



## Water Source Heat Pumps



0.5 to 35 Tons



## The Utmost in Product Flexibility

Carrier Aquazone™ Water Source Heat Pumps (WSHPs) 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 35.

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. HFC Puron® refrigerant (R-410A) two-stage models offer Energy Efficiency Ratios (EERs) up to 20.8 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 35 along with exceptional heating performance with heating coefficient of performance ratings as high as 5.

### 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.

### CONTROLS

Carrier's WSHP 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.

### 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 or constant torque motors plus fan motor insulation are standard on Aquazone units. The isolated compressor railing system minimizes vibration transmission, and most units feature isolated 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
- Remote Reset at Thermostat
- Copper Water Coil
- Condensate Overflow Protection
- TXV
- DDC Controller
- Multiple Access Panels
- Hot Gas Reheat
- Scroll Compressor

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



### 50PCH/PCV

- Compact High Efficiency Series
- 0.5 to 6 Tons
- Up to 17.7 EER
- Exceeds ASHRAE 90.1
- Horizontal, vertical up-flow, and vertical down-flow units
- Hot Gas Reheat



### 50PTH/PTV

- Premium Efficiency Series
- 2 to 6 Tons
- Up to 35 EER
- Exceeds ASHRAE 90.1
- Two-stage compressor
- Horizontal and vertical up-flow units
- Hot Gas Reheat



### 50PSH/PSV

- Premium Efficiency Series
- 0.5 to 6 Tons
- Up to 27.4 EER
- Exceeds ASHRAE 90.1
- Single-stage compressor
- Horizontal and vertical up-flow units
- Hot Gas Reheat



### 50HQP/VQP

- Large Horizontal and Vertical Series
- 6 to 30 Tons
- Up to 24 EER
- Exceeds ASHRAE 90.1
- Extended range operation
- Dual refrigerant circuits
- Hot Gas Reheat

## Console Units



### 50PEC

- Efficiency Series
- 0.75 to 1.5 Tons
- Up to 22.3 EER
- Exceeds ASHRAE 90.1
- Extended cabinet available

## Water-to-Water Units



### 50PSW

- Efficiency Series
- 2 to 35 Tons
- Up to 25.7 EER
- Dual independent refrigerant circuits





## Selection Guide

Factory Installed Options	Copper-Nickel Coil	Constant Torque Motor	Constant Airflow ECM Fan Motor	Factory Insulated	Mute Package	Extended Range EWT	Auto-Flow Water Regulation	Hot Gas Reheat	Hot Gas Bypass	WSHP Open DDC Control	Coated Air Coil	Waterside Economizer	Merv 13 Filter	Factory Installed Electric Reheat
50PCH/PCV Standard Efficiency Units	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
50PSH/PSV High Efficiency Units	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
50PTH/PTV Premium Efficiency Units	✓	✓	✓	✓	✓	✓		✓		✓	✓		✓	✓
50PEC Console Units	✓			✓		✓				✓				
50PSW Water-to-Water Units	✓			✓	✓	✓				✓				
50HQP Large Horizontal Series	✓			✓	✓	✓		✓	✓	✓	✓	✓		
50VQP Large Vertical Series	✓			✓	✓	✓		✓	✓	✓	✓	✓		



## Benefits at a Glance

### For Building Owners and Managers

- Delivers greater occupant comfort
- Quiet operation
- Low life cycle costs
- Reliable operation
- Supports LEED® certification

### For Consulting Engineers

- ASHRAE 90.1 compliant
- Quiet operation
- Reduced energy consumption
- High efficiency
- Plug-and-play design

### For Contractors

- Extensive factory-installed options
- 100 percent run-tested
- Easy to start up and operate
- Easy to service
- Proactive diagnostics

## A LEGACY OF TRAINING



Willis H. Carrier began training members of the heating, ventilation, air conditioning and refrigeration industry in 1905. Carrier continues to promote technical expertise in the industry with the expansion of its sustainable solutions curriculum and has recently been named a U.S. Green Building Council Education Provider (USGBC EP).

To earn this status, Carrier's course materials were reviewed by a panel of USGBC peers and deemed to provide the high level of quality required for training Leadership in Energy and Environmental Design (LEED®) professionals. The courses and workshops supporting LEED-Accredited Professional and Green Associates credential maintenance are administered through Carrier University.

