Carrier
United Technologies
turn to the experts

Carrier AquaFlow™
Variable Water Volume (VWV) System

THE BEST OF BOTH WORLDS

AQUAFLOW™
VWV system

R410A | Inverter

AQUAFLOW™
VWV system

Carrier AquaFlow™ Variable Water Volume (VWV) System

THE BEST OF BOTH WORLDS

Carrier's innovative AquaFlow™ VWV System combines the benefits of conventional hydronic and VRF systems, providing superior indoor comfort and energy efficiency.

The AquaFlow™ VWV System includes modular outdoor air-cooled chiller and heat pump unit with self adaptive technology to control the variable refrigerant evaporating temperature*, low-noise fan-coil unit, heat recovery fresh air handling unit, inverter hydronic kit, networked indoor thermostat, and intelligent system manager.

Single system capacity: 25kW - 320kW

*Self adaptive variable water temperature / Self adaptive variable refrigerant evaporating temperature

		Carrier AquaFlow™ VWV System	Conventional hydronic system	Conventional VRF
				
Expanding the benefits of conventional hydronic systems	Flexible Design	Max. indoor unit (IDU) / outdoor unit connectivity: 200%	Case by case design on job basis	Max. indoor unit/outdoor unit connectivity: 130%
		Max. pipe length: 400m Max. ODU / IDU height difference: 100m*	Case by case design on job basis	Max. pipe length: 150m Max. ODU / IDU height difference: 50m
	Indoor Comfort	Temp control +/-0.5°C, humidity detect +/-5%	No humidity control function	Air supplied too cold or too hot; no humidity control function
		Non-stop heating in winter defrosting (multiple outdoor unit system)	No heating during winter defrosting	No heating during winter defrosting
		No risk of indoor refrigerant leakage	No risk of indoor refrigerant leakage	Potential risk of indoor refrigerant leakage
Expanding the benefits of conventional VRF	Easy Installation and Maintenance	Lift transport, pipe connection only	Transported by crane; high installation cost	Lift transport and refrigerant pipe connect only
		System centralized control	No centralized control; no communication between IDU / ODU	System centralized control
		Energy metering and BA connection	Extra hardware & software needed	Extra hardware & software needed
	Cost Savings	40% higher system IPLV vs. conventional hydronic system, 10% higher system IPLV vs. VRF	IPLV is 40% lower than the VWV system	IPLV is 10% lower than the VWV system
		Self adaptive variable water temperature / Self adaptive variable refrigerant evaporating temperature Energy efficiency: grade 1(China GB)	No variable refrigerant flow / variable refrigerant evaporating temperature Energy efficiency: grade 2 or below (China GB)	Variable refrigerant flow Energy efficiency: grade 1(China GB)
		No cooling/heating capacity loss in long pipes, Outdoor unit optimized 10-20%**	No cooling/heating capacity loss in long pipes** (subject to appropriate design)	Cooling capacity loss: 10% – 15% in long pipes
		Self adaptive variable water flow	Constant water flow speed	Not applicable
		100% fresh air effect, 25% fresh air operation cost	100% fresh air effect, 100% fresh air operation cost	100% fresh air effect, 100% fresh air operation cost

* Outdoor unit and hydronic module sited above the indoor unit
** Within the recommended pipe length range

Applications


Villas


Shopping malls


Office buildings


Hotels

Single system capacity

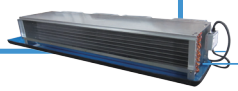
25kW – 320kW

Modular outdoor unit (Self adaptive variable refrigerant evaporating temperature*)

4 models
(25kW, 30kW,
35kW, 40kW)

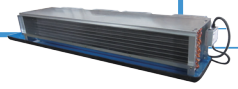
VFD hydronic kit

6 models



Compact ducted fan coil unit

13 models (1.9kW – 9.8kW)



Quiet ducted fan coil unit

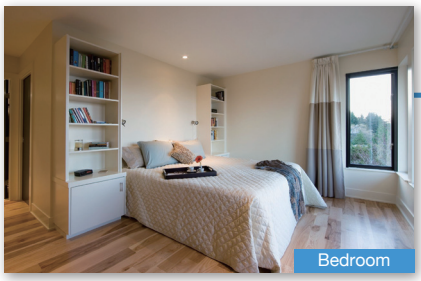
13 models (1.9kW – 9.8kW)

Intelligent system manager

Controls up to 8 outdoor units, 128 indoor units (thermostat), 4 heat recovery fresh air handling units, and 1 hydronic kit

4-way cassette fan coil unit

5 models (3.2kW – 8.7kW)



Hi-wall fan coil unit

4 models (1.98kW – 5.1kW)

Heat recovery fresh air handling unit

9 models (1000CMH – 8000CMH)

Indoor thermostat

Networked thermostat with
LCD display and touch keys

*Self adaptive variable water temperature / Self adaptive variable refrigerant evaporating temperature

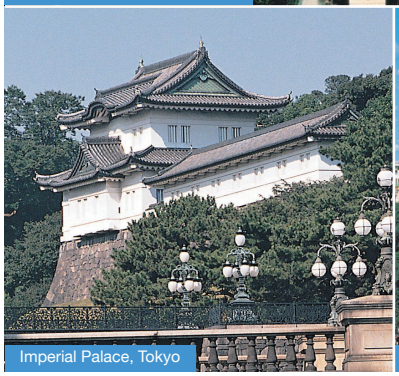
Turn to the Experts

Since Willis Carrier invented the first air-conditioning system in 1902, Carrier has been a technology pioneer and the preferred choice of customers around the globe, providing highly efficient chillers as well as central and airside air-conditioning units for household and commercial applications. As a unit of United Technologies Corp., Carrier is the world's leading provider of heating, ventilation and air-conditioning (HVAC) and refrigeration equipment.


Dr. Carrier

Preferred choice across the world


The Whitehouse, Washington


Imperial Palace, Tokyo


The Kremlin, Moscow


The Great Hall of the People, Beijing

improve buildings™

We make the world a better place to live. We create comfortable, efficient, healthy, safe and secure environments, and ensure the global food supply is transported and preserved for safe consumption.

Carrier
United Technologies

United Technologies
Building & Industrial Systems