

SECTION 15840 - AIR TERMINAL UNITS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Shutoff, single-duct air terminal units.

1.2 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Hangers and supports shall withstand the effects of gravity loads and stresses within limits and under conditions described in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible".

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For air terminal units. Include plans, elevations, sections, details, and attachments to other work.

1.4 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. ASHRAE Compliance: Applicable requirements in ASHRAE 62.1-2004, Section 5 - "Systems and Equipment" and Section 7 - "Construction and System Start-Up."

PART 2 - PRODUCTS

2.1 SHUTOFF, SINGLE-DUCT AIR TERMINAL UNITS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - 1. Anemostat Products; a Mestek Company.
 - 2. Carnes.
 - 3. Environmental Technologies, Inc.
 - 4. Krueger.
 - 5. METALAIRE, Inc.
 - 6. Nailor Industries Inc.
 - 7. Phoenix Controls Corporation.
 - 8. Price Industries.
 - 9. Titus.
 - 10. Trane; a business of American Standard Companies.
 - 11. Trox USA Inc.; a subsidiary of the TROX GROUP.
 - 12. Tuttle & Bailey.
 - 13. Warren Technology.

- B. Configuration: Trane Varitrac volume-damper assembly with control components inside a protective metal shroud.
- C. Electronic Controls: Bidirectional damper operator and microprocessor-based thermostat with integral airflow transducer and room sensor. Control devices shall be compatible with temperature controls specified in Division 15 Section "HVAC Instrumentation and Controls" and shall have the following features:
 - 1. Damper Actuator: 24 V, powered.
 - 2. Velocity Controller: Factory calibrated and field adjustable to minimum and maximum air volumes; shall maintain constant airflow dictated by thermostat within 5 percent of set point while compensating for inlet static-pressure variations up to 4-inch wg (1000 Pa); and shall have a multipoint velocity sensor at air inlet.
 - 3. Thermostat: Wall-mounted electronic type with temperature set-point display in Fahrenheit and Celsius.
- D. Direct Digital Controls: Single-package unitary controller and actuator specified in Division 15 Section "HVAC Instrumentation and Controls."

2.2 HANGERS AND SUPPORTS

- A. Hanger Rods for Noncorrosive Environments: Cadmium-plated steel rods and nuts.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install air terminal units according to NFPA 90A, "Standard for the Installation of Air Conditioning and Ventilating Systems."
- B. Install air terminal units level and plumb. Maintain sufficient clearance for normal service and maintenance.
- C. Install wall-mounted thermostats.

3.2 HANGER AND SUPPORT INSTALLATION

- A. Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Chapter 4, "Hangers and Supports."
- B. Building Attachments: Concrete inserts, powder-actuated fasteners, or structural-steel fasteners appropriate for construction materials to which hangers are being attached.
- C. Hangers Exposed to View: Threaded rod and angle or channel supports.
- D. Install upper attachments to structures. Select and size upper attachments with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.

3.3 CONNECTIONS

- A. Make connections to air terminal units with flexible connectors complying with requirements in Division 15 Section "Duct Accessories."

3.4 IDENTIFICATION

- A. Label each air terminal unit with plan number, nominal airflow, and maximum and minimum factory-set airflows. Comply with requirements in Division 15 Section "Identification for HVAC Piping and Equipment" for equipment labels and warning signs and labels.

3.5 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
 - 1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- B. Tests and Inspections:
 - 1. After installing air terminal units and after electrical circuitry has been energized, test for compliance with requirements.
 - 2. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
 - 3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- C. Air terminal unit will be considered defective if it does not pass tests and inspections.
- D. Prepare test and inspection reports.

END OF SECTION 15840