

Installation Questions

How do I determine what type of heat I have?

There may be several ways to determine what type of heat you have. First, if you can access the unit that is responsible for creating the heat, you may find some indication of the type of heat you have on somewhere on the unit. If you are the owner of your home, check the paperwork on your home you received at the time of purchase, as often there will be a description of the type of heating you have in the home. There are other things you can consider, such as the following.

A furnace draws air from the house into a ductwork system, taking it to an area where it is warmed before being delivered back to living spaces. Newer furnaces use blowers to recirculate the warmed air. A furnace may be fueled with gas, electricity, oil, or even coal or wood. Gas and oil furnaces light a burner that warms a heat exchange unit, which in turn warms the air before it is circulated back through the house. These furnaces have a flue where exhaust gases vent to the outside. An electric furnace uses heating strips, or elements, to warm the air. A wood or coal furnace has a sealed firebox where the fuel is burned and a heat exchanger where air is warmed before delivery.

A heat pump on the other hand works by shuffling heat from one place to another. They also serve as air conditioners during warm weather, so a heat pump is an air conditioner that works in reverse to make heat. Ask yourself whether or not the unit that you think of as an air conditioner (usually located outside) runs when you are calling for heat. If so, you have a heat pump. Heat pumps also have air handlers (usually located inside the home), which are responsible for circulating the air through the home. Heat pumps extract warmth from outdoor air, from ground or surface water, or from the earth. The air is warmed more by the system if necessary and then circulated through the house. You'll find metal vents and filters similar to those used for forced air furnaces. The outdoor unit usually states 'heat pump' on its label.

Baseboard heaters are often visible as long, metal units with electrical elements inside. Each unit has its own control and is often high voltage.

Radiant systems warm objects in much the same way as the sun does. No blowers are used. Electric radiant elements are installed in floors or ceilings.

Hydronic heating is another type of radiant heat where hot water flows through tubes under the floor or through units that resemble baseboard heaters. A hydronic system might be installed in ceilings. Hydronic heating systems include a boiler that warms circulating water.

How do I wire the thermostat?

To wire the thermostat you need to determine what wires you have. To find out what wires you have you should turn off the power to your heating and cooling system. Then remove the thermostat from the wall and note where the wires are attached. The wires will be attached to terminal with letters by them. For example the red wire attached to R or perhaps a blue wire attached to Y, etc. Do not assume

that the color of the wire will match the letter on the thermostat. Once you determine which wires you have please referred to the wiring diagrams for the model Rite Temp you have. There is no color code; even if some of the wire colors seem to match the letters, do not use the wire color, use just match the letters to connect the wires.

How should the wires be prepared for installation in the wire terminal block on the 6020 thru 6080 thermostats?

To wire the thermostat strip the wires back about 1/8 of an inch. Insert the wire in the correct terminal making sure you go through both holes and then snug the screw down tight enough to get a good contact but not too tight that you break the wire or the screw. Then pull on the wire to make sure it is connected.

I have 5 wires and 4 of them connect to the old thermostat. Where do I connect the other wire to?

Only re-connect the wires that were connected to the old thermostat. Do not connect any other wires as you do not know where or if they are connected to the heating and or cooling system. Do not connect the extra wire to the C or any other terminal.

Where should I connect the C wire?

If you have a "C" wire, connect it to the "C" terminal. Do not connect anything else to the "C" terminal.

What do I do with the W2 and/or E and/or X2 wires?

W2 or X2 wires are used on two-stage gas or oil or electric heating systems or a heat pump with auxiliary heat. If there is an E wire tape it off as it is not necessary. Rite Temp has several units that are compatible with multistage heating and heat pump systems. See compatibility Matrix for compatible models. All or just some of these wires may be used with the new thermostat. Please refer to the installation manual or contact support at 877-505-2353 or email support@ritetemp-thermostats.com

Where does the red wire go?

If the red wire was connected to the R terminal on the old thermostat, then connect to the RH terminal on the new thermostat. If a different colored wire was connected to the R terminal on the old unit then label it and connect to the new thermostat in the same way. Always refer to the letter to which the wire was connected on the old thermostat before removing the wire. This will be the label for your wire. There is no color code, just a letter code.

My old thermostat has two wires, but the installation instructions for my Rite Temp thermostat show only a three wire installation.

On a two wire low voltage, heat only systems connect to the RH and the W terminals. The “C” (common) wire is optional, and is not needed to run the thermostat. If you have the “C” wire, connect it to the “C” terminal, and it will extend the thermostat’s battery life substantially.

What do I do with the extra wires in the wall that are not connected?

Leave them disconnected but tape the wires off so they do not touch each other or any other wire. If you do not have a “C” wire, the next time your furnace is serviced, ask the technician to connect one of the extra wires to the “C” (common) connection at the furnace and the “C” terminal in the thermostat to extend the life of your batteries.

Do I need to match the wire colors to the letters on my Rite Temp thermostat?

No, sometimes the colors match the letters but not always. Be sure to label the wires according to the letters they connected to on the old thermostat first and wire according to terminals the wires were attached to.

What do I do with the W2 or E or X1 or X2 or X or L or T wire?

In most cases these wires are not used and should be individually taped off. But sometimes they are used for example W2 is 2nd stage of heat in a conventional heating system and should be connected to W2. In a heat pump system W2, E, X1 or X2 are used to turn on auxiliary/emergency heat and one of them should be attached to the W2 terminal. Which one you connect depends on the system. The X wire sometimes corresponds to the C wire which is 24AC common power. The L wire is a system monitor and used to light a light on the thermostat – not used on the Rite Temp thermostat. The T wire is an external temperature sensor and is not used with the Rite Temp thermostat. So they can be taped off and put in the wall.

I am not sure if I have a C wire. How do I determine if I do?

There are two ways to determine if you have a “C” or common wire. 1) If there is a wire hooked up to the “C” terminal on the old thermostat, hook it up to the new thermostat on the C terminal. 2) If you have a spare wire in the wall you can go to the connector panel at the furnace/air handler end and check for a “C”, 24VC, or common connector and connect the extra wire to there and then to the “C” on the Rite Temp thermostat. (Sometimes the C wire is also labeled different for example it may be an X wire depending on the manufacture of the system/thermostat.) If your system is a Trane or American Standard, connect their B wire to the new thermostat’s C terminal.)

Can my thermostat be used on batteries as well as 24VAC from the heater?

Yes, Rite Temp thermostats will operate on batteries and 24 volts AC. The 24 volts AC common will be connected to the “C” connector. The batteries will last significantly longer using both the 24 Volts AC

from the system along with the batteries. An added advantage to using batteries along with having a "C" wire is that the batteries will keep the programming if you should lose house power.

C Wire Installation

The C wire stands for COMMOM and originates from the common side of the 24 VAC transformer. The R/RH wire coming up to the thermostat is one side of the 24VAC transformer. The other side of the transformer goes to the HEAT relay, the COMPRESSOR relay, and the FAN relay, hence the expression "common" wire.

Generally, this connection is indicated with "C", "comm." Or "24VAC" wherever the rest of the thermostat wires connect at the furnace. Sometimes it is directly available at the transformer on older systems. All 24VAC systems by definition have the common side of the transformer. Finding and connecting to it takes a qualified HVAC repairman as there are lethal (115AC) voltages in the furnace. We cannot recommend you doing the connection yourself. That is why we say "if there is a C wire, connect it". The C wire is not necessary for most mechanical thermostats so seldom brought up.

Once the C connection is located, if you have an extra wire in the cable going to the thermostat, you could use it for the C wire. If not, a new wire would have to be put in.

2nd Transformer:

If the 24VAC common wire (C) is not available at the thermostat, any external 24VAC plug-in adapter can be connected to run the thermostat.

The Radio Shack part number 273-1690 for around \$15.99 can be used with its switch in the 24V position. Another 24 volt transformer you can use is a Rain Bird replacement power adaptor UT1 Home Depot part number #26C06505. Cut off the connector and strip the wires as shown in the picture. Then connect the wires to RH and C. There is no polarity; either wire can go to either terminal (RH or C).

Transformer rating is 24 volts AC at 300 to 500 mili-amps

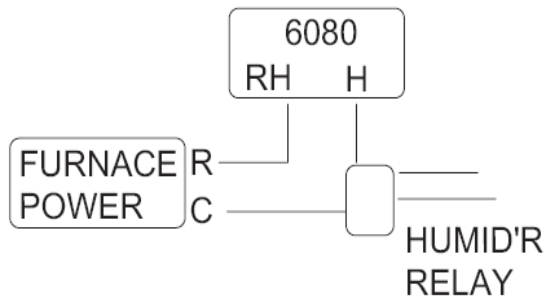
I have 2 wires coming from my humidistat. How do I wire them to the 6080?

There is no polarity so you will just put one wire on H and the other on RH with your other RH wire. When you need to put two wires in to one space, splice the wires together before the terminal block and then just insert one wire into the block.

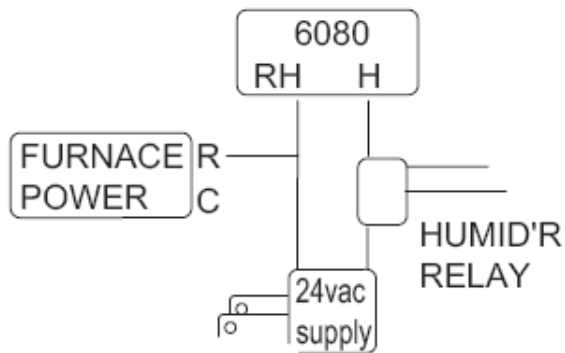
How do I wire my humidifier to the 6080?

It will depend on how your humidifier is wired. Some units have their own transformer and others use the furnace transformer. See options below:

HUMIDIFIER USING HEATING SYSTEM's 24VAC



Humidifier using a seperate 24 VAC power supply



My old thermostat had an anticipator adjustment. Where is it on yours?

Rite Temp thermostats do not require an anticipator adjustment because it is an electronic thermostat. Electronic thermostats typically use temperature sensing devices called thermistors which are very small, with almost no thermal mass. These devices track the air temperature very well so no anticipator is necessary. Rite Temp thermostats are specified and checked at $\pm 1^\circ\text{F}$ accuracy.