Simplicity is in its name: FHP offers ICM’s SimpleComfort® PRO series thermostats feature innovation and technology that provides programming simplicity with precise control for year-round comfort and energy savings. Our patented Thermal Intrusion Barrier and patent-pending SimpleSet™ Target Programming set new industry standards in thermostat technology and are exclusive to each PRO series model.

- 3-Stage heat/2-Stage cool
- Single or dual compressor heat pump
- New ICM patented Thermal Intrusion Barrier
- New ICM patent-pending SimpleSet™ Target Programming technology
- Large display with backlight
- Permanent memory
- Accuracy: ±1°F, ±0.5°C
- Programmable fan mode
- Manual or auto changeover
- Field adjustable calibration
- Hardwired
- Dual fuel compatible
- Extra comfort and energy savings modes between stages
- Adjustable maximum heat/minimum cool setpoints
- Adjustable temperature differentials
- Configurable remote sensor compatible
- Selectable °F or °C
- Keypad lockout
- Soft touch controls
- Status LEDs
SC5812
Programmable 7-day, 5-2-day & 5-1-1 day
3-Stage heat/2-Stage
cool or heat pump
hardwired

Specifications

Electrical Rating:
- 24 VAC (18-30 VAC)
- 1 amp maximum per terminal
- 4 amp minimum total load
- Easy access terminal block

Temperature Control Ranges:
- 45° F to 90° F, Accuracy: ± 1° F
- 7° C to 32° C, Accuracy: ± 5° C

System Configurations:
- 3-Stage heat/2-Stage cool
- Single or dual compressor heat pump

Terminations:
- SC5812: R, C, W1/O/B, Y1, W2, Y2, G, W3, S1, S2
Made in USA

AR7806
Programmable Electronic Thermostat

- Service Light
- 7-Day, 5-2-Day or 5-1-1-Day Programmable
- Configurable
- 3-Stage Heat/2-Stage Cool Systems
- 2-Stage Heat Pump Systems
- Large Display With Backlight
- Selectable Fahrenheit or Celsius
- Compatible with Gas, Oil, or Electric
- Dual Fuel Compatible
- SimpleSet™ Field Programming
- Status Indicator Light
- Relay Outputs
  (minimum voltage drop in thermostat)
- Remote Sensor Compatible
- Ideally Suited for:
  - Residential (New Construction/Replacement)
  - Light Commercial

Installation, Operation & Application Guide

For more information on our complete range of American-made products – plus wiring diagrams, troubleshooting tips and more, visit us at www.icmcontrols.com
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Parts Diagram

- **Up button**
- **Down button**
- **Right (fan) button**
- **Left (system) button**
- **Field programming pins**
- **Status light**
- **Configuration switch**
- **Service light**
- **Reset switch**

**Configuration switch**
- Switch
- Left (system) button
- Right (fan) button
- Down button
- Up button

**Field programming pins**
- L S1 S2 R C W Y1 W2 Y2 G W3
**Specifications**

**Electrical rating:**
- 24 VAC (18-30 VAC)
- 1 amp maximum per terminal
- 3 amp maximum total load

**Temperature control range:** 45°F to 90°F (7°C to 32°C)  
**Accuracy:** ± 1°F (± 0.5°C)

**System configurations:** 3-stage heat, 2-stage cool, heat pump, gas, oil, electric

**Timing:** Anti-short Cycle: 5 minutes (bypass anti-short cycle delay by returning to OFF mode for 5 seconds)

  - Backlight Operation: 10 seconds

**Terminations:** L, S1, S2, R, C, W/O/B, Y1, W2, Y2, G, W3
**Important Safety Information**

**WARNING!:** Always turn off power at the main power supply before installing, cleaning, or removing thermostat.

- This thermostat is for 24 VAC applications only; do not use on voltages over 30 VAC
- Do not short across terminals of gas valve or system control to test operation; this will damage your thermostat and void your warranty
- All wiring must conform to local and national electrical and building codes
- Do not use air conditioning when the outdoor temperature is below 50 degrees; this can damage your A/C system and cause personal injuries
- Use this thermostat only as described in this manual

**Package Contents/Tools Required**

Package includes: AR7806 thermostat on base, thermostat cover, wiring labels, screws and wall anchors, Installation, Operation and Application Guide

Tools required for installation: Drill with 3/16” bit, hammer, screwdriver

**To Remove Existing Thermostat**

**ELECTRICAL SHOCK HAZARD – Turn off power at the main service panel by removing the fuse or switching the appropriate circuit breaker to the OFF position before removing the existing thermostat.**

1. Turn off power to the heating and cooling system by removing the fuse or switching the appropriate circuit breaker off.
2. Remove cover of old thermostat. This should expose the wires.
3. Label the existing wires with the enclosed wire labels before removing wires.
4. After labeling wires, remove wires from wire terminals.
5. Remove existing thermostat base from wall.
6. Refer to the following section for instructions on how to install this thermostat.
To Install Thermostat

ELECTRICAL SHOCK HAZARD – Turn off power at the main service panel by removing the fuse or switching the appropriate circuit breaker to the OFF position before removing the existing thermostat.

IMPORTANT: Thermostat installation must conform to local and national building and electrical codes and ordinances.

** Note: Mount the thermostat about 5 feet above the floor. Do not mount the thermostat on an outside wall, in direct sunlight, behind a door, or in an area affected by a vent or duct.

1. Turn off power to the heating and cooling system by removing the fuse or switching the appropriate circuit breaker off.
2. To remove cover, pull gently at the seam at the top.
3. Put thermostat base against the wall where you plan to mount it (Be sure wires will feed through the wire opening in the base of the thermostat).
4. Mark the placement of the mounting holes.
5. Set thermostat base and cover away from working area.
6. Using a 3/16” drill bit, drill holes in the places you have marked for mounting.
7. Use a hammer to tap supplied anchors in mounting holes.
8. Align thermostat base with mounting holes and feed the control wires through slit in thermal intrusion barrier and into wire opening.
9. Use supplied screws to mount thermostat base to wall.
10. Insert stripped, labeled wires in matching wire terminals.
   CAUTION!: Be sure exposed portion of wires does not touch other wires.
11. Gently tug wire to be sure of proper connection. Double check that each wire is connected to the proper terminal.
12. Turn on power to the system at the main service panel.
13. Configure thermostat (see Page 13) to match the type of system you have.
14. Replace cover on thermostat by snapping it in place.
15. Test thermostat operation as described in “Testing the Thermostat” (Page 24).
Wiring Diagrams

Heat/Cool Systems

Transformer

120 VAC

24 VAC

Service Light

Optional remote or outdoor sensor

Heat #1

Cool #1

Heat #2

Cool #2

Fan

Heat #3

L

S1

S2

R

CTHERMOSTAT

W O/B

Y1

W2

Y2

G

W3
Single Compressor heat pump with electric backup

Dual Compressor heat pump with electric backup

Transformer

120 VAC 24 VAC

Service Light

Optional remote or outdoor sensor

Reversing Valve

Compressor

Auxiliary Heat #1

Fan

Auxiliary Heat #2

Transformer

120 VAC 24 VAC

Service Light

Optional remote or outdoor sensor

Reversing Valve

Compressor #1

Auxiliary Heat

Compressor #2

Fan

Y2

W2

Y1

W1

R

C

W O/B

T H E R M O S T A T
Single Compressor
heat pump with gas/oil backup

Dual Compressor
heat pump with gas/oil backup

Transformer

120 VAC 24 VAC

Service Light

Optional remote or outdoor sensor

Reversing Valve

Compressor

Oil/Gas Heat

Fan

W3

Y2

W2

RCW

S2

S1

L

Transformer

120 VAC 24 VAC

Service Light

Optional remote or outdoor sensor

Reversing Valve

Compressor #1

Oil/Gas Heat

Compressor #2

Fan

W3

Y2

W2

RCW

S2

S1

L
Remote Sensor Installation (Optional)

Terminals S1 and S2 can be used for an outdoor sensor or for an indoor remote sensor.

The outdoor sensor is used to change system operation based on the outdoor temperature. It can be used for heat pumps with gas/oil backup or heat pumps with electric backup.

The indoor remote sensor is used to read the indoor temperature in a different location. This is beneficial when the thermostat is not mounted in the ideal location.

1. Remove cover from remote sensor housing.
2. Select an appropriate location for mounting the remote sensor.
3. Mount remote sensor unit using hardware provided.
4. Install two strand shielded wire between remote sensor and thermostat. Shielded wire is recommended. **Do not** run remote sensor wire in conduit with other wires.
   - Wire 1 should run between the S1 terminal on the thermostat and the S1 terminal on the remote sensor
   - Wire 2 should run between the S2 terminal on the thermostat and the S2 terminal on the remote sensor
   - Connect the shielding of the wire to the S2 terminal on the thermostat
5. Configure the thermostat to operate with the remote indoor sensor (see Configuration Mode setting 17, Page 17) or use it for an outdoor sensor for heat pump systems (see Page 9).
## Terminal Designator Descriptions

- **R** – 24 VAC hot
- **C** – 24 VAC common
- **W1/O/B** – Configurable
  - **W1** – 1st stage heat for non-heat pump systems
    - **O** – cool active reversing valve
    - **B** – heat active reversing valve
  - **Y1** – 1st stage cool, 1st stage heat for heat pumps
  - **W2** – 2nd stage heat for 1 compressor heat pump and non-hp, 3rd stage heat for 2 compressor heat pump systems
  - **Y2** – 2nd stage cool for 2 compressor systems, 2nd stage heat for 2 compressor heat pump systems
  - **G** – Fan
  - **W3** – 3rd stage heat for non-hp systems
  - **L** – Service light

## AR7806 Output Chart

<table>
<thead>
<tr>
<th></th>
<th>1ST Cool</th>
<th>2ND Cool</th>
<th>1ST Heat</th>
<th>2ND Heat</th>
<th>3RD Heat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat/Cool</td>
<td>Y1,G</td>
<td>Y1,Y2,G</td>
<td>W1,G*</td>
<td>W1,W2,G*</td>
<td>W1,W2,W3,G*</td>
</tr>
<tr>
<td>Heat Pump (One Compressor)</td>
<td>Y1,G,O</td>
<td>Y1,G,O</td>
<td>Y1,G,B</td>
<td>Y1,W2,G,B</td>
<td>Y1,W2,W3,G,B</td>
</tr>
<tr>
<td>Heat Pump (Two Compressors)</td>
<td>Y1,G,O</td>
<td>Y1,Y2,G,O</td>
<td>Y1,G,B</td>
<td>Y1,Y2,G,B</td>
<td>Y1,Y2,W2,G,B</td>
</tr>
<tr>
<td>Dual Fuel (One Compressor)</td>
<td>Y1,G,O</td>
<td>Y1,G,O</td>
<td>Y1,G,B</td>
<td>W2</td>
<td>W2,W3</td>
</tr>
<tr>
<td>Dual Fuel (Two Compressors)</td>
<td>Y1,G,O</td>
<td>Y1,Y2,G,O</td>
<td>Y1,G,B</td>
<td>Y1,Y2,G,B</td>
<td>W2</td>
</tr>
<tr>
<td>Emergency Heat (Heat Pump Only)</td>
<td>N/A</td>
<td>N/A</td>
<td>W2,G</td>
<td>W2,W3,G</td>
<td>N/A</td>
</tr>
</tbody>
</table>

* G not energized when configured as a gas/oil system

The AR7806 thermostat is configurable for all systems. The configuration directly affects the outputs. Use the output chart to correctly configure and wire the thermostat to your system.
Configuration Mode

The configuration mode is used to set the AR7806 to match your heating/cooling system. The AR7806 functions with heat pump, air conditioning, gas, oil or electric heat systems.

To configure the AR7806, perform the following steps:

1. Verify the AR7806 is in the **OFF** mode.
   Press the **SYS** (left) button until off mode displays.

2. Remove the cover of the thermostat by gently pulling near one of the corners at the top of the thermostat.
   
   **Note:** Do not force open. Use a small coin or slotted screwdriver to release tabs if necessary.

3. Press the **CONFIG** button for 1 second while the AR7806 is in **OFF** mode.

   Press the **up** or **down** button to change settings within each screen.

   Press the **right** button to advance to the next screen.

   **Note:** Pressing the **left** button will return you to the previous screen.

To exit configuration mode, press the **CONFIG** switch for 1 second.
The setup screens for Configuration Mode are as follows:

1. **Temperature Scale (F or C)** – Choose Fahrenheit or Celsius.
   Press the up or down button to select.
   Press the right button to advance to the next screen.

2. **1st Stage Temperature Differential** (1°F to 5°F) (0.5°C to 2.5°C)
   Set the number of degrees between your “setpoint” temperature and your “turn on” temperature.
   Press the up or down button to set differential value.
   Press the right button to advance to the next screen.

3. **2nd Stage Temperature Differential** (1°F to 5°F) (0.5°C to 2.5°C)
   Set the number of degrees between when stage 1 turns on and when stage 2 turns on.
   Press the up or down button to set differential value.
   Press the right button to advance to the next screen.

4. **3rd Stage Temperature Differential** (1°F to 5°F) (0.5°C to 2.5°C)
   Set the number of degrees between when stage 2 turns on and when stage 3 turns on.
   Press the up or down button to set differential value.
   Press the right button to advance to the next screen.
5. **Staged Off Outputs**

Select whether the outputs for heating and cooling are staged off independently or are satisfied simultaneously.

1 = outputs staged off independently

0 = outputs off simultaneously (best for dual fuel)

**Note:** For 2 compressor heat pumps and multi-stage gas/oil systems, stage 3 is staged off independently when SO is set to 0.

Press the up or down button to set.

Press the right button to advance to the next screen.

6. **Minimum Deadband** (1°F to 9°F) (1°C to 5°C)

Set the minimum separation between heat setpoint and cool setpoint in Auto Changeover Mode.

Press the up or down button to set deadband value.

Press the right button to advance to the next screen.
7. **System** – Set for heat pump, non-heat pump, reversing valve operation and number of compressors in your system.

<table>
<thead>
<tr>
<th>Choose</th>
<th>System</th>
<th>Reversing Valve Active</th>
<th>Number of Compressors</th>
<th>Type of Heat</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Heat Pump</strong></td>
<td>HP</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HP</td>
<td>b</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HP</td>
<td>0</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HP</td>
<td>b</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>Non-Heat Pump</strong></td>
<td>Heat</td>
<td></td>
<td></td>
<td>Gas</td>
</tr>
<tr>
<td></td>
<td>Heat</td>
<td></td>
<td></td>
<td>Electric</td>
</tr>
</tbody>
</table>

Press the **up** or **down** button to select.
Press the **right** button to advance to the next screen.

8. **Dual Fuel System** – Appears only if heat pump is selected.
1 = Heat pump with gas/oil furnace backup
0 = Heat pump with electric backup
Press the **up** or **down** button to select.
Press the **right** button to advance to the next screen.
9. **Outdoor Upper Setpoint**  (50°F to 25°F, – –) (10°C to -4.0°C, – –)

Appears only if heat pump is selected.

**Note:** See chart on Page 15 for more information

**For Heat Pumps With Gas/Oil Backup**

When the ambient temperature is below the selected temperature, the heat pump will be locked out and only the furnace will operate.

**For Heat Pumps With Electric Backup**

When the ambient temperature is above the selected temperature, the heat pump will operate and electric backup will be locked out.

Press the **up** or **down** button to select temperature.

Press the **right** button to advance to the next screen.

10. **Outdoor Lower Setpoint** (select – – to disable)

Appears only for heat pump with electric backup with outdoor upper setpoint enabled.

**Note:** See chart on Page 15 for more information

When the ambient temperature is below the selected temperature, heat pump is locked out and only electric heat will operate

Press the **up** or **down** button to select temperature.

Press the **right** button to advance to the next screen.

See “Remote Sensor When Used as Outdoor Sensor” diagram on next page.
Remote Sensor When Used as Outdoor Sensor

Heat Pump with Electric Backup

Heat pump operation only

Both heat pump and electric backup

Electric backup only

Heat Pump with Gas/Oil Backup

Heat pump operation only

Gas/oil operation only

Outdoor Temperature

°F/C

Upper setpoint

Lower setpoint

Outdoor Temperature
11. **Auxiliary Delay ON** – (0-30 minutes) – Set the delay time in minutes for auxiliary heat to be locked out after a call for second stage. This extra savings feature is used to temporarily lock out auxiliary heat devices, allowing just heat pump to try to satisfy heat call.

Press the up or down button to select.

Press the **right** button to advance to the next screen.

---

12. **Lockout (0-8°, NITE, COOL-HEAT)** – Select the number of degrees set temperature can be changed during keypad lockout or select to lockout during NITE period only. **COOL-HEAT** lockout allows adjustment of the set temperatures to the maximum heat set temperature selected in Step 13 and minimum cool set temperature selected in Step 14.

**Note:** The mode cannot be changed when the thermostat is locked.

Press the **up** or **down** button to select.

Press the **right** button to advance to the next screen.

---

13. **Maximum Heat Setpoint** (45°F to 90°F) (7°C to 32°C)
Adjust to control the maximum heat set temperature allowed.

Press the **up** or **down** button to select.

Press the **right** button to advance to the next screen.

---

14. **Minimum Cool Setpoint** (45°F to 90°F) (7°C to 32°C)
Adjust to control the minimum cool set temperature allowed.

Press the **up** or **down** button to select.

Press the **right** button to advance to the next screen.
17. **Temperature Sensor** (1-4) Appears for non-heat pump systems and heat pumps without an outdoor sensor.
   1. Only on-board sensor determines room temperature.
   2. Only remote sensor determines room temperature.
   3. Average temperature of on-board and remote sensor.
   4. Only on-board sensor will be used until NITE period, and then only remote sensor is used.
   
   **Note:** If there is no remote sensor, option 1 must be selected.

Press the **up** or **down** button to select.
Press the **right** button to advance to the next screen.
18. **Cooling Fan Delay Off Time** (0, 30, 60, 90 seconds)
Select the fan purge time for cooling.
Press the **up** or **down** button to select.
Press the **right** button to advance to the next screen.

19. **Fan Recirculation Activation in Non-Program Mode**
Select to operate the recirculation fan: **Never** (OFF), in **Cool** mode only (COOL), and **Cool** and **Heat** mode (COOL & HEAT).
Press the **up** or **down** button to select.
Press the **right** button to advance to the next screen.

20. **Fan Recirculation Time** (20, 40, 60, 120 minutes)
Select the time between fan cycles in minutes
(e.g. 40 minutes = 40 minutes with no fan, then 12 minutes of fan run).
Press the **up** or **down** button to select.
Press the **right** button to advance to the next screen.

21. **Status Indicator Light** (Lt 0, 1, 2, 3)
0 = Status indicator never on
1 = Status indicator on with first stage
2 = Status indicator or with second stage
3 = Status indicator or with third stage
Press the **up** or **down** button to select.

Press the **CONFIG** button for 2 seconds to exit configuration.
Mode of Operation

The AR7806 is a programmable, manual or auto changeover, 3-stage heat, 2-stage cool thermostat. It functions with air conditioning, heat pumps, gas, oil or electric heat systems. It is dual fuel compatible and an outdoor sensor can be used to monitor the crossover temperature.

The thermostat activates the heating appliance when the room temperature is below the set heat temperature (by the differential temperature) and the red indicator light (configurable) on the thermostat will light. The AR7806 will stop outputting and the red light will turn off when the call for heat has been satisfied. With heat pumps, the thermostat will not let the compressor come on for 5 minutes after it turns off. This protects your compressor.

When the room temperature is greater than the set cool temperature (by the differential temperature), the cooling device is activated and the green indicator light (configurable) on the thermostat will turn on. The AR7806 will stop outputting and the green light will turn off when the call for cooling is satisfied. The thermostat will not let the compressor come on for 5 minutes after it turns off. This protects your compressor.

The AR7806 has five possible operating modes: OFF, Heat, Cool, Heat & Cool, and Program mode. In off mode, the thermostat will not turn on heating or cooling devices. The manual fan can be turned on in all operating modes using the fan button. In heat mode, the thermostat controls the heating system. In the cool mode, the thermostat controls the cooling system. In heat & cool mode, the thermostat controls both the heating and cooling systems. In program mode, the thermostat will automatically be controlled by the set program. Program mode can function with heat mode, cool mode, or heat & cool mode. The clock display alternates with the set temperature display for heat & cool mode.

The program schedule can be overridden by changing the set temperature (up or down button). This puts the AR7806 thermostat into a 2-hour temporary hold. After 2 hours, it will automatically return to the program schedule.

The programmable fan feature can be used to recirculate air while in Program mode. It is activated during the program schedule set up. For non-program schedule fan operation, activate the recirculation feature in the configuration mode (see Step 19 on Page 18).

The AR7806 also has a button lockout feature. This enables the thermostat to be set to the proper mode and temperature and locked so it cannot be tampered with.
**Button Functions**

**UP**
Used to increase the time, set temperatures and to adjust configuration settings.

**DOWN**
Used to decrease the time, set temperatures and to adjust configuration settings.

**SYS (left)**
Used to change from OFF, HEAT, EMERGENCY HEAT, COOL and AUTO changeover modes.

**FAN (right)**
Used to turn on and off the indoor fan.

**PROG (SYS and FAN)**
Used to change from program operation to manual operation.

**UP and PROG**
Held in simultaneously for 10 seconds to lock and unlock the thermostat.

**DOWN and SYS**
Pressed simultaneously to display outdoor temperature if outdoor remote sensor is connected.
Operating Modes

There are five possible operating modes for the AR7806. Off, Cool, Heat, and Cool & Heat modes are accessed by pressing the SYS (left) button. Program mode is accessed by pressing the SYS (left) and FAN (right) buttons simultaneously.

OFF Mode

• In this mode, the thermostat will not turn on the heating or cooling devices

  Note: The indoor fan can be turned on manually in every operating mode by pressing the FAN (right) button. The word FAN shows on the display and the fan icon 🍂 appears when the fan operates.

Heat Mode

• In this mode, the thermostat controls the heating system. When the heat outputs, the flame icon 🔥 appears on the display.

  Note: For heat pumps, there is a five-minute delay for your compressor to restart after it has turned off. To bypass the compressor time delay, go to OFF mode for 5 seconds.
Emergency Heat Mode (Heat pump systems only)
• In emergency heat mode, the heat pump system will be disabled and auxiliary heat will become the primary source of heat.

Cool Mode
• In this mode, the thermostat controls the cooling system. When the cooling outputs, the snowflake icon ❄️ appears on the display.

  **Note:** There is a five-minute delay for your compressor to restart after it has turned off. To bypass the compressor time delay, go to OFF mode for 5 seconds.

Cool and Heat Mode (Auto Changeover)
• In this mode, the thermostat controls the cooling and heating systems, automatically changing over from one to the other as needed.
• The timing display alternates with the set temperature every 10 seconds in the cool and heat mode.
Program Mode

• In this mode, the program function is on (PROG displays), and the thermostat will automatically be controlled by the set program schedule. Program mode can function with heat mode, cool mode, or heat & cool mode. The program schedule can be overridden by changing the set temperature (up or down button). After 2 hours, the program schedule will automatically be resumed. To manually return to the program schedule, press the PROG button twice.
Testing the Thermostat

Once the thermostat is configured, it should be thoroughly tested.

**CAUTION!**: Do not energize the air conditioning system when the outdoor temperature is below 50 degrees. It can result in equipment damage or personal injury.

**Heat Test**
1. Press **SYS** (left) button until heat mode is displayed.
2. Adjust the set temperature so it is 5 degrees above the room temperature.
3. Heat should come on within a few seconds. Red LED may turn on.
4. Adjust the set temperature 2 degrees below the room temperature and the heat should turn off. There may be a fan delay on your system.

**Note**: For heat pumps, there is a five-minute delay to protect your compressor after it turns off. To bypass the compressor time delay, go to OFF mode for 5 seconds.

**Cool Test**
1. Press **SYS** (left) button until cool mode is displayed.
2. Adjust set temperature so it is 5 degrees below room temperature.
3. A/C should come on within a few seconds. Green LED may turn ON.
4. Adjust the set temperature 2 degrees above the room temperature and the A/C should turn off. There may be a fan delay on your system.

**Note**: There is a five-minute time delay to protect the compressor after it turns off. To bypass the compressor time delay, go to OFF mode for 5 seconds.

**Fan Test**
1. Press **FAN** (right) button. Fan displays. Indoor fan turns ON.
2. Press **FAN** (right) button. Indoor fan turns OFF.
Setting the Time and Day of the Week

The time and day of the week must be set for your program schedule to operate correctly.

1. Press the **SYS** (left) button until you are in the OFF mode.

2. Press and hold the **PROG** button (**SYS** (left) and **FAN** (right) buttons pressed simultaneously) in for 6 seconds.

3. Time displays (hour flashing).
   Press the **up** or **down** button to adjust the hour.

4. Press the **FAN** (right) button once to select minutes (minutes flashing).
   Press the **up** or **down** button to adjust the minutes.

5. Press the **FAN** (right) button once to select day of the week (TODAY flashing).
   Press the **up** or **down** button to select current day of the week.

   **Note:** At any time, press the **SYS** (left) button to return to the previous screen or press the **FAN** (right) button to advance to the next screen.

Press the **PROG** button in for 2 seconds to lock values into memory and return to the OFF mode or press the **FAN** (right) button once to enter programming.
**Programming**

**Program Overview**

The AR7806 programmable thermostat has four periods (MORN, DAY, EVE, NITE) that are customizable for each day of the week. Each period will have a start time, heat temperature, cool temperature and programmable fan option. The AR7806 monitors the day and time, while maintaining the specific conditions you have chosen for each period in your program.

Setting the program schedule:

1. Press the **SYS** (left) button until you are in **OFF** mode.
2. Press and hold the **PROG** button (**SYS** and **FAN** buttons pressed simultaneously) for 6 seconds.
3. Press the **FAN** (right) button 3 times.
4. SUN thru SAT are blinking.

From this screen you have 2 options:

1. Press the **FAN** (right) button to begin programming all 7 days at one time, or
2. Press the up button to see the other programming options.

**Note:** The days of the week shown on the display will be programmed simultaneously.

The screens are listed below.

<table>
<thead>
<tr>
<th>Screen 1</th>
<th>SUN</th>
<th>MON</th>
<th>TUE</th>
<th>WED</th>
<th>THU</th>
<th>FRI</th>
<th>SAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screen 2</td>
<td>MON</td>
<td>TUE</td>
<td>WED</td>
<td>THU</td>
<td>FRI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen 3</td>
<td>MON</td>
<td>TUE</td>
<td>WED</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>FRI</td>
</tr>
<tr>
<td>Screen 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SAT</td>
</tr>
<tr>
<td>Screen 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>FRI</td>
<td></td>
</tr>
<tr>
<td>Screen 8</td>
<td>SUN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SAT</td>
<td></td>
</tr>
<tr>
<td>Screen 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SAT</td>
<td></td>
</tr>
<tr>
<td>Screen 10</td>
<td>SUN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
From any of the screens on Page 26, you can press the FAN (right) button to begin entering your program schedule. The days shown on the display will all be programmed simultaneously.

Once the FAN (right) button is pressed, MORN blinks.

Use the up or down button to select a different period (MORN, DAY, EVE, NITE).

Press FAN (right) button to advance to the next screen. Transition time hour blinks.
Use the up or down button to select a different hour.

Press FAN (right) button to advance to the next screen. Transition time minutes blink.
Use the up or down button to select different minutes.

Press FAN (right) button to advance to the next screen. Heat set temperature displays.
Use the up or down button to adjust the heat set temperature.

Press FAN (right) button to advance to the next screen. Cool set temperature displays.
Use the up or down button to adjust the cool set temperature.

Press FAN (right) button to advance to the next screen. Programmable fan screen displays.
Use the up or down button to select:

Choose  Off – Programmable fan disabled
   Cool – Programmable fan runs in Cool mode or after Cool call in auto changeover
   Cool & Heat – Programmable fan runs in Cool mode and in Heat mode and in auto changeover
   On – Indoor fan on continuously

** Note: Programmable fan operates in Program mode only and runs based on time set in configuration step 20 (see Page 18).

Repeat above steps to program the four periods per day.

When the program schedule is complete, press and hold the PROG button (SYS and FAN buttons pressed simultaneously) in for 2 seconds to return to the OFF mode.
**Lockout Feature**

The AR7806 has a button lockout feature so the mode cannot be changed and the temperature adjustment is limited. Select the appropriate lockout from Configuration Mode Settings (Step 12, Page 16) of this guide.

To activate the LOC feature:

1. Simultaneously press the **SYS**, **FAN** and **UP** buttons for 10 seconds.
2.  

To deactivate the LOC feature, repeat steps 1 and 2 above.
Factory Preprogramming

The AR7806 comes preprogrammed with the following schedule:

<table>
<thead>
<tr>
<th>MONDAY thru SUNDAY</th>
<th>MORN 6:00 AM</th>
<th>DAY 8:00 AM</th>
<th>EVE 6:00 PM</th>
<th>NITE 10:00 PM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HEAT 70°F</td>
<td>HEAT 62°F</td>
<td>HEAT 70°F</td>
<td>HEAT 62°F</td>
</tr>
<tr>
<td></td>
<td>COOL 78°F</td>
<td>COOL 85°F</td>
<td>COOL 78°F</td>
<td>COOL 82°F</td>
</tr>
<tr>
<td></td>
<td>FAN Off</td>
<td>FAN Off</td>
<td>FAN Off</td>
<td>FAN Off</td>
</tr>
</tbody>
</table>

Personal Program Schedule

Use the following personal program schedule to record your settings:

<table>
<thead>
<tr>
<th>MONDAY</th>
<th>MORN</th>
<th>DAY</th>
<th>EVE</th>
<th>NITE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Heat</td>
<td>Heat</td>
<td>Heat</td>
<td>Heat</td>
</tr>
<tr>
<td></td>
<td>Cool</td>
<td>Cool</td>
<td>Cool</td>
<td>Cool</td>
</tr>
<tr>
<td></td>
<td>Fan</td>
<td>Fan</td>
<td>Fan</td>
<td>Fan</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TUESDAY</th>
<th>MORN</th>
<th>DAY</th>
<th>EVE</th>
<th>NITE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Heat</td>
<td>Heat</td>
<td>Heat</td>
<td>Heat</td>
</tr>
<tr>
<td></td>
<td>Cool</td>
<td>Cool</td>
<td>Cool</td>
<td>Cool</td>
</tr>
<tr>
<td></td>
<td>Fan</td>
<td>Fan</td>
<td>Fan</td>
<td>Fan</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WEDNESDAY</th>
<th>MORN</th>
<th>DAY</th>
<th>EVE</th>
<th>NITE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Heat</td>
<td>Heat</td>
<td>Heat</td>
<td>Heat</td>
</tr>
<tr>
<td></td>
<td>Cool</td>
<td>Cool</td>
<td>Cool</td>
<td>Cool</td>
</tr>
<tr>
<td></td>
<td>Fan</td>
<td>Fan</td>
<td>Fan</td>
<td>Fan</td>
</tr>
</tbody>
</table>
# Personal Program Schedule (continued)

<table>
<thead>
<tr>
<th>Day</th>
<th>MORN</th>
<th>DAY</th>
<th>EVE</th>
<th>NITE</th>
</tr>
</thead>
<tbody>
<tr>
<td>THURSDAY</td>
<td>HEAT</td>
<td>HEAT</td>
<td>HEAT</td>
<td>HEAT</td>
</tr>
<tr>
<td></td>
<td>COOL</td>
<td>COOL</td>
<td>COOL</td>
<td>COOL</td>
</tr>
<tr>
<td></td>
<td>FAN</td>
<td>FAN</td>
<td>FAN</td>
<td>FAN</td>
</tr>
<tr>
<td>FRIDAY</td>
<td>HEAT</td>
<td>HEAT</td>
<td>HEAT</td>
<td>HEAT</td>
</tr>
<tr>
<td></td>
<td>COOL</td>
<td>COOL</td>
<td>COOL</td>
<td>COOL</td>
</tr>
<tr>
<td></td>
<td>FAN</td>
<td>FAN</td>
<td>FAN</td>
<td>FAN</td>
</tr>
<tr>
<td>SATURDAY</td>
<td>HEAT</td>
<td>HEAT</td>
<td>HEAT</td>
<td>HEAT</td>
</tr>
<tr>
<td></td>
<td>COOL</td>
<td>COOL</td>
<td>COOL</td>
<td>COOL</td>
</tr>
<tr>
<td></td>
<td>FAN</td>
<td>FAN</td>
<td>FAN</td>
<td>FAN</td>
</tr>
<tr>
<td>SUNDAY</td>
<td>HEAT</td>
<td>HEAT</td>
<td>HEAT</td>
<td>HEAT</td>
</tr>
<tr>
<td></td>
<td>COOL</td>
<td>COOL</td>
<td>COOL</td>
<td>COOL</td>
</tr>
<tr>
<td></td>
<td>FAN</td>
<td>FAN</td>
<td>FAN</td>
<td>FAN</td>
</tr>
</tbody>
</table>
SimpleSet™ Field Programming

Requires SimpleSet™ Transfer Cable (ACC-WIH22)

This feature is used for transferring configuration and program schedule from the master to the target thermostat. All thermostats for a job can be mounted and powered up. Configure and program one thermostat. This will be the master. The master will be used to copy the program to the rest of the thermostats.

Preparing the master to Send:

1. The master must be powered with 24 VAC.
2. Verify the master thermostat is in OFF mode.
3. Press SYS (left) button until OFF mode displays.
4. Remove cover of the master thermostat by gently pulling near one of the corners at the top of the thermostat.
   **Note:** Do not force open. Use a small coin or slotted screwdriver to release tabs if necessary.
5. Press the up and down buttons and CONFIG switch simultaneously for 5 seconds.
6. The OUT screen displays indicating the master thermostat is ready to transfer data.
   **Note:** Press the up and down buttons and CONFIG switch simultaneously for 5 seconds to exit from data transfer mode and to return the master to the OFF mode.
7. Turn off power to the master and remove it from the wall.
8. Connect the master to the target using the 3 wire connector. Attach one end to the Master’s FP pins and the other end to the Target’s FP pins.
   **Note:** Target thermostat must be powered with 24 VAC for field programming to occur

When the connection has been made correctly, the master thermostat will power up and the target will count from 5 down to 1. It will then display the LOCK confirming the data has been saved in memory.

When all target thermostats have been completed, reinstall the master thermostat.
Press the up and down buttons and the CONFIG switch simultaneously for 5 seconds to exit from the data transfer mode and to return the master thermostat to the OFF mode.
<table>
<thead>
<tr>
<th>Symptom</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>No display</td>
<td>Check for 24 VAC at thermostat; display is blank when 24 VAC is not present Time and day of week must be reset after extended power loss</td>
</tr>
<tr>
<td>System fan does not come on properly</td>
<td>Verify wiring is correct, check Gas/Electric Configuration (see Setting 7, Page 13)</td>
</tr>
<tr>
<td>All thermostat buttons are inoperative</td>
<td>Verify 24 VAC is present; unit locks out when 24 VAC is not present</td>
</tr>
<tr>
<td>No response with first button press</td>
<td>First button press activates backlight only</td>
</tr>
<tr>
<td>Program schedule activates at the wrong time</td>
<td>Check time (AM/PM) set on thermostat (see Setting the Time, Page 25)</td>
</tr>
<tr>
<td>Thermostat turns on and off too frequently</td>
<td>Adjust temperature differential (see Configuration Mode Setting 2, Page 11)</td>
</tr>
<tr>
<td>Thermostat does not follow program</td>
<td>Verify it is operating in program mode (PROG displays); check time (AM/PM); check if in 2 hour program override</td>
</tr>
<tr>
<td>Fan runs continuously</td>
<td>Press FAN (right) button to turn fan off</td>
</tr>
<tr>
<td>Fan turns on occasionally</td>
<td>Non-Program Mode: Check fan recirculation time (see Configuration Mode Setting 19, Page 18) Program Mode: Check programmable fan setting in program schedule (see Page 27)</td>
</tr>
<tr>
<td>Status indicator light not on during call</td>
<td>Turn status indicator function on (see Configuration Mode Setting 21, Page 18)</td>
</tr>
<tr>
<td>Room temperature is not correct</td>
<td>Calibrate thermostat (see Configuration Mode Setting 15, Page 17) If remote sensor is used, check S1 and S2 terminal connections</td>
</tr>
<tr>
<td><img src="https://example.com/lock_icon" alt="_lock" /> displays when any button is pressed</td>
<td>Thermostat has the button lockout function activated (see Lockout Feature, Page 28 and Configuration Mode Setting 12, Page 16)</td>
</tr>
<tr>
<td><img src="https://example.com/alarm_icon" alt="alarm" /> on display instead of room temperature</td>
<td>Check for a bad connection at S1 and S2 terminals, if used (see Configuration Mode Setting 17, Page 17)</td>
</tr>
<tr>
<td>Heat or Cool not coming on</td>
<td>Verify wiring is correct, gently pull on each wire to verify there is a good connection at terminal block</td>
</tr>
<tr>
<td>Service light on</td>
<td>Have service technician check system</td>
</tr>
<tr>
<td>Problem not listed above</td>
<td>Press Reset button once*</td>
</tr>
</tbody>
</table>

* **Reset Button Function**  Time and day are reset, configuration and program settings are unchanged.
ONE-YEAR LIMITED WARRANTY

The Seller warrants its products against defects in material or workmanship for a period of one (1) year from the date of manufacture. The liability of the Seller is limited, at its option, to repair, replace or issue a non-case credit for the purchase prices of the goods which are provided to be defective. The warranty and remedies set forth herein do not apply to any goods or parts thereof which have been subjected to misuse including any use or application in violation of the Seller’s instructions, neglect, tampering, improper storage, incorrect installation or servicing not performed by the Seller. In order to permit the Seller to properly administer the warranty, the Buyer shall: 1) Notify the Seller promptly of any claim, submitting date code information or any other pertinent data as requested by the Seller. 2) Permit the Seller to inspect and test the product claimed to be defective. Items claimed to be defective and are determined by Seller to be non-defective are subject to a $30.00 per hour inspection fee. This warranty constitutes the Seller’s sole liability hereunder and is in lieu of any other warranty expressed, implied or statutory. Unless otherwise stated in writing, Seller makes no warranty that the goods depicted or described herein are fit for any particular purpose.

Patent No. - Design: 424,953
Patent No. - Thermal Intrusion Barrier: 6,597,275
Patent Pending - SimpleSet™ Target Programming Technology

6333 Daedalus Drive, Cicero, NY  13039
(Toll Free) 800-365-5525     (Phone) 315-233-5266     (Fax) 315-233-5276
www.icmcontrols.com