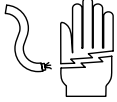


# INSTRUCTIONS FOR REPLACEMENT AIR SENSING THERMOSTAT

HE-CNTRL

**READ ALL DIRECTIONS CAREFULLY BEFORE BEGINNING INSTALLATION**

## **WARNING**



1. INSTALLATION MUST BE MADE AND MAINTAINED IN STRICT ACCORDANCE WITH NATIONAL/LOCAL PLUMBING AND NATIONAL/LOCAL ELECTRICAL CODES (CSA IN CANADA). INSTALLATION MUST BE MADE BY A QUALIFIED ELECTRICIAN. THE APPLICABLE PROVISIONS OF THE ABOVE MENTIONED CODES TAKE PRECEDENT. IMPROPER ELECTRICAL INSTALLATION AND MAINTENANCE MAY RESULT IN SERIOUS INJURY OR DEATH FOR PERSONNEL OR ANIMALS.
2. EACH ELECTRICAL UNIT MUST BE WIRED THROUGH A FUSED SWITCH BOX AND FUSED ACCORDING TO AMPS REQUIRED FOR EACH SPECIFIED ELECTRICAL UNIT.
3. THIS UNIT MUST BE GROUNDED TO A COPPER GROUND ROD 5/8" (1.6 CM) DIAMETER BURIED AT LEAST 8 FEET (3.1 METERS) IN UNDISTURBED SOIL.

Model **HE-CNTRL** air sensing thermostat is a replacement for the original “bulb and bellows” thermostat used to protect Hawkeye Steel Products, Inc. livestock waterers(Pride of the Farm, Brower or Marlor) from freezing. Unlike the original design of a submerged bulb to sense water temperature, this unit **senses the air temperature** immediately surrounding the water trough. Therefore, it is **NOT** designed for water submersion. Do **NOT** submerge the replacement sensor. The sensor will turn on the heating element at about 45 degrees Fahrenheit. It will click off when it senses about 60 degrees Fahrenheit.

Installation Procedure:

1. **Disconnect or turn off all 120 volt power to the waterer at the fuse box!** Refer to the wiring diagram on page 4.
2. Decide on the best location to hang the sensor. Review paragraph 13 below along with Exhibits 1-3. Do not position the sensor yet. Just get an idea of where it will go before you start to wire in the sensor.
3. Locate the electrical junction box located under the water trough. Remove and save the 4 hex screws holding the cover plate and old thermostat to the opening of the junction box.
4. Locate the black incoming 120 volt power lead which is referred to as L1, or the ‘hot’ wire. Remove the twist lock connector where the two or more black wires are twisted together. Remove or pull out the black wire from the old thermostat.
5. Locate and remove the twist lock connector on the red wires(the ‘load’) connecting between the old thermostat and the heater element. Remove or pull out the red wire connecting to the thermostat.



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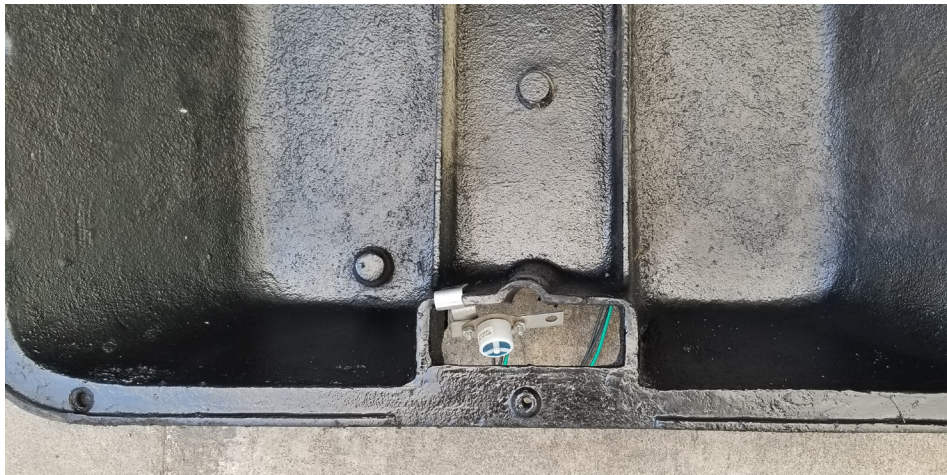


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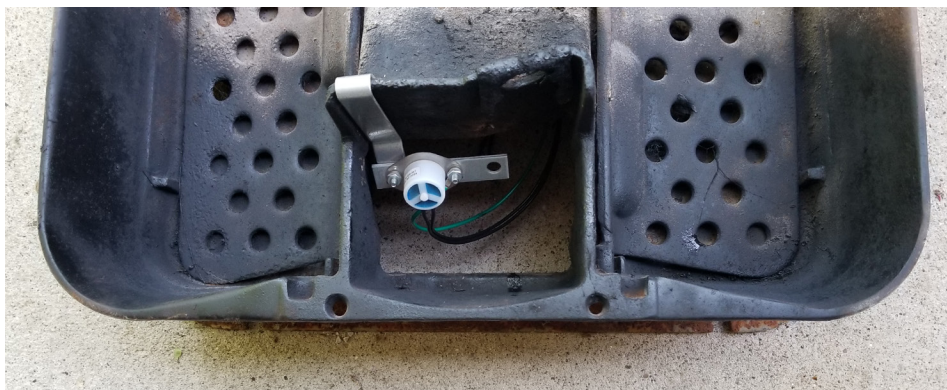
6. Remove the thermostat white wire from the twisted group of white wires which connects to the incoming L2 or 'neutral.'
7. Remove the original thermostat and cover plate.
8. Position the new thermostat and cover plate next to the electrical junction box and note the 2 black wires.....one labeled 'L1 Black' and the other 'Load.'
9. Twist together the incoming 120 volt power L1 or black wire and the replacement thermostat black wire labeled L1 Black. Secure with a twist lock connector and tighten it enough that you cannot easily pull apart the wires.
10. Locate the red wire from the heater and twist it together with the thermostat black wire labeled 'load.' Again, snug secure with a connector.
11. Replace the twist lock connector for the white incoming power, L2 or neutral, and the white wire from the heating element. The new air sensing thermostat does **NOT** connect to the white neutral power wire.
12. Replace the 4 hex cover screws.
13. Then, locate the new air sensor. Examples are shown in Exhibits 1-3.

#### **Note of Further Explanation:**

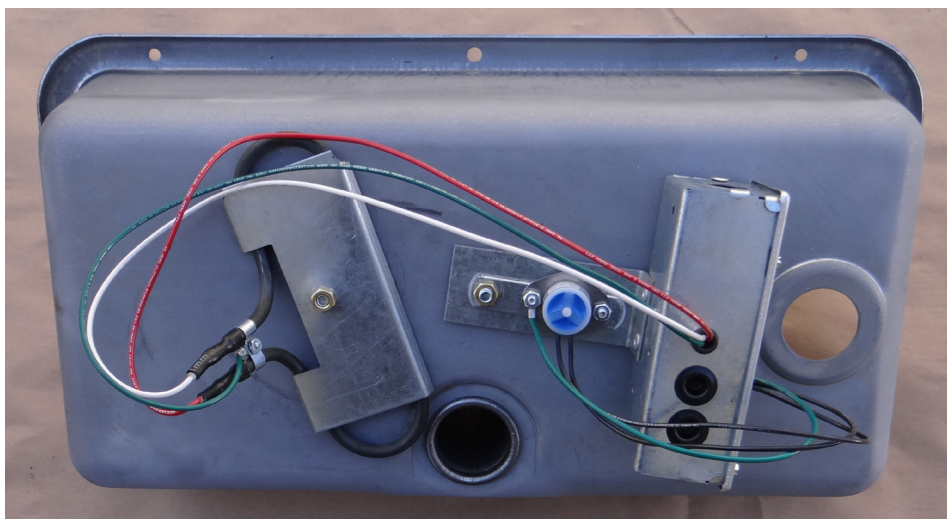
Hawkeye Steel manufactured scores of different models of waterers using the bulb and bellows thermostat. The thermostat became increasingly expensive and difficult to source. Thus, Hawkeye Steel came up with the air sensor design to allow the continued use of waterers which may well be 50 years or older. Because a lot of the replacement applications are low volume, it is not possible to design custom brackets for each model— and that is not necessary. You need to find a location where you can hang the bracket which comes with the sensor. On cast iron waterers, most models had cavities to provide water and bellows access as shown in Exhibits 1 and 2. Hang the sensor as shown in the cavity opening. There is not exact positioning. Hang the sensor away from the heating element and **NOT IN THE WATER.**



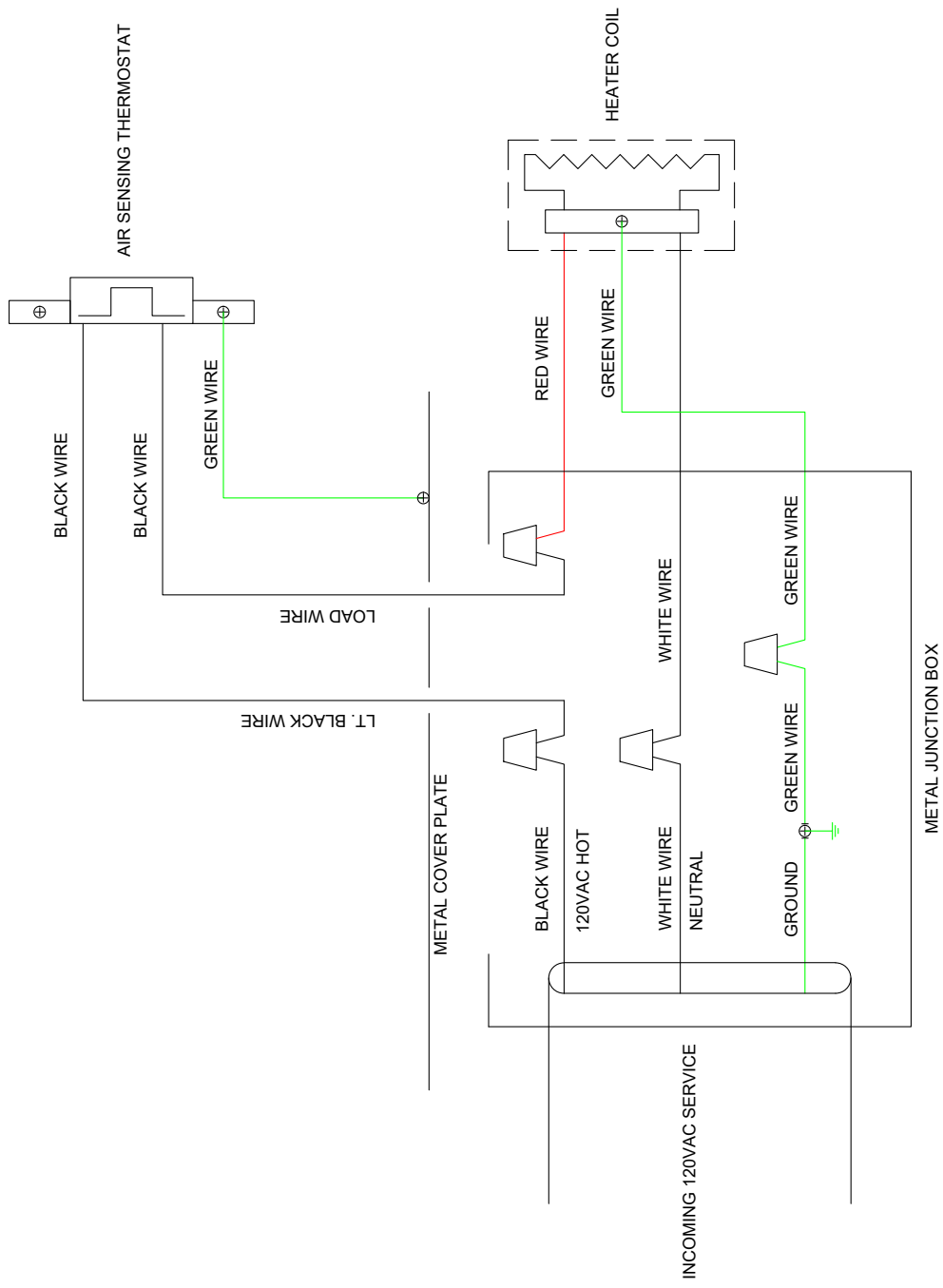
**Exhibit 1.** The air sensor hung inside the cavity of the trough on a Model WE cast iron waterer for cattle and large animals.




**Exhibit 2.** The air sensor hung inside the cavity of the trough on a Model WR cast iron hog waterer.



**Exhibit 3.** Your waterer trough may look like or be similar to the image above. Place the sensor bracket on the same stud which holds the junction box. Do **NOT** use the stud holding the heating element. With this installation, you will not use the hook which may come with your air sensing thermostat.



NOTES:  = WIRE NUT