

# VENSTAR®

## DIGITAL THERMOSTAT

## RESIDENTIAL THERMOSTAT T1100FS



### 7-DAY PROGRAMMABLE UP TO 2-HEAT & 2-COOL



- Control up to 2 Heat & 2 Cool Stages
- 7-Day Programmable
- 4 Settings/Day
- Auto Changeover
- 5 minute Built-In
- Compressor Protection
- Self-Prompting Programming with Copy Command
- Display Either F° or C°
- Mounts Flush with the Wall
- Back-Lit display
- One For All™ Works with Virtually All Equipment
- Non-Volatile memory
- Keypad lockout
- Single or Dual setpoint with Adjustable Deadband
- 'O' or 'B' Terminal
- Optional: Outdoor Sensor
- Programmable Fan

• Use with most Air Conditioning & Heating Systems including: 1 or 2 Stage Electric Cooling & 2 Stage Gas Heating, Heat Pump, Electric or Hydronic Heat.





## INSTALLATION INSTRUCTIONS

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**CAUTION** Follow *Installation Instructions* carefully.  
 DISCONNECT POWER TO THE HEATER -  
AIR CONDITIONER BEFORE REMOVING  
THE OLD THERMOSTAT AND INSTALLING  
THE NEW THERMOSTAT.  **WARNING**

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**P/N T1100FS**

This device complies with Part 15 of the FCC rules.  
Operation is subject to the following two conditions:  
(1) This device may not cause harmful interference, and  
(2) this device must accept any interference received,  
including interference that may cause undesired operation.

## STEP #1

## PREPARATION



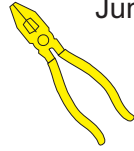
Proper installation of the thermostat will be accomplished by following these step by step instructions. If you are unsure about any of these steps, call a qualified technician for assistance.



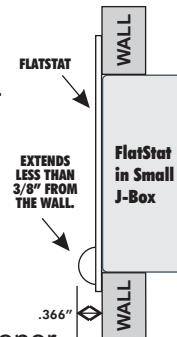
Assemble tools & recommended Junction Box\*.



*Flat Blade  
Screwdriver*



*Wire cutter  
& Stripper*



Make sure your Heater/Air Conditioner is working properly before beginning installation of the thermostat.



Carefully unpack the thermostat. Save the screws, wall anchors, and instructions.



Turn off the power to the Heating/Air Conditioning system at the main fuse panel. Most residential systems have a separate breaker for disconnecting power to the furnace.

*\*'Mud rings' or Remodel boxes will not fit.*

## STEP #2 REMOVE & REPLACE OLD THERMOSTAT



Remove the cover of the old thermostat. If it does not come off easily check for screws.



Loosen the screws holding the thermostat base or subbase to the wall, and lift away.



Disconnect the wires from the old thermostat. Tape the ends of the wires as you disconnect them, and mark them with the letter of the terminal for easy reconnection to the new thermostat.

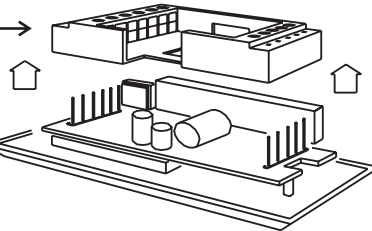


Keep the old thermostat for reference purposes, until your new thermostat is functioning properly.



Remove the white plastic wire connector from the rear of the thermostat. Install wires as directed. Press the wired connector on the back of the thermostat.

Lift Connector straight up →  
to remove.



**For best operation, install the thermostat in a junction box that is free from drafts that originate inside the wall.**

**STEP #3****WIRE CONNECTIONS**

If the terminal designations on your old thermostat do not match those on the new thermostat, **refer to the chart below, or the wiring diagrams that follow.**

Wire from the old thermostat terminal marked	Function	Install on the new thermostat connector marked
G or F	Fan	G
Y1, Y or C	Cooling	Y1
W1, W or H	Heating	W1,O,B
Rh, R, M, Vr, A	Power	R
C	Common	C *
O/b	Rev. Valve	W1,O,B**
Y2	2nd Stage Cool	Y2
W2	2nd Stage Heat	W2
RS+5	Remote Sensor +5vdc	RS+5
RS	Remote Sensor Signal	RS
RS G	Remote Sensor Ground	GND

\* C may not be used on all systems.

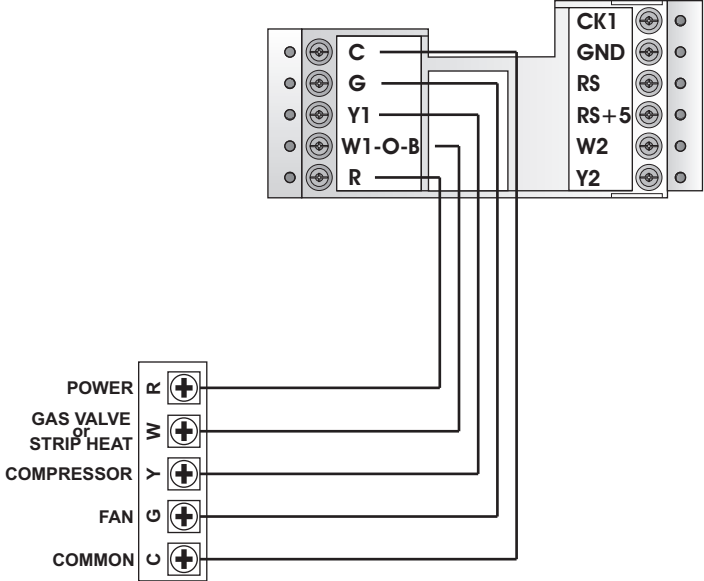
\*\* O/B is used if your system is a Heat Pump.

## Sample Wiring Diagrams

# Gas or Electric Heat

5 Wire, 1 Stage Cooling, 1 Stage Gas Heat

Residential Gas or Electric Heat\*,  
Electric Cool, split systems & package  
units



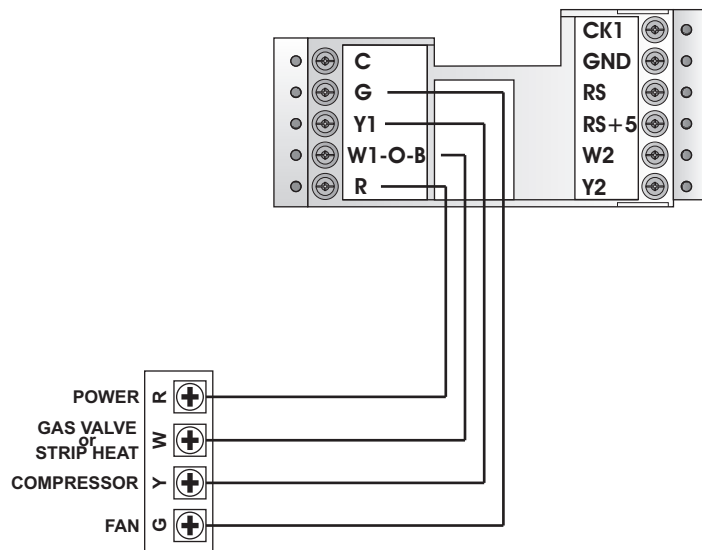
*\* If using first stage electric heat, this option must be selected ON (see page 13, step 5 of Owner's Manual).*

## Sample Wiring Diagrams

# Gas or Electric Heat

4 Wire, 1 Stage Cooling, 1 Stage Gas Heat

Residential Gas or Electric Heat\*,  
Electric Cool, split systems & package  
units



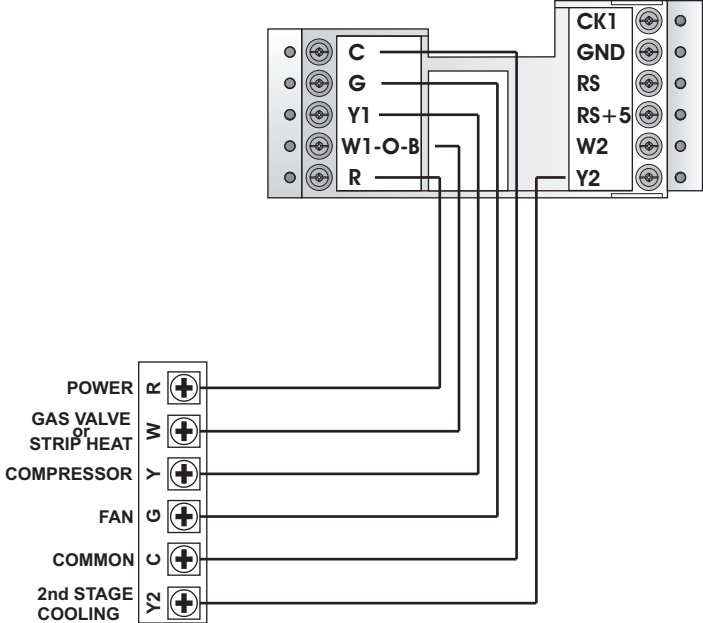
*\* If using first stage electric heat, this option must be selected ON (see page 13, step 5 of Owner's Manual).*

Sample Wiring Diagrams

# Gas or Electric Heat

6 Wire, 2 Stage Cooling, 1 Stage Gas Heat

Residential two stage cooling with Gas or Electric Heat\*.



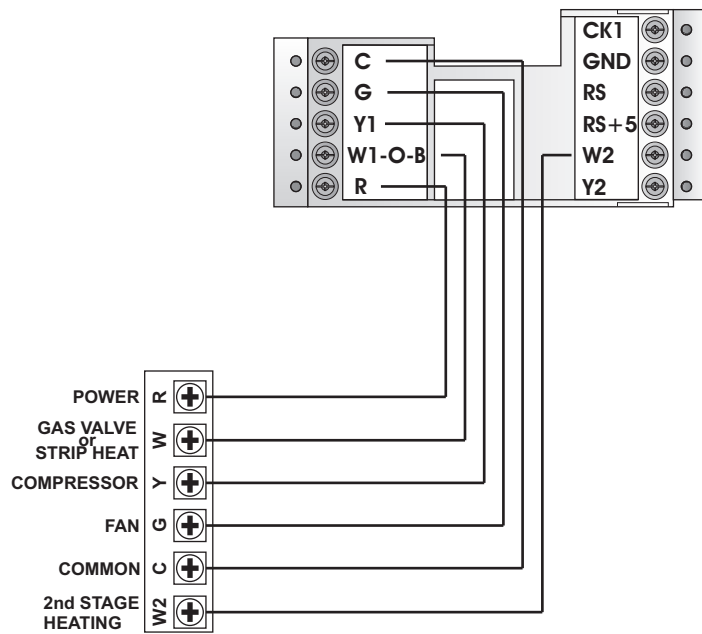
\* If using first stage electric heat, this option must be selected ON (see page 13, step 5 of Owner's Manual).

## Sample Wiring Diagrams

# Gas or Electric Heat

6 Wire, 1 Stage Cooling, 2 Stage Heat

Residential & commercial 1 Stage Cooling,  
with 2 Stage Gas or Electric Heat\*



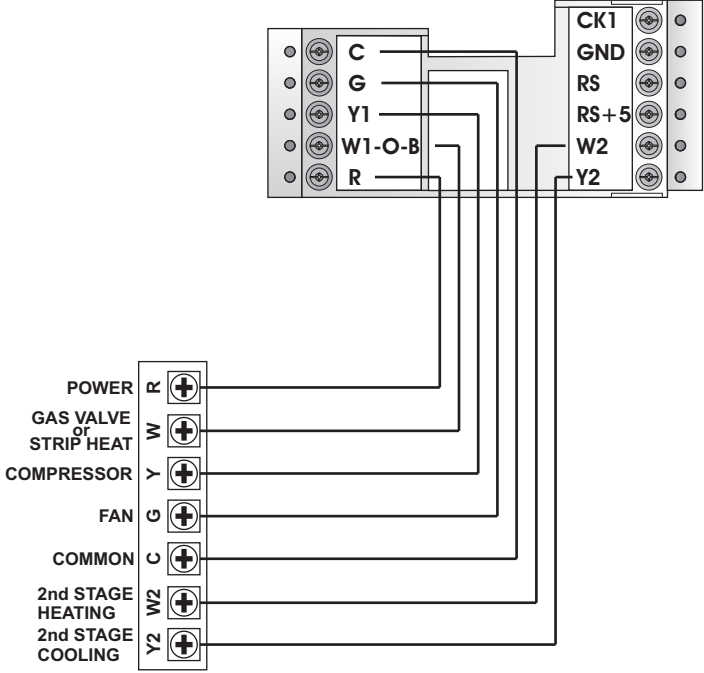
*\* If using first stage electric heat, this option must be selected ON (see page 13, step 5 of Owner's Manual).*

## Sample Wiring Diagrams

# Gas or Electric Heat

7 Wire, 2 Stage Cooling, 2 Stage Heat

Commercial Gas or Electric Heat \*,  
Electric Cool, split systems & package units  
including Commercial Heat Pumps \*\*

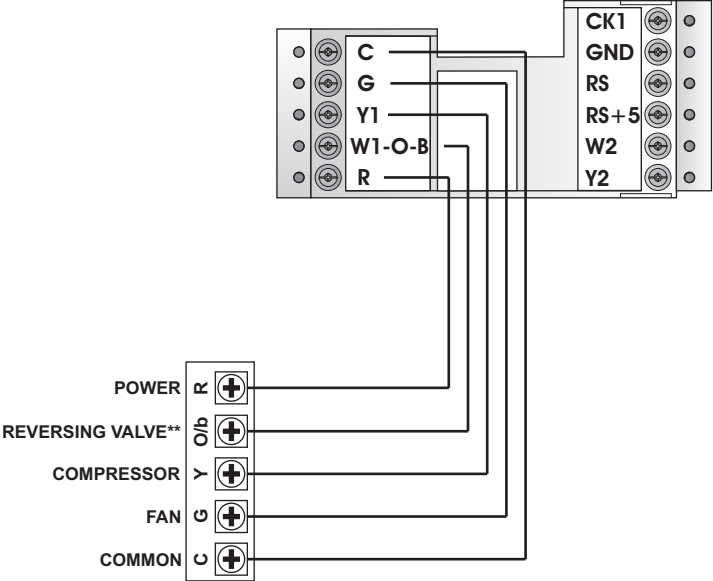


\* If using first stage electric heat, this option must be selected ON (see page 13, step 5 of Owner's Manual).  
 \*\* Commercial heat pumps do not have the heat pump turned ON in advanced setup (see page 12, step 3 of Owner's Manual).

**Sample Wiring Diagrams**

# Heat Pump

**5 Wire, 1 Stage Cooling, 1 Stage Heat-Heat Pump\* with O or b reversing valve\*\*.**  
 Residential Heat Pumps, split systems & package units, with no auxiliary heat.



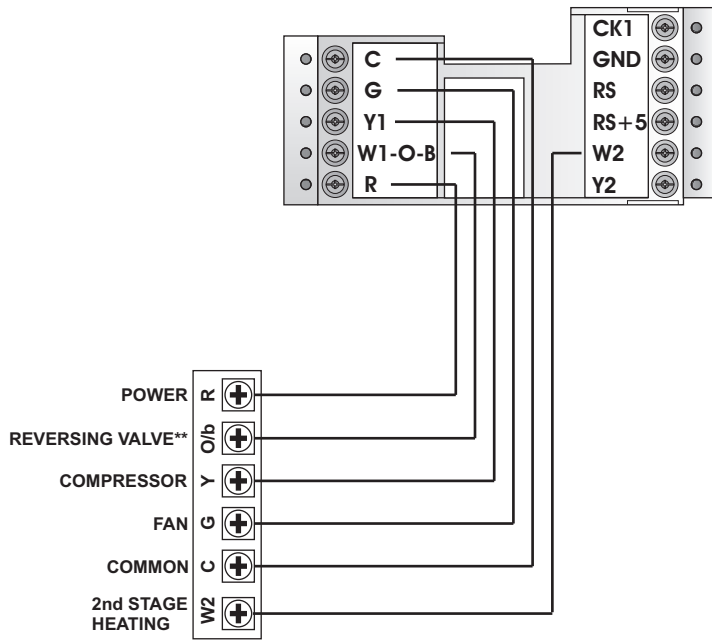
\* This option must be selected ON during advanced setup (see page 12, step 3 of Owner's Manual).

\*\* This option must be selected O or b during advanced setup (see page 13, step 4 of Owner's Manual).

**Sample Wiring Diagrams**

# Heat Pump

**6 Wire, 1 Stage Cooling, 2 Stage Heat-Heat Pump\* with O or b reversing valve\*\*.**  
 Residential Heat Pumps, split systems & package units, with auxiliary heat.



\* This option must be selected ON during advanced setup (see page 12, step 3 of Owner's Manual).

\*\* This option must be selected O or b during advanced setup (see page 13, step 4 of Owner's Manual).

**STEP #4****TEST OPERATION**

Turn the power on to the Heating/Air Conditioning system.



Press the **MODE** button repeatedly until the **HEAT** icon appears on the display. Press the **UP** or **DOWN** buttons until the set temperature is 10 degrees above room temperature. The HVAC unit should energize in the heating mode.



Press the **MODE** button repeatedly until the **COOL** icon appears on the display. Press the **UP** or **DOWN** buttons until the set temperature is 10 degrees below room temperature. The HVAC unit should energize in the cooling mode.

**NOTE:** Most equipment has a time delay of 5 minutes between cool cycles. This feature is defeatable on the thermostat (see page 13, step 8 of Owner's Manual).



Press the **UP** button until the setpoint is equal to the room temperature. Press the **FAN** button to **Fan On**. The fan should turn on and run continuously.

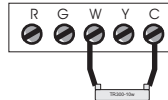
## TROUBLESHOOTING



**SYMPTOM:** When using 4 wires (R, G, W, Y), the air conditioning equipment tries repeatedly to turn on, but cannot. At times the display dims or disappears.

**CAUSE:** There is not enough power available to "power share".

**REMEDY:** Connect a 250 ohm, 10 watt power resistor **at the furnace** as shown below.



**SYMPTOM:** The air conditioning does not attempt to turn on.

**CAUSE:** The compressor timer lockout may prevent the air conditioner from turning on, for a period of time.

**REMEDY:** See page 13 of the Owner's Manual and configure step 8 to defeat the 5-minute compressor lockout.



**SYMPTOM:** The display is blank.

**CAUSE:** Lack of proper power.

**REMEDY:** Make sure power is turned on to the furnace and 24vac between **R & W**. If **C** is used, 24vac between **R & C**.

## TROUBLESHOOTING



**SYMPTOM:** When controlling a residential heat pump, and asking for cooling, the heat comes on.

**CAUSE:** Heat pump is not selected "ON" in the Advanced Setup.

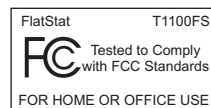
**REMEDY:** See page 12 of the Owner's Manual and configure step 3 to enable heat pump operation.



**SYMPTOM:** When calling for cooling, both the heat and cool come on.

**CAUSE:** The thermostat is configured to control a heat pump and the HVAC system is a "conventional" (non-heat pump) system.

**REMEDY:** See page 12 of the Owner's Manual and set step 3 to OFF to enable gas electric operation.



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