1F83C-11PR (Programmable)
Installation and Operating Instructions
80 Series Single Stage Thermostat
Battery Powered or Hardwired with Common

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specifications
Electrical Rating:
Battery Power ................................................................. mV to 30 VAC, NEC Class II, 50/60 Hz
Input-Hardwire ................................................................. 20 to 30 VAC, NEC Class II, 50/60 Hz
Terminal Load ................................................................. 1.0 A per terminal, 1.5 A maximum all terminals combined
Setpoint Range ............................................................... 45°F to 99°F (7°C to 37°C)
Rated Differentials: Heat (6°F/HR) ......................... 0.5°F 0.75°F 1.9°F
Cool (6°F/HR) ................................................................. 0.9°F 1.2°F 1.7°F
Operating Ambient ......................................................... 32°F to 105°F (0°C to +41°C)
Display Temperature Range ................................ 32°F to +99°F (0°C to 37°C)
Operating Humidity ......................................................... 90% non-condensing max
Shipping Temperature Range .................................... -20°F to +150°F (-29°C to +65°C)
Thermostat Dimensions ............................................... 3-3/4" H x 6" W x 1-1/8" D

thermostat Applications
- Conventional Gas, Oil, Electric (mV and 24V), Heat Only, Cool Only or Heat/ Cool Systems
- Heat Pump (air source or geothermal) with no Aux. Heat

maximum Stages Heat/Cool
- 1/1

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. Refer to www.thermostat-recycle.org for information on disposing of products containing mercury.

thermostat Installation
Wiring
Refer to equipment manufacturer’s instructions for specific system wiring information. After wiring, see INSTALLER MENU for proper thermostat configuration. Wiring table shown are for typical systems and describe the thermostat terminal functions.

<table>
<thead>
<tr>
<th>Terminal Designations</th>
<th>Terminal Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>RC*</td>
<td>Power for Cooling</td>
</tr>
<tr>
<td>RH*</td>
<td>Power for Heating</td>
</tr>
<tr>
<td>O/B</td>
<td>Changeover Terminal-Energized in Heat (B) or Cool (O) for Heat Pump or Damper Systems</td>
</tr>
<tr>
<td>Y**</td>
<td>Cooling Relay</td>
</tr>
<tr>
<td>G</td>
<td>Fan Relay</td>
</tr>
<tr>
<td>W**</td>
<td>Heating Relay</td>
</tr>
<tr>
<td>C</td>
<td>Common wire for 24V (optional with batteries)</td>
</tr>
</tbody>
</table>

*When both RC and RH wires are present, cut RC/RH jumper (see next page).
**For heat pump systems, add a jumper wire to connect terminals Y and W

Precautions
- Do not exceed the specification ratings.
- All wiring must conform to local and national electrical codes and ordinances.
- This control is a precision instrument, and should be handled carefully. Rough handling or distorting components could cause the control to malfunction.

WARNING
Do not use on circuits exceeding specified voltage. Higher voltage will damage control and could cause shock or fire hazard.

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

Optional Accessory: Wall Cover-Up Plate F61-2663, 6 3/4” W x 4 1/2” H
1.) Gas/Elec Switch
If the system is a heat pump or electric furnace, the GAS/ELEC Switch must be set to Elec. If your system is a gas or oil furnace, the switch must be set to Gas.

2.) O/B Terminal Switch
The O/B switch on this thermostat is factory set to the O position. This will accommodate the majority of heat pump applications, which require the changeover relay to be energized in Cool. If the heat pump being installed requires a B terminal, to energize the changeover relay in Heat, the O/B switch must be moved to the B position.

3.) RC/RH Jumper Wire
This thermostat electrically connects the RC and RH terminals so a jumper wire is not required. If the application provides a separate wire for RC and RH, clip the RC/RH jumper. This will isolate both terminals so they can be independently used.

INSTALLED MENU
To prevent changes that may affect system performance, this thermostat has an INSTALLER’S MENU and an USER MENU. The INSTALLER’S MENU provides access to every option, while the USER MENU provides access to items that will not affect system performance. To access the INSTALLER’S MENU press the Menu button for 8 seconds. The display will show item 30 in the table below. Use Next and Back to navigate through menu items. Press ▲ or ▼ to change a menu setting.

<table>
<thead>
<tr>
<th>Installer’s Menu # (Hold Menu 8 Seconds)</th>
<th>Description</th>
<th>Default Setting (flashing icons)</th>
<th>Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>Heat Cycle Rate (how often the heat will turn on)</td>
<td>MED</td>
<td>SLO – slow MD – medium FAS – fast</td>
</tr>
<tr>
<td>35</td>
<td>Cool Cycle Rate (how often the cooling will turn on)</td>
<td>MED</td>
<td>SLO – slow MD – medium FAS – fast</td>
</tr>
<tr>
<td>50</td>
<td>Compressor Lockout (protects the compressor from short cycling)</td>
<td>OFF</td>
<td>On – 5 minute display OFF – no delay</td>
</tr>
<tr>
<td>65</td>
<td>Maximum Heat Limit (maximum set point for heat mode)</td>
<td>99</td>
<td>47 to 99</td>
</tr>
<tr>
<td>66</td>
<td>Minimum Cool Limit (minimum set point for cool mode)</td>
<td>45</td>
<td>45 to 97</td>
</tr>
<tr>
<td>74</td>
<td>Schedule Type (set as either 7-Day, 5-1-1 Day or Non-Programmable)</td>
<td>5</td>
<td>7 – 7 Day 5 – 5-1-1 Day 0 – Non Programmable</td>
</tr>
</tbody>
</table>

(Installer Menu continued on next page)

TEST EQUIPMENT
Turn on power to the system.

Fan Operation
If your system does not have a G terminal connection, skip to Heating System.
1.) Move fan switch to On position. The blower should begin to operate.
2.) Move fan switch to Auto position. The blower should stop immediately.

Heating System
1.) Move System Switch to Heat position.
2.) Press ▲ to adjust thermostat setting to 1° above room temperature. The system should begin to operate and the thermostat will indicate Heat On.
3.) Press ▼ to adjust thermostat setting 1° below room temperature. The heating system should stop operating and the thermostat should indicate Heat.

Cooling System
1.) Move System Switch to Cool position.
2.) Press ▼ to adjust thermostat setting 1° below room temperature. The blower should come on immediately on high speed, followed by cold air circulation. The thermostat will indicate Cool On. There can be up to a 5 minute delay. (see INSTALLER MENU, item 50)
3.) Press ▲ to adjust thermostat setting to 1° above room temperature. The cooling system should stop operating and the thermostat will indicate Cool.

Note: If Starting Soon is shown on the display, the compressor lockout feature is operating. There will be up to a 5 minute delay before the compressor turns on. (see INSTALLER MENU, item 50)

CAUTION
To prevent compressor and/or property damage, if the outdoor temperature is below 50°F, DO NOT operate the cooling system.

Do not allow the compressor to run unless the compressor oil heaters have been operational for 6 hours and the system has not been operational for at least 5 minutes.
THERMOSTAT OVERVIEW

Before you begin using your thermostat, you should be familiar with its features, display and the location/operation of the thermostat buttons and switches.

THERMOSTAT BUTTONS AND SWITCHES

1. Fan Switch
2. System Switch
3. Backlight Button (located on the top of the thermostat)
4. Set Correct Time
5. Hold a Permanent Temperature
6. Cancels Hold – Returns to Programmed Schedule
7. Raises Temperature Setting
8. Access Menu Options
9. Lowers Temperature Setting

THE DISPLAY

10.) Thermostat is protecting the equipment from short cycling (5-minute delay)
11.) Indicates that the system is running in cool or heat
12.) Displays the current time
13.) Battery status indicator
14.) Low battery indicator
15.) Day of the week used when programming a schedule
16.) Permanent hold (bypassing the schedule)
17.) Temperature setpoint
18.) Appears when the keypad is locked (to prevent unwanted changes)
19.) Next (Menu button) is used to navigate within a menu
20.) Access the schedule and customize thermostat features
21.) Back (Run button) is used to navigate within a menu
22.) Exit (Hold button) returns to the home screen
23.) SEE TROUBLESHOOTING

USER MENU

To customize thermostat settings, press the Menu button from the home screen. Use the ▲ or ▼ buttons to highlight Settings and press Next. Use Next and Back to navigate through menu items. Press ▲ or ▼ to change the setting.

<table>
<thead>
<tr>
<th>User’s Menu # (Press Menu button and release)</th>
<th>Description</th>
<th>Default Setting (flashing icons)</th>
<th>Settings (Press ▲ or ▼)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Schedule Type (set as either 7-Day, 5-1-1 Day or Non-Programmable)</td>
<td>5</td>
<td>7–7 Day 5–5-1-1 Day 0–Non-programmable</td>
</tr>
<tr>
<td>02 E</td>
<td>Early Start (starts heating or cooling early so your programmed temperature is reached by the programmed time)</td>
<td>OFF</td>
<td>On – start early OFF – start at program period time</td>
</tr>
<tr>
<td>03</td>
<td>Fahrenheit or Celsius °F °C – Fahrenheit °C – Celsius</td>
<td></td>
<td></td>
</tr>
<tr>
<td>04</td>
<td>Temperature Display Adjustment (adjust the Room Temperature)</td>
<td>0</td>
<td>-5 to +5</td>
</tr>
<tr>
<td>05 dl</td>
<td>Continuous Display Light (keep the backlight always on – “C” wire required)</td>
<td>OFF</td>
<td>On – always on OFF – momentarily</td>
</tr>
<tr>
<td>06</td>
<td>Change Air Filter (set up a monthly reminder)</td>
<td>OFF</td>
<td>1 to 12 – reminder time (months) OFF – no filter reminder</td>
</tr>
<tr>
<td>07</td>
<td>Keypad Lock (prevent unwanted changes to the thermostat)</td>
<td>OFF</td>
<td>On – disable buttons OFF – all buttons are active</td>
</tr>
</tbody>
</table>

THERMOSTAT OPERATION

Set Current Time and Day

Note: Time icons will flash at initial power up or after a reset.

1.) Press Set Time
2.) Use ▲ or ▼ to adjust the hour
3.) Press Next to advance to set the minutes and day of the week
4.) Press Exit when finished.

The default program is 5-1-1 Day, but can be setup as a 7-Day or Non-Programmable thermostat (refer to the User Menu above)

- Hold Temperature (bypassing the schedule) – With the System switch set to Heat or Cool, momentarily press the Hold button. Hold will be displayed. Use ▲ or ▼ to adjust the temperature. The thermostat will hold the room temperature at the selected setting until you press Run to start program operation again.
- Program Override (Temporary Hold) – Press ▲ or ▼ until the desired temperature is displayed. The thermostat will override the schedule until the next programmed time period with a minimum override of 2 hours. Then the thermostat will automatically revert to the program.
- Keypad Lockout – To prevent unwanted changes, the buttons can be disabled. To turn this feature On, press and hold ▲ and the Menu button until the icon appears (this can also be turned on in the menu). To turn Off, press and hold ▲ and the Menu button for 3 seconds.

Whenever “Replace” appears in the display, new premium brand AA alkaline batteries should be installed. If the house will be unoccupied for an extended period and either “Replace” or “Replace” is displayed, install new batteries before leaving.
**THERMOSTAT SCHEDULE**

Energy Saving Factory Schedule
This thermostat is programmed with the energy saving settings shown in the table below for all days of the week.

<table>
<thead>
<tr>
<th>Heating Schedule</th>
<th>Wake</th>
<th>Leave</th>
<th>Return</th>
<th>Sleep</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:00 AM - 70°F</td>
<td>5:00 PM - 70°F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8:00 AM - 62°F</td>
<td>10:00 PM - 62°F</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cooling Schedule</th>
<th>Wake</th>
<th>Leave</th>
<th>Return</th>
<th>Sleep</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:00 AM - 75°F</td>
<td>5:00 PM - 75°F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8:00 AM - 83°F</td>
<td>10:00 PM - 78°F</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Thermostat can be programmed on or off the subbase

**Troubleshooting continued on next page**

**TROUBLESHOOTING (Continued)**

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Possible Cause</th>
<th>Corrective Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Cool</td>
<td>1.) System Switch not set to Cool</td>
<td>Verify thermostat and system wires are securely attached.</td>
</tr>
<tr>
<td></td>
<td>2.) Loose connection to thermostat or system</td>
<td>Diagnostic: Set System Switch to Cool and lower the setpoint below room temperature. Same procedures 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 if the compressor lock-out option is selected in the installer menu. (see INSTALLER MENU, item 50)</td>
</tr>
<tr>
<td></td>
<td>3.) Cooling System requires service or thermostat</td>
<td></td>
</tr>
<tr>
<td></td>
<td>requires replacement</td>
<td></td>
</tr>
<tr>
<td>Heat, Cool or Fan Runs Constantly</td>
<td>Possible short in wiring, thermostat, heat, cool or fan system</td>
<td>Check each wire connection to verify they are not shorted or touching other wires. Try resetting the thermostat. If the condition persists contact your HVAC service person.</td>
</tr>
<tr>
<td>Thermostat Display &amp; Thermometer Disagree</td>
<td>Thermostat display requires adjustment</td>
<td>Display can be adjusted +/-5°. See User Menu item 04</td>
</tr>
<tr>
<td>Furnace (Air Conditioner) Cycles Too Fast or Slow (narrow or wide temperature swing)</td>
<td>The location of the thermostat and/or the size of the Heating System may be influencing the cycle rate</td>
<td>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. If you would like to increase cycle time, choose SLO for slow cycle in the Installer menu. (Reference menu items 30 &amp; 35) If an acceptable cycle rate is not achieved, contact your HVAC service person.</td>
</tr>
</tbody>
</table>

**Symptom**

1.) Blown fuse or tripped circuit breaker
2.) Furnace power switch to OFF
3.) Furnace blower compartment door panel loose or not properly installed
4.) Loose connection to thermostat or system
5.) Replace fuse or reset breaker
6.) Turn switch to ON
7.) Replace door panel in proper position to engage safety interlock or door switch
8.) Tighten Connections

**Corrective Action**

1.) Heating system is not able to heat the space to within 10 degrees of the setpoint within 2 hours
2.) See corrective action for “No Heat”
3.) Replace thermostat
4.) Make sure keypad lockout is not turned on (denoted by icon)

**Symptom**

1.) Heating system is not able to cool the space to within 10 degrees of the setpoint within 2 hours
2.) See corrective action for “No Cool”
3.) Replace thermostat
4.) Make sure keypad lockout is not turned on (denoted by icon)

**Symptom**

1.) System Switch not set to Heat
2.) Loose connection to thermostat or system
3.) Heating System requires service or thermostat requires replacement
4.) Tighten Connections

Resetting the Thermostat or Thermostat Settings
If the thermostat has good batteries, but has a blank display or does not respond to key presses, the thermostat should be reset by removing the batteries for 2 minutes. This reset will not change the menu settings or program. If the condition persists after reinstalling the batteries, replace the thermostat.

To conveniently reset only the schedule and user settings back to factory defaults, press Menu and Backlight buttons at the same time and hold until the display goes blank and resets.

**HOMEOWNER HELP LINE: 1-800-284-2925**

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