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daisyTemp sensor

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 daisyTemp sensor is a multipoint temperature measurement solution specially designed for efficient rack temperature monitoring.

Up to 8 daisyTemp sensors can be strung together and plugged into one securityProbe Intelligent Sensor port enabling the unit to measure up to a maximum of 64 temperature points.

The sensor cables can be extended using Ethernet cable with a maximum daisy-chain length of 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 1 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 daisyTemp sensor using UTP Cat5 cables.
- Sensor type: semiconductor microprocessor controlled.
- Power source: powered by the securityProbe. No additional power needed.
- SecurityProbe auto detects the presence of the daisyTemp.
- Measurement rate: one reading every 10 seconds
- Up to 8 daisyTemp sensors per sensor port, measure up to 64 temperature points on one securityProbe.
- The securityProbe temperature detail page allows you to set and get the working parameters of a specific temperature sensor.

Configuring the Temperature Sensors.

a) Plug the daisy-chain of daisyTemp sensors into one of the RJ45 sensor 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.

d) You should now be able to setup the thresholds for each of the sensors on you're the daisy-chain. 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 daisy-chain.

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 daisy-chain temperature 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 securityProbe 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 daisy-chain configuration

Please see the annotated screenshots below describing the fields for the daisyTemp sensor setup

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

The screenshot displays a web-based configuration interface for temperature 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 box with an arrow points to the table, stating 'The summary screen will show each sensor here'. Below the table is a 'System Log' section with a table of messages. A red box with an arrow points to this section, stating 'Each of the sensors reading and status will be shown here'. On the left side, there is a 'Display Options' panel with various filters and settings, including 'Sensors Filter', 'Syslog Filter Option', and 'Advanced Filter'. The interface also shows 'Current System Time: 3:2:09 19:45:14' and 'Location: System Location'.

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

Message ID	Time	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 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 setting on the daisy chain.

The screenshot displays a web interface for managing sensors. At the top, there are navigation tabs: Summary, Map, Picture Log / Sound Log, Sensors (selected), Notification, Settings, Applications, and Help. Below these is a 'Sensor Settings' section with a grid of 8 sensors. Each sensor has an 'Auto Sense' button, a 'Status' indicator (red dot), an 'Online' indicator (green dot), and a port icon labeled 'N/C'. The 5th sensor is highlighted with a red box and labeled 'Temperature'. Below the grid, there are tabs for 'Temperature 1', 'Temperature 2', 'Temperature 3', and 'Temperature 4'. The 'Temperature 1' tab is active, showing the following details:

- Device ID: 10-3C-5E-6A-01-00-00-0A
- Sensor Name: Sensor #1
- Current Reading: 81 °F
- Status: Warning
- Sensor Currently: Online
- Temperature Search: Search
- Advanced Mode >>
- Save, Reset, Set Thermostat Online buttons

Annotations in red boxes provide additional context:

- 'The system shows the daisyTemp is plugged into port #5 of the unit' points to the sensor icon in the top row.
- 'Each sensors tab on the string is located here' points to the 'Temperature' tab below the sensor icon.
- 'All of the sensor details including the ID, the name and warning levels are located here' points to the configuration details on the right side of the page.

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