

Sensing Thermostat Operating State

When a thermostat does not reliably report state changes to the home automation system via an integration or via a direct radio interface, it is possible use additional hardware to physically sense the low voltage signals that would typically be provided to an air handler or zone controller and communicate those signals to the home automation system. Once Hubitat has the thermostat signals, a companion App called Indirect Thermostat Filler can be used to update a virtual device which the Zoning App can utilize in lieu of a thermostat. However, since this virtual device does not report the setpoint and current temperature, some functionality will not be available. Specifically, staging control and dump zone options that rely on the difference between a zone's current temperature and its setpoint will be disabled.

One option for hardware to sense the low voltage signals is to build a circuit using an Arduino circuit and connect your circuit to Hubitat using a package called Hubduino. There is a thread on Hubitat Community discussing how to accomplish this at <https://community.hubitat.com/t/12-zone-valves-need-monitoring-but-how/39490/15>. (Special thanks to Dan Ogorchock (ogiewon) for technical assistance getting this working). If you are already familiar with Hubduino, this should be a pretty straight forward exercise. Otherwise, you will need to do some learning.

Another alternative is to use Zooz relays to sense the thermostat signals, as shown in Figure 7. Be sure to configure each of the switch types to be Toggle Switch.

If you use the Arduino circuit, you get three contact sensor devices in Hubitat. If you use the circuit of Figure 7, you get three switch devices in Hubitat. An accessory App called Indirect Thermostat reads these devices and populates a virtual device that implements the Thermostat capability. That virtual device can be used within the App as a thermostat. The virtual device uses a device handler called HVAC_Status.groovy.

Example #3B – Single Zone with Subzones

This example is like the previous one except that the thermostat does not have an integration that provides reliable and prompt communication of operating state to Hubitat. Therefore, a Zooz ZEN16 and three ZAC93 relays are utilized to detect the operating state and send it to Hubitat as illustrated in Fig. 7. The three relays of the ZEN16 are then used to forward these signals to the air handler. Configuration parameters of the ZEN16 must be set to indicate to the ZEN16 that it should forward these values. Although Hubitat is used to set the configuration parameters, the ZEN16 does the forwarding without any communication from Hubitat.

