# White Rodgers™

## Big Blue Universal Thermostat with Automatic Heat/Cool Changeover Option

### Single Stage, Multi-Stage, Heat Pump
### Installation and Operating Instructions for Model:

**Save these instructions for future use!**

FAILURE TO READ AND FOLLOW ALL INSTRUCTIONS CAREFULLY BEFORE INSTALLING OR OPERATING THIS CONTROL COULD CAUSE PERSONAL INJURY AND/OR PROPERTY DAMAGE.

| Model | Programming Choices | | |
|-------|--------------------|---|---|
| **1F95-1277** | Non-Programmable | 5/1/1 Day | 7 Day |

## APPLICATIONS

### THERMOSTAT APPLICATION GUIDE
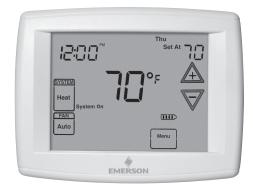
| Description | |
|-------------|---|
| Heat Pump (No Aux. or Emergency Heat) | Yes |
| Heat Pump (with Aux. or Emergency Heat) | Yes |
| Systems with up to 3 Stages Heat, 2 Stages Cool | Yes |
| Heat Only Systems | Yes |
| Millivolt Heat Only Systems – Floor or Wall Furnaces | Yes |
| Cool Only Systems | Yes |
| Gas or Oil Heat | Yes |
| Electric Furnace | Yes |
| Hydronic (Hot Water) Zone Heat – 2 Wires | Yes |
| Hydronic (Hot Water) Zone Heat – 3 Wires | Yes |
| Wired Remote Temperature Sensor (Indoor/Outdoor) | Yes |
| Dual Fuel Feature (Heat Pump Mode) | Yes |

**1F95-1277 Touchscreen Thermostat**



## SPECIFICATIONS

Electrical Rating:
    Battery Power . . . . . . . . . . . . . . . . . . . . . . . . . . . . mV to 30 VAC, NEC Class II, 50/60 Hz or DC
    Input-Hardwire . . . . . . . . . . . . . . . . . . . . . . . . . . 20 to 30 VAC
Terminal Load . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 1.5A per terminal, 2.5A maximum all terminals combined
Setpoint Range . . . . . . . . . . . . . . . . . . . . . . . . . . . . 45 to 99°F (7 to 37°C)
Differential (Single Stage) . . . . . . . . . . . . . . . . . . . . Heat 0.6°F; Cool 1.2°F
Differential (Multi-Stage) . . . . . . . . . . . . . . . . . . . . . Heat 0.6°F; Cool 1.2°F
Differential (Heat Pump) . . . . . . . . . . . . . . . . . . . . . Heat 1.2°F; Cool 1.5°F
Operating Ambient. . . . . . . . . . . . . . . . . . . . . . . . . . 32°F to +105°F (0 to +41°C)
Operating Humidity . . . . . . . . . . . . . . . . . . . . . . . . . 90% non-condensing max.
Shipping Temperature Range . . . . . . . . . . . . . . . . . -4 to +150°F (-20 to +65°C)
Dimensions Thermostat. . . . . . . . . . . . . . . . . . . . . . 4-9/16"H x 5-13/16"W x 1-3/16"D

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### ⚠ CAUTION

**To prevent electrical shock and/or equipment damage, disconnect electric power to system at main fuse or circuit breaker box until installation is complete.**

**ATTENTION: MERCURY NOTICE**
This product does not contain mercury. However, this product may replace a product that contains mercury.

Mercury and products containing mercury must not be discarded in household trash. Do not touch any spilled mercury. Wearing non-absorbent gloves, clean up any spilled mercury and place in a sealed container. For proper disposal of a product containing mercury or a sealed container of spilled mercury, place it in a suitable shipping container. Refer to **www.thermostat-recycle.org** for location to send the product containing mercury.

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**EMERSON™ Climate Technologies**

# INSTALLATION

## Remove Old Thermostat

A standard heat/cool thermostat consists of three basic parts:

1. The cover, which may be either a snap-on or hinge type.
2. The base, which is removed by loosening all captive screws.
3. The switching subbase, which is removed by unscrewing the mounting screws that hold it on the wall or adapter plate. **Before removing wires from old thermostat, label each wire with the terminal designation from which it was attached.** Disconnect the wires from the old thermostat one at a time. **Do not let wires fall back into the wall.**

## Installing New Thermostat

1. Pull the thermostat body off the thermostat base. Forcing or prying on the thermostat will cause damage to the unit.
2. Place base over hole in wall and mark mounting hole locations on wall using base as a template.
3. Move base out of the way. Drill mounting holes. If you are using existing mounting holes and the holes drilled are too large and do not allow you to tighten base snugly, use plastic screw anchors to secure the base.
4. Fasten base snugly to wall using mounting holes shown in Figure 1 and two mounting screws. Leveling is for appearance only and will not affect thermostat operation.
5. Connect wires to terminal block on base using appropriate wiring schematic (see diagram sheet 37-6808).
6. Push excess wire into wall and plug hole with a fire resistant material (such as fiberglass insulation) to prevent drafts from affecting thermostat operation.
7. Carefully line the thermostat up with the base and snap into place.

## Battery Location

2 "AA" alkaline batteries are included in the thermostat at the factory with a battery tag to prevent power drainage. Remove the battery tag to engage the batteries.

To replace batteries, set system to **OFF**, remove thermostat from wall and install the batteries in the rear along the top of the thermostat (see Figure 1). For best results, use a premium brand "AA" alkaline battery such as Duracell® or Energizer®.

**Figure 1 – Thermostat Base Multi-Stage 1F95-1277**



↑UP

Mounting Hole → ← Mounting Hole

Place Level across Mounting Tabs (for appearance only) → ← Place Level across Mounting Tabs (for appearance only)
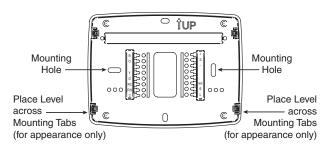
**Rear view of thermostat**



2 "AA" Batteries

# WIRING CONNECTIONS

Refer to equipment manufacturers' instructions for specific system wiring information. After wiring, see CONFIGURATION section for proper thermostat configuration.
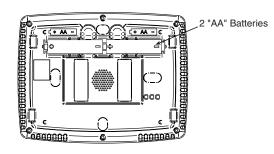
For wiring diagrams, see 37-6808.
Wiring diagrams shown are for typical systems and describe the thermostat terminal functions.

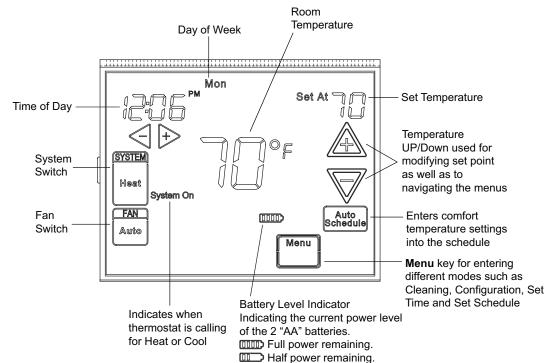**TERMINAL DESIGNATION DESCRIPTIONS**

| Terminal Designation | Description |
| --- | --- |
| B | Changeover valve for heat pump energized constantly in heating |
| O | Changeover valve for heat pump energized constantly in cooling and off |
| Y2 | 2nd Stage Compressor |
| Y | Compressor Relay |
| G | Fan Relay |
| RC | Power for Cooling |
| RH | Power for Heating |
| C | Common wire from secondary side of cooling (Optional). Required for fault indication, continuous backlight operation or remote temperature sensor operation |
| L | Malfunction indicator for systems with malfunction connection |
| 6 | Powered closed 3rd wire for 3-wire zone valve |
| W/E | Heat Relay/Emergency Heat Relay (Stage 1) |
| W2 | 2nd Stage Heat (3rd Stage Heat in HP2) |
| Blank | Blank |
| - | Common (DC) for wired remote temperature sensor |
| S | Frequency signal from remote temperature sensor |
| + | Power (DC) to remote temperature sensor |

# THERMOSTAT QUICK REFERENCE

## Home Screen Description

### Figure 2 – Home Screen Display

Day of Week

Room Temperature

Time of Day

Set Temperature

System Switch

Temperature UP/Down used for modifying set point as well as to navigating the menus

Fan Switch

System On

Enters comfort temperature settings into the schedule

**Menu** key for entering different modes such as Cleaning, Configuration, Set Time and Set Schedule

Indicates when thermostat is calling for Heat or Cool

Battery Level Indicator Indicating the current power level of the 2 "AA" batteries.
Full power remaining.
Half power remaining.
**Change** The batteries should be replaced at this time.

## Programming and Configuration Items

1. Displays 🔒 and **"Keypad Lockout"** when in keypad lockout mode.
   Displays 🔒 and **"Temperature Limit"** and **"Keypad Lockout"** when limited range is activated and locked.
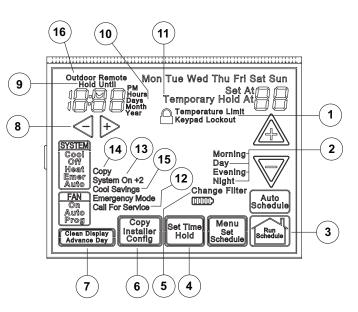   Displays only **"Temperature Limit"** when limited range is activated.

2. Indicates period of day being programmed.

3. RUN SCHEDULE (run program) button.

4. SET TIME button or HOLD temperature button.

5. Displays **"Change Filter"** when the system has run for the programmed filter time period as a reminder to change or clean your filter.

6. COPY button or INSTALLER CONFIG button.

7. CLEAN DISPLAY button allows 30 seconds to wipe off the display or ADVANCE DAY button for programming.

8. Used in programming to set time and in configuration menu to change selections.

9. **"Hold Until"** indicates the time when a temporary hold period will end.

10. **"Hours"** and **"Days"** displays during steps in installer.

11. The words **"Hold At"** are displayed when the thermostat is in the **HOLD** mode. **"Temporary Hold At"** is displayed when the thermostat is in a temporary **HOLD** mode.

12. **"Call For Service"** indicates a fault in the heating/cooling system. It does not indicate a fault in the thermostat.

13. **"System On"** indicates when heating or cooling stage is energized. **"+2"** also indicates when a second stage is energized.

### Figure 3 – Programming & Configuration Items

14. **"Copy"** indicates the copy program feature is being used during programming.

15. A steady **"Cool Savings"** display indicates the feature is enabled in the installer menu. A flashing **"Cool Savings"** display indicates the feature is active.

16. **"Remote"** indicates that the indoor remote temperature sensor, is being accessed. **"Outdoor Remote"** indicates the outdoor remote temperature sensor is being accessed.

# INSTALLER/CONFIGURATION MENU ────────

To enter the menu: Press the **Menu** touch key. Press and hold for 5 seconds the **Installer Config** touch key. This displays menu item #1 in the table below. Press △ to advance to the next menu item or ▽ to return to a previous menu item. Press ▷ or ◁ to change a menu item.

**Installer Note:** To default the programming, clock and Configuration Menu to the Factory Default Settings, press the △, ▽ and SYSTEM keys simultaneously. The thermostat display will go blank for a few seconds, and then all segments will display momentarily. **For heat pump systems, Configuration Menu item 1 must be set to match the heat pump system.**

| CONFIGURATION MENU | | | | | | |
|---|---|---|---|---|---|---|
| Menu Reference Number | Program-mable | Non-Program-mable | Press Button | Displayed (Factory Default) | Press ▷ or ◁ to select from listed options | Comments |
| 1 | 1 | 1 | | MS 2 | HP 1, HP 2, SS 1 | Selects Multi-Stage (MS 2, No Heat Pump), Heat Pump 1 (HP 1, 1 compressor), Heat Pump 2 (HP 2, 2 compressor or 2 speed compressor), or Single Stage |
| 2 | 2 | 2 | △ | (ELE) | GAS | GAS setting: furnace controls blower ELE setting: thermostat controls blower |
| 3 | 3 | 3 | △ | Days, (7) P | **5**-1-1 or **0** | Programs per week. (0 = non-programmable) |
| 4 | 4 | NA | △ | **PS (4)** | **2** | Program periods per day 4 = Morning, Day, Evening, Night 2 = Day, Night |
| 5 | 5 | 4 | △ | Cool-Off-Heat-Auto | Cool-Off-Heat, Off-Heat, Cool-Off | System switch configuration in non heat pump mode |
| | | | | Cool-Off-Heat-Emer-Auto | Cool-Off-Heat-Emer, Off-Heat-Emer, Cool-Off | System switch configuration, heat pump mode |
| 6 | 6 | NA | △ | **E (On)** | **OFF** | Selects Energy Management Recovery, E (with programming option on) |
| 7 | 7 | 5 | △ | Cr, Heat (FA) | SL | Selects Adjustable Anticipation, cycle rate, Heat |
| 8 | 8 | 6 | △ | Cr, Cool (FA) | SL | Selects Adjustable Anticipation, cycle rate, Cool |
| 9 | 9 | 7 | △ | Cr/AU, Emer (FA) | SL | Selects Adjustable Anticipation, cycle rate auxiliary, (This item is only to appear if HP 1 or HP 2 is selected above) |
| 10 | 10 | 8 | △ | **CL (OFF)** | On | Selects Compressor Lockout |
| 11 | 11 | 9 | △ | **dL (On)** | OFF | Selects Continuous Display backlight & intensity |
| 12 | 12 | 10 | △ | **dL (LO)** | HI | Selects Backlight Intensity |
| 13 | 13 | 11 | △ | 0 | 4, LO to 4, HI | Selects Adjustable Ambient Temperature Display [range -4 (LO) to +4 (HI)] |
| 14 | 14 | 12 | △ | **°F** | **°C** | Selects °F/°C Display (temperature units in Fahrenheit or Celsius). |
| 15 | 15 | 13 | △ | **b (On)** | OFF | Selects audible Beeper On/Off |
| 16 | 16 | 14 | △ | **dS (On)** | OFF | Selects Daylight Saving Time calculation |
| 17 | 17 | 15 | △ | **AS**, Heat (On) | OFF | Selects Automatic Schedule for comfort temperature Programming, heat mode |
| 18 | 18 | 16 | △ | **AS**, Cool (On) | OFF | Selects Automatic Schedule for comfort temperature Programming, cool mode |
| 19 | 19 | 17 | △ | **CS**, (OFF) Cool Savings | 1-2-3-4-5-6 | Selects Cool Saving Feature & amount |
| 20 | 20 | 18 | △ | **HL**, Heat (99) | 62-98 | TEMPERATURE LIMIT, HEAT (max. heat set point) |
| 21 | 21 | 19 | △ | **LL**, Cool (45) | 46-82 | TEMPERATURE LIMIT, COOL (min. cool set point) |
| 22 | 22 | 20 | △ | OFF, 🔒 **Keypad Lockout** | **L** (total), **P** (partial), **Temperature Limit** (limited temperature range) | Selects Keypad Lockout |
| | | | △ | 000 | 001-999 | Selects Keypad Lockout Combination (active only if keypad Lockout is selected). |
| 23 | 23 | 21 | △ | FS, Heat (On) | OFF | Fast second stage of heat (not available if SS1 is selected above) |
| 24 | 24 | 22 | △ | FS, Cool (On) | OFF | Fast second stage of cool (not available if SS1 or HP1 is selected above) |
| 25 | 25 | 23 | △ | Remote (OFF) | On | Remote temperature sensor, enable/disable |
| | | | | In, Remote | Outdoor Remote | Remote temperature sensor (Indoor/Outdoor) |
| | | | | LS (On) | OFF | Local temp. Sensor enable/disable (only when Indoor Remote is selected On). |
| 26 | 26 | 24 | △ | **dF** (5) | 5-50 | Selects Dual Fuel Feature & set point (in Fahrenheit) (applicable only when HP1 or HP2 is selected) |
| | | | △ | **Cd** (60) | 0-99 | Selects Compressor delay in seconds (only when **dF** is selected >5) |
| 27 | 27 | 25 | △ | Change Filter (OFF) | On | Selects Change filter feature |
| | | | △ | 200 Hours | 25-1975 (in increments of 25 hours) | Change filter, duration hours |

# INSTALLER/CONFIGURATION MENU

1) This control can be configured for:
   MS2 – Multi-Stage System (2 heat/2 cool)
   HP1 – Heat Pump with one stage of compressor (2 heat/1 cool)
   HP2 – Heat Pump with two stage compressor or two compressor system, Gas or Electric backup; (Dual Fuel see menu item 26) (3 heat/2 cool)
   SS1 – Single Stage System (3 wire zone see wiring diagram 37-6808A)

2) GAS or Electric (ELE) fan operation. If the heating system requires the thermostat to energize the fan, select ELE. Select GAS if the heating system energizes the fan on a call for heat. **Note: Resetting the thermostat switches the option to ELE.**

3) **Programs per week** – This control can be configured for 7 independent day or 5/1/1 day programming or non-programmable modes. Default is 7-day mode. The display indicates **"7 Days"** as default. Other options **"5 Days"** or **"0 Days"** can be selected by pressing touch keys, $\triangleright$ or $\triangleleft$. If **"0 Days"** is selected for non-programmable mode, the step for EMR will be skipped, as this feature will not be available in this mode.

4) **Program Steps per day** – This control can be configured for 4 or 2 program steps per day. Default is **"4 PS"** and can be toggled between 4 PS and 2 PS by pressing the $\triangleright$ or $\triangleleft$ touch keys.

5) **System Switch Configuration (MS2/SS1)** – This thermostat is configured for Heat and Cool with Auto change-over default (Cool-Off-Heat-Auto). Can be configured as Heat & Cool (Cool-Off-Heat), or Heat Only (Off-Heat), or Cool Only (Cool-Off).
   When the control is in heat pump configuration **(HP1/HP2)**, the system switch configuration will have an additional mode available namely, **Emer** for **Emergency Mode**.

6) **Energy Management Recovery (EMR)** – (this step is skipped if configured as non-programmable).
   When set to "On" causes the thermostat to start heating or cooling early to make the building temperature reach the program setpoint at the time you specify.
   **Example:** Let us say, the heating program is 65°F at night and 70° at 7 AM. If the building temperature is 65°F, the difference is 5°F. Allowing 5 minutes per °F rise, the thermostat setpoint will change to 70° at 6:35 AM. Cooling allows more time per °F, because it takes longer to reach temperature.

7, 8 & 9) **Cycle Rate Selection** – The factory default setting is fast cycle (FA Cr) in all modes (Heat, Cool, Emer). To slow cycling (SL, Cr), press touch keys $\triangleright$ or $\triangleleft$ toggle between FA & SL. The cycle rates are as below different selections:

| Mode | Fast rate | Slow rate |
| --- | --- | --- |
| Heat | 0.6°F | 1.2°F |
| Cool | 1.2°F | 1.7°F |
| Emer | 1.2°F | 1.7°F |

10) **Select Compressor Lockout (CL)** – Selecting CL On will cause the thermostat to wait 5 minutes between cooling cycles. This is intended to help protect the compressor from short cycling. Some of the newer compressors have already got a time delay built in and do not require this feature to be activated in the thermostat. Your compressor manufacturer can tell you if this lockout feature is already present in their system. When the thermostat compressor time delay is activated, it will flash the set point for up to five minutes.

11) **Select Continuous Backlight** – In low lighting conditions, display backlight improves the display contrast. When **C** terminal is connected, selecting dL On will turn the backlight on continuously. Selecting dL Off will turn the backlight on momentarily after any key is pressed. When **C** terminal is not powered (battery only), dL On enables the momentary backlight whenever a key is pressed.

12) **Select Backlight Intensity** – This thermostat has the ability to provide two selectable intensities of the backlight: HI and LO. Using $\triangleright$ or $\triangleleft$ touch keys you can toggle the selection between HI and LO.

13) **Select Temperature Display Adjustment 4 LO to 4 HI** This allows you to adjust the room temperature display by an amount in the range of -4°F to +4°F in 1° steps by using the $\triangleright$ or $\triangleleft$ touch keys. Your thermostat was accurately calibrated at the factory, however you have the option to change the display temperature value to match your previous thermostat, if you so prefer.

14) **Select °F or °C Readout** – Select the desired temperature unit by pressing $\triangleright$ or $\triangleleft$. Factory default is °F.

15) **Select Audio Prompting (Beeper) On or Off** – Factory default setting is on (b, On). If you wish to turn off the beeper select OFF.

16) **Select Daylight Saving Time Calculation** – This feature will allow the thermostat to calculate the DST automatically and apply it to the Real Time Clock display. Default On. Use $\triangleright$ or $\triangleleft$ touch keys to select the feature, OFF.

17 & 18) **Select Automatic Schedule** – This feature allows programming a "Comfort Temperature" into all program periods with the **Auto Schedule** key. When **Heat AS** (for Heat mode) or **Cool AS** (for Cool mode) is selected **On**, the Auto Schedule feature is ready to be set. **Off** indicates that the feature is not ready to be used or a "Comfort Temperature is already set. See Auto Schedule in Programming section.

19) **Select Cool Savings™**: With Cool Savings™ enabled, the thermostat will make small adjustments to the setpoint temperature during periods of high demand to reduce AC system running time and save energy. When the cooling system has been running for more than 20 minutes, humidity in the home will be lower and a higher temperature will feel comfortable. After 20 minutes of run time, the thermostat will start increasing the setpoint temperature in steps of less than one degree as the system continues to run. These adjustments will eventually cause the system to satisfy the thermostat to turn the system off and reduce the energy consumption. When the Cool Savings™ feature is active and making adjustments, the display will flash **"Cool Savings"**. The amount of the adjustments to the setpoint temperature is dependent on the Cool Savings™ value that is set, 1 being the least adjustment and 6 being the most adjustment. With this feature set to OFF, no change will occur when the AC system is continuously running during the periods of high demand. Periods of high demand will normally occur during the late afternoon and early evening on the hottest days of the summer. As demand lessens the adjustments to setpoint temperature are reversed until setpoint temperature returns to normal and **"Cool Savings"** no longer flashes.

# INSTALLER/CONFIGURATION MENU

20) **Heat Temperature Limit Range** – This feature adjusts the highest setpoint temperature for heat. The default setting is 99°F. It can be changed between 62°F and 98°F by pressing the ▷ or ◁ key. The **"temperature limit"** icon will be displayed to the left of your setpoint temperature when using this feature. The **"temperature limit"** icon will flash if an attempt is made to adjust the temperature beyond the range selected.

21) **Cool Temperature Limit Range** – This feature adjusts the lowest setpoint temperature for cool. The default setting is 45°F. It can be changed between 46°F and 82°F by pressing the ▷ or ◁ key. The **"temperature limit"** icon will be displayed to the left of your setpoint temperature when using this feature. The **"temperature limit"** icon will flash if an attempt is made to adjust the temperature beyond the range selected.

22) **Keypad Lockout** – This step allows you to select the type of lockout or limited range security required. If no lockout or limited range security is required, press ⚠ to advance the menu.

Three security settings are available in this menu item. Use the ▷ or ◁ keys to select the lockout desired. Lockout selections are:

**"Keypad Lockout** and **L"** = Total Lockout. Total Lockout locks all keys.

**"Keypad Lockout** and **P"** = Partial Lockout. Partial Lockout allows only the △ or ▽ keys to operate within your set temperature limits.

**"Temperature Limit/Keypad Lockout"** prevents changing the temperature limits in the Configuration Menu.

**Keypad Lockout Combination Number Selection**
Display will read **"OFF" "Keypad Lockout"**.
Skip this step and continue through the configuration menu items 23 thru 27 if you require an Air Filter Change out indicator or Humidifier Pad Change out indicator by pressing the ⚠ button to advance.

Return to this point when you are ready to start your selected lock-out and continue by:
Pressing ▷ or ◁ keys to select ON.
Press ⚠. Display will read **"000"**.
Pressing ▷ or ◁ keys to select your keypad lockout combination number. Note: **"000"** is not a valid combination choice.
**Record the number you select for future use.**
Press ⚠ to exit the menu. The security feature you select will start in 10 seconds. The system button will remain active for 10 seconds to allow setting Heat, Off, Cool or Auto.

23 & 24) **Select Fast Second Stage ON or OFF** – In the run mode, with the fast Heat feature enabled (FA Heat On), if the Heat setpoint temperature is manually raised by 3°F (2°C) or more above the actual temperature using △ the second stage will energize immediately. With FA OFF, second stage will not energize until the setpoint temperature is 1°F or more above actual temperature for more than ten minutes. The Fast Cool feature (FA Cool) provides the same controls when the setpoint temperature is lowered.

25) **Select Remote Temperature Sensor** – This control allows one wired remote temperature sensor (indoor, F145-1328, or outdoor, F145-1378) be connected to it and indicates the measured temperature in clock digits. This menu enables you to select the remote sensor and also configure it as indoor or outdoor temperature sensor. Factory default is off. Select **Remote On** and **Remote in** (for indoor) or **Outdoor Remote**.

**Local Temperature Sensor disable** – This is applicable only when indoor remote temperature sensor is enabled. Factory default is **On LS**. You can make it **Off LS** if you desire by using ▷ or ◁ touch keys. Then, only the indoor remote temperature reading will be used for control.

26) **Select Dual Fuel Feature and Setpoint** – This feature is applicable only in heat pump modes. An outside remote sensor must also be installed. When the outside temperature falls below the selected setpoint temperature, **dF**, the thermostat will switch to gas heat and shut down the compressor. Use the ▷ or ◁ keys to select the desired setpoint temperature in the range of 5 to 50. Factory default is 5, which disables this feature. See Dual Fuel Temperature and Setpoint in Programming section.

**Select Compressor Delay** – When **dF** is enabled, the shut down of the compressor(s) is delayed for a time period after the auxiliary stage is energized. This delay, **Cd**, is factory set at 60, but can be set in the range of 0 to 99.

27) **Select Change Filter Run Time** – The thermostat will display **"Change Filter"** after a set time of blower operation. This is a reminder to change or clean your air filter. This time can be set from 25 to 1975 hours in 25 hour increments. A selection of OFF will cancel this feature. When **"Change Filter"** is displayed, you can clear it by pressing Clean Display. In a typical application, 200 hours of run time is approximately 30 days.

# OPERATING YOUR THERMOSTAT ——— IMPORTANT! ———

## Choose the Fan Setting (Auto or On)
Fan **Auto** is the most commonly selected setting and runs the fan only when the heating or cooling system is on.
Fan **On** selection runs the fan continuously for increased air circulation or to allow additional air cleaning.

## Choose the System Setting (Cool, Off, Heat, Emer, Auto)
Press the SYSTEM button to select:

**Heat:** Thermostat controls only the heating system.

**Off:** Heating and Cooling systems are off.

**Cool:** Thermostat controls only the cooling system.

**Auto:** Auto Changeover is used in areas where both heating and cooling may be required on the same day. **AUTO** allows the thermostat to automatically select heating or cooling depending on the indoor temperature and the selected heat and cool temperatures. When using **AUTO**, be sure to set the Cooling temperatures more than 1° Fahrenheit higher than the heating temperature.

**Emer:** Setting is available only when the thermostat is configured in HP1 or HP2 mode.

## Manual Operation for Non-Programmable Mode
Press the SYSTEM button to select Heat or Cool and use the △ or ▽ buttons to adjust the temperature to your desired setting. After selecting your desired settings you can also press the SYSTEM button to select **AUTO** to allow the thermostat to automatically change between Heat and Cool.

## Manual Operation (Bypassing the Program) Programmable Mode
Press △ or ▽ and the HOLD button and adjust the temperature wherever you like. This will override the program. The **HOLD** feature bypasses the program and allows you to adjust the temperature manually, as needed. Whatever temperature you set in **HOLD** will be maintained 24 hours a day, until you manually change the temperature or press **Run Schedule** to cancel **HOLD** and resume the programmed schedule.

## Program Override (Temporary Override)
Press △ or ▽ buttons to adjust the temperature. This will override the temperature setting for a (default) four hour override period. The override period can be shortened by pressing ◁ or lengthened by pressing ▷. Program Override period can range from 15 minutes to 7 days.

**Example:** If you turn up the heat during the morning program, it will be automatically lowered later, when the temporary hold period ends. To cancel the temporary setting at any time and return to the program, press **Run Schedule**.

If the SYSTEM button is pressed to select **AUTO** the thermostat will change to Heat or Cool, whichever ran last. If it switches to heat but you want cool, or it changes to cool but you want heat, press both △ or ▽ buttons simultaneously to change to the other mode.

# PROGRAMMING ————————————

## Set Current Time and Day
1) Press Menu key to enter installer menu. Then press Set Time once to indicate hour & A or P designation in clock display.
2) Press and hold either the ▷ or ◁ touch key until you reach the correct hour and A or P designation.
3) Press Set Time again to display minutes only in clock display.
4) Press and hold either the ▷ or ◁ touch keys until you reach the correct minutes.
5) Press Set Time once again to display year.
6) Press and hold either the ▷ or ◁ touch key until you reach the correct year.
7) Press Set Time once again to display month.
8) Press and hold either the ▷ or ◁ touch key until you reach the correct month.
9) Press Set Time once again to display date of the month along with day of the week at top row (which is automatic).
10) Press and hold either the ▷ or ◁ touch key until you reach the correct day of the month and day of the week is automatically calculated and displayed at the top row.
11) Press Run Schedule once; now the display will show the correct time and room temperature.

## Automatic Daylight Saving Calculation
The Real Time Clock will adjust automatically for daylight savings time, in the following manner:
Increment one hour at 2 AM on the second Sunday of March and decrement one hour at 2 AM on the first Sunday of November. (New DST effective 2007).
The daylight saving feature can be enabled or disabled in installer configuration menu. Default is **dS ON** (enabled).
After entering installer configuration mode, momentarily press △ or ▽ touch key until the display indicates **dS** (in actual temperature digits) and on (default – in clock digits). ▷ and ◁ keys will toggle display and operation from on to OFF.

# PROGRAMMING

## Programming Tip: Copy Program

When programming your thermostat, you may copy the program from one day to another day or group of days using the **Copy** key. In 7 day programming mode, a day can be copied to another day or all six other days. In 5/1/1 day programming mode the weekday (Mon – Fri) program can be copied into Sat and Sun or either Sat or Sun.

To copy a program from one day to another:
1)  In Set Schedule mode, enter the program for the day or select the day you wish to copy by pressing **Advance Day**.
2)  Press **Copy**. The display will show **"Copy"** next to the SYSTEM key and the day of the week that will be copied.
3)  Press **Advance Day**. The day being copied will be indicated and the other days will be flashing.
4)  If you wish to copy to all days skip to next step or press **Advance Day** until the day you wish to copy to is flashing.
5)  Press **Copy**. **"Copy"** will disappear, the day you copied from will disappear and the day(s) you copied to will be on.
6)  If you wish to copy this same program into other days, press **Copy** and repeat steps 3, 4 and 5.
7)  Press **Run Schedule** to return to normal operation.

Fill in the blank schedule on the next page then:

## Enter the Heating Program

1)  Press the Menu button and then press Set Schedule. Press SYSTEM button to select either **"Heat"** or **"Cool"** in the system switch area indicating the active mode being programmed. You can switch to the other mode by pressing the system switch at any time.
2)  The top of the display will show the day(s) being programmed. The time and set at temperature are also displayed. **"Morning"** will also be displayed to indicate the period.
3)  Press △ or ▽ key to change the temperature to your selected temperature for the 1st heating period (Morning).
4)  Press ▷ or ◁ key to adjust the start time for period. The time will change in 15 minute increments.
5)  Press **FAN** to select **Auto** or **Prog**.
6)  After you have set the time and the temperature for the period to begin, press Set Schedule to advance to the next program period.
7)  Repeat steps 2 through 6 until all of the program times and temperatures are set for all program periods on that day.
8)  Press "Advance Day" to change to the next day and repeat steps 2 through 8.
9)  When programming is complete and all of the times and temperatures match your desired heating schedule, press Run Schedule. The thermostat will now run your program.

## Enter the Cooling Program

1)  Press the SYSTEM button until the Cool icon appears.
2)  Follow **Enter Heating Program** instructions for entering cooling times and temperatures.

## Automatic Schedule

This feature provides a method to program every day with the most popular time and temperature settings using one key. For this feature to be available, the Auto Schedule options (Installer/Configuration menu item 17, **AS Heat**, or item 18, **AS Cool**) must be selected **On**.

To use Auto Schedule, press **Run Schedule** to be sure you are in normal operating mode. In SYSTEM Heat mode, use the △ or ▽ keys to select your "Comfort Temperature". When your "Comfort Temperature" is selected, press **Auto Schedule** key. The key will begin to flash indicating that the feature is ready to store your selected temperature. Press **Auto Schedule** a second time to complete the process. The **Auto Schedule** key will disappear to indicate that the Auto Schedule command has been accepted.

In Heat mode the thermostat will maintain your "Comfort Temperature" during the Morning, Day and Evening periods and setback 6° for the Night. Morning period will begin at 6:30 AM and Night period will begin at 10:30 PM.

To set the Auto Schedule temperature for Cool mode, press SYSTEM to change the mode to Cool and repeat setting the temperature.  In Cool mode, the thermostat will maintain your selected "Comfort Temperature" continuously.

The "Comfort Temperature" can be temporarily overridden by changing the setpoint temperature using the △ or ▽ keys. Once Auto Schedule has been set and the key has disappeared, it can be reset in the Installer/ Configuration menu.

## Entering Fan Program

In the Set Schedule mode, the **FAN** key is used to select the fan operation during a program period. The default state of the **Fan** key is **FAN Auto** (fan runs during a call for cool but not on a call for heat). It can be changed to **FAN Prog** (fan runs during a program period). Each press of the FAN key will change the mode of the fan between **Auto** and **Prog**.

In the Run mode, when a program period that has **FAN Prog** begins, the fan will turn on and stay on during the complete period. The display will show **FAN On Prog**. Pressing the **FAN** key will change **FAN On Prog** to **On** (fan running continuously) or **Auto**. To return to **FAN On Prog**, press **Run Schedule**.

## PROGRAMMING ──────────────

### Energy Saving Factory Pre-Program

The **1F95-1277** thermostats are programmed with the energy saving settings shown in the table below for all days of the week.
If this program suits your needs, simply set the thermostat clock and press the RUN button.
The table below shows the factory set heating and cooling schedule for all days of the week.

| | *Wake Up (Morning) | | Leave For Work (Day) | | *Return Home (Evening) | | Go To Bed (Night) | |
|---|---|---|---|---|---|---|---|---|
| **Heating Program** | 6:00 AM | 70°F | 8:00 AM | 62°F | 5:00 PM | 70°F | 10:00 PM | 62°F |
| **Cooling Program** | 6:00 AM | 75°F | 8:00 AM | 83°F | 5:00 PM | 75°F | 10:00 PM | 78°F |

\* You can eliminate these two program periods in the configuration menu (reference #3) if the building is occupied all day. Day will change to 6:00 am and can be programmed as required.

### Planning Your Program – Important

The Heating and Cooling Program schedules below allow you to pencil in your own program times and temperatures.
The 1F95-1277 comes configured for 7 day programming and can also be configured for 5+1+1 programming (see configuration section).
Factory settings are listed on Monday, Saturday and Sunday. If you are re-programming a 5+1+1 day schedule, pencil in your own times and temperatures directly below the factory times and temperatures.

If you are re-programming a 7 day fill in all lines with the times and temperatures you want.

Keep the following guidelines in mind when planning your program.
• In Heating, lower temperatures will save energy.
• In Cooling, higher temperatures will save energy.
• **If you plan on using Auto Changeover, do not program the heating higher than the cooling.**

### Worksheet for Re-Programming 5+1+1 and 7 Day Program

| Heating Program | Wake Up (Morning) | | Fan | Leave For Work (Day) | | Fan | Return Home (Evening) | | Fan | Go To Bed (Night) | | Fan |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MON** | 6:00 AM | 70°F | Auto | 8:00 AM | 62°F | Auto | 5:00 PM | 70°F | Auto | 10:00 PM | 62°F | Auto |
| | | | | | | | | | | | | |
| **TUE** | | | | | | | | | | | | |
| **WED** | | | | | | | | | | | | |
| **THU** | | | | | | | | | | | | |
| **FRI** | | | | | | | | | | | | |
| **SAT** | 6:00 AM | 70°F | Auto | 8:00 AM | 62°F | Auto | 5:00 PM | 70°F | Auto | 10:00 PM | 62°F | Auto |
| | | | | | | | | | | | | |
| **SUN** | 6:00 AM | 70°F | Auto | 8:00 AM | 62°F | Auto | 5:00 PM | 70°F | Auto | 10:00 PM | 62°F | Auto |
| | | | | | | | | | | | | |

| Cooling Program | Wake Up (Morning) | | Fan | Leave For Work (Day) | | Fan | Return Home (Evening) | | Fan | Go To Bed (Night) | | Fan |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MON** | 6:00 AM | 75°F | Auto | 8:00 AM | 83°F | Auto | 5:00 PM | 75°F | Auto | 10:00 PM | 78°F | Auto |
| | | | | | | | | | | | | |
| **TUE** | | | | | | | | | | | | |
| **WED** | | | | | | | | | | | | |
| **THU** | | | | | | | | | | | | |
| **FRI** | | | | | | | | | | | | |
| **SAT** | 6:00 AM | 75°F | Auto | 8:00 AM | 83°F | Auto | 5:00 PM | 75°F | Auto | 10:00 PM | 78°F | Auto |
| | | | | | | | | | | | | |
| **SUN** | 6:00 AM | 75°F | Auto | 8:00 AM | 83°F | Auto | 5:00 PM | 75°F | Auto | 10:00 PM | 78°F | Auto |
| | | | | | | | | | | | | |

# PROGRAMMING

## Wired Remote Temperature Sensing

One remote temperature sensor can be installed indoor or outdoor and connected to the thermostat by a maximum cable length of 100 meters (300 feet). Terminals +, S and - on the terminal block allow connection of the remote sensor. The thermostat must have 24 VAC Common connection to terminal C for the remote sensor to operate. The remote sensor can be enabled or disabled in the Installer/Configuration menu, item 25.

When remote sensor, **Remote**, is selected **Off** (factory default), no remote sensor is enabled. When remote sensor is selected **On**, the next step is to select the remote as indoor, **Remote In**, or outdoor, **Remote Outdoor**. If the remote is selected as **Remote In**, an additional step will be to select if the temperature shown on the display will be from the thermostat, **LS On**, or the remote sensor **Ls Off**.

In normal operation, when a remote sensor is enabled the time digits of the display will alternate between the time and the remote temperature for three seconds each. Above the remote temperature will be **Remote**, for indoor sensor or **Outdoor Remote**, for outdoor sensor. If the remote sensor is an indoor sensor and the local display has been disabled, the temperature displayed as the room temperature will be the remote sensor temperature.

Sensing Range:
Outdoor temperature range is -40 to 140°F
Indoor temperature range is 32 °F to 99 °F

## Weight of Remote Reading:

The thermostat is designed to receive the temperature of the indoor remote sensor and average, or weight, it with the local sensor in the thermostat for each program period. The averaging will be active only when the local sensor and the indoor remote sensor are both functional and enabled in the Installer/Configuration menu.

When the thermostat is in the Set Schedule mode, the weight of the indoor sensor will be shown in the current temperature digits of the display. The weight will show as **A2** (average and default), **H4** (high) or **L1** (low). Pressing the ▷ and ◁ keys at the same time will change the weight for the program period. The weight of the local sensor is fixed.

In normal operation of the thermostat, the current temperature displayed will be the weighted average of the local sensor and the remote sensor using the formula (local sensor weight x local sensor temperature) + (remote sensor weight x remote sensor temperature) / (local sensor weight + remote sensor weight).

Example: Local sensor temperature is 80° and the remote sensor is 70°.
If weight is selected H4, the averaged temperature of 72° will be displayed.
(1 x 80) + (4 x 70) / 5 = 72°

If weight is selected **A2**, the average temperature of 73° will be displayed.
(1 x 80) + (2 x 70) / 3 = 73.3°

If weight is selected **L1**, the average temperature of 75° will be displayed.
(1 x 80) + (1 x 70) / 2 = 75°

The example shows that the weight selected would prioritize the overall averaged temperature between the two sensors. The high weight selection caused the remote sensor to have a higher influence in the calculated temperature average than the local sensor and the low weight selection caused the remote sensor to have less influence.

## Dual Fuel Temperature Setpoint

When the thermostat is configured for Heat Pump mode and an outside remote sensor is installed, the thermostat can monitor the outside temperature. When the outside temperature falls below a user selectable temperature, the thermostat will switch to gas heat and shut down the compressor. This eliminates the need for a fossil fuel kit.

The user selectable temperature is called the dual fuel temperature setpoint, **dF** and is set in the Installer/Configuration menu, item 26. The dual fuel temperature setpoint can be set to a temperature of 5 through 50. A selection of 5 (default setting) disables this feature and menu selection of **Cd** will not be available.

After the dual fuel temperature setpoint is set above 5 and ⚠ is pressed, a delay, **Cd**, can be set for compressor shutdown after the auxiliary stage is energized. This delay can be set from 0 seconds to 99 seconds to minimize the time that the system may blow cooler air until the alternate source of heat comes on. Default setting for delay is 60. When setting the delay if the ▷ or ◁ keys are held depressed, the setpoint will increase or decrease at the rate of one degree every half second for the first three seconds and double the speed after three seconds.

# TROUBLESHOOTING

### Reset Operation

**Note:** When thermostat is reset, installer configuration menu settings and programming will reset to factory settings.

If a voltage spike or static discharge blanks out the display or causes erratic thermostat operation, you can reset the thermostat by removing the wires from terminals R and C (do not short them together) and removing batteries for 2 minutes. After resetting the thermostat, replace the wires and batteries. If the thermostat has been reset and still does not function correctly contact your heating/cooling service person or place of purchase.

| Symptom | Possible Cause | Corrective Action |
|---|---|---|
| **No Heat/No Cool/No Fan (common problems)** | 1. Blown fuse or tripped circuit breaker.<br>2. Furnace power switch to OFF.<br>3. Furnace blower compartment door or panel loose or not properly installed.<br>4. Loose connection to thermostat or system. | Replace fuse or reset breaker.<br>Turn switch to ON.<br>Replace door panel in proper position to engage safety interlock or door switch.<br>Tighten connections. |
| **No Heat** | 1. Pilot light not lit.<br>2. Furnace Lock-Out Condition. Heat may also be intermittent.<br><br><br><br>3. Heating system requires service or thermostat requires replacement. | Re-light pilot.<br>Many furnaces have safety devices that shut down when a lock-out condition occurs. If the heat works intermittently contact the furnace manufacturer or local HVAC service person for assistance.<br>**Diagnostic:** Set SYSTEM Switch to **HEAT** and raise the setpoint above room temperature. Within a few seconds the thermostat should make a soft click sound. This sound usually indicates the thermostat is operating properly. If the thermostat does not click, try the reset operation listed above. If the thermostat does not click after being reset contact your heating and cooling service person or place of purchase for a replacement. If the thermostat clicks, contact the furnace manufacturer or a HVAC service person to verify the heating is operating correctly. |
| **No Cool** | 1. Cooling system requires service or thermostat requires replacement. | Same as diagnostic for No Heat condition except set the thermostat to **COOL** and lower the setpoint below the room temperature. There may be up to a five minute delay before the thermostat clicks in Cooling. |
| **Heat, Cool or Fan Runs Constantly** | 1. Possible short in wiring.<br>2. Possible short in thermostat.<br>3. Possible short in heat/cool/fan system.<br>4. FAN Switch set to Fan **ON**. | Check each wire connection to verify they are not shorted or touching together. No bare wire should stick out from under terminal block. Try resetting the thermostat as described above. If the condition persists the manufacturer of your system or service person can instruct you on how to test the Heat/Cool system for correct operation. If the system operates correctly, replace the thermostat. |
| **Thermostat Setting & Thermostat Thermometer Disagree** | 1. Thermostat thermometer setting requires adjustment. | The thermometer can be adjusted +/- 4 degrees. See Temperature Display Adjustment in the Configuration Menu section. |
| **Furnace (Air Conditioner) Cycles Too Fast or Too Slow (narrow or wide temperature swing)** | 1. The location of the thermostat and/or the size of the Heating System may be influencing the cycle rate. | Digital thermostats provide precise control and cycle faster than older mechanical models. The system turns on and off more frequently but runs for a shorter time so there is no increase in energy use. If you would like an increased cycle time, choose **SL** for slow cycle in the Configuration menu, step 7 (heat) or 8 (cool). If an acceptable cycle rate is not achieved, contact a local HVAC service person for additional suggestions. |
| **Forgot Keypad Lockout Code** | | Press the menu button (button will disappear) and hold in for 20 seconds. This unlocks the thermostat. |