

# Installer Manual

## **Commercial Smart Wi-Fi Thermostat**

#### **PSP4272C** Up to 4-heat / 2-cool with Humidity Control **OPTIONAL Wi-Fi and Local API with module**

- Specifications 2 Installation Instructions and Wiring 3 Installer Setup 4 Factory Defaults 5 Technician Setup & Calibration 6 Troubleshooting
- 7 Limited Waranty



## WARNING

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

## **1** Specifications

- Choose 7-Day, 5/1/1 day or 1-Day Programming
- 365-Day Holiday Programming (when connected to ProStat+ Web Portal)
- Built in light sensor for light activation option .
- . Smart recovery auto-adjusts Occ 1 start time
- Preoccupancy Fan Purge
- Random Start ensures staggered equip. starts .
- Energy Watch tracks heating, cooling, and override run times
- Adjustable Timers & Deadbands Between Stages

- Controls Humidification. Dehumidification & Reheat
- AUX output for Ventilation Control or IECC2018 regs
- Drv Contact for FDD alerts. condensate alarm, etc.
- Control to, or Monitor a 2nd Remote Sensor, supply air or computer room, etc.
- Setpoint Limiting
- Choice of English, Spanish or French For Scrolling Display
- CA Title 24 Compliant
- **OEM-Branded Equipment** . Badges Included

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## 2 Installation Instructions

## 1 Remove and Replace the old thermostat

To install the thermostat properly, please follow these step by step instructions. If you are unsure about any of these steps, call a qualified technician for assistance.

 Installation tools: Small flat blade screwdriver, Phillips screwdriver, wire cutters and wire strippers.



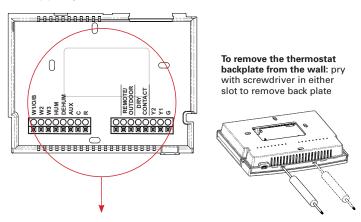
- Make sure your Heater/Air Conditioner is working properly before beginning installation of the thermostat.
- Carefully unpack the thermostat. Save the screws, any brackets, and instructions.
- Turn off the power to the Heating/Air Conditioning system at the main fuse panel. Most residential systems have a separate breaker or switch for disconnecting power to the furnace.
- 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.
- If you have a smart phone handy, take a photo of the wiring for future reference.
- 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.

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## 2 The ProStat+ Thermostat Backplate

### To remove the thermostat backplate:

Gently separate the display from the base by pulling from the center.



R	24 VAC return	С	24 VAC common	
G	Fan relay	AUX	Ventilation or IECC2018	
W1/O/B	1st stage heat circuit or reversing valve	HUM	Humidifier control circuit	
		DEHUM	Dehumidifier control circuit	
W2	2nd stage heat circuit*	DRY	FDD alerts, twist timer, etc.	
W3	3rd stage heat circuit**	CONTACT		
Y1	1st stage compressor (Cool or Heat)	REMOTE SENSOR	Remote sensor connections	
Y2	2nd stage compressor (Cool or Heat)	OUTDOOR SENSOR	Outdoor sensor connections	

\*3rd stage heat for heat pumps with two compressor stages \*\*4th stage heat for heat pumps with two compressor stages

IMPORTANT: This thermostat requires <u>both</u> R (24 VAC Return) and C (24 VAC Common) be connected to the backplate terminals.

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## 3 Check Dip Switch

Ensure which switch is correct for your system. Dip switches are located on the back of the thermostat.

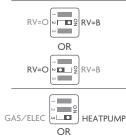




1. When **GAS/ELEC** or **HEATPUMP** is set for **GAS/ELEC**: This switch (GAS or ELEC) controls how the thermostat will control the Fan (G) terminal in heating mode. When **GAS** is chosen, the thermostat will not energize the Fan (G) terminal in heating. When **ELEC** is chosen the thermostat will energize the fan in heating.

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2. When GAS/ELEC or HEATPUMP is set for HEATPUMP: This switch (GAS or ELEC) defines the Aux Heat type. When GAS is chosen, the auxiliary heat will not be allowed to run during heat pump operation. When ELEC is chosen, up to two stages of auxiliary strip heat will be allowed to run.



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HEATPUMP

#### For Heat Pump Only

When the GAS/ELEC or HEATPUMP dip switch is configured for HEATPUMP, this dip switch (O or B) must be set to control the appropriate reversing valve. If O is chosen, the W1/O/B terminal will energize in cooling. If B is chosen, the W1/O/B terminal will energize in heating.

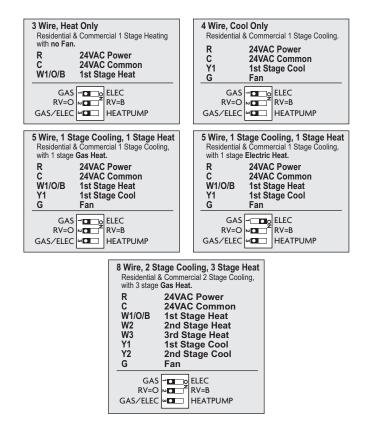
This dip switch configures the thermostat to control a conventional gas/electric system or a heat pump. If your system is anything other than a heat pump, leave this switch set for **GAS/ELEC**.

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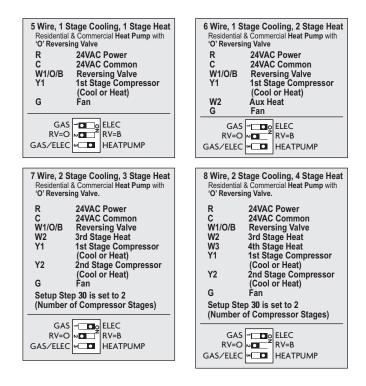
GAS/ELEC

4 Sample Wiring Diagrams

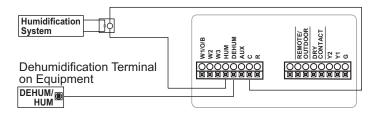
#### **Conventional Heating and Cooling Systems**



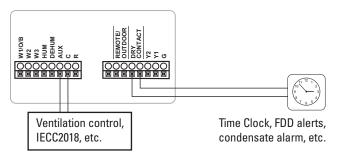
#### **Heat Pump Systems**



### Humidification or Dehumidification



#### **Dry Contact and Aux Output**



## 3 Installer Setup

Setup Step Table See User Manual for steps 1 - 8

FD = Factory Default Setting

Step	# Description	Pg#	Range	FD
1	Prog Mode		Non, 1 Day, 5/1/1 Day, 7	Day 7
2	Available Modes		Heat/Cool/Auto/Off,	Heat/Cool/
			Heat/Cool/Off, Heat/Off, Cool/Off	Auto/Off
3	Backlight		On. Off	Off
4	Backlight Level		Off thru 7 levels of brightness	Level 5
5	Night Dimmer		On/Off	Off
6	Night Dimmer Brightness		Off thru 7 levels of brightness	2 (20%)
	Night Dimmer StartTime		12A-12A	8:00P
7 8	Night Dimmer StopTime		12A-12A	6:00A
9	Current Service Filter Runtime Hours	10	0-1999 Hours	0
10	Current Service Filter Calendar Days	10	0-720 Days	0
11	Current Heat Runtime Hours	11	0-1999 Hours	0
12	Current Aux Heat Runtime Hours	11	0-1999 Hours	0
13	Current Cool Runtime Hours	11	0-1999 Hours	0
14	Current Override Hours	11	0-1999 Hours	0
15	Current UV Lamp Calendar Days	11	0-720 Days	0
16	Current Humidifier Calendar Days	11	0-720 Days	0
17	Set Service Filter Runtime Hours	10	0-1950 hours	0
18	Set Service Filter Calendar Days	10	0-720 Days	0
19	Set UV Lamp Calendar Days	11	0-720 Days	0
20	Set Humidifier Calendar Days	11	0-720 Days	0
21	Language	12	English, Espanol, Francais	English
22	Scrolling Method	12	"L-R Slow, L-R Fast, Word	"Whole Words
	Ũ		L-R Slow, Word L-R Fast,	Center Fast"
			Whole Word L Slow, Whole	
			Word R Slow, Whl Wrd Center	
			Fast, WhI Wrd Center Slow"	
23	Setpoint Limits	12	0 - 3	0
24	Max Heat Setpoint	12	35 - 99 Degrees	74
25	Min Cool Setpoint	12	35 - 99 Degrees	70
26	Cycles Per Hour	13	No Limit, 2, 3, 4, 5, 6	6
27	Compressor Minimum Off Min.	13	0, 3, 5 Minutes	5
28	Min. Heat/Cool Setpoint Difference	13	0 - 6 Degrees	2
29	Number of Heat Stages	13	0 - 3	2
30	Number of Cool Stages	13	0 - 2	1
31	Number Of Compressor Stages	13	1, 2	1
32	Number of Aux Stages	13	0, 1, 2	0
33	1st Stage Deadband	13	1 - 6 Degrees	2
34	2nd Stage Deadband	13	0 - 10 Degrees	2
35	3rd Stage Deadband	13	0 - 10 Degrees	2

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FD = Factory Default Setting

Sten#	Description	Pa#	Range	FD
	·		-	
36	4th Stage Deadband	14	0 - 10 Degrees	2
37	Minutes Between 1st and 2nd Stage	14	0 - 60 Minutes	2
38	Minutes Between 2nd and 3rd Stage	14	0 - 60 Minutes	2
39	Minutes Between 3rd and 4th Stage	14	0 - 60 Minutes	2
40	2nd StageTurnoff Point	14	Deadband, Setpoint	Deadband
41	3rd StageTurnoff Point	14	Deadband, Setpoint	Deadband
42	4th StageTurnoff Point	14	Deadband, Setpoint	Deadband
43	Minutes of Fan Purge	15	0 - 3 hrs, 15 min. increments - 0 = off	0
44	Wired Sensor Type	14	Remote, Supply	Remote
45	Control to Temp Source	14	Thermostat, Wired Remote*, Wireless Remote, Average of Wireless Remotes, Average Thermostat and Wired Remote*, Average All Sensors. *Option only if prior step = "Remote"	Thermostat
46	Wireless Remote to Use	15	list of wifi sensors currently linked to thermostat. Prior step must = "Wireless Remote"	first linked sensor in list
47	Humidity Only With Heat	15	On, Off	Off
48	Fan With Humidity Demand	15	Fan On, Fan Off	Fan Off
49	Fan With Dehumidify Demand	15	Fan On, Fan Off	Fan Off
50	Cool To Dehumidify	15	On, Off	Off
51	Maximum Occ Dehum Overcool	15	0 - 20 Degrees	2
52	Maximum Unocc Dehum Overcool	15	0 - 20 Degrees	2
53	Reheat w/Cool To Dehum.	15	On, Off	Off
54	Fan Off Delay	16	0 - 120 Seconds	0
55	F/C	16	Fahrenheit (F), Celsius (C)	F
56	Aux Output Polarity	16	Open, Closed	Open
57	Aux Output	16	Time, Temperature, External, Economizer	Time
58	Aux Output Program Days	16	1 Day, 5/1/1 Day, 7 Day	1
59	Day Of Week To Program	17	Sunday - Monday (S - M)	MTWTFSS
60	Aux Output Start Time	17	12am - 12am	7am
61	Aux Output Stop Time	17	12am - 12am	9pm
62	Сору	17	Yes, No	No
63	Aux Output Temp Source	17	Thermostat, Outdoor, Remote, External	Remote
64	Aux Output Trigger Point Temp	17	0 - 120 Degrees	65
65	Comfort Recovery	14	On, Off	Off

FD = Factory Default Setting

Step#	Description	Pg#	Range	FD
66	Dry Contact Polarity	18	Open, Closed	Open
67	Dry Contact Use	18	Condensate Pan, Occupied FDD, Holiday, Doorswitch	
68	Humidity Polarity	15	Open, Closed	Open
69	Dehumidify Polarity	15	Open, Closed	Open
70	Dehumidify only with Cooling	15	On, Off	On
71	Light Activation Sensitivity	19	Press Fan button to set current light level	
72	Light Activation to Occupied	19	On/Off	Off
73	Skyport	19	On, Off	On
74	Local API	19	On, Off	Off
75	ADR	19	On, Off	On
76	ADR Action	19	Observe Setpoint Offset, Observe Static Setpoints	Observe Setpoints Offsets
77	Event Max Cool Setpoint	20	65 - 99	90
78	Event Min Heat Setpoint	20	50 - 99	50
79	Static Cool Setpoint	20	65 - 99	82
80	Static Heat Setpoint	20	35 - 99	60
81	Cool Setpoint Offset	20	1 to 10	4
82	Heat Setpoint Offset	20	-1 to -10	-4
83	Press Fan To Clear All Messages	20		

### How to Change Settings in the Setup Screens

To enter Advanced Setup, press the **SETUP** button, then press **MODE**. Use the **WARMER** or **COOLER** buttons to adjust the value of your selection. Press **MODE** to advance to the next setup step. Press **SETUP** again to leave the setup screens.



FAN

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### Runtime Alerts & Reset (Setup Steps 9-20)

These setup steps allow the user to monitor equipment runtimes and program service alerts. Service alerts are displayed in the scrolling marquee. Press and hold FAN to clear service alert messages from the scrolling marguee.

### Service Filter Runtime (Setup Steps 9-10, 17-18)

**Current Service Filter Runtime Hours (Setup Step 9)** - This counter keeps track of the number of hours of fan runtime in the Heating mode, Cooling mode, and in stand alone Fan operation. Press **FAN** to reset.

Current Service Filter Calendar Days (Setup Step 10) - This counter displays the total number of calendar days that have elapsed since the counter was reset to help the user track filter usage. Press FAN to reset.

Set Service Filter Runtime Hours (Setup Step 17) - This timer allows the user to specify the number of hours the fan will run before the "Replace Filter" alert will be displayed. Press COOLER continuously until 0 is displayed to disable this alert.

Set Service Filter Calendar Days (Setup Step 18) - This timer allows the user to specify the number of calendar days that will elapse before the "Replace Filter" alert will be displayed. Press COOLER continuously until 0 is displayed to disable this feature.

### Heating and Cooling System Runtime - Energy Watch (Setup steps 11-13)

**Current Heat Runtime Hours** (Setup Step 11) - This counter keeps track of the number of hours the system has run in Heating. Press FAN to reset.

Current Aux Strip Heat Runtime Hours (Setup Step 12) - This counter keeps track of the number of hours the system has run in Auxiliary Heating. This setup step is only available when the thermostat jumpers are configured for Heat Pump and Electric Heat. Press **FAN** to reset.

Current Cool Runtime Hours (Setup Step 13) - This counter displays the number of hours the system has run in Cooling. Press FAN to reset.

Current Override Hours (Setup Step 14) - This counter keeps track of the number of hours that the thermostat is overridden into Occupied settings. Press FAN to reset.

UV Lamp Runtime (Setup Steps 15, 19)

Current UV Lamp Calendar Days (Setup Step 15) - This counter displays the total number of calendar days that have elapsed since last reset to help the user track UV lamp runtime. Press FAN to reset.

**Set UV Lamp Calendar Days** (Setup Step 19) - This timer allows the user to specify the number of calendar days the UV Lamp will operate before the "Replace UV Lamp" alert will be displayed. Press COOLER continuously until 0 appears to disable this alert.

Humidifier Runtime (Setup Steps 16, 20)

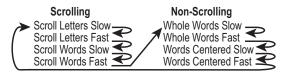
Current Humidifier Calendar Days (Setup Step 16) - This counter displays the total number of calendar days that have elapsed since last reset to help the user track the Humidifier run time. Press FAN to reset.

**Set Humidifier Calendar Days** (Setup Step 20) - This timer allows the user to specify the number of calendar days the Humidifier will run before the "Service Humidifier" alert will be displayed. Press COOLER continuously until 0 appears to disable this alert.

### Scrolling Display (Setup Steps 21, 22)

**Language** (Setup Step 21) - Setup step instructions on the scrolling display can be set for English, Spanish, or French.

Scrolling Display Method (Setup Step 22) - This option allows the user to choose how the scrolling text is displayed. Options are:



### Setpoint Limits (Setup Steps 23-25)

Setpoint Limits (Setup Step 23) - When this feature is at any setting other than NO SETPOINT LIMITS the heat and cool setpoints can be restricted to preset levels, set in steps 24 and 25. This feature allows the user to set 3 different levels of security: (0 - 3).

No Setpoint Limits (0) - When this level is selected, no restrictions are activated.

**Use Setpoint Limits (1)** - When this level is selected, the heat and cool setpoints can be restricted to preset levels, set in setup steps 24 and 25.

Maximum Heat Setpoint (Setup Step 24) - (35° - 99°).

Minimum Cool Setpoint (Setup Step 25) - (35° - 99°).

Force Program Mode (2) - When this level is selected, the heat and cool setpoints can be restricted to preset levels, set in setup steps 24 and 25 and the thermostat is locked into the current mode and the PROGRAM OFF | RUN and FAN buttons are locked out.

Setpoints Frozen (3) - When this level is selected, the heat and cool setpoints, the current mode, the FAN button and the PROGRAM OFF I RUN and FAN buttons are locked.

### Staging & Cycle Timers (Setup Steps 26-32)

**Cycles Per Hour** (Setup Step 26) - The Cycles Per Hour setting may limit the number of times per hour your HVAC unit may energize. For example, at a setting of 6 cycles per hour the HVAC unit will only be allowed to energize once every 10 minutes. The Cycles Per Hour limit may be overridden and reset by pressing the WARMER or COOLER buttons on the thermostat. Settings are No Limit, 2, 3, 4, 5, or 6.

**Compressor Minimum Off Minutes** (Setup Step 27) - This feature allows the user to set a minimum off time for the compressor. Settings are 5 mins., 3 mins., or 0 mins.

Minimum Heat/Cool Setpoint Difference (Setup Step 28) - This feature allows the user to set the minimum gap between Heat and Cool setpoints in AUTO mode. Select from 0 to 6. If setup step 2 is not set for AUTO-CHANGEOVER, this step will not appear.

**Number of Heat Stages** (Setup Step 29) - This setting assures proper stage callouts on the thermostat display for non-heat pump applications.

**Number of Cool Stages** (Setup Step 30) - This setting assures proper stage callouts on the thermostat display for non-heat pump applications.

**Number of Compressor Stages** (Setup Step 31) - This feature is for heat pump application only. This feature allows the thermostat to control 1 or 2 compressor stages when configured for heat pump.

Number of Aux Stages (Setup Step 32) - This feature is for heat pump applications only. This feature allows for proper Aux Heat Staging. (0-2 stages)

### Deadband Settings (Setup Steps 33-42, 65)

#### The Deadband is the number of degrees or minutes that the thermostat waits before it initiates each stage of heating or cooling.

**1st Stage Deadband** (Setup Step 33) - Specifies the minimum temperature difference between the room temperature and the desired setpoint before the first stage of heating or cooling is allowed to turn on (1 - 6 degrees). For example, if the heat setpoint is 68° and the 1st Stage deadband is set to 2 degrees, the room temperature will need to fall to 66° before the heat turns on.

**2nd Stage Deadband** (Setup Step 34) - Specifies the additional minimum temperature difference after the first stage turns on before the second stage is activated.  $(0^{\circ} - 10^{\circ})$ 

**3rd Stage Deadband** (Setup Step 35) - Specifies the additional minimum temperature difference after the second stage turns on before the third stage is activated.  $(0^{\circ} - 10^{\circ})$ 

**4th Stage Deadband** (Setup Step 36) - (Two Stage heat pump only) - Specifies the additional minimum temperature difference after the third stage turns on before the final stage of strip heat is activated ( $0^{\circ}$  -  $10^{\circ}$ ).

**Minutes Between 1st and 2nd Stage** (Setup Step 37) - Specifies the minimum time (in minutes) after the first stage turns on before the second stage can turn on. (0 - 60)

Minutes Between 2nd and 3rd Stage (Setup Step 38) - Specifies the minimum time (in minutes) after the second stage turns on before the third stage can turn on. (0 - 60)

**Minutes Between 3rd and 4th Stage** (Setup Step 39) - Specifies the minimum time (in minutes) after the third stage turns on before the final stage can turn on. (0 - 60)

**Second Stage Turnoff Point** (Setup Step 40) - Specifies whether second stage will turn off at first stage deadband or remain on until the room temperature demand is satisfied. Choose between Deadband or Setpoint.

**Third Stage Turnoff Point** (Setup Step 41) - Specifies whether third stage will turn off at second stage deadband or remain on until the room temperature demand is satisfied. Choose between Deadband or Setpoint.

**Fourth Stage Turnoff Point** (Setup Step 42) - Specifies whether fourth stage will turn off at third stage deadband or remain on until the room temperature demand is satisfied. Choose between Deadband or Setpoint.

**Comfort Recovery** (Setup Step 65) - With Comfort Recovery on, the thermostat will attempt to reach the Occupied 1 setpoint temperature at the exact time programmed into the thermostat. Comfort Recovery, only works when the thermostat enters the Occupied mode from the Unoccupied mode. For example, if the Occupied program is set for 6am at 72°F heating and 75°F cooling, the thermostat will turn the system on before 6am in an effort to bring the temperature to its correct setting at exactly 6am. The thermostat learns from experience, so please allow 4-8 days after a program change or after initial installation to give Comfort Recovery time to adjust. If used with a heat pump, electric strip heat will be disabled while Comfort Recovery is active.

### Remote Sensor Operation (Setup Steps 44-46, 55)

Wired Sensor Type (Setup Step 44) - Specifies the use of the connected, wired sensor. The choices are: Remote or Supply. The remote option allows control to the sensor, the supply is for monitor only.

**Control To Temp Source** (Setup Step 45) - This feature allows the user to specify which temperature sensor source the thermostat will use to measure room temperature.

Thermostat: Uses the internal thermostat sensor only.

Remote Sensor: Uses wireless or wired sensors only.

Average of Remote Sensor and Thermostat: Averages the temperatures of the remote sensor(s) and the thermostat.

**Wireless Remote To Use** (setup step 46) - Specifies which single wireless remote sensor is to be used for control. This step only appears when prior step setting is Wireless Remote.

Fahrenheit or Celsius (Setup Step 55) - This feature allows the thermostat to display temperature in Fahrenheit or Celsius.

#### NOTE: If a remote sensor is being used, the degree icon on the large room temperature display will blink.

### Humidity Control (Setup Steps 47-53, 68-70)

Humidity Only With Heat (Setup Step 47) - When this step is set to ON, Humidity will not run without a demand for Heat.

Fan with Humidity Demand (Setup Step 48) - Specifies if the fan should be turned on with a demand for Humidity. (This step will only appear if step 47 is set to OFF.)

Fan with Dehumidify Demand (Set up Step 49) - Specifies if the fan should be turned on with a demand for Dehumidify. (This step will only appear if step 50 is set to OFF.)

**Cool To Dehumidify** (Setup Step 50) - Specifies if the cooling equipment is allowed to turn on exclusively to lower room humidity. (If set to OFF the following two steps will not appear.)

**Max Occupied Dehum Overcool** (Setup Step 51) - Specifies how many degrees below the Cool setpoint the air conditioning will run to satisfy a Cool to Dehumidify demand during occupied periods.  $(0^{\circ} - 20^{\circ})$ 

**Max Unoccupied Dehum Overcool** (Setup Step 52) - Specifies how many degrees below the Cool setpoint the air conditioning will run to satisfy a Cool to Dehumidify demand during unoccupied periods.  $(0^{\circ} - 20^{\circ})$ 

Reheat Operation With Cool To Dehumidify (Setup Step 53) - Specifies if electric strip heat is allowed to turn on during a Cool to Dehumidify demand to help maintain desired

room temperature. This step is not available if Electric Heat is not present. Humidity Output Polarity (Setup Step 68)

Humidity Output Normally Open - means no voltage is sent to the HUM output when there is no demand for humidity.

Humidity Output Normally Closed - means voltage is sent to the HUM output when there is no demand for humidity.

Dehumidify Output Polarity (Setup Step 69)

**Dehumidify Output Normally Open** - means no voltage is sent to the DEHUM output when there is no demand to dehumidify.

**Dehumidify Output Normally Closed** - means voltage is sent to the DEHUM output when there is no demand to dehumidify.

**Dehumidify Only with Cooling** (Setup Step 70) - When set to ON, Dehumidify will only turn on with a 1st stage cooling demand.

## Fan Operation (Setup Steps 43, 54)

**Minutes of Fan Purge** (Setup Step 43) - When this feature is activated, the fan will turn on during an unoccupied period at a preset amount of time prior to Occupied 1. This preoccupancy fan purge timer may be set from zero to three hours, in 15 minute increments. Zero means this feature is turned off.

**Fan Off Delay in Seconds** (Setup Step 54) - This feature allows the user to increase the cooling or electric strip heating efficiency of the system. The thermostat may be programmed to continue running the fan after a call for cooling or electric strip heating has been satisfied. This delay can be set for 0, 30, 60, 90, or 120 seconds. If set to 0, the fan will not run after a call for cooling or electric strip heating has been satisfied.

## Auxiliary Output (Setup Steps 56-64)

The thermostat is equipped with a programmable auxiliary output. This output can be configured to be controlled from a variety of sources.

Aux Output Polarity (Setup Step 56) - Specifies if the Auxiliary output will be Open (Normally Open) or Closed (Normally Closed).

Aux Output (Setup Step 57) - Specifies which source will control the Aux output. Choices are:

Time - Uses the internal clock of the thermostat.

Temp - Uses one of three temperature sources.

**External** - The Auxiliary Output is controlled from an external source, such as a mobile app.

**Economizer** - Used to control an economizer, the Aux Output is active when program is in any occupied period.

### Auxiliary Output Programming by Time (Setup Steps 58-62)

If TIME is selected for the Aux Output, the following setup steps will appear:

Aux Output Days (Setup Step 58) - Specifies if the Aux Output will be single day (1 DAY), weekday/weekend (5/1/1 DAY), or seven day (7 DAY) programmable.

Day Of Week To Program (Setup Step 59) - Specifies which day of week to program.

Aux Output Start Time (Setup Step 60) - Specifies the time of each day when the Aux output will turn on.

Aux Output Stop Time (Setup Step 61) - Specifies the time of each day when the Aux output will turn off.

**Copy** (Setup Step 62) - This step only appears if Aux Output Days (Setup Step 58) is set for 7 DAY programmable output days. Press COOLER and then OUTDOOR to copy. Press WARMER and then OUTDOOR to program another day with a different setting.

### Auxiliary Output Programming by Temp (Setup Steps 63, 64)

If TEMP is selected for the Aux Output, the following setup steps will appear:

Aux Output Temp Source (Setup Step 63) - Specifies what temperature source will be monitored for controlling the programmable output. The options are:

Thermostat - Temperature is monitored from the thermostat sensor.

Outdoor Sensor - Temperature is monitored from the Outdoor temperature sensor.

**Wired Remote** - Temperature is monitored from a wired sensor connected to the Remote Sensor terminals.

Aux Output Trigger Point Temp (Setup Step 64) - Specifies the temperature from the above selected source above which the Aux Output is triggered. A non-adjustable two degree deadband is applied to avoid frequent triggering. The 'N.O.' (Normally Open) or 'N.C.' (Normally Closed) function (Setup Step 56) can be altered to make the output trigger below the set temperature. Temps are adjustable from 0° - 120° Fahrenheit.

## Dry Contact Operation (Setup Step 66 - 67)

Dry Contact Polarity (Setup Step 66)

**Open (Normally Open)** - The dry contact is open until the connected device closes the circuit.



**Closed (Normally Closed)** - The dry contact is closed until the connected device opens the circuit.



### Dry Contact Use (Setup Step 67)

**CONDENSATE** - If OCCUPIED is selected, when the dry contact is active the thermostat will lockout the compressor terminal(s) and CONDENSATE PAN OVERFLOW will appear on the display.

**OCCUPIED** - If OCCUPIED is selected, when the dry contact is active the thermostat will be forced into Occupied 1. This setting may be used with time clocks or twist timers to force the thermostat from Occupied to Unoccupied, or from Unoccupied to Occupied depending on the dry contact polarity.

**FDD** - If FDD is selected, when the dry contact is active EQUIPMENT FAULT will appear on the display.

**HOLIDAY** - The Holiday feature allows the thermostat to use temporary, energy saving settings without having to change regular programming. Holiday setup/programming at the local thermostat is limited to the number of days employing Holiday settings. When the optional Wi-Fi module is detected in the thermostat, local Holiday programming is not allowed. In this case Holiday setup and programming is accomplished with the **ProStat+** web portal. The **ProStat+** web portal gives the user extensive control over Holiday settings.

Press the Holiday button to enter Holiday programming (no Wi-Fi Module detected). *If there is not a Holiday period active:* 

Use the Warmer and Cooler buttons to choose the number of days desired to run the Holiday feature. To confirm your settings and advance to the next step, press the Holiday button again. Choose the desired Holiday Cool set point. Press Holiday. Then choose the desired Holiday Heat set point. Press Holiday to return to the main screen.

**REMOTE** - No action is taken at the thermostat. The dry contact status is simply communicated to the **ProStat+** web portal.

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### Light Activation (Setup Steps 71-72)

**Light Activation Sensitivity** (Setup Step 71) - With the lights on in the space, press the FAN button to set the sensitivity of the light sensor. This light level will be the minimum light level needed to switch the thermostat to Occupied 1 settings. If the light level falls below this level the thermostat will revert to Unoccupied settings.

Upon pressing the FAN button, the scrolling display will read "Light sensor set".

Note: The **ProStat+** web portal can track "lights on" runtime. This is accomplished by accumulating the hours that the light sensor of the thermostat recognizes that the lights are on.

To use this feature, adjust the light activation sensitivity.

Step 72 below does not need to be On for the **ProStat+** Web Portal to accumulate "lights on" runtime.

**Light Activation to Occupied** (Setup Step 72) - This feature allows the thermostat to go from Occupied settings to Unoccupied settings when the room lights are turned off and the program is unoccupied. It also allows the thermostat to return to the Occupied 1 settings once the lights come back on. **OFF** = Light Activation not used. **ON** = Light Activation is used.

Note: if the thermostat is using Occupied 1 settings exclusively because the lights are on or the dry contact is active, the Occupied 1 icon will blink

#### Web Portal, API, & ADR Operation (Setup Steps 73-82)

**ProStat+ Web Portal** (Setup Step 73) - If set to **ON**, the thermostat may communicate and receive data from the **ProStat+** web portal.

**Local API** (Setup Step 74) - Turning the local API to **ON** allows 3rd party software to interface with your thermostat such as a building automation system.

#### ADR Operation (Setup Steps 75-82)

**ADR** (Setup Step 75) - Controls whether you want the thermostat to respond to signals from a utility provider. Select ON to allow this and to have steps 76-82 appear.

**ADR Action** (Setup Step 76) - Allows the user to determine what action is taken when an ADR event is received.

**Observe Setpoint Offsets** – will offset the heat and cool setpoints by the amounts specified in setup steps 79 and 80

**Observe Static Setpoints** – will set the heat and cool setpoints to the values specified in setup steps 77 and 78

Event Max Cool Setpoint (Setup Step 77)

Event Min Heat Setpoint (Setup Step 78)

Specifies the range of allowable setpoint adjustments to be enforced when any ADR signal has been received from the utility. Since you might be paying more for energy while an event is active, you can impose tighter limits on setpoint ranges that are only enforced during the event.

Static Cool Setpoint (Setup Step 79)

Static Heat Setpoint (Setup Step 80)

Specifies the setpoints that will come into use during an event when the ADR ACTION is set to OBSERVE STATIC SETPOINTS.

Cool Setpoint Offset (Setup Step 81)

Heat Setpoint Offset (Setup Step 82)

Specifies how much the current setpoints in effect prior to an event will be altered during an event when the ADR ACTION is set to OBSERVE SETPOINT OFFSETS. The heat setpoint can be automatically lowered by 1 to 10 degrees while the cool setpoint can be automatically raised by 1 to 10 degrees

#### DISPLAY INDICATIONS WHEN AN ADR EVENT IS HAPPENING

After setting your desired values for use during an ADR event, the scrolling display will give a little information when an event is pending or active. For instance, when an ADR event has been sent to your thermostat, you might see ADR STARTS 8/14 at 2:00pm to notify you of a pending event. Once active, you might see ADR STOPS 8/14 at 6:00pm. When an event is active, you can press any of COOLER, WARMER or MODE buttons, followed by the WARMER to opt out of the event.

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Press Fan To Clear All Messages (Setup Step 83) This feature allows the user to clear all current error messages from the display.

### Locking/Unlocking the Keypad

To prevent unauthorized use of the thermostat, the front panel buttons may be disabled. To disable, or 'lock' the keypad, press and hold the MODE button. While holding the MODE button, press the WARMER and COOLER buttons together, and the  $\widehat{\ensuremath{\omega}}$  icon will appear on the display.

To **unlock** the keypad, press and hold the MODE button. While holding the MODE button, press the WARMER and COOLER buttons together, and the  $\widehat{}$  icon will disappear from the display.

## 4 Factory Defaults

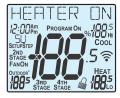
If, for any reason, you desire to return all the stored settings back to the factory default settings, follow the instructions below.

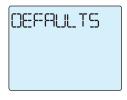
WARNING: This will reset all Time Period and Advanced Programming to the default settings. Any information entered prior to this reset will be permanently lost.

1 Press and hold **SETUP** for 10 seconds. All icons will appear on the display. Keep pressing the **SETUP** button until you see this screen.

2 After all the icons appear, release SETUP. Press and hold FAN for 5 seconds. DEFAULTS will appear on the display.

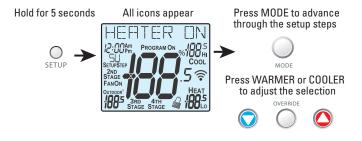
3 After DEFAULTS appears, release FAN. Press SETUP to return to normal operation.





## 5 Technician Setup & Calibration

To enter Technician Setup, press and hold the SETUP button for 5 seconds. After all the icons appear, press MODE. The version number of the thermostat will appear in the scrolling text. Press MODE to advance to the next step. Use the WARMER or COOLER buttons to adjust the value of your selection. To leave Technician Setup, press SETUP.



Technician Setup is for diagnostic and testing purposes and is intended for use by a qualified technician. See next page for more detailed instructions.

#### Technician Setup contains the following options:

- View the version number of the thermostat.
- View the Dip Switch equipment type settings.
- View the state of the Dry Contact.
- Turn on equipment outputs for testing.
- Calibrate thermostat, remote, and humidity sensors.
- Control HUM output (On or Off)
- Control DEHUM output (On or Off)
- Control AUX output (On or Off)

To enter Technician Setup, press and hold the SETUP button for 10 seconds until all the icons appear. Follow the next steps to view settings and test equipment.

- 1. Press MODE to view the version numbers of the thermostat.
- Press MODE again to view the jumper settings and current state of the Dry Contact terminal.
- Press MODE again and the scrolling display will read "TURN ON EQUIPMENT?" Press WARMER for Yes or COOLER for No.

If Yes is chosen, press WARMER to turn on heat or COOLER to turn on Cooling. The scrolling display will read "NOTHING ON." Next:

Press WARMER to turn on and cycle up through the heating stages. Press COOLER to turn the heating stages off. Press MODE to exit.

Press COOLER to turn on and cycle down through the cooling stages. Press WARMER to turn the cooling stages off. Press MODE to exit.

- Press MODE until "CALIBRATE SENSORS?" appears on the scrolling display. Press WARMER for Yes or COOLER for No. Press MODE to select which sensor to calibrate. Use WARMER or COOLER to modify your selection.
- Press MODE until "CONTROL HUM?" appears on the scrolling display. Press WARMER for On or COOLER for Off. Press MODE to continue.
- 6. Press MODE until "CONTROL DEHUM?" appears on the scrolling display. Press WARMER for On or COOLER for Off. Press MODE to continue.
- Press MODE until "CONTROL AUX OUT?" appears on the scrolling display. Press WARMER for On or COOLER for Off. Press MODE to exit.

To exit Technician Setup at any time, press the SETUP button. Technician Setup will automatically exit after 10 minutes if no buttons are pressed.

## 6 Troubleshooting

- 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: Consult the manual Setup section to defeat the Cycles Per Hour.
- SYMPTOM: The display is blank.
  CAUSE: Lack of proper power.
  REMEDY: Make sure the power is on to the furnace and that you have 24vac between R & C.
- SYMPTOM: The air conditioning does not attempt to turn on.
  CAUSE: The cooling setpoint is set too high.
  REMEDY: Lower the cooling setpoint or lower the cooling setpoint limit.
  See Setpoint Limits.
- SYMPTOM: The heating does not attempt to turn on. CAUSE: The heating setpoint is set too low. REMEDY: Raise the heating setpoint or raise the heating setpoint limit. See Setpoint Limits.
- SYMPTOM: When controlling a residential heat pump, and asking for cooling, the heat comes on.

**CAUSE:** The thermostat reversing valve jumper is set for "**B**". **REMEDY:** Set the reversing valve jumper for "**0**".

• SYMPTOM: When calling for cooling, both the heat and cool come on. CAUSE: The thermostat equipment jumper is configured for "HP" and the HVAC unit is a Gas/Electric.

REMEDY: Set the equipment jumper for "Gas/Elec".

 SYMPTOM: When the Program button is pressed, the display reads "DISABLED". CAUSE: Program mode is set to "NON PROGRAM". REMEDY: Set Program Mode (Setup 1) to 1, 5/2, or 7 Day. See Selecting Your Program Mode.

## 7 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.

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

commenced on the installation date.

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 AGREES THAT THESE REMEDIES ARE THE

(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

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

The warranty period does not continue after the control

installed. The replacement of a part under this warranty

is removed from the location where it was originally

does not extend the warranty period. In other words.

the period remaining in the applicable warranty that

Goodman warrants a replacement control only for

product is paired was originally installed.

How Long Does Warranty Coverage Last?

The warranty lasts for a period up to 1 YEAR.

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

OWNER'S EXCLUSIVE REMEDIES FOR BREACH OF ALL WARRANTIES, EXPRESS 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.
- 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 arbitratorion 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.



Part No. PWCSTATPLUS

**Installer Guide** 



PROSTAT +

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