DVTH Temperature Humidity Logger with Display

The DataView DVTH is a self-contained, precision instrument for recording the temperature and relative humidity of the surrounding environment. The DVTH can store up to 43,344 temperature samples, or up to 21,672 of both temperature and relative humidity samples. In addition to Temperature and Humidity, the unit computes and displays the Dew Point Temperature.

The DVTH features a display that allows the user to see the current temperature, humidity and dew point simultaneously. In addition the unit shows, graphically, the temperature and relative humidity data that has been logged during the current logging session. A summary screen shows information about the current logging session, such as the logging rate, the number of samples recorded, the length of the current recording and the amount of time left for recording.

The DVTH temperature and relative humidity sensors are open to the air. It is therefore important to ensure that water does not get into the unit. This is especially important in high humidity situations (90% RH and above) where water may condense inside the logger, causing damage to the internal electronics.

Warning: Care must be taken to ensure that the logger is not operating under condensing conditions. This means that the dew point temperature must be below the ambient temperature. Condensation will damage the humidity sensor and the logger electronics.

Turning the DVTH On and Off

To conserve battery, the DVTH will turn itself Off after about 1hour of operation, if the unit is not logging and no buttons are pushed. The display will go blank and the unit will enter a Power Save mode. In this mode the logger uses practically no power, and the battery will last as long as its shelf life (typically 6 years for an alkaline battery).

In the Power Save mode you can still use all the features of the SUPCOLog software to communicate with the logger, even set the logger for a new logging session. The logger will automatically exit the Power Down mode when it is set to log.

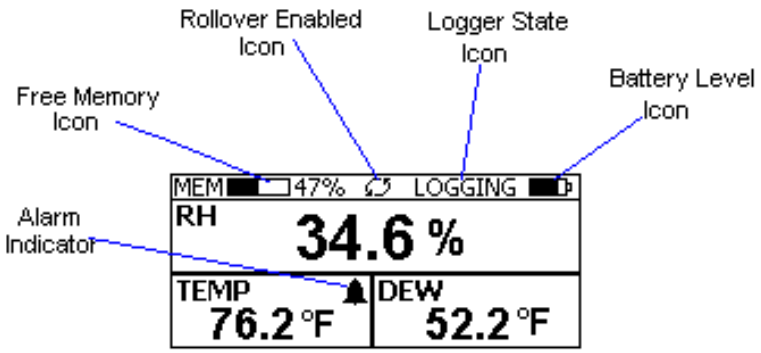
Another way to turn the logger Off is to power down the logger using the SUPCOLog software.

To turn the logger On at any time, just press any of the logger's buttons. The display will come back on and the logger will operate normally

DVTH Sample Screen

There are three different screens that the user can switch between, using the **View** button. The Sample and Summary screen show the current status of the logger. The Graph screen shows a record of the logged temperature and humidity samples in memory.

The Sample screen is shown below.



This screen shown the current Relative Humidity, Temperature and Dew Point measurements. The measurements

are updated every two seconds, independent of the device sample rate.

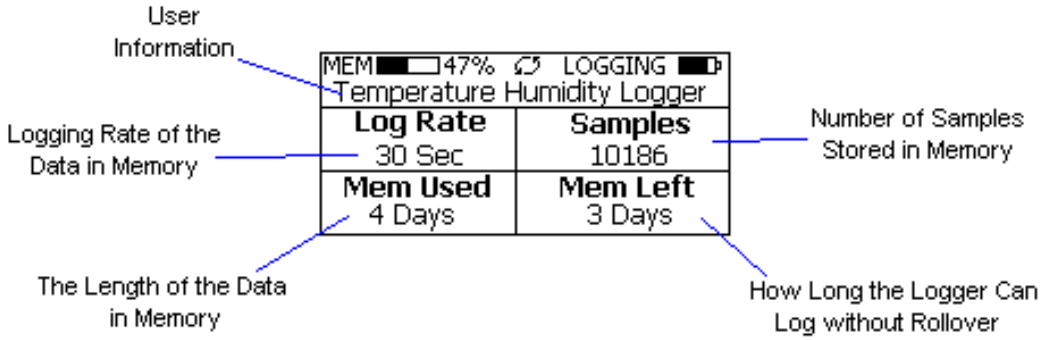
Note: If the user selects only the temperature channel to be logged, the logger will display only the temperature during logging. Relative Humidity and Dew point will not be displayed. When logging is finished (either the memory becomes full, or on user command), the logger will once again display all three measurements (temperature, humidity and dew point).

The icons provide a summary of the current state of the logger.

- **MEM**: The Memory bar graph shows the amount of memory used and left in the logger. When logging starts, the bar graph is empty. It fills up as samples are stored into memory. The percentage display shows how much memory is used, as well.
- **Rollover Enabled Icon**: This icon shows that rollover has been enabled and that once the memory becomes full, the logger will overwrite the oldest data stored in memory. Note that this icon shown that rollover has been enabled. It does not indicate if rollover has occurred.
- **Logger State Icon**: This icon shows the current state of the logger:
  - **IDLE**: The logger is not logging. The sample display is still being updated, but no data is stored in logger memory.
  - **LOGGING**: The logger is recording data at a user specified logging rate.
  - **PRESS START TO LOG**: The logger is not recording data, but has been setup to start logging when the **Start** button is pressed. Press and hold the **Start** button for about 3 seconds to start logging.
  - **DELAYED LOGGING**: The logger is not recording data, but has been setup to start logging at a specific date and time. To see when logging will start, press the **View** button twice to bring up the countdown to the start of logging.
- **Battery Level Icon**: This icon shows the state of the logger batteries. When this icon is down to one bar, the logger battery should be replaced.
- **Alarm Indicator**: This icon shows that a channel has entered an alarm state during logging. This is a "sticky" indicator since once the channel entered an alarm condition, the icon turns On, and stays On even if the alarm condition goes away. See the Alarm Setup section in the Software User's Guide for more information on setting and using alarms.

The DVTH Summary Screen

The Summary screen is shown below.



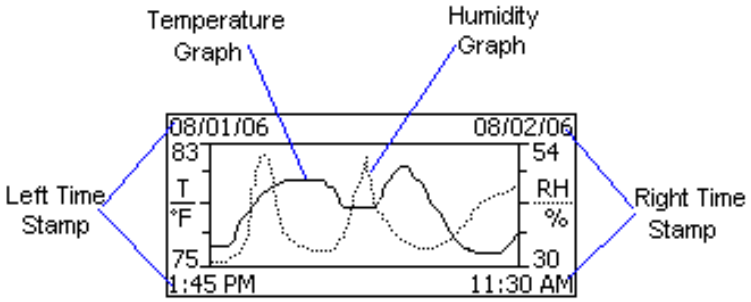
The icons in the summary screen are identical to the icons in the Sample screen. The Summary screen shows:

- The **User Information**: This 30 character text field is entered through the SupcoLog setup software, and can be any text that describes the logger
- **Logging Rate**: Is the rate at which the data in memory was logged at.

- **Samples**: Shows the number of samples stored in memory. If a rollover has occurred this number will show the maximum number of samples that can be stored in the logger, and will not change, even though the logger may be logging.
- **Mem Used**: Shows the length (in days, hours, minutes or seconds) of data currently stored in memory. If a rollover has occurred, this number will show the maximum length of data that can be stored in memory, for a given sample rate. If a rollover has occurred, this number will not change even though the logger may be logging.
- **Mem Left**: Shows the length (in days, hours, minutes or seconds) of data the logger can record without overwriting currently recorded data (record without a rollover). If a rollover has occurred, this number will show *0 Sec*, even though the logger may still be logging.

DVTH Graph Screen

The DVTH is capable of displaying the logged data graphically to show temperature and relative humidity trends. The DVTH Graph screen is shown below.



This screen shows the graph of the samples stored in logger memory. The temperature graph is shown with a solid line. The temperature axis is on the left. The humidity graph is shown with a dotted line. The humidity axis is on the right. The graph time stamps are shown on the left and on the right, above the axis.

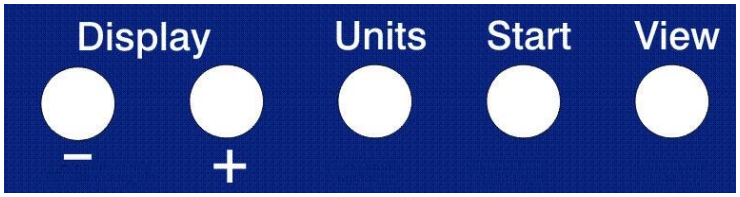
For instance, in the graph above, data collected between August 1st, 2006, 1:45 PM and August 2nd, 11:30 AM is shown. The graph temperature range is between 75°F and 83°F. The relative humidity range is between 30%RH and 54%RH.

When in the graph screen, you can use the **Display -** and **Display +** buttons to shift the graph left and right, respectively. Pressing and holding the **Start** button, while in the graph screen, returns the graph view to the last sample taken.

When the logger is logging, the graph display is automatically updated as new samples are logged.

DVTH Buttons

The DVTH has five buttons as shown below.



- **Units**: Use this button to change the displayed units between °F and °C.
- **View**: Use this button to change the displayed screen.
- **Start**: If the logger has been setup to start on button press, press and hold the **Start** button to begin

logging. In the Graph screen, pressing and holding this button returns the view to the last sample logged.

- **Display +**: Use this button to increase the screen contrast when in Sample and Summary screens. When in the Graph screen this button shifts the graph to the right.
- **Display -**: Use this button to decrease the screen contrast when in Sample and Summary screens. When in the Graph screen this button shifts the graph to the left.

Replacing the DVTH Battery

The DVTH uses three AA type alkaline or lithium batteries. Using rechargeable Ni-MH batteries is not recommended. The battery level of the DVTH is shown on the screen, or can be checked using the SUPCOLog software, by opening the *Logger Status* window. It is suggested that the battery is replaced when the battery level reaches 1 bar on the display, or in the yellow zone in the SUPCOLog software. When the battery indicator is empty, or reaches red in the SUPCOLog software, it is imperative that the battery is replaced as soon as possible. When the battery level is too low, the logger will stop logging automatically, resulting in data not being recorded. The SUPCOLog software will give you a warning if you try to start a logging session while the battery is low.

To conserve battery power, the DVTH will shutdown automatically, when not logging, after about one hour of operation. To turn the logger back On, just press any button. The logger can run while logging continuously for one year on a single set of three AA alkaline batteries.

To replace the batteries follow these steps:

1. Disconnect the logger from the USB cable. Do not replace the battery while the USB cable is connected!
2. Using a screwdriver, remove the 4 screws in the back of the logger.
3. Carefully remove the back case. Be very careful not to pull on the battery wires.
4. Remove the three used AA batteries.
5. Press and hold any logger button for about 2 seconds. This step removes any extraneous charge from the logger system. This step is very important. The logger may not operate correctly if this step is not performed.
6. Insert three new AA batteries into the battery holder. Make sure that the + indicator on the battery matches the + indicator on the battery case.
7. When the batteries is replaced correctly, the logger should start up automatically and show the Sample screen.
8. Replace the DVTH back cover and replace the 4 screws.

DVTH Specifications

Text Display	Displays real time temperature, humidity and dew point. Displays logging summary, sample rate, memory used and memory left.
Graph Display	Shows measurement trends graphically. Graph can be scrolled through the entire logged data.
Sample Point Capacity	43,344 points for temperature only. 21,672 points for temperature, humidity and dew point.
Alarms	Visual over and under alarm indicator for temperature and humidity. Dew point alarms are not available
Calibration	User single point offset calibration is available through software for both temperature and humidity. Calibration is password protected.
Operating Temperature	15°F to 150°F (-10°C to 65°C)
Storage Temperature	-5°F to 160°F (-20°C to 70°C)
Time Accuracy	+/-100ppm @75°F
Relative Humidity Range	0% to 99%RH, non condensing.
Relative Humidity Accuracy	+/- 2%RH, from 10% to 90% RH
Relative Humidity Resolution	0.01%RH
Temperature Accuracy	+/-1°F (0.5°C)
Temperature Resolution	0.01°F or 0.01°C
Dimensions	4'' x 3.05" x 1.5'' (10.2cm x 7.7cm x 3.8cm)
Weight	7.0 oz (200g)
Power Source	Three AA batteries (Included)
Battery Life	1 year continuous use, 2 years average use. The logger automatically turns itself Off after 1 hour, when not logging. Turn On by pressing any button.