

Application Note

Monitoring Temperature with the IC-88

Q: Our small manufacturing business uses oil heat. Last winter during the Christmas shutdown week, we ran out of oil during a hard freeze. Several pipes froze and burst. Can we use an IC-88 to monitor the temperature and send an email if the temperature drops too low?

A: While the IC-88 doesn't have any analog inputs, it can easily monitor the temperature by using a low-cost mechanical thermostat. Mechanical thermostats require no power to operate and they provide "dry contact" switching when the set-point temperature has been reached. Since you are only concerned with low temperature, a heat-only thermostat may be used. They can be purchased from the big home / builder supply chain stores for under \$30 (many are less than \$20). Simply wire the thermostat's contacts between an IC-88 input and ground. Be sure to set the input's PULL-UP mini-jumper to ENABLE. Refer to the "call for heat" wiring example in **Figure 1**. When the temperature falls below the set-point, the thermostat's contacts should close, which will ground the input and cause it to read low. When you program the IC-88 input descriptions, enter "Temperature is" in the input Name field and "below 40°!" in the Low Message field. Enter "is normal" in the High Message field.

Q: What about monitoring for a high temperature?

A: To monitor for a high temperature, you can still get by with a heat-only thermostat. Example: You want to be notified if the temperature gets above 90°F. Set the thermostat to 90°. Since it is a heat-only thermostat, the contacts will open at 90°, so the input will read high. In this case, your High Message would be "is over 90°" or something similar.

Q: How about monitoring for both high and low temperatures?

A: That can be done, but it will require two available IC-88 inputs. Instead of a heat-only thermostat, you will need a mechanical thermostat for heat / cool with an auto-changeover setting. Connect the "call for heat" contacts to one input and the "call for cool" contacts to a different input. Make sure the thermostat is set to "Auto". Program your input Name and High / Low Message fields as before.

Note that both the low and high temperature limits should read as low, so program your Low Message fields accordingly.

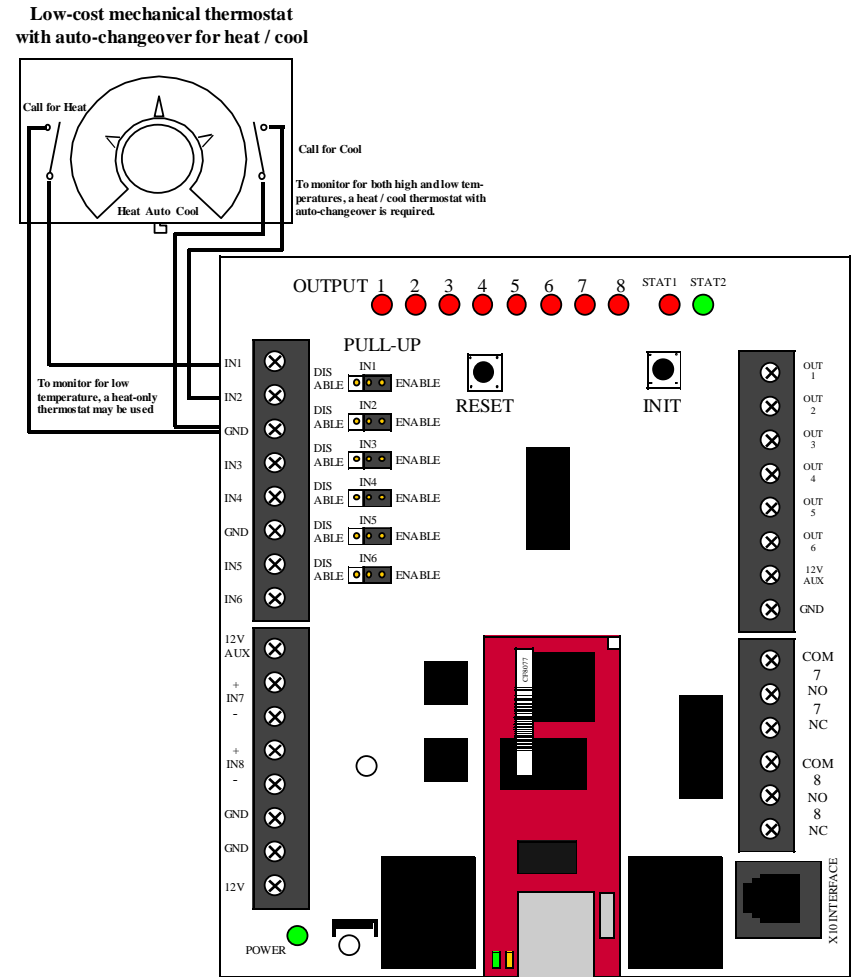


Figure 1: Connecting a low-cost mechanical thermostat to IC-88 inputs

Be sure to Enable User 1 and / or User 2 Email Notices if you want to receive email notification. To test your wiring, raise the heat setting higher than the current room temperature. You should receive a "low temp" email notice. Next, set the AC setting lower than the current room temperature. You should receive a "high temp" email notice. Once you confirm your wiring and messages are correct, set your high and low set-points to their final settings.