HEAT-TIMER®

INSTALLATION AND OPERATION INSTRUCTIONS

HWRQ Platinum

HOT WATER HEATING AND SEQUENCING CONTROL

RESET CONTROLS FOR MULTIPLE BOILER HYDRONIC HEATING SYSTEMS

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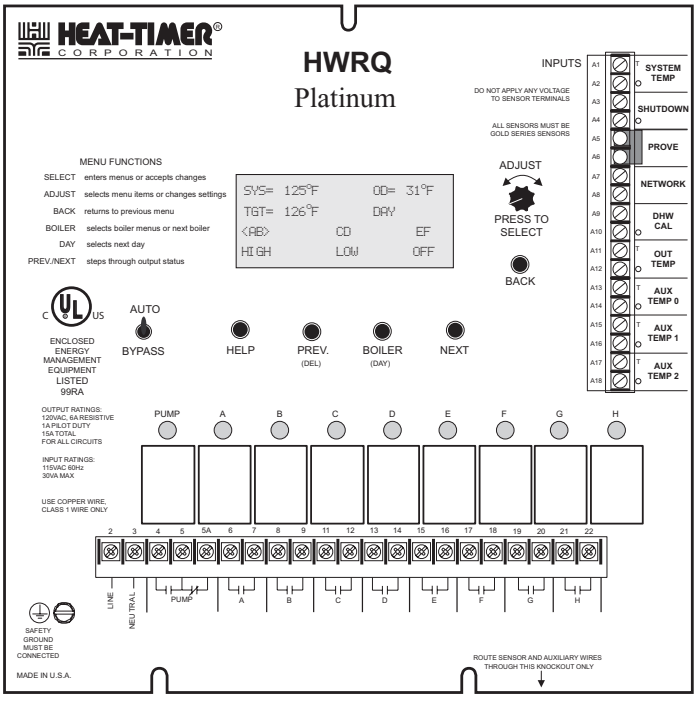


This Preliminary manual attempted to be complete and accurate at the time of publication. Additional upgrades and new features may change HWRQ Platinum functions. Upgrades to this manual may occur at any time. Contact the factory for further details.

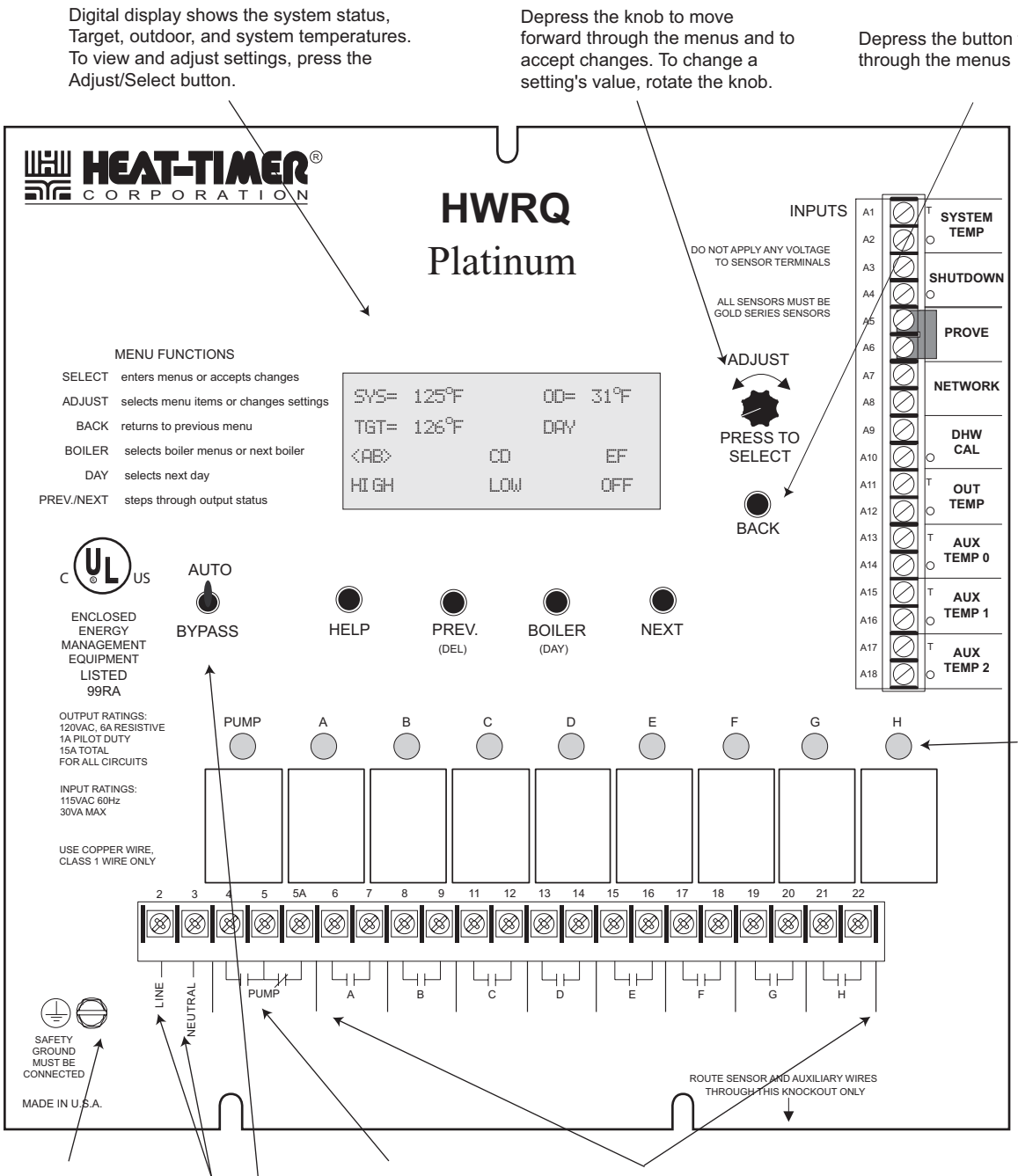
⚠ WARNING

The HWRQ Platinum is strictly an operating control. It CANNOT be used as a limit control. All boilers 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 HWRQ Platinum is installed.

This control must be installed by a licensed electrician.

Contents

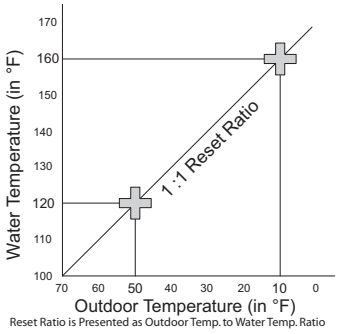
Panel Layout



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

Understanding Operation Concept

The HWRQ Platinum controls a hot water heating system to provide a building with comfortable and even heat levels. The HWRQ Platinum varies the temperature of the circulating heating water in response to changes in the Outdoor temperature (OD). The heating water temperature is controlled by staging up to eight on/off boilers (or 4 2-stage, 2 3-stage, or 2 4-stage boilers) directly, or by staging up to 32 on/off (or 16 2-stage, 10 3-stage, or 8 4-stage boilers) with the addition of up to 3 Extension panels.

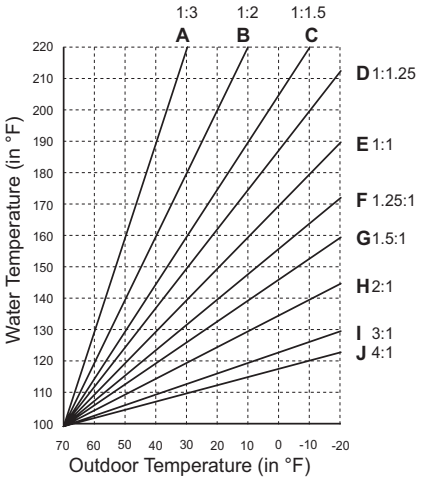


Reset Ratio is Presented as Outdoor Temp. to Water Temp. Ratio

The HWRQ Platinum also controls the system circulating pump based on an adjustable Outdoor Cutoff. When the Outdoor temperature (OD) is above the Outdoor Cutoff, the pump is off and no heating water is circulated through the system. When the Outdoor temperature (OD) drops below the Outdoor Cutoff, the pump is activated and the heating water circulates through the system. The Reset Ratio and the outdoor temperature control the temperature of the heating water.

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 temperatures will remain constant. The Reset Ratio is an adjustment that lets you achieve this equilibrium between heat input and heat loss.



Reset Ratio Curves

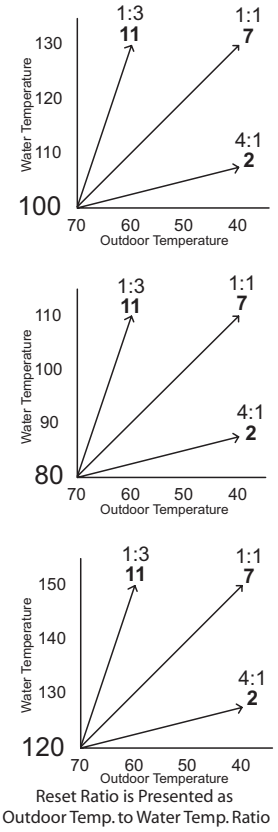
The starting point for most systems is the 1:1 (Outdoor Air Temperature : Heating Water Temperature) ratio. This means that for every degree the outdoor temperature drops, the temperature of the heating water will increase one degree. The starting point of the curves is adjustable, but comes factory 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 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 HWRQ Platinum has a full range of Reset Ratios to match any buildings heat loss characteristics.

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.



Reset Ratio is Presented as
Outdoor Temp. to Water Temp. Ratio

Water Offset

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

⚠ 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. Therefore, any change made to the Offset will immediately change the value of the Target Water Temperature (TGT) by the same amount. For example, if the Target Water Temperature (TGT) was 150°F based on the specific outdoor temperature and Reset Ratio, then increasing the Offset from 0°F to 10°F would increase the Target Water Temperature (TGT) to 160°F.

In a new installation, start with an Offset value of 0°F. Adjust the Offset value in mild weather. If the ambient indoor temperatures are too warm in the mild 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, the system pump is activated and the HWRQ Platinum regulates the heating system to hold the Computed Water temperature. As the Outdoor temperature (OD) changes, the HWRQ Platinum adjusts the actual water temperature to hold a constant Day (Normal) heat level. The Day heat level is for when occupants are present and active.

The HWRQ 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 HWRQ has the capability of programming up to 4 Day and 4 Night settings 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 Computed Water Temperature by a set amount of degrees set by the Boost Adjustment for a period of time that depends on the 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 HWRQ 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 HWRQ Platinum will shift to Night (Setback). At 65°F Outdoor Temperature (OD) the Early Shutdown is the longest, 90 minutes. At 0°F Outdoor Temperature (OD) there is no Early Shutdown or Early Shutdown is 0 minutes.

Sequence of Operation

The HWRQ 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, the HWRQ Platinum activates the system pump and begins to calculate the Target Water Temperature (TGT). The Target Water Temperature (TGT) is the temperature of the circulating system water the HWRQ Platinum calculates based on Outdoor temperature (OD) and the Reset Ratio curves. If the HWRQ Platinum has been set up correctly, then by circulating water at the Target Water Temperature (TGT), the amount of heat entering the building will equal the building’s heat loss.

The HWRQ Platinum also monitors the System Water Temperature (SYS). When the System Water Temperature (SYS) is different from the Target Water Temperature (TGT), the HWRQ Platinum will take action to correct the difference. The HWRQ Platinum will turn boiler stages on and off to regulate the circulating system water temperature. Once the Target Water temperature is achieved, the HWRQ Platinum will keep the necesary stages to maintain target. The Pump relay will stay energized for as long as the Outdoor temperature (OD) is below the Outdoor Cutoff + 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 HWRQ Platinum and will give the opportunity to utilize many of the energy saving features and give more comfortable heat when needed.

The program should consist of the following:

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 Stages
Setting the Schedules
Adjusting Reset Ratio and Water Offset (In Reset Mode Only)

Selecting the System Features

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

Outdoor Reset or Set Point (Control Mode)

- The HWRQ Platinum can control the System Temperature either by adjusting the Target Temperature according to the Outdoor Temperature (Outdoor Reset) or by maintaining an adjustable Set Point. The earlier relies on an Outdoor Sensor (supplied with the control) and achieves better fuel savings in addition to better comfort.

PID or Oversize (Control Logic)

- The HWRQ Platinum can use an algorithm (PID) to look at the rate of change in the System. If the System Temperature changes quickly, the HWRQ Platinum will turn on or off stages quickly. If the temperature changes are slow or minor, the HWRQ Platinum will react slowly. The PID logic provides the most stable operation. Stages are brought on or off based on the rate of change of the System Temperature and the impact a stage has on that rate.
- For applications where the stages are oversized for most load conditions, the HWRQ Platinum has Oversize System logic. The Oversize logic turns stages on or off proportionally, based on how far the System Temperature is from the Set Point.

Number of Stages

- The HWRQ Platinum can be configured to control a variety of boiler-burner configurations. It can control up to 32 boiler stages using the HWRQ Platinum in addition to 3 Extension panels.
- The HWRQ Platinum can control up to 4 stage burners.
- Burner stages can be sequenced Lo/Hi/Lo/Hi or Lo/Lo/Hi/Hi. The first lets a burner fire its lower stage first followed by its higher stages. The second lets all burners lower stages to turn on before starting any higher burner stages. Both can only apply to 2-stage or more burners.

Adding up to 3 Extension Panels for Additional Stages

- When additional Stages are needed, the HWRQ Platinum can control up to 3 additional extension panels for a total of 32 stages.
- Extension panels have built-in Lockout input terminals. The HWRQ Platinum can isolate locked out boilers from the operation process and display their status.

Stages Sequencing (for Multiple Stage Boilers)

- The HWRQ Platinum can sequence multiple stage burners in one of two different ways. Either, starting burners' lower stages followed by the higher ones or by sequencing each burner stages followed by the next burner. Contact boiler manufacturer for the appropriate sequence of operation.

Automatic Rotation among Stages

- Rotating the first burner to be activated on a call for output promotes even wear on all burners. The HWRQ Platinum has three modes of rotation: Manual, First-ON/First-OFF, or automatically every selected time period from every hour to every 41 days.

Boiler Lockout (Requires Extension Panel)

- The HWRQ Platinum is designed to accept Lockout inputs, when used with an Extension Panel, from each burner. If any burner is in Lockout, the HWRQ Platinum will automatically skip it when adding more capacity. If a burner goes into Lockout during normal operation, the next burner will be activated immediately to maintain the desired output capacity.

Domestic Hot water with or without Priority

- This allows the HWRQ Platinum to change System Temperature to be able to supply a domestic hot water system with heat from the boilers. An external control or device must initiate a dry contact signal to input terminals DHW Call. No voltage can be supplied across the DHW Call terminals.
- 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 HWRQ Platinum will raise the Target Temperature (TGT) to 200°F or Maximum Water Temperature setting, whichever is lower, 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 HWRQ Platinum will revert to its operating schedule and logic.

Schedules

- By setting an operating Schedule and Night Setback, you can save energy while providing comfortable heat to the building. The setting allows the HWRQ 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 Setback setting. Each weekday can have up to 4 Day Time and 4 Night Time (Setback) settings. Refer to *Schedules (menu selection),* and *System Settings/System Settings 2/Night Setback (menu selection).*

Boost

- This feature lets the HWRQ Platinum bring the building up to temperature quickly after a Night Setback. When the HWRQ Platinum is to start the Boost, it raises the Target Temperature by the amount set by the Boost Adjustment for a period that is calculated 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 HWRQ 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 HWRQ Platinum will shift to Night Setback. Refer to *System Settings/System Settings 2/Boost Mode (menu selection)*

System Pump Run-On

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

Remote Communication

- The HWRQ Platinum can be upgraded to Heat-Timer's Visual Gold or Internet system to monitor and control all HWRQ Platinum functions from a remote location. Either of the communication packages upgrade allows the HWRQ Platinum to accept additional sensors, to monitor their status, and to provide alarms if the sensor values are not in the correct range.

Making Sure You Have the Right Control

If you need the HWRQ 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 HWRQ Platinum can control the heating system through these different methods:

- Controlling multiple single or multiple stage boilers.
- Controlling up to 32 Burner stages by interfacing to a Heat-Timer Extension Panels with lockout.

Mounting the Control Box

Locate an appropriate site

- Near the equipment to be controlled
- Away 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 HWRQ Platinum from the metal enclosure

- 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 enclosure 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.

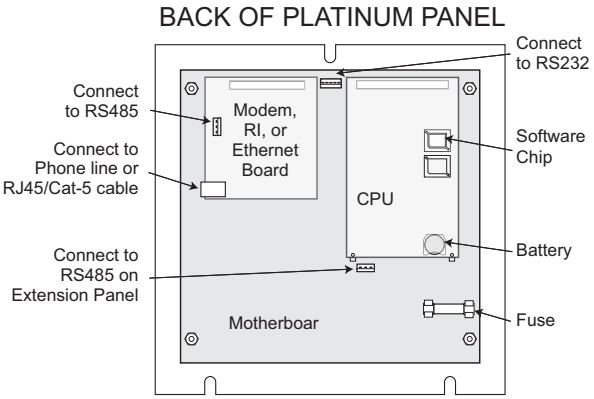
Rear of Panel

Activate the Battery

- Turn the HWRQ Platinum panel over to reveal the piggyback circuit board (CPU board).
- Remove the plastic strap the covers the battery. The contacts should be touching the battery.

⚠ 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.



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 for remote communication, a RI board must exist. The round terminal connection must be screwed to one of the side knockouts on the enclosure.
- Modem, Ethernet or Internet connection must have the proper boards. A modem requires RIM board. An Internet requires RINet board.
- Remember that the upgrade to Internet panel requires replacing the CPU board.
- When connecting the HWRQ Platinum to an Extension Panel, connect the RS485 to the back of the HWRQ Platinum. Use the center RS485 terminals on the motherboard. Do not use the RS485 terminals onthe RI board.

⚠ CAUTION

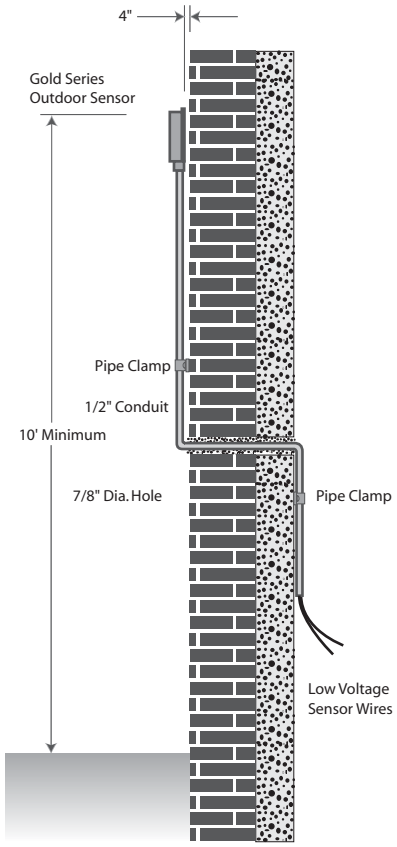
When connecting the HWRQ Platinum to an Extension Panel, use the RS485 terminals on the motherboard. DO NOT use the RS485 on the RI, RIM or other boards.

Screw the HWRQ 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 HWRQ Platinum is an operating control only. All boilers 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 HWRQ Platinum is installed.

⚠ CAUTION

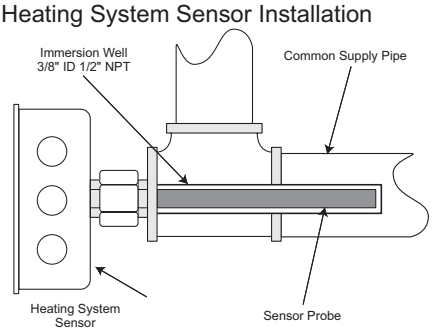
Determining the proper location for the Outdoor Sensor is very important. The HWRQ Platinum will base the heat on the outdoor temperature information it receives from this location. If the sensor is in the sun, or covered with ice, its reading will be different from the actual Outdoor temperature (OD).

Heating System Sensor (HSS) Installation

Locating HSS

- Put the Heating System sensor approximately 10' past the boiler on the common supply header but before any major takeoffs.
- The sensor must be located where it sees the output of all the boiler stages. If a boiler is piped so that the sensor does not see its output, the HWRQ Platinum will not sequence the boilers correctly.

Heating System Sensor Installation



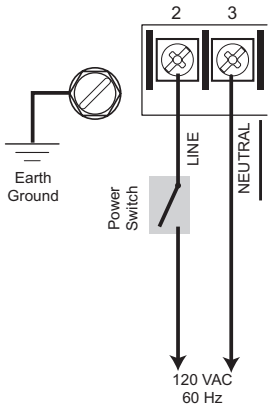
Heating System Sensor (HSS) Installation

- 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 a shielded 2-conductor cable. Do not ground the shield at the sensor. Only at the panel using one of the terminals marked with an “O”.
- Do not run sensor wires in conduit with line voltage wiring.

⚠ CAUTION

If the HSS can not sense the correct heating system water temperature being supplied to the building, the HWRQ 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.

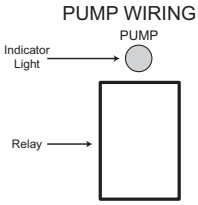
Wiring



Power Input Wiring

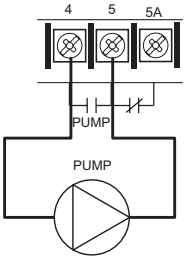
- Bring the power wires through the bottom **left** hand knock out of the enclosure. ***Do not bring wires through sides or the top, as this will interfere with servicing the control.***
- Attach 120V 60 Hz to terminals *Line* and *Neutral*.
- Ground wiring must be connected to Ground screw. DO NOT use 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 installation 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.
- Wire 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 dry contact only. A separate power source is required for the equipment.

Burner Stages Wiring



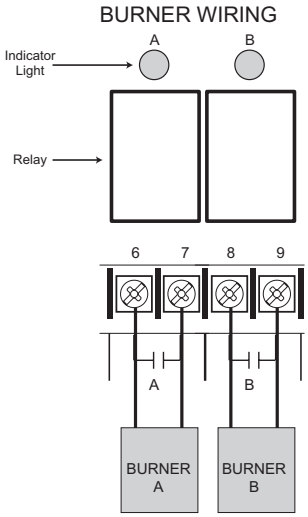
- The HWRQ Platinum outputs are dry contacts only. They do not source any power.
- Bring the boiler wires through a bottom left hand KO of the enclosure.
- The Normally Open (NO) contacts for each boiler must be in series with the boiler limit circuits.
- If the boilers need the secondary pumps to run on after the boiler is turned off, or need an interlock to combustion air, use Heat-Timer System Control Panel SCP-6 panel (HT #926601-00) or Pump-Lead-Lag PLL control (HT #926720-00)

For up to 8 on/off boilers (without an Extension Panel)

- Attach the first boiler to the NO contacts marked BURNER STAGE A (terminals 6 & 7), the second boiler to B (8 & 9), and the third boiler to C (11 & 12), and so on.

For up to 4 lo/hi boilers (without an Extension Panel)

- The Normally Open (NO) contacts for each boiler must be in series with the boiler limit circuits
- Attach the low stage of the first boiler to the NO contacts marked BURNER STAGE A (terminals 6 & 7), the high stage to B (8 & 9)
- Attach the low stage of the second boiler to the NO contacts marked C (terminals 11 & 12), the high stage to D (13 & 14)



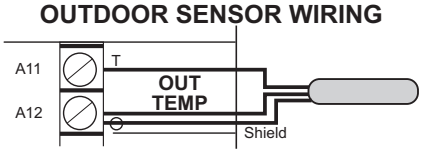
⚠ CAUTION

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.

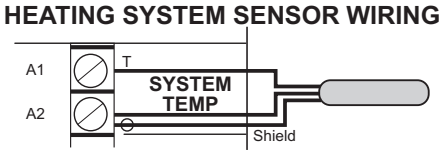
Wiring the Outdoor Sensor



- The HWRQ 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.

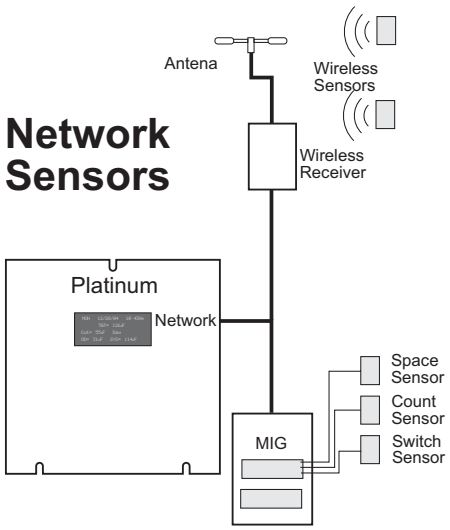
Wiring the Heating System Sensor (HSS)

- The HWRQ 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).
- Temperature 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.



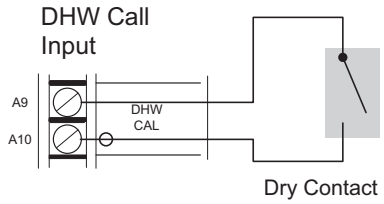
Wiring Network Sensors (Wireless and MIG) (Requires Communication Package Upgrade)

- Remember that network sensors can only be configured remotely through Visual Gold or the Internet.
- The HWRQ Platinum Network terminals can connect to up to 64 sensors.
- When connecting to multiple sensors, a MIG control can be used to handle up to 28 sensors each. Multiple MIG's can connect to a single HWRQ Platinum.
- Wireless 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



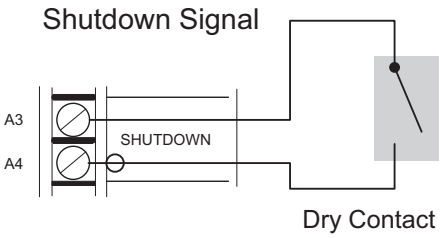
Wiring DHW Call Input (Optional)

- DHW can be used to raise Set Point to 200°F or Maximum Water temperature, whichever is lower.
- DHW Call terminals are dry contact N.O. terminals.
- Wire an aquastat or other controls to provide closure on the DHW Call terminals.



Wiring Shutdown Terminals (Optional)

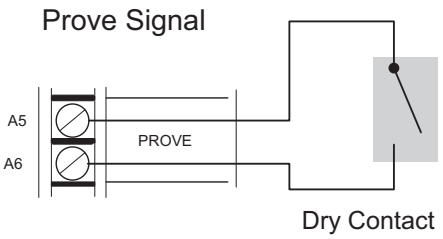
- This feature can be used whenever it is desirable to turn off the HWRQ Platinum from a remote location or another controller.
- A typical use for this feature would be to disable all heat when an Energy Management System (EMS) indicates a building is overheated.
- When the Shutdown feature is enabled by closing a dry contact, all stage relays will de-energize. The Pump relay will continue to be energized.



- 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 boilers.
- If the PROVE input terminals are open, the HWRQ Platinum will enable only the Pump relay. All stage relays will be de-energized 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 HWRQ 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

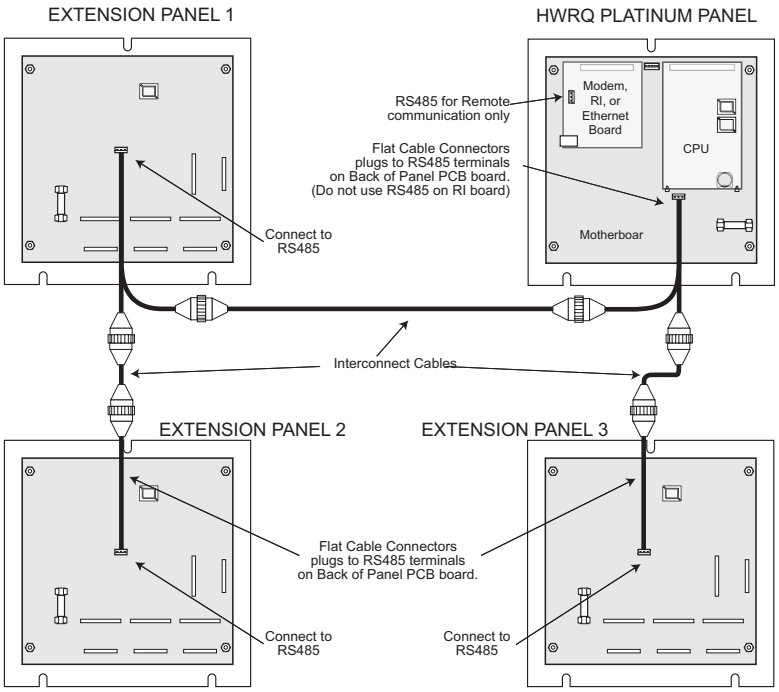
- Power up the HWRQ Platinum.
- The control will go through a countdown, and then the top left of the display marked (SYS) will show the temperature read by the Heating System Sensor (HSS). The top right (OD) will show the temperature read by the Outdoor Sensor.
- If the display reads OPEN, SHORT, or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

Wiring to an Extension Panel

- The HWRQ Platinum can control up to 8 stages solely. By adding a Heat-Timer Extension Panel using RS485 cable, you can add an additional 8 boiler stages. A total of 3 Heat-Timer Extension Panels can be added to any single HWRQ Platinum totaling 32 boiler stages.
- Each Extension Panel has 8 Lockout inputs that can be used by the HWRQ Platinum when sequencing the boilers. Each Lockout controls one boiler regardless of the number of stages it has.
- When the HWRQ Platinum is connected an Extension Panel, you will be able to scroll through each of the boilers using the Adjust Knob.
- If a communication package is purchased with the HWRQ Platinum and the Extension Panel, Visual Gold Plus and the Internet will show the status of each boiler including the Extension Panel boilers.
- No Output cards are required for the Extension Panel when used with the HWRQ Platinum. You will need to install the proper relays for the stages needed.

See Extension Panel documentation for additional wiring instructions.

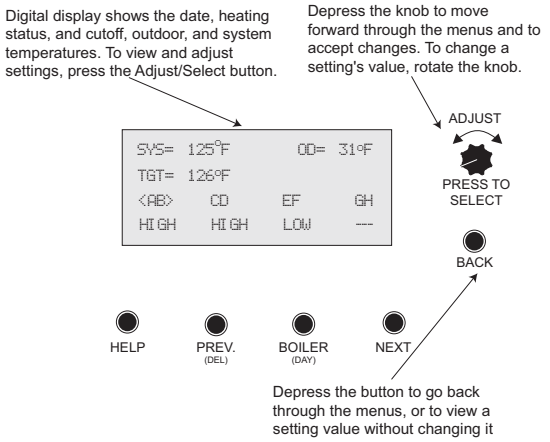
WIRING HWRQ PLATINUM TO MULTIPLE EXTENSION PANELS



Wiring Extension Panel Lockout

- Each Extension Panel has 8 Lockout inputs that can be used by the HWRQ Platinum when sequencing the boilers.
- The first Lockout terminals on the first Extension panel will control the first HWRQ Platinum boiler, the boiler that has stage A as its first stage. The second Lockout terminals on the first Extension panel will control the second HWRQ Platinum boiler.
- When a boiler Lockout terminals are shorted, the HWRQ Platinum will de-energize that boiler stages. In addition, it will omit that boiler from the sequencing process until those terminals are opened again. The display will show L.O under that boiler stages indicating the Locout Status.

Setting the Control



Display and Changing Settings

The HWRQ Platinum comes with an 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 — In Boiler menu, goes to the next setting. In Schedules, goes to next schedule time on schedules,

BOILER (DAY) — In the Boiler menu, switches between boilers. In Schedules, switches between different weekdays,

PREV.(DEL) — clears a specific schedule setting. In Boiler menu, will go to the previous boiler settings

HELP — when clicked on a specific menu item will provide help instructions.

When powering up the HWRQ 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 Stage 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.)
- Control Mode (Reset or Set Point)
- Burner Type (On/Off, 2-Stage, 3-Stage, or 4-Stage)
- Total Boiler (From 1 to 32)
- Sequencer (Lo/Hi/Lo/Hi or Lo/Lo/Hi/Hi)
- DHW Setting (No Priority or Priority)
- Fast Cool Down (Minimum Water temperature or OFF)
- Control Logic (PID or OSS)
- Sensor Fault (Stages On or Stages 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 HWRQ Platinum.

Control Mode

Reset or Set Point — Default: Reset

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

- The HWRQ Platinum can control the water temperature by adjusting it according to Outdoor temperature (Outdoor Reset) or by maintaining an adjustable Set Point.
- When Reset is selected, the HWRQ Platinum will adjust the Target Water Temperature (TGT) according to the Outdoor Temperature, the Reset Ratio, and the Offset. This option will provide more comfort and fuel savings.

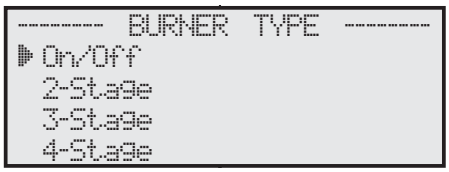
When Reset is Selected, the following are the settings that directly affects this modes operation:

- Reset Ratio SELECT *Settings/System Settings/Reset Ratio*
- Target Offset SELECT *Settings/System Settings/Target Offset*
- Maximum Target SELECT *Settings/System Settings/More Settings/Maximum Target*

When Set Point is Selected, the following are the settings that directly affects this modes operation:

- Set Point SELECT *Settings/System Settings/Set Point*

Burner Type



On/Off, 2-Stage, 3-Stage, or 4-Stage Default: On/Off

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

- The HWRQ Platinum can control multiple multi-stage boilers.
- The number of stages multiplied by the number of boilers will give the total number of stages the HWRQ Platinum will control.

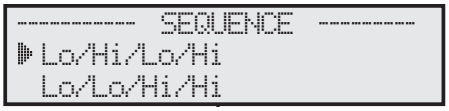
Total Boiler

From 1 to 32 depending on Boiler Type Default: varies

SELECT *Settings/System Startup/.../Total Boiler*

- The HWRQ Platinum can control up to a total of 32 stages using 3 Extension panels. The Total Boiler default will change to reflect the HWRQ Platinum's 8 stages. That is if Burner Type was set to 2-Stages, the Total Boiler will default to 4 resulting in a total of 8 stages being controlled by the HWRQ Platinum.

Sequence (Not Available for on/Off Boilers)



Lo/Hi/Lo/Hi or Lo/Lo/Hi/Hi Default: Lo/Hi/Lo/Hi

SELECT *Settings/System Startup/.../Sequence*

- The HWRQ Platinum can sequence multi-stage burners by boiler (Lo/Hi/Lo/Hi). In this option, the HWRQ Platinum will start the first boiler's lowest stage followed by the remaining stage for that boiler. Then, do the same for the following boilers.
- If the Lo/Lo/Hi/Hi option was selected, the HWRQ Platinum will start the first boiler's lowest stage followed by the second boiler's lowest stage until all boilers set to Auto mode has all their lowest stages on. When more stages are need, the HWRQ will start the secondary stages and so on. This option is more efficient for many copper tube and low mass boilers.

DHW Setting

No Priority or Priority Default: No Priority

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

- This selection allows you to set how the HWRQ Platinum will control the Pump relay operation 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 HWRQ Platinum changes the Target Set Point to 200°F or Max Target Water Temp. setting, whichever is lower.
- When the DHW Call contacts are opened, the HWRQ Platinum changes the Target Set Point back to a setting that is based on Outdoor temperature, Reset Ratio and Water Temperature Offset.
- The HWRQ 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 de-energize 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 to continue.

The following are the settings that directly affects this modes operation:

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

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

Min Target Temperature or Off Default: Min Tgt Temp

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

- This option is only available when the HWRQ 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 HWRQ Platinum will allow the System Temperature to cool down to the Minimum Target temperature when a switch from Day (Normal) to last Night (Saving) takes place. This option must be selected when the boiler manufacturer has a minimum boiler temperature requirement.
- When Off is selected, the HWRQ Platinum will reduce the system water temperature to a minimum of 70°F when a switch from Day (Normal) to last Night (Saving) schedule takes place.
- When the building space temperature reaches the Night Target setting the HWRQ Platinum will exit the Fast Cool Down.
- After the Space Temperature has reached the Night Target, the HWRQ Platinum will recalculate the Target Temperature based on the Night settings.

Control Logic

PID or OSS (Oversized System) Default: PID
SELECT *Settings/System Startup/.../Control Logic*

- The PID option allows the HWRQ Platinum to sequence stages based on Reaction Time and boiler Min Run Time. The PID relies on the rate of change in the System Temperature. The PID logarithmic calculations foresee changes and sequence stages based on those changes. It is the most efficient operation for most heating systems.
- The Oversize option sequence stages based on how many Throttling ranges is the system temperature away from the Target Temperature. At one Throttling range below the Set Point, only one stage will be on. For each additional Throttling range below the Set Point, an additional stage will be activated. The last stage on will be allowed to exceed the Set Point by one Throttling range before turning off that stage. This helps to prevent the last stage from short cycling.

When PID is Selected, the following are the settings that directly affects this modes operation:

- Reaction Time SELECT *Settings/System Settings/More Settings/Stage Settings/Reaction Time*
- Purge Delay SELECT *Settings/System Settings/More Settings/Stage Settings/Purge Delay*
- Minimum Run Time SELECT *Settings/System Settings/More Settings/Stage Settings/Min Runtime*
- Standby Delay SELECT *Settings/System Settings/More Settings/Stage Settings/Standby Delay*
- Last Stage Hold SELECT *Settings/System Settings/More Settings/Stage Settings/Lst Stage Hold*

When Oversize (OSS) is Selected, the following are the settings that directly affects this modes operation:

- Throttle SELECT *Settings/System Settings/More Settings/Stage Settings/Throttle*

Sensor Fault

Output On or Output Off Default: Output On
SELECT *Settings/System Startup/.../Sensor Fault*

- This selection determines the status of the stage relays when either the Outdoor Sensor or System Sensor is at fault, sensor reading will blink with either OPEN or SHORT. In addition, the Display second line will show SENSOR FAULT.
- When Stages On is selected and a sensor is at fault, the Pump relay in addition to all the stages relays will energize. This will allow all the boilers to run on their own limits.
- When Stages Off is selected and a sensor is at fault, the Pump relay will energize. However, all boiler stages relays will de-energize.

Day Light Saving

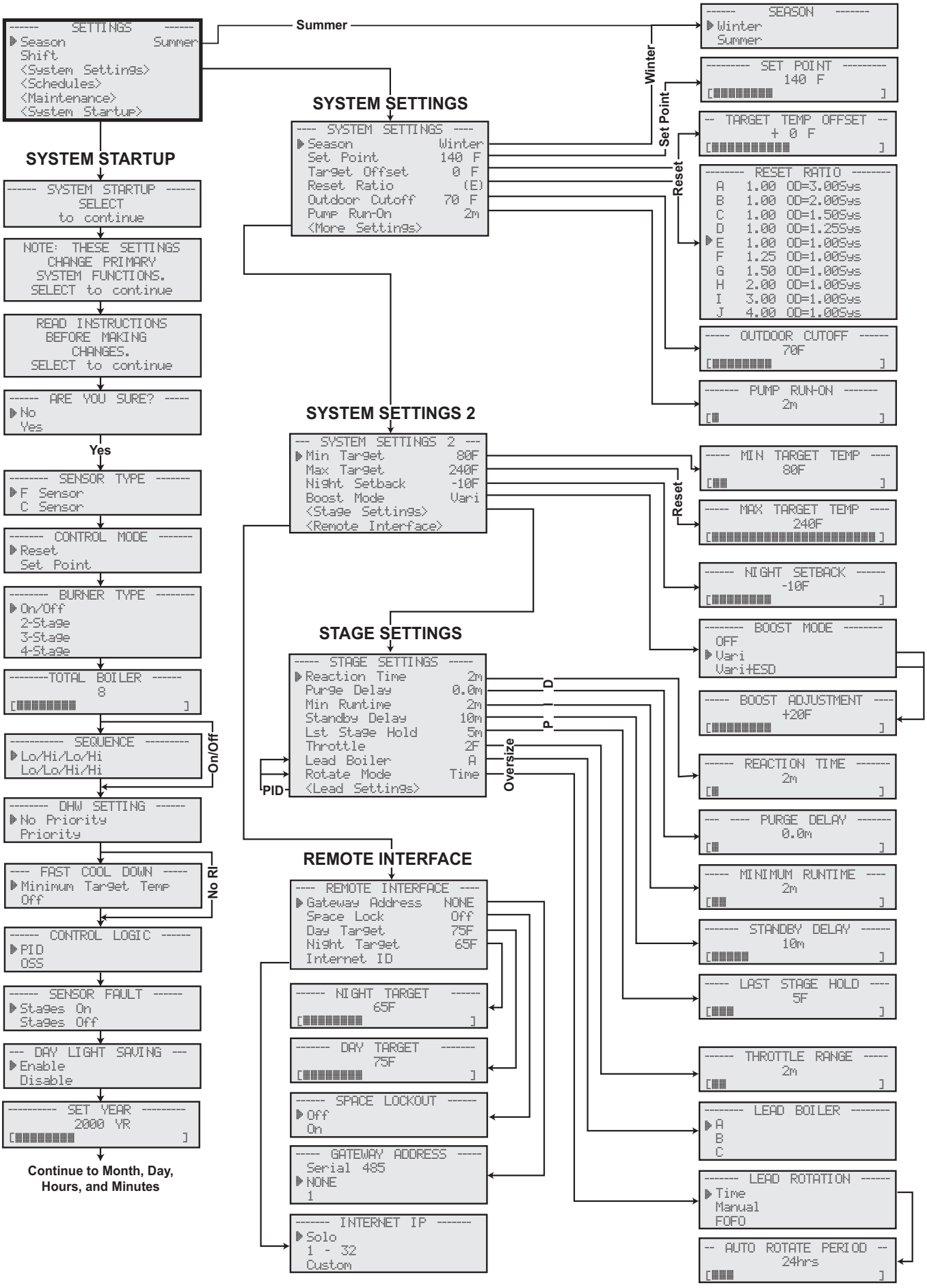
Enable or Disable Default: Enable
SELECT *Settings/System Startup/.../Day Light Saving*

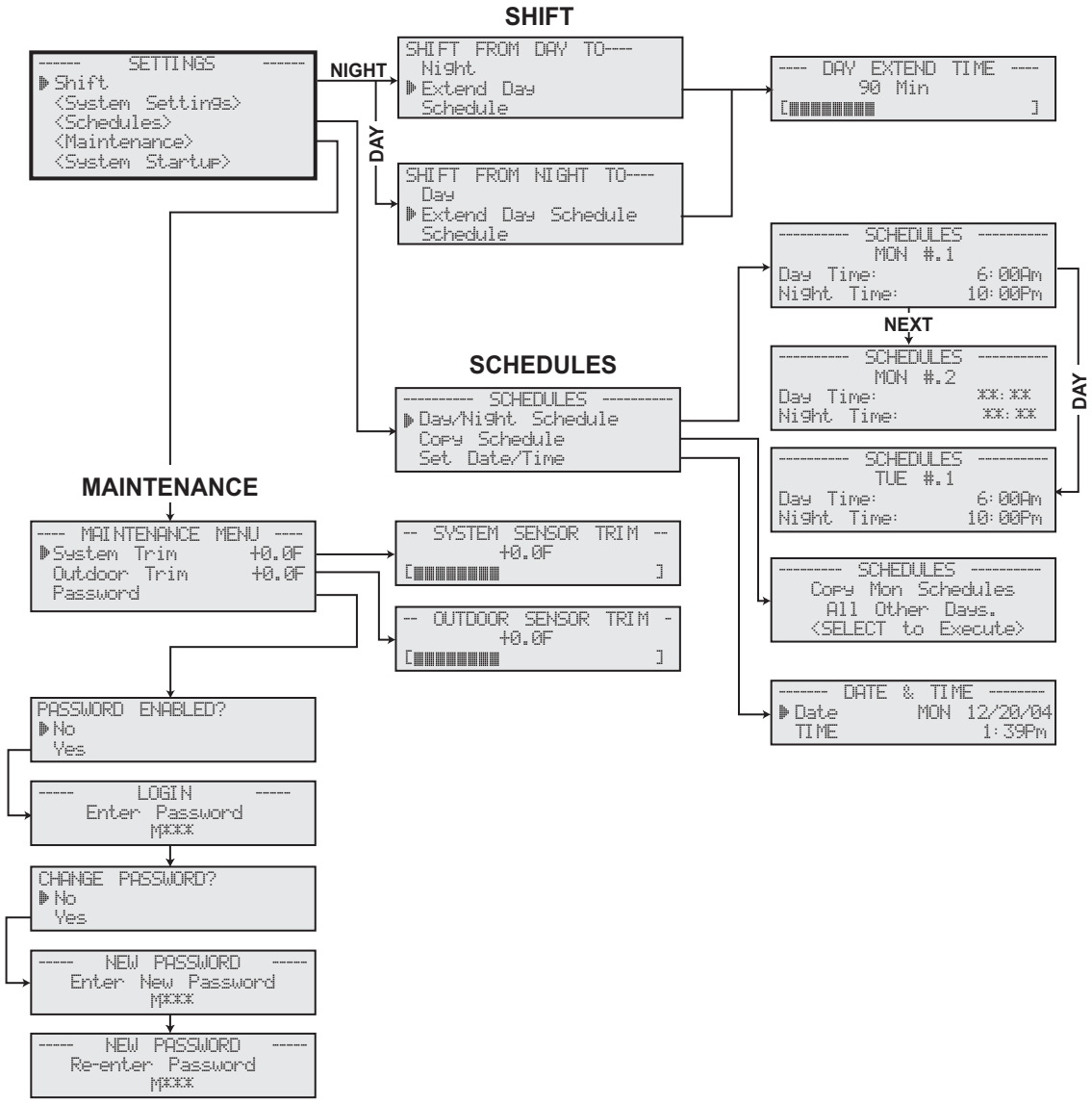
- Enable this feature in areas where Day Light Saving is observed to account for the time changes without having to manually change the time twice a year.

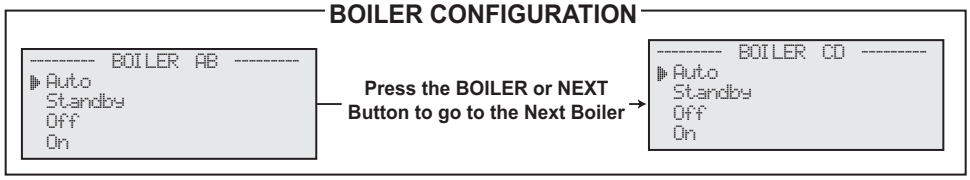
Date and Time Setting

Year, Month, Day, Time
SELECT *Settings/System Startup/.../Set Year*

- Entering the correct date and time assures that the HWRQ 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
SEASON
Winter
Summer
SYSTEM SETTINGS
SYSTEM SETTINGS
Season Winter
Set Point 140 F
Target Offset 0 F
Reset Ratio (E)
Outdoor Cutoff 70 F
Pump Run-On 2m
<More Settings>
Winter
Set Point
Reset
SET POINT
140 F
TARGET TEMP OFFSET
+ 0 F
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
OUTDOOR CUTOFF
70F
PUMP RUN-ON
2m
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
Yes
SENSOR TYPE
F Sensor
C Sensor
CONTROL MODE
Reset
Set Point
BURNER TYPE
On/Off
2-Stage
3-Stage
4-Stage
TOTAL BOILER
8
SEQUENCE
Lo/Hi/Lo/Hi
Lo/Lo/Hi/Hi
On/Off
DHW SETTING
No Priority
Priority
FAST COOL DOWN
Minimum Target Temp
Off
No RI
CONTROL LOGIC
PID
OSS
SENSOR FAULT
Stages On
Stages Off
DAY LIGHT SAVING
Enable
Disable
SET YEAR
2000 YR
Continue to Month, Day,
Hours, and Minutes
SYSTEM SETTINGS 2
SYSTEM SETTINGS 2
Min Target 80F
Max Target 240F
Night Setback -10F
Boost Mode Vari
<Stage Settings>
<Remote Interface>
Reset
MIN TARGET TEMP
80F
MAX TARGET TEMP
240F
NIGHT SETBACK
-10F
BOOST MODE
OFF
Vari
Vari+ESD
BOOST ADJUSTMENT
+20F
STAGE SETTINGS
STAGE SETTINGS
Reaction Time 2m
Purge Delay 0.0m
Min Runtime 2m
Standby Delay 10m
Lst Stage Hold 5m
Throttle 2F
Lead Boiler A
Rotate Mode Time
<Lead Settings>
PID
Oversize
D
I
P
REACTION TIME
2m
PURGE DELAY
0.0m
MINIMUM RUNTIME
2m
STANDBY DELAY
10m
LAST STAGE HOLD
5F
THROTTLE RANGE
2m
LEAD BOILER
A
B
C
LEAD ROTATION
Time
Manual
FOFO
AUTO ROTATE PERIOD
24hrs
REMOTE INTERFACE
REMOTE INTERFACE
Gateway Address NONE
Space Lock Off
Day Target 75F
Night Target 65F
Internet ID
NIGHT TARGET
65F
DAY TARGET
75F
SPACE LOCKOUT
Off
On
GATEWAY ADDRESS
Serial 485
NONE
1
INTERNET IP
Solo
1 - 32
Custom

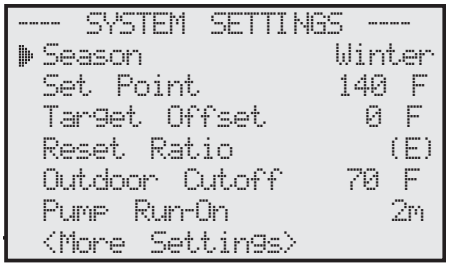

SHIFT
SETTINGS
Shift
<System Settings>
<Schedules>
<Maintenance>
<System Startup>
NIGHT
DAY
SHIFT FROM DAY TO----
Night
Extend Day
Schedule
SHIFT FROM NIGHT TO---
Day
Extend Day Schedule
Schedule
---- DAY EXTEND TIME ----
90 Min
SCHEDULES
Day/Night Schedule
Copy Schedule
Set Date/Time
---------- SCHEDULES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

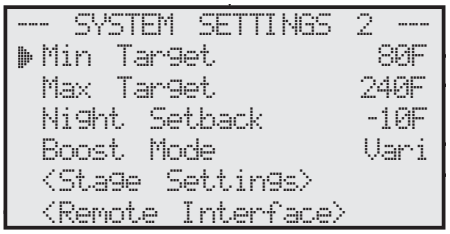

BOILER CONFIGURATION
BOILER AB
Auto
Standby
Off
On
Press the BOILER or NEXT
Button to go to the Next Boiler
BOILER CD
Auto
Standby
Off
On

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. The HWRQ Platinum behaves differently based on the selected Control Mode (see Startup Settings).





Reset

- Target Offset
- Reset Ratio
- Maximum Target
- Season (Winter or Summer)
- Outdoor Cutoff
- Pump Run-On
- Minimum Target
- Night Setback
- Boost Mode
- Stage Settings
- Remote Interface (Can be utilized with Remote Communication Only)

Set Point

- Set Point
- Season (Winter or Summer)
- Outdoor Cutoff
- Pump Run-On
- Minimum Target
- Night Setback
- Boost Mode
- Stage Settings
- 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 HWRQ Platinum will turn off the Pump relay when it is in Summer setting. Furthermore, the burners will be off for heating.
- When in Winter, the HWRQ Platinum will activate the Pump relay whenever the Outdoor temperature (OD) falls below the Cutoff setting. In addition, it will begin heating whenever the System temperature (SYS) falls below the Target Temperature. Therefore, adjust this setting to Winter during the heating season.
- When the heating season is over, it is a good practice to switch the HWRQ Platinum to Summer setting.

⚠ CAUTION

DO NOT turn power off to the HWRQ 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.

Set Point (Available with Set Point Control Mode Only)

70°F to 240°F Default: 120°F

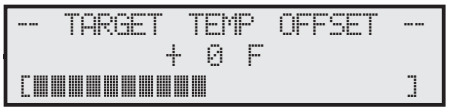
SELECT *Settings/System Settings/Set Point*

- When the Control Mode is set to Set Point, the HWRQ Platinum will sequence boiler stages to achieve that Set Point.

Target Offset (Available with Reset Control Mode Only)

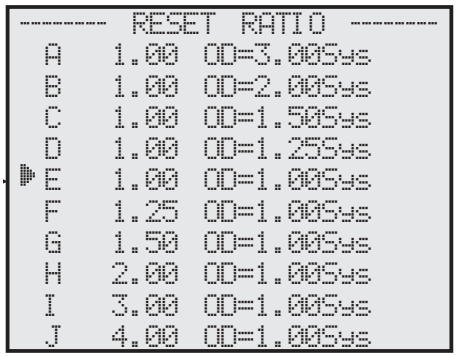
-40°F to 40°F Default: 0°F

SELECT *Settings/System Settings/Target Offset*



- The Target Offset setting lets you 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 example, if the Target water temperature (TGT) was 130°F and the Offset was changed from 0° to 10° (an increase of 10°), then the Target water temperature (TGT) would increase to 140°F
- The Target 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. (See Understanding Operation Concept)
- If required: **Adjust the Water Offset in mild weather**. If the ambient building temperatures are too warm in the mild weather, decrease the Water Offset. If the ambient building temperatures are too cold in the mild weather, increase the Water Offset. The rule of thumb for baseboard radiation is to change the Offset 4°F for every 1°F you wish to change the building temperatures. In radiant heat applications, change the Offset 1°F or 2°F for every 1°F 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 (Available with Reset Control Mode Only)



A to 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). (See Understanding Operation Concept)
- 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).

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 HWRQ Platinum turns on the Pump relay and begins heating the System water (SYS). When the Outdoor temperature (OD) is above the Outdoor Cutoff, the HWRQ Platinum will turn off the Pump relay. In addition, all burner stages will be off for heating. When the Outdoor temperature (OD) falls below the Outdoor Cutoff, the HWRQ Platinum will activate the Pump and control the burner stages to hold the Target water temperature (TGT).
- The Outdoor Cutoff can be set from 30°F to 75°F. In addition, the Setting can be set to ON or OFF. In the ON position, the Pump will run regardless of the Outdoor temperature (OD) and the burner stages will be active to hold the Target water temperature (TGT). (Note: The lowest Target water temperature the HWRQ Platinum will circulate is 70°F. If the Outdoor Cutoff is turned ON and the Season is set to Winter, the HWRQ 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 all burner stages will be off for heating.

Pump Run-On

0 to 60 minutes Default: 2 minute

SELECT *Settings/System 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 the last burner stage relay has de-energized, 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 boilers back into the building.
- The Pump Run-On time should be set based on the size and type of the boilers. A boiler with low water content and high horsepower will need a longer Pump Run-On than a boiler with the same horsepower but has more water content.

Minimum Target

70°F to 170°F Default: 80°F

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

- The Minimum Water Temperature must be set to the boiler manufacturer's specification. The HWRQ Platinum will calculate the Target temperature (TGT) based on the Outdoor temperature (OD), the Reset Ratio, and the Offset value. The HWRQ Platinum will control the burner stages to hold either the calculated temperature, or the Minimum Water Temperature, whichever is higher.
- The Minimum Target must be at least 20°F lower than the Maximum Target (See next setting).

Maximum Target (Available with Reset Control Mode Only)

90°F to 240°F Default: 240°F

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

- This is the highest temperature heating water the HWRQ Platinum will circulate through the heating system.
- When using a radiation system, it should be set according to the tubing or floor manufacturer's specification.
- The Maximum Target must be at least 20°F higher than the Minimum Target

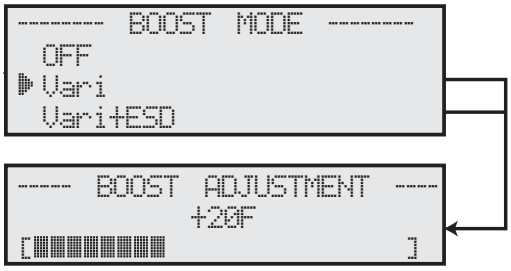
Night Setback

0°F to 80°F Default: 10°F

SELECT *Settings/System Settings/More Settings/Night Setback*

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

Boost and Early Shutdown and Boost Adjustment



Off, Vari, and Vari+ESD Default: Vari

Boost Adjustment: 0°F to 60°F Default:20°F

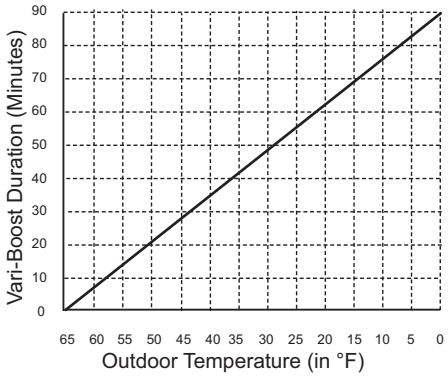
SELECT *Settings/System Settings/More Settings/Boost Mode*

- The morning Boost is designed to return the building to comfortable ambient temperatures after the cooler Night (Setback) period.
- The HWRQ 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 cancel a Boost or Early Shutdown for one time only for a specific day without changing the Schedule, Select Shift from the Settings menu. Any Shifting will result in cancelation of Boost or Early Shutdown.

There are three modes of Boost:

Off - The HWRQ Platinum will begin running the Day water temperatures at the Day # 1 time setting. No Boost will start.

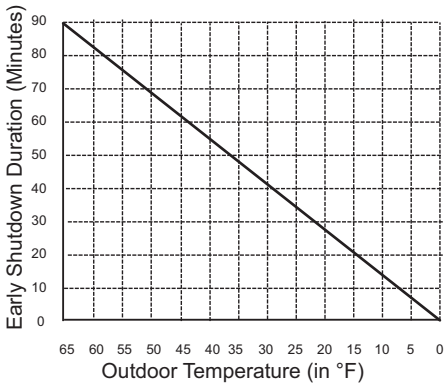
Vari-Boost - This Boost begins earlier than the Day # 1 time. The length of the Boost time depends on the outside temperature. During the Boost period, the HWRQ Platinum will increase the Target water temperature by the number of degrees set on the Boost Adjustment.



- The Boost Adjustment should initially be set to the same number of degrees as the Night Setback. For instance, if the Night setback is set at 20°F, then the Boost Adjustment should be set to 20°F.
- If the ambient building temperatures are too cold at the Day # 1 time, then increase the Boost Adjustment in increments of 10°F. If the Boost Adjustment is turned all the way up, and it is still to cold at the Day # 1 time, it might be necessary to decrease the amount of the Water Temperature Night Setback.
- If it is too warm at the Day # 1 time, then decrease the Boost Adjustment in increments of 10°F

Vari-Boost with Early Shutdown - This should be used in commercial buildings where the building will be unoccupied in the Night times. A Vari-Boost as described above is run. In addition, the HWRQ Platinum will switch into the Night Setback mode earlier than the latest Night setting for that day.

- The warmer it is outside, the earlier the HWRQ Platinum will shift into Night Setback.(see diagram)
- Whichever option the Fast Cool Down has been set to, the Early Shutdown will use it as a Target Temperature.
- If the HWRQ Platinum has a communication package, RI (direct connection with RS232), RIM (Connects through a modem), or Internet (can be connected to the WEB), and Space Lockout has been activated, the Early Shutdown will lower Target Temperature to either Minimum Water temp Setting or 70°F, depending on the Fast Cool Down setting, until Space Avg has reached the Night Target.
- If Space Lockout has not been activated or no communication package is available, the Target temperature will be the Night Setback.



Stage Settings

Enter menu by pressing SELECT: *Settings/System Settings/More Settings/Stage Settings*

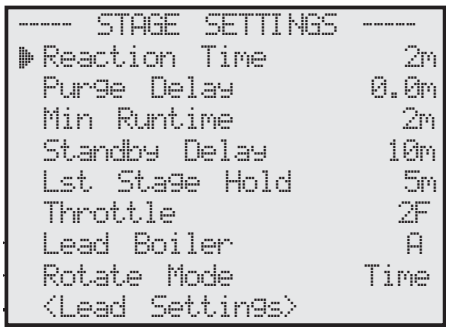
The Stage Settings is for adjusting how the burners and their stages should respond to different operation steps. The Stages behave differently based on the selected Control Logic (see Startup Settings).

PID

- Reaction Time
- Purge Delay
- Minimum Run Time
- Standby Delay
- Last Stage Hold
- Throttle
- Lead Stage
- Rotate Mode

Oversize (OSS)

- Throttle
- Lead Stage
- Rotate Mode



Reaction Time (Available with PID Control Logic Only)

1 minute to 10 minutes Default: 2 minutes

SELECT *Settings/System Settings/More Settings/Stage Settings/Reaction Time*

- It is the amount of time it takes a single stage to affect the system.
- After the HWRQ Platinum turns on a stage trying to meet a set point, it will not turn on another stage until the reaction time has elapsed. Then, it will recalculate if a stage is need.
- To determine the optimum time, start with a hot system. Then, turn on a single stage and calculate how long it takes until the system begins to respond to that stage. That period should be set as the Reaction Time.

Purge Delay (Available with PID Control Logic Only)

0.0 minute to 10.0 minutes Default: 0 minutes

SELECT *Settings/System Settings/More Settings/Stage Settings/Purge Delay*

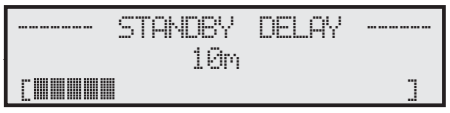
- Most large boiler units must go through a purge cycle before they are brought on line.
- When the HWRQ Platinum activates a boiler (the lowest stage on a burner), it does not start to calculate its output until the Purge Delay is over. This allows the unit to fully come on line and to begin producing output.
- The Purge Delay helps to prevent short cycling of a newly activated burner. Once the lowest burner stage is activated, it **MUST** run through the entire Purge Delay period.
- The minimum Purge Delay setting **MUST** be set to the time required by the units manufacturer.

Min Run Time (Available with PID Control Logic Only)

1 minute to 60 minutes Default: 2 minutes

SELECT *Settings/System Settings/More Settings/Stage Settings/Min Runtime*

- This is the minimum amount of time any stage will run.
- For the lowest stage of a burner, the Minimum Run Time starts after the purge cycle.
- This timer does not apply to the last stage online. The Last Stage Hold applies in that case.
- Initially, set the Min Run Time to half the Reaction Time.
- If System tends to overshoot, reduce the Min Run Time. If boilers tends to short cycle, increase Min Run Time.



Standby Delay (Available with PID Control Logic Only)

1 minute to 60 minutes Default: 10 minutes

SELECT *Settings/System Settings/More Settings/Stage Settings/Standby Delay*

- The Standby Delay Time only applies to Boilers in Standby Mode.
- A Standby Boiler can only be activated after all the boilers in Auto Mode have run for the full Standby Time.
- Standby boilers are used for backup or extreme load conditions only. A Standby Stage can never be a Lead Stage
- The full Standby Delay Time must always elapse regardless of what happens to system temperature or pressure. Therefore, shorter Standby Times will result in smoother set point operation in extreme conditions. Longer Standby Times may prevent a Standby Boiler from firing if the other boilers can eventually meet the load, or if the load decreases.
- When setting Standby Time, remember that it will be added to the Reaction Time for the first stage on the first Standby boiler. The following stages start time will rely on Pre-Purge and Reaction Time.

Last Stage Hold (Available with PID Control Logic Only)

0°F to 30°F Default: 5°F

SELECT *Settings/System Settings/More Settings/Stage Settings/Lst Stage Hold*

- The Last Stage Hold prevents short cycling of the Lead Stage during low load conditions.
- In low load conditions, the system might have a load that is significantly less than the output of one Stage. When the HWRQ Platinum brings on the Lead Stage, the Set Point is quickly exceeded, and the HWRQ Platinum turns the Lead Stage off.
- To prolong the run time during this type of condition, use the Last Stage Hold setting.
- The HWRQ Platinum will allow the system temperature to exceed the Set Point by the number of degrees selected, before the Lead Stage is turned off.
- For example, with a Set Point of 160°F and a Last Stage Hold setting of 10°F, the Lead Stage boiler will remain on, at low modulation, until the Set Point reaches 170°F.

Avoiding Conflicting Boiler Limits

- The temperature limits set on the boilers MUST be set considerably higher than the HWRQ Platinum's Set Point for the reasons detailed below.
- The HWRQ Platinum sensor is located in a common header some distance from the boilers.
- As the temperature rises in the header and before reaching the sensor location, energy is dissipated.
- Therefore, the temperature in the header will correctly be lower than that registered by sensors in the boilers.

⚠ CAUTION

The temperature limits set on the boilers must be higher than the HWRQ Platinum Set Point. Read the section at left for details that will prevent erratic system operation.

- In addition to the normal drop experienced between the boiler's temperature and that read by the HWRQ Platinum sensor, the Last Stage Hold setting must be accounted for. The boiler limit must be set above the Set Point PLUS the Last Stage Hold PLUS the normal drop experienced in the piping.
- Using the previous example of a 10°F Last Stage Hold with a 160°F Set Point, the boilers' limits must be set enough over 170°F to prevent the boilers' internal limits being reached. In this situation, the boiler high limit should be set at approximately 180°F to prevent the difference in boiler temperature vs. header temperature causing erratic operation.

Throttle (Available with OSS Control Logic Only)

2°F to 20°F Default: 2°F

SELECT *Settings/System Settings/More Settings/Stage Settings/Throttle*

- The Throttling Range sets a temperature band around the Set Point that controls when stages will be turned on or off.
- For example, in the Oversize (OSS) heating mode, no stages will be activated until the temperature falls one full Throttling Range below the Set Point. A second stage will be activated when the temperature falls to two full Throttling Ranges below the Set Point, and so on, with one extra stage being turned on for every throttling below the Set Point the System temperature gets.
- Stages will be turned off as the temperature rises toward the Set Point with one full throttling range as a differential.
- The last stage to be turned off will be allowed to exceed the Set Point by a full throttling range before it is turned off. This helps to prevent the last stage from short cycling when the load is low or when the stage is oversized.

Throttling Example
Set Point = 180°F **Throttling = 5°F** **4 Boiler Stages, A, B, C, and D**

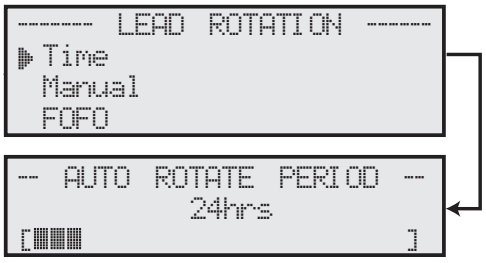
		Falling Temperature		Rising Temperature	
Temperature	**Calculation**	**Stage Turned On**	**Stages On**	**Stage Turned Off**	**Stages On**
185°F	180 + (1)THR	None	None	A	None
180°F	180 - (0)THR	None	None	None	A
175°F	180 - (1)THR	A	A	B	A
171 to 174°F	---	---	A	---	A,B
170°F	180 - (2)THR	B	A,B	C	A,B
166 to 169°F	---	---	A,B	---	A,B,C
165°F	180 - (3)THR	C	A,B,C	D	A,B,C
161 to 165°F	---	---	A,B,C	None	A,B,C,D
160°F	180 - (4)THR	D	A,B,C,D	None	A,B,C,D

Lead Boiler and Rotation Settings

Lead Boiler

A thru H or last boiler number Default: <A>
SELECT *Settings/System Settings/More Settings/Stage Settings/Lead Boiler*
or *Settings/System Settings/More Settings/Stage Settings/Lead Settings/Lead Stage*

- The Lead Boiler's lowest stage will always be the first stage brought on when there is a call for output. As more output is needed, additional Stages are added.
- The Lead Boiler is shown on the main display in brackets.
- In a 2-Stage system (see Boiler Type in the Startup section), the display will show the two Lead Boiler stages bracketed <AB>. In a 3-Stage system, the display will show the three Lead Boiler stages bracketed <ABC>, and so on.
- The Lead Boiler can be rotated based on the Rotation Mode selected. (See next setting)



Rotate Mode

Time, Manual, First-On/First-Off (FOFO) Default: Time
SELECT *Settings/System Settings/More Settings/Stage Settings/Rotate Mode*
or *Settings/System Settings/More Settings/Stage Settings/Lead Settings/Rotate Mode*

- Automatically rotating the Lead among the active stages promotes more even wear on the Stages and can help prolong the life of each unit.
- The HWRQ Platinum has three selections for rotating the Lead Stage.

Time

- On power up, or any time the HWRQ Platinum loses power, the Lead Boiler will be the lowest Boiler in Auto Mode (that is, A first, then B, C, or D).
- If the default 24 hour rotation is used, at 2 am every morning, the Lead Boiler will change to the next Boiler in Auto Mode. Note: If you do not set the system time, the HWRQ Platinum will assume it was installed at 2 PM.
- If the Rotate Time (Auto Rotate Period) is changed, the Lead Boiler will change to the next Boiler in Auto Mode every time the Rotate Time (Auto Rotate Period) has elapsed. For example, with a 12 hour Rotate Time, the Lead Boiler will rotate from A to B after the first 12 hours of operation, and then from B to C after the next 12 hours, and so on.
- When less output is needed, the additional Boiler Stages are turned off in the reverse order of how they were added. For instance, if the Boiler stages were added in the sequence A, B, and C, then they will be turned off in the sequence C, B, and A.

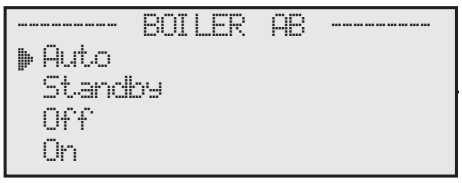
Manual

- If Manual is selected, the Lead Boiler will not automatically rotate.
- In Manual, whichever Boiler is presently the Lead will remain the Lead until there is a power failure. Then the HWRQ Platinum will revert to the lowest Boiler in Auto Mode (that is, A first, then B, C, or D).

First-On/First-Off (FOFO) (AVAILABLE IN PID CONTROL MODE ONLY. NOT AVAILABLE IN OSS)

- On power up, or any time the HWRQ Platinum loses power, the Lead Boiler will be the lowest Boiler in Auto Mode (that is, A first, then B, C, or D).
- When less output is needed, the Lead Boiler will be the first boiler turned off. The bracket indicating lead Boiler will then switch to the next available boiler in Auto Mode. For instance, if the boiler stages were added in the sequence A, B, and C, then they will be turned off in the sequence A, B, and finally C. The lead boiler will now be D when more output is needed.

Boiler Operation Mode



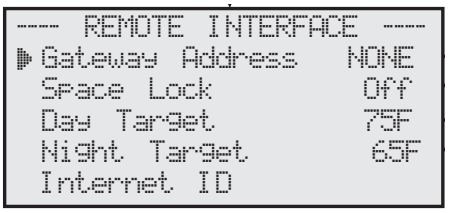
Auto, Standby, Off, On Default: Auto

BOILER (Button)

By pressing the BOILER button, the Boiler Operation mode menu selection will display. There are four modes. By pressing the BOILER, NEXT, or PREV buttons the display will scroll between the different modes.

- ***Auto*** - In this mode Boiler stage will operate based on control settings and Outdoor cutoff. Boiler Rotation will take effect.
- ***Standby*** - Boiler will start only after all Boilers set to Auto are on and Standby Delay has elapsed.
- ***Off*** - Boiler relay will be Off until this setting is changed.
- ***On*** - Boiler relay will be On until this setting is changed.

Remote Interface (Optional Communication)



SELECT *Settings/System Settings/More Settings/Remote Interface*

- The HWRQ Platinum can be controlled remotely. This allows it to monitor additional sensors that can be used for checking and configuring alarms and sensors.
- The HWRQ 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 number of sensors.

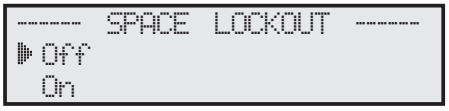
Gateway (Requires RI or RIM Package)

Serial 485, None, 1 through 39 Default: None

SELECT *Settings/System Settings/More Settings/Remote Interface/Gateway Address*

- When connection multiple controls to Heat-Timer TGC Gateway, the numbers 1 through 39 are used to identify each panel.
- When connecting to the HWRQ 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 HWRQ Platinum using a direct cable connection (RS232 or RS485 Cables) or a modem connection by dialing into the HWRQ 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 HWRQ 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 HWRQ 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 HWRQ Platinum will try to reach during the Early Shutdown ESD period when switching from the Day setting.

Internet ID (Requires RINet Package)

Solo, 1-31, Custom Default: Solo

SELECT *Settings/System Settings/More Settings/Remote Interface/Internet ID*

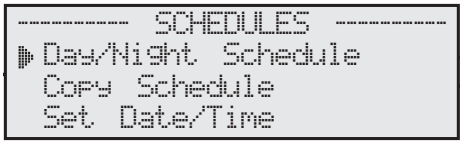
- The Solo; is for a single panel behind a router.
- When multiple panels are connected to one router, each panel requires a unique number from (1-31).
- The Cusom option allows the user to manually configure the Internet connection.

⚠ CAUTION

When connecting multiple panels to the Internet, a Heat-Timer Router is required.

Schedules

Enter menu by pressing SELECT: *Settings/Schedules*



- The HWRQ 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 HWRQ Platinum can have up to four Day Time and four Night Time (Setback) periods for each individual day of the week. The HWRQ Platinum will show which period is it in on the 2nd line of the display.
- Every time the HWRQ 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

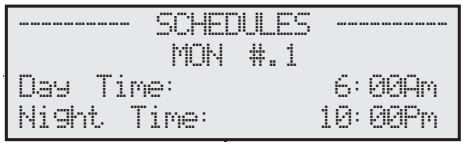
The HWRQ Platinum will ignore any Time setting that reads **:**.

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

Day Time default is 6:00 am Night Time default is 10:00 PM

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 HWRQ Platinum to set the Target based on Outdoor temperature and the Reset ratio (when Reset is selected as a Control Mode) or Set point (when Set Point is selected as a Control Mode).
- 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 lets the HWRQ Platinum reduce the Target temperature (TGT) by the Night Setback setting. Furthermore, if the Early Shutdown feature is being set, it uses the last Night Time setting of that weekday as an Early Shutdown calculation starting point. In this case, the actual Early Shutdown start time will vary based on Outdoor temperature.
- 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 weekday. The BOILER/DAY button will allow the scroll between all weekdays. The PREV/DEL button will erase the Day Time and Night Time settings for a specific day schedule.

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: Vari-Boost begins before 6 am and ends at 6 am
Day temperature level is maintained from 6 am until 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: Vari 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 until 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 until before 4 PM
Early Shutdown starts before 4 PM and ends at 4 PM
Night temperature level is maintained from 4 PM into Sunday

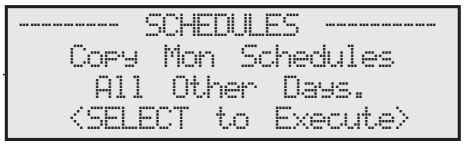
Sunday: Night temperature level is maintained all day Sunday, ending at the Vari Boost Monday morning

NOTE
When working with HWRQ 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

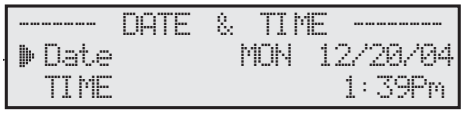
SELECT: *Settings/Schedules/Copy Schedule*

- To reduce the need for setting each weekday 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.



Set Date and Time

SELECT: *Settings/Schedules/Set Date & Time*

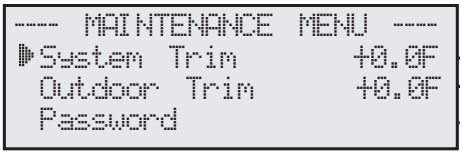


- In the startup process of the HWRQ Platinum, the Date and Time will need to be set. If the Date or Time needs to be adjusted, this area of the menu allows that.
- Selecting Date will allows you to set the year followed by the month then finally the days.
- Adjust the time by selecting Time from the menu and then scrolling through the hours followed by the minutes.

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

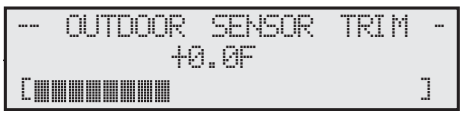
Maintenance

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 HWRQ 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, except Shift to Extended Day and Auto/Bypass toggle switch, 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 HWRQ Platinum has a built in default panel Password - HWRQ
- 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.
- To 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 HWRQ into the Login screen.
- When completed, select No to the prompt "*Change Password?*"

Note: When Password is enabled, all settings will be read only except for the Shift to Extended Day and the toggling of the Auto/Bypass Switch.

⚠ CAUTION
When using Visual Gold software, the Visual Gold default Password is "HWRQ".

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 programmed schedule. A typical example where the shift would be used is in a school where an event has gone into overtime. Instead of re-programming 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 HWRQ Platinum will hold the shift is:

- ***Shifting from Day to Night*** - The control will stay in the Night mode either until the control is shifted again, or until the next programmed Day mode time. The Display will show NIT SHT to indicate this status.
- ***Shifting from Night to Day*** - The control will stay in the Day mode either until the control is shifted again, or until the next programmed Night mode time. The Display will show DAY SHT 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 HWRQ Platinum in Day mode for an extended period of time when it is programmed for Night.

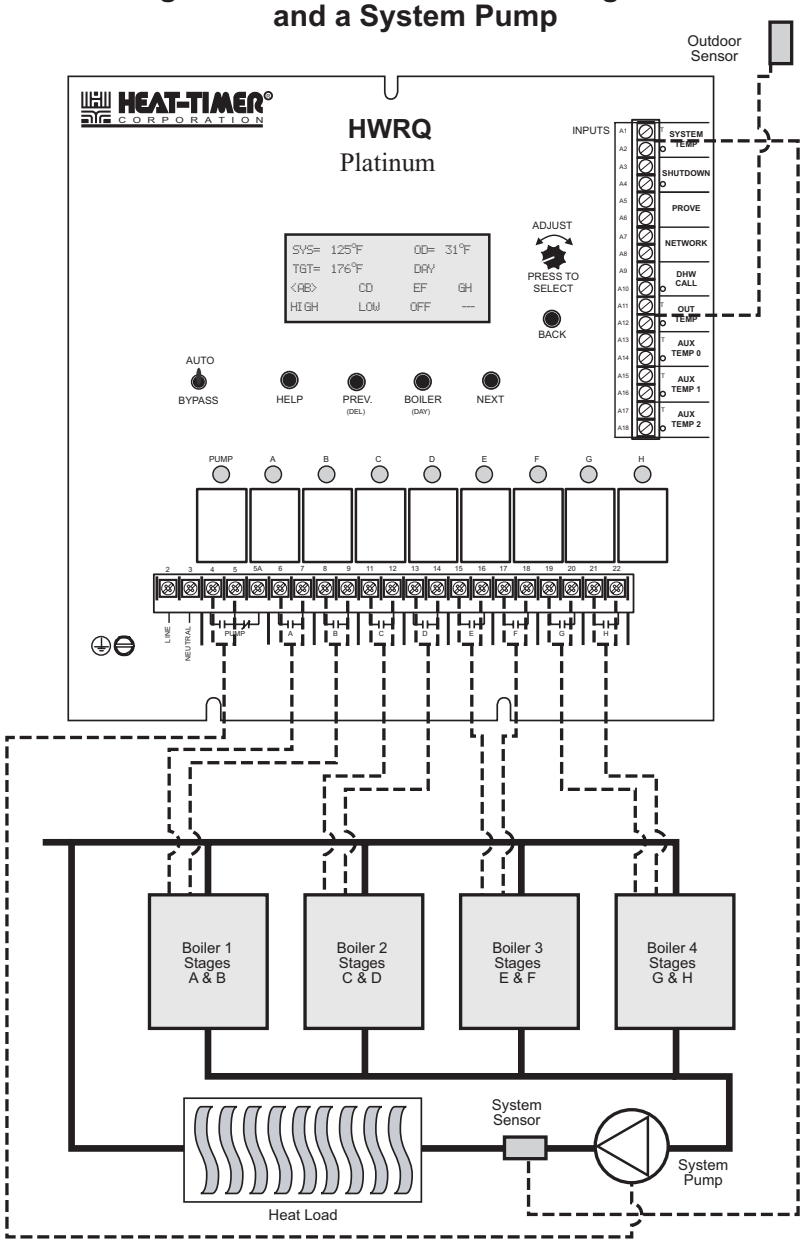
When the control is manually shifted to Extended Day. The Display will alternate between the DAY EXT and the Extended Time balance remaining in minutes indicating the Extended Day mode.

- The Shift to Extended Day option will be available to anyone to change. Password enabling will not affect this option.

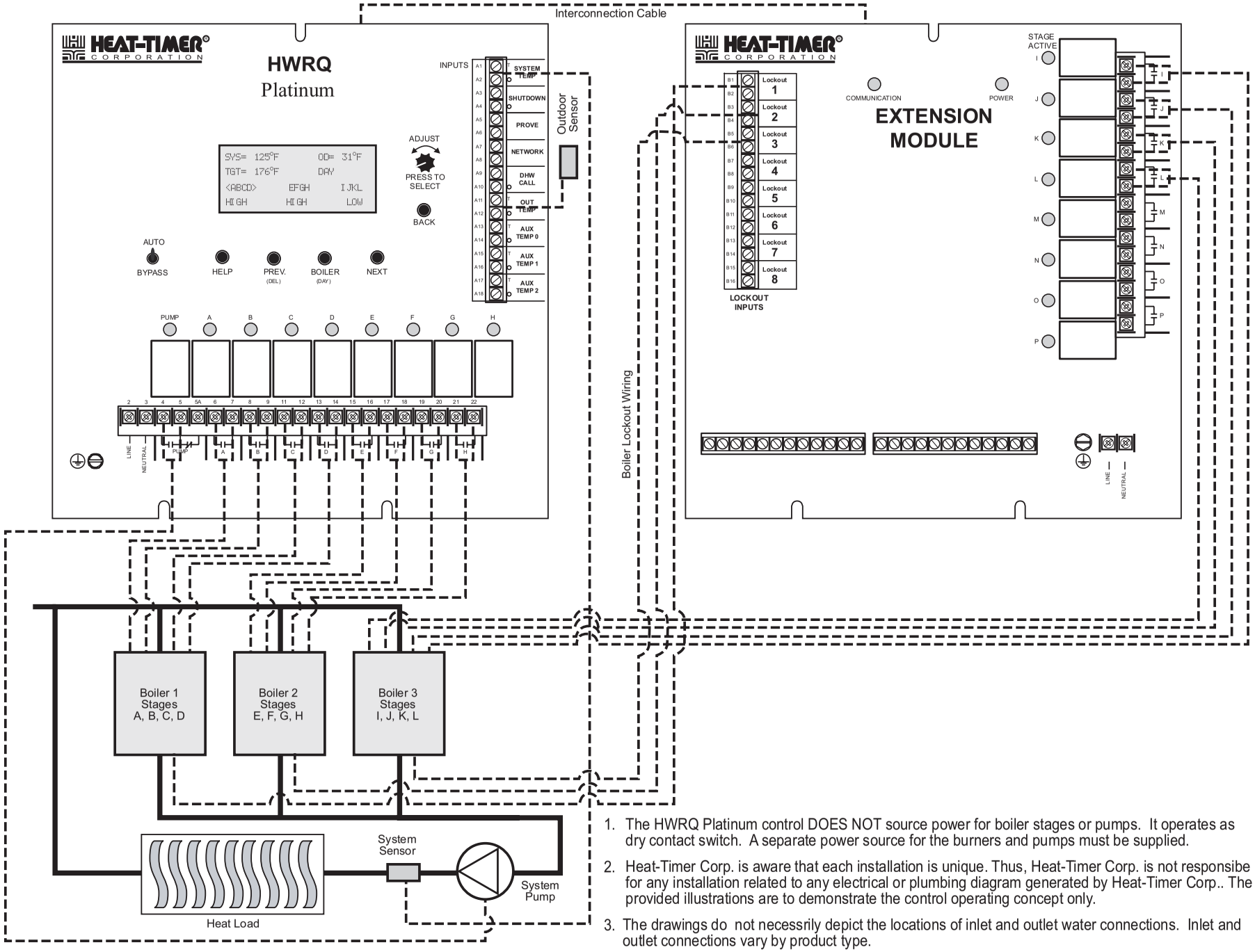
Auto/Bypass

- The switch must be in the AUTO position for the HWRQ Platinum to control the pump and the circulating system water temperatures.
- When switched to Bypass, the pump will run, and all burners and their stages will run on their limits. The Open switch directly connects the Normally Open contacts 4 to 5, contacts 6 to 7, contacts 8 to 9, contacts 11 to 12, and so on. Therefore, if there is no heat, test the pump and the boilers by putting the control in Bypass. If the units do not run, the problem is not with the HWRQ Platinum panel.
- When the HWRQ Platinum is in the Bypass position, no normal functions will be executed. The display will change to read the total amount of time the control has been in Bypass.
- This switch will not be affected by any password setting.

Wiring an HWRQ Platinum to 4 2-Stage Boilers and a System Pump



Wiring an HWRQ Platinum with an Extension Panel to 3 4-Stage Boilers and a System Pump



1. The HWRQ Platinum control DOES NOT source power for boiler stages or pumps. It operates as dry contact switch. A separate power source for the burners and pumps must be supplied.
2. Heat-Timer Corp. is aware that each installation is unique. Thus, Heat-Timer Corp. is not responsibe for any installation related to any electrical or plumbing diagram generated by Heat-Timer Corp.. The provided illustrations are to demonstrate the control operating concept only.
3. The drawings do not necessrily depict the locations of inlet and outlet water connections. Inlet and outlet connections vary by product type.

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:
The troubleshoot diagrams in the following pages represent these issues:

- No Heat, No Pump
- No Heat, Pump Running
- Too Little Heat
- Too 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 HWRQ 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 #1 Day 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.

Testing the Sensors

The HWRQ 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.

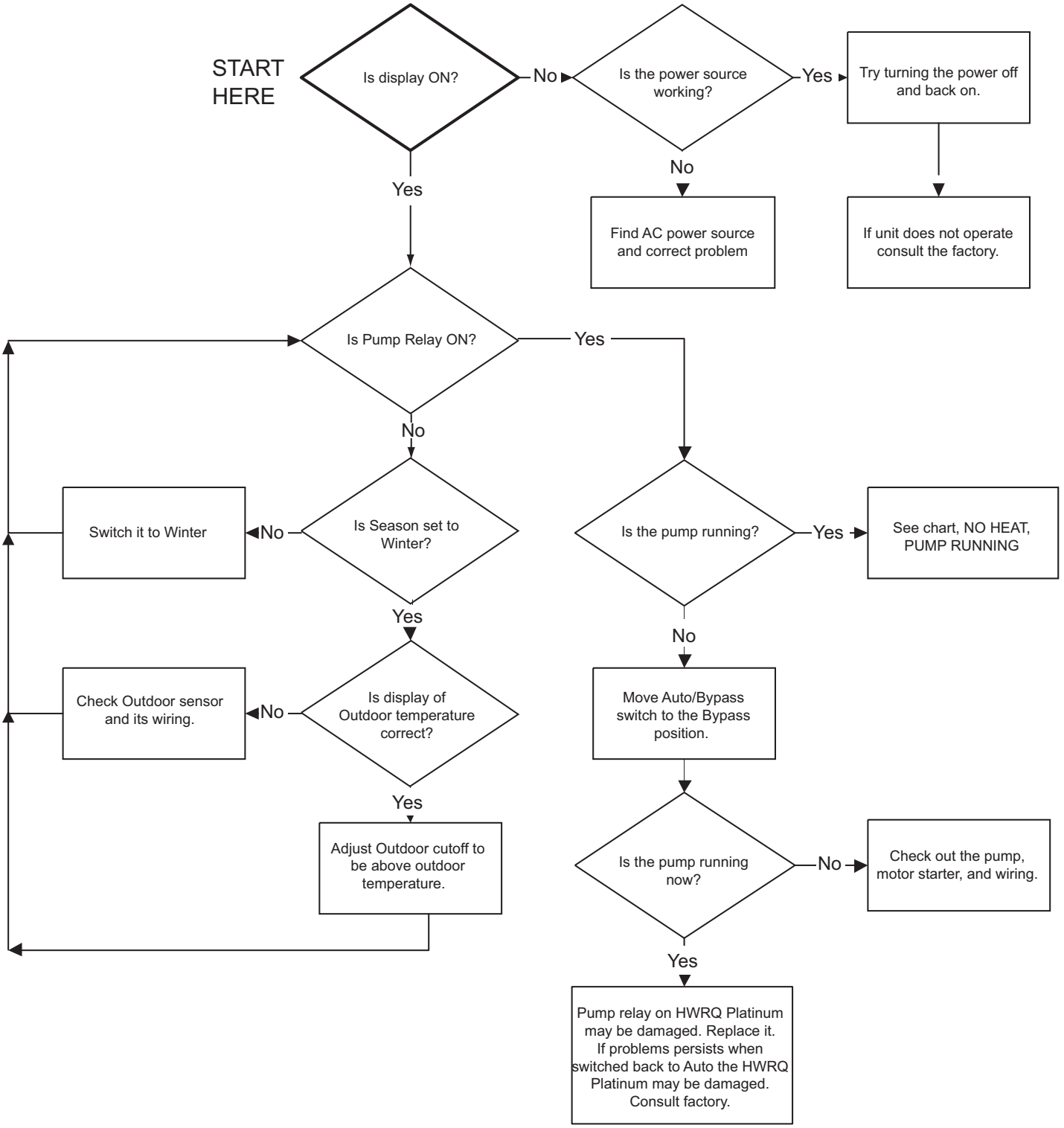
To perform the test, you will need a digital multi-meter capable of reading resistances. The Heating System Sensor and Outdoor Sensor temperatures are constantly displayed on the HWRQ Platinum. Remove the outdoor sensor wires from the Out Temp terminals (A11 and A12), or the heating system sensor wires 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 HWRQ 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 HWRQ Platinum. Otherwise, the sensor has been damaged, and should be replaced.

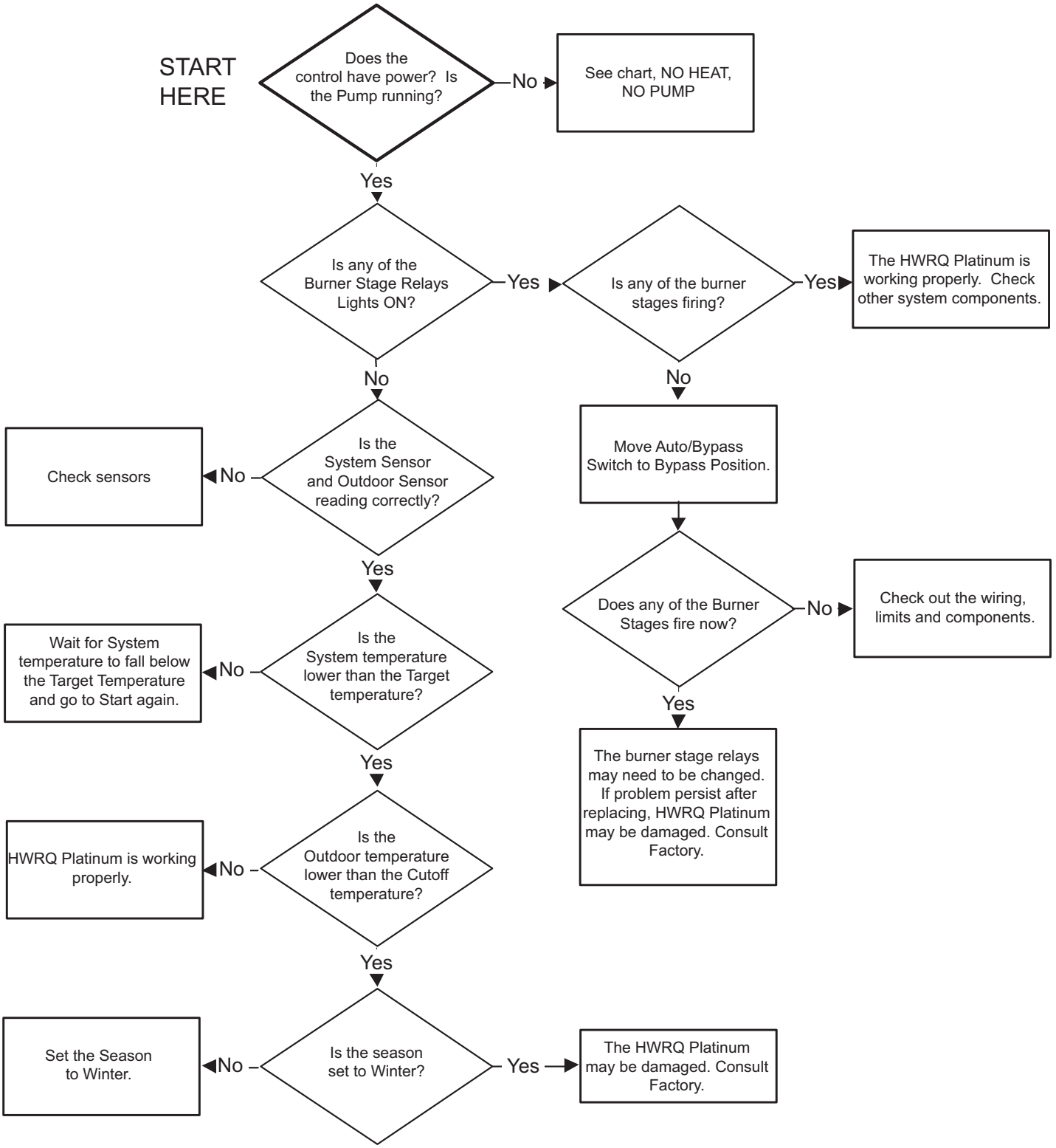
Temperature Sensor Chart

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

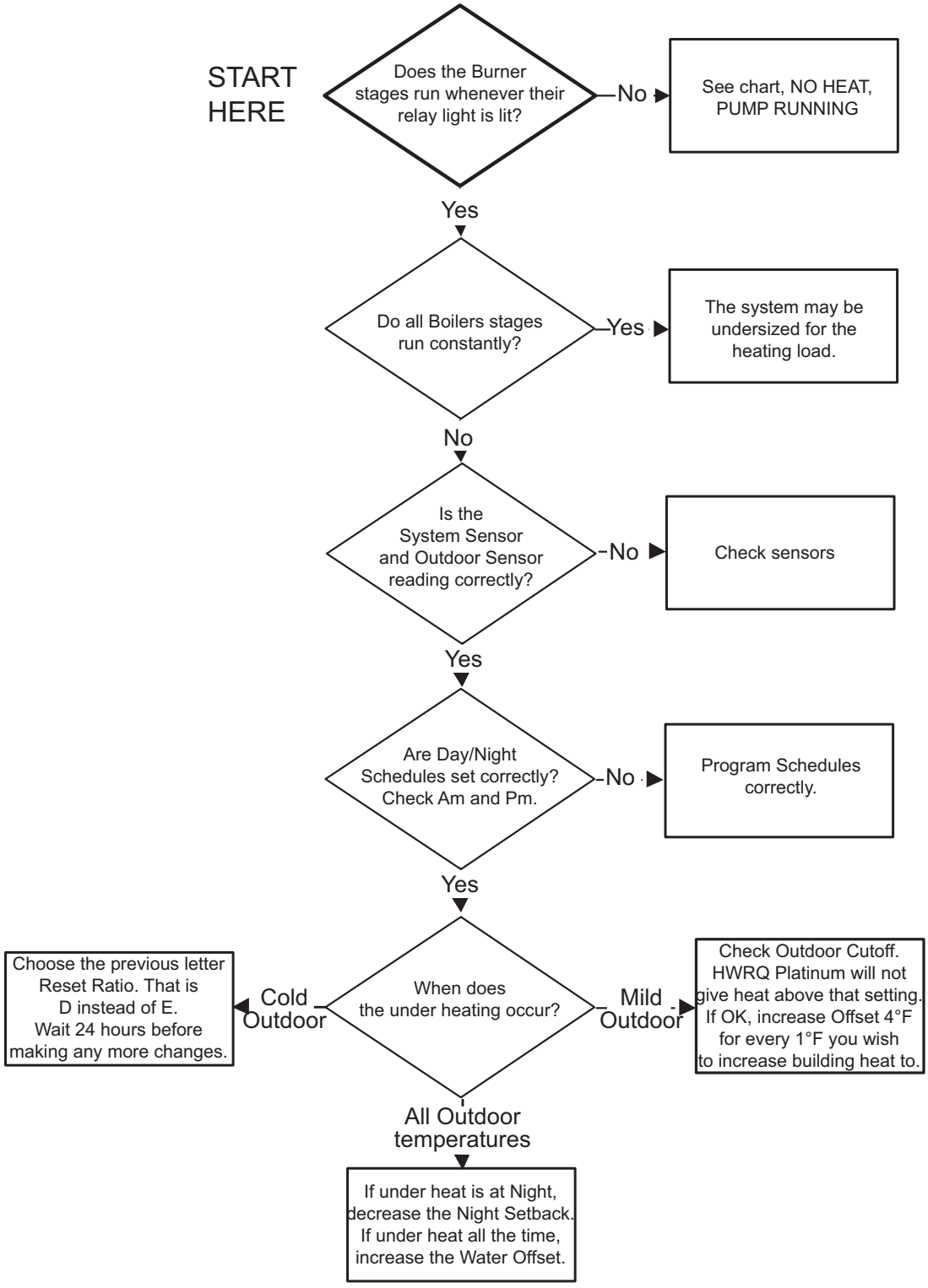
TROUBLESHOOT: NO HEAT, NO PUMP



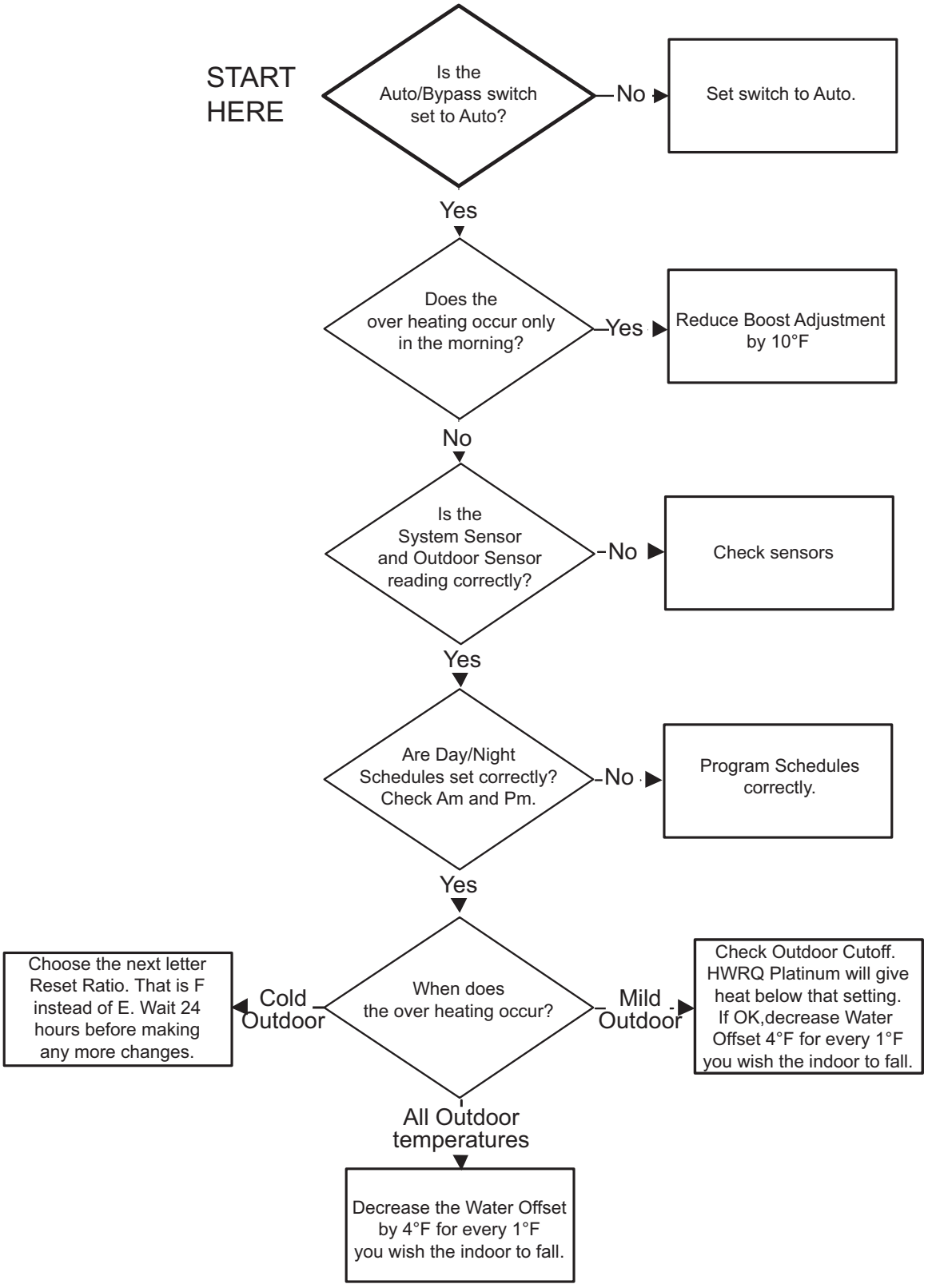
TROUBLESHOOT: NO HEAT, PUMP RUNNING



TROUBLESHOOT: LOW HEAT



TROUBLESHOOT: TOO MUCH HEAT



Added Features with Remote Communication Option

The HWRQ Platinum has a number of remote communication options that can be ordered. The HWRQ Platinum with the proper option can communicate through either direct cable connection (HWRQ Platinum with RI package will include RS232 and RS485 connections) or through dialup from a remote computer (HWRQ 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 manipulation 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 HWRQ Platinum with internet connection (HWRQ 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) until 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 Time line. A history graph of the boiler operation based on the type of input.
- Sensor Time line. Displays a history of the sensor readings based on predetermined intervals.

⚠ CAUTION

When connecting an Internet Panel make sure of the following:

- Panel must have a full time Internet access,
- Assigned connection IP must be STATIC,
- Firewall and Router must allow outgoing traffic on port 4133 and incomming traffic on ports 8082 - 8114,
- A Heat-Timer router is required when multiple panels are connected to a single internet connection.

For custom configurations contact Heat-Timer.

Specifications

Voltage Input: 120 VAC 60 Hz
Power Consumption: 30 VA Max
Pump Output: 1 N.O. S.P.D.T
Heating Output: 8 N.O. S.P.S.T. for Burner stages
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 rows with 20 characters each)
Sensor Ranges:
Outdoor temperature sensor - minus 35°F to 250°F
Heating system sensor - minus 35°F to 250°F
Outdoor Cutoff Range: 30°F to 75°F, ON and OFF
Control Operating Mode: Outdoor Reset or Set Point
Control Logic: PID Logarithm or Oversize System
Reset Ratio Range: A (1:3) to J (4:1) (Outdoor:System Water)
Offset Adjustment: minus -40°F to plus 40°F
Night Setback: 0°F to 80°F
Minimum Water Temperature: 70°F to 170°F
Maximum Water Temperature: 90°F to 240°F (available in Reset Mode only)
Reaction Time: 1 to 10 minutes
Minimum Boiler Run Time: 1 to 10 minutes
Stage Operation Modes: On, Off, Standby, Auto
Standby Time Delay: 0 to 60 minutes
Stage Rotation Modes: Manual, First-On/First-Off, Auto (from 1 Hour to 41 days)
Stage Sequencing: Lo/Hi/Lo/Hi or Lo/Lo/Hi/Hi
Last Stage Hold: 0°F to 30°F
Purge Delay: 1.0 to 10.0 minutes
Pump Run-On: 0 to 60 minutes
Schedules: 4 Day Time and 4 Night Time (Setback) settings per day
Night Setback: 0°F to 80°F
Morning Boost:
Vari-Boost - Self-adjusting from 0 to 90 minutes - Water temperature increase 0°F 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).
Remote Communications: 1 RS232 and 2 RS485 (RI and RIM controls), Modem (RIM only), Internet (RINet only).
External Inputs: 1 Network Input, 3 Aux Inputs, DHW Call Input, Shutdown Input, and Prove Input.
Network Input Maximum Sensors: 64 Neuron Sensors including MIG Sensors.
Season: Winter and Summer.
Enclosure: NEMA 1
Dimensions: 5-⅛" x 13" x 13"
Weight: 14 pounds