SOFTWARE

FT4X VIEW™

Free PC-Based Software Tool

for the FT4X Thermal Gas Mass Flow Meter

Software User's Manual

Document #108057
Rev C

FOX THERMAL®

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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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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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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.

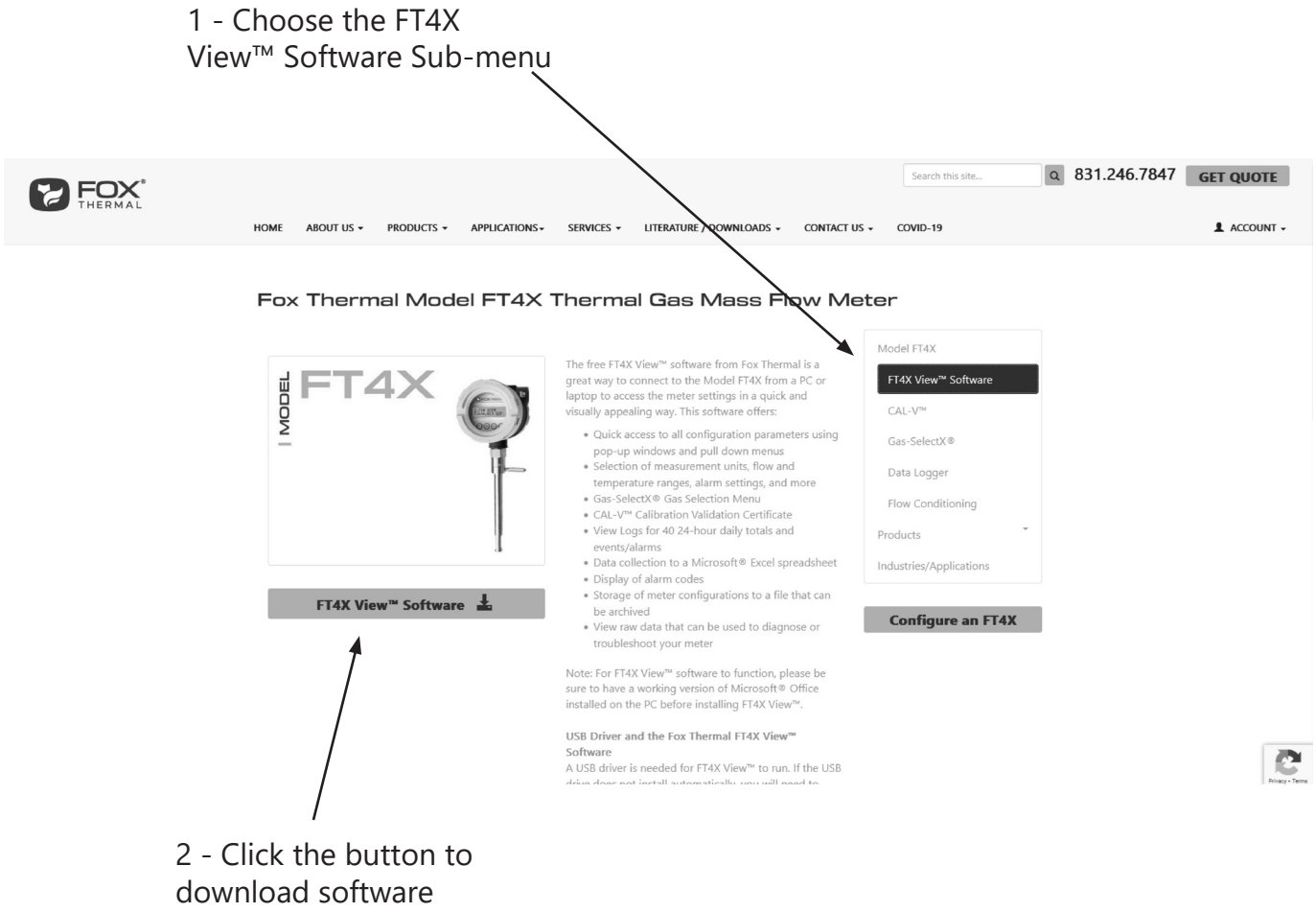
This manual is divided into the following sections: Introduction, Installation, Startup, Operation, Glossary and Index.

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.

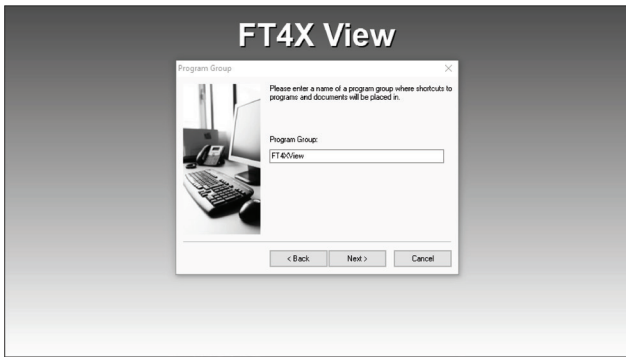
Fig. 2.1: Online Download Location for FT4X View™ Software



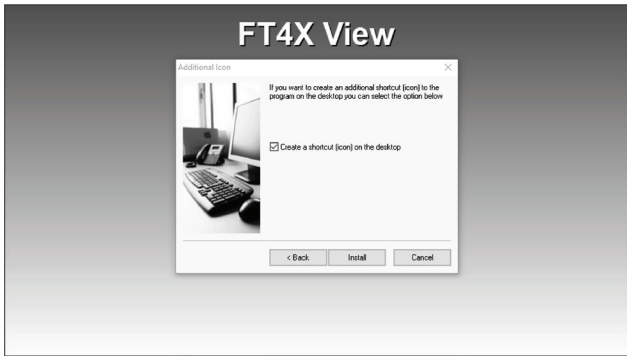
Install the FT4X View™ Software on a PC

To install the FT4X View™ program, run the "ft4xview-setup.exe" file that is located in the downloaded file. After clicking "Next" the screen will show:

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



When the program is done installing, note the program group 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 "Next" to continue.

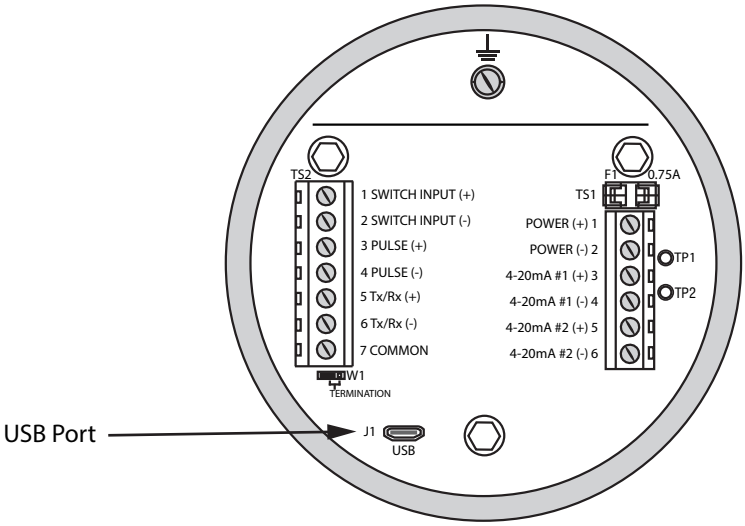
When the program is done installing, click "Exit".

To complete the installation process, close all applications, and restart your computer.

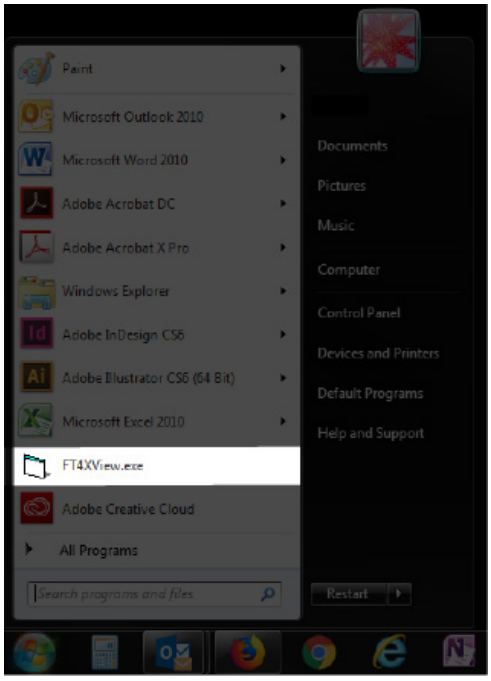
The FT4X View™ Software will be ready to use after the computer has rebooted.

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.



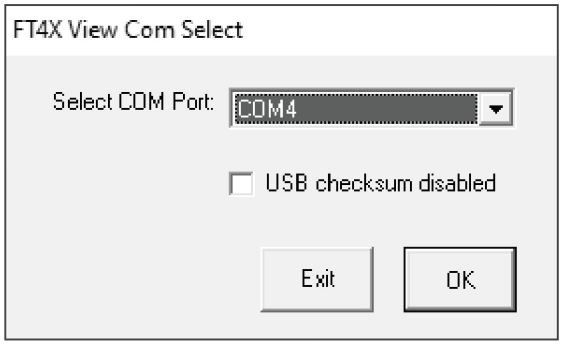
COM Port Assignment
Upon opening FT4X View™ for the first time, Windows® will assign a "virtual COM port". The COM port number that has been assigned will appear automatically in the drop down box.

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**.

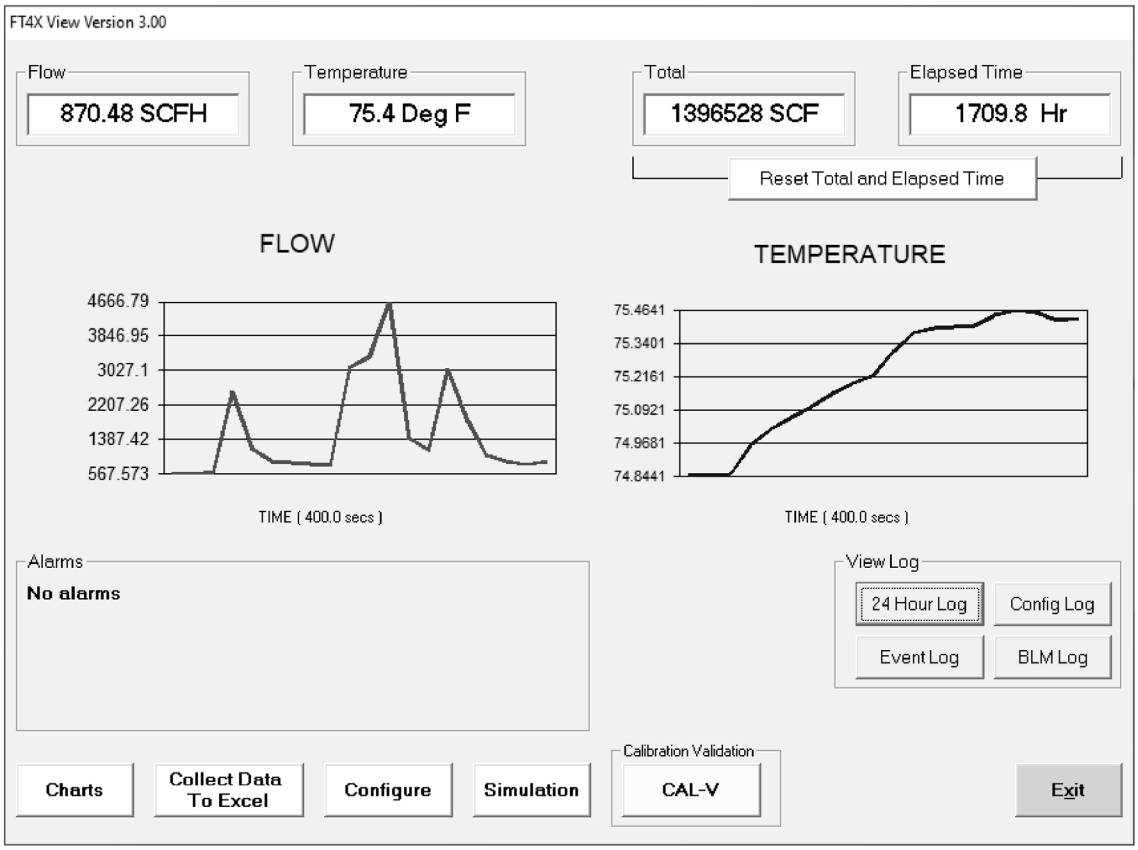
NOTE! The FT4X Meter must be plugged into the computer in order for the system to register it.

Fig. 3.1: COM Port Selection Window



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

Fig. 4.1: FT4X View™ Main Screen



NOTE! Data on the screen is refreshed at user selected update rate. See for more information on setting up Charts.

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, SCFH and ºF). These values are in the upper left of the screen. Use "Configure" to change from SCFH and ºF to other options. Two graphs also show real time changes in flow and temperature.

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 either temperature or 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! Charts can be set for either automatic or manual scaling.

Collect Data to Excel® Button
This function allows all selected data to be assembled into an Excel® file at the specified sample time. All readings are time/date stamped.

Configure Button
This allows the operator to go in and set the application parameters. This can be done either via the FT4X View™ software or manually via the instrument's display. For more information on configuring application parameters, refer to "Configure" on page 15.

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 watch for the pulse. Refer to Page 11 for more information on how to use the Simulation function.

Calibration Validation Diagnostic Test Section

CAL-V™ Button
The CAL-V™ calibration validation test can be performed while the unit is still in the pipe (even if a no flow condition cannot be established) or out of the pipe. CAL-V™ does the following:

- Validates the zero stability of the meter
- Checks thermal conductivity (heat transfer) repeatability of the sensor

The CAL-V™ calibration validation test is explained in greater detail on p. 26.

View Log (Data Logger) Section

24 Hour Log Button
Pressing this button produces a pdf listing of totals: yesterday's total followed by 40 24-hour totals. The start time begins and is reset when the totalizer is reset

Config Log 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 an Excel® spreadsheet.

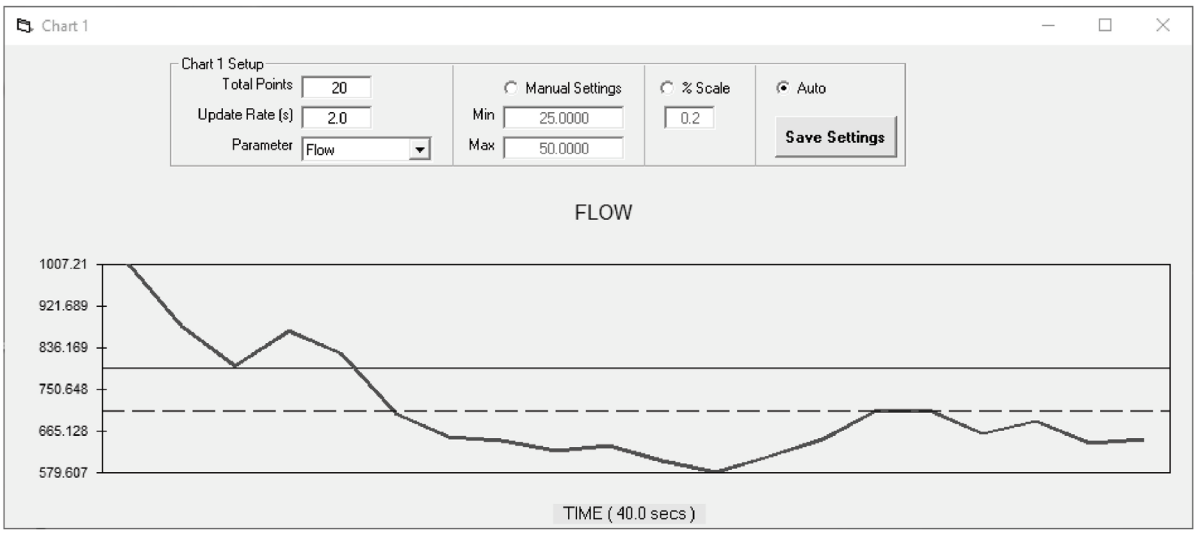
BLM Log Button
The BLM Log Button provides the user with a log detailing a 7 year history of flow, temperature, and total at hourly intervals.

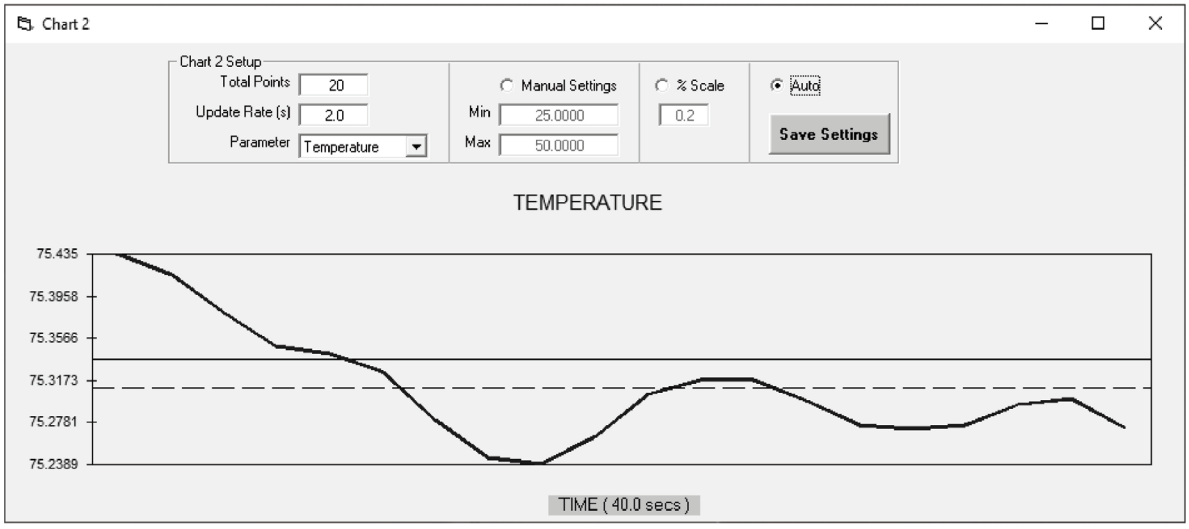
Exit Button
Exit the application.

Charts Settings

From the main menu screen, click on "Charts". Two charts will appear side-by-side. Each chart can be selected for flow, temperature or total flow and scaled in one of three ways: a plus/minus percent scale, inputting min/max values manually, or real-time automatic scaling.

Fig. 4.2: Chart Settings Window - Charts 1 and 2





Each chart can be selected for flow, temperature or total and scaled in one of three ways: a plus/minus percent scale, inputting min/max values manually, or real-time automatic scaling.

Save Settings

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

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

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.

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.

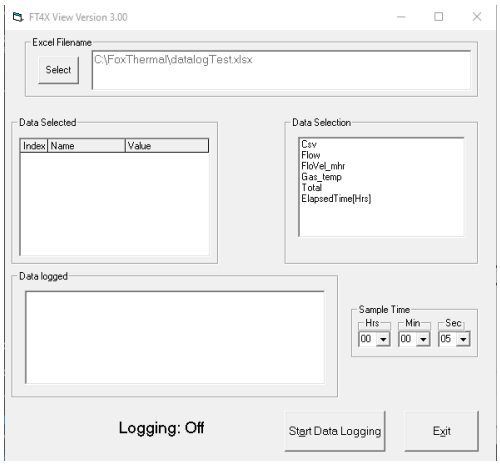
Manual Chart Setting
The Manual mode allows a user to input min/max values for chart scaling. When entering new values, click on Save Settings for them to take effect.

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

Collect Data to Excel

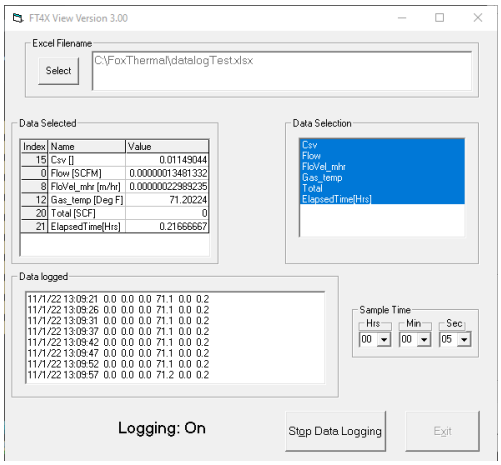
The Data Collection screen can be accessed from the main screen. Clicking the "Collect Data to Excel" function will prompt the user for a password. Enter a Level I or Level II password and the Collect Data window will appear.

Fig. 4.3: 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. Select or create a name for the Excel file and then press the "Start Data Logging" button.

Fig. 4.4: Data Collection Window - Logging Turned On

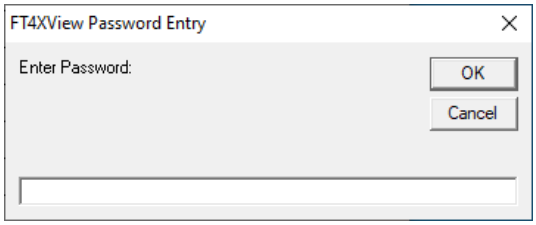


When "Start Data Logging" is pressed, the data is recorded in the specified Excel file - and also displayed in the Data Logged window. Pressing "Stop Data Logging" ends data acquisition.

Configure

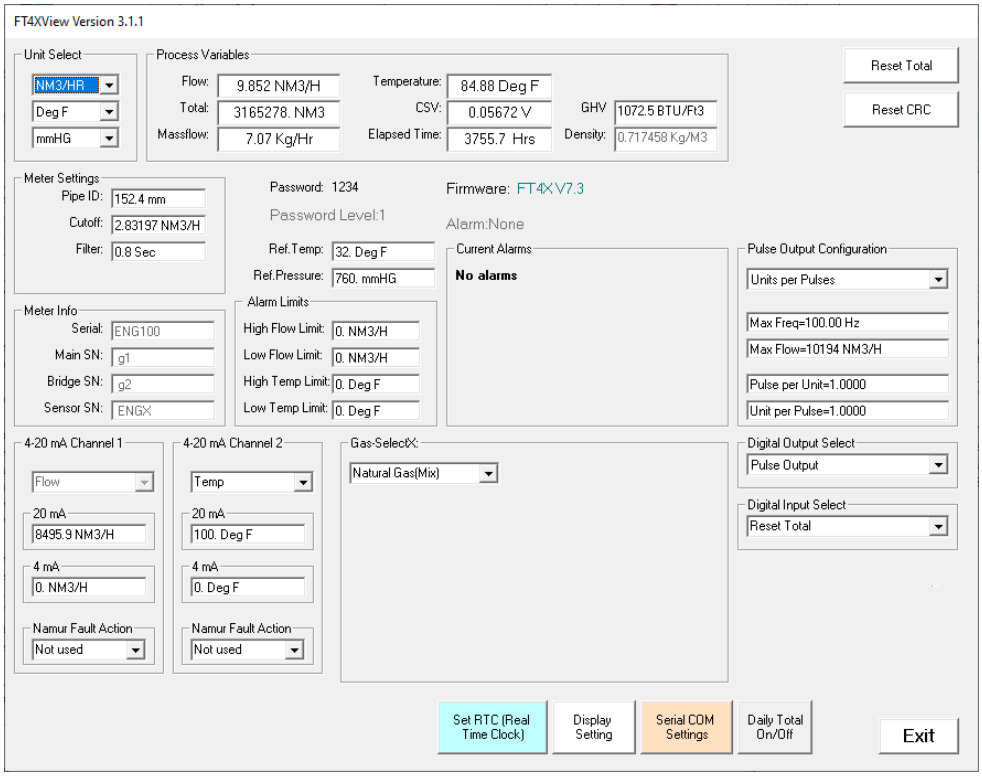
From the main menu, click on the "Configure" button and enter the requested password for either Level I (1234) or Level II (9111) access.

Fig. 4.5: 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. 4.6: Level I Configuration Screen



Unit Select

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

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
Elapsed Time: Time since the Totalizer was reset

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 the value.

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 (see FT4X Manual for more details).
- **Kfact:** A K-Factor can be applied to the meter's settings to offset the meter's calibration. The K-Factor is a direct scaling of the meter's output across the entire full scale.

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.

Reference Conditions: Ref. Temp. and Ref. 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 AppID data.

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.

Password
If the Level 1 password must be changed, enter the new password in this field.

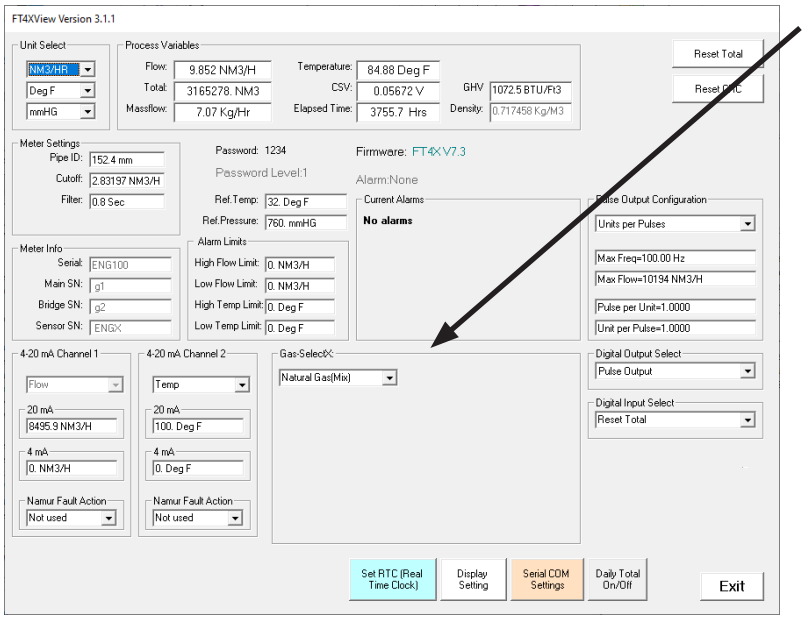
Serial Numbers
Serial numbers of the meter, the main board, bridge and sensor (factory set).

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.

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 11 gases
2. Gas Mix (MIX) - a mixture of any gases available in the Pure Gas menu except Natural Gas (total must equal 100%)
3. Oil & Gas Mix (O&G Mix) Menu - any combination of the 12 gases in the Oil & Gas menu (total must equal 100%)

Fig. 4.7: Gas-SelectX Menu in Configuration Screen

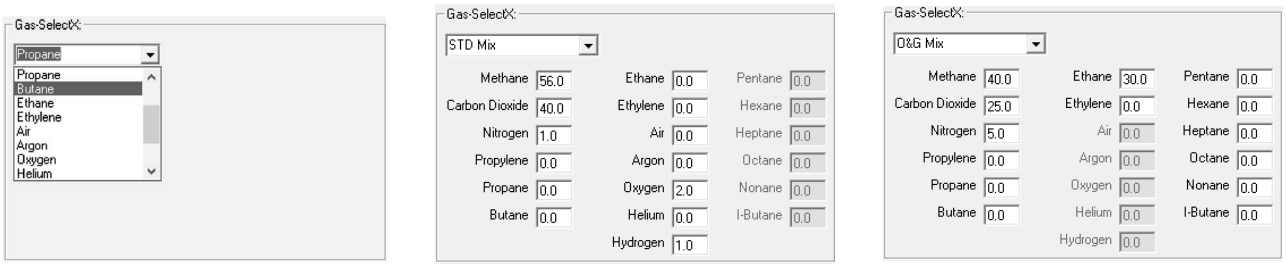


Gas-SelectX® Menu location

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. 4.8: Setting the Gas-SelectX Gas or Gas Mix



In the first example, Propane has been chosen from the list of gas options. The last two options are "Gas Mix" and "O&G Mix". When the "Gas 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 0.0 and 100.0. All remaining gases **not** used in the Gas Mix must be changed to 0.0. The total for the gases chosen for the mix must equal 100.0%.

NOTE! If the total of the three gases is greater or less than 100.0%, an alarm will show. Adjust the percentages until 100.0% is achieved.

Pulse Output Configuration
This selection configures the FT4X digital output for either pulses (counts) or as an alarm discrete output.

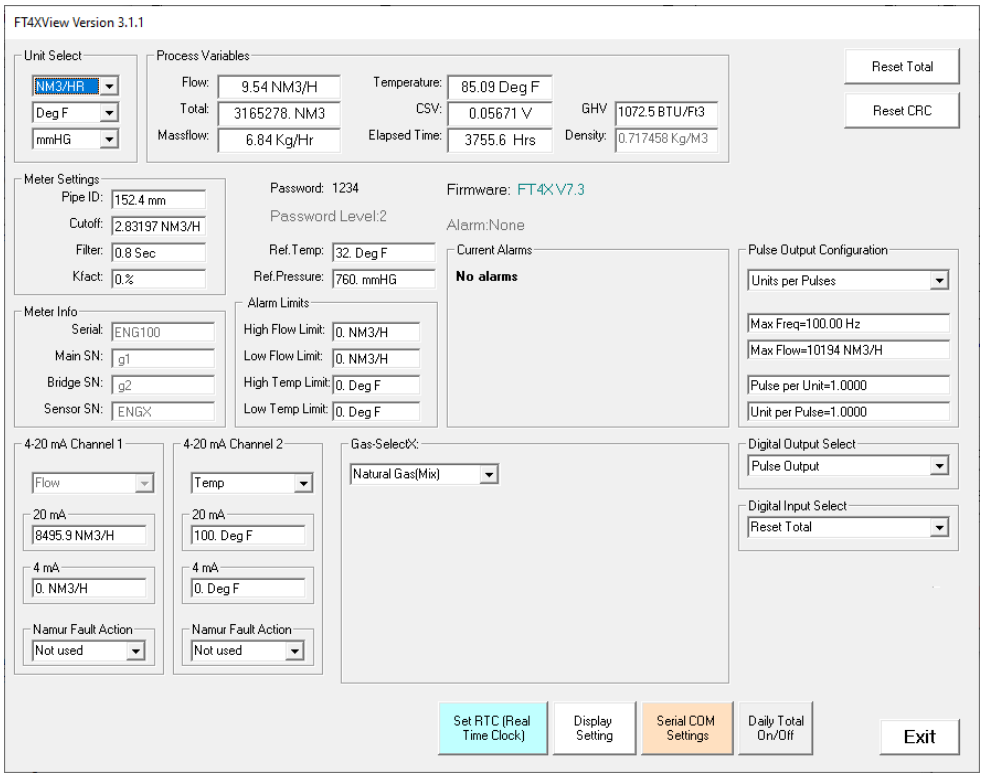
If the pulses (counts) output is selected, it can be programmed in three different ways using the pull-down menu "Frequency Output Configuration".

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

Digital Output Select
This menu allows the user to choose between dedicating the Output to Pulse, Alarms, or None.

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

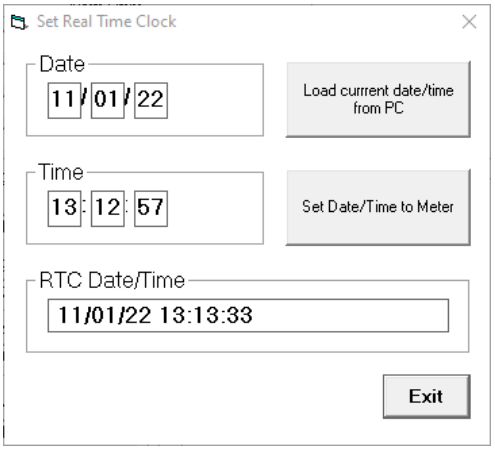
Fig. 4.9: Level 2 Configuration Screen



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.

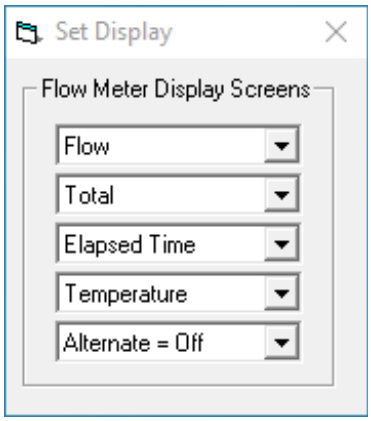
To set the date and time, click the "Set Date/Time to Meter" button.

Fig. 4.10: Setting the Real Time Clock (RTC)



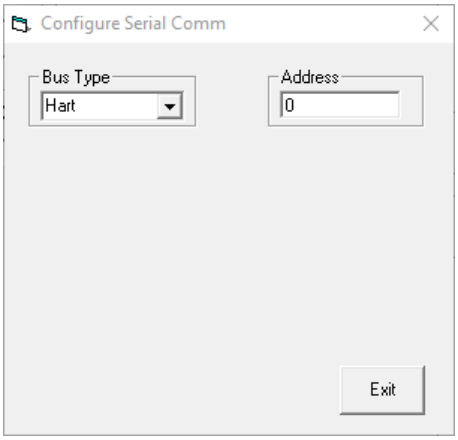
Display Setting
With the top four drop-down boxes, the user can choose the data to display on the meter's LCD display screen. By selecting "Alternate = On", the screen automatically switches between the data screens.

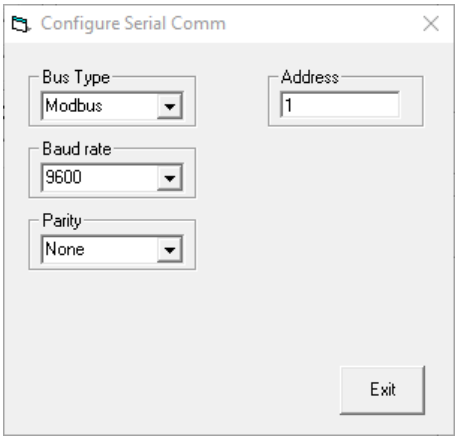
Fig. 4.11: Display Setting



Serial COM Settings
Use this function to set the serial communication settings for any of the optional FT4X bus communication boards.

Fig. 4.12: Select Serial Communication Window

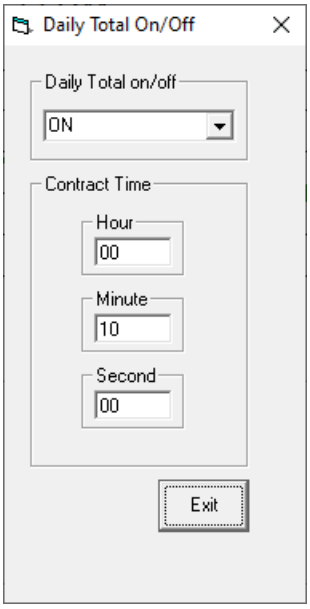




NOTE! This is only available on a meter configured for RS485 Modbus RTU or HART.

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

Fig. 4.13: Turning on Daily Total Function and setting Contract Time

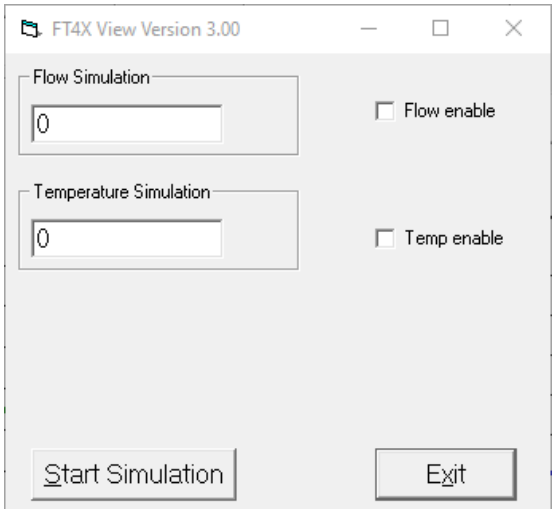


Setting the Contract Time
Resetting the Contract Time is done using the Daily Total On/Off window as seen in the figure above. The default Contract Time is midnight, but the user can change the Contract Time in this window, if needed.

Simulation Mode

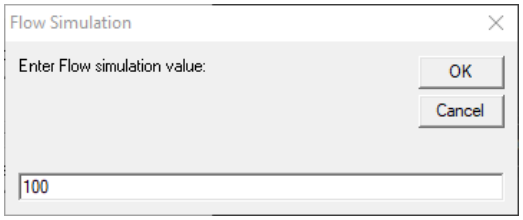
After clicking on the button marked "Simulation" from the main menu, a password will be requested. Enter the password and then the Simulation screen will be shown.

Fig. 4.14: Simulation Mode Window



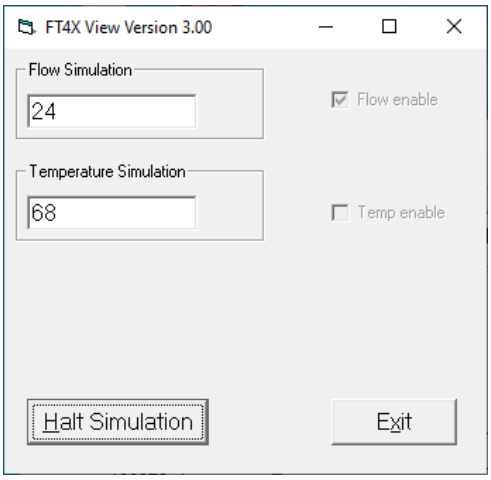
The simulation mode simulates flow rate, temperature and/or CSV. Click on the required data and enter a value. Simulation mode allows users to verify the analog output, digital outputs and totalizer at simulated flow rates and temperature.

Fig. 4.15: Entering a Simulation Value



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

Fig. 4.16: Simulation Running



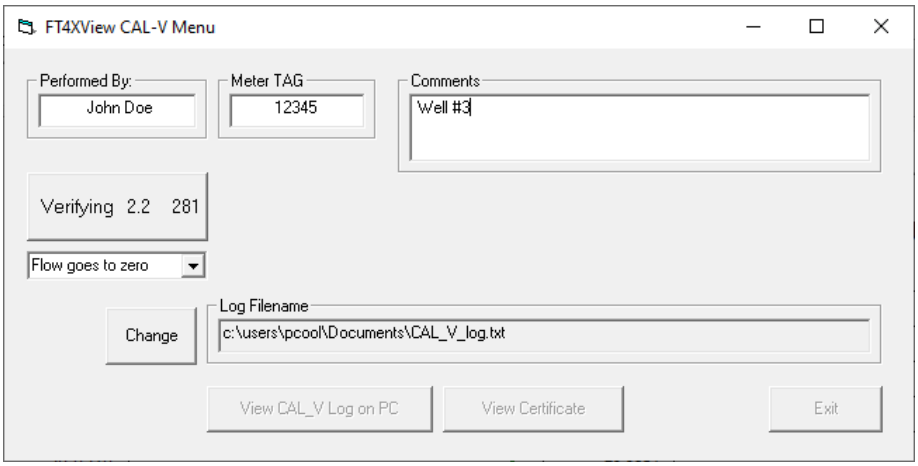
In Simulation mode, all FT4X outputs and the Totalizer respond as if in normal measurement mode. Click "Halt Simulation" to end.

CAL-V™

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

After clicking on the button marked "CAL-V" located in the box marked "Calibration Validation Diagnostic Test" from the main menu, the CAL-V™ screen will be shown.

Fig. 4.17: CAL-V™ Test Menu Window



On the CAL-V™ Menu, 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:

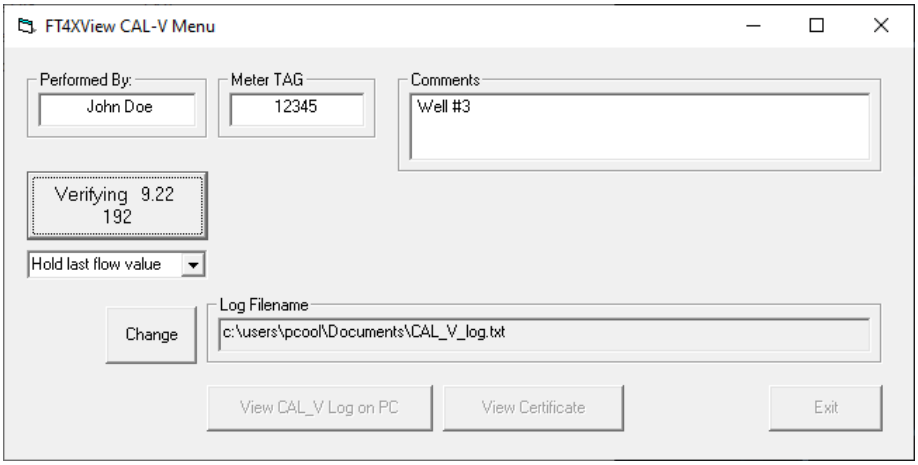
- Flow goes to Zero during CAL-V™
- Flow holds the last value during CAL-V™

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 four minutes. The flow measurement will stop and go to zero for this period unless the "hold last value" option has been chosen.

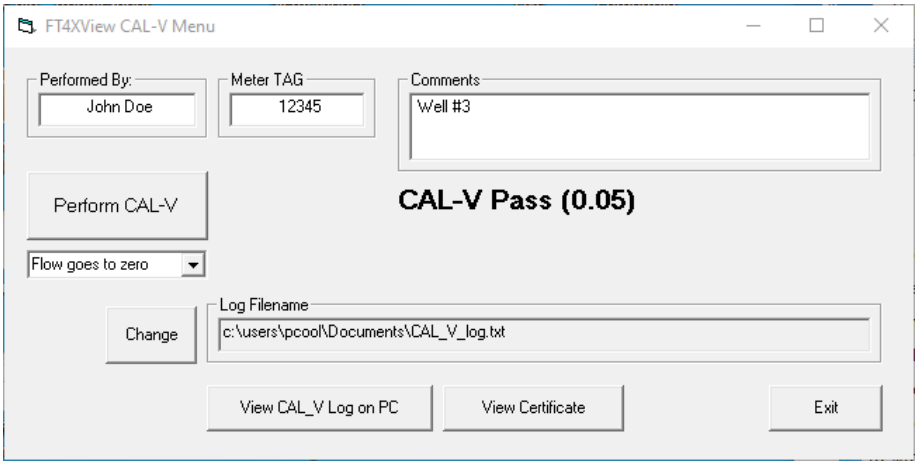
When ready to start, click the "Perform CAL-V Verify" button.

Fig. 4.18: Running a CAL-V™ Test



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

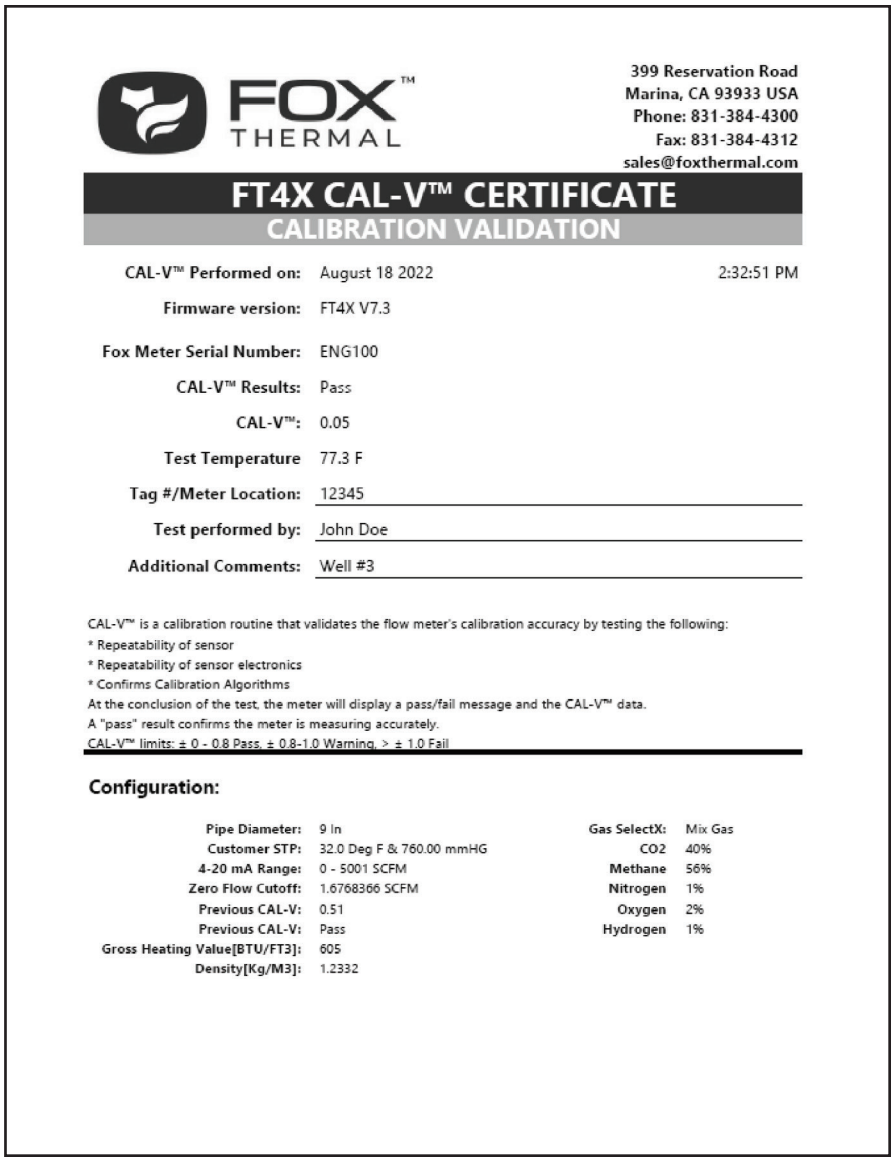
Fig. 4.19: CAL-V™ Results Window



CAL-V™ Certificate

The CAL-V™ Certificate button 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 on the CAL-V™ window. A laptop or PC can be used to perform the CAL-V™ test on the FT4X meter. 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



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FT4X CAL-V™ CERTIFICATE

CALIBRATION VALIDATION

CAL-V™ Performed on:	August 18 2022	2:32:51 PM
Firmware version:	FT4X V7.3	
Fox Meter Serial Number:	ENG100	
CAL-V™ Results:	Pass	
CAL-V™:	0.05	
Test Temperature	77.3 F	
Tag #/Meter Location:	12345	
Test performed by:	John Doe	
Additional Comments:	Well #3	

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

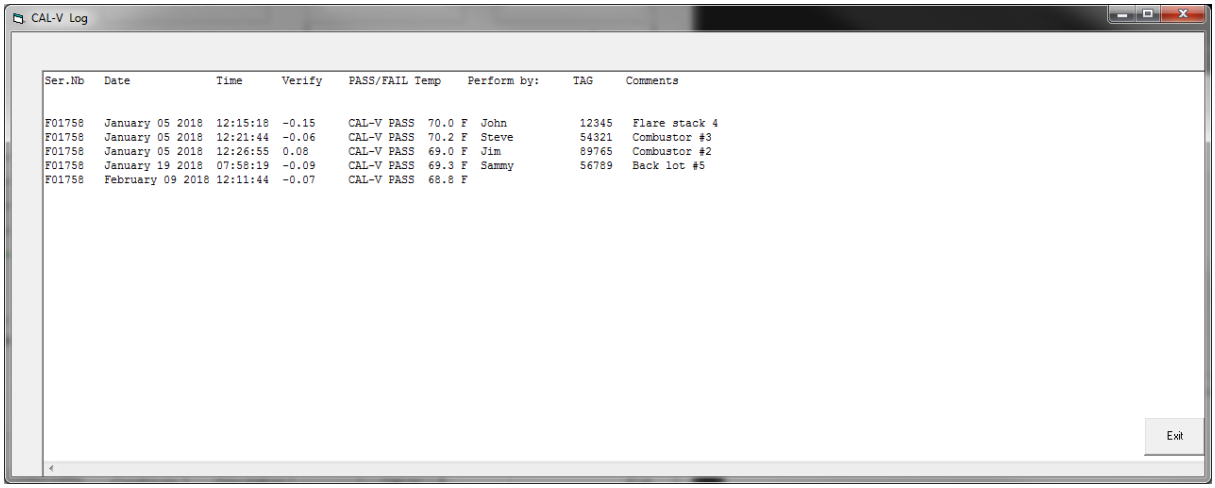
Configuration:

Pipe Diameter:	9 In	**Gas SelectX:**	Mix Gas
Customer STP:	32.0 Deg F & 760.00 mmHG	**CO2**	40%
4-20 mA Range:	0 - 5001 SCFM	**Methane**	56%
Zero Flow Cutoff:	1.6768366 SCFM	**Nitrogen**	1%
Previous CAL-V:	0.51	**Oxygen**	2%
Previous CAL-V:	Pass	**Hydrogen**	1%
Gross Heating Value[BTU/FT3]:	605		
Density[Kg/M3]:	1.2332		

Diagnostic Tests Log

The Diagnostic Tests 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.

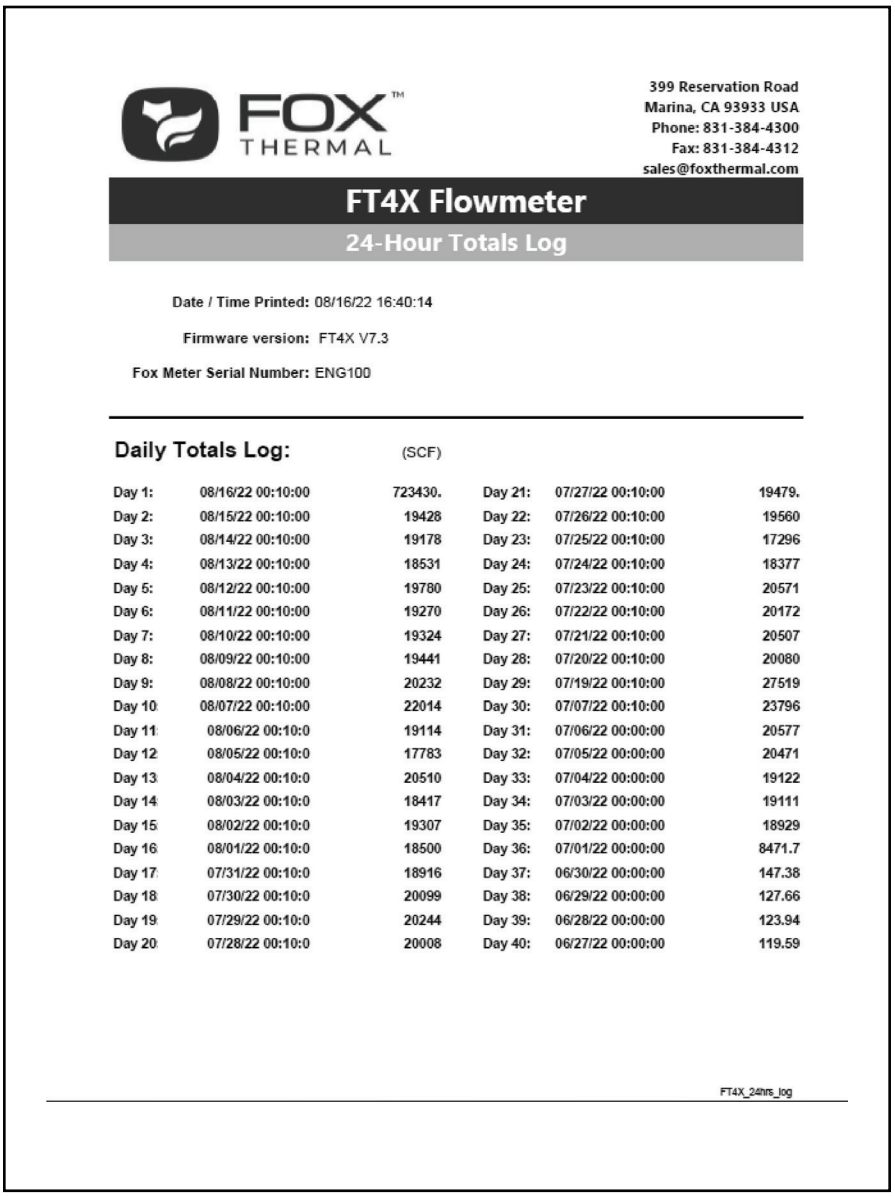
Fig. 4.21: CAL-V™ Log



24 Hour Log

After clicking on the button marked "24 Hour Log" located in the box marked "View Log" from the main menu, the operator can view a log of totals from the meter. Pressing this button produces a pdf listing of totals starting with yesterday's total and followed by 40 24-hour totals. The start time begins and is reset when the totalizer is reset.

Fig. 4.22: 24 Hour Log Example



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FT4X Flowmeter

24-Hour Totals Log

Date / Time Printed: 08/16/22 16:40:14

Firmware version: FT4X V7.3

Fox Meter Serial Number: ENG100

Daily Totals Log: (SCF)

Day 1:	08/16/22 00:10:00	723430.	Day 21:	07/27/22 00:10:00	19479.
Day 2:	08/15/22 00:10:00	19428	Day 22:	07/26/22 00:10:00	19560
Day 3:	08/14/22 00:10:00	19178	Day 23:	07/25/22 00:10:00	17296
Day 4:	08/13/22 00:10:00	18531	Day 24:	07/24/22 00:10:00	18377
Day 5:	08/12/22 00:10:00	19780	Day 25:	07/23/22 00:10:00	20571
Day 6:	08/11/22 00:10:00	19270	Day 26:	07/22/22 00:10:00	20172
Day 7:	08/10/22 00:10:00	19324	Day 27:	07/21/22 00:10:00	20507
Day 8:	08/09/22 00:10:00	19441	Day 28:	07/20/22 00:10:00	20080
Day 9:	08/08/22 00:10:00	20232	Day 29:	07/19/22 00:10:00	27519
Day 10	08/07/22 00:10:00	22014	Day 30:	07/07/22 00:10:00	23796
Day 11	08/06/22 00:10:0	19114	Day 31:	07/06/22 00:00:00	20577
Day 12	08/05/22 00:10:0	17783	Day 32:	07/05/22 00:00:00	20471
Day 13	08/04/22 00:10:0	20510	Day 33:	07/04/22 00:00:00	19122
Day 14	08/03/22 00:10:0	18417	Day 34:	07/03/22 00:00:00	19111
Day 15	08/02/22 00:10:0	19307	Day 35:	07/02/22 00:00:00	18929
Day 16	08/01/22 00:10:0	18500	Day 36:	07/01/22 00:00:00	8471.7
Day 17	07/31/22 00:10:0	18916	Day 37:	06/30/22 00:00:00	147.38
Day 18	07/30/22 00:10:0	20099	Day 38:	06/29/22 00:00:00	127.66
Day 19	07/29/22 00:10:0	20244	Day 39:	06/28/22 00:00:00	123.94
Day 20	07/28/22 00:10:0	20008	Day 40:	06/27/22 00:00:00	119.59

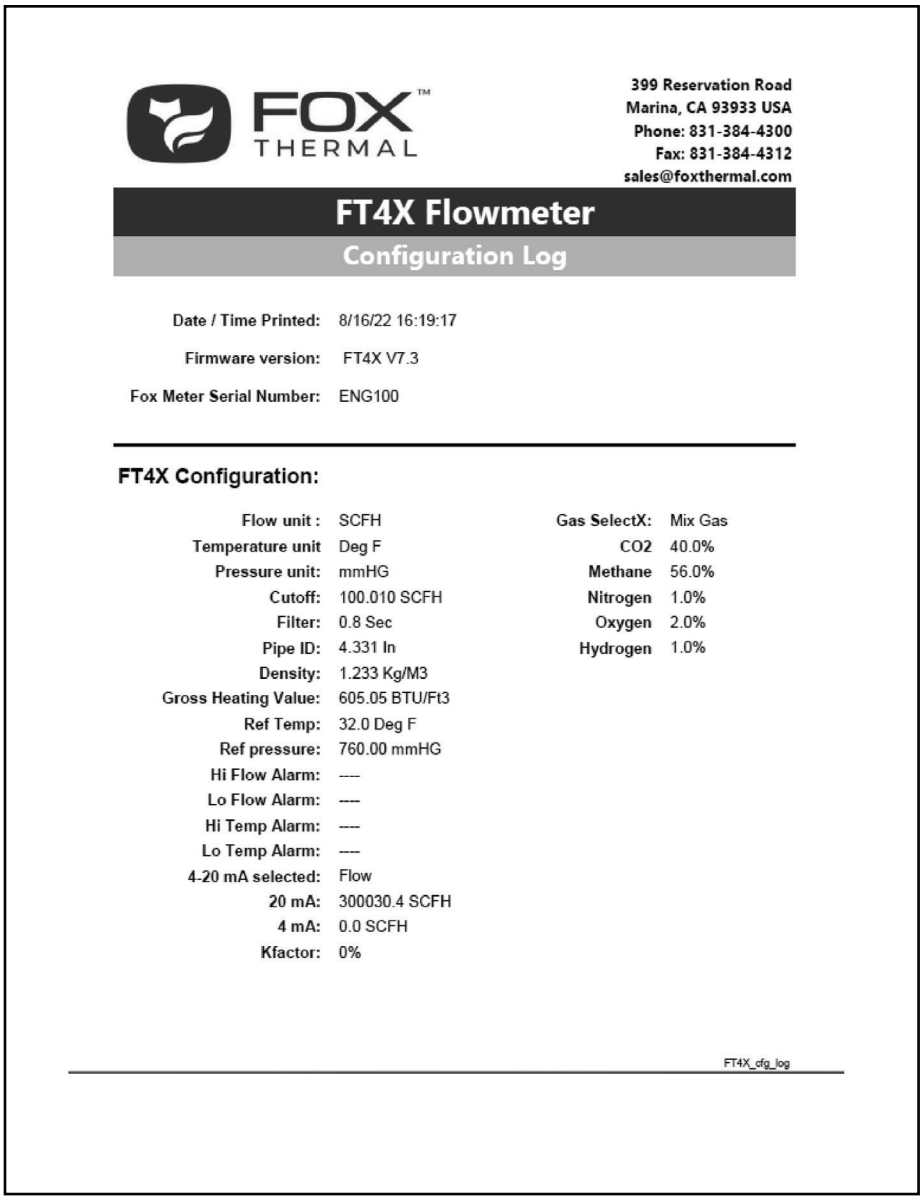
FT4X_24hrs_log

Configuration Log

After clicking on the button marked "Config Log" located in the box marked "View Log" from the main menu, the operator can view 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



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FT4X Flowmeter

Configuration Log

Date / Time Printed:	8/16/22 16:19:17
Firmware version:	FT4X V7.3
Fox Meter Serial Number:	ENG100

FT4X Configuration:

Flow unit :	SCFH	Gas SelectX:	Mix Gas
Temperature unit	Deg F	CO2	40.0%
Pressure unit:	mmHG	Methane	56.0%
Cutoff:	100.010 SCFH	Nitrogen	1.0%
Filter:	0.8 Sec	Oxygen	2.0%
Pipe ID:	4.331 In	Hydrogen	1.0%
Density:	1.233 Kg/M3		
Gross Heating Value:	605.05 BTU/Ft3		
Ref Temp:	32.0 Deg F		
Ref pressure:	760.00 mmHG		
Hi Flow Alarm:	----		
Lo Flow Alarm:	----		
Hi Temp Alarm:	----		
Lo Temp Alarm:	----		
4-20 mA selected:	Flow		
20 mA:	300030.4 SCFH		
4 mA:	0.0 SCFH		
Kfactor:	0%		

FT4X_cfg_log

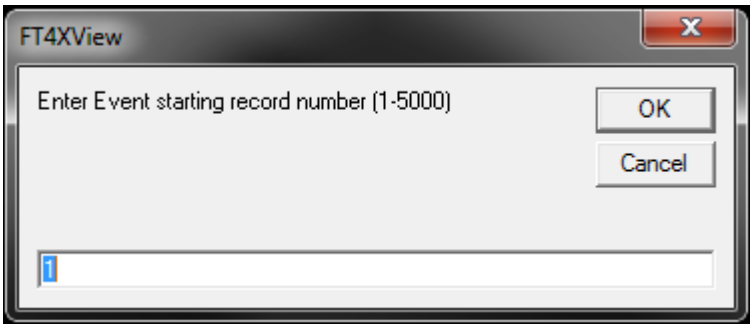
Event Log
After clicking on the button marked "Event Log" located in the box marked "View Log" from the main menu, the operator can view a log of the meter's current configuration.

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 an Excel® spreadsheet.

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

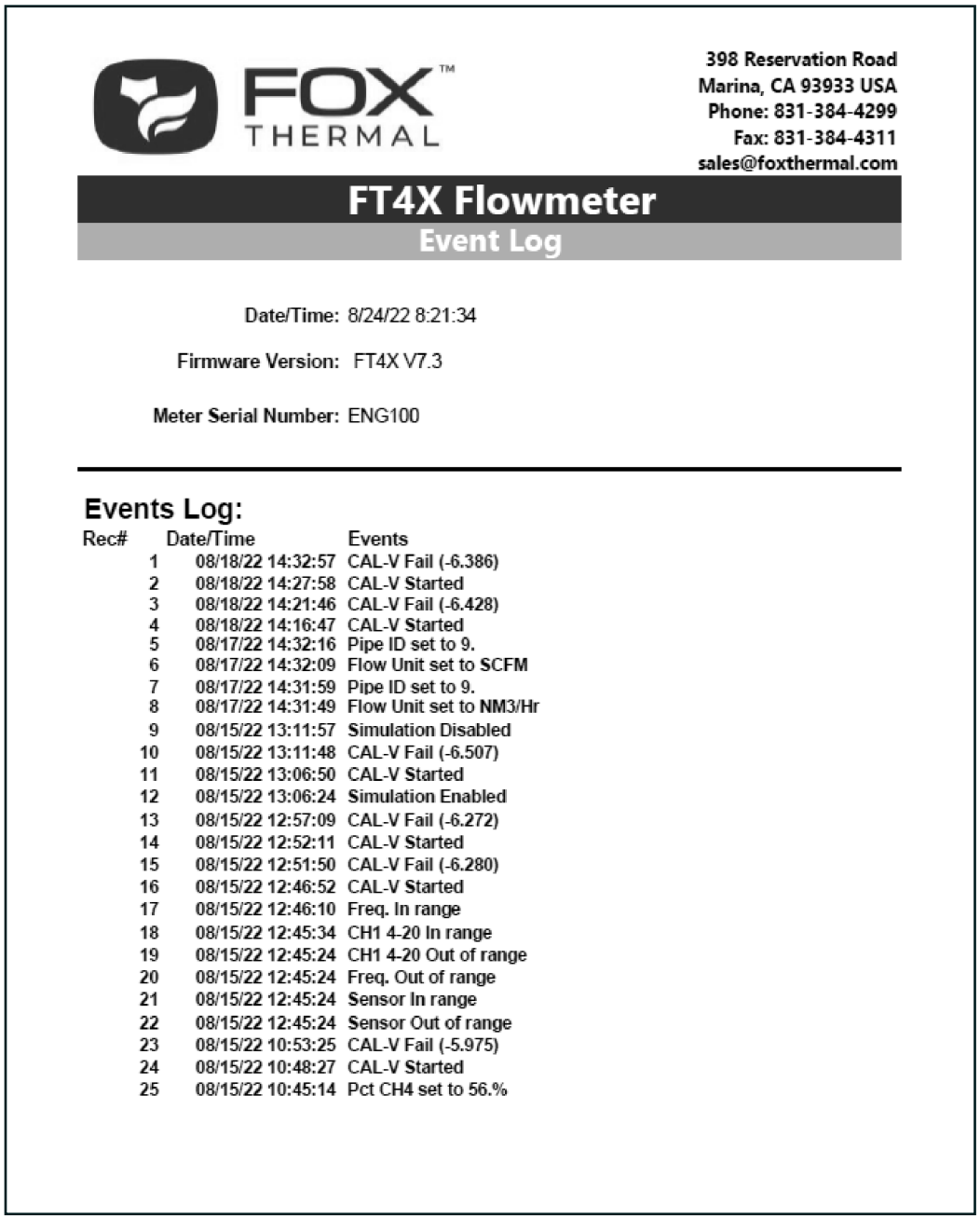


Enter the number of the record that you would like to have at the beginning of the log. This event will start the log and all subsequent events will follow. Any previous events will be excluded from this viewing of the log.

The Event/Alarm Log will open in Excel®. The Log 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 occured
- 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



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FT4X Flowmeter

Event Log

Date/Time: 8/24/22 8:21:34

Firmware Version: FT4X V7.3

Meter Serial Number: ENG100

Events Log:

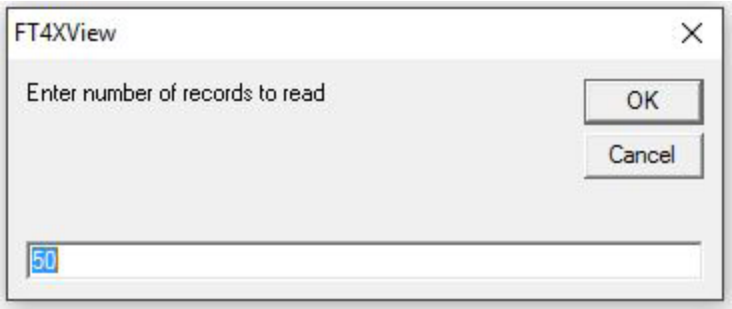
Rec#	Date/Time	Events
1	08/18/22 14:32:57	CAL-V Fail (-6.386)
2	08/18/22 14:27:58	CAL-V Started
3	08/18/22 14:21:46	CAL-V Fail (-6.428)
4	08/18/22 14:16:47	CAL-V Started
5	08/17/22 14:32:16	Pipe ID set to 9.
6	08/17/22 14:32:09	Flow Unit set to SCFM
7	08/17/22 14:31:59	Pipe ID set to 9.
8	08/17/22 14:31:49	Flow Unit set to NM3/Hr
9	08/15/22 13:11:57	Simulation Disabled
10	08/15/22 13:11:48	CAL-V Fail (-6.507)
11	08/15/22 13:06:50	CAL-V Started
12	08/15/22 13:06:24	Simulation Enabled
13	08/15/22 12:57:09	CAL-V Fail (-6.272)
14	08/15/22 12:52:11	CAL-V Started
15	08/15/22 12:51:50	CAL-V Fail (-6.280)
16	08/15/22 12:46:52	CAL-V Started
17	08/15/22 12:46:10	Freq. In range
18	08/15/22 12:45:34	CH1 4-20 In range
19	08/15/22 12:45:24	CH1 4-20 Out of range
20	08/15/22 12:45:24	Freq. Out of range
21	08/15/22 12:45:24	Sensor In range
22	08/15/22 12:45:24	Sensor Out of range
23	08/15/22 10:53:25	CAL-V Fail (-5.975)
24	08/15/22 10:48:27	CAL-V Started
25	08/15/22 10:45:14	Pct CH4 set to 56.%

BLM Log

After clicking on the button marked "BLM Log" located in the box marked "View Log" from the main menu, 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 produced in an Excel® spreadsheet.

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).

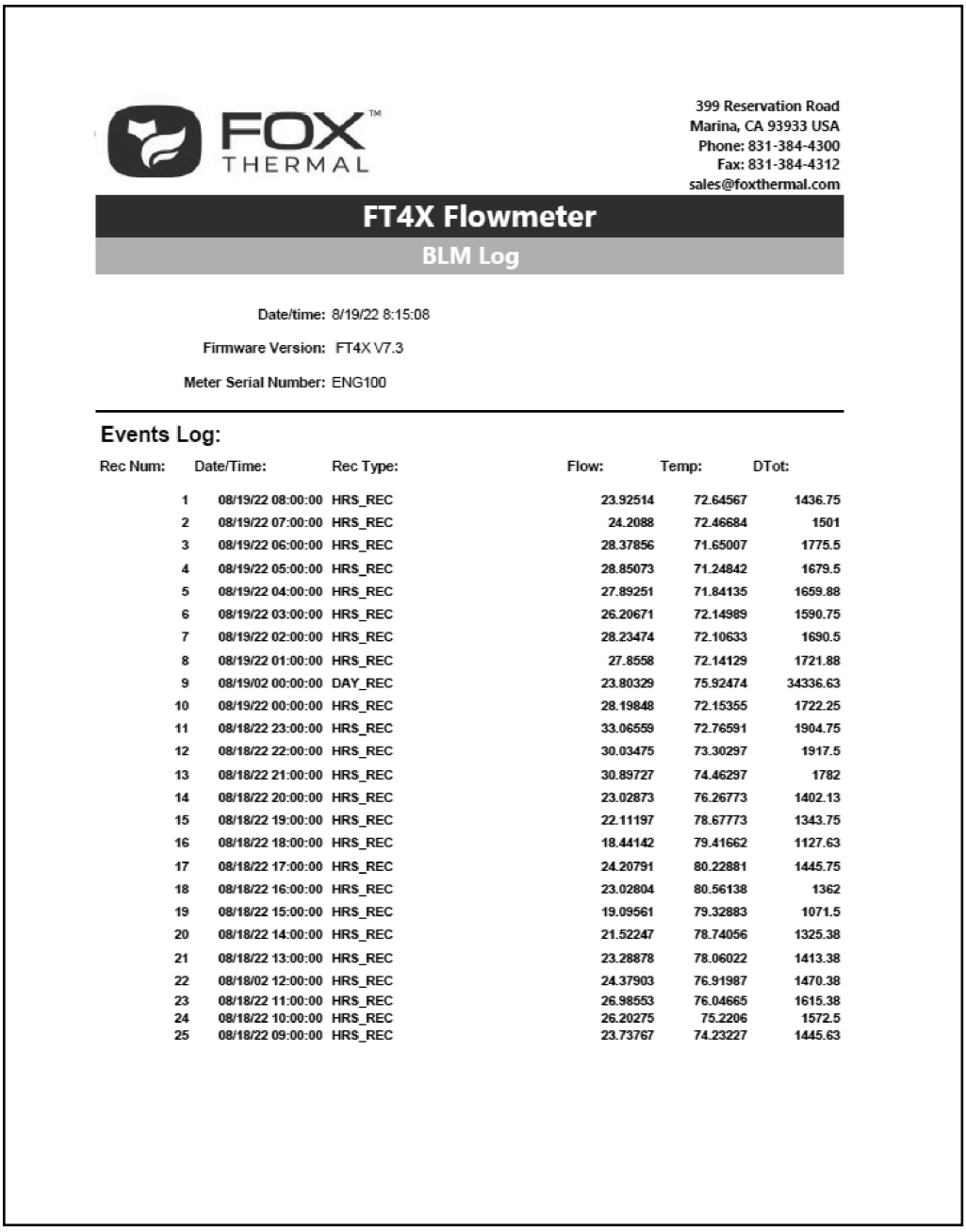
Fig. 4.28: Enter Record Number to Begin the Log

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 open in Excel®. The Log includes the following information:

- Current date/time
- Meter's firmware version
- Meter's serial number
- Record number
- Date/time stamp of record
- Flow
- Temperature
- Total

Fig. 4.29: BLM Log Example



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FT4X Flowmeter

BLM Log

Date/time: 8/19/22 8:15:08

Firmware Version: FT4X V7.3

Meter Serial Number: ENG100

Events Log:

Rec Num:	Date/Time:	Rec Type:	Flow:	Temp:	DTot:
1	08/19/22 08:00:00	HRS_REC	23.92514	72.64567	1436.75
2	08/19/22 07:00:00	HRS_REC	24.2088	72.46684	1501
3	08/19/22 06:00:00	HRS_REC	28.37856	71.65007	1775.5
4	08/19/22 05:00:00	HRS_REC	28.85073	71.24842	1679.5
5	08/19/22 04:00:00	HRS_REC	27.89251	71.84135	1659.88
6	08/19/22 03:00:00	HRS_REC	26.20671	72.14989	1590.75
7	08/19/22 02:00:00	HRS_REC	28.23474	72.10633	1690.5
8	08/19/22 01:00:00	HRS_REC	27.8558	72.14129	1721.88
9	08/19/02 00:00:00	DAY_REC	23.80329	75.92474	34336.63
10	08/19/22 00:00:00	HRS_REC	28.19848	72.15355	1722.25
11	08/18/22 23:00:00	HRS_REC	33.06559	72.76591	1904.75
12	08/18/22 22:00:00	HRS_REC	30.03475	73.30297	1917.5
13	08/18/22 21:00:00	HRS_REC	30.89727	74.46297	1782
14	08/18/22 20:00:00	HRS_REC	23.02873	76.26773	1402.13
15	08/18/22 19:00:00	HRS_REC	22.11197	78.67773	1343.75
16	08/18/22 18:00:00	HRS_REC	18.44142	79.41662	1127.63
17	08/18/22 17:00:00	HRS_REC	24.20791	80.22881	1445.75
18	08/18/22 16:00:00	HRS_REC	23.02804	80.56138	1362
19	08/18/22 15:00:00	HRS_REC	19.09561	79.32883	1071.5
20	08/18/22 14:00:00	HRS_REC	21.52247	78.74056	1325.38
21	08/18/22 13:00:00	HRS_REC	23.28878	78.06022	1413.38
22	08/18/02 12:00:00	HRS_REC	24.37903	76.91987	1470.38
23	08/18/22 11:00:00	HRS_REC	26.98553	76.04665	1615.38
24	08/18/22 10:00:00	HRS_REC	26.20275	75.2206	1572.5
25	08/18/22 09:00:00	HRS_REC	23.73767	74.23227	1445.63

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
TSI	Temperature Sense Current

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Definition of Terms

Troubleshooting Tips

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.

Indicates compliance with the WEEE Directive. Please dispose of the product in accordance with local regulations and conventions.

Indicates compliance with the applicable European Union Directives for Safety and EMC (Electromagnetic Compatibility Directive 2014/30/EU).

Indicates compliance with the UKCA (UK Conformity Assessed) regulations for Great Britain.

IP67 **Enclosure Protection Classification per IEC 60529: Protected against the ingress of dust and Immersion.**

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