



TemperatureString Sensors

Introduction

Temperature sensors are important where optimum temperature control is paramount. If there is an air conditioning malfunction or abnormal weather conditions, damage to information, delicate electronic equipment or warehouse stock may occur.

The temperatureString is a multipoint temperature measurement solution specially designed for efficient rack temperature monitoring.

The temperatureString consists of a string of temperature sensors which can be plugged into one intelligent sensor port of a ServSensor V4P. Each temperatureString comes standard with 5 feet sensor cables between each sensor and a 5 feet cable to connect the first sensor to the ServSensor V4P unit. The cables between the sensors and the cable going to the ServSensor V4P can be extended flexibly using additional CAT5e cable as long as the cable length of the total string does not exceed 500 ft.

As with all our intelligent sensors its presence will be automatically detected by the unit. Each sensor has its own SNMP OID so that data can be collected over the network and graphed.

A commonly used SNMP OID for each temperature sensor is the number of degrees. This information can be used for graphing each of the sensors in the string.

The SNMP OID for the temperature sensor degrees is:
.1.3.6.1.4.1.3854.1.2.2.1.19.33.<port>.2.1.3.<subport>

where

<port> is port the unit starting at 0 to 7

<subport> port of temperature sensor on the string

Specifications & Features:

- Measurement range Celsius: -55°C to +75°C
- Measurement resolution Celsius: 1°C increments.
- Measurement accuracy Celsius: ±0.5°C accuracy from -10°C to +75°C
- Measurement range Fahrenheit: -67°F to +167°F
- Measurement resolution Fahrenheit: 1°F increments.
- Measurement accuracy Fahrenheit: ±0.9°F accuracy from +14°F to +167°F
- Communications cable: RJ-45 jack to temperatureString sensor using UTP Cat5 cables.

- Sensor type: semiconductor microprocessor controlled in each
- Power source: powered by the ServSensor V4P. No additional power needed.
- The ServSensor V4P auto detects the presence of the temperature string sensor
- Measurement rate: one reading every 10 seconds
- Up to 8 temperatureStrings per ServSensor V4P for a total of 32 sensors
- Full Autosense including disconnect alarm
- The ServSensor V4P temperature detail page allows you to set and get the working parameters of a specific temperature sensor.

Configuring the Temperature Sensors.

- a) Plug the temperatureString into one of the RJ45 ports on the rear panel of the unit.
- b) Now point your browser to the IP address of the unit (default, 192.168.0.100). Next you need to login as the administrator using your administrator password (default is "public"). You will then be taken to the summary page.
- c) From the summary page you need to select the sensors tab. The layout of the next page will vary depending on your unit so please refer to your units manual.
- d) You should now be able to setup the thresholds for each of the sensors on your temperatureString. The low critical, low warnings, normal, high warnings, high critical values can be set from this page.

Now we will cover the settings that are specific to each sensor on your temperature string. The following applies to all of the sensors in the string.

Current Reading: The number of Degrees is displayed in this read-only field. This is an integer SNMP OID field which has a precision of 1 degree. The value can be polled via SNMP, and the data can be used to graph the temperature variations. The value displayed can be in Fahrenheit or Celsius. If communication to the temperature sensor is lost, the sensor value -512 will be returned by a *snmpget*.



Hint: The actual precision for each of the temperature sensors is 0.9°F (0.5°C). Nevertheless, the Current Reading field only displays the temperature with an increment/decrement of 1 degree. To retrieve the actual reading from the temperature sensor, another SNMP OID must be used; it is:

.1.3.6.1.4.1.3854.1.2.2.1.19.33.<port>.2.1.14.<subport>

where

<port> is port the unit starting at 0 to 7

<subport> port of temperature sensor on the string

However, since this is an integer SNMP OID, the temperature must be multiplied by 10 before polled via SNMP. Therefore, the returned value has to be divided by 10 to become the actual temperature.

Status: If at any time communications with a temperature string sensor is lost, the status of the temperature sensor will change to **sensorError**. If communications with the temperature sensor is re-established the status will be formed by comparing the Degree to the high and low thresholds.

Degree Type: The Degree Type can be set to Fahrenheit or Celsius. When the Degree Type is changed all the threshold fields will change their values automatically. The ServSensor V4P stores the thresholds for both Celsius and Fahrenheit independently allowing you to switch between the two.

Reading Offset: The Reading Offset parameter can be used to calibrate temperature and humidity sensors. If for example the actual reading of a sensor is 28 degrees Celsius and the Reading Offset is set to 2 the temperature will be displayed as 30 degrees Celsius.

Screen shots of the temperature string configuration

Please see the annotated screenshots below describing the fields for the temperatureString sensors setup

In this example, the Summary tab shows all the sensors including the status of each on the string including the reading in temperature and the status.

The screenshot displays a web-based configuration interface for temperature string sensors. At the top, there are navigation tabs: Summary, Map, Picture Log / Sound Log, Sensors, Notification, Settings, Applications, and Help. The 'Summary' tab is active, showing a table of sensors with columns for Sensor Name, Reading, and Status. A red callout box points to this table with the text: "The summary screen will show each sensor here".

Sensor Name	Reading	Status
Sensor #1	81 °F	Warning
Sensor #2	79 °F	Normal
Sensor #3	81 °F	Warning
Sensor #4	81 °F	Warning

Below the sensor table is a 'System Log' section showing 10 messages. A red callout box points to this section with the text: "Each of the sensors reading and status will be shown here".

ID	Timestamp	Message
1	2009.02.03 19:36:08	Temperature Port 6.2 is now OFFLINE
2	2009.02.03 19:36:02	Temperature Port 6.1 is now OFFLINE
3	2009.02.03 19:35:47	Temperature Port 6.3 is now OFFLINE
4	2009.02.03 19:35:19	Temperature Port 6.4 is now OFFLINE
5	2009.02.03 19:34:58	Sensor #2 is 79 F, status is NORMAL
6	2009.02.03 19:34:58	Sensor #4 is 81 F, status is HIGH WARNING
7	2009.02.03 19:34:58	Sensor #3 is 81 F, status is HIGH WARNING
8	2009.02.03 19:34:58	Sensor #1 is 81 F, status is HIGH WARNING
9	2009.02.03 19:34:55	Sensor #7 is now ONLINE
10	2009.02.03 19:34:55	Sensor #6 is now ONLINE

The interface also includes a 'Display Options' sidebar with filters for sensors, a 'System Log' section with a message count, and an 'Advanced Filter' section with checkboxes for various log types and a refresh interval of 10 seconds.

The Sensors tab is the area where we can edit each individual sensors setting. By clicking on each sensors tab the system allows us to change each sensors settings on the string.

The screenshot displays the 'Sensors' tab in a web-based management interface. At the top, there are navigation tabs: Summary, Map, Picture Log / Sound Log, Sensors (selected), Notification, Settings, Applications, and Help. The 'Sensors Menu' on the left includes 'Sensor Ports', 'Sound Detector', and 'Virtual Sensors'. The main area shows eight sensor ports, each with an 'Auto Sense' button, a status indicator (red or green dot), and an 'Online' indicator. Port 5 is highlighted with a red box and a blue box around its 'Temperature' icon. Below this, the 'Temperature 1' configuration page is shown, featuring a device ID (10-3C-5E-6A-01-08-00-0A), sensor name (Sensor #1), a temperature scale with warning levels (Low Critical, Low Warning, High Warning, High Critical), a current reading of 81 °F, and a status of 'Warning'. The interface also includes buttons for 'Advanced Mode >>', 'Save', 'Reset', and 'Set Thermostat Online'. Three red callout boxes with arrows point to specific elements: 'The system shows the sensorString is plugged into port #5 of the unit' points to port 5; 'Each sensors tab on the string is located here' points to the 'Temperature 1' tab; and 'All of the sensor details including the ID, the name and warning levels are located here' points to the sensor configuration details.

.Advanced settings of each sensor in the string can be setup by clicking on the “Advanced Mode” button