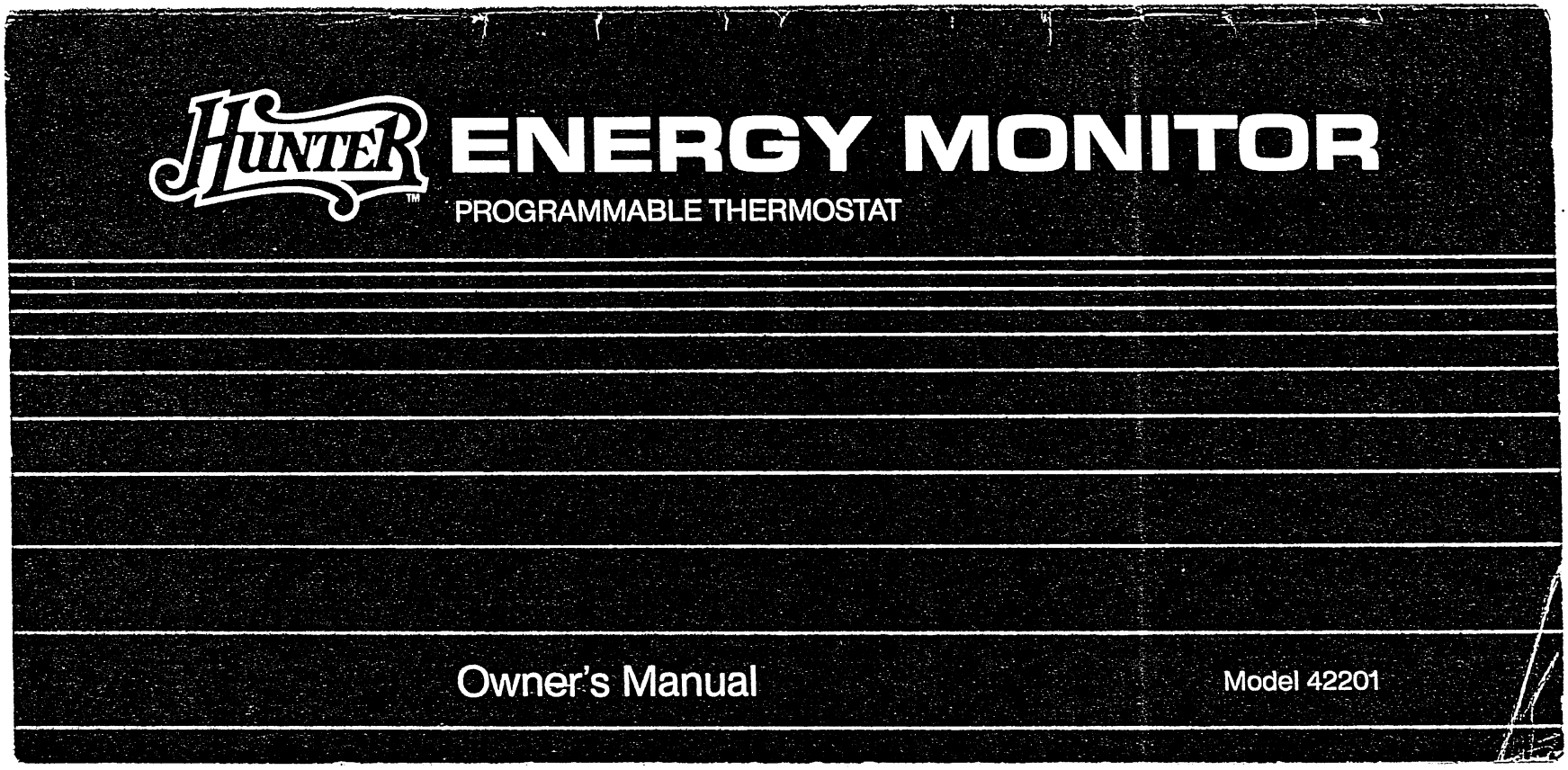

HUNTER
ENERGY MONITOR
PROGRAMMABLE THERMOSTAT
Owner's Manual
Model 42201

Congratulations!

Welcome to the Hunter energy saving family of quality products. As an energy conscious consumer, you have purchased one of the most advanced designs in micro-electronic thermostat technology.

The Department of Energy has attributed considerable fuel savings and lower utility bills through better household energy management. Your Hunter Energy Monitor Thermostat allows you to find your maximum comfort level using the least amount of fuel consumption. Through smart programming, the thermostat should pay for itself during the first full season of use.

This Owner's Manual has been specifically designed to help you install and program your thermostat with easy-to-follow, step-by-step illustrations. So now you can enjoy the same dependable energy saving performance that Hunter's fine line of ceiling fans provide.

Thank you for buying Hunter.

Sincerely,

William C. Clouspy

William C. Clouspy, President
Hunter Fan Company

Table of Contents

Features	6
Installation	8
Programming	14
Personal Programming Schedule	16
Trouble Shooting Guide	28
Wiring Diagrams	29

Read This First Before Installing Thermostat

1 Read the entire installation section (1) of this Owner's Manual thoroughly before you begin to install or operate your Hunter Energy Monitor Thermostat.

2 All installation is performed at your thermostat. There is no need to modify your furnace wiring.

3 Do not install thermostat on any high efficiency electronic controlled furnace (such as Carrier High Efficiency 58ES-125) before contacting the Hunter factory at 901-745-9222. An isolation relay may be necessary to ensure correct operation.

4 Your Hunter Energy Monitor Thermostat is designed to operate with gas, oil, electric or forced hot water heating and air conditioning systems having 24 volt controls and relay currents between 0.2A and 0.8A.

Such systems represent the great majority of residential central heating and air conditioning units in use in the United States.

The Energy Monitor is not designed to operate with millivolt systems, heat pump systems, high voltage electric baseboard, electric ceiling or multistage heating or cooling systems. Millivolt systems are usually clearly marked on the face of the existing thermostat, the others are usually very obviously of the type described.

5 No modifications or additions are required to your system. Typical systems are shown in the Appendix.

6 To familiarize yourself with the programming of the Energy Monitor before installation, simply connect the six wires to the terminals on the mounting (step 3, page 13). Connect a 9V battery and attach the Energy Monitor to the mounting plate. You may now place the Energy Monitor on any flat surface and practice programming prior to installation.

7 If the battery in your Energy Monitor is old or discharged, and there is a long duration failure in the main electricity supply to your home, your Heating/A.C. System may not automatically restart when the power is restored. If this occurs simply replace the battery with a new one and reprogram your Energy Monitor. It is a good idea to put a new battery in your Energy Monitor before leaving for an extended vacation.

If you have questions concerning the installation or programming of the Energy Monitor, call us at 901-745-9222 from 8 AM to 5 PM Central Time.

Hunter
ENERGY MONITOR
PROGRAMMABLE THERMOSTAT

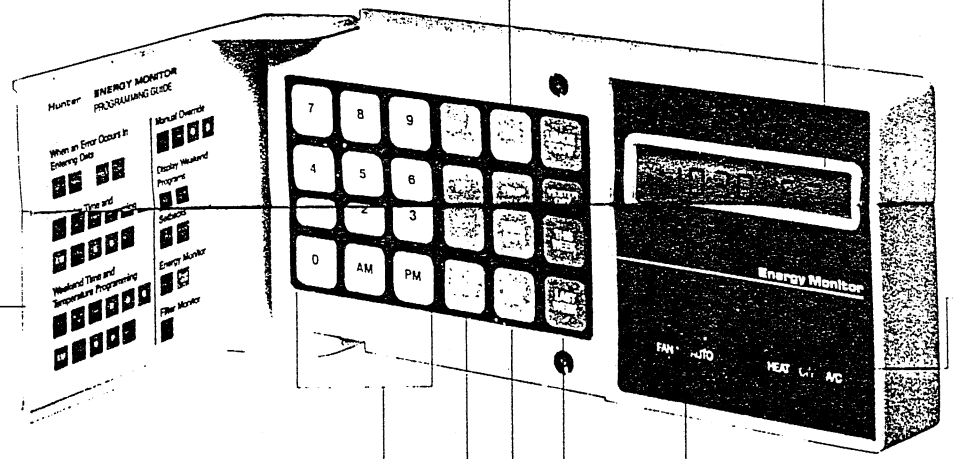
Fingertip programming—easy touch keyboard for entering, programming and displaying time and temperature settings; energy usage, and Filter Monitor.

Standby power system takes over during power failure to prevent loss of program.

Simplified programming instructions are provided on inside of door cover for easy reference.

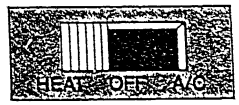
TIME — For entering time and temperature settings.

TEMP

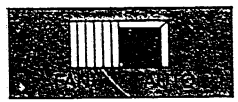




Digital clock (Liquid Crystal Display) indicates time-of-day, AM or PM, day of week, current room temperature and current program setting.



Manual switch for turning on Heating or Cooling system.

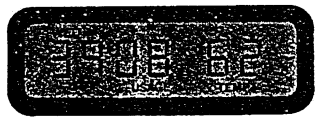


Manual switch for automatic or continuous fan operation.

For entering desired times and temperatures when programming.



Filter monitor automatically reminds you to clean or replace furnace filters. Filter Reset key clears FILTER? readout after you've serviced the filters.



Energy Monitor keys display energy usage Today, Yesterday, This Week, Last Week.

When orange keys are touched, LCD shows energy usage in hours and minutes plus current room temperature.

WEEK DAYS

For entering Monday through Friday, Saturday and Sunday program cycles.

WEEK END

Your Hunter Energy Monitor comes with two #8 slotted screws and two wall anchors for mounting. To install your unit, you should have the following tools & materials:

- Slotted screwdriver
- Electric drill and 3/16" bit
- Hammer

- **9 Volt Alkaline Battery**
  Your Hunter Energy Monitor requires a 9-V battery which powers the thermostat during power failures to prevent memory loss and avoid reprogramming. It is recommended that you replace battery once a year.

DO NOT USE YOUR ENERGY MONITOR WITHOUT FIRST INSTALLING THIS BATTERY.

Remove Old Thermostat

1 Turn your existing thermostat to OFF position. Turn off the power to the furnace at the main power panel to avoid electrical shock.

2 Remove existing thermostat cover and thermostat. Some thermostats will have screws or other locking devices that must first be removed. Once wallplate is exposed, look for wires.

If wires are not visible, they may be connected to the back of wallplate. Again, look for screws, tabs, etc. Some models have doors that open to expose wires and mounting screws. (See Figure 1)

3 Each wire coming from the wall to the existing thermostat is connected to a terminal point on that thermostat. Each of these terminal points is marked with a code letter as shown in Table A. Before disconnecting any wires, apply the self adhesive labels provided, to the wire as shown in Table A. (For example attach the label marked "W WHITE" to the wire which goes to the W or H terminal on your existing thermostat) IGNORE THE COLOR OF THE WIRES since these do not always comply with the standard. The number of wires in your system can be as few as two, (for heat only systems) as many as eight, or any number in between. If you follow the labeling procedures correctly, you don't have to

4 After labeling wires, disconnect them from the existing thermostat terminals.

5 Remove existing wallplate. To make sure wires do not fall back into wall opening, you may want to tape them to the wall.

6 If hole in wall is larger than necessary for wires, seal this hole up, so that no hot or cold air can enter the back of the thermostat from the wall. This air could cause a false thermostat reading.

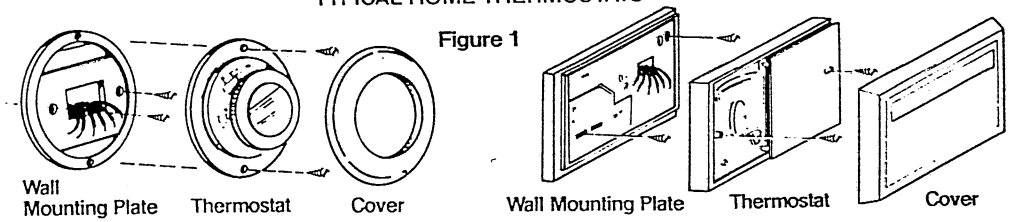
NOTE
Check the compatibility of your heating system and the Energy Monitor before installation. Simply connect all wires as instructed without mounting face plate to your wall. Now disconnect the 9 V battery. If the display dims significantly with the selector switch in either the Heat or A/C position, your system in not compatible with the Hunter Energy Monitor.

Next, turn your furnace or A/C on by using manual override (see page 24). Let the system run for 5-10 minutes without battery. If the display dims and gradually disappears, Hunter Energy Monitor is not compatible with your system.

CAUTION: Do not remove any wiring from existing thermostat before reading instructions carefully. Wires must be labeled prior to removal.

TYPICAL HOME THERMOSTATS

Figure 1

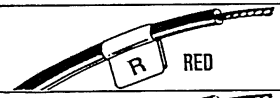
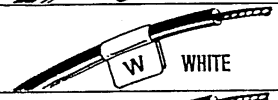
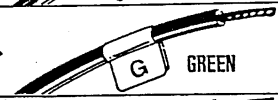
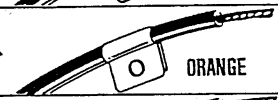
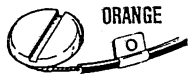
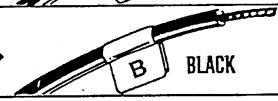


Mounting Your Energy Monitor

If your existing thermostat has separate wires going to terminals marked "R" and "RH", simply connect both these wires to terminal "R" on your Energy Monitor.

If you wish to use your Energy Monitor to control an air conditioning only system (no central heating unit), you must connect terminal W to terminal Y on the Energy Monitor wallplate using a wire jumper (see Fig. 4 for location) use copper wire of the same size as used for the other connections. Complete the installation per these instructions.

The table below will help you match the labels to the wires so you can attach them to your Hunter Energy Monitor Thermostat.

If the code letter on your existing thermostat is	then mark wire with label shown	and connect to Energy Monitor Terminal shown
RH, RC, R, M, VR, VC or 4 24 Volt		R 
W or H Heating		W 
Y or C Air Conditioning		Y 
G or F Fan		G 
O Heating Damper		O 
B A/C Damper		B 

Mount Energy Monitor Thermostat Wallplate

Detach the wallplate from your Energy Monitor thermostat by removing the two screws located above and below the keyboard. (Figure 2)

Position wallplate on wall and pull existing wires through large opening. Then level for appearance. Mark holes for plastic anchors provided if existing holes do not line up with Energy Monitor thermostat holes. (Figure 3)

Drill holes with 3/16" bit, and gently tap anchors into the holes until flush with wall. (Figure 3)

Reposition wallplate to wall, pulling wires through large opening, insert mounting screws provided into wall anchor and tighten. (Figure 3)

Figure 2

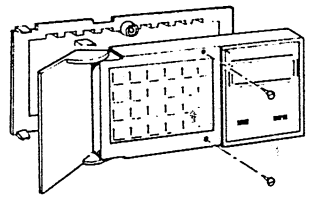
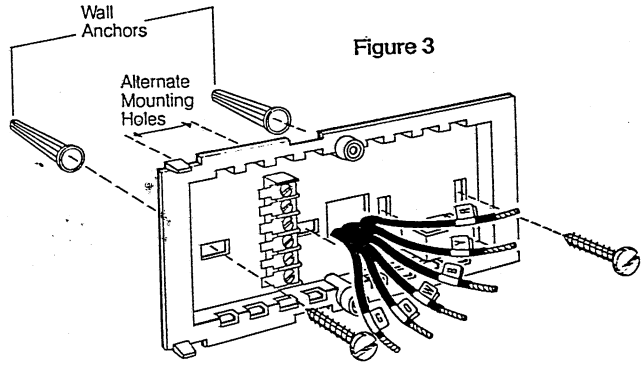


Figure 3



Connect Wires and Mount Energy Monitor Thermostat Cover

1 Match and connect the labeled wires to the appropriate coded terminal screws on the mounting plate. (Figure 4A) Ignore any wires which may be present, but which were not connected to your old thermostat. Do not connect these to your Energy Monitor.

2 Push excess wire back into hole to prevent interference with mounting of Energy Monitor Thermostat cover.

3 Push the connectors at the end of each Energy Monitor Thermostat wire onto the appropriate coded terminal screws on the mounting plate. (Figure 4) Match letter codes to wire colors. (Figure 4A)

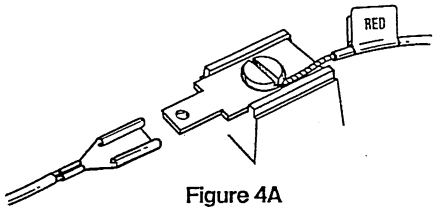


Figure 4A

4 Attach battery to connector and install into mounting plate. (Figure 5). At the time you insert the battery in your Energy Monitor, the LCD display should read 12:00 AM and indicate the current room temperature of your house. If it shows random numbers, or partial digits, disconnect the battery and red wire, wait one full minute, reconnect the battery and red wire, then, check the display again. Repeat as needed until the display does show12:00 and the room temperature.

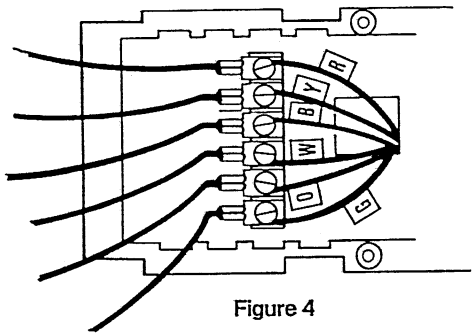


Figure 4

5 Line up the Energy Monitor Thermostat cover with wallplate, insert faceplate screws and tighten. (Figure 2)

6 Make sure the Heat-Off-Cool switch is in the OFF position. Then turn furnace system on at main power panel. You are now ready to program your thermostat.

7 OIL FIRED FURNACES require 9 volt battery in your Energy Monitor at all times. If you have an oil fired system, and the display becomes erratic or "locks up", turn off the main electric power supply to the furnace and install a fresh battery. Then turn the main supply back on.

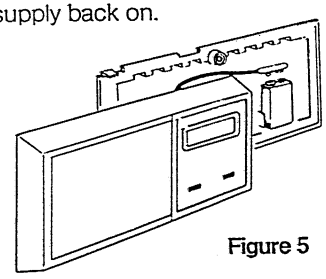


Figure 5

Time and Temperature Programming

Studies conducted by the Department of Energy estimate that setting your thermostat back 10°F for two 8-hour periods during winter can reduce your fuel bill by as much 30%. By setting your thermostat up 5° for two 8-hour periods during summer you can reduce your fuel bill up to 25%.

The following program instructions will show you how to do this and still remain comfortable throughout the year.

The exact energy and cost savings are dependent upon your home's structural design, geographic location, local utility rates, amount of insulation and temperature setting.

You can program four separate time and temperature settings for weekdays plus two settings for Saturday and two settings for Sunday. The times and temperatures can be set to fit your family activities and work schedules. Here is a typical program for winter, using all the temperature settings available. In this case, both parents work and children attend school.

The program shown (right) will control your heating system so that the temperature will increase to a comfortable 70°F in the morning when the family awakes, decreases to 60°F after the family leaves home, increases to 68°F before the first family members return home, and lowers to an energy saving 58°F after everyone has gone to sleep.

The weekend settings assume some family members will be in the house at all times. Therefore, Saturday and Sunday are programmed for a comfortable 68°F during the day, and 58°F after the family retires.

The summer program, follows the exact sequence, substituting the times and temperatures desired for the cooling season.

Weekday

WEEKDAY PROGRAM **1**	6:30 am	70°	Wake up to a warm, comfortable house.
WEEKDAY PROGRAM **2**	8:30 am	60°	Temperature setting is automatically lowered after last person leaves.
WEEKDAY PROGRAM **3**	3:30 pm	68°	Temperature is automatically increased before children return from school.
WEEKDAY PROGRAM **4**	10:30 pm	58°	Automatically lowered temperature allows cozy sleep —and big energy savings.

Weekend

SATURDAY PROGRAM **1**	7:30 am	68°	House is warmed before you awake.
SATURDAY PROGRAM **2**	11:30 pm	58°	Temperature is lowered for maximum energy savings at night.

Weekend

SUNDAY PROGRAM **3**	8:00 am	68°	Temperature is raised for comfortable all day setting.
SUNDAY PROGRAM **4**	11:00 pm	58°	Temperature is lowered after family is asleep.

Personal Program Schedule

Before programming, use this Energy Monitor Personal Program Schedule to determine which times and temperature settings will best satisfy both your comfort and energy saving requirements.

Use a pencil so you can revise your records each time you change your temperature settings.

Beginning Program Date				Beginning Program Date			
WINTER PROGRAM				SUMMER PROGRAM			
WEEKDAYS	TIME	AM/PM	TEMP.	WEEKDAYS	TIME	AM/PM	TEMP.
PROGRAM 1				PROGRAM 1			
PROGRAM 2				PROGRAM 2			
PROGRAM 3				PROGRAM 3			
PROGRAM 4				PROGRAM 4			
SATURDAY				SATURDAY			
PROGRAM 1				PROGRAM 1			
PROGRAM 2				PROGRAM 2			
SUNDAY				SUNDAY			
PROGRAM 3				PROGRAM 3			
PROGRAM 4				PROGRAM 4			

Energy Usage Chart

The Hunter Energy Monitor Thermostat measures, stores and displays the amount of time your heating or air conditioning system has operated the present day, previous day, present week or past week.

This Energy Usage Chart will help you discover your most efficient energy saving comfort zone by recording your energy usage on a daily or weekly basis.

Simply enter the daily or weekly hours displayed when you press the orange Energy Monitor keys.

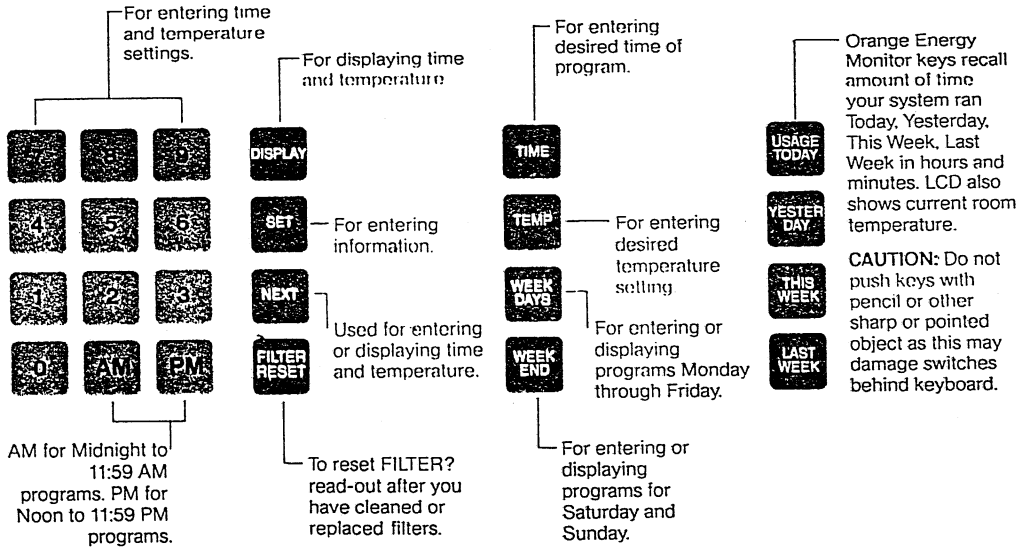
Date Begin: Month	Day	Year					
	MON	TUES	WED	THURS	FRI	SAT	SUN	TOTAL
WEEK 1								
WEEK 2								
WEEK 3								
WEEK 4								
WEEK 5								
WEEK 6								
WEEK 7								
WEEK 8								
WEEK 9								
WEEK 10								
WEEK 11								
WEEK 12								

Programming your new Hunter Energy Monitor Thermostat is simple to perform if you follow the instructions carefully. All programming is entered with the easy-touch keyboard.

Remember—You can practice programming the Energy Monitor before installation simply by connecting the 6 wires to the appropriate terminals on the mounting plate, (step 3, page 13) connecting a fresh 9 Volt battery, and attaching the thermostat to the mounting plate.

The ivory keys are for entering numbers for time and temperature settings. The grey keys provide command to enter, review or clear programs, the orange keys recall your energy usage in four different ways.

It is not necessary to press the keys hard. However a firm, even pressure is required to prevent inadvertent entry of two digits with one keystroke (rebound). As you use the keyboard, you will discover the right touch.



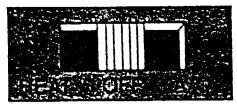
If an Error Occurs in Entering Data

The Hunter Energy Monitor Thermostat program steps have been developed to follow a given sequence. Should you enter the wrong sequence of data, the Energy Monitor will automatically ignore the command and return to normal time and temperature display. Should you change your mind while entering data, simply press

DISPLAY TIME

and the LCD read out will return to its normal time and temperature display. Then re-enter desired data **from the beginning.**

CAUTION:
Before programming, the Heat-Off-Cool switch should be placed in OFF position to avoid cycling the system.



Setting Time and Day of Week

When you first install your battery, your thermostat will automatically set the day and the time to Monday, 12:00 a.m. At 12:01 a.m., the temperature is also automatically set for 68° for both weekdays and weekends.

The first data you should enter is the current time and day of week.

As the keys are pressed the display will show the data being entered. Days are Sunday. For example, the 3 pressed after PM enters Wednesday or the third day of the week.

Example:
If the time and day of week is 7:38 p.m., Wednesday, to set the thermostat, you press:

SET TIME 7 3 8 PM 3 NEXT

If the temperature of the room was 70°F, your display would now read:



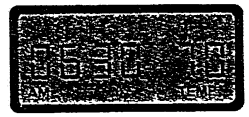
Weekday Time and Temperature Programming

You may program up to four time and temperature settings for weekdays. To program the winter example, you would press the following sequence of keys:

WEEKDAY PROGRAM 1

Programs the system to 70°F at 6:30 in the morning





WEEKDAY PROGRAM 2

Programs the system to 60°F at 8:30 in the morning





WEEKDAY PROGRAM 3

Programs the system to 68°F at 3:30 in the afternoon

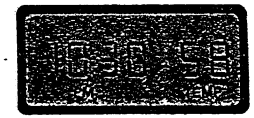




WEEKDAY PROGRAM 4

Programs the system to 58°F at 10:30 at night





Pressing **NEXT** will complete your weekday programming and returns the thermostat to displaying the current time and room temperature.



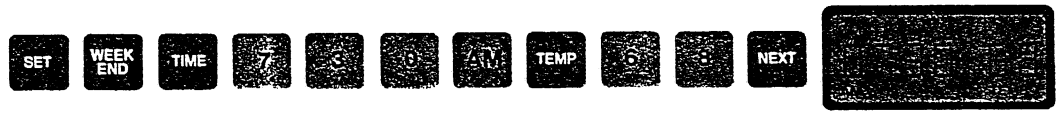


NOTE
If you want to use less than 4 temperature settings on any weekday, enter those you do want, then press the "NEXT" key as many times as necessary to return the display to the normal time and temperature. (1, 2 or 3 times depending on the number of settings). The display readout will not change each time you press 'NEXT.'

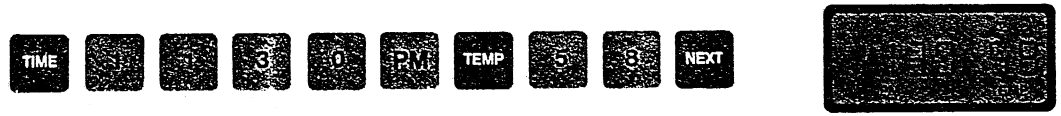
Weekend Time and Temperature Programming

There are two time and temperature settings available for Saturday and two for Sunday. Again, referring to our example at the beginning of this section, press:

SATURDAY PROGRAM 1 — Programs the first Saturday setting for 68°F at 7:30 in the morning



SATURDAY PROGRAM 2 — Programs the second Saturday setting for 58°F at 11:30 in the evening



SUNDAY PROGRAM 3 — Programs the first Sunday setting for 68°F at 8:00 in the morning



SUNDAY PROGRAM 4 — Programs the second Sunday setting for 58°F at 11:00 at night



Pressing **NEXT** will complete your weekend programming and returns the thermostat to displaying the current time and room temperature.





When programming for the weekend, note that there are 2 settings for Saturday and 2 for Sunday. After you have entered the 2 Saturday programs, **DO NOT** push the "SET" or "WEEKEND" keys. Again, simply push "NEXT" and enter the Sunday programs. Even if you want your Sunday program to be exactly the same as the Saturday one, you will still have to enter the information again for Sunday. It is **NOT** possible to enter or split up the weekend programs in any other way (for example, you **CANNOT** enter 3 Saturday and 1 Sunday programs).

Programming is Now Complete

If you have just programmed for heating, the Heat-Off-Cool switch should now be set to Heat. If you have programmed for the cooling season, the Heat-Off-Cool switch should be set to Cool.

When installing your Energy Monitor thermostat, the temperatures you have entered will go into effect at the next programmed time, not between settings. Since the Energy Monitor is preset to 68°F, if you wish to have a temperature does take effect, use the manual override feature.

Residential thermometers and thermostats are not normally accurate within ±3°F. You must recognize this

Manual Override

The manual override feature allows you to switch from a programmed setting to a temperature setting for those unscheduled activities such as an on-going party or just late evening reading.

For example, if it was 12:30 AM, Sunday morning, and you were ready to retire, you would press:



After pressing **NEXT,** the thermostat will return to displaying current time and temperature.



The temperature will remain at this setting until the next programmed time/ temperature change. If you want to return to the current programmed temperature, follow this same manual override procedure entering the programmed temperature.

Thermostat will cycle heating or cooling unit as follows:
Heat cycle start from set point -1°F, shut down +2°F.
Cool cycle start from set point +2°F, shut down -1°F.

Display Weekday Programs and Weekend Setbacks

To recall the time and temperature programs entered, simply press the following sequence of keys given below.

Note the program number in the upper right hand corner of the LCD display. This indicates which program sequence of the day is displayed.

If, after reviewing your four programs, you wish to make a change, simply push the **DISPLAY TIME** keys and the display will return to displaying the existing time and temperature. Then re-program following the same procedure given under weekday programming.



WEEKDAY PROGRAM **1**



SATURDAY PROGRAM **1**



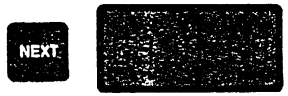
WEEKDAY PROGRAM **2**



SATURDAY PROGRAM **2**



WEEKDAY PROGRAM **3**



SUNDAY PROGRAM **3**



WEEKDAY PROGRAM **4**



SUNDAY PROGRAM **4**



Returns to displaying current time and temperature.



Returns to displaying current time and temperature.



Using the Energy Usage Monitor

The Energy Monitor measures and stores the amount of time the heating and air conditioning system operates. By pressing the key sequence shown, the usage can be displayed for the present day (as of 12:01 a.m.), the previous day (12:01 a.m. thru 11:59 p.m.), the present week (Monday through Sunday) or the past week.

By monitoring on a daily or weekly basis, you can gradually adjust your winter or summer temperature settings to see the immediate effect of your energy conserving efforts.

Display Energy Usage Example

To display the amount of time the heating or air conditioning system has operated:

The energy usage chart on page 14 will allow you to record the time your furnace has operated by using the Energy Monitor. By recording your energy usage on a daily or weekly basis, you can see for yourself how effectively you have been programming to save energy.

Shows the time the system has run today as of 12:01 a.m.

3 hours and 27 minutes

DISPLAY USAGE TODAY



Shows the time the system ran yesterday 12:01 a.m. thru 11:59 p.m.

4 hours and 8 minutes

DISPLAY YESTER DAY



Shows the time the system has run this week as of Monday, 12:01 a.m.

12 hours and 32 minutes

DISPLAY THIS WEEK



Shows the time the system ran last week as of Monday, 12:01 a.m. thru Sunday, 11:59 p.m.

23 hours and 42 minutes

DISPLAY LAST WEEK



Returns to displaying current time and temperature.

NEXT



Filter Monitor

The Filter Monitor automatically reminds you to clean or replace your furnace filter at regular intervals. This increases the efficiency of your system's operation.

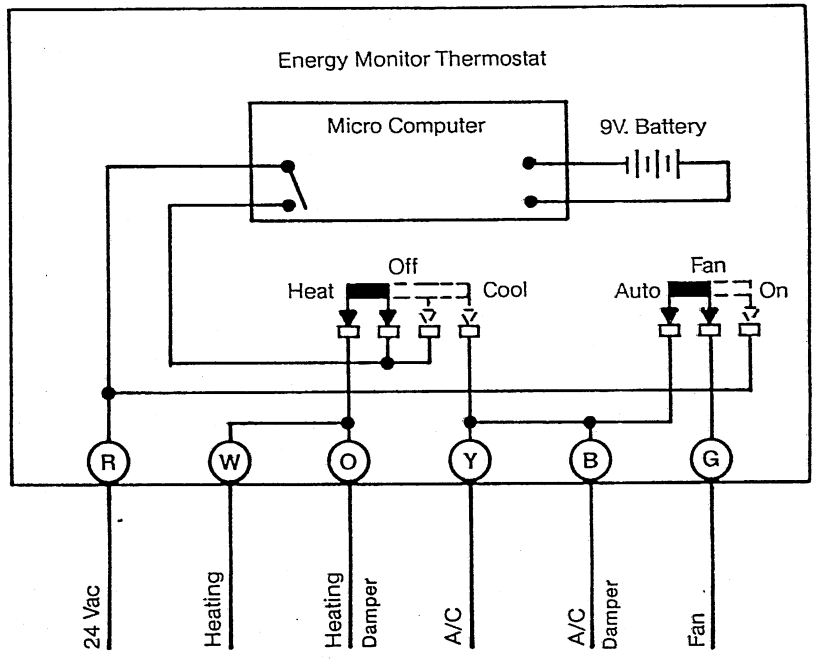
After 275 hours of actual heating or cooling usage, the word FILTER? will show up on the display along with the normal time and current room temperature. This will stay on until you press the **FILTER RESET** key.

FILTER RESET

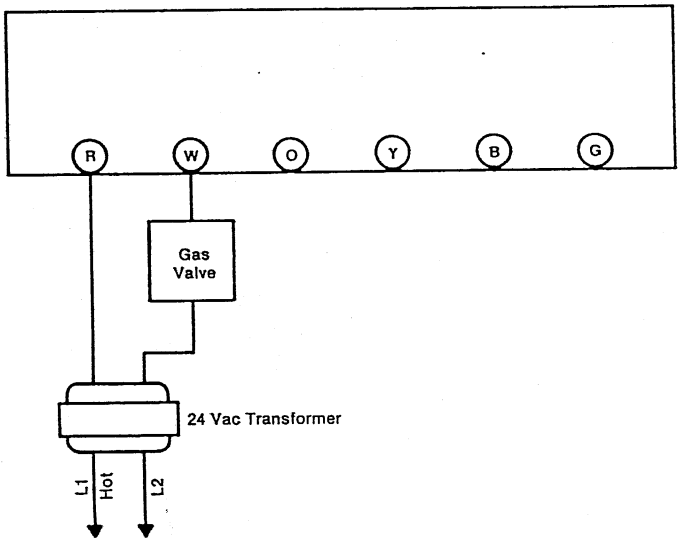


Problem	Solution
No Display	Check wiring connections and battery.
Low Temperature at Startup	This is normal. The temperature is not measured until 7 seconds after startup.
No Day or AM Shows	Re-enter time using **SET TIME** keys.
Heating or Cooling Does Not Go On or Off Immediately.	There may be as much as 7 seconds delay in the computer turning the system On or Off.
Cannot Manually Set the Temperature	If the time is the same as one of the programmed times, the programmed temperature will override. Wait 1 minute then manually set the temperature.
Display is Erratic	Check the battery. You may have to re-enter your programmed times and temperatures.
Display Jumps Back to Showing Time-Temperature	Error occurred during keyboard entry. Press **DISPLAY TIME** and re-enter the desired keyboard sequence.
Heating and Cooling Does Not Come On	Check that the slide switch is in the proper position. Check that the power to the Heating-Cooling system is on. For a new installation, check to be sure the wires are properly connected. To check the thermostat operating during winter, manually set the temperature to 5 degrees greater than the room temperature, set the slide switch to "Heat." Within 8 seconds the heating system will be turned On. During summer, set the temperature to 5 degrees lower than the room temperature and set the slide switch to "Cool."

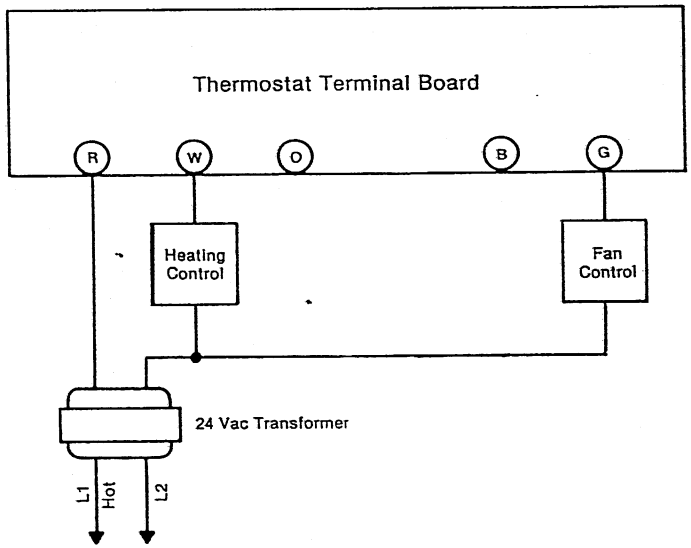
Energy Monitor Thermostat



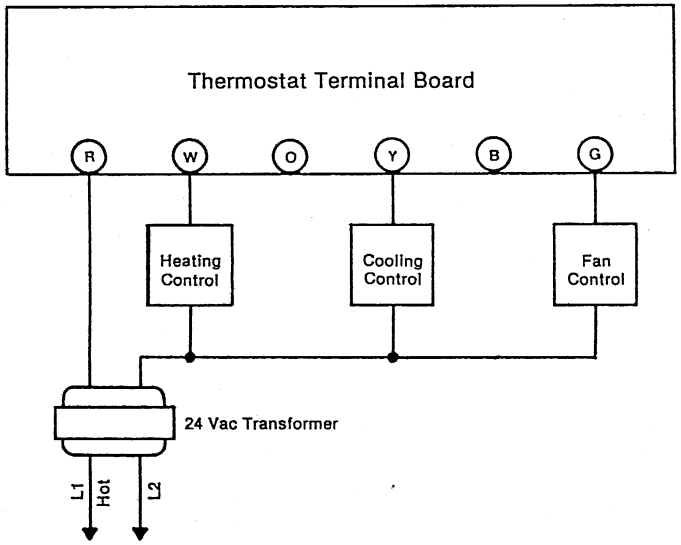
Typical Hook-up for 2-Wire Gas Heating Only System



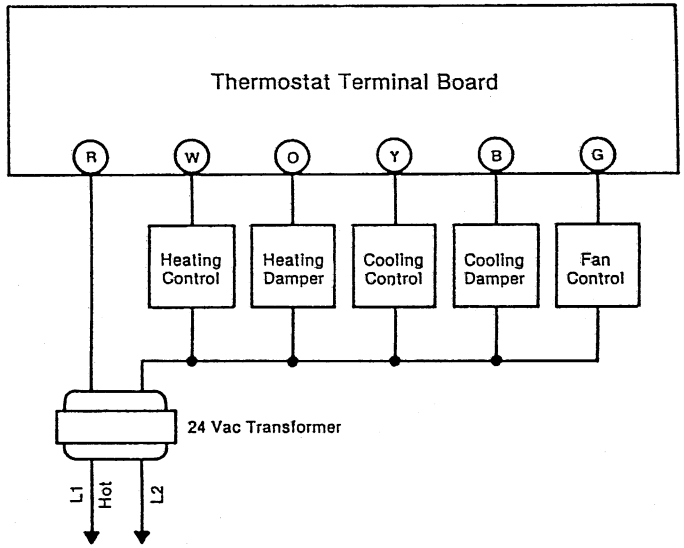
Typical Forced Air Heating Only Systems



Typical System With Heating and Cooling Controls

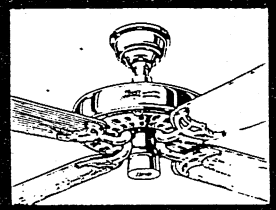


Typical Systems for Heating-Cooling System With Damper or Changeover Valves

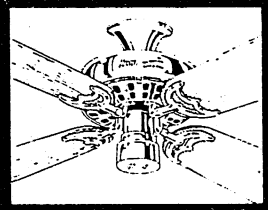


Hunter The original fan people since 1886.

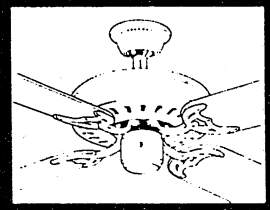
Hunter offers a Complete Line of Ceiling Fans to match any decor.



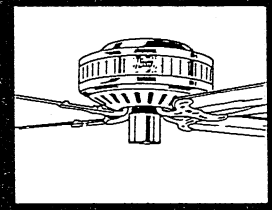
Hunter Original
America's number one ceiling fan. Backed by a Limited Lifetime Motor Warranty. Motor and blades are packed separately so you can custom design your own fan. Available in up to 10 motor finished in 52" and 42" sizes.



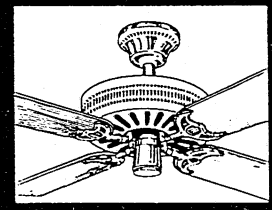
Hunter Original Low Profile
The close-to-the-ceiling version of our Original with Limited Lifetime Motor Warranty. Motor and blades packed in one carton. Available in 52" bright and antique brass, brown and white.



Hunter Summer Breeze
Contemporary look with tasteful touches of designer accents. Three-speed, reversible motor available in three 48" models: bright brass, antique brass and white. Motor and blades are packed in one carton. 5-year Limited Motor Warranty.



Hunter Low Profile
Close-to-the-ceiling fan provides that extra clearance needed on low or dropped ceilings. Available in both 52" and 42" sizes in white, brass and antique brass. 5-Year Limited Motor Warranty.



Hunter Studio Series
High fashion styling with traditional Hunter quality and performance. Available in brass and antique brass in 52" and 42" sizes. 5-Year Limited Motor Warranty.

Hunter SINCE 1886 T.M.

Hunter Fan Company
2500 Frisco Avenue
Memphis, TN 38114

Form #40846 8/85

© Copyright. Hunter Fan Company. 1985