Robertshaw®

INTEGRATED COMFORT SOLUTIONS™

9620 DIGITAL PROGRAMMABLE THERMOSTAT

H HEAT PUMP

7 Day Programmable
2 Heat / 2 Cool

User's Manual

Quick Start Installation and Programming

110-732E

As an ENERGY STAR® partner, Maple Chase has determined that this thermostat product meets the ENERGY STAR® guidelines for energy efficiency.

⚠ Important Safety Information

WARNING:

- Always turn off power at the main power source by unscrewing fuse or switching circuit breaker to the off position before installing, removing, cleaning, or servicing thermostat.
- Read all of the information in this manual before installing or programming this thermostat.
- This is a 24V AC low voltage thermostat. Do not install on voltages higher than 30V AC.
- All wiring must conform to local and national building and electrical codes and ordinances.
- Do not short (jumper) across terminals on the gas valve or at the system control to test installation. This will damage the thermostat and void the warranty.

Features

- Four preprogrammed ENERGY STAR® setpoints for each day of the week
- Quickset™ programming for quickly programming all days of the week simultaneously
- Energy Efficient Recovery (EER™)
- Residual cooling for added air conditioning efficiency
- Two AA ENERGIZER® brand batteries retain program memory, even during power outages
- Low battery indicator
- Multi-colored LED indicators for system status
- Zone compatible as master thermostat
- Fahrenheit/Celsius display option
- Programmable from 45°F (7°C) to 90°F (32°C)
- Accuracy within ±1 degree
- Adjustable temperature differential: 1-3 degrees
- Maintains summer and winter programming

Step 1: Replacing Existing Thermostat

1. Turn off power to heating and cooling system.
2. Remove cover of old thermostat to expose wires. (Figure 1)

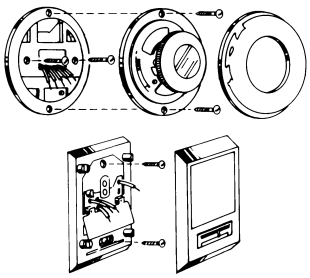


FIGURE 1

3. Disconnect wires one at a time from existing terminals. use enclosed labels to mark existing wires. Refer to cross references in Table 1 if existing wiring does not directly match the labels.

- If you have any questions about cross referencing the old terminal to the new label, reference your equipment installation manual, a licensed contractor, or call Robertshaw Tech Support (800) 445-8299.

4. Remove existing thermostat base from wall.

TABLE 1

Old Terminal	New Label	Description
R, V-VR or VR-R	R	24 VAC
Y, Y1 or M	Y1	Stage 1 Cooling/Heating Circuit
O or R	O	Reversing Valve (Cooling Mode)
B	B	Reversing Valve (Heating Mode)
G or F	G	Fan Contactor Circuit
Y2	Y2	2nd Stage Cooling Circuit
W1 or W2 or W-U	W2	2nd Stage Heating Circuit
L or X	L	System Monitor LED
E	E	Emergency Heating Circuit
C, X or B	C	24 VAC Transformer Common Side

NOTE: THIS THERMOSTAT REQUIRES A 24V AC COMMON WIRE FOR PROPER OPERATION.

5. After labeling wires, remove wires from terminals.
6. Remove existing thermostat base from wall.
7. Refer to the following section for instructions on how to install thermostat.

Recycling Thermostat

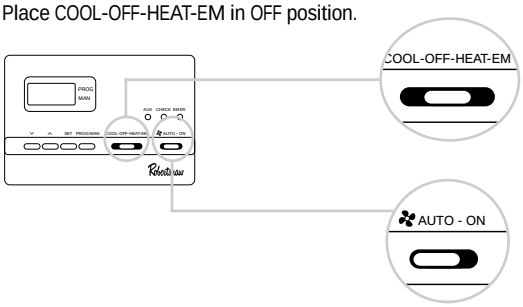
If this thermostat is replacing a thermostat that contains mercury in a sealed tube, do not place your old thermostat in the garbage. Contact your local waste management authority for instructions regarding proper disposal of the thermostat. If you have any questions, call Robertshaw technical support at 1-800-445-8299.

Step 2: Installing Model 9620 Thermostat

NOTE: FOR NEW INSTALLATIONS, MOUNT THERMOSTAT ON INSIDE WALL, 4-5 FEET ABOVE THE FLOOR. DO NOT INSTALL BEHIND A DOOR, IN A CORNER, NEAR AIR VENTS, IN DIRECT SUNLIGHT, OR NEAR ANY HEAT OR STEAM GENERATING FIXTURES. INSTALLATION AT THESE PLACES WILL AFFECT THERMOSTAT OPERATION.

IMPORTANT: THIS THERMOSTAT IS COMPATIBLE WITH 100% LOCKOUT SYSTEMS. TO RESET THE SYSTEM, TURN THERMOSTAT TO OFF POSITION FOR AT LEAST 60 SECONDS.

1. Turn off power to the heating and cooling systems.
2. Place COOL-OFF-HEAT-EM in OFF position.



3. Place ✣ AUTO-ON switch into AUTO position.
4. Remove the cover using a coin or screwdriver (Figure 2).

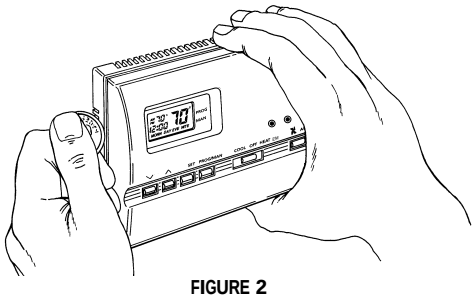


FIGURE 2

5. Place thermostat against the wall at desired location. Make sure wires will feed through opening on base of thermostat.
6. Mark placement of mounting holes (Figure 3). Set base aside.

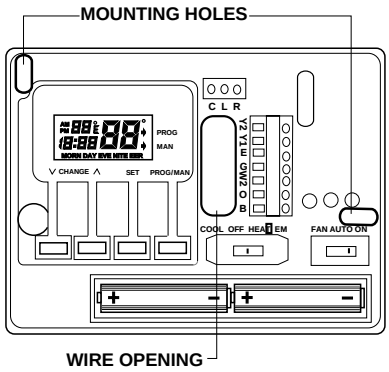


FIGURE 3

7. Drill the marked holes using a 3/16" drill bit. **NOTE: Enclosed plastic anchors do not require a drilled hole for drywall.**
8. Tap plastic anchors into the holes.
9. Align base with plastic anchors and feed wires through opening (Figure 3).

10. Secure base to wall with supplied screws.
11. Terminal screws are loosened. Insert wires into terminal strip (Figure 4) matching the label to the corresponding terminal (see Wiring Diagrams below). Tighten screws.

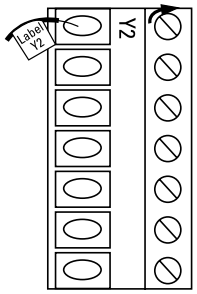
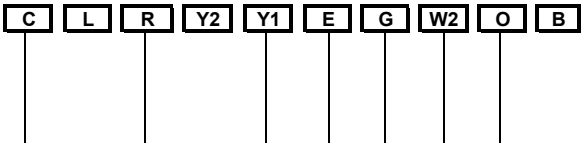


FIGURE 4

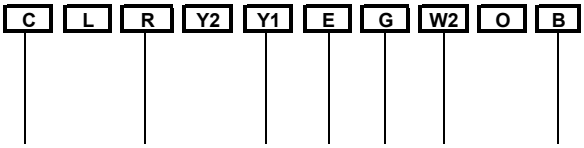
9620 WIRING SAMPLE #1

Typical heat pump with cool active reversing valve and auxiliary/emergency heat.



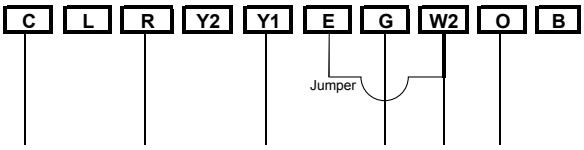
9620 WIRING SAMPLE #2

Typical heat pump with heat active reversing valve and auxiliary/emergency heat.



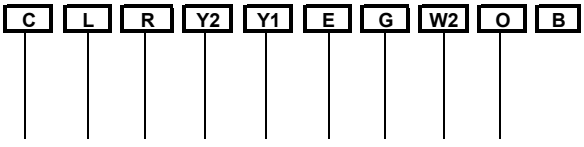
9620 WIRING SAMPLE #3

Typical heat pump with heat active reversing valve and auxiliary/emergency heat.
Does not have separate wire for emergency heat (jump W2 & E).



9620 WIRING SAMPLE #4

Typical heat pump with cool active reversing valve, auxiliary/emergency heat
and second stage of cooling. System fault indicator connected (L terminal).

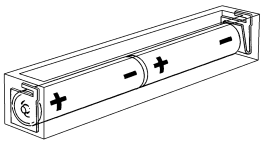


TERMINAL LEGEND - 9620

TERM	EQUIPMENT TO CONNECT	REQ?	TERMINAL FUNCTION
C	24VAC common connection	Yes	For input of 24VAC common side of transformer
L	System fault indicator connection	No	For connection of system fault indicator (if present)
R	24VAC hot connection	Yes	For input of 24VAC hot side of transformer
Y2	Second stage cooling connection	No	Energizes on a call for second stage cooling
Y1	First stage compressor connection	Yes	Energizes on a call for first stage heating or cooling
E	Emergency heat connection	No*	Energizes on a call for heat in the EM mode only
G	Indoor fan connection	Yes	Energizes with E, Y1, Y2 and W2 terminals or with FAN option switched to the ON position
W2	Second stage heat connection	No*	Energizes on a call for second stage of heat (auxiliary heat)
O	Cool active reversing valve connection	Yes**	Energizes when in the in COOL mode
B	Heat active reversing valve connection	Yes**	Energizes when in the HEAT or EM modes

* For systems using a backup heat source. If separate E terminal connection is not available, jumper E and W2.
** Most heat pump systems will have a cool active *OR* a heat active reversing valve. Use the appropriate terminal.

12. Install two AA ENERGIZER® brand batteries or equivalent into battery compartment. Be sure to match positive (+) ends of batteries with positive (+) battery terminals in the battery compartment.

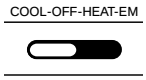


13. Replace cover on thermostat by snapping into place.
14. Turn on power to system. Test thermostat as described in the following section.

Step 3: Testing the Thermostat

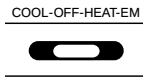
WARNING: DO NOT SHORT (JUMPER) ACROSS TERMINALS OF GAS VALVE OR SYSTEM CONTROL TO TEST OPERATION. THIS WILL DAMAGE THE THERMOSTAT AND VOID YOUR WARRANTY.

CAUTION: DO NOT SWITCH SYSTEM TO COOL IF THE TEMPERATURE IS BELOW 50°F (10°C). THIS CAN DAMAGE THE AIR CONDITIONING SYSTEM AND CAUSE PERSONAL INJURY.

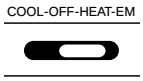


1. Place the COOL-OFF-HEAT-EM switch into the COOL position
2. Press the ⋁ button until the temperature setting is at least 3 degrees below the room temperature. The air conditioning system should turn on within a few seconds.

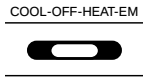
NOTE: ONCE THE THERMOSTAT TURNS THE SYSTEM OFF WHILE IN THE COOL OR HEAT MODE, A BUILT-IN DELAY KEEPS THE COMPRESSOR FROM TURNING ON FOR ABOUT 5 MINUTES. THIS PROTECTS THE COMPRESSOR. NO ADDITIONAL TIME DELAY RELAY (DELAY ON BREAK) IS NECESSARY. TO OVERRIDE THE 5-MINUTE DELAY FOR INSTALLATION, PRESS RESET. THIS WILL ERASE THE DELAY AS WELL AS ALL PROGRAMMING.



3. Put the COOL-OFF-HEAT-EM switch into the OFF position. The air conditioning system should turn off. The fan may continue to run for a short period of time.



4. Put the COOL-OFF-HEAT-EM switch into the HEAT position.
5. Press the ⋀ button until the temperature setting is at least 3 degrees above room temperature. The heating system should turn on. The fan may not turn on immediately, depending on the fan delay built into the furnace.



6. Put the COOL-OFF-HEAT-EM switch into the OFF position. The heating system should turn off. Once again, the fan may have a delay.

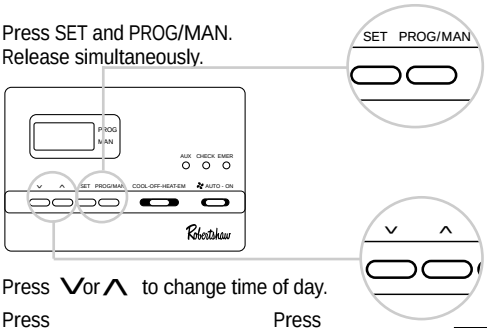
7. Put the AUTO-ON switch to the ON position. The blower fan should turn on.

8. Put the AUTO-ON switch to the AUTO position. The blower fan should turn off.

Step 4: Customizing Your Thermostat

◆ Set Time of Day, Day of Week, Temperature Differential, Residual Cooling

1. Press SET and PROG/MAN. Release simultaneously.



Press ⋁ or ⋀ to change time of day.

2. Press SET

Press ⋁ ⋀ to change day of week.

1=MO
2=TU
3=WE
4=TH
5=FR
6=SA
7=SU

3. Press SET

Press ⋁ ⋀ to change 1st stage temperature differential.

NOTE: THE TEMPERATURE DIFFERENTIAL IS FACTORY PRESET AT 1°. THIS MEANS THAT WHENEVER THE ROOM TEMPERATURE CHANGES BY ONE FULL DEGREE FROM THE TEMPERATURE SETTING, THE SYSTEM WILL TURN ON. IF THE SYSTEM TURNS ON TOO OFTEN, INCREASE THE TEMPERATURE DIFFERENTIAL.

4. Press SET

Press ⋁ ⋀ to change 2nd stage temperature differential.

NOTE: THE SECOND STAGE TEMPERATURE DIFFERENTIAL IS FACTORY PRESET AT 2°.

5. Press SET

Press ⋁ ⋀ to change residual cooling.

NOTE: THE RESIDUAL COOL FEATURE WILL KEEP THE SYSTEM FAN ON FOR AN ADDITIONAL 30, 60, OR 90 SECONDS AFTER THE COMPRESSOR CYCLES OFF IN COOL MODE. THE RESIDUAL COOL FEATURE CAN BE SET ONLY IN THE COOL MODE.

◆ Changing Fahrenheit (F) to Celsius (C)

Press and hold SET. Press

Release both simultaneously.

◆ Energy Efficient Recovery (EER™)

The Energy Efficient Recovery (EER™) feature looks ahead up to 2 hours prior to the end of the setback (or set-up) period to begin monitoring performance and calculating when to turn on your system. It also determines whether the auxiliary heat or cool stages should be activated prior to setpoint time to meet your chosen setpoint temperature. The thermostat will indicate EER in the display when this program feature is active. The EER™ feature will lockout the auxiliary stages until 20 minutes prior to upcoming setpoint time to utilize the most energy efficient first stage. The auxiliary stages of heating and cooling will be available during this lock-out period to maintain the setpoint temperature should the system not be able to keep up with the heating or cooling demand.

Step 5: Setting the Program

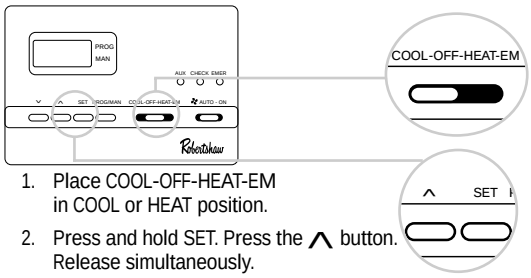
This Robertshaw thermostat is preprogrammed with the following ENERGY STAR® settings for the greatest energy savings.

Setting	Time	Heat Setpoint Temperature	Cool Setpoint Temperature
MORN	6:00 a.m.	70°F	78°F
DAY	8:00 a.m.	62°F	85°F
EVE	5:00 p.m.	70°F	78°F
NITE	10:00 p.m.	62°F	82°F

These settings can be customized using the following QuickSet™ or daily programming guides.

◆ QuickSet™ Programming Mode

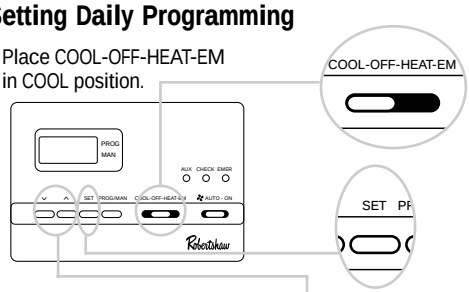
QuickSet™ will program all 7 days of the week with the same program.



1. Place COOL-OFF-HEAT-EM in COOL or HEAT position.
2. Press and hold SET. Press the ^ button. Release simultaneously.
3. The MORN indicator should be blinking. Program the time of day and the temperature as outlined in the Setting Daily Program section.

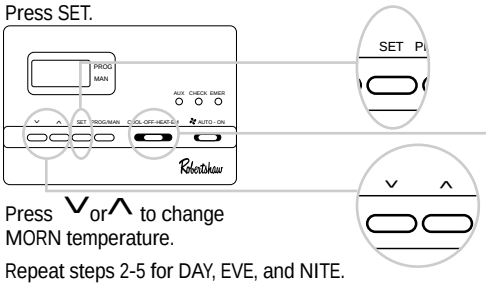
◆ Setting Daily Programming

1. Place COOL-OFF-HEAT-EM in COOL position.



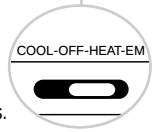
2. Press SET button. The display will show a number from 1 to 7. This number represents the day of the week to be programmed. If programming individual days, press either v or ^ button to adjust the day of the week to program.

3. Press SET. Press v or ^ to change MORN time.
4. Press SET.



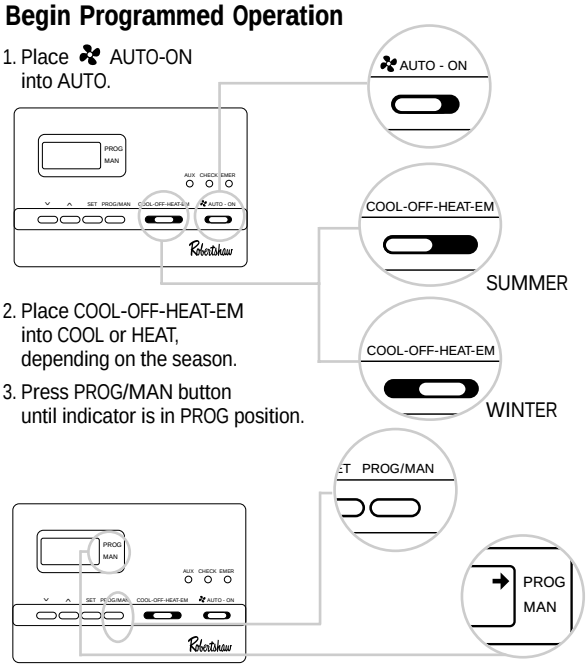
5. Press v or ^ to change MORN temperature.

6. Repeat steps 2-5 for DAY, EVE, and NITE.
7. Repeat steps 2-6 above to program any other day of the week.
8. Shift COOL-OFF-HEAT-EM to HEAT position.
9. Repeat steps 2-6 to program HEAT (winter) settings.



◆ Begin Programmed Operation

1. Place ✣ AUTO-ON into AUTO.
2. Place COOL-OFF-HEAT-EM into COOL or HEAT, depending on the season.
3. Press PROG/MAN button until indicator is in PROG position.



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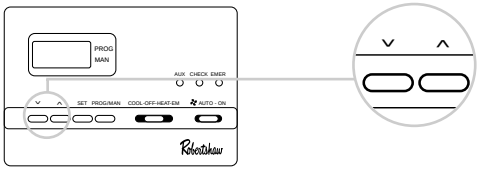
◆ Temporary Program Override

To temporarily increase or decrease temperature:

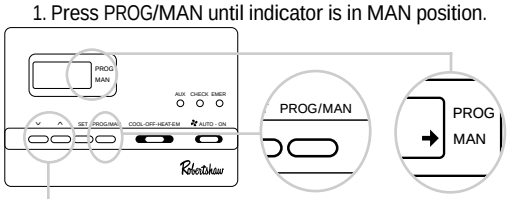
Press ⋁ or ⋀ .



The thermostat will automatically return to the program at the next scheduled setting change or after four hours.

◆ Manual Operation

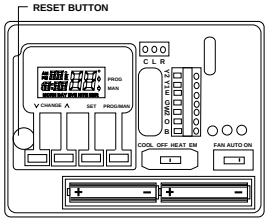
1. Press PROG/MAN until indicator is in MAN position.



2. Press ⋁ or ⋀ to adjust temperature settings.

◆ Reset

To reset the thermostat to factory preprogrammed conditions, press the RESET button located beneath the lower left corner of the display.



◆ LED Indicators

The LED indicators are used to indicate system activity. The AUX indicator illuminates during a call for second stage heating. The auxiliary stages are used to maintain comfort during extremes in weather conditions. If the AUX LED is illuminated too frequently during periods of moderate temperature, check the differential settings (page 8).

The CHECK indicator is used to monitor system status. If the CHECK indicator is illuminated, call your local HVAC service provider.

The EMER indicator is illuminated only when the system switch is moved to the EM (emergency heat) position. The EM position is used only when the primary stage of heat is not functioning or requires service.

Troubleshooting

SYMPTOM	REMEDY
Thermostat does not turn on system.	Check wiring. (See **Installing Model 9620 Thermostat**) Check fuse. Replace with 3 amp fuse if fuse has opened. Five minute compressor short cycle protection maybe in effect. Press RESET to override. NOTE: This will erase programming.
Thermostat turns on and off too frequently.	Increase temperature differential. (See **Customizing Your Thermostat**)
Display is blank, flashing, or constant LO BAT.	Replace batteries.
Time shown on display is not the current time of day.	Change time of day setting. (See **Customizing Your Thermostat**)
Thermostat does not follow program.	Thermostat in MANUAL mode. (See **Customizing Your Thermostat**) Thermostat may not have been programmed in HEAT or COOL position. Verify program. Check AM/PM indicators at time of day and programmed time changes. (See **Customizing Your Thermostat**) Verify program and day of week is correct. (See **Customizing Your Thermostat**)
Thermostat does not advance day of week.	To view or change day of week use method on page 5.

If problems with thermostats cannot be resolved, call:
Technical Support: (800) 445-8299
Monday-Friday 7:30-5:30 CST

Five-Year Limited Warranty

Maple Chase Company warrants to the original contractor installer, or to the original consumer user, each new Robertshaw thermostat to be free from defects in materials and workmanship under normal use and service for a period of five (5) years from date of purchase. This warranty does not cover batteries, damage caused by batteries, damage resulting from improper installation, alteration, misuse or abuse of the thermostat occurring after the date of purchase.

Maple Chase Company agrees to repair or replace at its option any thermostat under warranty provided it is returned within the warranty period, postage prepaid, with proof of the date of purchase. Cost of thermostat removal or reinstallation is not the responsibility of Maple Chase Company.

Repair or replacement as provided under this warranty is the exclusive remedy of the consumer. **Maple Chase Company** shall not be liable for any incidental or consequential damages for breach of any express or implied warranty on this product, or under any other theory of liability. Except to the extent prohibited by applicable law, any implied warranty of merchantability or fitness for a particular purpose on this product is limited to the duration of this warranty.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

For warranty returns, send thermostat, shipping prepaid to:

Uni-Line North America
Warranty Claims Department
515 S. Promenade
Corona, CA 91719

invensys™

Maple Chase Company
2820 Thatcher Road
Downers Grove, Illinois 60515
United States of America