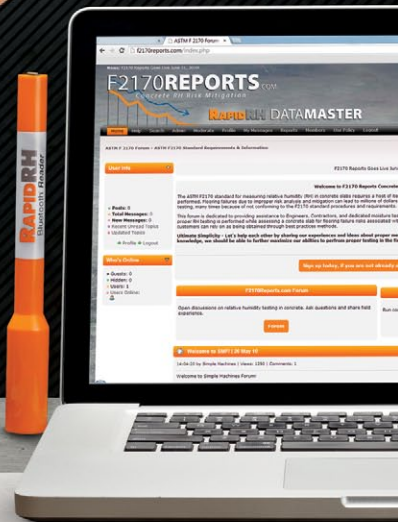
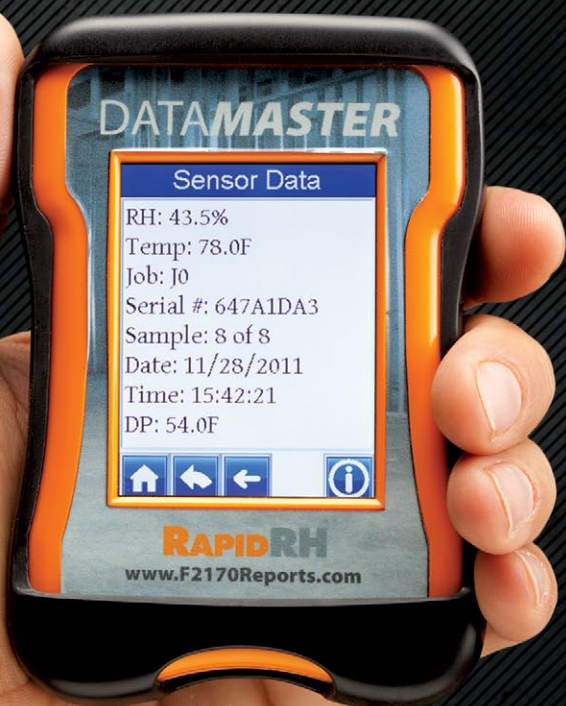


# DATAMASTER



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## Welcome to the DataMaster™ Bluetooth® Reader System

The Rapid RH® DataMaster™, with its innovative Bluetooth® Reader, ensures complete data integrity for the most comprehensive in situ concrete relative humidity testing system available today, the Rapid RH® 4.0. Using innovative technologies, operators can record and report complete testing results from each Job site for fully ASTM F2170-compliant Job-site testing and reporting.

With the Rapid RH® tradition of accuracy and efficiency, the DataMaster™'s compact design, with touch-screen data recording and complete Job-site records, make the Rapid RH® DataMaster™/Bluetooth® Reader system a must for any concrete and flooring professional.

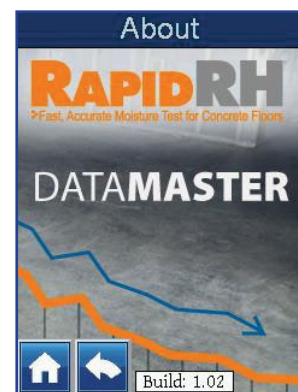
**IMPORTANT NOTE:** A DataMaster™ unit and a Bluetooth® Reader must be “paired” to allow communication between the two (see the section in this manual “Pairing a Bluetooth® Reader and DataMaster™”).

Your DataMaster™ unit and a Bluetooth® Reader combination has already been paired at the factory, and should not require another pairing-up process, but if you are not able to successfully acquire readings, you may have to perform the pairing process.

It is also important to note that your DataMaster™ is compatible with any Bluetooth® Reader but can only be paired with one Bluetooth® Reader at a time.

Welcome to a new era of data integrity for accurate and efficient RH testing for concrete.

TIP: TO GET STARTED QUICKLY, REFER TO THE DATA MASTER™/BLUETOOTH® READER QUICK START GUIDE.

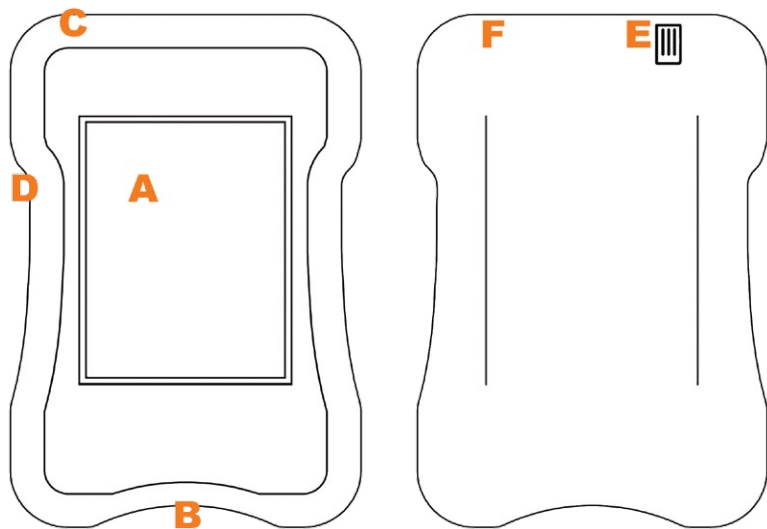


## Initial Battery Charge

Your DataMaster™ requires an initial charge to have a fully operable battery capacity. To charge the DataMaster™, connect the included USB cable to the port at the base of the unit and then to a computer USB port or AC USB adaptor (not included). Allow 2-3 hours for the initial charge.

Your Bluetooth® Reader is powered by two, AAAA batteries. The Reader uses very little energy. Its sophisticated power-saving logic will greatly lessen the frequency of battery replacement.

## Hardware Layout of the DataMaster™



- A. Touch screen
- B. USB port (on bottom)
- C. On/Wake-Up button (on top)
- D. SD card slot (on side)
- E. Ambient RH/Temp sensor
- F. Hard reset hole

**A. Touch Screen Display:** This is the convenient user interface for the DataMaster™.

**B. USB port:** This port serves a dual function: 1) For use when charging of the DataMaster™ internal battery; 2) For connecting to a personal computer to upload sensor data to the [f2170reports.com](http://f2170reports.com) web site.

**C. On/Wake-Up button:** The DataMaster™ power-saving features include automatic screen dimming and sleep mode based on no touch screen activity. After 60 seconds of no activity, the screen's backlight will dim. Touching the screen turns it back on. After 5 minutes of no activity, the DataMaster™ will go into a low-power sleep mode. Touching the screen wakes the unit up.

**D. SD card slot:** The SD card stores the data you acquire. The DataMaster™ cannot take or store readings without an SD card in this slot. The largest size SD card supported is 2 GB.

**E. External (Ambient) RH/Temp Sensor:** The relative humidity (RH)/temperature sensor monitors the ambient (room) conditions. When you take a reading, the ambient RH and temperature are acquired and stored with that set of readings for that Smart Sensor. This information is required for correct ASTM F2170 reporting protocol.

**F. Hard Reset hole:** If your DataMaster™ becomes unresponsive (locked-up, etc.), just use a small diameter (one end of small paper clip, for example) tool to insert and push into the hole which will reset the unit. If you perform this reset function, you will need to reset the Date/Time for your unit.

## Main Menu

Once powered up with the On/Wake-Up switch, the Main menu will display in the window. Main menu selections include View, Graph, Tools and Settings. We recommend beginning with the Settings Menu. A Quick Start guide is available for the initial unit settings and function.

Battery-level icons and a Bluetooth® communication icon may appear in the Main Menu title bar (and on some other DataMaster™ screens as well).



The left-hand battery icon shows the last charge level indicated for your Bluetooth® Reader. If this icon is not present, it will again appear when you take a reading with the Reader. The battery icon on the right-hand side is for the DataMaster™ device.

If the Bluetooth® communication icon is not present in the title bar, this indicates the Reader is powered off. To “turn on” Bluetooth® communication, try to take a reading in a Smart Sensor. During this “power on” period, it can take from 3 to 7 seconds for the Reader to initially connect to the DataMaster™, at which time the Bluetooth® communication icon will appear in the title bar.

So long as the DataMaster™ is on, and less than 5 minutes has elapsed from the last sensor reading, the Reader will stay “connected/powering on” and the communication icon will indicate this. The Bluetooth® Reader will turn off if left idle for 5 minutes.

If the Bluetooth® icon is in the title bar, the Bluetooth® Reader is powered on and should take 2-3 seconds to acquire a reading. If you don't get a reading within 2-3 seconds when the Bluetooth® icon is present, then you likely do not have a good connection between the Reader and the Smart Sensor. Remove your Reader and reinsert into the sensor. See our Trouble Shooting Guide if further difficulties persist.

## Settings Menu

From the Settings Menu, select from a sub-menu of options including About, Units, Graph Scales, Date/Time, Touch-screen Calibration, Backlight & Sound and Battery. When powering up for the first time, users should access the Settings Menu to set the defaults before testing.

NOTE: PRESSING THE HOME ICON ON ANY SCREEN WILL TAKE YOU BACK TO THE MAIN MENU.

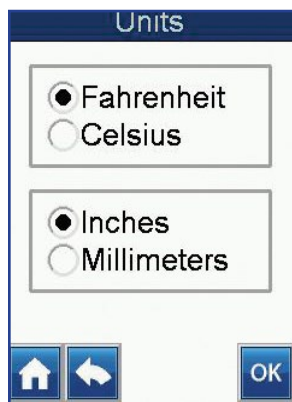


## Units Setting

Choose the units used to record the temperature and depth of the drilled hole.

1. From the Settings menu, select the Units option.
2. Select either Fahrenheit or Celsius.
3. Select either Inches or Millimeters.
4. Select **OK**.

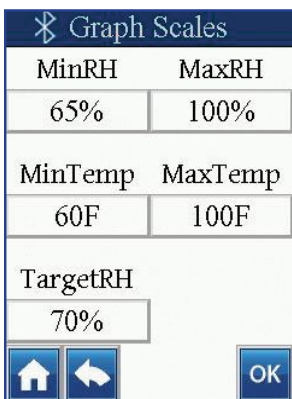
NOTE: CHANGING THE UNIT SETTINGS AFTER DATA HAS BEEN RECORDED WILL AUTOMATICALLY CONVERT ALL READINGS ON THE DATA MASTER™ TO THE SELECTED UNITS.



## Graph Scales Setting

Recorded data can be viewed with customized scale and graph view on the DataMaster™ unit.

1. From the Settings menu, select the Graph Scales setting.
2. Set the Min RH and the Max RH.
3. Set the Min Temp and the Max Temp.
4. Set the Target RH.
5. Select **OK**.



## Date/Time Setting

1. From the Settings menu, select the Date/Time option.
2. Set month, day, year, hour, minute and second by touching the appropriate box and using the up or down arrows at the bottom of the screen to select the correct number.
3. Select **OK** when finished.



Setting the correct Date and Time is vital to ensure that all data is accurately recorded as being within the selected time and date for a Job. All data records are date and time-stamped accordingly for specific recordkeeping, and the date and time displays when viewing the results of a particular test.

## Touch-screen Calibration

Touch-screen Calibration on each DataMaster™ unit has been carefully completed prior to shipping. **We recommend NOT using this feature unless absolutely necessary.**

For precision, use a stylus or pencil eraser tip when performing this operation, and follow the onscreen directions exactly.

## Backlight and Sound Setting

Users can customize the display brightness and audible indicator.

1. Select the Backlight and Sound Setting option.
2. Select and slide the sliding bar to the left or right for the appropriate Backlight percentage setting.
3. Select the Sound as On or Off.
4. Select **OK**.

NOTE: BATTERY LIFE CAN BE EXTENDED BY DECREASING THE BACKLIGHT BRIGHTNESS.

## The Battery

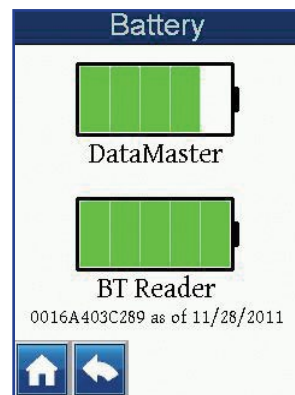
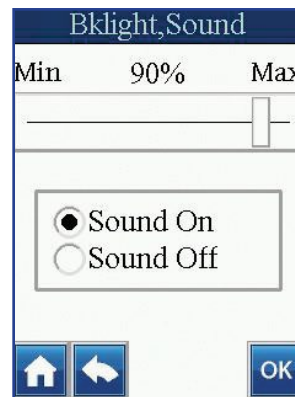
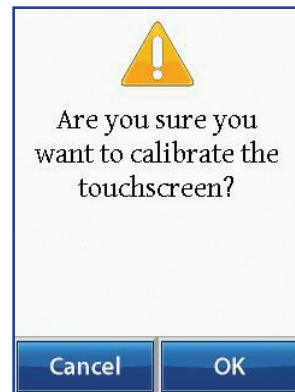
The Battery option indicates the battery charge level in both the unit's battery and the paired Bluetooth® Reader.

To charge the battery, use the USB cable and connect it to any computer USB port or USB power-source adaptor. A pop-up screen will display the unit charge level.

Return to the Settings menu by selecting the "back" arrow.

## Tools Menu

The Tools option is available to users from the Main Menu of the unit. Once the Tools option is selected, the Tools menu displays and users can select from the following options: **Add Job**, **Delete Job**, **Delete Sensor**, **BT Reader**, and **Format Card**.



## Add Job

1. From the Tools menu, select Add Job.
2. Enter the name or number using the touchpad.
3. Select OK to store the information into memory for easy retrieval.

NOTE: JOB NAMES CAN BE A MAXIMUM OF 8 ALPHA-NUMERIC CHARACTERS. MULTIPLE JOB NAMES CAN BE ADDED AT ANY TIME. THE JOB LIST CAN BE REVIEWED AT ANY TIME BY SELECTING "VIEW" FROM THE MAIN MENU.



## Taking Readings

1. Firmly insert the Bluetooth® Reader into a Smart Sensor.
2. Hold the Bluetooth® Reader in place for approximately 3 seconds, or until the reading acquired screen (shown below) appears, then remove the Bluetooth® Reader.

NOTE: MAY TAKE UP TO 7 SECONDS IF BLUETOOTH® COMMUNICATION HAS NOT BEEN INITIALLY ESTABLISHED (BLUETOOTH® ICON IS NOT PRESENT IN TITLE BAR).



IF Bluetooth® icon is already present in title bar, a successful reading will usually occur within 2 seconds of Reader insertion. If you do not get a successful reading, reinsert the Bluetooth® Reader.

After 3-4 seconds of displaying this screen, and if this is the very first reading for this sensor, you will be taken to the "Select a Job" screen where you assign this sensor to the appropriate Job from the Job list.

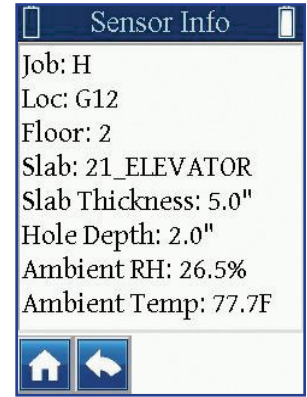
Once you choose the Job, you will be taken to the Sensor Data screen where you will be able to view stored data for this first reading for this sensor.

Next, you will enter other Sensor Information, when the DataMaster™ acquires the initial (first) reading for a sensor.



To enter sensor information:

1. From the Sensor Data screen, touch the "Information" button ("i" in a circle) on the bottom right corner of the screen.
2. On the "Sensor Info" screen (shown below), enter the sensor's location (Loc:) on that particular slab and the Hole Depth, which are mandatory for correct reporting according to the ASTM F2170 reporting protocol. Floor, Slab and Slab thickness are optional, but may be used to provide additional information if desired.



3. Once the Sensor information has been entered, press the "back arrow" to return to the Sensor Data screen, or press the Home icon to return to the Main screen.

Once a sensor has been assigned to a specific Job, subsequent readings from that sensor will automatically be stored under the assigned Job. Sensors are non-transferrable between Jobs once assigned.

Job site data can be viewed by selecting individual sensors from the sensor list for a Job. Sensor data can also be graphically viewed when you choose the "Graph" menu of the DataMaster™. Each reading for a sensor will record the current slab internal RH and temperature, sensor serial number, sample number (i.e. 2 of 3), date, time, dew point (DP) and ambient RH and temperature.

## Delete Job

When data from a particular Job is no longer needed or has been uploaded from the DataMaster™, the Job name and records can be deleted from the unit.

1. From the Tools menu, select Delete Job.
2. Select the name or number of the Job you wish to delete.
3. Select OK to permanently delete the Job from memory.



NOTE: THE JOB AND ITS DATA WILL NO LONGER BE ACCESSIBLE ONCE THE JOB IS DELETED. ONCE DELETED, THE JOB DATA WILL ONLY BE AVAILABLE IF IT HAS BEEN UPLOADED TO THE WWW.F2170REPORTS.COM WEBSITE FOR ARCHIVING OR ASTM-FORMATTED REPORTING. FILES CAN ALSO BE TRANSFERRED FROM THE SD CARD TO A PC CARD READER FOR BACK-UP, BUT THIS MUST BE DONE BEFORE THE JOB IS DELETED THROUGH THE DATAMASTER™ UNIT.

## Delete Sensor

The Delete Sensor option enables users to remove any sensor data from any Job.

1. From the Tools menu, select Delete Sensor.
2. Select a Job.
3. Select the sensor you wish to delete.
4. Select OK to permanently delete the sensor from memory.



NOTE: SENSORS ARE NON-TRANSFERRABLE BETWEEN JOBS ONCE ASSIGNED. SELECTING THE DELETE SENSOR OPTION DELETES ALL SENSOR DATA FROM MEMORY. ONCE COMPLETED, THE DATA IS LOST AND CANNOT BE RETRIEVED AND THE SENSOR CANNOT BE USED FOR ANOTHER JOB.

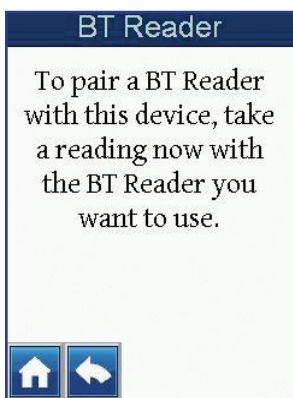
## Pairing a Bluetooth® Reader and DataMaster™

A Bluetooth® Reader must be paired with the DataMaster™ before you can acquire readings. The BT Reader function pairs the DataMaster™ to a Bluetooth® Reader. The DataMaster™ is compatible with any Bluetooth® Reader but can only be paired with one Bluetooth® Reader at a time.

1. From the Tools menu, select BT Reader. A new window displays stating the device is ready to take a reading.
2. Insert a Bluetooth® Reader into a Rapid RH® Smart Sensor.
3. Keep the Bluetooth® Reader firmly inserted into the Smart Sensor until you hear a beep, or the Bluetooth® Reader serial number displays on the window. This may take up to 15 seconds.

Once the pairing is established, the unit will return to the Main menu. If not, you will get an error message.

With a successful pairing, the DataMaster™ is paired to the Bluetooth® Reader and available to retrieve data from any sensor assigned to the Job site (see Sensor Information, page 14). Each sensor has a serial number and all data is stored according to that number.



## Format Card

The Format Card option allows users to format the SD card used for data storage.

NOTE: UP TO A 4GB SD CARD CAN BE USED FOR STORING DATA; UPDATING THE DATA MASTER™ UNIT'S SOFTWARE REQUIRES A 2GB OR LESS SD CARD.

From the Tools menu, select Format Card.

1. Insert the SD card into the slot located on the left of the unit.
2. Select Format. Note: The unit will ask you to verify that you want to format the card. Once format is selected, all existing data on the SD card is erased.
3. Select Format to proceed with formatting the SD card. Note: All existing data is erased once Format is selected.
4. Select Format to continue, or Cancel to cancel the procedure.

## View Menu

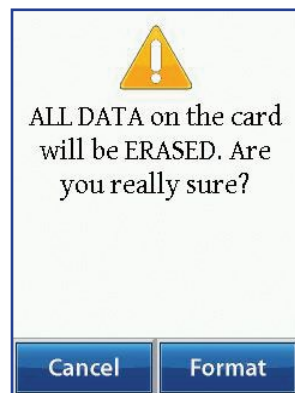
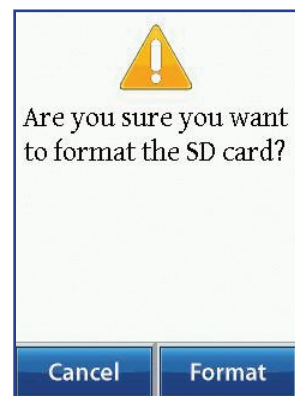
The View Menu option allows users to select and view a Job that has been loaded into the unit from a site that has been tested or is in the process of being tested.

1. From the Main Menu, select View.
2. Select a Job from the Select a Job menu.
3. Select the sensor to view its data

## Sensor Data

Complete sensor data is available for each sensor assigned to a Job site. It can be accessed through the View Menu by selecting a Job name from the "Select a Job" menu, then choosing the desired sensor from the displayed list of sensors.

The field descriptions are as follows:



**RH:** Displays the test hole's relative humidity.

**Temp:** Displays the test hole's temperature in Fahrenheit or Celsius.

**Job:** Displays the Job site by name.

**Serial #:** Displays the serial number of the sensor.

**Sample:** Displays the particular sample number for this data, and how many times you have taken a reading from that sensor.

**Date:** Displays the date the reading was taken.

**Time:** Displays the time the reading was taken in a 24 hour format.

**DP:** Displays the dew point in either Fahrenheit or Celsius (F or C) depending on option chosen in Settings Menu).

**Slab:** Displays any additional slab information entered

**Slab Thickness:** Displays the thickness (if entered) of the slab (i.e. 3 inch, 4 inch, 5 inch). Measurements display down to tenths of an inch.

**Hole Depth:** Displays the hole depth entered (i.e. 1 inch, 2 inch). Measurements display down to tenths of an inch.

**Ambient RH:** Displays the ambient Relative Humidity percentage recorded in the area where the sensor was installed.

**Ambient Temp:** Displays the ambient temperature recorded in the area where the sensor was installed.

Optional features are available at the bottom of the sensor data screen. These icons, when selected, perform accordingly:

ICON	NAVIGATION
Home	Returns you to the Main menu.
Curved Back Arrow	Retrieves the last screen displayed.
Back Arrow	Returns to the previous set (sample) of readings for that sensor. (Appears when sensor has more than one reading)
Forward Arrow	Takes you to the next set (sample) of readings for that sensor. (Appears when sensor has more than one reading and you're not on most recent)
Circled 'i'	Displays the entire Sensor Information window.

### Sensor Information

For the initial (first) reading for any sensor, the Sensor Information screen allows you to enter (except for Ambient RH and Ambient Temp) key information of the description, location, type of floor, the type of slab and its thickness plus the depth of the test hole. Some of this information is **required** if you plan to use [www.f2170reports.com](http://www.f2170reports.com) for storing data or for generating verified reports or ASTM-compliant reports. Once this data is entered the first time for a particular sensor, this data will appear for that sensor on the Information screen.

The field descriptions are as follows:

**Desc:** Displays the name of the Job.

**Loc:** Displays the sensor's location as entered for a particular Job.

**Floor:** Displays the floor type, if entered.

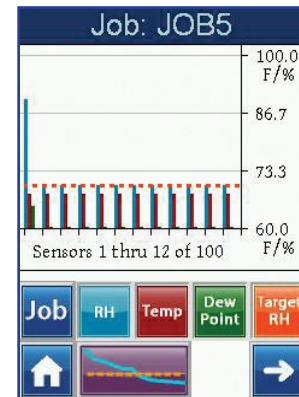
Sensor Info	
Job:	H
Loc:	G12
Floor:	2
Slab:	21_ELEVATOR
Slab Thickness:	5.0"
Hole Depth:	2.0"
Ambient RH:	26.5%
Ambient Temp:	77.7F

## Graph Menu

This Graph Menu allows users to select the type of graphical readings they wish to view.

1. From the Main menu of the unit, select Graph.
2. Select the Job to view its graphical readings.

Optional features are available at the bottom of the screen. These icons, when selected display the following screens:




ICON	NAVIGATION
Job	Displays Job selection screen to choose data you want to view. Once selected, the screen displays from 1 to 12 sensors per screen. The screen displays most recent data in a bar graph or the trend history as a line graph if selected.
Graph	Allows users to change the graph from bar graph to line graph.
RH	Displays the relative humidity in a graphical format.
Temp	Displays the temperature in a graphical format.
Dew Point	Displays the Dew Point in a graphical format.
Home	Returns you to the Main menu
Target RH	Displays the limit as a line within the graph. The Target RH is set within the Settings menu.
Forward Arrow	Displays the next screen.
Back Arrow	Returns to the previous screen.

## Using www.f217reports.com

To begin, you must first create a unique user account for storing your data and creating reports. The sign up option is available on the site's home page. Please provide all information that is required. Once your user account is created, begin uploading test data from your RapidRH® DataMaster™.


### Uploading Data

Login to your account on the web site and select "Reports".



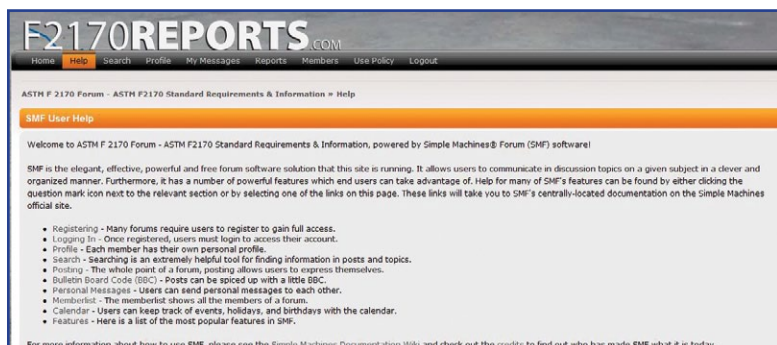
The screenshot shows the 'Upload Data File(s)' form on the F2170REPORTS.COM website. The form has a header bar with the site name and navigation links. Below the header, there is a section for uploading data. It includes a 'File(s):' field with a 'Browse...' button, a 'Target RH, %' field with the value '0', and 'Upload' and 'Cancel' buttons.

When prompted to upload your files, connect the DataMaster™ to your PC's USB port using the USB cable. The DataMaster SD Card will appear as a "thumb drive" on your PC. Alternately, insert the SD card from your DataMaster™ into the slot on your computer or any standard card reader connected to your computer. Next, click on "Upload Files" then select "Browse", find the appropriate drive with your DataMaster™ data. (You can either upload a single file or a zipped file containing all the data files for a particular Job.) Select the file(s), then select "Upload."



The screenshot shows a list of reports on the F2170REPORTS.COM website. The table has columns for ID, Name, Date, and Actions. The list includes reports for 326PINE, C, CCC, GGGH, HCH, HCRH, HRH, job5, job7, and MVR.

ID	Name	Date	Actions
9	326PINE	March 01, 2012, 07:51:28 AM	Expand   Edit   Export to PDF   Export to CSV   Export to XLS   Export to XLSX
15	C	March 01, 2012, 09:36:55 AM	Expand   Edit   Export to PDF   Export to CSV   Export to XLS   Export to XLSX
10	CCC	March 01, 2012, 07:51:28 AM	Expand   Edit   Export to PDF   Export to CSV   Export to XLS   Export to XLSX
13	GGGH	March 01, 2012, 07:51:28 AM	Expand   Edit   Export to PDF   Export to CSV   Export to XLS   Export to XLSX
12	HCH	March 01, 2012, 07:51:28 AM	Expand   Edit   Export to PDF   Export to CSV   Export to XLS   Export to XLSX
8	HCRH	March 01, 2012, 07:51:28 AM	Expand   Edit   Export to PDF   Export to CSV   Export to XLS   Export to XLSX
11	HRH	March 01, 2012, 07:51:28 AM	Expand   Edit   Export to PDF   Export to CSV   Export to XLS   Export to XLSX
7	job5	February 07, 2012, 01:08:47 PM	Expand   Edit   Export to PDF   Export to CSV   Export to XLS   Export to XLSX
6	job7	February 07, 2012, 11:50:26 AM	Expand   Edit   Export to PDF   Export to CSV   Export to XLS   Export to XLSX
14	MVR	March 01, 2012, 07:51:28 AM	Expand   Edit   Export to PDF   Export to CSV   Export to XLS   Export to XLSX



The screenshot shows the 'SMF User Help' page on the F2170REPORTS.COM website. The page contains a welcome message and a list of features and instructions for users.

Welcome to ASTM F 2170 Forum - ASTM F2170 Standard Requirements & Information, powered by Simple Machines® Forum (SMF) software!

SMF is the elegant, effective, powerful and free forum software solution that this site is running. It allows users to communicate in discussion topics on a given subject in a clever and organized manner. Furthermore, it has a number of powerful features which end users can take advantage of. Help for many of SMF's features can be found by either clicking the question mark icon next to the relevant section or by selecting one of the links on this page. These links will take you to SMF's centrally-located documentation on the Simple Machines official site.

- Registering - Many forums require users to register to gain full access.
- Logging In - Once registered, users must login to access their account.
- Profile - Each member has their own personal profile.
- Search - Searching is an extremely helpful tool for finding information in posts and topics.
- Posting - The whole point of a forum, posting allows users to express themselves.
- Bulletin Board Code (BBC) - Posts can be spiced up with a little BBC.
- Personal Messages - Users can send personal messages to each other.
- Memberlist - The memberlist shows all the members of a forum.
- Calendar - Users can keep track of events, holidays, and birthdays with the calendar.
- Features - Here is a list of the most popular features in SMF.

For more information about how to use SMF, please see the Simple Machines Documentation Wiki and check out the credits to find out who has made SMF what it is today.

## Generating ASTM F2170 Reports

Once the site has uploaded your data files, the results will be displayed on the screen. You now have an opportunity to retrieve the results in several different formats (PDF, Excel, or CSV format) for reporting, sharing, and archiving. Choose the format that works best for you, keeping in mind that the pdf file will be the report that conforms to the ASTM F2170 requirements.

To get a "Wagner Certified" indication on the report, all the final data taken from the particular Job's sensors must fall within the time period prior to the sensors' expiration dates.

A help menu is also available on the web site to guide you with any questions you may have, or provides contact information should you need further assistance.

## Troubleshooting

PROBLEM	WHAT TO DO
DataMaster™ will not turn on	Charge the battery using the USB cable; wait 20 min then try again
DataMaster™ will not link to BT-reader	Make sure the Data Master™ battery is charged. If it is, then change the batteries in the Bluetooth® Reader and try again.
DataMaster™ will not let you input Jobs or data	Check to make sure that the SD card has been formatted and /or is unlocked and format or unlock as required. If necessary, replace the SD card.
DataMaster™ locked up	On the back side of the unit there is a tiny hole / top left; insert a small pin to reset the unit.
DataMaster™ will not read SD card	Remove and re-insert SD card; if still not working replace with new SD card
Display malfunctioning	On the back side of the DataMaster™ there is a tiny hole / top left; insert a small pin to reset the unit. Recalibrate the display if needed.
Cracked display	Return DataMaster™ to Wagner Meters for repair.





**WAGNER  
METERS**  
*The Moisture Measurement Leader*

**Wagner Meters**  
326 Pine Grove Road  
Rogue River, OR 97537  
(800) 585-7629

**RAPIDRH**  
Fast, Accurate Moisture Test for Concrete Floors

**For more information on relative humidity testing  
and to order online go to  
[www.RapidRH.com](http://www.RapidRH.com)**

The RAPID RH® is registered under U.S. Patent 7231815 & 8047056 Additional Patents Pending

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