



***IT Temperature Monitor
Device Manual***

Model F

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Regulatory Information

U.S.A. Requirements

FCC Radio Frequency Class A Notice for the IT Temperature Monitor

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the Federal Communications Commission (FCC) rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy. If it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case users will be required to take whatever measures may be necessary to correct the interference at their own expense. Do not attempt to repair or modify this equipment. All repairs must be performed by Sensatronics, or an authorized Sensatronics representative.

Contents

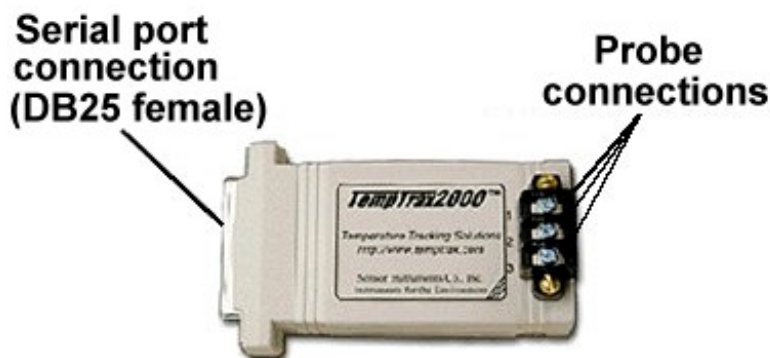
Regulatory Information	2
U.S.A. Requirements	2
1 – Description	4
Module	4
Probes	4
2 – Connecting the Device	5
Connecting to Serial Port	5
Connecting Probes	6
Locating the Probes	6
Shortening Cables	6
Lengthening Cables	6
3 – Software	7
TempAlert Software	7
Writing Your Own Software	8
Sample Code for Visual Basic V6.0	9
Sample Code for Perl	10
Software Plug-Ins	10
Plug-In FAQs	10
IP Sentry Configuration	11
Appendix A-Troubleshooting	12
Temperature Readings	12
Appendix A-Hardware Specs	13
Warranty	14
Index	16

1 – Description

Module

The IT Temperature Monitor Model F module is an RS-232 device capable of providing temperature sensor information to network management software for environmental monitoring.

The Model F module can support one or two temperature probes, and connects to a series port on a PC. A six-foot DB25 male to DB9 female cable is supplied with the unit.



Probes

Two types of probes are available:

- Standard
- Heavy-duty

The **standard** probe has a 50-foot, 24-gauge AWG cable, with the sensor housed in a small white nylon cap (0.325" diameter, 0.575" length) on one end. It is well suited for most indoor applications, where environmental conditions don't require a rugged probe. The standard probe should be fine for most applications.



The **heavy-duty** probe has a 75-foot PVC-jacketed and shielded cable, with the sensor housed in a stainless steel cylinder (0.375" diameter, 1.50" length). It is well suited to withstand the elements of outdoor environments.



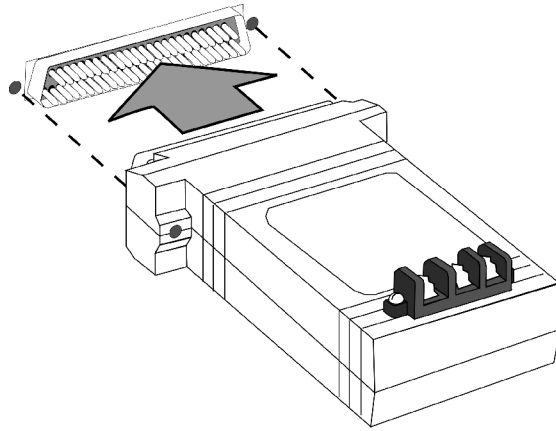
2 – Connecting the Device

Connecting to Serial Port

Identify the PC's serial port. This port has either 25 or 9 pins. Connect the Model F to the PC's serial port. If you only have 9-pin ports, use the supplied converter cable to convert the 9-pin port to a 25-pin connection.

WARNING: *Connecting the unit to the PC's parallel port may damage the unit and the parallel port!*

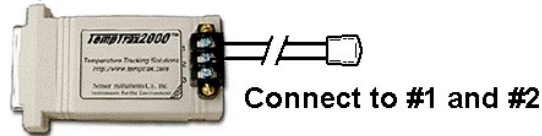
If you have trouble locating a serial port on your PC, see your PC owner's manual.



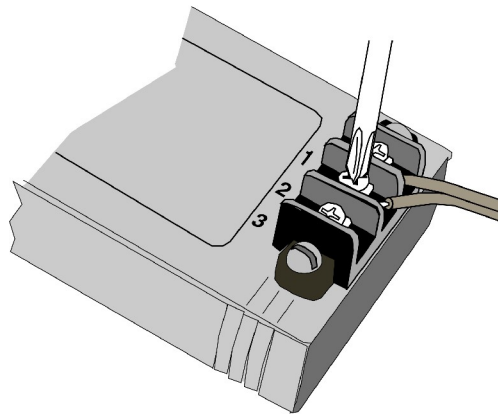
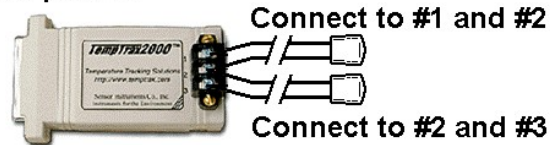
Connecting Probes

Using a small Phillips screwdriver, connect one or two probes to the unit, using terminals #1, #2, or #3, as shown:

One probe -



Two probes -



For a single probe, it doesn't matter which wire goes to #1 and which to #2.

For two probes, one wire from each probe connects to #2. You can use one standard probe and one heavy-duty probe, if desired.

Locating the Probes

Probes should not be placed in direct sunlight. Also, avoid the sun's reflection off metal buildings. Radiation shields are available to protect the probes from sunlight and other elements.

Shortening Cables

The supplied temperature cables can be shortened if desired. Shortening a cable will not significantly affect the accuracy of the probe.

Lengthening Cables

If you desire to lengthen the supplied cable, make sure splices are sealed and properly protected from the weather. Cables can be lengthened up to 2000 feet without significantly affecting the accuracy of the probe.

3 – Software

You can communicate with the module one of the following ways:

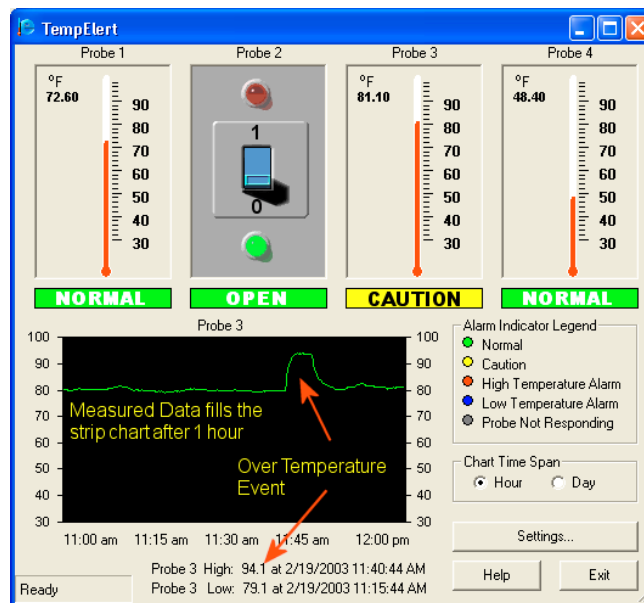
- Network management software (currently for users of IPSentry, Nagios, and Big Brother, and the Intellipool Network Monitor)
- TempEAlert software
- Write your own software

For more information, visit our website at:

www.sensatronics.com

TempEAlert Software

Sensatronics has partnered with ItWorks to offer the TempEAlert Alerting and Monitoring Program for the IT Temperature Monitor Model F. The TempEAlert Program notifies you through e-mail or a page whenever temperatures reach values that you set.



TempEAlert features:

- Data is displayed as visual thermometer indicators.
- Probes can be either thermometers or switches, enabling simultaneous monitoring of temperature and door/window switches, limit switches or burglar alarm relays.
- Probes and switches can be named to match locations.
- Both Normally Open (N.O.) switches and Normally Closed (N.C.) switches are supported.
- An at-a-glance visual annunciator shows alarm status on-screen.
- Alarms and Cautions upper and lower limits can be set.
- Built-in error checking and recovery, and daily data logging to disk (plain text) are included.
- Audible alarms can be turned on or off, and different alarm sounds are selectable.

- A customizable Alarm or Switch Status Box allows you to use your own image and wording in the alarm indicator box.
- Temperatures can be displayed in either Fahrenheit or Celsius degrees.
- A single unit can be monitored from multiple locations. Multiple iterations of the program can poll the IT Temperature Monitor Model E simultaneously.
- External windows programs (such as a PC power shutdown routine) can be run when alarms occur. Programs and batch file operations are supported.
- Remote and local operation, and dial-up Internet connections are supported.
- TempElert contains fully-configurable SMTP mail server settings, including authentication, if needed. It can monitor 1- or 2-probe serial RS232 IT Temperature Monitor Model F devices, or the 4-, 8-, or 16-probe Ethernet/Internet-ready IT Temperature Monitor Model E.

For more information on TempElert software, visit the TempElert website at www.tempealert.com.

Writing Your Own Software

It's easy to write software for the IT Temperature Monitor, and is especially useful for users who have straightforward needs for temperature readings without using proprietary software.

Programs can easily be written in Excel, Visual Basic, Perl, or other languages.

When the unit is configured as described in the previous chapter, open the comport and set DTR high. Send any character out the computer's serial port. This will activate the IT Temperature Monitor, which will take measurements and respond with a carriage return/linefeed-delimited ASCII string of data that will look something like the following:

```
76.8
34.5
Bat Ok
```

The first line returned is the temperature in °F of Probe #1. The second line is the temperature of Probe #2. (You can disregard the third line.)

Note: If a probe returns a temperature of "-99.9", the probe is not connected. If a probe returns a temperature of "255.0", there is a short in that line.

Only 4 serial port lines are used with the IT Temperature Monitor Model F: Transmit, Receive, DTR, and Ground.

Sample Code for Visual Basic V6.0

Name	GetData()
Purpose	Send a character out the computer's comport. This causes the IT Temperature Monitor to take a reading and send the results back to the computer. 'CommCtrlG is the standard MSComm control shipped with Visual Basic.

```
Private Function GetData() As String
Dim str As String
CommCtrlG.DTREnable = True      'DTR signal powers the IT
                                'Temperature Monitor circuit
Rest (0.5)                       'User defined function to provide
                                '1/2 second wait time for unit to
                                'power up
CommCtrlG.Output = " "          'Send a character out comport to get
                                'data... any character will work
Rest (1)                          'Wait a second before looking at
                                'return string
str = CommCtrlG.Input            'str should now contain the
                                'temperature data
If (Not Len(str) > 10) Then
    GetData = ""
Else
    GetData = str
End If
CommCtrlG.DTREnable = False
End Function
```


- **How do I get the plug-in I need?**

Our website (www.sensatronics.com) always contains information on how and where to obtain the latest software plug-ins. Please note that IPSentry uses the term, “add-in components” for plug-ins. They are the same thing.

- **How do I install the plug-in?**

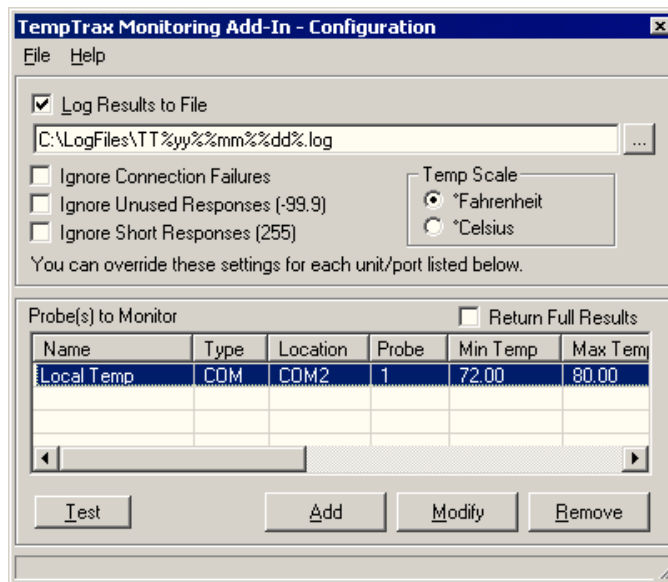
Plug-ins are installed or copied into specific folders. For IPSentry, use the Add-in manager to install the plug-in. For Nagios and Big Brother, refer to the readme file that comes with the plug-in.

- **Where can I get more help?**

Contact Sensatronics for help with using plug-ins. Visit our website at www.sensatronics.com or send e-mail to support@sensatronics.com.

IP Sentry Configuration

Before using the IT Temperature Monitor with IPSentry, use the IPSentry Add-in Manager to install the Temperature Monitor plug-in, then the Temperature Monitor configuration screen:



For details on configuring the IPSentry Temperature Monitor plug-in, visit their website at <http://www.ipsentry.com>.

Appendix A-Troubleshooting

Temperature Readings

Question: I get a temperature of “-99.9”. What’s wrong?

Answer: This temperature reading indicates that the probe for that position is not connected. One possible cause is if the line had been cut between the probe and the unit. Check the line, and make sure you have a good connection to the unit.

Question: I get a temperature of 255.0. What’s wrong?

Answer: This temperature reading indicates that there is a short in the line. Check the line for damage.

Appendix A-Hardware Specs

Number of Ports: 2

Accuracy: 0.5°F from -20°F (-29°C) to +120°F (49°C)
1.5 °F from -40°F (-40°C) to +140°F (60°C)

Resolution: 0.1°

Units: Fahrenheit, Celsius

Interface: RS-232

Protocols: ASCII, CR/LF delimited

Power Source: PC's DTR signal (pin 20)

Current Drain: 12µA in power down, 2mA when awake

Dimensions: 3.5" x 2.125" (89mm x 54mm)

Weight: 2.5 ounce (71g)

Mounting: none

Cable Length: 50 feet for the standard probe, or 75 feet for the heavy-duty probe. Longer lengths available on request. You can use a maximum of 2000 feet for each probe.

Operating Systems: Any operating system as long as the PC that the IT Temperature Monitor is connected to contains a valid RS232 serial port.

Warranty

GENERAL WARRANTY POLICY

Sensatronics LLC. (hereinafter referred to as SENSATRONICS) warrants that the Product shall conform to and perform in accordance with published technical specifications and the accompanying written materials, and shall be free of defects in materials and workmanship, for the period of time herein indicated, such warranty period commencing upon receipt of the Product. This Limited Warranty applies only to hardware products manufactured by or for Sensatronics that can be identified by the Sensatronics trademark, trade name, or logo affixed to them. The Limited Warranty does not apply to any non-Sensatronics hardware products or any software, even if packaged or sold with Sensatronics hardware.

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Limited warranty service may be obtained by delivering the Product to SENSATRONICS in the US or to the international distributor it was purchased through and providing proof of purchase or receipt date. Customer agrees to insure the Product or assume the risk of loss or damage in transit, to prepay shipping charges to SENSATRONICS, and to use the original shipping Container or equivalent.

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HARDWARE PRODUCT WARRANTY DETAILS

WARRANTY PERIOD: SENSATRONICS warranties hardware Product for a period of one (1) year.

WARRANTY PROCEDURE: Upon return of the hardware Product SENSATRONICS will, at its option, repair or replace Product at no additional charge, freight prepaid, except as set forth below. Repair parts and replacement Product will be furnished on an exchange basis and will be either reconditioned or new. All replaced Product and parts become the property of SENSATRONICS. If SENSATRONICS determines that the Product is not under warranty, it will, at the Customers option, repair the Product using current SENSATRONICS standard rates for parts and labor, and return the Product using Ground Transportation at no charge in or out of warranty.

- Accuracy, 13
- Big Brother, 10
- Cables, 6
- Connecting, 5
- Description, 4
- Dimensions, 13
- Hardware, 13
- Mounting, 4, 13
- Operating Systems, 13
- Plug-ins, 10
- Power, 13
- Probes, 4, 6
- Protocols, 13
- Resolution, 13
- Sensatronics, 2
- Serial port, 5
- Specifications, 13
- TempElert, 7
- Temperature readings, 8, 12
- Troubleshooting, 12
- Versions, 4
- Warranty, 14
- Weight, 13