

FT2 ViewTM Instruction Manual

399 Reservation Road, Marina, California U.S.A. Ph: (831) 384-4300 Fax: (831) 337-5786 www.foxthermalinstruments.com

©2006 Fox Thermal Instruments, Inc.

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

HERMAL INSTRUM		, INC.				Google" Dustem Search	Search	Select Language Powered by Google Tra	anslate Porta
	Home	About	Products	Sales	Calibration	News and Events	Contact Us		
Applications	1	FT2 View™	' Software To	ol					
Services	- F	The FT2 Vie Flow Meter.	w™ application	n software	is a program tha	t runs on a PC and comm	nunicates with a	Fox FT2 Thermal Ma	ss
1 Literature						a filladeacar		E EIN	
Find a Fox Rep		 Ouick 	access to all c	onfiguratio	on narameters	Difference Particle Control of Particle Control Particle Control of Particle Control Particle Control of Particle Control Particle Control of Particle Control of Particle Control Particle Control of Particle Control of Pa	V John Arder Prins 97 Werkburg Stripter Stripter Bargedt	Control Physics and Control Co	
Visual Forum		 With p Select 	op-up windows	s and pull ement uni	down menus ts. flow and	And a star in the	Cally Configure a	10 ²	
Reg's and Compliance		tempe • Displa	erature ranges, ay of error code	, alarm se es	ttings and more	Product of the second s	d 1 405 m d 2000 inf vash vash Aucher of the		
FAQ's		 Storage can be 	ge of meter co e archived	nfiguration	ns to a file that	TextDend in the foreign text text text text text text text tex	201007-00 201007-00 0007-00		
Get a Free Quot	e	 Raw d diagno 	lata calculation ose or troubles	s that can hoot your	be used to meter	nak 2004 toda tak			
Use our configurator to choo the right meter for your application. Submit the configuration and get a quote	se								
within 1 business day.			FT2 View™ Da	<u>ta Sheet</u>					
CIRCK TO JET A THEE LOUTE C			<u>FT2 View™ Ins</u>	struction M	lanual (Instructio	ons for downloading and u	using the FT2 Vie	ew™ Software)	
SALITY SPSILS			<u>FT2 View™ So</u>	<u>ftware</u> (fo	r XP/Win7)				

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

Fox Thermal Instruments:	FT2_view		×
THERMAL INSTRUMENTS, INC.	Please click next.		
		Next >	Cancel

After clicking "Next" the screen will show:

Destination Folder	×
THERMAL INSTRUMENTS, INC.	Please choose destination folder for your program. This is the directory where the program and its support files are installed to.
	<u>F</u> older:
	C:\Program Files (x86)\Fox Thermal Instruments\FT2_viev
	Browse
Disk Space	Keller Ke

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

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**.

Com Select		
Select COM Port:	COM2	•
	Å	ок

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.

1	1		- distribution	2730-	Weber 9	
	-		<index< th=""><th><1 me</th><th>value</th><th></th></index<>	<1 me	value	
FlowEng	34 43 SCEM		0	Elow Eng	34 43 SCEM	
CSVAvaCat	4095		1	FloAvaCot	4095	
CSVEItCot	4095		2	FloEltCot	4095	
TSV avr. cnt	4095	Acquire	3	TSV AvaCnt	4095	
Spare BTD2	237	data to	4	Not used	241	
TSI avr cnt	1328.	Excel file	5	TSI AvaCnt	1325	
FloVelEng	626. FT/Hr	_	6	TempAvaCnt	0	
FloVel mhr	11448.2 M/Hr		7	FloVelEng	625.9967	
Total	342451.7 SCF	acquisition	8	FloVel mhr	11448.23	
Csv	2,4236 Volt		9	Ma 420 ch1	2870	
Gas Temp	-197. Deg F	_	10	Ma 420 ch2	72	
Ma 420 CH1	2870		11	Feg value	451.2718	
Ma_420_CH2	72	Print	12	Gas_temp	-196.8088	
Feq_value	451.2718	1 10 0	13	Errlog	22,33	
Elapsed Time	165.6 Hr		14	Spare	51	
Gas Temp(K)	145.9		155	Csv	2.423614	
Tsi_volt	3.989 Volt		16	Manufacture	Fox Thermal	
Tsi_cur	.047429 Amp		17	AccessLevel	0	
Tsv_volt	2.4236 volt		18	Tot_low	446.8722	
Tsi_res	83.965 Ohm 🔶		19	Tot_Mil_Cnt	342	1
	•		20	MassTotal	342446.9	-
	<u>+</u>		1 20	MassTotal	342446.9	<u> </u>

- 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.
 - * 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.

FT2 Configuration						
Unit Select	-	Temperature Calibration		Simulation		
SCFM +	Password=1	HiTemp= 300 F		Flo=0.000000		
Deg F	Ref Temp= 0 Deg F	HiBes= 300 Obm		Csv=0.000000		
	Ref Pressure = 760 mmHG			T		
Imminu I	Hi Flow Alarm= 0.SCEM	- LoTemp= 70 F		11 emp=0.000000		
Pipe Id=3.17554 in	Lo Flow Alarm= 0 SCFM	LoRes= 200 Ohm		Sim=Disabled 👻		
Cuttoff- 2 SCEM	Hi Temp Alarm= 0 Deg F			-		
Filter= 8	Lo Temp Alarm= 0 Deg F					
Pipe Area= .055 Ft^2	rea=.055 Ft^2					
Gas Density= 1 Kg/M2	CSV= 2.4. Tsi= 3.98	Not used 👻				
Serial Nb=	Bes= 83.	95486 Ohm	SATAN I			
AdcF= .000591847	Vel= 114	48.23 m/hr He	set i otal			
Tsi ratio= .197183	Flow= 34.	42983 SCFM	where energy			
R20= 2.5 ohm	Temp=-1	36.9038 Deg F	itabase unu	and the second s		
Rx= 51.1 0hm				Recall EE from EE		
1.1.1	- 4-20 ma			раскир		
Display	- Flow	Temperature	Frequency			
dsp1l1=mflo 👻	20 ma Flo= 100 SCEM	20 ma Temp= 208 fleg F	riequency	Set using 1 of		
dsp1l2=total 👻		Lo ma romp 200 pogr	Max Freg= 100	0 Hz		
Lean Lean	4 ma Flo=-199 SCFM	4 ma Temp= 50 Deg F	H	Method 1		
	20 ma Flo Cnt= 3656	20 ma Cnt= 3495	Maxio= 5000	SLFM		
dsp2l2=elps time 💌	4 ma Flo Cnt= 72	4 ma Cnt= 72	P/U= 4	- Method 2		
Alt dsp=Off			U/P= .25	- Method 3		
	a second second		P/U = Pulse per u	nit		
RS485 Save cfg to file	from file screen	Lalibration Print Form	U/P = Unit per pul	se Exit		
.0 110						

- 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.

Configure RS485		
Baud=9600 Parity=none Stop bit=2 Data bit=8 Bus=Ethernet	Id=1	Exit

- "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

•

- \circ $\;$ 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.

Volt 1 = 0.9872 volt Volt 2 = 1.0803 volt	Flow 1 = 0. m/hr	
Volt 2 = 1.0803 volt		
	Flow 2 = 364.2 m/hr	
Volt 3 = 1.1429 volt	Flow 3 = 784.6 m/hr	
Volt 4 = 1.2177 volt	Flow 4 = 1515.5 m/hr	
Volt 5 = 1.2648 volt	Flow 5 = 2318.3 m/hr	David +
Volt 6 = 1.3305 volt	Flow 6 = 3476.1 m/hr	Luive +
Volt 7 = 1.4078 volt	Flow 7 = 5150.7 m/hr	
Volt 8 = 1.4629 volt	Flow 8 = 7088.5 m/hr	
Volt 9 = 1.5229 volt	Flow 9 = 9321. m/hr	Dout t
Volt 10 = 1.5727 volt	Flow 10 = 12245.2 m/hr	Lurve +
Volt 11 = 0. volt	Flow 11 = 0, m/hr	
Volt 12 = 0. volt	Flow 12 = 0. m/hr	
Volt 13 = 0. volt	Flow 13 = 0, m/hr	
Volt 14 = 0. volt	Flow 14 = 0. m/hr	
Volt 15 = 0. volt	Flow 15 = 0. m/hr	
Volt 16 = 0. volt	Flow 16 = 0, m/hr	
Volt 17 = 0. volt	Flow 17 = 0, m/hr	
Volt 18 = 0. volt	Flow 18 = 0, m/hr	
Volt 19 = 0. volt	Flow 19 = 0. m/hr	
Volt $20 = 0$ volt	Flow 20 = 0. m/hr	

• "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.

1	FT2 View					-
	Enter data index	es to collect (i.e 1	2,6,45)	[OK 1	
	-	Stop	1			
		acquisition	8	FloVel_mhr	11448.23	
			10	Ma_420_cm	72	
			11	Feg value	451 2718	
		Ditus	12	Gas temp	-196.8154	
		Fint	13	Errlog	22.33	
		-	14	Spare	51	
			15	Csv	2.423614	
1			16	Manufacture	Fox Thermal	
			17	AccessLevel	0	
			18	Tot_low	205.5202	
	*		19	Tot_Mil_Cnt	339	1
1	•		20	MassTotal	339205.6	

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.

 1				× •	
Enter sample ra	te in seconds			OK 1	
 [1.0	81 - I		THOTOLENG		
	acquisition	8	FloVel_mhr	11448.23	
		9	Ma_420_ch1	2870	
		10	Ma_420_ch2	72	
 		11	Feq_value	451.2718	
 	Print	12	Gas_temp	-196.8154	
 	-	13	Errlog	22,33	
 		14	Spare	01	
 		10	Manufacture	Eov Thermal	
 		17	Access evel	n os mennar	
 		18	Tot low	205 5202	
	1	19	Tot Mil Cnt	339	
	1	20	MassTotal	339205.6	

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.

FT2 ViewTM Instruction Manual

🖏 Enter or select filename	
C:\Fox_Thermal_Instruments	\test.xls
🖃 c: [Windows7] 💌	
C:\ Thermal_Instrum	
	Cancel OK

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.