SAVE THESE INSTRUCTIONS

INSTALLATION AND MAINTENANCE

KBP eco2S PRO CONTROL

DANGER

ELECTRIC SHOCK OR FIRE HAZARD

READ ALL WIRE SIZING, VOLTAGE REQUIREMENTS AND SAFETY DATA TO AVOID PROPERTY DAMAGE AND PERSONAL INJURY

CLEARANCES: Do not install bottom of heater less than 6 ft above the floor 6 inches to side wall, 5 inches to back wall, and 2 inches to ceiling when clearance to ceiling is 2 inches. Do not point heater at ceiling.

KBP ECO2S PRO unit heaters are to be operated at **voltage listed on the rating label.** It is important that you verify the power supply voltage is the same as the nameplate voltage of the heater. Connecting the heater to an improper voltage or failure to follow the procedures as outlined in this manual can result in damage to the heater and void the warranty. This heater is provided with a factory installed thermostat. Disconnect all power from the heater at the main service panel before attempting to install or service this unit. All electrical wiring must conform to local electrical codes. Heater circuit must be properly protected.

WARNING

READ CAREFULLY - *Use the heater only as described in this manual. Any other use is not recommended and could result in fire, electric shock, and personal injury. Following these instructions will prevent difficulties that might occur during the installation and use of the heater. Please study the instructions first, as they may save considerable time and trouble during use addition to providing important safety information. Make*

Read all instructions before wiring or using this heater.

WARNING Heaters outlet grill is very hot when in use. To avoid burns, do not touch hot surfaces with bare skin. Keep combustible materials, including furniture, pillows, bedding, papers, clothes, curtains, and boxes at least 3 feet from the front of the heater and keep them away from the sides and rear.

WARNING Do not use outdoors.

WARNING Heater is not intended for use in bathrooms, laundry areas or similar indoor locations. Never locate heater where it may fall into a bathtub or other water container.

WARNING Do not insert or allow foreign objects to enter any inlet or outlet openings as this may cause an electric shock, fire, or damage to the heater.

WARNING To prevent a possible of fire, do not block air intakes or exhaust in any manner.

WARNING Heater has hot surfaces. Internal thermostat and limiting parts can arc or create sparks inside. Do not use this heater in areas where gasoline, paint, or flammable liquids or gases are used or stored.

WARNING Use this heater only as described in this manual. Any other use is not recommended by the manufacturer and may cause fire, electric shock, explosion or injury to people and or property.

WARNING If heater shows signs of overheating immediately turn the circuit breaker off to the heater. Remove and inspect for any objects on or adjacent to the heater that may cause the high temperatures. Have a professional inspect the internals until the reason is clear why the heater is overheating. Do not reinstall until it has been professionally serviced.

WARNING Do not operate heater after it malfunctions. Disconnect heater at service panel and have heater inspected by a reputable electrician before reusing. To disconnect heater, turn controls to off position, and turn off power to heater circuit at main electrical panel or operate internal disconnect switch to off if provided.

WARNING Extreme caution is necessary when any heater is used by or near children or invalids and whenever the heater is left operating and unattended too.

SAVE THESE INSTRUCTIONS

SAFETY INFORMATION

KBP ECO2S PRO Circuit Sizing Chart

1 PHASE CIRCUIT SIZING TABLE					
Watts (Max)	BTUH	Volts	Amps 1 Phase	Wire Size	Circuit Protection
950	3242	120	7.9	#14/2	15A-1P
		208	4.6	#14/2	15A-2P
		240	4.0	#14/2	15A-2P
1900	6485	120	15.8	#12/2	20A-1P
		208	9.1	#14/2	15A-2P
		240	7.9	#14/2	15A-2P
2620	8942	208	12.6	#12/2	20A-2P
2850	9727	120	23.8	#10/2	30A-1P
		240	11.9	#14/2	15A-2P
3340	11399	208	16.0	#12/2	30A-2P
3800	12969	240	15.8	#12/2	20A-2P
4290	14642	208	20.6	#10/2	30A-2P
4750	16212	240	19.8	#10/2	30A-2P
5010	17065	208	24	#10/2	30A-2P
5700	19454	240	23.8	#10/2	30A-2P

WARNING: Prior to operating, make sure the circuit breaker is of the configuration and capacity appropriate for the heater.

IMPORTANT: Per the National Electrical Code heating circuits are considered a continuous load and therefore must be de-rated by 20%.

For example, a 20 amp heating circuit can not have more than 16 amps of connected load.

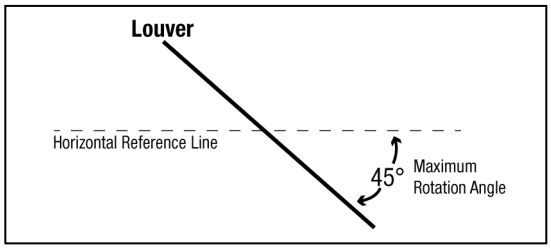
- Minimum installed distance from the heater to the adjoining wall or ceiling surfaces - 5 inches to back wall.
- When clearance to ceiling is 2 inches, Do Not Point Heater At Ceiling.
- Use extreme caution when used near children or people with disabilities.
- Do not use outdoors.
- Not intended for use in bathrooms, laundry areas or other similar wet locations. Never locate heater where it may have contact with water.
- Do not use heater in wet or moist locations.
- Don't place heater against cardboard or low-density fiberboard surfaces.
- Avoid using an extension cord because the extension cord may overheat and cause a risk of fire.
- Use only the electrical power (voltage and frequency) specified on the model plate of the heater.
- Keep all combustible materials away from this heater.

LOUVER ADJUSTMENT TO DIRECT AIRFLOW

The louvers are opened during testing at factory, but may have shifted during shipping. Confirm louvers are rotated less than 45 degrees from horizontal before operation. To adjust the opening angle, grasp the left and right end of louver and twist with two hands to the desired position.
CAUTION: Increasing angle beyond 45° degrees from horizontal may restrict air flow casing over temperature limit to activate & shut off the heater.

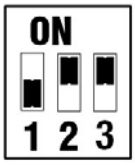
Louver Adjustment

Do Not Adjust While Heater Is Operational



HEATER DIP SWITCH SETTINGS

In order for your heater to recognized and pair with the ECO PRO Controller, Dip Switch #1 on the back of the Heater display must be set to OFF. Once set to OFF the heater will be able to receives signals from the ECO Pro Controller.



PRO CONTROL

SAVE THESE INSTRUCTIONS

ASSEMBLY INSTRUCTIONS

king

DANGER

ELECTRIC SHOCK OR FIRE HAZARD

READ ALL WIRE SIZING, VOLTAGE REQUIREMENTS AND SAFETY DATA TO AVOID PROPERTY DAMAGE AND PERSONAL INJURY

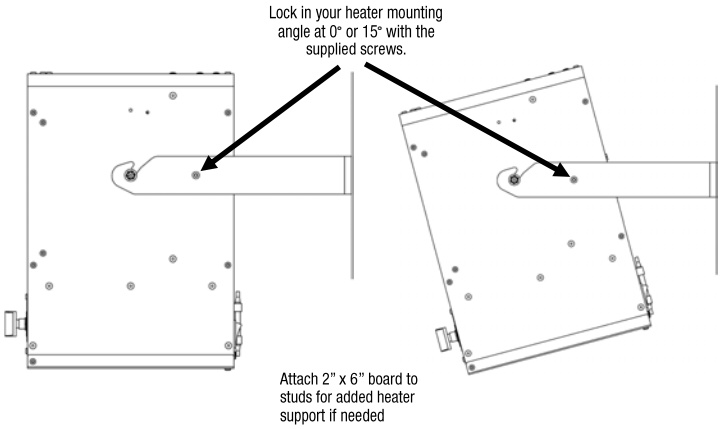
KBP

eco2S PRO CONTROL

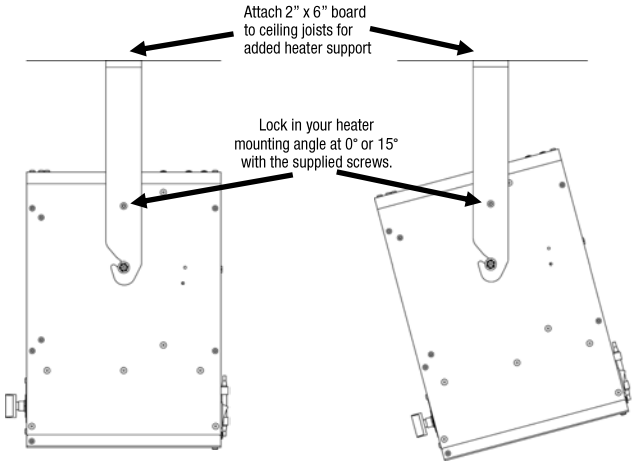
Minimum Clearance From Combustibles	
Front	18 in.
Top	2 in.
Sides	6 in.
Rear	5 in.
Floor	6 ft.

INSTALLATION INSTRUCTIONS

FOR WALL MOUNT APPLCATIONS



FOR CEILING MOUNT APPLCATIONS



TOOLS NEEDED:

- Screwdriver (Phillips, Square, & Slotted)
- Wire Cutters
- Pliers
- Adjustable Wrench
- Electric Drill

Remove heater & all packaging materials from the box.

HARDWARE NEEDED:

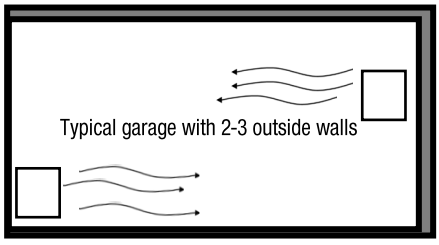
- Adequate gauge & length of wire for your application
- Proper size fuses or breakers to handle amperage
- Proper wire connectors for your application
- Fasteners appropriate size to mount heater

Tip: Remove the hardware kit package from the box packaging.

MOUNTING HEIGHT:

When the air flow of the heater is directed vertically or horizontally, the minimum mounting height is 6 feet in the USA and 8 feet in Canada. Mounting heights depend upon building utilization and heater KW capacity.

LOCATION OF HEATER: The heater should be installed 6 feet above floor and according to minimum clearance chart. The direction of airflow should not be restricted by machinery, beams, etc., and the air flow should run with walls, rather than blowing directly at them. When more than one heater is used in an area, the heaters should be arranged so that the air discharge of each heater supports the air flow of the others to provide best circulation of warm air.



MOUNTING HEATER: Wall stud and ceiling joists are typically wider than our mounting bracket which is 11 inches wide. The heater weighs 14 lbs. and should be mounted onto at least one stud to be properly supported.

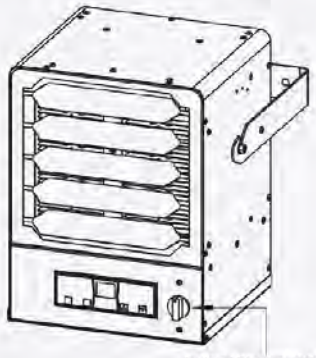
Your fasteners penetrating a stud is critical to supporting the weight. A gypsum wall board fastener is not strong enough. If your ideal location has no solid backing, you can fasten with large screw fasteners a 2" x 6" board to ceiling joists or wall studs. Attach with appropriate lag bolts with proper depth for the 14 lbs. Install wing nut fasteners into the outside of the bracket and star washer between the heater and bracket. Be certain bracket bolts are tightened firmly to secure the heater to swivel bracket.

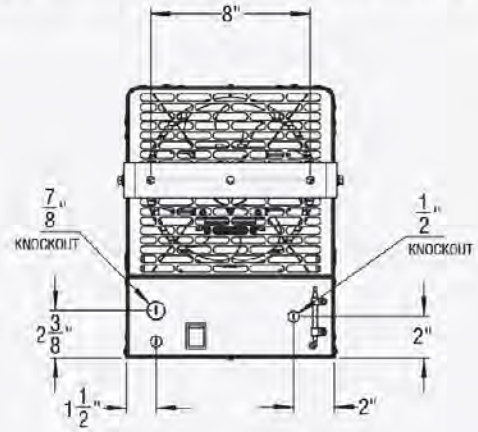
***For additional flexibility, an optional mounting bracket is available for sale separately.**

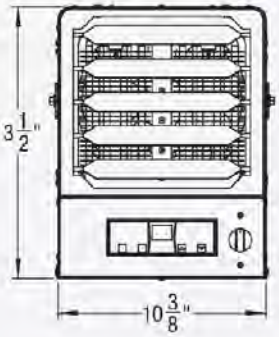
DIMENSIONAL DATA

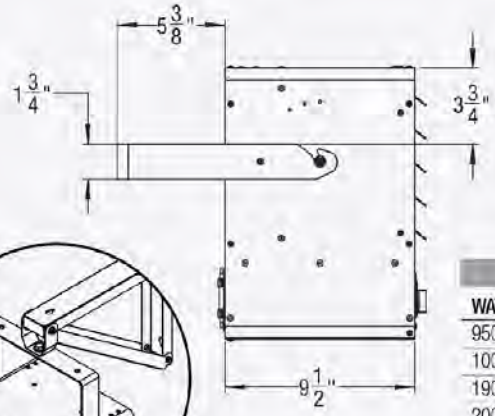
Dimensional Data

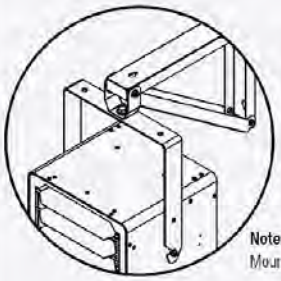
Minimum clearance from combustibles: 18" from front, 2" from top, 6" from sides and 5" from rear. Minimum clearance 6' from floor.
(Optional Disconnect Switch Shown)











Note: Optional Swivel Mounting Bracket

TEMPERATURE RISE PER WATTAGE CHART

WATTS	BTUH	CFM	TEMP. RISE	WATTS	BTUH	CFM	TEMP. RISE
950	3,242	385	8	3800	12,969	385	31
1000	3,413	385	8	4000	13,652	385	33
1900	6,485	385	16	4160	14,198	385	34
2000	6,826	385	16	4750	16,212	385	39
2850	9,727	385	23	5700	19,454	385	47
3000	10,239	385	25	6000	20,478	385	49

WIRING INSTRUCTIONS

WARNING **Before proceeding further with the installation of this heater, turn off the power and lock the supply line for the heater at the main service box.**

WIRING INSTRUCTIONS

1. Remove wiring compartment cover.
2. Remove one of the knock outs from the back of the unit. It is not necessary to remove the grill cover.
3. Size service wire to adequately handle amp load of the heater. Refer to the Circuit Sizing Table for proper wire size and circuit protection.
4. Connect supply wire to L1 & L2 & L3 as applicable as shown in the wiring diagrams provided with heater.
5. Secure power supply cable with cable clamp.
6. Connect ground wire to the ground lug.
7. Adjust the heater to the desired position.

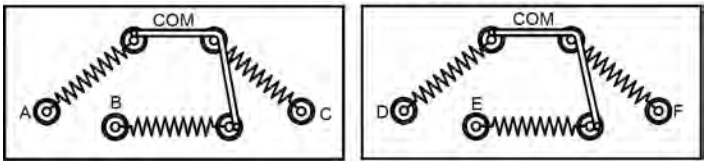
SAVE THESE INSTRUCTIONS

Field-Adjustable Wattages

Pic-A-Watt® Heating Element Exclusive King multi-tap element allows field adjustment to several wattages at time of installation.

Reference the wiring diagram when adjusting the wattage. The below tables should be used as a supplement to your wiring diagam.

Element End View for Single Phase "-1" Models



Single phase models have a welded busbar connecting all element commons together. This is depicted by "COM" in the diagram above. There is only 1 connection point for the "COM" common connection. This will not be removed when adjusting the wattages.

KBP1230-1-MB-ECO2S

REMOVE ELEMENT POSITION	HEAT STAGE	ELEMENT WIRE COLOR	WATTAGE REDUCTION
ELEMENT 1 - 120V - 1425W			
A	STAGE 1	RED	712
B	STAGE 2	RED/WHITE	475
C	STAGE 1	RED	238
ATTENTION :DO NOT REMOVE BLACK E1 COM OR E2 COM WIRES ATTACHED TO BUSBAR ON EACH ELEMENT			
ELEMENT 2 -120V -1425W			
D	STAGE 1	YELLOW	712
E	STAGE 2	RED/WHITE	475
F	STAGE 1	RED	238

120V - 2850W

STAGE 1 ELEMENT LEADS REMOVED TO GET SELECTABLE WATTTAGES	STAGE 1 SELECTABLE WATTAGES
NONE	1900
C	1662
C & F	1425
A & F	950
A & D	475
STAGE 2 ELEMENT LEADS REMOVED TO GET SELECTABLE WATTTAGES	**STAGE 2 SELECTABLE WATTAGES**
NONE	950
E	475

KBP2005-1-MB-ECO2S

REMOVE ELEMENT POSITION	HEAT STAGE	ELEMENT WIRE COLOR	WATTAGE REDUCTION
ELEMENT 1 - 208V - 2850W			
A	STAGE 1	RED	950
B	STAGE 2	RED/WHITE	950
C	STAGE 1	RED	950
ATTENTION :DO NOT REMOVE BLACK E1 COM OR E2 COM WIRES ATTACHED TO BUSBAR ON EACH ELEMENT			
ELEMENT 2 - 240V -2850W [2250W @ 208V]			
D	STAGE 1	YELLOW	720
E	STAGE 2	RED/WHITE	720
F	STAGE 1	RED	720

208V - 5010W

STAGE 1 ELEMENT LEADS REMOVED TO GET SELECTABLE WATTTAGES	STAGE 1 SELECTABLE WATTAGES
NONE	3230
D	2510
A	2280
A & D	1560
STAGE 2 ELEMENT LEADS REMOVED TO GET SELECTABLE WATTTAGES	**STAGE 2 SELECTABLE WATTAGES**
NONE	1670
E	950
B	720

KBP2406-1-MB-ECO2S

REMOVE ELEMENT POSITION	HEAT STAGE	ELEMENT WIRE COLOR	WATTAGE REDUCTION
ELEMENT 1 - 240V - 2850W			
A	STAGE 1	RED	950
B	STAGE 2	RED/WHITE	950
C	STAGE 1	RED	950
ATTENTION :DO NOT REMOVE BLACK E1 COM OR E2 COM WIRES ATTACHED TO BUSBAR ON EACH ELEMENT			
ELEMENT 2 - 240V -2850W			
D	STAGE 1	YELLOW	720
E	STAGE 2	RED/WHITE	720
F	STAGE 1	RED	720

240V - 5700W

STAGE 1 ELEMENT LEADS REMOVED TO GET SELECTABLE WATTTAGES	STAGE 1 SELECTABLE WATTAGES
NONE	1900
C	1662
C & F	1425
A & F	950
A & D	475
STAGE 2 ELEMENT LEADS REMOVED TO GET SELECTABLE WATTTAGES	**STAGE 2 SELECTABLE WATTAGES**
NONE	950
E	475

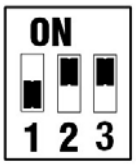
SAVE THESE INSTRUCTIONS

PAIRING ECO PRO CONTROLLER TO HEATER

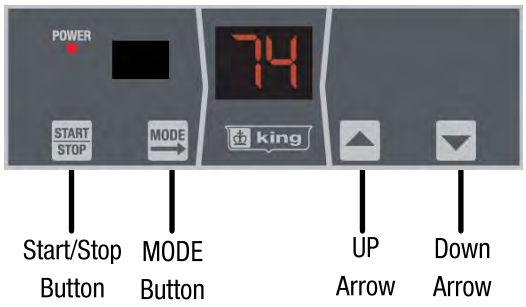
PRO CONTROLLER PAIRING:

IMPORTANT: The PRO Controller must be paired to the heater prior to use. If heater display shows "L5" the PRO Controller has not been paired successfully. Repeat Pairing Process.

HEATER DIP SWITCH SETTINGS



Heater Display Panel



PAIRING AND USEAGE GUIDE

Since it is possible that more than one heater/PRO Controller would be used in a home, you must first pair the PRO Controller to a specific heater. Each PRO Controller has a unique ID number, which will be used in the pairing process. When installing the PRO Controller first time, users need to pair the PRO Controller with heater, so the heater can learn and save the remote sensor's ID.

Step 1: On the Heater's Display Press START STOP and ▼ button at the same time for 5 seconds. The LED display will flash "id". Release buttons.

Step 2: Put the PRO Controller within 3 feet of the heater and then press and hold the ✓ button to enter pairing mode.

Step 3: The signal icon will appear on the PRO Controller, and the heater's display indicator lights will illuminate (LED tubes show 88) for 1 second and then turn off. **This means the Pro Controller and the heater have paired with each other successfully.**

NOTE: If the display flashes "id" for 20 seconds and then turns off, it means that the heater failed to pair with the PRO Controller and has exited the Pair mode. Repeat the above steps to pair the remote sensor.

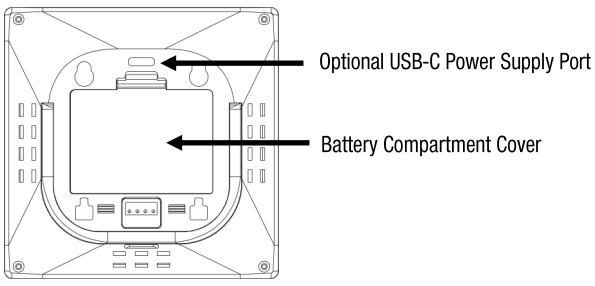
Step 4: After pairing the PRO Controller successfully, put the PRO Controller in the room where you want to detect temperature. The heater display will now display the temperature from the remote sensor.

Installing Batteries / Optional USB-C Adaptor

Open the battery cover and insert 3pcs AAA batteries.

Important Note: To conserve battery life the PRO Controller perform a handshake with the heater every 3 minutes. Users may experience up to a 3-minute delay.

Recommendation: For instant communication, a standard USB-C cable and power adapter are recommended to provide constant power.



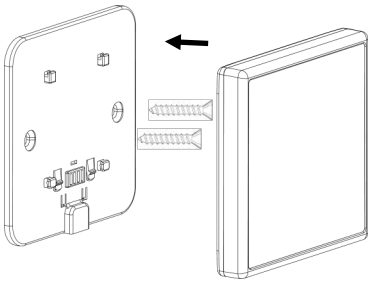
Low Battery Indicator

When batteries are low, "BA" will flash on the heater display and icon appears on the Pro Controller to indicate batteries should be replaced.

Note: If batteries fail, the heater is designed to revert back to the onboard temperature sensor for temperature control until the batteries are replaced in the remote sensor.

Wall Mounting The PRO Controller

PRO Controller can be placed on any flat surface or can be fixed to the wall with the mounting bracket. **Mounting Bracket Install:** Select location for the PRO Controller on the wall,. Secure the bracket to with 2 appropriate anchors and screws. Insert PRO Controller into bracket.



Low Signal Indicator

When the PRO Controller is not paired with the heater or if the signal is being blocked. the display flashes "LS". After 10 minutes, the controller will automatically switch to work with the on-board temperature sensor, but the display will continue to flash "LS" until the signal restored.

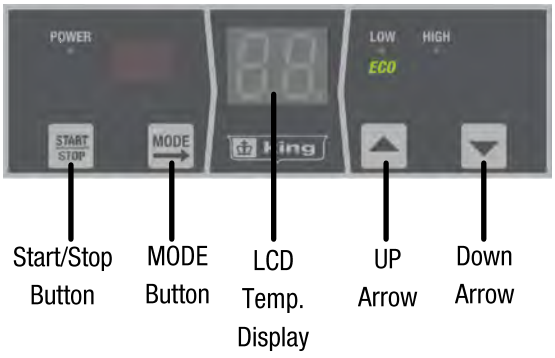
1. Following Pairing process above to successfully pair the sensor.
2. Move PRO Controller closer to the heater or away from metal objects that might block the signal.

OPERATING INSTRUCTIONS

Operation

1. Push the START STOP button, the heater will turn on and heat to the default setting of 72°F.
2. Once the room temperature reaches the set point, the heat elements will turn off, followed by a 3 minute fan delay period to exhaust excess heat from the case. Afterwards the unit will turn off.
3. In normal operation the display will show the current room temperature.

ECO2S PRO Control Panel



ECO2S PRO Automatic 2-stage HIGH/LOW operation

ECO2S PRO controllers offer energy efficient 2-stage heating, automatically using the lowest wattage required to heat the room.

- During operation, when the set temperature is within 3 degrees of the room temperature the heater automatically switches to ECO mode, operating at LOW wattage.

Room Temperature Selection

- During operation, push ▲ or ▼ arrow buttons to set the temperature from 40°F-95°F, Hold down the UP or DOWN arrow to speed up the selection process. The LCD will go back to display room temperature after 5 seconds.

Timer Mode Selection

- During operation, press the MODE button 1 time, the display window will show the timer mode setup. Push ▲ or ▼ to set Timer from 1 hour—9 hours.

Fan Only Mode Selection

- During operation, press the MODE button 2 times, the display window will show [H] Heat Mode or [F] Fan Only Mode.

  Push ▼ or ▲ to switch between Fan Only and Heat modes.

DISPLAY DIP SWITCH SETTINGS

DIP SWITCH 1

OFF = ECO PRO CONTROLLER (DEFAULT)

ON = LOCAL SENSOR CONTROL

DIP SWITCH 2

OFF = 1-STAGE HEATING MODE

ON = 2-STAGE HEATING MODE (DEFAULT)

DIP SWITCH 3

OFF = WIRED PIR SENSOR CONNECTED

ON = WIRED DOOR/WINDOW SENSOR CONNECTED (DEFAULT)

OPERATING INSTRUCTIONS CONTINUED

Display Lock Feature

Display Lock is designed for high traffic areas and deactivates the heater display buttons to prevent unwanted temperature adjustments. However settings can still be adjusted through the remote control.

- During operation, press the START STOP button and HOLD for 5 seconds to set the display lock. [L] will appear on the display temporarily if a user attempts to make a temperature adjustment. While in Display Lock, heater can be adjusted using remote control.

Setting "Environment" Mode

Two Environment Options: Standard **[SΓ]** and Bedroom **[BE]**.

Bedroom Mode turns off the display after 30 seconds for people using this heater in a light sensitive environment. Once any button is pressed the display turns back on.

- During operation, press the and HOLD the MODE and ▲ buttons for 3 seconds. Then press ▼ or ▲ to select

  Standard Mode [SΓ] or Bedroom Mode [BE]

Factory Reset

- During operation, press and HOLD the MODE button for 5 seconds to reset to the factory settings. [FA] will flash on the display.

Sensor Error Code

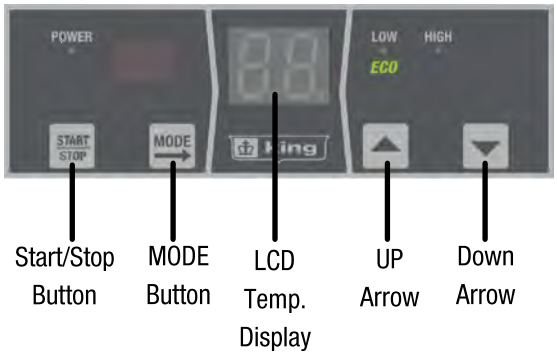
- During operation, if the display shows [E1] that indicates an issue with the sensor and the sensor needs to be replaced. Contact customer support for assistance.

Setting Differential Value

The differential or gap affects how often the heater cycles. The lower the differential setting, the more the heater will cycle. If heater cycles too often, raise the differential setting to a higher degree.

- Press the and HOLD the MODE and ▼ buttons for 5 seconds. The display will show the previously set differential. Press ▼ or ▲ to adjust the differential value between –0 to –5.

ECO2S PRO Control Panel



DISPLAY DIP SWITCH SETTINGS

DIP SWITCH 1

OFF = ECO PRO CONTROLLER (DEFAULT)

ON = LOCAL SENSOR CONTROL

DIP SWITCH 2

OFF = 1-STAGE HEATING MODE

ON = 2-STAGE HEATING MODE (DEFAULT)

DIP SWITCH 3

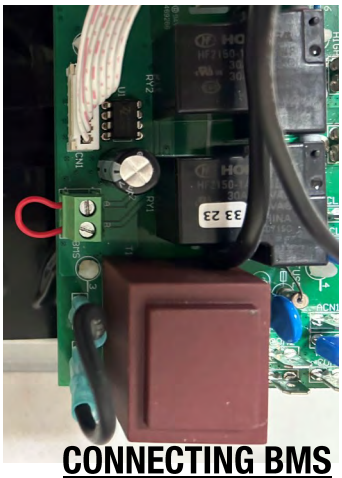
OFF = WIRED PIR SENSOR CONNECTED

ON = WIRED DOOR/WINDOW SENSOR CONNECTED (DEFAULT)

BUILDING MANAGEMENT (BMS) LOCKOUT CIRCUIT

KBP ECO PRO Heater features onboard terminals **(Figure A)** that allow the heater to be wired to a Building Management System (BMS) to prevent the heaters from running when the building is in cooling mode.

FIGURE A



CONNECTING BMS

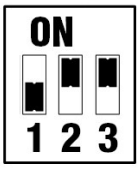
NOTE: DO NOT REMOVE RED JUMPER UNLESS BMS SYSTEM CONTTROL IS BEING USED.

SYSTEM LOCKOUT FEATURE

Step 1: Wire BMS System To Heater

To utilize the BMS capabilities remove the red jumper wire between terminals A and B on the control terminal board. **(See Figure A).** Connect two wires from a dry contact (no voltage) in the BMS system to terminals A and B.

Step 2: Dip Switch Selection: On back of the Heater Display, **switch Dip Switch #3 to ON** position to activate BMS Lockout capabilities.



Step 3: Heater Display Setup: Press and hold both ▼ and ▲ buttons for 5 seconds to set BMS Lockout to "OF" for OFF mode.

OPERATION

When connected to a BMS System and the BMS lockout circuit is activated, the heater functions will not work. The display on the heater displays "OF" for OFF Mode and the display on the ECO PRO Controller will display ECO WIN

When BMS releases control, heater functions are available and heater resumes operating at previously programmed settings. Refer to your BMS Systems Operations Manual for details.

ECO PRO Controller - Heater Locked Out

Heater Display – Heater Locked Out

WIRED AUXILIARY CONTROL OPTIONS (OPTIONAL)

KBP ECO2S PRO models features onboard terminals (Figure A) that allow a wired auxiliary window/door sensor or PIR Occupancy Sensor for automatic triggering of a setback or off state when the contacts open.

FIGURE A

NOTE: DO NOT REMOVE RED JUMPER UNLESS AUX CONTTROL IS BEING USED.

CONNECTING A WIRED WINDOW/DOOR SENSOR or OCCUPANCY SENSOR TO THE SYSTEM

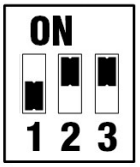
Step 1: Wire Sensor To Heater

To utilize the Window/Door or PIR Occupancy Sensor capabilities remove the red jumper wire between terminals A and B on thecontrol terminal board. (See Figure A). Connect two wires from a dry contact (no voltage) of the PIR motion sensor or door sensor to terminals A and B.

Step 2:

Dip Switch Selection (Window/Door Sensor):

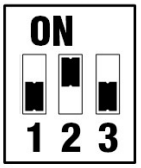
Switch Dip Switch #3 to ON position to activate Window/Door capabilities.



PRO Settings - Window/Door Sensor

Dip Switch Selection (PIR Occupancy Sensor):

Switch Dip Switch #3 to OFF Position to activate PIR Occupancy capabilities.



PRO Settings - PIR Occupancy Sensor

Step 3: Select Environment Mode Option

When paired with an optional Window/Door or PIR Occupancy sensor there are two environmental modes to choose from when thesensor contacts open: Freeze Protection **[** FP] and OFF **[OF]**.

Press the and HOLD the MODE and ▲ buttons on the Control Display for 3 seconds.

Then Press ▲ or ▼ to select Freeze Protection or OFF mode.

Heater Display - Freeze Protection Mode

Freeze Protection Mode:

When contact is open, heater sets back the set temp to 40F.

Control Display shows “FP”.

OFF Mode:

When contact is open, System is OFF regardless of room temp.

Control Display shows “OF” Pro Controller display shows “OFF”.

Heater Display – OFF Mode

SAVE THESE INSTRUCTIONS

INITIAL SETUP OF ECO PRO CONTROLLER

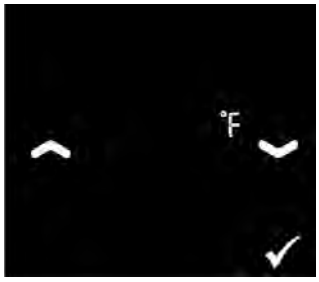
INITIAL SETUP:

Press and hold ^ and v buttons for 5 seconds to enter SETTINGS steps:

Setting#1: Set °Celsius or °Fahrenheit

Press ^ or v to select °C or °F (Default °F).

Press ✓ to save setting and move to next step.



Setting °C or °F

Setting#2: Set Clock

Press ^ or v to adjust Day → Hour → Minute.

Press ✓ to save setting and move to next step.

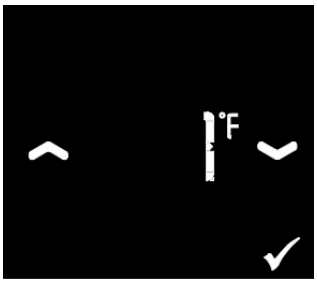
Setting Clock

Setting#3: Set Temperature Offset:

The Offset value that you set will be added or subtracted from the ambient temperature reading shown on the display. This canbe useful to match other temperature reading devices in the space.

Press ^ or v to adjust the Temperature Offset. (Range -4°F to +4°F)

Press ✓ to save setting and move to next step. (Default 0°F)



Setting Temperature Offset

Setting#4: Set Brightness:

Press ^ or v to select the screen's contrast level from 1(Dimmest) to 7 (Brightest).

Press ✓ to save setting and exit initial setup. (Default 5)

Setting Brightness

INITIAL SETUP OF ECO PRO CONTROLLER - Cont.

Setting#5: System OFF or Freeze Protection OFF:

System Off

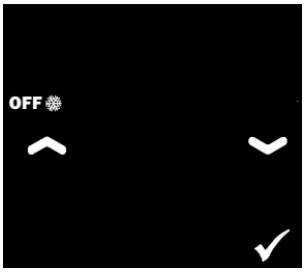
This option sets the preferred setting when the ⏻ button is pressed.

Press ^ or v to select between System OFF or Freeze Protection OFF

Press ✓ to save setting and move to next step.

System Off = Disables the relay output and heater will never turn on under any scenario.

When activated OFF is shown on display.



Freeze Protection Off

Freeze Protection Off = Heater will turn on if the ambient room temperature drops below 40F.

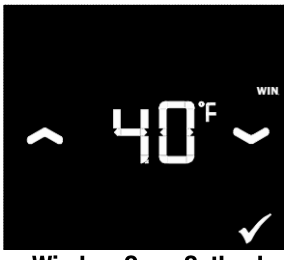
When activated OFF ❄ is shown on display.

Setting#6: WINDOW OPEN SETBACK Temperature (Optional Window/Door Sensor Accessory Required)

Sets the preferred setback temperature if an optional Window/Door sensor is connected to system.

Press ^ or v to select between 40°F (default), 45°F, 50°F, or 55°F.

Press ✓ to save setting and move to next step.



Window Open Setback

Setting#7: PIR UNOCCUPIED SETBACK Temperature (Optional PIR Occupancy Sensor Accessory Required)

Sets the preferred setback temperature if an optional PIR Occupancy Sensor is connected to system.

Press ^ or v to select between 45°F, 55°F, 60°F (default), or 65°F.

Press ✓ to save setting and exit initial setup.

PIR Unoccupied Setback

Setting#8: MULTIPLE HEATERS INSTALLATION SCENARIO (SAME ROOM OR DIFFERENT ROOMS)

Since ECO PRO Controller can be paired to multiple heaters, the status of each heater will be different under these two scenarios.

This option sets the control logic depending if multiple heaters are installed in a single room or different rooms.

Press ^ or v to select between 1 = Same Room (Default) or 0 = Different Rooms.

Press ✓ to save setting and exit initial setup.

Note: At any time during the setup process you can Press and Hold the ✓ button for several seconds to exit the initial setup early.

OPERATION OF ECO PRO CONTROLLER

PRESET SCENE TEMPERATURES:

ECO PRO Controller has 3 preset scene temperatures that you can quickly select to temporarily override the heating schedule, when your daily routine unexpectedly changes. Their default settings are shown in the following table:

Scene	Icon	Default Temp Settings
Home		70°F
Away		55°F
Sleep		60°F

HOW TO USE A PRESET SCENE:

Short Press the Preset Scene Temperature Icon and it will start flashing. With each addition press it will switch between the 3 preset scenes.

Once the Scene you desire is shown, Press to save Preset Scene.

That preset temperature becomes the current setpoint until the next Heat Schedule period starts , when the heater returns to the programmed heating schedule.

MODIFYING A PRESET SCENE TEMPERATURE:

Short Press the Preset Scene Temperature Icon and it will start flashing. With each addition press it will switch between the 3 preset scenes.

Once the Scene you desire to modify is shown, Press or to adjust the temperature setpoint for that scene until the new desired setpoint temperature is shown.

Press to save the new setpoint for the Preset Scene.

Note: This becomes the new setpoint, not only for the Preset Scene but also throughout your heating schedule where that scene is used.

PROGRAMMING THE HEATING SCHEDULE

DEFAULT HEATING SCHEDULE:

The ECO Pro Controller uses the PRESET SCENE TEMPERATURES setpoints (as described on the previous page) as the temperature setpoints for the time period in your heating schedule. The default heating schedule is shown in the following table. We recommend using the default schedule since it was designed to help reduce your heating expenses.

The schedule consists of 4 periods per day, which represents a typical work day.

The HOME preset temperature is automatically used in Periods 1and 3.

The AWAY preset temperature is automatically used in Period 2.

The SLEEP preset temperature is automatically used in Period 4.

You can have a different schedule for every day; i.e., each period can start at a different time every day.

Period	Icon	Scene	Mon	Tue	Wed	Thr	Fri	Sat	Sun
1		Home	6:00 AM	6:00 AM	6:00 AM	6:00 AM	6:00 AM	6:00 AM	6:00 AM
2		Leave	8:00 AM	8:00 AM	8:00 AM	8:00 AM	8:00 AM	8:00 AM	8:00 AM
3		Home	6:00 PM	6:00 PM	6:00 PM	6:00 PM	6:00 PM	6:00 PM	6:00 PM
4		Sleep	10:00 PM	10:00 PM	10:00 PM	10:00 PM	10:00 PM	10:00 PM	10:00 PM

The PRO Controller has been factory programmed with the above schedule.

HOW TO MODIFY THE HEATING SCHEDULE:

Step 1: Press to start the process.

Mon begins to flash. Press or to select the Day of the Week you would like to modify.

Step 2: Press again to move to the next step and select the Time Period you would like to modify.

Period 1 icon begins to flash. If changing Period 1, Press again to move to next step. Or Press or to change to the Time Period you would like to modify such as Period 2 or Period 3 or Period 4 .

PROGRAMMING THE HEATING SCHEDULE

HOW TO MODIFY THE HEATING SCHEDULE - Continued:

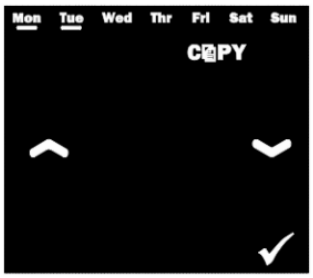
Step 3: Press  again, Hour begins to flash. Press  or  to modify the Hour period starts.

Step 4: Press  again, Minutes begin to flash. Press  or  to modify Minutes period starts.

Step 5: Press  again to select the next period of the selected day to modify that period program according to the steps above.

After modifying the heat schedule as needed, Press  to save setting or wait for 15 seconds and the setting will be saved automatically.

COPY & PASTE A DAY'S SCHEDULE - Save Time Programming!



If you would like to copy the schedule for a specific day and add it to other days of the week, follow these steps and save time!

Step #1 After changing the schedule for a specific day (example Mon), Press  to save the day's schedule.

Step #2 Press the  icon to copy the selected day's schedule (example Mon). The remaining Days of the Week will appear on the screen.

Step #3 Press each day of the week that you want to paste Monday's schedule to. (For example: Tues, Wed, Thr, Fri).

As you press each day, a line will appears under the days you have selected.

Step #4 Press  to confirm the pasted schedule.

HEATING SCHEDULE OVERRIDE / ADJUSTING THE TEMPERATURE - (Temporary)

To adjust the desired temperature up or down, touch  and  on the thermostat home screen.

Note: Adjusting the temperature will temporarily override the current set point until the next schedule period unless you want to use one of the schedule overrides below.

GENERAL OPERATION

ECO PRO CONTROLLER OPERATING MODES

SYSTEM MODES:

PRO Controller has 3 system modes (Schedule, Override, Permanent Hold) that indicate if the state of the system. The current mode is displayed to the right of the Set To temperature on the home screen. The set duration of the current mode is displayed to the right of that, showing the time the system mode is active until. This makes it easy to identify when the next system change will occur.

Schedule: System is running based on the programmed heating schedule.

Override: System, is running based on a manually set override for a limited amount of time.

Permanent Hold: System is running on a manually set override that will be permanently held until manually turned off.

OPERATION MODES:

PRO Controller has 4 operation modes (Heat, Timer, Hold, Fan Only). The current mode is displayed on the left, under the Date and Time on the home screen. The set duration of the current mode is displayed at the bottom right of the Set To temperature, showing the time it is active until.

To cycle through the available operation modes, touch Mode 

on the thermostat home screen and select the appropriate mode and settings.

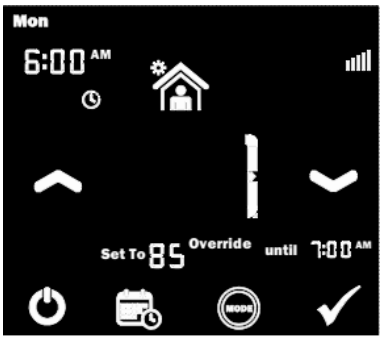
Heat: This is the default operation mode based on the heating schedule you have programmed.

Timer: This is a temporary system override based on the current system settings, that will expire after on a length of time you set.

Hold:: This is a permanent system override that holds the current system settings permanently, until manually canceled.

Fan Only:This is a operating mode to run the fan only, typically used in the summer for cooling.

CHANGING THE OPERATION MODES:



Timer Mode

Timer Mode: Press 

once to enter into Timer Mode.

The timer Hour begins to flash. Press  or  to adjust the Hour for when the timer expires.

Press  and Minutes begin to flash. Press  or  to adjust.

Press  to save. Pro Controller will run based on current settings for that set period of time.

To cancel, press 

three times get to Heat mode. Press  to save the mode.

Hold Mode

Hold Mode: Press 

two times to enter into Hold Mode.

Press  to save the mode.

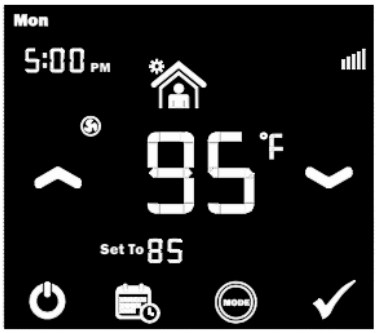
Pro Controller will permanently hold the current temperature until manually canceled.

To cancel, press 

two times get to Heat mode. Press  to save the mode.

GENERAL OPERATION

CHANGING THE OPERATION MODES - Continued:



Fan Only Mode

Fan Only Mode: Press MODE three times to enter into Fan Only Mode.

Press ✓ to save the mode.

When fan mode is selected there is no heat output. Fan turns on when room temperature is higher than the set temperature. When room temperature drops to the set temperature, fan turns off.

Note: The system functions as a cooling thermostat.

To cancel, press MODE one time get to Heat mode. Press ✓ to save the mode.

Heat Mode: Press MODE four times to return to Heat Mode. System functions based on Programmed Heat Schedule again.

Press ✓ to save the mode.

SYSTEM OFF/STANDBY FUNCTION:

Press ⏻ button to enter or exit Standby Mode.

System will enter "System Off" or "Freeze Protection Off", depending on what default was set during INITIAL SETUP

System Off

(Heat Stays OFF Regardless of Room Temp)

Freeze Protection Off

MULTIPLE HEATERS PAIRED TO CONTROLLER - SYSTEM STATUS CHECK:

When multiple heaters are paired to a single ECO PRO Controller, if the heaters are installed in different rooms the status of each heater will be different based on the ambient temperature in each room. Follow the below steps to check the status of each heater:

Long press ⌂ for 5s to enter the check mode. The middle number represents different heaters, press ^ or v to check the status of each heater and the mode of it. Press ✓ to exit the check mode.

GENERAL OPERATION

MAX TEMPERATURE LIMIT SETTING:

This setting allows the user to set a limit on the highest temperature setting allowed on the thermostat. It can be used in high traffic areas and can help prevent energy waste.

Press button to enter OFF mode

Press and hold and button simultaneously for 5 seconds to enter **Max Temperature** setting mode

Press or to adjust the max temperature (40~95 °F)

Press to confirm the setting or wait for 15 seconds and the setting will be saved automatically.

DISPLAY LOCK MODE:

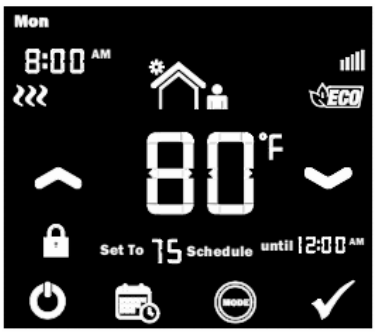
Display Lock is designed for high traffic areas and deactivates the heater display buttons to prevent unwanted temperature adjustments. However settings can still be adjusted through the remote control.

Press and hold and button simultaneously for 5 seconds to enter **Display Lock Mode.**

All buttons on the Heater Display and ECO Pro Controller will be disabled until unlocked.

To Unlock: Press and hold and button for 5 seconds to exit **Display Lock Mode.**

Note: While in Display Lock Mode, the heater operates at the last known settings.

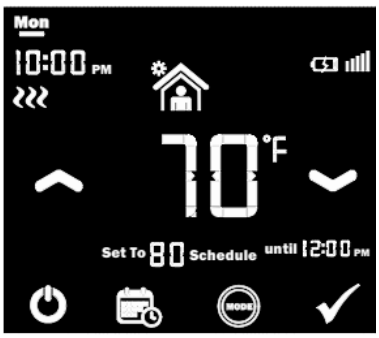


Display Lock

LOW BATTERY INDICATOR

When running on battery power, when the batteries are low on power the display shows .

Replace batteries or plug into wall power.



Low Battery Indicator

FACTORY RESET UNIT

Press and hold and button simultaneously for 10 seconds.

All lights on the display will flash to confirm reset was completed and then the unit returns to it's factory default settings & program.

DISPLAY WAKEUP (Wall Adaptor Connected)

The controller has a proximity sensor, so as you approach the controller the display will turn on automatically (detection range is 5 feet). When there is no activity for 30 seconds, the display will turn off automatically.

If the display does not turn on when you approach the controller, you can also press the icon on the display to wake it up.

DISPLAY WAKEUP (Battery Powered)

When powered with batteries only, the display will automatically turn off after 15 seconds to save battery life.

Press the icon the display to wake it up.

Important Note: To conserve battery life the PRO Controller perform a handshake with the heater every 3 minutes. Users may experience up to a 3-minute delay.

Recommendation: For instant communication, a standard USB-C cable and power adapter are recommended to provide constant power.

CREATE A HEATING ZONE - Connect Multiple Heaters

Control Temperatures and Save Energy with Zoned Heating Systems

A zoned heating system allows homeowners to control the temperature of each room or zone individually, thereby maximizing comfort and minimizing energy costs. A zoned system can be adjusted for numerous factors, including room usage, personal preferences, and environmental conditions. Zoned systems help homeowners use their heating systems more effectively by distributing heat where and when it is needed.

A single ECO Pro Controller can be paired to multiple heaters, creating a Heating Zone that is controlled by a single heating schedule. All heaters in this zone will be synchronized to the heating schedule of the ECO Pro Controller.

Creating a Heating Zone

Step 1: Pair Multiple Heaters To A Single ECO PRO Controller

Follow the Pairing and Usage setup instructions on page 7 of this manual to pair each heater in the required heating zone to a single ECO PRO Controller. After pairing the first heater, repeat steps to pair each additional heater.

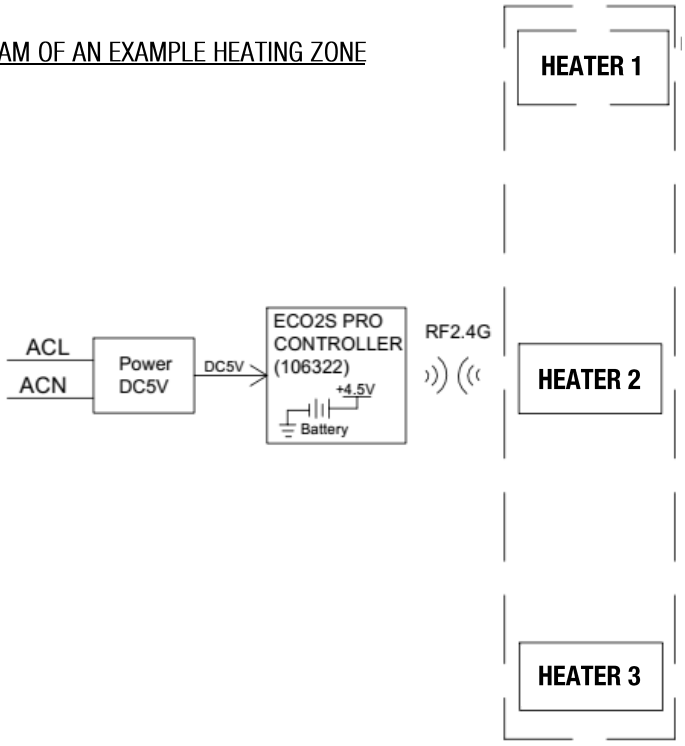
Step 2: Program The Desired Heating Schedule

Follow the Program The Heating Schedule instructions on page 14 to create a heating schedule for the ECO PRO Controller.

Step 3: Operation

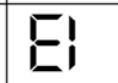
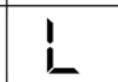
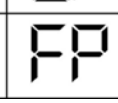
All heaters within this heating zone are now synchronized and will operate off the programmed heating schedule. Any changes made to the ECO PRO Controller will effect all heaters in this zone. The ambient room temperature will be detected at the location of the ECO PRO Controller, so proper placement of the ECO PRO Controller is important. Locate the ECO PRO Controller in the coldest spot in the heating zone to eliminate any cold areas within the zone.

DIAGRAM OF AN EXAMPLE HEATING ZONE



ECO PRO Controller

TROIBLESHOOTING ERROR CODES

Display Code	Display Symbols	Type	Description of Code	Action (if Any)
LS		ERROR	Low Sensor Signal	1. Check and verify Dip Switch settings are correct on the back of the display - reference instruction manual for settings. 2. Move Sensor closer to the heater or away from metal objects that might block the signal.
BA		ERROR	Low Battery Indicator	indicate batteries should be replaced.
E1		ERROR	Onboard Sensor Error	Indicates an issue with the backup sensor inside the heater and the sensor needs to be replaced. Contact customer support for assistance.
L		FEATURE	Display Lock Mode	Press and HOLD Start/Stop button for 5 seconds to turn off Display Lock
BL		OPTIOANL FEATURE	BUILDING MANAGEMENT SYSTEM - SYSTEM LOCKED	Displays when BMS System Contacrs are OPEN
OF		OPTIOANL FEATURE	WINDOW/DOOR/PROXIMINTY - SYSTEM OFF	Displays when Window/Door/Proximity Sensor Contacts are OPEN
FP		OPTIOANL FEATURE	WINDOW/DOOR/PROXIMINTY - FREEZE POTECTION MODE (40F SETBACK)	Displays when Window/Door/Proximity Sensor Contacts are OPEN

SMART LIMIT PROTECTION AND MAINTENANCE

Heater Safety Limit Tripped?

This heater is equipped with a thermal overload Smart Limit Protection which disconnects elements and motor in the event normal operating temperatures are exceeded. If thermal overload trips due to abnormal operating temperatures, thermal overload shall remain open until manually reset by turning the heater OFF for fifteen minutes. Inspect for any objects on or adjacent to the heater that may cause high temperatures. After inspecting the heater, keep the power to the heater off for 15 minutes to reset the SLP thermal protector. If the SLP thermal protector shuts the heater off again, immediately turn the heater OFF at the circuit breaker and inspect the heater for possible fan motor failure or dirt and lint on the heating element. Repeat the starting procedure.

DO NOT TAMPER OR REMOVE THIS THIS DEVICE

Maintenance

With proper care your electric heater should last a lifetime, however, seasonal cleaning is recommended to maintain the efficiency of the heater. Keep heating element, fan and motor free of debris. Use compressed air to blow out any debris.

We're Here to Help!

For any difficulties installing or operating this product

Call Us Toll Free at:

1-800-603-5464

7:00 am -3:30 pm PST Mon-Fri

Visit king-electric.com

or email us at info@king-electric.com