GENERAL DESCRIPTION

Mega Modular Hi-Rise Fan Coil Units:

MGY – Concealed Mega Modular Hi-Rise

PART 1

1.1 SUMMARY

This section includes fan coil units and accessories.

1.2 SYSTEM DESCRIPTION

Mega Modular Hi-Rise Fan Coil Units, 2-pipe, 4-pipe, or 2-pipe with electric heat, concealed or exposed cabinets that are floor mounted; direct connected to optional factory supplied risers.

1.3 QUALITY ASSURANCE

Coils shall be tested in accordance with AHRI Standard 440. Each coil shall be factory tested for leakage at 300 psig air pressure with coil submerged in water. Insulation and adhesive shall meet NFPA-90A requirements for flame spread and smoke generation.

Base or "standard" units shall be ETL listed.

1.4 DELIVERY, STORAGE AND HANDLING

Unit shall be handled and stored in accordance with the manufacturer's instructions.

PART 2 – PRODUCTS

2.1 MANUFACTURER

Basis of design shall be fan coils by International Environmental Corporation.

2.2 CONFIGURATION

A. General:

Factory assembled Mega Modular Hi-Rise fan coil units complete with water coil with integrated motorized control valve, fan, motor, drain pan, and all required wiring, piping and controls.

B. MGY Concealed Mega Modular Hi-Rise Units:

1. Units shall be constructed of heavy gauge galvanized steel frame and back panel.
2. Interior surfaces shall be lined with 1/2" standard fiberglass (1/2" Premium IAQ fiberglass, 1/2" foil face with taped edges, or 1/4" closed cell) insulation.
3. Units shall be designed to have wallboard applied directly to the unit surface.
4. Controls shall be factory wired and accessible from front of unit.
5. Return air/access opening shall provide access to all internal components.
6. Stainless steel (or removable stainless steel) drain pans shall be externally coated with a 2 part closed cell foam insulation.
7. All valve package piping to coil(s) shall be factory installed.
8. Units shall have 1" nonwoven synthetic throwaway (MERV 8 or 13 pleated) filters.

2.3 CERTIFICATION

A. Safety:

IEC's Mega Modular Hi-Rise Units are listed by ETL. The C-ETL-US listing signifies that IEC's fan coil units have been examined by ETL and are in compliance with both the U.S. and Canadian applicable standards.

B. Capacities:

Coil capacities are tested in accordance with AHRI Standard 410.

2.4 MATERIALS

A. Coils:

All coils shall have 1/2" copper tubes, manual (or automatic) air vent, and aluminum fins, 14 fins per inch spacing. Coil fins shall be mechanically bonded to copper tubes. Copper tubes must comply with ASTM B-75. Fin thickness shall be 0.0045" and tube thickness shall be 0.016". All coils shall be leak tested with air at 300 psig under water.

1. For installation in a 2-pipe system, unit shall be equipped with:
    a. 3-row, 4-row, or 5-row coil as shown on equipment drawings
    b. 2 ball valves
    c. 1 circuit setter
    d. 1 motorized control valve
2. For installation in a 4-pipe system, unit shall be equipped with:
    a. 3/1, 3/2 or 4/1 row-split coil, as shown on equipment drawings
    b. 4 ball valves
    c. 2 circuit setters
    d. 2 motorized control valves

B. Motorized Control Valves:

1. Shall be rated at 300 psig.
2. Shall be rated to operate with fluid temperatures from 40° F to 180° F.
3. Normally closed valve shall be powered open with spring driven closure.

C. Fans:

1. Fans shall be direct-drive, double-width fan wheels with forward-curved blades.
2. Blower wheels shall be statically and dynamically balanced.
3. Scrolls and fan wheels shall be constructed of galvanized steel.
4. Fans shall be easily removable.

D. Fan Motors:

1. Motors shall be 3-speed, single phase, 60 Hz High Static permanent split capacitor type for 115 V (208 V, 230 V, or 277 V), permanently lubricated, with sleeve bearings.

2. Provide Eco-telligent™ brushless DC fan motor for use with single phase, 120 V (208 V, 230 V, 277 V), 60 Hz. power. Motor shall have a slow speed change ramp and a soft start.

    a. Provide jumper style control board for field adjustment of airflow utilizing jumpers. Airflows for each discrete speed shall be selected from a list of four options.

    b. Provide potentiometer style control board for field adjustment of airflow. Each discrete speed may be set anywhere in the unit's programmed operating range.

    c. Provide proportional style control board. Control board shall receive a 0-10VDC fan control signal, and operate the fan accordingly, within the unit's programmed operating range.

3. Motors shall be equipped with quick connect electrical plugs.

4. Motors shall have thermal overload protection with automatic reset.

5. Motors shall be factory mounted on the blower housing.

E. Electric Heaters:

Unit shall be equipped with nichrome wire electric strip heaters for total or auxiliary electric heat as specified on the equipment schedule.

1. Heaters shall be protected by an automatic reset safety cutout switch and a fusible link.

2. Heater capacity shall be as specified on the equipment schedule.

3. Heaters shall be single phase, 208 V (240 V, or 277 V) as specified on the equipment schedule.

F. Controls:

1. Manual (or Auto) changeover heating/cooling thermostat with integral 3-speed fan switch

2. Continuous (or cycling) fan

3. Manual make-up air damper

4. Water temperature sensing for 2-pipe CW/HW system changeover

5. Remote mounted thermostat

6. Low voltage components

7. Standard (or digital) display

8. Condensate overflow switch to shut down unit when water is at unsafe level

G. Safeties:

1. Fan motors shall include thermal overloads.

2. Electric heaters shall include thermal overloads with fusible link back-up.

3. Equipment shall be supplied with a interlocking disconnect switch and unit fusing.

4. Electric heat units shall also include blower motor and control sub-fusing.

H. Electrical Requirements:

Standard unit shall operate on 115 V (208 V, 230 V, or 277 V), single phase, 60 Hz electrical power, and all externally exposed wiring shall be in flexible conduit.

I. Options and Accessories:

1. Risers:
    a. Supply risers shall be 3/4"–2-1/2" diameter as shown on the equipment drawings.
    b. Length of risers shall be as specified on the equipment drawings.
    c. Supply and return risers shall be Type M (or L) copper.
    d. Drain riser shall be Type M copper.
    e. Insulation on risers shall be 1/2" (or 3/4") thick closed cell insulation or 1/2" (or 1") fiberglass insulation.
2. Return air panels (or grilles) shall be supplied as shown on the drawings.
3. A make-up air opening shall be provided as shown on the equipment drawings.
4. Furnish unit with factory installed discharge plenum.