## Working with the Insteon Thermostat
http://www.smarthome.com/insteon-2441th-thermostat.html

The HCA User Guide covers using Thermostats and how to view and change the heat and cool setpoints and how to view and test on the current temperature and humidity.

This tech tip relates to creating programs that respond when changes to the mode, setpoints, temperature, and humidity occur.

In the Add Wizard on step 3 choose "Insteon" as the manufacturer and then press the Next button. In step 4 press the dialog button to put the PowerLinc into linking mode <u>before</u> pressing the set button on the device to complete the link.
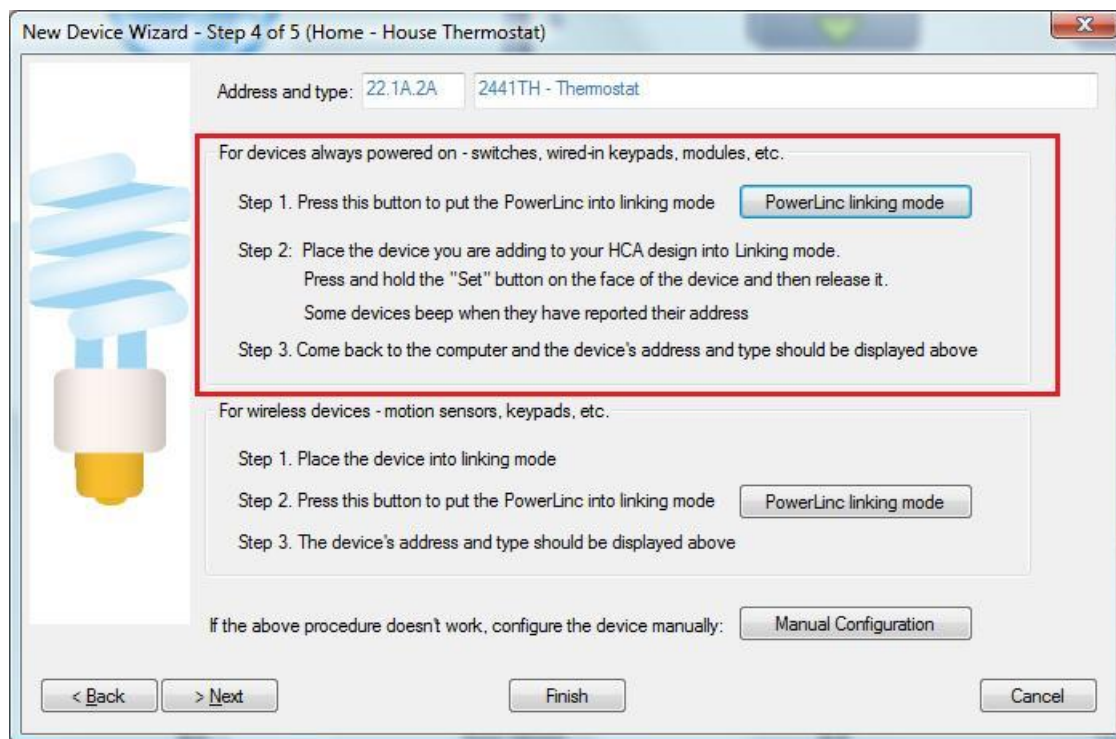
After the thermostat is added to your design choose the linking tab and link it to HCA. Several commands are sent to the thermostat to configure to report status as it changes.

The way this reporting mechanism works is that the thermostat sends two pieces of data when changes happen. The first piece tells you what changed and the second piece tells you the value it changed to. These are encoded as:

Code	Meaning
110	Ambient temperature changed
111	Humidity changed
112	Mode / Fan status changed
113	Cool setpoint changed
114	Heat setpoint changed
115	External temperature changed

For code 110 the second piece of data is the temperature and is reported as twice the actual value. Divide by two to get the actual value.

For code 111 then second piece of data is the humidity as a value from 0 to 100.

For code 112 the second piece of data is encoded as:

Code	Meaning
0	Off mode
1	Heat mode
2	Cool mode

3	Auto mode
4	Program mode
16	Off mode and fan on
17	Heat mode and fan on
18	Cool mode and fan on
19	Auto mode and fan on
20	Program mode and fan on

For code 113 the second piece of data is the cool set point.

For code 114 the second piece of data is the heat set point

For code 115 the second piece of data is the external sensor temperature

To create a program to handle these status messages create the program as usual. Then on the "Advanced" tab make sure to configure the program for parameters.
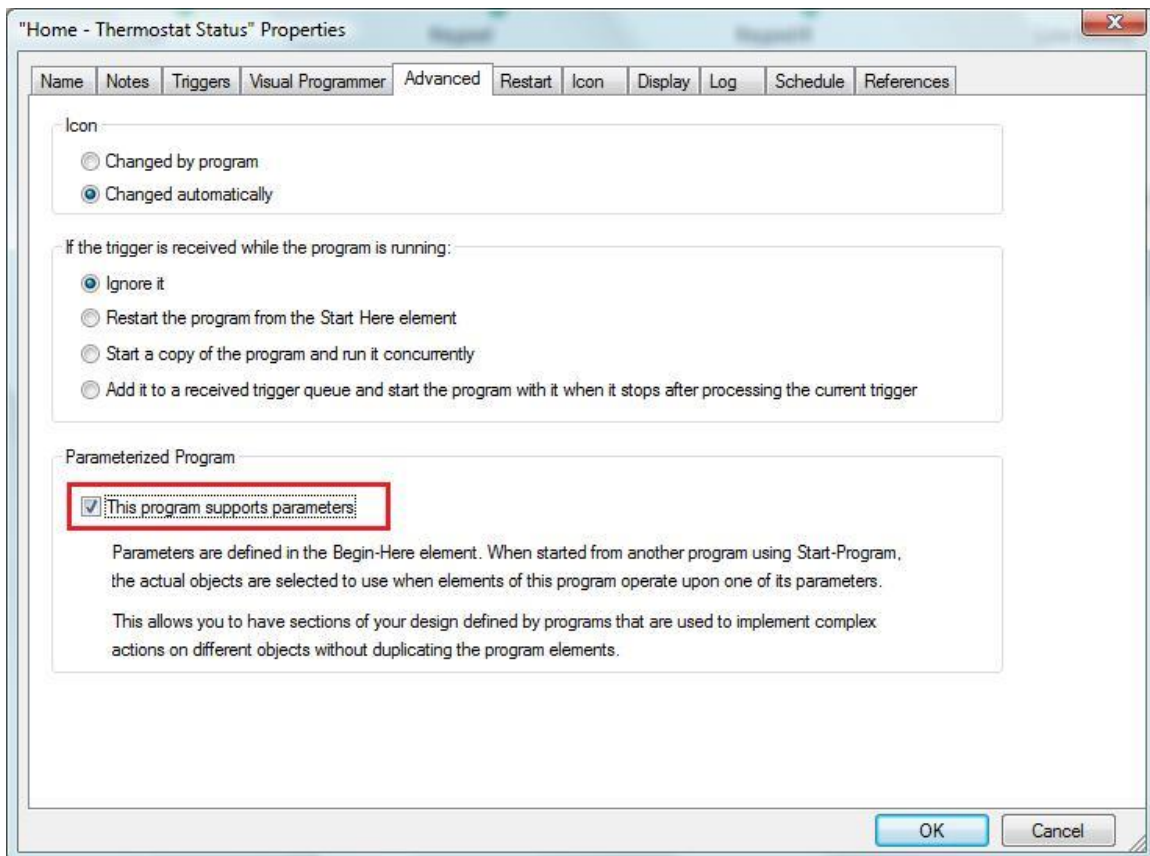
If you ate not familiar with parameterized programs it may be a good idea to review this topic in the HCA User Guide Programs chapter.

Create a trigger for the thermostat status reporting.

Unlike other triggers there is no need to specify a command. The program triggers on any of the thermostat changes. The program itself must to test to see if the status reported is one that the program wants to process.

When the program is triggered the first piece of data is assigned to the first parameter and the second piece of data to the second piece of data. In this example program the parameter names are cmd1 and cmd2.
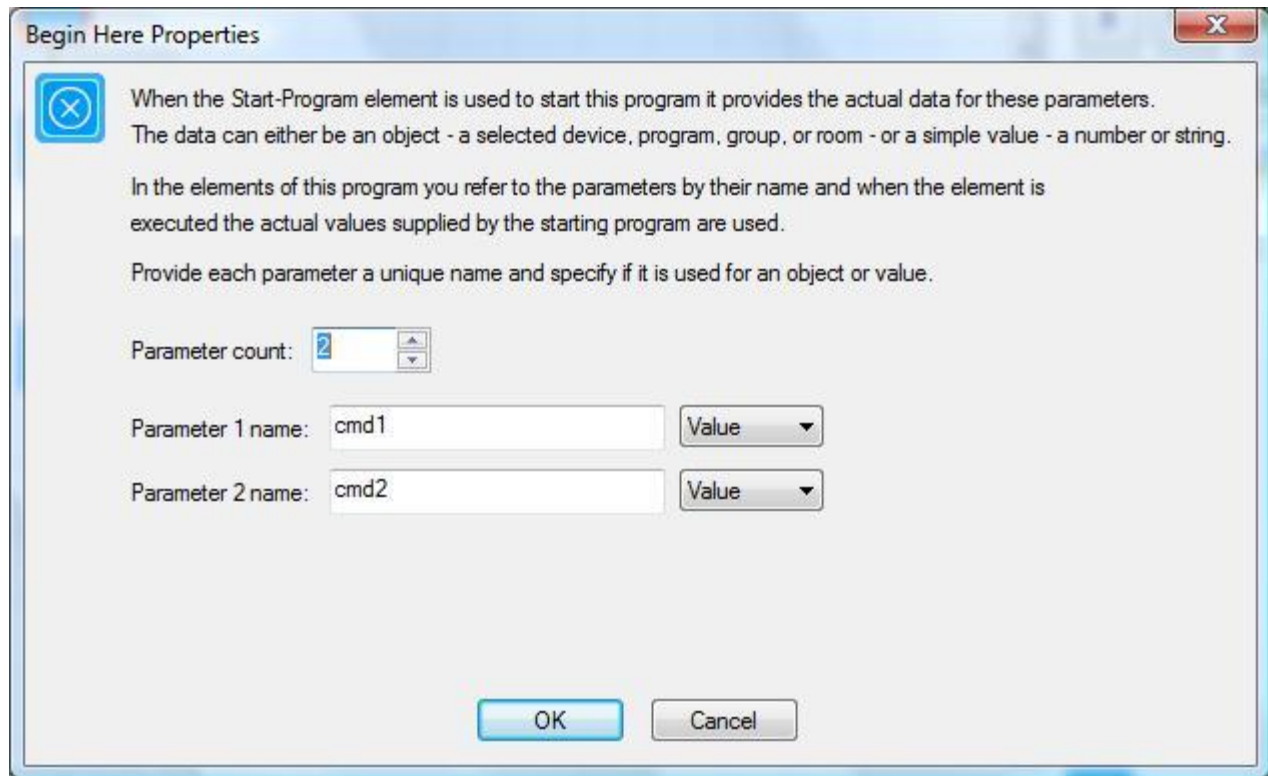
Within the program you can then test the values of the parameters using the Compute-Test element. For example this tests to see if the thermostat is reporting that it is in cool mode.