



FT2 View™ Instruction Manual

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Introduction:

The FT2 View™ application software is a program that runs on a PC and communicates with a Fox FT2 Thermal Mass Flowmeter.

Installation:

To install the FT2 View™ program, you must first download the file from the Fox website. The latest version of the FT2 View™ software is available for download at <http://www.foxthermalinstruments.com/products/ft2view.php>.

The screenshot shows the Fox Thermal Instruments website. The header includes the company logo, a search bar, and a language selection dropdown. The main content area is titled "FT2 View™ Software Tool" and contains a description of the software and a list of features:

- Quick access to all configuration parameters with pop-up windows and pull down menus
- Selection of measurement units, flow and temperature ranges, alarm settings and more
- Display of error codes
- Storage of meter configurations to a file that can be archived
- Raw data calculations that can be used to diagnose or troubleshoot your meter

At the bottom of the page, there are three links: "FT2 View™ Data Sheet", "FT2 View™ Instruction Manual (Instructions for downloading and using the FT2 View™ Software)", and "FT2 View™ Software (for XP/Win7)". A red arrow points to the "FT2 View™ Software" link.

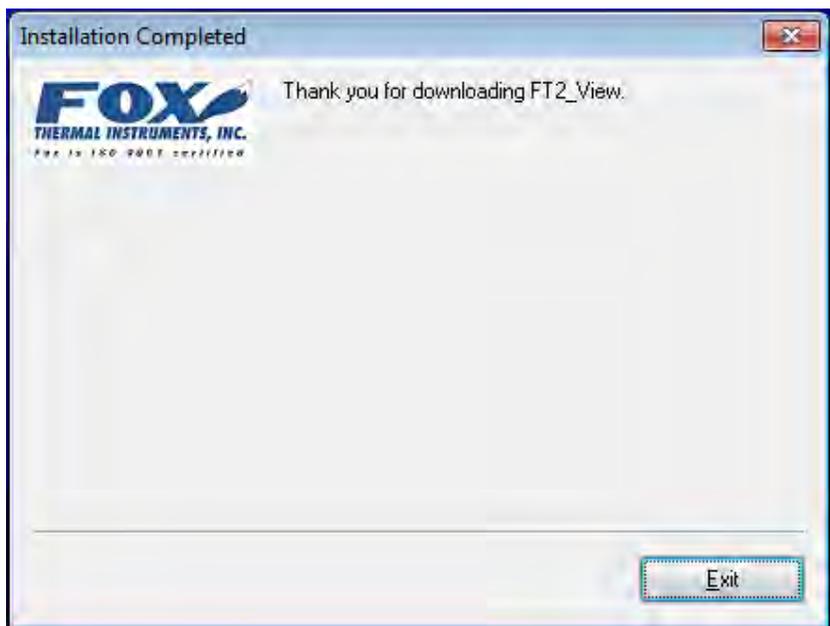
To install the FT2 View™ program, run the “FT2View_V#.#.#-setup.exe” file that is located in the downloaded file.



After clicking “Next” the screen will show:



Select the folder in which you wish to install FT2view™, then click “Install.”



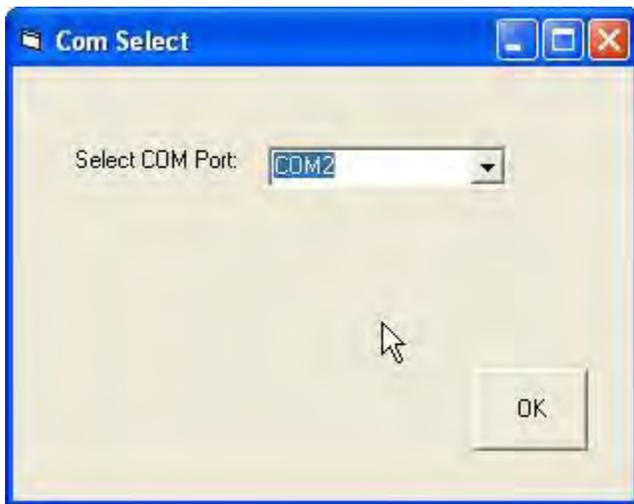
When the program is done installing, you may exit, then restart your computer.

Operation:

Connect a RS232 DB9 cable from the FT2 RS232 serial port located on the inside of the FT2 transmitter and a serial port of a PC. The serial cable must be a null modem cable or use a null modem DB9 adapter. If your PC does not have a RS232 port, you will need a USB to RS232 converter along with a VCP driver.

If the PC is connected to the Internet and running Windows 7™, the PC will try to automatically load the VCP driver. If the driver does not load automatically, download the VCP driver at: <http://www.ftdichip.com/Drivers/VCP.htm>

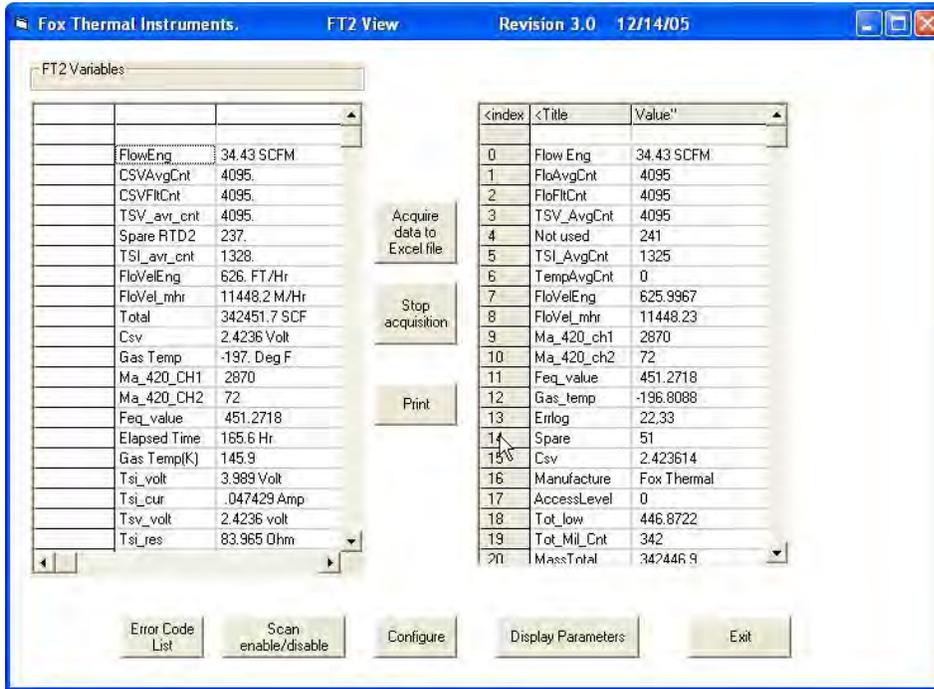
Run the application by clicking on FT2_View.exe and select the Communication port used when prompted by using the drop down menu and press **OK**.



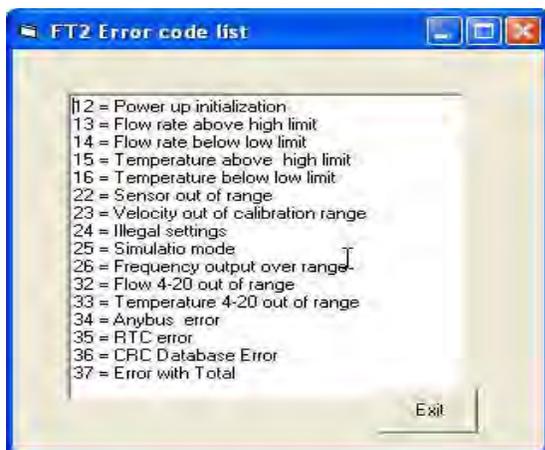
The COM port selection can be found by going to the control panel and opening the Device Manager and clicking on the PORT (COM&LPT). A COM port assignment should be displayed.

Welcome Screen

The right side of the first screen shows all of the FT2 parameters which are scanned once upon entering the program. The left side of the window displays FT2 variables which are automatically refreshed about once a second.

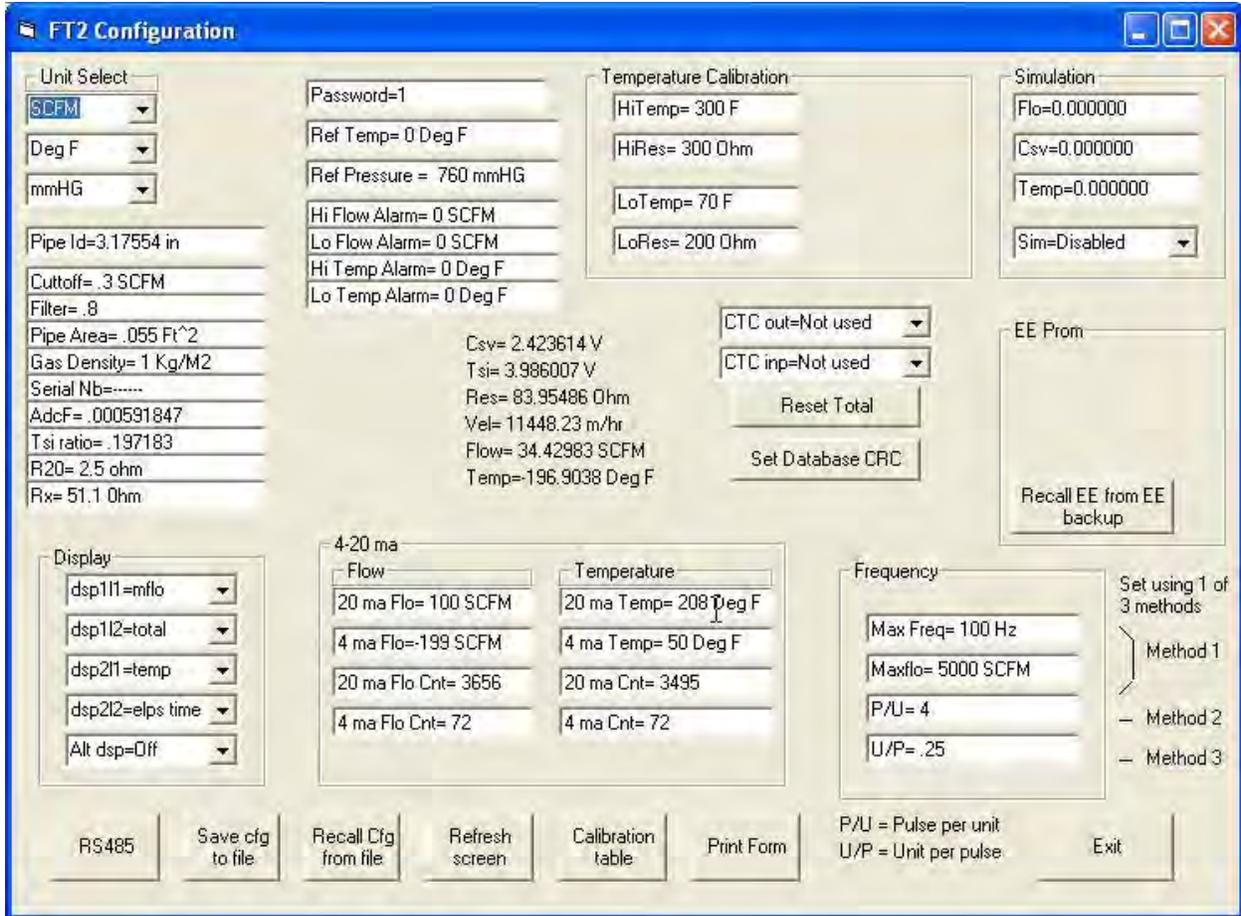


- The **“Error Code List”** button enables the user to display a list of error codes and their descriptions (see example below).
- The **“Scan Enable/Disable”** button allows the user to stop and start the data scanning.
- The **“Configure”** * button allows the user to enter a sub-menu to allow FT2 parameters settings and display. A password will be requested to access different levels of parameters protection. See pages 3-4 for more information.
 - o * Please note that the **“Configure”** button will be visible only after communication has been established with the FT2.
- The data can be refreshed by clicking on the **“Display Parameters”** button located at the bottom right.
- **“Acquire data to Excel file”** button is use to save specified data at a requested time interval to an Excel spreadsheet. See page 6 for more information.
- The **“Stop Acquisition”** button is clicked to terminate data collection.



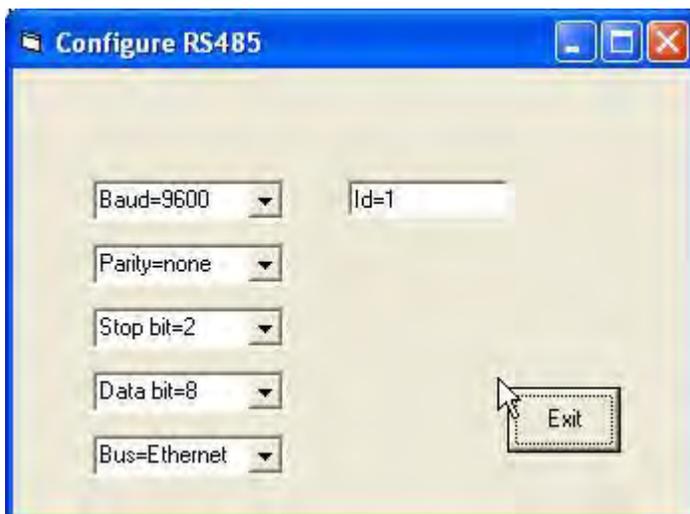
Configure Menu:

After pressing the “Configure Menu” button, a screen will prompt the user to enter a password that will allow access to some or all parameters. After entering the password (1234 for most parameters), the “Configure Menu” button will flash with “Please Wait” until the program has acquired all the parameters from the FT2 and displays them on the screen.

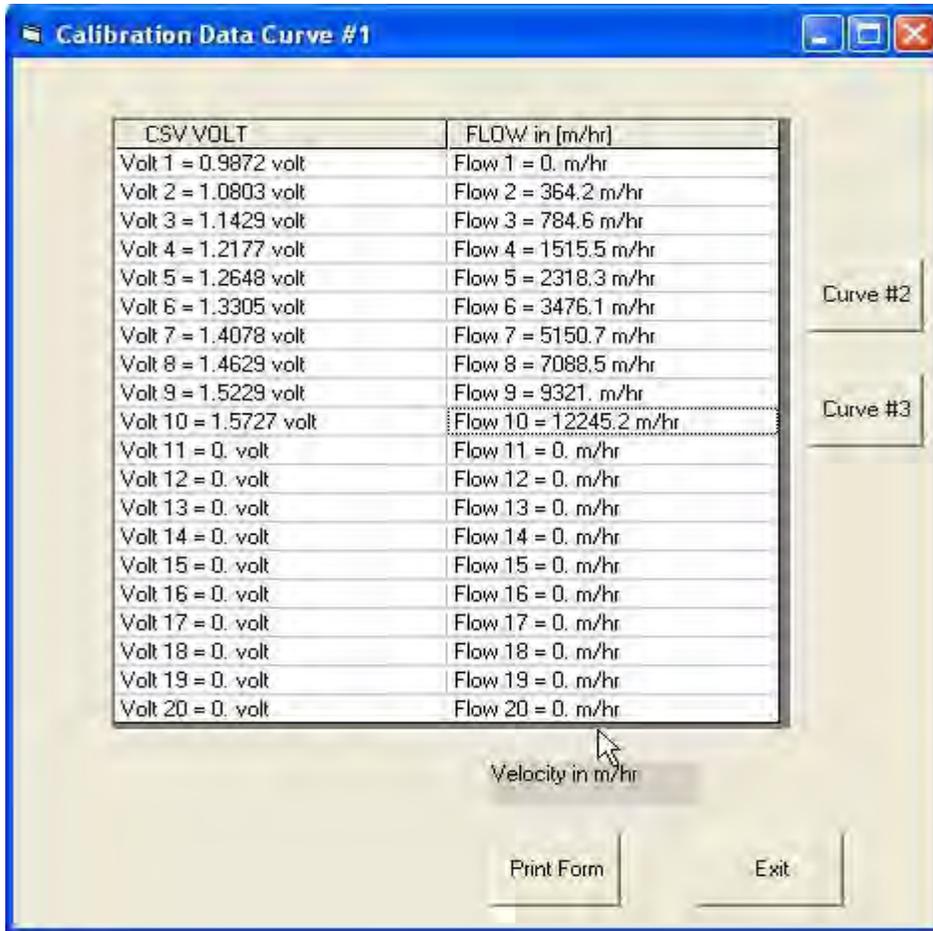


- **Unit Select**
 - Choose the Flow Rate unit, temperature in F or C and the pressure label.
- **Temperature Calibration**
 - The Temperature calibration section allows the user to modify the temperature calibration factors but should not be modified unless the temperature reading is out of calibration.
- **Simulation**
 - Flow rate, Temperature and sensor sense voltage can be simulated by clicking on the respective display box, entering new values and then selecting Sim=Enable. The Simulation message will be displayed on the FT2 local display every 10 seconds when operating in that mode. After a power cycle, the simulation mode will be automatically disabled.
- **Display**
 - The display section allows programming of the display 1 & 2 of the local display.
 - Dsp111 is for display 1 line 1.
 - Dsp112 is for display 1 line 2.
 - Dsp211 is for display 2 line 1.
 - Dsp212 is for display 2 line 2.

- **4-20ma**
 - The 4-20mA section allows programming of the two 4-20 mA outputs for flow rate and temperature.
 - The “20mA Flo” is the flow rate corresponding to the 20 mA and the “4 mA Flo” is the flow rate corresponding to the 4mA. “20 mA Temp” and “4 mA Temp” are settings for gas temperature.
 - The “20mA flo cnt” and the “4mA flo cnt” are the calibration settings and should not be changed unless the output is out of specification.
 - The “20mA Temp cnt” and “4mA Temp cnt” are for the output associated with temperature.
- **Frequency**
 - The frequency section allows the programming of the pulse output associated with flow rate. Three methods are provided to accomplish this.
 - Method 1: the first method is by setting the maximum flow rate and corresponding frequency output (frequency may not exceed 100 hz)
 - Method 2: the second method is by setting the number of pulses per unit of total (i.e 10 pulses per SCF)
 - Method 3: the third is by setting the total unit per pulse (i.e 10 SCF per pulse).
- **EE Prom**
 - **“Recall EE from EEbackup”** is used to recall default parameters set at the factory when the unit was calibrated. A switch on the FT2 circuit board needs to be activated before performing this function.
- **Other Parameters**
 - **“CTC out”** allows the programming of the digital output as an alarm indicator for exceeding a certain threshold for flow rate or temperature.
 - **“CTC inp”** allows the programming on a contact input to reset the totalizer.
 - The **“Reset Total”** button is used to reset the FT2 total.
 - The **“Set database CRC”** is used to re-calculated the CRC associated with some of the critical parameters. This would be done to clear a “Database CRC Error” after verifying that all the critical database parameters are accurate. This button allows the user to reset the CRC associated with critical data in the event an error has been detected. All critical data need to be verified before resetting the CRC to avoid operating with corrupted data.
- **“RS485” Button**
 - This button allows the user to configure the RS485 serial port and bus type. The RS485 settings apply only if the bus type selected is Modbus.



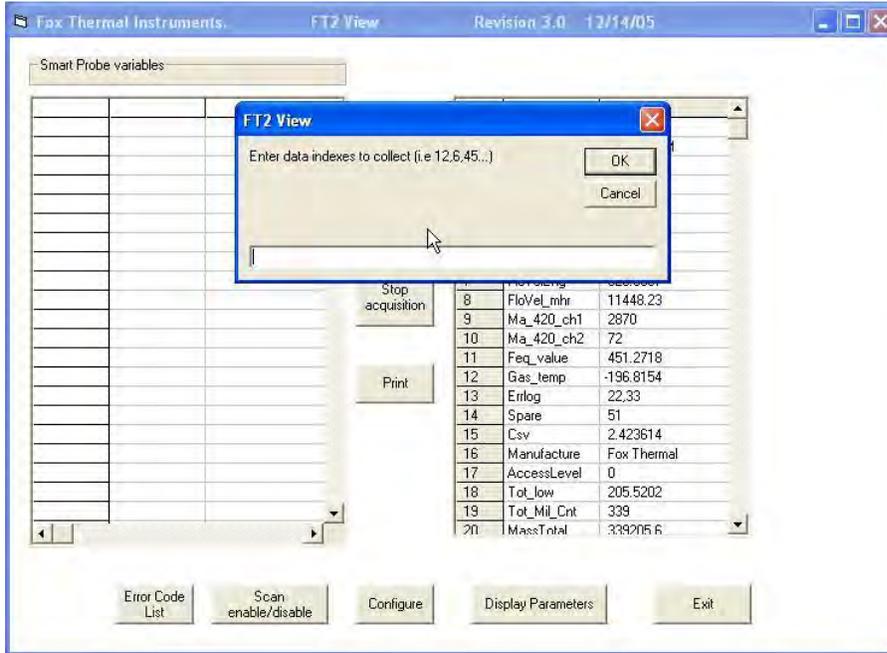
- **“Save cfg to file” Button**
 - This button is used to save all the settings to a data file.
- **“Recall cfg from file” Button**
 - This button is used to recall previously saved settings from a file.
- **“Refresh screen” Button**
 - This button is used to refresh all the parameters on that screen.
- **“Calibration table” Button**
 - This button allows access to the flow calibration tables.
 - If the meter is calibrated with multiple curves, the “Curve #2” and “Curve #3” buttons may be used to view calibration table information of the other curves.



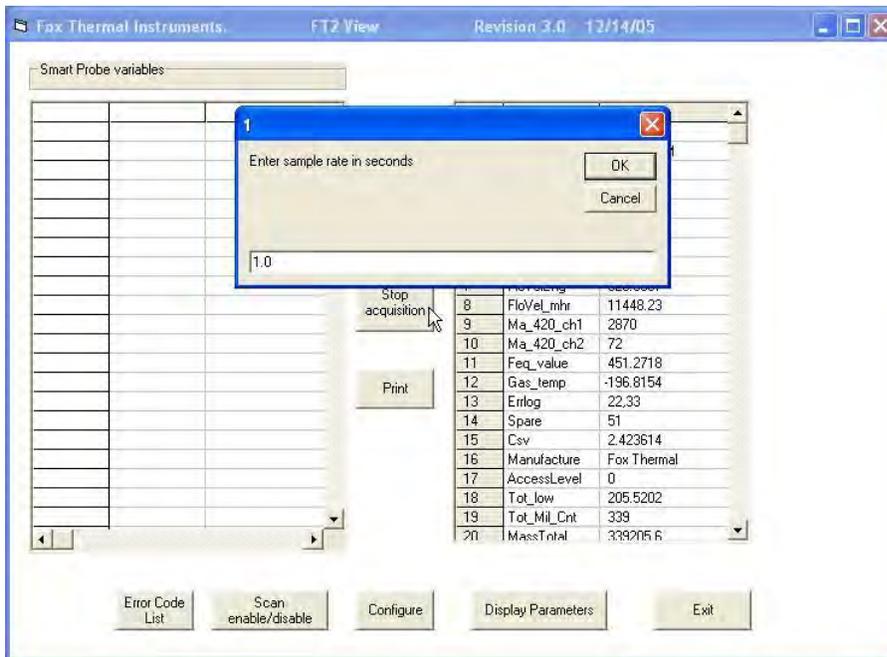
- **“Print Form” Button**
 - This button allows the user to print the page.

Data Acquisition to Excel File

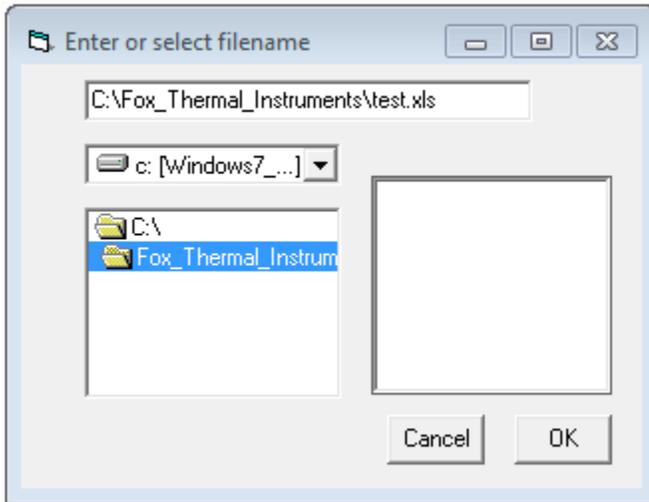
After selecting the “Start Acquisition to Excel File” button, a box will prompt the user to enter a list of data index to collect the data.



Please refer to the Thermal Mass Flowmeter & Temperature Transmitter RS232 Message Protocol for data index codes. Data index should be separated with commas. Next a box will prompt the user to enter the sample interval time in seconds and then the file name.



Select the directory in which you wish to log data. Ensure there are no spaces in the folder names and file name. The file name must end with “.xls” and do not save your data in the root directory, as Windows 7 does not allow this.



The program will collect the data to the Excel file at the specified rate and save it to disk every 30 seconds until stopped by pressing the “Stop Acquisition” button.