

SAVE THESE INSTRUCTIONS

INSTALLATION AND MAINTENANCE



ESP-230 & ESP-120 with battery program back-up



DANGER



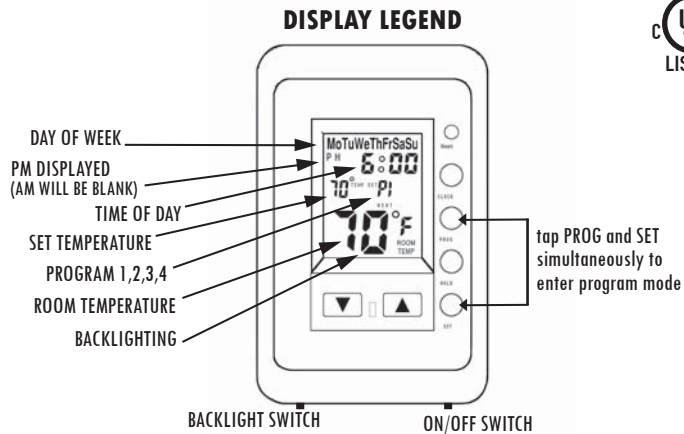
ELECTRIC SHOCK OR FIRE HAZARD

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



REPLACES MODELS:

CALV / T4800 /
T4700 / T4600 /
1A66 / D22 /
S22 / M602 /
T498 / T4398 /
MD26 / WR661 /
1D22 / S2022 /
TW242 / TD902 /
T410 / TD942 /
M7 / M402 /
M512



⚠ WARNING ⚠

READ CAREFULLY - These instructions are written to help prevent difficulties that might arise during installation of thermostat. Studying the instructions first may save you considerable time and money later. Observing the following procedures will cut your installation time to a minimum. Save these instructions for future use.

Thank you for buying this King Thermostat. It should provide years of service and comfort to your home. Inspect the package. You should have received the thermostat with its cover and two screws to attach it to a wallbox.

1. Check the total load of the heaters you are connecting to the thermostat. The maximum wattage at 240 Volt is 5280 Watts (ESP230). If you have the 120 Volt version the maximum is 2640 Watts (ESP120). You need to stay below this total wattage connected to the thermostat. The lower the wattage the longer the life of the contacts in the relay.
2. To wire the thermostat determine which pair of wires are coming from the circuit breaker panel and which pair lead to the heater.
3. With wire nuts attach the blue wire (white wire on 120 Volt model ESP120) into the pair of white wires in the junction box. (Option is red wires)
4. Use black lead from the circuit breaker panel and attach it to the black lead on the thermostat. This will provide power to the thermostat, LCD display and backlight.
5. Attach black lead going to the heater to the red lead on the thermostat. This will provide power to the heater when the thermostat calls for heat.
6. Remove thermostat cover by holding back of thermostat with one hand and grasp the top and bottom of the cover with the other hand, pulling towards you evenly.
7. Push the wires carefully into the junction box making sure no wires will be pinched when attaching to the wall using #6-32 screws provided.
8. Holding thermostat into wallbox, fasten screws at the top and bottom mounting holes attaching to wallbox. Do not over tighten screws.
9. Turn on power to test. Increase set point to higher than current room temperature by tapping the up button. There will be up to a 3 minute delay in turning on. The red indicator will turn on and you will here a small click as the heater energizes. Turn the thermostat down by tapping on the down arrow.
10. **To turn on backlighting:** Under the bottom left of the thermostat you will feel a small switch. Moving one way will turn on the light and the other will turn off the backlight. The On / Off switch is located on the lower right corner to disable any operation. You have now verified the thermostat is in perfect working order.
11. **Mounting tips:** Make sure there is nothing that could affect the average room temperature sensing of the thermostat such as plumbing pipes in the wall, a lamp close by, direct sunlight, a T.V. set, and/or cold drafts from a door opening.
12. **Cleaning:** A damp cloth will clean the plastic case surface of fingerprints and dust. Strong spray cleaners may damage plastic case, remove writing or arrows printed on case. Blow out any dust that may accumulate on air vents on top or bottom. Good air circulation is key to long life and accurate operation.
13. **Humid locations:** Mildly humid locations like bathrooms may see a reduced life due to corrosion on the contact and lint from towels getting into air vents on thermostat. Blow out vent regularly and mount thermostat away from shower locations for longer life.
14. **Power outages:** The internal battery program backup will hold all or your settings. These batteries are constantly charged and should never need to be replaced.

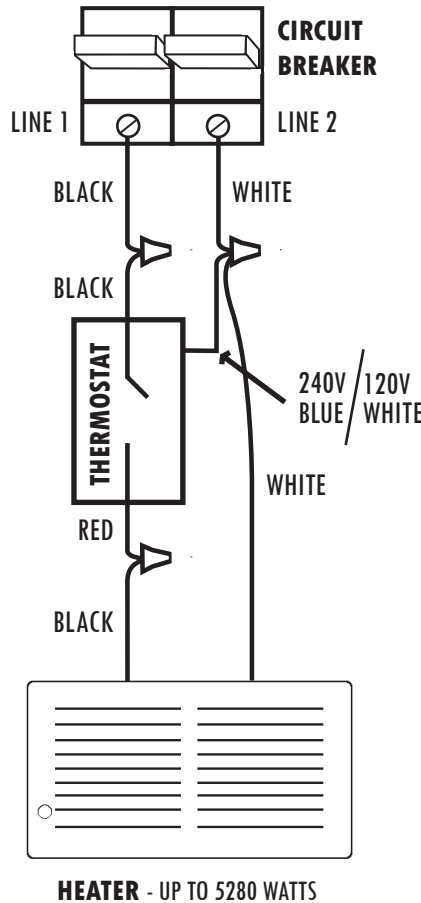
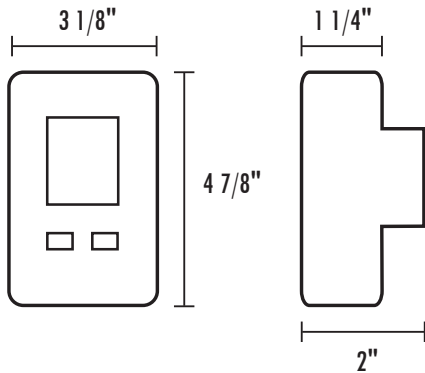
WIRING INSTRUCTIONS



ESP-230 & ESP-120 with battery program back-up

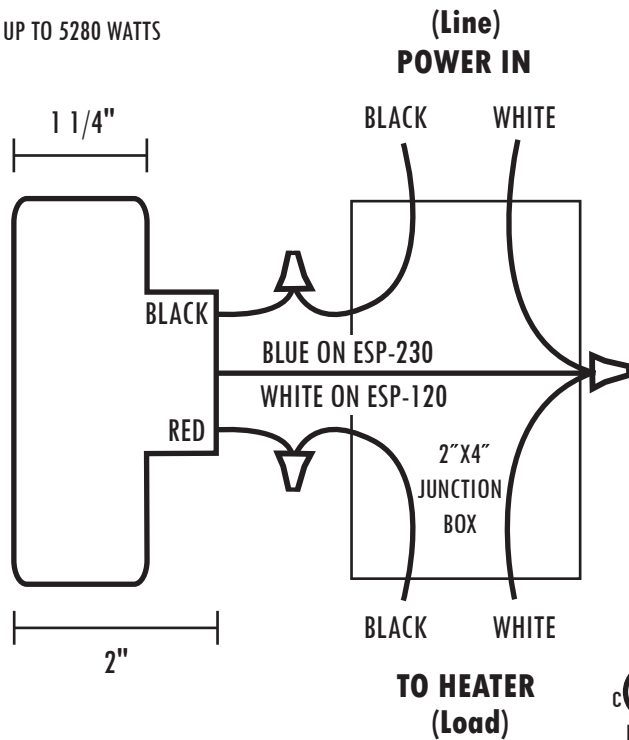
⚠ DANGER ⚠
ELECTRIC SHOCK OR FIRE HAZARD
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DIMENSIONS:



DISPLAY CHANGE
 Fahrenheit to Celsius:
 On the bottom edge of the thermostat, there are air vents. In one of the vents on the left side, just behind the illumination switch, there is a larger opening with a pin collector attached. With needle nose pliers, pull the connector off. This will put the thermostat into the metric Celsius mode. Turning off power to stat completes reset.

1. To wire the thermostat determine which pair of wires are coming from the breaker panel and which pair lead to the heater.
2. With wire nuts attach the blue wire (white wire on 120 Volt model ESP120) into the pair of white wires in the junction box.
3. Take a black lead from the circuit breaker panel and attach it to the black lead on the thermostat. This will provide power to the thermostat, LCD display, backlighting and heater relay.
4. Take the black lead that goes to the heater and attach it to the red lead on the thermostat. This will provide power to the heater when the thermostat calls for heat.
5. Remove cover of thermostat by holding back of thermostat and, with a finger and thumb on the top and bottom of the thermostat, pull cover towards you evenly to remove cover and expose mounting holes and buttons.
6. Push the wires carefully into the junction box making sure no wires are pinched or will get in the way of the screws mounting the thermostat. Now attach the thermostat to the wallbox with the #6-32 screws provided.
7. Hold thermostat into wallbox and place screws in top and bottom mounting hole and attach to wallbox.
8. Turn on power and test by increasing set point to higher than room temperature by tapping the up button. There will be up to a 3 minute delay in turning on. The indicator light will turn on and you will here a small click and at the same time and the heater should be on. Turn the thermostat down by tapping on the down arrow.



Due to internally generated heat and an offset to compensate for this, the display temperature of the thermostat may not match a digital thermometer placed next to it or in the same room. This thermostat will keep very accurate control of room temperature. Set it to what feels comfortable, not the temperature you were used to with your old thermostat.

king ESP-230 PROGRAMMING INSTRUCTIONS

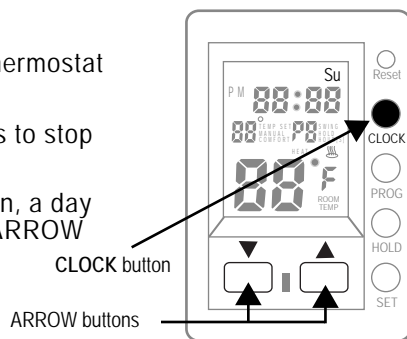
With Battery Program Backup



1 Set Date

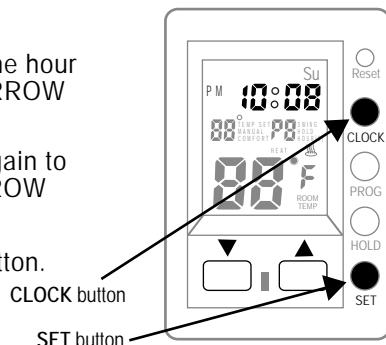
Upon initial power-up, the thermostat will be flashing.

- Press the ARROW buttons to stop flashing.
- Press the "CLOCK" button, a day will flash, then press the ARROW buttons to set today's day.



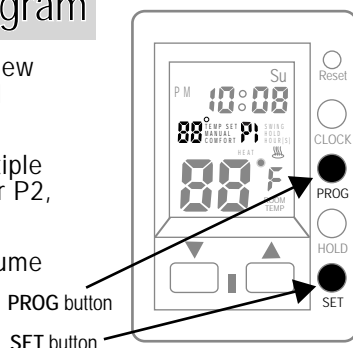
2 Set Time

- Press the CLOCK button, the hour will flash, then press the ARROW buttons to set the hour.
- Press the CLOCK button again to set the minute with the ARROW buttons.
- To exit, press the "SET" button.



3a View Current Program

- Press the "PROG" button to view the P1 temperature or Preset 1 setting for that day.
- Press the "PROG" button multiple times to scroll thru presents for P2, P3, and P4.
- Press the "SET" button to resume normal operation.



3b Energy Saving Schedule

- P1 Morning wake-up program
- P2 Daily away from home program
- P3 Evening home program
- P4 Nightly sleep program

default schedule

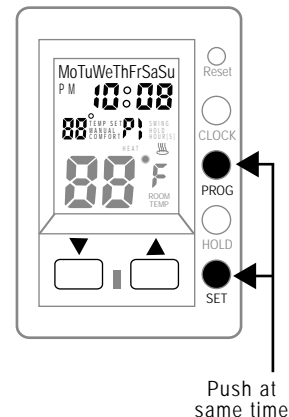
Program	Temp.	Mo-Su
P1	70°	6:00am
P2	62°	8:00am
P3	70°	6:00pm
P4	62°	10:00pm

your customized schedule

Program	Temp.	Mo	Tu	We	Th	Fr	Sa	Su
P1								
P2								
P3								
P4								

4 Program Adjustments

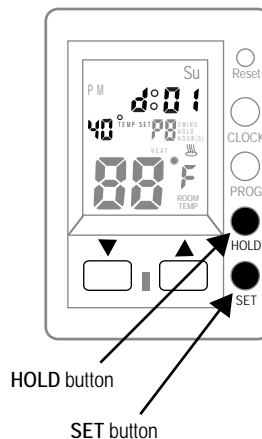
- Press the "SET" button and the "PROG" button at the same time. This puts you into Program mode and the days will be flashing.
- Press the ARROW buttons to select all seven days or one at a time.
- Press the "PROG" button to highlight the time.
- Press the ARROW buttons to adjust time.
- Press the "PROG" button again to set the temperature for that specified time.
- Repeat these steps for all Presets: P1, P2, P3, and P4.
- When you reach P1 again, press one of the ARROW buttons to change the day and repeat Programming.
- For P2, P3, & P4 if all the days are identical for that temperature, select all seven days for that P number.
- Press the "SET" button to resume normal operation.



5 Vacation Hold

For extended days of absence:

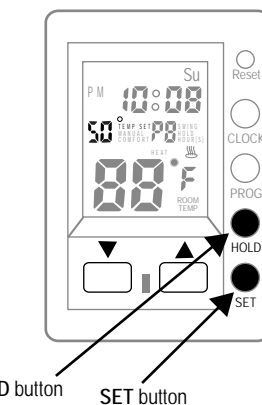
- Press the ARROW buttons to set temperature.
- Press the "HOLD" button until d:01 displays in the time window.
- Press the ARROW buttons until your number of days on vacation is displayed. Up to 99 days can be programmed.
- To stop vacation hold press "SET" button and normal operation is resumed.



6 Permanent Hold

To permanently hold the temperature:

- Press "HOLD" button.
- Press ARROW buttons to set temperature.
- To stop permanent hold press "SET" button and normal operation is resumed.



When looking at the bottom of the unit the switches are as follows:

- upper left: backlight
- upper right: system on/off
- lower right: temperature sensor