

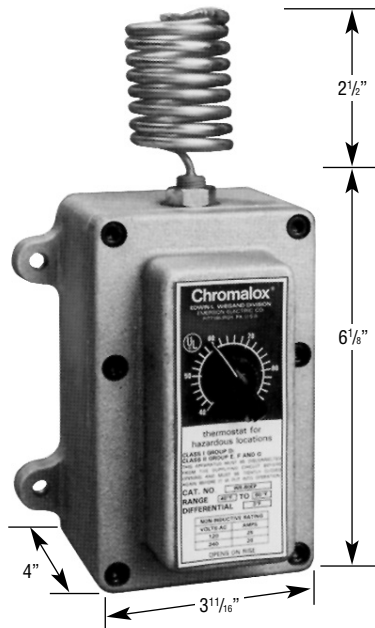
# Chromalox®

## Installation and OPERATION INSTRUCTIONS

### SERVICE REFERENCE

DIVISION 4	SECTION WR
SALES REFERENCE (Supersedes PK435-4)	PK435-5
161-048630-001	
DATE JUNE, 1994	

## Type WR-80EP Explosion Proof Room Thermostat



WR-80EP  
40 to 90°F  
UL Listed

Specifications – Table A

Model	Temp. Range (°F)	Maximum Rating					
		120V a-c	† 115V d-c	240V a-c	† 230V d-c	277V a-c	480V a-c
WR-80EP	40-90	25 amps or 3000 total watts	125Va pilot duty (use with d-c contactor)	22 amps or 5280 total watts	125Va pilot duty (use with d-c contactor)	18 amps or 5000 total watts	125Va pilot duty (use with a-c contactor)

† d-c ratings not UL listed

### GENERAL

Positive accuracy, long and reliable service, 3° differential. Heavy-duty, single stage, SPST line voltage snap-acting switch. Patented hydraulic element. WR-80EP has external, coiled sensing element and a low position which drops control point to keep heater off.

**Uses** — Automatically controls room temperature by turning electric air heaters on and off. Can be used to control the air heaters directly, within thermostat rating. For higher ratings use thermostat with magnetic contactor. Place thermostat on inside wall, away from undue heating or cooling influences, about 4 feet above the floor. The explosion proof WR-80EP is suitable for Class I, Group D and Class II, Groups E, F and G locations.

**NOTICE:** Type WR thermostats are designed for temperature control service only. Because they do not fail safe, they should not be used for temperature limiting duty.

**WARNING: Users should install adequate back-up controls and safety devices with their electric heating equipment. Where the consequences of failure may be severe, back-up controls are essential. Although the safety of the installation is the responsibility of the user, Chromalox will be glad to assist in making equipment recommendations.**

**Principle of Operation** — Control action of these thermostats is provided through the principle of liquid volume change. With a variation in temperature, the liquid in the sensing element expands or contracts, causing a bellows to actuate the switching mechanism.

**Housing** — The control housing and cover assembly is of heavy-duty cast aluminum.

### MOUNTING

**Note:** Do not mount control where it will be subject to vibration, shock, grease, dust, lint or corrosive vapors. Do not mount adjacent to a large magnetic contactor, as vibration and shock will cause thermostat to interact erratically – resulting in chattering of the contactor.

**WARNING: Do not twist or uncoil the coiled element on top of the case.**

The proper location of a heavy duty room thermostat is important to assure good performance.

1. Locate where air circulates freely.
2. Never install on or near outside wall.
3. Keep away from windows or doors.
4. Do not locate too close to strong light or other false source of heat, such as sunlight, steam lines, etc.

5. If electrical conduit leads into cooler or warmer room, plug up space around wires in the conduit with rock wool.

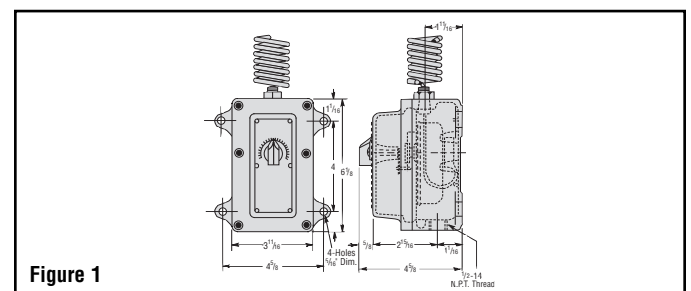


Figure 1

## WIRING

**WARNING: Hazard of Electric Shock. Disconnect all power before wiring or servicing this control.**

1. After a suitable location has been chosen for the control, remove the front cover by using a  $\frac{3}{16}$ " Allen Head Wrench, (furnished with control) in the 6 cover screws.
2. Electric wiring to heater must be installed in accordance with National Electrical Code and with local codes. **WARNING: Use copper conductors only.**
3. Entrance for wiring is provided by one  $\frac{1}{2}$ -14 NPT hole in the bottom of the housing. Wiring to control housing must be in rigid conduit also in accordance with National Electrical Codes (NEC) for hazardous locations. (See Figure 2)
4. Connect wires according to wiring diagrams (Figures 3 and 4).  
**Note:** Electrical connections should be made with generous loops of wire – approximately 6" per lead.  
**Note:** If load amperage or voltage rating exceeds switch rating, a contactor must be used. Contactor and wiring to be supplied by customer. (See Figure 4)

### Replacing Cover

1. Set the internal dial and the external dial to the same setting so that the hole in the dial lines up with pin on the arm that is operated by the knob. (See Figure 2)
2. Replace 6 cover screws and tighten with Allen Wrench provided.

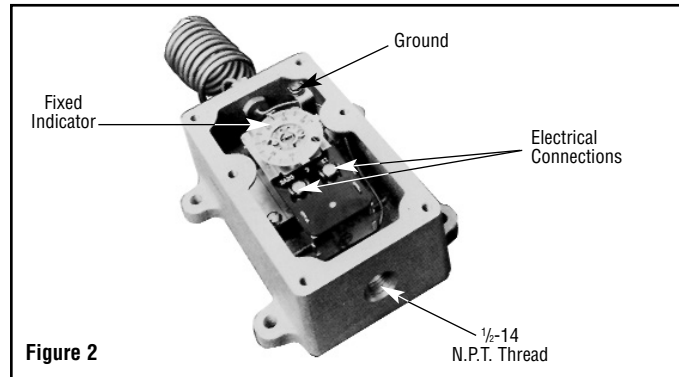


Figure 2

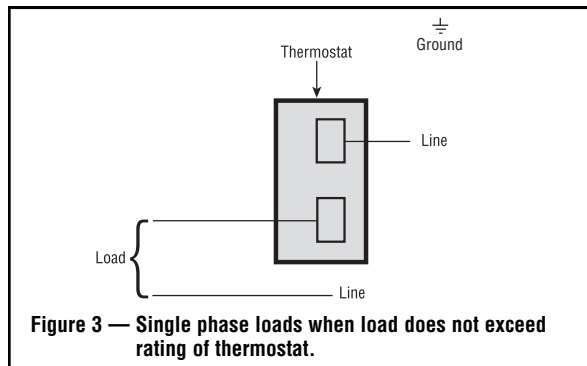


Figure 3 — Single phase loads when load does not exceed rating of thermostat.

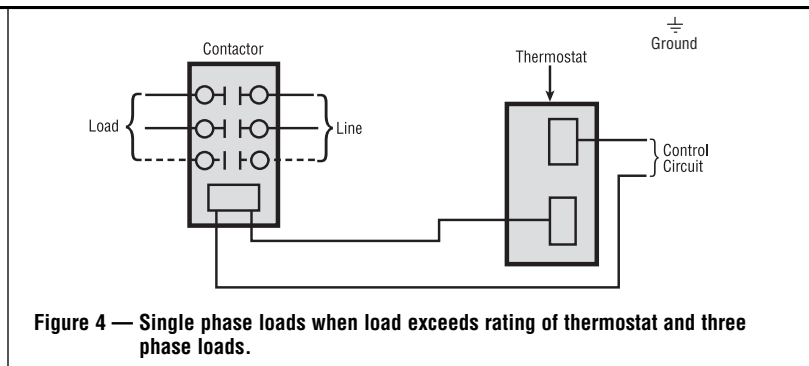


Figure 4 — Single phase loads when load exceeds rating of thermostat and three phase loads.

## CALIBRATION

**WARNING: Hazard of Electric Shock. Extreme care should be exercised during calibration adjustments because of shock hazard due to exposed electrical terminals.**

**DANGER: Calibration will involve exposure of internal control terminals to ambient conditions during some part of the recalibration procedure. Combustible materials which cause hazardous conditions must not be present during recalibration process – otherwise explosion may result.**

WR-80EP thermostats are accurately calibrated at the factory so the dial setting correctly indicates the temperature at which the contacts open on temperature rise. If, as a result of damage in tran-

sit or for other reasons the room temperature differs appreciably from the dial setting, the calibration may be adjusted as follows:

1. Note temperature on the thermometer.
2. Set dial at highest temperature.
3. Turn dial slowly to lower temperature and stop when thermostat contacts open.
4. Remove cover using the  $\frac{3}{16}$ " Allen Head Wrench as in #1 wiring.
5. Loosen two dial screws (Figure 2). Carefully turn the dial only to correct temperature setting as indicated by thermometer. Be sure the thermostat shaft is not moved during this operation.
6. Tighten the dial screws and replace thermostat cover. (See "Replacing Cover")

### Limited Warranty:

Please refer to the Chromalox limited warranty applicable to this product at <http://www.chromalox.com/customer-service/policies/termsforsale.aspx>.

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