

Installer Manual

Non-Programmable Thermostats

PSP1100 Up to 1-heat / 1-cool **PSP2100** Heat Pump, Up to 2-heat / 1-cool

- 1 Specifications 2 Safety Warnings 3 About Your Thermostat
- 4 Preparation & Installation 5 Sample Wiring & Jumpers
- 6 Test Operations 7 Troubleshooting 8 Warranty



WARNING

Follow Installation Instructions carefully. Disconnect Power to the Heater/Air Conditioner before removing the old thermostat and installing the new thermostat.

1 Specifications

model PSP1100

- Manual-changeover
- 1 heat, 1 cool
- Non-programmable
- · Compatible with gas/elec, millivolt, and heat pump systems with no aux heat
- · Battery or 24vac system powered

model PSP2100

- Manual-changeover
- 2 heat, 1 cool
- Non-programmable
- · Compatible with heat pumps with 2nd stage aux heat
- · Battery or 24vac system powered

Table of Contents

4 Preparation and Installation

Remove Old Thermostat	10
Battery Replacement	11
Wire Connections	12
Thermal Insulating Sheet	13

5 Sample Wiring Diagrams

Sample Wiring Diagrams for PSP1100	14
Sample Wiring Diagrams for PSP2100	16
Jumper Configuration	17
6 Test Operation	18
7 Troubleshooting	20
8 Warranty	21

2 Safety Warnings



Follow Installation Instructions carefully. DISCONNECT POWERTOTHE HEATER - AIR CONDITIONER <u>BEFORE</u> REMOVING THE OLD THERMOSTAT AND INSTALLING THE NEW THERMOSTAT.



The two Alkaline "AA" batteries must be replaced at least once every 12 months to ensure proper operation. The Low Battery icon will appear on the display when it is time to replace the batteries. If the thermostat is connected to 24v power, the batteries should still be installed, but are not required.

When "Low Battery" is displayed the batteries must be replaced immediately. The manufacturer cannot be liable for improper operation of the thermostat if the batteries are not immediately replaced.

Annual battery replacement is especially critical in locations subject to freezing temperatures. The thermostat will be unable to turn on the heating system if the batteries are exhausted.

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.

3 About Your Thermostat

1 Front Panel



Display



- Heat and Cool indicators. In normal operation, Heat or Cool appears, depending on the Mode Switch position. When heat or cool is energized, the Heat or Cool indicator will flash.
- 2 Current room temperature.
- Obesired set temperature indicator. When this indicator is on, the large numbers represent the desired room temperature. Pressing the COOLER or WARMER button during normal operation will cause the large numbers to switch from the current room temperature to the desired set temperature.



- Indicates battery life is low; it is recommended to replace the batteries at this time.
- Indicates auxiliary heat is energized. (PSP2100 only)



Operation

- Select Cool or Heat with the Mode Switch.
- Normally leave the fan switched to Auto. In Fan Auto, the fan will turn on only with a heat or cool demand. When Fan On is selected, the fan will run continuously.
- Adjust the desired set temperature with the COOLER and WARMER buttons.



Operation



Select Off with the Mode Switch.

- Press and hold the COOLER and WARMER buttons at the same time until the temperature is displayed in degrees Celsius.
- Repeat this process to display the temperature in degrees Fahrenheit.



<u>Emergency</u> - Disables all compressor functions* and energizes only Aux Heat to satisfy the heat demand.

<u>Normal</u> - Aux Heat is allowed to run, if necessary, along with the heat pump to satisfy the heat demand.

Lockout - Aux Heat will never turn on regardless of the heat demand.

*When the Aux Heat switch is in the Emergency position the compressor will also be locked out during cooling operation.

4 Preparation and Installation

- 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:



- Make sure your Heater/Air Conditioner (Heat Pump for PSP2100) is working properly before beginning installation of the thermostat.
- Carefully unpack the thermostat. Save the screws and instructions.
- Turn off the power to the Heating/Air Conditioning (or Heat Pump for PSP2100) system at the main fuse panel. Most residential systems have a separate breaker for disconnecting power to the furnace.

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.

Battery Replacement



The batteries are easily accessible from the battery door located on the bottom front of the thermostat (fig. 1). To open the battery slot, pull out on the battery door (fig. 1) and swing down (fig. 2).



The batteries must be replaced immediately when the thermostat displays LOW BATTERY in the lower left corner of the display.

Wire Connections PSP1100

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
С	Common	C (optional)
R, M, Vr, A	Power (Heating Transformer)	RH*
Y1 or Y	Cooling	Y
W1, W or H	Heating	W
G or F	Fan	G
RC, R, M, Vr, A	Power (Cooling Transformer)	RC*
0/B	Rev. Valve	0/B

* The RC and RH terminals have a factory installed jumper to control single transformer systems. Remove this jumper to control dual transformer systems.

Wire Connections PSP2100

Wire from the old thermostat terminal marked	Function	Install on the new thermostat connector marked
С	Common	C (optional)
Rc, R, M, Vr, A	Power	R
Y1 or Y	Cooling	Y
W1, W or H	Auxiliary Heat	W
G or F	Fan	G
В	Reverse Valve (Energize to Heat)	В
0	Reverse Valve (Energize to Cool)	0

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.

FIG. 1



5 Sample Wiring Diagrams

Sample Wiring Diagrams PSP1100

Conventional Heating and Cooling Systems and Heat Pump Systems with no Aux Heat

4 Wire, 1 Stage Cool, 1 Stage Heat	4 Wire, 1 Stage Cool, 1 Stage Heat
Heat Pump with 0 reversing valve	Heat Pump with B reversing valve
Residential Heat Pumps, split systems &	Residential Heat Pumps, split systems &
package units, with no auxiliary heat	package units, with no auxiliary heat
Y COMPRESSOR	Y COMPRESSOR
G FAN	G FAN
R POWER	R POWER
O REVERSING VALVE	B REVERSING VALVE
J1 = ELEC	J1 = ELEC
J2 = HP	J2 = HP
J3 = 0	J3 = B
4 Wire, 1 Stage Cool, 1 Stage Heat Residential Gas or Electric Heat, Electric Cool, split systems & package units Y COMPRESSOR W GAS OR ELECTRIC HEAT G FAN R POWER J1 = GAS J2 = GAS/ELEC J3 = not used	3 Wire, 1 Stage Heat Residential Gas or Electric Heat units with a separately controlled fan W GAS OR ELECTRIC HEAT G FAN R POWER J1 = GAS (for gas heat) or J1 = ELEC (for electric heat) J2 = GAS/ELEC J3 = not used

Sample Wiring Diagrams PSP1100

Conventional Heating and Cooling Systems and Heat Pump Systems with no Aux Heat

2 Wire, 1 Stage Gas Heat Residential Gas or Millivolt units W GAS OR ELECTRIC HEAT R POWER J1= not used J2 = GAS/ELEC J3 = not used Dual Transformer 5 Wire, 1 Stage Cool, 1 Stage Heat Residential Gas or Electric Heat. Electric Cool, split systems & package units HEATING SYSTEM **RH* POWER HEAT** W GAS OR ELECTRIC HEAT G FAN COOLING SYSTEM COMPRESSOR γ **RC* POWER COOL** J1 = GAS (for gas heat) or J1 = ELEC (for electric heat) $J_{2} = GAS/FLFC$ J3 = not used*Remove the factory installed jumper

between BC and BH

Sample Wiring Diagrams PSP2100

Heat Pump Systems

4 Wire, 1 Stage Cool, 1 Stage Heat Heat Pump with 0 reversing valve Residential Heat Pumps, split systems & package units, with no auxiliary heat R POWER Y COMPRESSOR G FAN 0 REVERSING VALVE	5 Wire, 1 Stage Cool, 1 Stage Heat Heat Pump with 0 reversing valve and Auxiliary Heat Residential Heat Pumps, split systems & package units, with auxiliary heat R POWER Y COMPRESSOR W AUXILARY HEAT G FAN 0 REVERSING VALVE
4 Wire, 1 Stage Cool, 1 Stage Heat Heat Pump with B reversing valve Residential Heat Pumps, split systems & package units, with no auxiliary heat R POWER Y COMPRESSOR G FAN B REVERSING VALVE	5 Wire, 1 Stage Cool, 2 Stage Heat Heat Pump with B reversing valve and Auxiliary Heat Residential Heat Pumps, split systems & package units, with auxiliary heat R POWER Y COMPRESSOR W AUXILIARY HEAT G FAN B REVERSING VALVE

Check Jumpers (ONLY for PSP1100)

Ensure which jumper is correct for your system. Jumpers are located on the back of the thermostat.





J1 = GAS the thermostat <u>will not</u> energize the Fan (G) terminal in heating.

J1 = ELEC the thermostat $\underline{\text{will}}$ energize the fan in heating.



J2 = GAS/ELEC the thermostat is configured for a conventional gas/electric system

J2 = HP the thermostat is configured for a heat pump system.



Heat Pump Systems Only (J2 = HP) J3 = 0 reversing valve terminal O/B will energize in cooling

J3 = B reversing value terminal O/B will energize in heating

6 Test Operation

- Turn on the power to the Heating/Air Conditioning (or Heat Pump for PSP2100) system.
- On the thermostat, slide the Mode Switch to HEAT. 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 (Page 6). 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.
- On the thermostat, slide the Mode Switch to COOL. Press the COOLER or WARMER buttons until the set temperature is 10 degrees below room temperature. The HVAC unit should energize in the cooling mode (Page 6). Note: You may need to wait up to five minutes for cooling to energize due to the compressor lockout feature.
- Keep the old thermostat for reference purposes, until your new thermostat is functioning properly.
- On the thermostat, slide the Mode Switch to **OFF**. Slide the Fan Switch to **Fan On**. The fan should turn on and run continuously (Page 6).

For the PSP2100

- **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, non-adjustable), minus the 2nd stage deadband (two degrees, non-adjustable).
- On the thermostat, slide the Aux Heat Switch to the **NORMAL** position. Press the COOLER or WARMER button until the set temperature is 10 degrees above room temperature. The Aux Heat icon will appear indicating that the thermostat has energized Aux Heat (page 8).



7 Troubleshooting

• **SYMPTOM**: The slide switches on the thermostat are very difficult to move. **CAUSE**: The backplate of the thermostat is screwed too tightly into a wall that is not perfectly flat.

REMEDY: Loosen the screws holding the thermostat into the wall.

• **SYMPTOM:** The Air Conditioning does not attempt to turn on. **CAUSE:** The cooling setpoint is set too high, the Mode Switch is not set for Cool, or the batteries are too weak.

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

- Lower the cooling setpoint (Page 6).
- Correct the Mode Switch position (Page 6).
- Replace the batteries (Page 10).
- Adjust the Aux Switch to Normal (page 8) for PSP2100 ONLY.
- SYMPTOM: The fan does not turn on even though the compressor has energized.

CAUSE: The Fan Switch is not completely in the On or Auto position. **REMEDY:** Slide the Fan Switch firmly into the On or Auto position.

- **SYMPTOM:** Aux Heat does not turn on (PSP2100 only). **CAUSE:** The Aux Heat Switch is set for Lockout. **REMEDY:** Consult the Aux Heat section of this manual to slide the Aux Heat Switch to Normal (Page 8).
- **SYMPTOM:** The Heating does not attempt to turn on. **CAUSE:** The heating setpoint is set too high, the Mode Switch is not set for Heat, or the batteries are too weak.

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

- Raise the heating setpoint (Page 6).
- Correct the Mode Switch position (Page 6).
- Replace the batteries (Page 10).

8 Limited Warranty

PSP Series - Thermostat Models: PSP1100, PSP1152, PSP2100, PSP2152, PSP2270, PSP2270c, PSP2111, PSP4272, PSP4273, PSP4271C, PSP4272C, PSP4272RT, PSP4273RT, PSP4272CT, PSP4273CT

Who Is Providing The Warranty?

This warranty is provided to you by Goodman Manufacturing Company, L.P. ("Goodman"), which warrants all parts of this thermostat ("control"), as described below.

To What Type Of Installations Does This Warranty Apply?

This warranty applies to controls installed in owneroccupied residences.

What Units Does This Warranty Not Cover?

This warranty does not apply to:

- Controls that are ordered over the Internet, by telephone, or by other electronic means unless the unit is installed by a dealer adhering to all applicable federal, state, and local codes, policies, and licensing requirements.
- Controls that are installed outside the United States, its territories, or Canada.
- Controls that are installed in buildings other than owner-occupied residences, such as non-residential buildings or residences not occupied by the owner.

What Problems Does This Warranty Cover?

This warranty covers defects in materials and workmanship that appear under normal use and maintenance.

Other Warranties

This warranty is in lieu of all other express warranties. ANY IMPLIED WARRANTIES BY GOODMAN, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, ARE LIMITED TO THE DURATION OF THIS WARRANTY. NO AFFILIATE OF GOODMAN GIVES ANY EXPRESS OR IMPLIED WARRANTY, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, ON THIS UNIT. Some states and provinces do not allow the exclusion of express warranties and/or limitations on how long an implied warranty lasts, so the above exclusion and/or limitation may not apply to you. For further information about this warranty contact Consumer Affairs at (877) 254-4729 or by mail to 19001 Kermier Rd, Waller, Texas 77484

What Problems Does This Warranty Not Cover?

Goodman is not responsible for:

- Damage or repairs required as a consequence of faulty installation or application.
 Damage as a result of floods, fires, winds, lightning, accidents, corrosive atmosphere, or other conditions beyond Goodman's control.
- Damage or the need for repairs arising from the use of components or accessories not compatible with this control.
- Normal maintenance as described in the installation and operating manual.
- Parts or accessories not supplied or designated by the manufacturer.
- · Damage or the need for repairs resulting from any improper use, maintenance, operation, or servicing.
- Damage or failure of the control due to interruption in electrical service or inadequate electrical service.
- Any damage caused by frozen or broken water pipes in the event of equipment failure.
- Changes in the appearance of the control that do not affect its performance.
- Replacement of fuses and replacement or resetting of circuit breakers.

When Does Warranty Coverage Begin?

Warranty coverage begins on the "installation date." The installation date is one of two dates depending on the circumstances of purchase:

- For controls installed in a newly constructed residence, the installation date is the date the owner purchases the residence from the builder.
- (2) For controls installed in existing residences, the installation date is the date that the control is originally installed.

- (3) For products on which a manufacture date is indicated, if the date the owner purchases the residence from the builder or the date the product is originally installed cannot be verified, the installation date is three months after the manufacture date.
- (4) For products on which a manufacture date is not indicated, if the date the owner purchases the residence from the builder or the date the product is originally installed cannot be verified, the installation date is the date the condensing unit to which the product is paired was originally installed.

How Long Does Warranty Coverage Last?

The warranty lasts for a period up to 1 YEAR. The warranty period does not continue after the control is removed from the location where it was originally installed. The replacement of a part under this warranty does not extend the warranty period. In other words, Goodman warrants a replacement control only for the period remaining in the applicable warranty that commenced on the installation date.

What Will Goodman Do To Correct Problems?

Goodman will furnish a replacement control, without charge for the control only, to replace any control that is found to be defective due to workmanship or materials under normal use and maintenance. Furnishing of the replacement control is Goodman's only responsibility under this warranty and the furnishing of the replacement control is the owner's only remedy. THE OWNER AGRESS THAT THESE REMEDIES ARE THE OWNER'S EXCLUSIVE REMEDIES FOR BREACH OF ALL WARRANTES, EXPERSS OR IMPLIED.

What Won't Goodman Do To Correct Problems?

Goodman will not pay for:

- Labor, freight, or any other cost associated with the service, repair, or operation of the control.
- Electricity or fuel costs, or increases in electricity or fuel costs, for any reason, including additional or unusual use of supplemental electric heat.
- · Lodging or transportation charges.

WHETHER ANY CLAIM IS BASED ON NEGLIGENCE OR OTHER TORT, BREACH OF WARRANTY OR OTHER BREACH OF CONTRACT, OR ANY OTHER THEORY, NEITHER GOODMAN NOR ANY OF ITS AFFILIATES SHALL IN ANY EVENT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING BUT

NOT LIMITED TO LOST PROFITS, LOSS OF USE OF A CONTROL, EXTRA UTILITY EXPENSES, OR DAMAGES TO PROPERTY.

Some states and provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you.

How Can The Owner Receive Warranty Service?

If there is a problem with the control, contact a licensed contractor.

To receive a replacement control, a licensed contractor must bring the defective control to a Goodman heating and air conditioning products distributor.

For more information about the warranty, contact Consumer Affairs at 877-254-4729 or write to Consumer Affairs, 19001 Kermier Rd, Waller, TX 77484.

This warranty gives you specific legal rights, and you may also have other rights that vary from state to state or province to province.

Quebec Residents

The arbitration provisions of this warranty shall not apply to residents of Quebec.

Non-Owner Occupied Warranty

Products installed in non-residential buildings or in residences not occupied by the owner are warranted for a period of 1 YEAR. THIS WARRANTY IS PROVIDED IN LIEU OF ANY OTHER WARRANTIES, WHETHER BY GOODMAN OR ANY OF ITS AFFILIATES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Subject to the additional limitations set forth in this paragraph, all other provisions of the Limited Warranty apply to products installed in non-residential buildings or in residences not occupied by the owner.

Where Can Any Legal Remedies Be Pursued? ARBITRATION CLAUSE. IMPORTANT. PLEASE REVIEW THIS ARBITRATION CLAUSE. IT AFFECTS YOUR LEGAL RIGHTS.

- Parties: This arbitration clause affects your rights against Goodman and any of its affiliates or employees or agents, successors, or assigns, all of whom together are referred to below as "we" or "us" for ease of reference.
- 2. ARBITRATION REQUIREMENT: EXCEPT AS STATED BELOW, ANY DISPUTE BETWEEN YOU AND ANY OF US SHALL BE DECIDED BY NEUTRAL, BINDING ARBITRATION RATHER THAN IN COURT OR BY JURY TRIAL. "Dispute" will be given the broadest possible meaning allowable by law. It includes any dispute, claim,

- or controversy arising from or relating to your purchase of this control, any warranty upon the unit, or the unit's condition. It also includes determination of the scope or applicability of this Arbitration Clause. The arbitration requirement applies to claims in contract and tort, pursuant to statute, or otherwise.
- 3. CLASS-ARBITRATION WAIVER: ARBITRATION IS HANDLED ON AN INDIVIDUAL BASIS. IF A DISPUTE IS ARBITRATED, YOU AND WE EXPRESSLY WAIVE ANY RIGHT TO PARTICIPATE AS A CLASS REPRESENTATIVE OR CLASS MEMBER ON ANY CLASS CLAIM YOU MAY HAVE AGAINST US OR WE AGAINST YOU, OR AS A PRIVATE ATTORNEY GENERAL OR IN ANY OTHER REPRESENTATIVE CAPACITY. YOU AND WE ALSO WAIVE ANY RIGHT TO CLASS ARBITRATION OR ANY CONSOLIDATION OF INDIVIDUAL ARBITRATIONS.
- 4. Discovery and Other Rights: Discovery and rights to appeal in arbitration are generally more limited than in a lawsuit. This applies to both you and us. Other rights that you or we would have in court may not be available in arbitration. Please read this Arbitration Clause and consult the rules of the arbitration organizations listed below for more information.
- SMALL CLAIMS COURT OPTION: YOU MAY CHOOSE TO LITIGATE ANY DISPUTE BETWEEN YOU AND ANY OF US IN SMALL CLAIMS COURT, RATHER THAN IN ARBITRATION, IF THE DISPUTE MEETS ALL REQUIREMENTS TO BE HEARD IN SMALL CLAIMS COURT.
- 6. Governing Law: For residents of the United States, the procedures and effect of the arbitration will be governed by the Federal Arbitration Act (9 U.S.C. § 1 et seq.) rather than by state law concerning arbitration. For residents of Canada, the procedures and effect of the arbitration will be governed by the applicable arbitration law of the province in which you purchased your control. The law governing your substantive warranty rights and other claims will be the law of the state or province in which you purchased your control. Any court having jurisdiction may enter judgment on the arbitration award.
- 7. Rules of the Arbitration: If the amount in controversy is less than \$250,000, the arbitration will be decided by a single arbitrator. If the amount in controversy is greater than or equal to \$250,000, the arbitration will be decided by a panel of three arbitrators. The arbitrator(s) will be chosen pursuant to the rules of the administering arbitration organization. United States residents may choose the American Arbitration Association (1633 Broadway, 10th Floor, New York, NY 10019, www.adr.

org), JAMS (1920 Main Street, Ste. 300, Irvine, CA 92614, www.jamsadr.com), or, subject to our approval, any other arbitration organization. In addition, Canadian residents may choose the ADR Institute of Canada (234 Eglinton Ave. East, Suite 405, Toronto, Ontario, M4P 1K5, www.amic.org). These organizations' rules can be obtained by contacting the organization or visiting its website. If the chosen arbitration organization's rules conflict with this Arbitration Clause, the provisions of this Arbitration Clause control. The award of the arbitrator(s) shall be final and binding on all parties.

- Location of the Arbitration Hearing: Unless applicable law provides otherwise, the arbitration hearing for United States residents will be conducted in the federal judicial district in which you reside or, for Canadian residents, in the province in which you reside.
- 9. Costs of the Arbitration: Each party is responsible for its own attorney, expert, and other fees unless applicable law requires otherwise. Goodman will pay your share of the fees charged by the arbitration organization and arbitrator(s) beyond the first \$200. Where permissible by law, you may be required to reimburse Goodman for the fees of the arbitration organization and arbitrator(s) in whole or in part by decision of the arbitrator(s) at the discretion of the arbitrator(s).
- 10. Survival and Enforceability of this Arbitration Clause: This Arbitration Clause shall survive the expiration or termination, or any transfer, of the warranty on your control. If any part of this Arbitration Clause, except waivers of class-action rights, is found to be unenforceable for any reason, the remainder of this clause and the warranty shall remain enforceable. If, in a case in which class-action rights under this warranty is found to be unenforceable with respect to any part of the dispute, the parts of the dispute as to which the waiver of class-action rights have been found unenforceable will be severed and will proceed in court without reference or application of this Arbitration Clause. Any remaining parts will proceed in arbitration.



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