Temperature Monitoring System with 4 Sensors

Salient Features:

- 4 Sensors (Temperature or Temperature & Humidity)
- The whole system works independently without any computer connection. A laptop can be connected through USB cable for downloading the data as and when required.
- Each sensors can be programmed separately for high and low level of alerts
- Data Storage upto 1.5 years
- Free Software for data download (Excel or Chart)
- Voice call, SMS & Email alert(optional)
- Audible alarm / Strobe / Beacon light (optional)
- Simple plug and play device. Can be installed and commissioned without our technical supervision.
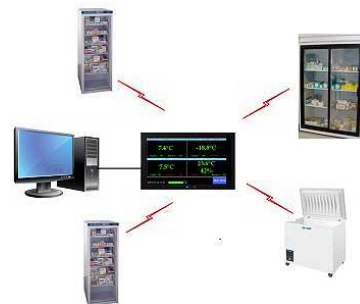- Temperature monitoring from -100°C to 1250°C
- No annual charges

Applications

The device is suitable for the following applications:

- Places where computer connectivity & LAN network is not always available
- When sensor wire has to be extended for long distances
- Recording & monitoring of temperature for freezers, refrigerator, ship hull, hazardous areas, chemical rooms, cold rooms, freezer rooms etc

The **TV2** stores **over 80,000 temperatures** for each sensors, which means that it will store over 1.5 year of temperature history if you are sampling temperature once every 10 minutes. If you are logging temperature and humidity it will store nine months of history for each of the four sensors. Although the **TV2** can store and display temperature from absolute zero to thousands of degrees, the actual temperatures collected depends on the type of sensors being used.
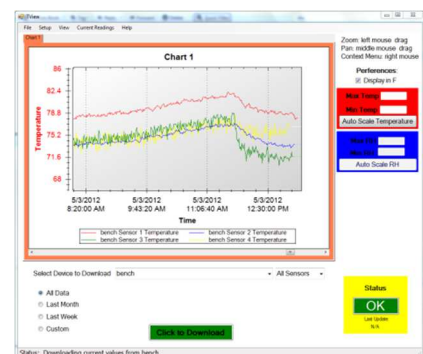
In addition to showing the current conditions the TV2 can display the temperature history. Touching one of the temperatures causes the temperature history to be shown in an easy-to-read chart format.   The chart can be scrolled backwards and forward. It can also be zoomed into or out of to show more or less data.

Downloads to a PC with our free TView software

The TView software is a powerful part of the Master Thermometer. It runs on your computer and can be configured to automatically copy the stored temperatures to your computer, in addition to downloading data on-demand. This ensures that you will always have a backup of your temperature history.

The data can be downloaded as an Excel Sheet or as a chart.

It can also be used to display current temperatures on your computer from multiple TV2s. So if you are using five monitors to keep tabs on twenty different refrigerators you could have a mini-chart displayed for each one of them on your computer.

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This mini chart would show the last 100 saved temperature readings along with the current temperature. And should an alarm occur, the temperature immediately turns red.

Our optional Email software will send an email or text message when an alarm occurs as long as the Master Thermometer is attached to a USB port on your computer. The USB power/interface cable can be plugged into any USB port on your computer. Once the connection between your computer and the TV2 has been established an automatic download can be started so that every few seconds the collected data stored in the TV2 will be copied onto your computer. This automatic backup can be accessed at any time to view the temperature history or print out charts for audits.

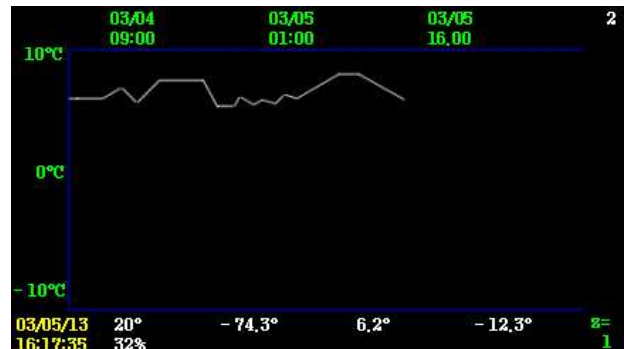Each Master Thermometer can monitor four different areas.

Since the Master Thermometer can track four different temperatures and humidity readings simultaneously you only need one display for all four sensors. This lowers the cost of monitoring multiple areas and means that you only have to look at one display to see what the current conditions are for all four areas.

The picture above is of one fourth of the current status display showing the current conditions for one of the four sensors and the maximum and minimum temperature recorded. The current battery charge for the sensor is also displayed.

In addition to the current status display you can also view the historical conditions for each area. The Master Thermometer has an 'Easy Touch' display for simple operation. To look at detailed information for one of the sensors you simply touch that temperature.

With one touch on the display a temperature chart immediately opens up so you can see what happened last night, last week, last month or even last year.

To see additional temperature history just touch the display again and scroll bars will appear on the chart.

The chart can be scrolled to the left or right to show earlier data. It can also be zoomed into or out of to show much more historical information. The chart is not only paperless it is never ending. Once all of the non-volatile memory is filled with data the newer data will roll over oldest data, so you will always have the last 80,000 measurements stored for each sensor.

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Technical Specifications:

Display

Channels	Temperature only - Four Channels Temperature/humidity - Eight Channels (4 temp & 4 RH) (In either case the screen will be divided into 4 sections and current readings will be shown continuousy)
Current Conditions Display	Shows: 1. Temperature of each sensor (4) 2. Low battery indicator 3. Max/Min temperature of each sensor 4. Date and time
Display Resolution	0.1° on LCD, 0.0001 on PC
Monitoring	Continuous with active display
Max/Min Display	Shows on active display. Resets with Easy Touch.
Sensor Accuracy	Sensor dependent. *(See sensor specs below)*
Size	8 3/8" x 5" x 1 3/8"
Sample Interval	User selectable: 1/min - 1/24hrs
Temperature Range:	Sensor dependent *(see below)*

Sensors

Thermistor sensor	-20°C to 75°C (±0.3°C), (±.2°C option) for glycol bottle
Thermistor/Humidity sensor	-20°C to 75°C (±0.3°C), RH 0% to 100% ±3.0% w 0.5% Repeatability
K Thermocouple sensors	-200°C to 1250°C. Accuracy ~±2.2°C
E Thermocouple sensors	-200°C to 900°C. Accuracy ~±1.7°C
J Thermocouple sensors	-0°C to 750°C. Accuracy ~±2.2°C
T Thermocouple sensors	-250°C to 350°C. Accuracy ~±1.0°C

Note: All thermistor and thermocouple sensors come with a 3-foot wire ending in a 2 inch stainless steel probe.

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Alarms	1. Out of temperature range (high and low) 2. Low battery 3. Low sensor battery 4. Power outage 5. Sensor out of range.
Alarm output	NO/NC contact is available which can be programmed to generate external alert devices such as strobe/beacon light/phone dialer etc.
Calibration:	Optional NIST traceable
Characterization:	One - three point calibration table
Data Storage Technique	Battery backed-up non-volatile memory
Non-volatile memory	80000 samples per channel
Power	Via USB cable or screw terminals 5-24vdc
Battery Backup	>40 hrs while in sleep mode. 3 AA batteries.
Output to PC	USB cable
PC Software	Site license included
Indicators	LCD & LED
Controls	Easy Touch display response to a finger touch
User Settings	On board password-protected menu
LCD Pixels	488 horizontal x 270 vertical
LCD Temperatures	Operating 0°C to 50°C, storage -20°C to 68°C
LCD size	2.5" x 4.5"
LED	Green indicates AC power present
Relay	Dry N/O with 2 terminal clamp<30v fused for .5 amp
Mounting	Wall mount - Velcro.
Display weight	1 lb
Shipping weight	4.5 lbs with power adaptor, sensors & cables
Optional accessories(to be specified at the time of ordering)	1. Sensors of extra length 2. Phone dialer with SMS which operates on SIM card 3. Strobe (Siren) with 100 dB sound level 4. Calibration certificate

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