



Air Conditioner Product Introduction

Overseas department



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01

VCS Series Rack AC

◆ Split-type (3.7-12.5kW)

◆ Integrated-type (3.7kW)

Rack AC

Split-type

◆ Cooling range

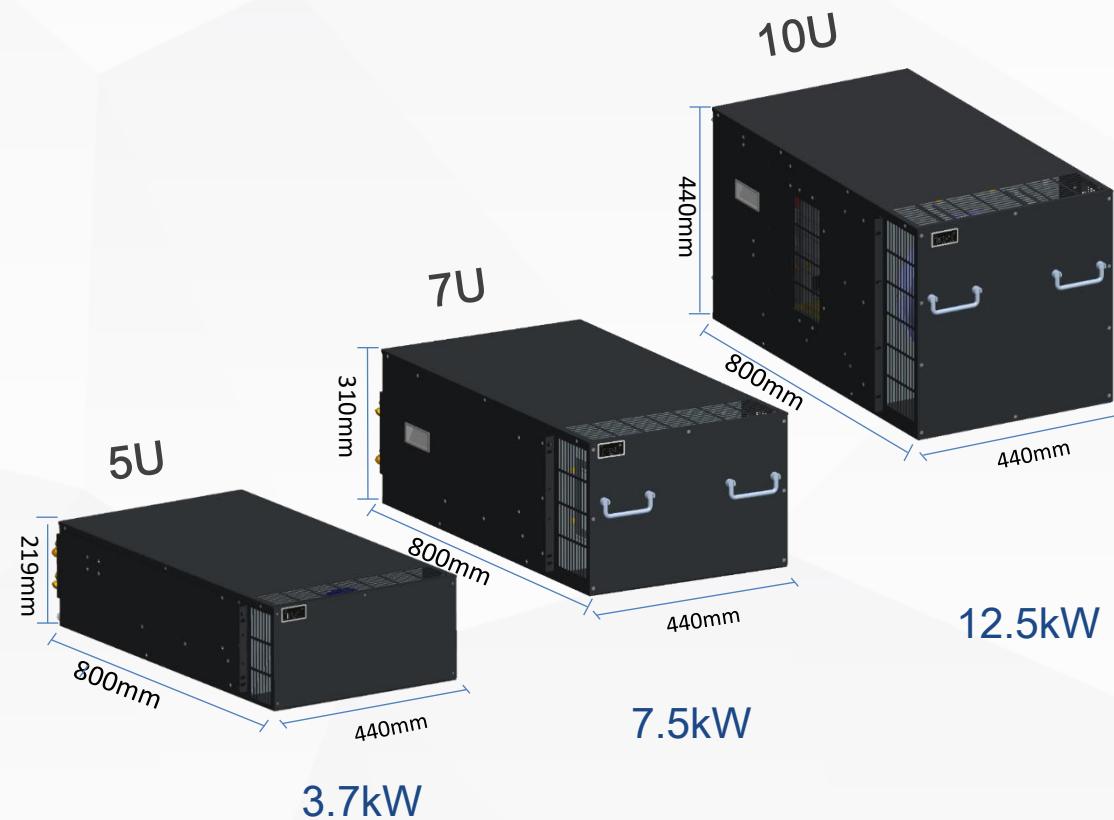
3.7kW ~ 12.5kW

◆ Cooling mode

Air cooled

◆ Air supply mode

Top Air Supply and Horizontal Airflow Supply



Split-type

Rack AC

Feature



Pluggable design, easy to install, its indoor unit and outdoor unit use stop valve for pipe connection, no need to weld on site;

Its dimension meets the installation requirements of standard server racks in the market, and its internal structure is compact and highly integrated, saving space.

Easy
installation

Flexible
application

High
adaptability

Reliable

Outdoor units support a variety of installation methods to meet the requirements of various complex environments.

The main components adopt international famous brands

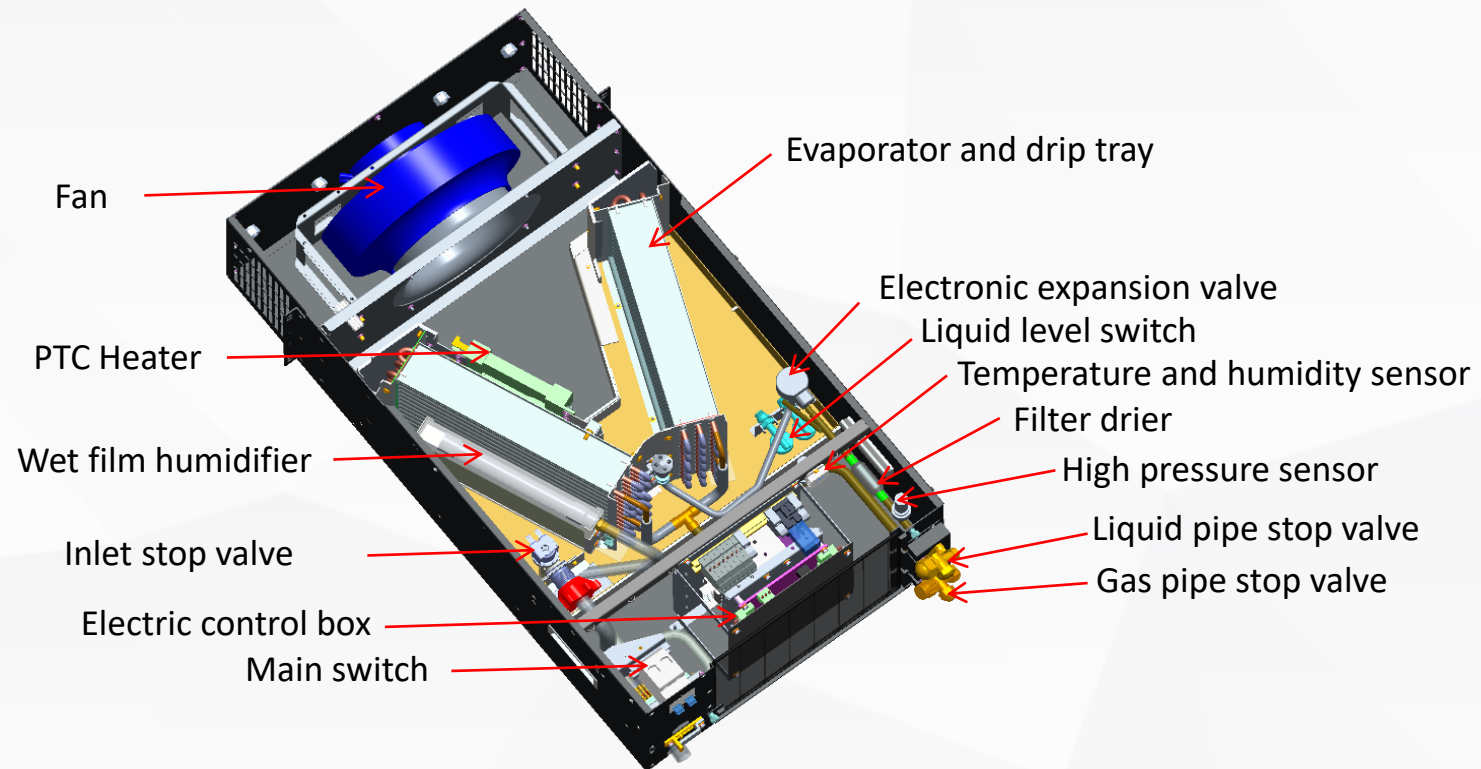
- . GMCC Compressor
- . Fans-tech Fans
- . LS Circuit Breaker

Rack AC

Indoor Unit



VCS series internal structure diagram of the split type air conditioner indoor unit is shown below.
(Compressor at the outdoor unit)

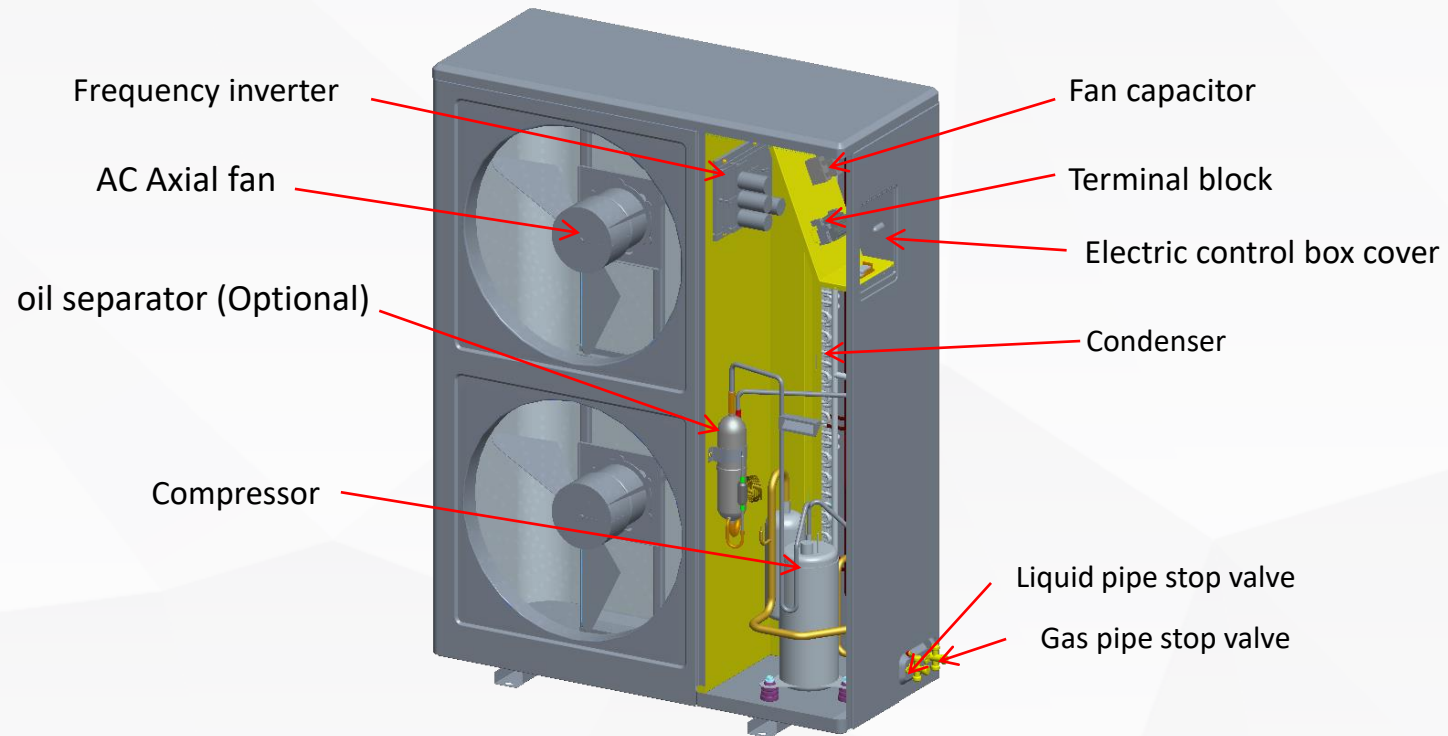


Rack AC

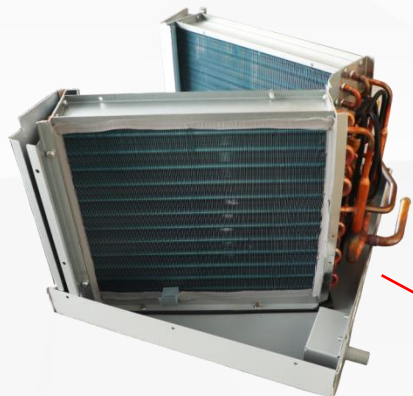
Outdoor Unit



VCP series internal structure diagram of the split type air conditioner outdoor unit is shown below.



Rack AC



“V” type evaporator

Small footprint and large heat exchange area.

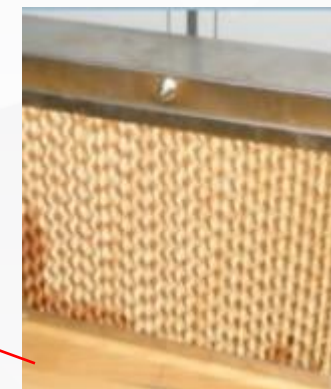


Inverter rotor compressor



EC Centrifugal Fan

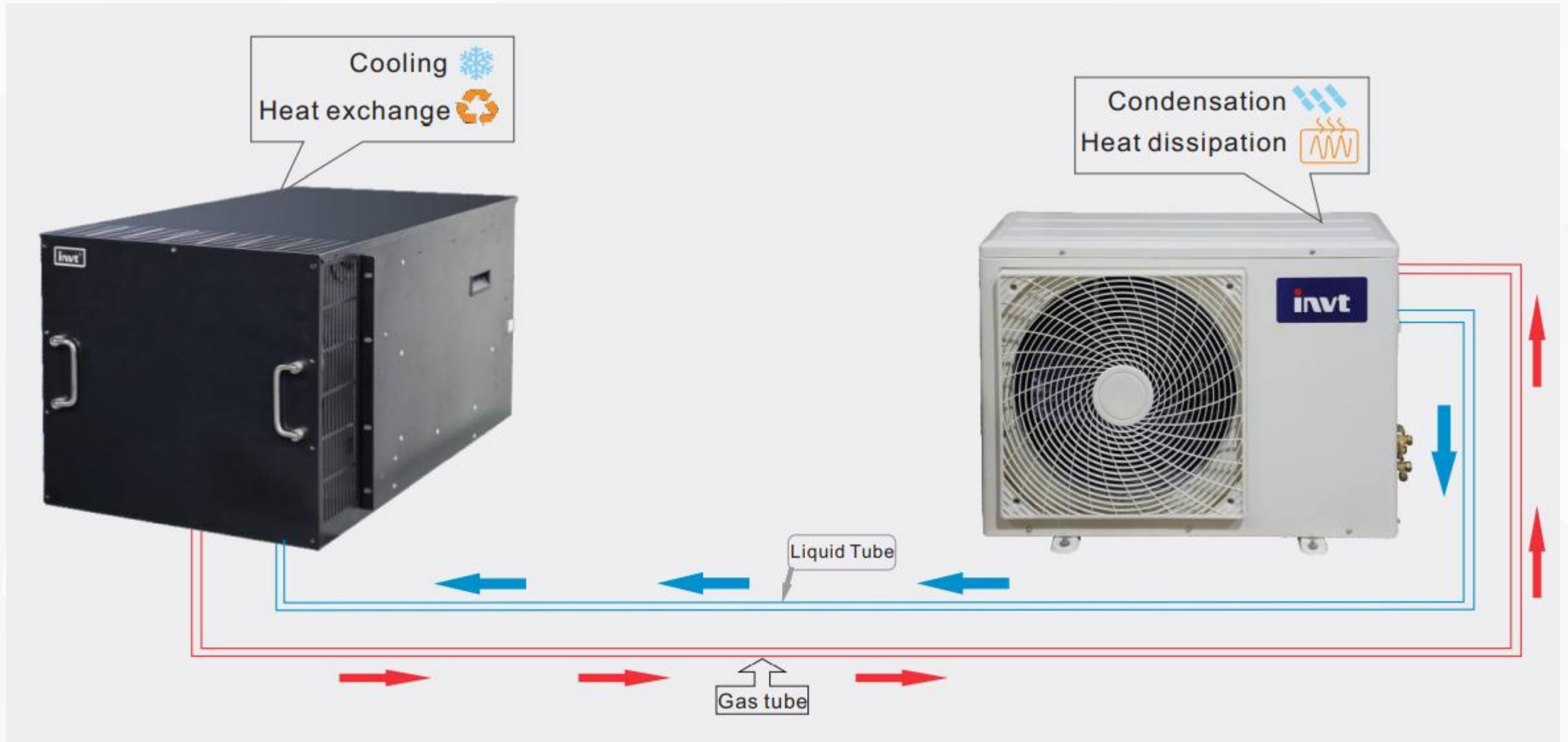
Adopting backward inclined centrifugal EC fan, it saves more than 40% energy than ordinary fans.



Wet film humidifier

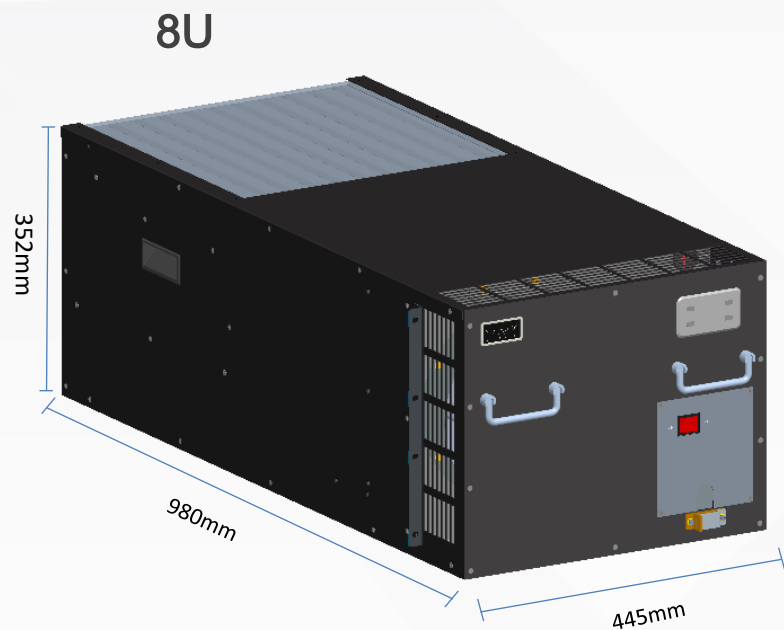
Rack AC

Operation principle



Rack AC

Integrated-type



3.7kW

Integrated-type

Cooling range
3.7kW

Cooling mode
Air cooled

Air supply mode
Top Air Supply
Horizontal Airflow Supply

Rack AC

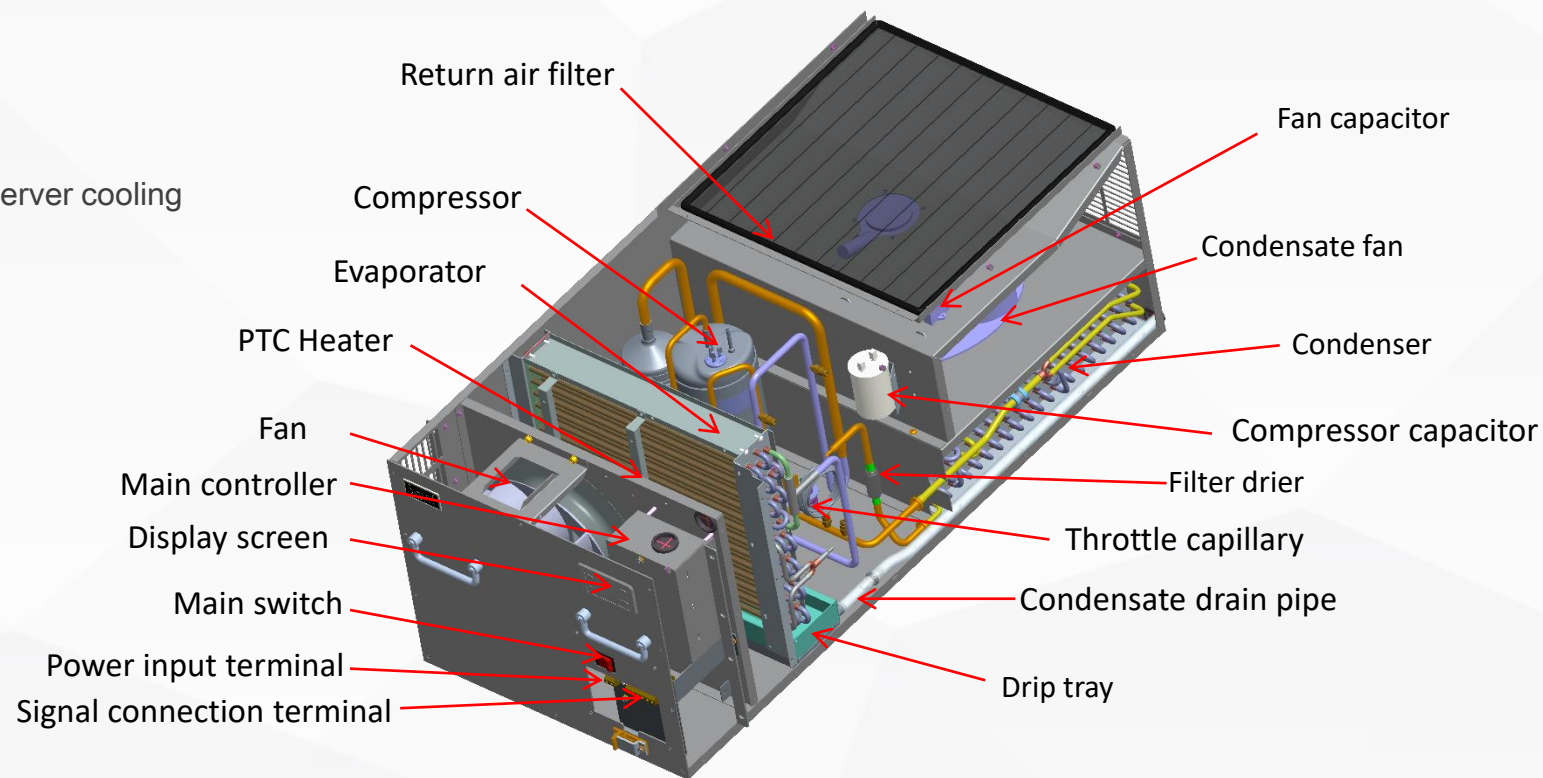
Integrated-type

High efficiency and energy saving

Embedded in standard cabinets, it can achieve near-server cooling without outdoor units, decrease data center PUE.

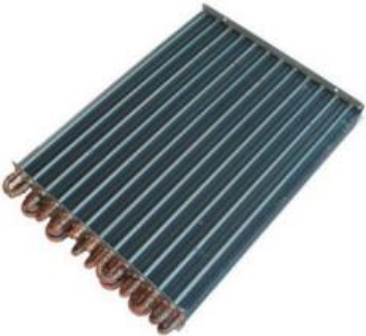
Easy installation

Integrate the indoor unit and outdoor unit into a whole, simplify installation, plug-and-play.



Rack AC

Integrated-type



“/” type Evaporator



Fixed Frequency Rotor Compressor



PTC heater



AC Fan

Differentiation

	3.7kW Rack AC (Integrated-type)	3.7kW Rack AC (Split-type)	7.5kW Rack AC (Split-type)	12.5kW Rack AC (Split-type)
Compressor	Fixed Frequency Rotor	Inverter rotor	Inverter rotor	Inverter rotor
Evaporator	“/” type	“V” type	“V” type	“V” type
Fan	AC fan	EC fan	EC fan	EC fan
Humidifier	/	Wet Film Humidification	Wet Film Humidification	Wet Film Humidification
Heater	PTC	PTC	PTC	PTC
Screen	LCD screen	/	/	/

Rack AC

Specification parameters

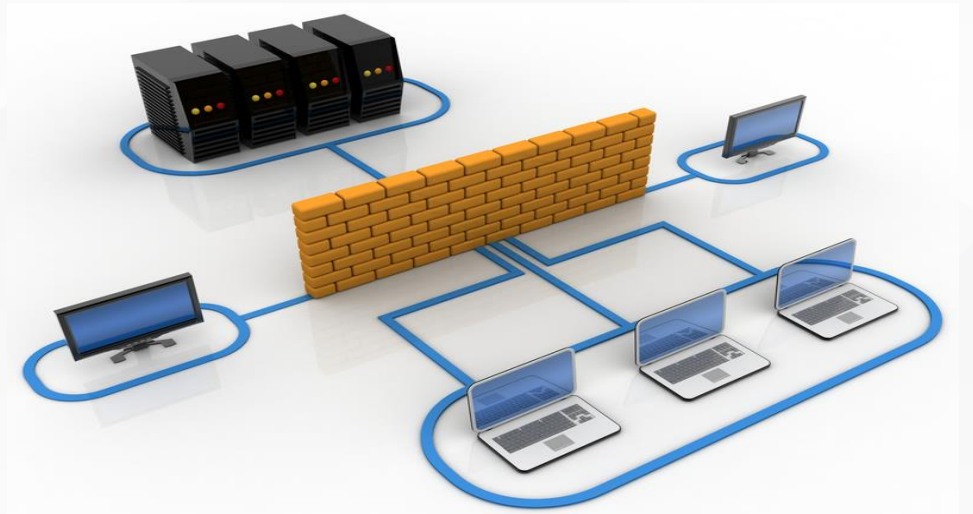


VCS***	Unit	3.7 (Rack)	7.5 (Rack)	12.5 (Rack)	3.7 (Integrated)
Unit configuration	-	Constant Temp&Hum			Constant Temp
Total cooling capacity 2)	kW	3.7	7.5	12.5	3.7
Sensible cooling capacity 2)	kW	3.7	7.5	12.5	3.7
Air volume	m3/h	700	1350	2300	700
Sensible heat ratio	%	100	100	100	100
Standard distribution heating 3)	kW	1	2	3	1
Humidification capacity	kg/h	0.5	0.5	0.5	-
Compressor type (standard)	/	DC inverter			
Voltage	V	220	220	220	220
Frequency	Hz	50	50	50	50
Phase	P	1	1	1	1
Full load current	A	13.6	28.8	29	13
Unit weight	kg	30	39	58	47
Unit width	mm	440	440	440	440
Unit depth	mm	800	800	800	970
Unit height	mm	219 (5U)	310 (7U)	440 (10U)	350 (8U)
Air Conditioner Outdoor Unit					
VCP***	Unit	5	10	18	/
Voltage	V	220	220	220	/
frequency	Hz	50	50	50	/
Phase	P	1	1	1	/
Unit width	mm	886	882	995	/
Unit depth	mm	340	380	440	/
Unit height	mm	605	720	1256	/

Test conditions: indoor return air temperature 37°C, humidity 27%, outdoor temperature 35°C.

Micro Data Center

- ✓ Single-cabinet or double-cabinet micro-unit data center
- ✓ Single row micro data center



Edge Computing Data Center

02

VCR Series In-row AC

◆ 12.5-30kW (300mm wide) ◆ 40-60kW (600 mm wide)

In-row AC

◆ Cooling range

12.5kW ~ 60kW

◆ Cooling mode

Air cooled.

◆ Air supply mode

Horizontal Airflow Supply (12.5kW-25kW)

Front Airflow Supply (12.5kW-60kW)



In-row AC
(12.5-25kW)



In-row AC
(12.5-30kW)



In-row AC
(40-60kW)

In-row AC

Feature

In-row air conditioners are usually placed side-by-side with servers, combined with closed hot and cold aisles for efficient cooling close to the heat source.

High
efficiency

Energy
saving

Intelligent

Reliable

Standard RS485 interface, support optional SNMP interface. Optional 7-inch color capacitive touch screen, supporting graphic status and temperature and humidity curve display.

Precise temperature and humidity control capability, full inverter design, intelligent control system, on-demand control of cooling capacity and airflow output

The main components adopt international famous brands

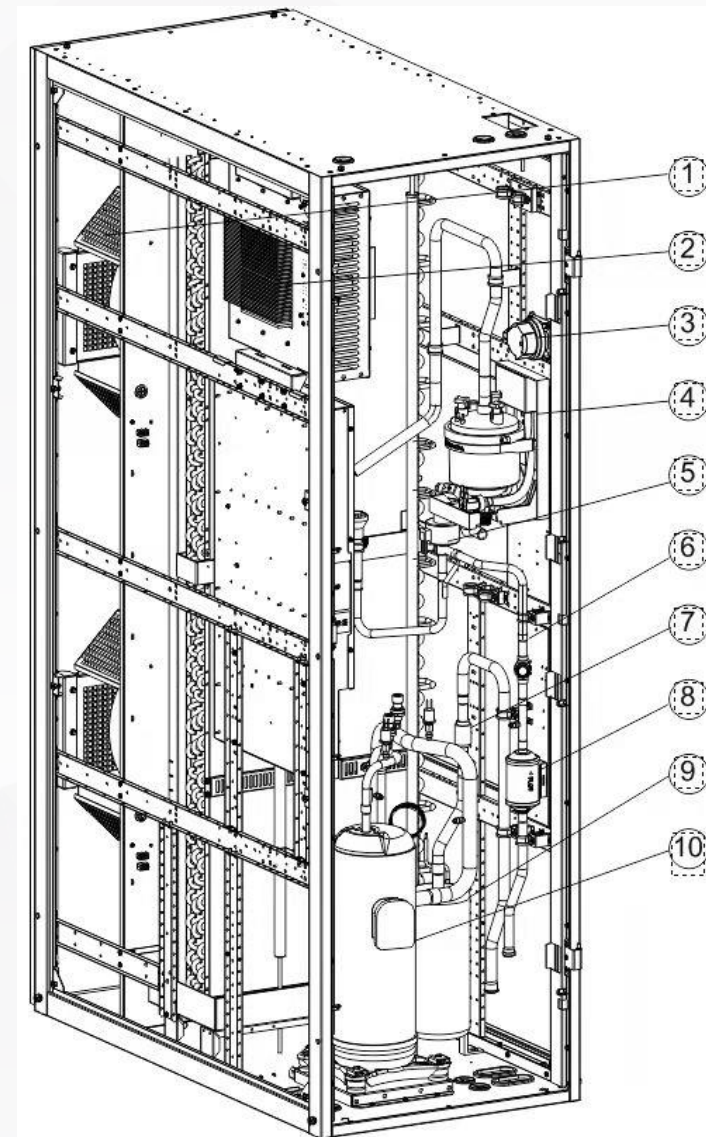
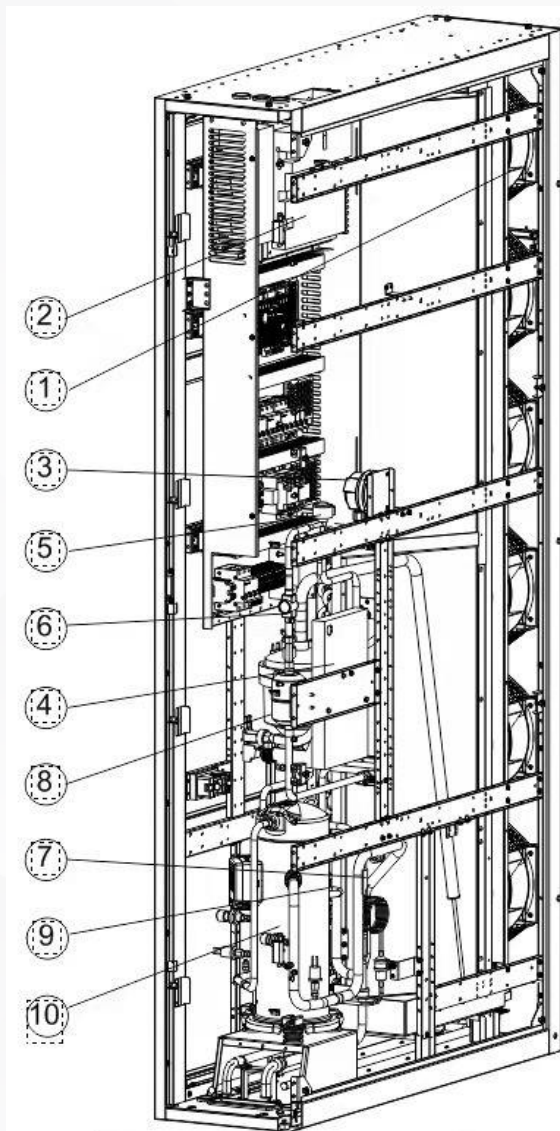
- Copeland, Mitsubishi or GMCC Compressors
- Fans-tech Fan
- Schneider Contactors

In-row AC

Indoor Unit

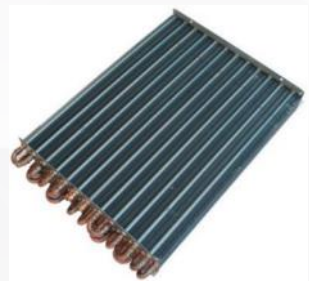


Num.	Device Name
1	EC Fan
2	Frequency Inverter
3	Differential pressure switch
4	Electrode Humidifier
5	Electronic expansion valve
6	Sight glass
7	Check valve
8	Filter driers
9	Oil separator
10	Compressor

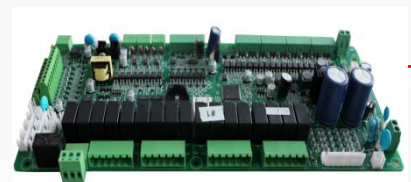


In-row AC

Indoor Unit



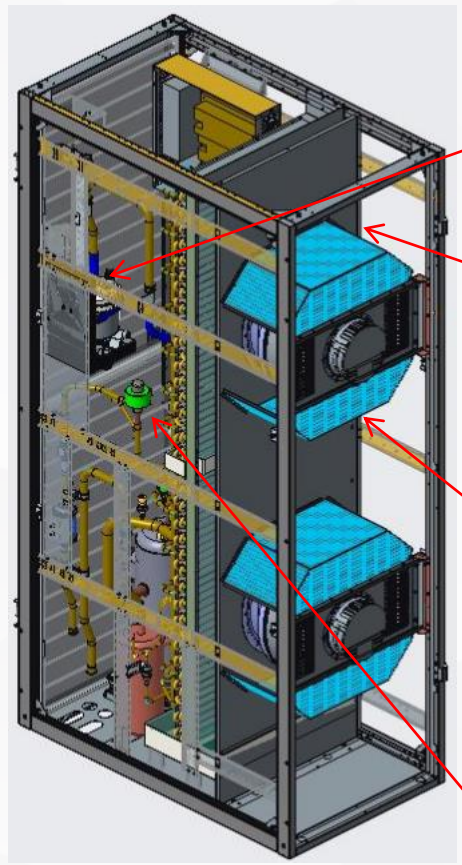
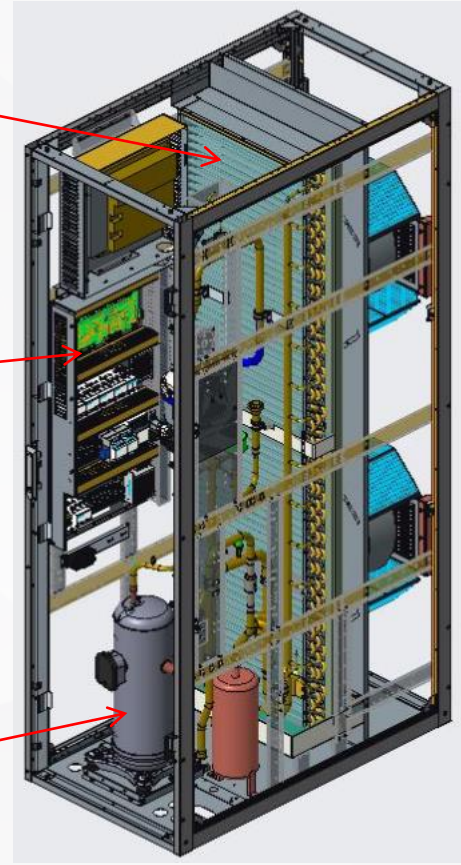
"U" type Evaporator



Controller



Inverter compressor



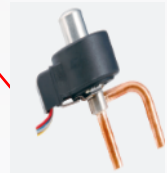
Electrode humidifier



PTC heater

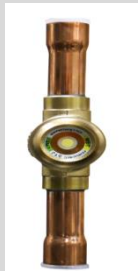
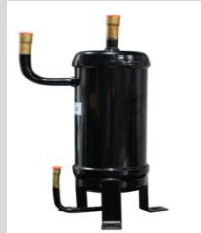


EC fan



Electronic expansion valve

In-row AC



1

DC inverter scroll compressor

Can dynamically adjust the cooling output in the range of 20%~100%;

2

Backward inclined EC fan

High efficiency and low noise, according to the real-time heat load changes to adjust the speed output

3

Electronic expansion valve

Faster response, more accurate flow rate adjustment

4

Liquid sight glass

Can visually and effectively check the status of refrigerant in the pipeline of air conditioner system

5

Check valve

Prevent damage caused by refrigerant migration to the compressor during shutdown

In-row AC

Outdoor unit



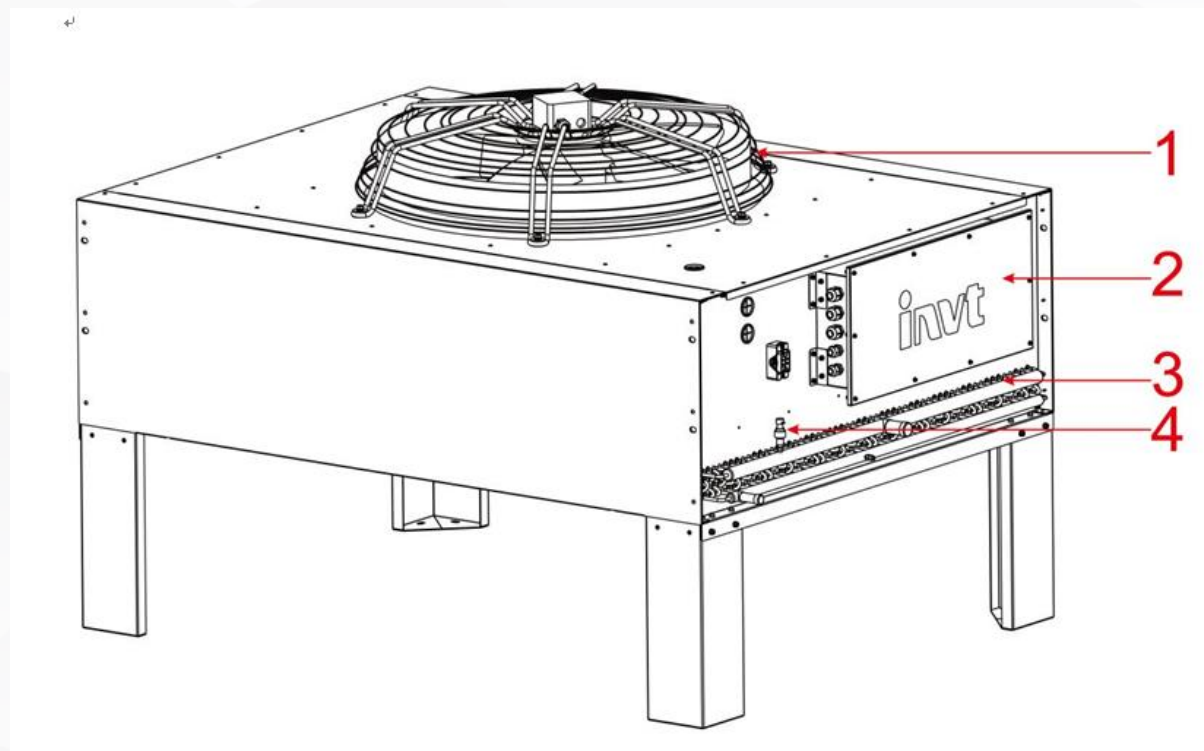
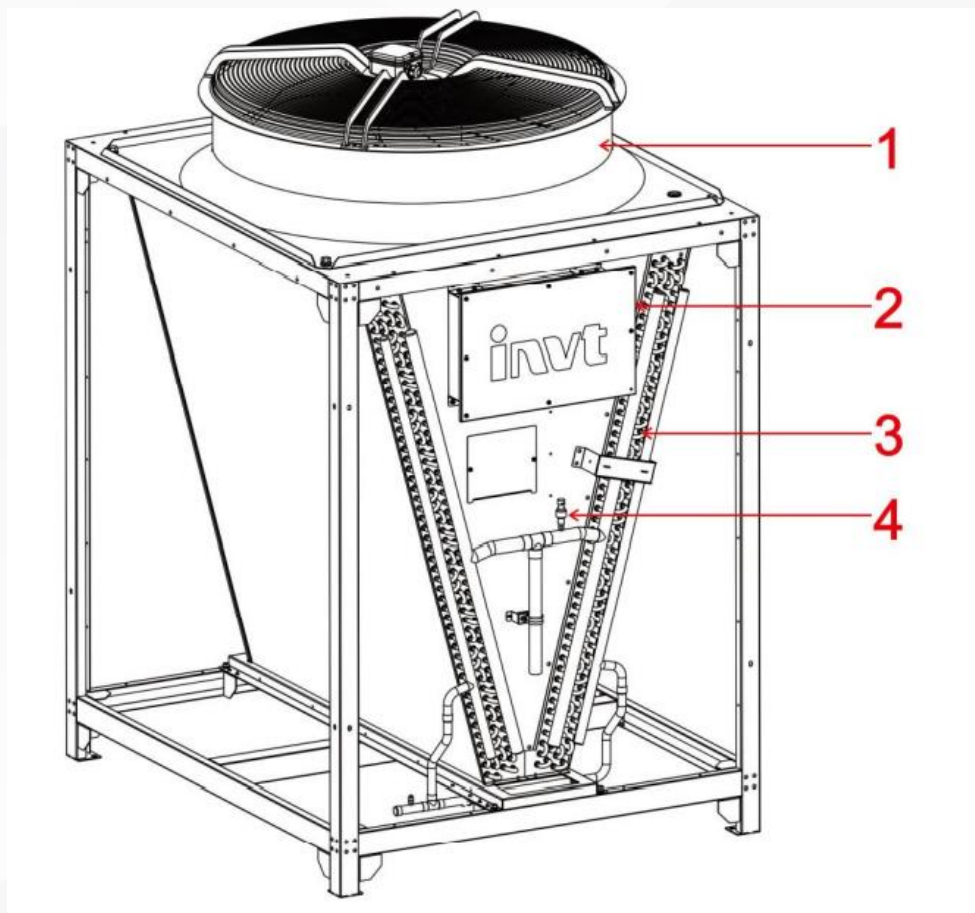
Conventional outdoor unit
(26-96kW)



Centralized outdoor unit
(45-180kW)

In-row AC

Outdoor unit



1 AC axial fan

2 Electric control box

3 Condenser

4 Pressure sensor

In-row AC



Home page



Equipment Status



AC Equipment control



Tem and Hum curve



System Setting

ID	Datetime	Event	Current Alarm
1	2022-01-10 07:50:18	Fan 1 Fail	History Alarm
2	2022-01-10 07:50:18	Heater Fail	

Home State Data Alarm Set

Alarm logs



In-row AC

Differentiation

	12.5kW In-row AC	25kW In-row AC	30kW In-row AC	40kW In-row AC	50kW In-row AC	60kW In-row AC
Compressor	Inverter rotor type	Inverter scroll type				
Evaporator	“/” type				“V” type	
Fan	EC fan					
Humidifier	Electrode humidification					
Heater	PTC					
Screen	Optional 7" touch screen		Standard 7" touch screen, Optional 10" touch screen			

In-row AC

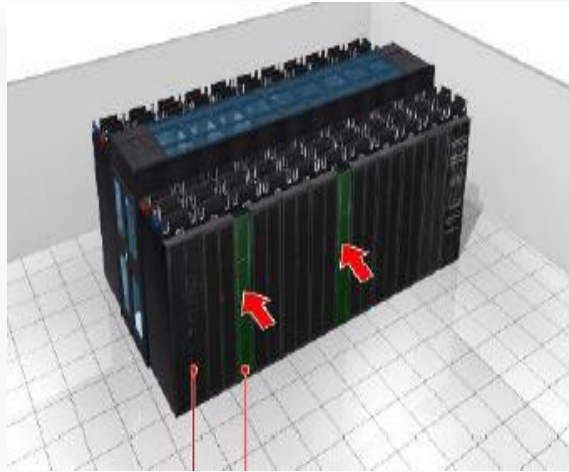
Specification parameters

	Unit	VCR012	VCR025	VCR030	VCR040	VCR050	VCR060
Configuration	—	KF/Constant Temp&Humidity					
Total cooling capacity	kW	12.5	25.5	30.8	42.8	51.5	62.7
Sensible cooling capacity	kW	12.5	25.5	30.8	42.8	51.5	62.7
Refrigerant Type	—	R410A					
Compressor Type	—	DC inverter					
Expansion valve Type	—	Electronic expansion valve					
Air Filter	—	G4 filter					
Fan Type	—	EC Fan					
Fan Number	Pcs	4	6	6	2	3	3
Air volume	m3/h	2800	5000	5200	8500	10500	11500
Heating capacity	kW	3	4.5	4.5	6	6.5	6.5
Humidification capacity	kg/h	1.5	3	3	3	3	3
Width	mm	300	300	300	600	600	600
Depth	mm	1100/1200	1100/1200	1100/1200	1100/1200	1100/1200	1100/1200
Height	mm	2000	2000	2000	2000	2000	2000

Test conditions: indoor dry bulb temperature 37°C, relative humidity 24%, outdoor temperature 35°C

In-row AC

Applications



**Container
Data Center**

**High density
data room**



**Medium and
small MDC**



**Modular
Data Center**





VCA Series Base Station AC

◆ 5.5kW / 7.5kW

◆ 12.5kW

◆ 17.5kW / 20.5kW

Base station AC



Cooling range

5.5kW ~ 20.5kW

Cooling mode

Air cooled

Air supply mode

Support Top Front Supply or
Downflow Supply method

Base station AC



Feature

Standard electronic expansion valve, precise regulation of refrigerant flow; adopt full inverter design, on-demand control of cooling capacity and airflow output

- Standard 4.3-inch color capacitive touch screen
- Standard RS485 interface, optional SNMP interface
- Support temperature and humidity curve display and graphic status display
- More than 1000 historical alarm information storage
- Use CAN communication to do network group control
- Support timer switch on/off

High
efficiency

Safety

Intelligent

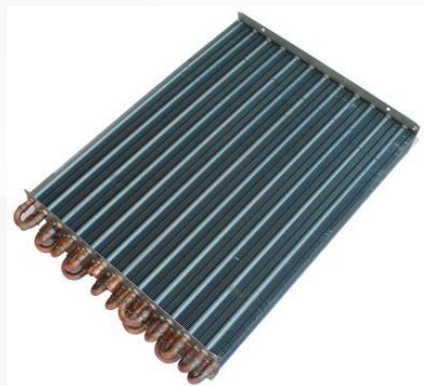
Reliable

Ultra-wide grid adaptability with optional phase sequence fault tolerance;
Standard environmentally friendly refrigerant R410A;
Threaded quick coupling design, no welding

The main components adopt international famous brands

- . Copeland or Hitachi Compressors
- . Fans-tech Fan
- . LS contactors

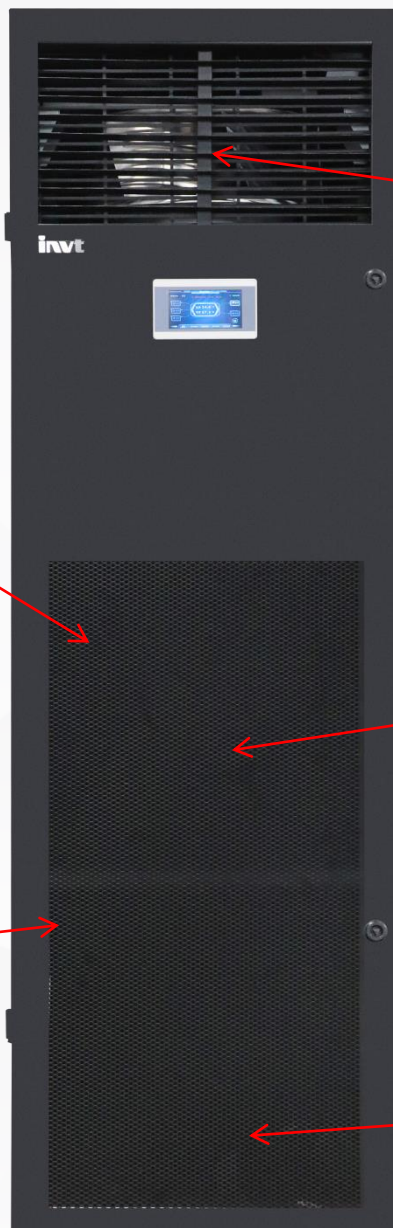
Base station AC



“U” type Evaporator



Fixed Frequency Rotor
Compressor



AC or EC fan

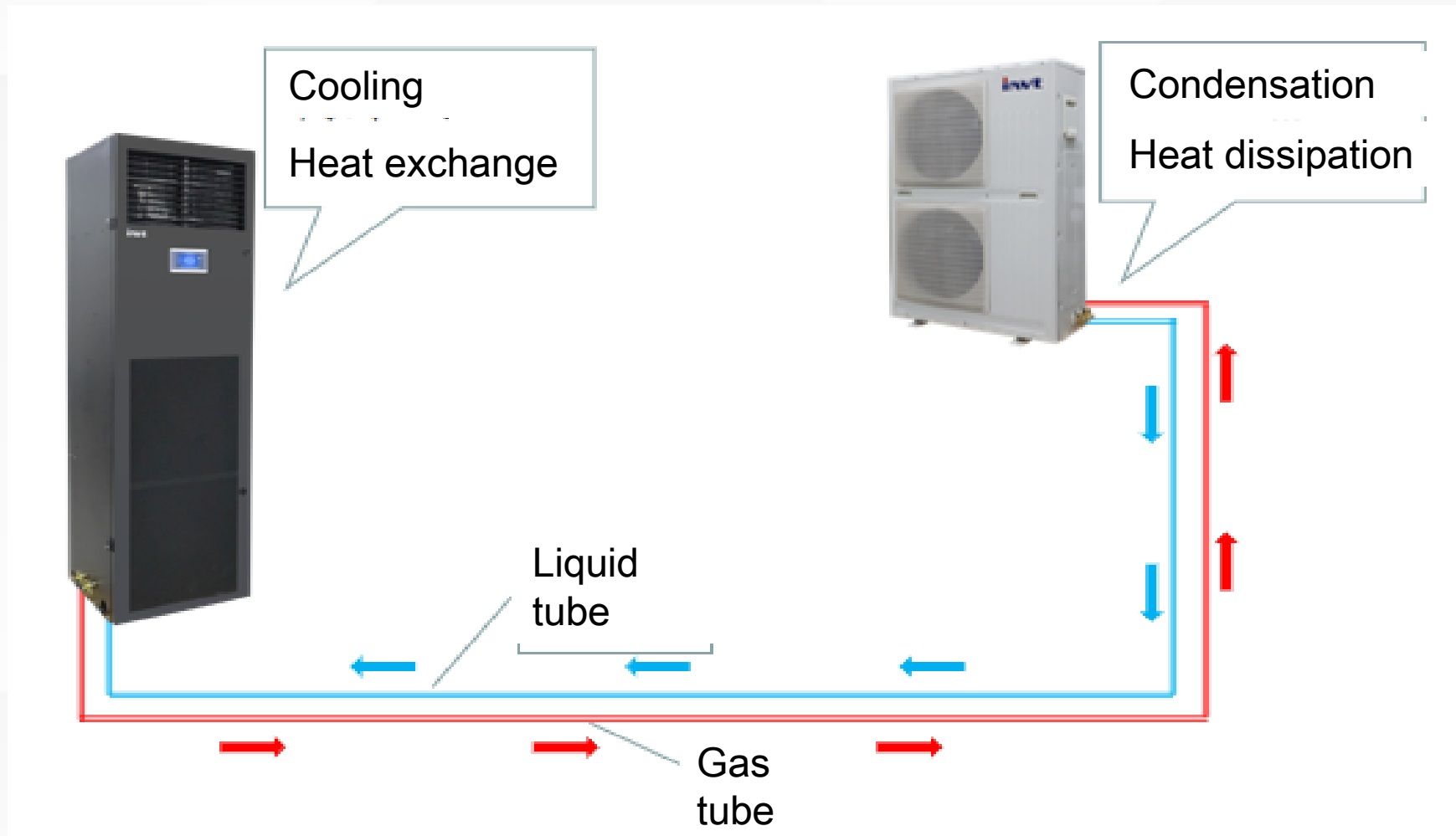


Electrode humidifier



Electronic expansion valve

Base station AC



Base station AC



Differentiation

	5.5kW AC	7.5kW AC	12.5kW AC	17.5kW AC	20.5kW AC
Compressor	Fixed Frequency Rotor				
Evaporator	"/" type	"/" type	"/" type	"/" type	"/" type
Fan	AC fan	AC fan	AC fan	AC fan	AC fan
Humidifier	Electrode humidification	Electrode humidification	Electrode humidification	Electrode humidification	Electrode humidification
Heater	PTC	PTC	PTC	PTC	PTC
Screen	Standard 4.3" touch screen,				

Base station AC



Specification parameters

	Unit	VCA005	VCA007	VCA012	VCA017	VCA020
Configuration	—	KF/Constant Temp&Humidity				
Total cooling capacity	kW	5.5	7.5	12.5	17.0	20.5
Sensible heat ratio	W/W	0.9	0.9	0.9	0.9	0.9
Refrigerant Type	—	R410A				
Expansion valve Type	—	Electronic expansion valve				
Air volume	m ³ /h	1800	2300	3200	5000	5500
Heating capacity	kW	3	3	3	6	6
Humidification capacity	kg/h	3	3	3	3	3
Width	mm	520	520	600	700	700
Depth	mm	420	420	520	700	700
Height	mm	1750	1750	1800	1900	1900
Grid type	-	220V/50Hz		380V/50Hz		
KF type full load current	A	10.5	14.9	10.8	14.3	14.6
Constant Temp&Hum type full load current	A	23	25	18.2	20	20
Weight	kg	62	65	100	120	130

Test conditions: indoor return air temperature 24°C, relative humidity 50%, outdoor temperature 35°C.

04

VCA Series Large Room AC

◆ Downflow supply

◆ Upflow supply

Large Room AC



◆ Cooling range

25kW ~ 100kW

◆ Cooling mode

Air cooled

◆ Air supply mode

Support Top Front Supply, upflow supply or downflow supply method



Large Room AC



Features

- Scroll compressors
- V-type evaporator, high heat exchange efficiency
- High-precision electronic expansion valve, precise regulation of refrigerant flow
- EC fan with real-time adjustment of airflow output according to demand

- Standard 10-inch color capacitive touch screen
- Standard RS485 interface, optional SNMP interface
- Support temperature and humidity curve display and graphic status display
- More than 2000 historical alarm information storage
- Use CAN communication to do network group control

High
efficiency

Diversified
configurations

Intelligent

Reliable

- Optional water leakage detector
- Optional built-in low-temperature starting up component

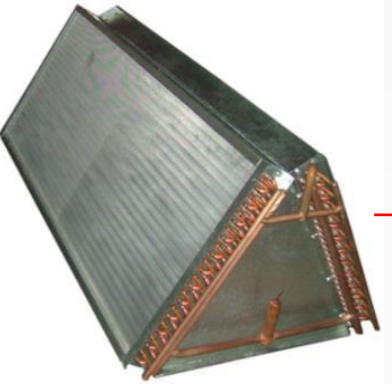
The main components adopt international famous brands

- Copeland Compressors
- Germany EBM, Fans-tech or Ziehl-Abegg EC fan
- LS circuit breaker
- Schneider contactors
- Standard G4 filter

Large Room AC



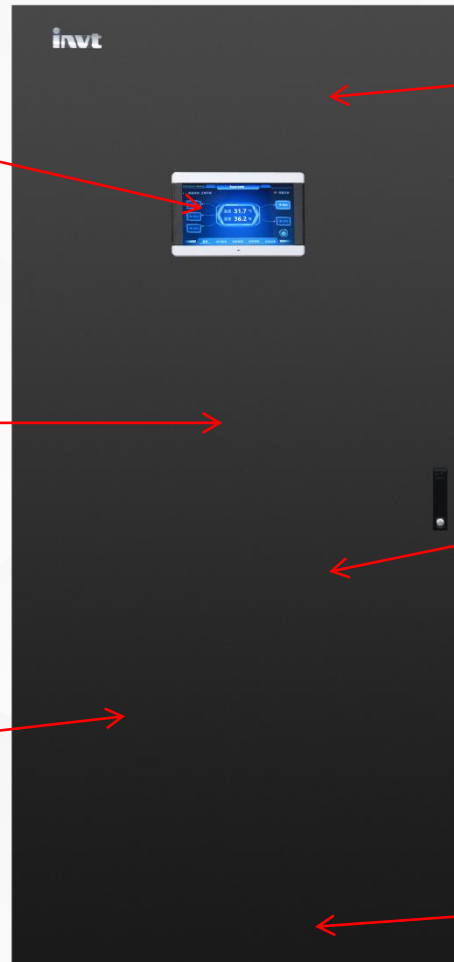
10" touch screen



"V"-type Evaporator



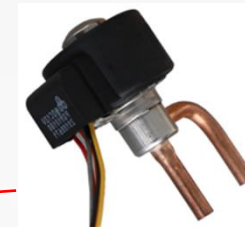
Scroll compressors



EC Fan



Electrode humidifier



Electronic expansion valve

Large Room AC

Outdoor unit



Conventional outdoor unit (26-56kW)
(single fan)



Conventional outdoor unit (66-96kW)
(dual fan)

Large Room AC

Specification parameters



Model	VCA025	VCA030	VCA035	VCA040	VCA045	VCA050	VCA050 (Dual Sys.)	VCA060	VCA070	VCA080	VCA090	VCA100
Configuration	Constant Temp&Humidity											
Total cooling capacity (kW)	26.1	30.2	35.5	40	45.6	50	50.4	60.4	71	80	91.2	100
Air volume (m ³ /h)	8000	9000	10000	12000	12500	13500	13500	18000	20000	24000	25000	27000
Heating capacity (kW)	6	6	6	10	10	10	10	10	10	12	12	12
Humidification capacity (kg/h)	6	6	6	10	10	10	10	10	10	10	10	10
AEER (W/W)	4	4	4	4	4	4	4	4	4	4	4	4
Width (mm)	900	900	900	900	1100	1100	1200	1800	1800	1800	2200	2200
Depth (mm)	995	995	995	995	995	995	995	995	995	995	995	995
Height (mm)	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975

Test conditions: indoor return air temperature 24°C, relative humidity 50%, outdoor temperature 35°C.

Applications



Large-scale server room



Traditional Server Room



Large-scale data centers



High heat density data center



Air conditioner have been produced:

- ✓ VCS series rack air conditioner (3.7-12.5kW) ,
- ✓ VCR series in-row air conditioner (12.5-60kW),
- ✓ VCA series base station fixed frequency air conditioner (5.5-20.5kW)
- ✓ VCA series large room fixed frequency air conditioner (25-100kW)

Air conditioner to be developed:

- VCA series base station inverter air conditioner (5.5-20.5kW)
- VCA series large room inverter air conditioner (25-100kW)
- Chilled water series air conditioner
- Fluorine pump free cooling series air conditioner

Full Series





Thank you

April 15, 2022