POLARGlobal HVAC SYSTEMS

POLARAIR

Guide Specifications

Console Type Hydronic Fan Coils (Universal Floor, Wall, or Under-ceiling Mounted)

HVAC Guide Specifications

Size Range: 0.85 to 9.59 kW, Nominal Cooling

0.88 to 9.72 kW, Nominal Heating

Polar Air Models: PFWB(C)-V/P, PFWB(C)-V/P-ECM

PFWB(C)-VI/PI, PFWB(C)-VI/PI-EC

Part 1 — GENERAL INFORMATION

1.1 UNIT DESCRIPTION

Indoor, floor standing, low wall, or under ceiling mounted, chilled or chilled and hot water coil, suitable for installation without duct. Appropriate for connection to air-to-water or water-to-water heat pumps, boilers, and chillers with water supply temperatures up to 80 ^{o}C.

1.2 QUALITY ASSURANCE

Unit shall be certified by Eurovent. 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, top discharge (end if ceiling mounted), horizontal or vertical return, 2 or 4 pipe console fan coil unit complete with cooling coil or cooling and heating coils. Unit shall include AC or EC fan motor with on-off 3 speeds or modulating speed, single point primary electrical power connection (unless provided with optional electric heater), integral controller, heating, cooling, and entering coil air temperature sensors, transformer, capable of operating and capable of accommodating integrated, factory installed condensate pump. Control methods shall be available for AC and EC units. Infra-red receiver display for remote control, valves, and electric heater shall be available as optional items. Fan coil shall be suitable for surface mounting or concealed. Surface mount units shall be provided with a finished external cabinet.

B: Unit Cabinet

Cabinet structure shall be constructed of galvanized steel. Decorative cover shall be cold-rolled steel with fire retardant ABS plastic and discharge grilles. Steel cover shall be painted and resistant to rust, corrosion, chemical agents, solvents, aliphatic compounds and alcohols. The cabinet shall be provided with thermal and acoustical internal insulation and mounting holes.

C: Drain Pan

Condensate drain pan shall be single slope, "V" type, constructed of galvanized steel. Stainless steel pan shall be available as an option.

D: Air Delivery Grilles

Supply and return air grilles shall be white color RAL9010 ABS with fixed louvers.

E: 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 3 or 4 rows selected to meet project requirements.
4. Heating coils shall be single row, independently circuited specifically designed for hot water application.
5. Coils shall be TP2 seamless copper tubes 10 mm outside diameter, mechanically expanded into corrugated hydrophilic coating aluminum fins for a permanent primary to secondary surface bond. Fin spacing shall be 12.7 fins per inch. Coil connectors shall be 3/4" female threaded.
6. Each coil shall be provided with factory installed manual air vent and water purge valve.

F: Insulation

3 mm thick NBR plastic foam.

G: Motors

1. AC motor shall be PSC, permanently lubricated type with internal thermal overload protection.
2. 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 3 speed or variable speed modulation functionality.
3. Fan motor shall be IP40 Class B.

H: Fan Section

The fan section shall include 1, 2 or 4 galvanized steel centrifugal fans consisting of forward curved, double air inlet blades directly attached to the AC or EC motor. Fans shall be statically and dynamically balanced.

I: Control Options

Controllers shall provide on-off or modulating fan and auxiliary electric heater control. Controls shall include coil temperature sensors which will allow fans to operate when coil is chilled (during cooling mode) and heated (during heating mode) and provide alarm configurations.

1. FULL CONTROL OPTION (I/S Type): Microprocessor controller shall control fan motor, water valves (ON/OFF or modulating), electric heater (optional). Controller shall be capable of changing temperature settings, fan speed and other control functions using either infrared wireless handset or 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. 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 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.
3. TERMINAL STRIP ONLY (T Type): To be used with an external thermostat. Available for AC Motor only.

J: Condensate Pump and Float Switch (Optional)

Fan coil units shall be available with factory-installed condensate pumps and float switches controlled by onboard controllers.

K: Filters

Nylon Filters shall be 7 mm thick. 7 mm 3M HAF MERV 8 filters shall be offered as an option.

L: Electrical Requirements

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

M: Electric Heat (Optional)

PTC type stainless steel electric heaters shall be provided with two thermal protection switches, one manual fuse type and one automatic reset type. Heaters shall be suitable for factory or field installation and controlled via onboard controller.

N: Safety Ratings and Performance Verification

Fan Coil Unit shall be Eurovent certified. Performance shall be confirmed by accepted third party (Eurovent for performance and sound).

O: Wall Mounted Wired Pad

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

P: Infrared Remote Handset

An infrared handset for remote communication shall be available as an optional accessory for the 'I' controller. (A LED receiver must be installed for single communication.)

Q: Thermostat

A thermostat shall be available as an optional accessory for the "W" controller (EC motor) or "T" terminal strip (AC motor).

Part 3 – MAINTENANCE

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

OFFICES

EUROPE
Calle Río Júcar Nave 6,
Pol. Ind. El Saladar,
30564; Lorquí, Murcia
contact@pghvac.com

HONG KONG
Office 6, 9th F, Block A.
6 On Ping St,
Shatin; Hong Kong

BOSTON
20 Walford Park Dr,
Canton, MA
02021; USA

www.pghvac.com | www.pghvac.us