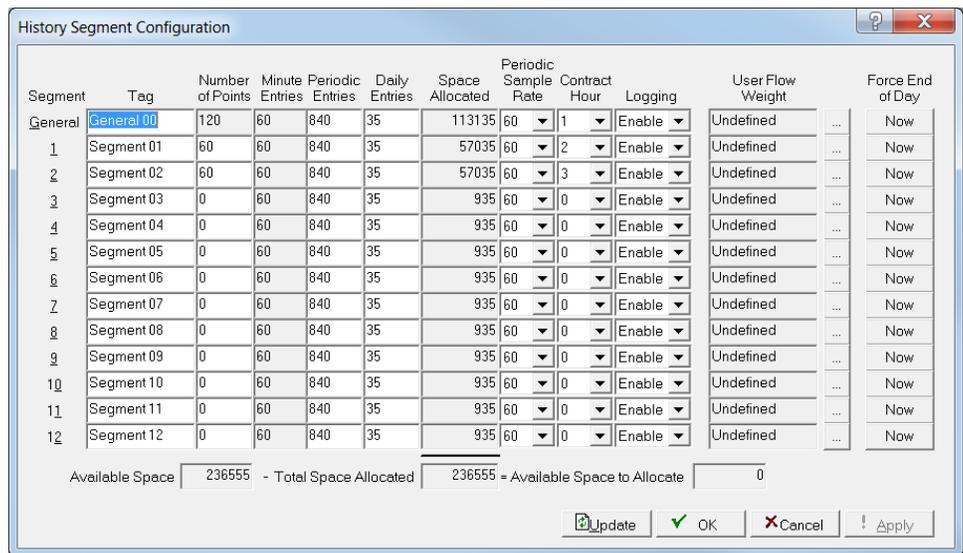
Figure 11. ROCLINK 800, History Segment Configuration

3. Change the Number of Points field for Segment 01 to a value of **18**.

4. Change the Periodic Entries field for Segments 02-12 to a value of **0**.

5. Change the Daily Entries field for Segments 01-12 to a value of **0**.

6. Change the Periodic Entries field for Segment 01 to a value of **10000**.
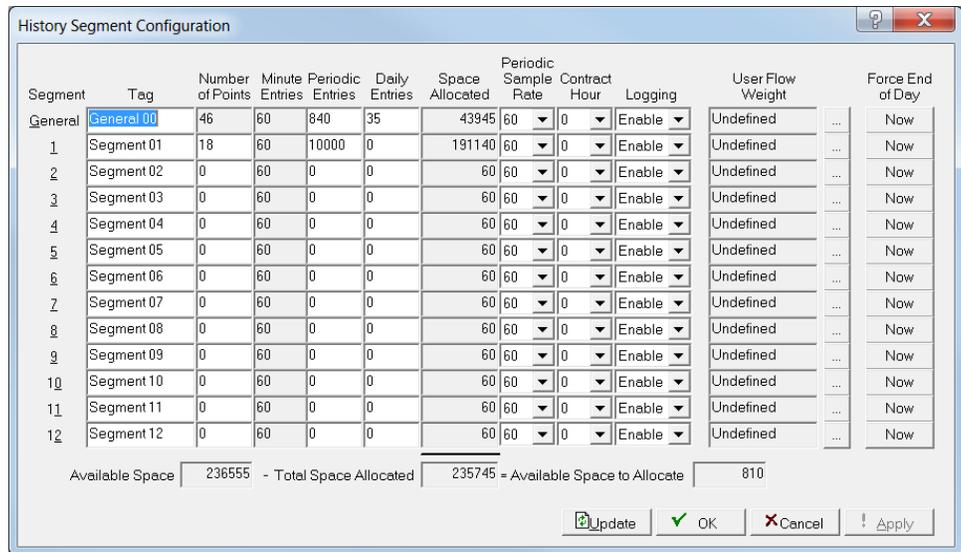
Figure 12. History Segment Configuration (with configured values)

7. Click **Apply** and then **OK**. The main ROCLINK 800 screen displays.

8. Proceed to *Section 3.1.2, History Segment Point Configuration.*

3.1.2 Configuring History Segment Points

You must also make changes to the History Segment Point Configuration screen. These changes tell the ROC what type of data the program collects.

To access this screen:

1. Select **Configure** > **History Points** from the ROCLINK 800 menu bar.

2. Select the **Segm…01** tab on the History Segment Point Configuration screen.

Figure 13. History Segment Point Configuration, Segm...01 tab

3. Change (as show in *Figure 13*) the Archive Type field of Point 1 to a value of **User Program Time**.

4. Change (as shown in *Figure 13*) the Archive Type field of points 2 – 18 to a value of **User Program Data**.

   Note: Leave the Archive Point field for points 1-18 at the default value (either "undefined" or 0,0,0). Optionally, complete the User Description field for each point with a short description of the variable being logged.

5. Click **Apply** and then **OK**. The ROCLINK 800 screen appears.

6. Proceed to *Section 3.2* to configure the Fast History program.

3.2   FastHistory Screen

Use this screen to view information on the proper operation of the Fast History program and to define the logging interval, status inputs, and process data that the program records.

To access this screen:

1. From the Directory Tree, select **User Program** > **Program #1, FastHistory**.

2. Double-click **Display #65, FastHistory**. Double-click **#1, Setup**. The Product screen displays, showing the Information tab:
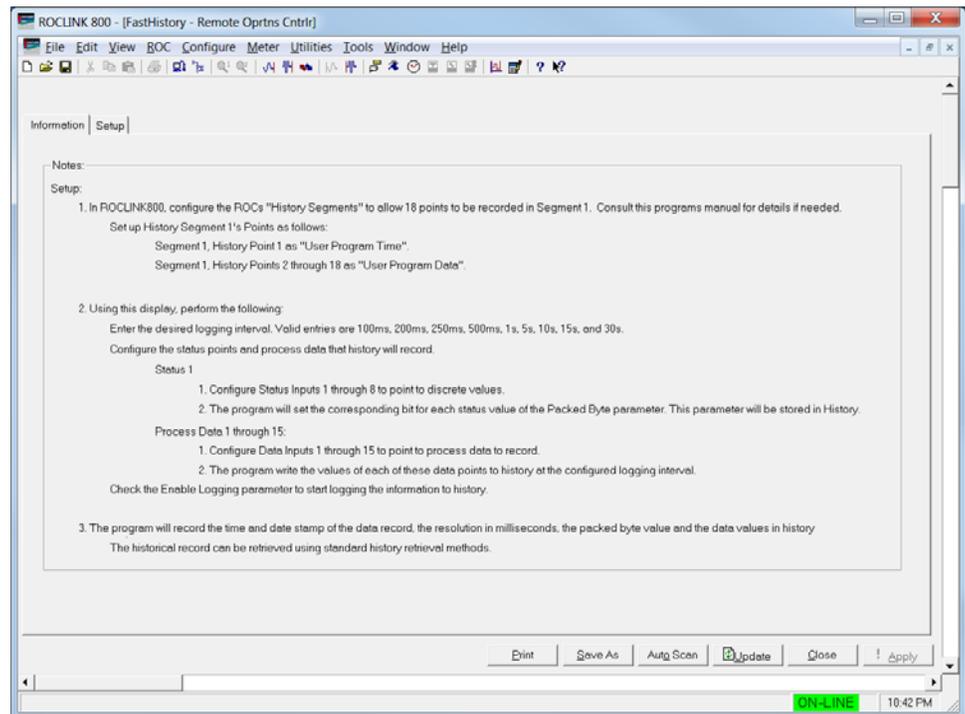
Figure 14. FastHistory, Information tab

Note: The Fast History screen has a tab format. *Sections 3.2.1* and *Section 3.2.2* discuss the requirements for each tab on the Product screen.

3.2.1 FastHistory – Information Tab

Use this tab (which displays when you access the Fast History screen) to view information and instructions on the proper operation of the program.

Note: This is a **read-only** screen and provides generalized reference information on the proper use of the Fast History program. Consult this manual for more detailed instructions.
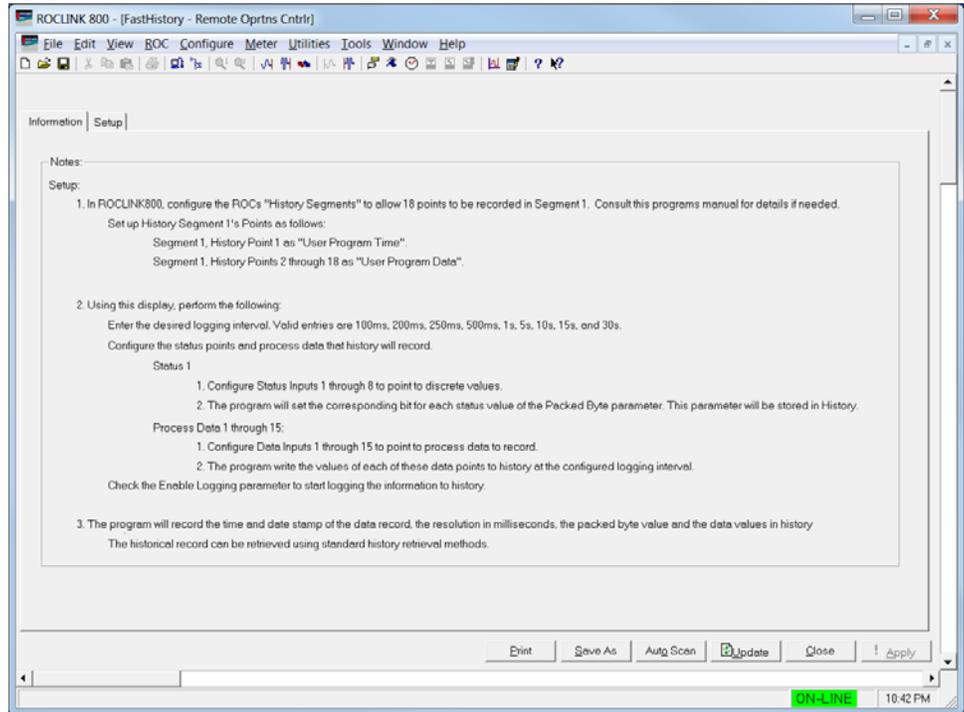
Figure 15. FastHistory, Information tab

3.2.2 FastHistory – Setup Tab

Use this tab to define the logging interval, status inputs, and process data that is recorded by the program.

To access this screen:

1. Select the **Setup** tab. The FastHistory screen displays:
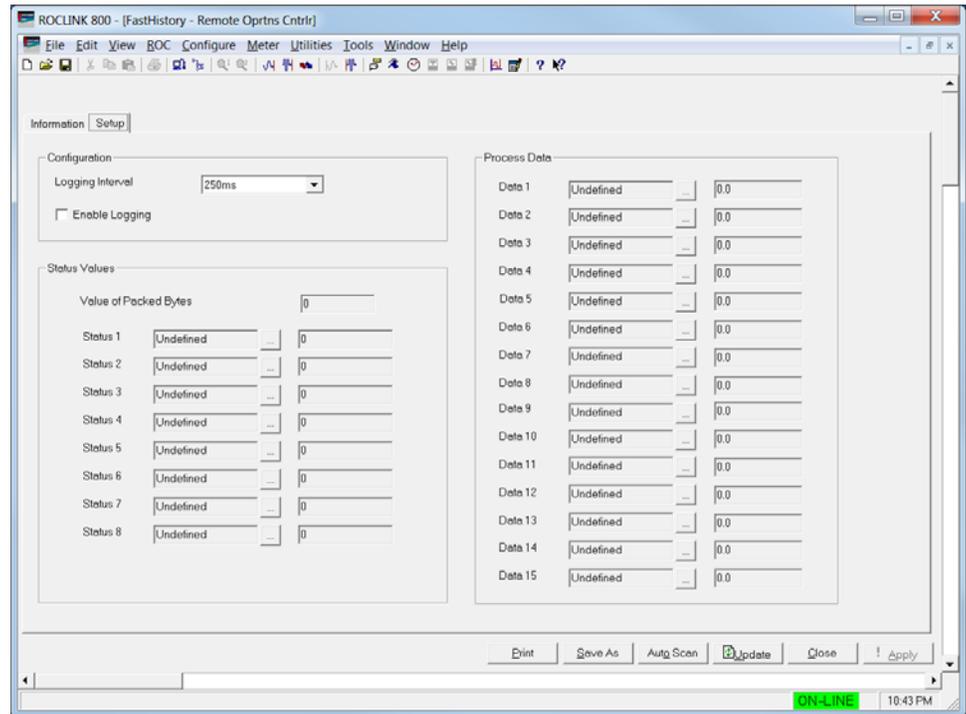
Figure 16. FastHistory, Setup tab

2. Review the values in the following fields:

Field	Description
Logging Interval	Defines the amount of time the program waits before polling the system for values and archiving them into history points. Valid values are **100ms**, **200ms**, **250ms**, **500ms**, **1000ms, 5s, 10s, 15s, and 30s**. The default value is **250ms**.

Logging Interval (ms)	# of History Points	Amount of History		
100	10000	16 min	40 s	
200	10000	33 min	20 s	
250	10000	41 min	40 s	
500	10000	1 hr	23 min	20 s

Logging Interval (s)	# of History Points	Amount of History		
1	10000	2 hr	46 min	40 s
5	10000	13 hr	53 min	20 s
10	10000	1 day	3 hr	46 min	40 s
15	10000	1 day	17 hr	40 min
30	10000	3 days	11 hr	20 min

Field	Description
Enable Logging	Select to have the program write the values gathered during the polling process to history. The default value is **unselected**.
Value of Packed Bytes	This **read-only** field displays the total size of the data gathered during the polling process.
Status 1-8	Click **…** to display the TLP screen, which you use to assign a discrete input. The status of the discrete input is recorded in history as a **1** or **0**.
Data 1-15	Click **…** to display the TLP screen, which you use to assign an analog input. The floating point value of the analog input is recorded in history (typically the live in-use EU value). If you do not use analog inputs, assign these fields only to parameters with a "Float" data type.

3. Click **Apply** and then **Close** to save any changes you have made and return to the main ROCLINK 800 screen.

4. Proceed to *Section 3.3* to define how the system retrieves history values.

3.3   Retrieving History Values

Use the following screens to retrieve history data from the device.

To access this screen:

1. From the ROCLINK menu bar, select **View** > **History** > **From Device**. The Select History to View screen displays.

2. Select Segment #1, Segment 01 and select **Hour/Periodic** as the History Type.
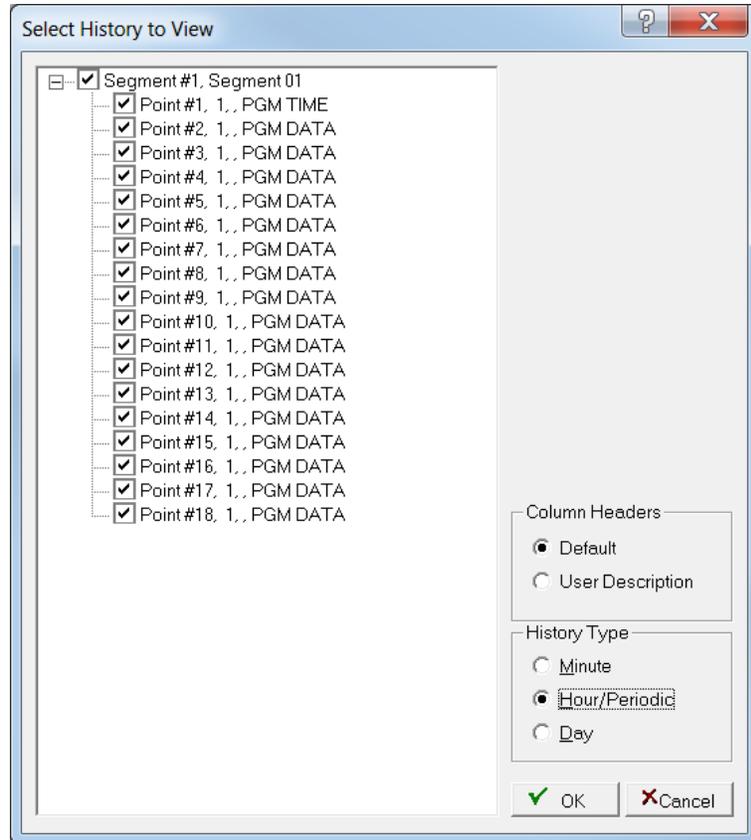
Figure 17. Select History to View

3. Click OK to display the Periodic History values table:

Figure 18. Periodic History

4. Review the values in the following fields (Columns):

Column	Description
Date/Time	The Fast History program does not use this column, which retains its default values.
PGM TIME	This column represents the time stamp (day and time) that the data in the same row has been archived.
PGM	The first PGM column contains the number of micro seconds into the second that the data is logged. For logging intervals less ais value increases relevant to the records taken within the same second. This field is not used for logging intervals greater than or equal to 1 second (such as 5 seconds)
PGM	The second PGM column contains the value of the packed bits recorded at the time of the history record

Column	Description
PGM	The third and subsequent PGM columns contain the value of the floating point parameters recorded at the time of the history record.

5. Proceed to *Section 3.4* to save the configuration.

3.4   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:
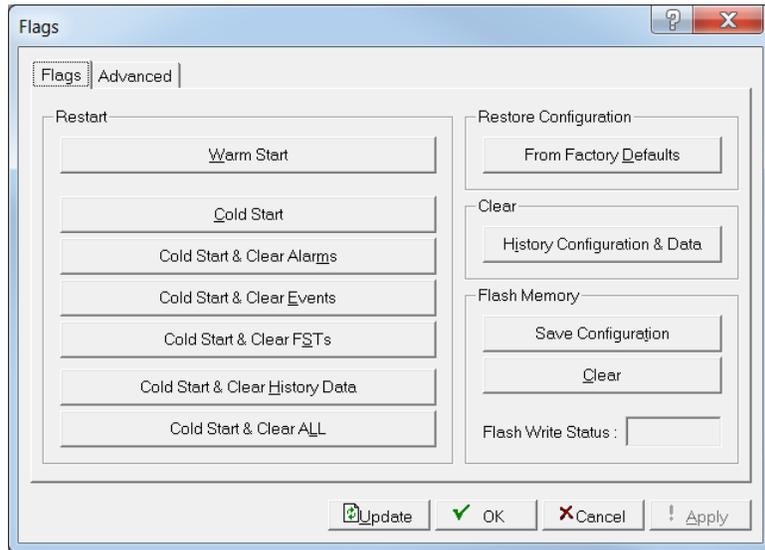
Figure 19. Flags screen

2. Click **Save Configuration**. A verification message displays:
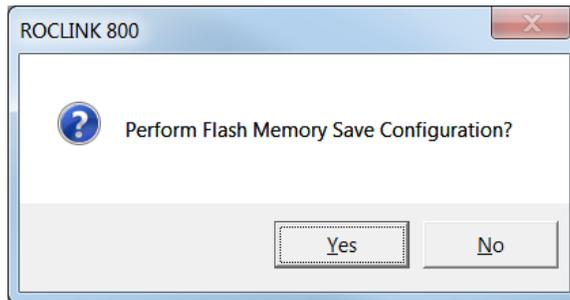
Figure 20. Perform Save screen

3. Click **OK** to begin the save process. The Status field on the Flags screen displays *In Progress*. When the process ends, the Status field on the Flags screen displays *Completed*.

4. 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 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 information on the user-defined point type the Fast History program uses:

Fast History

- Point Type 64/65 (Fast History)

4.1   Point Type 64/65: Fast History

Point type 64/65 contains the parameters defining selections for the Fast History program.

Point Type 64/65: Fast History

Parm #	Name	Access	Program or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
0	Tag ID	R/W	User	String10	10	0x20 → 0x7E for each ASCII character	" "	1.00	Identification name.
1	Log Interval	R/W	User	U16	2	100, 200, 250, 500, 1000, 5000, 10000, 15000, 30000	250	1.00	Millisecond interval between attempts to record data. Valid values are 100, 200, 250, 500, 1000, 5000, 10000, 15000, and 30000.
2	Enable Logging	R/W	User	U8	1	0-255	0	1.00	If enabled, logs data at the configured interval. If a status is non-zero, it is considered True, Logical 1.
3	Packed Status	R/O	System	U8	1	0-255	0	1.00	Looks at the value of status 1 through status 8, and packs the values into one byte to store in history. If a status is non-zero, it is considered True, Logical 1. The lowest bit of this byte represents the value of status 1. Example: Status 1 and 3 are non-zero, the rest are zero. The bits would be set as 0000 0101. The value of this parameter would be 5.
4	Status 1 TLP	R/W	User	TLP	3	Any TLP in the ROC	0, 0, 0	1.00	Defines the parameter in the ROC database to be represented by bit 1 in the packed byte.

Point Type 64/65: Fast History

Parm #	Name	Access	Program or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
5	Status 1	R/O	System	U8	1	0-255	0	1.00	The value of the parameter defined by Status 1. If a status is non-zero, it is considered True, Logical 1.
6	Status 2 TLP	R/W	User	TLP	3	Any TLP in the ROC	0, 0, 0	1.00	Defines the parameter in the ROC database to be represented by bit 2 in the packed byte.
7	Status 2	R/O	System	U8	1	0-255	0	1.00	The value of the parameter defined by Status 2. If a status is non-zero, it is considered True, Logical 1.
8	Status 3 TLP	R/W	User	TLP	3	Any TLP in the ROC	0, 0, 0	1.00	Defines the parameter in the ROC database to be represented by bit 3 in the packed byte.
9	Status 3	R/O	System	U8	1	0-255	0	1.00	The value of the parameter defined by Status 3. If a status is non-zero, it is considered True, Logical 1.
10	Status 4 TLP	R/W	User	TLP	3	Any TLP in the ROC	0, 0, 0	1.00	Defines the parameter in the ROC database to be represented by bit 4 in the packed byte.
11	Status 4	R/O	System	U8	1	0-255	0	1.00	The value of the parameter defined by Status 4. If a status is non-zero, it is considered True, Logical 1.
12	Status 5 TLP	R/W	User	TLP	3	Any TLP in the ROC	0, 0, 0	1.00	Defines the parameter in the ROC database to be represented by bit 5 in the packed byte.

Point Type 64/65: Fast History

Parm #	Name	Access	Program or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
13	Status 5	R/O	System	U8	1	0-255	0	1.00	The value of the parameter defined by Status 5. If a status is non-zero, it is considered True, Logical 1.
14	Status 6 TLP	R/W	User	TLP	3	Any TLP in the ROC	0, 0, 0	1.00	Defines the parameter in the ROC database to be represented by bit 6 in the packed byte.
15	Status 6	R/O	System	U8	1	0-255	0	1.00	The value of the parameter defined by Status 6. If a status is non-zero, it is considered True, Logical 1.
16	Status 7 TLP	R/W	User	TLP	3	Any TLP in the ROC	0, 0, 0	1.00	Defines the parameter in the ROC database to be represented by bit 7 in the packed byte.
17	Status 7	R/O	System	U8	1	0-255	0	1.00	The value of the parameter defined by Status 7. If a status is non-zero, it is considered True, Logical 1.
18	Status 8 TLP	R/W	User	TLP	3	Any TLP in the ROC	0, 0, 0	1.00	Defines the parameter in the ROC database to be represented by bit 8 in the packed byte.
19	Status 8	R/O	System	U8	1	0-255	0	1.00	The value of the parameter defined by Status 8. If a status is non-zero, it is considered True, Logical 1.
20	Data 1 TLP	R/W	User	TLP	3	Any TLP in the ROC	0, 0, 0	1.00	Defines the parameter in the ROC database to be stores in history.
21	Data 1	R/O	System	Float	1	Any valid IEEE 754 float	0	1.00	The value of the data point.

Point Type 64/65: Fast History

Parm #	Name	Access	Program or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
22	Data 2 TLP	R/W	User	TLP	3	Any TLP in the ROC	0, 0, 0	1.00	Defines the parameter in the ROC database to be stored in history.
23	Data 2	R/O	System	Float	4	Any valid IEEE 754 float	0	1.00	The value of the data point.
24	Data 3 TLP	R/W	User	TLP	3	Any TLP in the ROC	0, 0, 0	1.00	Defines the parameter in the ROC database to be stored in history.
25	Data 3	R/O	System	Float	4	Any valid IEEE 754 float	0	1.00	The value of the data point.
26	Data 4 TLP	R/W	User	TLP	3	Any TLP in the ROC	0, 0, 0	1.00	Defines the parameter in the ROC database to be stored in history.
27	Data 4	R/O	System	Float	4	Any valid IEEE 754 float	0	1.00	The value of the data point.
28	Data 5 TLP	R/W	User	TLP	3	Any TLP in the ROC	0, 0, 0	1.00	Defines the parameter in the ROC database to be stored in history.
29	Data 5	R/O	System	Float	4	Any valid IEEE 754 float	0	1.00	The value of the data point.
30	Data 6 TLP	R/W	User	TLP	3	Any TLP in the ROC	0, 0, 0	1.00	Defines the parameter in the ROC database to be stored in history.
31	Data 6	R/O	System	Float	4	Any valid IEEE 754 float	0	1.00	The value of the data point.
32	Data 7 TLP	R/W	User	TLP	3	Any TLP in the ROC	0, 0, 0	1.00	Defines the parameter in the ROC database to be stored in history.
33	Data 7	R/O	System	Float	4	Any valid IEEE 754 float	0	1.00	The value of the data point.
34	Data 8 TLP	R/W	User	TLP	3	Any TLP in the ROC	0, 0, 0	1.00	Defines the parameter in the ROC database to be stored in history.

Point Type 64/65: Fast History

Parm #	Name	Access	Program or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
35	Data 8	R/O	System	Float	4	Any valid IEEE 754 float	0	1.00	The value of the data point.
36	Data 9 TLP	R/W	User	TLP	3	Any TLP in the ROC	0, 0, 0	1.00	Defines the parameter in the ROC database to be stored in history.
37	Data 9	R/O	System	Float	4	Any valid IEEE 754 float	0	1.00	The value of the data point.
38	Data 10 TLP	R/W	User	TLP	3	Any TLP in the ROC	0, 0, 0	1.00	Defines the parameter in the ROC database to be stored in history.
39	Data 10	R/O	System	Float	4	Any valid IEEE 754 float	0	1.00	The value of the data point.
40	Data 11 TLP	R/W	User	TLP	3	Any TLP in the ROC	0, 0, 0	1.00	Defines the parameter in the ROC database to be stored in history.
41	Data 11	R/O	System	Float	4	Any valid IEEE 754 float	0	1.00	The value of the data point.
42	Data 12 TLP	R/W	User	TLP	3	Any TLP in the ROC	0, 0, 0	1.00	Defines the parameter in the ROC database to be stored in history.
43	Data 12	R/O	System	Float	4	Any valid IEEE 754 float	0	1.00	The value of the data point.
44	Data 13 TLP	R/W	User	TLP	3	Any TLP in the ROC	0, 0, 0	1.00	Defines the parameter in the ROC database to be stored in history.
45	Data 13	R/O	System	Float	4	Any valid IEEE 754 float	0	1.00	The value of the data point.
46	Data14 TLP	R/W	User	TLP	3	Any TLP in the ROC	0, 0, 0	1.00	Defines the parameter in the ROC database to be stored in history.
47	Data 14	R/O	System	Float	4	Any valid IEEE 754 float	0	1.00	The value of the data point.

Point Type 64/65: Fast History

Parm #	Name	Access	Program or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
48	Data 15 TLP	R/W	User	TLP	3	Any TLP in the ROC	0, 0, 0	1.00	Defines the parameter in the ROC database to be stored in history.
49	Data 15	R/O	System	Float	4	Any valid IEEE 754 float	0	1.00	The value of the data point.
50	Current History Index	R/O	System	U16	2	0 -> 65535	0	1.03	Determines the current working periodic index into the in-use history segment. Can be used for the retrieval of history via protocol. Increments by 1 for each history entry made, and will rollover to 0 when it reaches the maximum size of the history segment, as defined by 124,X,3 (Periodic Entries).

For customer service and technical support,
visit *www.emersonprocess.com/remote/support*

Headquarters:
Emerson Process Management
Remote Automation Solutions
6005 Rogerdale Road
Houston, TX 77072 U.S.A.
T +1 281 879 2699 | F +1 281 988 4445
www.EmersonProcess.com/Remote

Europe:
Emerson Process Management
Remote Automation Solutions
Unit 8, Waterfront Business Park
Dudley Road, Brierley Hill
Dudley UK DY5 1LX
T +44 1384 487200 | F +44 1384 487258
www.EmersonProcess.com/Remote

North American/Latin America:
Emerson Process Management
Remote Automation Solutions
6005 Rogerdale Road
Houston TX USA 77072
T +1 281 879 2699 | F +1 281 988 4445
www.EmersonProcess.com/Remote

Middle East/Africa:
Emerson Process Management
Remote Automation Solutions
Emerson FZE
P.O. Box 17033
Jebel Ali Free Zone – South 2
Dubai U.A.E.
T +971 4 8118100 | F +971 4 8865465
www.EmersonProcess.com/Remote

Asia-Pacific:
Emerson Process Management
Remote Automation Solutions
1 Pandan Crescent
Singapore 128461
T +65 6777 8211| F +65 6777 0947
www.EmersonProcess.com/Remote

Remote Automation Solutions

EMERSON
Process Management