

INSTALLATION & OPERATING MANUAL

1F60-22

SETBACK
THERMOSTAT



WHITE-RODGERS

PHOTO --POSITION ONLY!

(For use on 24 Volt AC Heat/Cool and Heat-Only Systems)

Homeowner: Save this booklet for future use!

Congratulations!

You have selected the 1F60-22 Setback thermostat. This state-of-the-art thermostat enables you to enjoy maximum comfort and convenience. This thermostat automatically changes temperature settings, which keeps your home comfortable and increases your system's efficiency while you save time.

Your new thermostat is....

- easy to install. You only need one regular screwdriver — all other hardware is included.
- easy to operate.
- equipped with built-in minimum timing cycles, which increase system efficiency and life.

Please read this manual thoroughly before beginning thermostat installation. If you have questions you may call our technical service department at 1-314-577-1300 or toll free at 1-800-876-TECH (8:00 AM to 4:30 PM CST).

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YOUR NEW THERMOSTAT'S FEATURES

- This thermostat incorporates easy one-finger operation.
- The thermostat has a liquid crystal display (LCD) that alternately displays time and temperature and shows system status. Celsius temperature display is optional.
- The thermostat has indicators for AM/PM mode, "setback on", "cool on", and "heat on".
- The thermostat divides the time of day into 15-minute blocks, providing 48 possible setbacks over a 24-hour period.
- To provide higher efficiency and better temperature control, and to help increase the life of your system, this thermostat has automatic minimum cycle on and off timing.
- During power outages, the thermostat is powered by two standard 1.5V watch batteries. One set of batteries is included with your thermostat. Thermostat programming and clock operation are not affected by power outages when batteries are installed.
- The thermostat has a temperature differential switch for controlling temperature within either 1° F or 3°F of the set temperature.
- This thermostat controls heat/cool, heat-only, and electric heat systems.

- This thermostat is capable of meeting HUD requirements (may be field-disabled). This thermostat

also meets all state and federal energy efficiency requirements.

CHECK YOUR THERMOSTAT'S LOCATION

You should install your thermostat about five feet (1.5 meters) above the floor in an area with good air circulation and average temperature. Normally, you can simply replace your old thermostat with your new one.

However, you may consider changing the thermostat's location if the thermostat is affected by:

- drafts or dead air spots behind doors and in corners.
- direct exposure to hot or cold air blowing from ducts.
- direct exposure to sunlight or heat from appliances.
- pipes or chimneys located behind the wall where the thermostat is located.
- unheated areas behind the thermostat, such as an outside wall.

OBSERVE THESE SAFETY PRECAUTIONS

WARNING

- **DO NOT USE** on circuits exceeding specified voltage -- higher voltage will damage thermostat, and may cause shock or fire hazard.
- **DO NOT SHORT OUT TERMINALS** on gas valve or primary control to test. Shorts or incorrect wiring will burn out heat anticipator, and may cause personal injury and/or property damage.
- **DISCONNECT POWER** at the main fuse or circuit breaker box before beginning thermostat removal/installation. This will prevent electrical shock and/or damage to the heating/cooling system or thermostat.

CAUTION

- If in doubt about whether you wiring is millivolt, line, or low voltage, have it inspected by a qualified heating/air conditioning contractor.
- Do not exceed specification ratings (24 v AC -- 30v AC max., 1 amp.)
- Wiring must conform to local and national codes and ordinances.
- This thermostat is a precision instrument and should be handled carefully. Rough handling or distorting components could cause the thermostat to malfunction.

YOUR NEW THERMOSTAT'S COMPONENTS

Your thermostat consists of two parts: the **base** and the **cover**. To remove the cover, grasp it and pull it out from the base. Take a few minutes to become familiar with the location of switches and buttons on the thermostat. You will use them during installation and operation of your new thermostat. To replace the cover, align the cover with the base and push until it snaps into place. Do not force the cover onto the base, as this may damage the thermostat.

1. Liquid Crystal Display (LCD)
2. 1°/3° Differential Switch
3. Fuse
4. Terminal Screws
5. Temperature-Set Sliding Switch
6. Gas/Electric Heat Switch
7. Reset Button

8. Fan Switch (used on heat/cool systems only)
9. Setback Switch
10. System (Cool-Off-Heat) Switch
11. Batteries
12. SET BACK Button
13. TIME SET Button
14. F°/C° Switch

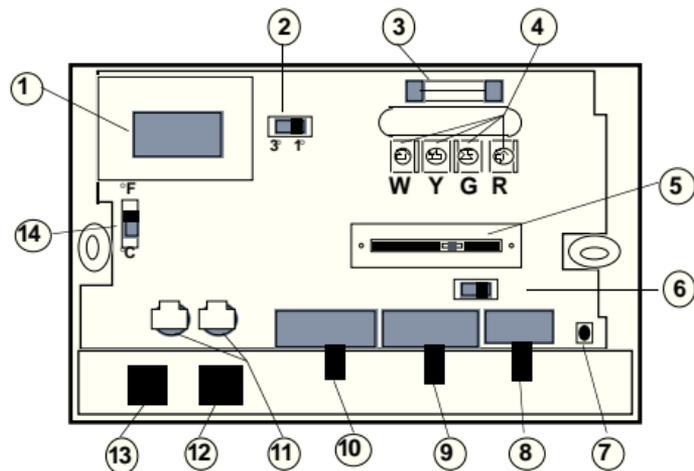


Figure 1. Thermostat base

REMOVING THE OLD THERMOSTAT

1. Disconnect 120v AC power.
2. Remove the cover from the old thermostat.
3. Remove terminal wires **one at a time**. As you remove each wire, tag the wire with the terminal identification (such as Y, W, R) as shown on the old thermostat base.
4. When all wires are removed, remove the old thermostat base from the wall.

INSTALLING YOUR NEW THERMOSTAT

1. Disconnect 120v AC power.
2. Remove the thermostat cover from the base.
3. Pull the wires through the opening above the terminal screws on the thermostat base. Check the wire ends; they should be stripped and corrosion-free.

STOP!

If your system has five or six wires, **read the following cautionary statements**. If your system has two or four wires, go directly to step 4.

CAUTION

If you have a two-transformer (5-wire) system and both heat and cool transformer secondaries are grounded, **you cannot use this thermostat**, even if the transformers are properly phased.

Never connect the common (neutral) wire on the 24v AC side of the transformer to the thermostat.

NOTE

For systems where neither or only one of the transformers is grounded, you may use this thermostat only if the transformers are properly phased. Use fig. 4 to wire the thermostat. If you are not sure of your particular application, contact a qualified service person or call the technical service number found elsewhere in this booklet.

4. Connect wires to the appropriate terminals on the base. See table 1 and figs. 2, 3, and 4 to match the tagged wires with the correct terminals.

TYPICAL SYSTEM WIRING DIAGRAMS

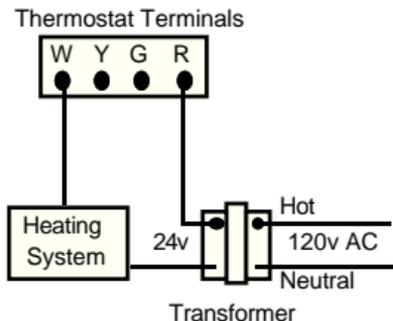


Figure 2. 2-Wire Heat-only

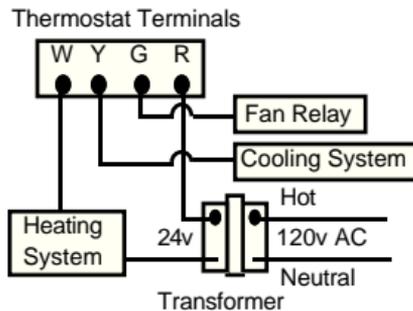
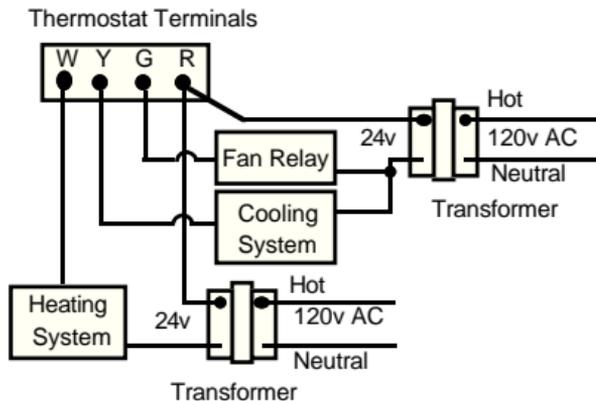


Figure 3. 4-Wire Heat/Cool



**Figure 4. 5-Wire
(2-transformer) Heat/Cool**

Table 1. THERMOSTAT WIRING

OLD THERMOSTAT MARKINGS	W-R MARKINGS
R, RC and/or RH*, or V	R
G or F	G
Y, C, or Y6	Y
W, H, or 4	W

* On systems that have both RC and RH wires, see cautionary statements for 5-wire system

5. When connections are complete, push excess wire back into the wall's opening. Plug the opening with a fire-resistant insulating material, such as fiberglass insulation, to prevent drafts that could affect thermostat operation.
6. Attach the thermostat base to the wall using the two screws provided.
7. Check the wires on the thermostat base terminals; they should not be touching one another or any other part of the thermostat.
8. Set the option switches to desired positions (see **SETTING OPTION SWITCHES**).
9. Reconnect 120v AC power to system. The thermostat display should now be operating.

NOTE

If 120v AC power is to be disconnected immediately after thermostat installation, omit step 10 (to conserve battery power). Perform step 10 when power is restored to the system.

10. Pull battery insulation tab down firmly and remove. This will engage the batteries.
11. Replace the thermostat cover. Ensure that the system switch is in the **Off** position before you begin testing (see **TESTING YOUR THERMOSTAT**).

SETTING OPTION SWITCHES

The **1°/3° DIFFERENTIAL SWITCH** is located to the right of the display on the base. The thermostat is preset at 1°F. At this setting, the thermostat will maintain the room temperature within 1°F of the set temperature (this results in more frequent system on/off cycles). If you move the switch to the left, the thermostat will maintain the room temperature within 3°F of the set temperature (resulting in longer on/off cycles). Normally, the 1°F setting is used.

The **F°/C° SWITCH** is located below the display on the base. When you move the switch up, the temperature will be

displayed in degrees Fahrenheit. When you move the switch down, the temperature will be displayed in degrees Celsius.

The **GAS/ELECTRIC SWITCH** is located above the **setback switch** on the base. When you move the switch right, the fan will turn on immediately when the furnace turns on (for electric heaters). When you move the switch to the left, the fan will come on after the furnace warms up (for gas furnaces).

TESTING YOUR THERMOSTAT

Follow these steps to ensure that your thermostat is correctly installed. You may want to refer to **YOUR NEW THERMOSTAT'S COMPONENTS** to help you locate switches you will use during testing. **If at any time during testing your system does not work as indicated, stop testing immediately, disconnect the batteries and the 120v AC power, and check thermostat wiring. If wiring is correct, see TROUBLESHOOTING YOUR THERMOSTAT.**

1. Move the **system (Cool-Off-Heat) switch** to the **Off** position.

NOTE

If you have a heat only system, omit steps 2 and 3. Go directly to step 4.

2. (For heat/cool systems only). Move the **fan switch** to the **Cont.** position. The system fan should come on. Move the **fan switch** to the **Auto** position. The system fan should turn off.

CAUTION

If the outside temperature is below 40°F, **OMIT STEP 3**. Running the air conditioner when the temperature is below 40°F can damage the compressor.

3. (For heat/cool systems only). Move the **system switch** to **Cool**. Move the **temperature-set switch** until it is set to a temperature that is approximately 5°F below the displayed room temperature. The air conditioner should come on within two minutes. Move the **temperature-set switch** at

least 5°F above the displayed room temperature. The air conditioner should shut off within two minutes.

4. Move the **system switch** to **Heat**. Move the **temperature-set switch** until it is set to a temperature that is approximately 5°F above the displayed room temperature. The furnace should come on within two minutes. Move the **temperature-set switch** at least 5°F below the displayed room temperature. The furnace should turn off within two minutes (although the fan may continue to run for several more minutes).

OPERATING YOUR THERMOSTAT

Use this section to learn about the operation of the display, buttons, and switches on your new thermostat. You will also find information about the thermostat's built-in minimum timing cycles. If you installed your thermostat, you are already familiar with the display and switch locations. If someone else installed your thermostat for you, you may want to refer to **YOUR NEW THERMOSTAT'S COMPONENTS** to help you locate buttons and switches on

the thermostat. After you are familiar with the operation of your thermostat, refer to **PROGRAMMING YOUR THERMOSTAT** to set your thermostat for your needs.

Before you begin this section, move the **system switch** to the **Off** position. This will prevent the system from cycling and causing possible damage while you experiment with the buttons and switches.

THE DISPLAY

The display indicates system status in three ways (see fig. 5).

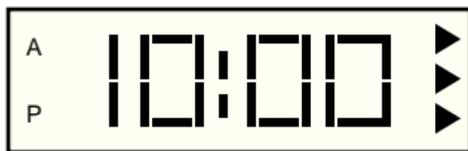


Figure 5. LCD Display

1. **AM/PM display:** When the **A** is displayed, the time indicated is **AM**. When the **P** is displayed, the time indicated is **PM**.
2. **Time/temperature display:** The time display is a 12-hour clock. The

temperature is displayed either in degrees Fahrenheit or degrees Celsius, depending on which option you choose (see **SETTING OPTION SWITCHES**). The time and temperature are alternately displayed.

3. **Indicator arrows:** These arrows indicate which part of the system is currently operating. The top arrow indicates that the setback mode is activated. The middle arrow indicates that the heating system is activated. The bottom arrow indicates that the cooling system is activated (if applicable). If you currently have the **system switch** in the **Off** position, there may not be any arrows displayed.

THE TIME SET BUTTON

TIME
SET

Press and release the **time set button**. The time setting will advance one minute. Press and hold down the **time set button**. The time setting will advance one minute per second for four seconds. Then it will advance rapidly through the 24-hour time period.

THE SETBACK BUTTON

SET
BACK

You will use the **setback button** to program the temperature setback time periods you want. Press and release the **setback button**. The top arrow on the display should now be visible. Press and

release the **setback button** again. The setback indicator on the display should now be off. You will find more information about using the **setback button** in **PROGRAMMING YOUR THERMOSTAT**.

THE SWITCHES

You use the **temperature-set sliding switch** to set the desired room temperature. The actual room temperature may vary from the temperature you set, depending on setback switch and differential option switch settings.

You use the **system (Cool-Off-Heat) switch** to activate (or deactivate) your system. When the switch is in the **Off**

position, all systems will be off. When the switch is in the **Heat** position, the thermostat will cycle only the heating system. If you have a heating/cooling system, when the switch is in the **Cool** position, the thermostat will cycle only the cooling system.

The **setback switch** allows you to determine how much the temperature will change during setback periods. The switch settings (**0°F, 5°F, 10°F, and 15°F**) indicate how much the temperature will be adjusted during setback periods. You will find more information about using the setback switch in **PROGRAMMING YOUR THERMOSTAT**.

You use the **fan switch** only if you have a heat/cool system. When the switch is in the **Auto** position, the fan will cycle automatically when the heat/cool system turns on. When the switch is in the **Cont.** position, the fan will run continuously.

The **option switches** allow you to adjust your thermostat to meet your needs. You will find more information about the option switches in **SETTING OPTION SWITCHES**.

You use the **reset button** if you want to cancel any thermostat programming. You also use this button to override minimum cycle times.

MINIMUM TIMING CYCLES

The thermostat has built-in timing cycle controls. These controls increase the efficiency of your system and protect the system from turning on and off excessively (excessive cycling may damage the system or shorten its life).

In the heating mode, once the furnace has turned on, it will continue to run for at least four minutes, even if the set (or setback) temperature is reached in less than four minutes. If the room temperature does not reach the set/setback temperature during the minimum period, the furnace will continue to run until the set/setback temperature is

reached. After the furnace turns off, it will not turn on again for at least six minutes. After six minutes, the furnace will turn on if the room temperature is below the set/setback temperature range. The heat indicator arrow on the display will flash if the furnace is waiting to turn on after the six-minute minimum cycle time has expired.

In the cooling mode, once the cooling unit has turned on, it will continue to run for at least six minutes, even if the set (or setback) temperature is reached in less than six minutes. If the room temperature does not reach the set/setback temperature during the minimum period, the cooling unit will continue to

run until the set/setback temperature is reached. After the cooling unit turns off, it will not turn on again for at least six minutes. After six minutes, the cooling unit will turn on if the room temperature is above the set/setback temperature range. The cool indicator arrow on the display will flash if the cooling unit is waiting to turn on after the six-minute minimum cycle time has expired.

You may temporarily override the minimum timing cycle in three ways:

- Move the **temperature-set sliding switch** at least 5°F from its current position.

- Move the **system switch** from its current position and back (for example, moving the system switch from **Heat** to **Cool** and back to **Heat** again will override the minimum cycle time).
- Press the **reset button** to reset programming and override minimum timing cycle. **Pressing the reset button will also cancel any thermostat programming you have done and reset the time of day to 12:00 PM.**

PROGRAMMING YOUR THERMOSTAT

Programming your new thermostat is easy. Follow these procedures for planning and programming, then you will be ready to enjoy complete comfort and efficiency.

NOTE

Please save these instructions!

You may want to change your thermostat programming at a future date.

PLANNING FOR YOUR NEEDS

This thermostat is designed to provide comfort and efficiency by allowing you to program **setback** time periods. A setback is a time period during which the thermostat will automatically raise the temperature (during the cooling season) or lower the temperature (during the heating season). Most users program setbacks for times when they will be sleeping or out of the house. When the setback time period ends, the thermostat automatically resets the temperature. The thermostat allows you to program setbacks in blocks as small as 15 minutes,

on the quarter hour (6:00 AM to 6:15 AM or 10:30 PM to 10:45 PM are examples of the smallest blocks of time you can program for a setback).

Look at the sample programming table to get an idea of how you can program your thermostat. Table 2 shows programming plans for a household where the home is unoccupied during the day, and for a household where the home is occupied during the day.

Use table 3 (or make your own) to plan the programmed setbacks you will need. If you refer to your table while programming your thermostat, programming will be much easier for you. Remember that

Table 2. Samples of Typical Program Plans

Sample program when home is unoccupied during day

TypicalSchedule	BEGIN Setback Time	END Setback Time
Go to bed at 10:00 PM	10:00 PM	
Wake up at 6:00 AM		5:45 AM
Last person leaves for work at 8:15 AM	8:00 AM	
First person arrives home from work at 5:15 PM		5:00 PM

Sample program when home is occupied during day

Go to bed at 10:00 PM	10:00 PM	
Wake up at 6:00 AM		5:45 AM

Table 3. Your Programming Plan

Your Schedule	BEGIN Setback Time	END Setback Time

you can program up to 48 setbacks in a 24-hour period. This may be useful if people in your household work different shifts, or if your home is unoccupied for short periods during the day or evening (for example, you may want to use the setback feature while you attend an evening class).

ENTERING YOUR PROGRAM

Follow these steps to program your thermostat. Before you begin programming, press the **reset button** to erase any programs that you may have entered while experimenting with your thermostat.

NOTE

You must complete steps 2 through 4 within one minute. If you do not complete these steps within one minute, start again at step 1.

1. Look at your programming plan table 3 to determine your first planned “begin setback” time, then press and hold the **time set button** until this time is displayed (also check the display for the correct AM or PM mode).
2. Press the **setback button**.
3. Check the display. The setback indicator arrow should be on.

4. Look at your programming plan table 3 to determine your first planned “end setback” time, then press and hold the **time set button** until this time is displayed.
5. Press the **setback button**.
6. Check the display. The setback indicator arrow should be off.

Your first setback time is programmed! To program all the setbacks you want, just repeat steps 1 through 6 for each begin/end setback time period. After you have programmed all desired setback time periods, you may want to review your programmed setback periods. If so, proceed to step 7. If you don't want to review your programming, omit step 7 and proceed to step 8.

7. Press and hold the **time set button**. Watch the display. When a programmed “begin setback” time is displayed, the setback indicator arrow will turn on. You may check the programmed “begin setback” time by releasing the **time set button** when the indicator arrow turns on (keep in mind that the time displayed will probably not be the exact time you programmed, since it may take you a moment to release the button after the indicator arrow turns on). Press and hold the **time set button** again. When a programmed “end setback” time is displayed, the setback indicator arrow will turn off. You may check the programmed “end setback” time by releasing the

time set button when the indicator arrow goes off. You may keep pressing, holding, and releasing the **time set button** until you have checked all your programmed setback time periods.

8. Set the time of day by pressing the **time set button** until the correct time is displayed (also check the AM/PM mode).
9. Move the **temperature-set sliding switch** (see fig. 6) to the temperature you want maintained when the house is occupied.

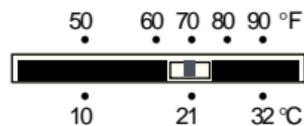


Figure 6. Temperature-Set Sliding Switch

10. Move the **setback switch** to the desired position. The setback switch has four settings (0°F, 5°F, 10°F, and 15°F). This switch tells the thermostat how much to adjust the temperature during setback periods. For example, if (in the winter) you want to maintain the temperature at 68°F when the house is occupied, but you want the temperature to be 63°F when you are sleeping or the house is unoccupied, you should move the setback switch to 5°F. The thermostat will then maintain the temperature at 5°F below the set temperature during

setback periods. Table 4 shows examples of possible set temperatures and setback switch combinations you might use.

11. Move the **system switch** to **Heat** or **Cool** as desired.

Your thermostat is now programmed and will adjust the temperature when setback program times are displayed.

To reprogram your thermostat, press the **reset button** to cancel previous programming. Then you may reprogram by following the above steps.

Table 4. Set/Setback Temperature Examples

**SAMPLE TEMPERATURE/SETBACK
TEMPERATURES FOR HEATING SEASON**

If set temperature when home is occupied is...and setback switch is set to....during setback periods, the temperature will be....
68°F	0°F	68°F
	5°F	63°F
	10°F	58°F
	15°F	53°F
72°F	0°F	72°F
	5°F	67°F
	10°F	62°F
	15°F	57°F
75°F	0°F	75°F
	5°F	70°F
	10°F	65°F
	15°F	60°F

**SAMPLE TEMPERATURE/SETBACK
TEMPERATURES FOR COOLING SEASON**

If set temperature when home is occupied is...and setback switch is set to....during setback periods, the temperature will be....
72°F	0°F	72°F
	5°F	77°F
	10°F	82°F
	15°F	87°F
75°F	0°F	75°F
	5°F	80°F
	10°F	85°F
	15°F	90°F
79°F	0°F	79°F
	5°F	84°F
	10°F	89°F
	15°F	94°F

MAINTAINING YOUR THERMOSTAT

When properly installed and maintained, your new thermostat is designed to provide years of service. This section contains information about replacing batteries and troubleshooting the thermostat and system. This information is provided to help ensure that your thermostat will continue to provide complete comfort control.

REPLACING THE BATTERIES

Two batteries have been included with your thermostat. These batteries provide power to the thermostat during any power interruptions. The thermostat is

not designed to run on battery power alone, but the batteries will maintain your programming and the time of day in the event of a power interruption. Battery life is dependent on system switch position and frequency and duration of power interruptions. To maintain full battery power at all times, you should replace the batteries once a year.

The thermostat's batteries are the same type used in many watches and digital clocks. These batteries are available in most stores that carry watch batteries,

and the dealer where your thermostat was purchased should also carry replacement batteries.

You may use the following battery types as replacements: 303BP, WS14, RW22, Type A, 8002, ANSI No. S-15, IEC No. SR44, NEDA No. 1107SO, or equivalent.

Follow these steps to replace batteries.

1. Remove the thermostat cover.
2. Locate the batteries (they are above the **time set button**).
3. Gently remove the old batteries. Be careful not to damage the thermostat.

4. Insert the new batteries with the **flat (+) side up**.

5. Replace the cover.

If you are experiencing short battery life, it may be due to the type or condition of your heating/cooling system. To extend battery life, you should follow one of these two procedures.

PROCEDURE 1. Short battery life may be caused by the opening of the furnace's high temperature limit switch during the heating cycle. Limit switch opening may be related to airflow reduction in the system. Airflow reduction is often caused by dirty filters, a loose fan belt, blocked cold air returns, or having too

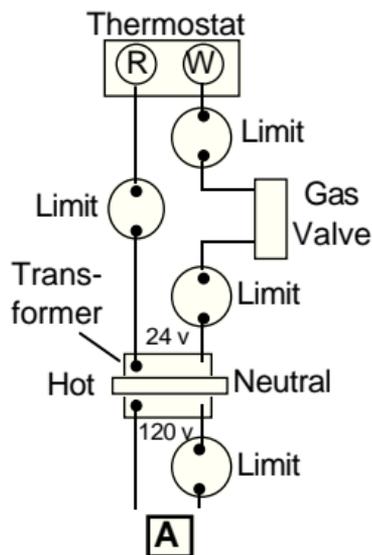
many registers closed. Check your system to ensure that there are no airflow problems.

If you continue to experience short battery life after fixing airflow problems, your furnace has a limit switch that functions even when airflow is adequate. In this case, a 24 V single-pole, normally-open (SPNO) relay must be added to the system using the following procedure.

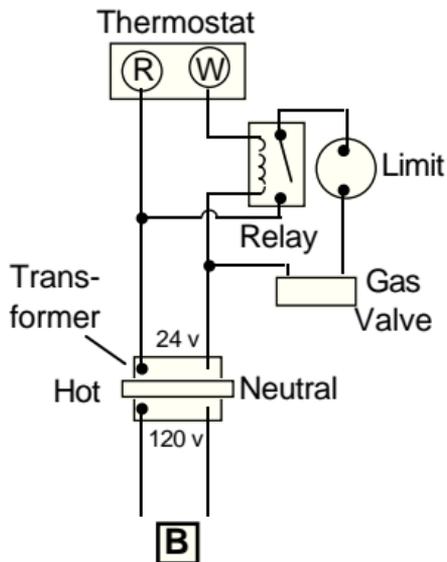
CAUTION

A qualified service person should perform this installation.

1. Disconnect 120v AC power from the system.
2. Obtain a 24v SPNO relay (No. 8A04-1).
3. Connect the limit switch to the contact side of the relay (see fig. 7, part B).
4. Reconnect power to the system. Test the system and thermostat (see **TESTING YOUR THERMOSTAT**).



Typical wiring of gas furnace showing possible limit switch location



Typical wiring method using SPNO relay and limit in gas furnace

Figure 7. Relay Installation

PROCEDURE 2. Short battery life may also be caused by repeated power interruptions. These furnaces cause power interruptions during normal operation:

Bryant, Payne, Day & Night,
and Carrier Series

579	585
580	48KLA

If you own one of these systems, you should install the resistor that was included with your thermostat using one of the three following methods (depending on system type).

CAUTION

A qualified service person should perform the resistor installation.

Method 1. (For heat/cool systems **only**.)

1. Disconnect 120v AC power from system.
2. Install the resistor between the W and Y terminals on the thermostat (see fig. 8). **Do not allow the resistor to come into contact with any other thermostat components.**

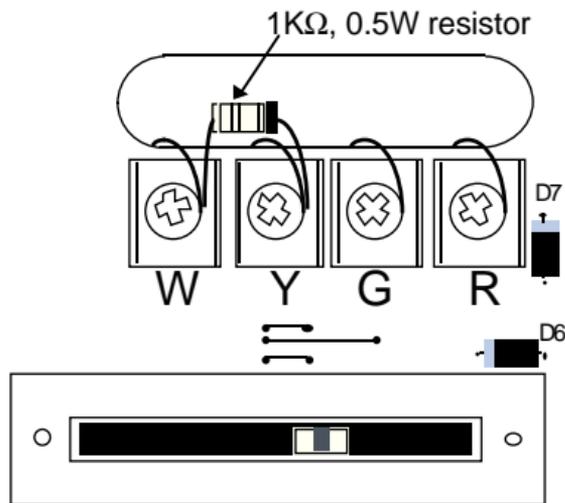


Figure 8. Install resistor at thermostat (method 1)

CAUTION

Do not connect the resistor to the R terminal at the thermostat or the furnace. System damage will occur.

3. Replace thermostat cover and restore power to the system.
4. Test thermostat and system operation (see **TESTING YOUR THERMOSTAT**).

Method 2. (For heat-only or heat/cool systems.)

NOTE

This installation requires an additional wire that will run from the furnace low voltage terminal block to the thermostat.

1. Disconnect 120v AC power from system.
2. Attach a wire to terminal C on the furnace low voltage terminal block. Attach the wire's other end to the resistor using a wire nut connector. Attach the resistor to the W terminal

on the thermostat (see fig. 9). **Do not allow the resistor or wire to come into contact with any other thermostat components.**

3. Replace the thermostat cover and restore power to the system.
4. Test thermostat and system operation (see **TESTING YOUR THERMOSTAT**).

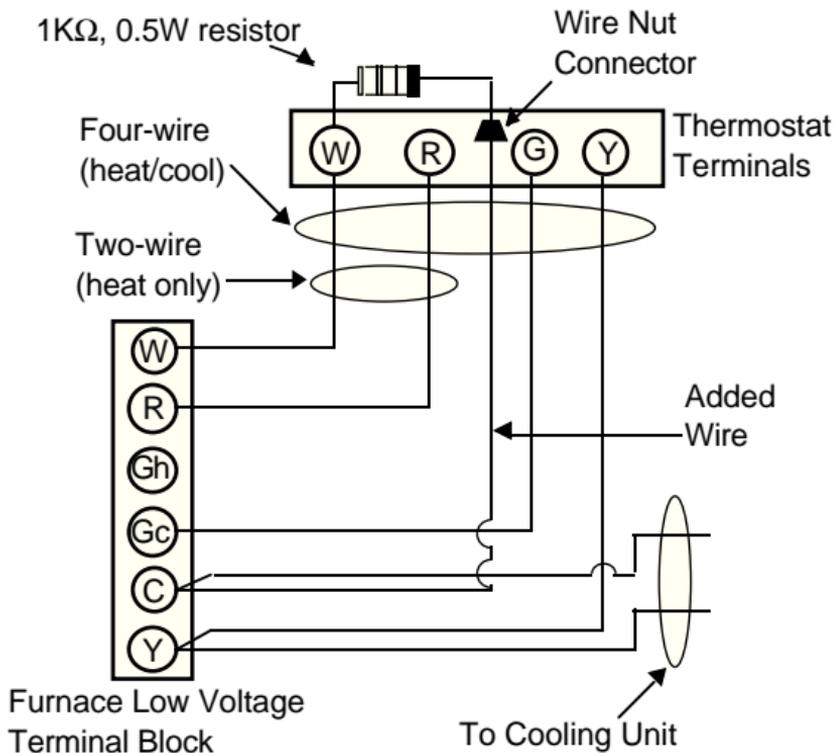


Figure 9. Install resistor between thermostat and furnace (method 2)

Method 3. (For heat-only or heat/cool systems.)

NOTE

This installation requires an additional wire that will run between the W and C terminals on the furnace low voltage terminal block.

1. Disconnect 120v AC power from system.
2. Attach a wire to terminal C on the furnace low voltage terminal block. Attach the wire's other end to the

resistor using a wire nut connector. Attach the resistor to the W terminal on the furnace low voltage terminal block (see fig. 10). **Do not allow the resistor or wire to come into contact with any other furnace components.**

3. Restore power to the system.
4. Test thermostat and system operation (see **TESTING YOUR THERMOSTAT**).

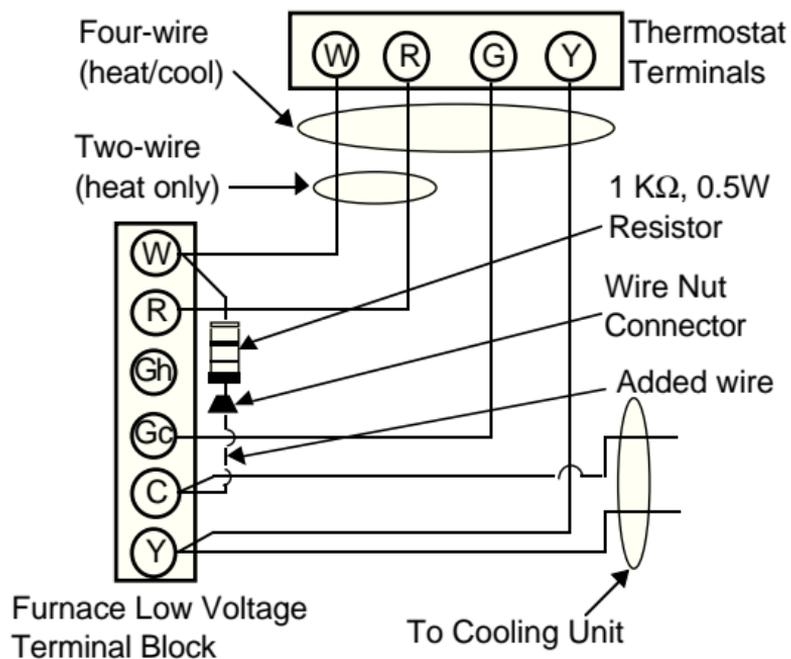


Figure 10. Install resistor at furnace (method 3)

REPLACING THE FUSE

If the thermostat has been incorrectly wired, or if the thermostat's specifications were exceeded, you must replace the fuse. Check and correct the wiring and/or the load, then follow these steps to replace the fuse.

1. Disconnect the 120v AC power.
2. Obtain a 1 amp., 250v, AGC type Normal-Blo fuse.
3. Locate the old fuse above the thermostat wire terminals. Remove the old fuse.
4. Install the new fuse.
5. Replace the thermostat cover and restore power to the system.

6. Test thermostat and system operation (see **TESTING YOUR THERMOSTAT**).

TROUBLESHOOTING YOUR THERMOSTAT

If you suspect that your thermostat is not working correctly, use table 5 to help you isolate the problem. You may be able to solve the problem yourself, but some procedures should be performed only by a qualified service person (this is noted in the “Action” column).

If you or your service person cannot solve the problem using this manual as a guide, you may call our technical service line at 1-314-577-1300 or toll free 1-800-876-TECH (8:00 AM to 4:30 PM CST).

Table 5. Troubleshooting Table

PROBLEM	POSSIBLE CAUSE	ACTION TO TAKE	IN MANUAL, REFERENCE SECTION ...
No display	<ol style="list-style-type: none"> Miswired No voltage to thermostat Switch in Cool position on heat only system Blown fuse 	<ul style="list-style-type: none"> Check thermostat wiring. Remove batteries. Check for 20-24v AC between R & W terminals with system switch in OFF position. If no voltage, check for limit switch operation. Move system switch to Heat position and replace batteries. Check wiring. Replace fuse. 	INSTALLING YOUR THERMOSTAT ----- OPERATING YOUR THERMOSTAT; MAINTAINING YOUR THERMOSTAT MAINTAINING YOUR THERMOSTAT
Heat will not turn on	<ol style="list-style-type: none"> Not in Heat mode Not calling for heat Bad gas valve, no pilot, bad relay open limit Blown fuse 	<ul style="list-style-type: none"> Move system switch to Heat position. Check heat indicator arrow on display. If off, move temperature slide to the right and ensure thermostat is not in setback mode. Ensure heat indicator arrow is on. Check for voltage at gas valve. Call 800 number for assistance. Check wiring. Replace fuse. 	OPERATING YOUR THERMOSTAT OPERATING YOUR THERMOSTAT OPERATING YOUR THERMOSTAT MAINTAINING YOUR THERMOSTAT

(Table continued on next page)

PROBLEM	POSSIBLE CAUSE	ACTION TO TAKE	IN MANUAL, REFERENCE SECTION ...
Cooling system will not turn on	1. Not in Cool mode	<ul style="list-style-type: none"> • Move system switch to Cool 	OPERATING YOUR THERMOSTAT
	2. Not calling for cool	<ul style="list-style-type: none"> • Check cool indicator arrow on display. If off, move temperature slide to the left and ensure thermostat is not in setback mode. 	OPERATING YOUR THERMOSTAT
	3. Bad compressor contactor	<ul style="list-style-type: none"> • Check for voltage at compressor contactor - call service person for repair. 	-----
	4. Blown fuse	<ul style="list-style-type: none"> • Check wiring. Replace fuse. 	MAINTAINING YOUR THERMOSTAT
Large temperature swing	1. Thermostat location	<ul style="list-style-type: none"> • Relocate thermostat. 	CHECK YOUR THERMOSTAT'S LOCATION
	2. Differential switch set to 3°F	<ul style="list-style-type: none"> • Move differential switch to 1°F. 	SETTING OPTION SWITCHES
On/off cycles too short	1. Thermostat location	<ul style="list-style-type: none"> • Relocate thermostat. 	CHECK YOUR THERMOSTAT'S LOCATION
	2. Differential switch set to 1°F	<ul style="list-style-type: none"> • Move differential switch to 3°F. 	SETTING OPTION SWITCHES
	3. Miscalibrated	<ul style="list-style-type: none"> • Thermostat is calibrated at factory at 70°F and should need no further calibration - if calibration is needed, call 800 number for assistance. 	-----
Frozen display	1. Static electricity	<ul style="list-style-type: none"> • Push reset button. 	OPERATING YOUR THERMOSTAT

If you need further information on installation or programming instructions, you may call our technical service department (8:00 AM to 4:30 PM CST) at 1-314-577-1300 or toll free at 1-800-876-TECH.

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