FAST-STAT Model 5000 Installation Instructions

Application

The FAST-STAT Model 5000 adds additional HVAC control wiring between a thermostat and indoor unit.

It provides R, C, G, Y, W1 & W2 connections over a 2-wire thermostat cable. Additional thermostat cable wires can be used for other functions.

Before Installing This Product

1. Read Instructions. If you have any questions please contact our tech support line
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.

Sender Installation

1. The sender is installed in the wall space behind the thermostat (non-insulated walls only).
2. Enlarge the opening around the thermostat cable so that the sender can be inserted into the wall cavity. Trim the lead ends as required to fit the thermostat sub-base terminals but avoid cutting large amounts off.
3. Connect the sender to the thermostat cable. Once the connections to the cable and thermostat are completed, insert the sender into the wall cavity. The sender hangs by its leads and does not require any mounting.
4. When operating, the sender will produce a small amount of heat. To prevent this from affecting the thermostat it is advisable to have the sender as far as possible from the thermostat. This is achieved by having the sender leads as long as possible. Any unused leads should be taped back.

Receiver Installation

The receiver module is normally mounted inside the cabinet of the indoor unit near the other controls. If there is no space inside the cabinet, the module may be located in any dry location without exposure to high temperatures.

Wiring

1. The transformer power supply must be between 24 to 27 volts for proper operation.
2. The total connected load must not exceed 2 amps. The connected load cannot operate at a voltage of more than 30 volts (not intended for line voltage control).
3. All red wires are interchangeable.
4. Tape back any used wires to prevent shorting
5. For single-stage heat, use the WHITE and BLUE wires together for "W".

Sequence of Operation

The receiver has four normally-open relays, one for each output. One side of each relay contact is connected to red wire which is then connected to the transformer "R" terminal. The other side of the relay contact is connected to either the green, yellow, white or blue wires. When any relay is energized it will connect its load to the transformer "R" terminal.

1. A 24 volt input on the sender green wire will cause a 24 volt output at the receiver green wire (fan control)
2. A 24 volt input on both of the sender green & yellow wires will cause a 24 volt output on the receiver green & yellow wires (fan & condenser control)
3. A 24 volt input on the sender white wire will cause a 24 volt output at the receiver white wire (heat 1st stage)
4. A 24 volt input on the sender white & blue wires will cause a 24 volt output on both the receiver white and blue wires (1st & 2nd stage heat)
5. When W1 is on, the outputs for G and Y will shut off if they were on.

Setting the Receiver Board Voltage

The amount of power used by the thermostat will affect the receiver control board voltage. It is factory set to operate with typical thermostats. For some thermostats it may be necessary to adjust the receiver board voltage and this is done by turning an adjuster located on the side of the receiver enclosure.

1. Apply power to the thermostat and receiver.
2. With the thermostat in standby mode (fan off, no call for heating or cooling), connect a voltmeter between the receiver ORANAGE and BLACK wires and set the meter for DC Volts.
3. Slowly turn the adjuster until a 1.00 volt reading is obtained.
4. Apply electrical tape to the end of the ORANAGE wire after use.

If the receiver control board voltage is too low, the relays for G, Y, W1 or W2 may not properly energize and switch on. If the receiver control board voltage is too high, the relays for G, Y, W1 or W2 may not shut off properly.

Start Up

1. Set the thermostat to "fan manual on". The fan will start. Set the fan mode selector switch to "auto mode". The fan should shut off.
2. Set the thermostat so that it will call for the heating system to start. The heating system will start. Return the thermostat to the off position. The heating system should shut off.
3. To test for 2-stage heat control, the thermostat will need to be set to "installation mode" to get the "W2" function to work. The cause of this is that many thermostats will not call for "W2" regardless of how high the temperature is set if the room temperature is increasing at a rate fast enough when the furnace is in 1st stage heat.

4. Set the thermostat to a call for cooling. The fan and compressor will start. Set the thermostat to off. The fan and compressor should shut off.

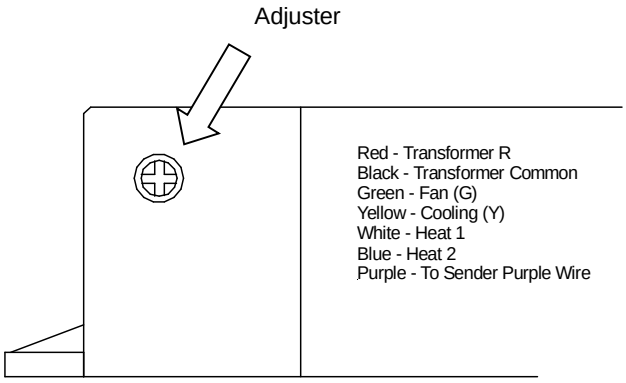
Troubleshooting

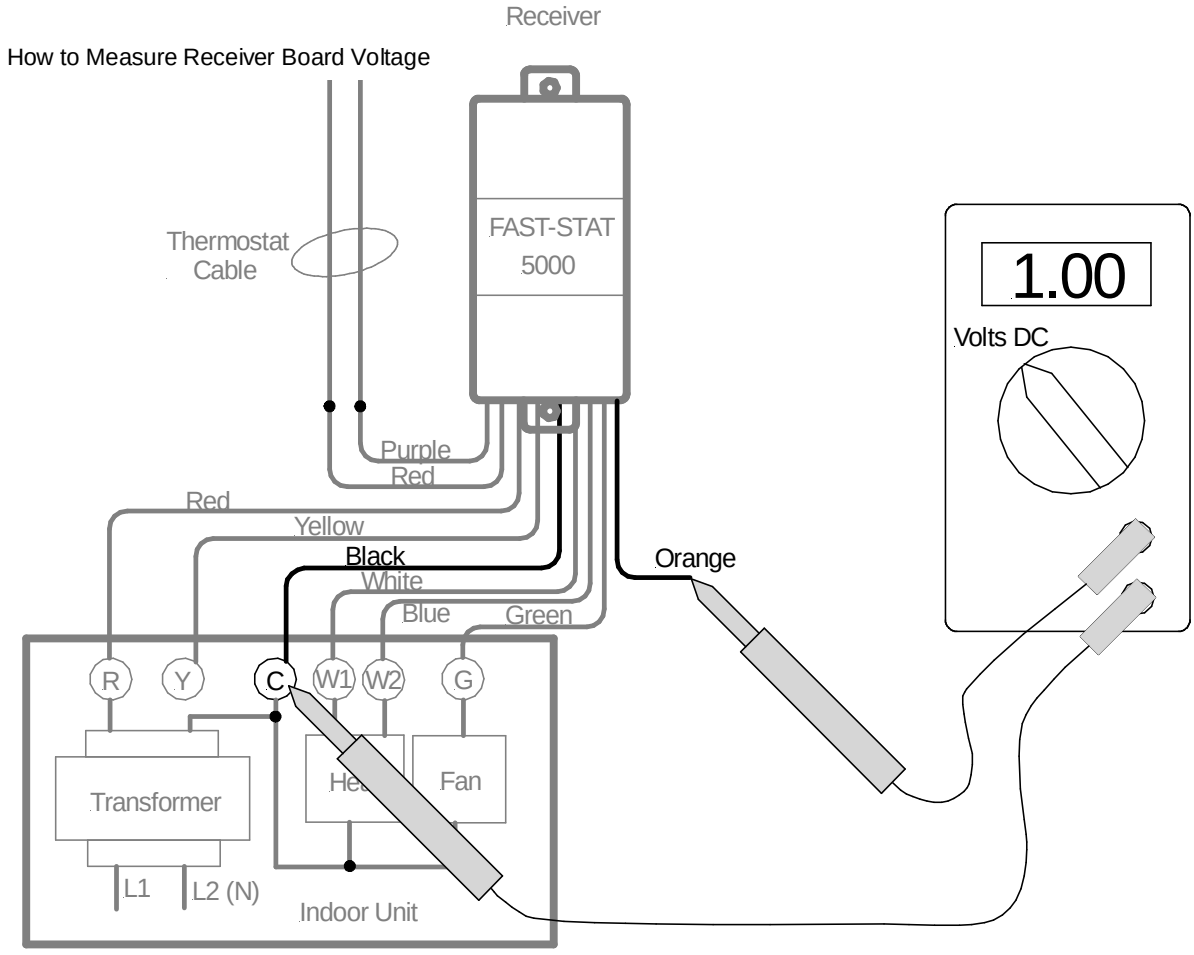
1. Check that there is 24-volt power connected to the red and black leads of the receiver module. The receiver black wire must be connected to the indoor unit common terminal and the red wire must be connected to the indoor unit "R" terminal.

2. If the red and purple wires that connect the sender to the receiver are crossed (purple to red) a call for "fan" and/or "cooling" will start "heat" and a call for "heat" would start the "fan". There would also be no common connection "C" at the thermostat so the thermostat may not start up. Set the thermostat into "Fan Manual On". If the heating cycle starts, switch the Purple and Red wires at the Receiver that are connected to the thermostat cable and retest. If this does not fix the problem, then switch the wires back to the way they were.

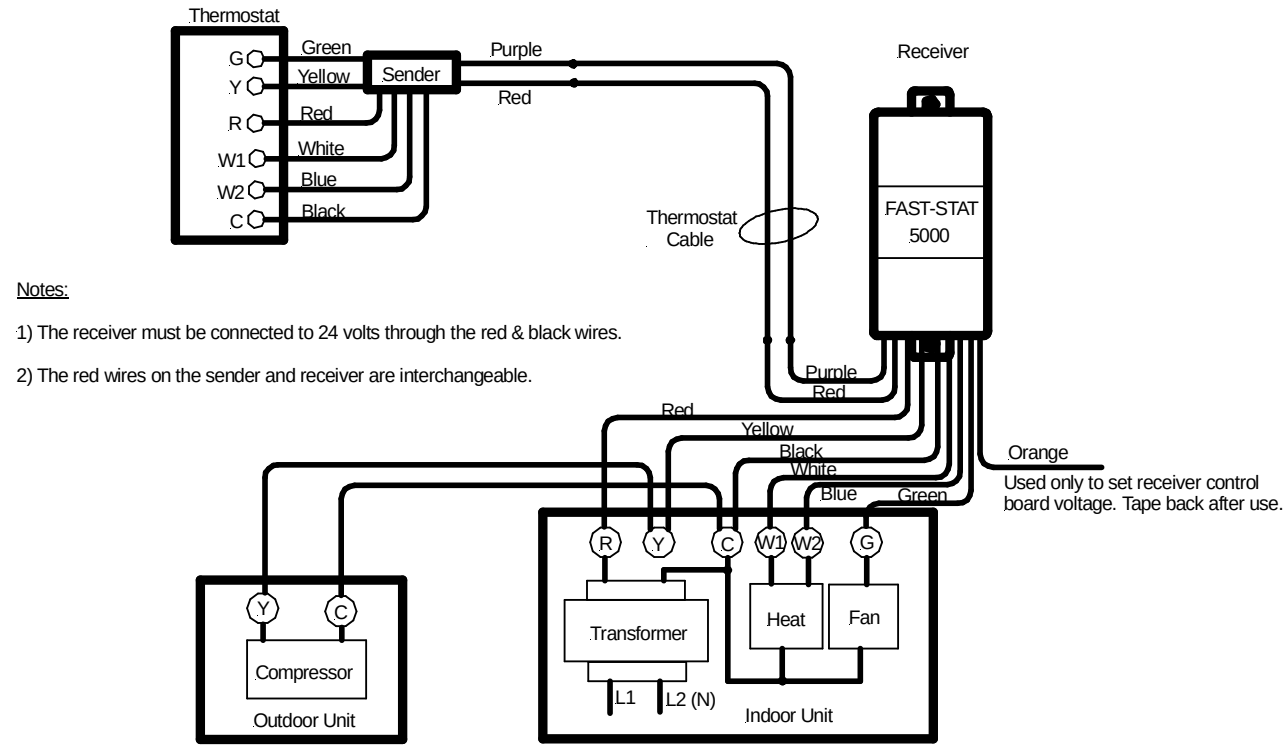
3. Remove the thermostat from its sub-base. With a jumper, make a connection between "R" and "G" on the thermostat terminal strip. The fan should start. Jumper together "R" "G" and "Y", the fan and A/C should start. Jumper "R" and "W1", the heating system should start. If the fan, A/C and heating systems start when a jumper is used but will not start when the thermostat is used, there may a set up or compatibility issue with the thermostat.

4. If no functions operate when doing test #3, there may be an open (break) in the connections to the thermostat cable.

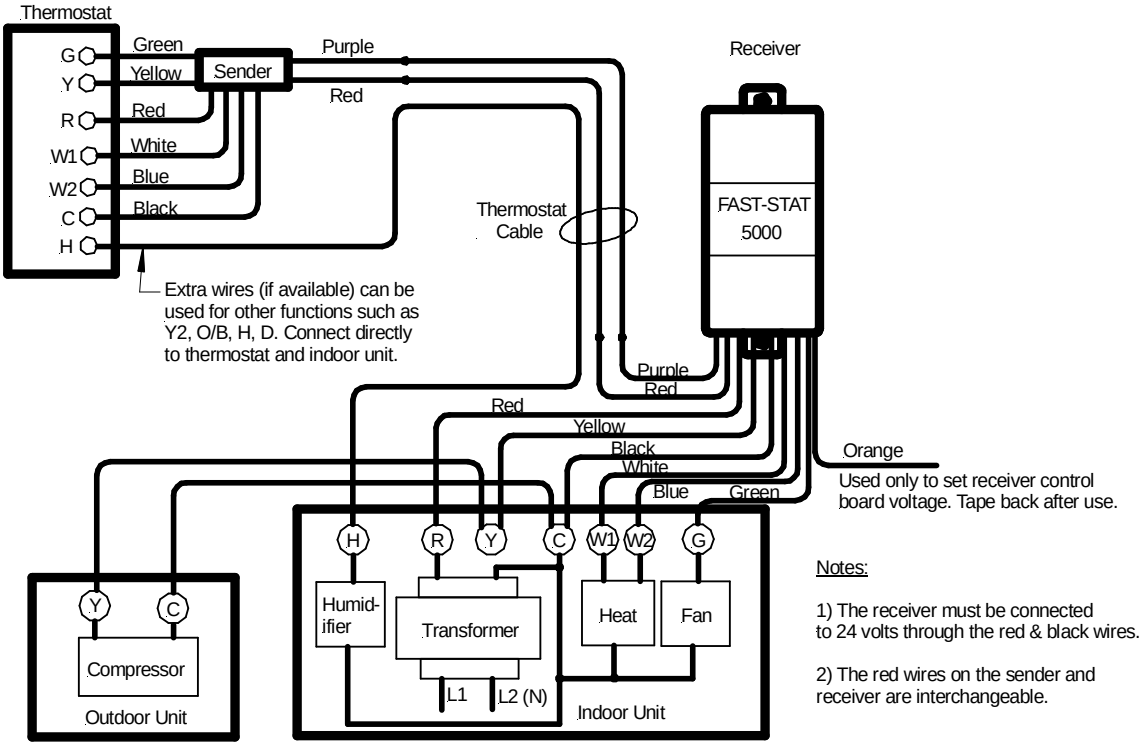




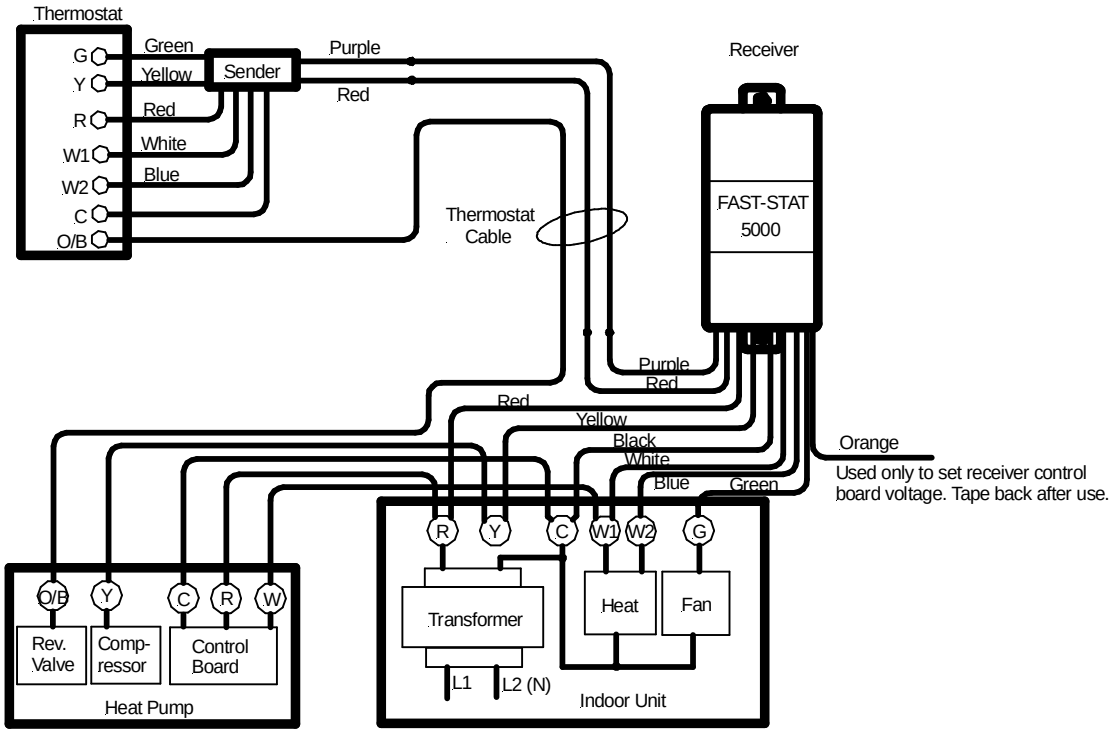
A) Model 5000 used to extend wiring from a thermostat.
Example: Air conditioner with a 2-stage heating system



B) Model 5000 used to extend wiring from a thermostat.
Example: Using extra cable wires for other functions.



C) Model 5000 used to extend wiring from a thermostat.
Example: Single-stage heat pump with a 2-stage furnace



D) Model 5000 used to extend wiring from a thermostat.
Example: Connecting to a heating system that requires "dry contact" switching.