

SOFTWARE

FT4X VIEW™

Free PC-Based Software Tool

for the FT4X Thermal Gas Mass Flow Meter



Software Instruction Manual

Document #108057

Rev D



This publication must be read in its entirety before performing any operation. Failure to understand and follow these instructions could result in serious personal injury and/or damage to the equipment. Should this equipment require repair or adjustment beyond the procedures given herein, contact the factory at:

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**Download Technical Data Sheets from our website:
www.foxthermal.com**

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Fox Thermal FT4X Manuals:

- **Model FT4X Instruction Manual**

All Fox Thermal Manuals and software available in English only.

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FT4X View™

Introduction

Introduction

Thank you for purchasing the Model FT4X Thermal Gas Mass Flow meter from Fox Thermal. The Model FT4X is one of the most technically advanced flow meters in the world. Extensive engineering effort has been invested to deliver advanced features, accuracy measurement performance, and outstanding reliability.

The FT4X View™ software allows users to easily display data and configure the FT4X to their specific application parameters. The software allows users to collect flow/temperature data and export to an Excel® file. The software can access the Gas-SelectX® menu and the CAL-V™ calibration validation diagnostic test. Unique to the FT4X is the addition of several logs: 24-Hour Log, Configuration Log, Event Log, and BLM Log. These logs provide useful information about the daily totals by Contract Time, meter Configuration, and event/alarm records.

The Model FT4X is available with two different communication options: RS485 Modbus or HART. The FT4X View™ Software has been developed to react intuitively to the type of FT4X meter with which it is interfacing.

This Manual contains the installation and operation instructions for the FT4X View™ Software.

This manual is divided into the following sections: Introduction, Installation, Startup, Operation, Glossary and Index.

Prepare the Flow Meter for Connecting to a PC

Open the enclosure by unscrewing the back enclosure cap. Connect the FT4X to a PC with a USB (Type-A to Micro-B) cable. If the PC is connected to the internet and running Windows®, the PC will try to automatically load the VCP driver. If the driver does not load automatically, download the VCP driver at: www.ftdichip.com/Drivers/VCP.htm

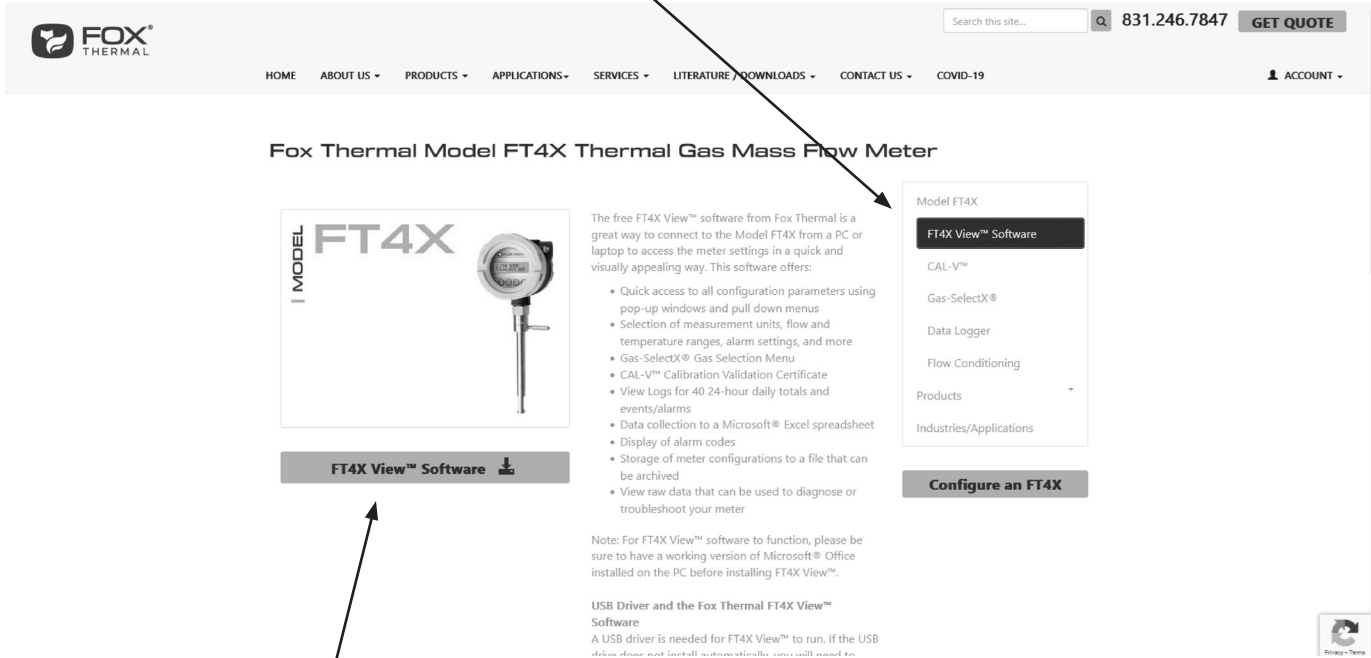
Download the FT4X View™ Software from Fox Website

The latest version of the FT4X View™ software is available for download at www.foxthermal.com/products/ft4x.php#ft4xview

The location of the FT4X View Software download link on the FT4X product webpage is shown below.

Fig. 2.1: Online Download Location for FT4X View™ Software

1 - Choose the FT4X View™ Software Sub-menu



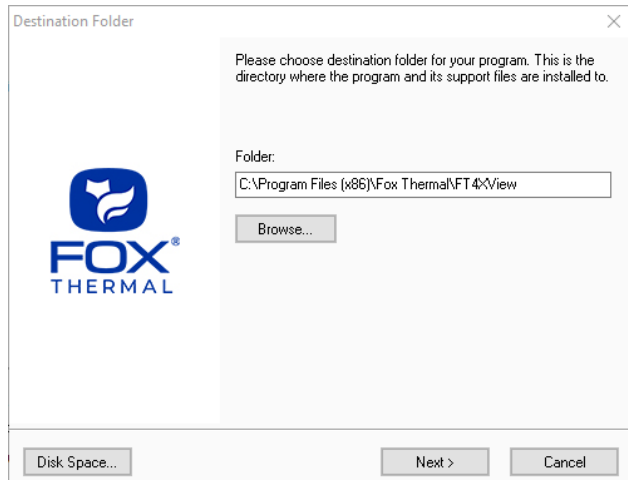
2 - Click the button to download software

FT4X View™

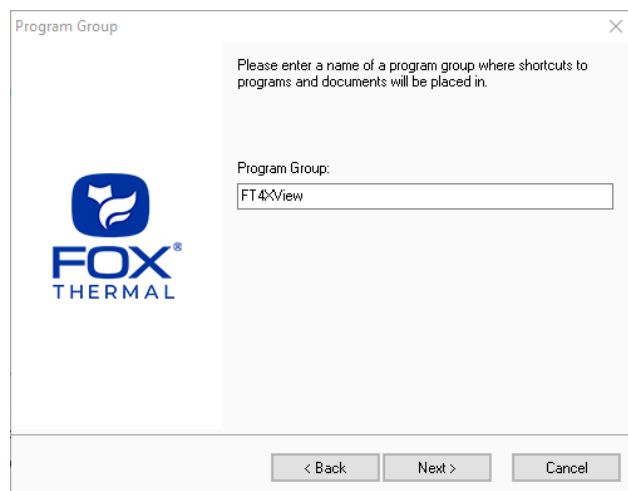
Installation

Install the FT4X View™ Software on a PC

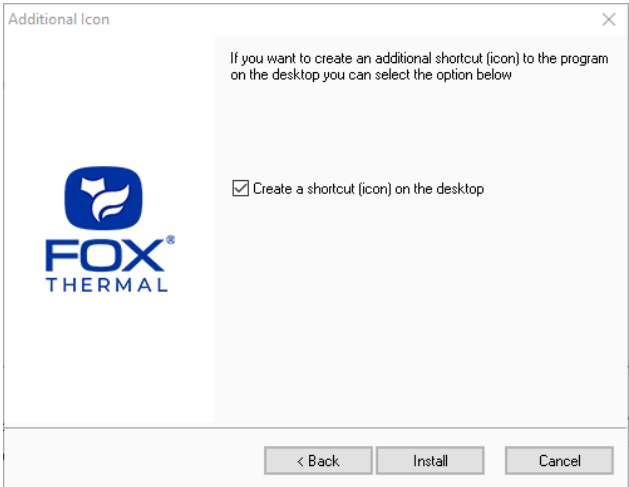
To install the FT4X View™ program, run the downloaded "ft4x-view-setup.exe" file. After clicking "Next" the screen will show:



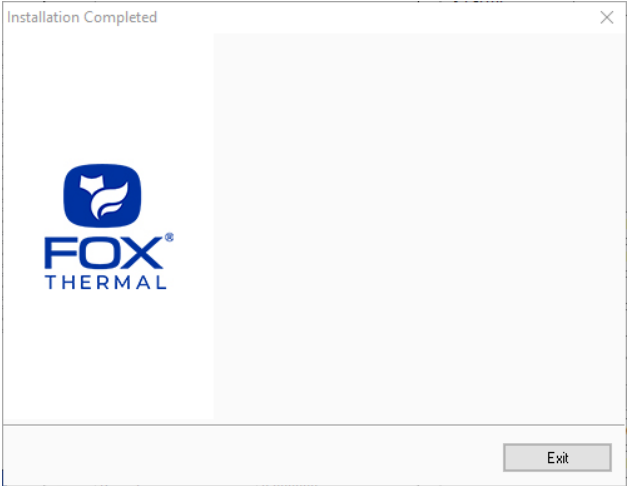
Select the folder in which you wish to install FT4X View™, then click "Next".



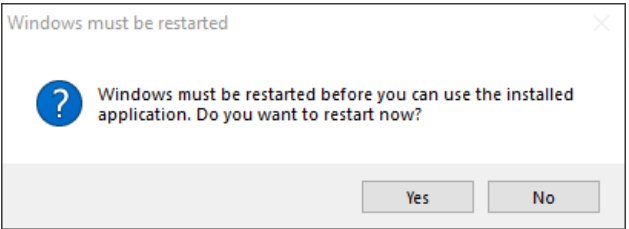
Please enter a name for the Program Group or use the default FT4XView name and click "Next".



To find the program easily, you may choose to create a shortcut icon for your PC desktop by placing a check in the checkbox. Click "Install" to continue.



When the program is done installing, click "Exit".



To complete the installation process, close all applications, and restart your computer. The FT4X View™ Software will be ready to use after the computer has rebooted.

FT4X View™

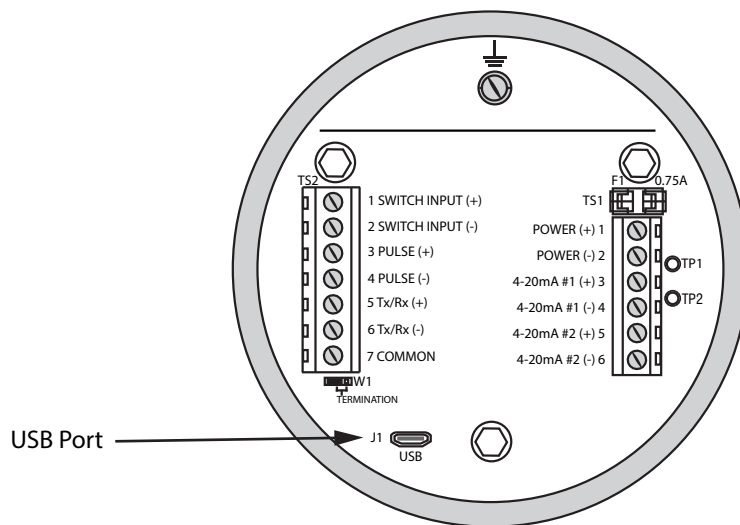
Startup

Power on the Meter

Refer to the FT4X Instruction Manual for Power input wiring instructions. The FT4X must be powered on to communicate with the FT4X View™ software tool.

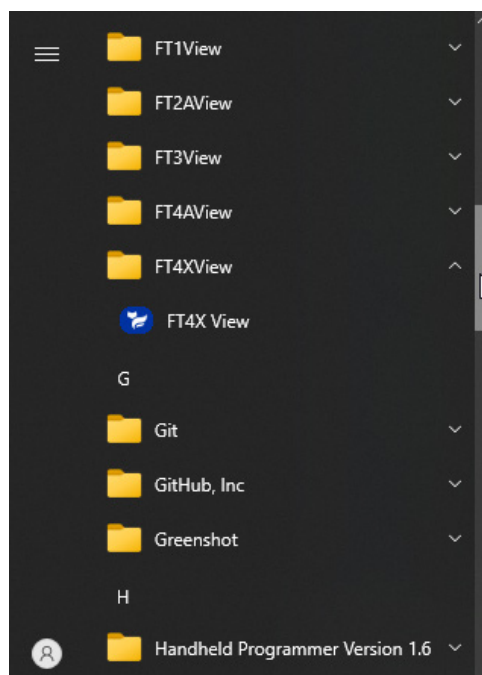
Connect the FT4X to a PC or Laptop via USB

Be sure to have your FT4X flow meter connected by USB to a PC or laptop that has FT4X View™ software successfully downloaded to the operating system. The USB port can be found by removing the rear enclosure cap.



Startup FT4X View™ Software

After re-boot and connecting to a PC via USB, startup the FT4X View™ software accessible in the Windows "Start" button or search bar.



COM Port Assignment

Upon opening FT4X View™ for the first time, Windows® will assign a "virtual COM port". The COM port number that has been assigned will appear automatically in the drop down box.

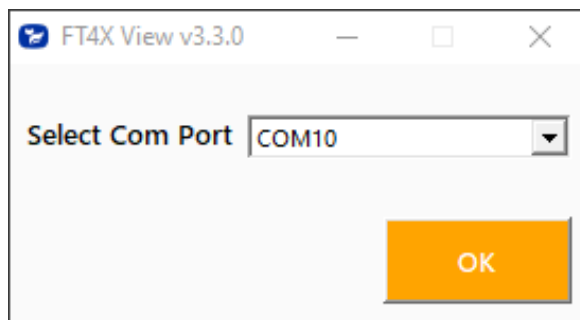
If the correct COM Port does not appear, go to Control Panel/Device Manager and click on Ports (COM & LPT). The COM port number should be displayed under the USB symbol.

If prompted, enter the assigned COM port in FT4X View™ by using the drop down menu and press **OK**.



NOTE! The FT4X Meter must be plugged into the computer in order for the system to register it.

Fig. 3.1: COM Port Selection Window



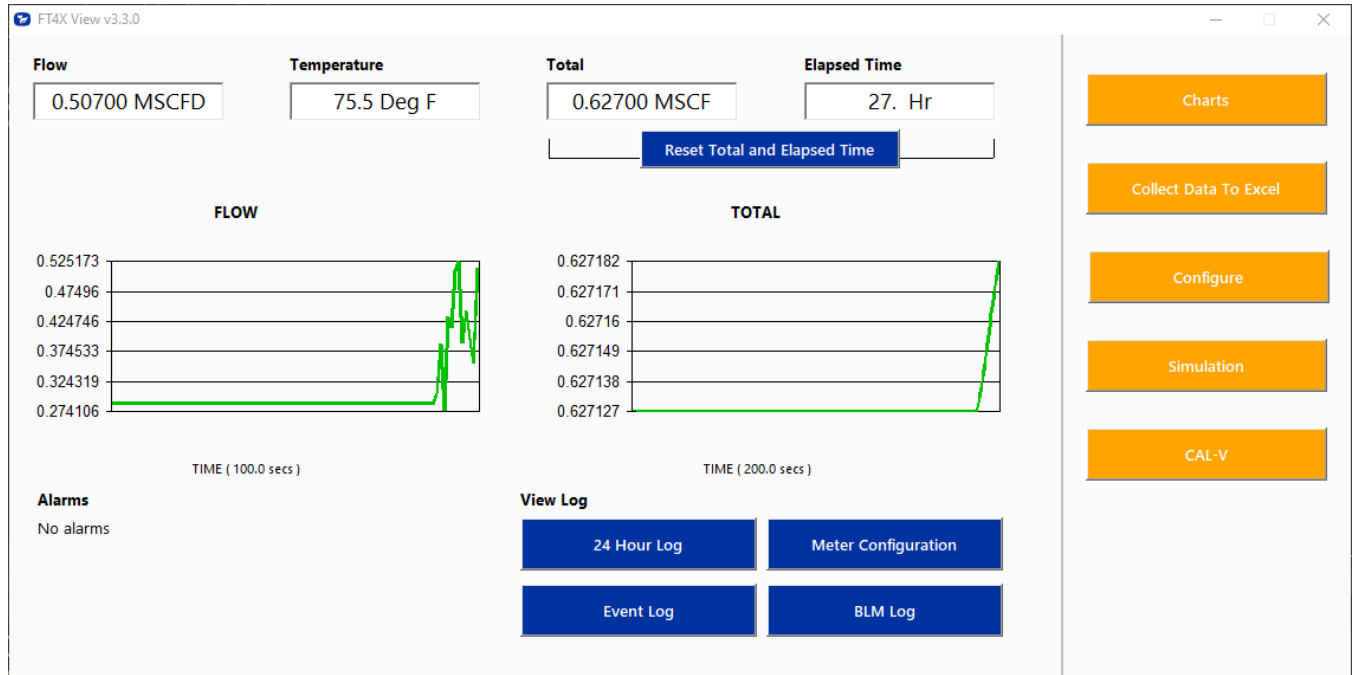
FT4X View™

Operation

Main Screen

The image below depicts the main screen that appears upon entering FT4X View™.

Fig. 4.1: FT4X View™ Main Screen



Flow & Temperature

FT4X View™ will show values for flow and temperature in the pipe in real time based on how the flow meter has been configured (in this case, MSCFD and °F). These values are in the upper left of the screen.

Total & Elapsed Time

Flow total and Elapsed Time are shown in the upper right of the screen and can be reset with the button just underneath the displayed values.

Charts Button

This calls up two charts that can be configured for flow, temperature, or total flow. Each chart can be individually enlarged and rescaled from the original default settings. For more information on how to change the charts settings, refer to p. 12.



NOTE! Data on the screen is refreshed at user selected update rate. See "Charts Settings".

Collect Data to Excel® Button

Selecting the Collect Data to Excel button allows all selected data to be assembled into an Excel® file at the specified sample time. All readings are time/date stamped. For more information on using the data collection function, refer to "Collect Data to Excel" on p. 14.

Configure Button

This allows the operator to set the application parameters. This can be done using the FT4X View™ software or manually using the instrument's display. For more information on configuring application parameters, refer to "Configure" on p. 16.

Simulation Button

This function can be used to verify that all the flow meter outputs are working properly. The easiest way to perform this check is to enter a specific temperature/flow rate. The corresponding analog outputs can be verified using a DMM and using a timer for the pulse. Refer to p. 23 for more information on how to use the Simulation function.

Calibration Validation Diagnostic Test Section**CAL-V™ Button**

Calibration validation allows customers to validate the accuracy and functionality of the meter in the field with a push of a button. By performing a simple test, the operator can verify that the meter is running accurately.

The CAL-V™ calibration validation test is explained in greater detail on p. 24

View Log (Data Logger) Section**24 Hour Log Button**

Pressing this button produces a pdf list of the 40 latest 24-hour totals. The user defined Contract Time specifies when the Daily Total 24 Hour Log is recorded each day.

Meter Configuration Button

The Configuration Log button produces a pdf listing of the meter's current configuration settings.

Event Log Button

The Event Log button will open a series of windows requesting the number of records to be accessed and which record must start the list. This data will be produced in a pdf document.

BLM Log Button

The BLM Log Button provides the user with a log detailing a 7 year history of flow, temperature, and total at hourly intervals.

Charts Settings

From the main screen, click on "Charts". Two charts will appear side-by-side. Each chart can be selected for flow, temperature or total flow.

Fig. 4.2: Chart Settings Window - Chart 1

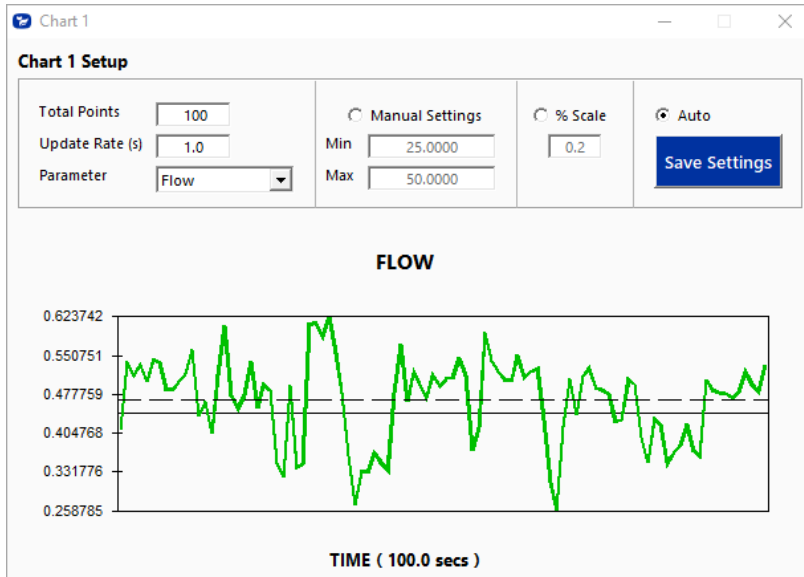
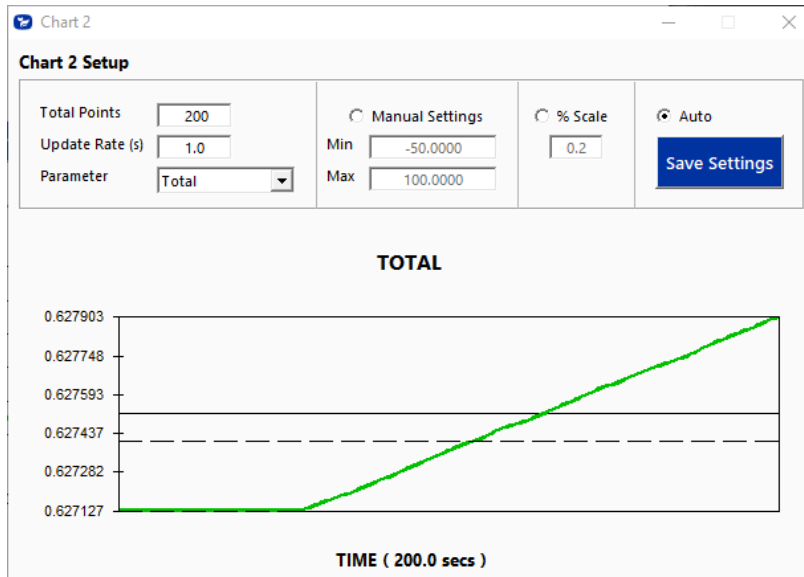


Fig. 4.3: Chart Settings Window - Chart 2



Total Points

The total points specifies the number of points plotted on the graph. Older data is automatically omitted.

Update Rate

The update rate controls the data refresh rate.

Parameters

Flow, temperature or total flow can easily be selected for charting.

Manual Chart Setting

The Manual mode allows a user to input min/max values for chart scaling. When entering new values, click on Save Settings for them to take effect.

Percent (%) Scale

This sets the scale to a plus/minus specified percentage from the initial measured value. Typically, the minimum/maximum is scaled at plus/minus 10% of that initial value.

Automatic Chart Setting

Automatic mode lets the program adjust the scaling on a real-time basis based on the entire range of values.

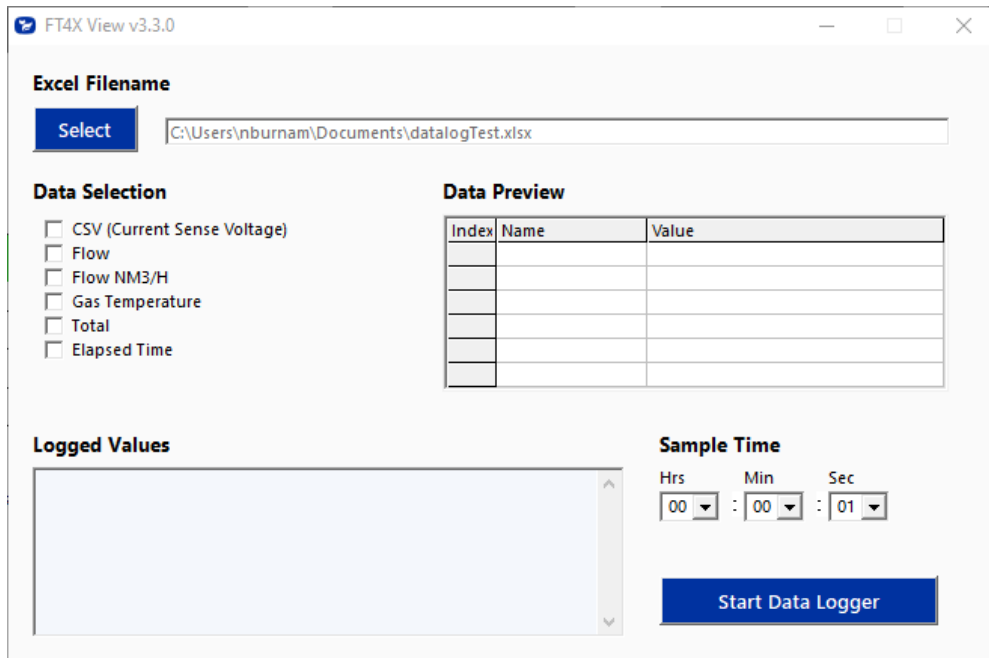
Save Settings

Click the Save Settings button to save the chart settings to the main screen window. These settings can then be closed by clicking on the "X" at the top right corner of the window.

Collect Data to Excel

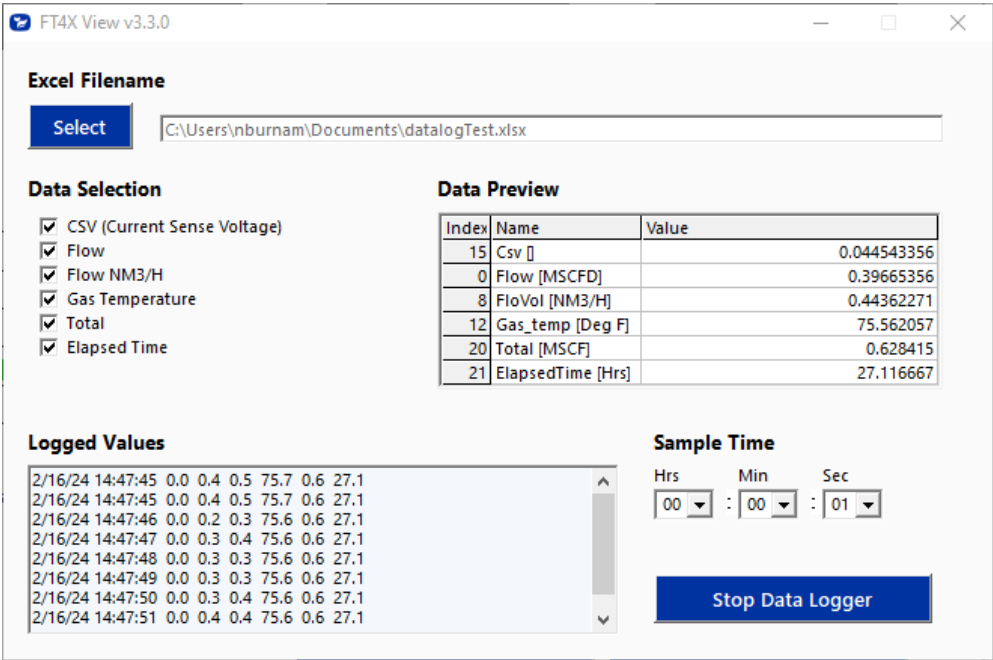
The Data Collection screen can be accessed from the main screen. Clicking the "Collect Data to Excel" function will prompt the user for a password. Enter a Level I (1234) or Level II (9111) password and the Data Collection window will appear.

Fig. 4.4: Data Collection Window - Logging Turned Off



Select the sample time from the drop menu, and then select the required data from the Data Selection list. Press the "Select" button to create a name for the Excel file and then press the "Start Data Logger" button.

Fig. 4.5: Data Collection Window - Logging Turned On

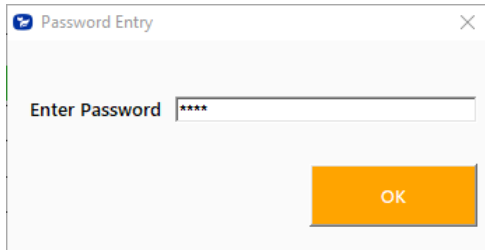


When "Start Data Logger" is pressed, the data is recorded in the specified Excel file - and also displayed in the Logged Values window. Pressing "Stop Data Logger" ends data acquisition.

Configure

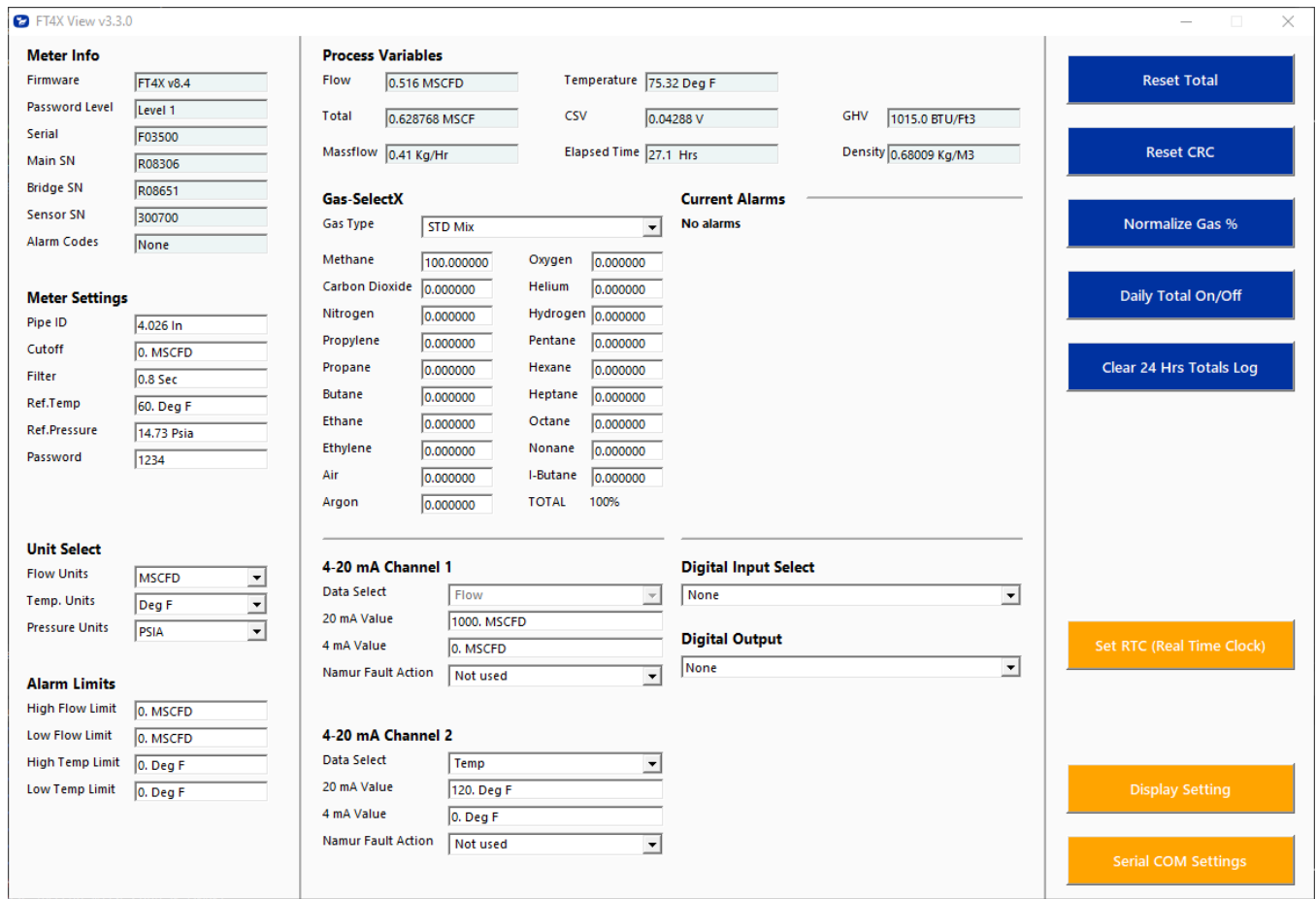
From the main screen, click on the "Configure" button and enter the requested password for either Level I (1234) or Level II (9111) access.

Fig. 4.6: Password Window



NOTE! Most users will only need access to the Level I screen to do basic setting of units, alarms and output scaling.

Fig. 4.7: Level I Configuration Screen



Meter Info

- **Firmware:** FT4X meter firmware revision level.
- **Password level:** FT4X View Password level entered.
- **Serial Numbers:** Serial numbers of the meter, the main board, bridge and sensor (factory set).
- **Alarm Codes:** Displays the alarm codes as described in the meter manual. These codes are written out in the Current Alarms menu.

Meter Settings

- **Pipe Inner Diameter (ID):** The pipe inner diameter can be entered in either inches or millimeters, depending on whether the flow or mass measurement units selected are metric or US standard. Once entered, the program will automatically recalculate the pipe cross-sectional area for the velocity/flow calculations. A precise ID is required to ensure accurate flow measurement.
- **Cut-off:** A gas flow rate at - or below - the cut-off setting will cause the meter to read zero. Default cut-off is set to 1% of maximum flow value.
- **Filter:** Changing this value will increase or decrease the damping of the flow rate reading. Increase the setting to increase damping. The default setting is 0.8.
- **Ref. Temp:** Reference Temperature - Reference temperature and pressure are the standard (or normal) temperature and pressure (STP) for which the flow rate is calculated. This is set in the factory according to the customer's original ApplD data.
- **Ref. Pressure:** Reference Pressure - Reference temperature and pressure are the standard (or normal) temperature and pressure (STP) for which the flow rate is calculated. This is set in the factory according to the customer's original ApplD data.
- **Password:** The Level 1 password can be changed to a new value (number or letter characters up to 4 digits).
- **K-factor:** Enter a percent value [-200 to 200] to scale the flow output. Final Flow = Flow + (Flow * K Factor/100)



NOTE! K-factor settings are only available with Level 2 Password

Unit Select

The "Unit Select" section is used to change the desired units of the flow rate, temperature and reference pressure.

Alarm Limits

Users can set both high/low alarms for both flow and temperature. When a limit is reached, an alarm message is displayed. In addition, if the meter's digital output is activated, breaching the alarm limit automatically activates a discrete output to control an external buzzer, light or some other way to alert the operator.

Process Variables

Flow: Current flow rate in selected units

Total: Cumulative mass or volume flow in selected units

Massflow: Mass flow of gas in Kg/Hr

Temperature: Gas temperature (Fahrenheit or Celsius)

CSV: Current sense voltage of sensor measurement circuit

Elapsed Time: Time since the Totalizer was reset

GHV: Gross Heating Value (GHV) of the programmed gas in the Gas-SelectX® gas menu is calculated by the meter and viewed here.

Density: View the density of the programmed gas in the Gas-SelectX® gas menu is displayed here

Reset Total Button

The Reset Total button will clear the total and elapsed time.

Reset CRC Button

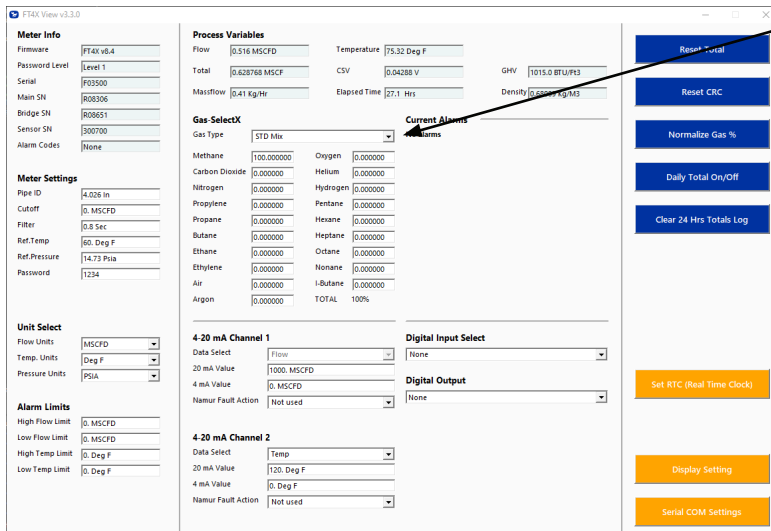
CRC (Cyclical Redundancy Check) is a value that verifies that all critical values in the meter's database are good. This check is performed once every minute. The Reset CRC button clears and generates a new CRC value.

Gas-SelectX®

This menu allows the user to select a gas or gas mix from a list of gases. When entering the FT4X gas menu the user will have three choices:

1. Pure Gas Menu (PUR) - a list of pure gases
2. Gas Mix (MIX) - any combination of gases in the Gas Mix menu (total must equal 100%)
3. Oil & Gas Mix (O&G Mix) Menu - any combination of the gases in the Oil & Gas menu (total must equal 100%)

Fig. 4.8: Gas-SelectX Menu in Configuration Screen

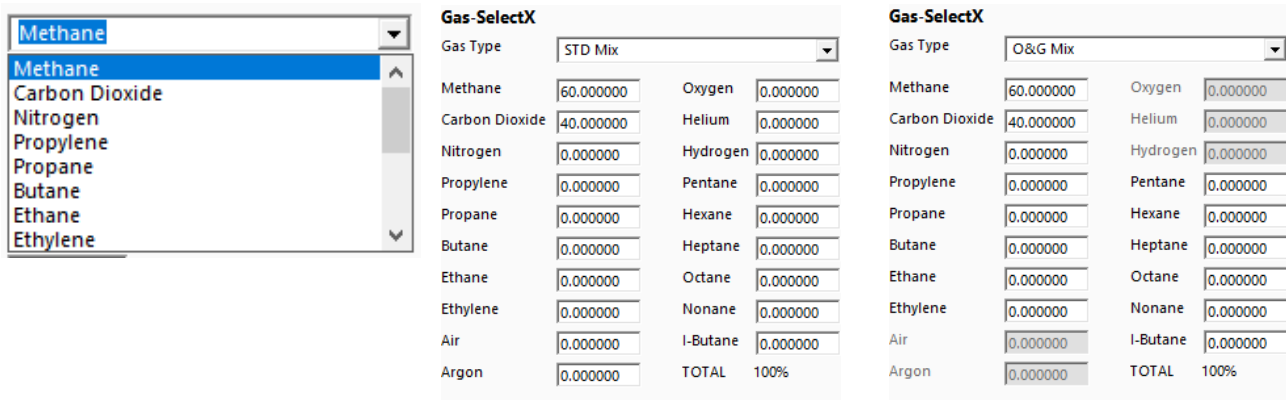


Gas-SelectX® Menu location

NOTE! A list of pure and mixed gases available on the FT4X flow meter are kept on the Fox website at www.foxthermal.com.

NOTE! Gases are in mole percentages.

Fig. 4.9: Setting the Gas-SelectX Gas or Gas Mix



In the first example, Methane has been chosen from the list of gas options. The last two options are "STD Mix" and "O&G Mix". When the "STD Mix" or "O&G Mix" options are chosen, a series of additional gas concentration fields will appear. Each field is labeled according to the gases available in that menu. A default amount will appear in each field, but these can be changed to any percentage between 0.000000 and 100.000000. All remaining gases **not** used in the Gas Mix must be changed to 0.000000. The total for the gases chosen for the mix must equal 100.000000%.



NOTE! If the total of the gases is greater or less than 100.000000%, an alarm will show. Adjust the percentages until 100.000000% is achieved.

Normalize Gas Percentage

In the scenario where the desired gas mix does not total to an even 100%, use the "Normalize Gas %" button to scale the gas mix proportionally so that the total results in 100%.

4-20mA Output: Channels 1 & 2

Channel 1: This analog 4-20mA output is programmed for flow.

Channel 2: This analog 4-20mA output is configurable for either flow or temperature.

Though the FT4X will be scaled for the specific application coming from the factory, FT4X View™ allows the operator to easily re-scale the 4-20mA output as needed.

Digital Input Select

This menu allows the user to choose between Reset Total or None.

Digital Output Select

This menu allows the user to choose between dedicating the Output to Pulse, Alarms, or None. If the Digital Output is set to Pulse, see "Pulse Output Configuration" below.

Pulse Output Configuration

If "Pulse Output" is selected, it can be programmed in three different ways using the pull-down menu "Pulse Option":

- Maximum flow and maximum frequency
- Pulses per Unit
- Units per Pulse

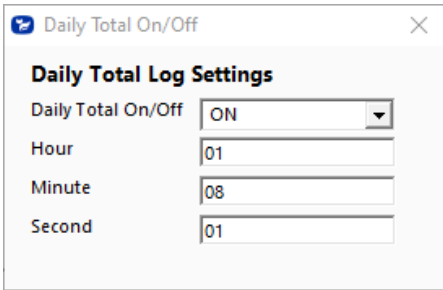
Configuration Screen Logs

Turning on the Daily Total 24 Hour Log, Setting the Contract Time, Clearing the 24-Hour Total and Setting Real Time Clock functions are done in the Configuration screen shown on p. 16.

Daily Total On/Off

After installation and during the setup of your meter, the user must turn on the Daily Total function.

Fig. 4.11: Turning on Daily Total Function and setting Contract Time



Setting the Contract Time

Resetting the Contract Time is done using the Daily Total On/Off window as seen in the figure above. The default Contract Time is midnight, but the user can change the Contract Time in this window, if needed. The user defined Contract Time defines when the Daily Total 24 Hour Log is recorded each day.

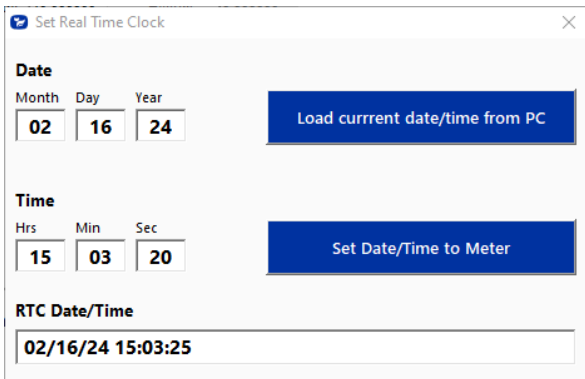
Clear 24 Hrs Total

This will clear all records for the 24-Hour Totals Log.

Set RTC (Real Time Clock)

The user has the option of setting the date/time manually in the provided fields or to use the "Load current date/time from PC" button which pulls the current date and time automatically from your PC's data. To set the date and time, click the "Set Date/Time to Meter" button.

Fig. 4.12: Setting the Real Time Clock (RTC)

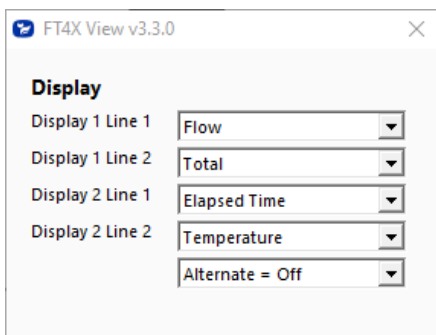


Display Setting

The information displayed on the front panel of the FT4X can be configured by clicking on the "Display Setting" button in the lower right portion of the Configuration Screen in Fig. 4.7. The four drop-down boxes can be used to select the data to present on Screen 1 and Screen 2 of the flow meter display. By selecting "Alternate", the screen automatically switches between the data screens.

With the top four drop-down boxes, the user can choose the data to display on the meter's LCD display screen. By selecting "Alternate = On", the screen automatically switches between the data screens.

Fig. 4.13: Display Setting



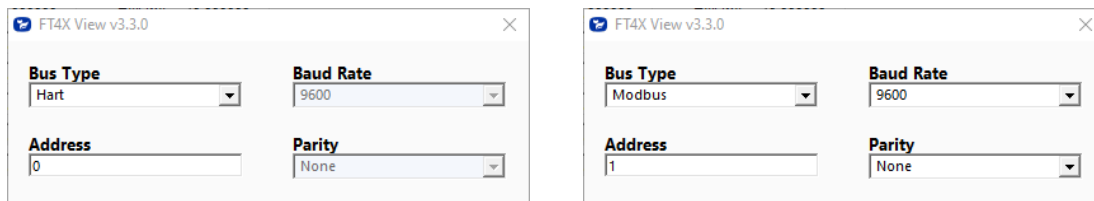
Serial COM Settings

The serial communication settings can be accessed by clicking on the "Serial COM Settings" button in the lower right portion of the configuration screen in Fig. 4.7. Use this function to adjust the settings of the FT4X serial communication options.



NOTE! This is only available on a meter configured for RS485 Modbus RTU or HART.

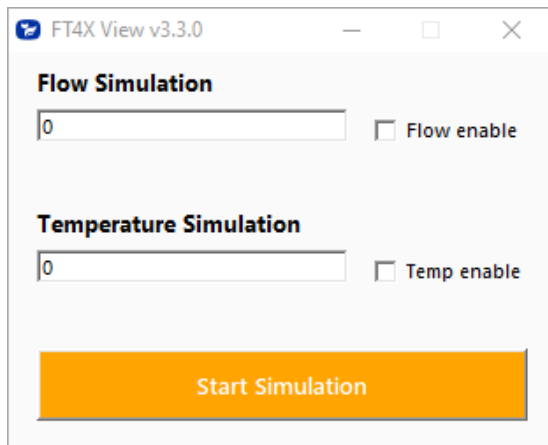
Fig. 4.14: Select Serial Communication Window



Simulation Mode

To enter simulation mode, click on the button marked "Simulation" in the Main screen and a password will be requested. Enter the password and then the Simulation screen will be shown.

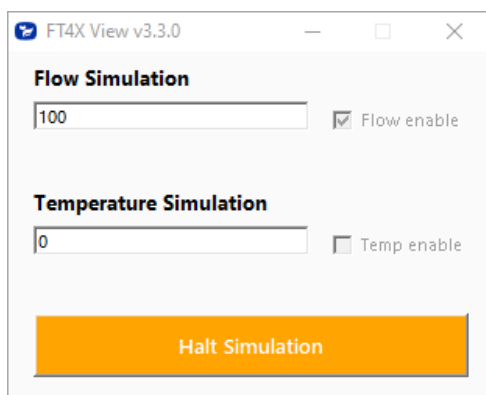
Fig. 4.15: Simulation Mode Window



The simulation mode simulates flow rate and temperature. Click on the required data and enter a value. Simulation mode allows users to verify the analog outputs, digital output and totalizer at simulated flow rates and temperature.

Enter the value, click **OK**, select the corresponding checkbox, and press "Start Simulation".

Fig. 4.16: Simulation Running

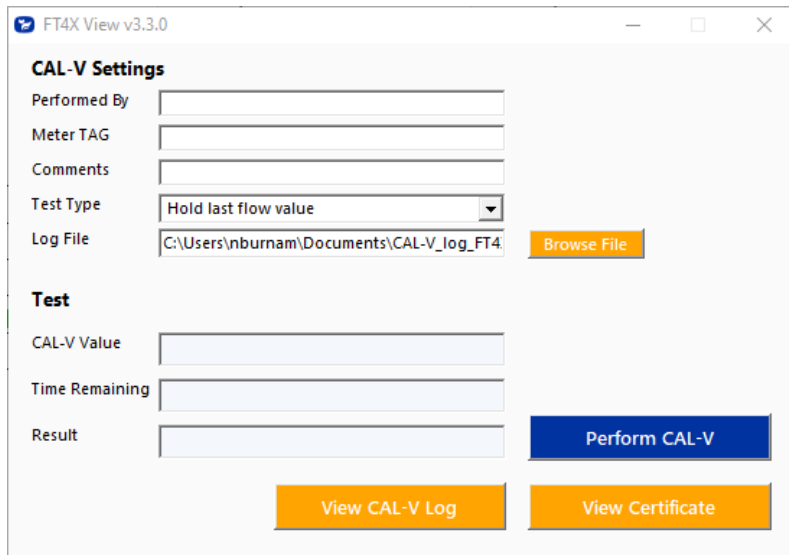


In Simulation mode, all FT4X outputs and the Totalizer respond as if in normal measurement mode. Click "Halt Simulation" to end.

CAL-V™

CAL-V™ is performed to verify the proper operation of the FT4X flow meter. From the Main screen, click on the "CAL-V" button to access the CAL-V™ Menu Window.

Fig. 4.17: CAL-V™ Menu Window



The screenshot shows the 'CAL-V Settings' window in FT4X View v3.3.0. It features several input fields and buttons. Under 'CAL-V Settings', there are text boxes for 'Performed By', 'Meter TAG', and 'Comments'. A dropdown menu for 'Test Type' is set to 'Hold last flow value'. The 'Log File' field contains the path 'C:\Users\nburnam\Documents\CAL-V_log_FT4' and a 'Browse File' button. The 'Test' section includes text boxes for 'CAL-V Value', 'Time Remaining', and 'Result'. At the bottom, there are three buttons: 'Perform CAL-V' (blue), 'View CAL-V Log' (orange), and 'View Certificate' (orange).

In the CAL-V™ Menu Window, there are fields to enter information about the person performing the test, meter tag information, and any other important information may be entered into the comments area.

A drop-down menu allows the user to choose between these two options:

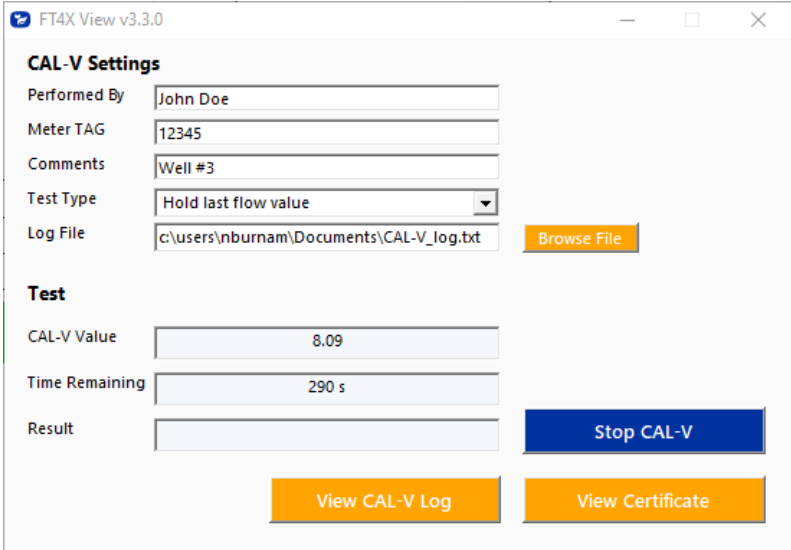
- Flow goes to Zero during CAL-V™
- Flow holds the last value during CAL-V™

The user can also specify a particular folder name and location for the data to be stored in a log to access test results at later times.

Please note that the test will take about five minutes. The flow measurement will stop and go to zero for this period unless the "hold last value" option has been chosen.

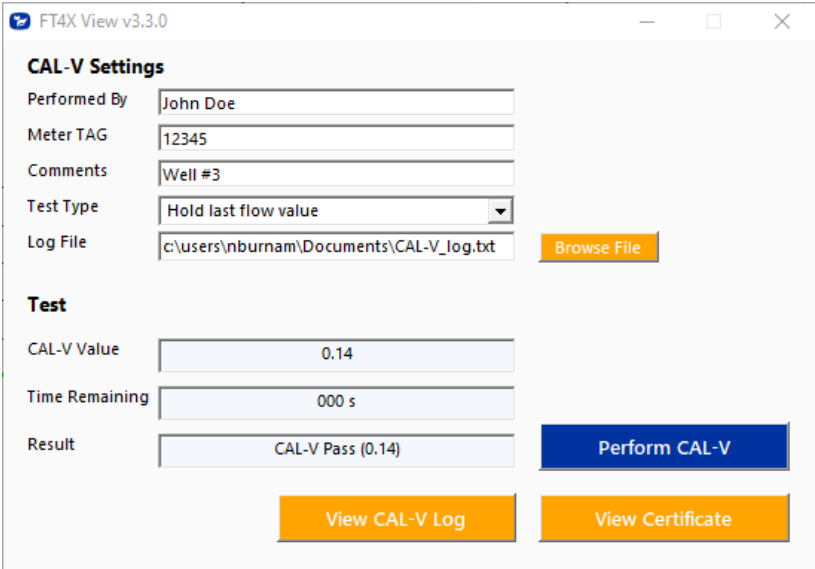
When ready to start, click the "Perform CAL-V" button.

Fig. 4.18: Running a CAL-V™ Test



A Pass/Fail message for the CAL-V™ test will be displayed at the test conclusion.


Fig. 4.19: CAL-V™ Results Window



CAL-V™ Certificate

The "View Certificate" button in the CAL-V™ Menu Window will display the latest certification. When performing a CAL-V™ test, all the data is logged into a CAL-V™ log file with all pertinent data, including the serial number. You can choose to create multiple logs by changing the file name and location in the CAL-V™ Menu Window. When a CAL-V™ certificate is requested, the program will search the log file for the specific serial number and will display only the last check performed.

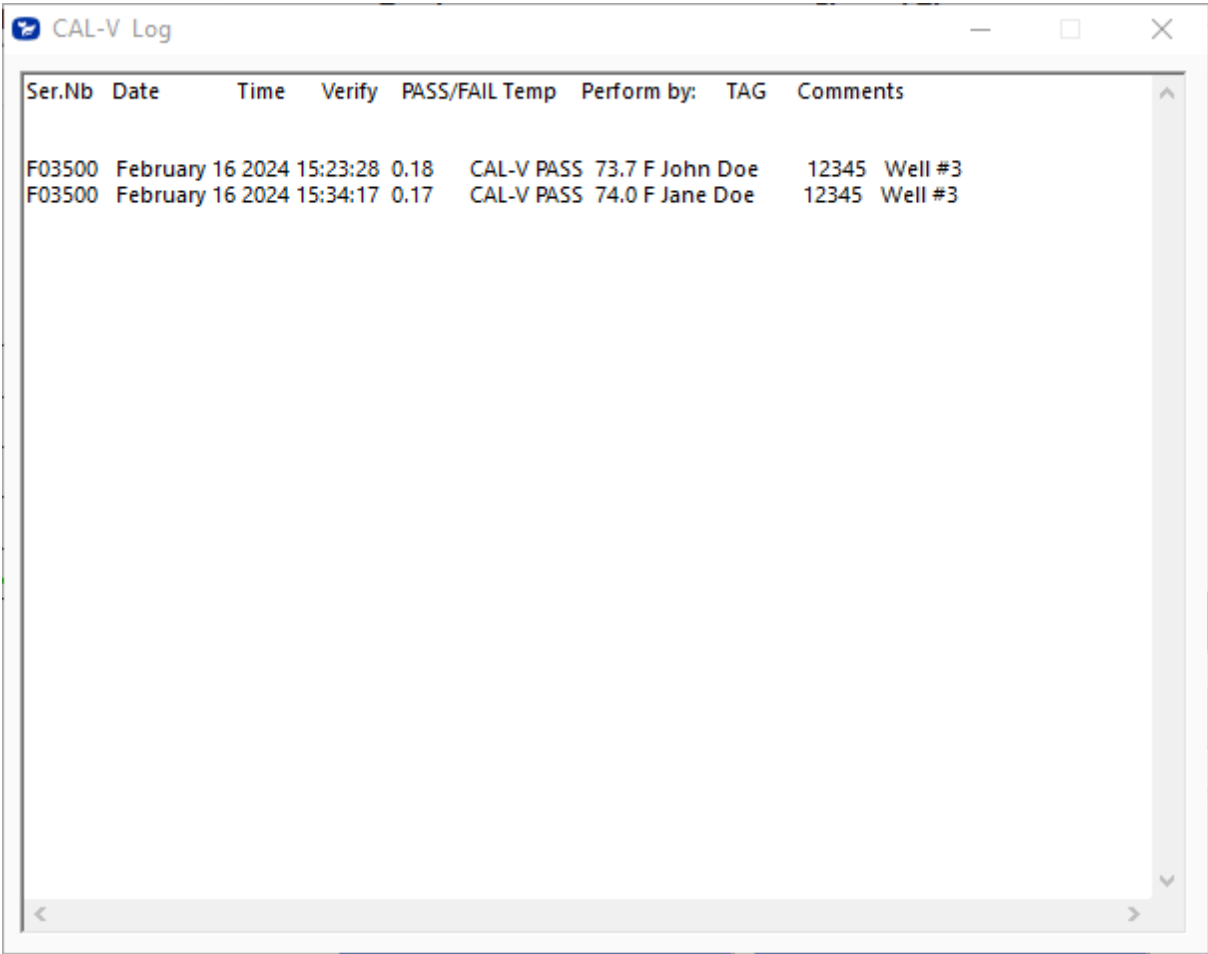
Fig. 4.20: CAL-V™ Certificate

	399 Reservation Road Marina, CA 93933 USA Phone: 831-384-4300 sales@foxthermal.com		
FT4X CAL-V™ CERTIFICATE CALIBRATION VALIDATION			
CAL-V™ Performed on:	February 16 2024 15:15:35		
Firmware version:	FT4X v8.4		
Fox Meter Serial Number:	F03500		
CAL-V™ Results:	Pass		
CAL-V™:	0.14		
Test Temperature:	74.0 F		
Tag #/Meter Location:	12345		
Test performed by:	John Doe		
Additional Comments:	Well #3		
<p>CAL-V™ is a calibration routine that validates the flow meter's calibration accuracy by testing the following: * Repeatability of sensor * Repeatability of sensor electronics * Confirms Calibration Algorithms At the conclusion of the test, the meter will display a pass/fail message and the CAL-V™ data. A "pass" result confirms the meter is measuring accurately. CAL-V™ limits: ± 0 - 0.8 Pass, ± 0.8-1.0 Warning, > ± 1.0 Fail</p>			
Configuration:			
Pipe Diameter:	4.026 In	Gas Select:	O2/G Mix
Customer STP:	60.0 Deg F & 14.73 Psia		Methane 60%
4-20 mA Range:	0 - 1000 MSCFD		CO2 40%
Zero Flow Cutoff:	0 MSCFD		
Previous CAL-V Value:	0.20		
Previous CAL-V Result:	Pass		
Previous CAL-V Date:	2/7/24 13:49:48		
Gross Heating Value[BTU/FT3]:	609.9		
Density[Kg/M3]:	1.156		

View CAL-V Log

The "View CAL-V Log" button allows the operator to view a log of previous CAL-V™ checks that have been run on the meter. Be sure to access the correct log by choosing the correct file name in the CAL-V™ Log Filename box.

Fig. 4.21: CAL-V™ Log



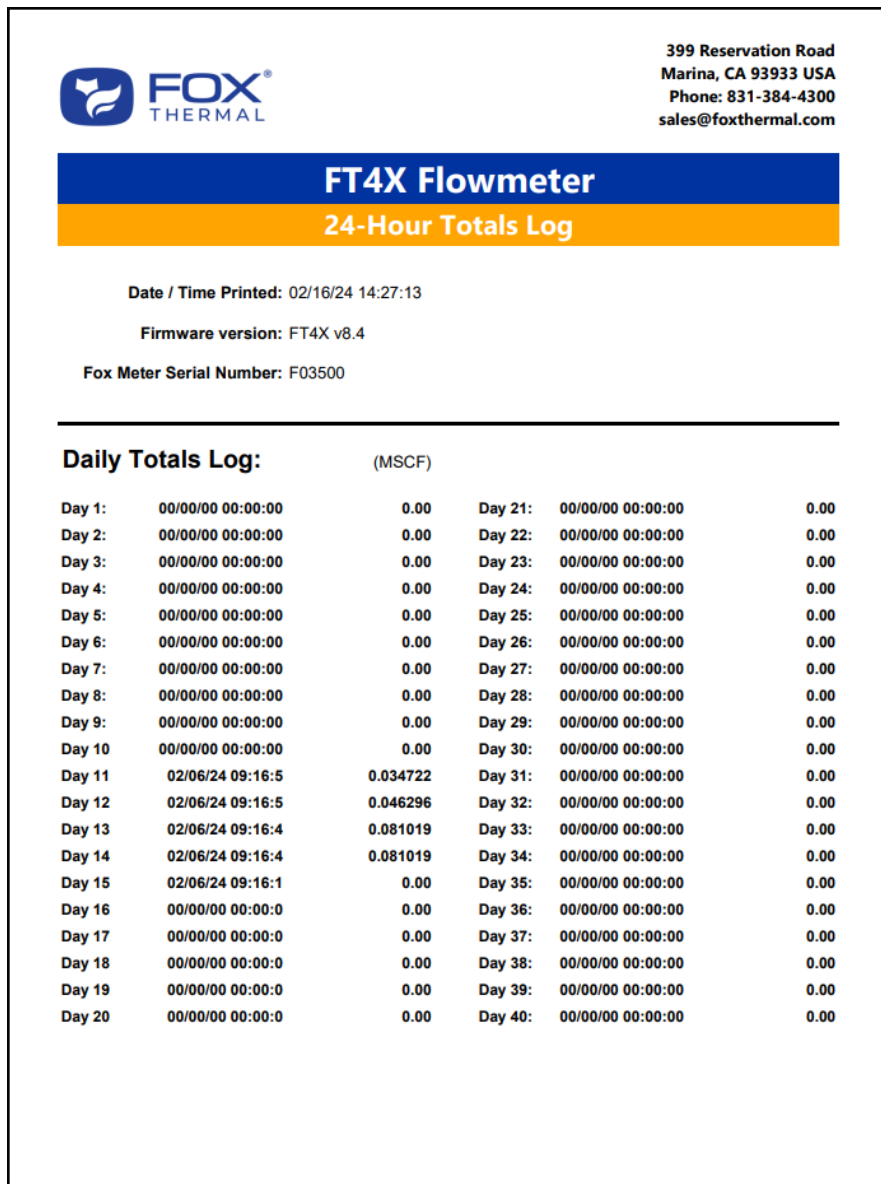
Ser.Nb	Date	Time	Verify	PASS/FAIL Temp	Perform by: TAG	Comments
F03500	February 16 2024	15:23:28	0.18	CAL-V PASS 73.7 F	John Doe	12345 Well #3
F03500	February 16 2024	15:34:17	0.17	CAL-V PASS 74.0 F	Jane Doe	12345 Well #3

24 Hour Log

Pressing the 24 Hour Log button in the View Log section of the main screen produces a list of flow totals. The list of 40 24-hour totals is provided in a pdf document starting with yesterday's flow total. The start time begins and is reset at the Contract Time.

The Daily Total function must be turned on to log the 24-hour totals. Daily Total On/Off, Setting the Contract Time, Clear 24 Hrs Total and Set RTC (Real Time Clock) functions are set in the Configuration screen, see p. 21. The log features can also be set through the FT4X front panel display menu.

Fig. 4.22: 24 Hour Log Example



399 Reservation Road
Marina, CA 93933 USA
Phone: 831-384-4300
sales@foxthermal.com

FT4X Flowmeter

24-Hour Totals Log

Date / Time Printed: 02/16/24 14:27:13
Firmware version: FT4X v8.4
Fox Meter Serial Number: F03500

Daily Totals Log:		(MSCF)			
Day 1:	00/00/00 00:00:00	0.00	Day 21:	00/00/00 00:00:00	0.00
Day 2:	00/00/00 00:00:00	0.00	Day 22:	00/00/00 00:00:00	0.00
Day 3:	00/00/00 00:00:00	0.00	Day 23:	00/00/00 00:00:00	0.00
Day 4:	00/00/00 00:00:00	0.00	Day 24:	00/00/00 00:00:00	0.00
Day 5:	00/00/00 00:00:00	0.00	Day 25:	00/00/00 00:00:00	0.00
Day 6:	00/00/00 00:00:00	0.00	Day 26:	00/00/00 00:00:00	0.00
Day 7:	00/00/00 00:00:00	0.00	Day 27:	00/00/00 00:00:00	0.00
Day 8:	00/00/00 00:00:00	0.00	Day 28:	00/00/00 00:00:00	0.00
Day 9:	00/00/00 00:00:00	0.00	Day 29:	00/00/00 00:00:00	0.00
Day 10:	00/00/00 00:00:00	0.00	Day 30:	00/00/00 00:00:00	0.00
Day 11:	02/06/24 09:16:5	0.034722	Day 31:	00/00/00 00:00:00	0.00
Day 12:	02/06/24 09:16:5	0.046296	Day 32:	00/00/00 00:00:00	0.00
Day 13:	02/06/24 09:16:4	0.081019	Day 33:	00/00/00 00:00:00	0.00
Day 14:	02/06/24 09:16:4	0.081019	Day 34:	00/00/00 00:00:00	0.00
Day 15:	02/06/24 09:16:1	0.00	Day 35:	00/00/00 00:00:00	0.00
Day 16:	00/00/00 00:00:0	0.00	Day 36:	00/00/00 00:00:00	0.00
Day 17:	00/00/00 00:00:0	0.00	Day 37:	00/00/00 00:00:00	0.00
Day 18:	00/00/00 00:00:0	0.00	Day 38:	00/00/00 00:00:00	0.00
Day 19:	00/00/00 00:00:0	0.00	Day 39:	00/00/00 00:00:00	0.00
Day 20:	00/00/00 00:00:0	0.00	Day 40:	00/00/00 00:00:00	0.00

Configuration Log

Clicking the Meter Configuration button located in the View Log section of the main screen produces a log of the meter's current configuration. The log is in pdf form and includes the following information:

- Current date/time
- Meter's firmware version and serial number
- Meter settings for temperature, pressure, etc
- Application or process factory-set values
- Alarm settings
- Gas mix information

Fig. 4.23: Configuration Log Example

The image shows a PDF document titled "FT4X Flowmeter Configuration Log". At the top left is the FOX THERMAL logo. At the top right is the company address: 399 Reservation Road, Marina, CA 93933 USA, Phone: 831-384-4300, and sales@foxthermal.com. Below the title bar, the document lists the following information:

Date / Time Printed: 2/16/24 14:27:31
Firmware version: FT4X v8.4
Fox Meter Serial Number: F03500

FT4X Configuration:

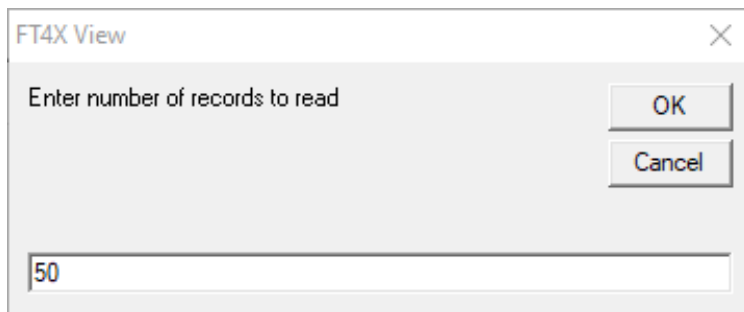
Flow unit :	MSCFD	Gas SelectX:	Mix Gas
Temperature unit	Deg F	Methane	100.000000%
Pressure unit:	Psia		
Cutoff:	0.000 MSCFD		
Filter:	0.8 Sec		
Pipe ID:	4.026 In		
Density:	0.680 Kg/M3		
Gross Heating Value:	1014.96 BTU/Ft3		
Ref Temp:	60.0 Deg F		
Ref pressure:	14.73 Psia		
Hi Flow Alarm:	----		
Lo Flow Alarm:	----		
Hi Temp Alarm:	----		
Lo Temp Alarm:	----		
4-20 mA selected:	Flow		
20 mA:	1000.0 MSCFD		
4 mA:	0.0 MSCFD		
Kfactor:	0%		

Event Log

Clicking the Event Log button located in the View Log section of the main screen produces a log of the meter's events. Event logs with date/time stamps include all changes to flow meter settings (4-20mA scaling, pipe size, gas composition), alarms, and power on/off events.

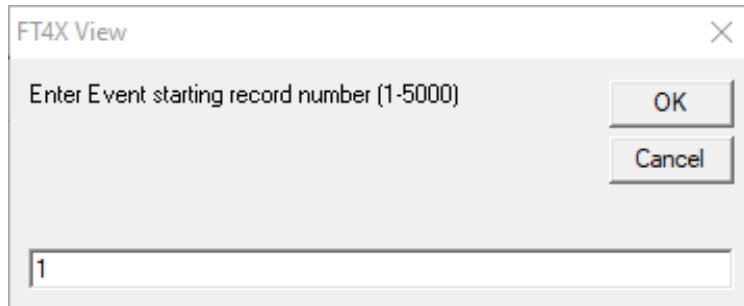
The Event Log button will open windows requesting the number of records to be accessed and which record must start the list. This data will be produced in a PDF document.

Fig. 4.24: Enter Number of Records to be Viewed in Log



Enter the number of records that you would like to view in the log.

Fig. 4.25: Enter Record Number to Begin the Log




Enter the number of the record that you would like to have at the beginning of the log. This event will start the log and all subsequent events will follow. Any previous events will be excluded from this viewing of the log.

The BLM Log pdf document includes the following information:

- Current date/time
- Meter's firmware version
- Meter's serial number
- Instances of power on/off of meter
- Instances that an Alarm has occurred
- Setting of the Real Time Clock
- Changes to meter's configuration or settings
- Changes to the gas mix information
- Resets (total or CRC)

Fig. 4.26: Event/Alarm Log Example



398 Reservation Road
Marina, CA 93933 USA
Phone: 831-384-4299
sales@foxthermal.com

FT4X Flowmeter

Event Log

Date/Time: 2/16/24 14:27:42

Firmware Version: FT4X v8.4

Meter Serial Number: F03500

Events Log:

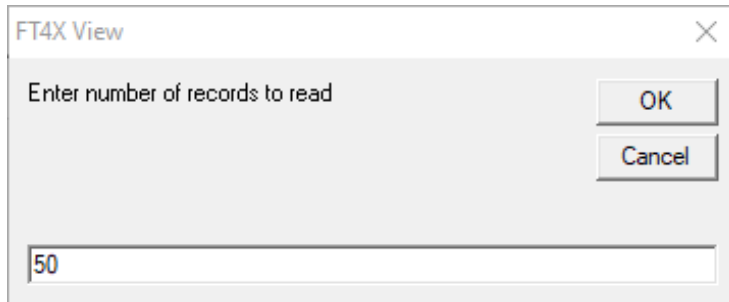
Rec#	Date/Time	Events
1	02/16/24 14:03:38	Power ON
2	02/16/24 11:42:45	Power OFF
3	02/16/24 11:41:09	Power ON
4	02/16/24 11:13:50	Power OFF
5	02/16/24 11:13:38	Power ON
6	02/16/24 11:13:21	Power OFF
7	02/16/24 11:13:09	Power ON
8	02/15/24 15:34:57	Power OFF
9	02/16/24 11:12:54	Power ON
10	02/15/24 15:34:57	Power OFF
11	02/15/24 15:33:05	CH2 4-20 OOR
12	02/15/24 15:32:50	Delta_T OOR
13	02/15/24 15:32:45	Power ON
14	02/15/24 15:32:34	Power OFF
15	02/15/24 15:32:27	Delta_T OOR
16	02/15/24 15:32:22	Power ON
17	02/15/24 15:32:07	Power OFF
18	02/15/24 15:26:52	CH2 4-20 OOR
19	02/15/24 15:26:36	Delta_T OOR
20	02/15/24 15:26:31	Power ON
21	02/15/24 15:26:16	Power OFF
22	02/15/24 14:53:24	CH2 4-20 OOR
23	02/15/24 14:53:09	Delta_T OOR
24	02/15/24 14:53:04	Power ON
25	02/15/24 14:52:52	Power OFF
26	02/15/24 14:52:12	CH2 4-20 OOR
27	02/15/24 14:51:57	Delta_T OOR
28	02/15/24 14:51:52	Power ON
29	02/15/24 14:51:28	Power OFF
30	02/15/24 14:47:12	CH2 4-20 OOR
31	02/15/24 14:46:57	Delta_T OOR
32	02/15/24 14:46:52	Power ON
33	02/15/24 14:38:30	Power OFF
34	02/15/24 14:36:30	Power ON
35	02/15/24 14:32:25	Power OFF
36	02/15/24 14:23:01	Power ON
37	02/15/24 14:12:43	Power OFF
38	02/15/24 14:10:19	Power ON
39	02/15/24 14:05:03	Power OFF
40	02/15/24 14:08:37	Power ON
41	02/15/24 14:05:03	Power OFF
42	02/15/24 13:50:15	Power ON
43	02/15/24 13:49:58	Power OFF
44	02/15/24 13:46:10	Power ON
45	02/15/24 13:41:50	Power OFF
46	02/15/24 11:57:38	Power ON
47	02/15/24 11:56:36	Power OFF
48	02/15/24 11:52:00	Power ON
49	02/15/24 11:51:25	Power OFF
50	02/15/24 11:40:25	Power ON

BLM Log

After clicking on the button marked "BLM Log" located in the box marked "View Log" from the main screen, the operator can view a 7-year history log of the meter's flow, temperature, and total data.

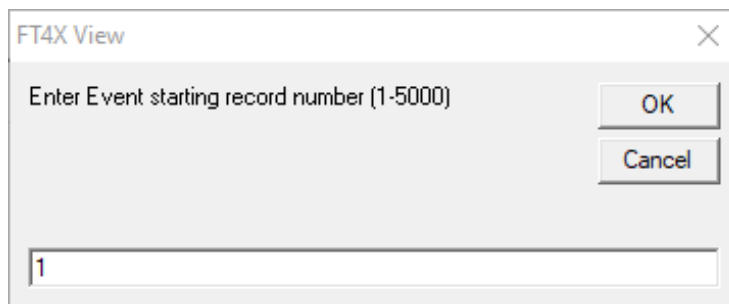
The BLM Log button will open a series of windows requesting the number of records to be accessed and which record must start the list. This data will be provided in a pdf document.

Fig. 4.27: Enter Number of Records to be Viewed in Log



Enter the number of records that you would like to view in the log (default is 50).

Fig. 4.28: Enter Record Number to Begin the Log

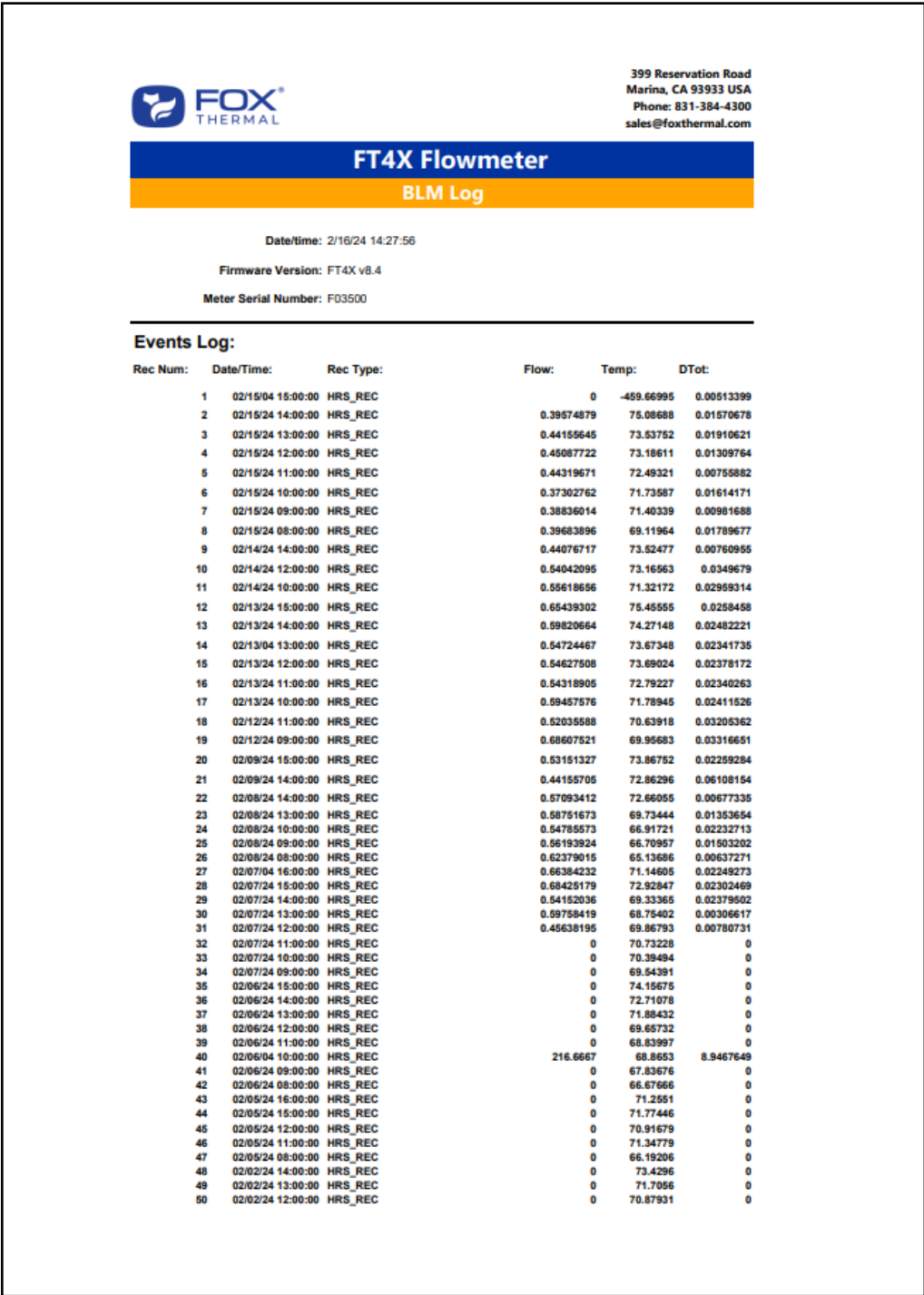


Enter the number of the records that you would like to have at the beginning of the log. This event will start the log and all subsequent events will follow. Any previous events will be excluded from this viewing of the log.

The BLM Log will be provided in a PDF document. The Log includes the following information:

- Current date/time
- Meter's firmware version
- Meter's serial number
- Record number
- Date/time stamp of record
- Rec_Type: Indicates if the type of data in the Log is recorded hourly or daily
- Flow: the average hourly Flow rate
- Temperature: the average hourly Temperature
- DTot: Hourly Flow Total when the record type is HRS_REC (Hourly Record) and Daily Flow Total when the record type is DAY_REC (Daily Record)

Fig. 4.29: BLM Log Example



Glossary of Terms and Definitions

COM	Communication
CRC	Cyclical Redundancy Check
CSV	Current Sense Voltage
DMM	Digital Multimeter
ID	Inner Diameter
mA	Milliamps
PC	Personal Computer
RTD	Resistance Temperature Detector
STP	Standard Temperature and Pressure

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Wiring



Troubleshooting Tips



Definition of Terms



NOTE! is used for Notes and Information



WARNING! is used to indicate a hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION! is used to indicate a hazardous situation which, if not avoided, could result in minor or moderate injury.



SALES@FOXTHERMAL.COM

Address

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Marina, CA 93933 USA

Make Downtime a Thing of the Past
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NON-STOP PERFORMANCE**

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831.384.4300

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