

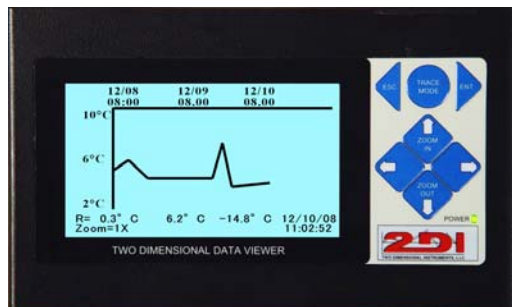


# APPLICATION NOTE: 81

## Monitoring room temperature

It can be critical that the room temperature be monitored and documented.

Government agencies and certifying agencies sometimes **require room temperature monitoring** if certain material are stored there. If delicate instruments are used in a laboratory it is important that the room temperature be monitored to insure that they remain in calibration. Room temperature might have to be maintained within a narrow temperature range for ISO 9000 certification.



The ThermaViewer is an ideal instrument for monitoring and documenting temperature. It is equipped with two temperature ( $\pm 1.0^{\circ}\text{C}$ ) sensors, to monitor and document temperature in two different rooms or two areas within the same room.

It is accurate and automatic, providing continuous monitoring and indicating trends so that corrective action can be taken. The temperature data is displayed as a chart on the large LCD display. It has a trace mode and a zoom function so

that individual measurements as well as trends can be examined. It requires no special skills to read and interpret and comes equipped with a relay to trigger an alarm or auto dialer if out-of-spec conditions occur.

Using a ThermaViewer is simple, **with minimum set-up** required. It needs no programming, maintenance, paper or pens to monitor and document temperature. Simply plug the ThermaViewer into a wall socket and begin collecting temperature history immediately.

Installation of the ThermaViewer is a **simple 6-step process**:

1. Position the two sensor modules in the areas to be monitored.
2. Route and plug in the two 20 foot cables (100 foot cables are available as an option).
3. Plug the power adaptor into a wall socket and into the ThermaViewer.
4. Attach the auto dialer (if purchased).
5. Set the time and monitoring frequency (see below for suggested settings).
6. Set the alarm in needed.

### What to Order:

- TDVD-01 (2-digital sensors  $\pm 1.0^{\circ}\text{C}$ ) \$ 579.00 (-20 to 75°C)  
or
- TDVD-02 (high accuracy sensors) \$ 679.00 (-20 to 75°C)

### Optional Items:

- Auto Dialer with cable \$ 189.00
- 100 foot cable \$ 50.00
- Calibration to NIST stds Call
- International switching power supply (100-240vac) \$ 30.00

Temperature probe #2





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## Installation and setup

Mount the ThermaViewer display unit in the room or office area near the area to be monitored. Position each probe in a separate space 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:

#### Room 1 Sensor

Sample Data once every 00:10:00 HH:MM:SS  
Type of Averaging Med

Maximum temperature line 85°F  
Minimum temperature line 60°F

#### Room 2 Sensor

Sample Data once every 00:10:00 HH:MM:SS  
Type of Averaging Med

Maximum temperature line 85°F  
Minimum temperature line 60°F

### Alarm Menu

Sensor 1 Temperature Relay: Enabled<sup>1</sup>  
Trigger Relay for 10:00 MM:SS  
If temperature is > 75°F for more than 00:20:00 HH:MM:SS  
If temperature is < 65°F for more than 00:15:00 HH:MM:SS

Sensor 2 Temperature Relay: Enabled<sup>1</sup>  
Trigger Relay for 10:00 MM:SS  
If temperature is > 75°F for more than 00:20:00 HH:MM:SS  
If temperature is < 65°F for more than 00:10:00 HH:MM:SS

Setting the probes to sample data every 10 minutes with medium averaging will cause the ThermaViewer to average the temperature over the 10-minute period. This causes the chart to more accurately reflect the temperature of the room. Momentary dips and rises of the air temperature, which can occur when a door is opened are not usually enough to affect the internal environment and can safely be averaged over the 10 minute period between readings.

There is a **three-point temperature characterization table** built into each ThermaViewer sensor that can be used to adjust the temperature if you are using the 02 model. The digital sensors of the 01 model cannot be adjusted but should remain in calibration for years. If the Thermistor sensor used in the 02-model drift, it can be brought back within calibration by making entries into the calibration table through the ThermaViewer menu system.

### Downloading data:

The ThermaViewer will hold over 1.5 years of temperature data for each probe with the settings listed above (10 minute store interval). If you want to hold more data you can lengthen the store data interval. An interval of 60 minutes will allow five years of data to be stored for each sensor.

A regular schedule for downloading data from the ThermaViewer can 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).

<sup>1</sup> Enable the relay only if you have an alarm or the optional auto-dialer wired to the relay.

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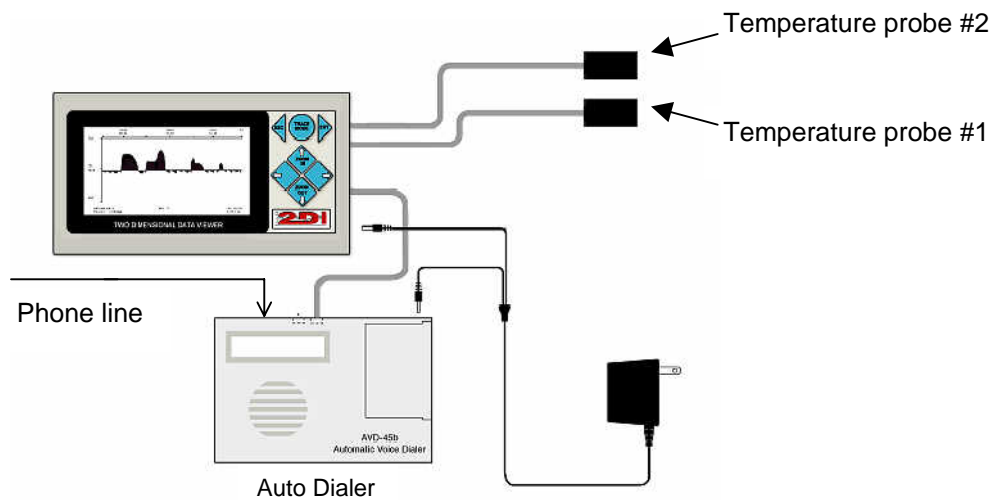


## Optional Auto-Dialer

The ThermaViewer comes equipped with a dry-contact relay that can be used to trigger an alarm or auto dialer. Each probe has its own high and low trigger point. The relay will be closed when temperature rises above 75°F for more than 20 minutes or falls below 65°F for more than 15 minutes, *if the suggested settings above are used*. Once the relay has been triggered, the alert clock is reset.

If you need faster response time you can decrease the time on the alarm menu. You could have the ThermaViewer trigger the alarm if the temperature rises or falls below your safe values for 5 seconds, or for more than 24 hours.

If an auto dialer is ordered with a ThermaViewer, a power supply with two leads is supplied to provide power for both the ThermaViewer and the auto-dialer. The auto dialer will call four phone numbers (i.e. phone, pager, answering machine or service) and leave a 16 second message when triggered by the ThermaViewer. It will keep calling the four numbers until someone picks up and the message is delivered.



The auto dialer should be set as follows:

- 60 second exit delay

- 9 minute entry delay

- N.O. (meaning that the relay is normally open).

- MOM (meaning that it only takes a momentary activation from the relay to trigger the dialer).

A relay test function on the System Parameter of the ThermaViewer causes the relay to be immediately triggered. Entering 'yes' in this field causes the ThermaViewer causes the auto dialer to immediately call the four phone numbers stored in its memory. Allow 90 seconds to elapse between the time you exit the programming mode of the auto dialer and you activate the relay.

**Technical support for Auto Dialer only (858) 413-0149**