



Product Description

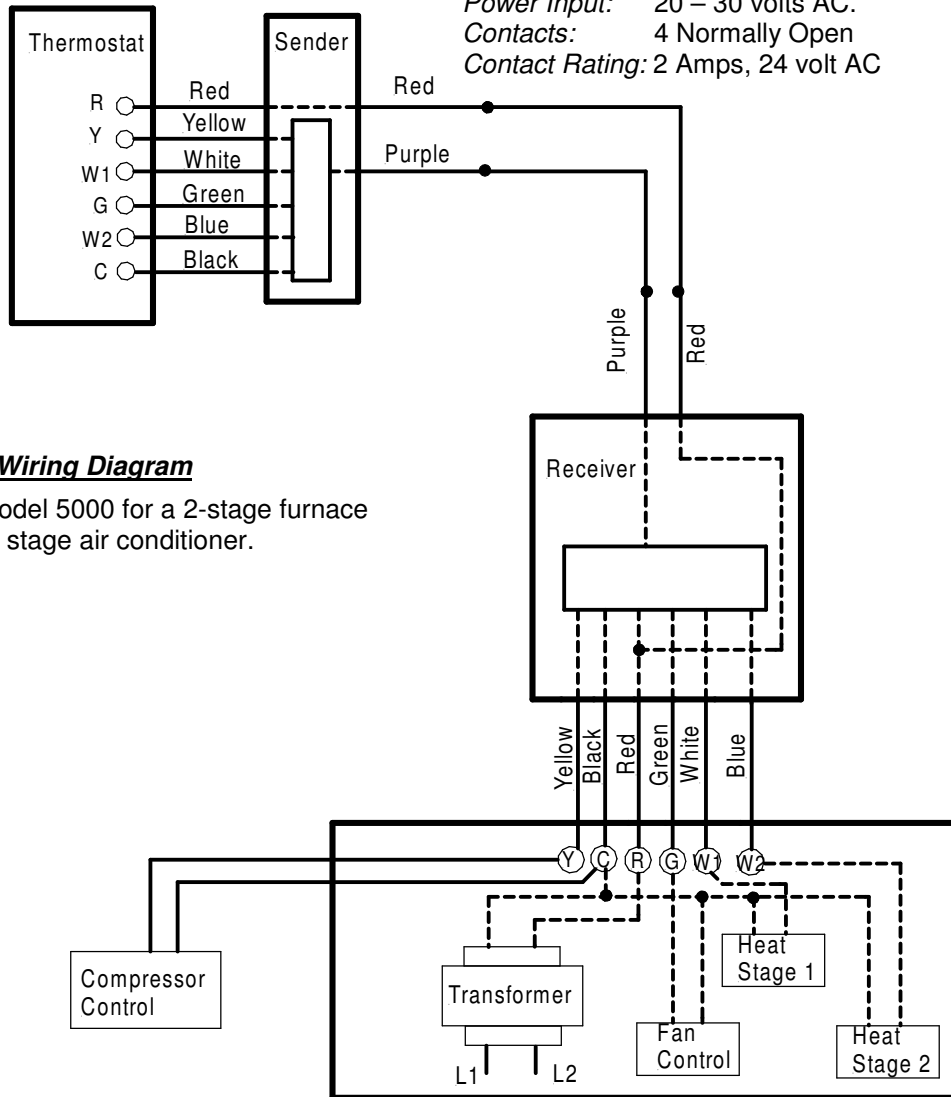
The **FAST-STAT Model 5000** provides 6-wire control over 2-wire cable or 8-wire control over a 4-wire cable. With a 2-wire cable it can provide "R", "C", "W1", "W2", "G" & "Y". With a 4-wire cable it can provide "R", "C", "W1", "W2", "G" & "Y" + any other two functions such as "H", "D", "W2", "Y2" or "O/B".

Common Uses

Adding air conditioning to a heating system or installation of a 2-stage furnace. Can also be used for heat pumps, 2-stage heating or cooling when an existing 4-wire thermostat cable is present.

Ratings

Power Input: 20 – 30 volts AC.
 Contacts: 4 Normally Open
 Contact Rating: 2 Amps, 24 volt AC



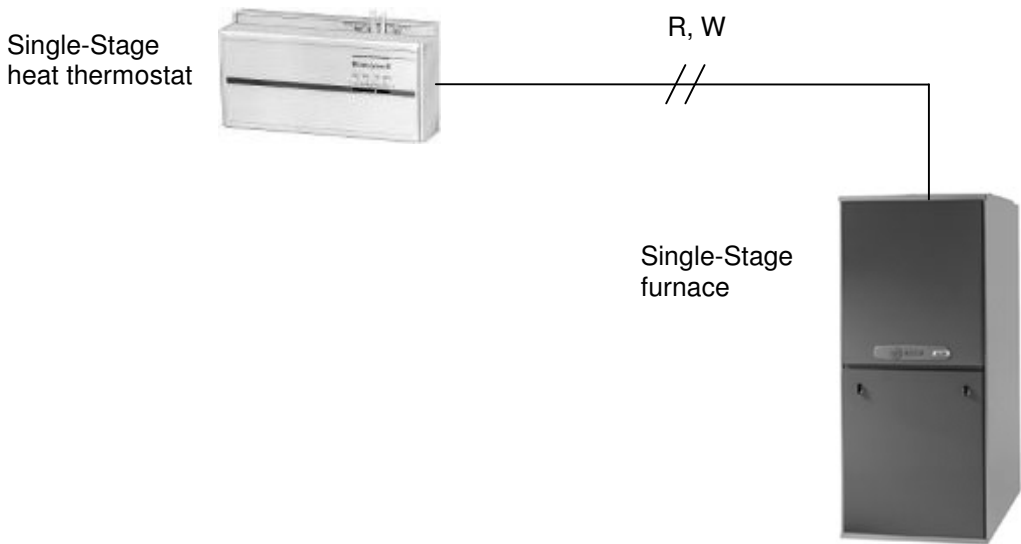
Example Wiring Diagram

Using a Model 5000 for a 2-stage furnace and single stage air conditioner.

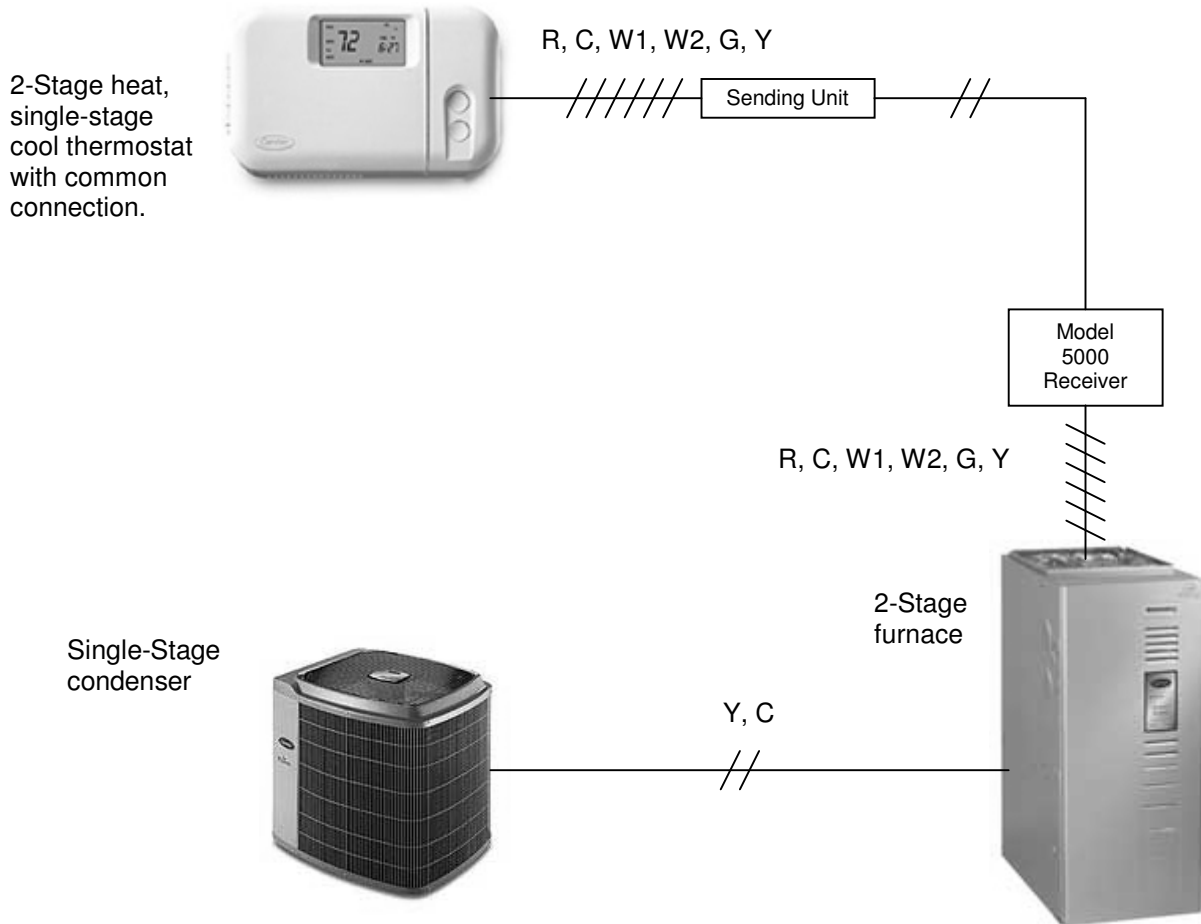
Furnace Wiring

EXAMPLE: FAST-STAT model 5000 used to add air conditioning and upgrade the furnace to 2-stage heat.

OLD SYSTEM



NEW SYSTEM



FAST-STAT

Model 5000 Installation Instructions

Application

1. The model 5000 FAST-STAT is designed to reduce installation time when retrofitting 2-stage furnaces.
2. With a 2-wire thermostat cable it can provide 2-stage heating and single stage cooling control. With a 4-wire thermostat cable it can be used for a wide range of applications including heat pumps.

Before installing this product

1. Read instructions. If you have any questions please contact tech support line at the number listed below.
2. This product is designed for use only on 24 volt ac circuits supplied by a class 2 transformer.
3. This product is only to be installed by qualified technicians.
4. To avoid risk of electrical shock or equipment damage disconnect power before beginning installation.

Operational Considerations

1. A call for Compressor (Y) will always switch on Fan (G). A call for heat (W1 and/or W2) will cause Compressor (Y) and Fan (G) to shut off. A call for second stage heat (W2) will always switch on first stage heat (W1). This is the same sequence of operation as most thermostats. This information is provided for reference when using the model 5000 in other applications such as heat pumps.
2. The common connection provided by the sending unit for the thermostat may not be compatible with all thermostats that require a "C" connection. If this problem is encountered, a wire (if available) may be connected to the thermostat "C" terminal and the furnace / fan coil common terminal. Remove and tape back the sending unit black wire when doing this.
3. The power supply must be between 21 to 28 volts for correct operation. The total connected load must not exceed 2 amps.

Table 1. Terminal designation descriptions

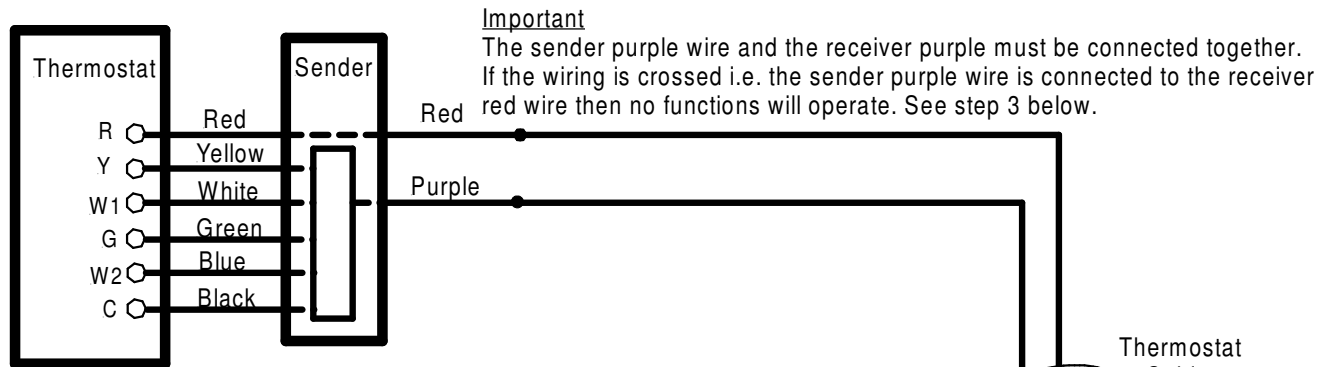
Terminal Designation	Description	Comment	Color
R	Transformer Power	Included & must be connected	Red
C	Transformer Common	Included & must be connected at Receiver	Black
Y - Y1	Compressor Stage 1	Included	Yellow
Y2	Compressor Stage 2	Requires additional thermostat cable conductor	not defined
G	Fan	Included	Green
W1	1st Stage Heat	Included	White
W2	2nd Stage Heat	Included	Blue
O/B	Reversing Valve	Requires additional thermostat cable conductor	Not Defined

Tech Support: 1-800-775-4750

FAST-STAT

Installation Guide A

Model 5000 Typical Installation when used with 2-wire thermostat cable.



Step 1:

- Remove the existing thermostat.
- Enlarge the hole around the thermostat cable so that the Sender can be inserted into the wall space.
- Connect the wires from the Sender to the corresponding thermostat terminal. The two red wires are interchangeable. Connect one to the thermostat "R" and the other to the thermostat cable.
- Connect the purple wire to the thermostat cable.
- Insert the Sender into the wall space.
- Mount the new thermostat according to mfg's instructions.

Step 2.

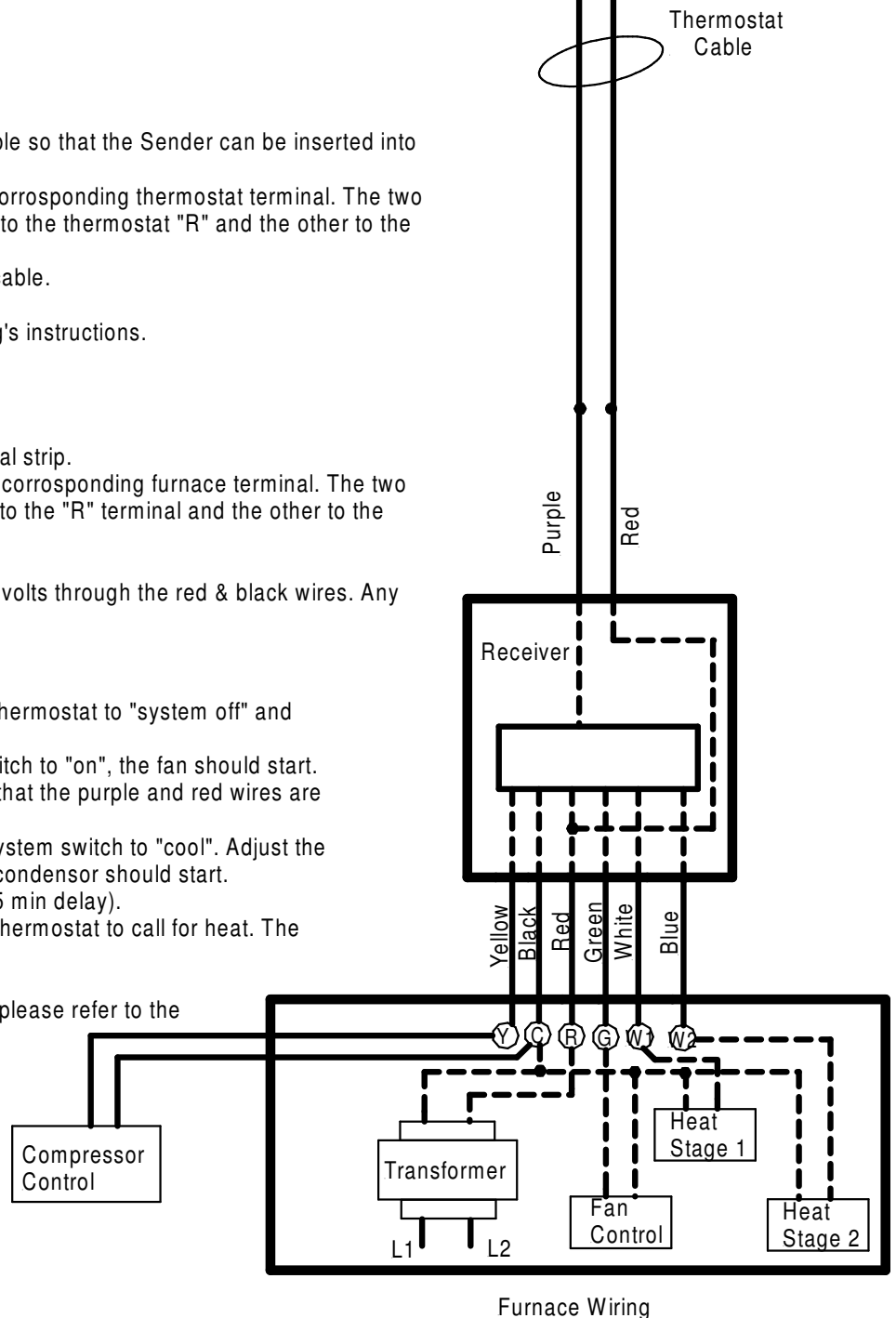
- Install the Receiver near the furnace terminal strip.
- Connect the wires from the Receiver to the corresponding furnace terminal. The two red wires are interchangeable, connect one to the "R" terminal and the other to the thermostat cable.

Note: The Receiver must be connected to 24 volts through the red & black wires. Any unused wires are taped back.

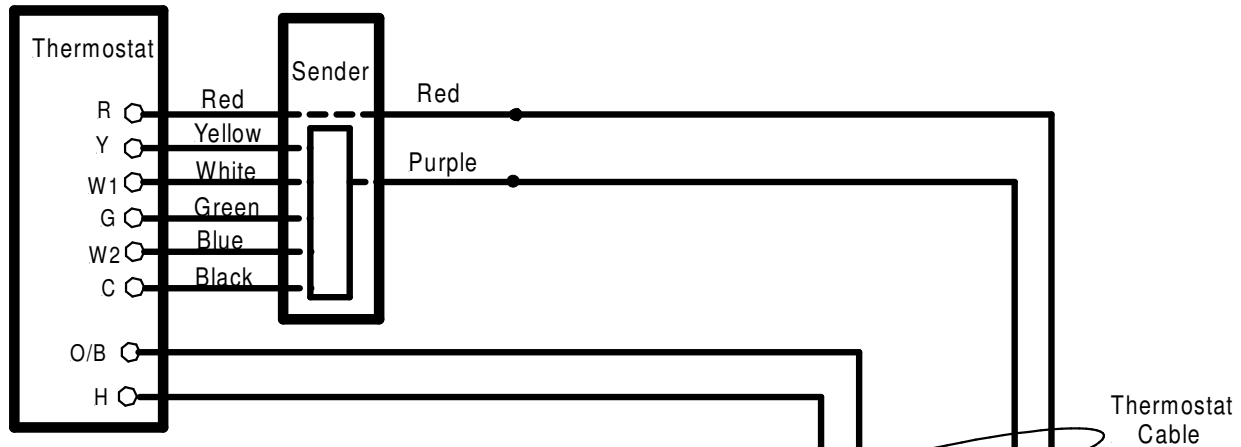
Step 3:

- After all equipment is ready to run, set the thermostat to "system off" and the fan switch to "auto".
- Switch on the control power. Set the fan switch to "on", the fan should start. If the fan does not start it may be possible that the purple and red wires are crossed.
- Set the fan switch back to "auto" and the system switch to "cool". Adjust the thermostat to call for cooling. The fan and condenser should start. (depending on thermostat there may be a 5 min delay).
- Set the system switch to "heat" and adjust thermostat to call for heat. The heating cycle should start.

Note: If the system does not operate properly please refer to the Trouble Shooting Instructions.



Using a Model 5000 with a thermostat cable that has more than 2 conductors.



What can the extra wires be used for?

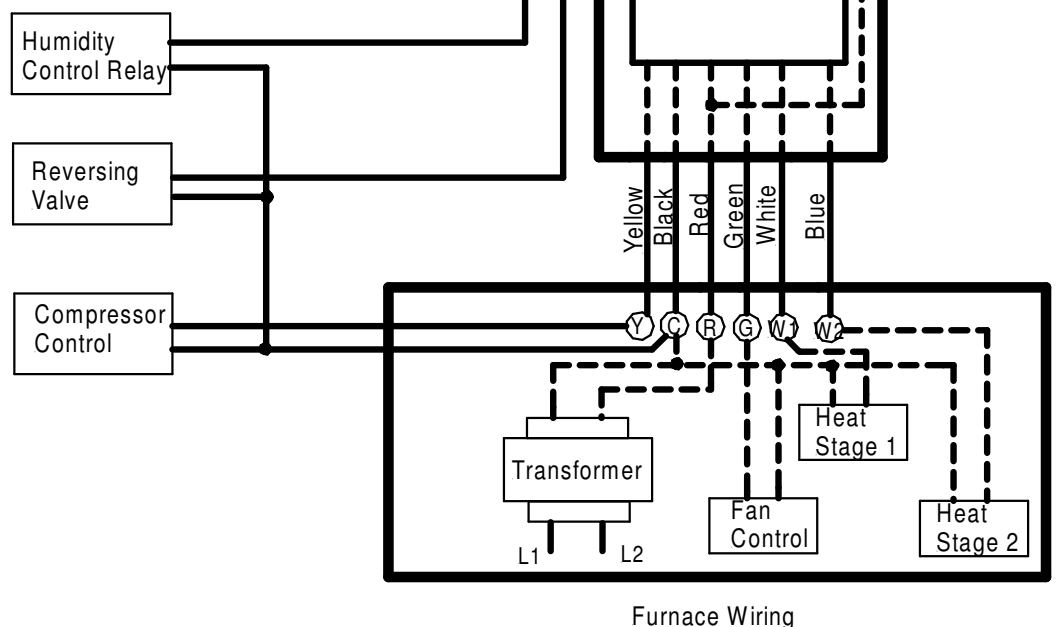
You can use the extra thermostat cable wires for Y2, O/B, H, D, E or other functions. In this example the extra wires have been used for "Humidity" and "reversing valve" functions.

How the circuit works

The circuit works by taking the transformer power at "R" and sending it through the Receiver and Sender to the thermostat. This is the same as if a single wire was connected between the transformer "R" and the thermostat "R". At the thermostat the "fan"(G),"cooling"(Y1) and "heat" (W1) (W2) & "common" (C) functions are sent back to the Receiver through the 2nd thermostat cable conductor. The 3rd, 4th and others wires (if available) can be used as required.

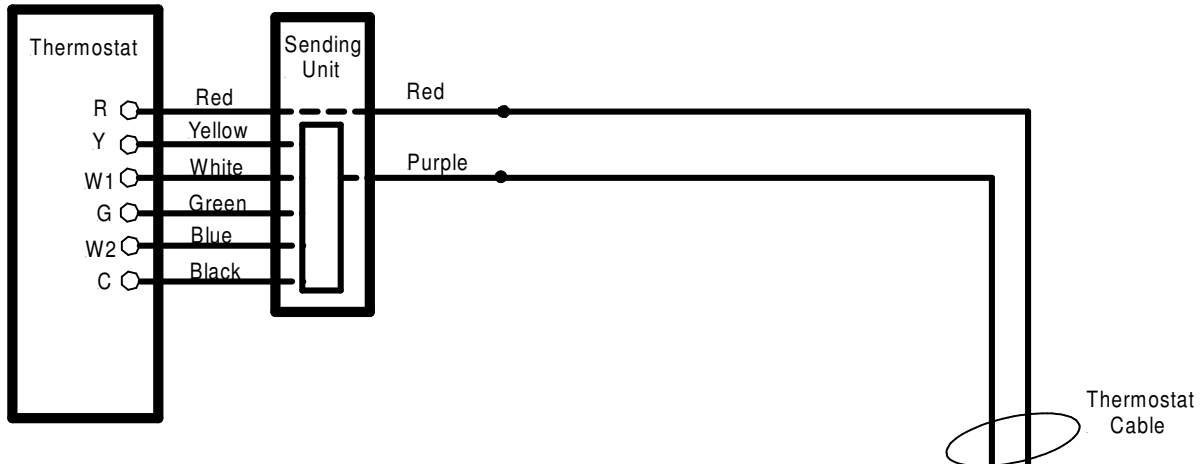
How to connect

The extra thermostat wires are used in the normal manner in that the wires are connected to the thermostat at one end and the respective loads at the other end.



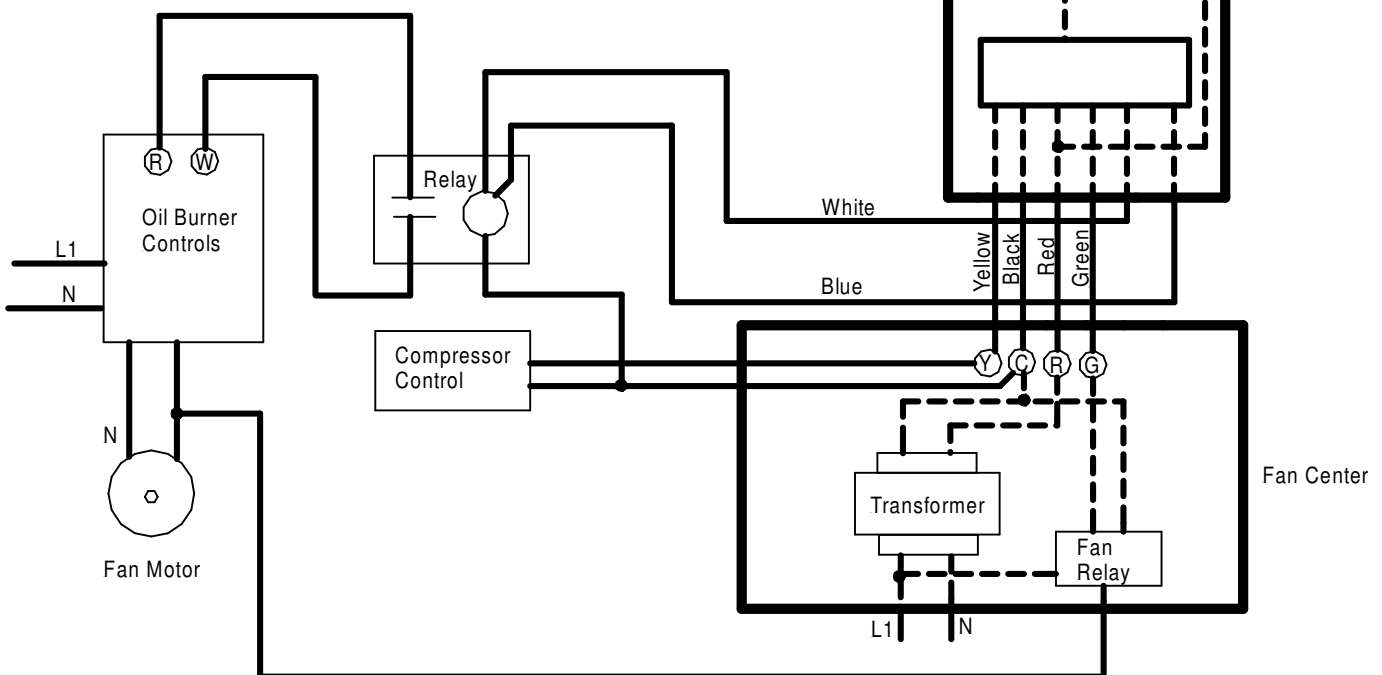
Furnace Wiring

Using a Model 5000 with 2 conductors and an oil furnace.



Notes:

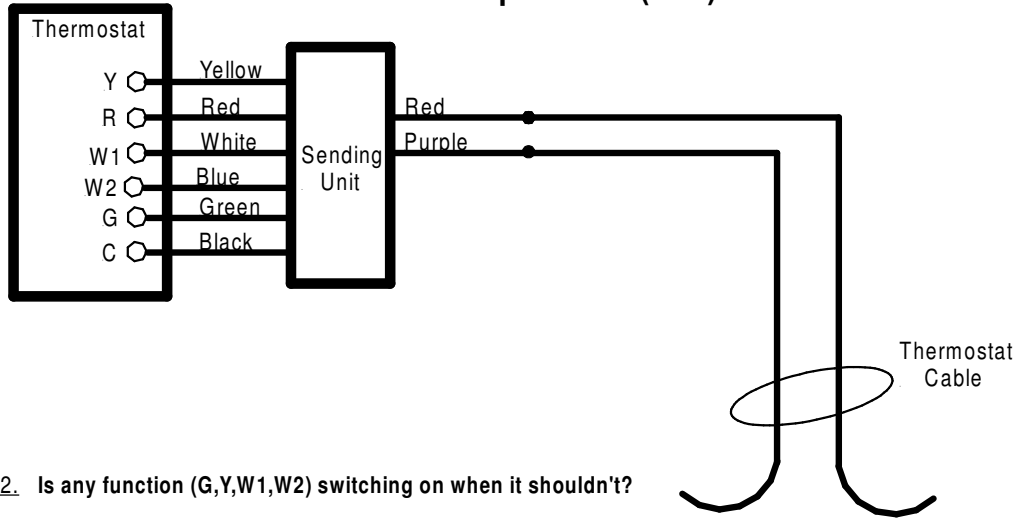
1. If the furnace is a single stage heat then join the sending unit white and blue wires together onto the thermostat's W terminal. At the furnace join the receiver's white and blue wires together onto the isolating relay.
2. If the thermostat does not require a "C" (common) connection then tape back the sending unit black wire.



FAST-STAT

Trouble Shooting Instructions

Model 5000 Steps 1 to 2 (of 4)

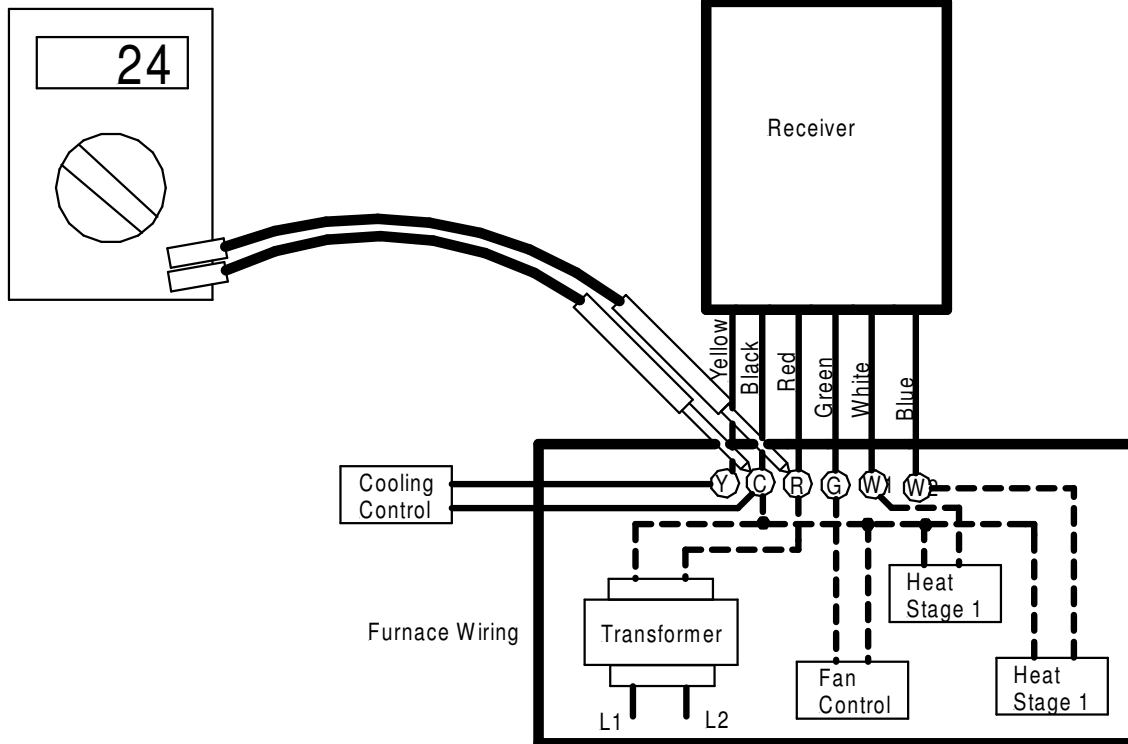


Step 2. Is any function (G,Y,W1,W2) switching on when it shouldn't?

Disconnect the wires from the thermostat cable. Switch on the control circuit. The fan (green), A/C (yellow) and heat (white & blue) should remain off. If any starts then the Receiver has to be replaced. If OK go to step 3.

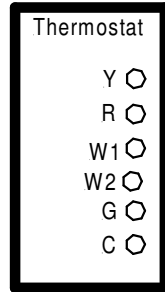
Step 1. Is the Receiver getting power?

Switch on control circuit and measure voltage at R & C. There should be 20 to 28 volts ac at the Receiver's black & red wires. If OK go to step 2.

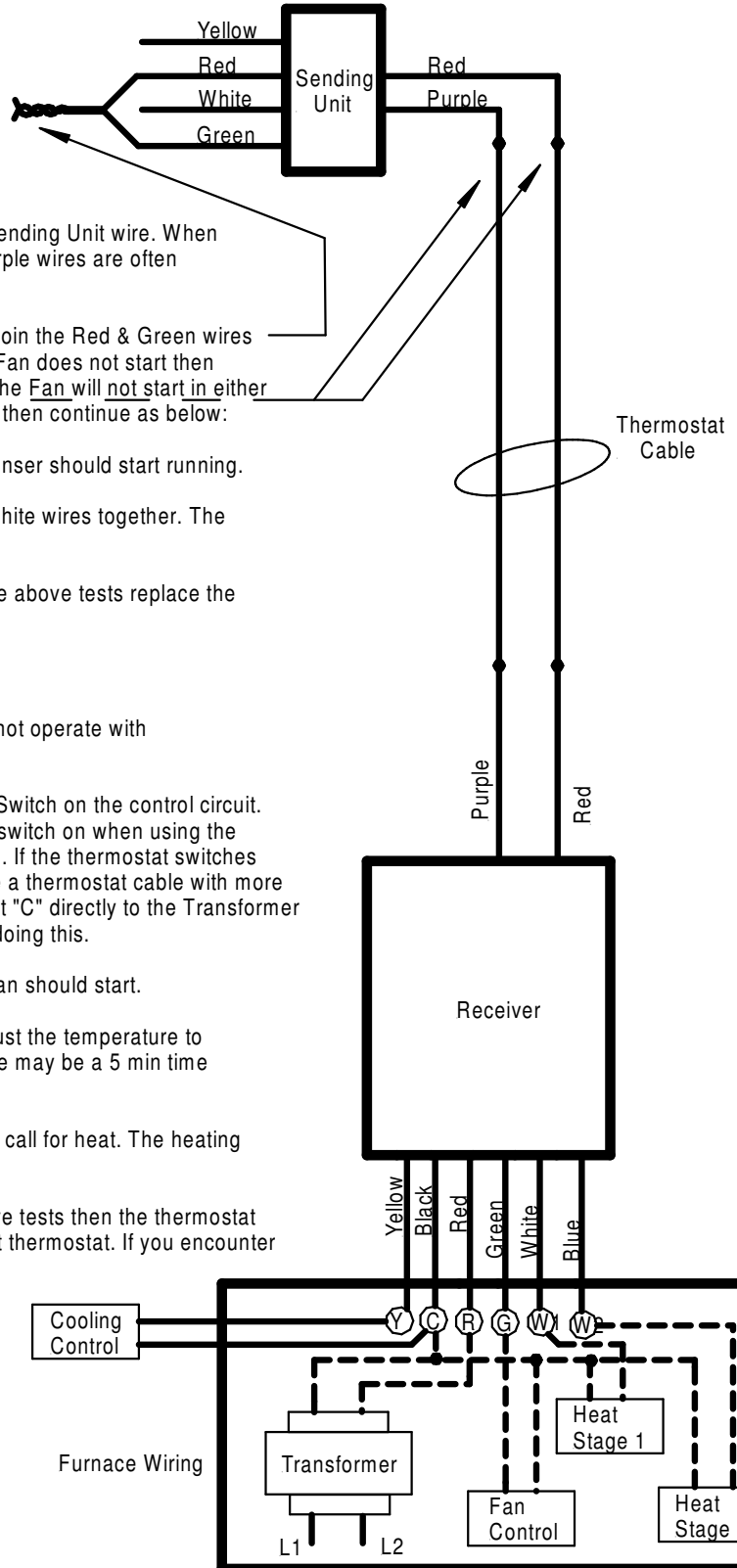


FAST-STAT

Trouble Shooting Instructions



Steps 3 to 4 (of 4)



Step 3: Does the Sending Unit Work?

The Red wire from the Receiver has to be connected to the Red Sending Unit wire. When installing with an older 2-wire non-color coded cable the Red & Purple wires are often mistakenly reversed.

- a) Disconnect the wires from the Sending Unit to the thermostat. Join the Red & Green wires together. Switch on the control circuit. The Fan should start. If the Fan does not start then reverse the Red & Purple wires at the Sending Unit and re-test. If the Fan will not start in either case then replace the Sending Unit and Receiver. If the Fan starts then continue as below:
- b) Add the Yellow wire to the Red and Green. The Fan and Condenser should start running.
- c) Disconnect the Red, Green & Yellow wires. Join the Red and White wires together. The heating cycle should start.

If the Fan, Condenser or Heating does not run when performing the above tests replace the Sending Unit and Receiver. If OK then go to step 4.

Step 4: Is the thermostat compatible with FAST-STAT?

Some thermostats that require a "C" or Common connection may not operate with the common connection provided by the Sending Unit.

- a) Reconnect the wires from the Sending Unit to the thermostat. Switch on the control circuit. The thermostat display should switch on. If the thermostat will not switch on when using the Sending Unit Common wire then the thermostat is not compatible. If the thermostat switches on then continue as below. If you encounter this problem and have a thermostat cable with more than 2-wires, use one of the spare wires to connect the Thermostat "C" directly to the Transformer "C". Disconnect and tape back the Sending Unit Black wire when doing this.
- b) Set the Fan switch to "on" and the system switch to "off". The Fan should start.
- c) Set the Fan switch to auto and the system switch to "cool". Adjust the temperature to call for cooling. The Fan and Condenser should start running (there may be a 5 min time delay on a cooling call)
- d) Switch the system switch to "heat" and adjust the thermostat to call for heat. The heating cycle should start.

If the Fan, Cooling or Heat does not run when performing the above tests then the thermostat is not compatible with FAST-STAT. You will need to use a different thermostat. If you encounter this problem please call our tech support line :

1-800-775-4750