

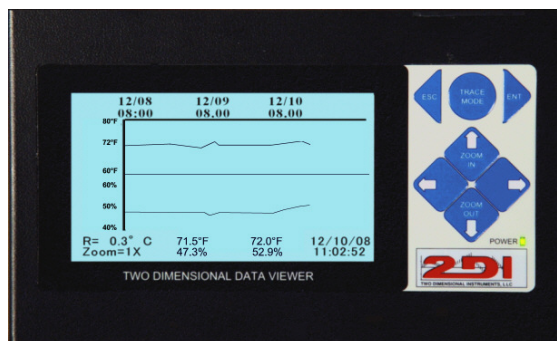
APPLICATION NOTE: 201

Wireless Electronic Hygrometer

A Hygrometer is an instrument used for measuring humidity and temperature. A recording hygrometer not only displays the temperature and humidity on a minute by minute basis, it also documents the conditions over time. Traditionally the records were made by marking a paper chart or long strip of paper with a pen. This has gradually given way to data loggers which record the data electronically. However a big drawback of data loggers is that the user has no way of knowing what was recorded until it is downloaded to a computer. The [instant information aspect of the chart recorder is lost with a data logger](#).

This electronic Hygrometer, the ThermaViewer, using one or two temperature/humidity sensors has all the advantages of the data logger and a chart recorder in one instrument. It not only shows the current temperature and humidity on its display, it also draws a chart so that the [conditions over time are charted](#). The user can view months or even years of temperature/RH history on the display without ever having to download the data to a computer. It can, of course, be downloaded to a computer and a chart printed out, but there is no requirement to do so.

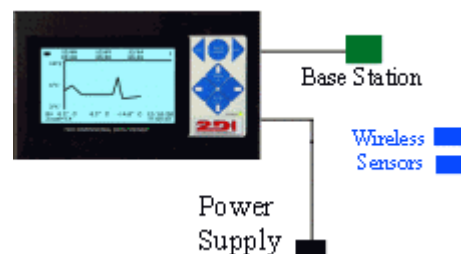
The ThermaViewer is an ideal instrument for monitoring and documenting the temperature and humidity of incubators, laboratories, warehouses, clean rooms, paint booths, computer rooms, museums, etc... It is equipped with **two temperature/RH sensors ($\pm 0.3^{\circ}\text{C}$ & $\pm 3\%$)**, to monitor and document temp/RH in two different rooms or areas. It is accurate and automatic, providing continuous monitoring and indicating trends so that corrective action can be taken. It requires no special skills to read and interpret the data and comes equipped with a dry-contact N/C relay to trigger an alarm or auto dialer if out-of-spec conditions occur.



Using a Wireless Hygrometer is simple, with minimum set-up required.

Installation of the Wireless hygrometer is a simple 6-step process:

1. **Plug in the Hygrometer with base station attached**
2. **Set the date and time.**
3. **Insure that the sensor is linked to the base station.**
4. **Position the sensor and insure that the signal is good.**
5. **Attach the auto dialer (if purchased).**
6. **Set the Alarm Settings (if used).**



What to Order:

- Hygrometer w base station & 2 sensors (WTDVDR-02 ($\pm .3^{\circ}\text{C}$) \$ 779.00
- Hygrometer w base staton & 1 sensor (WTDVDR-02-1 \$ 679.00

Optional Items:

- Auto-dialer with cable \$ 189.00



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Installation and setup

Mount the Wireless Hygrometer display and base station unit in the room or office area near the area to be monitored. Position each sensor (100foot line of sight and attach the auto dialer (if purchased) to the relay connection.

The following are suggested settings. You should use the settings required by your standards.

Suggested settings:

Sensor 1		Sensor 2	
Store Data every	10 minutes	Store Data every	10 minutes
Type of Averaging	Med	Type of Averaging	Med
Relay	Enabled ¹	Relay	Enabled ¹
Activate Relay for	0:10 (min:sec)	Activate Relay for	0:10 (min:sec)
If Temp > 80° for more than	00:30:00 HHMMSS	If Temp > 80° for more than	00:30:00 HHMMSS
If Temp < 60° for more than	00:30:00 HHMMSS	If Temp < 60° for more than	00:30:00 HHMMSS
Humidity > 65% for more than	00:20:00HHMMSS	Humidity > 65% for more than	00:20:00HHMMSS
Humidity < 40% for more than	00:30:00HHMMSS	Humidity < 40% for more than	00:30:00HHMMSS

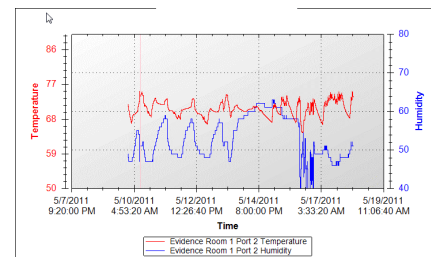
Averaging temperature: Setting the sensors to use the 'Med' averaging will cause the sensors to sample data every minute and store data every 10 minutes. If you need to store data more often, set the store data period accordingly. Each value will store 60,000 measurements; so if you are storing one every ten minutes minute, the Wireless Hygrometer will store about 9 months of temperature and humidity history.

The alarm: In addition to the temperature and humidity alarm the **power failure alarm** will also sound (if enabled) and close the relay if the unit is operating on battery power. The alarm will always sound an audible alarm and trigger the relay even if the unit is operating on battery power. The relay can be shipped as a N/O or a N/C relay. The relay is a dry contact relay but can be shipped as a powered relay (12 VDC) if requested.

Calibration: The Thermistor/humidity sensors can be calibrated and any corrections entered into a three-point calibration table. The calibration data is stored in the base station so if sensors are moved to a different base station is will be necessary to reenter any calibration offsets.

Downloading data:

The Wireless Hygrometer will hold and chart approximately **9 months of temperature/humidity history** for each sensor with the above settings. A regular schedule for downloading data from the ThermaViewer should be established so that a back up copy of the data is maintained in your computer. You can also print out a copy of the chart with the same program that downloads data to your computer (TView). Access to the unlicensed TView software is provided with the ThermaViewer. It can be installed on multiple computers to download the stored data.



¹ Enable the relay even if you do not have anything wired to the external relay. Enabling the relay also enables the audible and visual alarm.