Guide Specifications

Horizontal Mini Air Handling Ducted Fan Coils

HVAC Guide Specifications

Size Range: 9.63 to 56.7 kW, Nominal Cooling

9.15 to 68.05 kW, Nominal Heating

Polar Air Models: HAHU-V/P-ECM, HAHU-VI/PI-ECM

Part 1 — GENERAL INFORMATION

1.1 UNIT DESCRIPTION

HAHU is an ideal air handling terminal unit for suspended ceiling installation and suitable for ducted air distribution. Appropriate for connection to air-to-water or water-to-water heat pumps, boilers, and chillers.

1.2 QUALITY ASSURANCE

Each coil shall be factory tested for leakage by water pressure test at 3.5 MPa for 3 minutes. Completed unit shall be air tested for leakage at 0.8 MPa for 3 minutes. The maximum working pressure is 2.0 MPa. Fan coils shall meet compliance requirements of ISO9001, and CE. All claims of capacity and sound performance shall be verified by an internationally recognized third-party testing agency.

1.3 DELIVERY, STORAGE, AND HANDLING

Unit shall be stored and handled per manufacturer's instructions.

Part 2 — PRODUCTS EQUIPMENT AND CONFIGURATION

A: General

Indoor, concealed ceiling mounted, horizontal, 2 or 4 pipe console fan coil unit complete with cooling coil or cooling and heating coils. Unit shall include EC fan motor with on-off or modulating speed, single phase for EC as electrical power connection, integral controller, heating, cooling, and entering coil air temperature sensors. Control methods shall be available for the units. Electric heater shall be available as optional items.

B: Unit Casing

Casing shall be insulated double wall construction consisting of outer and inner RAL 9010 painted steel panels and 25mm of high-density polyurethane insulation. The exterior and interior finishes shall be resistant to rust, corrosion, chemical agents, solvents, aliphatic compounds and alcohols.

C: Drain Pan

Condensate drain pan shall provide 1" outlet for drain pipe connection and be constructed of electrostatic coating steel. Stainless steel pan shall be available as an option.

D: Coil

1. Standard unit shall be equipped with a cooling coil for installation in a 2 pipe system.
2. Additional coil shall be provided for installation in a 4 pipe system.
3. Cooling coils shall be 5 or 6 rows selected to meet project requirements.
4. Heating coils shall be 2 rows, independently circuited specifically designed for hot water application.
5. Coils shall be TP2 seamless copper tubes 16 mm outside diameter, mechanically expanded into corrugated hydrophilic coating aluminum fins for a permanent primary to secondary surface bond. Fin spacing shall be 10 fins per inch. Coil connectors shall be 1-1/4 inch for cooling and 1 inch for heating female
6. threaded.
   Each coil shall be provided with factory installed manual air vent and water purge valve.

E: Insulation

Sandwich panel 25mm thick of high-density polyurethane insulation with an R-value of 41.6~58.8 Km^2/W. All panels as well as supply air outlet flange shall be provided with a 10mm NBR foam gasket to ensure air sealing and a thermal break.

F: Motors

1. High efficiency EC motors shall be enclosed with thermal overload protection and sealed, permanently lubricated bearings. Motors shall be controlled via a factory installed electronic controller. Motors shall be constant torque, permanent magnet, brushless DC motor (EC motor only) with variable speed modulation functionality.
2. Fan motor shall be IP40 Class B.

G: Fan Section

The fan section shall include 1 or 2 galvanized steel centrifugal fans consisting of forward curved, double air inlet blades directly attached to the EC motor. Fans shall be statically and dynamically balanced.

H: Controls Options

1. FULL CONTROL OPTION (I/S Type): Microprocessor controller shall control fan motor, water valves (ON/OFF or modulating) and electric heater (optional). Controller shall be capable of changing temperature settings, fan speed and other control functions using programmable wired wall mounted full function pendant controller. Controller shall provide coil freeze and over heat protection using factory installed sensors, occupancy or economy mode contacts, auto restart, and error diagnostics. Control shall include coil sensor(s) and a room sensor to allow fans to operate when coil is chilled (during cooling mode) and heated (during heating mode). It allows BMS control, Master-Slave control, VWV and VAV control.
2. FLEXIBLE CONTROL OPTION (W Type): Microprocessor controller shall be suitable to use with standalone 24/12 VAC thermostat or 0-10 VDC signal from external source. Controller shall be capable of providing on-off or modulating 0-10 VDC signal for water control valve(s) and optional electric heater control. Controller will provide simplified error diagnostics.

I: Filters

Nylon Filters shall be 25 mm thick. 25 mm G4, 50 mm F8 filters shall be offered as options.

J: Electrical Requirements

Units shall be available for 220~240/1ph/50~60Hz power supply.

K: Electric Heat Module (Optional)

Removable module included PTC type stainless steel electric heaters shall be provided with thermal protection switches. Heater Modules shall be suitable for factory or field installation and controlled via onboard controller.

L: Safety Ratings and Performance Verification

Fan Coil Unit shall be CE certified.

M: Wall Mounted Wired Pad

A wired wall pad for communication shall be available as an optional accessory for the 'I' controller.

N: Thermostat

A thermostat shall be available as an optional accessory for the "W" controller.

Part 3 – MAINTENANCE

Maintenance access shall be done by removal of cabinet for all unit component.

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