

SECTION 15930 - AIR TERMINAL UNITS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Constant volume terminal units.
- B. Variable volume terminal units.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

2.1.1 General

2.1.1.1 Manufacturers must participate in the ARI Certification program. Unit performance data must be Rated in Accordance with ARI Standard 880, and must display the ARI Symbol on all standard units. If a manufacturer does not participate in the ARI Certification program, specified equipment must be witnessed by an ARI certified testing laboratory to meet the criteria of the specification, including intended radiated NC, in an equipment mockup. Mockup must be similar to construction and operating conditions of this project.

2.1.1.2 Shutoff terminals must be UL listed as a Room Air Terminal.

2.1.1.3 Acceptable Manufacturers

- TRANE
- TITUS
- PRICE

2.1.1.4 Substitution: Any manufacturer desiring to furnish equipment on this project shall submit COMPLETE submittal data seven (7) days prior to the bid date. Catalog cut sheets and sales data are not acceptable. The unit manufacturer shall list all deviations from the specified unit. Any manufacturer allowed to bid this project will be listed herein or by addenda. Listing herein or by addenda does not relieve the contractor from providing equipment which meets both the letter and the intent of these documents. Only those manufacturers listed herein or by addenda will be considered as viable suppliers on this project.

2.2 MANUFACTURED UNITS

2.2.1 The contractor shall furnish and install ceiling mounted constant, variable air volume or constant volume terminals for connection to single medium pressure duct, central air systems, with constant volume or variable volume (as scheduled and/or specified) electric actuator. The direct digital controller shall be provided to the VAV terminal unit manufacturer for mounting and continuity testing.

2.2.2 Identify each terminal unit with clearly marked identification label and airflow indicator. Label shall include unit nominal air flow, maximum factory set air flow, minimum factory set air flow, and coil type.

2.3 FABRICATION

2.3.1 Casings. Units shall be completely factory assembled, manufactured of corrosion protected welded or screwed steel, and fabricated with a minimum of 18-gauge metal on the high pressure (inlet) side of the VAV damper and 22-gauge metal on the low pressure (outlet) side and unit casing.

2.3.2 INSULATION - Foil Face - Interior surface of unit casing is acoustically and thermally lined with a minimum of 1/2 inch, R-Value 2.2 1.9 lb./cu. ft. foil face insulation. All exposed edges are sealed to prevent fibers in the airstream. Meets NFPA-90A, UL 181 and bacteriological standard ASTM C 665.

2.3.3 Assembly: Air volume damper, and controls in single cabinet.

2.4 VOLUME DAMPER

2.4.1 Locate air volume damper assembly inside unit casing. Construct from extruded aluminum or a minimum of 20 gauge galvanized steel components. Key damper blades into shaft with nylon fitted pivot points.

Flow sensor must be provided regardless of control chosen. Flow sensor must be a ring or cross. Bar or single point sensing device is not acceptable.

2.4.2 Mount manually operated damper quadrant or automatic damper operator and automatic flow control assembly.

2.4.3 Air volume control damper shall be factory calibrated assembly consisting of air modulation damper and extension for connection to control actuator. All actuator linkage shall be protected by a sheet metal enclosure provided by the terminal unit manufacturer.

2.4.4 Air volume control damper shall be factory calibrated assembly consisting of air valve with integral actuator.

2.4.5 Electric actuator shall position damper. The electric actuator shall be provided by the terminal unit manufacturer.

2.5 HEATING COILS

2.5.1 Hot Water Heating Coil: Copper tube mechanically expanded into aluminum plate fins, leak tested under water to 300 psig pressure, factory installed. Female sweat-type water connections. The control valve shall be furnished by the controls contractor.

2.5.2 Capacity: per schedule.

2.6 WIRING

Factory mount and wire DDC controllers. The terminal unit manufacturer shall mount electrical components in control box with removable cover. The controls contractor shall furnish and field install all 24V power and control wiring to terminal unit control box.

2.7 TESTS

2.7.1 Factory set and check all analog electronic and pneumatic controllers to within 5% of scheduled maximum and minimum settings. Base performance on tests conducted in accordance with ARI 880. Provide complete documentation. Factory calibrate and set flow sensor and provide documentation.

2.7.2 Maximum Casing Leakage: 1 percent of nominal air flow at 0.5 in w.g. inlet static pressure.

2.7.3 Maximum Damper Leakage: 1 percent of design air flow at 4 in w.g. inlet static pressure.

PART 3 - EXECUTION

3.1 INSTALLATION

3.1.1 Install in accordance with manufacturer's instructions.

3.1.2 The sheet metal contractor shall install a minimum of two (2) feet of straight hard duct on the high pressure inlet connection to the terminal unit. Attached to the straight duct the sheet metal contractor can use a maximum of three (3) feet of high pressure flex duct for connection to the main supply duct. All joints shall be seal per these contract documents.

3.2 ADJUSTING

Reset volume with damper operator attached to assembly allowing flow range modulation from 100 percent of design air flow to 25 percent nominal air flow. Set units with heating coils for airflow as scheduled on the plans.

END OF SECTION