

air



Modular Air-cooled Inverter Scroll Chiller

Cooling & Heating



Modular Design to Provide Optimized Building Solutions

Exceptional efficiency from a smaller
footprint that permits flexible combinations

Footprint
-28%

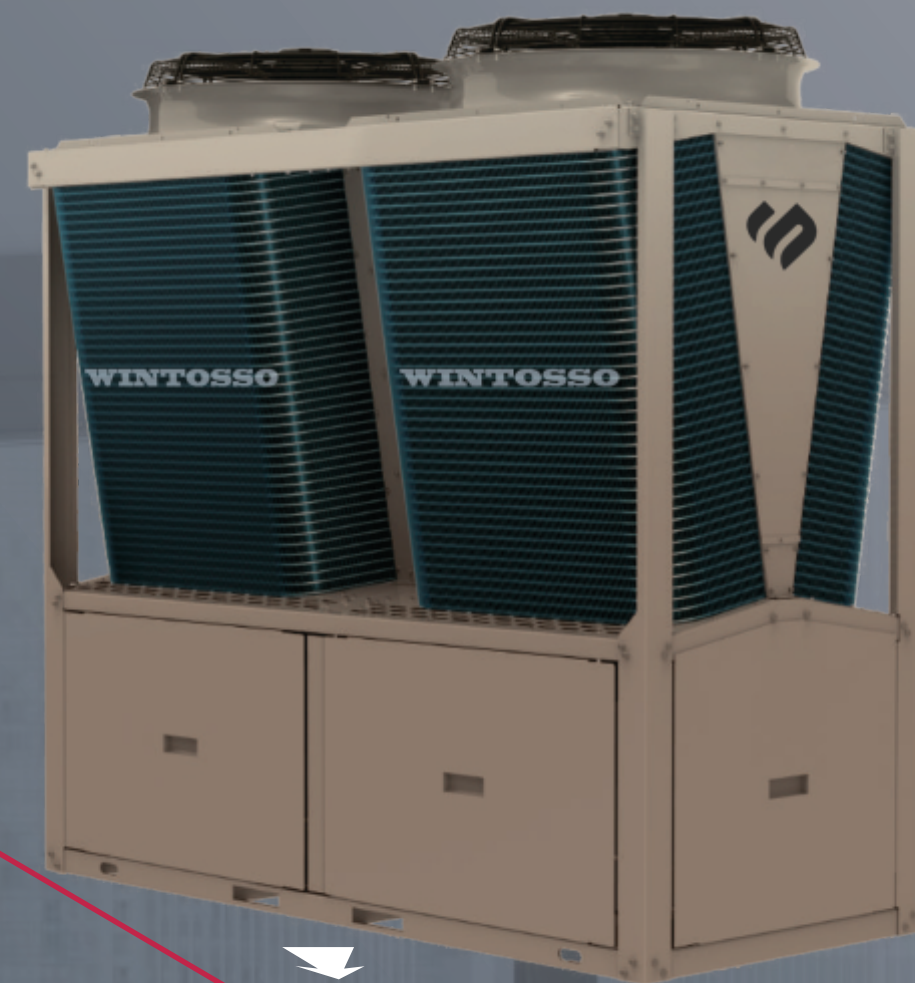
- **Smaller Footprint**

Footprint reduced by 28%
Less space is required when combining
several modular units

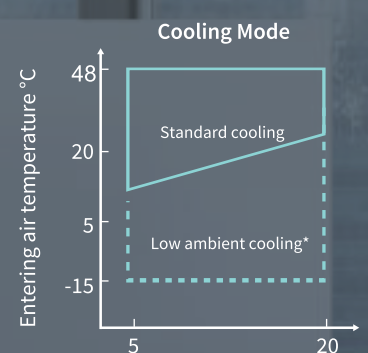
- **Quiet Operation**

Runs quiet at both full load & partial load

Ultra-quiet operation mode is available
as an option

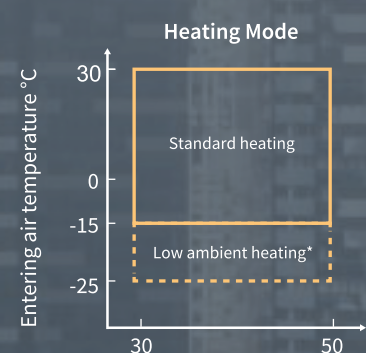


Operating Range



Leaving water temperature °C

Cooling Only Unit

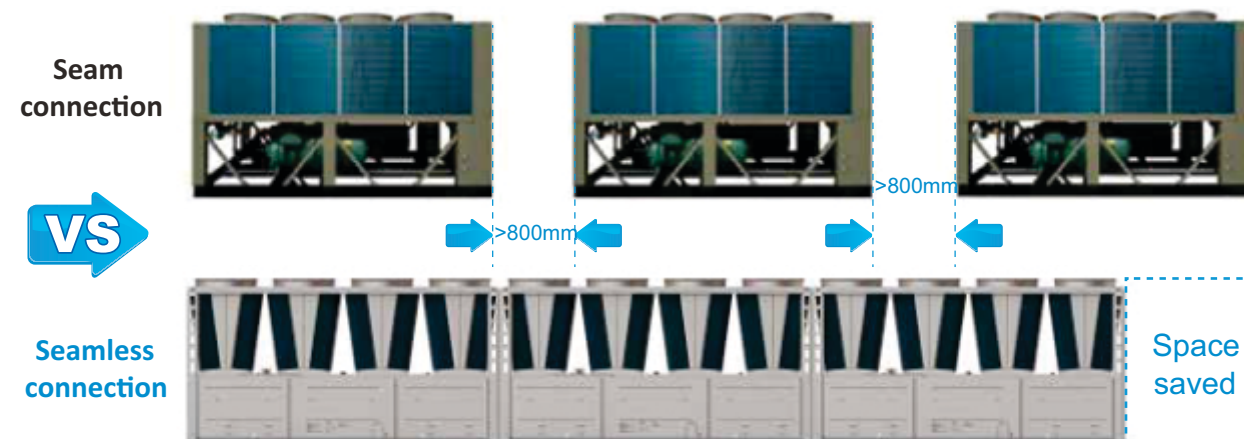


Leaving water temperature °C

Heat Pump Unit

PRODUCT FEATURES

Superior Performance



High-quality components makes new series have high efficiency

- MITSUBISHI DC Inverter Scroll Compressor
- “U Shape” Air Heater Exchanger
- Braze Plate Heat Exchanger Water-side heat exchanger
- High Precision Electronic Expansion Valve
- High Efficiency Fan System
- Hydrophilic Fin

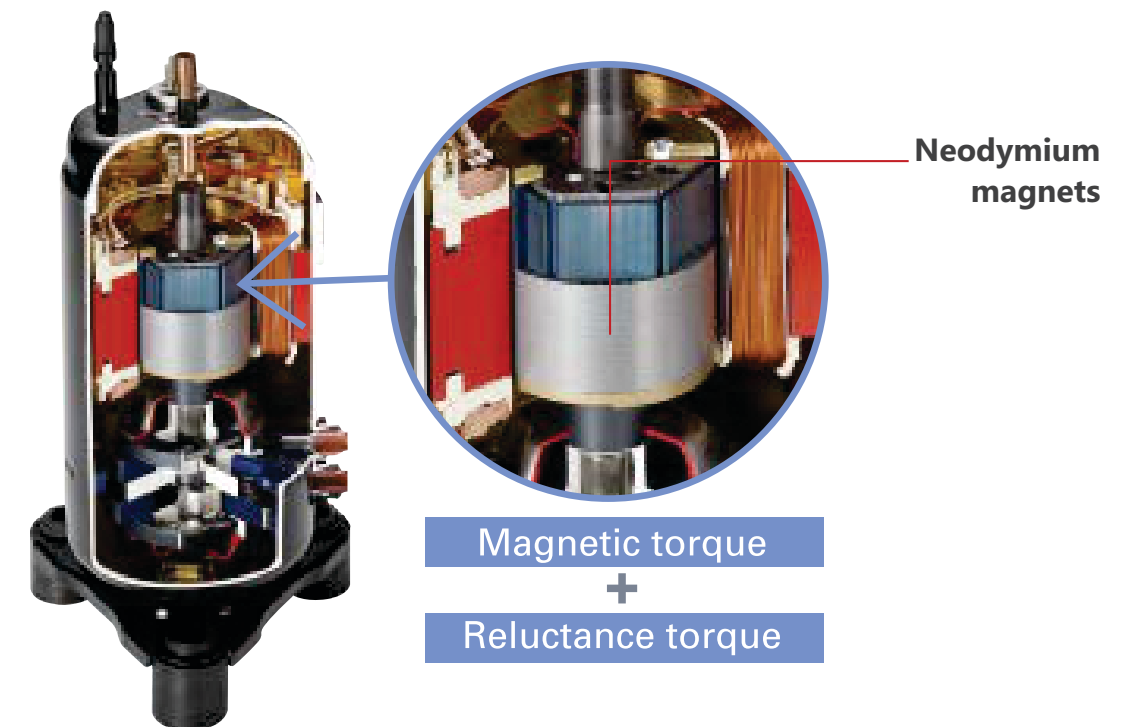
Mitsubishi DC Inverter Compressor

- MITSUBISHI ELECTRIC DC - Inverter Compressor adopted with high reliability and high energy efficiency ratio
 - Features the latest technology for exceptional performance all year round
 - Delivers stepless capacity control from 25% to 100%, allowing precise capacity matching for building loads and reducing the unit's power input
- Advanced stepless DC - Inverter driving technology. Wide-band compressor and advanced 180 degree Sine-wave driving technology improved IPLV up to 30 percent.

Wide Frequency

0~360Hz wide stepless frequency can automatically adjust power output according to real load, as result, variable environments and comfort can be meet.

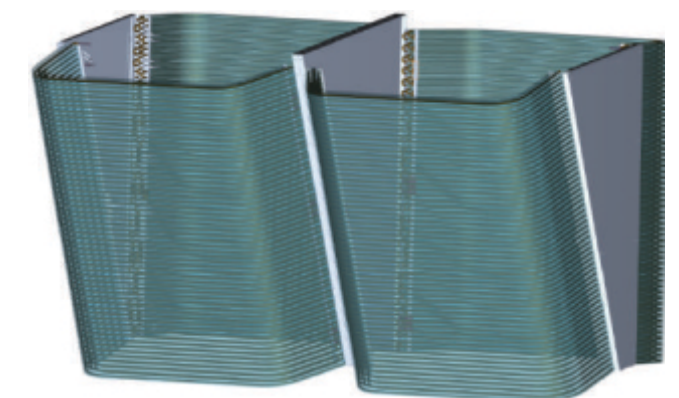
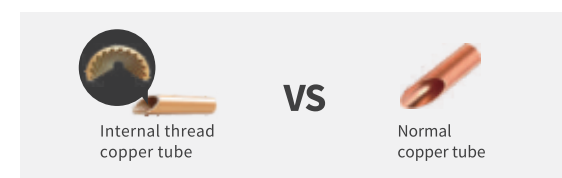
DC compressor motor (rotor)



Air-side Heat Exchanger

U Shape heat exchanger

- **Compact unit structure reducing the footprint further**
The footprint is **28%** smaller than previous models*.
- **Enhanced efficiency**
Ensure enhanced heat transfer via multi-way air inlet design. Internal thread copper tube increases internal turbulence and heat transfer area.



U shape Coil Design

PRODUCT FEATURES

Precise capacity control

- **Quick reaction and wider adjustment range**
- **Electronic Expansion Device**
Precise 500 steps flow resolution
Adjust the volume of refrigerant accurately and allow dynamic super heating exchange to ensure steady operation.



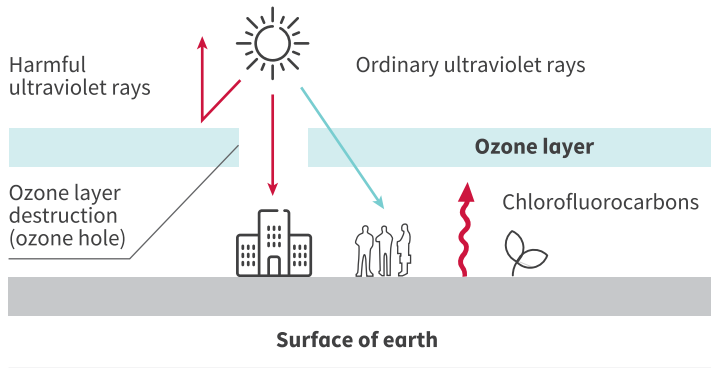
Control algorithm drives high part load efficiency

- 25%-100% Stepless Capacity Control by VFD technology
- Reduce power consumption by up to 30% compared to traditional fixed units
- Ensure stable water temperature, providing great comfort to users

Lower Environmental Impact

R410A refrigerant

- Stable, non-toxic, 0 ozone depletion potential
- High-density refrigerant, less refrigerant is needed
- Energy conservation, emission reduction, environmental protection



Great Flexibility

Flexible combination

- Flexible model connection (30/130kW)
- Support up to 16 units per system ranging from 30-2080 kW, easy for system capacity extension
- Easy to re-size system by adding or removing modules

Easy installation and maintenance

Simple A/C System

- Simple installation:
no cooling tower, condensing pump or piping
- Saving installation space:
no chiller plant room or condenser side piping

Easy to transport

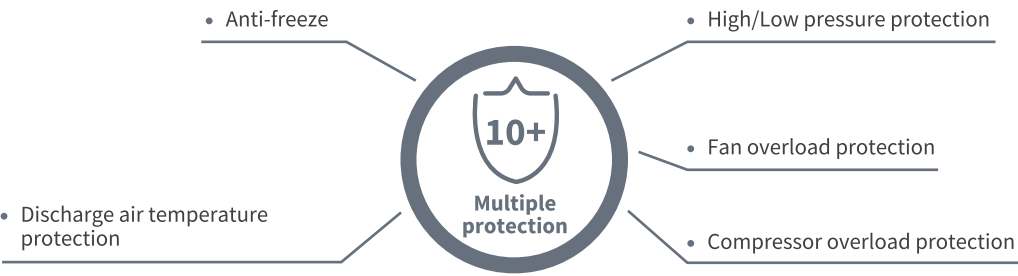
- Small size / weight per module, easy to ship, lift and store
- Can be transported independently without large lifting equipment

Easy maintenance

- Non-stop service
Failed unit could be disconnected without system operation interruption
- Standardized design
Allow quick delivery and replacement of failed units

Robust Reliability and Operating Safety

Multiple system protection functions to ensure reliable operation



Modular provides excellent system redundancy

- Free switching master/slave unit to reduce failure of the unit.
- Function independently of each other. When a unit is down , another standby module will run as backup. While one unit is being serviced, the others still run as normal without impacting on operational capabilities.
- Modularized manufacturing and standardized components ensures easy replacement.

Smart defrost/Manual defrost

- Smart defrosting function according to the unit's conditions. Avoids unnecessary defrosting operation or inadequate defrosting.
- Manual defrosting to remove ice layer under harsh environmental condition.

Trouble-Free Start-up

- The compressor starts at low frequency and gradually increases to full speed
- Low start current helps extend the life of the motor

PRODUCT FEATURES

Intelligent Control

Central Controller (Optional)



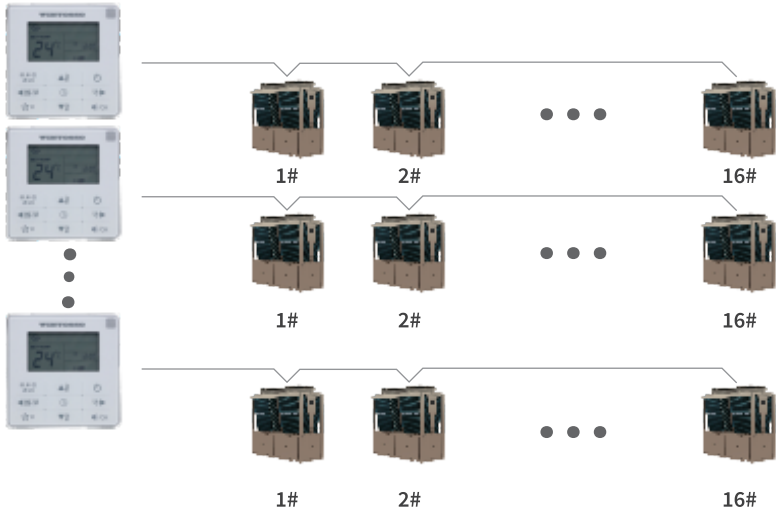
- Power indicator
- Running indicator
- Communication indicator

Touch screen with user - friendly interface the wire controller can realize 1000m long-distance communication with the main, which is convenient for users to operate.

A single wire controller can realize centralized control of up to 16 modular machines, allowing users to centrally manage the unit and check the operation status of the unit.

Free switching master/slave units to reduce the risk of failure.

Remote Control



Optimized Control Logic

- Automatically adjusts number of units operating as per operating frequency
- By optimizing operating frequency and controlling steps keeps units running under partial load conditions to improve efficiency
- Flexible operating frequency and control steps enable the unit working efficiently

SPECIFICATIONS

Model			VCH-30/SN1	VCH-65/SN1	VCH-100/SN1	VCH-130/SN1
Cooling Capacity		kW	30	65	100	130
Heating Capacity		kW	33	72	110	140
Power input	Cooling	kW	8.95	19.6	30.4	39.8
	Heating	kW	9.4	20.6	31.6	40.5
EER		kW / kW	3.35	3.31	3.28	3.26
COP		kW / kW	3.51	3.49	3.48	3.45
Power supply		V/Ph/Hz	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50
Compressor	Type		Rotary(Inverter)	Rotary(Inverter)	Rotary(Inverter)	Rotary(Inverter)
	Brand		MITSUBISHI ELECTRIC	MITSUBISHI ELECTRIC	MITSUBISHI ELECTRIC	MITSUBISHI ELECTRIC
	Quantity	Piece	1	2	4	4
Refrigerant	Type		R410A	R410A	R410A	R410A
	Refrigerant control		EXV	EXV	EXV	EXV
Condenser (Air side)	Type		Fin-coil	Fin-coil	Fin-coil	Fin-coil
	Number of rows		2	3	3	3
	Quantity of fan motor	Pieces	1	1	2	2
	Air flow	m³/h	14000	24000	48000	48000
	Fan motor input	kW	0.92	0.9	0.9×2	0.9×2
Evaporator (Water side)						
	Water pressure drop	kPa	18	40	50	60
	Volume	L	7	13	25	25
	Water flow	m³/h	5.16	11.2	17.2	22.4
Dimension	Net(D×H×W)	mm	870×1650×870	1110×2000×1170	2305×2000×1170	2305×2000×1170
Weight	Net weight	kg	225	400	800	800
	Operation weight	kg	245	420	830	830
Noise level		dB(A)	40	46	50	50

Note: Specifications are based on the following conditions:
Cooling : chilled water inlet/outlet: 12°C / 7°C, and outdoor ambient temp. of 35°C DB.
Heating : heat water inlet/outlet: 40°C / 45°C, and outdoor ambient temp. 7°C DB/6°C WB.
Water side fouling factor: 0.086m²°C /kW.