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WSHP Open

integrated water source heat pump control

Carrier's WSHP Open Controller is an integrated component of a Carrier water source heat pump. The WSHP Open controller continuously monitors and regulates water source heat pump operation with reliability and precision. This advanced controller features a sophisticated, factory-engineered control algorithm that provides optimum performance and energy efficiency. The WSHP Open controller also features plug-and-play connectivity to the Carrier i-Vu Open Control System. The Carrier i-Vu Open Control System combines state-of-the-art Carrier equipment, plug-and-play controllers, and the powerful, web-based i-Vu user interface to form a cohesive, intuitive, and fully-integrated BACnet® Building Automation System.

For added flexibility, the WSHP Open controller is capable of stand-alone operation. Or, it can be integrated with any Building Automation System utilizing the BACnet, Modbus, LonWorks*, or N2 protocols.

Application Features

- Controls 2 stages of DX cooling to maintain space temperature setpoint
- Integrated 2-position or modulating waterside economizer for optimized mechanical cooling
- Controls modulating or 2-position outside air damper to meet ASHRAE 90.1 requirements
- Built-in advanced control routines for zone level humidity control or zone level demand control ventilation (ASHRAE 62)
- Supports auxiliary modulating reheat, 2-position hot water/steam reheat, or electric heat
- Independent fan speed and compressor staging ensures quiet operation and maximizes latent heat removal for increased occupant comfort
- Modulating fan speed and compressor staging ensures safe unit operation

System Benefits

- Integrated Carrier airside linkage algorithm for plug-and-play integration with the Carrier WSHP System
- Fully plug-and-play with the Carrier i-Vu Open Control System
- Supports demand limiting for maximum energy savings
- Compatible with i-Vu Tenant Billing for tracking tenants' after-hours energy usage

Hardware Features

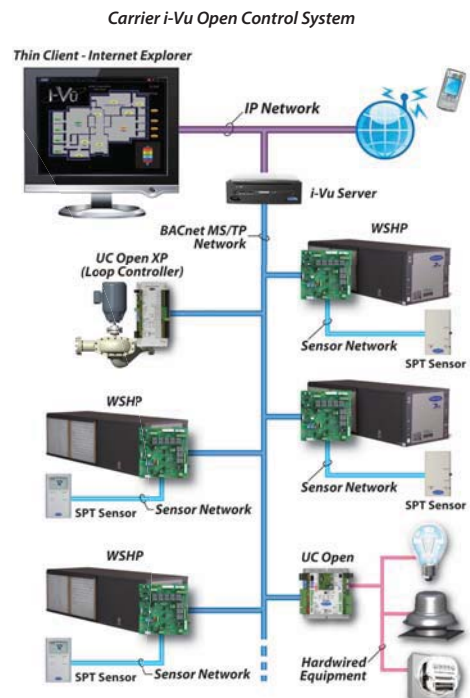
- Compatible with Aquazone™ horizontal and Puron® vertical water source heat pumps
- Integrates easily into any BAS using BACnet, Modbus, LonWorks*, or N2 protocols
- On-board hardware clock, remote occupancy input, and support for SPT/thermistor sensors provide stand-alone operation
- Easy startup and commissioning using Carrier's BACview Handheld Service Tool



*Requires LON Option Card (LON-OC)

Specifications

BACnet Support	Conforms to the Advanced Application Controller (B-AAC) Standard Device Profile as defined in BACnet 135-2001 Annex L
Communication Ports	Network Comm port: EIA-485 port for BACnet MS/TP, Modbus RTU, or N2 communications (protocol and baud rate are DIP switch selectable); Comm Option Port: For connecting a LON Option Card; Local Access port: For system start-up and troubleshooting using a PC or BACview (115.2 kbps); Rnet port: For connecting SPT room sensors. NOTE: SPT sensors are the only room sensors that can be used with the WSHP Open. The Rnet port supports up to four SPT Standard sensors and one SPT Plus or SPT Pro sensor for averaging or high/low select control.
Inputs	Four analog inputs dedicated to Relative Humidity, Indoor Air Quality, Supply Air Temperature, and Leaving Condenser Water Temperature. All analog inputs have 10 bit A/D resolution. Two binary inputs: Stage 1 Compressor Status, and Condensate Pan Overflow Switch.
Outputs	Two analog outputs: One dedicated to Outside Air Damper, and one configurable for either Auxiliary Reheat or Waterside Economizer. All analog outputs have 10 bit D/A resolution. Eight binary outputs: Supply Fan (low, medium, and high), Compressor Stage 1, Compressor Stage 2, Reversing Valve, Auxiliary Heat/2-position Waterside Economizer, and Dehumidification. Relay contacts rated at 3A max @ 24VAC, configured normally open
Real Time Clock	Battery-backed real time clock keeps track of time in event of power failure
Battery	10-year Lithium CR2032 battery provides a minimum of 10,000 hours of trend data & time retention during power outages
Protection	Incoming power and network connections are protected by non-replaceable internal solid-state polyswitches that reset themselves when the condition that causes a fault returns to normal. The power, network, input, and output connections are also protected against voltage transient and surge events.
Status Indicators	LED status indicators for network communications, run status, error, power, and all digital outputs
Controller Addressing	Rotary dip switches set BACnet MS/TP, Modbus, or N2 address of controller
Listed by	UL-873, FCC Part 15-Subpart B-Class A, CE EN50082-1997
Environmental Operating Range	-40°F to 158°F (-40°C to 70°C); 10 to 95% relative humidity, non-condensing
Power Requirements	24VAC ± 10%, 50 to 60Hz, 20 VA power consumption, single Class 2 source only, 100 VA or less



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Manufacturer reserves the right to discontinue, or change at any time, specifications or designs, without notice or without incurring obligations.

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