HEAT-TIMER®

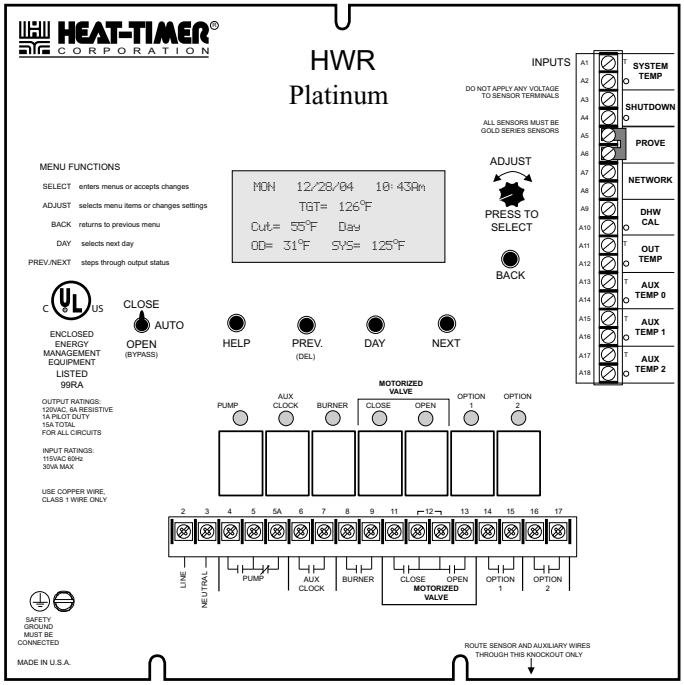
INSTALLATION AND OPERATION INSTRUCTIONS

HWR Platinum

HOT WATER HEATING CONTROL

RESET CONTROLS FOR HYDRONIC HEATING SYSTEMS

Table of Contents



This Preliminary manual attempted to be complete and accurate at the time of publication. Additional upgrades and new features may change HWR Platinum functions. Upgrades to this manual may occur at any time. Contact the factory for further details.

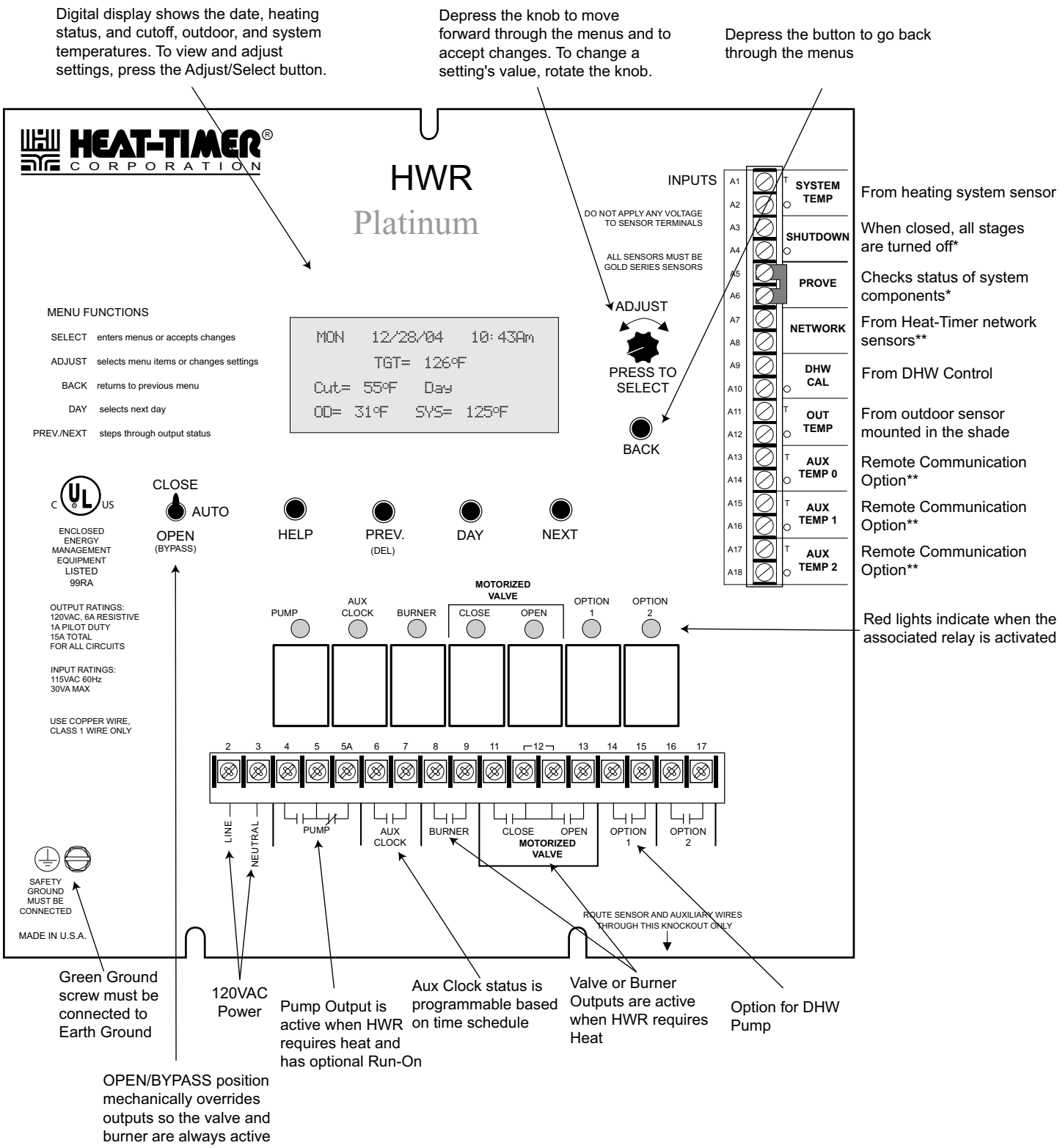
⚠ WARNING

The HWR Platinum is strictly an operating control. It CANNOT be used as a limit control. The boiler must have all safety and limit controls required by code. It is the responsibility of the installer to verify that all the safety and limits are working properly before the HWR Platinum is installed.

This control must be installed by a licensed electrician.

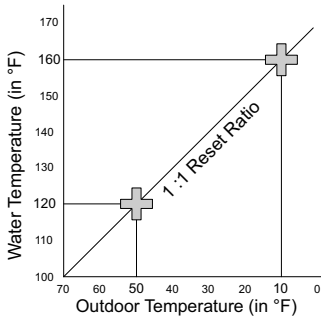
Contents

Panel Layout



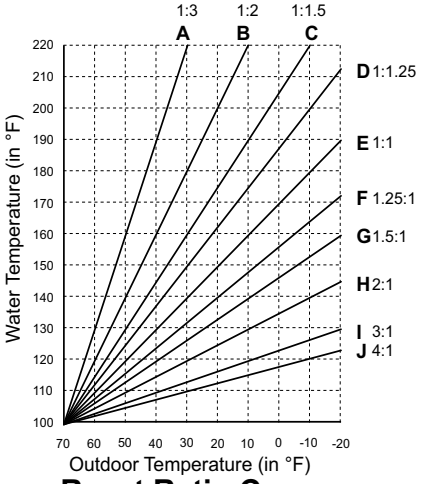
* DRY CONTACT ONLY
** Only available with the Remote Communications package

Understanding Operation Concept



The Model HWR Platinum controls a hot water heating system to provide a building with comfortable and even heat levels. The HWR Platinum varies the temperature of the circulating heating water in response to changes in the outdoor temperature. The heating water temperature is controlled through the use of either a motorized valve or through direct burner operation. (i.e. higher system water temperature as outdoor temperature drops.)

The HWR Platinum also controls the system circulating pump with an adjustable outdoor cutoff. When the outdoor temperature is above Outdoor Cutoff (CUT), the pump is off and no heating water is circulated through the system. When the outdoor temperature drops below the Outdoor Cutoff (CUT), the pump is activated and the heating water circulates through the system. The temperature of the heating water is controlled by the Reset Ratio, Water Offset, and changes with Outdoor temperature (OD).



Reset Ratio Curves

Reset Ratio/Outdoor Reset

When a building is being heated, heat escapes through the walls, doors, and windows to the colder outside air. The amount of heat that escapes depends on the outside temperature. The colder the outside temperature, the more heat escapes. If you can input heat into the building at the exact same rate that it is lost out of the building, then the building space temperatures will remain constant. The Reset Ratio is an adjustment which allows you to achieve this equilibrium between heat input and heat loss by matching the amount of heat input based on your building heat loss.

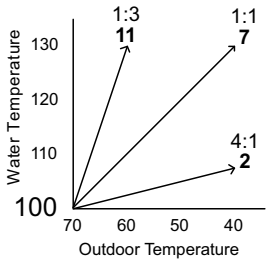
The starting point for most baseboard systems is the 1:1 (Outdoor Air Temperature : Heating Water Temperature) ratio. This means that for every degree the outdoor temperature drops, the temperature of the heating water will increase one degree. The starting point of the curves is adjustable using the Water Offset, but comes factory selected at 70°F Outdoor Temp. and 100°F Water Temp. For example with a 1:1 ratio, if the outdoor temperature is 50°F, this means the temperature has fallen 20° from the starting point of 70°F. Therefore, the heating water temperature will be increased 20° to 120°F.

Each building has different heat loss characteristics. A very well insulated building will not lose much heat to the outside air, and may need a Reset Ratio of 2:1 (Outdoor:Water). This means the outdoor temperature would have to drop 2 degrees to increase the water temperature 1 degree. On the other hand, a poorly insulated building or a building with insufficient radiation may need a Reset Ratio of 1:2 (Outdoor:Water). This means that for each degree the outdoor temperature dropped the water temperature will increase 2 degrees. The HWR Platinum has a full range of Reset Ratios to match any buildings heat loss characteristics.

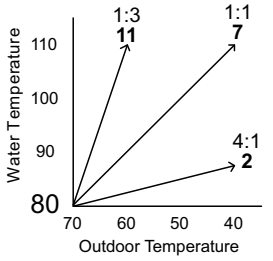
A heating curve that relies not only on Outdoor temperature but also on heat transfer units will improve heat comfort. The following are suggested starting settings for different heat transfer units based on average building insulation and heat loss:

Transfer Unit	Reset Ratio	Offset	Heat Transmission
Radiators(Steel & Cast Iron)	1.00 : 1.00	0˚F	radiation & convection
Baseboard (Finned copper tube& Cast Iron)	1.00 : 1.00	0˚F	radiation & convection
Radiant (High Mass/Concrete)	4.00 : 1.00	-10˚F	radiation & convection
Radiant (Low Mass/Joists)	2.00 : 1.00	-10˚F	radiation & convection
Fan Coils & Air Handlers	1.00 : 1.00	20˚F	convection

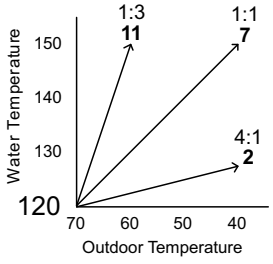
With a 0° Offset, the ratio curves begin at 100° Water Temperature.



With a -20° Offset, the ratio curves begin at 80° Water Temperature.



With a +20° Offset, the ratio curves begin at 120° Water Temperature.



⚠ WARNING

When controlling a none-condensing boiler directly without the use of a mixing valve, minimum boiler water temperature must be set to boiler manufacturer specifications. In that case, system temperature must not go below such temperature.

Water Offset

The Offset value moves the starting point of the Reset Ratio curves (see charts on the right).
Therefore, any change made to the Offset will immediately change the value of the Calculated water temperature by the same amount. For example, if the Calculated water temperature were 150°F based on the specific outdoor temperature and Reset Ratio, then increasing the Offset from 0°F to 10°F would increase the Calculated water temperature to 160°F.

In a new installation, start with a Offset value of 0°. Adjust the Offset value in mild weather. If the ambient indoor temperatures are too warm in the warm weather, decrease the Offset. If the ambient building temperatures are too cold in the mild weather, increase the Offset. The rule of thumb for baseboard radiation is to change the Offset by 4°F for every 1°F degree you wish to change the building temperatures. For radiant heat applications, change the Offset by 1° or 2° for every degree you wish to change the building temperature. The Offset can be set from -40 to 40°F.

Setback

Whenever the Outdoor temperature (OD) falls below the Outdoor Cutoff (CUT), the system pump is activated and the HWR Platinum regulates the heating system to hold the Target Water temperature (TGT). As the Outdoor temperature (OD) changes, the HWR Platinum adjusts the actual water temperature (SYS) to hold a constant or Day (Normal) heat level. The Day heat level is for when occupants are present and active.

The HWR can also hold a lower or Night (Setback) heat level. This lower level of heat is for when the building is unoccupied, or tenants are sleeping. The HWR has the capability of programming up to 4 Day and 4 Night times for each day of the week. When the building comes out of Night setting, there is an optional Boost setting to quickly bring the building up to comfortable temperatures.

Boost and Early Shutdown

The boost is designed to return the building to its Day (Normal) heat level after Night (Setback) heat level. It does it by increasing the temperature of the Calculated Water Temperature (TGT) by a set amount of degrees set by the Boost Adjustment for a period of time that depends on outside temperature.

Early Shutdown is a feature that allows a building, usually commercial, to start Night Setback earlier than the last Night schedule setting for that day. The HWR Platinum calculates the time period from the last Night Schedule setting for that day based on Outdoor temperature (OD). The warmer it is outside the earlier the HWR Platinum will shift to Night (Setback). At 65°F Outdoor Temperature (OD) the Early Shutdown is the longest of 90 minutes. At 0°F Outdoor Temperature (OD) there is no Early Shutdown or Early Shutdown is 0 minutes.

Sequence of Operation

The HWR Platinum checks the Outdoor temperature (OD) by means of an Outdoor Sensor located on the exterior North Side of the building. At the same time it monitors the water temperature (SYS) of the building's heating system by means of a Heating System Sensor located on a common supply line. When the Outdoor temperature (OD) falls below an adjustable Outdoor Cutoff temperature (CUT), the HWR Platinum activates the system pump and begins to calculate the Computed Water Temperature. The Target Water Temperature (TGT) is the temperature of the circulating system water the HWR Platinum calculates based on Outdoor temperature (OD) and the Reset Ratio curves. If the HWR Platinum has been set up correctly, then by circulating water at the Computed Water Temperature (TGT), the amount of heat entering the building will equal the heat loss.

The HWR Platinum also monitors the Actual Water Temperature (SYS). When the Actual Water Temperature (SYS) is different from the Target Water Temperature (TGT), the HWR Platinum will take action to correct the difference. If the HWR Platinum is controlling a boiler directly, then the HWR Platinum will turn the boiler on and off to regulate the circulating system water temperature. If the HWR Platinum is controlling a valve, the HWR Platinum will pulse the valve open or shut to regulate the circulating system water temperature (SYS). Once the Target Water temperature is acheived, the boiler will be turned off, or the motorized valve close relay will energize when HWR Platinum is controlling a motorized valve. The Pump relay will stay energized for as long as the Outdoor temperature (OD) is below the Outdoor Cutoff (CUT) + 2°F. However, the Pump may be on if Pump Run-On is set to a value higher than 0 minutes.

Initial Pilot Program

Setting an Initial Pilot Program will ease the configuration of the HWR Platinum and will give the opportunity to utilize the features that are to save on energy and give more comfortable heat when needed.

The program should consist of the following:

Identifying the type of heating system,
Selecting the features that your system can utilize,
Making sure you have the right control and accessories,
Install the Control,
Setting the System Startup,
Setting the System Settings,
Setting the Schedules
Adjusting Reset Ratio and Water Offset

Identifying the Type of Heating System

The HWR Platinum can control the heating system through these different methods:

- **Direct Boiler control.** This involves wiring the HWR Platinum Burner output to the burner. The HWR Platinum can control an On/Off burner. Also, a relay must be installed on the Burner Output socket on the HWR Platinum. On Startup Settings, Burner option must be selected from the Output Mode menu. ABurner Diff menu option will be available on the System Settings 2 menu.

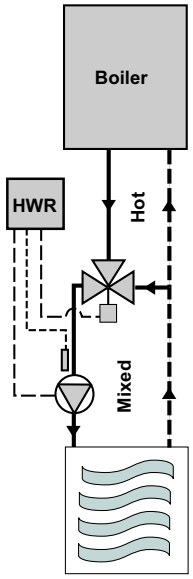
- **3 Way Motorized Valve** A hot water 3 way motorized mixing valve can be modulated by the HWR Platinu to maintain a calculated water temperature. Two Relays must be installed on the Motorized Valve Output sockets on the HWR Platinum. On Startup Settings, Motorized Valve option must be selected from the Outpu Mode menu.

- **2 Way Motorized Valve.** A steam 2 way motorized valve feeding a heat exchanger can be modulated by the HWR Platinum to maintain a calculated water temperature on the water output of the heat exchanger. 2 Relays must be installed on the Motorized Valve Output sockets on the HWR Platinum. On Startup Settings, Motorized Valve option must be selected from the Output Mode menu.

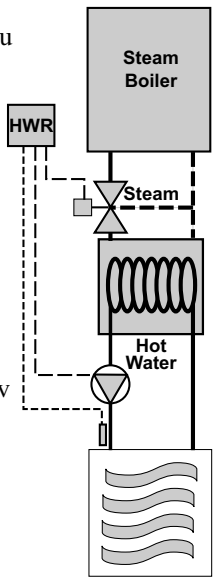
- **Multi-Mod or Multi-Mod with Extension.** The HWR Platinum can connect to a Multi-Mod controlling 4 modulating boilers. By adding 2 Multi-Mod extensions to this configuration, each extension controlling 8 modulating burners, this system can control up to a total of 20 modulating burners. Two Relays must be installed on the Motorized Valve Output sockets on the HWR Platinum. On Startup Settings, Motorized Valv option must be selected from the Output Mode menu.

In all of the above systems, the System Pump should be connected to the HWR Platinum through the Pump relay terminals. Add relay to Pump socket.

Pluming 3 Way Motorized Mixing Valve



Pluming 2 Way Motorized Mixing Valve & a Heat Exchanger



Selecting the Features of the System

The HWR Platinum has been designed with commercial building heating as the primary purpose. With this in mind, many of the HWR Platinum features can be utilized to ease, enhance and improve your system performance. Some of theses features are listed in this section.

Domestic Hot water with or without Priority

- This allows the HWR Platinum to control a domestic hot water pump that uses the boiler energy to heat the water. The DHW Call must be initiated from an external control or devise. The control or device must initiate a dry contact signal to input terminals DHW Call. No voltage can be supplied across the DHW Call terminals.

- The Domestic Hot Water Pump must be wired to Option 1 Output relay. Through the System Startup menu, under Option Relay 1 Mode, DHW Pump must be selected. If no domestic hot water priority is required then select it from the System Startup menu

DHW Setting. If domestic hot water priority is needed, then select it from the same menu.

- Regardless of the status of the priority, season, or Day or Night, when the DHW Call terminals are shorted using an external aquastat or other devices, the HWR Platinum will raise the Target Temperature (TGT) to 200°F for as long as the terminals are shorted. If the domestic hot water is set to have priority, the system Pump relay will turn off for up to an hour or until the DHW Call terminates, whichever is sooner. Upon termination of DHW Call, the HWR Platinum will revert back to its operating schedule. *Refer to Option 1 relay wiring, DHW Call wiring, DHW Setting (menu selection), and Option Relay 1 Mode (menu selection).*

Schedules

- By setting an operating Schedule and Night Setback, you can save energy while providing comfortable heat to the building. The setting allows the HWR Platinum to reduce Target temperature (TGT) by a specific number of degrees set by the Night Setback during the night or when building is unoccupied, i.e. office buildings and schools.

- During the day, Day Time settings will change Target temperature (TGT) based on Outdoor temperature (OD), Water Offset, Reset Ratio. A Night Time setting will reduce the Target temperature by the Night Setback number of degrees. Each week day can have up to 4 Day Time and 4 Night Time (Setback) settings. Refer to *Schedules (menu selection),* and *System Settings/Night Setback (menu selection).*

Boost

- This feature allows the HWR Platinum to bring the building up to temperature quickly after a Night Setback. It does it using the Outdoor temperature as a guide. Refer to *System Settings/System Settings 2/Boost Mode (menu selection)*

Early Shutdown ESD

- This feature allows the HWR Platinum to shift to Night Setback before the last Night Time setting for that day. The Early Shutdown varies based on Outdoor temperature (OD). The warmer the Outdoor temperature the earlier the HWR Platinum will shift to Night Setback. Refer to *System Settings/System Settings 2/Boost Mode (menu selection)*

System Pump Run-On

- This allows the HWR Platinum to run the System Pump for a longer period of time after the boilers have been turned off. Consequently, dissipating the excess heat from the boiler combustion chamber. That way the boiler should not over heat and activate its high limits. Refer to *System Settings/System Settings 2/Pump Run-On (menu selection)*

Auxiliary Schedule

- The Aux/Clock output relay in conjunction with the Aux Schedule provides output switching based solely on the time setting of the Aux Schedule. The Aux/Clock will act as separate time clock which can turn on and off lights, fans, dampers, or other equipment. Refer to *Schedules/Aux Schedule (menu selection)*

Option Output Relays

- The HWR Platinum has 2 additional output relays. Each on of the relays can be configured independently to activate or deactivate additional equipment based on the HWR Platinum operation or external input. Refer to *System Startup/Option Relay Mode (menu selection)*

- Option Relay 1 can be configured for a Domestic Hot Water Pump DHW that can be activated using the DHW Call input terminals. Furthermore, Option Relay 1 can be configured to follow the Day schedule.

- Option Relay 2 can be configured to either activate whenever the Pump or Burner relays are Off.

Making Sure You Have the Right Control

If you need the HWR Platinum to do additional tasks that either is not listed or do not know how to configure them, contact Heat-Timer Corp. Sales Department either by Phone (973)575-4004, Fax (973) 575-4052, or by E-mail support@heat-timer.com.

Installation

Before beginning the installation, carefully evaluate your heating system. The HWR Platinum can control the heating system through these different methods:

- Direct Boiler Control
- Controlling a 3-Way Motorized Valve
- Controlling a 2-Way Steam Valve into a Heat-Exchanger
- Controlling up to 20 Full Modulation Burners by interfacing to a Heat-Timer Multi-Mod with up to 2 Extension Panels.

Mounting the Control Box

Locate an appropriate site

- Near the equipment to be controlled
- A way from excessively high or low temperatures
- At eye level, or where the displays are easily visible
- The surface must be strong enough to hold the weight of the control and the metal enclosure.
- Leave 12" of clearance under the enclosure to allow access to gutter cover screws.

Remove the HWR Platinum from the metal enclosure

- T ake off the gutter cover by loosening the screws at its bottom.
- Remove the top center screw holding the panel to the enclosure.
- Loosen the two screws at the bottom of the enclosure.
- Make sure to unscrew any encloser cables. (Primarily used to connect to computers and remote systems.)
- Lift the panel from the enclosure.
- Screw the enclosure to the mounting surface through the holes provided.

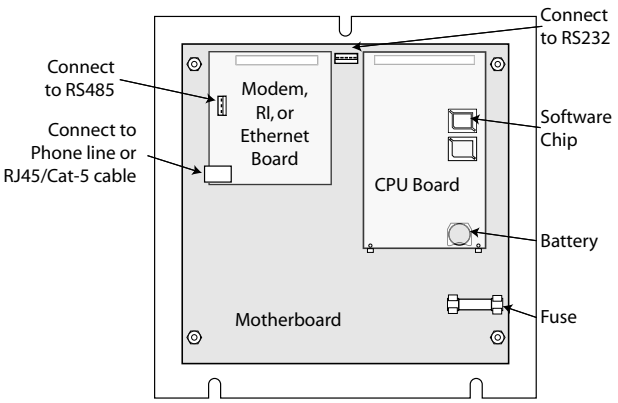
Rear of Panel

Activate the Battery

- T urn the HWR Platinum panel over to reveal the piggyback circuit board (CPU board).

> **⚠ CAUTION**
> Do not install the battery unless you plan to power the control at once. If the control is not powered, the battery will lose its charge in 100 days.

BACK OF PLATINUM PANEL



Connecting Modem, RS232, RS485, Ethernet or Internet Cables

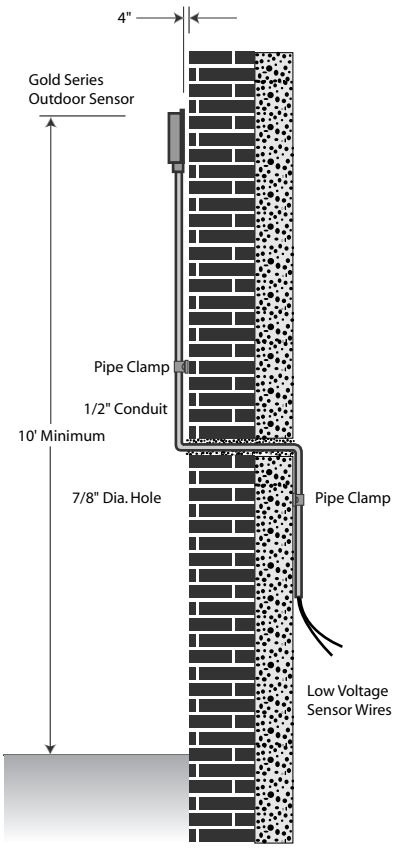
- All panels will include Motherboards and CPU boards.
- Some panels might include an addition board.
- When connecting a RS232 or RS485 cables, a RI board must exist for this connection to operate.
- Modem, Ethernet or internet connection must have the proper boards. A modem requires RIM board.
- Remember that there is no upgrade to Internet panel. A purchase of a complete HWR-Platinum with RI-Net panel is a must.

Screw the HWR Platinum back into the enclosure

Install the Sensors

Outdoor Sensor Installation

- Only use the Heat-Timer Gold Series sensor included with the unit (#904025). If you are replacing an earlier Gold model Heat-Timer, it is not necessary to upgrade the sensor.
- Locate the sensor in the shade on the north side of the building. The sensor should never be in direct sunlight.
- Be sure the location is away from doors, windows, exhaust fans, vents, or other possible heat sources.
- The sensor should be mounted at least 4 inches away from the building wall and approximately 10 feet above ground level.
- The sensor wires can be extended up to 500' using shielded 2 conductor cable. Do not ground the shield at the sensor.
- Do not run sensor wires in conduit with line voltage wiring.



⚠ WARNING

The HWR Platinum is an operating control only. The boiler must have all safety and limit controls required by code. It is the responsibility of the installer to verify that all the safety and limits are working properly before the HWR Platinum is installed.

⚠ CAUTION

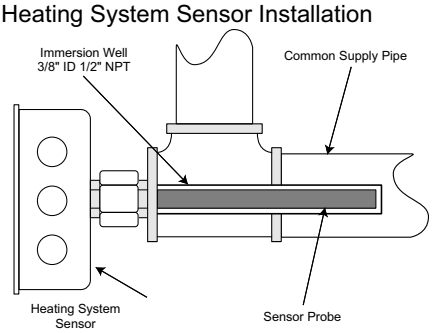
Determining the proper location for the Outdoor Sensor is very important. The HWR Platinum will base the heat on the outdoor temperature information it receives from this location. If the sensor is in the sun, or covered with ice, its reading will be different from the actual Outdoor temperature (OD).

Heating System Sensor (HSS) Installation

Locating HSS

- If the HWR Platinum is directly controlling the boiler, put the sensor approximately 10' past the boiler on the supply main but before any major takeoffs.
- If the HWR Platinum is controlling a 3-way valve, place the sensor on the outlet side of the valve which feeds the heating system. The sensor should be approximately 10' past the valve on the supply main, but before any takeoffs.
- If the HWR Platinum is controlling a steam valve into a heat-exchanger, the sensor must be on the outlet of the coil of the heat-exchanger which is feeding the heating system supply water. The sensor should be approximately 10' past the ***hot water*** outlet of heat-exchanger, but before any takeoffs. ***Never place the sensor in the steam line.***
- If the HWR Platinum is controlling a MULTI-MOD, the sensor must be in the common supply header after all the boiler connections. The sensor must be located where it can detect the inputs from all the boilers. Place the sensor approximately 10' downstream from the boilers, but before any takeoffs.

Heating System Sensor Installation



⚠ CAUTION

If the HSS can not sense the correct heating system water temperature being supplied to the building, the HWR Platinum will not provide comfortable heat levels. Be sure the HSS is located on a main supply pipe which can not easily be isolated from the system.

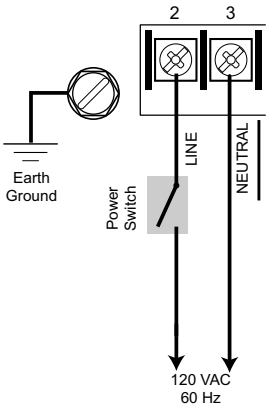
Heating System Sensor (HSS) Installation

- Only use a Gold Series sensor. If you are replacing an earlier Gold model Heat-Timer, it is not necessary to upgrade the sensor.
- Install a 3/8"ID 1/2"NPT immersion well (HT #904011 or equivalent).
- Insert the sensor probe of the supplied immersion sensor (HT #904024) into the well, and screw the handy-box into the threaded top of the well.
- The sensor wires can be extended up to 500' using shielded 2 conductor cable. Do not ground the shield at the sensor.
- Do not run sensor wires in conduit with line voltage wiring.

Wiring

Power Input Wiring

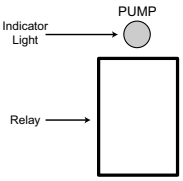
- Bring the power wires through the bottom **left** hand knock out of the enclosure. ***Do not bring wires through sides or the top as this will interfere with servicing the control.***
- Attach 120V 60 Hz to terminals *Line* and *Neutral*.
- Ground wiring must be connected to Ground screw. DO NOT use the neutral line as earth ground.
- Class 1 copper wire is required by UL.
- Class 1 voltages must enter the enclosure through a different opening from any Class 2 voltage wiring.
- Heat-Timer recommends the installtion of a Surge Suppressor and a Power Switch before the Power Line connection for safety and ease of service.

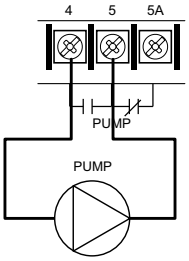


Circulation Pump Wiring

- The Pump Terminals are dry contacts only. They do not source any power.
- W ire the Normally Open (N.O.) Pump dry contact terminals to the pump or pump starter. The N.O. contacts DO NOT source any power.
- Make sure Pump relay is installed.
- All output terminals DO NOT source power. They act as a drycontact only. A separate power source is required for the equipment.

PUMP WIRING

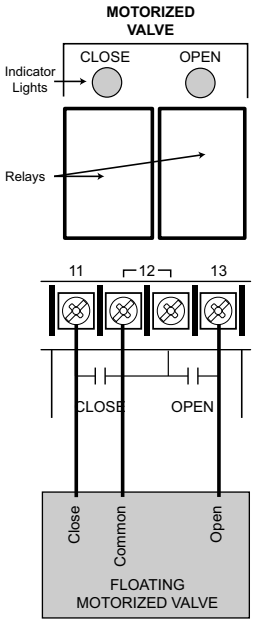


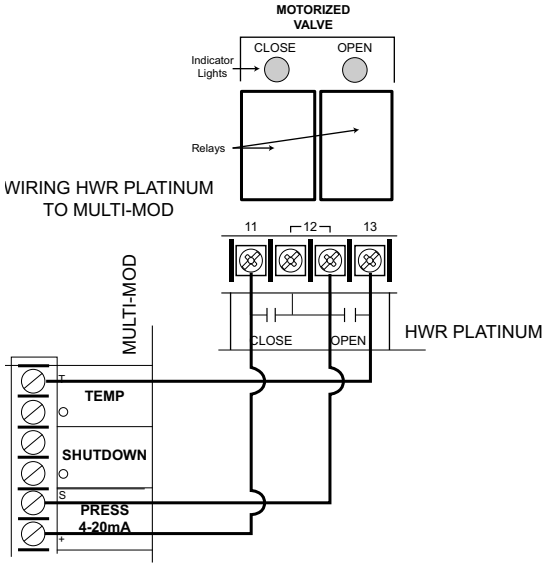


Burner, Motorized Valve or Multi-Mod Wiring

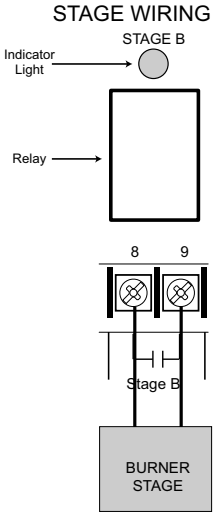
- W ith direct burner operation, only 2 of the relays will be used. One on Pump and another on the Burner.
- W ith motorized valve or Multi-Mod operation, 3 relays will be used. One on PUMP and the last two on the Motorized Valve.
- W ith a motorized valve, the motor must be of the floating type. If using a pneumatic valve, use the Electro-Pneumatic Transducer (HT #926018-00). Wire Terminal 12 to the Common (Red) of the motor. Wire Terminal 11 to the Close (White) and Terminal 13 to the Open (Black) of the motor.
- W ith a Multi-Mod wire the HWR Platinum Terminal 11 (Motorized valve Close) to the Multi-Mod input (A6). Wire Terminal HWR Platinum 12 (Motorized valve Common) to the Multi-Mod input (A5). Wire the HWR Platinum Terminal 13 (Motorized valve Open) to the Multi-Mod input (A1).

MOTORIZED VALVE WIRING





STAGE WIRING



Aux Clock Wiring (Optional)

- The Aux Clock outputs are an extra set of contacts which switch based solely on time. These contacts can be used in place of an external time clock. To switch units on or off, use the N.O. dry contacts terminals to open a damper or activate a motor.
- If there is a need to control additional equipment or building functions on a separate schedule, use the Aux Clock terminals.
- Install a relay on the Aux Clock output.
- W ire the terminals marked Aux Clock to the equipment. These terminals do not source power. They act as a dry contact only.

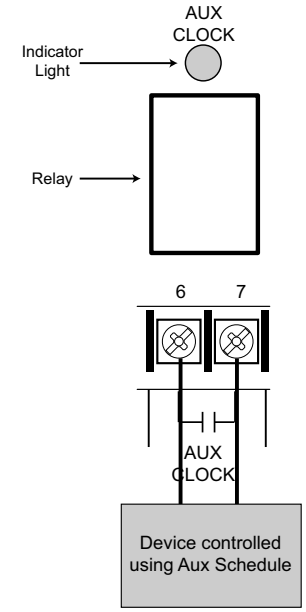
⚠ CAUTION

Each relay is rated at 1 amp inductive, 6 amps resistive at 120V. The total output of all relays must not exceed 15A.

⚠ WARNING

Never apply external voltage to the input terminals. Permanent damage will occur, voiding the warranty.

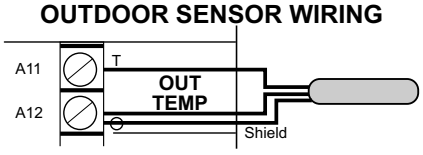
AUXILIARY CLOCK WIRING



Wiring the Outdoor Sensor

- The HWR Platinum is designed to be connected to a #904025-00 Outdoor sensor.
- Outdoor sensor wires can be extended up to 500' by splicing with 18 gauge shielded sensor wire.
- Attach the sensor wires to the Out Temp terminals (A11 and A12). Temperature sensors have no polarity.
- Connect the shield to the O terminal marked with a circle.
- Do not run sensor wire in conduit with line voltage.

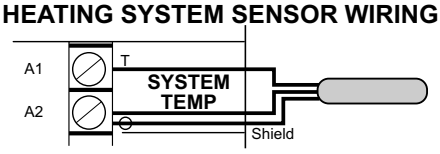
OUTDOOR SENSOR WIRING



Wiring the Heating System Sensor (HSS)

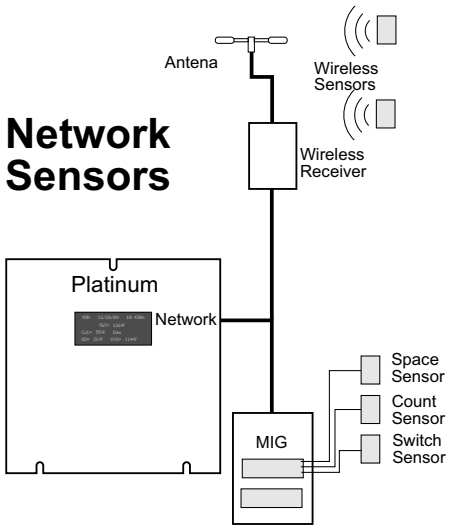
- The HWR Platinum is designed to be connected to a HT#904024-00) temperature sensor for immersion in 3/8"ID well (HT#904011-00 or equivalent).
- T emperature sensor wires can be extended up to 500' by splicing with 18 gauge shielded sensor wire.
- Attach the sensor wires to the SYSTEM TEMP terminals (A1 and A2). Temperature sensors have no polarity.
- Connect the shield to the right hand O terminal with a circle next to it.
- Do not run sensor wire in conduit with line voltage.

HEATING SYSTEM SENSOR WIRING

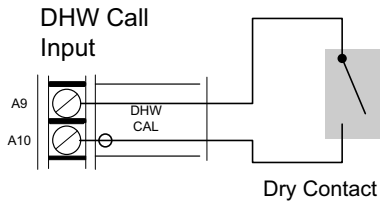


Wiring Network Sensors (Wireless and MIG) (Requires Communication Package Upgrade)

- Remember that network sensors can only be configured remotely through Visual Gold or the Internet.
- The HWR Platinum Network terminals can connect to up to 64 sensors.
- When connecting to multiple sensors, a MIG control can be used handle up to 28 sensors each. Multiple MIG's can be used to connect to one HWR Platinum.
- W ireless sensors can be used with a Receiver and an Antenna to reduce building sensor wiring. The Receiver then can be wired directly to the Network

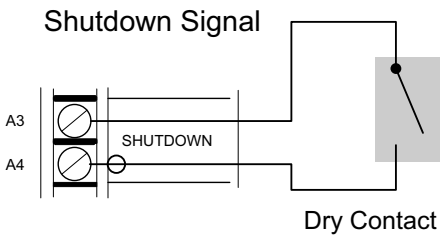


Wiring DHW Input Call (Optional)



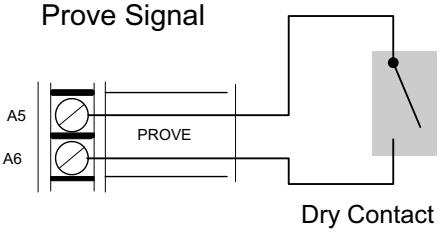
- DHW can be used to control a domestic hot water pump through Option 1 output terminals. Also, The HWR Platinum will raise Set Point to 200°F.
- DHW Call terminals are dry contact N.O. terminals.
- Install a relay on Option 1 output. Option 1 output will be used to control the DHW pump.
- W ire an aquastat or other controls to provide closure on the DHW Call terminals.

Wiring Shutdown Terminals (Optional)



- This feature can be used whenever it is desirable to turn off the HWR Platinum from a remote location or another controller.
- A typical use for this feature would be to disable all heat when an Energy Management System (EMS) indicates a building is overheated.
- When the Shutdown feature is enabled by closing a dry contact, the Burner and Motorized Valve Open (OUTPUT) relays will deenergize while the Motorized Valve Close relay will energize. The PUMP relay will continue to be energized for the period of the System Run-On.
- The Shutdown signal must be a dry contact only. No voltage can be placed across the SHUTDOWN terminals.
- Bring the two wires from the dry contact to the terminals marked SHUTDOWN- A3, A4

Wiring Prove Terminals



- The Prove feature checks system components are operational before activating the boiler or opening the motorized valve.
- If the PROVE input terminals are open, the HWR Platinum will enable only the System relay. The Burner and Motorized valve (OUTPUT) relays will be deenergized when the PROVE input is open.
- If NO external conditions must be met before the OUTPUT relays are energized, DO NOT remove the factory installed jumper across the PROVE terminals.
- The Prove signal must be a dry contact only. No voltage can be placed across the PROVE terminals.
- Bring the two wires from the dry contact to the terminals marked A5 and A6

⚠ CAUTION

The PROVE input terminals must be shorted for the HWR Platinum to provide heat. DO NOT remove the factory installed PROVE jumper unless replacing it with a Prove signal.

⚠ WARNING

The PROVE input CAN NOT be used as a safety limit. All equipment must have its own certified limit and safety controls as required by local codes. Any safety interlock MUST be wired back to the boilers or other equipment as required by code.

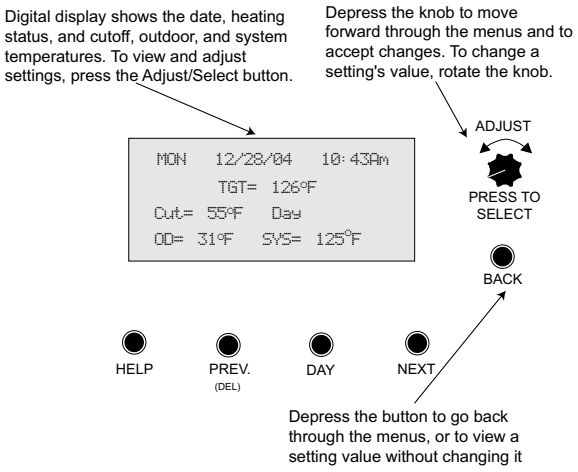
Wiring Aux Input Terminals (Optional) (Requires Communication Package Upgrade)

- Remember that Aux sensors can only be configured remotely through Visual Gold or the Internet.
- Each Aux terminal can connect to only one temperature sensor.

Testing the Sensors

- Power up the HWR Platinum.
- The control will go through a countdown, and then the bottom right of the display marked (SYS) will show the temperature read by the Heating System Sensor (HSS). The bottom left (OD) will show the temperature read by the Outdoor Sensor.
- If the display reads OPEN, SHORT, or an incorrect temperature, follow the troubleshoot procedures at the end of this manual.
- W ireless and MIG sensors readings can only be viewed on Visual Gold or the Internet.

Setting the Control



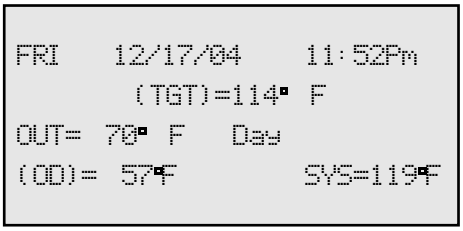
Display and Changing Settings

The HWR Platinum comes with a 80 character (20 character per row x 4 rows) digital display. In addition, to the right of the display a turn (ADJUST) and push (PRESS TO SELECT) knob is used to scroll through settings when turned. When PRESS TO SELECT is pushed, the menu selection or value is selected. A push BACK button is used to go to the previous step on the menus.

Under the display four additional push buttons exist to assist in other menu functions:

NEXT	goes to next schedule time on schedules,
DAY	switches between different week days when in schedules,
PREV.(DEL)	clears a specific schedule setting,
HELP	when clicked on a specific menu item will provide help instructions.Initial Startup Settings

When powering up the HWR Platinum for the first time, it will take you through an 80 second count down followed by the System Startup Settings then another 10 second boot setup and finally end with the system screen. Once the control is mounted and wired, set up an initial pilot program.

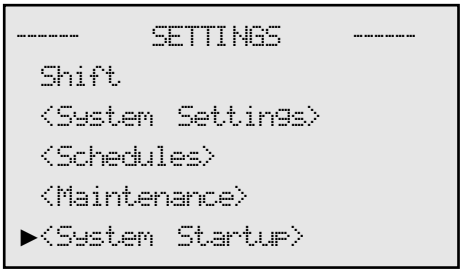


- Set and adjust System Startup Settings
- Set and adjust System Settings
- Set and adjust Maintenance
- Set and adjust Schedules

System Startup Settings

Enter menu by pressing SELECT: *Settings/System Startup*

If entering this menu option after the control has been set,several warnings will display with an option of pressing the Select button to continue. After the warnings the following options will be displayed in this order:

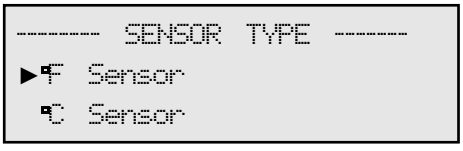


- Sensor Type (°F for Fahrenheit or °C for Celsius.)
- Output Mode (Burner or Motorized Valve)
- DHW Setting (No Priority or Priority)
- Fast Cool Down (Minimum Water temperature or OFF)
- Sensor Fault (Output On or Output Off)

Sensor Type

°F Fahrenheit or °C for Celsius Default: °F Fahrenheit

SELECT *Settings/System Startup/.../Sensor Type*

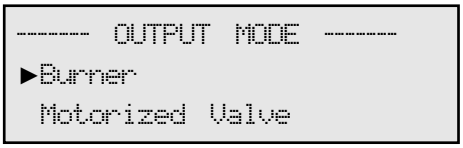


- This option allows you to set the display mode of the sensors and all temperature settings displayed by the HWR Platinum.

Output Mode

Burner or Motorized Valve Default: Burner

SELECT *Settings/System Startup/.../Output Mode*

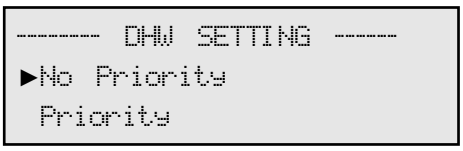


- The HWR Platinum can control the water temperature by either directly controlling the burner or outputting a valve signal to a motorized valve or Multi-Mod controlling multiple modulating burners.

- Therefore, if the HWR Platinum is resetting the circulating water temperature directly with the burner, the Output Mode must be set to Burner. This will enable the Normally Open Burner contacts 8 & 9 to run the burner.
- If the HWR is resetting the circulating water temperature with a motorized valve or Multi-Mod, the Output Mode must be set to Valve. This will enable the Motorized Valve contacts 11, 12, and 13 to modulate.

⚠ CAUTION
If the Output Mode is set incorrectly, the HWR Platinum will not control the circulating water temperature.

DHW Setting

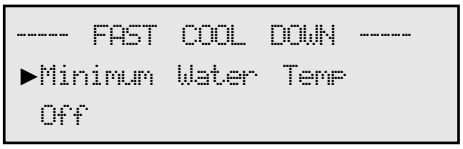


No Priority or Priority Default: No Priority

SELECT *Settings/System Startup/.../DHW Setting*

- This selection allows you to set how the HWR Platinum will control the Pump relay and Option 1 relay outputs will run based on a Domestic Hot Water call initiated through the DHW Call input terminals.
- When a domestic hot water call is initiated by closing the contacts on DHW Call terminals, the HWR Platinum changes the Target Set Point to 200°F.
- When the DHW Call contacts are opened, the HWR Platinum changes the Target Set Point back to a setting that is based on Outdoo temperature, Reset Ratio and Water Temperature Offset.
- If Option 1 relay was set to DHW Pump, at Startup Settings, the HWR Platinum will energize it as long as there is a DHW call.
- The HWR Platinum Pump Relay will react differently based on the DHW Setting. If the setting was set to No Priority, then the Pump Relay will stay energized supplying heat to the building.
- If the setting was set to Priority, the Pump Relay will deenergize for a period of one hour allowing all the heat to supply the Domestic Hot Water zone for that period.
- After the One hour priority time, the Pump Relay will energize again allowing both building heating (Pump relay) and domestic hot water heating (Option 1 relay) to continue .

Fast Cool Down (Available with RI, RIM, RINet)

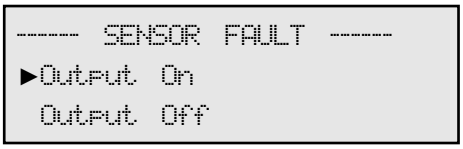


Minimum Water Temperature or Off Default: Minimum Water Temperature

SELECT *Settings/System Startup/.../Fast Cool Down*

- This option is only available when the HWR Platinum has a communication package.
- Space Lock (SELECT: Settings/System Settings/More Settings/Remote Interface) must be set to ON.
- The Fast Cool Down allows the building to cool down quicker until the space temperature is at the Night Target setting (SELECT: Settings/System Settings/More Settings/Remote Interface).
- When Minimum Water Temp is selected, the HWR Platinum will allow the System Temperature to cool down to the Minimum Target temperature (SELECT: Settings/System Settings/More Settings) when a switched from Day (Normal) to Night (Saving) mode takes place. This option must be selected when the boiler manufacturer has a minimum boiler temperature requirements.
- When Off is selected, the HWR Platinum will reduce the system water temperature to a minimum of 70°F when a switched from Day (Normal) to Night (Saving) mode takes place.
- When the building space temperature reaches the Night Target setting the HWR Platinum will exit the Fast Cool Dow n operation.
- After the Space Temperature has reach the Night Target, the HWR Platinum will recalculate the Target Temperature based on the Reset Ratio and Night Setback settings.

Sensor Fault

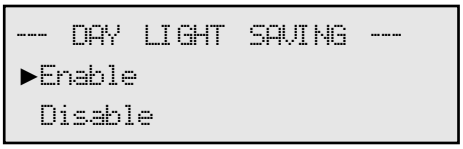


Output On or Output Off Default: Output On

SELECT *Settings/System Startup/.../Sensor Fault*

- This selection determines the status of the Boiler and Motorized Valve Outputs when either the Outdoor Sensor or System Sensor is at fault, sensor reading will blink with either OPEN or SHORT. Also, the Display second line will show SENSOR FAULT.
- When Output On is selected and a sensor is at fault, the Pump relay in addition to the Boiler relay or Motorized Valve Open relay, depending on Output Mode setting, will energize. This will allow the boiler to run on its own limits.
- When Output Off is selected and a sensor is at fault, the Pump relay and the Motorized Valve Close relay will energize.

Day Light Saving

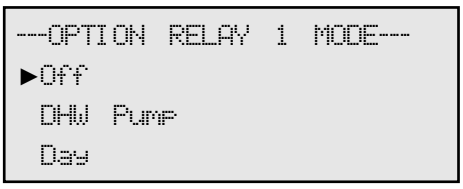


Enable or Disable Default: Enable

SELECT *Settings/System Startup/.../Day Light Saving*

- Enable this feature in areas where Day Light Saving is observed to account for the time changes without having to manually change the time twice a year.

Option Relay 1 Mode

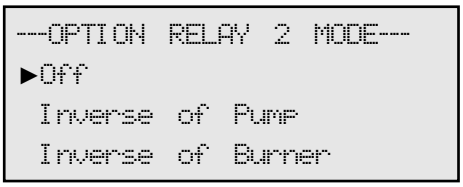


Off, DHW Pump, or Day Default: Off

SELECT *Settings/System Startup/.../Option Relay 1 Mode*

- Adjusting this feature to DHW Pump allows the HWR Platinum to energize the Option Relay 1 whenever a domestic hot water call is initiated through a dry contact closer on the DHW Call input terminals. At the same time of the closure, the HWR Platinum will change the System Target Temperature to 200°F.
- Selecting Day will cause the Option Relay 1 to energize whenever the HWR Platinum is in Day (Normal) mode.
- Off option will cause the Option Relay 1 never to energize.

Option Relay 2 Mode



Off, Inverse of Pump, or Inverse of Burner Default: Off

SELECT *Settings/System Startup/.../Option Relay 2 Mode*

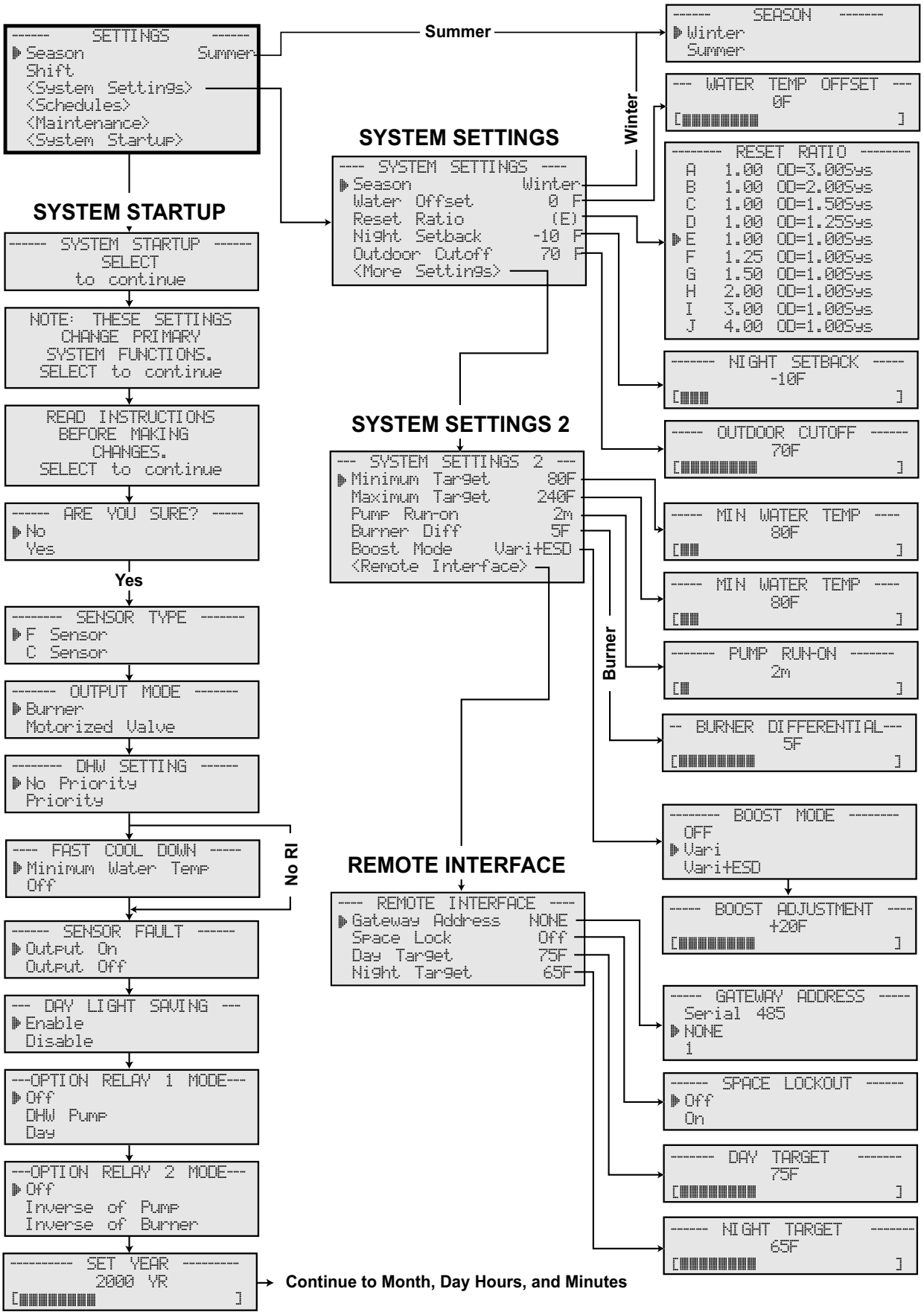
- Adjusting this feature to Inverse of Pump allows the HWR Platinum to energize the Option Relay 2 whenever the Pump relay is deenergized. When Pump relay is energized the Option Relay 2 will deenergize.
- Selecting Inverse of Burner requires that the HWR Platinum Output Mode to be set to Burner. This will cause the Option Relay 2 to energize whenever the Burner relay deenergizes and the Option Relay 2 to deenergize when Burner relay energizes.
- If Output Mode is not set to Burner while Option Relay 2 is set to Inverse of Burner, Option Relay 2 will never energize.
- Off option will cause the Option Relay 2 never to energize.

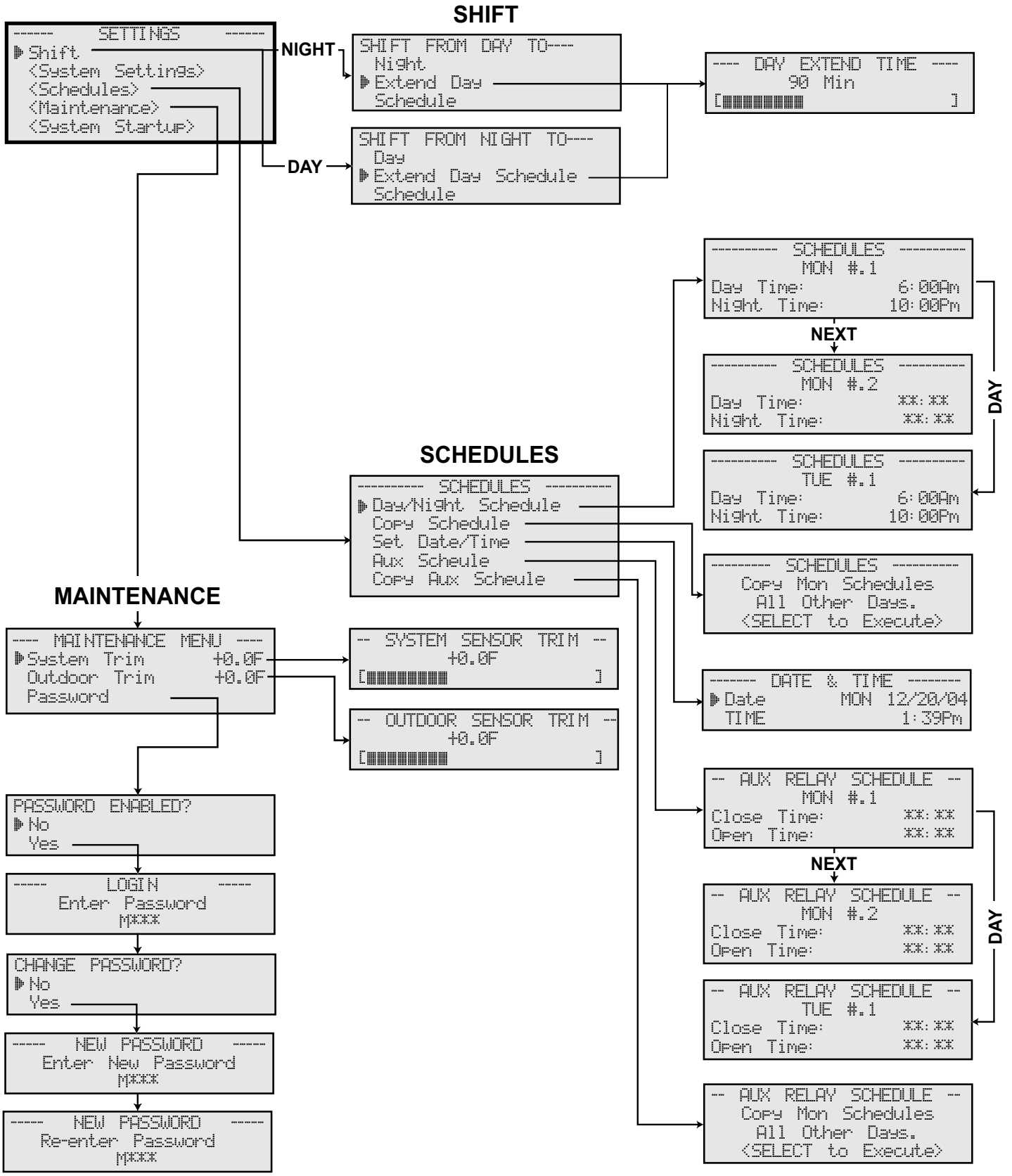
Date and Time Setting

Year, Month, Day, Time

SELECT *Settings/System Startup/.../Set Year*

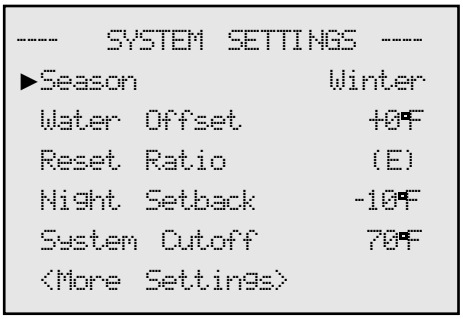
- Entering the correct date and time assures that the HWR Platinum will make its changes correctly.
- Use the Select and Adjust button to change date and time values.

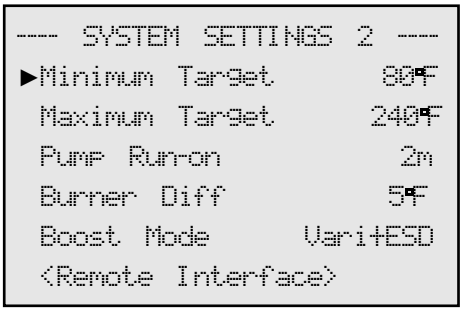

SETTINGS
Season Summer
Shift
<System Settings>
<Schedules>
<Maintenance>
<System Startup>
Summer
Winter
SEASON
Winter
Summer
SYSTEM SETTINGS
SYSTEM SETTINGS
Season Winter
Water Offset 0 F
Reset Ratio (E)
Night Setback -10 F
Outdoor Cutoff 70 F
<More Settings>
WATER TEMP OFFSET
0F
RESET RATIO
A 1.00 OD=3.00Sys
B 1.00 OD=2.00Sys
C 1.00 OD=1.50Sys
D 1.00 OD=1.25Sys
E 1.00 OD=1.00Sys
F 1.25 OD=1.00Sys
G 1.50 OD=1.00Sys
H 2.00 OD=1.00Sys
I 3.00 OD=1.00Sys
J 4.00 OD=1.00Sys
SYSTEM STARTUP
SYSTEM STARTUP
SELECT
to continue
NOTE: THESE SETTINGS
CHANGE PRIMARY
SYSTEM FUNCTIONS.
SELECT to continue
READ INSTRUCTIONS
BEFORE MAKING
CHANGES.
SELECT to continue
ARE YOU SURE?
No
Yes
NIGHT SETBACK
-10F
OUTDOOR CUTOFF
70F
SYSTEM SETTINGS 2
SYSTEM SETTINGS 2
Minimum Target 80F
Maximum Target 240F
Pump Runron 2m
Burner Diff 5F
Boost Mode Vari+ESD
<Remote Interface>
MIN WATER TEMP
80F
MIN WATER TEMP
80F
Yes
SENSOR TYPE
F Sensor
C Sensor
OUTPUT MODE
Burner
Motorized Valve
Burner
PUMP RUN-ON
2m
BURNER DIFFERENTIAL
5F
DHW SETTING
No Priority
Priority
BOOST MODE
OFF
Vari
Vari+ESD
FAST COOL DOWN
Minimum Water Temp
Off
No RI
REMOTE INTERFACE
REMOTE INTERFACE
Gateway Address NONE
Space Lock Off
Day Target 75F
Night Target 65F
BOOST ADJUSTMENT
+20F
SENSOR FAULT
Output On
Output Off
GATEWAY ADDRESS
Serial 485
NONE
1
DAY LIGHT SAVING
Enable
Disable
SPACE LOCKOUT
Off
On
OPTION RELAY 1 MODE
Off
DHW Pump
Day
DAY TARGET
75F
OPTION RELAY 2 MODE
Off
Inverse of Pump
Inverse of Burner
NIGHT TARGET
65F
SET YEAR
2000 YR
Continue to Month, Day Hours, and Minutes


SHIFT
SETTINGS
Shift
<System Settings>
<Schedules>
<Maintenance>
<System Startup>
NIGHT
DAY
SHIFT FROM DAY TO---
Night
Extend Day
Schedule
SHIFT FROM NIGHT TO---
Day
Extend Day Schedule
Schedule
---- DAY EXTEND TIME ----
90 Min
[ ]
SCHEDULES
SCHEDULES
Day/Night Schedule
Copy Schedule
Set Date/Time
Aux Scheule
Copy Aux Scheule
---------- SCHEDULES ----------
MON #.1
Day Time: 6:00Am
Night Time: 10:00Pm
NEXT
---------- SCHEDULES ----------
MON #.2
Day Time: **:**
Night Time: **:**
DAY
---------- SCHEDULES ----------
TUE #.1
Day Time: 6:00Am
Night Time: 10:00Pm
--------- SCHEDULES ---------
Copy Mon Schedules
All Other Days.
<SELECT to Execute>
MAINTENANCE
---- MAINTENANCE MENU ----
System Trim +0.0F
Outdoor Trim +0.0F
Password
-- SYSTEM SENSOR TRIM --
+0.0F
[ ]
-- OUTDOOR SENSOR TRIM --
+0.0F
[ ]
------- DATE & TIME -------
Date MON 12/20/04
TIME 1:39Pm
-- AUX RELAY SCHEDULE --
MON #.1
Close Time: **:**
Open Time: **:**
NEXT
-- AUX RELAY SCHEDULE --
MON #.2
Close Time: **:**
Open Time: **:**
DAY
-- AUX RELAY SCHEDULE --
TUE #.1
Close Time: **:**
Open Time: **:**
-- AUX RELAY SCHEDULE --
Copy Mon Schedules
All Other Days.
<SELECT to Execute>
PASSWORD ENABLED?
No
Yes
----- LOGIN -----
Enter Password
M***
CHANGE PASSWORD?
No
Yes
----- NEW PASSWORD -----
Enter New Password
M***
----- NEW PASSWORD -----
Re-enter Password
M***

System Settings

Enter menu by pressing SELECT: *Settings/System Settings*
The System Settings and System Settings 2 menus allow for adjusting and fine tuning the system for enhanced comfort and more fuel savings.





- Season (Winter or Summer)
- W ater Offset
- Reset Ratio
- Night Setback
- System Cutoff
- Minimum Target
- Pump Run-On
- Burner Differential (Only available in Burner Mode)
- Boost Mode
- Remote Interface (Can be utilized with Remote Communication Only)

Season

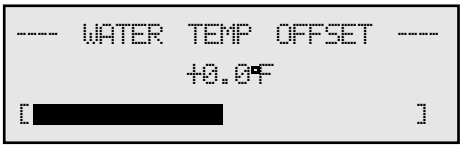
Winter or Summer Default: Winter
SELECT *Settings/Season* when in Winter setting
SELECT *Settings/System Settings/Season* when in Summer setting

The HWR Platinum will turn off the Pump relay when it is in Summer setting. In addition the burner will be off for heating or the motorized valve will be fully closed. When in Winter setting the HWR Platinum will activate the Pump relay whenever the Outdoor temperature (OD) falls below the cutoff setting (Day/Night). Also, the HWR Platinum will begin heating whenever the System temperature (SYS) falls below the Set Point setting. Therefore during the heating season this setting must be set to Winter. When the heating season is over, it is a good practice to switch the HWR Platinum to Summer setting.

⚠ CAUTION
DO NOT turn power off to the HWR Platinum when heating season is over. If you do so, the battery will run down and will have to be replaced. Instead switch to Summer.

Water Offset

-40°F to +40°F Default: 0°F
SELECT *Settings/System Settings/Water Offset*
The Water Offset setting allows you to adjust the starting points of the Reset Ratio curves. This means that regardless of the Outdoor temperature (OD), or the Reset Ratio that has been selected, when the Offset setting is changed, that change is directly added or subtracted to the Target water temperature (TGT). For instance, if the Target water temperature (TGT) was 130°F and the Offset setting was changed from 0° to 10° (an increase of 10°), then the Target water temperature (TGT) would increase to 140°F.



The Water Offset setting does not change the effect that Outdoor temperature (OD) has on System water temperature (SYS). For instance, with an E setting (1.00 (OD):1.00 (SYS)) Reset Ratio, the System water temperature (SYS) will always increase one degree for each degree change in the Outdoor temperature (OD). What the Offset does is add or subtract a constant temperature value.

If required: **Adjust the Water Offset in mild weather**. If the ambient building temperatures are too warm in the warm weather, decrease the Water Offset. If the ambient building temperatures are too cold in the warm weather, increase the Water Offset. The rule of thumb for baseboard radiation is to change the Offset by 4°F for every 1°F you wish to change the building temperatures. For radiant heat applications, change the Offset by 1°F or 2°F for every degree you wish to change the building temperature.

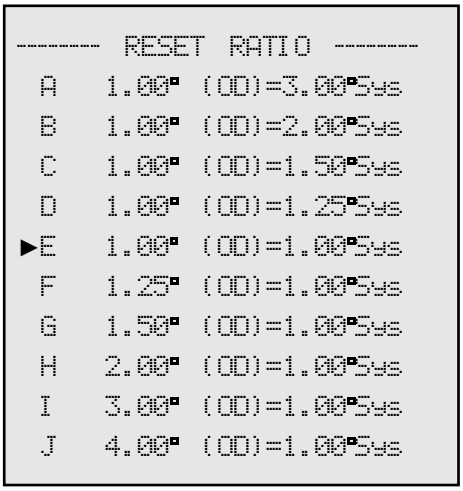
To adjust the Offset simply rotate the Adjust knob. The Water Offset is adjustable from -40°F to +40°F with a default of 0°F.. A minus Offset reduces the Target water temperature (TGT), and a positive Offset increases the temperature.

Reset Ratio

A through J Default: E

SELECT *Settings/System Settings/Reset Ratio*

The Reset Ratio determines how the System water temperature (SYS) will vary with Outside temperature (OD). With any of the ratios, the colder it becomes outside, the hotter the temperature of the system water. The ratios are adjustable from 1:3 (A) to 4:1 (J).



With a 1:3 (A) ratio, the System water temperature (SYS) will increase rapidly as the outside temperature falls, hitting the maximum of 240°F at 24°F outside temperature. With a 4:1 (J) ratio, the System water temperature (SYS) will increase slowly as the outside temperature falls. Even at -30°F, the system water will only be 125°F, and at 24°F outside, the system water will be 112°F. Such a low Reset Ratio might be used with radiant floor heating applications.

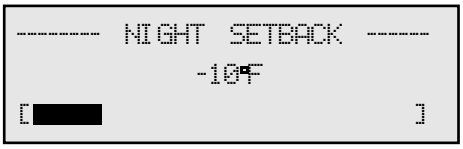
With most baseboard heating applications, a 1:1 (E) setting is a good place to start. With a 1:1 (E) ratio, for every degree the outside temperature falls, the system water temperature is increased one degree.

If required: **Adjust the RESET RATIO in cold weather.** If the ambient building temperatures are too cold in cold weather, change the ratio counterclockwise by one letter (i.e.. from E to D). If the building temperatures are too warm in cold weather, change the ratio clockwise by one letter (i.e.. from E to F).

Night Setback

0°F to 80°F Default: 10°F

SELECT *Settings/System Settings/Night Setback*



The HWR Platinum has two heat levels. The Day Time (Normal) settings are for when a building is occupied and people are active. The Night Time settings hold a lower ambient temperature, and are for when a building is unoccupied, or people are sleeping.

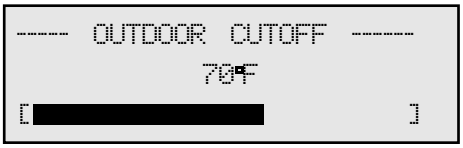
The Night Time setting lowers the temperature of the circulating System water (SYS) by the number of degrees indicated. In other words, the HWR Platinum will first calculate the temperature of the circulating System water by using the outside temperature and Reset Ratio. Then the HWR Platinum will add or subtract the value of the Water Offset. Finally, if the control is in Setback, the HWR Platinum will subtract the value of the Night Setback setting. This final value is the temperature the HWR Platinum will use for the Target water temperature (TGT). This procedure will occur automatically.

The Night Setback setting is adjustable from 0°F (no Night Setback) to -80°F (the circulating water temperatures will be lowered 80°F when the control enters the Setback mode.) For baseboard radiation, begin by setting the Night Setback 4°F for every degree you wish to decrease the ambient building temperatures. For example, if you wish the building to be 5°F cooler during Setback, set the Night Setback to -20°F. For radiant applications, begin by setting the Night Setback 1°F or 2°F for every degree you wish to decrease the ambient building temperatures.

Outdoor Cutoff/System Cutoff

Off, 30°F to 75°F, On Default: 70°F

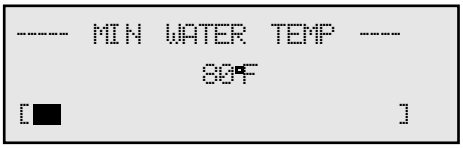
SELECT *Settings/System Settings/System Cutoff*



The Outdoor Cutoff will determine when the HWR Platinum turns on the Pump relay and begins heating the System water (SYS). When the Outdoor temperature (OD) is above the Outdoor Cutoff, the HWR Platinum will turn off the Pump relay. In addition, the burner will be off for heating, or the valve will be fully closed. When the Outdoor temperature (OD) falls below the Outdoor Cutoff, the HWR Platinum will activate the Pump and control the burner or valve to hold the Target water temperature (TGT).

The Outdoor Cutoff can be set from 30°F to 75°F. In addition, the Set Point can be set to ON or OFF. In the ON position, the Pump will run regardless of the Outdoor temperature (OD) and the burner and valve will be active to hold the Target water temperature (TGT). (Note: The lowest Target water temperature the HWR Platinum will circulate is 70°F. If the Outdoor Cutoff is turned ON, the HWR Platinum will circulate at least 70°F water even in the hottest of weather.) In the OFF position, the system pump will always be off and the burner will be off for heating or the valve will be fully closed.

Minimum Target/Minimum Water Temperature



70°F to 170°F Default: 80°F

SELECT *Settings/System Settings/More Settings/Minimum Target*

If controlling a motorized valve set the Minimum Water Temperature to 70°F. This will allow the HWR Platinum to calculate the Target water temperature (TGT) based on the Outdoor temperature (OD), the Reset Ratio, and the Offset value.

If controlling a burner directly, or controlling a Multi-Mod, the Minimum Water Temperature must be set to the boiler manufacturer's specification. The HWR Platinum will calculate the Target temperature (TGT) based on the Outdoor temperature (OD), the Reset Ratio, and the Offset value. The HWR Platinum will control the burner or Multi-Mod to hold either the calculated temperature, or the temperature of the Minimum Water Temperature, whichever is higher.

Maximum Target/Maximum Water Temperature

90°F to 240°F Default: 240°F

SELECT *Settings/System Settings/More Settings/Maximum Target*

When using the HWR Platinum to regulate water temperature for a radiant heat system set the Maximum Water Temperature to the radiant tubing manufacturer spec. This will allow the HWR Platinum to calculate the Target water temperature (TGT) based on the Outdoor temperature (OD), the Reset Ratio, and the Offset value with exceeding the Maximum Water Temp. Thus, protecting the tubing from exesive heat.

Pump Run-On

0 to 60 minutes Default: 2 minute

SELECT *Settings/System Settings/More Settings/Pump Run-On*

The Pump relay will energize whenever the Outdoor temperature (OD) is below the Outdoor Cutoff (CUT). When the Outdoor temperature increases 2°F above the Outdoor Cutoff after either the burner or the motorized valve relay has deenergized, the Pump relay will stay on for a period of time set by the Pump Run-On. This allows the Pump to dissipate the residual heat within the boiler back into the building.

The Pump Run-On time should be set based on the size and type of the boiler. A boiler with low water content and high horse power will need a longer Pump Run-On than a boiler with the same horse power but has more water content. This setting should be used when the HWR Platinum is controlling a boiler or a Multi-Mod.

Burner Differential

0°F to 15°F Default: 5°F

SELECT *Settings/System Settings/More Settings/Burner Diff*

The Burner Differential setting exist in the menu only when the Output Mode is set to Burner. The Burner Differential setting prevents the boiler from short cycling by allowing the actual circulating water temperature to fall by the set number of degrees before firing the boiler again. The burner will turn off at the Target water temperature (TGT), and not come back on until the actual water temperature falls through the differential. For example:

Target Water Temperature: 145°F
Output Mode: BURNER
Burner Differential: 5°F

The burner will run until the System temperature (SYS) reaches 145°F. The burner will then be shut off. The System water temperature will begin to fall. When the System water temperature falls to 140°F, the burner will be started again.

Boost and Early Shutdown

Off, Vari, and Vari+ESD Default: Vari

SELECT *Settings/System Settings/More Settings/Boost Mode*

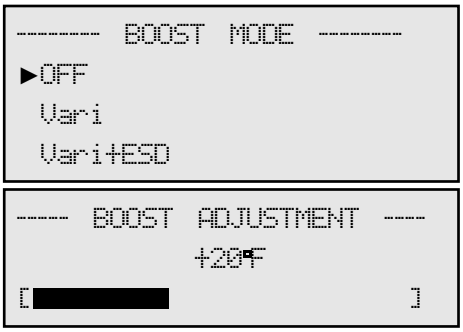
The morning Boost is designed to return the building to comfortable ambient temperatures after the cooler Night (Setback) period. The HWR Platinum will accomplish this by running elevated water temperatures for a given time period based on the #1 Day Time schedule for that day. If you do not want a Boost on a day of the week, simply program the #1 Day Time schedule to **:**, and use the #2 Day Time program for any Day (Normal) settings.

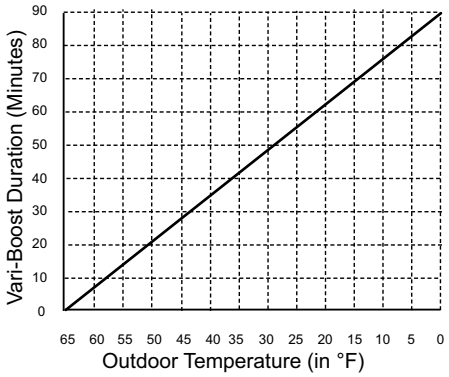
To set up the morning Boost, you must set the type of Boost you need and the amount of Boost. There are three types of Boost:

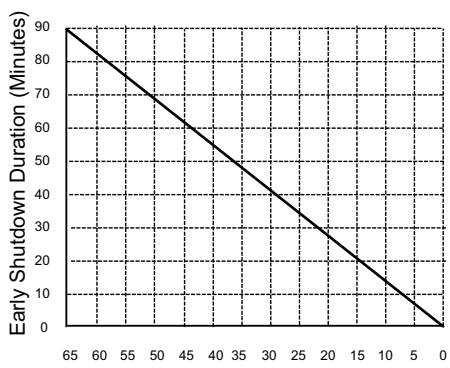
1. Off - The HWR Platinum will begin running the Day (Normal) water temperatures at the #1 Day Time.

2. Vari-Boost - This Boost begins earlier than the #1 Day Time schedule. The length of the Boost time depends on the Outdoor temperature (OD). During the Boost period, the HWR Platinum will increase the Target water temperature (TGT) by the number of degrees set on the Morning Boost. If the temperature at the Day Time #1 is cold, then increase the Boost Adjustment by 10°F and wait for several days before adjusting the Boost again.

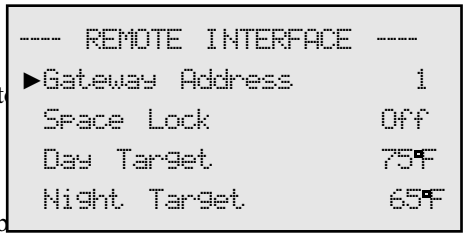
3. Vari-Boost with Early Shutdown ESD - This should be used in buildings that will be unoccupied in the Night (Setback) times. A Vari-Boost as described above is run. In addition, the HWR Platinum will switch into the Setback mode earlier than the latest Night Time setting for that day. The warmer it is outside, the earlier the HWR Platinum will shift into Setback. The maximum amount of Early Shutdown ESD is 90 minutes when it is 65°F Outdoor. At 0°F Outdoor, the HWR Platinum will shift back into Night at the time of the last *Night Time* setting for that day







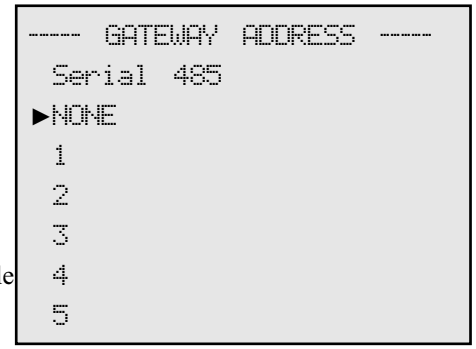
Remote Interface (Optional Package)



SELECT *Settings/System Settings/More Settings/Remote Interface*
The HWR Platinum can be controlled remotely. This allows the HWR Platinum to monit additional sensors that can be used for monitoring and turning alarms On or Off.

The HWR Platinum using a communication package (RI, RIM, RI-Net) and a computer with Visual Gold software or internet access (for RI-Net only) can configure a large numb of sensors that can be used either in calculating the heat required or for monitoring severa building and equipment functions. Using this feature allows setting alarms, warnings and analysis.

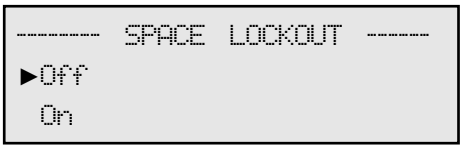
Gateway



Serial 485, None, 1 through 39 Default: None
SELECT *Settings/System Settings/More Settings/Remote Interface/Gateway Address*
When connection multiple HWR Platinums to Heat-Timer TGC Gateway, the numbers 1 through 39 are used to identify each HWR Platinum.

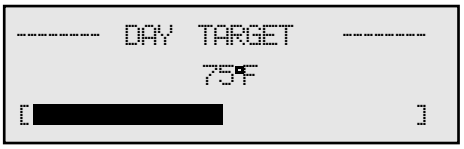
When connecting to the HWR Platinum using an RI (Remote Interface) a Gateway option will be present on the Remote Interface menu list. The Gateway is to configure the connection to the HWR Platinum using a direct cable connection (RS232 or RS485 Cable) or a modem connection by dialing into the HWR Platinum RIM through a modem.

Space Lock



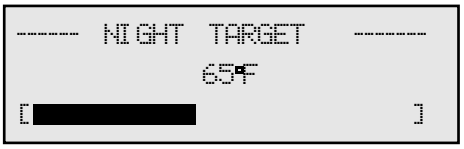
On or Off Default: Off
SELECT *Settings/System Settings/More Settings/Remote Interface/Space Lockout*
The Space Lockout is required to be set to On to be able to use Space sensors for Day Target and Night Target. This option can be set when the HWR Platinum has any of the communication packages.

Day Target



55°F to 85°F Default: 75°F
SELECT *Settings/System Settings/More Settings/Remote Interface/Day Target*
The Day Target is the space temperature the HWR Platinum will try to reach during the Boost period when coming out of the Night Time (Setback) setting.

Night Target



50°F to 80°F Default: 65°F
SELECT *Settings/System Settings/More Settings/Remote Interface/Night Target*
The Night Target is the space temperature the HWR Platinum will try to reach during the Early Shutdown ESD period when switching from the Day setting.

Schedules

Enter menu by pressing SELECT: *Settings/Schedules*
The HWR Platinum has two levels of heat. The Day Time level is used when a building is occupied, and people are active. The Night Time (Setback) level is used when a building is not occupied, or when people are sleeping.

The HWR Platinum can have up to four Day Time and four Night Time (Setback) periods for each individual day of the week. The HWR Platinum will show which period is it in on the 3rd line of the display. Every time the HWR Platinum updates the clock time, it checks the Day/Night program. If there is a matching Day/Night time programmed, it sets the heat level accordingly, otherwise the heat level is not changed. This means you do not have to program every day of the week. If an office building is unoccupied all weekend, simply set the last programmed #4 setting (8:00 PM on Friday). Then, set all the Saturday and Sunday programs to **:** (using the DEL button). The control will stay in Night Time (Setback) until it reaches a Day setting (6:00AM on Monday).

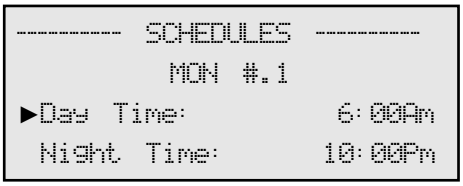
⚠ CAUTION

The HWR Platinum will ignore any Time setting that reads **:**.

The #1 setting for any Day Time is used by the Boost. The last Night Time setting is used by the Early Shutdown ESD features.

Day/Night Schedule

SELECT: *Settings/Schedules/Day Night Schedule*
Use this setting to set up to 4 Day Time and 4 Night Time (Setback) settings per each day of the week. The Day Time settings allows the HWR Platinum to set the Target based on Outdoor temperature and the Reset ratio. If the Boost feature is being used, it uses the Day Time on the 1st setting of that day as a Boost calculation starting point. The actual Boost start time varies depending on the Outdoor Temperature (OD).



The Night Time settings allows the HWR Platinum to reduce the Target temperature (TGT) by the Night Setback setting. Also, if the Early Shutdown feature is being set, it uses the Night Time setting on the last setting of that week day as an Early Shutdown calculation starting point. In this case, the actual Early Shutdown start time will vary depending on the Outdoor temperature (OD).

In this area of the menu 3 buttons will take effect. The NEXT button will allow the scroll between the 4 different settings of a specific week day. The DAY button will allow the scroll between all week days. The PREV.(DEL) button will erase the Day Time and Night Time settings for a specific day schedule (i.e.. 1st Day Time and Night Time schedule on Tuesday).

Schedule Example

Schedule		Day of Week						
		MON	TUE	WED	THU	FRI	SAT	SUN
#1	Day	6:00AM	6:00AM	6:00AM	6:00AM	7:00AM	**:**	**:**
	Night	10:00PM♦♦	10:00PM♦♦	10:00PM♦♦	10:00PM♦♦	11:00AM	**:**	**:**
#2	Day	**:**	**:**	**:**	**:**	1:00PM	8:00AM♦	**:**
	Night	**:**	**:**	**:**	**:**	4:00PM	4:00PM♦♦	**:**
#3	Day	**:**	**:**	**:**	**:**	6:00PM	**:**	**:**
	Night	**:**	**:**	**:**	**:**	10:00PM♦♦	**:**	**:**
#4	Day	**:**	**:**	**:**	**:**	**:**	**:**	**:**
	Night	**:**	**:**	**:**	**:**	**:**	**:**	**:**

♦ No boost will take effect.
♦♦ Early Shut Down ends. night Schedule begins

Monday through Thursday: V ari-Boost begins before 6 am and ends at 6 am
Day temperature level is maintained from 6 am till before 10 PM
Early Shutdown starts before 10 PM and ends at 10 PM
Night temperature level is maintained from 10 PM until the Vari Boost the following morning

Friday: V ari Boost begins before 7 am and ends at 7 am
Day temperature level is maintained from 7 am to 11 am
Night temperature level is maintained from 11 am to 1 PM
Day temperature level is maintained from 1 PM to 4 PM
Night temperature level is maintained from 4 PM to 6 PM
Day temperature level is maintained from 6 PM till before 10 PM
Early Shutdown starts before 10 PM and ends at 10 PM
Night temperature level is maintained from 10 PM until 8 AM the following morning

Saturday: No Vari Boost because the #1 is not programmed
Day temperature level is maintained from 8 am till before 4 PM
Early Shutdown starts before 4 PM and ends at 4 PM
Night temperature level is maintained from 4 PM into Sunday

Sunday: Night temperature level is maintained all day Sunday, ending at the Vari Boost Monday morning

NOTE

When working with the HWR Platinum with any of the communications option, Boost can extend to an additional hour if Day Target was not reached within the Boost period.

Copy Schedule

SELECT: *Settings/Schedules/Copy Schedule*
To reduce the need for setting each week day time schedule, this feature has been made to allow the copying of the MON Day Time and Night Time schedule settings to all of the reset of the days.

```
-------- SCHEDULES --------
   Copy Mon Schedules
     All Other Days.
   <SELECT to Execute>
```

Set Date and Time

SELECT: *Settings/Schedules/Set Date & Time*
In the startup process of the HWR Platinum, the Date and Time will need to be set. If the Date or Time needs to be adjusted, this area of the menu allows that. Selecting Date will allows you to set the year followed by the month then finally the days. Adjust the time by selecting Time from the menu and then scrolling through the hours followed by the minutes.

```
------- DATE & TIME -------
▶Date        MON 12/20/04
 TIME                1:39Pm
```

Remember that the battery is the only backup for the Date and Time. If no power is supplied to the HWR Platinum and there was no battery or battery had no power, date and time values will be lost and will need to be readjusted.

Aux. Schedule

SELECT: *Settings/Schedules/Aux Schedule*
Use the Aux Schedule setting to set up to 4 Close Time and 4 Open Time settings per each day of the week to control the status of the Aux/Clock Relay. The Aux schedule works independently from the Day and Night Schedule. The Close Time setting closes the Aux/Clock relay allowing activation or deactivation of an external device or control. The Open Time opens the Aux/Clock relay allowing activation or deactivation of an external device or control.

```
----AUX RELAY SCHEDULE-----
         MON #.1
▶Close Time:          XX:XX
 Open Time:           XX:XX
```

In this area of the menu 3 buttons will take effect. The NEXT button will allow the scroll between the 4 different settings of a specific week day. The DAY button will allow the scroll between all week days. The PREV.(DEL) button will erase the Close Time and Open Time settings for a specific day schedule (i.e.. 1st Close Time and Open Time schedule on Tuesday).

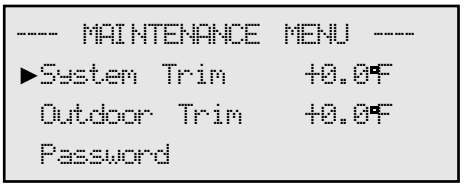
Copy Aux Schedule

SELECT: *Settings/Schedules/Copy Aux Schedule*
To reduce the need for setting each week Aux Time schedule, this feature has been made to allow the copying of the MON Close Time and Open Time schedule settings to all of the reset of the days.

```
--AUX RELAY SCHEDULE-----
   Copy Mon Schedules
     All Other Days.
   <SELECT to Execute>
```

Maintenance

Enter menu by pressing SELECT: *Settings/Maintenance*
The Maintenance menu gives access to sensor trimming and Password protection.

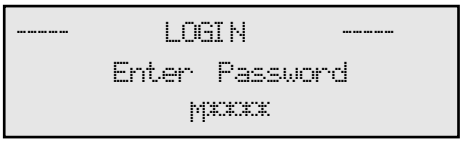


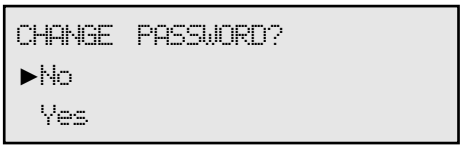
System and Outdoor Sensor Trim

SELECT: *Settings/Maintenance/System Sensor Trim*
SELECT: *Settings/Maintenance/Outdoor Sensor Trim*
The Heat-Timer thermistor type sensors are very accurate, and normally require no calibration. Sometimes it may be desirable to make small adjustments to the displayed value for either the Outdoor temperature (OD) or the System temperature (SYS). The Trim setting can adjust the displayed value by ± 5°F. Do not use the Trim setting to make the Outdoor temperature sensor match that reported on the radio or TV. Outdoor temperature can vary widely over a broadcast range. Only trim the outdoor sensor based on an accurate thermometer reading taken where the sensor is located.

Password

SELECT: *Settings/Maintenance/Password*
The Password is provided to prevent unauthorized users from making changes to HWR Platinum settings. Setting up the Password feature is not recommended as it slows down access, makes servicing more difficult, and can disable the system if management or ownership should change. The Password feature is not active unless a user enables it. If you choose to enable the Password, DO NOT forget the Password. Write it down and store it in a safe location known to at least one other authorized user. When the Password is enabled, none of the settings can be changed without entering the Password. Once the Password is entered, you can make multiple changes. The Password will expire 15 minutes after the last change has been made.





Using the Default Password

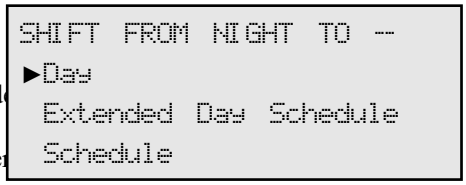
- The HWR Platinum has a built in default panel Password - HWRX.
- Enabling the default Password will prevent most unauthorized users from adjusting the settings, but will not prevent Heat-Timer service personnel, or anyone else with access to this manual, from adjusting the panel.
- T o enable the default Password, enter the Maintenance menu, select Password, and follow the prompts to enable the Password.
- At the Login screen, you will have to enter the Password. Turn the Adjust knob until the desired letter is shown. Then press the Select to move on to the next letter.
- Enter HWRX into the Login screen.
- When completed, select No to the prompt "*Change Password?*"

⚠ CAUTION

When using Visual Gold software, the Visual Gold default Password is "HWR".

The default panel Password will NOT allow the access through Visual Gold.

Shift



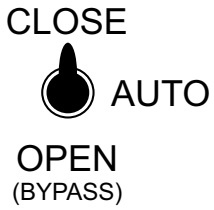
Enter menu by pressing SELECT: *Settings/Shift*

The Shift selection allows you to manually shift from any setting into Night, Day, Extended Day Schedule, or programmed Schedules. This can be used to temporarily override the programed schedule. A typical example where the shift would be used is in a school when an event has gone into overtime. Instead of reprogramming the control to keep it from going into the Setback mode, simply select the Shift followed by the Shift option.

The amount of time the HWR will hold the shift is:

- Shifting from Day to Night - The control will stay in the Night mode until either the control is shifted again, or until the next programmed Day mode time. The Display will show Night Shift to indicate this status.
- Shifting from Night to Day - The control will stay in the Day mode until either the control is shifted again, or until the next programmed Night mode time. The Display will show Day Shift to indicate this status.
- Shifting to Extended Day - The control will stay in the Day mode for an adjustable amount of time (adjustable between 60 to 240 minutes), and then revert automatically back to the scheduled program. This prevents a user (without a programming password) from putting the HWR Platinum in Day mode for an extended period of time when it is programmed for Night. When the control is in Extended Day, the Display will alternate between the Day Ext and the Extended Time balance remaining in minutes indicating the Extended Day mode.

Auto/Close/Open (Bypass)



The switch must be in the AUTO position for the HWR Platinum to control the pump and the circulating system water temperatures. In the Open/Bypass position, the pump will run constantly, and either the burner will run on its limits, or the motorized valve will be fully open. In the Close position, the pump will also run constantly, but the burner will be off, or the motorized valve close relay will energize.

When the HWR Platinum is in the Open/Bypass position, no normal functions will be executed. The display will show the number of hours and minutes the HWR Platinum has been in Open/Bypass.

When switched to Open, the pump will run, and the burner will run on its limits or the valve open relay will energize even if the HWR Platinum has been damaged or is not powered. The Open switch directly connects the Normally Open contacts 4 to 5, contacts 8 to 9, and contacts 12 to 13. Therefore, if there is no heat, test the pump and boiler or valve by putting the control in Open. If the units do not run, the problem is not with the HWR Platinum panel.

Troubleshooting

When there is a problem with heat in a building, the first place people look is at the heating control. And the heating control may be the problem, but so may be other system components, or perhaps the heating control is not adjusted properly. To help determine and correct the problem, simply follow the troubleshooting guide that best describes your heating situation:

NOTE: When using a Multi-Mod, follow the Motorized Valve Application guidelines. When the chart says the valve should be opening, the Multi-Mod should increase the amount of modulation. When the chart says the valve should be closing, the Multi-Mod should decrease the amount of modulation.

The troubleshoot diagrams in the following pages represent these issues:

- No Heat, No Pump
- No Heat, Pump Running, Burner Application
- No Heat, Pump Running, Motorized Valve Application
- T oo Little Heat, Burner Application
- T oo Little Heat, Motorized Valve Application
- T oo Much Heat

In addition to these basic problems, you may have intermittent problems. If you

Sometimes have No Heat, too Little Heat or too Much Heat

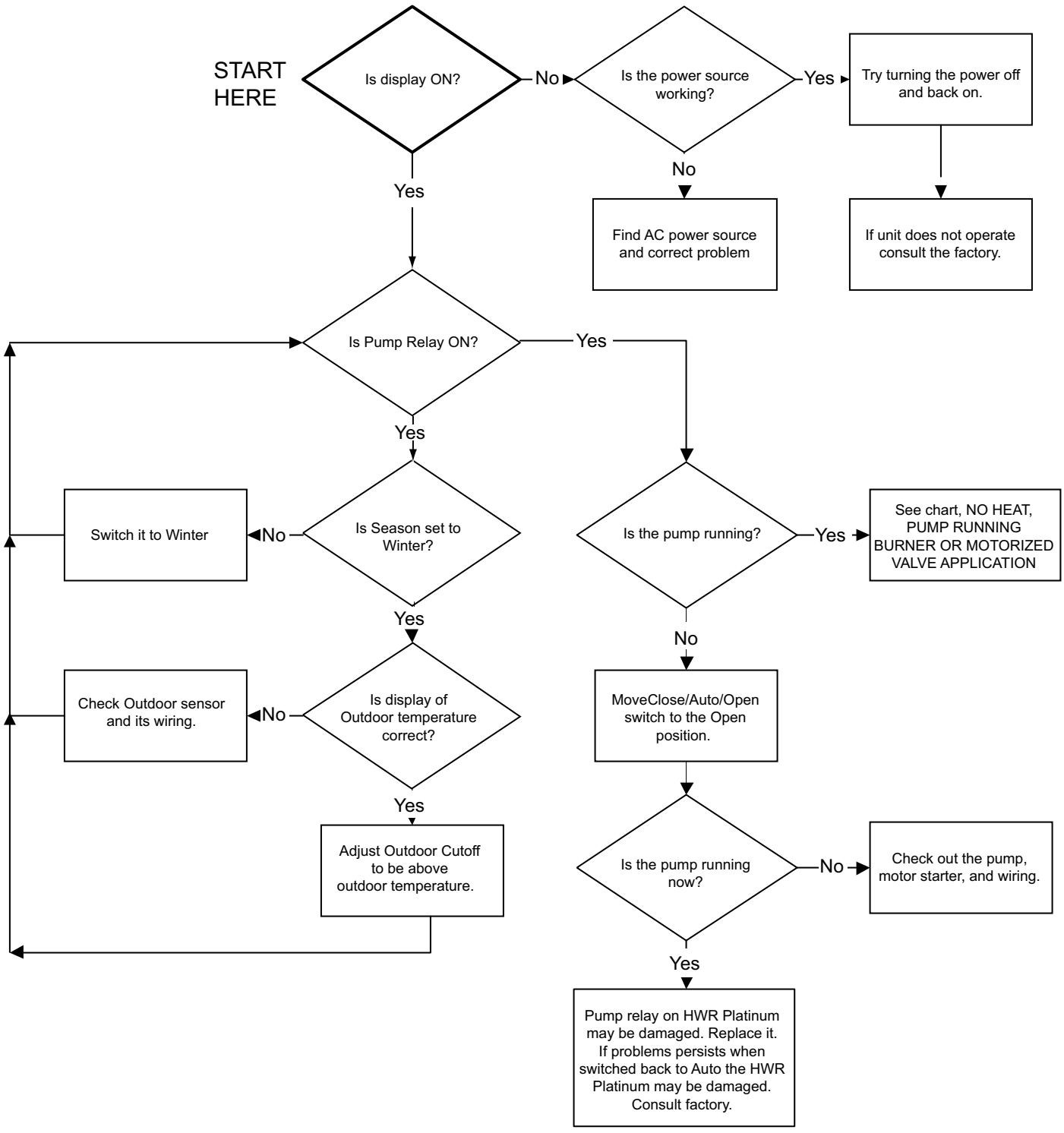
- The HWR Platinum may not be programmed correctly. Check through all the settings of the clock to make sure the Day and Night Setback modes are when you want them to be. Go through all four settings for each day of the week, making sure any unused settings display **:**. Pay special attention to the AM and PM, since if these are incorrect, the program will be 12 hours off. Refer to *Schedules/Day and Night Schedule (menu selection)*

Have too Little Heat or too Much Heat Only at the 1d Time, adjust your Vari Boost. The Vari Boost changes with Outdoor temperature (OD), and is therefore recommended if there is too little heat, increase the Boost Adjustment by 10°F, it there is too much heat, reduce the Boost Adjustment by 10°F. Refer to *System Settings/ System Settings 2/Boost Mode/Vari (menu selection)*

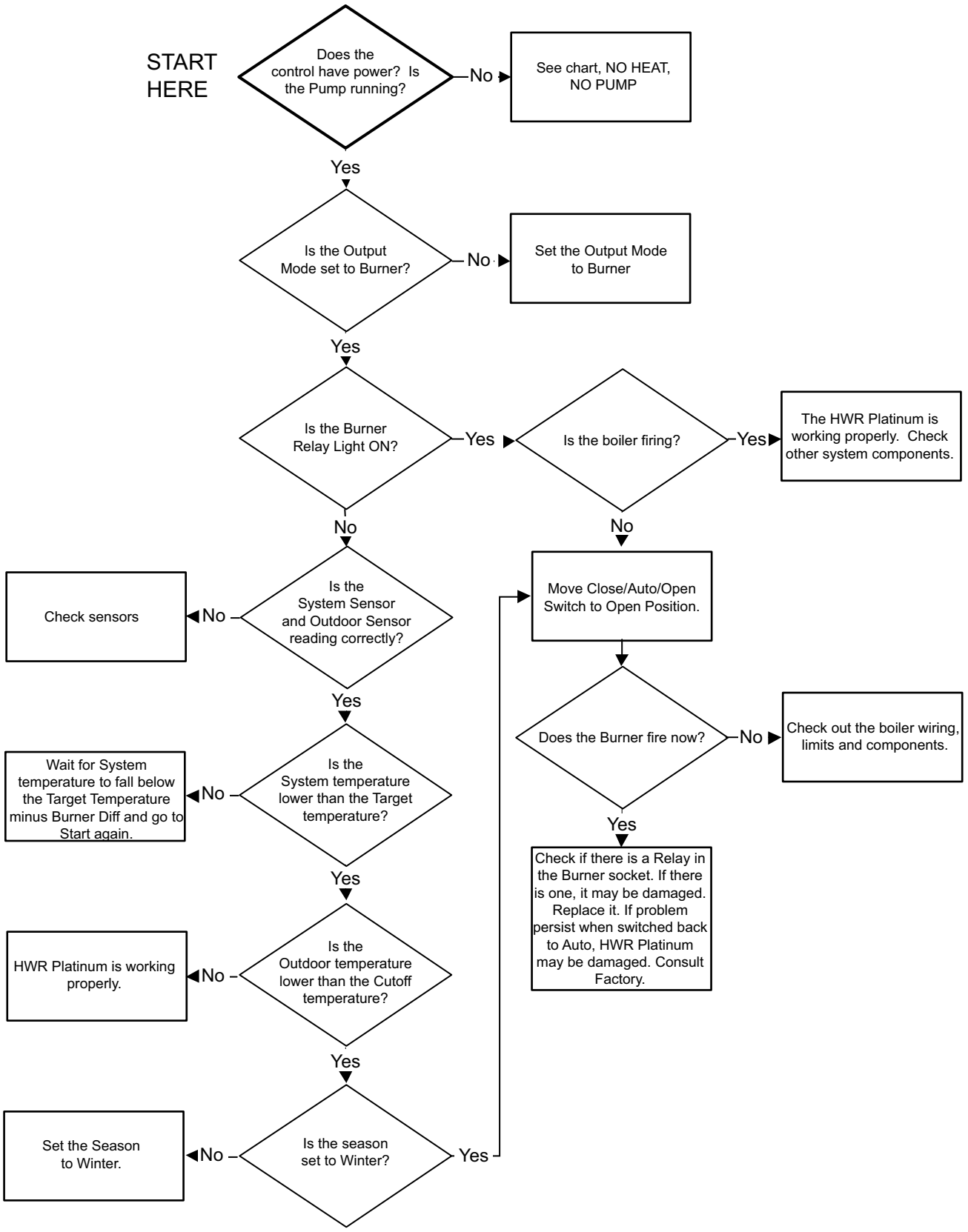
Have too Little Heat Before the Last Setback Program, you may not wish to use the Shutdown feature. Simply select the Vari Boost instead of Vari Boost+ESD. Refer to *System Settings/ System Settings 2/Boost Mode/Vari (menu selection)*

Have too Little Heat or too Little Heat Only in Parts of the Building, then check the heating system components. Check that there is no air trapped in the system, and that the pump are working properly.

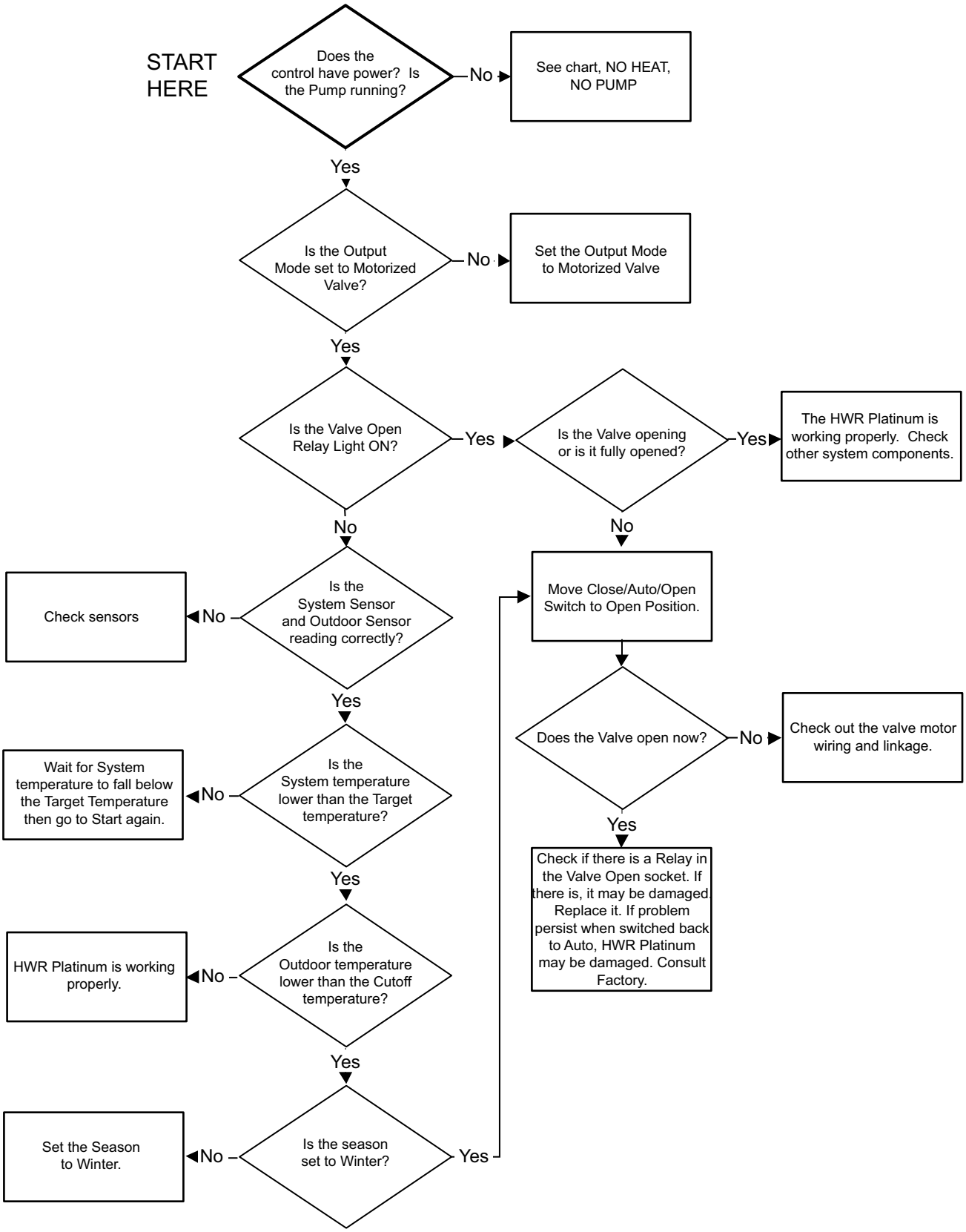
No Heat No Pump



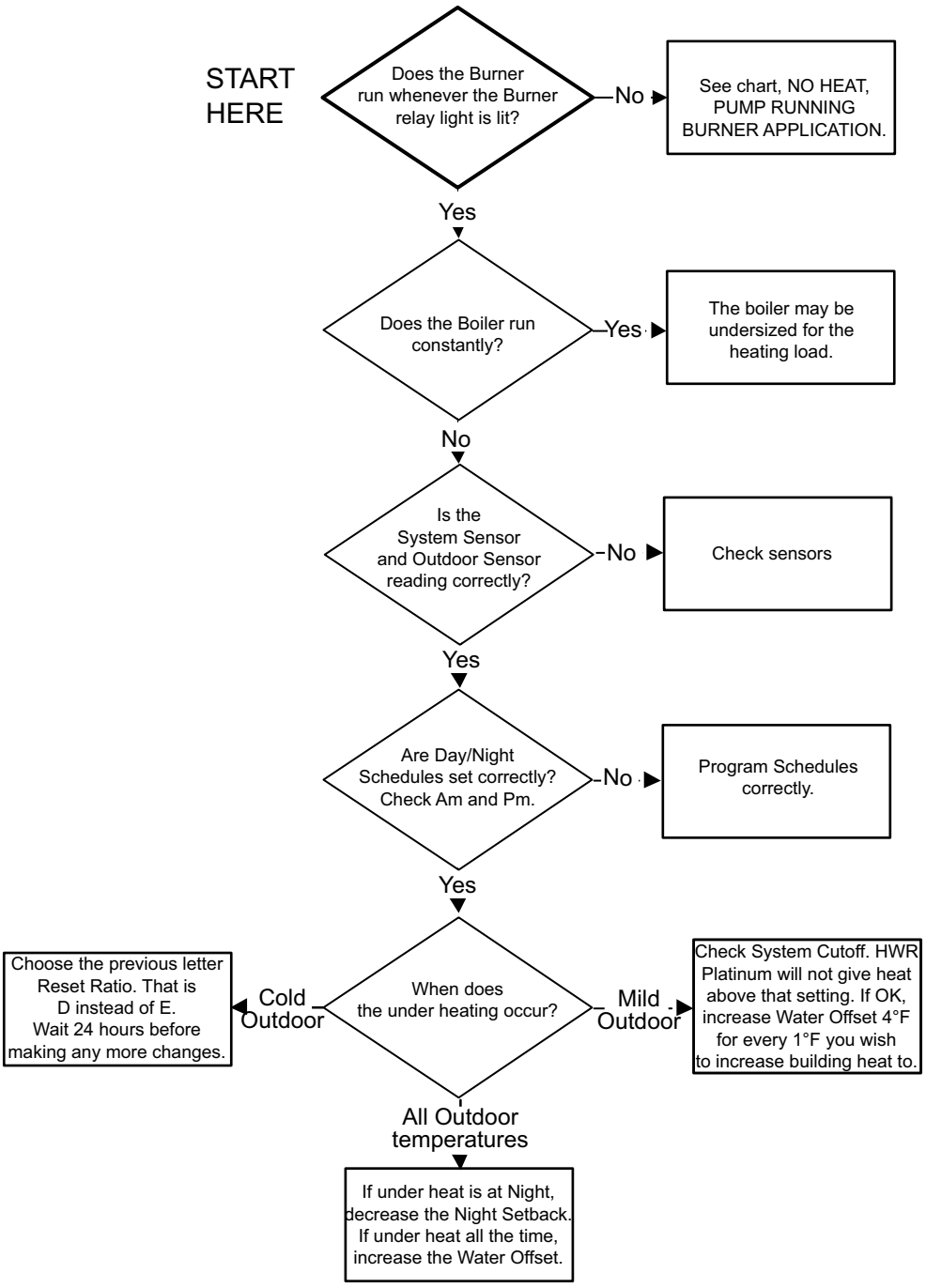
No Heat Pump Running, Burner Application



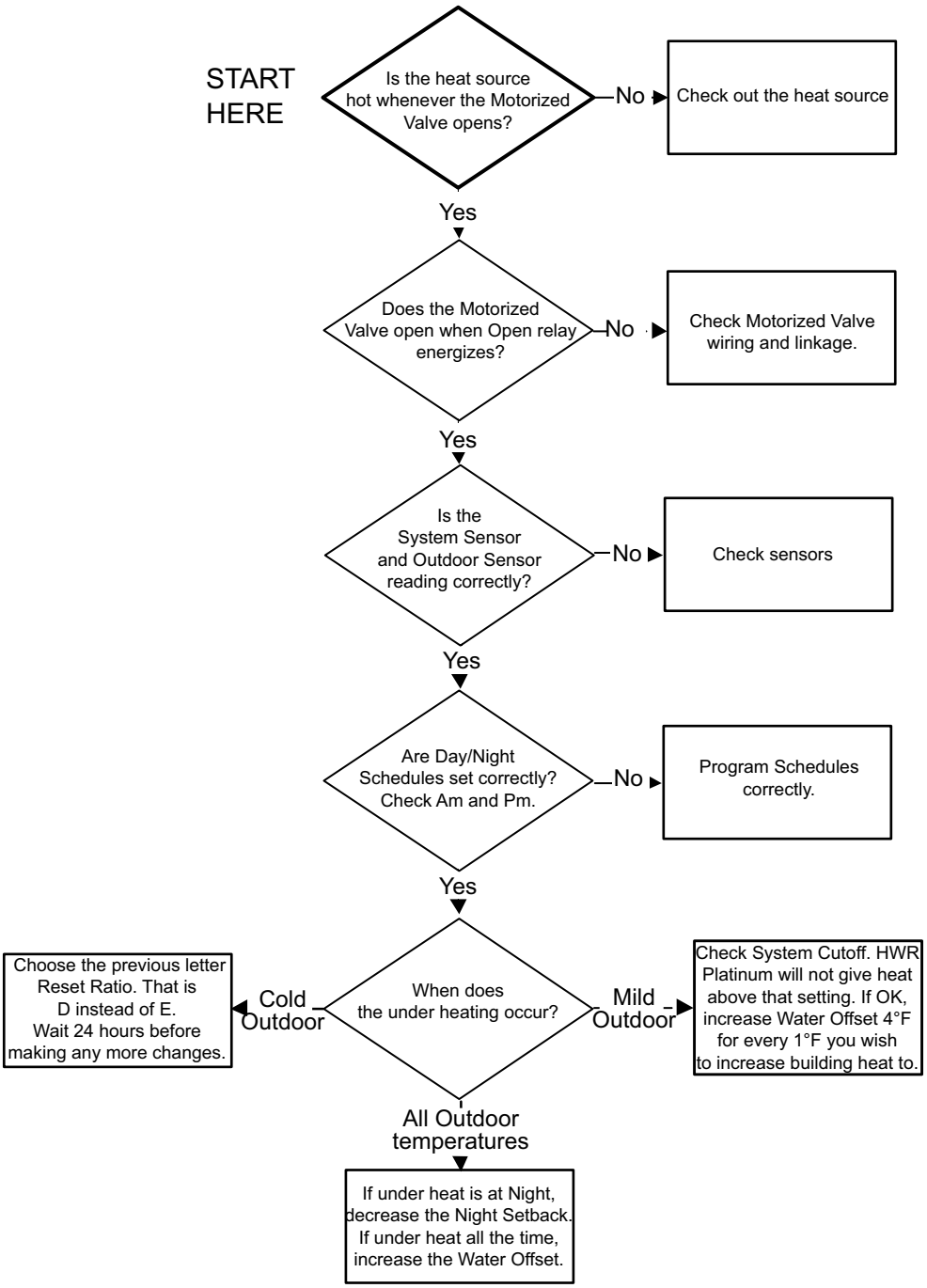
No Heat Pump Running, Motorized Valve Application



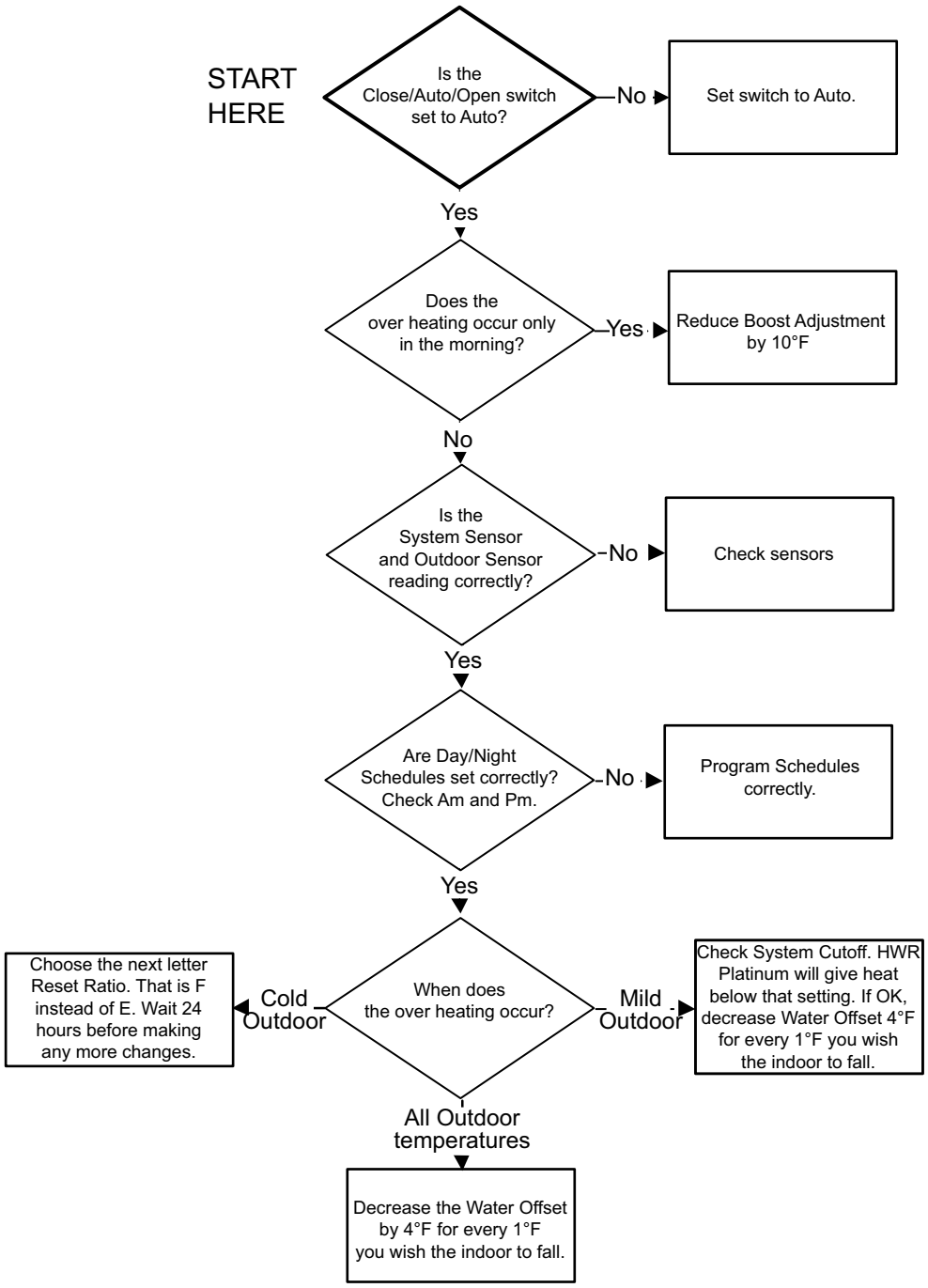
Low Heat, Burner Application



Low Heat, Motorized Valve Application



Too Much Heat



Testing the Sensors

The HWR Platinum sensors record the temperature where they are located. Before assuming a sensor is not working, it is important to get an accurate reading at the sensor location. If the outdoor sensor is affected by sun, exhaust fans, open doors, or windows, the reading may vary significantly from the actual outdoor temperature. Similarly, if the heating system sensor (HSS) does not appear to be reading correctly, check if it is located correctly.

To perform the test, you will need a digital multi-meter capable of reading resistances. The Heating System Sensor and Outdoor Sensor temperatures are constantly displayed on the HWR Platinum. Remove the outdoor sensor wires from the Out Temp terminals (A11 and A12), or the heating system sensor wires from System Temp terminals (A1 and A2). Use the multi-meter to take a resistance reading across the detached wires going to the sensor. If the reading shows:

- OPEN or resistance is higher than the values on the adjacent chart - Check the wires going to the sensor. They may have been broken or become disconnected. If the wires are fine, check the resistance at the sensor itself. If the resistance is still open, the sensor has been damaged and needs to be replaced.

- SHORT or resistance is lower than the values on the adjacent chart - Check the wires going to the sensor. They may have become shorted together in the run of the wire. If not, check the resistance at the sensor itself. If there still is no resistance, the sensor has been damaged and needs to be replaced.

- Resistances from 187 ohms to 117720 ohms - Find the temperature that corresponds to the resistance value on the chart. If the sensor appears to be outputting correctly, check that the wires were properly connected to the HWR Platinum inputs. If the sensor is not outputting correctly, take another reading at the sensor itself. If this is correct, the problem is in the wiring between the sensor and the HWR Platinum. Otherwise, the sensor has been damaged, and should be replaced.

Temperature Sensor Chart

TEMPERATURE (in Degrees °F)	Value (in Ohms)
-30	117720
-20	82823
-10	59076
0	42683
10	31215
20	23089
25	19939
30	17264
35	14985
40	13040
45	11374
50	9944
55	8714
60	7653
70	5941
80	4649
90	3667
100	2914
110	2332
120	1879
130	1524
140	1243
150	1021
160	842
170	699
180	583
190	489
200	412
210	349
220	297
230	253
240	217
250	187

Added Features with Remote Communication Option

The HWR Platinum has a number of remote communication options that can be ordered. The HWR Platinum with the proper option can communicate through either direct cable connection (HWR Platinum with RI-EMS package will include RS232 and RS485 connections) or through dialup from a remote computer (HWR Platinum with RIM package will include a built-in modem). Each can connect to Visual Gold Plus software package. The Visual Gold Plus is designed to allow for the reading and manupulition of the Platinum control panel settings as well as utilize additional features that could not be reached with a standard Platinum control.

In addition, Heat-Timer has developed an HWR Platinum with internet connection (HWR Platinum with RINet package will include RJ45 connection). This option allows not just to read and manipulate control settings through the internet, but as well keep a history of control operation and sensor values.

The following are some of the features that can be achieved when using any of the remote communication packages:

- Boiler and Sensor values and settings. Gives on-time status and editing capability of Platinum control settings and values from virtually anywhere.
- Space Temperatures. Gives accurate feed back of heating levels in different parts of the building.
- Alarms. Multiple alarms can be set for specific conditions either based on control operation or sensor status. Each alarm can be configured to send a message through a variety of means.
- Vari-Boost Enhancements. With Space Lock activated, Boost can end sooner if Day Target is reached. In addition, Boost can extend up to an hour if Day Target was not reached during the calculated Boost period.
- Fast Cool Down. With Space Lock activated, Fast Cool Down allows the building to cool down faster when switching from Day Time to Night Time (Setback) till Night Target is reached.
- Water Meter Inputs. A water meter sensor can be connected to the Platinum control panel allowing it to be monitored by any of the remote communication packages. This can be used to detect boiler feed leaks as well as primary building cold water leaks.
- Oil Tank Levels. Platinum control panels can be connected to Oil Tank Level controls to monitor and send an alarm when low levels are reached.
- Boiler Timeline. A history graph of the boiler operation based on the type of input.
- Sensor Timeline. Displays a history of the sensor readings based on predetermined intervals.

Specifications

Voltage Input: . . . . . 120 VAC 60 Hz
Power Consumption: . . . . . 30 VAMax/30 Amp Max
Heating Modes: . . . . . Burner or Motorized Valve.
Pump Output: . . . . . 1 S.P.D.T
Heating Output: . . . . . 2 N.O. S.P.S.T. for Motorized Valve and 1 N.O. S.P.S.T. for Burner.
Auxiliary /Clock Output: . . . . . 1 N.O. S.P.S.T.
Option1 Output: . . . . . 1 N.O. S.P.S.T.
Option2 Output: . . . . . 1 N.O. S.P.S.T.
DHW Pump Output: . . . . . Through Option 1 Relay. Can be set in the Startup menu.
DHW Priority: . . . . . Can be set in the Startup menu. Will provide 1 Hour priority opertation
Output Relay Ratings: . . . . . 1 Amp inductive, 6Amp resistive at 120 VAC 60 Hz, 15A total for all circuits
Temperature Display: . . . . . Fahrenheit or Celsius.
Display: . . . . . 80 character Alphanumeric (4 raws with 20 characters each)
Sensor Ranges: . . . . . Outdoor temperature sensor - minus 35°F to 250°F
Heating system sensor - minus 35°F to 250°F
Auxiliary Sensor Inputs: . . . . . 3 Auxiliary Sensor Input.
Network Sensor Input: . . . . . 64 Sensors can be connected (Use only Neuron Sensors, MIG, or Wireless Receiver.)
Outdoor Cutoff Range: . . . . . 30°F to 75°F, ON and OFF
Reset Ratio Range: . . . . . A (1:3) to J (4:1) (Outdoor:System Water)
Offset Adjustment: . . . . . minus -40°F to plus 40°F degrees
Night Setback: . . . . . 0°F to 80°F degrees
Minimum Water Temperature: . . 70°F to 170°F
Burner Differential: . . . . . 0 to 15°F
Pump Run-On: . . . . . 0 to 60 minutes
Schedules: . . . . . 4 Day Time and 4 Night Time (Setback) settings per day
Aux Clock Schedule: . . . . . 4 open and 4 closed settings per day
Night Setback: . . . . . 0 to 80°F
Morning Boost: . . . . . Vari-Boost - Self-adjusting from 0 to 90 minutes - Water temperature increase 0 to 60°F
Early Shutdown - Self-adjusting from 0 to 90 minutes
Power Backup: . . . . . Lithium coin battery, 100 days minimum 5 year replacement (Maintains Clock in power outages) Other parameters are stored in EE Prom
Memory Backup: . . . . . All control parameters are stored in EE Prom indefinitely.
Remote Communications: . . . . . 1 RS232 and 1 RS485 (RI and RIM controls), Ethernet (RI-Net only).
External Inputs: . . . . . 1 Network Input, 3 Aux Inputs, DHW Call Input, Shutdown Input, and Prove Input.
Season: . . . . . Winter and Summer.
Enclosure: . . . . . NEMA 1
Dimensions: . . . . . 5-⅛" x 13" x 13"
Weight: . . . . . 14 pounds