

## 15838 ELECTRICAL DUCT HEATER

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### *SPECIFIER:*

*CSI MasterFormat 2004 number: 238216.14*

*An optional keynote to the Drawings follows major product titles, for A/Es using National CAD Standard.*

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## PART 1 GENERAL

### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

### 1.2 SUMMARY

- A. Section includes duct mounted electric resistance air coils.
- B. Related Requirements:
  - 1. Section 15835 Unit Heaters
  - 2. Section 15890 Ductwork
  - 3. Section 15910 Duct Accessories

### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each air coil.
  - 2. Include rated capacities, operating characteristics, and pressure drops for each air coil.
- B. Shop Drawings: Include diagrams for power, signal, and control wiring.

### 1.4 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Ductwork plans, drawn to scale, on which coil location and duct-mounted access panels are shown and coordinated with each other.
- B. Field quality-control reports.

## PART 2 PRODUCTS

### 2.1 DESCRIPTION

- A. ASHRAE Compliance: Comply with applicable requirements in ASHRAE 62.1, Section 5 - "Systems and Equipment" and Section 7 - "Construction and Startup."

## B. COILS

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - a. Brasch Manufacturing Co., Inc.
  - b. Chromalox.
  - c. INDEECO.
  - d. Warren
  - e. Approved Equivalent.
2. Testing Agency Listing and Labeling: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
3. Coil Assembly: Comply with UL 1995.
4. Heating Elements: Open-coil resistance wire of 80 percent nickel and 20 percent chromium, supported and insulated by floating ceramic bushings recessed into casing openings, and fastened to supporting brackets.
5. High-Temperature Coil Protection: Disk-type, automatically reset, thermal-cutout, safety device; serviceable through terminal box without removing heater from duct or casing.
6. Secondary Protection: Load-carrying, manually reset or manually replaceable, thermal cutouts; factory wired in series with each heater stage.
7. Frames: Galvanized-steel channel frame, minimum 0.064 inch thick for **[slip-in] [flanged]** mounting.
8. Control Panel: [Unit] [Remote] mounted with disconnecting means and overcurrent protection. Include the following controls:
  - a. Magnetic contactor.
  - b. Mercury contactor.
  - c. Toggle switches; one per step.
  - d. Step controller.
  - e. Time-delay relay.
  - f. Pilot lights; one per step.
  - g. Airflow proving switch.
9. See Section 13810, Energy Management System, for method of control.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Examine ducts, plenums, and casings to receive air coils for compliance with requirements for installation tolerances and other conditions affecting coil performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. Install coils level and plumb.

1. Install coils in metal ducts and casings constructed according to SMACNA's "HVAC Duct Construction Standards, Metal and Flexible", and "Ducted Electric Heat Guide".
2. Clean coils using materials and methods recommended in writing by manufacturers, and clean inside of casings and enclosures to remove dust and debris.

### 3.3 CONNECTIONS

- A. Connect wiring according to Division 16.

### 3.4 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections:
  1. Operational Test: After electrical circuitry has been energized, operate electric coils to confirm proper unit operation.
  2. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- B. Prepare test and inspection reports.

END OF SECTION