

Guide Specifications

High Wall Series Fan Coils

HVAC Guide Specifications

Size Range: **2,300 to 20,000 BTU/H, Nominal Cooling**
3,500 to 31,000 BTU/H, Nominal Heating

Polar Air Models: **SWC-VX/VY-AECM**

Part 1 - GENERAL INFORMATION

1.1 Unit Description

Indoor, high wall mounted installation, chilled or hot water 2 row coil, to be matched with a commercial chiller, water source heat pumps, or hot water boiler (176F maximum).

1.2 Quality Assurance

Unit shall be certified by ETL. Each coil shall be factory tested for leakage by water pressure test 500 psi for 3 minutes. Completed unit shall be air tested for leakage at 116 psi for 3 minutes. The maximum working pressure is 300 psi (excluding flexible hoses). Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation. Insulation shall be rated to UL94 VO. All equipment wiring shall comply with NEC requirements. Fan coils shall meet compliance requirements of ETL, 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, & Handling

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

Part 2 - PRODUCTS EQUIPMENT AND CONFIGURATION

A: General

High Wall Series Fan Coil available in 2 pipe (4 pipe with 6 way valve kits) shall be equipped with EC fan motor with on-off 3 speeds or modulating speed, insulated stainless steel integral NPT hoses, stepping motor, fine-mesh nylon filter, LED display and mounting plate. 2 Control methods will be available as S type full unit control or W type flexi unit control with transformer for external thermostat. Valve & Electric heater application shall be available as an option.

B: Unit Cabinet

1. Cabinet shall be constructed of 1/16" flame resistance ABS plastic. Single mold casing shall provide quality assurance for durability and safety.

C: Drain Pan

Drain pan shall be constructed of 1/16" flame resistance ABS plastic.

D. Air Delivery Grilles

Supply and return air grilles shall be white color RAL9010 ABS. Supply air grilles are angle adjustable.

E: Fascia

Fascia shall be RAL 9010 white color and made of fire retardant ABS plastic rated UL94 V1 for lightweight and corrosion resistant operation.

F: Coil

1. Standard unit shall be equipped with a cooling / heating coil for installation in a 2-pipe system.
2. Coils shall be seamless copper tubes with 1/4" outside diameter, mechanically expanded into corrugated hydrophilic coated aluminum fins for a permanent primary to secondary surface bond.
3. Each coil shall have a manual air vent and a manual drain valve directly accessible under the air intake panel.
4. Coil connector shall be 1/2" NPT.

G: Insulation

Insulation is 3/16" NBR plastic foam.

H: Motors

1. High efficiency EC motor shall be enclosed with thermal overload protection, sealed for life lubricated bearings and include driver control Printed Circuit Board, constant torque, permanent magnet, brushless DC motor with 3 speeds and variable speed modulation setting that allows for precise air balancing.
2. Fan motor shall be IP40 Class B.

I: Fan Section

Fan shall be direct drive, tangential type dynamically balanced. Impellers shall be made of fire retardant ABS plastic for lightweight and corrosion resistant operation. Air outlet louvers shall be made from fire retardant ABS plastic rated UL94 VO and to prevent condensation from forming. Louvers shall be automatically adjustable and driven by stepping motor.

J: 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. The 'S' Microprocessor shall be a complete function integrated control, compatible with infra-red remote handset controller, programmable wired pendant control, with serial networking for addressable or global primary to secondary unit control, MODBUS BMS functionality, modulating valve with 24V transformer or on/off valve control, drain pump control, occupancy or economy mode contacts, auto restart, and error diagnostics displayed on the fascia.

2. The 'W' Microprocessor controller shall be a flexible function control for external thermostat applications with control of drain pump, louvers, limited diagnostics display on fascia, 24V transformer for supplying power to thermostat or modulating valves, and zone control product operations. It shall provide an alarm interlock relay for unit failure notification with normally open or normally closed contacts available for field connection.

K: Condensate Pump and Float Switch (Optional)

A float control shall be with the condensate pump to detect the presence of condensate. The pump shall be fixed to a mounting bracket on the casing.

L: Filters

Unit shall have factory supplied cleanable filters with tabs which allow direct access without dismantling the casing. Standard filter thickness shall be 1/16" with ABS framed nylon medium.

M: Electrical Requirements

Unit shall operate on 115V/1ph/60Hz (SWC-Y-AECM) or 220V/1ph/60Hz (SWC-X-AECM) power supply.

N: Electric Heat (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.

O: Low and High temperature protection available with 'S' Microprocessor controller

The freezing and over heat protection sensors on the coil shall prevent freezing of the coil assembly and plastic distortion from overheating.

P: Low temperature protection available with 'W' Microprocessor controller

The freezing protection sensor on the coil shall prevent freezing of the coil assembly.

Q: Disconnect Switch

The disconnect switch shall be located within the unit and underneath the grille cover and shall be sized for the full load ampere of the unit to enable the unit to be disconnected from the power supply prior to any maintenance.

R: Wall Mounted Wired Pad

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

S: Infrared Remote Handset

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

T: Thermostat

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

U: Safety Ratings and Performance Verification

Fan Coil Unit shall be ETL Listed. Performance shall be confirmed by accepted third party (AHRI for performance or Eurovent for performance and sound).

Part 3 – MAINTENANCE

Maintenance access shall be via the fascia for all unit components.