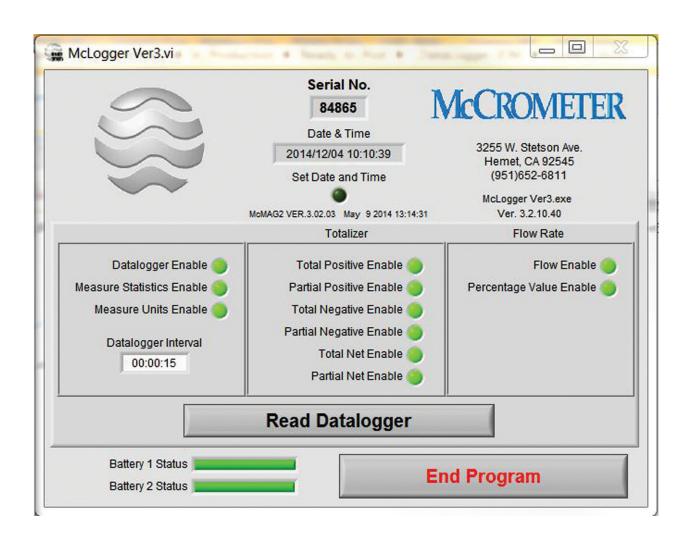


## McLogger Software Installation And Operation Manual Version 3

30121-87 Rev. 1.4 December 8, 2017





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## 1.0 INTRODUCTION

The McLogger is software that allows control and access to the datalogger installed in the converter flow meter. The following instructions cover the installation and use of the McLogger software.

## 2.0 INSTALLING SOFTWARE

To in stall the McLogger software, follow the steps below:

**Step 1:** Insert the provided USB memory stick into your computer. An "AutoPlay" dialogue box will appear. Click on "Open folder to view files". See Figure 1.



Figure 1. The AutoPlay Dialogue Box

Step 2: A window will open showing the contents of the files. Double click the "install.bat" file. See Figure 2.



Figure 2. Install.bat file

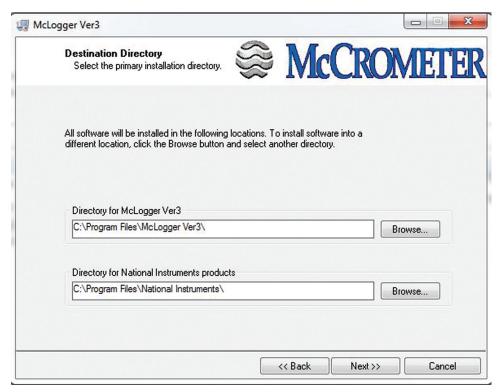


**Step 3:** Two command windows will appear. See Figure 3. Allow both command windows to complete their functions before proceeding.



**Figure 3. Two Command Windows** 

**Step 4:** When the command windows have competed their functions, a dialogue box will appear. See Figure 4. You may either select the location where the software will be installed, or select "Next" to accept the default locations. When the installer completes, click "Finish" to complete the McLogger software installation process.



**Figure 4. Software Installation Location** 

Once the software installation process is completed, follow the instructions in the next section to attach the cable and run the software.



#### 3.0 ATTACHING DATA CABLE



#### **IMPORTANT NOTE!**

This applies to both the Mc Mag 3000 and ML255: When the data port is not in use always screw the protective cap onto meter data port to prevent the entry of moisture and dirt.



#### **IMPORTANT NOTE!**

This applies to both the Mc Mag 3000 and ML255: When the data cable is attached to the meter and computer it causes a substantial drain on the batteries. Disconnect the data cable from the flow meter when not accessing data.

## 3.1 Connecting to Mc Mag 3000

The data cable attaches to the Mc Mag3000 at the data port located on the converter box on the upstream side. See Figure 5 below.

- a. Remove the protective cap from the port.
- b. Insert the cable and turn the knurled collar to the right until securely locked into place.



Figure 5. Attaching The Data Cable to the Mc Mag 3000

## 3.2 Connecting to the ML255

The data cable attaches through a port in the back of the converter. To access the port, remove the plug on the back cover using a 8mm hex wrench or a 19mm box wrench. Insert the data cable end into the data port. Be careful not to put a lot of pressure while inserting the data cable. See Figure 6.

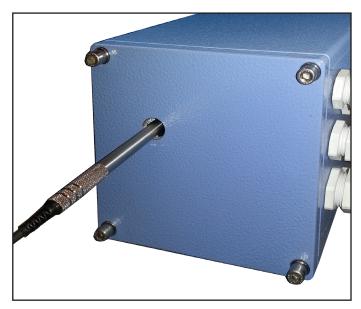


Figure 6. Attaching The Data Cable to the ML255



## 4.0 USING THE McLOGGER

## 4.1 McLogger User Interface

Below is the opening screen for the McLogger program. See Figure 7 and the following table (see next page) for a description of the datalogger controls.

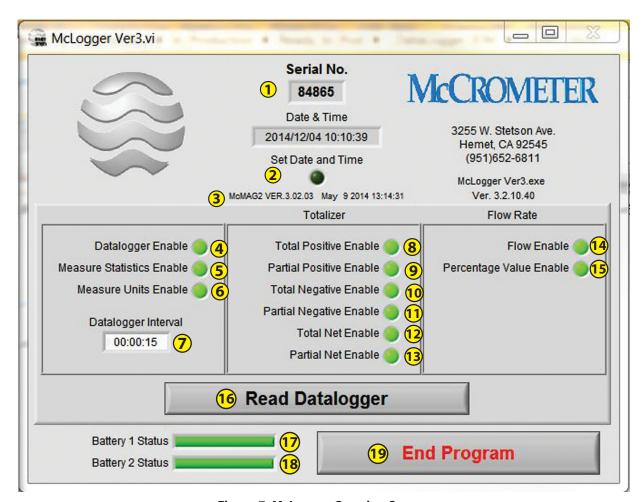


Figure 7. McLogger Opening Screen



#### **IMPORTANT NOTE! DEFAULT SETTINGS**

When shipped from the factory the default settings are: all features are enabled with logging set for every twelve (12) hours. The features must be enabled to log the the data associated with that feature. If the feature is disabled the datalogger will not record that data, and such data cannot be retrieved retroactively.

The table below refers to the functions identified in Figure 7.

ltem	Description	Function
1	Serial No.	The unique internal serial number of the converter being read (not the meter's serial number)
2	Set Date and Time	Syncs the flow meter's date and time to the computer's
3	Firmware Revision	Converter Firmware Revision Number
4	Datalogger Enable	Enable/Disable the Data Logger acquisition of samples
5	Measure Statistics Enable	Enables/Disables the registration of Measuring Statistics in logged data (number of measured cycles, status of batteries, board temperature)
6	Measure Units Enable	Enables/Disables units of measure in logged data
7	Datalogger Interval	Read/Set the standard interval time for data collection (hh:mm:ss)
8	Total Positive Enable	Enable/Disable the registration of the Total Positive Totalizer
9	Partial Positive Enable	Enable/Disable the registration of the Partial Positive Totalizer
10	Total Negative Enable	Enable/Disable the registration of the Total Negative Totalizer
11	Partial Negative Enable	Enable/Disable the registration of the Partial Negative Totalizer
12	Total Net Enable	Enable/Disable the registration of the Total Net Totalizer
13	Partial Net Enable	Enable/Disable the registration of the Partial Net Totalizer
14	Flow Enable	Enable/Disable the registration of the Flow Rate in the data
15	Percentage Value Enable	Enable/Disable the registration of the Percentage Values (%) of full scale
16	Read Datalogger	Opens the data logger download function
17	Battery 1 Status	Indicates the health of battery 1
18	Battery 2 Status	Indicates the health of battery 2
19	End Program	Exits McLogger program



#### NOTE ON THE DATALOGGER INTERVAL

The data capacity of the datalogger is large enough to capture data for several years. The default interval for capturing data is every 12 hours, but can be set to any interval in hours, minutes, and seconds, from 15 second to 24 hours.

The 2GB data card has sufficient capacity for any amount of data that is captured, regardless of the interval setting. Even at the 15 second interval, it will take five years to fill the data card to capacity. Most users will never use this interval unless they are troubleshooting a specific problem.

The more data that is accumulated, the longer it will take to download it. Thirty days' worth of data accumulated at the one hour interval will take roughly about one minute to download. Use the table below to determine your data interval. The download frequency for the intervals shown below is 30 days.

Data interval	5 minutes	30 minutes	1 hour	12 hours
Duration of download	11.5 minutes	115 seconds	57 seconds	5 seconds

Thus, users need to consider the time it takes to download the data combined with the frequency they will download it for analysis and archiving.



## 4.2 Starting the Datalogger Function

To download the information stored in the Datalogger, press the "Read Datalogger" button on the opening screen (see Figure 7, item 16, described in section 4.1). A new window will open showing the areas to set the logging date parameters to start the data retrieval. See Figure 8 below and the corresponding table for an explanation of each feature's function and description.



Figure 8. Data Retrieval Screen

ltem	Description	Function
1	Selection Dates	Sets the date range for the collection of data
2	1 Collection Date	Indicates the number of collection days and restates the collection data range
3	Data type	Selects between: Data, Events and Display Directory
4	Retrieve Data	Starts retrieving data from converter
5	Write File	Exports data in an comma separated values (.csv) file
6	Line No	Series of individual data line numbers for each date
7	Date	Date of logging of data
8	Time	Time of logging of data
9	Units	Unit of measure for total positive flow
10	Total Pos	Totalizer for total positive flow
11	Units	Unit of measure for total negative flow
12	Total Neg	Totalizer for total negative flow
13	Units	Unit of measure for flow rate
14	Flow Rate	Instantaneous rate of flow
15	Flow Rate %	Rate of flow as a percentage of full scale
16	Units	Unit of measure for partial positive flow
17	Partial Pos	Totalizer for partial positive flow
18	Units	Unit of measure for partial negative flow
19	Partial Neg	Totalizer for partial negative flow
20	Units	Unit of measure for total net totalizer
21	Total Net	Total net totalizer
22	Units	Unit of measure for partial net totalizer
23	Partial Net	Partial net totalizer
24	Cycles/Hour	The number of readings the converter takes (not associated with data logging)
25	Battery 1	Health of Battery 1
26	Battery 2	Health of Battery 2
27	Brd Temp	Temperature of the circuit board in flow meter
28	Done	Ends and closes the data retrieval function



**IMPORTANT NOTE!** The above parameter must be set (enabled) for the meter to log the data during the interval periods. Parameters cannot be set to retroactively collect data.



## 4.3 Reading the Retrieved Data

When it is time to retrieve and download data press the "Retrieve Data" button (see Figure 8, Item 4) to begin the analysis and acquisition of the requested data. If the collection date is not there it will state that it will be removed from the series. Once the data is prepared, a dialogue box will appear to indicate the amount of time it will take to produce the data (see Figure 9 below).

The system requires approval before acquiring data as prolonged usage of the data cable can cause a drain on the batteries greater than with normal use. The approval process allows the user to abort the data request if the function would take too long. See the "important Note" below.

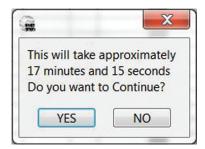


Figure 9. Data Acquisition Approval Screen



#### **IMPORTANT NOTE!**

When the data cable is attached it causes a substantial drain on the batteries. Disconnect the data cable from the flow meter when not accessing data.

## 4.4 Data Organization

When "Data" is selected from the "Data Type" selection box (see Figure 8, Item 3) the logged data relative to flow is returned. The data is organized in three sections: total flow, partial flow and statistics. Each section is explained below.

#### 4.4.1 Total Flow

The total flow data is shown as a sample below:

Line No	Date	Time	Units	Total Pos	Units	Total Neg	Units	Flow Rate		Flow Rate %
3279	2014/12/04	12:39:00	KGL	25527	KGL	1694	Gal/m	31.7	%	1.06
3280	2014/12/04	12:39:15	KGL	25527	KGL	1694	Gal/m	93.6	%	3.12
3281	2014/12/04	12:39:30	KGL	25527	KGL	1694	Gal/m	261.4	%	8.71
3282	2014/12/04	12:39:45	KGL	25527	KGL	1694	Gal/m	225.4	%	7.51
3283	2014/12/04	12:40:00	KGL	25527	KGL	1694	Gal/m	274.9	%	9.16
3284	2014/12/04	12:40:15	KGL	25527	KGL	1694	Gal/m	354.1	%	11.80

Figure 10. Total Flow Data

Date and Time = the date and time each line of data was acquired from the flow meter.

Units = the unit of measure for the total positive totalizer.

Total Pos = the totalizer for the total positive flow.

Units = the unit of measure for the total negative totalizer.

Flow Rate = the rate of flow at the time of data acquisition.

Flow Rate % = the flow rate as a percentage of full scale.



#### 4.4.2 Partial Flow

The partial flow data is shown as a sample below:

Units	Partial Pos	Units	Partial Neg	Units	Total Net	Units	Partial Net
KGL	25527	KGL	1694	KGL	23833	KGL	23833
KGL	25527	KGL	1694	KGL	23833	KGL	23833
KGL	25527	KGL	1694	KGL	23833	KGL	23833
KGL	25527	KGL	1694	KGL	23833	KGL	23833
KGL	25527	KGL	1694	KGL	23833	KGL	23833
KGL	25527	KGL	1694	KGL	23833	KGL	23833

Figure 11. Partial Flow Data

Units = the unit of measure for the partial positive totalizer.

Partial Pos = the totalizer for the partial positive flow.

Units = the unit of measure for the partial negative totalizer.

Partial Neg = the totalizer for the partial negative flow.

Units = the unit of measure for the total net totalizer

Total Net = the totalizer for the total net flow.

Units = the unit of measure for the partial net totalizer.

Partial Net = the totalizer for the partial net flow.

#### 4.4.3 Statistics

The statistic data is shown as a sample below:

Cycles/Hour		Battery1		Battery2		Brd Temp
261	%	99	%	99	°F	72
261	%	99	%	99	°F	72
261	%	99	%	99	°F	72
261	%	99	%	99	°F	72
261	%	99	%	99	°F	72
261	%	99	%	99	°F	72
	-	-	-		- 111	-

Figure 12. Statistics Data

Cycles/Hour = the number of readings the converter takes in an hour (not associated with data logging).

Battery1 = the health of battery 1 shown at a percentage of remaining life.

Battery2 = the health of battery 2 shown at a percentage of remaining life.

Brd Temp = the temperature of the circuit board in the flow meter shown in degrees.



#### **4.4.4 Events**

When "Events" is selected from the "Data Type" selection box (see Figure 8, Item 3) the logged data relative to any system event is returned relative to the selection dates. An "Event" is defined as anything that happens to the flow meter, either internally or by the meter operator. These events can include error codes and alarms.

The event data is shown below as an example below:

Event
2014/11/29 03:44:21 # WARNING: FLOW SENSOR SIGNAL ERROR (VDF=-0.07 VCM=-2.12 NS=255)
2014/11/29 03:47:51 # (EVENT OCCURRED 11 TIMES IN THE LAST 60 s) Flow sensor signal alarm/warning condition terminated
2014/11/29 04:00:06 - === SYSLOG TIME MARK ===
2014/11/29 05:00:06 - === SYSLOG TIME MARK ===
2014/11/29 05:35:36 # WARNING: FLOW SENSOR SIGNAL ERROR (VDF=-0.06 VCM=-2.16 NS=255)
2014/11/29 05:38:21 # (EVENT OCCURRED 9 TIMES IN THE LAST 60 s) Flow sensor signal alarm/warning condition terminated
2014/11/29 06:00:06 - === SYSLOG TIME MARK ===
2014/11/29 07:00:06 - === SYSLOG TIME MARK ===
2014/11/29 08:00:06 - === SYSLOG TIME MARK ===
2014/11/29 09:00:06 - === SYSLOG TIME MARK ===
2014/11/29 09:48:37 # WARNING: FLOW SENSOR SIGNAL ERROR (VDF=-0.01 VCM=-0.09 NS=255)
2014/11/29 09:48:37 # Flow sensor signal alarm/warning condition terminated

Figure 13. Events Data

#### 4.4.5 Display Directory

When "Display Dir" is selected from the "Data Type" selection box (see Figure 8, Item 3) it shows the data files that have been retrieved relative to the selection dates. The Display Directory data is shown as a sample below:

Directory
2014\11\01\DATA_LOG.CSV
2014\11\02\DATA_LOG.CSV
2014\11\03\DATA_LOG.CSV
2014\11\04\DATA_LOG.CSV
2014\11\05\DATA_LOG.CSV
2014\11\06\DATA_LOG.CSV
2014\11\07\DATA_LOG.CSV
2014\11\08\DATA_LOG.CSV
2014\11\09\DATA_LOG.CSV
2014\11\10\DATA_LOG.CSV
2014\11\11\DATA_LOG.CSV
2014\11\112\DATA_LOG.CSV
2014\11\13\DATA_LOG.CSV
2014\11\14DATA_LOG.CSV
2014\11\15DATA_LOG.CSV
2014\11\16\DATA_LOG.CSV

**Figure 14. Display Directory Data** 

## 4.5 Downloading the Retrieved Data

Once the requested logged data populates the screen it can be downloaded to your computer as a comma separated values file (CSV). To download the file, press the "Write File" button (see Figure 8, Item 5) and follow the prompts to direct where the file is to be saved.

## 5.0 CLOSING THE DATALOGGER

To close the program press the "Done" button (see Figure 8, Item 28). Then press the "End Program" on the opening screen (see Figure 8, Item 18). Once the program closed, remove the data cable from the converter. Leaving the data cable attached to flow meter and computer will cause a drain on the battery.



#### **IMPORTANT NOTE!**

Always screw the protective cap onto meter data port when not in use to prevent the entry of moisture and dirt.



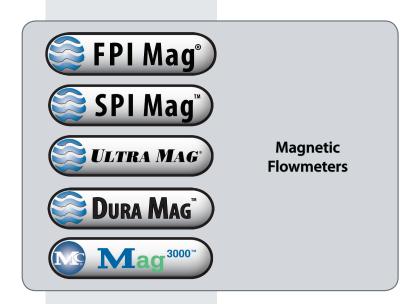
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