

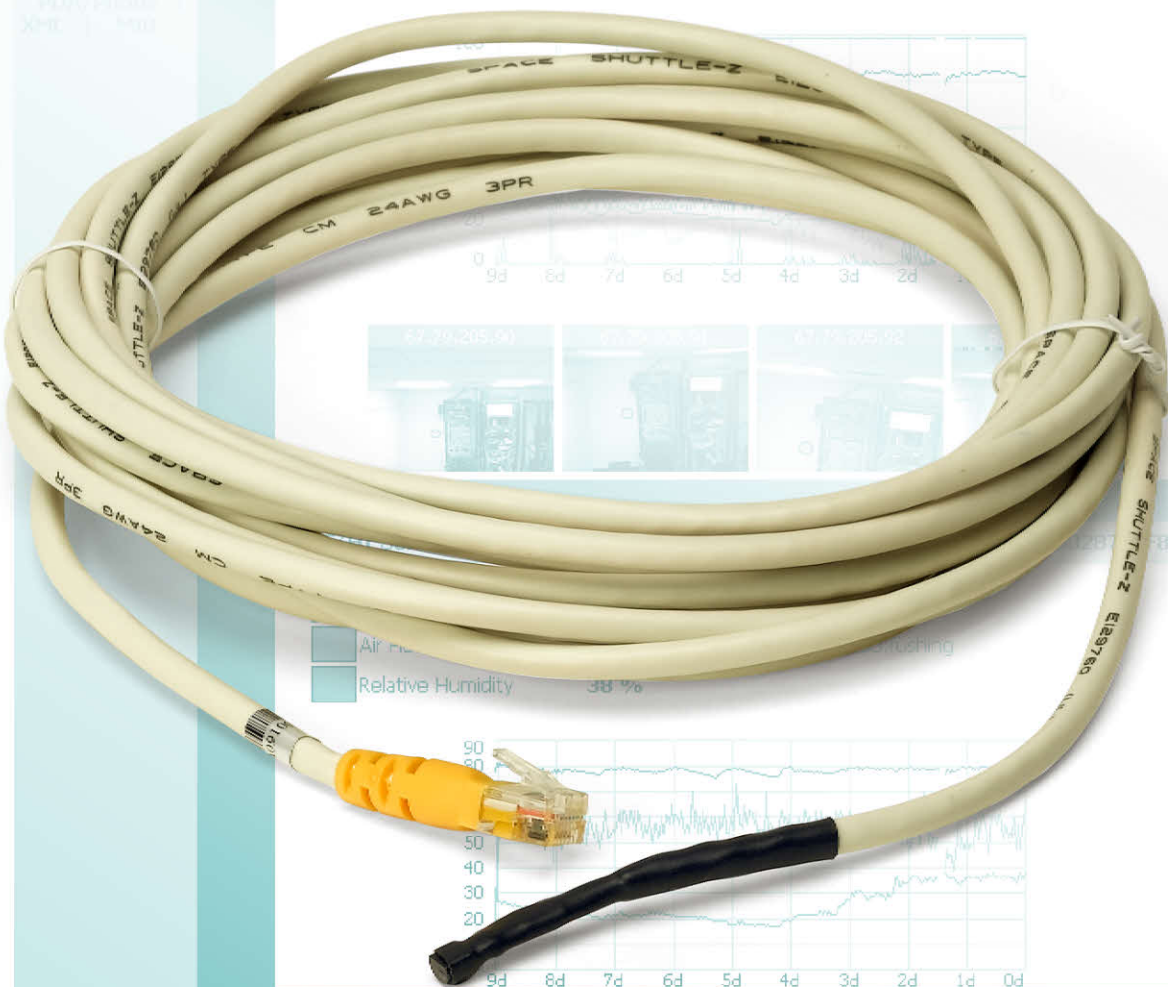
RT-series



ITWatchDogs

Remote Temperature Sensor

Temperature (F)	82.36 °F	
Relative Humidity	33 %	
Light Level	0	0:dark - 100:bright
Air Flow	0	0:still - 100:rushing
Sound Level	8	0:quiet - 99:loud
IO-1	99	0:0v - 99:5v
IO-2	99	0:0v - 99:5v
IO-3	99	0:0v - 99:5v



Unit Location: Somewhere
Admin: [redacted] or Call 000.123.5678
Support: [redacted] or Call 512.257.1462
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installation & user guide

RT-series *Temperature Sensor*



While every model of the *WeatherGoose* monitoring system includes (at least) a built-in temperature sensor, it is often desirable to be able to monitor temperatures at multiple locations from a single central display, especially if you have a medium-to-large data center or server room with multiple cabinets located at various distances from a central air-conditioning system. The RT-series Remote Temperature Sensor allows you to monitor up to sixteen remote locations at once from a single WeatherGoose. (The MiniGoose/XP-II, with its built-in 16 sensor ports, can accommodate all sixteen RT sensors directly; other models will require the use of one or more external bus-splitters to expand the number of ports.) Note that 16 is the maximum number of sensors which can be used on any one WeatherGoose, and the use of bus-splitters does not expand this maximum number; bus-splitters only expand the number of physical connection points.

The RT sensor is available with cable lengths of 12 ft. (3.65m), 20 ft. (6.1m), 50 ft (15.24m), and 100 ft. (30.48m) as standard options. Custom cable lengths can also be requested for specific applications. Keep in mind when ordering multiple sensors, or sensors with custom lengths, that WeatherGoose system has a maximum limit of 600 ft. of total cable length on the Digital Sensor Bus; i.e. you can have six 100 ft. sensors, or twelve 50 ft. sensors, or ten 20 ft. sensors plus four 100 ft. sensors, or any other combination as long as (A) the number of sensors does not exceed sixteen, and (B) the cable lengths do not add up to more than 600 ft. total. (Note that other Digital Sensor Bus devices, such as CCATs and Humidity/Dewpoint sensors, must also be added into these totals if present.)

The RT temperature sensor is pre-calibrated from the sensor chip's manufacturer, and is specified to have an accuracy of $\pm 0.5^{\circ}\text{C}$ ($\pm 0.9^{\circ}\text{F}$) across its operating temperature range of -10°C to $+85^{\circ}\text{C}$ (18°F ~ 185°F). (The device itself is capable of functioning across temperatures from -55°C to $+125^{\circ}\text{C}$ (-67°F to $+257^{\circ}\text{F}$), but the sensor chip's manufacturer does not guarantee $\pm 0.5^{\circ}\text{C}$ accuracy across that full range, nor is the WeatherGoose designed to function at those temperature extremes.)



Connecting the RT sensor to a WeatherGoose unit:



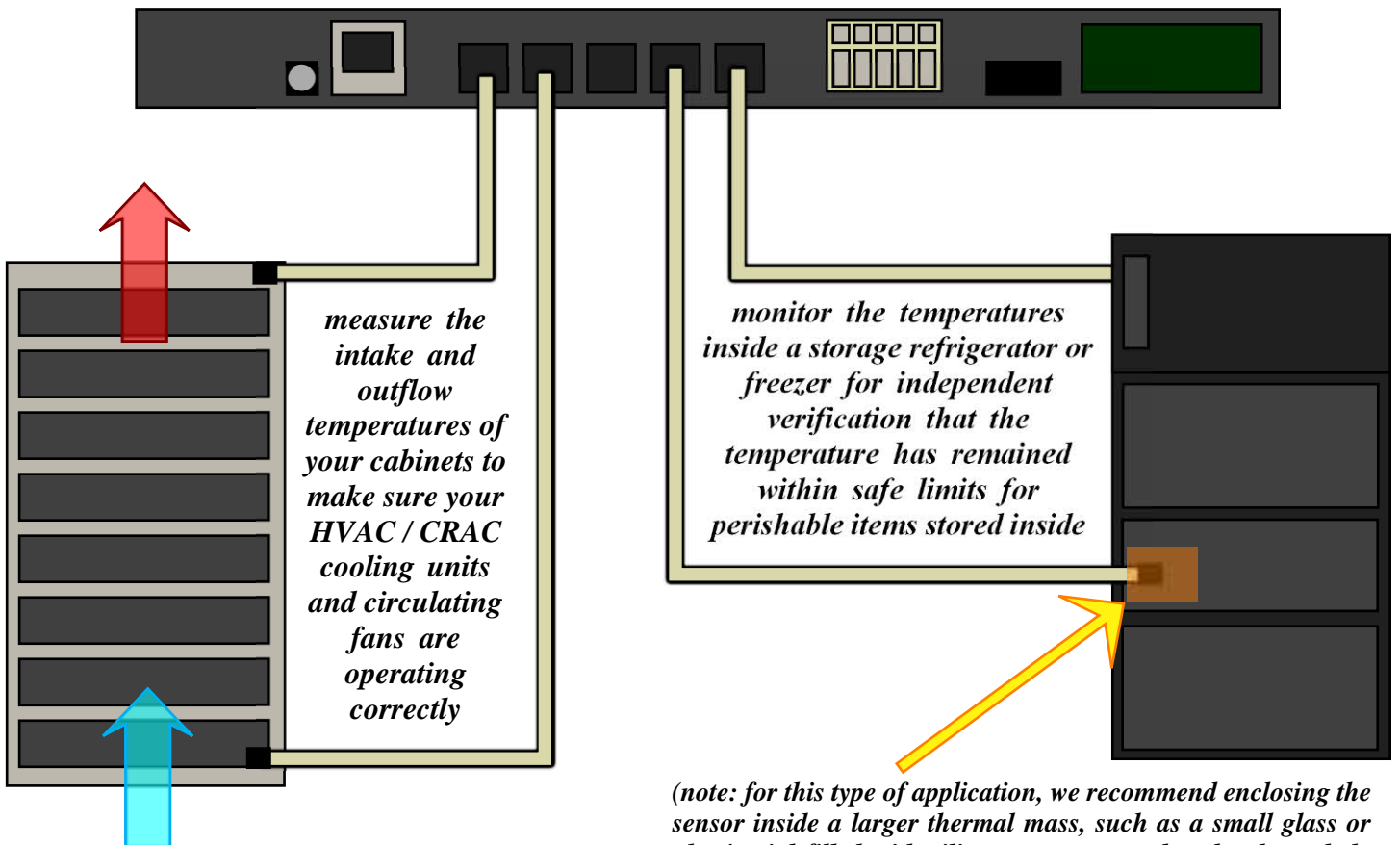
Connecting an RT-series Remote Temperature Sensor is fairly simple. Each RT is equipped with a 6p6c modular plug (also sometimes referred to as an “RJ-11” plug, since it’s the same style of plug used in US-style telephone systems) which fits into one of the corresponding Digital Sensor Bus sockets on a WeatherGoose climate monitoring unit. A WeatherGoose will have anywhere from one to sixteen of these sockets, depending on the model in question; in addition, a passive bus-splitter may be used to expand the number of available ports, up to the system’s maximum of 16 Digital Sensor Bus devices.

The diagrams below provide a general illustration of how to connect an RT sensor to a WeatherGoose monitoring unit, along with a couple of typical applications for temperature monitoring:

temperature sensor chip is placed at the location where temperature needs to be measured



modular plug at the end of the RT data cable fits into one of the corresponding jacks on the WeatherGoose monitoring unit

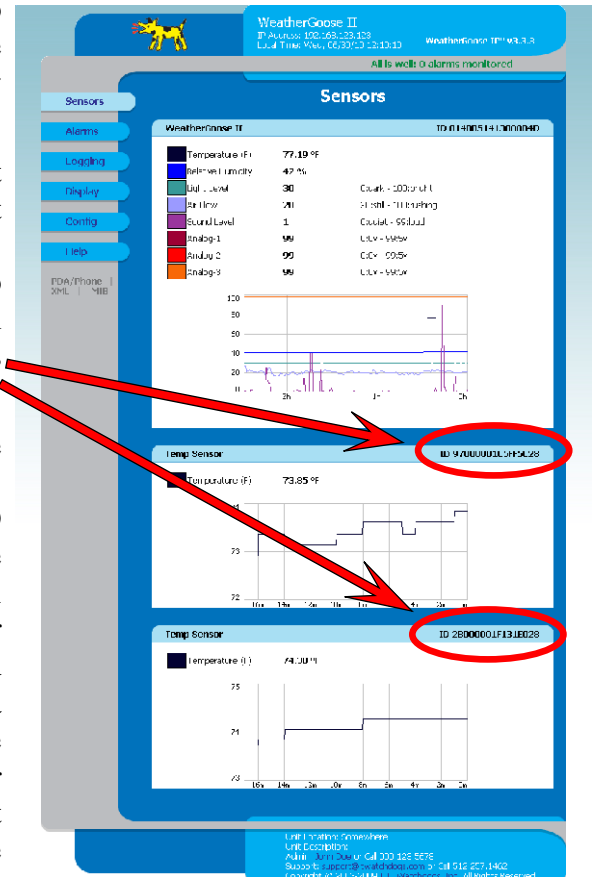


(note: for this type of application, we recommend enclosing the sensor inside a larger thermal mass, such as a small glass or plastic vial filled with silicone, epoxy, or glass beads, to help reduce false alarms due to momentary temperature shifts caused by air currents when the door is opened to access the contents.)

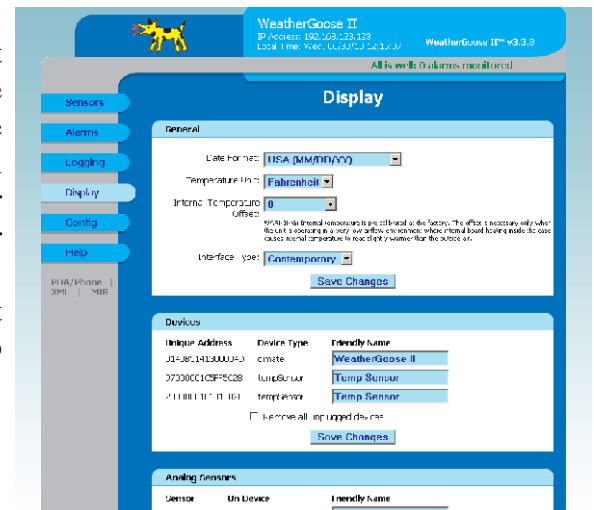
As you connect each RT-series Remote Temperature Sensor to the WeatherGoose, it will appear in the unit's web interface where you can examine the current readings, look at the graphed history (if any), and set alarm thresholds.

In the example shown here, we see a WeatherGoose-II unit with two RT sensors connected. Notice that when they are first connected to the unit, both of them are named "Temp Sensor", which is the default name for an RT sensor. The only way to distinguish them is by their device ID numbers, which are shown in the right-hand side of the title bar for each sensor block, as highlighted here.

For this reason, when connecting multiple RT sensors for the first time, we recommend that you only connect one RT at a time, wait for it to appear in the *Sensors* page, then make a note of its ID number and, if desired, change its name to a more meaningful one via the "friendly names" settings on the *Display* tab. (We will touch on this briefly in a moment; or you may refer to the user manual for your particular WeatherGoose model for more detailed instructions.) You may also wish to use a fine-point marker or a stick-on label to mark the device ID and friendly name on the cable, to assist you in identifying each device during or after installation. Then, after you have identified and marked the first RT device, connect the next one in turn, and repeat this procedure until all RTs have been connected and properly identified.



Here, we see the *Display* page with the two RTs connected. Notice that there are three entries under "Devices"; the first one, at the top of the list with a device type of "climate", is the WeatherGoose-II itself; the other two, with device type "tempSensor", are the RT sensors we just connected. Here, you can give each of the RTs a more useful or meaningful name; for example, you might indicate the sensor's location within your facility, or the position of an equipment rack being monitored. Then, when you examine the readings on the *Sensors* page or set alarms to trigger off the RT sensor readings, you will be able to easily identify which temperature sensor you are looking at.



Setting Alarms:

If you are using a series-II WeatherGoose model, each RT sensor connected to the system will have its own section on the *Alarms* page, similar to the one shown here, just as they each have their own block on the *Sensors* page as shown previously.

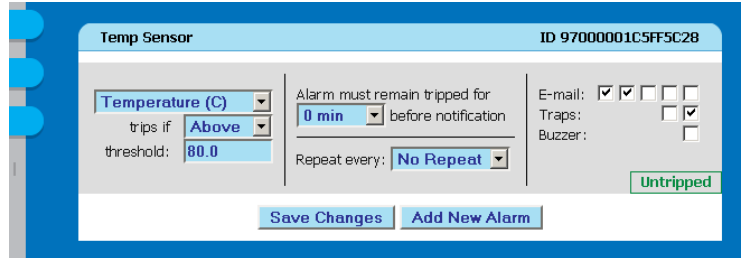
When first connected, these blocks will be empty save for a single button, Add New Alarms. Clicking

this button will add a new alarm event to that sensor's block; here, you can set the alarm threshold level in either degrees Fahrenheit or degrees Celsius, specify whether the alarm is to trip when the monitored temperature goes above or below the desired threshold, and which action(s) are to occur when the threshold is exceeded. Note that you can set alarms in either °C or °F regardless of the temperature-scale display option chosen on the *Display* page; the WeatherGoose-II will convert the threshold values internally as necessary.

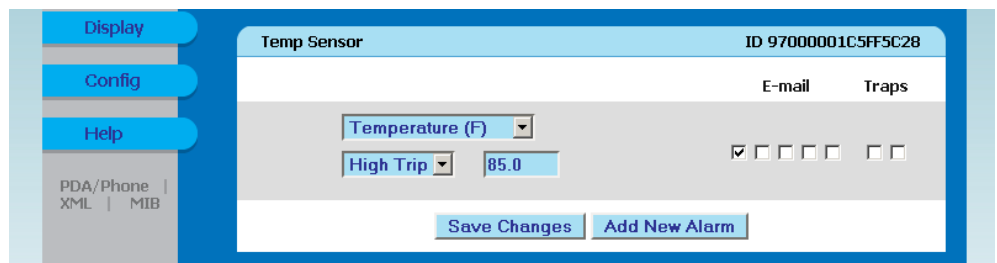
All WeatherGoose-II models offer both e-mail and SNMP-trap alarm actions, with the ability to selectively determine which e-mail recipients and/or SNMP managers should receive alert messages for any given alarm; some models also offer an audible siren, and/or one or more low-voltage dry-contact relays, which can also be selectively enabled to activate when the alarm occurs.

You can also set a delay period, so that the temperature must be above or below the threshold for a set period of time before the alarm will trip, and a "repeat" interval so that the chosen trip action(s) will occur repeatedly for as long as the temperature remains outside the set thresholds, if desired. Once you've configured all of the alarm options to your liking, click Save Changes to save and enable the alarm threshold.

The WeatherGoose-II allows you to add as many alarm thresholds to each sensor as you wish, up to the system's maximum of 200 alarms, which allows you to set up a series of escalating alarm conditions depending on how far the sensor's readings exceed the "normal" setpoint(s). For specific information on how to set alarm thresholds, and which additional action(s) beyond e-mail and SNMP are available on your particular WeatherGoose-II model, consult the *Setup Guide & User Manual* for the model in question. (Please note: IT Watchdogs can make no specific recommendations concerning what temperature threshold(s) are appropriate for your specific installation.)



If you are using a Series-II unit with a firmware revision prior to v3.4.x, your alarm-settings block will look like this. Alarm-threshold settings are calculated and programmed the same way as above; the only difference (aside from the lack of



trigger-delay and alarm-repeat intervals, which were introduced in v3.4) is that the alarm types are named **High Trip** and **Low Trip** instead of **Above** and **Below**, respectively. **High Trip** alarms are tripped when the reading goes higher than the set threshold, while **Low Trip** alarms are tripped when the reading goes below the threshold.

If you are using a Series-I WeatherGoose:

The alarm-settings block for each external RT sensor will look like this. The actual behavior of each sensor will be essentially the same as described in the previous

Temperature Sensor				ID 97000001C5FF5C28
Sensor	Current	Low Trip	High Trip	Alarm State
Temperature	73.40°F	-20	85	Disabled

section, but the alarms are set somewhat differently. Also, Series-I units do not offer as wide a range of alarm-setting options as the newer Series-II units do. In particular:

- ÿ Each RT sensor can have only a single High-Trip and Low-Trip threshold; it is not possible to add multiple thresholds to set up escalating alarm events.
- ÿ In addition, both the High- and Low-Trip thresholds are always active, and must be set to some value. The only way to “disable” an unwanted alarm threshold is to set it to a value that is well beyond the expected operating range. (In the case of an RT temperature sensor, a Low Trip of -999 or a High Trip of 999 will prevent the unwanted threshold from ever triggering, since those temperatures are well outside the possible range of the sensor.)
- ÿ Thresholds can only be set in the same temperature scale (°C or °F) set on the *Display* page. **CAUTION: If you subsequently change the display setting, you will need to reset your thresholds as well, as the series-I WeatherGoose will not automatically convert between scales for you!**
- ÿ Series-I units do not support selectively determining which e-mail recipients receive alerts for which alarm events; all e-mail recipients specified in the e-mail configuration page will automatically receive all alarm-trip and clear messages from all sensor devices. Also, Series-I units do not provide for traps to be sent to more than one SNMP manager, and there is no Series-I equivalent to the “RelayGoose-II” model which offers dry-contact control-relay outputs that can be energized when an alarm occurs.