

SECTION 233600 – AIR TERMINAL UNITS

PART 1 - GENERAL

1.1 SUBMITTALS

- A. Product Data: Include rated capacities; furnished specialties; and accessories for each model indicated. Include a schedule showing drawing designation, room location, number furnished, model number, size, and accessories furnished.
- B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loadings, required clearances, method of field assembly, components, and location and size of each field connection.
 - 1. Wiring Diagrams: Detail wiring for power, signal, and control systems and differentiate between manufacturer-installed and field-installed wiring.
- C. Maintenance Data: List of parts for each type of air terminal and troubleshooting maintenance guide to include in the maintenance manuals.

1.2 QUALITY ASSURANCE

- A. Listing and Labeling: Provide electrically operated air terminals specified in this Section that are listed and labeled.
- B. NFPA Compliance: Install air terminals according to NFPA 90A, "Standard for the Installation of Air Conditioning and Ventilating Systems."
- C. Comply with NFPA 70 for electrical components and installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide air terminals by one of the following:
 - 1. Price.
 - 2. Titus.
 - 3. Trane Co. (The).

2.2 SINGLE-DUCT AIR TERMINALS

- A. Configuration: Volume-damper assembly inside unit casing. Locate control components inside protective metal shroud.

- B. Casings: Steel or aluminum sheet metal of the following minimum thicknesses:
 - 1. Upstream Pressure Side: 0.0239-inch steel.
 - 2. Downstream Pressure Side: 0.0179-inch steel.
 - 3. Upstream Pressure Side: 0.032-inch aluminum.
 - 4. Downstream Pressure Side: 0.025-inch aluminum.

- C. Casing Lining: Minimum of 1/2-inch-thick, neoprene- or vinyl-coated, fibrous-glass insulation; 1.5-lb/cu. ft. density, complying with NFPA 90A requirements and UL 181 erosion requirements. Secure lining to prevent delamination, sagging, or settling.
 - 1. Coat liner surfaces and edges with erosion-resistant coating or cover with perforated metal.
 - 2. Cover liner with perforated metal.
 - 3. Cover liner with Mylar or Tedlar film.

- D. Plenum Air Inlets: Round stub connections or S-slip and drive connections for duct attachment.

- E. Plenum Air Outlets: S-slip and drive connections.

- F. Access: Removable panels to permit access to dampers and other parts requiring service, adjustment, or maintenance; with airtight gasket and quarter-turn latches.

- G. Volume Damper: Construct of galvanized steel with peripheral gasket and self-lubricating bearings.
 - 1. Maximum Damper Leakage: 2 percent of nominal airflow at 3-inch wg inlet static pressure.
 - 2. Damper Position: Normally open.

- H. Attenuator Section: Line with 2-inch-thick, neoprene- or vinyl-coated, fibrous-glass insulation.

- I. Controls: To be provided by Controls Contractor.

- J. Flow Sensing Device: Averaging flow sensing ring to measure primary airflow within +/- 5 percent of unit rated airflow.

2.3 SOURCE QUALITY CONTROL

- A. Testing Requirements: Test and rate air terminals according to ARI 880, "Industry Standard for Air Terminals."

- B. Identification: Label each air terminal with plan number, nominal airflow, maximum and minimum factory-set airflows, coil type, and ARI certification seal.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install air terminals level and plumb, according to manufacturer's written instructions, rough-in drawings, original design, and referenced standards; and maintain sufficient clearance for normal service and maintenance.
- B. Connect ductwork to air terminals according to Division 23 ductwork Sections.

3.2 FIELD QUALITY CONTROL

- A. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

3.3 CLEANING

- A. After completing system installation, including outlet fittings and devices, inspect exposed finish. Remove burrs, dirt, and construction debris, and repair damaged finishes.

3.4 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel as specified below:
 - 1. Train Owner's maintenance personnel on procedures and schedules related to startup and shutdown, troubleshooting, servicing, and preventive maintenance.
 - 2. Review data in the maintenance manuals. Refer to Division 1 Section "Contract Closeout."
 - 3. Review data in the maintenance manuals. Refer to Division 1 Section "Operation and Maintenance Data."
 - 4. Schedule training with Owner, through Architect, with at least 7 days' advance notice.

END OF SECTION 233600