



PRODUCT SPECIFICATIONS

# E4X/7-35235JB and E4X/7-200600JB

## ADJUSTABLE CONTROL THERMOSTATS

### APPLICATION

The E4X/7-35235JB and E4X/7-200600JB are designed for use as adjustable control thermostats for freeze protection and temperature maintenance applications requiring pipewall or tankwall sensing. The design of the thermostats permits their use as a junction box for connecting the heating cable to power by using the optional mounting kit (TM4X for ordinary locations or TM7 for Division 2 hazardous locations). Both thermostats feature an epoxy-coated cast aluminum NEMA 4X/NEMA 7 enclosure to provide watertight, dust tight, corrosion-resistant and explosion-proof protection to the thermostat switch. The differentiating factors between the two thermostats are the adjustable control range and maximum bulb exposure temperature.

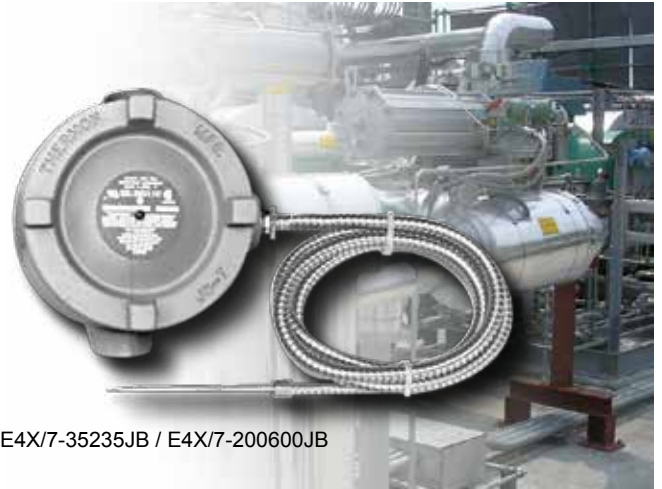
The E4X/7-35235JB and E4X/7-200600JB thermostats are approved for use in both ordinary (nonclassified) and hazardous (classified) locations.

### RATINGS

Voltage rating.....	125/240/277/480 Vac
Switch rating.....	30/30/25/15 amps
Switch type.....	SPST <sup>1</sup>
Electrical connection <sup>2</sup> .....	screw terminals on switch
Adjustable control range	
E4X/7-35235JB.....	35°F to 235°F (2°C to 113°C)
E4X/7-200600JB.....	200°F to 600°F (93°C to 316°C)
Maximum control differential	
E4X/7-35235JB.....	9°F (5°C)
E4X/7-200600JB.....	15°F (5°C)
Maximum bulb exposure temperature	
E4X/7-35235JB.....	300°F (149°C)
E4X/7-200600JB.....	650°F (343°C)
Bulb dimensions.....	1/4" x 6-3/8" (6.4 x 162 mm)
Bulb material.....	nickel-plated copper
Capillary length.....	6' (1.8 m)
Capillary material.....	nickel-plated copper
Capillary armor.....	flexible stainless steel

### Notes

- The National Electrical Code, Article 427-56(b) states: "Temperature- controlled switching devices which do not have an "off" position shall not be required to open all ungrounded conductors and shall not be permitted to serve as the disconnecting means." The E4X/7-35235JB and E4X/7-200600JB thermostats have no "off" position and therefore may be used for switching one conductor of a two-phase heating circuit.
- The E4X/7-35235JB and E4X/7-200600JB utilize two 1" NPT conduit hub openings for the mounting expediter and incoming power. The thermostats include an internal grounding terminal and are available with an optional TB2F terminal block.



E4X/7-35235JB / E4X/7-200600JB



**TM4X** optional mounting kit (purchased separately) components include:

- Pipe-mounted expediter
- 2 stainless steel pipe attachment bands.
- Heater cable grommet
- 2 power connection boots
- RTV adhesive
- Wire fasteners and grounding lug



**TM7** optional mounting kit (purchased separately) components include:

- Pipe-mounted expediter
- Cable seal assembly
- 2 stainless steel pipe attachment bands
- Heater cable grommet
- 2 power connection boots
- RTV adhesive
- Wire fasteners and grounding lug

### CERTIFICATIONS/APPROVALS



FM Approvals  
 Ordinary Locations  
 Hazardous (Classified) Locations  
 Class I, Divisions 1 and 2, Groups B, C and D  
 Class II, Divisions 1 and 2, Groups F and G  
 Class III, Divisions 1 and 2

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# E4X/7-35235JB and E4X/7-200600JB

## ADJUSTABLE CONTROL THERMOSTATS

The following installation procedures are suggested guidelines for the installation of a Thermon mechanical thermostat. They are not intended to preclude the use of other methods utilizing accepted engineering or field construction practices.

### UPON RECEIVING, THERMOSTAT

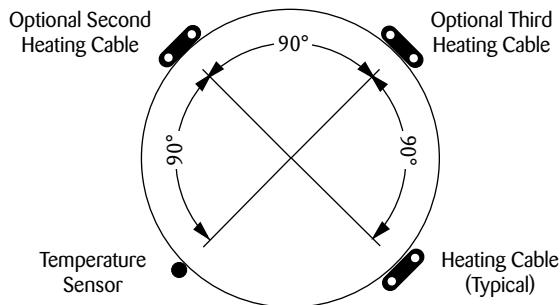
1. Upon receiving thermostat, check to make sure the proper type has been received.
2. Store in a dry place.

### APPLICATIONS

1. Mechanical thermostats are used for freeze protection or temperature maintenance of piping, tanks and instrumentation.
2. Thermostat may be installed in ordinary (nonclassified) and hazardous (classified) locations depending on the specific approvals. Ensure that thermostat/junction box combination is suitable for the area classification. If installed in classified (hazardous) locations, approved explosion-proof seal fittings shall be installed on all electrical wire entries.
3. Check the line voltage and the heater circuit current to be sure that the ratings of the thermostat are not exceeded.
4. Mount the thermostat/junction box vertically upright and in a position that will prevent condensation from draining into the enclosure from the connected conduit.

### THERMOSTAT CONNECTIONS

- When a line sensing controller is specified, the sensor should be placed at least 90° around the circumference from the heating cable, or at least 2" (5 cm ) from the cable. Mount the bulb in a location that is representative of the overall system temperature away from valves, pipe supports, nozzles, or other heat sinks. Fasten the bulb, capillary and flexible armor (where provided)



Heating Cable vs. Sensor Location (Line Sensing Control)

securely to the pipe/vessel with fiber or metallic tape, being sure that the entire length of the bulb is in intimate contact with the pipe surface. The bulb may be covered with a parallel pass of metallic tape to enhance heat transfer. The thermostat may require more than one support point. Prevent kinking of the capillary.

- For line sensing control, a leg of the heating circuit is to be connected in series with the control contacts as shown in the illustration below. Seal all thermal insulation penetrations after installation to prevent moisture intrusion.
  - For ambient sensing control, a leg of the heating circuit should be connected in series with the control contacts as shown in the illustration below. When using an ambient sensing temperature controller, the mounting location should be representative of the coldest region, and the sensing element should not be exposed to direct sunlight or any additional heat source.
5. **All electric power supply circuits should be disconnected and locked out prior to beginning wiring of the thermostat/junction box.**
  6. Set the thermostat dial to the control set point, and complete the electrical wiring. The heating system should not be energized prior to the circuit being properly tested.
  7. Once the piping or vessel is insulated and in service, the temperature of the process fluid may be measured and compared with the control set point. Adjust the set point where necessary.
  8. **Power should always be disconnected and a lockout/tagout procedure performed prior to opening the thermostat/junction box enclosure for maintenance.**
  9. Any modification to the enclosure or deviation from these procedures may affect unit's rating or approvals. Contact factory if modifications are necessary.
  10. If recalibration becomes necessary, contact factory for procedures/assistance.

### TYPICAL WIRING DIAGRAM

