Functions		Programs
Raise Temp. Adjust Hrs. Set Override Hrs	▲	A
Lower Temp. Adjust Mins.	▼	B
Select Days Set Override Days	▣	C
Resume Program Display Override	▢	D
Select /		✖ on/off

Programmable Heat Pump Thermostat Model HP1

Index

PROGRAMMING INSTRUCTIONS

INSTALLATION INSTRUCTIONS

## TROUBLE SHOOTING GUIDE

Programming instructions

Introduction

Your new thermostat contains a microcomputer that will automatically adjust the temperature of your home or office, up to four times each day, to suit your needs and at the same time save money and energy. It provides comfortable heating or cooling when you need it, and reduces energy expenditure while you are sleeping, or are out of the building, or on vacation. Your thermostat has separate weekend programming - we call it 5-1-1 so that 5 weekdays are the same, and then 2 successive days can each be different.

You can OVERRIDE or SUPERSEDE these settings whenever you wish to vary the schedule. If you have guests during the evening and you do not want the temperature to drop while they are visiting, the touch of a finger to your evening setting (for example 70°F or 21°C) will OVERRIDE your program and keep the temperature at its current setting until after your guests have gone. In addition, you can keep the temperature at a constant setting for any period from one hour up to 31 days using the TIMED OVERRIDE feature, explained on page 9.

We also recommend that everyone in the family read the instructions and, before installation, (by inserting the battery and following the programming stops) put in a program of their choice. You will soon know how truly simple it is to operate your thermostat.

The thermostat should then be installed. We recommend that a qualified technician install the thermostat because it is very important that it is properly located and all heating and cooling circuits are wired correctly. For INSTALLATION INSTRUCTIONS start on page 11.

1
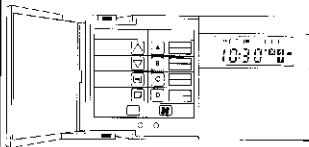
Know your thermostat

Figure 1.
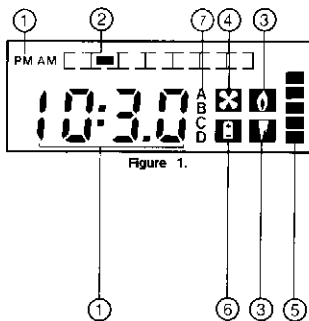
① The time of day AM or PM and the actual room temperature are displayed alternating at 4 second intervals in normal operation, and the decimal or colon are constantly blinking when temperature and time respectively are shown.

① A set temperature and the time are displayed when programming. Nothing is blinking. The factory setting for all programs is 70°F or 20°C in heating, 74°F or 22°C in cooling and 6:00 AM.

① The duration of timed override is displayed. Nothing is blinking. (see timed override page 9).
Note: decimal point is displayed and not a colon as in a time display.

② Day of week, shows the 'day indicator' at beginning of 5 day program, typically Monday of the 5 days of the week.

③ Mode symbols, indicating system in heating (flame) heating and cooling (flame and icicle) cooling (icicle) or off mode (no symbols).

④ Fan symbol shows when the fan is in the 'on' continuous mode.

⑤ Indicators showing from bottom to top: 1st stage cool, 2nd stage cool, 1st stage heat, 2nd stage heat, 3rd stage heat.

⑥ Indicates when unit is operating on the battery (thermostat is not installed or the power is off). When battery needs to be replaced, the symbol is flashing.

⑦ Indicates the program A,B,C, or D in which the thermostat is operating.

Slide switches

The slide switches 1 to 10 are accessed from the rear of the front unit of the thermostat. They have been preset at the factory for the most frequently used settings and **should only be changed by the installer.**

However, if you wish to review the options, see page 14.

Figure 2. Rear view of front unit
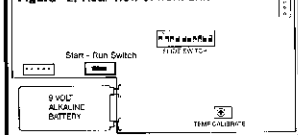
Control buttons

There are Function buttons on the left and Program buttons on the right. Each button has multiple uses.

Raises temperature, adjusts hours, sets override hours

Lowers temperature, adjusts minutes

Push to advance the day indicator to the correct day of week, sets override days when override is displayed

Pressing once will resume program
Pressing a second time will display timed override (**RESUME** button)

The program buttons A, B, C and D
are used to gain access to programs in order to;
- enter a program
- override a program
- change or check a program

Functions	Programs
Raise Temp Adjust Hrs. Set Override Hrs.	A
Lower Temp. Adjust Mts	B
Select Day Set Override Days	C
Resume Program Display Override	D
Select /	on/auto

Front view

Selecting your heat/cool system

By consecutively pressing and releasing the ⊟ button the following symbols will appear:
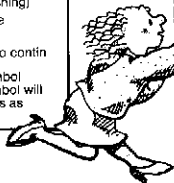
COOL   AUTO   HEAT   EMERGENCY HEAT

(flashing)

With no heat or cool symbols displayed, the system is off.

With the fan button ✖ , you set the fan to continuous operation (ON mode) and the fan symbol is displayed. In the 'auto' mode, no fan symbol will be displayed and the fan operates or cycles as the system demands.

3

Set your personal schedule

typical residential schedule

Figure 3.

DAYS	PROGR.	HEAT°	COOL°	START TIME	AM/PM
Weekdays ☐☐☐☐☐☐☐ or any 5 consecutive days:	A	70	74	6:00	AM
	B	60	80	8:30	AM
	C	70	74	4:30	PM
	D	60	80	11:00	PM
Saturday ☐☐☐☐☐☐☐ or day following 5 consecutive days:	B	71	75	7:00	AM
	B	70	74	7:00	AM
	C	70	74	7:00	AM
	D	60	80	11:00	PM
Sunday ☐☐☐☐☐☐☐ or day preceding 5 consecutive days:	A	71	75	7:00	AM
	B	70	74	7:00	AM
	C	70	74	7:00	AM
	D	60	80	11:00	PM

typical office schedule

DAYS	PROGR.	HEAT°	COOL°	START TIME	AM/PM
Weekdays ☐☐☐☐☐☐☐ or any 5 consecutive days:	A	70	74	7:00	AM
	B	70	74	7:00	AM
	C	60	72	7:00	AM
	D	60	85	8:00	PM
Saturday ☐☐☐☐☐☐☐ or day following 5 consecutive days	A	70	74		
	B	72	76		
	C	68	72		
	D	60	85		
Sunday ☐☐☐☐☐☐☐ or day preceding 5 consecutive days	A	70	74	7:00	
	B	72	76		
	C	68	72		
	D	60	85		

NOTE:
If the thermostat has more than one setting with the same start time, it chooses the first one in alphabetical order. In the "Typical residential schedule" example for Saturday at 7:00 AM and switch to "D" at 11:00 PM. However, "B" and "C" are still available for override (2 or 3 hours in timed override recommended) and we suggest that the user put different temperatures in these unused programs to provide greater selection when using override.

4

The first thing to do before programming your thermostat is to determine your own personal comfort levels for each day as to temperature and time. Figure 3 is a typical schedule.

After the temperature has been lowered all night, it would be typical to have the thermostat begin to warm the house at 6:00 AM, if you get up at 7 AM. At 8:30 AM before everyone has left for the day, the thermostat can be set to lower the temperature to save you energy during the day. Before anyone arrives home in the afternoon, the temperature may again be increased to provide comfort for you when you return. Finally, at bedtime, the thermostat again lowers the temperature to save you energy all night.

Figure 4 is a blank form for you. Start with weekdays, and write in your personal comfort level, and the time you want the furnace (or air conditioner) to come on in the morning to bring your home to that temperature. It is suggested that you set your desired program times about 1 hour before the time you actually require your home to reach the set temperature. So if you get up at 7 AM, set the furnace to come on at 6 AM.

Then write in the Saturday and Sunday settings.

fill in your own personal schedule

DAYS	PROGR.	HEAT°	COOL°	START TIME	AM/PM
Weekdays ☐☐☐☐☐☐☐ or any 5 consecutive days:	A				
	B				
	C				
	D				
Saturday ☐☐☐☐☐☐☐ or day following 5 consecutive days	A				
	B				
	C				
	D				
Sunday ☐☐☐☐☐☐☐ or day preceding 5 consecutive days	A				
	B				
	C				
	D				

Figure 4.

Begin programming

Figure 5. Display on start-up


Figure 5. Display on start-up

1. Separate the thermostat front unit from the mounting plate (page 12 figure 13).

2. Install the battery.

3. Operate the START-RUN switch back and forth and leave in RUN position.

4. Ensure that the display is flashing once per second as in figure 5. (If it is not, repeat step 3).
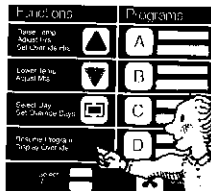
STEP 1.

Press the [⏻] button and observe the time and temperature alternating every 4 seconds.
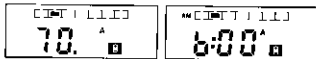
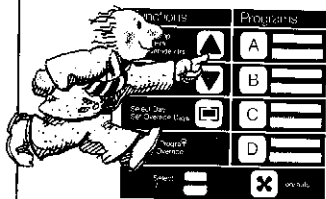Actual temperature   Time

STEP 2.

When the display is showing time, press and hold the [▲] button, until the hour digits advance to the correct hour, ensuring that AM/PM indicator is correct. (This button will not affect minutes).

Again when the time is displayed, press and hold [ ] button until the minute digits advance to the correct minute. (This button will not affect the hours).

5

STEP 3. Set correct day of week

Press the [■] button, and advance the day indicator to the correct day of the week. Figure 6 shows the indicator at Monday.
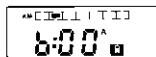
Figure 6.

STEP 4. Select heat or cool system

By consecutively pressing and releasing the [▨] button the following symbols will appear in this order on your display.

COOL	AUTO	HEAT	EMERGENCY HEAT
❄	❄/🔥	🔥	🔥 (flashing)

Select and display your system requirements ie. heat only, cool only, or heating and cooling (auto change over).

NOTE
· The battery symbol will show when power is off.

· Battery symbol will flash to indicate weak battery.

· When no heat or cool symbol is displayed, the system is off.

· If you have 🔥 only or ❄ only displayed, you will program one temperature and the time. If you have both 🔥 and ❄ (auto change over) you will program first heat, then cool, and then time.

STEP 5. Enter your program for 5 weekdays

[▐▮▬▮▬▮▬▮▬▮▬▮▬]

(1) If your system selection is cool only, skip substeps (2) to (4) and begin at (5).

(2) Press and release [A]. You will observe a display in figure 7.

(3) Press [▲] to raise or [▼] to lower to the desired temperature.

Caution
* Setting below 51°F or 10.5°C may shut system off.
* Setting below 55°F or 12°C may freeze pipes.

(4) If your system selection is heat only, skip substeps (5) and (6) and proceed to (7).

(5) Press and release [A]. You will observe the display as in figure 8.

(6) Press [▲] to raise or [▼] to lower to the desired temperature.

(7) Press and release [A]. You will observe the display as in figure 9.

(8) Press [▲] to advance the hours and [▼] to advance the minutes (10 minute increments) to the desired start time. You have now entered the "A" program for 5 days into the computer memory.

Repeat step 5 substituting [B] [C] or [D] for [A].

Note: The thermostat's design will not allow the heat and cool setpoints to be set closer than 4°F or 2°C.
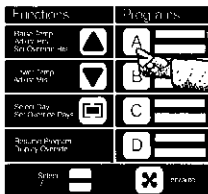
Figure 7. Heat set point

Figure 8. Cool set point
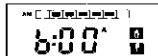
Figure 9. Time

Note:
These displays are typical only. What you observe will differ if someone has already programmed the thermostat or if your system selection is not heat/cool (see step 4).
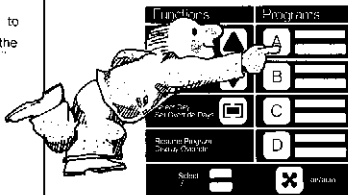
7
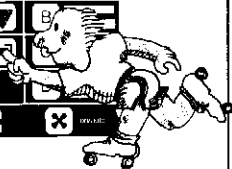
STEP 6. Enter program for Saturday

[I I I I I ▣]
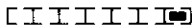
Press ▣ and advance the day indicator to the right hand position. Now follow step 5 for programs A,B,C and D for Saturday.

STEP 7.

[▣ I I I I I I]
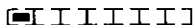
Press ▣ again and advance the day indicator to the left hand position. Now follow step 5, for programs A,B,C, and D for Sunday.

STEP 8.

Press ▣ and the display will alternate between temperature and time and control of your environment will now be automatic as programmed.

8

STEP 9. Continuous override

At any time you may override the scheduled program by merely pressing the program button $\boxed{A}$ $\boxed{B}$ $\boxed{C}$ or $\boxed{D}$ with the temperature you wish to hold. The display will then only show that temperature. The temperature will now control continuously at the selected program temperature until you press $\blacksquare$ (unless you have used the timed override feature, in which case the normal program will resume after the override time has elapsed).

Enter timed override

While it is not necessary for normal operations, timed override is a very convenient feature and its use is strongly recommended. **Caution:** a minimum of 1 hour is mandatory if keyboard is to be disabled; see page 10.

(1) Press $\blacksquare$ until you observe your display as in figure 10.

(2) Press and hold $\boxed{\blacktriangle}$ until the desired hours of override are shown in the two right digits as in figure 11.

(3) Press $\boxed{\blacksquare}$ until the desired days are shown.

Figure 11 shows a recommended typical setting of 3 hours of timed override and no days.

Any time the override is used, (by simply pressing button $\boxed{A}$ $\boxed{B}$ $\boxed{C}$ or $\boxed{D}$ which has the desired temperature called for) the temperature will control for 3 hours and then the normal program will resume again.

Figure 10.
Display of timed override

Figure 11.

STEP 10. Verify your programs

1. Press $\boxed{A}$ and check that it now shows your desired heat set point, for your 5 day program.

Press $\boxed{A}$ again and check your cool set point.

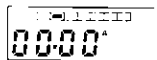Press $\boxed{A}$ again and check your time.

(2) Repeat for programs B, C, and D.

(3) Repeat for Saturday and Sunday programs, after pressing $\boxed{\blacksquare}$ to advance to the desired day.

(4) Record your program in pencil on the thermostat (figure 12).

Simply pressing $\blacksquare$ returns to programmed operation.

Figure 12.

9

Using some special features

Functions	Programs
Raise Temp / Adjust Hrs / Set Override Hrs	A
Lower Temp / Adjust Mins	B
Select Day / Set Override Days	C
Resume Program / Display Controls	D
Select / F	✖ °F/Auto

Fan operation

To select FAN ON press ✖. The fan will operate continuously and the fan symbol will be displayed. To select FAN AUTO, which operates the fan only when the system is running, press ✖ a second time and the fan symbol will disappear.

Battery symbol

The battery symbol indicates two conditions. If it is flashing, it indicates a missing or low battery condition. When this condition occurs, go to BATTERY INSTALLATION AND START-UP for instructions on how to replace the battery. If the battery symbol is displayed continuously, it indicates that the power is off and that the thermostat is maintaining its memory using the battery. A fresh battery will last 5 to 10 days without power to the thermostat. With continuous power the battery should last two to three years.
Caution: use alkaline battery only.

Keyboard disable

All keyboard buttons (except A B C and D) can be disabled by setting slide switch # 7 ON. This prevents the program from being altered by unauthorized people. **TIMED OVERRIDE MUST be used in conjunction with KEYBOARD DISABLE because RESUME is disabled.** We suggest a TIMED OVERRIDE interval of at least one hour.
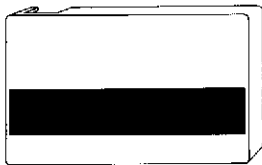
Remote sensor Model RSK4

If you are planning on installing a remote sensor you must use a shielded cable with a ground wire or coaxial cable. Thermostat wire is not suitable for the remote sensor. Follow instructions that come with sensor.

ACTUAL SIZE SHOWN

10

Installation instructions

• Disconnect power supply to systems before beginning installation to prevent personal injury or death from electrical shock or entanglement in moving parts and to prevent equipment damage.
• Ensure control voltage is 20-30 Vac.
• We recommend installer be a trained, experienced service technician.

Thermostat location

To ensure proper operation, the thermostat should be mounted on an inside wall in a frequently occupied area of the building. In addition, its position must be at least 18 inches from any outside wall, and approximately five feet above the floor in a location with freely circulating air of an average temperature. Be sure to avoid the locations described below when determining a site for the thermostat.

CAUTION: ZONE INTEGRITY MUST BE MAINTAINED TO EFFICIENTLY CONTROL UNITS OR GROUPS OF UNITS. UNLESS ZONES OF CONTROL ARE CONSIDERED AND ACCOUNTED FOR, ADJACENT UNITS MAY OPERATE IN HEATING AND COOLING MODES SIMULTANEOUSLY.

Note: When optional remote sensor is used, these restrictions apply to the sensor location. The thermostat may then be located anywhere except in direct sunlight, harsh atmospheres or near sources of electrical interference.

Do not locate the thermostat

• behind doors or in corners where freely circulating air is unavailable.
• where direct sunlight or radiant heat from appliances might affect control operation.
• on an outside wall.
• adjacent to, or in line with, conditioned air discharge grilles, stairwells, or outside doors.
• where its operation may be affected by steam or water pipes or warm air stacks in an adjacent partition space, or by an unheated/uncooled area behind the thermostat.
• where its operation will be affected by the supply air of an adjacent unit.
• near sources of electrical interference such as arcing relay contacts.

Figure 13.

Mounting plate

TABLE 1

System Type	Slide Sw.			Output Terminals								
	1	2	3	1	2	3	4	5	6	7	8	9
single stage heat-pump	H	H	H	L	X	*	BH	G	HP1	RC	RH	AUX
two stage heat-pump	H	H	H	L	X	*	HP2	G	HP1	RC	RH	AUX

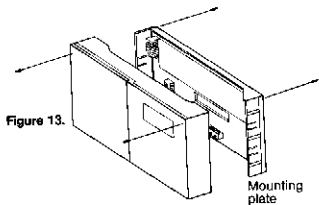* O when slide switch 4 is OFF. Energizes in cool mode.
H when slide switch 4 is ON. Energizes in heat mode.
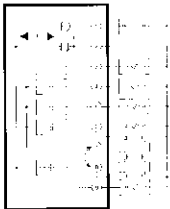
Note: This thermostat requires a connection to the transformer common. Make sure that there are enough conductors in the thermostat cable to include it. A cable of up to 9 conductors may be required.

1. Make sure the power to the systems is off.

2. Pull front unit off of mounting plate.

3. Determine which of the two systems described in table 1 applies to your installation. Figure 14 shows the two systems in a schematic diagram format. Use the enclosed sheet titled "Enerstat HP-1 Thermostat Replacement Connections" to assist in determining which system you need. It lists a number of common systems and shows how to set the slide switches as well as any special requirements. This sheet is not all inclusive so it may be necessary to obtain schematic diagrams and other information from the heat pump manufacturer to determine installation requirements.

4. If there are any special wiring requirements, go to the equipment and perform the wiring as directed by instructions on the "Enerstat HP-1 Thermostat Replacement Connections" sheet or other sources of information.

5. Set slide switches 1, 2, and 3 as shown in table 1 for your system choice and then set slide switch 4 for "O" or "B" as required with your system. This is very important. These slide switches must correspond to the output wiring. If the battery is installed, move the START-RUN switch to the START position, then move it to the RUN position and leave it there.

6. Identify the wires as per table 1. Again reference the connections sheet as required.

7. Position the mounting plate so that all the control wires protrude through the centrally located slot (figure 15). Level for appearance and mark the three mounting holes. Drill holes using a 3/16" (5mm) drill bit. Install supplied anchors, reposition the mounting plate and secure it to the wall. Do not overtighten screws.

8. Connect the control wires to the proper output terminals.

12

TABLE 2

| Symbol	Description
AUX	Energizes when auxiliary heat is required.
HH	24 Vac connection for AUX.
HC	Power supply for all other stages.
HP1	Energizes when 1st stage heat-pump is required.
G	Energizes fan when HP1 is on or when manually activated by the fan switch.
HP2	Energizes when 2nd stage heat pump is required.
EH	Energizes when emergency heat mode is selected.
O	Energizes in cool mode.
B	Energizes in heat mode.
X	24 Vac common connection.
I	Heat-pump monitor connection.
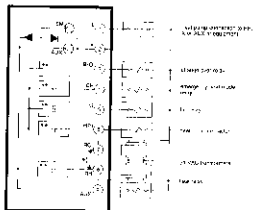
HHH Figure 14a. Typical connection for single stage heat-pump.
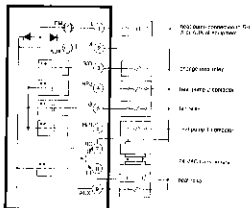

HHH Figure 14b. Typical connection for two stage heat-pump.

* Remove jumper for dual transformer systems

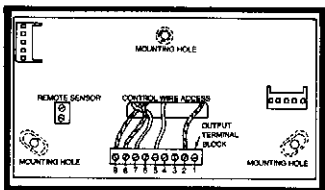** Solid state switch (not accessible).

Figure 15. Mounting plate

13

Setting slide switches

6. There are a number of options that you can select with the slide switches. They slide up and down very easily using a pen. The ON position is marked on the block that encloses the switches (figure 16). Set the slide switches using the information in figure 16 as your guide.

CAUTION: Always operate START-RUN switch after battery installation or a change in position of slide switch numbers 1, 2, 3, 5 or 8 and 9.
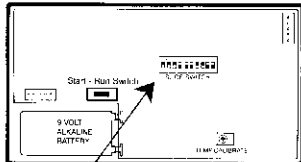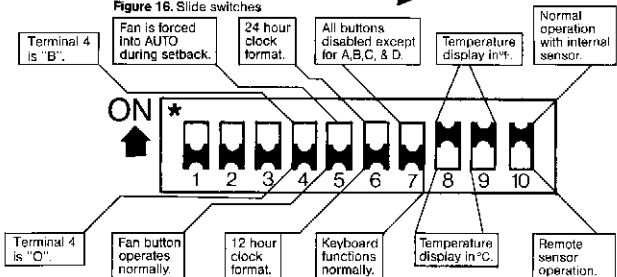

Figure 16. Slide switches

Terminal 4 is "B".
Fan is forced into AUTO during setback.
24 hour clock format.
All buttons disabled except for A, B, C, & D.
Temperature display in °F.
Normal operation with internal sensor.

Terminal 4 is "O".
Fan button operates normally.
12 hour clock format.
Keyboard functions normally.
Temperature display in °C.
Remote sensor operation.

★Switches 1, 2, and 3 select single stage or two stage systems. See table 1.

Switch 4
OFF - H2O terminal 4 is designated as "O". It is energized in the cool mode.
ON - Terminal 4 is designated as "B" it is energized in the heat mode.

SWITCH 5.
OFF - Fan comes on only when heating or cooling equipment operates (ON/AUTO). ON - In the FAN ON mode the fan runs continuously when the building is occupied but goes to FAN AUTO during setback or setup periods when the building is unoccupied. The setback temperature must be below 66°F or 18°C and the setup must be above 82°F or 26°C to use this feature.

SWITCH 6.
OFF - Time is displayed in 12 hour format.
ON - Time is displayed in 24 hour (military or European) format.

SWITCH 7.
OFF - Keyboard operates normally.
ON - All buttons are disabled except A, B, C, and D. This feature prevents a program from being accidentally (or deliberately) altered. Ensure that you set a minimum of 1 hour (00 01) in timed override.

SWITCHES 8 AND 9.
OFF - Temperature displayed in Celsius
ON - Temperature displayed in Fahrenheit

SWITCH 10.
ON - Normal operation with internal temperature sensor.
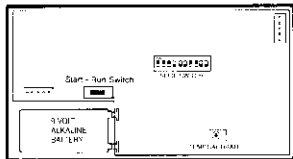OFF - For use with remote sensor. Do not place off unit just before placing the front unit onto the mounting plate.

14   ★Switches 1, 2, and 3 should have been set when the thermostat was connected. See page 12.

Battery installation & start-up

Figure 17. Start-up display

Figure 18. Battery Installation

7. Install the battery.
8. Operate the START - RUN switch. Move to the START position, then move it to the RUN position and leave it there.
9. Ensure the display is flashing once per second (figure 17). If it is not, repeat step 8.
10. Push the RESUME button and the display will alternate every 4 seconds between room temperature and time.
11. Replace the thermostat front unit on mounting plate.

Checking installation

CAUTION: UNIT HAS BUILT-IN TIME DELAYS FOR HEAT AND COOL. THEY MAY VARY DEPENDING ON ROOMTEMP RISE OR FALL. DELAYS CAN BE FROM 3 TO 15 MIN. PER STAGE.
Follow the checkout procedure outlined in Table 3. The thermostat should be in the OFF mode. When the system power is turned on the battery symbol should disappear or flash. If the battery is weak or missing. Minimum on and off times have been built into the thermostat to prevent short cycling. These delays may be longer than specified if the HVAC equipment has built in delays.

Temperature Calibration

The temperature calibration control shown in figure 18 may be used for minor adjustments.

15

Table 3

STEP	PUSH BUTTON	DISPLAY SHOWS	RESPONSE
1	⊟	❄	Cool mode
2	⊟	❄☀	Auto heat/cool mode
3	⊟	☀	Heat mode
4	⊟	flashing once per second	Emergency Heat mode - auxiliary stage only
5	⊟	(no symbol)	All systems go off after 7 seconds.
6	⊟	select required mode	(step 1, 2, or 3) for further testing
7	▲	Stationary 70 or 74 (20.0 or 22.0)	Heating and cooling set-points. Room temperature will be maintained at these set-points.
8	▲ ▼	Increase or decrease of set point temperature	Equipment will respond subject to time delays
9	A hold	Time delays may be reduced to a few seconds by pressing and holding program button A. Release when stage indicators are displayed. Slide switches 8 & 9 must be "ON". Care must be taken not to short cycle the compressor. Set-point should be 10° higher than ambient in heating or 10° lower than ambient in cooling.	
10	✖	✖	Fan runs continuously subject to figure 16, Page 14, switch # 5
11	✖	(no FAN symbol)	Fan operates automatically

Trouble shooting guide

| SYMPTOM	CAUSE	ACTION
UNIT APPEARS TO BE OKAY BUT WILL NOT ACTIVATE RELAYS OR RELAYS CHATTER	1) SOLID STATE SWITCH FAILURE 2) HIGH RESISTANCE AT EQUIPMENT 3) 2 TRANSFORMER SYSTEM OUT OF PHASE	– REPLACE UNIT – LOAD DOWN RELAY COIL WITH 4700 ohm 1 WATT RESISTOR OR INSTALL RELAY. – PHASE TRANSFORMERS
HEAT OR COOL STATUS INDICATORS WILL NOT APPEAR	1) BUILT IN TIME DELAYS	– OVERRIDE USING TIME DELAY SPEED UP
DISPLAY LOCKED INTO A,B,C,D, PROGRAM RESUME NOT OPERATING	1) KEYBOARD DISABLED BY SLIDE SWITCH #7 2) SLIDE SWITCH #10 OFF & NO REMOTE SENSOR CONNECTED OR REMOTE SENSOR CIRCUIT OPEN	– PLACE #7 TO "OFF" & RESUME .PUT IN MINIMUM OF 00.01 (1 HR) INTO OVERRIDE TO PREVENT REPEAT CHECK SWITCH AND REMOTE CIRCUIT
SYSTEM CYCLES BEFORE REACHING SET POINT	BUILT IN COMPUTER RECOVERY	UNIT OPERATING NORMALLY
DISPLAY FLASHING PROGRAM LOST	1) STATIC ELECTRICITY 2) HIGH FREQUENCY INTERFERENCE	– DISCHARGE BEFORE TOUCHING STAT! – USE SHIELDED CABLE WITH REMOTE SENSOR.
TEMPERATURE READING INCORRECT	1) OUT OF CALIBRATION 2) EXTERNAL HEAT SOURCE 3) DOWN DRAFT AT THERMOSTAT	– RECALIBRATE WITH ACCURATE THERMOMETER. – ISOLATE STAT FROM HEAT SOURCE OR OVERHEAD DIFFUSERS.
BLANK DISPLAY	1) START-RUN SWITCH LEFT IN START POSITION 2) BATTERY DEAD 3) STATIC ELECTRICITY	– PLACE IN RUN POSITION – TEST AND REPLACE – RESET WITH START-RUN SWITCH
DISPLAY READING 24 HR FORMAT	SLIDE SWITCH #6 IN THE "ON" POSITION	SET IN "OFF" POSITION IF DESIRED
ERRATIC TEMPERATURE READING	1) WHEN REMOTE SENSOR IS INSTALLED #10 SWITCH MUST BE IN "OFF" POSITION 2) FAULTY THERMISTOR 3) INCORRECT SHIELDING CONNECTIONS OR SHIELD GOES TO MECHANICAL GROUND.	DISCONNECT REMOTE SENSOR LEADS IF INTERNAL THERMISTOR IS TO BE USED TEMPORARILY. REPLACE OR CHECK WITH ohm METER 10.000 ohm-approximate – CHECK REMOTE SENSOR WIRING.
CLOCK SPEEDS UP (REMOTE SENSOR)	HIGH VOLTAGE SPIKES REACHING THERMOSTAT	INSTALL 10 UF CAPACITOR ACROSS REMOTE SENSOR TERMINALS IN SUB-BASE. SEE REMOTE SENSOR INSTRUCTIONS
STAT WILL NOT RETURN FROM SET BACK	1) OVERRIDE SET FOR DAYS 2) WRONG DAY OF WEEK 3) KEYBOARD LOCKED	– PRESS RESUME, REMOVE DAYS FROM MEMORY – PRESS DAY KEY & ADVANCE TO CORRECT DAY – UNLOCK WITH SLIDE SWITCH #7
UNIT COOLING IN HEATING MODE HEATING IN COOLING MODE	B-O SWITCH INCORRECT SETTING	'B' ENERGIZED IN HEATING WHEN #4 SWITCH IS ON. 'O' ENERGIZED IN COOLING WHEN #4 SWITCH IS OFF.

LIGHTS

Red Emergency Indicator Light

When this light is on, your heat pump is not operating at
optimum performance levels. This condition may also occur in
the emergency heat mode. If the light persists, switch to
emergency heat mode, refer to your heat pump manual or call
your service dealer.

Amber Auxiliary Indicator Light

When this light is on, it indicates the furnace is on and
supplying auxiliary heat to the conditioned space.
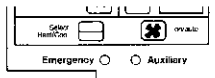
Specifications

Rated voltage	20 – 30 Vac
Rated current	0.050 – 1.5 Amp continuous for each output with surges to 4 Amps
Cycle rate	3 CPH heat pump 6 CPH auxiliary heat
Minimum on/off times to prevent short cycling	6 minutes for heat pump 3 minutes for auxiliary heat
Maximum recovery rate	6°F (3°C)/hr 12°F (6°C)/hr emergency heat mode
Control range Heating	51 to 106°F in 1° steps or 10.5 to 38°C in 0.5° steps
Cooling	55 to 110°F in 1° steps or 12.5 to 40°C in 0.5° steps
Temperature measurement range	50 to 113°F or 10 to 41.5°C
Accuracy	±0.5°F ± 0.05°F/°F difference from 70°F
Battery	9 volt ALKALINE (Eveready # 522 or equivalent) for memory retention during power outage
Quartz clock accuracy	± 80 seconds/month
Range of ambient operation	32 to 131°F (0 to 55°C)
Storage temperature	– 30 to 131°F (– 34 to 55°C)
Operating humidity range	5 to 90% RH

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