

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:

Run the setup.exe that is located on the FT2 View CD and follow the instructions.

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.



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.

Fox Thermal Instrume	nts. F	T2 V	iew	Rev	ision 3.0 1	2/14/05	
FT2 Variables							
-	1			Zindey	ZTitle	Value"	
	3			VILLOCA	<the .<="" td=""><td>Value</td><td></td></the>	Value	
FlowEng	34 43 SCEM			0	Flow Eng	34 43 SCEM	
CSVAvaCat	4095			1	FloAvaCnt	4095	-
CSVEItCot	4095			2	FloEltCnt	4095	-
TSV avr cnt	4095		Acquire	3	TSV AvaCnt	4095	-
Spare RTD2	237.	-	data to	4	Not used	241	-
TSI avr cnt	1328.		Excel file	5	TSI AvaCnt	1325	-
FloVelEng	626. FT/Hr			6	TempAvgCnt	0	-
FloVel mhr	11448.2 M/Hr		C 1	7	FloVelEng	625.9967	-
Total	342451.7 SCF		Stop	8	FloVel mhr	11448.23	-
Csv	2.4236 Volt		acquisition	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		Drint	12	Gas temp	-196.8088	
Feg value	451.2718		FILL	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	-1		19	Tot_Mil_Cnt	342	
	1	_		20	MassTotal	342446.9	•

The above FT2 view screen is displayed. The right side displays all of the FT2 parameters and is scanned once upon entering the program. Refresh of the data can be accomplished by clicking on the "Display Parameters" button.

The left side displays FT2 variables and is automatically refreshed about once a second.

The "Error Code List" button enables the user to display a list of error codes and their descriptions.



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 permit FT2 parameters settings and display. A password will be requested to access different levels of parameters protection.



"Acquire data to Excel file" button is use to save specified data at a requested time interval to an Excel spreadsheet. The "Stop Acquisition" button is clicked to terminate data collection.

* Please note that the "**Configure**" button will be visible only after communication has been established with the FT2.

Configure Menu:

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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	Password=1	Temperature Calibration		Simulation	
Deg F 💌	Ref Temp= 0 Deg F	HiRes= 300 Ohm		Csv=0.000000	
mmHG 🗨	Hi Flow Alarm= 0 SCFM	LoTemp= 70 F		Temp=0.000000	
Pipe Id=3.17554 in	Lo Flow Alarm= 0 SCFM Hi Temp Alarm= 0 Deg F	LoRes= 200 Ohm		Sim=Disabled	
Filter= .8	Lo Temp Alarm= 0 Deg F	CTC out=	=Not used 💌	EE Prom	
Gas Density= 1 Kg/M2	Csv= 2.43 Tsi= 3.98	23614 V 6007 V CTC inp=	Not used		
AdcF= .000591847	Res= 83. Vel= 114	95486 Ohm R 48.23 m/hr	eset Total		
R20= 2.5 ohm Bx= 51.1 0hm	Flow= 34. Temp=-1	42983 SCFM Set D 96.9038 Deg F	atabase CRC	Recall EE from EE	
Diselau	- 4-20 ma			backup	
dsp1l1=mflo	Flow 20 ma Flo= 100 SCFM	Temperature 20 ma Temp= 20810 eg F	Frequency	Set using 1 of 3 methods	
dsp1l2=total	4 ma Flo=-199 SCFM	4 ma Temp= 50 Deg F	Max Freq= 100	100 Hz Method 1	
dsp2l2=elps time 💌	20 ma Flo Cnt= 3656	20 ma Cnt= 3495	P/U= 4	= 4 Method 2	
Alt dsp=Off	Je no no circe i z	I THIS ONCE I Z	U/P= .25	- Method 3	
RS485 Save cfg to file	Recall Cfg Refresh from file screen	Calibration table Print Form	P/U = Pulse per un U/P = Unit per puls	nit se Exit	

The display section allows programming of the display 1 & 2 of the local display.

Dsp111 is for display 1 line1. Dsp112 is for display 1 line 2.

Dsp2l1 is for display 2 line 1.

Dsp212 is for display 2 line 1. Dsp212 is for display 2 line 2.

The 4-20 mA 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 4 mA. "20 mA Temp" and "4 mA Temp" are settings for gas temperature.

The "20 mA flo cnt" and the "4 mA flo cnt" are the calibration settings and should not be changed unless the output is out of specification.

The "20 mA Temp cnt" and "4 mA Temp cnt" are for the output associated with temperature.

The "20 mA Temp cnt" and "4 mA Temp cnt" are for the output associated with temperature.

The frequency section allows the programming of the pulse output associated with flow rate. Three methods are provided to accomplish this. The first method is by setting the maximum flow rate and corresponding frequency output (frequency may not exceed 100 hz), the second method is by setting the number of pulses per flow rate unit (i.e. 10 pulses per SCF) and the third is by setting the total unit per pulse (i.e. 10 SCF per pulse).

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.

"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 of a contact input to reset the totalizer.

"Set Database CRC" buttons 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.

"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.

• "RS485" button allows the user to configure the RS485 serial port and bus type. The RS485 settings apply only if the bus type selected is for the Modbus.

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

- "Save cfg to file" is used to save all the settings to a data file.
- "Recall cfg from file" is used to recall the settings from a file.
- "Refresh screen" is used to refresh the all the parameters on that screen.
- "Calibration table" button allows access to the flow calibration tables.
- "Print Form" allows the user to print the page.

5		
CSV VOLT	FLOW in [m/hr]	
Volt 1 = 0.9872 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	Come #
Volt 6 = 1.3305 volt	Flow 6 = 3476.1 m/hr	Curve #
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	с <i>н</i>
Volt 10 = 1.5727 volt	Flow 10 = 12245.2 m/hr	Curve #.
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	
	Velocity in m ³ hr	

- "Reset Total" button is used to reset the FT2 total.
- "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.
- "Recall EE from EE backup" is used to recall the manufacture default setting that were shipped with the product.

Simulation Mode

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. Select SIM = disabled to shut off simulation mode.

Data Acquisition to Excel File

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

Fox Thermal Instruments.	FT2 View	Re	vision 3.0 1	2/14/05	
- Smart Probe variables					
	T2 View			×	
	Enter data indexes to collect (i.e.	12,6,45)	Γ	ок 1	-
			L	Cancel	
			-		-
		5			
	p Char		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	51	-
		15	LSV	Z.423614	-
		15	Manufacture	Fox I hermal	-
		10	AccessLevel	0 205 5202	-
		10		203.3202	-
		20	MassTotal	339205.6	-
		1.711			
5 6 1	· · · · · · · · · · · · · · · · · · ·			Ť.	1
List ens	Scan Configure	D	isplay Parameters	Exit	
		5			

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	rate in seconds		[OK Cancel		
	[1.0	Stop	1.	THOTOLENg			
		acquisition	8	FloVel_mhr	11448.23		
	-		9	Ma_420_ch1	2870		
	-		10	Ma_420_ch2	12		
			11	Feq_value	451.2718		
7.		Print	12	Gas_temp	-196.8194		
2			13	Emog	ZZ,33 51		
7	2		14	Cou	2 422614		
2.	2		16	Manufacture	Eov Thermal		
2			17	Access evel	0		
2.	2		18	Tot low	205.5202		
7.		-1	19	Tot Mil Cnt	339		
			20	MassTotal	339205.6	-	

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