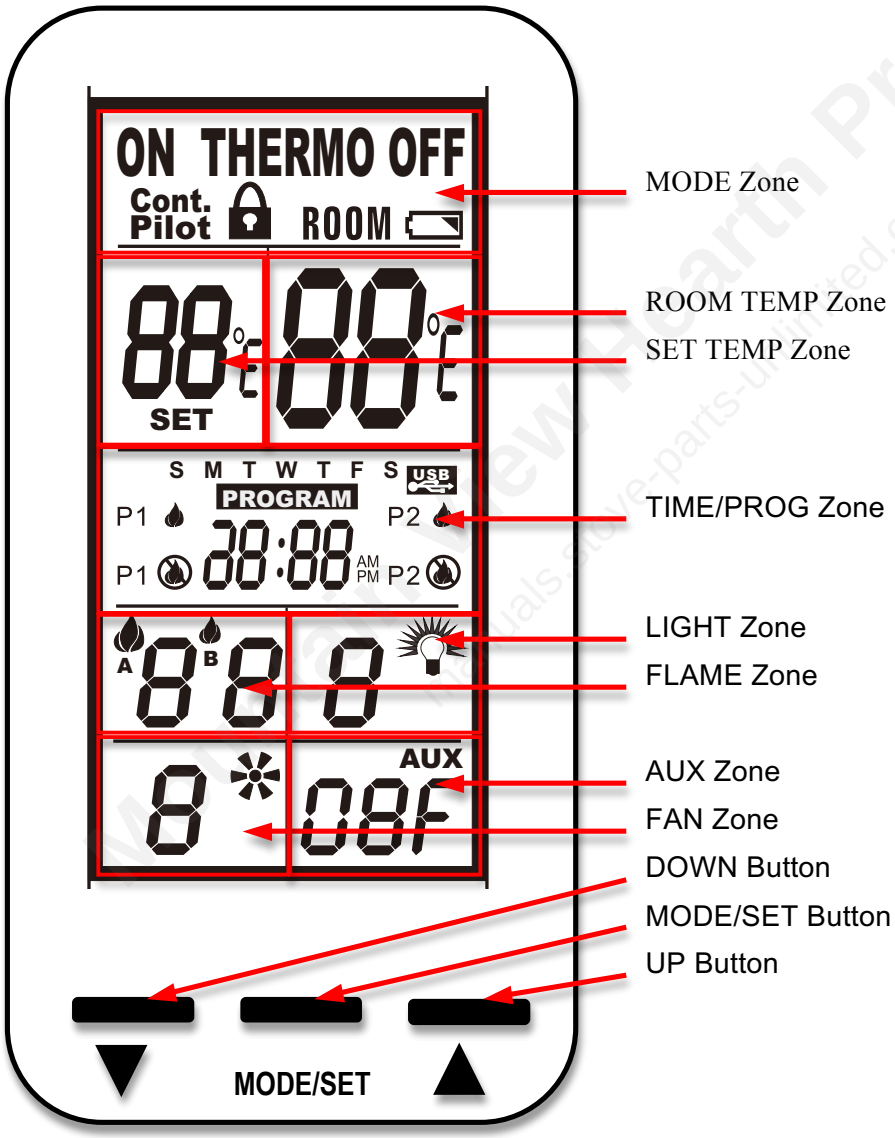
INNOVATIVE HEARTH PRODUCTS

Cat. No. F2689

Basic Construction

- Touch-Screen LCD and three push buttons will allow input from users - the 1st touch of the LCD screen or press of a push button will only illuminate the backlight (will not respond to associated function).
- LCD screen will provide system status & input feedback to user.
- Backlight will illuminate LCD screen for 5 seconds after any user input.
- Powered via four AAA sized alkaline batteries (6V nominal) with LOW BATTERY INDICATOR (5.0V).
- Transmission Frequency: 303.8MHz, certified per FCC Part 15B/ANSI C63.4 and IC RSS-210.

Touch-Screen LCD and Button Layout (not-to-scale)



Learn Process (Pairing the Remote to the Control Module)

NOTE: *The transmitter must be in the "OFF" or "THERMO OFF" in order to allow the remote to pair with the control module.*

- To pair the remote transmitter to the control module, press the learn switch and release. There should be an audible beep indicating the module is ready to accept a transmitter code. Next, press mode/set button twice on the transmitter within 60 seconds to send a signal (the "MODE/SET" button must be pressed once to activate the screen [lights up] and then a second time for the remote to pair). If the signal is received, the module should beep indicating the signal was received. ***Note:*** *the module will remain "Open" and ready to accept a signal for 60-seconds after the learn switch is pressed.*
- The control module will learn up to 3 different transmitter security codes (only one may be a thermostat style).
- Security codes will be retained in memory indefinitely if power is removed.
- Press and hold learn switch on for 6-seconds then release to clear all transmitter security codes retained in memory. After releasing the switch, three series of beeps will be heard. This serves as proof that the transmitter's security codes have been cleared from memory. Repeat learn process as needed.

Functional Description

Note: All function adjustments will be automatically accepted 15-seconds after pressing a given touch zone or button. The user may press the MODE/SET button to immediately accept the adjustment manually.

Day and Time Display

- The current day of week and time of day will be continuously displayed in the TIME/PROG Zone (except during Setup operations).
- The day of week will be displayed as one of the following: S, M, T, W, T, F, S
- The time of day will be in 12-hour AM, 12-hour PM format. Midnight will be displayed as 12:00am.
- Day/Time Setup:
  - Press and hold the MODE Zone for 5 seconds to enter Day/Time Setup.
  - Press the UP or DOWN Buttons to adjust the day of week (press the MODE/SET Button or wait for 15 seconds for adjustment to be accepted, then enter hour of day adjustment).
  - Press the UP or DOWN Buttons to adjust the hour of the day. The time will advance in 1-hour increments; AM and PM will change when the hour advances to 12:00 midnight and 12:00 noon respectively (press the MODE/SET Button or wait for 15 seconds for adjustment to be accepted, then enter minute of hour adjustment).
  - Press the UP or DOWN Buttons to adjust the minute of the hour. The time will advance in 1-minute increments (press the MODE/SET Button or wait for 15 seconds and the transmitter will exit Day/Time Setup and return to normal operation).
  - LCD Displays – when in Day/Time Setup:
    - MODE Zone: Blank
    - ROOM TEMP Zone: Blank
    - SET TEMP Zone: Bank
    - LIGHT Zone: Blank
    - FAN Zone: Blank
    - TIME/PROG Zone: Day of Week, or Time of Day will Flash
    - AUX Zone: Blank
    - FLAME Zone: Blank

Modes of Operation

Operation modes:

- MANUAL OFF
- MANUAL ON
- THERMOSTAT

The modes may be cycled in the order above by pressing the MODE Zone or the MODE/SET Button. There will be a 2-second delay before the associated transmission is sent (the display will be updated immediately).

MANUAL OFF Mode:

- Transmits flame OFF command.
- LCD Displays:
  - MODE Zone: OFF is displayed
  - ROOM TEMP Zone: Measured temperature is displayed
  - SET TEMP Zone: Blank
  - LIGHT Zone: LIGHT and light setting level is displayed
  - FAN Zone: Blank
  - TIME/PROG Zone: Current day indicator and current time is displayed
  - AUX Zone: AUX and AUX setting is displayed
  - FLAME Zone: Blank

MANUAL ON Mode:

- Transmits flame ON command
- LCD Displays:
  - MODE Zone: ON is displayed
  - ROOM TEMP Zone: Measured temperature is displayed
  - SET TEMP Zone: Blank
  - LIGHT Zone: LIGHT and light setting level is displayed
  - FAN Zone: FAN and fan setting level is displayed
  - TIME/PROG Zone: Current day indicator and current time is displayed
  - AUX Zone: AUX and AUX setting is displayed
  - FLAME Zone: A Flame Icon and flame setting level number is displayed

THERMOSTAT Mode:

- Will cycle flame on and off based on room and set temperatures. Will transmit ON command if SET TEMP (+SWING) is higher than ROOM TEMP and will transmit OFF command if SET TEMP (-SWING) is lower than ROOM TEMP.
- Built-in thermostat will measure room temperature.
- All programming should be written for deg. F and converted to deg. C when selected.
- Temperatures may be displayed in degrees F (factory default) or degrees C. Press the UP and DOWN Buttons simultaneously to change between degrees F and C.
- SET TEMP: While in THERMOSTAT mode, press the UP or DOWN Button to change the SET TEMP (45-90 deg. F, 7-32 deg. C); the new set temperature will automatically be accepted after 2 seconds. The factory default SET TEMP is 68 deg. F.
- SWING Temperature: This model does not allow for SWING temperature adjustment. This model utilizes thermostatic flame modulation that will modulation the main flame based on the difference between room temperature and set temperature (see example below).
  - Important - factory SWING TEMPERATURE setting is 2 degrees. The thermostatic flame modulation feature will not allow this SWING to be changed.

EXAMPLE:

Set Temperature	Room Temp.	Flame Level
	74F	OFF
	73F	Level 1
Set Temperature (72) →	72F	Level 2
	71F (or less)	Level 3

- Manual Flame Adjustment while in THERMOSTAT mode: If Flame-A is manually adjusted while in thermostat mode, it will override the automatic flame setting until the flame cycles off, then back ON thermostatically; when the flame cycles ON again, automatic flame adjustment will resume. Automatic flame adjustment will also resume if the operational mode is cycled out of, then back into THERMOSTAT mode or if the SET temperature is changed.

- THERMOSTAT **OFF** LCD Displays:
  - MODE Zone: THERMO and OFF is displayed
  - ROOM TEMP Zone: Measured temperature is displayed

- SET TEMP Zone: SET TEMP is displayed
- LIGHT Zone: LIGHT and light setting level is displayed
- FAN Zone: Blank
- TIME/PROG Zone: Current day indicator and current time is displayed
- AUX Zone: AUX and AUX setting is displayed
- FLAME Zone: Blank

- THERMOSTAT **ON** LCD Displays:
  - MODE Zone: THERMO and ON are displayed
  - ROOM TEMP Zone: Measured temperature is displayed
  - SET TEMP Zone: SET TEMP is displayed
  - LIGHT Zone: LIGHT and light setting level is displayed
  - FAN Zone: FAN and fan setting level is displayed
  - TIME/PROG Zone: Current day indicator and current time is displayed
  - AUX Zone: AUX and AUX setting is displayed
  - FLAME Zone: A Flame Icon and flame setting level number is displayed

Room Temperature Limit

- The Room Temperature Limit Shutdown feature will operate in all modes of operation MANUAL ON & OFF, THERMOSTAT ON & OFF mode, and PROGRAM ON & OFF modes. If the room temperature reaches 95 deg. F or greater, the transmitter will automatically change to MANUAL OFF mode and send a MANUAL OFF command to the control module. If the user turns the control back ON and the room temperature is still 95F or greater, the transmitter will switch to back manual OFF and send another MANUAL OFF command the next time the transmitter reads & updates the room temperature (2-minute update interval).

Program Operation

- Press the TIME/PROG Zone to activate or deactivate Program Operation. Pressing the MODE Zone or the MODE/SET Button will also deactivate Program Operation. When Program Operation is deactivated, the transmitter will return to MANUAL OFF Mode.
- Program Operation will cycle fireplace ignition ON and OFF based on time settings (2 weekend periods and 2 weekday periods) and thermostat settings. Press the MODE/SET Button or wait for 15 seconds to advance to each subsequent program setting.
- To enter Program Setup, press and hold the TIME/PROG Zone for 5 seconds.
- Program OFF LCD Displays:
  - MODE Zone: OFF
  - ROOM TEMP Zone: Measured temperature is displayed
  - SET TEMP Zone: Blank
  - LIGHT Zone: LIGHT and light setting level is displayed
  - FAN Zone: Blank
  - TIME/PROG Zone: Current day indicator, current time, and Program status (P1-OFF or P2-OFF) is displayed
  - AUX Zone: AUX and AUX setting is displayed
  - FLAME Zone: Blank
- Program ON LCD Displays:
  - MODE Zone: THERMO and either ON or OFF is displayed
  - ROOM TEMP Zone: Measured temperature is displayed
  - SET TEMP Zone: SET TEMP is displayed
  - LIGHT Zone: LIGHT and light setting level is displayed
  - FAN Zone:
    - If Thermostat is ON, FAN and fan setting number is displayed
    - If Thermostat is OFF, display is blank.
  - TIME/PROG Zone: Current day indicator, current time, and Program status (P1-ON or P2-ON) is displayed
  - AUX Zone: AUX and AUX setting is displayed
  - FLAME Zone:
    - If Thermostat is ON, A Flame Icon and flame setting level number is displayed.
    - If Thermostat is OFF, display is blank.

Flame-A (or Main) Adjustment

- Transmits a flame height setting command to the control module to adjust the Flame-A height.
- Available settings are 1-3 with a factory default of 3. If the Flame-A setting is changed during operation (either manually or automatically), the control will remember and use the adjusted setting on subsequent manual ON cycles (Flame-A setting memory). Refer to the THERMOSTAT Mode section for additional details on flame modulation in THERMOSTAT mode.
- While in MANUAL ON, THERMOSTAT ON, or PROGRAM ON modes, press the FLAME Zone to enter Flame-A Adjustment, then press the UP or DOWN buttons to raise and lower the flame; press the MODE/SET Button or wait for 15 seconds to accept the new setting.
- LCD Display: When setting the Flame-A height, the Flame-A icon, and Flame-A setting number will flash in the FLAME Zone.

Flame-B (or Rear) Adjustment

- Transmits a flame height setting command to the control module to adjust the Flame-B height.
- Available settings are 0 (off) – 3 with a factory default of 3. If the user changes the Flame-B setting during operation, the control will remember and use the adjusted setting on subsequent manual ON cycles (Flame-B setting memory).
- While in MANUAL ON, THERMOSTAT ON, or PROGRAM ON modes, press the FLAME Zone twice enter Flame-B Adjustment (first press is Flame-A adjustment), then press the UP or DOWN buttons to raise and lower the flame; press the MODE/SET Button or wait for 15 seconds to accept the new setting.
- LCD Display: When setting the Flame-B height, the Flame-B icon, and Flame-B setting number will flash in the FLAME Zone.

Fan Control

The fan will turn ON and OFF based on the status of the Main Flame. The fan output will be energized 5-minutes after the main flame is turned on and will be turned off 12-minutes after the main flame is turned off. This applies to Manual, Thermal, and Program modes. If the main flame is turned off and then cycled back on within the 12-minute off-delay period, the fan should remain on (the 5-minute ON delay is omitted in this condition). The setting/voltage values are as follows:

Setting/Display	Voltage Values
6 (High)	100% Line Voltage
5	97% Line Voltage
4	92% Line Voltage
3 (Default)	89% Line Voltage
2	86% Line Voltage
1 (Low)	77% Line Voltage
Off	0% Line Voltage

Fan Adjustment

- Transmits a fan setting command to the control module to adjust the fan output level.
- Available settings are 0 (off) – 6 with a factory default setting of 3. If the user changes the fan speed during operation, the control will remember and use the adjusted setting on subsequent fan ON cycles (fan speed memory).
- While in Manual ON, THERMOSTAT ON, or PROGRAM ON modes, press the FAN Zone to enter Fan Adjustment, then press the UP or DOWN buttons to increase or decrease the fan output; press the MODE/SET Button or wait for 15 seconds to accept the new setting.
- LCD Displays:
    - When raising or lowering the fan output level with the UP or DOWN buttons, the fan icon and fan setting number will flash in the FAN Zone.

Light Adjustment

- Transmits a light setting command to the control module to adjust the light output level.
- Available settings are 0 (off) – 6 with a factory default of 0 (off).
- While in any mode of operation, press the LIGHT Zone to enter Light Adjustment, then press the UP or DOWN buttons to raise or lower the light output; press the MODE/SET Button or wait for 15 seconds to accept the new setting.
- LCD Displays:

- When raising or lowering the light output level with the UP or DOWN buttons, the light icon and light setting number will flash in the LIGHT Zone.

AUX Adjustment

- Transmits an AUX setting command to the control module to turn the AUX output ON or OFF.
- While in any mode of operation, press the AUX Zone to enter AUX Adjustment, then press the UP or DOWN buttons to turn the AUX output ON or OFF; press the MODE/SET Button or wait for 15 seconds to accept the new setting.
- LCD Display:
  - When adjusting the AUX output, AUX and AUX setting (ON or OFF) will flash in the AUX Zone.

Continuous Pilot Operation

- To activate or deactivate the Continuous Pilot Feature, press and hold the MODE/SET and UP Buttons simultaneously for 5 seconds.
- LCD Display: When activated, CONT. PILOT will be displayed in the MODE Zone.

SETTING ºF/ ºC SCALE

The factory setting for temperature is ºF. To change this setting to ºC, first press and hold the **UP** touch button and the **DOWN** touch button on the transmitter at the same time. Follow same procedure to change from ºC back to ºF.

NOTE: When changing between the ºF and ºC scales, the set temperature defaults to the lowest temperature (45 ºF, or 6 ºC).

Child-Lock Operation

- Child-Lock operation prevents any user input to the transmitter. No mode of operation or feature may be adjusted when Child-Lock is activated. All automatic functions (thermostat, program, etc.) will continue normally.
- To activate or deactivate the Child-Lock feature, press and hold the MODE/SET and DOWN Buttons simultaneously for 5 seconds.
- LCD Displays:
  - When activated, the LOCK icon will appear in the MODE Zone.
  - If any touch-zone or button is pressed when activated, the LCD backlight will illuminate and the LOCK icon will flash for 5 seconds in the MODE Zone.

Audible Alerts

- LEARN Window Open:
  - Audible Alert: Single long beep (~1 second in length) after pushing the LEARN button.
  - Description of Alert: Inform the user that the module is ready to learn the security code of a transmitter.
- Code Accepted:
  - Audible Alert: Four short beeps (~0.2 seconds in length) in rapid succession.
  - Description of Alert: Inform the user that the module has successfully learned a transmitter's security code.
- LEARN Memory Cleared:
  - Audible Alert: Three long beeps in succession.
  - Description of Alert: Inform user that the transmitter security code memory has been successfully cleared.

Error Codes

- **Ignition Safety** (Protection for Ignition system):
  - Error Code: One short beep (~0.2 seconds in length) every one-second.
  - Description of Fault: Pilot is not successfully ignited within the trial period.
  - Action: The control will operate the step motor in the gas valve to the OFF position.
  - How to Clear: Press OFF button.

- **Recycle Safety:** (Protection for Unstable Pilot)
  - Error Code: Two short beeps every one-second.
  - Description of Fault:
    - Automatic Recycle - Pilot is proven and lost 3-times within 2-minutes without multiple ON/OFF commands.
    - Manual Recycle – Ignition sequence is initiated 6-times within 2-minutes.
  - Action: The control will operate the step motor in the gas valve to the OFF position.
  - How to Clear:
    - After 5-minutes has elapsed (5-minute internal timer expires), the module must see the mode/switch in the OFF position after that time.
    - Once the module see's the mode/switch in the OFF position after the 5-minutes has elapsed, it will stop beeping.
    - Once the beeping has stopped, it will accept normal operation including another ON command from the user.
    - The only other way to reset this fault in another manner is to remove power to the module (for approximately 30-seconds until the internal circuits discharge), and then re-apply power.
- **Sensor Safety (Protection for Flame sensor):**
  - Error Code: 4 Short beeps every one-second (Constant beeping)
  - Description of Fault: Pilot flame sensor voltage is too high (>FLAME=FALSE threshold) when ignition sequence is initiated.
  - Also occurs if ground circuit is not properly connected, including ground from pilot assembly or ground integral to valve's motor connection (motor not plugged into module or white wire on valve end of wire harness not connected to ground).
  - Action: The control will operate the step motor in the gas valve to the OFF position.
  - How to Clear: Press OFF button.
- **Thermal Safety (Overheat Protection):**
  - Error Code: 4 Short beeps every 2-seconds.
  - Description of Fault: Internal temperature has exceeded 170 degrees F.
  - Action: The module will operate the step motor in the gas valve to the OFF position.
  - How to Clear: Module's internal temperature must cool to below 160 deg. F and then press OFF button.
- **Communication Safety** (Note: This feature is only available when transmitter includes an LCD screen).
  - Error Code: One short beep every 4-seconds
  - Description of Fault: Transmitter and & receiver are not communicating properly. Control monitors RF transmissions for communication safety signal (expected every 15-minutes). If the signal is not received within 15-minutes, a 2-hour countdown begins. If no other RF transmissions are received before the countdown expires, the control will enter Communication Safety fault.
  - Action: The module will operate the step motor in the gas valve to the OFF position.
  - How to Clear: Control must receive a subsequent transmission from the remote control or a command from the on-board ON/OFF switch.