POLAR Global HVAC SYSTEMS

SIWA POLAR AIR

Guide Specifications

ECO Slimline Ducted Fan Coils

HVAC Guide Specifications

Size Range: 1.1 to 6.4 kW, Nominal Cooling
0.9 to 6.4 kW, Nominal Heating

Polar Air Models:
PDWSL-V/P-ECM

Part 1 — GENERAL INFORMATION

1.1 UNIT DESCRIPTION

Concealed ceiling mounted, chilled or chilled and hot water coil, suitable for installation with duct. 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 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 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, capable of operating and capable of accommodating integrated, factory installed condensate pump. Electric heater shall be available as optional items.

B: Unit Casing

Casing shall be constructed of galvanized steel panels with couplings for ducting and resistant to rust, corrosion, chemical agents, solvents, aliphatic compounds and alcohols. The casing shall be provided with thermal and acoustical internal insulation and mounting holes.

C: Drain Pan

Condensate drain pan shall be positive slope, constructed of steel with powder finish, coated with self-extinguishing closed cell expanded polyethylene with thermal properties. 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 3 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 9.5 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". Coil connectors shall be 3/4" female threaded.
6. Each coil shall be provided with factory installed manual air vent and water purge valve.

E: Insulation

5 mm thick NBR plastic foam.

F: Motors

1. Fan coils shall be provided with high efficiency EC motors provided with thermal overload protection and sealed, permanently lubricated bearings. Motors shall be controlled via a factory installed electronic controller. Motors shall constant torque, permanent magnet, brushless DC

motor with 3 speed or variable speed modulation functionality.

2. Fan motor shall be IP40 Class B.

G: Fan Section

The fan section shall include 2, 3 or 4 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: Control Options

Controllers shall provide on-off or modulating fan control, integral condensate pump control, 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), drain pump and 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 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), drain pump control and optional electric heater control. Controller shall provide simplified error diagnostics.

I: Condensate Pump and Float Switch

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

J: Filters

Nylon Filters shall be 7 mm thick.

K: Electrical Requirements

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

L: Electric Heat (Optional)

PTC type stainless steel electric heaters shall be provided with two (2) 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.

M: Safety Ratings and Performance Verification

Fan Coil Unit shall be CE certified.

N: Wall Mounted Wired Pad

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

O: Infrared Remote Handset

An infrared handset for remote communication shall be available as an optional accessory for the 'I/S' controller.

P: 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 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