

**Part 1 General**

**1.1 SUMMARY**

- .1 Section Includes:
  - .1 Materials and application of electric duct heaters.

**1.2 REFERENCES**

- .1 Canadian Standards Association (CSA International).
  - .1 CSA C22.2 No.46, Electric Air-Heaters.

**1.3 SUBMITTALS**

- .1 Make submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit product data and include:
  - .1 Element support details.
  - .2 Heater: total kW rating, voltage, phase.
  - .3 Number of stages.
  - .4 Rating of stage: rating, voltage, phase.
  - .5 Heater element watt/density and maximum sheath temperature.
  - .6 Maximum discharge temperature.
  - .7 Physical size.
  - .8 Unit support.
  - .9 Performance limitations.
  - .10 Clearance from combustible materials.
  - .11 Internal components wiring diagrams.
  - .12 Minimum operating airflow.
  - .13 Pressure drop at operating and maximum airflow.

**Part 2 Products**

**2.1 DUCT HEATERS**

- .1 Duct heaters: flange type.
- .2 Elements:
  - .1 Helical coils of nickel chrome alloy resistance wire.
- .3 Staging:
  - .1 Staged heaters: balanced line current at each stage.
  - .2 Each stage: uniform face distribution.

- .4 Maximum temperature at discharge: 66°C (151°F).
- .5 Controls:
  - .1 Factory mounted and wired in control box. Use terminal blocks for power and control wiring to thermostat and sail switch.
  - .2 Remote mounted as indicated with terminal strips in heater terminal box for power and control wiring.
  - .3 Controls mounted in a NEMA 1 enclosure and to include:
    - .1 Magnetic contactors.
    - .2 Control transformers.
    - .3 SCR controller.
  - .4 Where controls are mounted in heater, exercise care in mounting contactors to minimize switching noise transmission through ductwork.
  - .5 High temperature cut out and air proving switch.
- .6 Electrical:
  - .1 Main isolation disconnect switch.

**Part 3 Execution**

**3.1 INSTALLATION**

- .1 Make power and control connections to CSA C22.2 No.46.

**3.2 FIELD QUALITY CONTROL**

- .1 Perform tests in accordance with Section 26 05 01 - Common Work Results - Electrical.
- .2 Perform tests in presence of Contract Administrator.
  - .1 Provide test report and include copy with Operations and Maintenance Manuals.

**END OF SECTION**