

SECTION 23 82 39 – ELECTRIC HEATERS

PART 1 - GENERAL

1.1 THE REQUIREMENT

- A. The CONTRACTOR shall provide heating systems, complete and operable, in accordance with the Contract Documents.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. WORK shall be in full accordance with the latest State and local codes and regulations, including the local Plumbing Code, the local Building Code, Fire Code, and all other local codes. Nothing in the Contract Documents shall be construed to permit WORK in violation of the above codes, rules, and regulations. In the absence of applicable codes, installation and workmanship shall follow the standards set by the American Society of Heating, Refrigeration, and Air Conditioning Engineers.

1.3 CONTRACTOR SUBMITTALS

- A. Submit Shop Drawings in accordance with MASS Section 10.05 Article 5.6.
- B. Equipment Numbers: Equipment is identified by number code for reference and location purposes in the Contract Documents. The appropriate equipment numbers shall be included on the Shop Drawings and on other submittals.

1.4 WARRANTY

- A. Air conditioners, heaters, fans, and blowers shall carry the manufacturer's standard warranty, and all such warranties shall be furnished to the ENGINEER before final acceptance.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Quality: All units shall be alike in materials, workmanship, and design and shall be of the manufacturer's top of the line, industrial-commercial grade.
- B. Supports: Equipment and appurtenances shall be firmly anchored or connected to supporting members. Supports required for the proper installation of the equipment, but not forming an integral part of the building structure, shall be provided by the Contractor, unless otherwise indicated. Mounting brackets shall be supplied by the heater manufacturer.

2.2 CONTROLS

- A. General: Electric unit heaters shall have unit-mounted 24-volt contactors and shall be controlled by the SCADA system or low-level thermostat as shown on the drawings.
- B. Low-Level Thermostats: Low-level thermostats shall be digital type with internal adjustable maximum setting stop. Setpoints shall be adjustable from 40 to 80 degrees F. Thermostats shall meet the Energy Conservation Standard approval where required by the State. Thermostat shall be of steel construction and have a keyed locking fastener.
- C. Cooling Thermostats: Cooling thermostats shall be digital type. Setpoints shall be adjustable from 55 to 95 degrees F, close on rise. Thermostats shall meet the Energy Conservation Standard approval where required by the State. Thermostat shall be of steel construction and have a keyed locking fastener.
- D. Manufacturers: Control system components and thermostats shall be as manufactured by **White Rodgers**, or equal.

2.3 ELECTRIC HEATERS

- A. General: Electric unit heaters shall be provided where indicated. Heaters shall be controlled from the SCADA panel, unless otherwise indicated. Brackets shall be provided for wall mounting as required. Heaters shall have built-in magnetic contactors and safety devices to meet UL listing, National Electrical Code, and local regulations.
- B. Unit Heaters: Unit heaters shall be of the electric, horizontal blower type, with enameled steel cabinet, mounting bracket, adjustable horizontal louvers, spiral finned, enclosed heating element, automatic reset overheat protection, thermal protected, permanently lubricated fan and motor, fuses, and contactors. The heaters shall be equipped with 24V control transformers.
- C. Heater voltage shall be as shown on plans. Where not specified heater voltage shall be provided in the following order of preference where the voltage / phase is available:
 - 1. 480V three-phase,
 - 2. 208/240V three-phase,
 - 3. 208/240 V single-phase,
 - 4. 120V.
- D. Manufacturers: **Chromalox Series LUH**, or equal.
- E. Provide the following heaters:

| Tag No. | Location | Part Number | kW |
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PART 3 - EXECUTION

3.1 GENERAL

- A. Checking: The CONTRACTOR shall test all unit heaters and control systems for proper operation.
- B. System deficiencies shall be corrected, to the ENGINEER'S satisfaction, at the CONTRACTOR'S expense.

END OF SECTION 23 82 39