

FREEDOM



Advantage

Instructions FP series

The benefits of owning a Freedom *Advantage* Thermostat

- Made in the USA
- Manufactured by the makers of ACCUSTAT® controls
- Large easy to read backlit display
- Easy programming of scheduled events
- Programmable fan - Models FP810C and FP810C-B
- ServiceWatch® for filter, cooling and heating maintenance
- Permanent memory retention
- Pre-programmed energy saving events schedule
- Temporary manual override of events scheduled
- Battery backup
- Advanced Performance Technology (AdPt)
- Outdoor sensor capability
- Heat/Cool Limits
- Programmable lockout features
- 5 year warranty

Toll free technical assistance is available
via our technical hotline: 1-800-523-2558
Mon-Fri, 8:00 A.M. to 4:30 P.M. Eastern Standard Time

 **PSG Controls, Inc.**
The Innovators of
ACCUSTAT®

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NOTE: This thermostat has been pre-programmed at the factory for an A1H1 system, but other configurations are available. See pages 17 - 25.

ATTENTION: *This product does not contain mercury.*

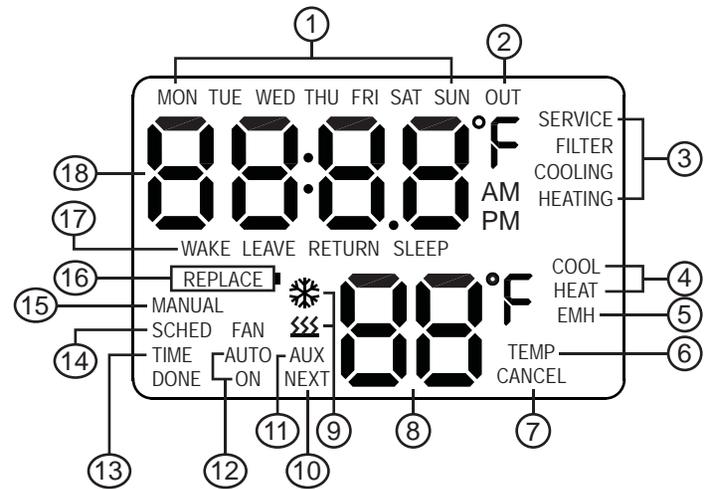
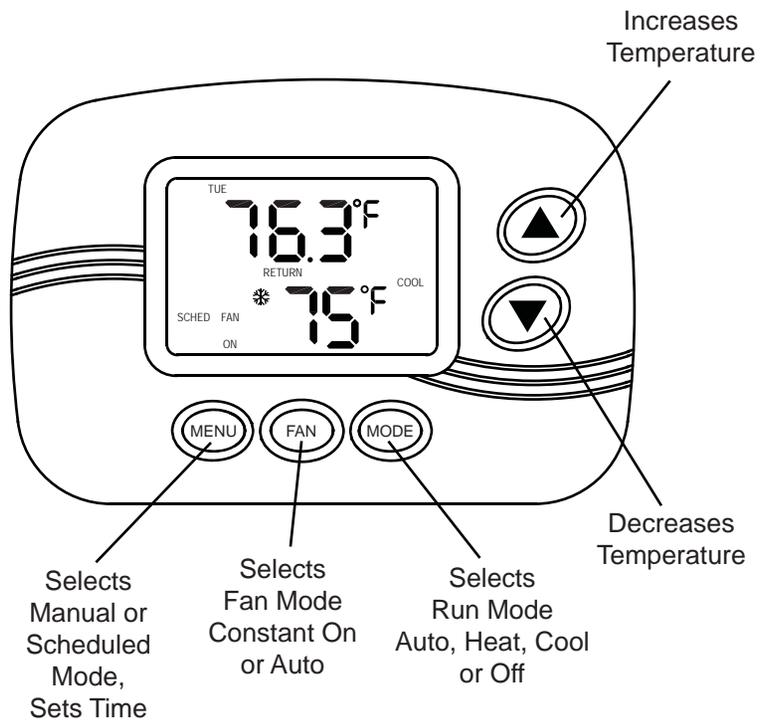
However, this product may replace a control which contains mercury in a sealed tube. Do not place the old control in the household trash. For more information on recycling and proper disposal visit TRC's website www.thermostat-recycle.org.

Should a tube break, do not touch any spilled mercury. Wear non-absorbent gloves, collect any spilled mercury and place it in a sealed container. Contact your local waste management authority for recycling and proper disposal instructions.

NOTE: Even when hardwired, the thermostat will NOT work properly without the batteries installed.

The backlight cannot operate continuously, the batteries will drain quickly and the backlight will burn out.

ALSO NOTE: If any button is pressed and (4) 0's and d1 appear on the display the thermostat is password protected. Enter (4) digit password to gain access.



- ① Current day, used to program the events schedule
- ② Outside temperature indicator, available only if outdoor sensor is installed
- ③ Indicates when service is needed - filter changed or, heating or cooling systems maintained
- ④ Operational mode status
- ⑤ Emergency heat is active

- ⑥— Events schedule has been temporarily overridden
- ⑦— Used in programming (MODE button)
- ⑧— Setpoint
- ⑨— Heating or cooling active, flashes when pending
- ⑩— Used in programming (FAN button)
- ⑪— Auxiliary heat is active
- ⑫— Fan function, auto on/off or constant on
- ⑬— Shows when setting time and date
- ⑭— Events schedule is active
- ⑮— Fixed setpoint operation is active, event schedule is inactive
- ⑯— Batteries need replacement
- ⑰— Current event
- ⑱— Slowly toggles current time of day, room temperature and outside temperature if sensor is installed

STARTUP CHECKLIST:

- Disconnect power supply to thermostat.
- Separate base from thermostat.
Mount base to wall.
Connect wires, refer to the diagrams beginning on page 11.
If using remote sensors refer to the cable requirements on page 10.
- While the thermostat is separated from the base, install the batteries, refer to page 32.
- Set the clock, refer to page 16.
- Select the equipment type, refer to page 19.
Select the equipment preferences and the configuration preferences, refer to the preferences beginning on page 20.
- Set the schedule, if desired, refer to page 27.
- Press the MENU/DONE button to exit.
- Assemble the thermostat to the base using the instructions on page 32.
- Press the MODE button until the setpoint appears on the lower right.
- Press the MENU button to select either MANUAL or SCHEDULE (SCHED).
If SCHEDULE is chosen set-up is complete.

- If MANUAL is chosen, press either the up or down arrow button to set the desired heating comfort temperature.
- Press the MODE button to select COOLING.
Press either the up or down arrow button to set the desired cooling comfort temperature.
NOTE: AUTO mode uses both the heating and cooling comfort temperature.
- Press the MODE button to select HEAT, COOL or AUTO (auto changeover).
The thermostat will begin to control the space to the selected settings once the power is restored.
- Reconnect power supply to thermostat. There may be a 3 minute delay for compressor based systems.

Relax and enjoy the comfort and energy savings of the
Freedom *Advantage* Thermostat.

INSTALLATION INSTRUCTIONS:

1. **CAUTION:** Make sure that the power has been disconnected.
2. All wiring must comply with applicable codes and ordinances.
3. A thorough check-out of the system should be made after installation is complete.
4. If retrofitting old thermostat, remove old thermostat from wall, carefully noting the wire connections on the old unit.
Record wire color and terminal legends in spaces provided.

Thermostat terminals	Cable wire color
Y2	_____
Y1	_____
B/O	_____
G	_____
C	_____
RC	_____
RH	_____
W1	_____
W2	_____

5. Using the mounting screws provided, mount the thermostat base to the wall or junction box.
6. Connect wire cables according to your wire color chart.
7. Push excess cable wires back into the wall. If there is a draft, pack the opening with non-combustible material.

8. Place batteries into battery cradle.
9. Position cover over base and press gently to close.

This thermostat can be configured prior to attaching it to the wall. Just install the batteries into the battery cradle and program the equipment options, the preference options and even the events schedule.

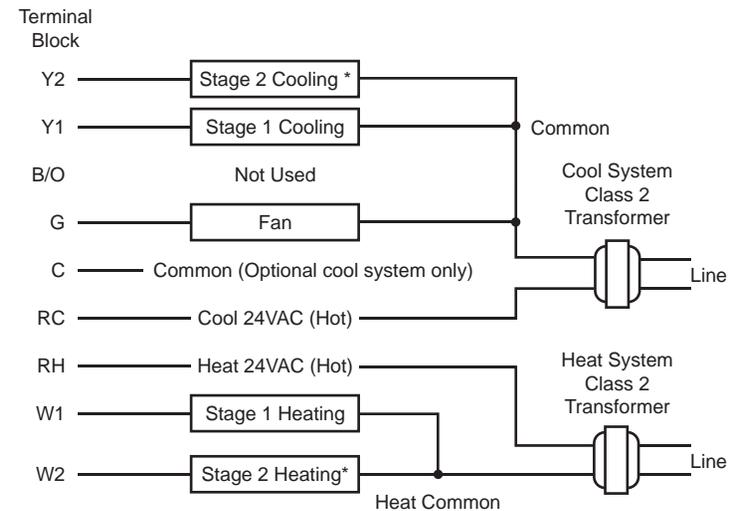
**For Outdoor/Floor/Duct or Wall Mount Sensors:
Use ONLY PSG P/N:
- FP-OS outdoor/floor/duct sensor
- FP-WS wall mount sensor**

Recommended Cable: 22AWG 1 pair (twisted) with foil shielded communication cable, Alpha Wire #2211C or equal, 150 feet maximum.

**DO NOT USE THERMOSTAT WIRE
FOR REMOTE SENSORS!**

Conventional System Wiring

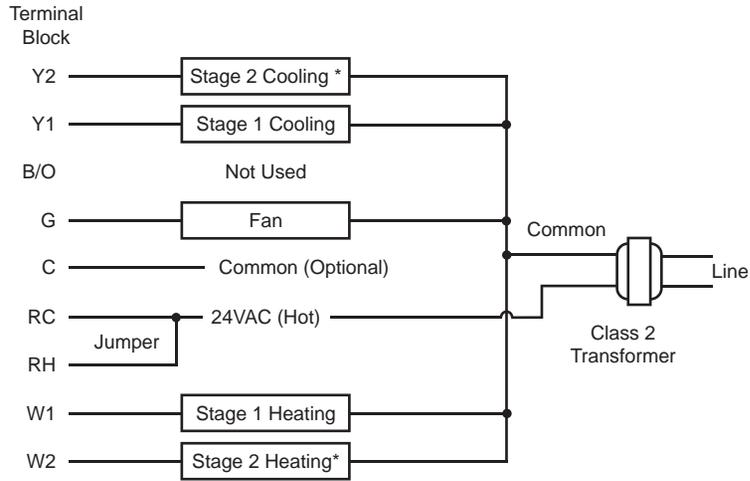
Conventional System (Split System)



*Systems that do not have 2nd stages, DO NOT USE.

NOTE: For use with 3 wire zone valves or inverted systems see page 15.

Conventional System (Single Transformer)

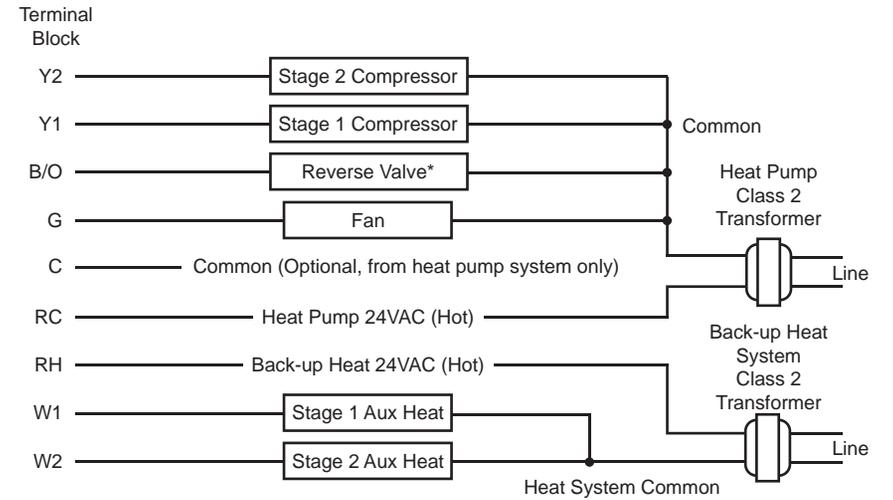


*Systems that do not have 2nd stages, DO NOT USE.

NOTE: For use with 3 wire zone valves or inverted systems see page 15.

Heat Pump Wiring

Heat Pump with Back-up Heat (Dual Transformer)

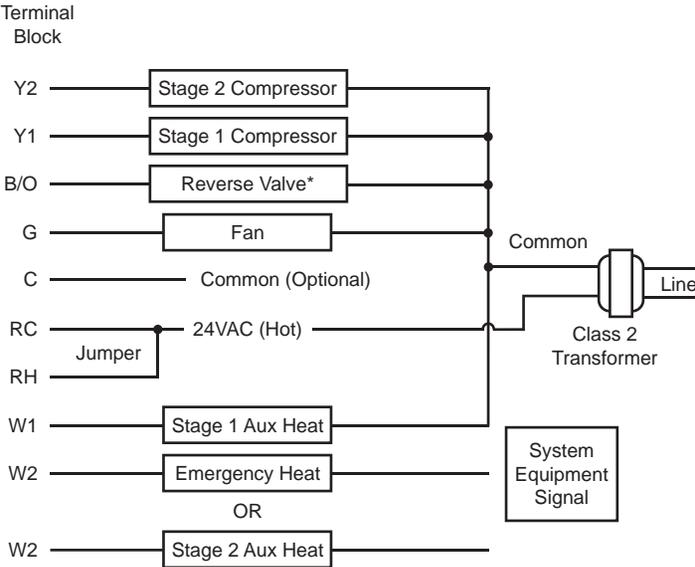


IMPORTANT:
For this configuration do not use a jumper between RC and RH.

*Reverse Valve B = energize on heat O = energize on cool

INSTALLATION NOTES:

Heat Pump with Back-up Heat (Single Transformer)



*Reverse Valve B = energize on heat O = energize on cool

1. When using heat pump models HP12 and HP23, if manually placed into emergency heat mode, the W2 output will become active.
2. When using conventional models that have only single stage heat (H1, A1H1 or A2H1) W1 output will be the standard output (normally open) and W2 will be the opposite (normally closed). This will allow the use of a 3 wire zone valve or an inverted signal if needed.
3. When using conventional models that have only single stage cool (A1, A1H1 or A1H2) Y1 output will be the standard output (normally open) and Y2 will be the opposite (normally closed). This will allow the use of a 3 wire zone valve or an inverted signal if needed.

SETTING TIME AND DATE:

To adjust the time and date, the thermostat must be in HEAT, AUTO or COOL mode. It cannot be in OFF mode. Press the MODE button if in OFF.

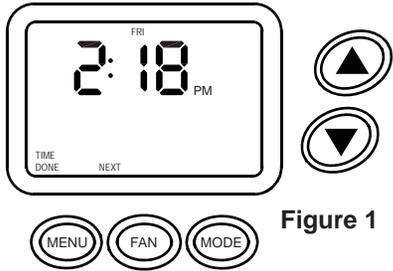


Figure 1

The MENU/TIME DONE button can be pressed at any time to save and exit.

1. **PRESS** the MENU button until TIME DONE appears in the lower left corner. Display will appear as shown (Figure 1).
2. **PRESS** the FAN/NEXT button. The hour numeral will flash.
3. **PRESS** the up or down arrow button to set the current hour.
4. **PRESS** the FAN/NEXT button. The minute numerals will flash.
5. **PRESS** the up or down arrow button to set the current minutes.
6. **PRESS** the FAN/NEXT button. Yr and the year will appear flashing.
7. **PRESS** the up or down arrow button to set the current year.
8. **PRESS** the FAN/NEXT button. m and the month will appear flashing.
9. **PRESS** the up or down arrow button to set the current month.
10. **PRESS** the FAN/NEXT button. dy and the day will appear flashing.
11. **PRESS** the up or down arrow button to set the current day.
12. **PRESS** the MENU/TIME DONE button to save and exit.

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PROGRAMMING INSTRUCTIONS:

Please read the instructions prior to programming the thermostat and save them for future reference.

NOTE: The programming mode has a time limit of 10 minutes. The timer is automatically activated when the programming is started. At the end of the 10 minutes the thermostat will resume normal operation. The programmed options will remain unchanged unless the programming mode was ended by pressing the MENU/DONE button.

NOTE: The default values mentioned on the following pages have been pre-programmed at the factory and are appropriate for an A1H1 system. If the system is an A1H1 system no programming is necessary. Check the default values, however, for possible changes.

The MENU/DONE button can be pressed at any time to save and exit programming mode. The revised options will be saved.

When exiting programming mode the thermostat defaults to the OFF mode.

To avoid damaging the equipment, the EQUIP and CFG options should be programmed by a qualified technician.

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To navigate (EQUP, CFG, SCHE):

1. **Press** and hold the MENU and MODE buttons for approximately 3 seconds. EQUIP will appear on the display.
2. **Press** the up or down arrow button to scroll through the **MAIN MENU** to reach the desired options menu.
3. **Press** the FAN/NEXT button.
4. **Press** the up or down arrow button to scroll through the options menu to reach the desired preference. The preferences are defined and the factory set default values are listed on the following pages.
5. **Press** the FAN/NEXT button to access the preference. The preference value will begin to flash.
6. **Press** either the up or down arrow button to reach the desired change.
7. **Press** the FAN/NEXT button. The preference value will stop flashing. Continue scrolling by pressing the up or down arrow button and change preference values as desired.
8. **Press** the MENU/DONE button to exit back to the main menu to continue with other options.
9. **Press** the MENU/DONE button to save and exit.

NOTE: While the preference value is flashing press the MODE/CANCEL button to undo the change.

MAIN MENU:

EQUP - Selects the equipment type and the associated options

CFG - Selects the options such as ServiceWatch®, heat/cool limits, etc.

SCHE - Programs events schedule, up to 4 events per day

EQUP MENU:

HP24 - Two stage heat pump, two stage auxiliary heat

HP23 - Two stage heat pump, single stage auxiliary heat

HP22 - Two stage heat pump, no auxiliary heat

HP13 - Single stage heat pump, two stage auxiliary heat

HP12 - Single stage heat pump, single stage auxiliary heat

HP11 - Single stage heat pump, no auxiliary heat

A2H2 - Two stage cool, two stage heat

A2H1 - Two stage cool, single stage heat

A1H2 - Single stage cool, two stage heat

A1H1 - Default, single stage cool, single stage heat

A2 - Cool only, two stage compressor

A1 - Cool only, single stage compressor

H2 - Heat only, two stages

H1 - Heat only, single stage

Press the UP arrow button.

The following options appear depending on the equipment selected.

tyPE - Selects the reverse valve type, "O" or "B"

OL - Default, reverse valve on cool, latching

O - reverse valve on cool, non-latching

b - reverse valve on heat, non-latching

bL - reverse valve on heat, latching

toFF - Selects the minimum number of minutes between the equipment cycling off and back on again

3 minutes - Default

Selectable range: 01 to 07 minutes, in 1 minute increments

C2td - Selects the delay time in seconds before second stage cooling or the heat pump compressor turns on

90 seconds - Default

Selectable range: 10 to 90 seconds, in 10 second increments

C2SP - Selects the temperature offset from setpoint for second stage cooling or second stage compressor to turn on

4°F - Default

Selectable range: 00°F to 10°F, in 2° increments

H2td - Selects the delay time in seconds before second stage heating or auxiliary heat turns on

90 seconds - Default

Selectable range: 10 to 90 seconds, in 10 second increments

H2SP - Selects the temperature offset from setpoint for second stage heating or auxiliary heat to turn on

4°F - Default

Selectable range: 00°F to 10°F, in 2° increments

FUEL - Selects when the fan cycles

E - Default, fan cycles with both heating and cooling calls

F - Fan cycles only with cooling calls, heating system controls fan during heating calls

Filter hours will still be logged during heating calls

rS - Selects the remote sensor function (See page 30 for details)

oFF - Default, no remote sensor in use

rt - remote is room temperature

Art - remote is averaged with thermostat temperature

out - remote is outside temperature

Cd - Selects the outside temperature that disables the compressor and switches auxiliary heat to the primary heat

40°F - Default

Selectable range: 0°F to 40°F, in 1 degree increments

Ed - Selects the outside temperature that disables the electric strip heat

70°F - Default

Selectable range: 40°F to 70°F, in 1 degree increments

Press the MENU/DONE button to exit back to the EQUIP menu

FLr - remote is floor slab temperature for use with hydronic floor heating

HF - Selects the high floor temperature to turn valve off

80°F - Default

Selectable range: 56°F to 110°F, in 1 degree increments

LF - Selects the low floor temperature to turn valve on

65°F - Default

Selectable range: 55°F to 79°F, in 1 degree increments

Press the MENU/DONE button to exit back to the EQUIP menu

Press MENU/DONE button to return to main menu.

Press MENU/DONE button at any time while programming to return to main menu or to save and exit programming mode.

CFG MENU:

unit - Selects the unit of measure (°F or °C)

°F - Default

db - Selects the dead band between heat and cool, used with auto mode only

4°F - Default

Selectable range: 2°F to 10°F, in 1 degree increments

diF - Selects the cooling and heating differential settings

0.4°F - Default

Selectable range: 0.2°F to 1.0°F, in 0.2 degree increments

CyCL - Selects the heating and cooling cycle rates

6 cycles per hour - Default

Selectable range: 2 cycles to 12 cycles per hour

Ser - Selects ServiceWatch® on or off (See page 31 for details)

oFF - Default

on

SH with SERVICE FILTER - Selects when, in hours, the filter needs to be changed

1000 hours - Default

Selectable range: 100 hours to 9900 hours, in 100 hour increments

AH with SERVICE FILTER - Actual number of hours accumulated

SH with SERVICE HEATING - Selects when, in hours, the heating system needs to be checked

2000 hours - Default

Selectable range: 100 hours to 9900 hours, in 100 hour increments

AH with SERVICE HEATING - Actual number of hours accumulated

SH with SERVICE COOLING - Selects when, in hours, the cooling system needs to be checked

2000 hours - Default

Selectable range: 100 hours to 9900 hours, in 100 hour increments

AH with SERVICE COOLING - Actual number of hours accumulated

Press the MENU/DONE button to exit back to the CFG menu

dSt - Selects daylight savings time on or off

on - Default

oFF

HL - Selects the heating limit temperature

85°F - Default

Selectable range: 40°F to 90°F, in 1 degree increments

CL - Selects the cooling limit temperature

65°F - Default

Selectable range: 40°F to 90°F, in 1 degree increments

LOC - Selects the level of password protection desired

oFF - Default, no password protection

LC - Locks both CFG and EQUP menus

LS - Locks all menus, locked into schedule mode, no clock adjustment

LA - Locks everything, thermostat totally locked

If any lock function is selected **Press** FAN/Next button to set password.

Press up or down arrow button to select proper d1 number

Press FAN/NEXT to proceed to d2. Continue until all (4) numbers are selected.

Press MENU/DONE to complete.

AdPt - Selects adaptive recovery on or off (See page 31 for details)

oFF - Default

on

FP - Selects freeze protection at 38°F on or off

on - Default

oFF

dFLt - Selects return to factory set defaults, on or off

oFF - Default

on - When on is selected and the FAN/NEXT button is pressed, the thermostat will automatically exit programming mode. The thermostat will be in the OFF mode and the time and date will have to be reset.

Press MENU/DONE button to return to main menu.

Press MENU/DONE button at any time while programming to return to main menu or to save and exit programming mode.

PROGRAMMING EVENTS SCHEDULE:

Default Preprogrammed Events Schedule

Monday thru Friday

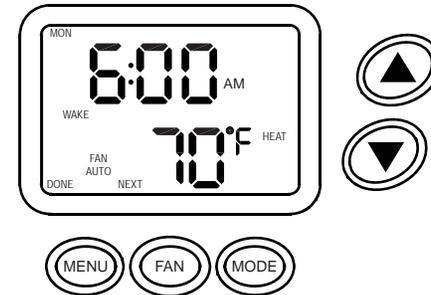
Event	Event time	Heat setpoint	Cool setpoint	Fan
Wake	6:00 AM	70°F	75°F	Auto
Leave	8:00 AM	62°F	83°F	Auto
Return	6:00 PM	70°F	75°F	Auto
Sleep	10:00 PM	62°F	78°F	Auto

Saturday and Sunday

Event	Event time	Heat setpoint	Cool setpoint	Fan
Wake	8:00 AM	70°F	75°F	Auto
Leave	10:00 AM	62°F	83°F	Auto
Return	6:00 PM	70°F	75°F	Auto
Sleep	11:00 PM	62°F	78°F	Auto

PROGRAMMING EVENTS SCHEDULE:

1. **Press** and hold the MENU and MODE buttons for approximately 3 seconds. EQUIP will appear on the display.
2. **Press** down arrow button twice until SCHE appears on the display.
3. **Press** the FAN/NEXT button. The display will appear as in Figure 2.



Each day can be programmed individually or the desired days can be grouped together (example: TUE - SAT and SUN - MON) depending on the need.

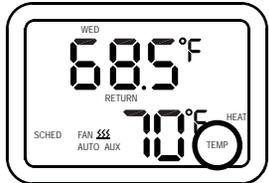
4. **Press** the up or down arrow button to scroll to the desired day to start the events schedule programming or just start on MON.
5. **Press** the FAN/NEXT button. The chosen day will begin to flash.
6. **Press** either the up or down arrow button to expand the selection or the day can be programmed individually. All of the days to program at once will be flashing.

7. **Press** the FAN/NEXT button. The event will begin to flash.
8. **Press** either the up or down arrow button to change the event.
The selected event or WAKE will be flashing.
9. **Press** the FAN/NEXT button. The time will begin to flash.
10. **Press** either the up or down arrow button to reach the desired time, in 15 minute increments.
11. **Press** the FAN/NEXT button. The setpoint and HEAT will begin to flash.
(NOTE: only available with heating equipment)
12. **Press** either the up or down arrow button to reach the desired setpoint.
13. **Press** the FAN/NEXT button. FAN AUTO and HEAT will begin to flash.
(NOTE: only available in programmable fan models)
14. **Press** either the up or down arrow button to select FAN AUTO or FAN ON (constant fan).
15. **Press** the FAN/NEXT button. The setpoint and COOL will begin to flash.
(NOTE: only available with cooling equipment)
16. **Press** either the up or down arrow button to reach the desired setpoint.
17. **Press** the FAN/NEXT button. FAN AUTO and COOL will begin to flash.
(NOTE: only available in programmable fan models)
18. **Press** either the up or down arrow button to select FAN AUTO or FAN ON (constant fan).
19. **Press** the FAN/NEXT button. The next event will begin to flash.
Repeat steps 9 through 18 to program the remaining events.
20. **Press** the MENU/DONE button to complete.

21. The next day will begin to flash.
Example: MON through FRI were programmed together.
SAT is now flashing.
22. Repeat steps 6 through 20 to program the remaining day or days.
23. **Press** the MENU/DONE button to complete.
24. **Press** the MENU/DONE button to return to the main menu.
20. **Press** the MENU/DONE button to save and exit.

When exiting programming mode the thermostat defaults to the OFF mode.

Even when a day has been programmed with a group of others it can be revised individually. Just go back into SCHE and use the up and down arrow buttons to scroll to the particular day. Press the FAN/NEXT button to complete the changes.



TEMPORARILY OVERRIDING THE CURRENT SCHEDULED EVENT:

PRESS the up or down arrow button to override the scheduled setpoint. TEMP will appear on the display.

The new setpoint will operate for four hours or until the next scheduled event. The setpoint will then return to the scheduled one.

TEMPORARILY OVERRIDING THE CURRENT FAN OPERATION (PROGRAMMABLE FAN MODELS ONLY):

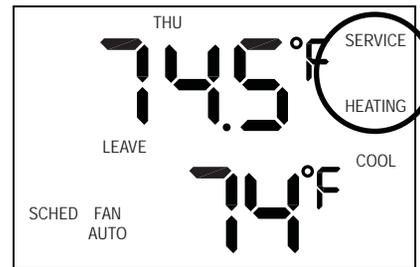
PRESS the fan button to override the scheduled fan operation. TEMP will appear on the display. The new fan operation will operate for four hours or until the next scheduled event.



Advanced Performance Technology (AdPt) allows the HVAC system to gradually change the temperature from the energy saving setback temperature to the comfort temperature. AdPt is only available in the event schedule mode. Just program the desired time and temperature. The thermostat will activate either heating or cooling at the appropriate time to reach the desired temperature by the correct time. AdPt is active when the current event indicator (WAKE, LEAVE, RETURN, SLEEP) is flashing.

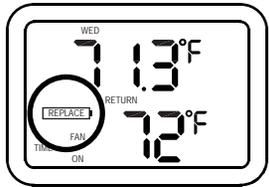
ServiceWatch® monitors the run time hours. It is a program designed to remind the homeowner to schedule service for the HVAC equipment. The maintenance period for filter replacement and heating or cooling service is programmable based on the respective system run times. The control will monitor the run times, and when the programmed settings are reached the display will show **SERVICE** and either **FILTER, COOLING** or **HEATING**.

THIS IS NOT AN EMERGENCY, just a reminder.



Example: When the display shows **SERVICE** and **HEATING** it is time to schedule an appointment to have the heating system maintained.

THIS IS NOT AN EMERGENCY, just a reminder.



Battery Replacement

The batteries need to be replaced immediately when the **REPLACE** battery icon appears on the display.

The batteries should be replaced once a year, even if the replace battery icon does not appear. The programmed settings are saved even with the batteries removed. Only the time has to be reset.

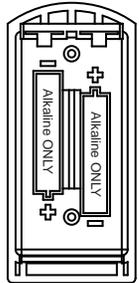


To remove batteries squeeze slotted tabs on top and bottom of thermostat.

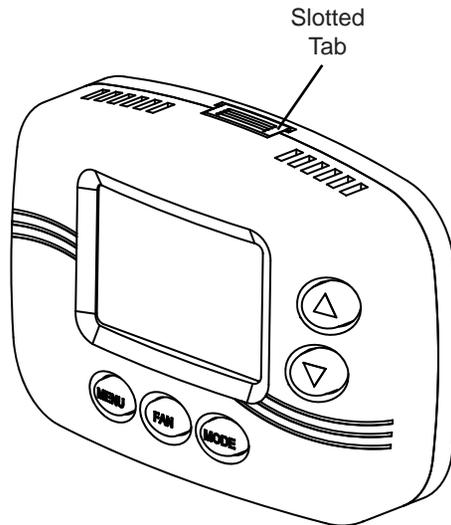
Pull cover straight off of base.

To replace cover line up the sides of the cover and the base, and gently press cover onto base.

NOTE: Even when hardwired, the thermostat will NOT work properly without the batteries installed.



Make sure batteries are placed properly into battery cradle.



IMPORTANT NOTES - PLEASE READ

1. If a **REMOTE SENSOR** is installed, the display will alternate between time, room temperature and remote temperature. Remote temperature will be indicated by the OUT symbol.
NOTE: If the remote sensor is used to average or measure room temperature the OUT symbol will not appear. NS2 would indicate a fault with the sensor wiring.
2. **TIME BLINKS** when the time needs to be reset. The reset may be due to a power interruption.
3. To permanently override the events schedule while on vacation, etc. press the MENU button until MANUAL appears on the display. Press the up or down arrow button to set the desired temperature. To return to the events schedule, press the MENU button until SCHED appears on the display.
4. When the scheduled event (WAKE, LEAVE, RETURN or SLEEP) is flashing the AdPt is active.
5. If the thermostat is in the OFF mode and the temperature drops below 38°F the freeze protection feature automatically activates the heating system. ICE will appear on the display.
6. The thermostat can be in the OFF mode but the fan can be constantly active. OFF and FAN ON will appear on the display.

8. To adjust the setpoint when AUTO mode is active, press the up or down arrow button. To adjust either heating or cooling setpoints, press the MODE button. Press the up or down arrow button in COOL or HEAT to adjust the setpoint up or down.

Cleaning:

This thermostat has a flame retardant ABS enclosure which is easily cleaned with a dry cloth or vacuum brush. Occasional soiling may be cleaned with a soft cloth lightly dampened with water and/or mild cleaning solution. IN NO CASE should this device be directly sprayed with or exposed to free flowing liquids, including water, which could penetrate its interior.

9510-0872
Rev C
12-16-10

PSG Controls, Inc.
LIMITED WARRANTY POLICY

PSG Controls, Inc. (Hereinafter referred to as "PSG") warrants the following:
Only cataloged products sold to distributors are warranted to the original purchaser, to conform with specifications furnished or approved by PSG, and to be free from defects in material and workmanship, for a period of five (5) year from the date of purchase, unless specified in writing for a different period.
Any PSG product that proves defective within the above described warranty period will be repaired or replaced (at PSG's option) free of any charge if returned to the PSG factory at 1225 Tunnel Road, Perkasie, PA. 18944 with transportation charges prepaid.
Prior to returning this product to PSG, the purchaser shall give PSG notice in writing stating how this product fails to fulfill this warranty. No product shall be accepted for repair or replacement without a required written notice and without prior written authorization and shipping instructions having been received by the purchaser from PSG. Only PSG's factory is authorized to perform services under this warranty.
This warranty does not extend to any product that has been subjected to misuse, abuse, neglect, accidents, alterations, improper installation or use in violation of the printed instructions furnished by PSG. This warranty neither applies to batteries nor deterioration of, nor damage to the product caused by the use of faulty batteries. Final determination as to whether any product is actually defective rests solely with PSG.
This warranty is expressly in lieu of all other agreements and warranties, expressed, implied, or statutory and PSG has no other obligations or liabilities in connection with this product. In no event shall PSG's obligation or liability hereunder exceed the purchase price of this product. PSG SHALL NOT IN ANY EVENT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES. This warranty gives you specific legal rights, and you also have other rights which vary from state to state. Some states do not allow the exclusion or limitation of incidental or consequential damages, or implied warranties, so the above limitations or exclusion may not apply to you.