

SECTION 238126.11 - DUCTLESS SPLIT SYSTEM AIR CONDITIONER

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Provide all labor, materials, equipment and services as required for the complete installation designed in Contract Documents.

1.2 SUBMITTALS

- A. Submit product data for split system ductless air conditioner, including condensing unit, refrigerant piping diagrams, and control and wiring schematics.

1.3 GENERAL REQUIREMENTS

- A. Provide units to fit intended use and location as indicated:
  - 1. Capacity, size and arrangement, component parts and accessories as scheduled and/or as necessary to obtain required results and allow for proper maintenance.
  - 2. Unit capacities to be ARI 210 rated.
  - 3. Unit to meet or exceed minimum SEER Requirements of New York State Energy Code and Department of Energy (DOE).

PART 2 - PRODUCTS

2.1 AIR HANDLING UNIT WALL MOUNTED TYPE)

- A. Units shall be completely factory assembled including coil, condensate drain pan, fan, motor, filters and controls in an insulated casing. Units shall be UL listed and C.S.A. certified. Forward curved, dynamically and statically balanced fan with 3 speed direct drive. Fan motor bearing shall be permanently lubricated.
- B. Units shall have sheet metal and steel frame construction and shall be painted with an enamel finish. Casing shall be insulated and knockouts shall be provided for electrical power and control wiring.
- C. Unit shall have a single refrigerant circuit controlled by a flow control check valve (FCCV). Aluminum fin surface shall be mechanically bonded to 3/8 in. OD copper tubing. Coils shall be factory pressure and leak tested.

2.2 CONDENSING UNIT

- A. The condensing unit shall be fully charged from the factory for up to 100 ft. of piping. The unit must be designed to operate at outdoor ambient temperatures as high as 115°F and as low as -20°F, with low-ambient kit. The unit shall be UL listed. Unit casing shall be constructed of heavy gauge, galvanized steel and painted with a weather-resistant powder paint finish.

- B. Refrigeration system controls include condenser fan and compressor contactor. High and low pressure controls shall be inherent to the compressor. A factory installed liquid line dryer shall be standard. The compressor shall feature internal over temperature and pressure protection, total epoxy dipped hermetic motor windings, thermostatically controlled sump heater, centrifugal oil pump, and internal spring mounts to reduce vibration and noise. The coil shall be continuously wrapped, corrosion resistant all aluminum glued with minimized brazed joints. The coil shall be 3/8 in. O.D. seamless aluminum glued to a continuous aluminum fin. The coil shall be protected on all four sides by louvered panels.

## 2.3 ACCESSORIES

- A. Wall Mounted Microprocessor Controller:
  - 1. Liquid crystal digital display indicating: Operating mode, setpoint temperature, room temperature, timer setting, fan speed and airflow direction.
  - 2. Self diagnostic fault indication.
  - 3. 24 hour on-off timer.
  - 4. Previous setpoint memory feature.
- B. Low ambient protection kit with wind baffle. Allow unit operation down to 0°F -20°F
- C. Auto restart following power failure.
- D. Condensate drain hose.
- E. Pre-charged uninsulated refrigerant piping lines.

## 2.4 DESIGN EQUIPMENT

- A. Mitsubishi.

## 2.5 ACCEPTABLE MAKE

- A. Sanyo, Mitsubishi, EMI, Carrier.

# PART 3 - EXECUTION

## 3.1 INSTALLATION

- A. Install equipment in strict accordance with manufacturer's instructions and so as to be compatible with intent of the respective system performance requirements.
- B. Connect condensate to piping left by Plumbing Contractor.
- C. Provide refrigerant piping and control wiring.
- D. Provide any and all necessary control wiring

END OF SECTION

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SECTION 238219 - FAN COIL UNITS

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Provide labor, materials, equipment and services as required for the complete installation shown on Contract Drawings.

1.2 SUBMITTALS

- A. Submit product data for room fan coil units and accessories.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Baked enamel finish of color selected from manufacturers standard colors. Each piece of equipment boxed separately and tagged by room number.
- B. Coordinate voltages of valve and damper operators to be provided, with the DDC system controls subcontractor.

2.2 CONSOLE FAN COIL UNITS

- A. Cabinets:
  - 1. 18 gauge steel removable front enclosure so that internal operating parts are accessible for service or replacement.
  - 2. Bar supply grilles.
  - 3. Isolated valve compartment.
  - 4. Access to motor, fan assembly, and filters.
  - 5. Type as required for job conditions.
  - 6. Return air grilles.
  - 7. Insulated drip pan for coil and valve sections.
  - 8. Insulated cabinet with material in compliance with NFPA 90A requirements.
- B. Heating Coils:
  - 1. Copper tubes and headers, nonferrous fins.
- C. Cooling Coils:
  - 1. Copper tubes and headers, nonferrous fins.

D. Motors:

1. Multispeed, tapwound permanent split capacitor high efficiency type.
2. Built-in overload protection.
3. Resilient mountings to dissipate noise and magnetic vibration.
4. Quick detachable motor cords.
5. Permanently lubricated bearings.

E. Shall not exceed sound data as scheduled. Acoustical data is published manufacturer's data obtained by tests in accordance with ARI Standard 350-086.

F. Options:

1. Fresh air intake damper (where shown on plans) with two-position spring-return electric operator.
2. Keylock panel and access doors.
3. Manual air vent.
4. Disconnect switch.
5. 1 in. pleated throwaway filter.
6. Deluxe 2-way factory installed piping package with manual circuit setter, unions, strainer and supply side ball valve.
7. Unit-mounted fan speed switch.

G. Design Equipment: Trane.

H. Make: Carrier, Daikin Applied, Trane.

## 2.3 RECESSED FAN COIL UNITS

A. Arrangement:

1. Base unit designed for fully recessed wall installation.
2. Features and accessories shall be the same as console type, except for the following:
  - a. Base casing shall be provided in lieu of finished cabinet. Return grille.
  - b. Remote flush mounted speed switch shall be provided.

B. Design Equipment: Trane.

- C. Make: Carrier, Daikin Applied, Trane.

## 2.4 LOW PROFILE - RECESSED FAN COIL UNITS

- A. Arrangement:

1. Base unit designed for fully recessed wall installation.
2. Features and accessories shall be the same as console type, except for the following:
  - a. Base casing shall be provided in lieu of finished cabinet. Return Grille.
  - b. Remote flush mounted speed switch shall be provided.
  - c. Maximum unit height 14 in.

- B. Design Equipment: Trane.

- C. Make: Carrier, Daikin Applied, Trane.

## PART 3 - EXECUTION

### 3.1 GENERAL

- A. Left hand or right hand piping connections for supply and return. Obtain complete instructions from unit manufacturer regarding each item and proper installation of same. Adjust motor speed.

### 3.2 INSTALLATION

- A. In accordance with manufacturer's recommendations. Install piping within valve compartment to allow for pipe insulation. Provide drain piping. Vacuum clean inside of unit prior to operating units. Provide flexible duct connections at supply and return connections to ceiling units. For recessed and ceiling units, coordinate location of valves, fittings, filters, with access panels, to allow for convenient service of components. END

OF SECTION