

AQUAZONE™

Water Source Heat Pumps

Selection Guide

Product Series	Fan Motor	Ground Water Heat Pump			
		Cooling 59°F		Heating 50°F	
		Capacity Range BTUh	EER Range Btuh/W	Capacity Range BTUh	COP Range
50PTH/PTV/PTD*	FULL	28,900 - 77,100	19.9 - 24.5	18,600 - 51,700	4.3 - 4.8
	PART	22,200 - 59,800	24.5 - 31.5	25,700 - 70,200	4.3 - 5.1
50PSH/PSV/PSD†	PSC	7,400 - 77,100	21.6 - 25.7	6,300 - 69,400	4.0 - 4.8
	ECM¹	22,100 - 77,000	23.5 - 27.4	18,900 - 69,000	4.4 - 5.1
50P1H/P1V	PSC	6,900 - 66,000	19.6 - 24.5	6,200 - 64,000	3.8 - 4.4
50PCH/PCV†	PSC	6,900 - 66,600	19.6 - 24.5	6,200 - 64,000	3.8 - 4.4
50PEC Console Units†	PSC	9,200 - 17,600	18.6 - 21.3	9,500 - 16,500	4.0 - 4.3
50HQP Large Horizontal†	Belt	78,500 - 134,000	19.3 - 20.0	75,500 - 132,500	4.0 - 4.4
50VQP Large Vertical†	Belt	87,500 - 340,000	20.0 - 21.4	83,500 - 310,000	4.2 - 4.3
50PSW Water-to-Water²	N/A	36,200 - 282,000	19.3 - 23.1	35,300 - 277,000	3.7 - 4.0
50RTP Large Rooftop	Belt	41,000 - 276,000	19.3 - 24.0	36,500 - 230,000	4.0 - 4.6
50VS Vertical Stack³	PSC	11,200 - 38,000	19.0 - 21.0	10,500 - 35,000	3.9 - 4.2

Features

Model	Standard Features													Factory-Installed Options															
	R-410a Puron Refrigerant	Complete C Microprocessor Control Board	Standard EWT range (60 to 95°F)	Copper Water Coil	TXV	Dual Level Compressor	Vibration Isolation	Multiple Access Panels	Scroll Compressors	Factory-Installed Hanger Brackets	Field Convertible Supply/Discharge	Remote Reset at Thermostat	Condensate Overflow Protection	Copper-Nickel Coil	High Static Blower	Mute Package	Extended Range Entering Water Temperature	Auto-Flow Water Regulation	Two-Way Control Valve	Downflow Configuration	Desuperheater/Hot Water Generator	DDC Controller	Deluxe D Microprocessor Board	Coated Air Coil	Internal Secondary Pump	ECM Fan Motor	Hot Water Reheat	Non-fused Disconnect	
50PTH/PTV/PTD*	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
50PSH/PSV/PSD†	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
50P1H/P1V	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
50PCH/PCV†	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
50PEC Console Units†	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
50HQP Large Horizontal†	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
50VQP Large Vertical†	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
50PSW Water-to-Water²	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
50RTP Large Rooftop	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
50VS Vertical Stack³	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Cooling capacities based upon 80.6°F DB, 66.2°F WB entering air temperature. Heating capacities based upon 68°F DB, 59°F WB entering air temperature.
 All ratings based upon operation at the lower voltage of dual voltage rated models.
 * Available in ECM motor only.
 † 50Hz available
 † ECM motor available on sizes 018 and larger.
 ² Indoor = Load side heat exchanger; Outdoor = Source side heat exchanger.
 ³ Standard microprocessor control board with troubleshooting codes and dip switches for simple system configuration. Includes 75VA transformer with resettable fuse.



AQUAZONE™ Water Source Heat Pumps

Versatile Systems for Comfortable Indoor Climates

Carrier Aquazone™ Water Source Heat Pumps (WSHP) are a great solution for year-round multi-zone heating and cooling. Our wide range of WSHP models deliver efficient, reliable temperature and humidity control for a variety of applications.

Utilizing the earth's natural resources along with our engineered operating flexibility, Aquazone heat pumps deliver Energy Efficiency Ratios (EER) up to 31.5.

Carrier WSHPs let you put heating and cooling capacity exactly where and when you need it. Aquazone units are available in numerous sizes and configurations with several standard and factory-installed options allowing you to configure systems for today as well as for expansion in the future.

How it works

WSHP systems are designed to take advantage of the fact that the earth's resources (ground or water) remain at a relatively constant temperature at a certain depth. Instead of using a conventional heat source, the ground water can be used as the heat sink for absorption or rejection of heat.

Geothermal Earth Loops come in several different configurations depending on space availability and soil properties. Geothermal heat pumps can work with closed or open loops. Open loops work best with well, river, or lake water applications. Closed loops can be installed in vertical or horizontal ground configurations, or submerged in a pond or lake.

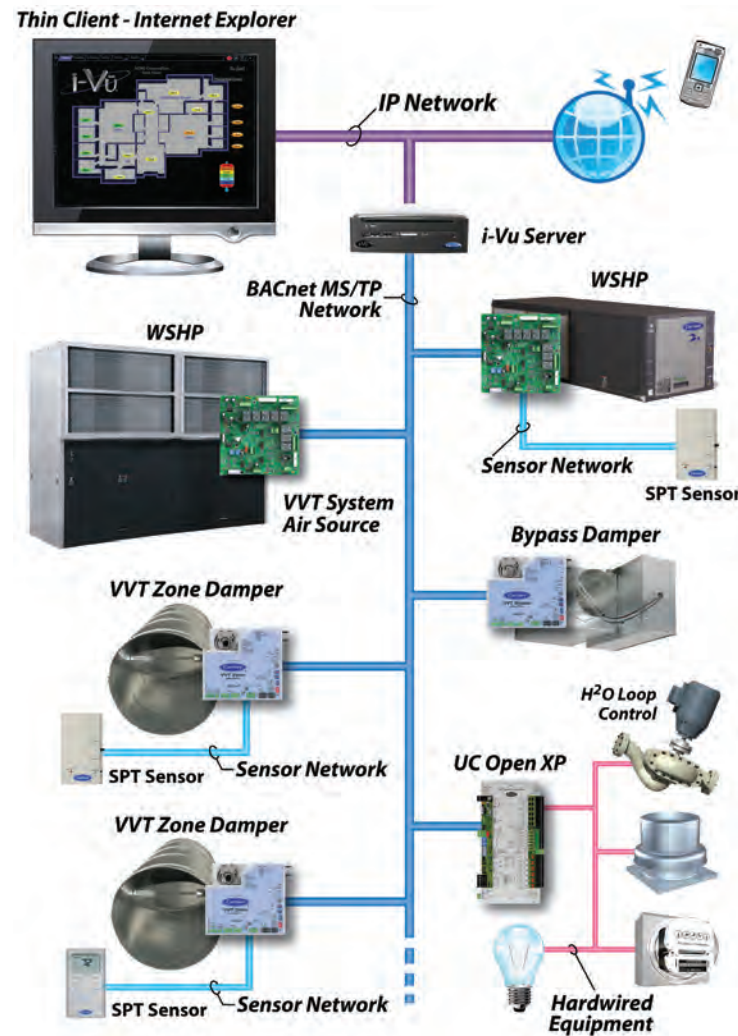
Efficiency

Carrier Aquazone heat pumps are designed to reduce utility costs, especially under part-load conditions and over a lifetime of operation. Puron® refrigerant two-stage models offer Energy Efficiency Ratios (EERs) up to 18.5 in boiler/tower applications.

High-efficient heat pumps in a geothermal application, where they simply move heat within the earth that already exists can achieve EERs up to 31.5 along with 3.5 to 5 units of energy for every unit used to power the heat pump system.

Reliability

Built with heavy-gage, galvanized steel sheet metal cabinets and featuring a corrosion-resistant, powder-painted finish, Carrier Aquazone WSHPs are durable and long lasting. All water and air coils, plus drain pans are available with coating options to protect against corrosion and airborne chemicals, plus state-of-the-art compressor technology yields the highest efficiency and reliability. Team these components with solid-state digital controls and eight standard safeties plus a standard five-year warranty on most units for added peace of mind.



Controls

Carrier Aquazone Water Source Heat Pumps Open Controller 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 building automation system (BAS). WSHP Open also includes advanced independent fan speed and compressor operation and proactive diagnostics to ensure reliable and efficient operation.

For added flexibility, the WSHP Open controller is capable of stand-alone operation. Or, it can be integrated with any BAS utilizing the BACnet®, Modbus®, Johnson Controls N2 or LonWorks® protocols.

BACnet is a registered trademark of American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE).
Modbus is a registered trademark of Schneider Automation Inc.
LonWorks is a registered trademark of Echelon Corp.

Packaged Units

50PTH/PTV/PTD

- Premium Efficiency Series
- 2 to 6 Tons
- 24 EER
- Exceeds ASHRAE 90.1
- Two-stage compressor
- Horizontal, vertical up-flow and down-flow units



50PCH/PCV

- Compact High Efficiency Series
- 0.5 to 5 Tons
- 24 EER
- Exceeds ASHRAE 90.1
- Horizontal and vertical up-flow units

50PSH/PSV/PSD

- Premium Efficiency Series
- 0.5 to 6 Tons
- 27 EER
- Exceeds ASHRAE 90.1
- Single-stage compressor
- Horizontal, vertical up-flow and down-flow units



50HQP

- Large Horizontal Series
- 6 to 10 Tons
- 20 EER
- Exceeds ASHRAE 90.1
- Extended range operation
- Dual refrigerant circuits



50P1H/P1V

- High Efficiency Series
- 0.5 to 5 Tons
- 24 EER
- Exceeds ASHRAE 90.1
- Horizontal and vertical up-flow units



50VQP

- Large Vertical Series
- 7 to 25 Tons
- 21 EER
- Exceeds ASHRAE 90.1
- Vertical up-flow
- Standard extended range operation



Vertical Stack Units

50VS

- High Efficiency Series
- 0.75 to 3 Tons
- 21 EER
- Exceeds ASHRAE 90.1
- Removable chassis
- Vertical hi-rise stack units



Water-to-Water Units

50PSW

- Efficiency Series
- 3 to 28 Tons
- 23 EER
- Dual independent refrigerant circuits



Console Unit

50PEC

- Efficiency Series
- 0.75 to 1.5 Tons
- 21 EER
- Exceeds ASHRAE 90.1
- Two piece chassis/cabinet design



Rooftop Unit

50RTP

- 3 to 20 Tons
- ERV capabilities (combination curb)
- Hot gas bypass equipped
- Economizer functionality



Quiet

Advanced engineering has made Carrier Aquazone heat pumps among the quietest on the market. Noise-reduction features such as cabinets with dual density acoustical insulation, low-speed blowers and ECM motors plus fan motor insulation are standard on Aquazone units. The isolated compressor railing system minimizes vibration transmission, and most units feature spring-mounted compressors for additional sound protection.

Indoor Air Quality

While efficiency and environmental demands are shaping the Water Source Heat Pump industry, indoor air quality is also an important part of the equation. Carrier offers a full variety of outdoor air options that can introduce conditioned ventilation air into a WSHP system. In conjunction with our outdoor air options, utilizing Carrier's WSHP Open controller and CO₂ monitoring allows Carrier's heat pump systems to

deliver the right amount of conditioned ventilation air at the right time while lowering the overall system size and usage costs.

Flexibility

Carrier Aquazone heat pumps give you unprecedented flexibility with many sizes, configurations, standard features, and factory-installed options.

- Standard EWT Range
- Copper Water Coil
- TXV
- Multiple Access Panels
- Scroll Compressor
- Remote Reset at Thermostat
- Condensate Overflow Protection
- DDC Controller