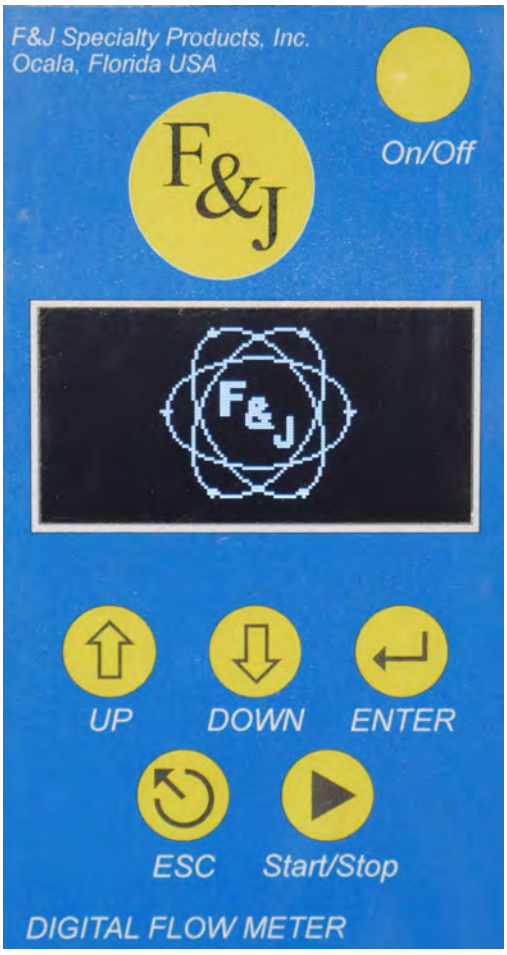
F&J SPECIALTY PRODUCTS, INC.

"THE NUCLEUS OF QUALITY AIR MONITORING PROGRAMS"

OPERATING FEATURES AND INSTRUCTIONS

GENERATION 2 OLED DIGITAL FLOW METER FOR AC AIR SAMPLERS



All pictures are being used for illustrative purposes only. Actual product may vary slightly.
Specifications, availability and components are subject to change without notice

Revision: 22 October 2024

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OPERATING FEATURES AND INSTRUCTIONS

THE DIGITAL FLOW METER (DFM)

The DFM is the control panel of the air sampler. Through the DFM, the operator can activate or deactivate all the user available features of the air sampler as well as monitor various sample parameters during operation. For battery models, the user will also have available pertinent on-board battery and charging information.

KEYPAD BUTTONS AND THEIR FUNCTIONS

ON/OFF: The ON-OFF button is located in the upper right corner of the DFM module.

Pressing the ON-OFF button of a unit in shut off condition while the air sampler is connected to line power will place the unit in standby mode. If Manual On/Off is disabled, the motor will start.

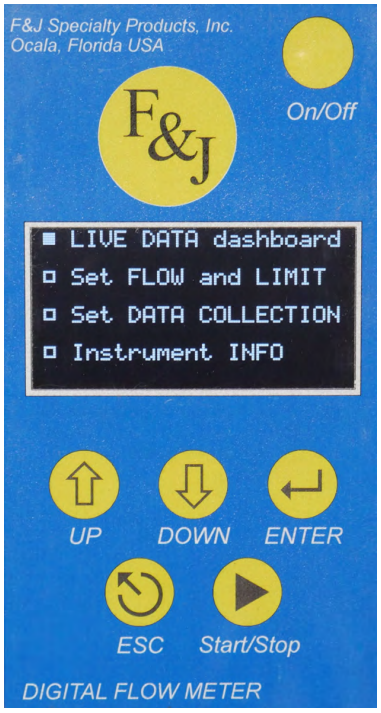
ESC: The ESC Button is the bottom eft-most of the five lower buttons. It serves to provide the user with the option to return to the previous screen. It can also be used during a sample event to return the display to the home screen and access various functions during operation.

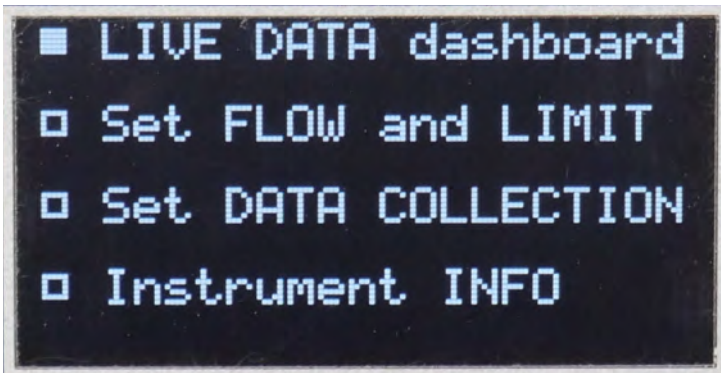
UP/DOWN: The UP/DOWN buttons serve as the toggle function for the user to scroll through the different parameters displayed on the interface.

ENTER: The ENTER button acts as the primary selector button when browsing between the various options displayed through the DFM module.

START/STOP: The START/STOP Button is used to both initiate/terminate a sample event.

The DFM main menu and the six (6) button keypad interface is illustrated below:





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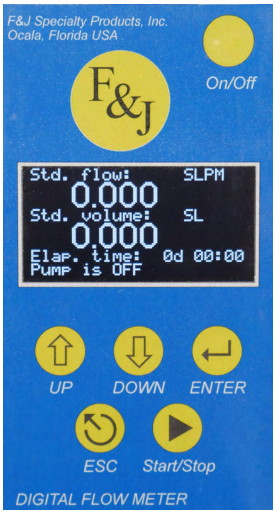
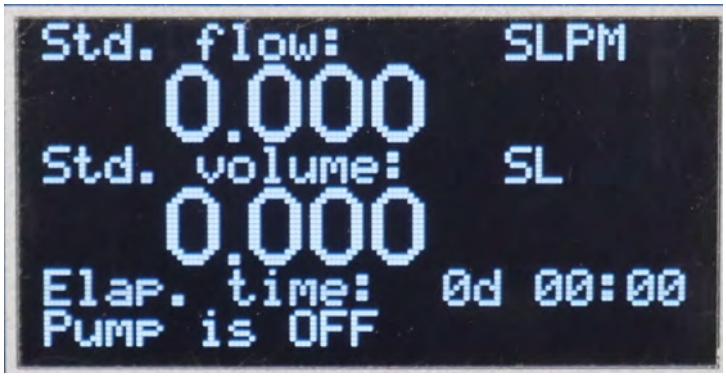
OPERATING FEATURES AND INSTRUCTIONS

LIVE DATA DASHBOARD

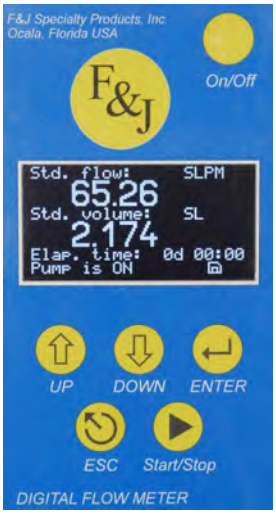
The “Live DATA dashboard” menu is the first option on the DFM main menu. With the bullet toggled on the option press the ENTER button to enter the dashboard. The first menu of the dashboard will display the pump’s current status (“Pump is OFF” vs “Pump is ON”…), the current standard flow rate, the standard accumulated volume and the elapsed time.

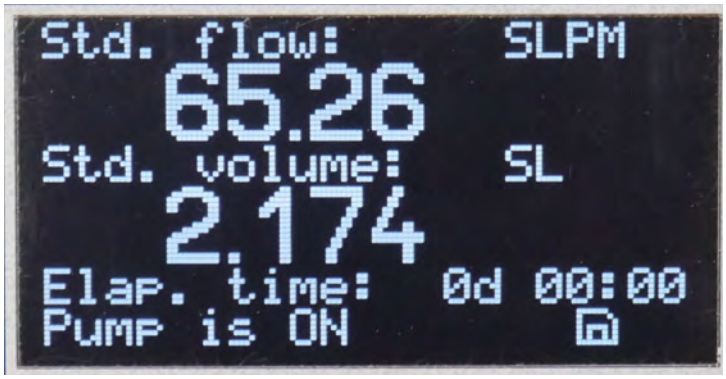
If the pump is not running a “Pump is OFF!” message will be displayed on the bottom of the menu. When the pump is stopped, the standard flow rate (“Std. flow:”) will display zero since it shows the current flow rate of the air sampler. The standard volume will display the volume that was accumulated and will remain unchanged since the pump is not operating.





If the pump is running a “Pump is ON...” message will be displayed on the bottom of the menu. When the pump is running, the standard flow rate (“Std. flow:”) will display the current flow rate of the air sampler in the factory set engineering units corrected to a set standard temperature and pressure (STP). The standard volume will display the volume accumulated and will changed accordingly as the pump is operating.





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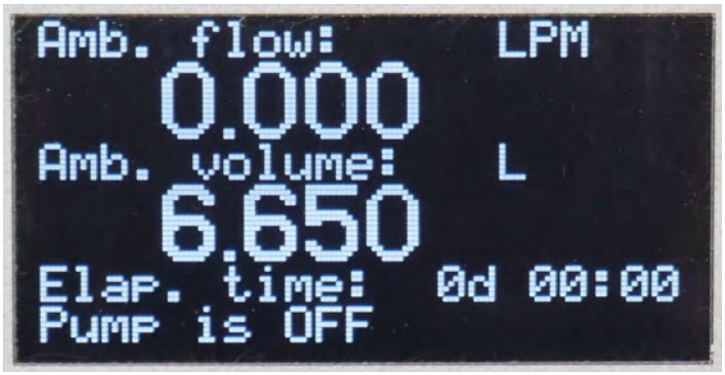
OPERATING FEATURES AND INSTRUCTIONS

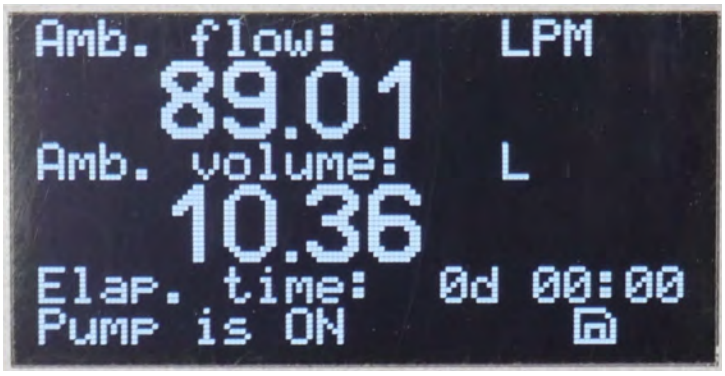
LIVE DATA DASHBOARD - Menu 2

Use the DOWN arrow to toggle to the second menu of the live data dashboard. The second menu of the dashboard will display the pump's current status ("Pump is OFF" vs "Pump is ON"…), the current ambient flow rate, the ambient accumulated volume and the elapsed time.

If the pump is not running a "Pump is OFF" message will be displayed on the bottom of the menu. When the pump is stopped, the ambient flow rate ("Amb. flow:") will display zero since it shows the current flow rate of the air sampler. The ambient volume will display the volume that was accumulated and will remain unchanged since the pump is not operating.



If the pump is running a "Pump is ON..." message will be displayed on the bottom of the menu. When the pump is running, the ambient flow rate ("amb. flow:") will display the current ambient flow rate of the air sampler in the factory set engineering units corrected to a set standard temperature and pressure (STP). The ambient volume will display the volume accumulated and will changed accordingly as the pump is operating.



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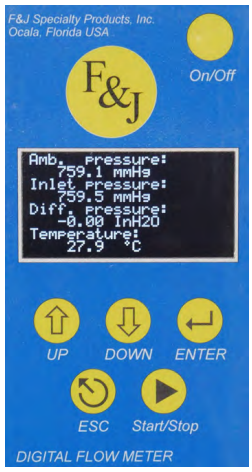
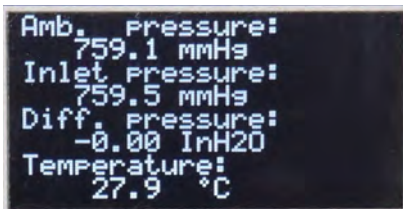
LIVE DATA DASHBOARD - Menu 3

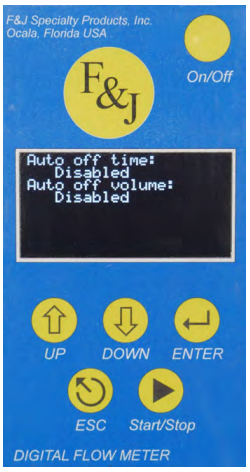
Use the DOWN arrow to toggle to the third menu of the live data dashboard. The third menu of the dashboard will display the ambient temperature/pressure conditions and the flow meter's inlet and differential pressures. All these values will be displayed in the factory set engineering units.

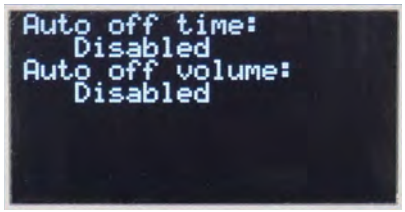


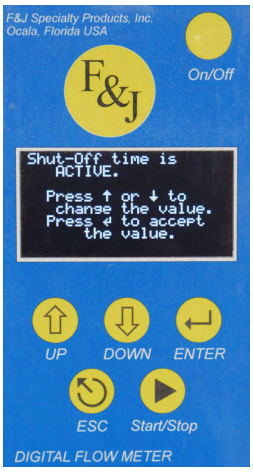


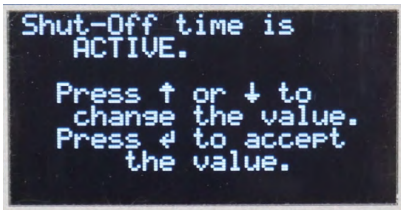
LIVE DATA DASHBOARD - Menu 4

Use the DOWN arrow to toggle to the fourth menu of the live data dashboard. The fourth menu of the dashboard will display the status of the sample volume limit and elapsed time limit set parameters. If disabled, the menu will display a "Disabled" message below the parameter. If one or both are enabled, the set condition will be displayed below the parameter. (note: enabling and adjusting these parameters is covered in the *"Time Limit"* and *"Volume Limit"* section of this manual.) If enabled, the volume limit value will be displayed in the factory set engineering units.









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OPERATING FEATURES AND INSTRUCTIONS

ENGINEERING UNITS

The available engineering units (selectable by the user at the time of purchase) are listed below:

1. FLOW

   SCFM: Stand Cubic Feet per Minute (Sft^3/min)

   SLPM: Standard Liters per Minute (Sl/min)

   SCMH: Standard Cubic Meters per Hour (Sm^3/h)

   SCMM: Standard Cubic Meters per Minute (Sm^3/min)

   SCCM: Standard Cubic Centimeters per Minute (Scm^3/min)

2. VOLUME

   SCF: Standard Cubic Feet (Sft^3)

   SL: Standard Liters (Sl)

   SCM: Standard Cubic Meters (Sm^3)

   SCC: Standard Cubic Centimeters (Scm^3)

(Note: A user cannot switch engineering units in the field. The Digital Flow Meter (DFM) unit must be returned to the factory to change the engineering units and recalibrate the flow sensors)

SETUP FLOW AND LIMITS

The "SETUP flow and limits" menu can be accessed by toggling downward to the second option on the DFM main menu This feature is utilized to set, enable or disable one or more of the available features listed below:

1. Flow value (Set the Flow Rate)
2. Time limit (Automatic Shut-Off by a Set Time)
3. Volume limit (Automatic Shut-Off by a Set Accumulated Volume)
4. Start delay time (Delayed Start for a Sample Event)

Use the UP and DOWN arrows to toggle through the menu list and press ENTER to select the desired parameter.

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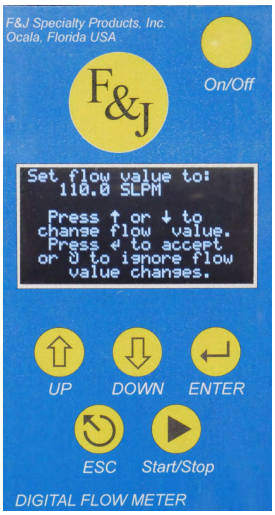
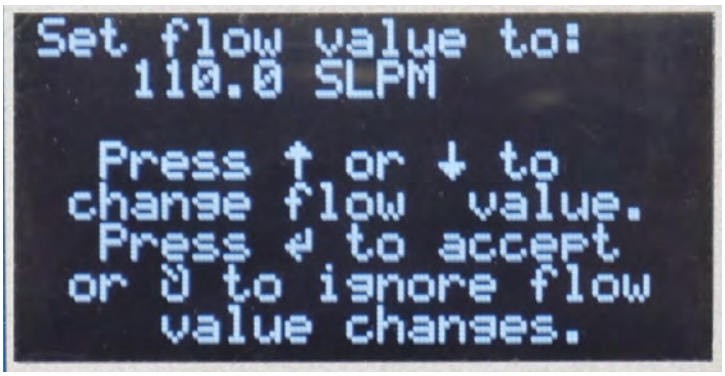
OPERATING FEATURES AND INSTRUCTIONS

- ***FLOW VALUE***

  The "Flow value" parameter is used to adjust the set flow rate of the air sampler within its factory calibrated flow range. The flow rate can be adjusted using the UP and DOWN arrows; and once the desired flow rate is reached it is saved using the ENTER button. The ESC button can be pressed at any time to ignore any changes that were made. Once set, the internal microprocessor will automatically adjust the motor's speed in order to maintain the set flow rate mitigating flow loss under conditions of dust loading. (Note: This is only available for units that have automatic flow control).





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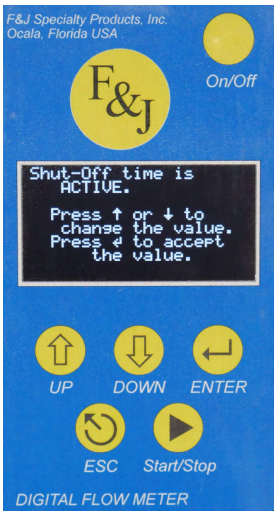
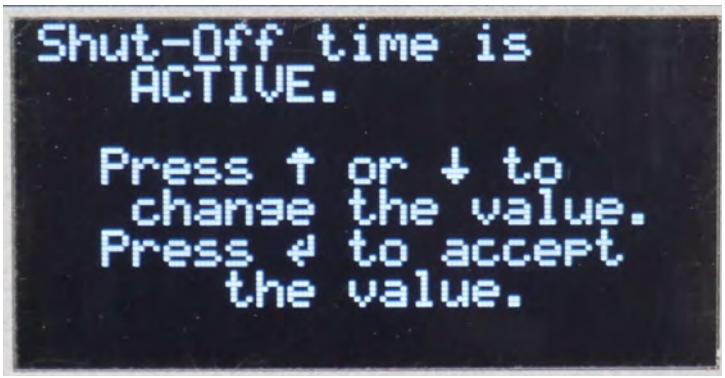
OPERATING FEATURES AND INSTRUCTIONS

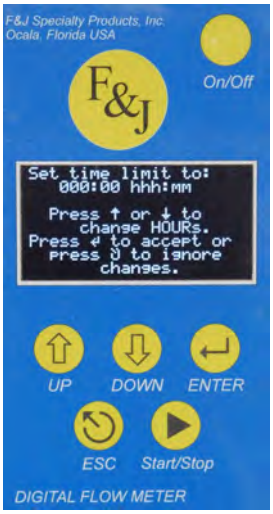
- ***TIME LIMIT***

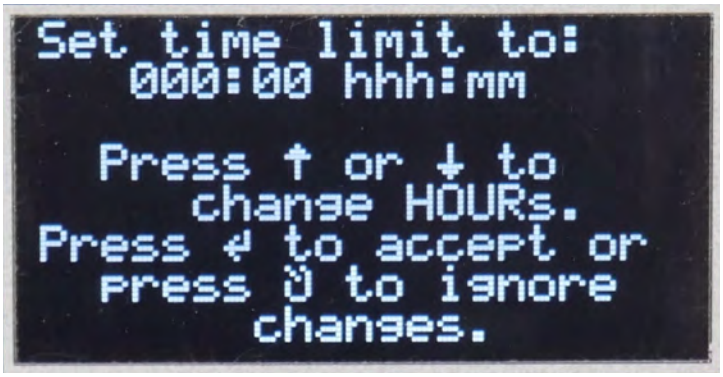
  The “Time limit” parameter allows the operator to define a specific amount of time that the air sampler will be in operation before terminating the sample event. When received from the factory this parameter will be disabled; so it must be set to ACTIVE using the UP or DOWN arrow and ENTER to accept. Once active, the UP and DOWN arrows can be used to set the desired time duration for the sample event and the ENTER to save the value. The ESC button can be pressed at any time to ignore any changes that were made.

  The time setting screen displays the time limit as hhh:mm (hours: minutes). Any time value may be set from 000:01 to 168:00 hr:min.





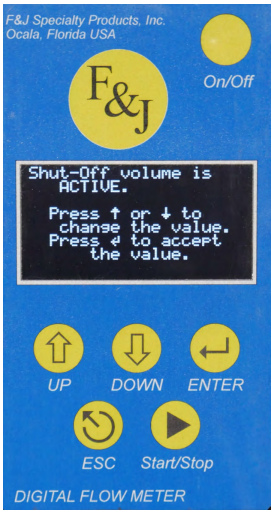


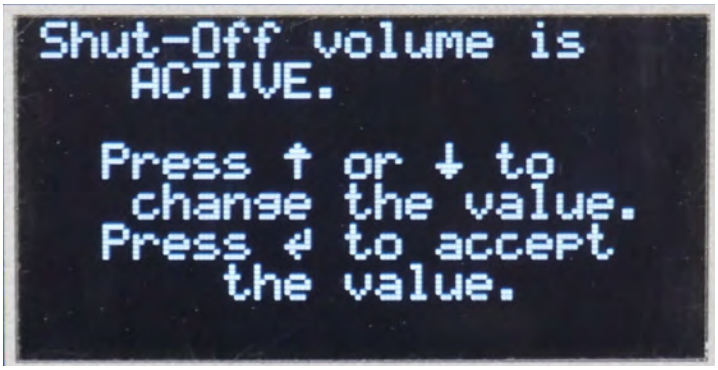


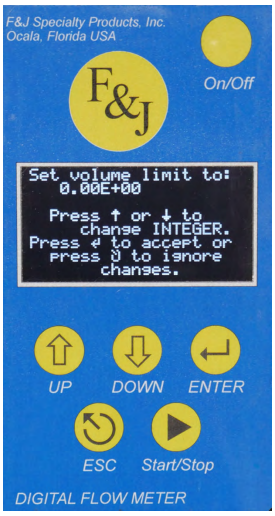
OPERATING FEATURES AND INSTRUCTIONS

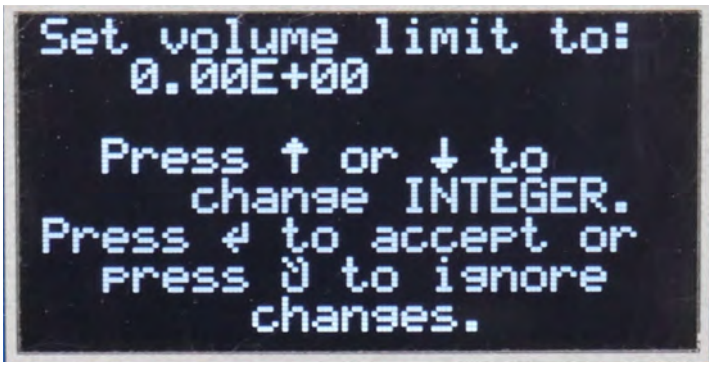
- ***VOLUME LIMIT***

  The "Volume limit" parameter allows the operator to define a specific accumulated volume that the air sampler needs to obtain before terminating the sample event. When received from the factory this parameter will be disabled; so it must be set to ACTIVE using the UP or DOWN arrow and ENTER to accept. Once active, the UP and DOWN arrows can be used to set the desired accumulated volume for the sample event and the ENTER to save the value. The ESC button can be pressed at any time to ignore any changes that were made.





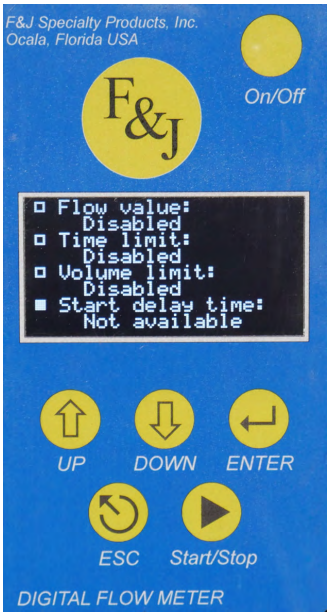


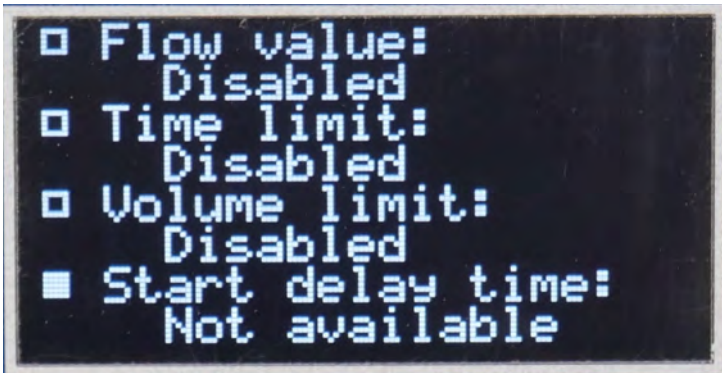


OPERATING FEATURES AND INSTRUCTIONS

- ***START DELAY TIME (OPTIONAL FEATURE)***

  The "Start delay time" parameter allows the operator to define a specific amount of time from 1 minute to 60 minutes (in 1 minute intervals) that must elapse before the sampler begins the sample event. When received from the factory this parameter will be disabled; so it must be set to ACTIVE using the UP or DOWN arrow and ENTER to accept. Once active, the UP and DOWN arrows can be used to set the desired time and the ENTER to accept. The ESC button can be pressed at any time to ignore any changes that were made.





OPERATING FEATURES AND INSTRUCTIONS

- ***SAVING SET LIMITS***

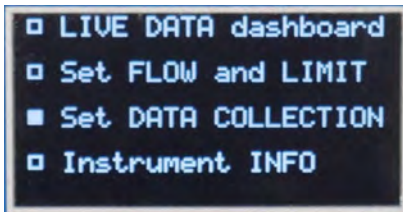
  Once all limits have been set with the "SETUP flow and limits" menu, pressing the ESC button will save all the newly set configurations and return to the main menu.

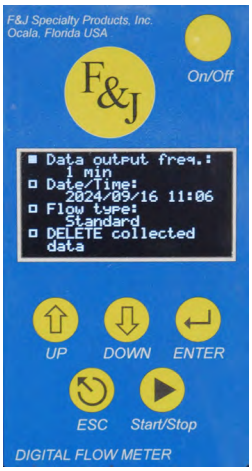
SETUP DATA COLLECTION

The "Setup DATA COLLECTION" menu can be accessed by toggling downward to the third option on the DFM main menu. This feature is utilized to set, enable or disable one or more of the available features listed below:

1. Data output freq. (Set the RS232 data output frequency of the DFM)
2. Date/Time (Set the current Date and Time)
3. Flow type (Select between Standard and Ambient Flow)
4. Start delay time (Delayed Start for a Sample Event)

Use the UP and DOWN arrows to toggle through the menu list and press ENTER to select the desired parameter.





OPERATING FEATURES AND INSTRUCTIONS

- ***DATA OUTPUT FREQUENCY***

  The "Data output freq." parameter allows the operator to define the frequency at which the data is recorded on the DFM's internal storage. When received from the factory this parameter is set to 1 min. The UP and DOWN arrows can be used to set the desired frequency and the ENTER to save the value. The ESC button can be pressed at any time to ignore any changes that were made; the available frequencies are listed below:

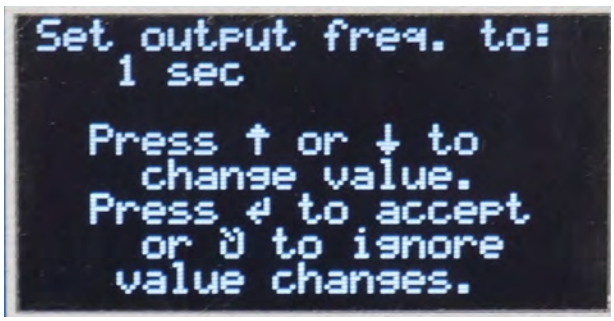
  1 sec: A data string is recorded once every second

  1 min: A data string is recorded once every minute

  6 min: A data string is recorded once every 6 minutes

  60 min: A data string is recorded once every hour

Note: Unless a very short sample event is performed (less than 1 hour); it is recommended that the **1 sec** frequency setting is not used. Long run events may lead to a large data file that increases the risk of data corruption.



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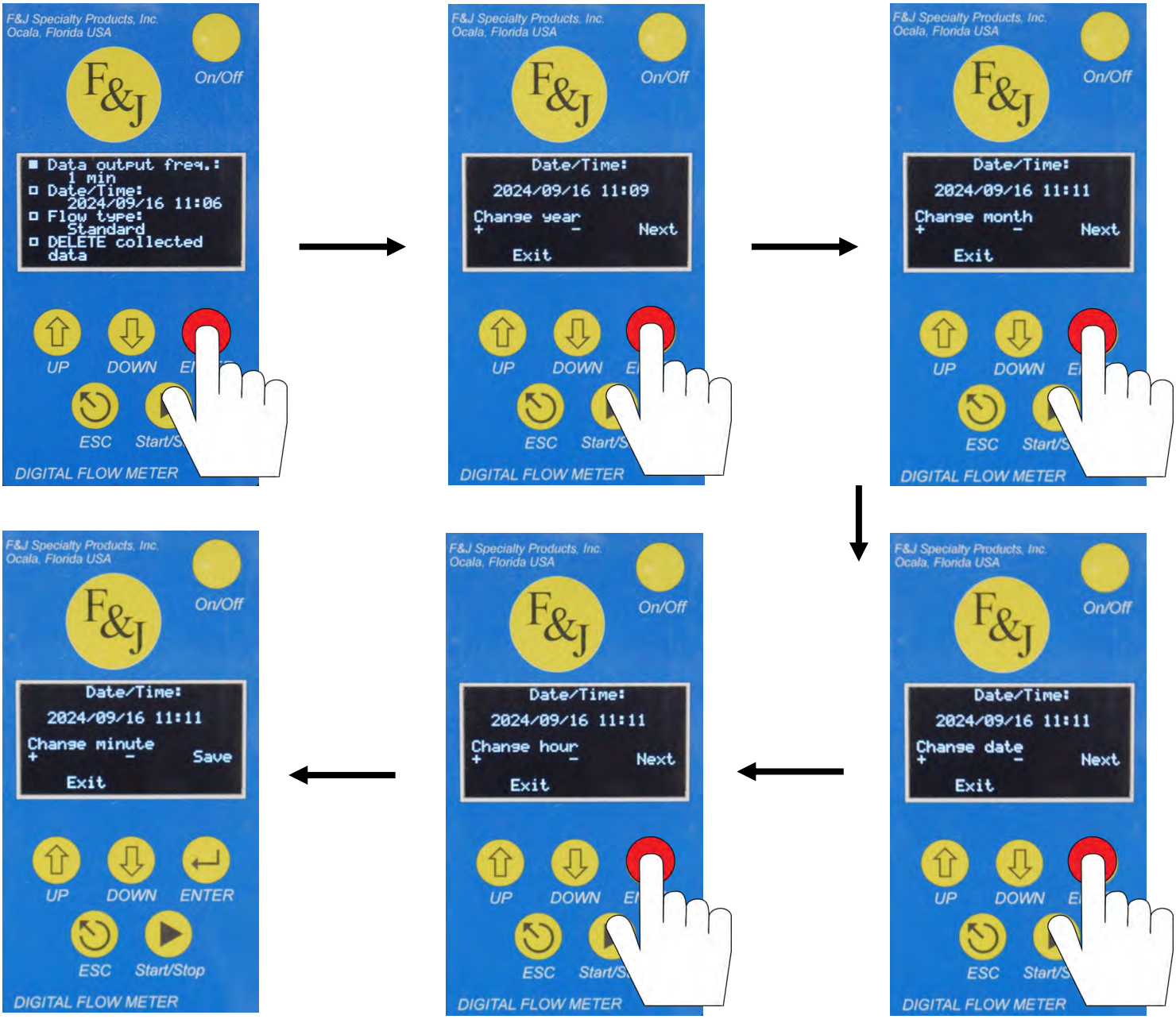
OPERATING FEATURES AND INSTRUCTIONS

- ***DATE/TIME***

  The "Date/Time" parameter allows the operator to update the internal clock of the Digital Flow Meter (DFM) to the current date and time. Once selected, the operator will be prompted to change the year using the UP and DOWN arrows. Once the year is set, pressing the ENTER button will go to the next prompt to change the month, then the day, followed by the hour and finally the minutes. When the minutes have been set, the ENTER button can be pressed to save all changes. The ESC button can be pressed at any time to exit without saving any changes that were made to the date and time.



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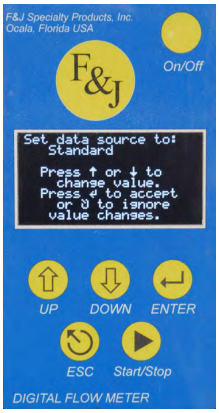
OPERATING FEATURES AND INSTRUCTIONS

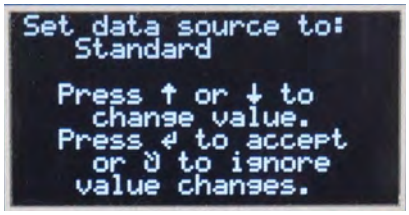
- ***FLOW TYPE***

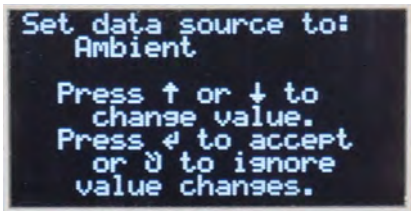
  The “Flow type” parameter allows the operator to select between whether the Digital Flow Meter (DFM) data source displays the STANDARD or AMBIENT (normal) flow rate and totalized volume.

  Once in the “Flow type” sub-menu, use the UP or DOWN arrows to toggle between the two available data sources (Standard/Ambient). Once the desired data source is set, press ENTER to save the selection. The ESC button can be pressed at any time to ignore any changes that were made; the available F&J options for reference temperature and pressure (STP) are as follows:

Standard Temperature:	0 °C, 20 °C, 21.1 °C (70 °F) or 25 °C
Standard Pressure:	1 atmosphere (760 mmHg, 101.325 kpa, 29.9213 inHg)
	1 bar (750.062 mmHg, 100 kpa, 29.53 inHg)

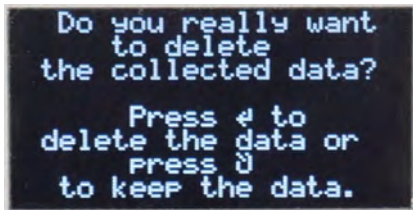






- ***DELETE COLLECTED DATA***

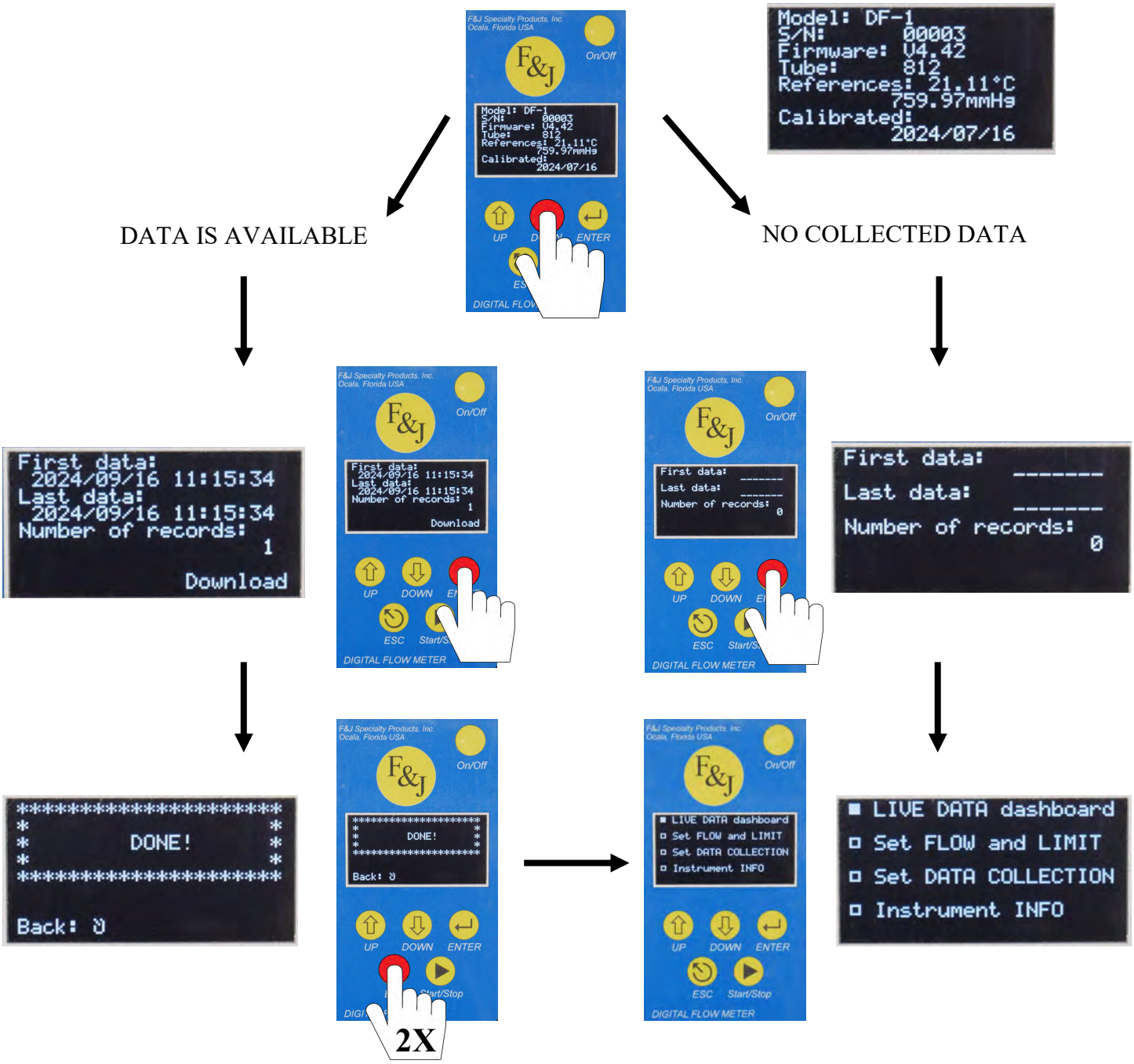
  The “DELETE collected data” parameter allows the operator to delete all data internally stored in the DFM. Once selected and in the sub-menu, press ENTER to delete all collected data or ESC to keep the data and return to the “Setup DATA COLLECTION” menu.



OPERATING FEATURES AND INSTRUCTIONS

INSTRUMENT INFORMATION

The “Instrument information” menu provides the operator with important information unique to the air sampler; use the UP and DOWN arrows to toggle between the two available screens. Press ESC to exit and return to the DFM main menu.

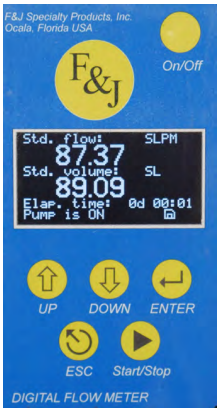


NOTE: REFER TO THE “DOWNLOADING COLLECTED DATA” SECTION OF THIS MANUAL FOR DETAILED INSTRUCTIONS

OPERATING FEATURES AND INSTRUCTIONS

STARTING A SAMPLE EVENT

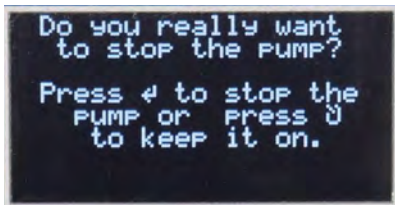
Once all desired parameters have been set, the sample event can be started by pressing the *START/STOP* button on the top right of the DFM. (note: the DFM must be either on the main menu or the live dashboard to start the sample run) When started from the main menu a *"Collecting data…"* message will briefly appear and then shift to the first live data dashboard menu where the status of the pump will indicate *"Pump is running…"*. When started from the live dashboard menu, regardless of which menu, the pump will start operation and the menu will remain unchanged (use the UP or DOWN arrows to toggle through the live dashboard menus).



TERMINATING A SAMPLE EVENT

A sample event can be terminated one of four ways.

1. While in operation the user may press the *START/STOP* button; when pressed a message will appear to verify that the user wants the sample even terminated. At this point the ENTER button can be pressed to confirm the termination or the ESC button to continue operation. (note: the DFM screen will dim to reduce power consumption. If it's dimmed, the button will have to be pressed twice).



OPERATING FEATURES AND INSTRUCTIONS

TERMINATING A SAMPLE EVENT (CONTINUED)

2. The sample event will terminate when the set elapsed time value has been reached.

3. The sample event will terminate when the set accumulated volume has been reached.

4. If the unit is battery powered, the sample will terminate once the on-board battery has been depleted below the 11.0VDC threshold. Note that the DFM will NOT treat this as a *"POWER FAILURE"* event. *

*** *POWER FAILURE:* *While the sampler is in the middle of a sample event while connected to power and a loss of power is experienced; the air sampler will continue its operation when the power is returned.*

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OPERATING FEATURES AND INSTRUCTIONS

RS232 COMMUNICATIONS PORT

GENERAL

The DFM transmits a fixed length, comma delimited ASCII string of data. The data string is comprised of the following parameters in its general format.

dd.hh.mm,ttt.t.F,bb.bb.In Hg, dd.dd In H_2O, (aaaaaaaaa or ccccccccc), uuuuu, [….],vvvvvvvvv,UUU

WHERE:

dd,hh:mm	-	elapsed time in day,hour:minute format
ttt.t. T	-	temperature [ºF] or [ºC]
bb.bb. InHg	-	barometric (inlet) pressure [InHg] or [mm Hg]
dd.dd InH_2O	-	differential pressure [InH_2O] or [mm Hg]
aaaaaaaaa	- mat	ambient flow with 3, 2 or 1 decimal digit resolution up to 99999, or in x.xxxEyyy format for larger numbers. This for-ensures the best possible resolution even for large values. Ambient flow has an “a” prefix
ccccccccc	-	corrected flow (same format as for the ambient flow) but has a “S” prefix
uuuuu	-	Engineering Unit for flow: SCFM, SLPM, sccm or SCMH if reference flow is selected, or aCFM, aLPM, accm or aCMH if ambient flow is selected
[…]	-	optional values for Totalizer model
vvvvvvvvv	-	Total volume (same format as for the ambient flow)
UUU	-	Engineering Unit for total volume: SCF, SL, scc or SCM or aCFM, aL, acc or Acmh

The engineering units change according to customer selection at time of purchase. The […] data (total flow and engineering units) are sent out when the Totalizer option is enabled.

An example of a data string utilizing English units is illustrated below:

0.00:21,77.2 F, 30.74 InHg, 2.98 In H_2O, 2.72SCFM, 50.21SCF

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DOWNLOADING COLLECTED DATA

The F&J SPECIALTY PRODUCTS, INC. "DATACOMM" APPLICATION

The easiest way to download data, communicate and set DFM4 Bluetooth equipped Digital Flow Meters using a dedicated application called DataComm.exe. This application runs on most Windows operating systems so there is no need for any special process for installation.

Necessary steps before using this application:

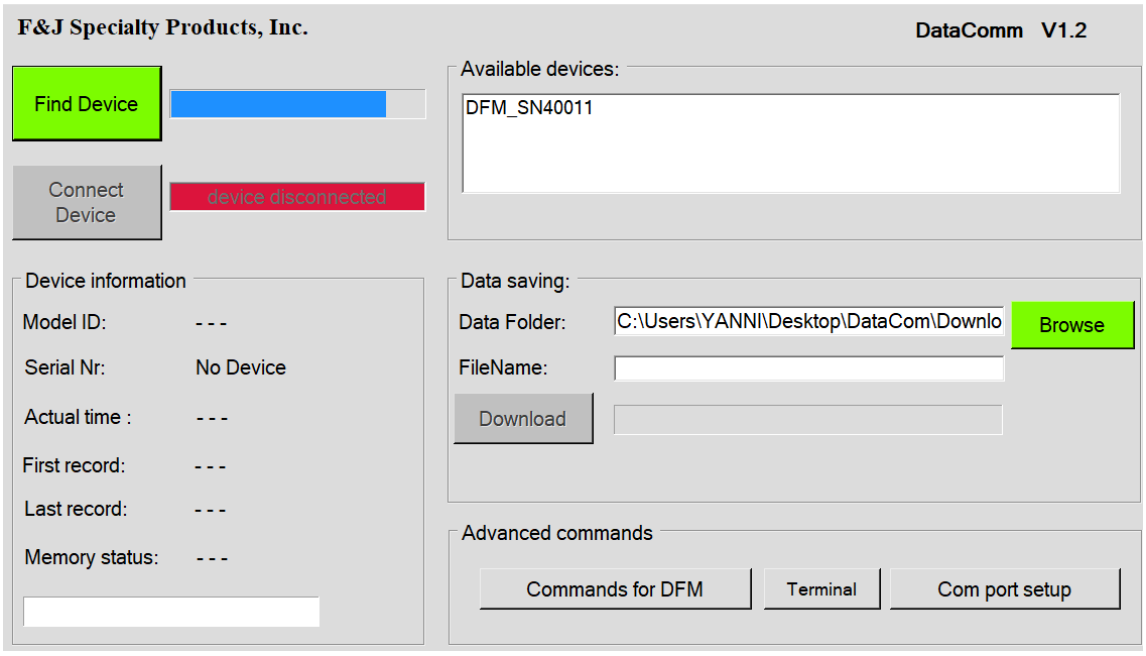
1. Download the necessary driver for the USB-Bluetooth adapter from the following website:

   https://www.silabs.com/documents/public/software/CP210x_Universal_Windows_Driver.zip
2. Install the driver as described in the "Cp-2102 install instructions" section.
3. Create a folder for the DataComm application. Copy the DataComm.exe application and the data-comm_config.ini files into this folder. Create another folder for the storage of the downloaded data.
4. Plug in the USB-Bluetooth adapter (PN: BTDG) into an available USB connector. Please check the error free status of the virtual com port in the "Device Manager". This procedure is also described in the "Cp-2102 install instructions" section.

The system is now ready for communication with the DFM4 Digital Flow Meter via Bluetooth connection.

REMOTE DATA DOWNLOAD OVER BLUETOOTH CONNECTION

During the remote download process, place the computer within at least 10 feet of the working Digital Flow Meter (DFM). Plug in the USB-Bluetooth adapter into an available USB port, navigate on the computer to the DataComm.exe application and run it.



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DOWNLOADING COLLECTED DATA

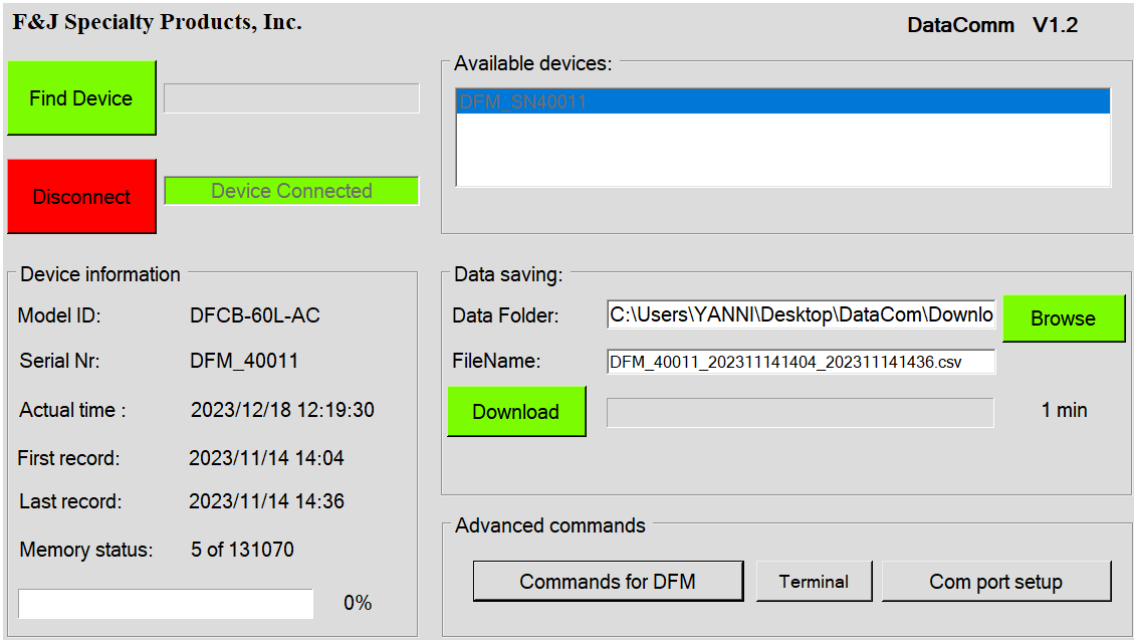
If the desired unit's serial number appears in the "Available devices:" window, click on it to select it, then click on the "Connect Device" button to establish the connection. After a successful connection, the Bluetooth icon appears on the screen of the Digital Flow Meter (DFM) and the detailed information about the data content of the DFM appears in the "Device information" field.

Under the "Data saving" field the destination folder and default name for the collected data file is listed. If the background of the "Data Folder" field is red, it means there is no such folder. To change or generate a destination folder for the collected data, click on the "Browse" button and select or make a new folder.

The default file name for the collected data is:

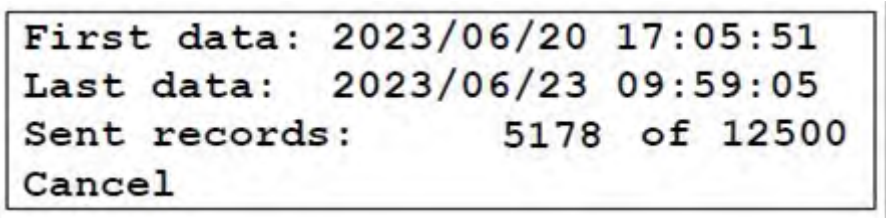
Digital Flow MeterTypeAndSerialNumber_TimeAndDateOfTheFirstRecord_TimeAndDateOfTheLastRecord

This can be changed by simply clicking on the "Filename" field and change it to any name acceptable by the Windows Operating System.



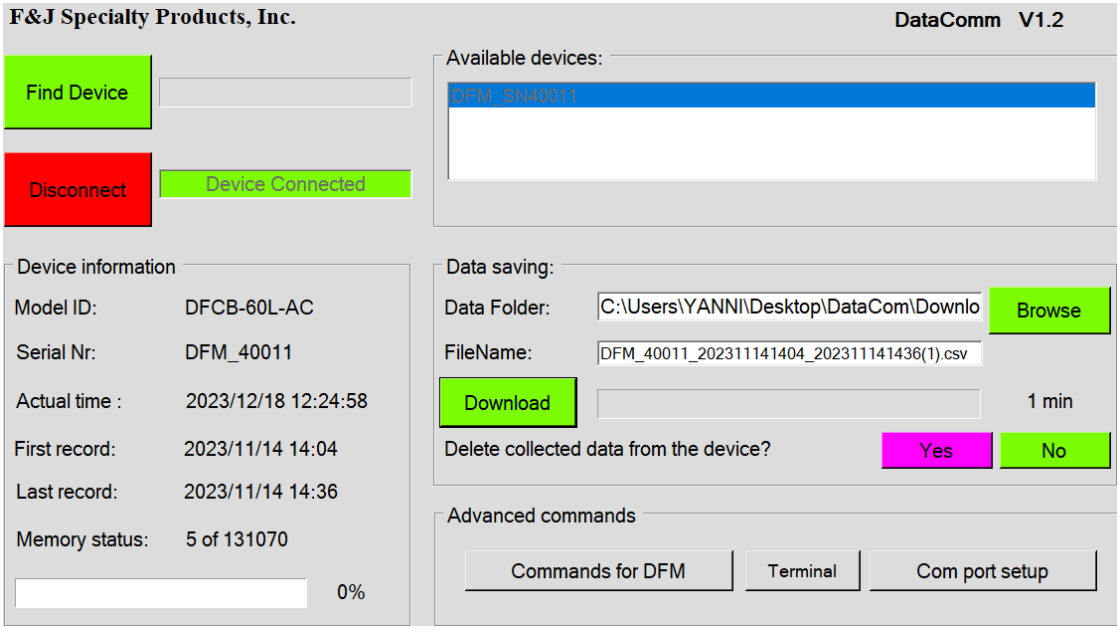
To start the data download, click on the "Download" button. The progress bar shows the actual status of the process, and next to the progress bar is the remaining time counter. The download process can be canceled at anytime, either on the computer or on the DFM. Although a download is cancelled, the partially downloaded data will be saved in the file location.

During the data download the DFM shows on its display the downloading process status too. As illustrated below:

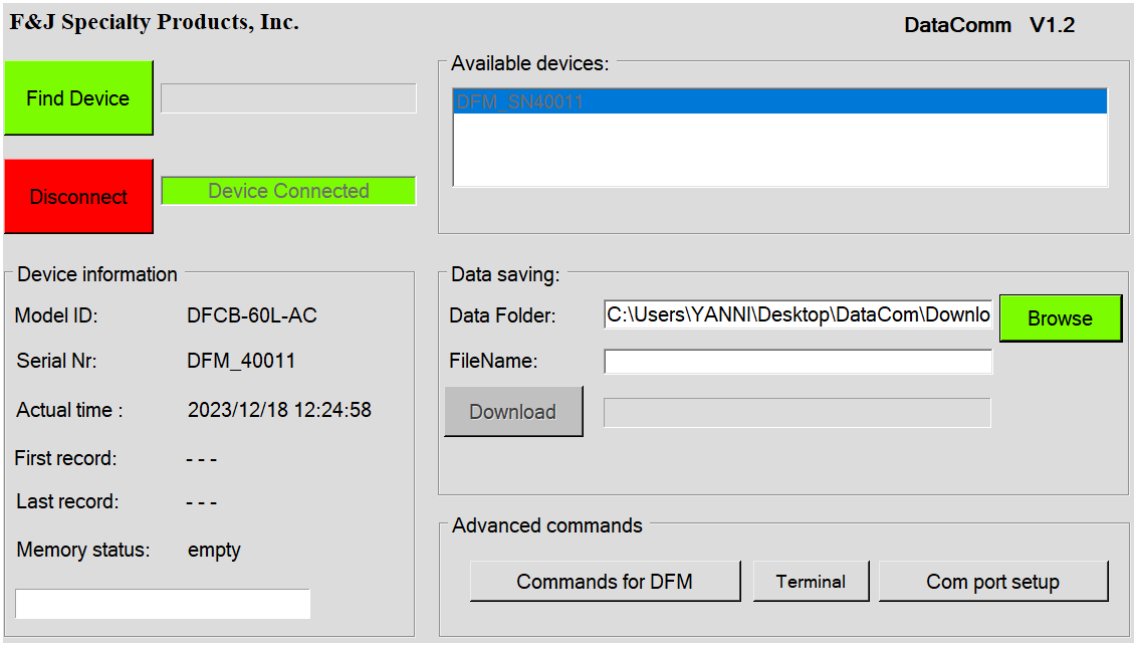


DOWNLOADING COLLECTED DATA

After a successful data download, the collected data that is stored on the DFM can be deleted by clicking on the appearing purple “Yes” button. Conversely, by clicking the green “No” button all stored data remains unchanged.



After deleting the collected data from the DFM, the memory content information will update appropriately. This update may take a few seconds.



The downloading session can be closed by clicking on the red “Disconnect” button.

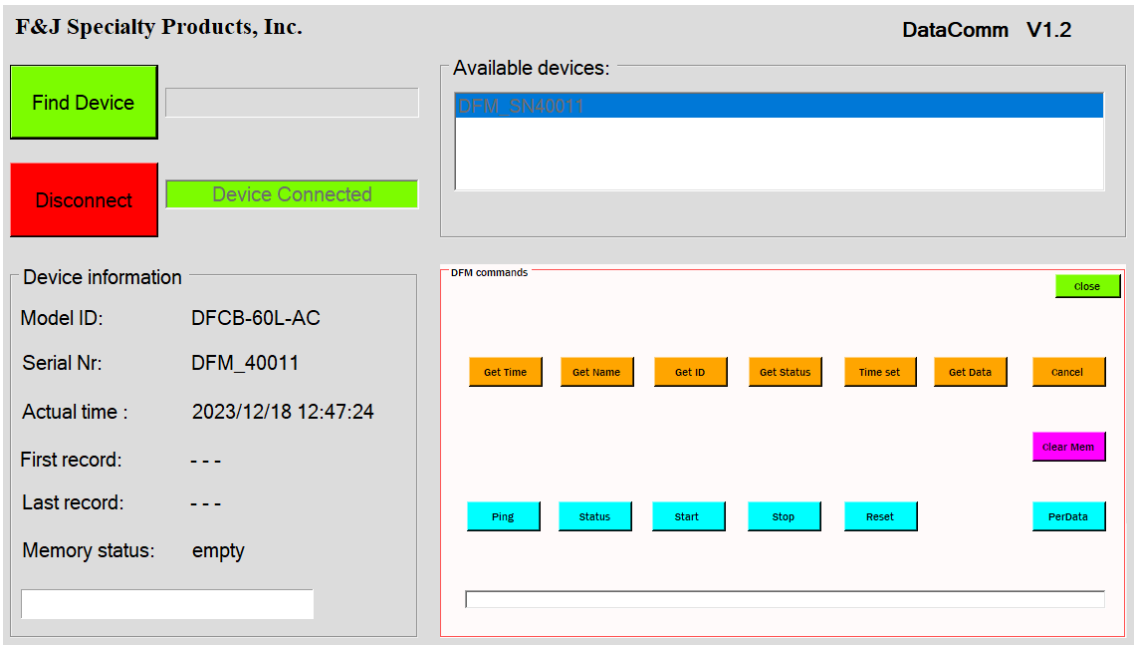
DOWNLOADING COLLECTED DATA

ADVANCED COMMANDS IN THE DATACOMM APPLICATION

There are three additional features in the application found under the “Advanced commands” field.

1. Commands for DFM

By clicking on the “Commands for DFM” button it opens a new window with extended control buttons.



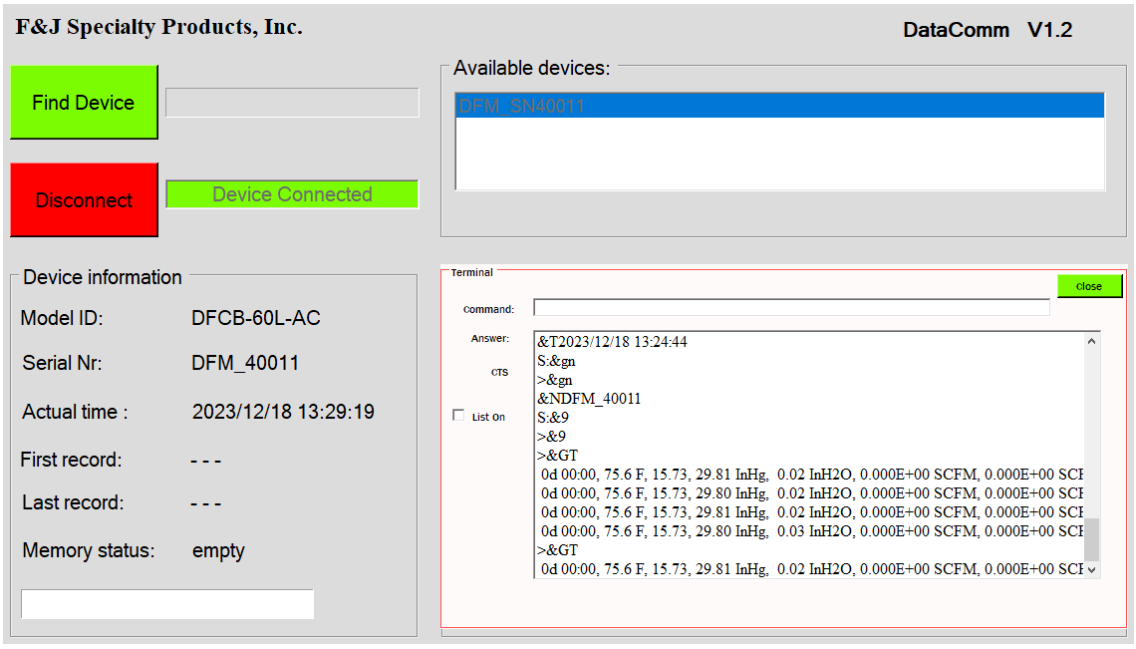
It is possible to send control commands and data requests to the DFM device by clicking on the orange or light blue buttons. The answer from the DFM can be viewed in the status line at the bottom of the white window. The available commands are listed below:

- Get actual date/time from the Digital Flow Meter
- Get the name and serial number of the Digital Flow Meter
- Get the Model I.D. of the air sampler the DFM was installed in.
- Get status information of the collected data
- Start data download
- Stop data download
- Set the actual time in the Digital Flow Meter
- Get Air Sampler group I.D. and stop periodic data stream
- Get pump on/off status
- Start the air sampler (with preset parameters)
- Stop the air sampler (with preset parameters)
- Reset flow data in the Digital Flow Meter. This has no effect for the collected data in the DFM.
- Ask for the periodic data stream

DOWNLOADING COLLECTED DATA

2. Terminal Window

By clicking on the “Terminal” button opens a serial terminal window.



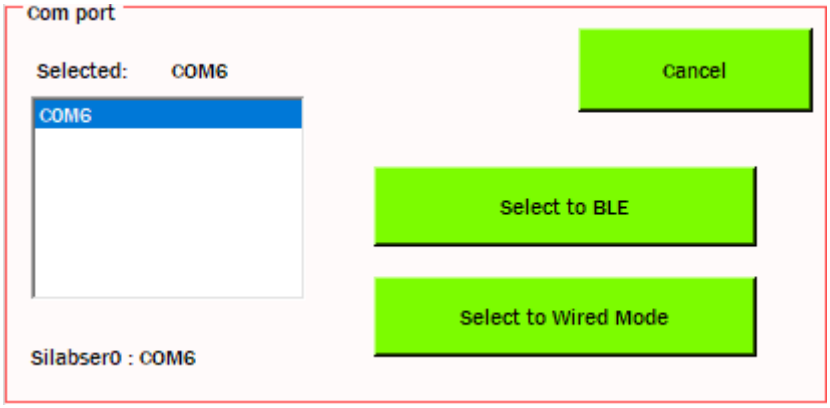
The Digital Flow Meter (DFM) output data stream or the DFM answers can be seen in the big window area titled “Answer”.

There is an input data line above the “Answer” window called “Command”. Any typed text can be sent to the DFM by pressing the enter on the keyboard. The answer appears in the “Answer” field.

The “Terminal” window can be closed by clicking on the green “Close” button.

3. Com port setup

By clicking on the “Com port setup” button opens a serial communication port selector window. This setting is needed if the automatic com port recognition does not work. In this case, the communication port must be selected manually by clicking on the serial port number then clicking the “Select to BLE” button.



DOWNLOADING COLLECTED DATA

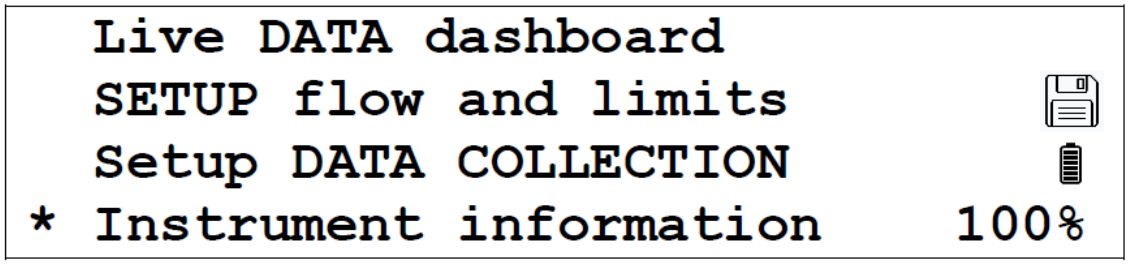
PREPARING DATA DOWNLOAD OVER WIRED CONNECTION

For successful wired data download the following are required:

- Computer with either the DataComm application or with a terminal program capable of saving incoming serial data such a HyperTerminal for example.
- Available USB port on the computer.
- USB to Serial adapter with the correct connector as the air sampler. There are two available types of connections that the air sampler may be supplied with:
    1. USB Type A
    2. 3.5mm Plug

The necessary steps to download collected data via wired connection are as follows:

1. Plug the USB to Serial adapter into the RS232 input of the air sampler and the USB end of the cable into an available USB port on the computer.
2. Check in the Device Manager for the appearing serial port and notice the number of the appearing new COM port.
3. Turn on the Digital Flow Meter (DFM) and wait until the main menu display appears.



NOTE: BE SURE THAT THE BLUETOOTH SYMBOL DOES NOT LIGHT ON THE UPPER

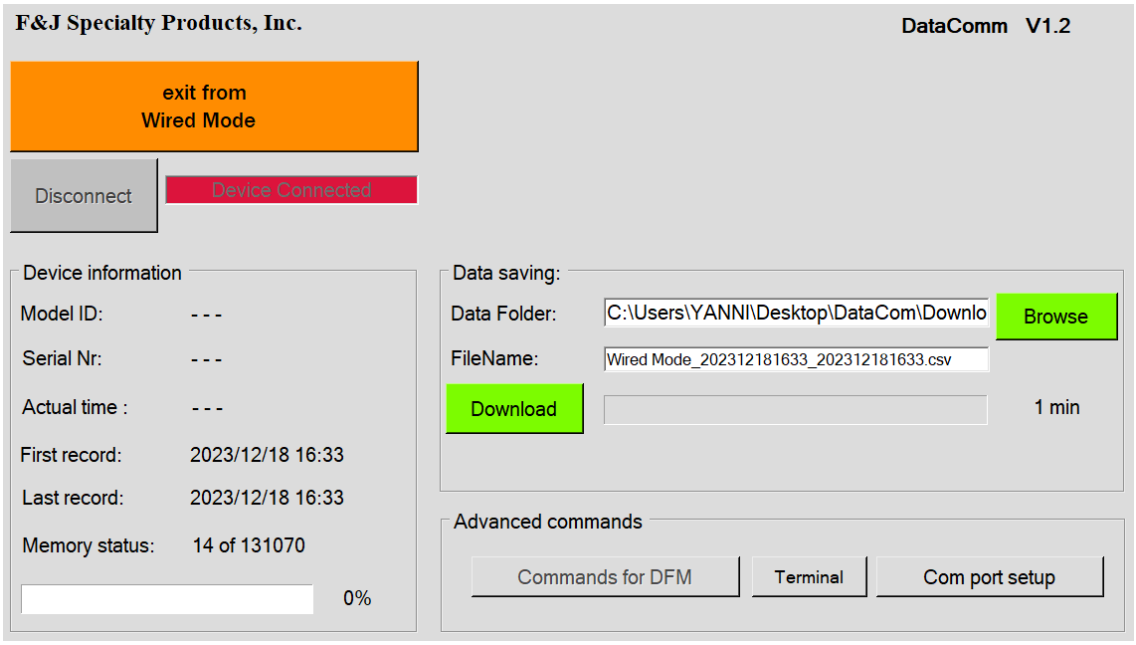
a. WIRED DATA DOWNLOAD USING DATACOMM APPLICATION

To save collected data through a wired connection using the DataComm application it needs to be set to the "Wired Mode".

1. Navigate on the computer to the DataComm.exe application and run it.
2. Click on the "Com port setup" button to select the COM port for the data download.

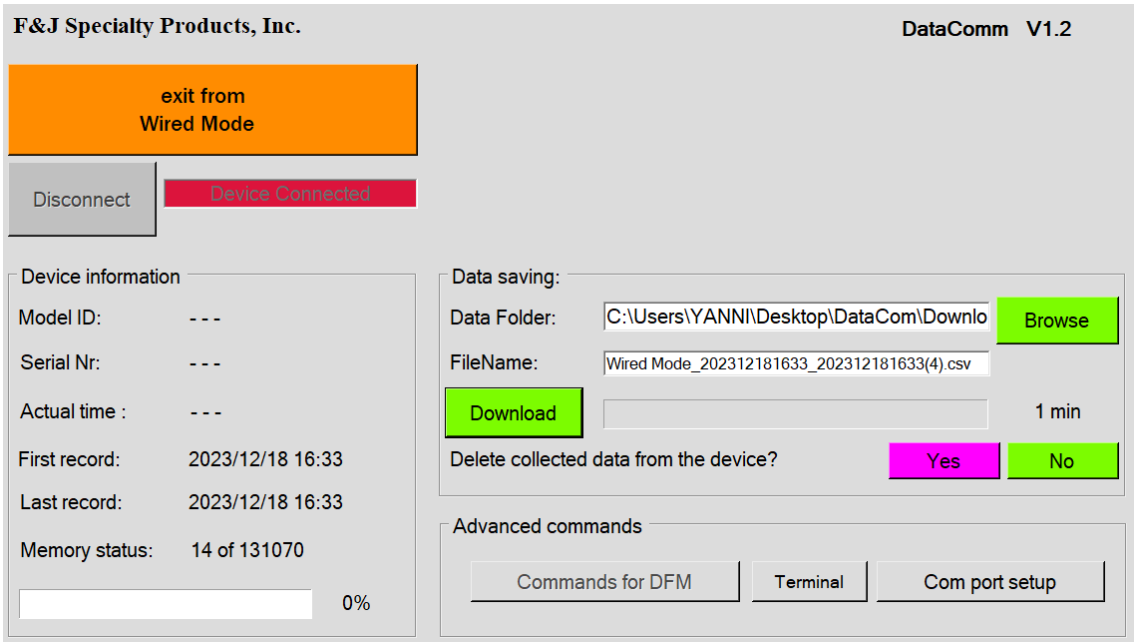
DOWNLOADING COLLECTED DATA

3. Click on the COM port number on the left side of the menu, then click on the “Select to Wired Mode” button. The DataComm application changes to the wired connection mode.



4. On the Digital Flow Meter screen instead of the Bluetooth icon a “W” appears at the same position confirming the air sampler has established a wired connection.

5. To start the data download, click on the “Download” button. The progress bar shows the actual status of the process, and next to the progress bar is the remaining time counter. The download process can be canceled at anytime, either on the computer or on the DFM. Although a download is cancelled, the partially downloaded data will be saved in the file location.



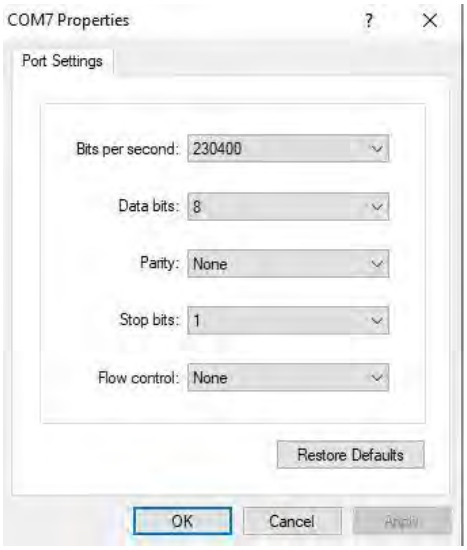
DOWNLOADING COLLECTED DATA

6. After a successful data download, the collected data that is stored on the DFM can be deleted by clicking on the appearing purple "Yes" button. Conversely, by clicking the green "No" button all stored data remains unchanged.
7. After deleting the collected data from the DFM, the memory content information will update appropriately. This update may take a few seconds.
8. To exit from the wired connection mode, click the orange "exit from Wired Mode" button and then click on the green "cancel" button. The screen will go back to its "normal" mode.

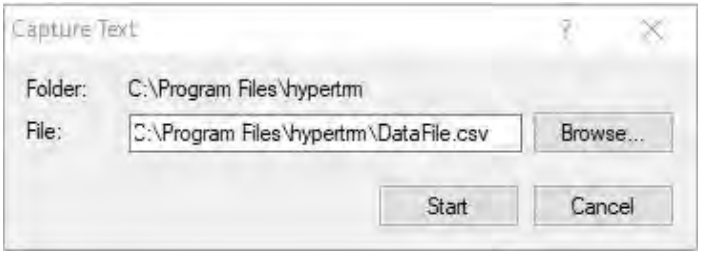
b. WIRED DATA DOWNLOAD USING A TERMINAL PROGRAM

For this technical manual the HyperTerminal program was used as a reference, however, any other terminal program may be used for downloading the data.

1. Open the HyperTerminal program, in the "File" - "Properties" menu point select the new USB serial port to setup. Configure it for 230400Bd, 8 data bits, no parity, 1 stop bit and no flow control. Click on the "OK". Disconnect the port with the "Disconnect" icon.

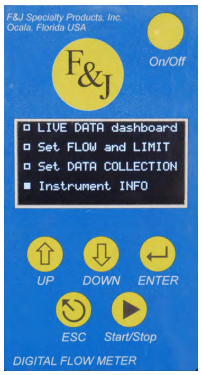


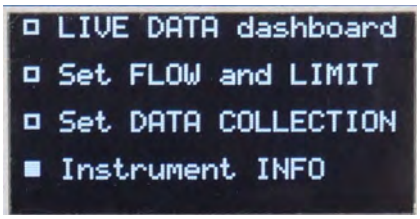
2. Click on the "Transfer" - "Capture Text" menu then point and select any name or folder for the saved data file with the "Browse…" button. *Note: Be sure that the file extension is .csv (Comma Separated Value)* This file format is importable into many data processing programs. Click on "Start" button.



DOWNLOADING COLLECTED DATA

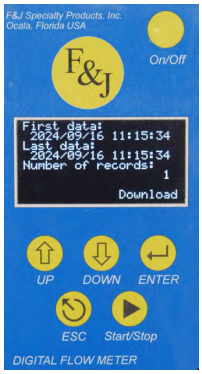
3. Turn on the Digital Flow Meter (DFM) and connect the USB to Serial adapter cable to the DFM RS232 input.
4. On the main menu of the DFM navigate to the “Instrument information” line using the UP or DOWN buttons.



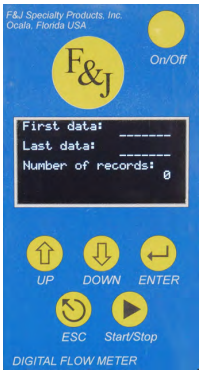


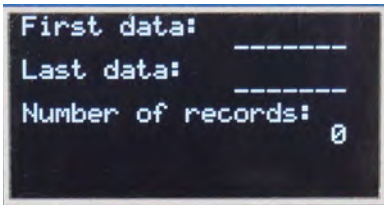
5. Be sure that the Bluetooth symbol does not light on the upper right corner of the screen. Push the ENTER button to navigate to the Instrument information sub-menu. Once in the sub-menu, use the UP or DOWN arrow to toggle to the next screen which provide information on the stored data.

DATA IS AVAILABLE



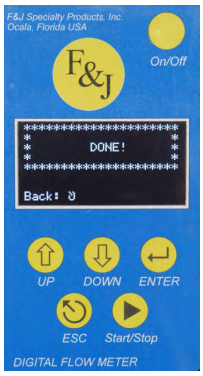
NO COLLECTED DATA





6. On the PC’s HyperTerminal screen, connect the port using the “Connect” icon. On the DFM, push the ENTER button to start the data download. The DFM shows on its display the downloading progress status. While in progress the download can be cancelled at any time by pressing the ESC button (Cancel). The downloading data stream will be visible on the PC’s HyperTerminal screen (Reference Figure 1). When the data transfer is finished, the DONE! Display appears on the DFM screen.

Do NOT press the ESC button yet!



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DOWNLOADING COLLECTED DATA

7. On the PC's HyperTerminal screen click on the "Transfer" - "Capture Text…" - "Stop:" menu point to save the data file.
8. The data download is now done. On the Digital Flow Meter (DFM) press the ESC button to return to the instrument information sub-menu and press the ESC button again to return to the Main Menu.

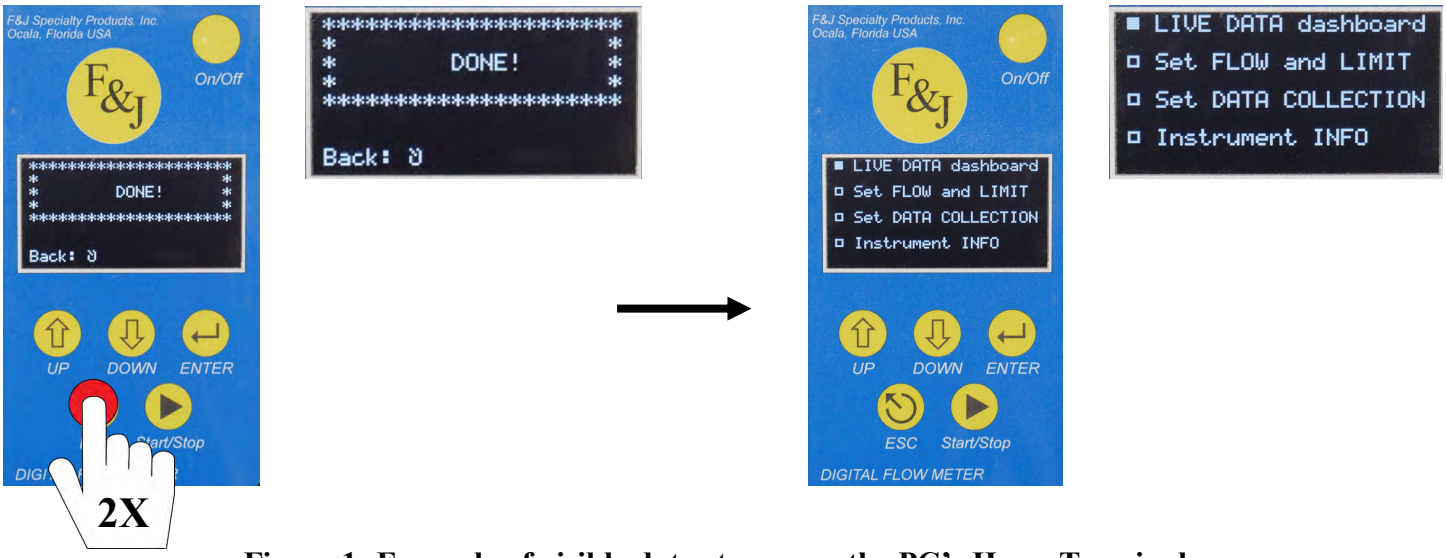
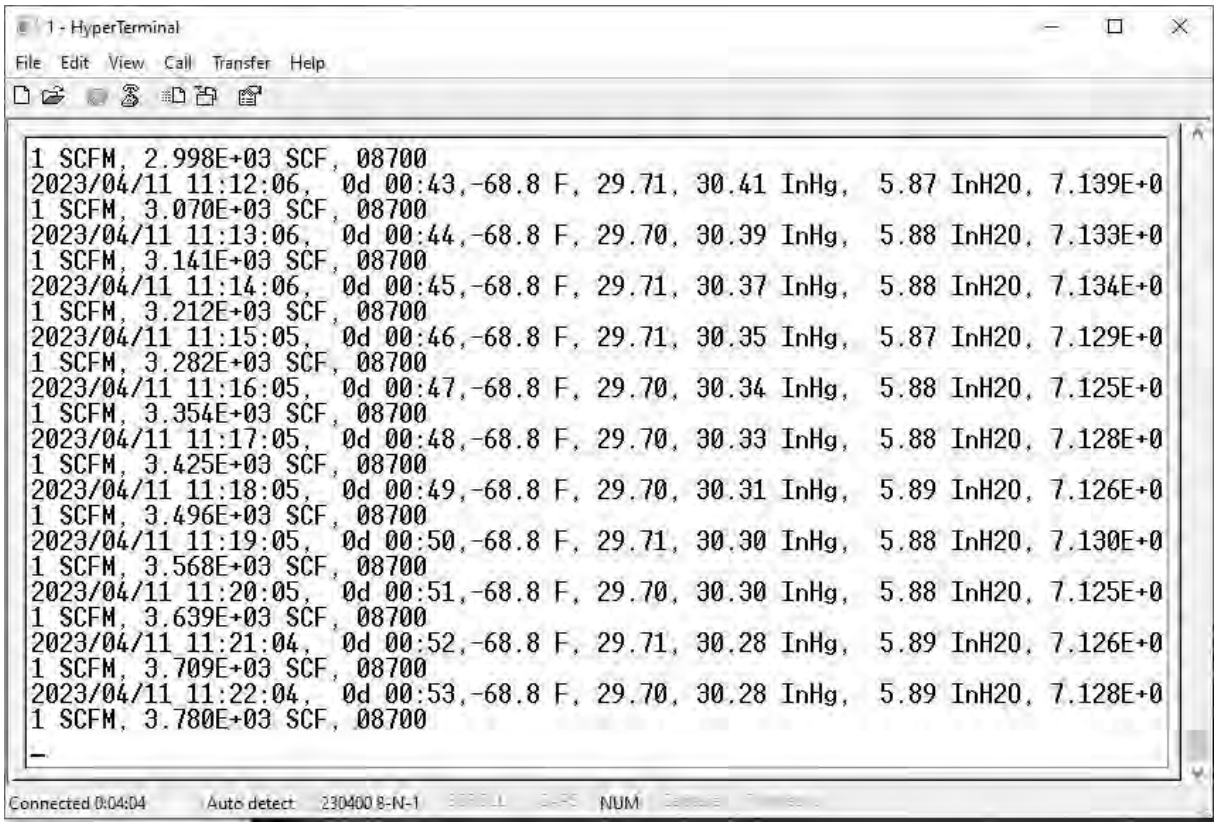


Figure 1: Example of visible data stream on the PC's HyperTerminal



WARRANTY

Limited Warranty: The Seller represents and warrants to the Purchaser that any equipment manufactured by Seller and bearing Seller's name plate to be free from defects in material or workmanship, under proper and normal use and service, as follows: if, at any time within 1 year from the date of sale, the Seller receives written notification from Purchaser, that in Purchaser's opinion, the equipment is defective and returns the equipment to the Seller's originating factory prepaid and the Seller's inspection finds the equipment to be defective in material or workmanship, the Seller will promptly correct it by either, at Seller's option, repairing any defective part or material or replacing it free of charge and return shipped lowest cost transportation prepaid. (If Purchaser requests premium transportation, Purchaser will be billed for transportation costs.) If inspection by the Seller does not disclose any defect in material or workmanship, the Seller's regular charges for repair or replacement will apply. Any replacement or repair will be warranted for the remainder of the original warranty or thirty (30) days, whichever is longer.

Sole Remedy: Seller's entire liability and Purchaser's exclusive remedy shall be limited to the repair or the replacement of materials or parts as herein described.

Limitations: Notwithstanding the warranty provisions set forth herein, this warranty shall be effective only if installation, use and maintenance is in accordance with Seller's instructions and written notice of a defect is received by the Seller within the period herein provided. Seller shall have no warranty obligations with respect to any failures of the equipment which are the result of accident, abuse, misapplication, extreme power surge or extreme electromagnetic field.

Disclaimer of Warranties: This warranty is the sole and exclusive warranty offered by Seller and is in lieu of any other warranties written, oral or implied; specifically without limitation, there is no warranty of merchantability or fitness for any purpose, even if Purchaser has been informed of such purpose.

LIMITATION OF LIABILITY

The Seller shall not be liable for any claim for consequential or incidental loss or damage arising or alleged to have risen from any delay in delivery, malfunction, failure of the equipment or Seller's inability to provide maintenance services for hardware or software related to the products. Accordingly, Purchaser agrees that Seller shall not be responsible to Purchaser for any loss-of-profit, indirect, incidental special or consequential damages arising out of the use of products or services. The Seller's liability for any other loss or damage arising out of or connected with the manufacture, sale or use of the equipment sold or service provided in a maintenance service contract, including liability that arises from any claim based on breach or repudiation of contract, warranty, tort, or otherwise, shall not in any event exceed the price of the equipment or services supplied by Seller. Seller reserves the right make changes, at any time without notice, in prices, colors, materials, specifications and models; and to discontinue models.

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SERVICE INFORMATION

For all work not covered under warranty, F&J SPECIALTY PRODUCTS, INC. will repair any instrument for the cost of parts and labor as quoted. If major components must be replaced, F&J SPECIALTY PRODUCTS, INC. will notify the customer before proceeding with repairs. When returning any instrument for service, please include a Purchase Order marked: "Repair – Cost not to exceed $250.00 without customer authorization". Please provide the following information with your instrument:

Company Name:
Address:
Telephone:
Fax:
Contact Name:
Serial Number (s):
Date of Purchase:
Service Required or Description of Problem:

You must first obtain an RMA number prior to returning any product. Obtain your RMA number by calling F&J SPECIALTY PRODUCTS, INC. (352) 680-1177 OR (352) 680-1178. To expedite services and repairs, have your Customer ID number ready.

Please ensure that all products returned to F&J contain no hazardous materials. Any obviously contaminated product received will be returned to the customer. All products scheduled for service must be received within 30 days of the RMA number issuance date. Unauthorized products will be returned to the customer.

TECHNICAL SUPPORT SERVICE

Technical Assistance	(352) 680-1177 / (352) 680-1178
Fax:	(352) 680-1454
Email;	fandj@fjspecialty.com
Web Site:	www.fjspecialty.com
Hours:	Monday – Thursday 8:00 AM to 4:30 PM (EST)

If you need additional information or help during installation or normal use of this product, contact F&J SPECIALTY PRODUCTS, INC. Technical Support. Our customer support staff will attempt to answer your installation questions by phone or issue a service authorization number for repair or replacement of your product. Unauthorized returns will not be accepted. When calling for support, please have your product serial number and product model number available.

Return Address:

F&J SPECIALTY PRODUCTS, INC.
Attn: Shipping Department
404 Cypress Road
Ocala, FL 34472

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Ocala, FL 34472
United States

Email: fandj@fjspecialty.com

Website: www.fjspecialty.com