SECTION 23 8119
SELF-CONTAINED AIR-CONDITIONERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Packaged terminal air conditioning units.

B. Packaged terminal heat pump units.

C. Wall sleeves.

D. Louvers.

E. Controls.

1.02 RELATED REQUIREMENTS

A. Section 22 3000 - Plumbing Equipment: Cooling condensate removal pumps.

B. Section 23 0913 - Instrumentation and Control Devices for HVAC: Installation of thermostats and other control components.

C. Section 26 2717 - Equipment Wiring: Installation of thermostats and other control components.

D. Section 26 2717 - Equipment Wiring: Electrical characteristics and wiring connections.

1.03 REFERENCE STANDARDS

A. AHRI 210/240 - Standard for Performance Rating of Unitary Air-Conditioning and Air-Source Heat Pump Equipment; 2008.

B. AHRI 270 - Sound Performance Rating of Outdoor Unitary Equipment; 2008.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide drawings indicating dimensions, rough-in connections, and electrical characteristics and connection requirements.

C. Manufacturer's Instructions: Include assembly instructions, support details, connection requirements, and start-up instructions.

D. Sustainable Design Documentation: Submit manufacturer's product data on refrigerant used, showing compliance with specified requirements.

E. Operation and Maintenance Data: Provide maintenance data, parts lists, controls, and accessories. Include trouble-shooting guide.

F. Warranty: Submit manufacturer's warranty and ensure forms have been filled out in Owner's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.

B. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Protect finished cabinets from physical damage by leaving factory packing cases in place before installation and providing temporary covers after installation.

1.07 WARRANTY

A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

B. Provide a five year warranty to include coverage for refrigeration compressors.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Carrier, a part of UTC Building and Industrial Systems, a unit of United Technologies Corp; _____: www.carrier.com.

B. Trane, a brand of Ingersoll Rand; _____: www.trane.com.

C. York International Corporation/Johnson Controls Inc; _____: www.york.com.

2.02 PERFORMANCE REQUIREMENTS

A. Air Cooled Units:
   1. Cooling Capacity at AHRI 210/240 Test Conditions: ____ Btu/hr with maximum EER of ____ Btu/hr/Watt.
   2. Reverse Cycle Heating Capacity at AHRI 210/240 High Temperature New Test Conditions: ____ Btu/hr with COP of _____.
   3. ARI 270 Sound Number: _____.

B. Water Cooled Units:
   1. Cooling Capacity at AHRI 210/240 Test Conditions: ____ Btu/hr with maximum EER of ____ Btu/hr/Watt.
   2. Reverse Cycle Heating Capacity at AHRI 210/240 High Temperature New Test Conditions: ____ Btu/hr with COP of ____, ____ gpm condenser water entering at ____ degrees F.
   3. AHRI 270 Sound Number: ____.

2.03 AIR CONDITIONING UNITS

A. Description: Packaged, self-contained, through-the-wall air cooled terminal air conditioning units, with wall sleeve, room cabinet, electric refrigeration system, electric heating, outside air louvers, built-in temperature controls; fully charged with refrigerant and filled with oil.

B. Electrical Characteristics:
   1. Refer to section 26 2717.
   2. Disconnect Switch: Factory mount disconnect switch on equipment under provisions of Section 26 2717.

C. Energy Efficiency:
   1. Cooling Capacity: Less than 7000 Btu/h:
      a. Energy Efficiency Ratio: 8.88, minimum.
      b. Seasonal Coefficient of Performance: 3.19.
   2. Cooling Capacity: 7000 Btu/h through 1500 Btu/h:
      a. Energy Efficiency Ratio: 10.0.
      b. Seasonal Coefficient of Performance: 3.19, minimum.
   3. Cooling Capacity: Greater than 1500 Btu/h:
      a. Energy Efficiency Ratio: 7.60, minimum.
      b. Seasonal Coefficient of Performance: 3.19.

2.04 CABINET

A. Cabinet: Wall mounted of 18 gage, 0.0478 inch galvanized steel with epoxy coated finish, removable front panel with concealed latches, _____ color as selected.

B. Discharge Grille and Access Door: Removable punched louver discharge grilles, allowing 4-way discharge air pattern with hinged door in top of cabinet for access to controls.

2.05 WALL SLEEVES AND LOUVERS

A. Wall Sleeves: ____ inches deep, 16 gage, 0.0598 inch galvanized steel with protective mastic coating.

B. Louvers: Provide flush anodized aluminum with enamel finish, _____ color as selected.

2.06 CHASSIS

A. Refrigeration System:

1. Direct expansion cooling coil.
2. Hermetically sealed compressor with internal spring isolation, external isolation, permanent split capacitor motor and overload protection.
3. Accumulator.
4. Condenser coil and fan.

B. Coaxial tube in tube condenser with water regulating valve.
1. Capillary restrictor and constant pressure expansion valve.
2. Reversing valve.

C. Air System: Centrifugal forward curved tangential evaporator fans with two speed permanent split capacitor or ECM motor, permanent washable filters, positive pressure ventilation damper with concealed manual operator.

D. Condensate Drain: Drain pan to direct condensate to condenser coil for re-evaporation.

E. Condenser Fan: Centrifugal, forward curved type with separate permanent split capacitor motor.

2.07 CONTROLS

A. Control Module: Unit mounted adjustable thermostat with heat anticipator, heat-off-cool switch, high-low fan switch.

B. Low Ambient Lockout Control: Below 35 degrees F, outdoor thermostat shall prevent compressor operation and switch to heat mode.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Coordinate installation of units with architectural, mechanical, and electrical work.

C. On water coils, provide shut-off valve on supply line and balancing valve on return line. Provide manual air vents at high points complete with stop valve.

D. In steam coils, provide shut-off valve and vacuum breaker in steam line. Install steam traps with outlet below coil return connection.

END OF SECTION 23 8119