

Installation Instructions



Model
S1-THEU22P7S
RESIDENTIAL

BACKLIT **DISPLAY**

Heat/Cool & Heat Pump
7-Day Programmable

Digital
Thermostat

Use with most
Heat Pump Systems:
2-Heat, 2-Cool



- Stages: 2-Heat, 2-Cool
- Backlit Digital Display
- Aux Heat Indicator
- System Powered
- Fahrenheit or Celsius



LEARN MORE AT
energystar.gov

Contents

Page #

Safety Warnings	3
Preparation	4
Remove Old Thermostat	5
Wire Connections	6
Test Operation	15
Troubleshooting	17
Warranty	18

Safety Warnings

P/N S1-THEU22P7S

CAUTION

Follow *Installation Instructions* carefully.

DISCONNECT POWER TO THE HEATER -
AIR CONDITIONER BEFORE REMOVING
THE OLD THERMOSTAT AND INSTALLING
THE NEW THERMOSTAT.

**WARNING**

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.

Preparation



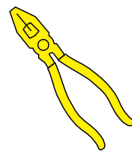
Proper installation of the thermostat will be accomplished by following these step by step instructions. If you are unsure about any of these steps, call a qualified technician for assistance.



These tools will be required:



*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 and instructions.



Turn off the power to the Heat Pump system at the main fuse panel.

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.

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
W1, W or H	Gas Furnace	W1/O/B
Y1 or Y	Electric Cool	Y1
Y2	Electric Cool	Y2
B	Rev. Valve (Energize to Heat)	W1/O/B
O	Rev. Valve (Energize to Cool)	W1/O/B
W2	Aux. Heat	W2
G or F	Fan	G
Rh, R, M, Vr, A	Power	R
C	Common	C

Thermal Insulating Sheet

A label is provided on the backplate that prevents drafts originating inside the wall from entering the thermostat.

These drafts, left unchecked, may cause incorrect room temperature readings.

Please do not remove this label from the thermostat. Insert the wires through the slots provided in the label as shown in Fig. 1.

Wire Slots

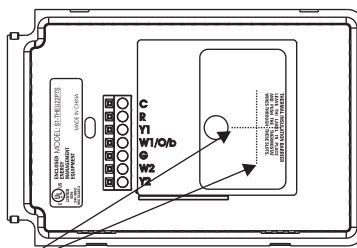
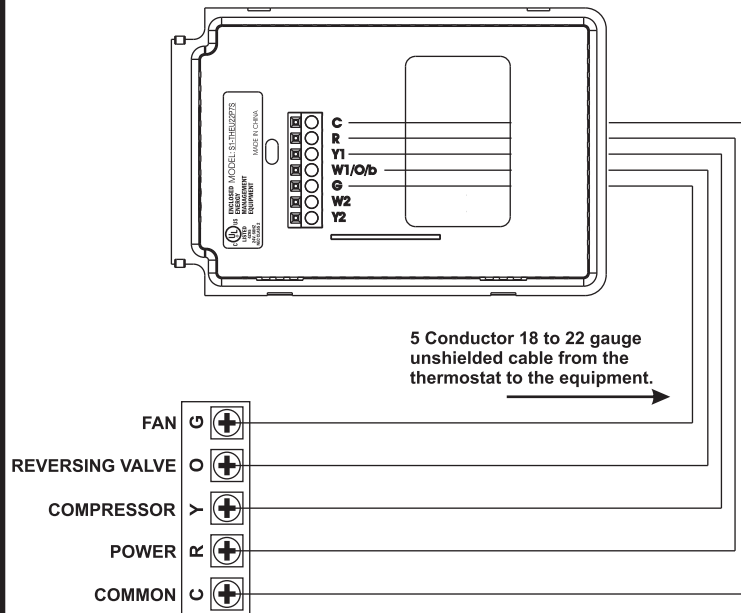


Fig. 1

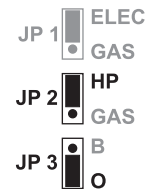
Sample Wiring Diagrams

5 Wire, Single Stage Heat Pump (O reversing valve)

Residential Heat Pumps, split systems & package units, with no auxiliary heat.



JUMPER SETTINGS



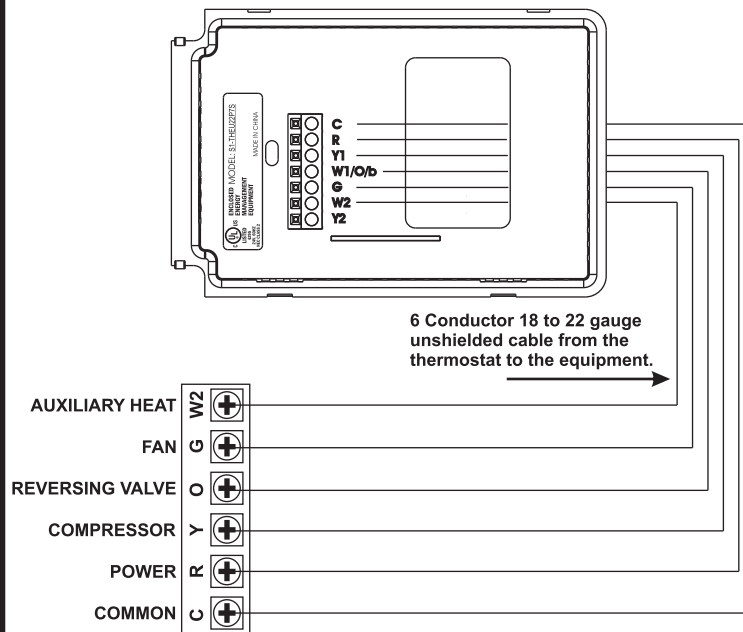
ACTIVE OUTPUTS

	With Demand
1st Stage Cooling	Y, G, O
1st Stage Heating	Y, G

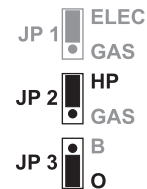
Sample Wiring Diagrams

6 Wire, Single Stage Heat Pump with Auxiliary Heat (O reversing valve)

Residential Heat Pumps, split systems & package units, with auxiliary heat.



JUMPER SETTINGS



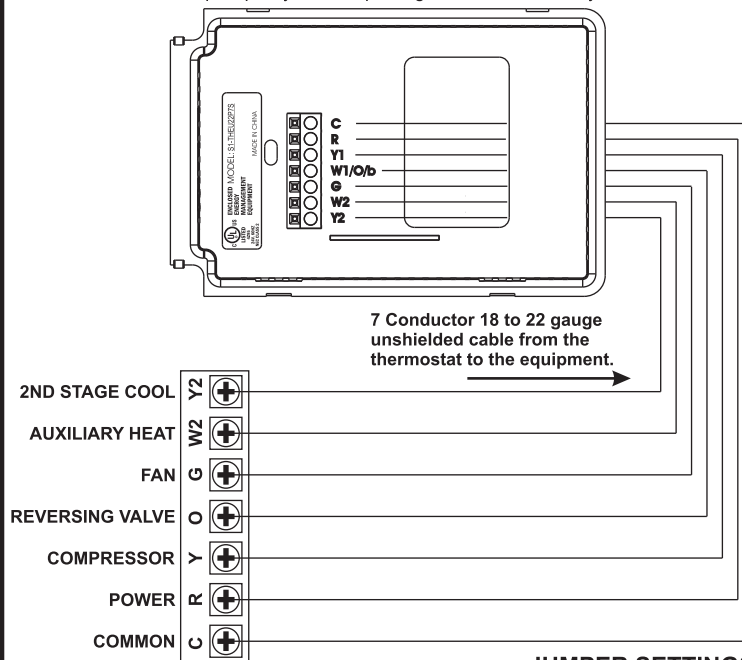
ACTIVE OUTPUTS

	With Demand
1st Stage Cooling	Y, G, O
1st Stage Heating	Y, G
2nd Stage Heating	W2, Y2, Y, G

Sample Wiring Diagrams

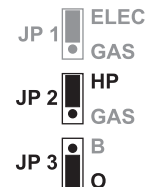
7 Wire, Two Stage Heat Pump with Auxiliary Heat (O reversing valve)

Residential Heat Pumps, split systems & package units, with auxiliary heat.



JUMPER SETTINGS

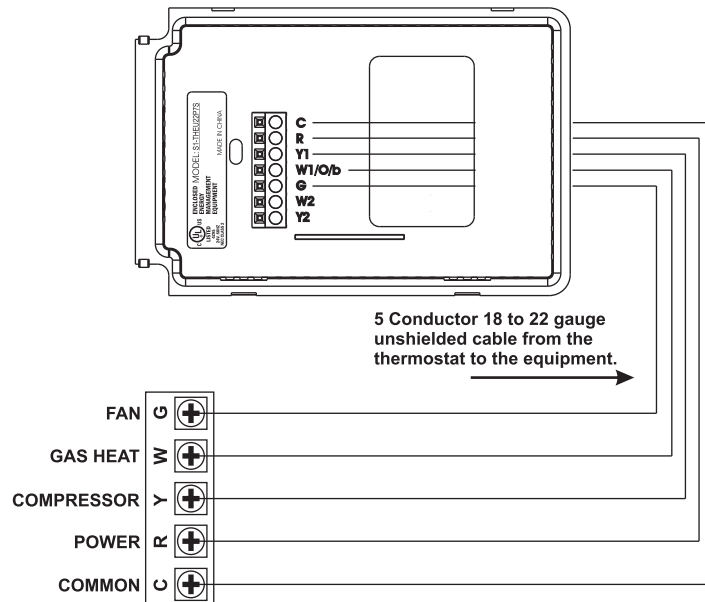
ACTIVE OUTPUTS	With Demand
1st Stage Cooling	Y, G, O
2nd Stage Cooling	Y2, Y, G, O
1st Stage Heating	Y, G
2nd Stage Heating	W2, Y2, Y, G



Sample Wiring Diagrams

5 Wire, Single Stage Gas Furnace

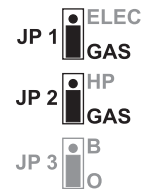
Residential Gas Heat, Electric Cool, split systems & package units.



ACTIVE OUTPUTS	With Demand
1st Stage Cooling	Y, G
1st Stage Heating	W1, (G)*

*In this application 24v will not be present at the 'G' terminal. The fan will be controlled by the Gas Furnace.

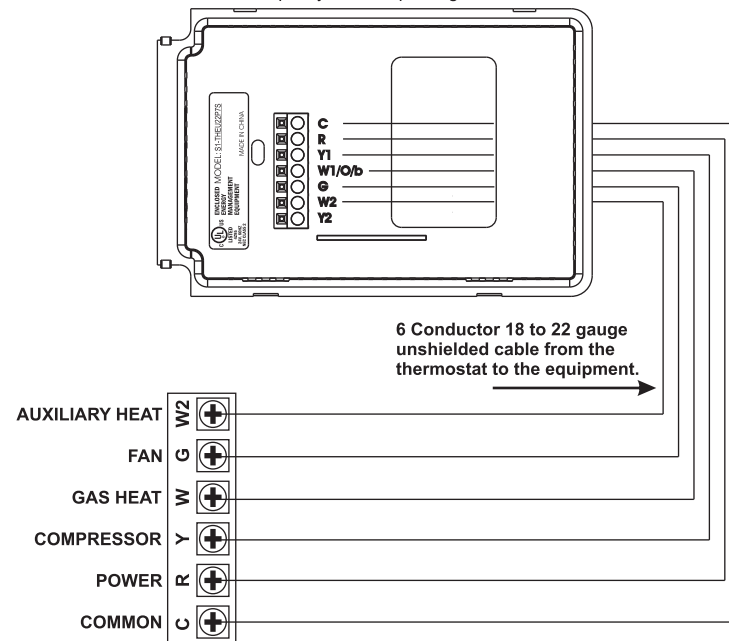
JUMPER SETTINGS



Sample Wiring Diagrams

6 Wire, Two Stage Gas Furnace and Single Stage Cooling

Residential Gas, Electric Cool, split systems & package units.

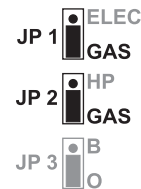


ACTIVE OUTPUTS

	With Demand
1st Stage Cooling	Y, G
1st Stage Heating	W1, (G)*
2nd Stage Heating	W2, W1, (G)*

*In this application 24v will not be present at the 'G' terminal. The fan will be controlled by the Gas Furnace.

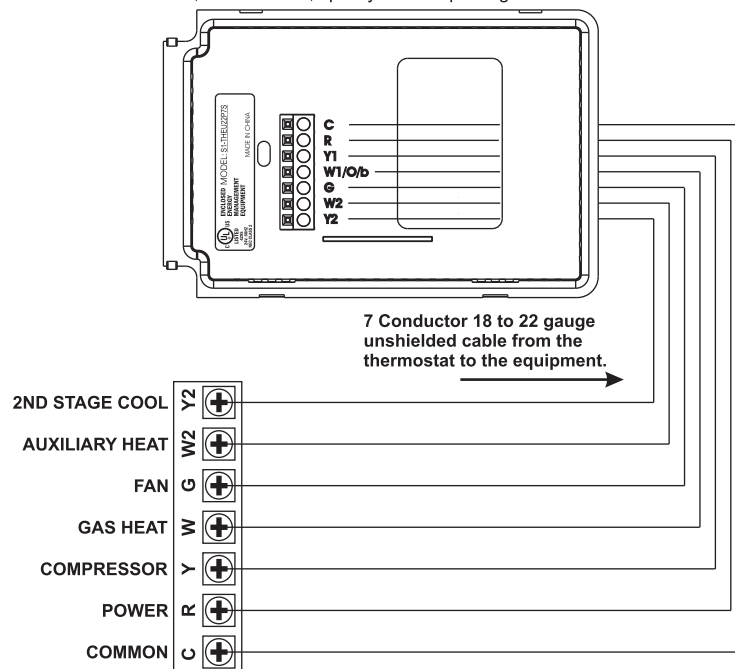
JUMPER SETTINGS



Sample Wiring Diagrams

7 Wire, Two Stage Gas Furnace and Two Stage Cooling

Residential Gas Heat, Electric Cool, split systems & package units.

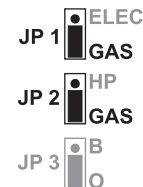


ACTIVE OUTPUTS

	With Demand
1st Stage Cooling	Y, G
2nd Stage Cooling	Y2, Y, G
1st Stage Heating	W1, (G)*
2nd Stage Heating	W2, W1, (G)*

*In this application 24v will not be present at the 'G' terminal. The fan will be controlled by the Gas Furnace.

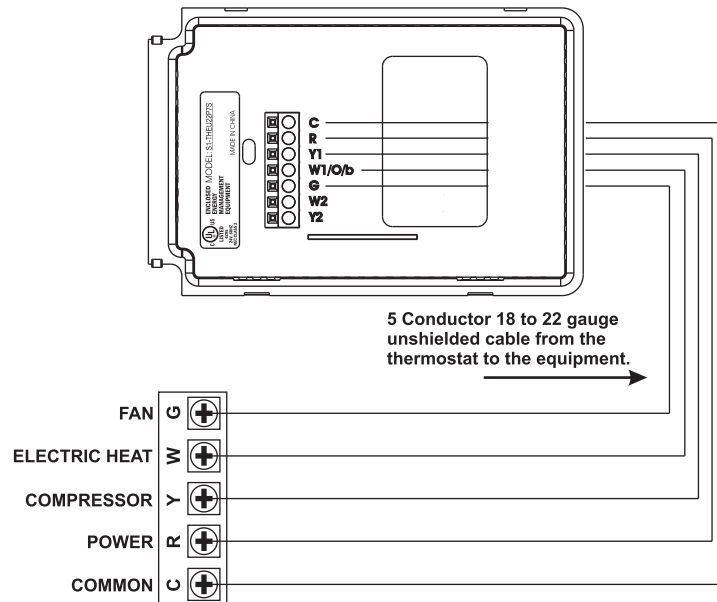
JUMPER SETTINGS



Sample Wiring Diagrams

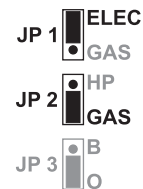
5 Wire, Single Stage Electric Heat

Residential Electric Heat units with a separately controlled fan.



ACTIVE OUTPUTS	With Demand
1st Stage Cooling	Y, G
1st Stage Heating	W1, G

JUMPER SETTINGS



Test Operation



Turn on the power to the HVAC unit.

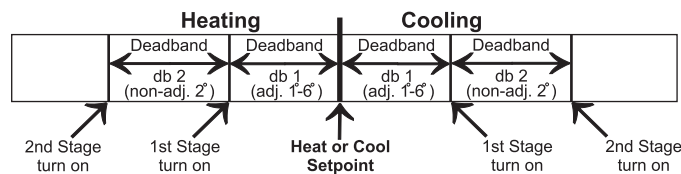


On the thermostat, press the Mode button until **HEAT** is displayed. Press the COOLER or WARMER button until the set temperature is 10 degrees above room temperature. The HVAC unit should energize in the heating mode.

Note: *You may need to wait up to five minutes for heating to energize due to the compressor lockout feature. There is a two minute minimum run-time for first stage heating.*



TWO STAGE OPERATION - The 2nd stage of heat (auxiliary heat) is turned on when the room temperature is equal to or less than: *the setpoint minus the 1st stage deadband (one degree, adjustable), minus the 2nd stage deadband (two degrees, non-adjustable).*



Test Operation

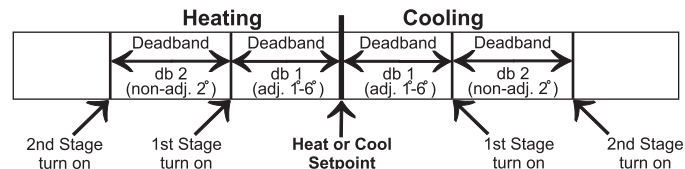


On the thermostat, press the Mode button until **COOL** is displayed. Press the COOLER or WARMER button until the set temperature is 10 degrees below room temperature. The HVAC unit should energize in the cooling mode (page 7 of the Owner's Manual).

Note: *You may need to wait up to five minutes for cooling to energize due to the compressor lockout feature.*



TWO STAGE OPERATION - The 2nd stage of cooling is turned on when the room temperature is equal to or greater than: *the setpoint plus the 1st stage deadband (one degree, adjustable), plus the 2nd stage deadband (two degrees, non-adjustable).*



On the thermostat, press the Mode button until **OFF** is displayed. Press the Fan button until **Fan On** is displayed. The fan should turn on and run continuously.

Trouble Shooting



SYMPTOM: The cooling does not attempt to turn on.

CAUSE: The cooling setpoint is set too high or the thermostat is not in the Cool mode.

REMEDY: Consult the Normal Operation section in the Owner's Manual to:

Lower the cooling setpoint

Place the thermostat into the Cool mode



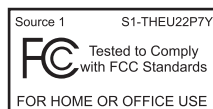
SYMPTOM: The heating does not attempt to turn on.

CAUSE: The heating setpoint is set too low or the thermostat is not in the Heat mode.

REMEDY: Consult the Normal Operation section in this manual to:

Raise the heating setpoint

Place the thermostat into the Heat mode



P/N 88-679
Rev. 1

Warranty

One-Year Warranty - This Product is warranted to be free from defects in material and workmanship. If it appears within one year from the date of original installation, whether or not actual use begins on that date, that the product does not meet this warranty, a new or remanufactured part, at the manufacturer's sole option to replace any defective part, will be provided without charge for the part itself provided the defective part is returned to the distributor through a qualified servicing dealer.

THIS WARRANTY DOES NOT INCLUDE LABOR OR OTHER COSTS incurred for diagnosing, repairing, removing, installing, shipping, servicing or handling of either defective parts or replacement parts. Such costs may be covered by a separate warranty provided by the installer.

THIS WARRANTY APPLIES ONLY TO PRODUCTS IN THEIR ORIGINAL INSTALLATION LOCATION AND BECOMES VOID UPON REINSTALLATION.

LIMITATIONS OF WARRANTIES – ALL IMPLIED WARRANTIES (INCLUDING IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY) ARE HEREBY LIMITED IN DURATION TO THE PERIOD FOR WHICH THE LIMITED WARRANTY IS GIVEN. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE MAY NOT APPLY TO YOU. THE EXPRESSED WARRANTIES MADE IN THIS WARRANTY ARE EXCLUSIVE AND MAY NOT BE ALTERED, ENLARGED, OR CHANGED BY ANY DISTRIBUTOR, DEALER, OR OTHER PERSON WHATSOEVER. ALL WORK UNDER THE TERMS OF THIS WARRANTY SHALL BE PERFORMED DURING NORMAL WORKING HOURS. ALL REPLACEMENT PARTS, WHETHER NEW OR REMANUFACTURED, ASSUME AS THEIR WARRANTY PERIOD ONLY THE REMAINING TIME PERIOD OF THIS WARRANTY.

THE MANUFACTURER WILL NOT BE RESPONSIBLE FOR:

1. Normal maintenance as outlined in the installation and servicing instructions or owner's manual, including filter cleaning and/or replacement and lubrication.
2. Damage or repairs required as a consequence of faulty installation, misapplication, abuse, improper servicing, unauthorized alteration or improper operation.
3. Failure to start due to voltage conditions, blown fuses, open circuit breakers or other damages due to the inadequacy or interruption of electrical service.
4. Damage as a result of floods, winds, fires, lightning, accidents, corrosive environments or other conditions beyond the control of the Manufacturer.
5. Parts not supplied or designated by the Manufacturer, or damages resulting from their use.
6. Manufacturer products installed outside the continental U.S.A., Alaska, Hawaii, and Canada.
7. Electricity or fuel costs or increases in electricity or fuel costs for any reason whatsoever including additional or unusual use of supplemental electric heat.
8. ANY SPECIAL INDIRECT OR CONSEQUENTIAL PROPERTY OR COMMERCIAL DAMAGE OF ANY NATURE WHATSOEVER. Some states do not allow the exclusion of incidental or consequential damages, so the above may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which may vary from state to state.