

HVAC & Building Technologies Division
Midea Group

Add.: Midea Headquarters Building, 6 Midea Avenue, Shunde, Foshan, Guangdong, China

Postal code: 528311

hbt.midea.com www.midea-group.com



Note: Product specifications change from time to time as product improvements and developments are released and may vary from those in this document.

2021

HVAC BUILDING TECHNOLOGIES

Heat pump solution
& Modular chiller



MDV

MDV was created in 1999 under Midea's HVAC & Building Technologies Division as a professional climatic solution brand for sales via specialized air-conditioning companies. MDV's brand portfolio (range of products produced under MDV brand) consists of cutting-edge technology and commercial and industrial equipment. These include VRF (Variable Refrigerant Flow) systems, air source heat pump, chillers and fan-coils, compressor condensing units, light commercial air-conditioners, used in commercial segment. Focusing on the professional channel for more than 10 years, MDV brand is recognized worldwide as one "professional HVAC solutions" .

1999
Established

2003
Entered the air source heat pump field and launched the first generation cycle heating products.

2004
• Launch the first generation of direct heating products.
• Acquired MGRE entered the chiller industry.

2011
Launched the M thermal initial generation products.

2015
• JV with Carrier in China in chiller field
• An international strategic Platform has brought Midea Group, Carrier Corporation and Chongqing General Industry Group together in the chiller business.
• Launched the DC Inverter Aqua Mini Chiller Series.

2016
• Acquired 80% stake in Clivet
• Launched the Standard Series M thermal, including Mono and Split type.market

2017
• Launched the R410A Aqua Tempo Super II Series DC Inverter Air-cooled Chiller.

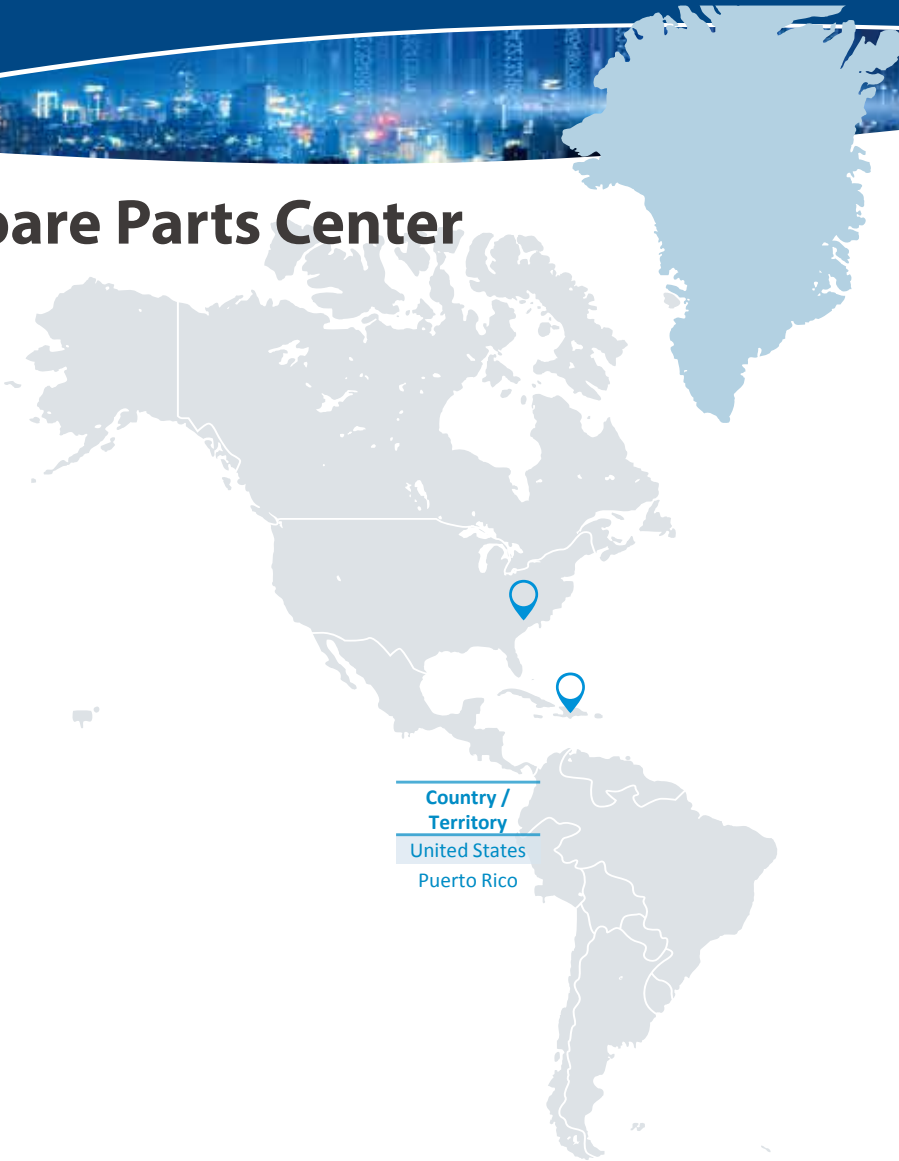
2018
Launched the Eco Series M thermal Mono type

2019
• Launched the Eco Series M thermal Split type.
• Launched the R32 Aqua Tempo Super II Series DC Inverter Air-cooled Chiller.

2020
• Launched the Arctic M thermal, including Mono and Split type.
• Launched the new generation R32 DC Inverter Air-cooled Chiller.

Midea Global Spare Parts Center

The global spare parts center provides high quality and fast spare parts supply. Midea online system (<https://tsp.midea.com>) can query and purchase spare parts with one click, further shortening the supply time of spare parts.



MHBT Learning Academy



Objective

Midea HBT Learning Academy aims to provide training to the sales personnel as well as technical personnel in order to increase the utilization for your Midea HBT equipment. Once you have purchased equipment from Midea HBT, taking care of the equipment is topmost priority. Midea HBT Learning Academy offers training courses to learn firsthand from the manufacturer what it takes to get the best out of your Midea HBT product. The goal of Midea HBT Learning Academy is to provide product specific training, safe work procedures and expertise in carrying out the installation and maintenance of Midea HBT products as well as teaching the main selling points in order to help the sales people sell the Midea HBT products with ease.

Training Centers

Our world class training centers provide knowledge and skills necessary to efficiently deploy Midea HBT technologies.

The training centers include dedicated laboratories to provide hands-on experiences with various systems, components and controls to refresh and enhance the skills of your sales, design and installation and service teams. Right now we operate our trainings from the below two locations:

1. Midea HBT Training Center

Address: Midea HBT Training Center, 2nd Floor, Building 6, Midea Global Innovation Center, Beijiao, Shunde, Foshan, China
Pin- 528311

The Midea HBT Training Center is situated 70 kilometers from Baiyun Guangzhou International Airport.

Products: VRF, M thermal

2. Chongqing Midea Training Center

Address: No. 15, Qiangwei Road, Nan'an District, Chongqing, China

Chongqing Midea Training Center is 35 kilometers from Chongqing International Airport.

Products: Centrifugal Chiller, Screw/Scroll Chiller and Terminals



VRF training



M thermal training



Chiller training

Global Technical Trainings

The training courses by Midea HBT Learning Academy are divided into the following two categories with different targeted audiences for each.

Design and Application Trainings: The design and application trainings for various products are basically for the sales personnel selling Midea HBT products in order to give them basic understanding about the main features. The trainings are conducted on a global level inviting sales engineers, technical engineers, consultants and project designers from different parts of the world.

After Sales- Service Trainings: These trainings are dedicated for the After Sales/ Service personnel in order for them to better carry out the installation, commissioning and maintenance of Midea HBT products. Technical person and engineers from different parts of the world are invited to take part in these trainings.

ZOOM Online Trainings: The trainings to the Global customers can also be done online with the help of ZOOM software. This way, the customers do not need to be physically present for the training. Amid the COVID-19 pandemic, Midea HBT Learning Academy has conducted a lot of online trainings. The training videos are available on the TSP system and can be downloaded by using QR codes.

Products: VRF, M thermal, Chillers and Terminals

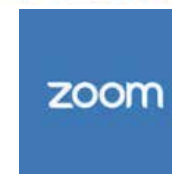
Highly Skilled Trainers: The trainers for various courses by Midea HBT Learning Academy are expert people with vast experiences in their field. Most of them have a deep insight about the global HVAC market and help the attendees to better understand the HBT products.

Training Certificates:

The attendees for Global trainings are provided a training certificate highlighting the courses discussed in the training, signed by Mr. Jason Zhao, General Manager of Midea HBT Overseas Sales Company.

Registration:

You can contact your respective Midea contact point to provide you with the complete schedule about the global technical trainings as well as how to register for these trainings.



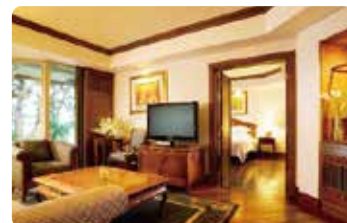
Arctic Series

Reference projects



Aston Kuta Bali Hotel (Five Star)

📍 Country: Indonesia
📍 City: Bali
📅 Completion Year: 2010
🏠 Unit: ATW heat pump



Sheraton Bandara Resort Hotel (Five Star)

📍 Country: Indonesia
📍 City: Jakarta
📅 Completion Year: 2011
🏠 Unit: ATW heat pump



Grand Aston Tunjungan (Five Star)

📍 Country: Indonesia
📍 City: Surabaya
📅 Completion Year: 2013
🏠 Unit: ATW heat pump



The Royale Springhill Residences

📍 Country: Indonesia
📍 City: Jakarta
📅 Completion Year: 2010
🏠 Unit: ATW heat pump

FINNING CAT Office Building

- Country: Chile
- City: Santiago
- Outdoor Units: Air-cooled scroll chiller
- Indoor Units: FCU
- Total Capacity: 740 HP



Vimpelcom Office Building

- Country: Russia
- City: Yaroslavl
- Outdoor Units: Air-cooled scroll chiller
- Indoor Units: FCU
- Total Capacity: 186 HP



Transportation



Sulaymaniyah Airport

- Country: Iraq
- City: Sulaymaniyah
- Outdoor Units: Tropical air-cooled scroll chiller
- Indoor Units: FCU
- Completion Year: 2017

Hotels & Resorts



Great Wall Plaza

- Country: Vietnam
- City: Hai Duong
- Outdoor Units: Air-cooled modular chiller & ATW Heat Pump
- Indoor Units: FCU
- Total Capacity: 700HP

Complex

Grand Comfort is the largest material market in middle Asia, the total area is 55,000 square meters. Midea CAC provided 21 air-cooled power and super modular chillers for the project. The total capacity is up to 5,780kW.



Grand Comfort Material Market

- Country: Kyrgyzstan
- Outdoor Units: Air-cooled modular chiller
- Indoor Units: FCU & AHU
- Total Capacity: 5,780kW
- Completion Year: 2015



City Mall

- 📍 Country: Tanzania
- 📍 City: Dar es Salaam
- 🏢 Outdoor Units: Air-cooled modular chiller
- 🏢 Indoor Units: FCU & AHU
- 📊 Total Capacity: 1,560kW

Hospitals & Healthcare



MRI Center Canovas

- 📍 Country: Puerto Rico
- 📍 City: San Juan
- 🏢 Outdoor Units: Air-cooled modular chiller
- 🏢 Indoor Units: MAHU
- 📊 Total Capacity: 360kW



KUKA Robotics in Hungary

- 📍 Country: Hungary
- 📍 City: Füzesgyarmat
- 🏢 Outdoor Units: Air-cooled scroll chiller
- 🏢 Indoor Units: FCU & AHU
- 📊 Total Capacity: 715kW



Zetes Power Station

- 📍 Country: Turkey
- 📍 City: Zonguldak
- 🏢 Outdoor Units: Precision A/C, VRF, Air-cooled modular chiller
- 🏢 Indoor Units: Duct & Cassette, AHU
- 📊 Total Capacity: 500HP



Heat pump solution

M thermal Arctic Series.....14

Aqua thermal Series.....33



MDV thermal Arctic Series

Focus on your comfort

Split 4~16kW



Mono 4~30kW



Product lineup

Mono	Capacity (kW)	4	6	8	10	12	14	16	18	22	26	30
	220~240V-1N-50Hz	●	●	●	●	●	●	●				
	380~415V-3N-50Hz					●	●	●	●	●	●	●

Split Outdoor unit	Capacity (kW)	4	6	8	10	12	14	16
	220~240V-1N-50Hz	●	●	●	●	●	●	●
	380~415V-3N-50Hz					●	●	●

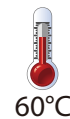
Split Hydronic box	Model	60	100	160
	220~240V-1N-50Hz	●	●	●



Overview

Refrigerant R32 75% less impact on global warming
 DC Inverter technology allows precise consumption on real load
 Maximum water temperature up to 60°C by heat pump
 Minimum operation ambient temperature down to -25°C
 COP up to 5.20(Split 4/8kW model)
 High energy efficiency level A+++ for energy saving (Water outlet temperature at 35°C)
 Offers heating capacity of 100% at -7°C(Water outlet temperature at 35°C; Mono/Split 4kW model)
 Provide space heating, cooling and domestic hot water, total heat solution
 Compatible with other heat sources such as solar panels and boilers

DC Inverter



Compatible with different kinds of terminals

Fan coil unit



Radiator



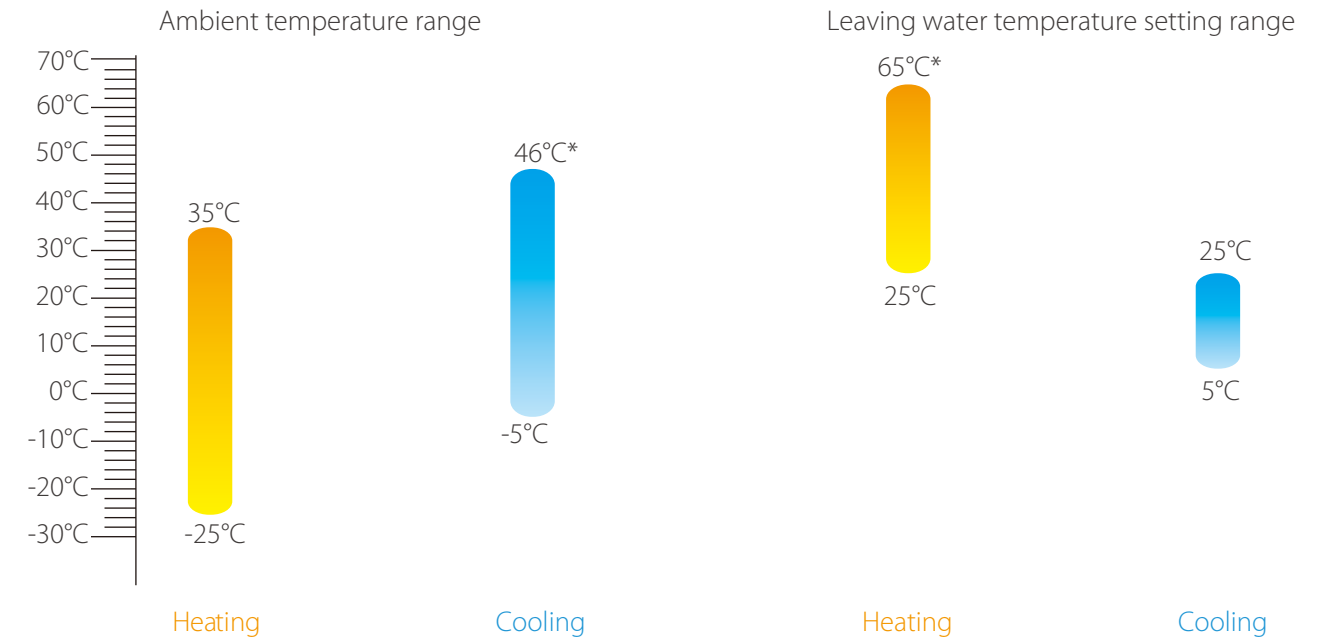
Water tank



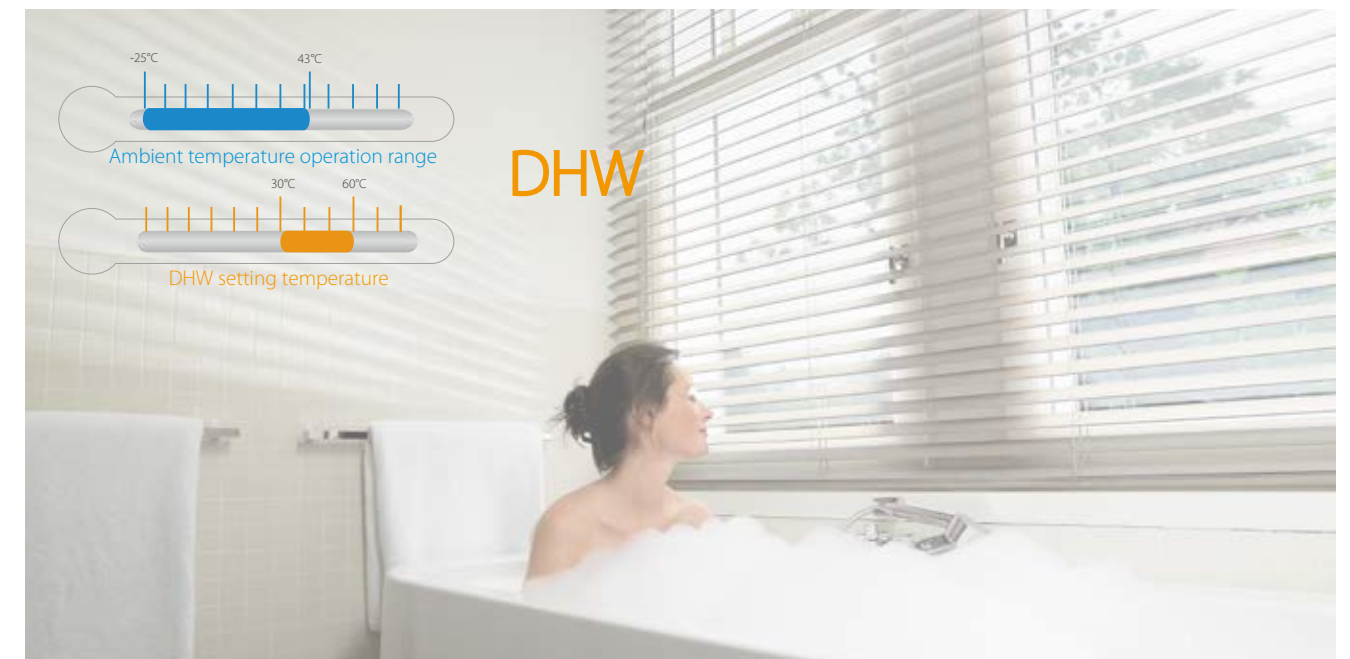
Floor heating loop



Wide operation range



* For Mono 4~16kW and Split models, the ambient temperature range for cooling mode is -5°C~43°C.
 For Mono 18~30kW models, the leaving water setting temperature range for heating mode is 25°C~60°C.



Multiple function



DHW Operation Priority



AUTO mode



Disinfect mode¹



Eco mode



Preset water temperature



Fast DHW



Day schedule



Weekly schedule

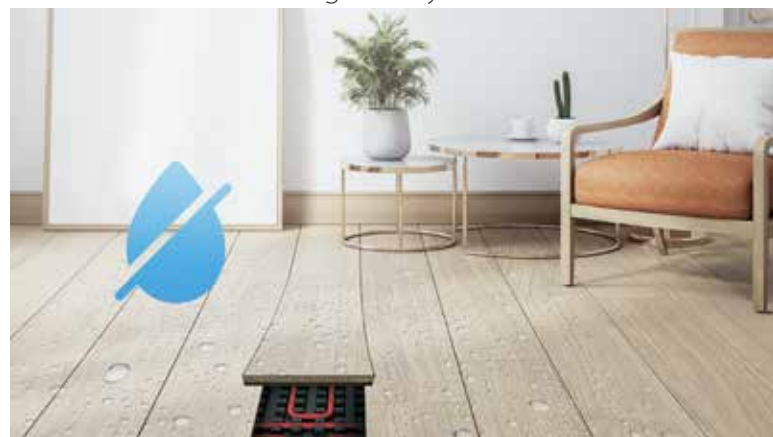
Note:

1. Only when the immersion heater of tank is available can the disinfection water temperature reaches 70°C.

High reliability

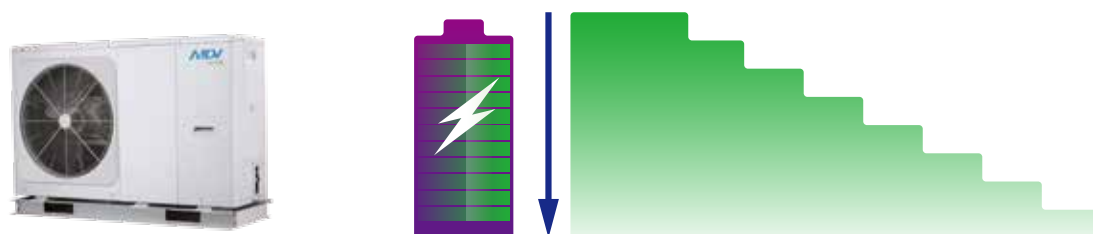
Preheating and drying up for floor

Before floor heating, if a large amount of water remains on the floor, the floor may be warped or even ruptured during floor heating operation. We provide two modes for heating floor, one is drying up mode which is used after the initial installation of floor loops and the other one is preheating mode for the first heating during seasonal heating. Both of the modes are in order to protect the floor. During the process, the water temperature would be increased gradually.



Power limitation function

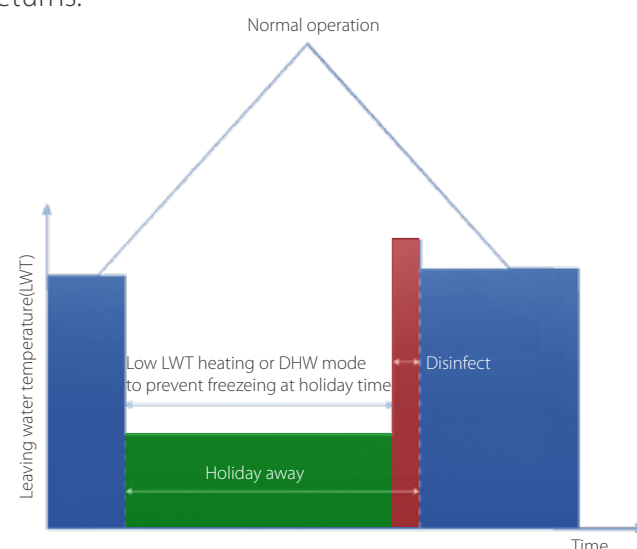
Power limitation function makes the machine suitable for a variety of current supplies. There are 8 configurations for user to choose according to the maximum allowable access current. Only easy setting on the wired controller is needed, the units can suit more application.



Holiday function

Holiday away

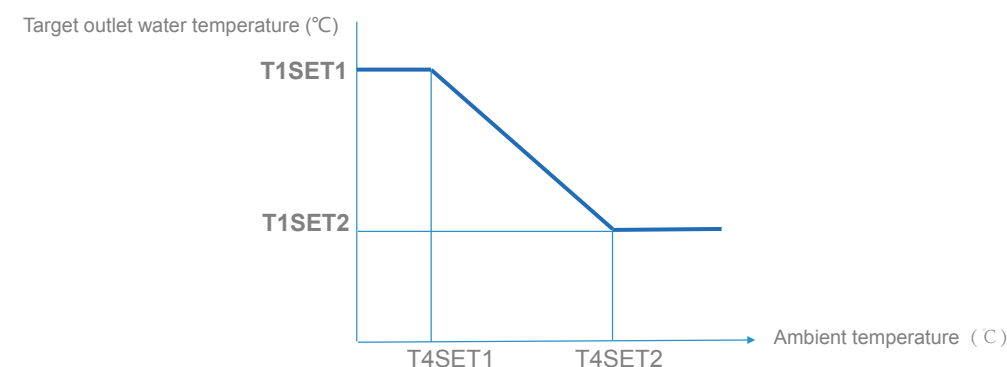
Holiday away function is a mode for improving system reliability and saving energy. Unit operates in heating mode and/or DHW mode with low water temperature to prevent water from freezing in the winter during holiday outside. The user can pre-set, the disinfection mode before he returns home to make sure that germ free water is available to be used when he returns.



Smart control

Weather temperature curve

With the help of Weather temperature curve function, water temperature will automatically change as outside air temperature changes. When outdoor air temperature increases/decreases, the heating load will decrease/increase and water temperature will decrease/increase automatically. When outdoor air temperature decreases/increases, the cooling load will decrease/increase and water temperature will increase/decrease automatically. Totally 32 fixed Weather temperature curve and one custom curve is available, which meets the diversified requirements of temperature.



Smart Grid

Heat pump adjusts the operation according to different electrical signals. Power consumption of the system can be automatically adjusted according to the peak and valley power to reduce the power consumption to a great extent.

Cheap electrical signal: DHW mode will be effective to produce hot water

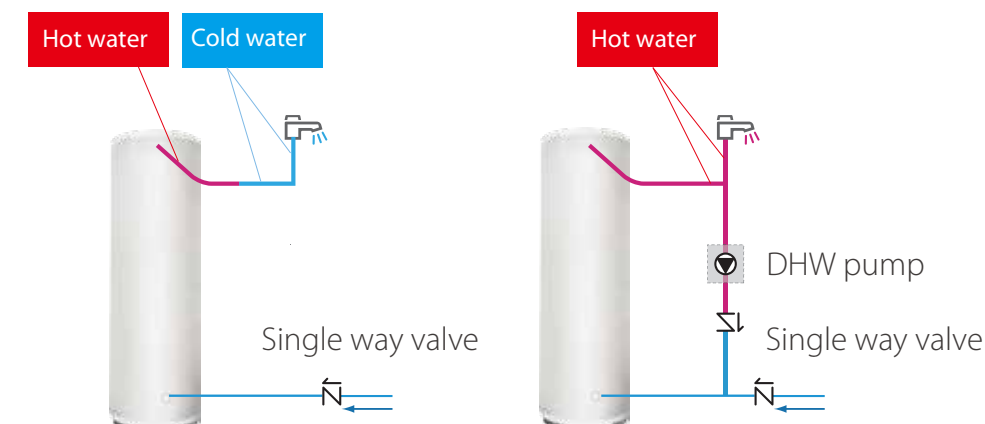
Normal electrical signal: Operates according to users' need.

Expensive electrical signal: Set the maximum operating time for heating mode and cooling mode.



DHW pump function

The DHW pump function is used to return water in the water pipe net to the hot water tank according to set timer. Total 12 timers for one day can be set, which allows users to set the DHW pump operation time according to using habit to guarantee using hot water without waiting for a long time.



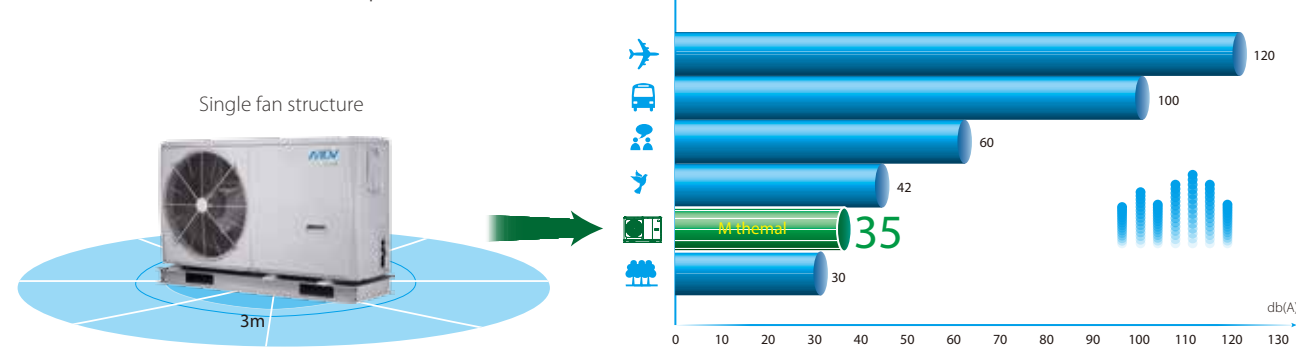
Comfort

Silent mode

Mono 4kW model produces 35dB(A) sound pressure level at 3 meters thanks to multiple optimization design.

Test condition:

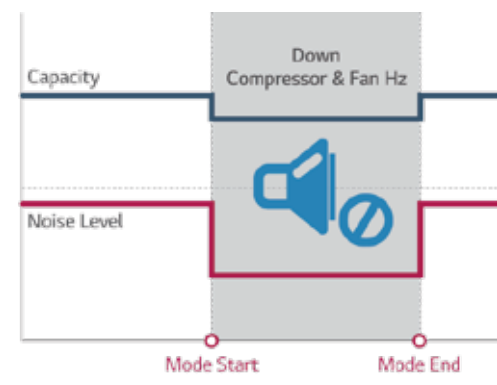
1. Evaporator air in 7°C, 85% R.H., Condenser water in/out 30/35°C
2. Condenser air in 35°C. Evaporator water in/out 23/18°C



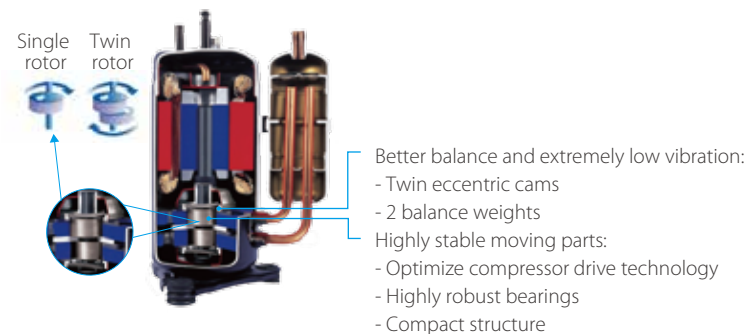
Multiple optimization design makes noise reduction:

Triple noise reduction

Silent mode decrease the sound effectively
Level 2 is more silent than level 1.



Twin rotary compressor

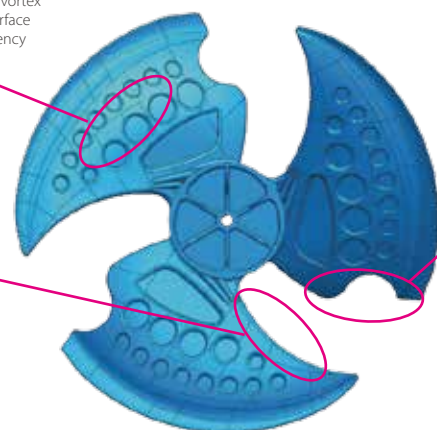


Bionic fan design

Suction surface concave design
Reduce the size of wake shedding vortex
Improve the flow field on blade surface
Reduce weight and improve efficiency

Leading edge thickening design
Reduce low frequency noise
Effectively improve the blade strength

Trailing edge notch design
Change pressure distribution in the trailing edge of the blade
Reduce the noise of blade wake vortex shedding



Optimized piping distribution



Convenient

USB function

Convenient program upgrade

No need to carry any other heavy equipments but only USB can realize program upgrade of indoor unit and outdoor unit.

Parameter setting transmission between wired controllers

Installer can quickly copy the setting from one controller to another via USB, which save the time of on-site installation.

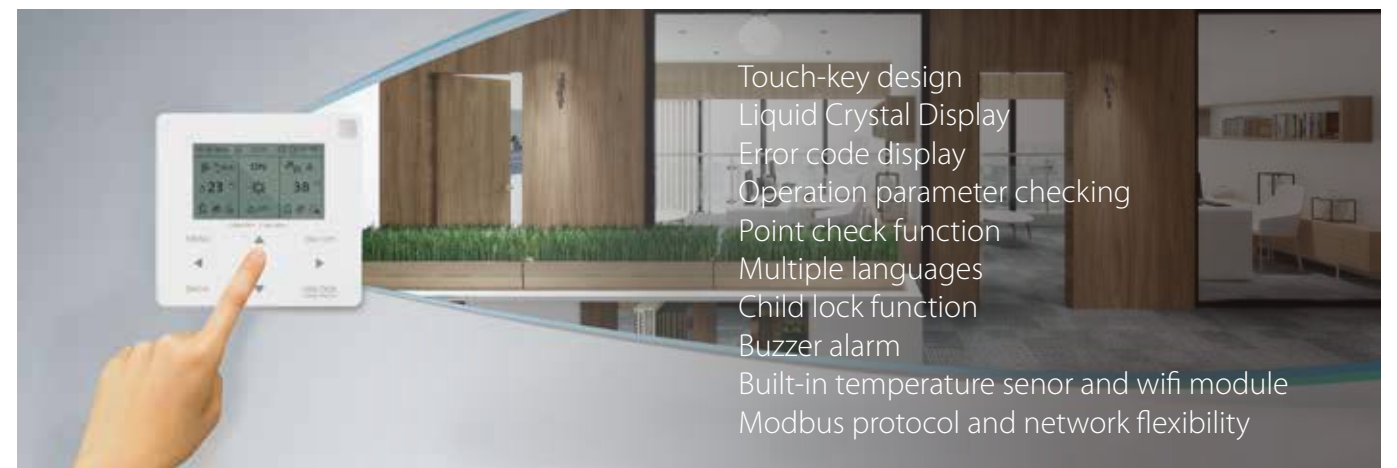


Holiday home

Holiday home function is used to deviate from the normal schedules without having to change them during the holiday at home.



Wifi controller



APP control



Comfort Home APP

Easy setting
Double zones control
Monitor system status
Know power consumption
Convenient remote control
Suggestion for energy saving
Schedule function and timer setting

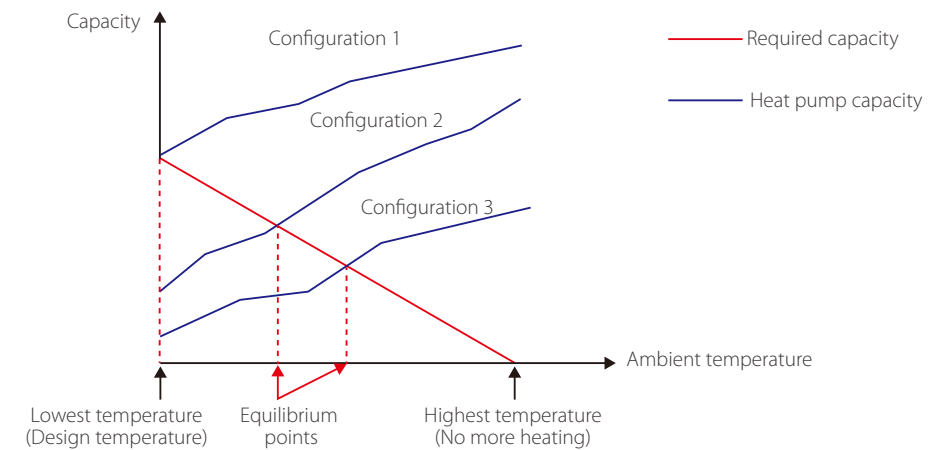
Note: APP interface changes from time to time as APP is updated and may change slightly vary from those in this document.

Typical Applications

System configurations

MDV thermal system can be configured to run with the electric heater either enabled or disabled and can also be used in conjunction with an auxiliary heat source such as a boiler.

The chosen configuration affects the size of heat pump that is required. Three typical configurations are described below.



Configuration 1: Heat pump only

- ❖ The heat pump covers the required capacity and no extra heating capacity is necessary.
- ❖ Requires selection of larger capacity heat pump and implies higher initial investment.
- ❖ Ideal for new construction in projects where energy efficiency is paramount.

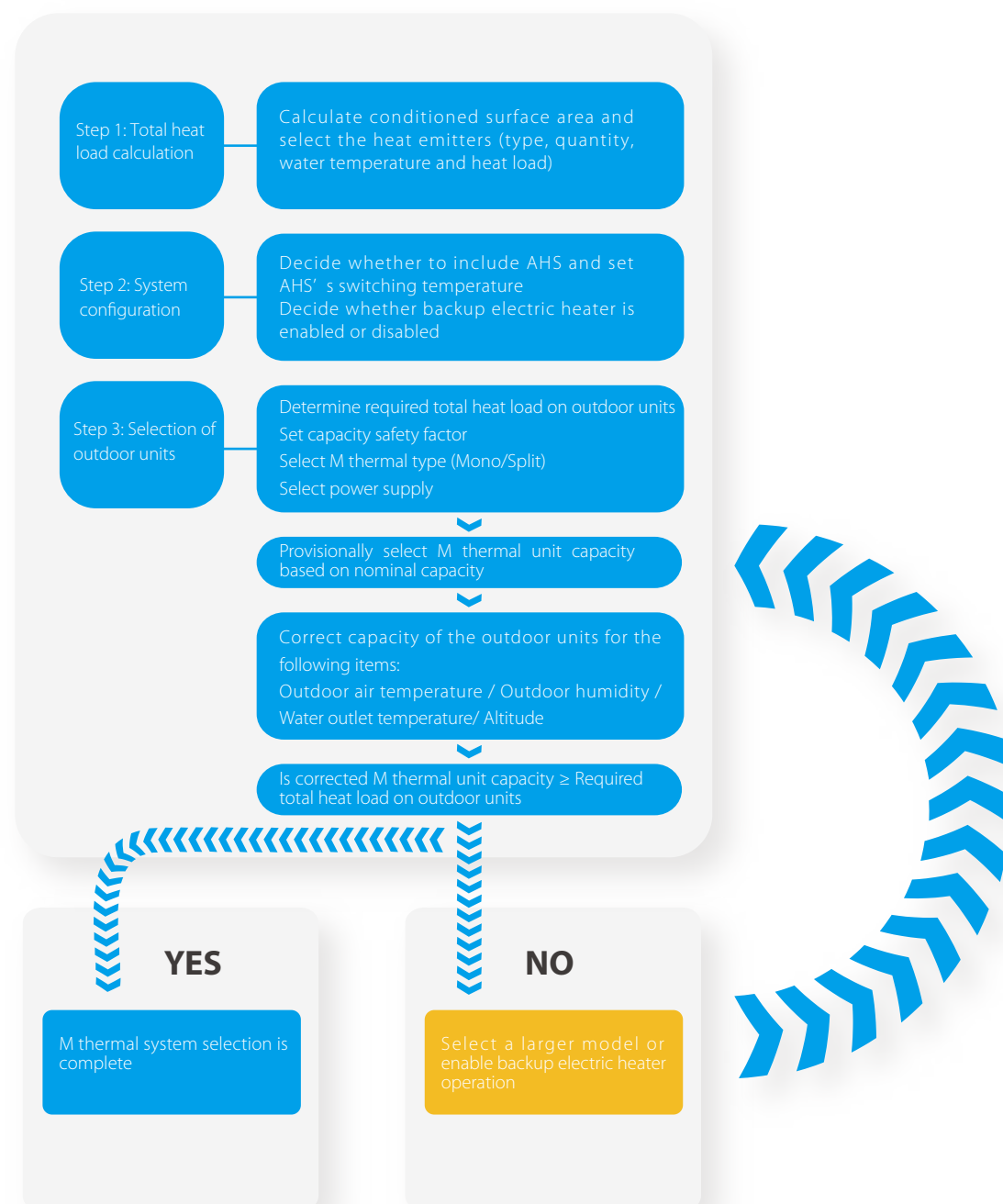
Configuration 2: Heat pump and backup electric heater

- ❖ Heat pump covers the required capacity until the ambient temperature drops below the point at which the heat pump is able to provide sufficient capacity. When the ambient temperature is below this equilibrium point, the backup electric heater supplies the required additional heating capacity.
- ❖ Best balance between initial investment and running costs, results in lowest lifecycle cost.
- ❖ Ideal for new construction.

Configuration 3: Heat pump with auxiliary heat source

- ❖ Heat pump covers the required capacity until the ambient temperature drops below the point at which the heat pump is able to provide sufficient capacity. When the ambient temperature is below this equilibrium point, depending on the system settings, either the auxiliary heat source supplies the required additional heating capacity or the heat pump does not run and the auxiliary heat source covers the required capacity.
- ❖ Enables selection of lower capacity heat pump.
- ❖ Ideal for refurbishments and upgrades.

Selection Procedure



Leaving Water Temperature (LWT)

The recommended design LWT ranges for different types of heat emitter are:

- ❖ For floor heating: 30°C to 35°C
- ❖ For fan coil units: 40°C to 45°C
- ❖ For low temperature radiators: 40°C to 50°C

One-stop solution - Heating, cooling and domestic hot water in one system

MDV thermal is an integrated system that provides space heating and cooling as well as domestic hot water, offering a complete, all-year-round solution which can remove the need for traditional gas or oil boilers, or work together with them. MDV thermal can be combined with floor heating loops, fan coil units, radiators and domestic water tank. It can also be connected to solar collectors, gas furnace, boiler and other heat sources.

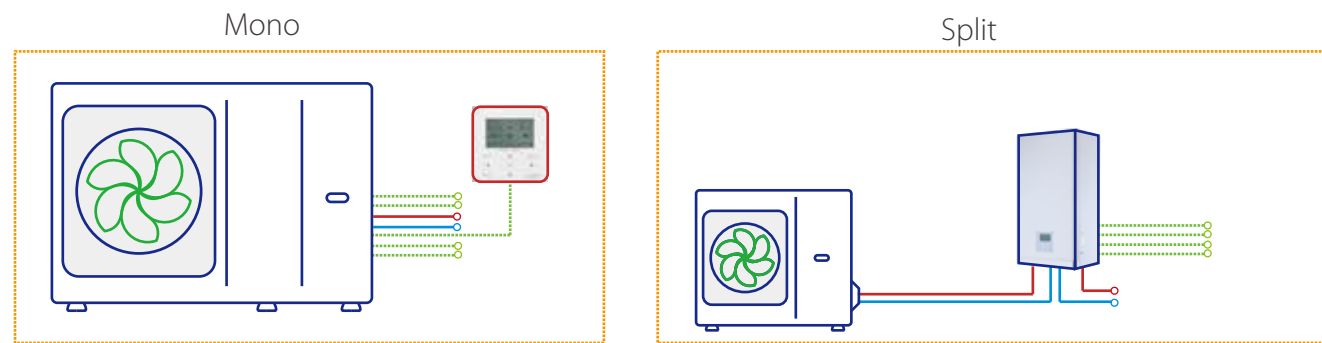


Smart Grid certification indicates MDV thermal can fully utilize electricity from different sources or different price levels, which means like photovoltaic, and the peak valley of urban electricity supply to satisfy different modes operation, which is benefit for cost saving.



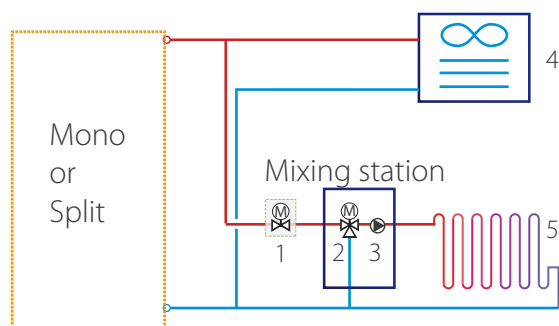
Typical application

Practical applications are various, including but not limited to the following applications. The application examples given below are for illustration only.



Heating and cooling

Floor heating loops is used for space heating and fan coil unit is used for both space heating and cooling. For heating mode, floor heating loops and fan coil unit require different operating water temperature. To achieve these two temperature, a mixing station (field supplied) which consists of 3-way valve and water pump is used to adapt the water temperature according to requirements of the floor heating loops. The mixing station is controlled by the unit. For cooling mode, 2-way valve is used to prevent cool water from entering floor heating loops then result in condensation during cooling.

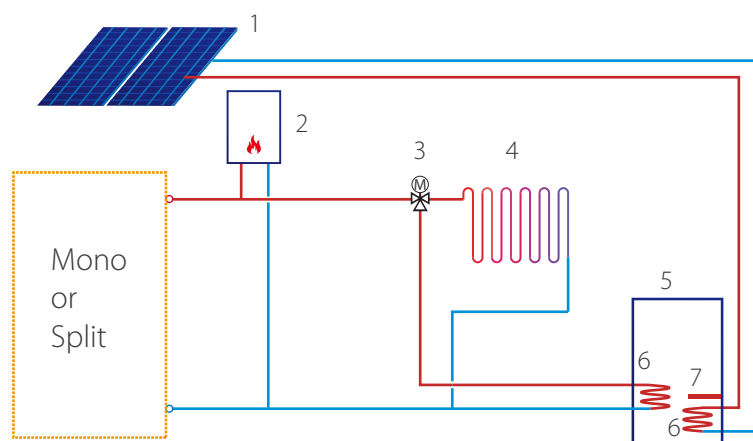


Notes:

1. 2-way valve (field supplied)
2. 3-way valve (field supplied)
3. Water pump (field supplied)
4. Fan coil unit (Midea can supply)
5. Floor heating loop (field supplied)

Heating, DHW and hybrid heat source

Backup electric heater (customized)* and AHS provide additional heating to raise the water temperature for unit outlet temperature. TBH and solar system provide additional heating to raise the domestic hot water temperature. 3-way valve is used to switch between heating mode and DHW mode.



Notes:

1. Solar panel (field supplied)
2. AHS: Additional heating source (field supplied)
3. 3-way valve (field supplied)
4. Floor heating loop (field supplied)
5. Water tank (field supplied)
6. Heat exchanger coil (field supplied)
7. TBH: Tank booster heater (field supplied)

* For Split model, backup electric heater can be installed in the hydraulic box.
For Mono 4~16kW models, backup electric heater can be installed in the unit.

Double zones control

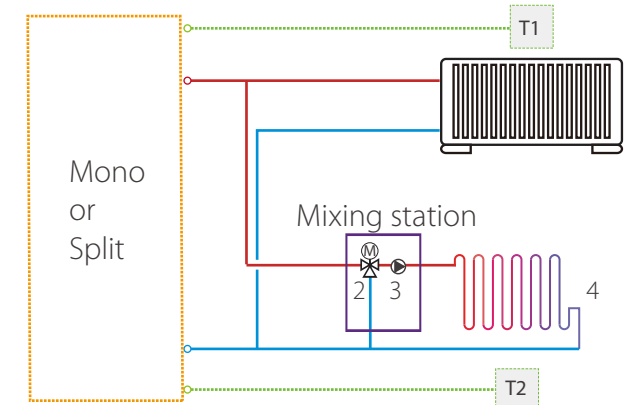
Double zones control is only available for heating mode. It can control different areas to reach different temperature to meet various needs of daily use.

1. Using wired controller only

Wired controller sets the mode, temperature and on/off. Zone 1 is controlled based on the leaving water temperature. Zone 2 is controlled based on the leaving water temperature or built-in sensor integrated in the wired controller.

2. Using wired controller and thermostat

Wired controller sets the mode and water temperature. Both Zone 1 and Zone 2 are controlled by thermostat.



Notes:

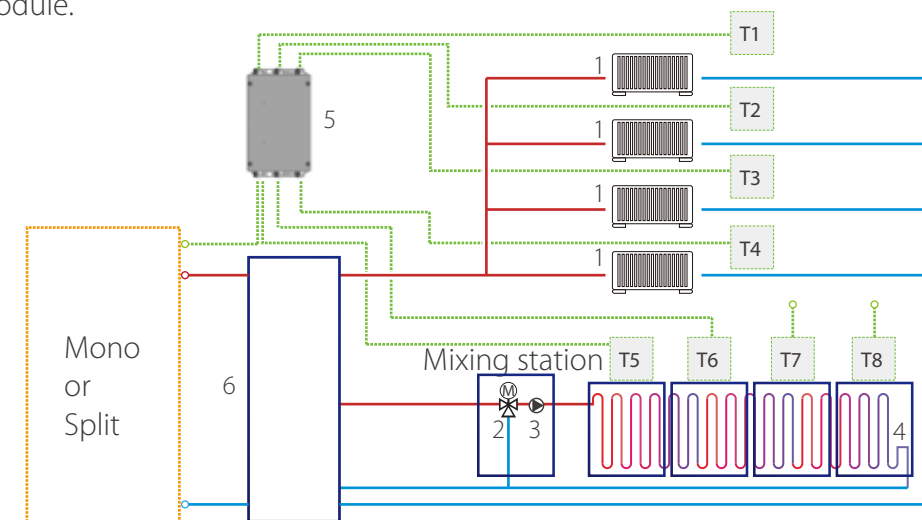
1. Radiator (field supplied)
2. 3-way valve (field supplied)
3. Water pump (field supplied)
4. Floor heating loop (field supplied)

Abbreviation

T: Room thermostat (field supplied)

Multiple rooms control (customized)

Maximum 6 room thermostats are available to be connected with M-kit and 2 thermostats are connected to hydraulic box, which realizes maximum 8 rooms can be controlled. M-kit is connected to the hydraulic module.



Notes:

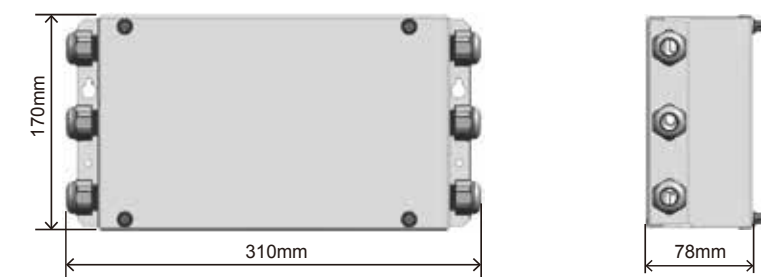
1. Radiator (field supplied)
2. 3-way valve (field supplied)
3. Water pump (field supplied)
4. Floor heating loop
5. M-kit (customized)
6. Balance tank (field supplied)

Abbreviation

T: Room thermostat (field supplied)

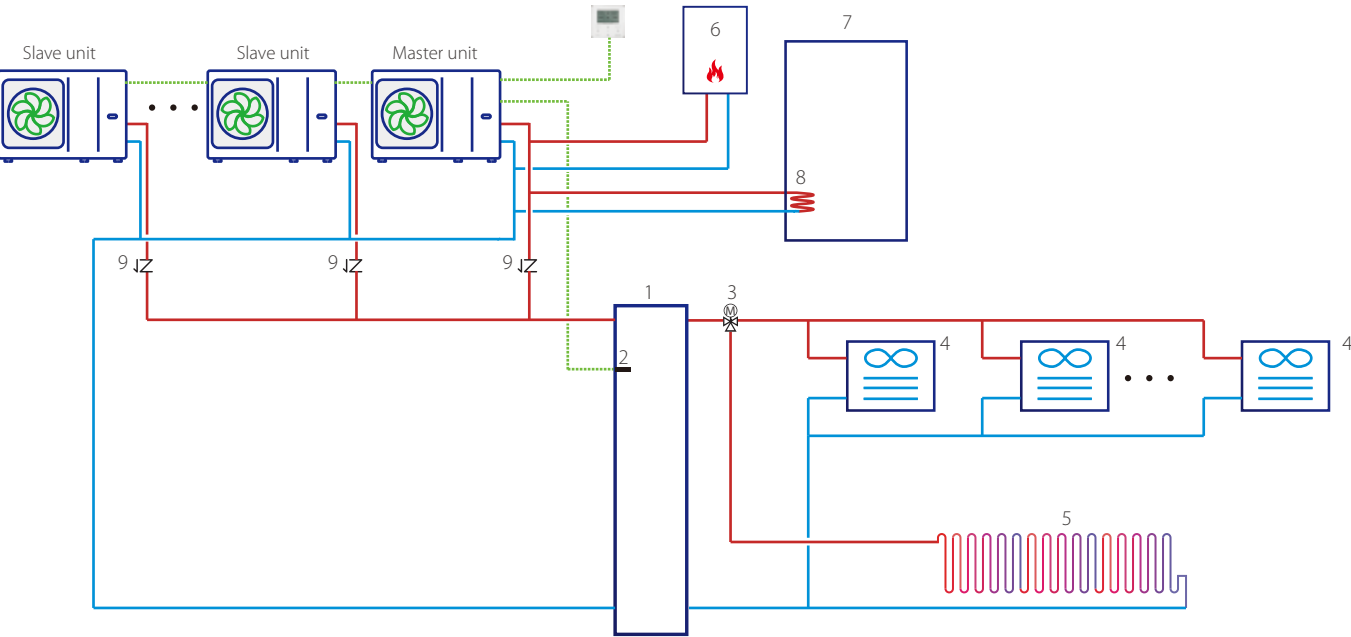
M-kit

Wall-mounted
Simple structure
Mini size
Flexible installation
Connect up to maximum 6 thermostats



Cascade system*

Cascade system design is perfect when an extension of capacity becomes required as the building cooling/heating demand evolves. Maximum 6 units can be controlled in group with one controller. Balance tank temperature control makes water temperature more accurate. Water tank can only be connected to the master unit water circuit through a three-way valve, and controlled by the master unit. AHS can only be connected to the master waterway and controlled by the master unit.



- Notes:
- 1. Balance tank(field supplied)
 - 2. Balance tank temperature sensor(Midea can supply)
 - 3. 3-way valve(field supplied)
 - 4. Fan coil unit(Midea can supply)
 - 5. Floor heating loop(field supplied)
 - 6.AHS: Additional heating source(field supplied)
 - 7.Water tank(field supplied)
 - 8.Heat exchanger coil(field supplied)
 - 9.Single way valve

* 1. 4~16kW modes can only combine with each other to reach a larger system capacity from 4~96kW.
2. 18~30kW models can only combine with each other to reach a larger system capacity from 18~180kW.

Arctic Series Mono



Outdoor unit model MDVC-			V4W D2ER8-A	V6W D2ER8-A	V8W D2ER8-A	V10W D2ER8-A	V12W D2ER8-A	V14W D2ER8-A	V16W D2ER8-A	V12W D2BR8-A	V14W D2BR8-A	V16W D2BR8-A
Power supply		V/Ph/Hz	220-240/1/50							380-415/3/50		
Heating ¹	Capacity	kW	4.20	6.35	8.40	10.0	12.1	14.5	15.9	12.1	14.5	15.9
	Rated input	kW	0.82	1.28	1.63	2.02	2.44	3.15	3.53	2.44	3.15	3.53
	COP		5.10	4.95	5.15	4.95	4.95	4.60	4.50	4.95	4.60	4.50
Heating ²	Capacity	kW	4.30	6.30	8.10	10.0	12.3	14.1	16.0	12.3	14.1	16.0
	Rated input	kW	1.13	1.70	2.10	2.67	3.32	3.92	4.57	3.32	3.92	4.57
	COP		3.80	3.70	3.85	3.75	3.70	3.60	3.50	3.70	3.60	3.50
Heating ³	Capacity	kW	4.40	6.00	7.50	9.50	11.9	13.8	16.0	11.9	13.8	16.0
	Rated input	kW	1.49	2.03	2.36	3.06	3.90	4.68	5.61	3.90	4.68	5.61
	COP		2.95	2.95	3.18	3.10	3.05	2.95	2.85	3.05	2.95	2.85
Cooling ⁴	Capacity	kW	4.50	6.50	8.30	9.90	12.00	13.50	14.90	12.00	13.50	14.90
	Rated input	kW	0.82	1.35	1.64	2.18	3.04	3.75	4.38	3.04	3.75	4.38
	EER		5.50	4.80	5.05	4.55	3.95	3.60	3.40	3.95	3.60	3.40
Cooling ⁵	Capacity	kW	4.70	7.00	7.45	8.20	11.5	12.4	14.0	11.5	12.4	14.0
	Rated input	kW	1.36	2.33	2.22	2.52	4.18	4.96	5.60	4.18	4.96	5.60
	EER		3.45	3.00	3.35	3.25	2.75	2.50	2.50	2.75	2.50	2.50
Seasonal space heating energy efficiency class ⁶	Water outlet at 35°C	class	A+++									
	Water outlet at 55°C	class	A++									
Refrigerant	Type(GWP)		R32(675)									
	Charged volume	kg	1.40		1.40		1.75					
Sound power Level ⁷		dB	55	58	59	60	65	65	68	65	65	68
Net dimension (WxHxD)		mm	1295x792x429			1385x945x526						
Packing dimension (WxHxD)		mm	1375x965x475			1465x1120x560						
Net/Gross weight		kg	98/121		121/148		144/170			160/188		
Water pump	Max. pump head	m	9									
Water piping connection		mm	R1"		R5/4"							
Ambient temperature range	Cooling	°C	-5~43									
	Heating	°C	-25~35									
	DHW	°C	-25~43									
LWT setting range	Cooling	°C	5~25									
	Heating	°C	25~65									
	DHW	°C	30~60									
Backup E-heater ⁸	Standard mounted	kW	/									
	Optional	kW	3	3	3/9	3/9	3/9	3/9	3/9	3/9	3/9	3/9
	Capacity steps		1	1	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3
	Power supply	3kW	220-240/1/50									
		9kW	380-415/3/50									

- Notes:
- 1. Evaporator air in 7°C, 85% R.H., Condenser water in/out 30/35°C
 - 2. Evaporator air in 7°C, 85% R.H., Condenser water in/out 40/45°C
 - 3. Evaporator air in 7°C, 85% R.H., Condenser water in/out 47/55°C
 - 4. Condenser air in 35°C. Evaporator water in/out 23/18°C
 - 5. Condenser air in 35°C. Evaporator water in/out 12/7°C
 - 6. Seasonal space heating energy efficiency class testes in average climate general conditions.
 - 7. Testing standard: EN12102-1.
 - 8. Backup electric heater is built into all models.
For three phase type backup electric heater, 3/6kW can be achieved by changing DIP switch when heat pump is equipped with 9kW. In this case, three phase power supply is needed.
 - 9. Relevant EU standards and legislation: EN14511; EN14825; EN50564; EN12102; (EU) No 811/2013; (EU) No 813/2013; OJ 2014/C 207/02:2014.

Arctic Series Mono



Model			MDVC-V18WD2BR8-A	MDVC-V22WD2BR8-A	MDVC-V26WD2BR8-A	MDVC-V30WD2BR8-A
Power supply		V/Ph/Hz	380-415/3/50			
Heating ¹	Capacity	kW	18.00	22.00	26.00	30.10
	Rated input	kW	3.83	5.00	6.37	7.70
	COP		4.70	4.40	4.08	3.91
Heating ²	Capacity	kW	18.00	22.00	26.00	30.00
	Rated input	kW	5.14	6.47	8.39	10.35
	COP		3.50	3.40	3.10	2.90
Heating ³	Capacity	kW	18.00	22.00	26.00	30.00
	Rated input	kW	6.55	8.30	10.61	13.04
	COP		2.75	2.65	2.45	2.30
Cooling ⁴	Capacity	kW	18.50	23.00	27.00	31.00
	Rated input	kW	3.90	5.00	6.28	7.75
	EER		4.75	4.60	4.30	4.00
Cooling ⁵	Capacity	kW	17.00	21.00	26.00	29.50
	Rated input	kW	5.57	7.12	9.63	11.57
	EER		3.05	2.95	2.70	2.55
Seasonal space heating energy efficiency class ⁶	Water outlet at 35°C	class	A+++	A+++	A+++	A++
	Water outlet at 55°C	class	A++	A++	A+	A+
Refrigerant	Type(GWP)		R32(675)			
	Charged volume		5.0			
Sound power level ⁷		dB	71	73	75	77
Net dimension (WxHxD)		mm	1129x1558x440			
Packing dimension (WxHxD)		mm	1220x1735x565			
Net/Gross weight			177/206			
Water pump	Max. pump head	m	12.0	12.0	12.0	12.0
Water piping connection		inch	1-1/4" BSP	1-1/4" BSP	1-1/4" BSP	1-1/4" BSP
Ambient temperature range	Cooling	°C	-5-46			
	Heating	°C	-25-35			
	DHW	°C	-25-43			
LWT setting range	Cooling	°C	5-25			
	Heating	°C	25-60			
	DHW	°C	30-60			

Notes:

1.Evaporator air in 7°C, 85% R.H., Condenser water in/out 30/35°C.

2.Evaporator air in 7°C, 85% R.H., Condenser water in/out 40/45°C.

3.Evaporator air in 7°C, 85% R.H., Condenser water in/out 47/55°C.

4.Condenser air in 35°C. Evaporator water in/out23/18°C.

5.Condenser air in 35°C. Evaporator water in/out 12/7°C.

6. Seasonal space heating energy efficiency class testes in average climate general.

7.Testing standard: EN12102-1.

8. Relevant EU standards and legislation: EN14511; EN14825; EN50564; EN12102; (EU) No 811/2013; (EU) No 813/2013; OJ 2014/C 207/02:2014.

Arctic Series Split

Outdoor unit model MDVA-			V4W D2ER8-A	V6W D2ER8-A	V8W D2ER8-A	V10W D2ER8-A	V12W D2ER8-A	V14W D2ER8-A	V16W D2ER8-A	V12W D2BR8-A	V14W D2BR8-A	V16W D2BR8-A
Hydronic box model HB-A			60/CGN8-B		100/CGN8-B		160/CGN8-B					
Heating ¹	Capacity	kW	4.25	6.20	8.30	10.0	12.1	14.5	16.0	12.1	14.5	16.0
	Rated input	kW	0.82	1.24	1.60	2.00	2.44	3.09	3.56	2.44	3.09	3.56
	COP		5.20	5.00	5.20	5.00	4.95	4.70	4.50	4.95	4.70	4.50
Heating ²	Capacity	kW	4.35	6.35	8.20	10.0	12.3	14.2	16.0	12.3	14.2	16.0
	Rated input	kW	1.14	1.69	2.08	2.63	3.24	3.89	4.44	3.24	3.89	4.44
	COP		3.80	3.75	3.95	3.80	3.80	3.65	3.60	3.80	3.65	3.60
Heating ³	Capacity	kW	4.40	6.00	7.50	9.50	12.0	13.8	16.0	12.0	13.8	16.0
	Rated input	kW	1.49	2.00	2.36	3.06	3.87	4.60	5.52	3.87	4.60	5.52
	COP		2.95	3.00	3.18	3.10	3.10	3.00	2.90	3.10	3.00	2.90
Cooling ⁴	Capacity	kW	4.50	6.55	8.40	10.00	12.00	13.50	14.90	12.00	13.50	14.90
	Rated input	kW	0.81	1.34	1.66	2.08	3.00	3.75	4.38	3.00	3.75	4.38
	EER		5.55	4.90	5.05	4.80	4.00	3.60	3.40	4.00	3.60	3.40
Cooling ⁵	Capacity	kW	4.70	7.00	7.40	8.20	11.6	12.7	14.0	11.6	12.7	14.0
	Rated input	kW	1.36	2.33	2.19	2.48	4.22	4.98	5.71	4.22	4.98	5.71
	EER		3.45	3.00	3.38	3.30	2.75	2.55	2.45	2.75	2.55	2.45
Seasonal space heating energy efficiency class ⁶	Water outlet at 35°C	class	A+++									
	Water outlet at 55°C	class	A++									

Arctic Series Split outdoor unit



Outdoor unit model MDVA-			V4W D2ER8-A	V6W D2ER8-A	V8W D2ER8-A	V10W D2ER8-A	V12W D2ER8-A	V14W D2ER8-A	V16W D2ER8-A	V12W D2BR8-A	V14W D2BR8-A	V16W D2BR8-A
Power supply		V/Ph/Hz	220-240/1/50							380-415/3/50		
Refrigerant	Type(GWP)		R32(675)									
	Charged volume	kg	1.50		1.65		1.84					
Sound power Level ¹		dB	56	58	59	60	64	65	68	64	65	68
Net dimension (WxHxD)		mm	1008x712x426				1118x865x523					
Packing dimension (WxHxD)		mm	1065x800x485				1180x890x560					
Net/Gross weight		kg	58/64		77/88		96/110			112/125		
Pipe size O.D.	Liquid	mm	6.35		9.52							
	Gas	mm	15.88		15.88							
Connection method			Flared									
Between indoor and outdoor unit	Height difference	m	Max.20									
	Pipe length	m	2-30									
Additional refrigerant	Chargment	g/m	20		38							
	Max. pipe length for no additional refrigerant	m	15									
Ambient temperature range	Cooling	°C	-5~-43									
	Heating	°C	-25~-35									
	DHW	°C	-25~-43									

Note: 1.Testing standard: EN12102-1.

Arctic Series Split hydronic box



Hydronic box model MDVHB-			60CEGR8-A	100CEGR8-A	160CEGR8-A
Power supply		V/Ph/Hz	220-240/1/50		
Sound power level ¹		dB	38	42	43
Unit dimension (W×H×D)		mm	420×790×270		
Packing dimension (W×H×D)		mm	525×1050×360		
Net/Gross weight		kg	37/43	37/43	39/45
Water pump	Max. pump head	m	9		
	Water side	mm	R1"		
Connection	Refrigerant liquid	mm	6.35	9.52	
	Refrigerant gas	mm	15.88	15.88	
Backup E-heater ²	Standard mounted		kW	/	
	Optional		kW	3/9	3/9
	Capacity steps			1/3	1/3
	Power supply	3kW	V/Ph/Hz	220-240/1/50	
		9kW		380-415/3/50	
LWT setting range	Cooling		°C	5~25	
	Heating		°C	25~65	
	DHW		°C	30~60	

Note: 1.Testing standard: EN12102-1.
2. For three phase type backup electric heater, 3/6kW can be achieved by changing DIP switch when hydronic box is equipped with 9kW.



MDV Aqua thermal Series



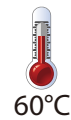
Product lineup

Capacity(kW)	90
Appearance	
380-415V/3Ph/50Hz	

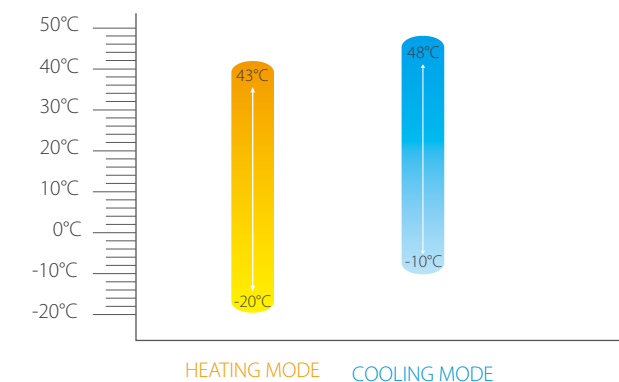
Overview

Refrigerant R32 75% less impact on global warming;
 DC Inverter technology allows precise consumption on real load;
 One-stop solution for heating, cooling and domestic hot water(Customization);
 Maximum water temperature up to 60°C for DHW mode(Customization);
 Minimum operation temperature down to -20°C;
 45°C water temperature at -15°C ambient temperature;
 High energy efficiency level A++ for energy saving (Water outlet temperature at 35°C);
 Space saving;
 Maximum 16 units combination and controlled by one controller;
 Maximum 1440kW combination capacity;
 Maximum 256 units controlled through Modbus;
 Hydraulic model for customization;

DC Inverter



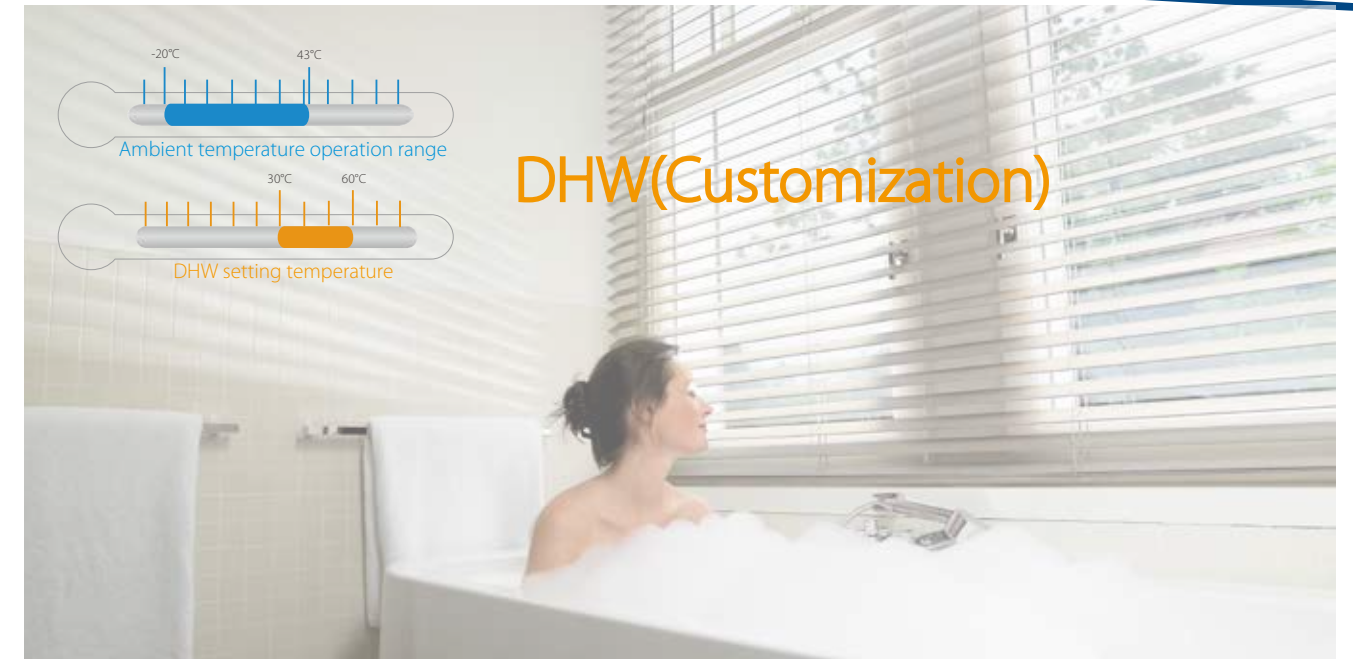
Ambient temperature



Outlet water temperature

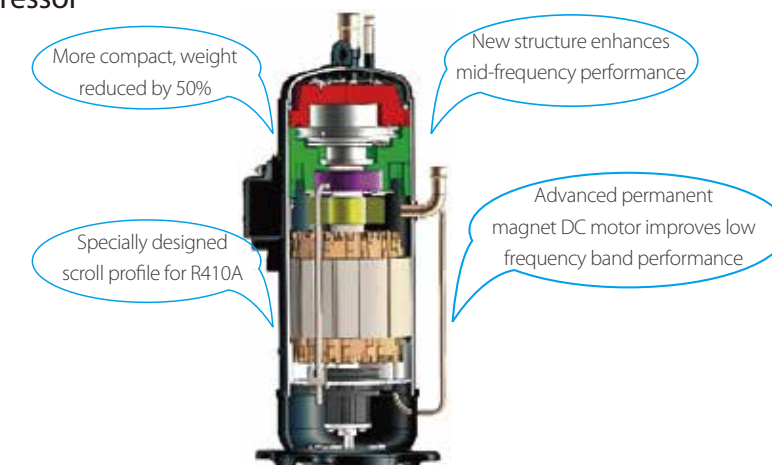


Note: For cooling mode, if outlet water temperature is less than 5°C, anti-freeze liquid is needed. 0°C water temperature can be reached by changing DIP switch setting.



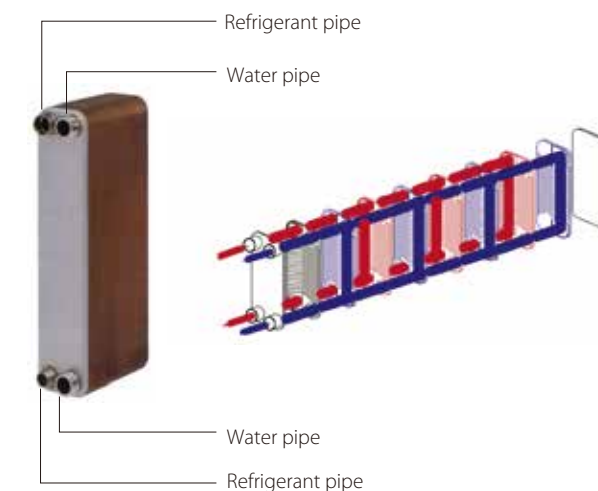
High quality components

DC Inverter compressor



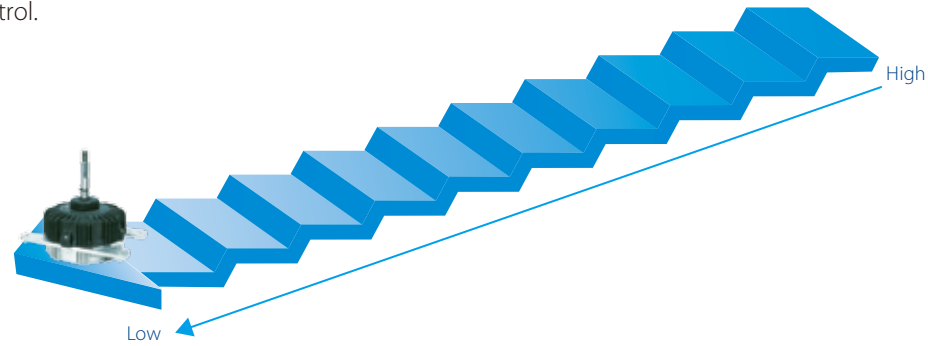
High efficiency plate heat exchanger

Plate heat exchanger uses metal plates to transfer heat between refrigerant and water. The fluids are exposed to a much larger surface area because the fluids spread out over the plates, so both heat transfer efficiency and heat exchanger speed are greatly improved. Multi protections including voltage protection, current protection, anti-freezing protection and water flow protection ensure system safety running.



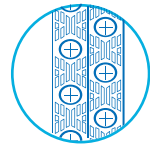
DC fan motors

Fan speed is controlled according to the system pressure and system load, reducing power consumption by 30%. There are 32-step vector control.



High performance heat exchanger

Enlarge heat-exchanging area



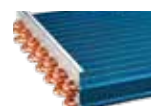
Fin

Enhance heat transfer



Inner-threaded pipe

High efficiency



Fin + inner-threaded pipes

Hydrophilic film fins and inner-threaded copper pipes optimize heat exchange efficiency. The specially coated blue fins enhance durability and protect against corrosion from air, water and other corrosive agents, assures a longer coil service life.

Heat exchanger aluminum foil

> Standard products:
200h of neutral salt mist

> Heavy anti-corrosion products:
1000h of neutral salt mist
140h of acid salt mis

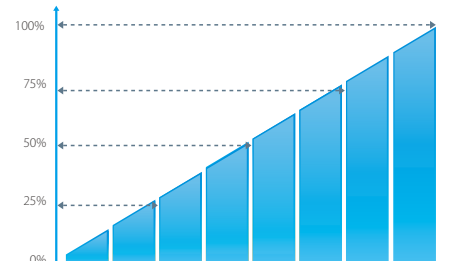
Heat exchanger copper pipe

> Standard products:
24h of neutral salt mist

> Heavy anti-corrosion products:
150h of neutral salt mist

Precise flow control

Patented liquid distribution components maximize performance and minimize impact of defrosting operation. 500-step EXV with capillary tube allows stable and accurate gas flow control. Fast response results in higher efficiency and improved reliability.



Advanced technology

Enhanced Vapor Injection (EVI) Compressor

Thanks to the vapor injection DC inverter compressor, the 90kW model can run heating mode stably down to -20°C, and the heating capacity can be improved greatly.



EVI compressor

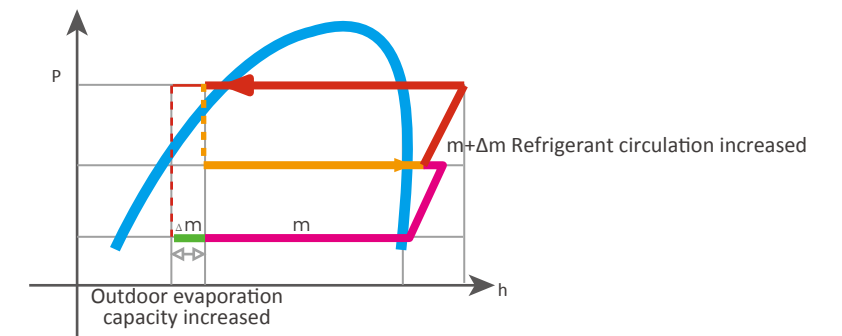
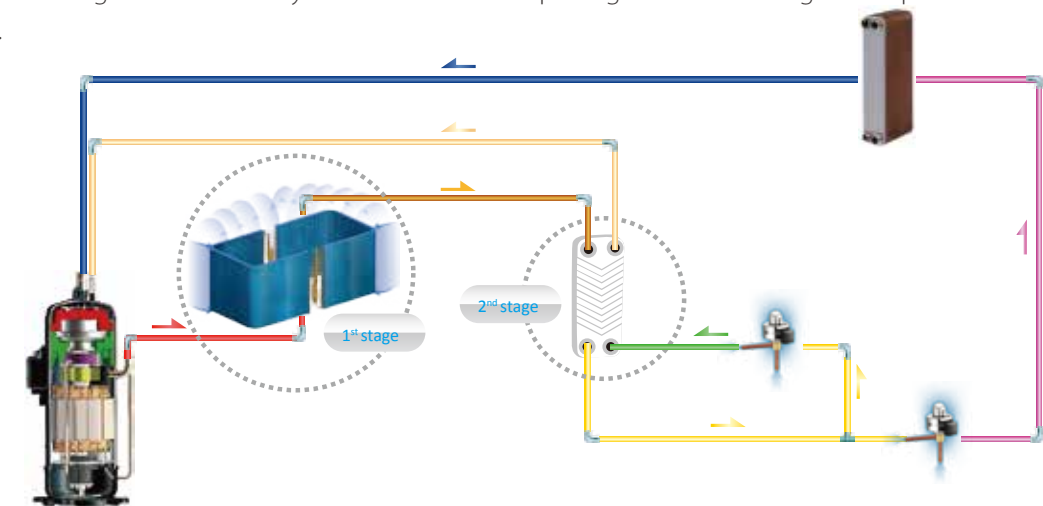


Plate Heat Exchanger Subcooling

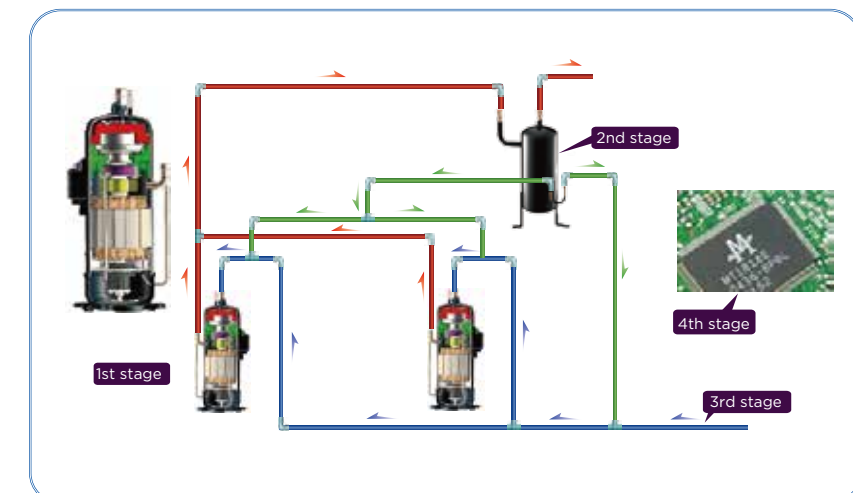
Plate Heat Exchanger as a secondary intercooler boosts up refrigerant subcooling and improves 10% energy efficiency.



Precise Oil Control Technology

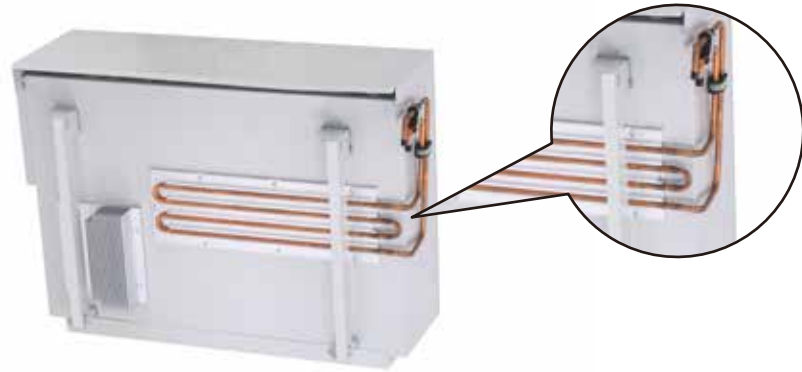
Four stages of oil control technology ensure all outdoor compressor oil is always kept at a safe level, eliminating any compressor oil shortage problems.

- Compressor internal oil separation.
- High-efficiency centrifugal oil separator (with separation efficiency of up to 99%) ensures that oil is separated from the discharge gas and returned to the compressors in a timely fashion.
- Oil balance pipe ensures oil distribution to keep compressor running normally.
- Auto oil return program monitors the running time and system status to ensure reliable oil return.



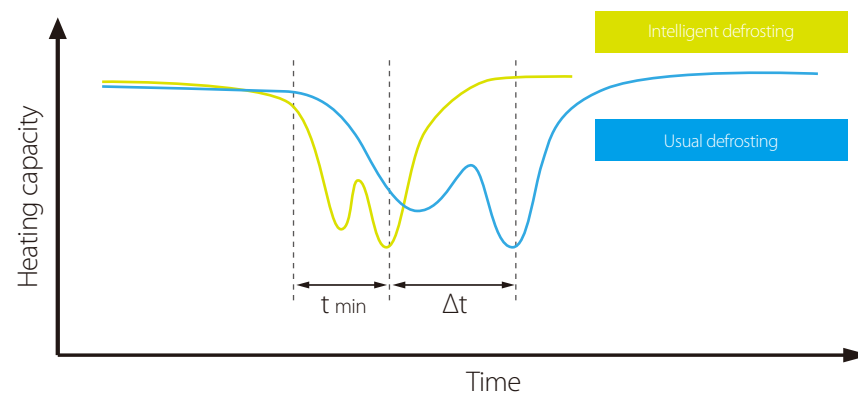
Refrigerant Cooling PCB

The 90kW model uses refrigerant cooling technology to cool the electric control box. Refrigerant cooling PCB technology reduces electric control heating under harsh working conditions, effectively reduce the temperature of electronic control components, ensure the stable and safe operation of the unit control system.



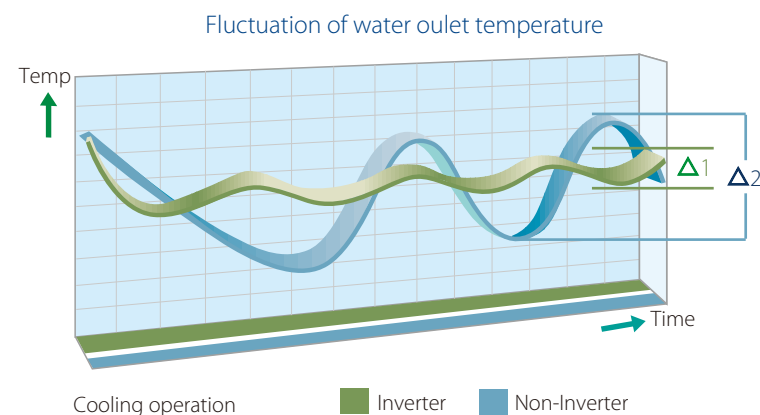
Intelligent defrosting technology

The intelligent defrosting program calculates the time required for defrosting according to the actual system status, eliminating heat losses from unnecessary defrosting. A specialized defrosting valve reduces time required for defrosting to as little as four minutes.



Rapid cooling or heating

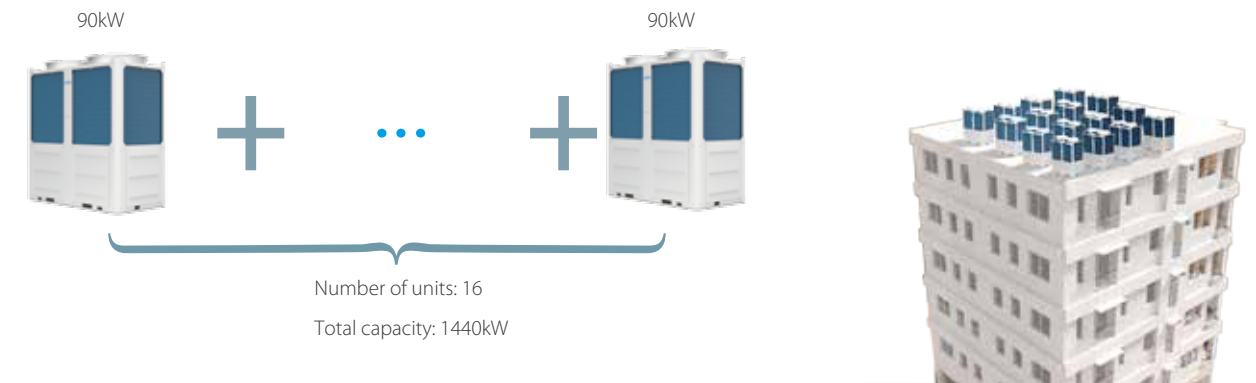
The DC inverter compressor reaches full capacity rapidly, providing quicker cooling or heating with lower levels of temperature fluctuation during the cooling/heating operation.



Flexibility

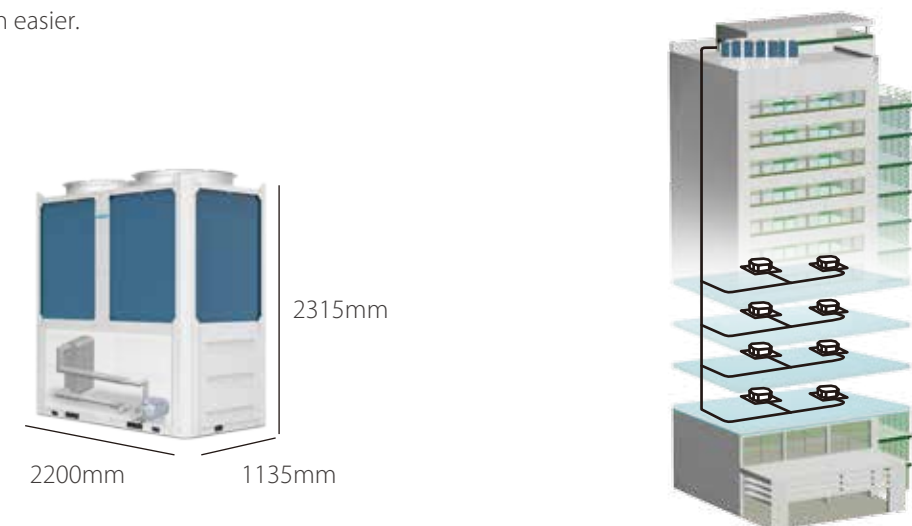
Modular design

Modularity is perfect when an extension of capacity becomes required as the building load range from 90kW to 1440kW.



Space saving and simplified installation

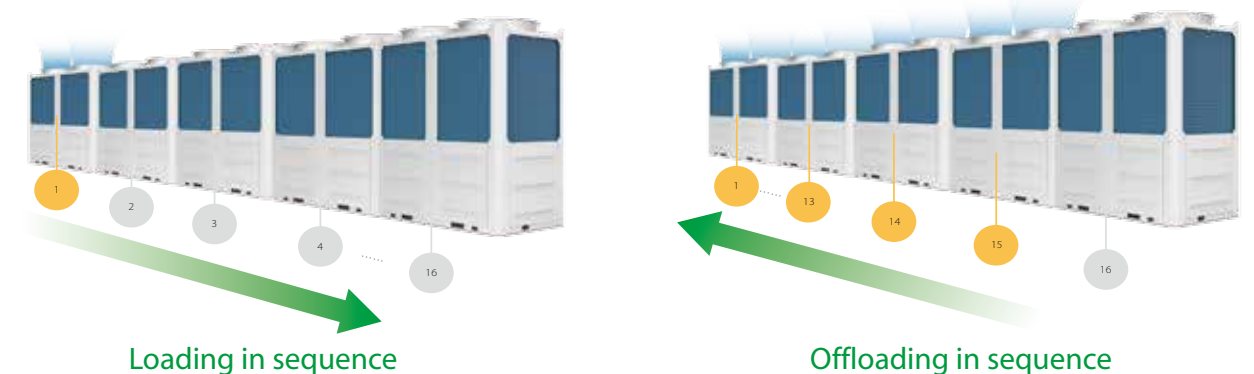
Single unit covers an area of only 2.5m², which greatly saves lots of space for group control. The hydraulic models (customized) has the water pump components inside the unit, which can save the installation cost and time and make installation easier.



High reliability

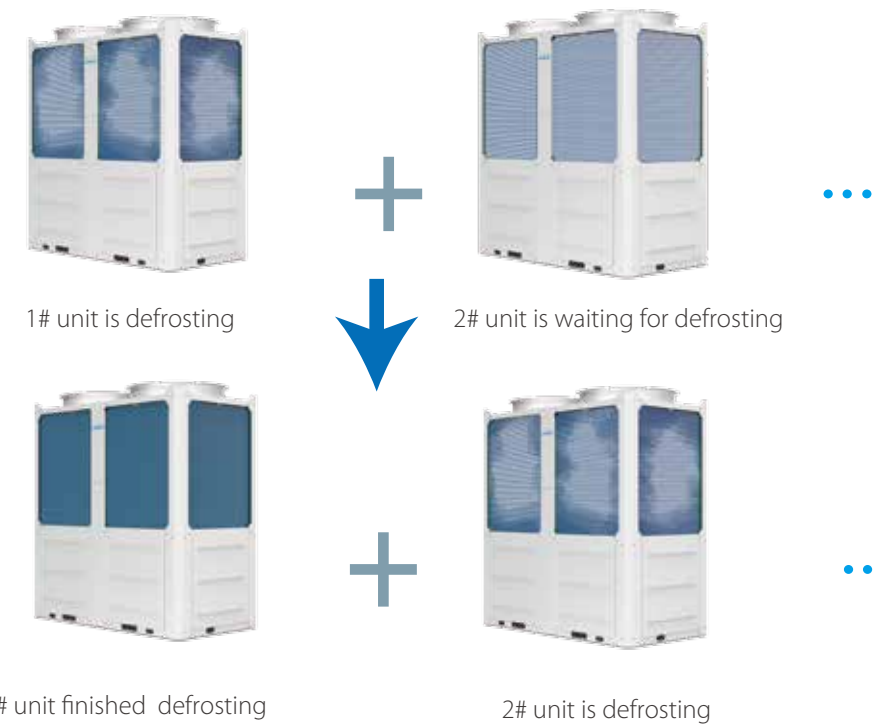
Alternative cycle duty operation

In one combination system, all units operate as alternative in cycle duty to keep equal running time, realize higher stability, better reliability and longer lifespan.



Alternate defrost operation

By detecting the water temperature, the proportion of defrosting unit can be determined intelligently so as to realize small water temperature fluctuation during the alternate defrosting period.



Back-up function

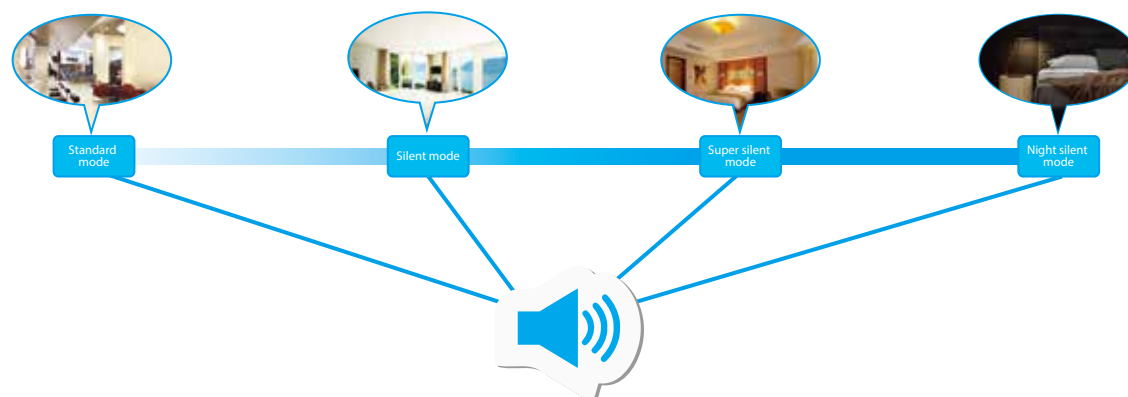
In a combination system, if one unit failed, other units can be back-up instead of the failed one for continuing operation.



Multiple function

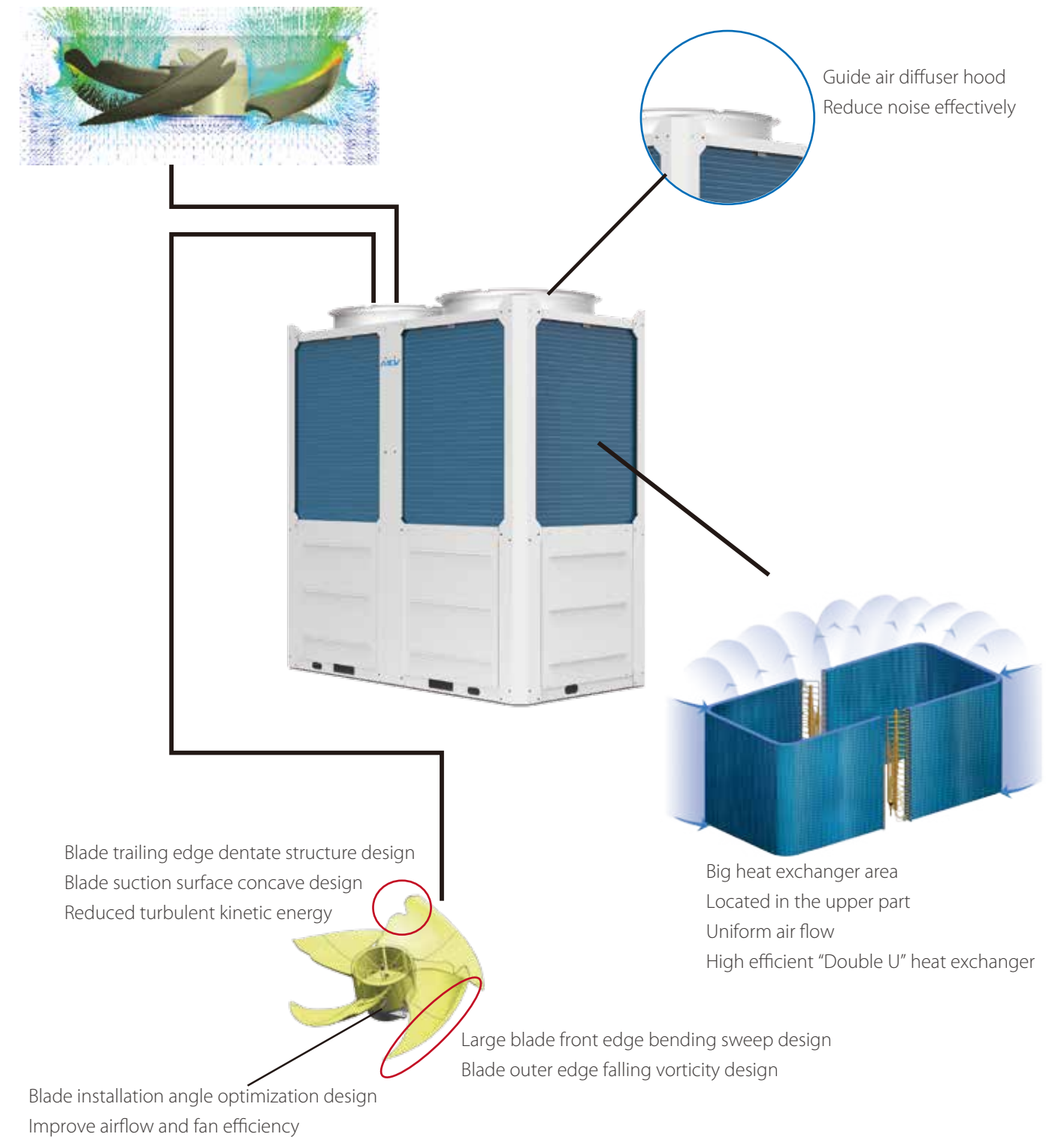
Multiple silent modes

Different silent modes enable noise reduction to suit time of day and ambient noise levels.



Multiple optimization design makes noise reduction

Optimized fan blade edge by CFD programs with analyzing air pressure distribution Realize higher air volume, lower noise level.



USB function

Convenient program upgrade

No need to carry any other heavy equipments but only USB can realize program upgrade of indoor unit and outdoor unit.



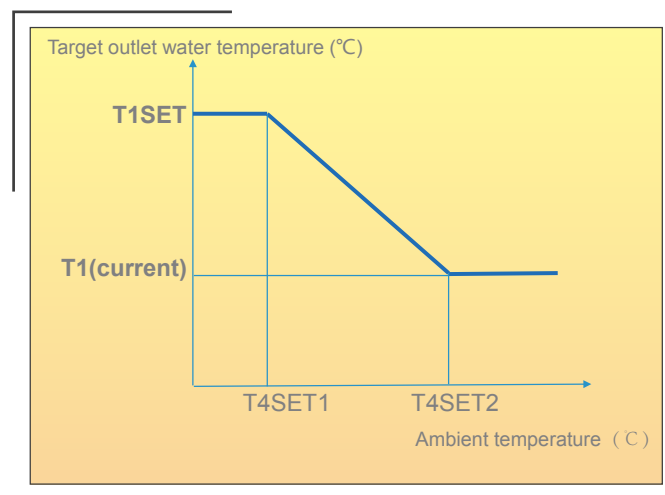
7 Levels of energy saving

For projects with temporary electricity supply restrictions, the outdoor unit supports 7 levels of energy management which can be set to output 40-100% capacity. It prevents tripping during electricity supply restriction conditions and remains system continue to operate.



Weather temperature curve

With the help of Weather temperature curve function, water temperature will automatically change as outside air temperature changes. When outdoor air temperature increases/decreases, the heating load will decrease/increase and water temperature will decrease/increase automatically. When outdoor air temperature decreases/increases, the cooling load will decrease/increase and water temperature will increase/decrease automatically.



Remote alarm, on/off control, cooling/heating control.



One-touch water temperature switching

For cooling and heating mode, different water temperatures can be switched just by one-touch.



Anti-corrosion Protection

Outdoor units are given anti-corrosion treatment for non-extreme conditions as standard and can also be customized with heavy anti-corrosion treatment on main components for surface protection against corrosive air, acid rain and saline air (for installations in coastal regions) to extend machine life span. The integrity of the anti-corrosion treatment is ensured by subjecting major components and parts to salt mist testing, moisture and heating testing and light aging testing.

Fan motor

Standard products:
72h of neutral salt mist

Heavy anti-corrosion products:
240h of neutral salt mist



Standard products:
500h of neutral salt mist
1000h of moisture and heating test
500h of light aging test

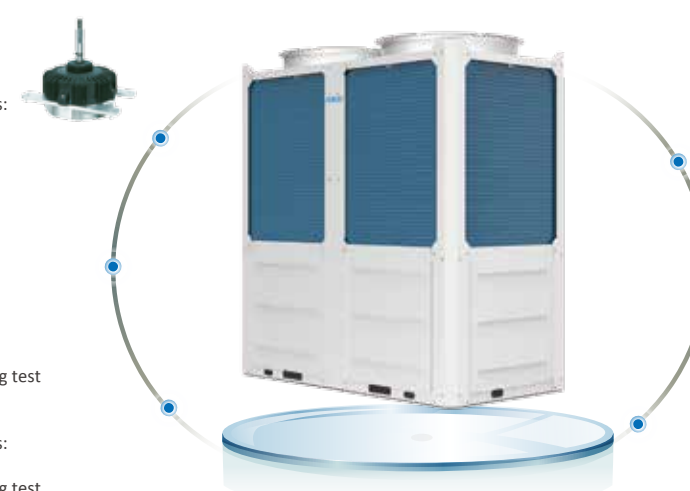
Heavy anti-corrosion products:
1000h of neutral salt mist
2000h of moisture and heating test
720h of light aging test



Screws / bolts / gaskets

Standard products:
300h of neutral salt mist

Heavy anti-corrosion products:
720h of neutral salt mist



Heat exchanger aluminum foil

Standard products:
200h of neutral salt mist

Heavy anti-corrosion products:
1000h of neutral salt mist
140h of acid salt mist

Heat exchanger copper pipe

Standard products:
24h of neutral salt mist

Heavy anti-corrosion products:
150h of neutral salt mist



Electric control box case

Standard products:
96h of neutral salt mist

Heavy anti-corrosion products:
240h of neutral salt mist

Convenient control

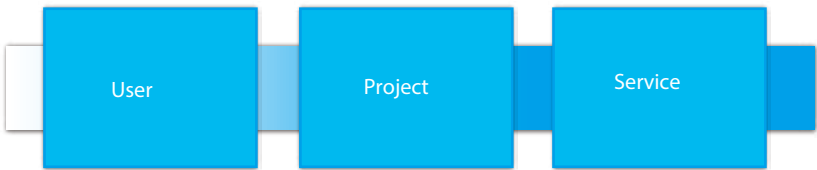
- Touch key wired controller as standard accessory to control the chillers.



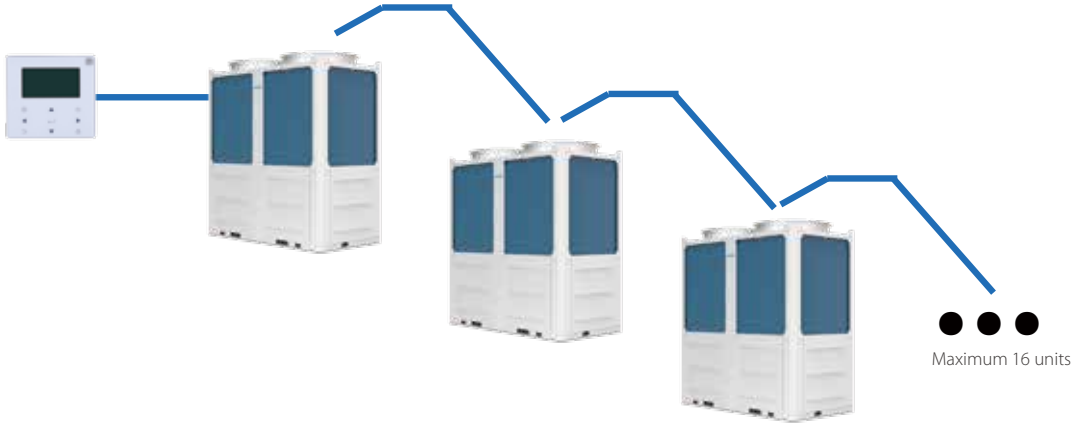
Model	KJRM-120H2/BMWKO-E
Appearance	
Main Functions	Touch key operation Parameter setting an LCD display Real-time clock function Multiple timer Power-off memory function Modbus Address setting Parallel function Buzzer prompt tone and alarm functions Weekly schedule Double set point function Energy saving function
Max. connection PCBs	16

Three user levels

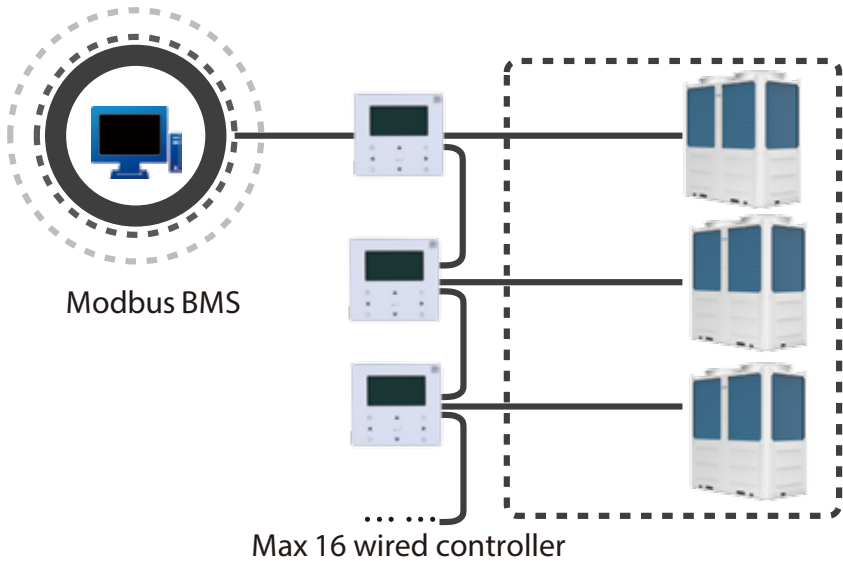
Three different user levels ensure users can easily access control functions and allow engineers convenient access to operating parameters.



Group control for up to maximum 16 units with one wired controller
Each unit can connect with one controller for setting and one controller for monitoring.



Multilingual wired controller using Modbus communication protocol



Easy installation

Built-in components



Hydraulic module
(customization option)



Water flow switch



Wired controller



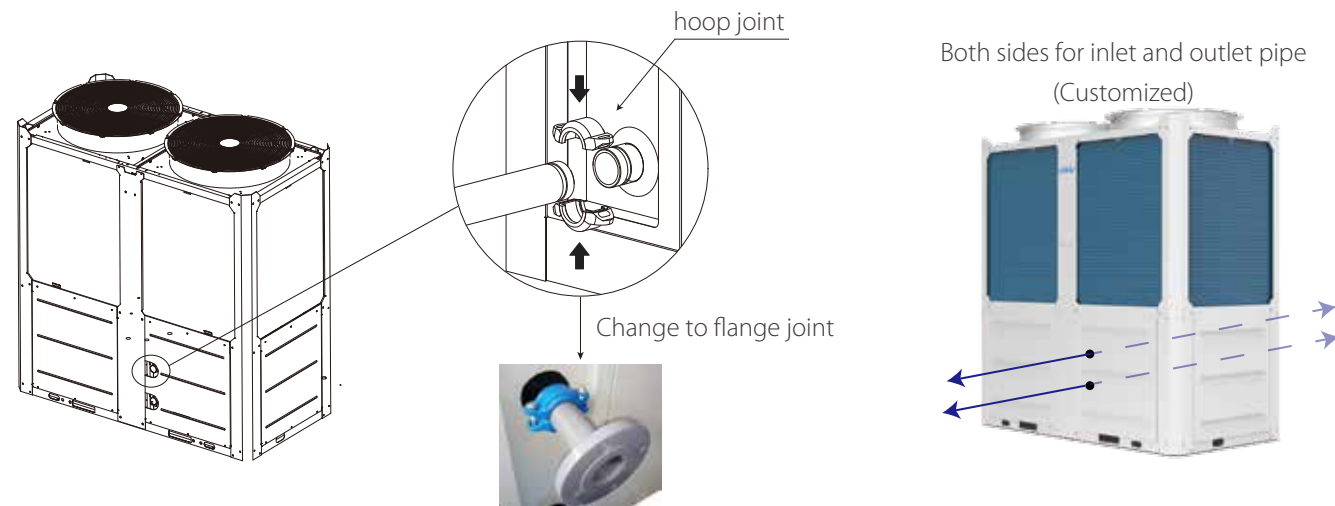
Air purge valve



Pressure relief valve

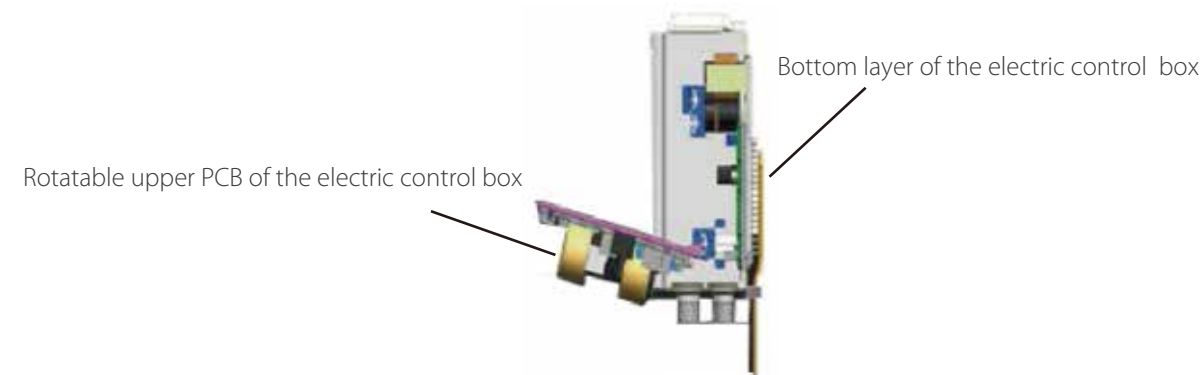
Water pipe connection

Only water piping installation is needed, no need to install refrigerant piping. Unit uses hoop connection which can be changed to flange connection by using Midea accessory in order to suit more application.

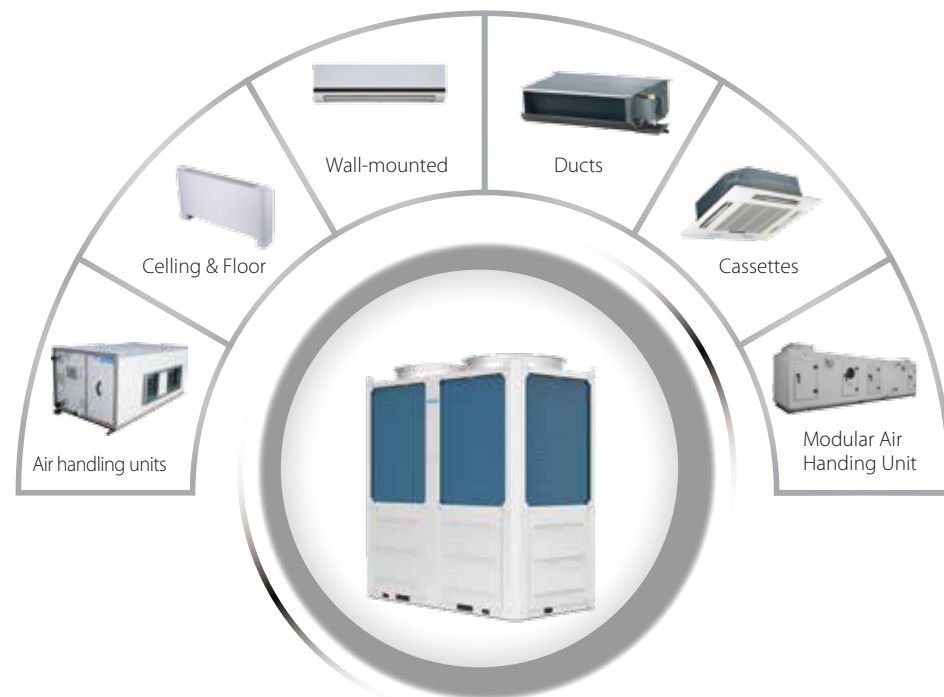


Rotatable electric control box with explosion-proof design

The bottom layer can be easily achieved through the rotatable upper PCB, making the maintenance easier. Due to the micro combustibility of R32, the electric control box adopts explosion-proof design to ensure safety and reliability.



Application scenarios



Specifications



Model			MDVM-V90D2BR8-A
Power supply	V/Ph/Hz		380~415/3/50
Cooling ¹	Capacity	kW	82
	Rated input	kW	27.8
	EER		2.95
Heating ²	Capacity	kW	90
	Rated input	kW	28.1
	COP		3.20
Seasonal space heating energy efficiency class (LWT at 35 °C)			A++
Compressor	Type		Scroll
	Quantity		2
Air side heat exchanger	Type		Finned tube
Fan motor	Type		DC motor
	Quantity		2
Water side heat exchanger	Type		Plate
Refrigerant system	Type		R32
	Charged volume	kg	16
Throttle	Type		EXV
Sound power level	dB		83
Net dimensions (W×H×D)	mm		2200*2315*1135
Packing dimensions (W×H×D)	mm		2250*2445*1180
Net/Gross weight	kg		635/660
Water pipe connection	mm		DN50
Ambient temperature range	Cooling	°C	-10 ~ 48
	Heating	°C	-20 ~ 43
	DHW(Customization)	°C	-20 ~ 43
LWT setting range	Cooling	°C	0 ~ 20
	Heating	°C	25 ~ 54
	DHW(Customization)	°C	30 ~ 60

Notes:

1. Water inlet/outlet temperature 12/7°C; Outdoor ambient temperature 35°C DB.
2. Water inlet/outlet temperature 40/45°C; outdoor ambient temperature 7°C DB/6°C WB.
3. Capacity and efficiency data calculated in accordance with EN14511; EN14825
4. For cooling mode, if water temperature reaches 0°C, anti-freeze liquid is needed.

Modular chiller

R410A MDV Aqua Tempo Super II Series.....51

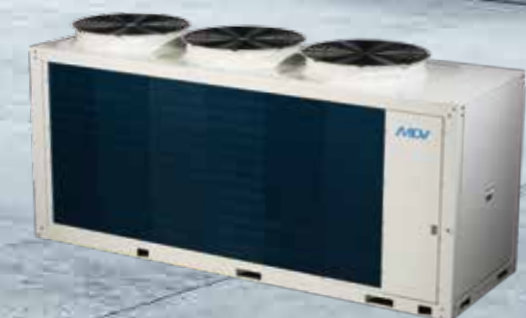
R32 MDV Aqua Tempo Super II Series.....67

MDV Aqua thermal Series.....81

MDV Aqua Mini Series.....97

MDV DC Inverter air-cooled chiller adopts air as the cooling/heating source and water as the cooling/heating medium to cooling/heating the indoor ambient temperatures through the indoor terminals (AHUs, FCUs and so on). The chiller system always works at the most high efficiency stage thanks to the advanced DC Inverter technology. The air-cooled chiller system has a lower initial investment cost than water cooled system. It does not require cooling tower, condenser water pump and associated condenser water chemical treatment system. It is widely used in hotel, office building, shopping mall, theater, factory, hospital, etc.

R410A MDV Aqua Tempo Super II Series



Product lineup

Capacity(kW)	30	60	90
Appearance			
380-415V/3Ph/50Hz	●	●	●

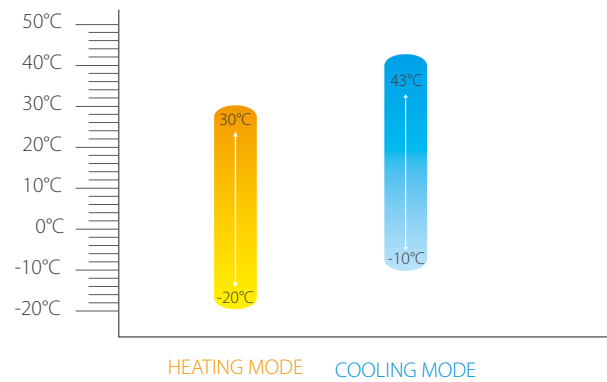
Overview

R410A refrigerant zero impact on the ozone layer;
DC Inverter technology allows precise consumption on real load;
Minimum water temperature down to 0 °C (Anti-freeze liquid needed);
Minimum operation ambient temperature down to -10 °C for cooling mode;
High energy efficiency level A++ for energy saving (Water outlet temperature at 35°C);
Maximum 16 units combination and controlled by one controller;
Maximum 1440kW combination capacity;
Maximum 256 units controlled through Modbus;
Hydraulic model for customization.



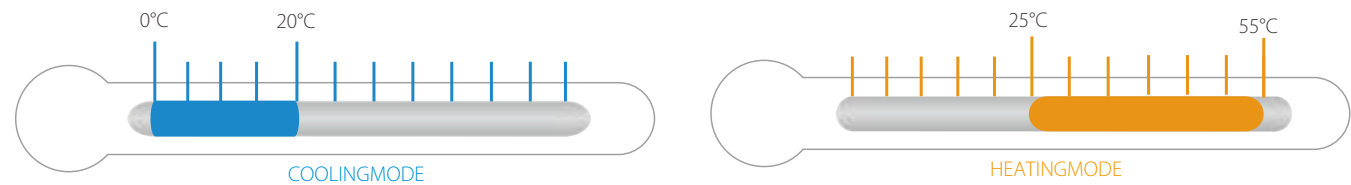
Ambient temperature*

Stable operation even under extreme conditions: -20°C to 43°C.



* It indicates the product lineup can cover the operation range. For specific operation range of different models, please refer to the specifications.

Outlet water temperature

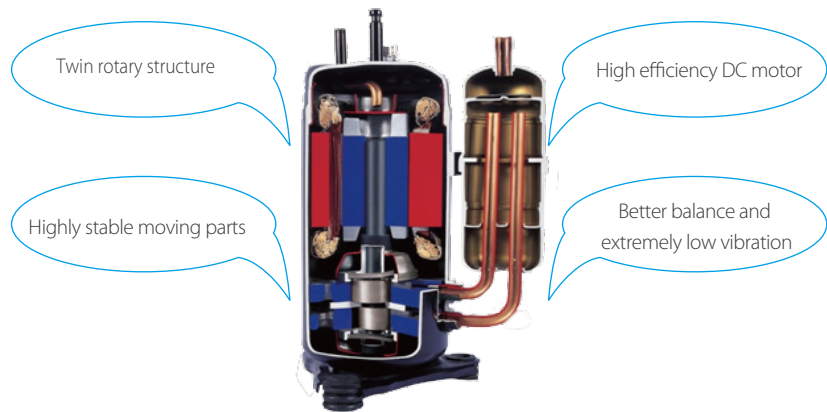


Note: For cooling mode, if outlet water temperature is less than 5°C, anti-freeze liquid is needed. 0°C water temperature can be reached by changing DIP switch setting.

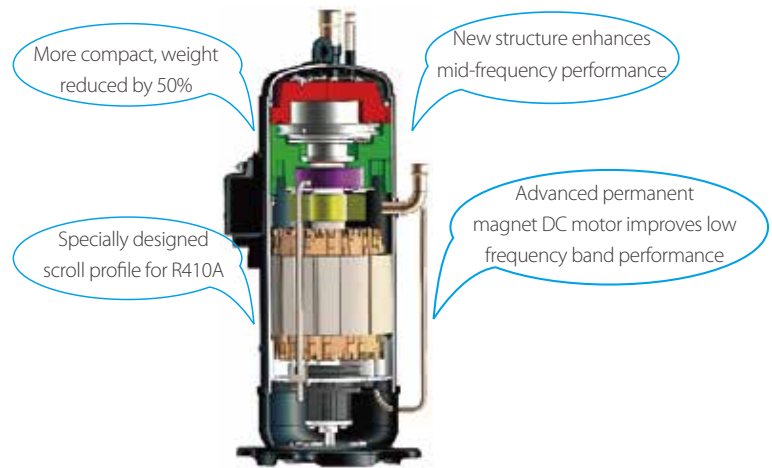
High quality components

DC Inverter compressor

At the heart of the chiller lies a world-leading DC inverter compressor. The compressor's innovative design and numerous high performance features reduce power consumption by 25%.



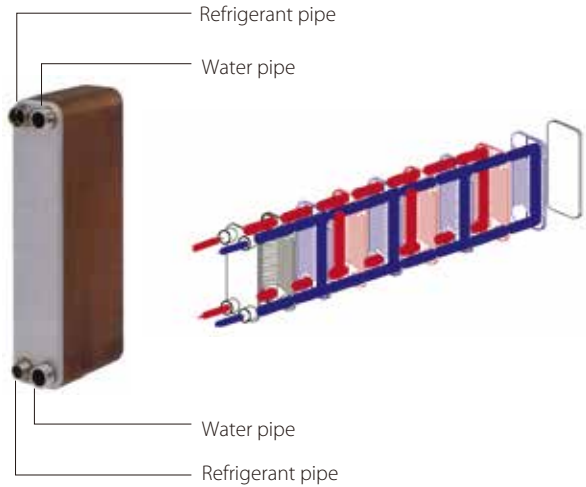
Compressor for 30/60kW models



EVI Compressor for 90kW model

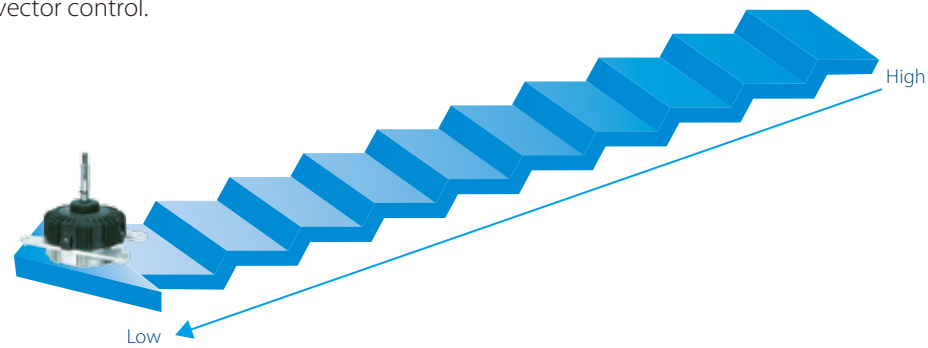
High efficiency plate heat exchanger

Plate heat exchanger uses metal plates to transfer heat between refrigerant and water. The fluids are exposed to a much larger surface area because the fluids spread out over the plates, so both heat transfer efficiency and heat exchanger speed are greatly improved. Multi protections including voltage protection, current protection, anti-freezing protection and water flow protection ensure system safety running.



DC fan motor

Fan speed is controlled according to the system pressure and system load, reducing power consumption by 30%. There are 12-step vector control.

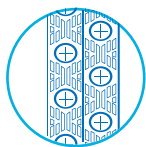


High performance heat exchanger

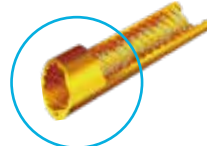
Enlarge heat-exchanging area

Enhance heat transfer

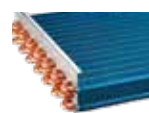
High efficiency



Fin



Inner-threaded pipe



Fin + inner-threaded pipes

Chillers use new structure design "I shape" condenser. The manufacturing process of "I shape" heat exchanger is simple, which increases production efficiency and product reliability. Hydrophilic film fins and inner-threaded copper pipes optimize heat exchange efficiency. The specially coated blue fins enhance durability and protect against corrosion from air, water and other corrosive agents, assures a longer coil service life.

Heat exchanger aluminum foil

> Standard products:

200h of neutral salt mist

> Heavy anti-corrosion products:

1000h of neutral salt mist

140h of acid salt mis

Heat exchanger copper pipe

> Standard products:

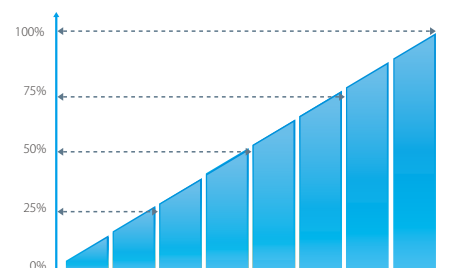
24h of neutral salt mist

> Heavy anti-corrosion products:

150h of neutral salt mist

Precise flow control

Patented liquid distribution components maximize performance and minimize impact of defrosting operation. 500-step EXV with capillary tube allows stable and accurate gas flow control. Fast response results in higher efficiency and improved reliability.



Advanced technology

Enhanced Vapor Injection (EVI) Compressor

Thanks to the vapor injection DC inverter compressor, the 90kW model can run heating mode stably down to -20°C , and the heating capacity can be improved greatly.



EVI compressor

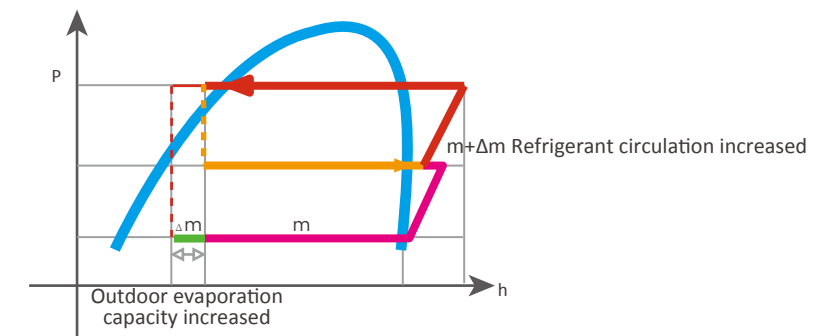
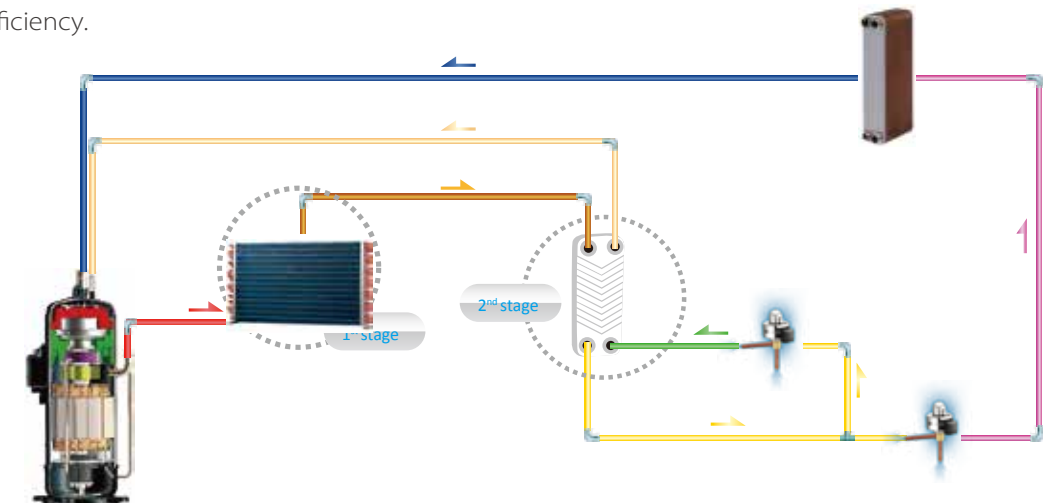


Plate Heat Exchanger Subcooling

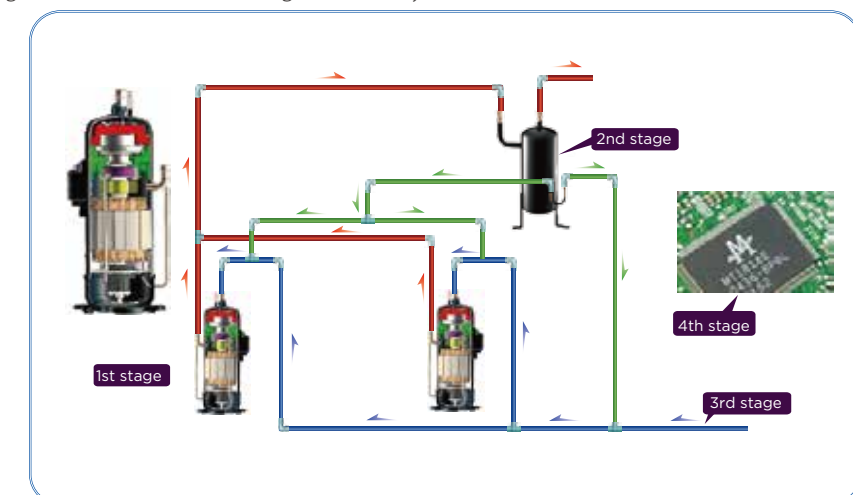
For 90kW model, plate heat exchanger as a secondary intercooler boosts up refrigerant subcooling and improves 10% energy efficiency.



Precise Oil Control Technology

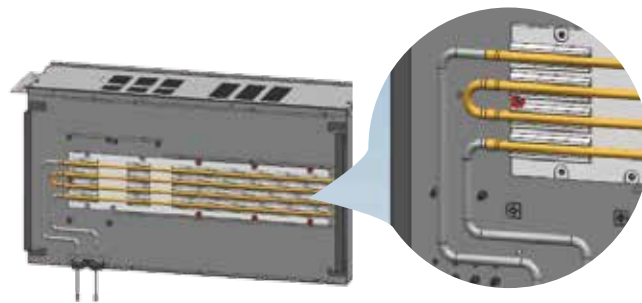
Four stages of oil control technology ensure all outdoor compressor oil is always kept at a safe level, eliminating any compressor oil shortage problems.

- Compressor internal oil separation.
- High-efficiency centrifugal oil separator (with separation efficiency of up to 99%) ensures that oil is separated from the discharge gas and returned to the compressors in a timely fashion.
- Oil balance pipe ensures oil distribution to keep compressor running normally.
- Auto oil return program monitors the running time and system status to ensure reliable oil return.



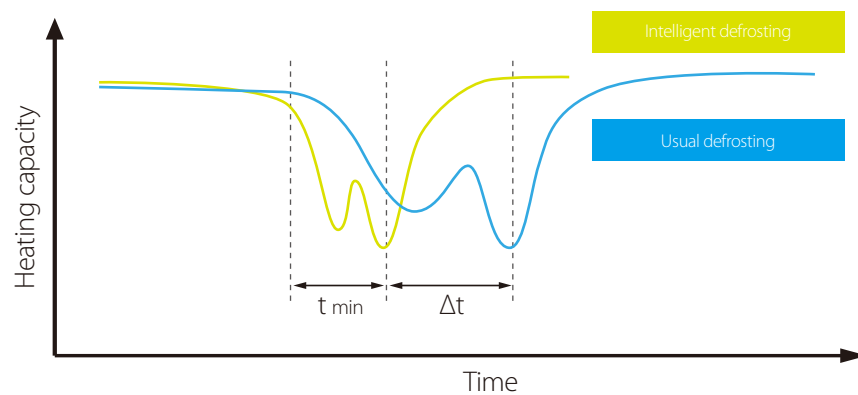
Refrigerant Cooling PCB

The 90kW model uses refrigerant cooling technology to cool the electric control box. Refrigerant cooling PCB technology reduces electric control heating under harsh working conditions, effectively reduce the temperature of electronic control components, ensure the stable and safe operation of the unit control system.



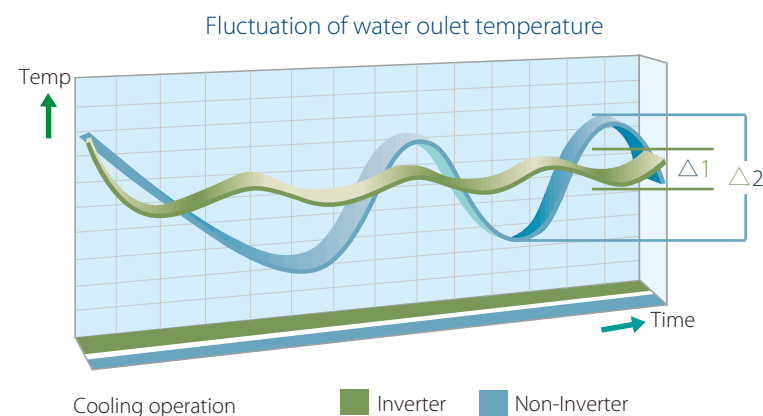
Intelligent defrosting technology

The intelligent defrosting program calculates the time required for defrosting according to the actual system status, eliminating heat losses from unnecessary defrosting. A specialized defrosting valve reduces time required for defrosting to as little as four minutes.



Rapid cooling or heating

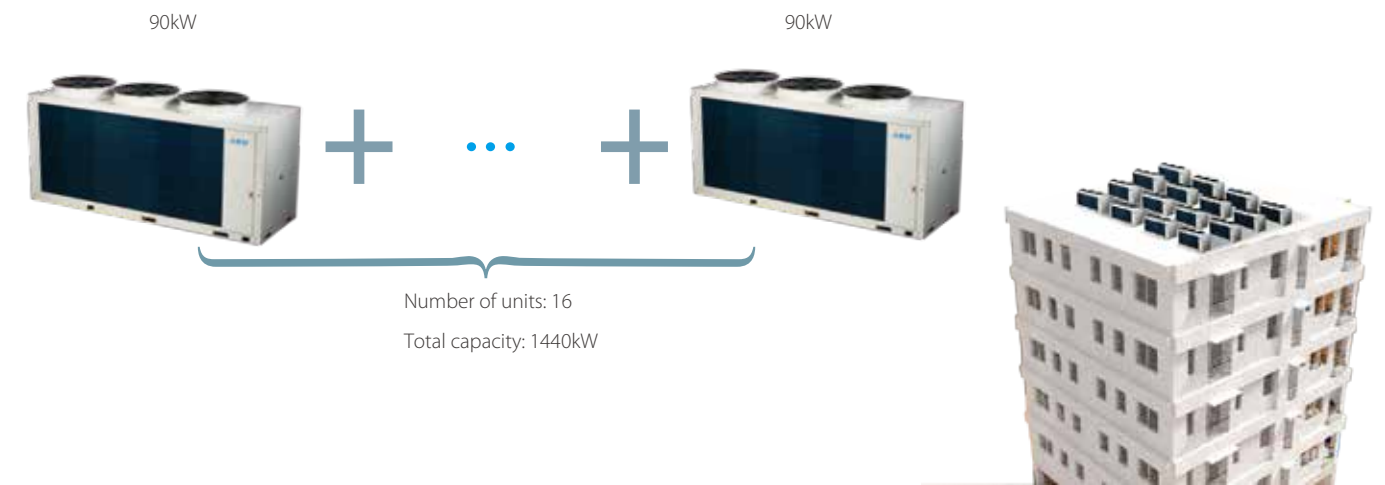
The DC inverter compressor reaches full capacity rapidly, providing quicker cooling or heating with lower levels of temperature fluctuation during the cooling/heating operation.



Flexibility

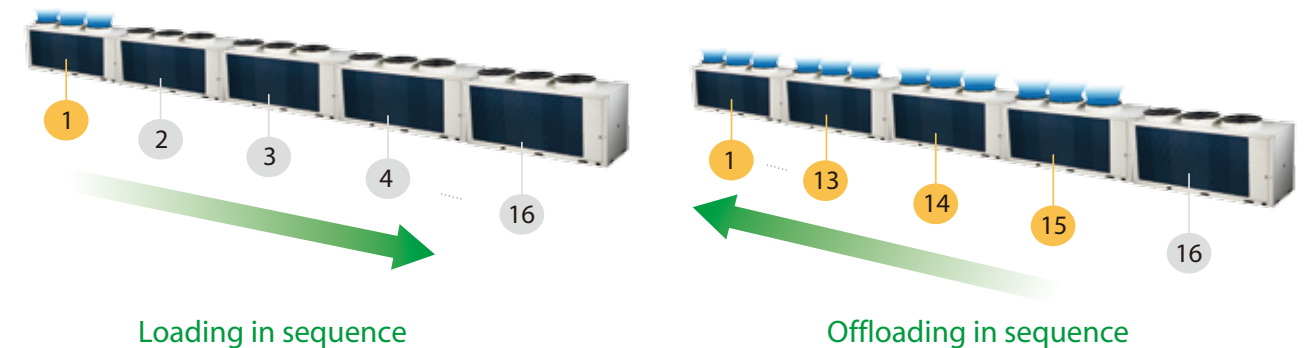
Modular design

Modularity is perfect when an extension of capacity becomes required as the building load range from 30kW to 1440kW.



Alternative cycle duty operation

In one combination system, all units operate as alternative in cycle duty to keep equal running time, realize higher stability, better reliability and longer lifespan.



Alternate defrost operation

By detecting the water temperature, the proportion of defrosting unit can be determined intelligently so as to realize small water temperature fluctuation during the alternate defrosting period.



Back-up function

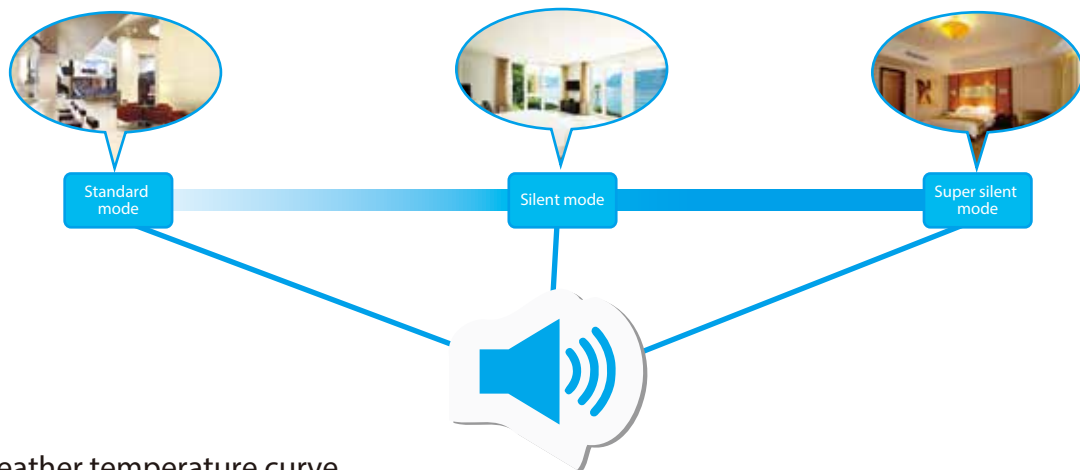
In a combination system, if one unit failed, other units can be back-up instead of the failed one for continuing operation.



Multiple function

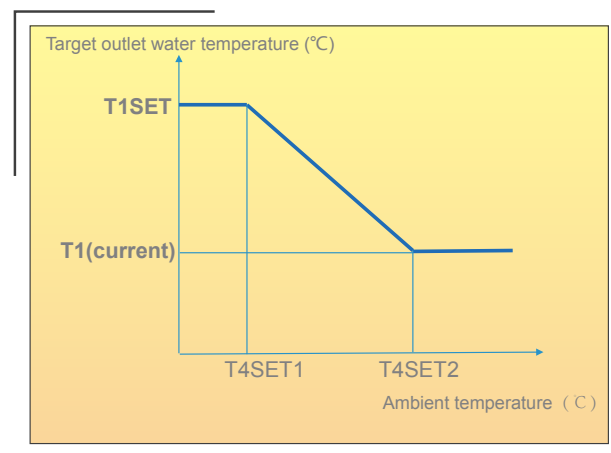
Multiple silent modes

Different silent modes enable noise reduction to suit time of day and ambient noise levels.



Weather temperature curve

With the help of weather temperature curve function, water temperature will automatically change as outside air temperature changes. When outdoor air temperature increases/decreases, the heating load will decrease/increase and water temperature will decrease/increase automatically. When outdoor air temperature decreases/increases, the cooling load will decrease/increase and water temperature will increase/decrease automatically.



Remote alarm, on/off control, cooling/heating control.



One-touch water temperature switching

For cooling and heating mode, different water temperatures can be switched just by one-touch.



Anti-corrosion Protection

Outdoor units are given anti-corrosion treatment for non-extreme conditions as standard and can also be customized with heavy anti-corrosion treatment on main components for surface protection against corrosive air, acid rain and saline air (for installations in coastal regions) to extend overall machine life span. The integrity of the anti-corrosion treatment is ensured by subjecting major components and parts to salt mist testing, moisture and heating testing and light aging testing.

Fan motor

Standard products:
72h of neutral salt mist

Heavy anti-corrosion products:
240h of neutral salt mist



Painted sheet metal(portion)

Standard products:
500h of neutral salt mist
1000h of moisture and heating test
500h of light aging test

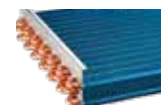
Heavy anti-corrosion products:
1000h of neutral salt mist
2000h of moisture and heating test
720h of light aging test



Screws / bolts / gaskets

Standard products:
300h of neutral salt mist

Heavy anti-corrosion products:
720h of neutral salt mist



Heat exchanger aluminum foil

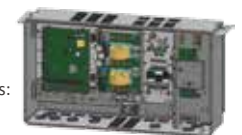
Standard products:
200h of neutral salt mist

Heavy anti-corrosion products:
1000h of neutral salt mist
140h of acid salt mist

Heat exchanger copper pipe

Standard products:
24h of neutral salt mist

Heavy anti-corrosion products:
150h of neutral salt mist



Electric control box case

Standard products:
96h of neutral salt mist

Heavy anti-corrosion products:
240h of neutral salt mist

Convenient control

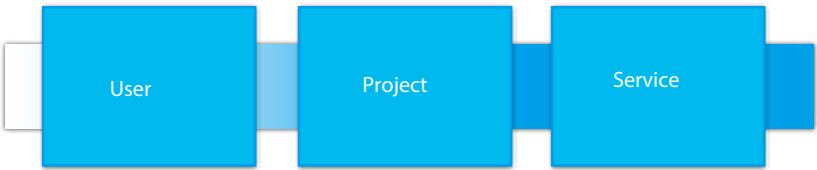
- Touch key wired controller as standard accessory to control the chillers.



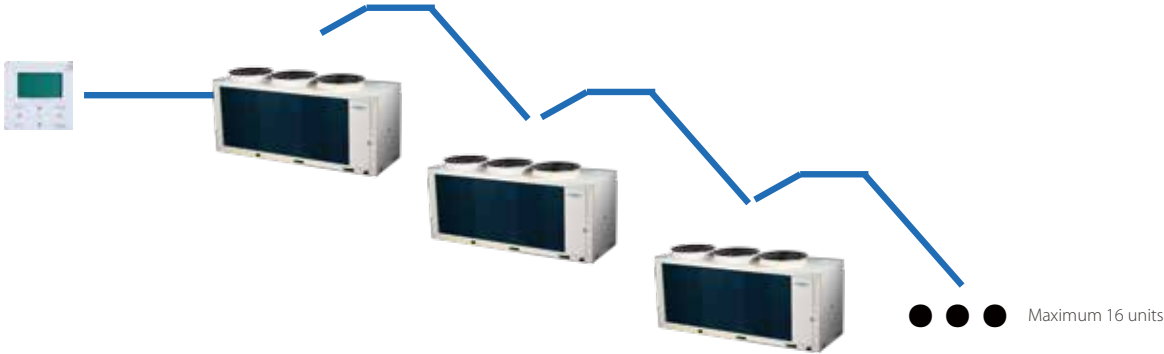
Model	KJRM-120H/BMWKO3-E
Appearance	
Main Functions	Touch key operation Parameter setting an LCD display Real-time clock function Multiple timer Power-off memory function Modbus Address setting Parallel function Buzzer prompt tone and alarm functions Weekly schedule Double set point function
Max. connection PCBs	16

Three user levels

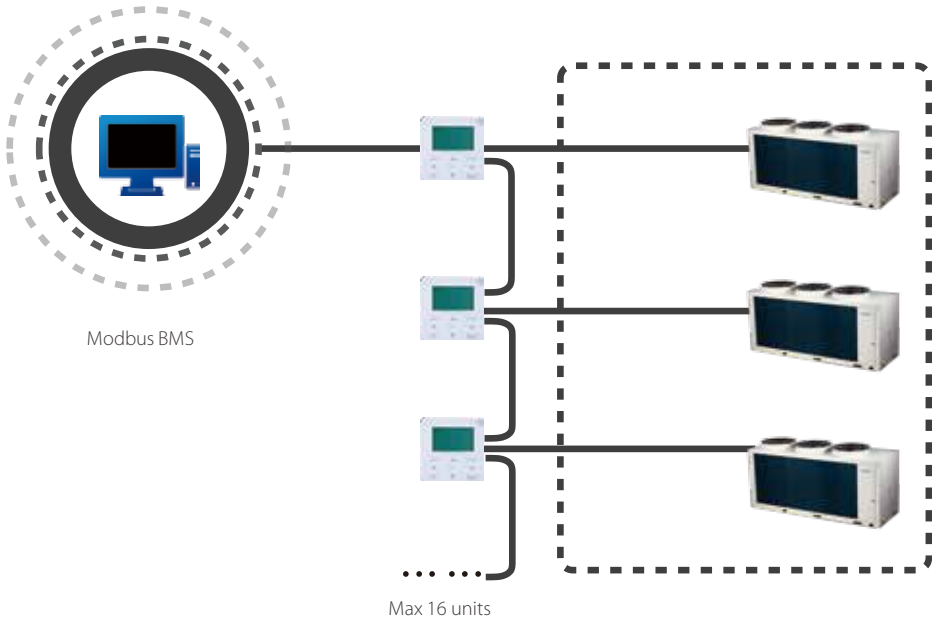
Three different user levels ensure users can easily access control functions and allow engineers convenient access to operating parameters.



Group control for up to maximum 16 units with one wired controller
For master unit, one controller is used for setting whilst another controller can be connected and used for monitoring. For slave units, controllers are only used for monitoring.



Multilingual wired controller using Modbus communication protocol



Easy installation

Built-in components



hydraulic module
(customization option)



water flow switch



wired controller



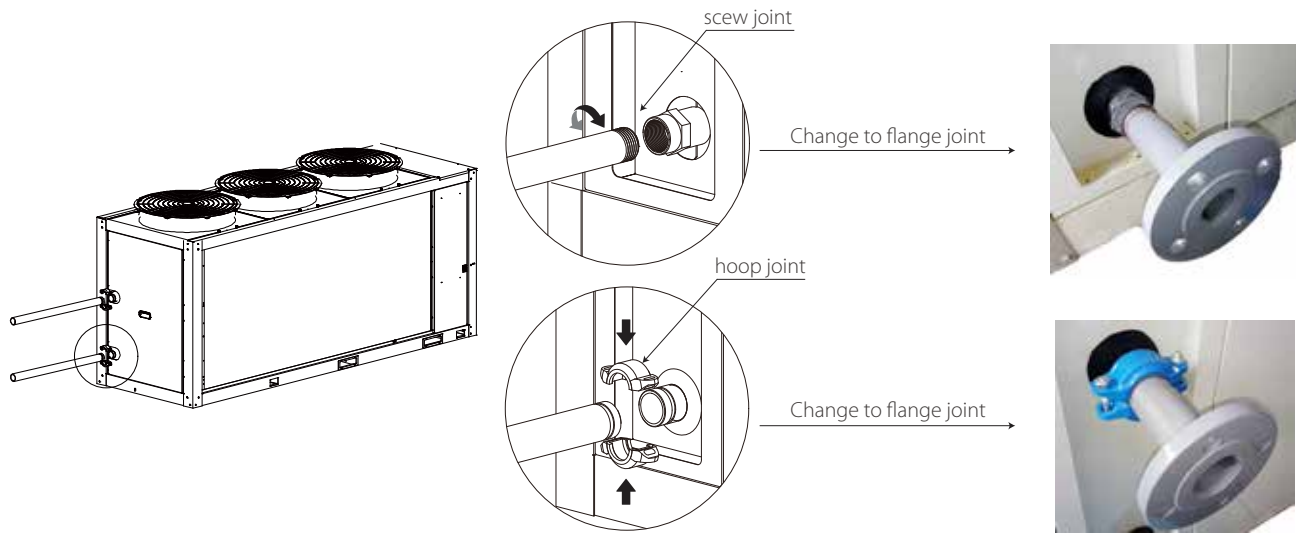
Air purge valve



Pressure relief valve

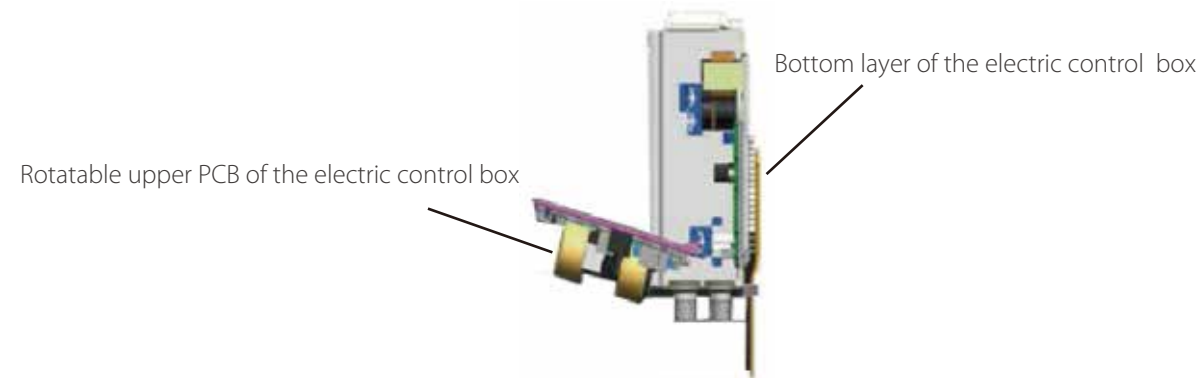
Water pipe connection

Only water piping installation is needed, no need to install refrigerant piping.
30kW model use screwed connection. 60/90kW models use hoop connection. Both of them can be changed to flange connection by using MDV accessory in orther to suit more application.

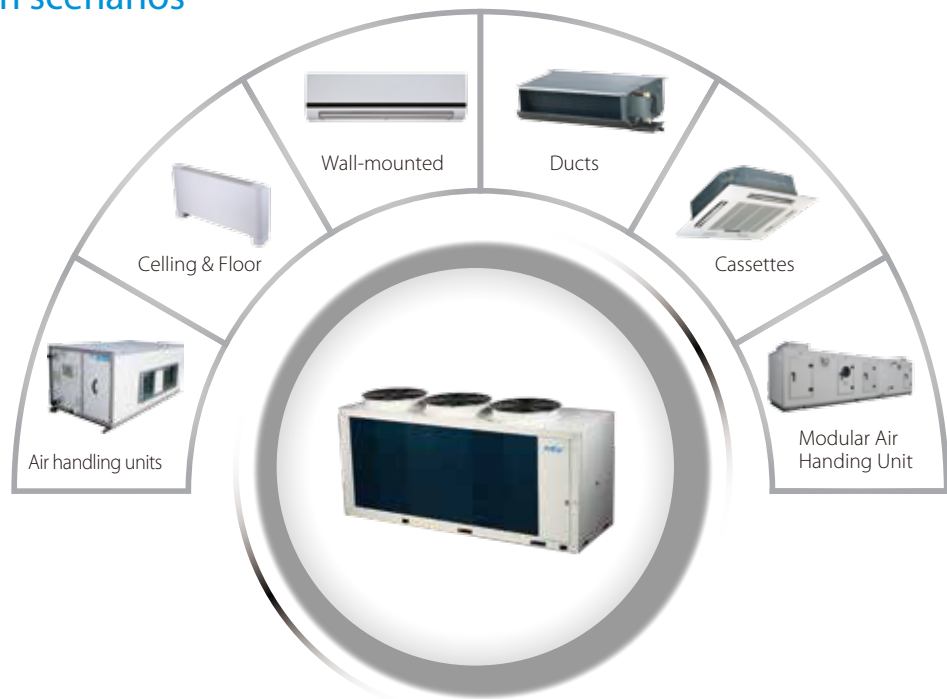


Rotatable electric control box

The bottom layer can be easily achieved through the rotatable upper PCB, making the maintenance easier.



Application scenarios



Specifications



Model			MDVM-V30D2BR1-X	MDVM-V30MD2BR1-X	MDVM-V60D2BR1-X	MDVM-V60MD2BR1-X	MDVM-V90D2BR1-X	MDVM-V90MD2BR1-X
Power supply			V/Ph/Hz	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50
Cooling ¹	Capacity	kW	27	27.6	55	55	82	82
	Rated input	kW	10.8	11.4	22	23.2	36.8	38
	EER		2.5	2.42	2.5	2.37	2.23	2.16
Heating ²	Capacity	kW	31	31	61	61	90	90
	Rated input	kW	10.5	11.2	20.3	21.5	32.8	34
	COP		2.95	2.77	3.00	2.84	2.74	2.65
Seasonal space heating energy efficiency class			A++	A+	A++	A+	A++	/
Compressor	Type		Rotary	Rotary	Rotary	Rotary	Scroll	Scroll
	Quantity		1	1	2	2	2	2
Air side heat exchanger	Type		Finned tube	Finned tube	Finned tube	Finned tube	Finned tube	Finned tube
Fan motor	Type		DC motor	DC motor	DC motor	DC motor	DC motor	DC motor
	Quantity		1	1	2	2	3	3
Water side heat exchanger	Type		Plate	Plate	Plate	Plate	Plate	Plate
Pump head(For hydronic module)	m		/	15	/	15	/	15
Refrigerant system	Type		R410A	R410A	R410A	R410A	R410A	R410A
	Charged volume	kg	10.5	10.5	17.0	17.0	27.0	27.0
Throttle	Type		EXV	EXV	EXV + Capillary	EXV + Capillary	EXV	EXV
Sound power level	dB		78	78	87	86	89	89
Net dimensions (WxHxD)	mm		1870x1175x1000	1870x1175x1000	2220x1325x1055	2220x1325x1055	3220x1513x1095	3220x1513x1095
Packed dimensions (WxHxD)	mm		1910x1225x1035	1910x1225x1035	2250x1370x1090	2250x1370x1090	3275x1540x1130	3275x1540x1130
Net/Gross weight	kg		300/310	315/325	480/490	515/525	710/739	710/739
Water pipe connections	mm		DN40	DN40	DN50	DN50	DN50	DN50
Ambient temperature range	Cooling	°C	-10 to 43	-10 to 43	-10 to 43	-10 to 43	-10 to 43	-10 to 43
	Heating	°C	-15 to 30	-15 to 30	-15 to 30	-15 to 30	-20 to 30	-20 to 30
LWT setting range	Cooling	°C	0 to 20	0 to 20	0 to 20	0 to 20	0 to 20	0 to 20
	Heating	°C	25 to 55	25 to 55	25 to 55	25 to 55	25 to 55	25 to 55

Note:
1. Cooling: Chilled water inlet/outlet temp. 12/7°C; outdoor ambient temp. 35°C DB.
2. Heating: Warm water inlet/outlet temp. 40/45°C; outdoor ambient temp. 7°C DB/6°C WB.
3. Sound pressure level is measured at a position 1m in front of the unit and 1.1m above the floor in a semi-anechoic chamber.
4. Capacity and efficiency data calculated in accordance with EN14511; EN14825
5. For cooling mode, if water temperature reaches 0°C, anti-freeze liquid is needed.

Bring you a new world

Eco friendly refrigerant R32

Lower GWP 675 (GWP: Global Warming Potential)

Zero impact on the ozone layer

Less carbon emission

Higher heat transfer coefficient

Better performance in poor conditions

Less pressure loss

No temperature glide

Easier to get

Less charged volume





Less cost



R32 MDV Aqua Tempo Super II Series



Product lineup

Capacity(kW)	30	60
Appearance		
380-415V/3Ph/50Hz		

Overview

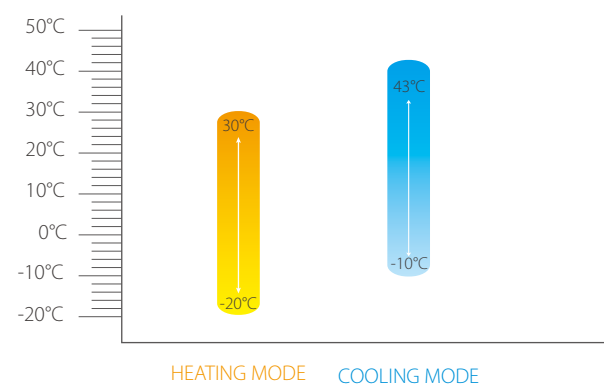
Refrigerant R32 75% less impact on global warming;
 DC Inverter technology allows precise consumption on real load;
 Minimum water temperature down to 0°C (Anti-freeze liquid needed);
 Minimum operation ambient temperature down to -10°C for cooling mode;
 High energy efficiency level A++ for energy saving (Water outlet temperature at 35°C);
 Maximum 16 units combination and controlled by one controller;
 Maximum 960kW combination capacity;
 Maximum 256 units controlled through Modbus;
 Hydraulic model for customization.

DC Inverter

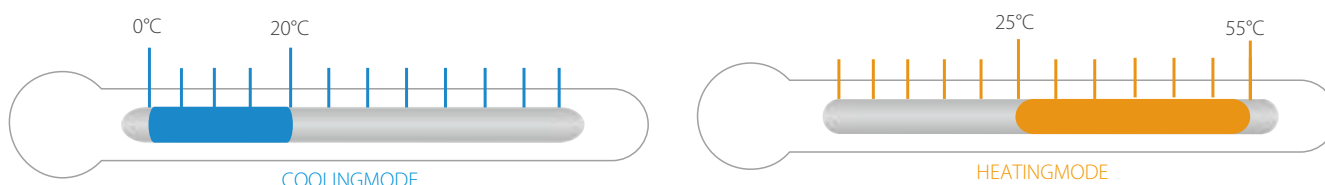


Ambient temperature

Stable operation even under extreme conditions: -14°C to 43°C.



Outlet water temperature

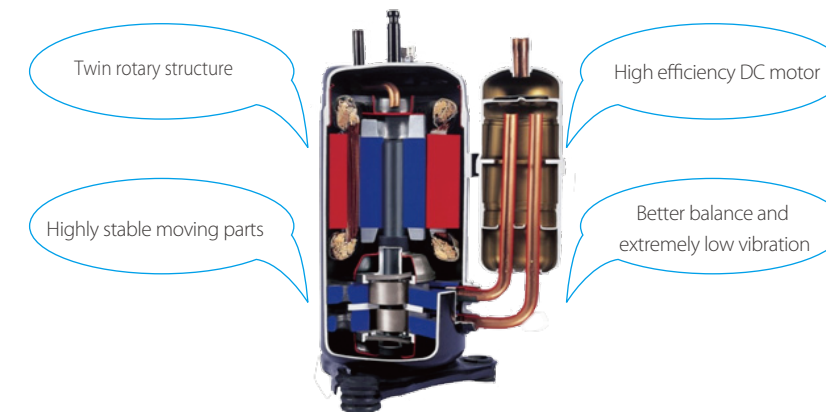


Note: For cooling mode, if outlet water temperature is less than 5°C, anti-freeze liquid is needed. 0°C water temperature can be reached by changing DIP switch setting.

High quality components

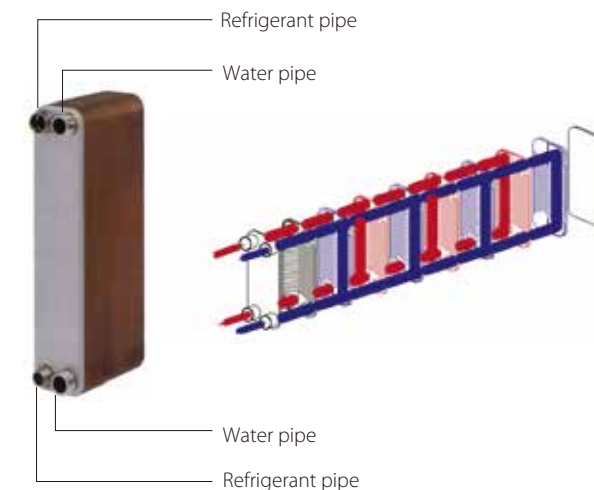
DC Inverter compressor

At the heart of the chiller lies a world-leading DC inverter compressor. The compressor's innovative design and numerous high performance features reduce power consumption by 25%.



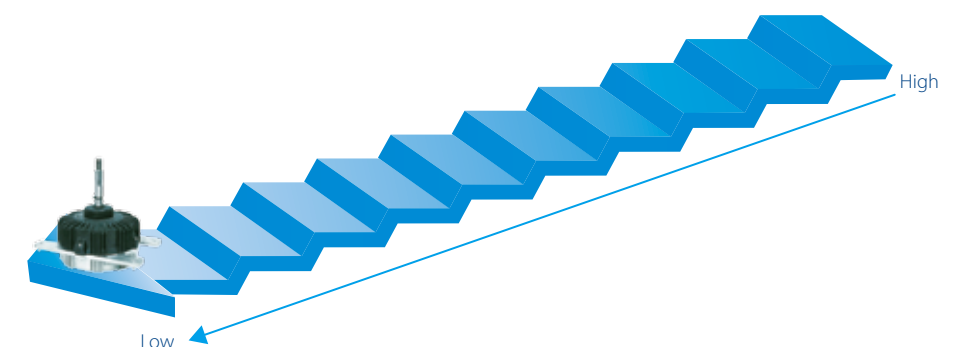
High efficiency plate heat exchanger

Plate heat exchanger uses metal plates to transfer heat between refrigerant and water. The fluids are exposed to a much larger surface area because the fluids spread out over the plates, so both heat transfer efficiency and heat exchanger speed are greatly improved. Multi protections including voltage protection, current protection, anti-freezing protection and water flow protection ensure system safety running.



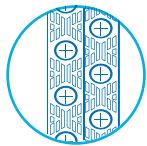
DC fan motors

Fan speed is controlled according to the system pressure and system load, reducing power consumption by 30%. There are 32-step vector control.



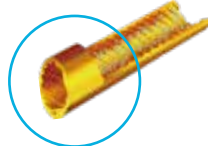
High performance heat exchanger

Enlarge heat-exchanging area



Fin

Enhance heat transfer



Inner-threaded pipe

High efficiency



Fin + inner-threaded pipes

Chillers use new structure design "I shape" condenser. The manufacturing process of "I shape" heat exchanger is simple, which increases production efficiency and product reliability. Hydrophilic film fins and inner-threaded copper pipes optimize heat exchange efficiency. The specially coated blue fins enhance durability and protect against corrosion from air, water and other corrosive agents, assures a longer coil service life.

Heat exchanger aluminum foil

> Standard products:
200h of neutral salt mist

> Heavy anti-corrosion products:
1000h of neutral salt mist
140h of acid salt mis

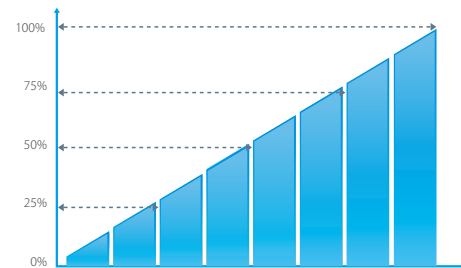
Heat exchanger copper pipe

> Standard products:
24h of neutral salt mist

> Heavy anti-corrosion products:
150h of neutral salt mist

Precise flow control

Patented liquid distribution components maximize performance and minimize impact of defrosting operation. 500-step EXV with capillary tube allows stable and accurate gas flow control. Fast response results in higher efficiency and improved reliability.

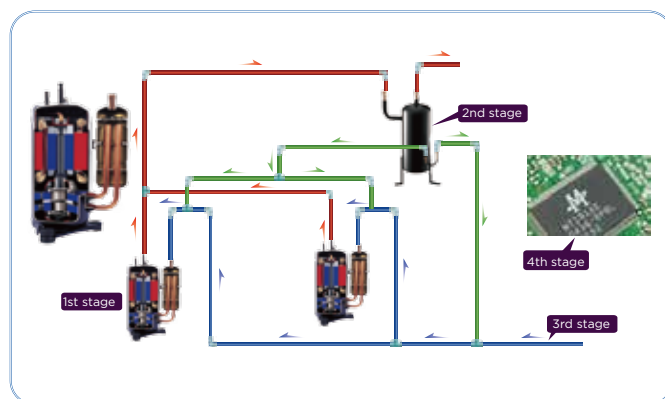


Advanced technology

Precise Oil Control Technology

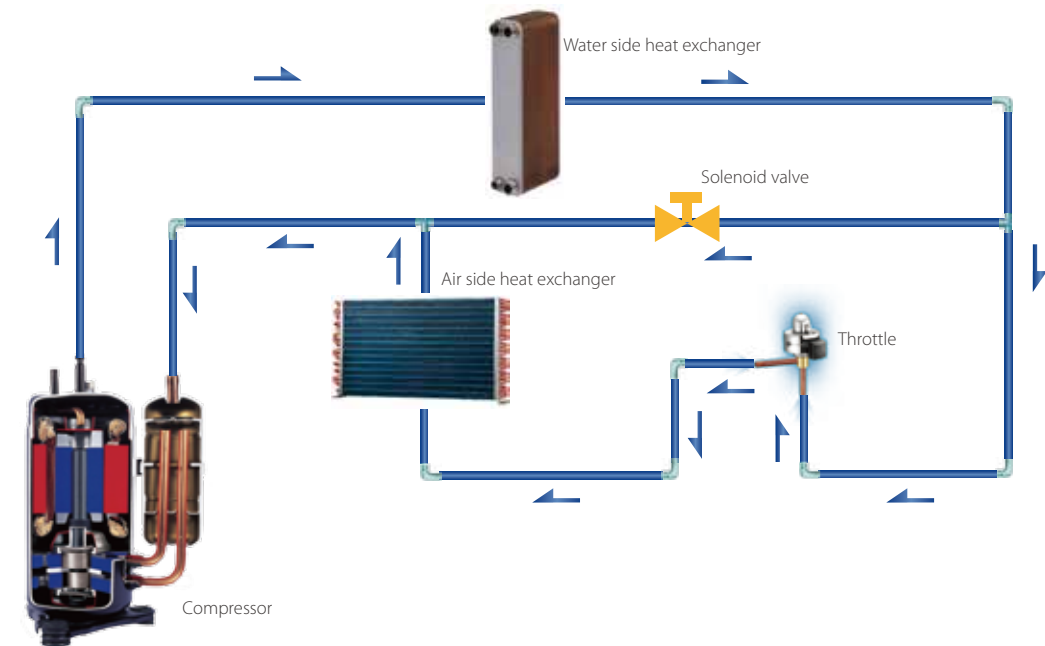
Four stages of oil control technology ensure all outdoor compressor oil is always kept at a safe level, eliminating any compressor oil shortage problems.

- Compressor internal oil separation.
- High-efficiency centrifugal oil separator (with separation efficiency of up to 99%) ensures that oil is separated from the discharge gas and returned to the compressors in a timely fashion.
- Oil balance pipe ensures oil distribution to keep compressor running normally.
- Auto oil return program monitors the running time and system status to ensure reliable oil return.



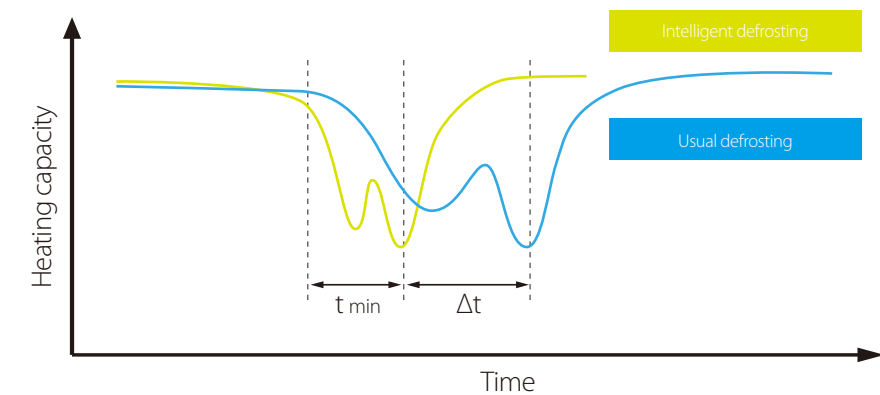
Spray liquid cooling control

Spray liquid cooling control, which is used for enhancing heating capacity in low temperature condition.



Intelligent defrosting technology

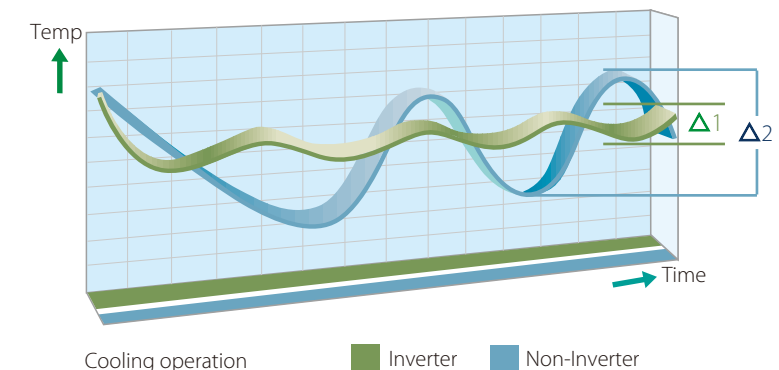
The intelligent defrosting program calculates the time required for defrosting according to the actual system status, eliminating heat losses from unnecessary defrosting. A specialized defrosting valve reduces time required for defrosting to as little as four minutes.



Rapid cooling or heating

The DC inverter compressor reaches full capacity rapidly, providing quicker cooling or heating with lower levels of temperature fluctuation during the cooling/heating operation.

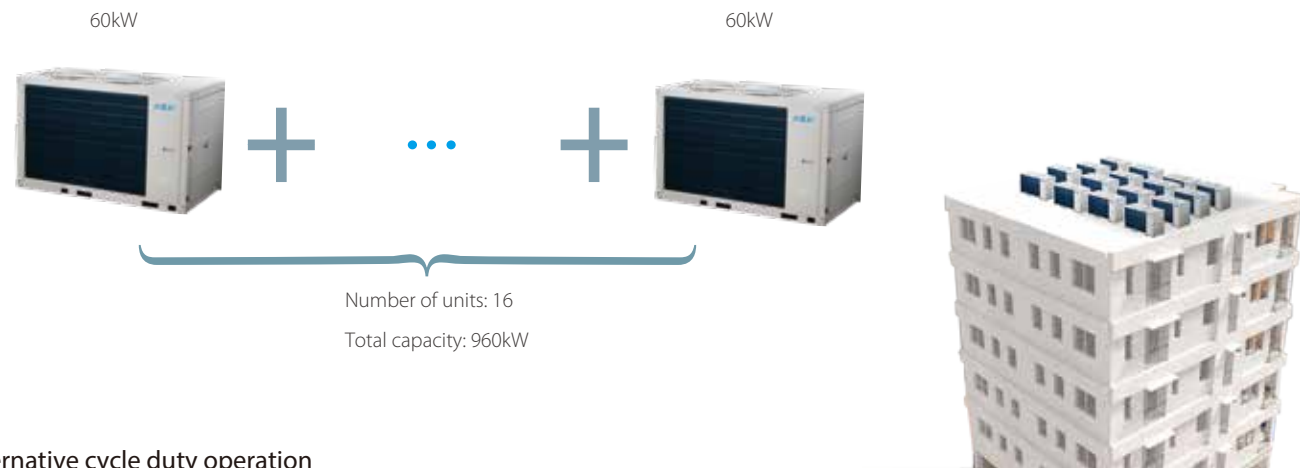
Fluctuation of water outlet temperature



Flexibility

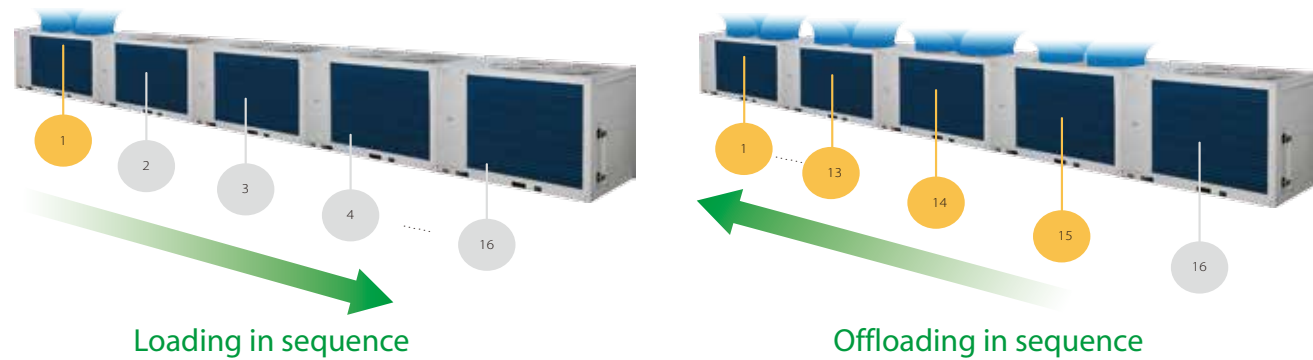
Modular design

Modularity is perfect when an extension of capacity becomes required as the building load range from 30kW to 960kW.



Alternative cycle duty operation

In one combination system, all units operate as alternative in cycle duty to keep equal running time, realize higher stability, better reliability and longer lifespan.



Alternate defrost operation

By detecting the water temperature, the proportion of defrosting unit can be determined intelligently so as to realize small water temperature fluctuation during the alternate defrosting period.



Back-up function

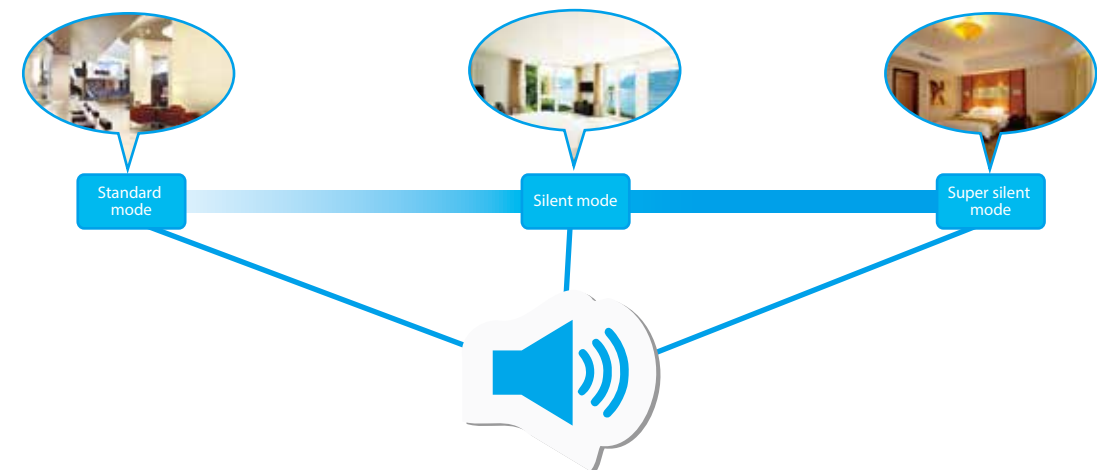
In a combination system, if one unit failed, other units can be back-up instead of the failed one for continuing operation.



Multiple function

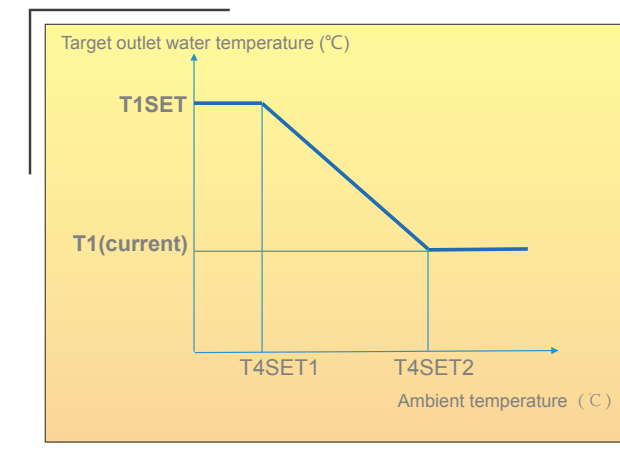
Multiple silent modes

Different silent modes enable noise reduction to suit time of day and ambient noise levels.



Weather temperature curve

With the help of weather temperature curve function, water temperature will automatically change as outside air temperature changes. When outdoor air temperature increases/decreases, the heating load will decrease/increase and water temperature will decrease/increase automatically. When outdoor air temperature decreases/increases, the cooling load will decrease/increase and water temperature will increase/decrease automatically.



Remote alarm, on/off control, cooling/heating control.



One-touch water temperature switching

For cooling and heating mode, different water temperatures can be switched just by one-touch.



Anti-corrosion Protection

Outdoor units are given anti-corrosion treatment for non-extreme conditions as standard and can also be customized with heavy anti-corrosion treatment on main components for surface protection against corrosive air, acid rain and saline air (for installations in coastal regions) to extend machine life span. The integrity of the anti-corrosion treatment is ensured by subjecting major components and parts to salt mist testing, moisture and heating testing and light aging testing.

Fan motor

Standard products:
72h of neutral salt mist

Heavy anti-corrosion products:
240h of neutral salt mist



Painted sheet metal

Standard products:
500h of neutral salt mist
1000h of moisture and heating test
500h of light aging test

Heavy anti-corrosion products:
1000h of neutral salt mist
2000h of moisture and heating test
720h of light aging test



Screws / bolts / gaskets

Standard products:
300h of neutral salt mist

Heavy anti-corrosion products:
720h of neutral salt mist



Heat exchanger aluminum foil

Standard products:
200h of neutral salt mist

Heavy anti-corrosion products:
1000h of neutral salt mist
140h of acid salt mis

Heat exchanger copper pipe

Standard products:
24h of neutral salt mist

Heavy anti-corrosion products:
150h of neutral salt mist



Electric control box case

Standard products:
96h of neutral salt mist

Heavy anti-corrosion products:
240h of neutral salt mist

Anti-snow mode

In snowy weather, with the help of Anti-snow mode, units intermittently turns on fans to stop snow from accumulating on the top of units to guarantee normal operation next time.



Convenient control

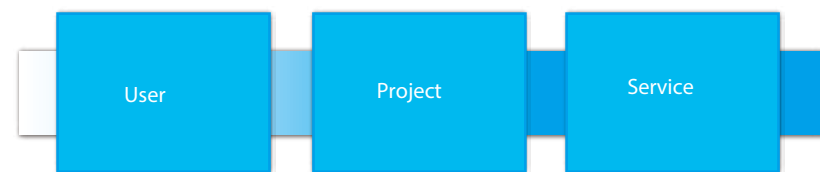
Touch key wired controller as standard accessory to control the chillers.



Model	KJRM-120H/BMWK03-E
Appearance	
Main Functions	Touch key operation Parameter setting an LCD display Real-time clock function Multiple timer Power-off memory function Modbus Address setting Parallel function Buzzer prompt tone and alarm functions Weekly schedule Double set point function
Max. connection PCBs	16

Three user levels

Three different user levels ensure users can easily access control functions and allow engineers convenient access to operating parameters.



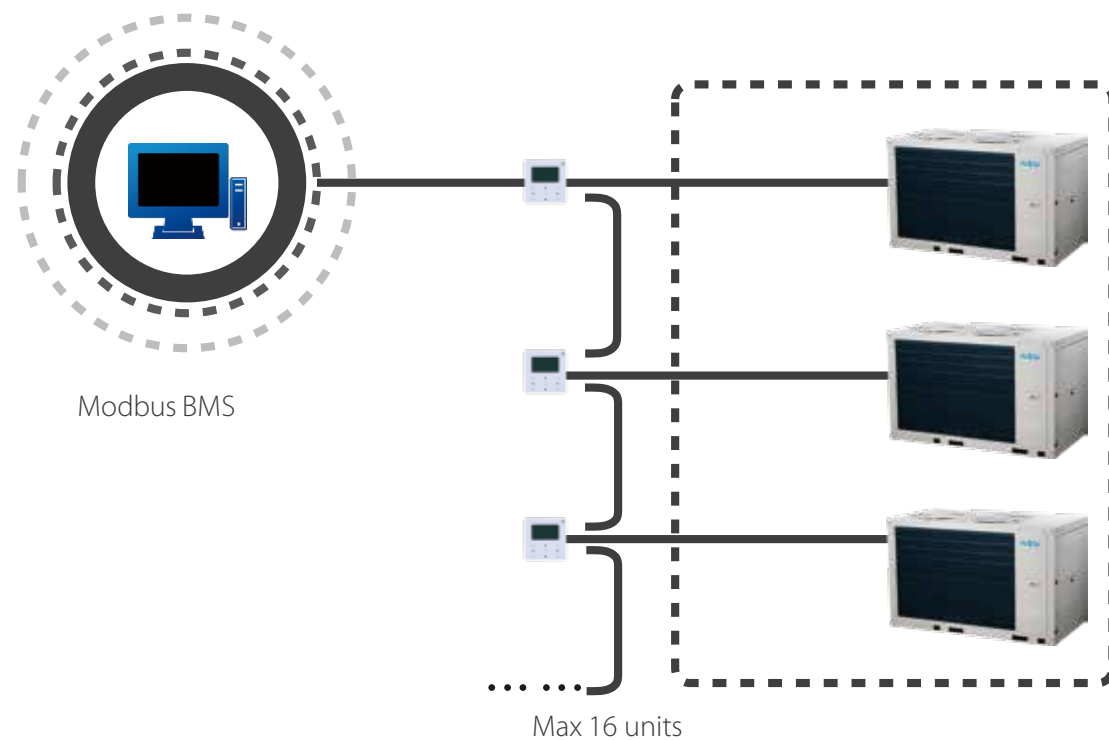
Group control for up to maximum 16 units with one wired controller

For master unit, one controller is used for setting whilst another controller can be connected and used for monitoring.

For slave units, controllers are only used for monitoring.



Multilingual wired controller using Modbus communication protocol



Easy installation

Built-in components



Hydraulic module
(customization option)



Water flow switch



Wired controller



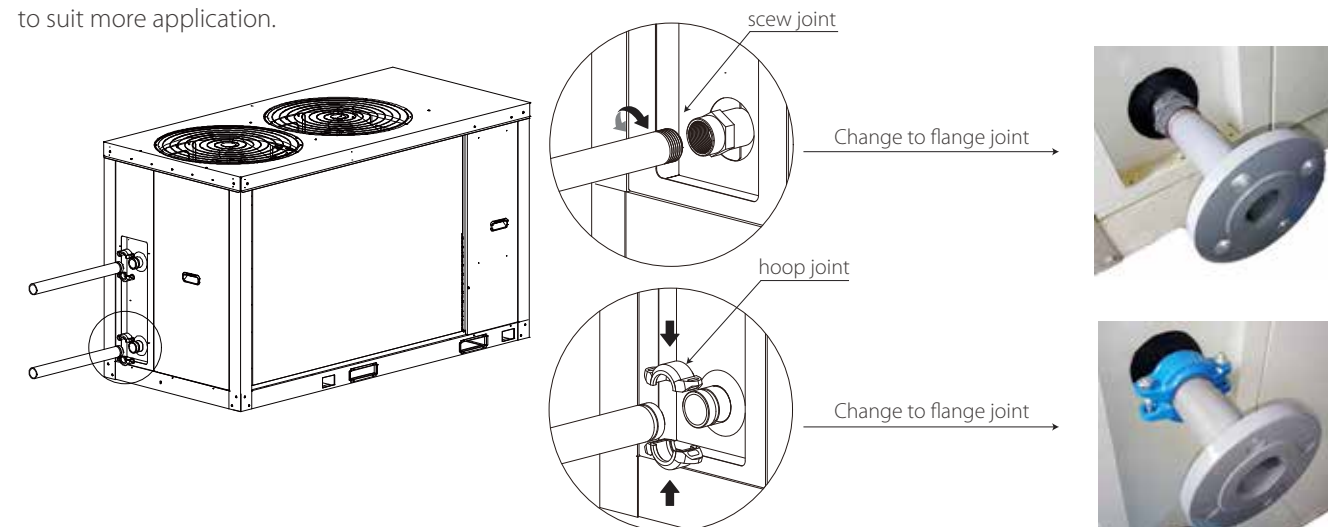
Air purge valve



Pressure relief valve

Water pipe connection

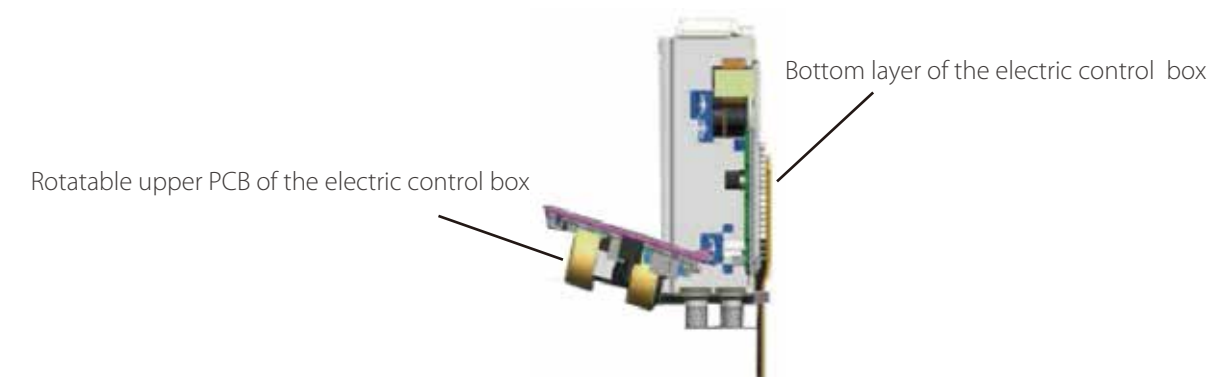
Only water piping installation is needed, no need to install refrigerant piping. 30kW model use screwed connection, while 60kW model use hoop connection. Hoop connection can be changed to flange connection by using MDV accessory in order to suit more application.



Rotatable electric control box with explosion-proof design

The bottom layer can be easily achieved through the rotatable upper PCB, making the maintenance easier.

Due to the micro combustibility of R32, the electric control box adopts explosion-proof design to ensure safety and reliability





Specifications





Model			MDVM-V30D2BR8-X	MDVM-V30MD2BR8-X	MDVM-V60D2BR8-X	MDVM-V60MD2BR8-X
Power supply		V/Ph/Hz	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50
Cooling ¹	Capacity	kW	27.5	27.5	55	55
	Rated input	kW	10.3	11	21.5	23
	EER		2.67	2.5	2.56	2.39
Heating ²	Capacity	kW	32	32	62	62
	Rated input	kW	10	10.7	20	21.5
	COP		3.2	2.99	3.1	2.88
Seasonal space heating energy efficiency class			A++	A++	A++	A+
Compressor		Type	Rotary	Rotary	Rotary	Rotary
		Quantity	1	1	2	2
Air side heat exchanger		Type	Finned tube	Finned tube	Finned tube	Finned tube
Fan motor	Type		DC motor	DC motor	DC motor	DC motor
	Quantity		1	1	2	2
Water side heat exchanger	Type		Plate	Plate	Plate	Plate
Pump head(For hydronic module)		m	/	15	/	15
Refrigerant system	Type		R32	R32	R32	R32
	Charged volume ³	kg	7.9	7.9	14	14
Throttle		Type	EXV	EXV	EXV + Capillary	EXV + Capillary
Sound power level		dB(A)	78	78	86	86
Net dimensions (W×H×D)		mm	1870×1175×1000	1870×1175×1000	2220×1325×1055	2220×1325×1055
Packed dimensions (W×H×D)		mm	1910×1225×1035	1910×1225×1035	2250×1370×1090	2250×1370×1090
Net/Gross weight		kg	300/310	315/325	480/490	515/525
Water pipe connections		mm	DN40	DN40	DN50	DN50
Ambient temperature range	Cooling	°C	-10 to 43	-10 to 43	-10 to 43	-10 to 43
	Heating	°C	-14 to 30	-14 to 30	-14 to 30	-14 to 30
LWT setting range	Cooling	°C	0 to 20	0 to 20	0 to 20	0 to 20
	Heating	°C	25 to 54	25 to 54	25 to 54	25 to 54

Note:
1. Cooling: Chilled water inlet/outlet Temp.12/7°C, outdoor ambient Temp. 35°C DB.
2. Heating: Warm water inlet/outlet Temp. 40/45°C, outdoor ambient Temp. 7°C DB/6°C WB.
3. For MC-SU60-RN8L, MC-SU60M-RN8L the total amount of refrigerant is 14 kg, including the 11.5 kg already charged before delivery and the 2.5 kg to be charged.
4. Capacity and efficiency data in accordance with EN14511, EN14825.
5. For cooling mode, if water temperature reaches 0°C, anti-freeze liquid is needed.

MDV Aqua thermal Series



Product lineup

Capacity(kW)	90
Appearance	
380-415V/3Ph/50Hz	

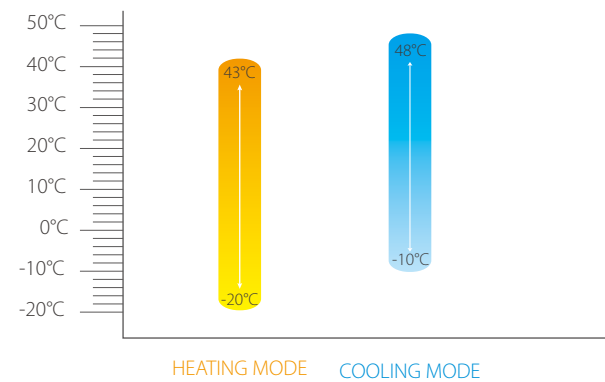
Overview

Refrigerant R32 75% less impact on global warming;
 DC Inverter technology allows precise consumption on real load;
 Minimum water temperature down to 0°C (Anti-freeze liquid needed);
 Minimum operation ambient temperature down to -10°C for cooling mode;
 High energy efficiency level A++ for energy saving (Water outlet temperature at 35°C);
 Comply with ErP 2021;
 Space saving;
 Maximum 16 units combination and controlled by one controller;
 Maximum 1440kW combination capacity;
 Maximum 256 units controlled through Modbus;
 Hydraulic model for customization;
 Domestic hot water mode for customization.

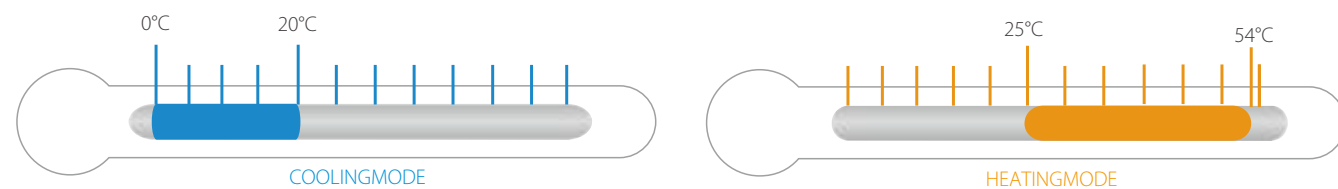
DC Inverter



Ambient temperature



Outlet water temperature



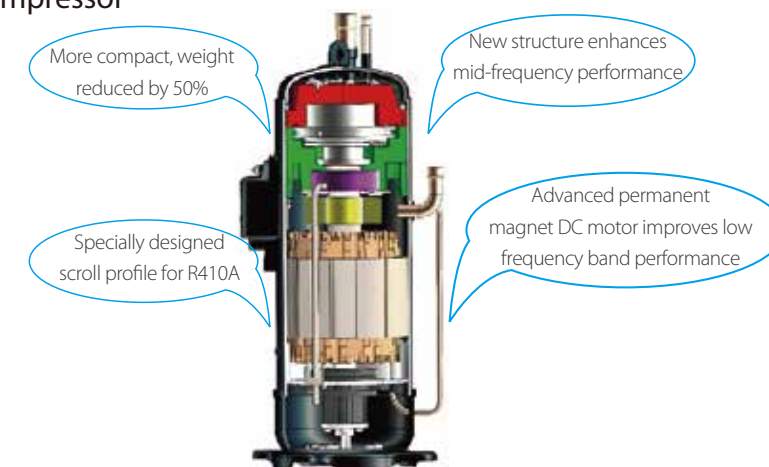
Note: For cooling mode, if outlet water temperature is less than 5°C, anti-freeze liquid is needed. 0°C water temperature can be reached by changing DIP switch setting.

Application scenarios



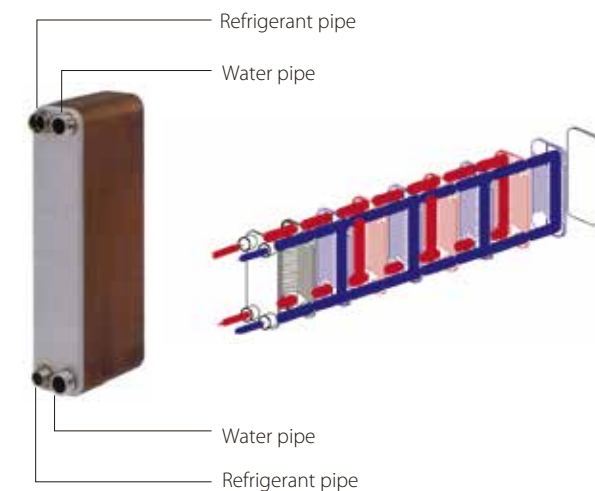
High quality components

EVI DC Inverter compressor



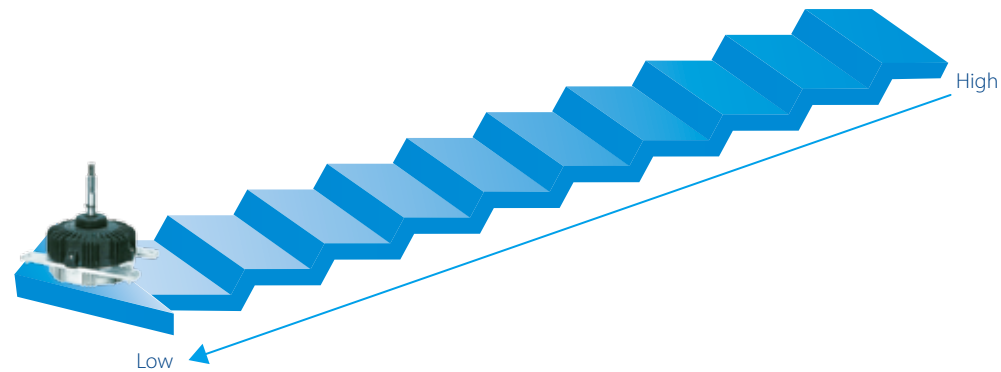
High efficiency plate heat exchanger

Plate heat exchanger uses metal plates to transfer heat between refrigerant and water. The fluids are exposed to a much larger surface area because the fluids spread out over the plates, so both heat transfer efficiency and heat exchanger speed are greatly improved. Multi protections including voltage protection, current protection, anti-freezing protection and water flow protection ensure system safety running.



DC fan motors

Fan speed is controlled according to the system pressure and system load, reducing power consumption by 30%. There are 32-step vector control.

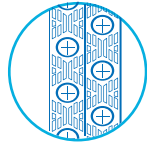


High performance heat exchanger

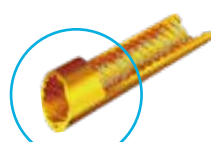
Enlarge heat-exchanging area

Enhance heat transfer

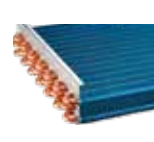
High efficiency



Fin



Inner-threaded pipe



Fin + inner-threaded pipes

Hydrophilic film fins and inner-threaded copper pipes optimize heat exchange efficiency. The specially coated blue fins enhance durability and protect against corrosion from air, water and other corrosive agents, assures a longer coil service life.

Heat exchanger aluminum foil

> Standard products:
200h of neutral salt mist

> Heavy anti-corrosion products:
1000h of neutral salt mist
140h of acid salt mis

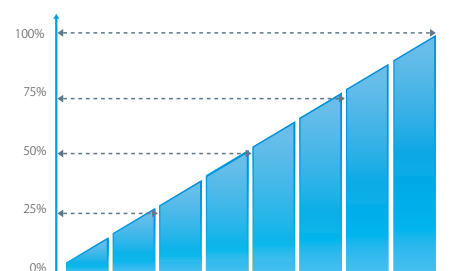
Heat exchanger copper pipe

> Standard products:
24h of neutral salt mist

> Heavy anti-corrosion products:
150h of neutral salt mist

Precise flow control

Patented liquid distribution components maximize performance and minimize impact of defrosting operation. 500-step EXV with capillary tube allows stable and accurate gas flow control. Fast response results in higher efficiency and improved reliability.



Advanced technology

Enhanced Vapor Injection (EVI) Compressor

Thanks to the vapor injection DC inverter compressor, the 90kW model can run heating mode stably down to -20 °C , and the heating capacity can be improved greatly.



EVI compressor

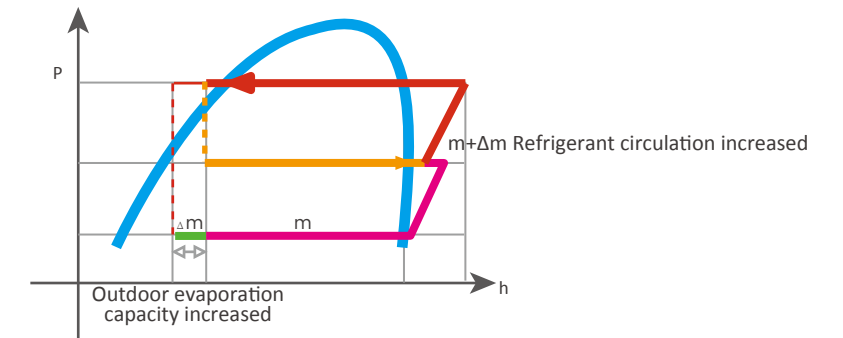
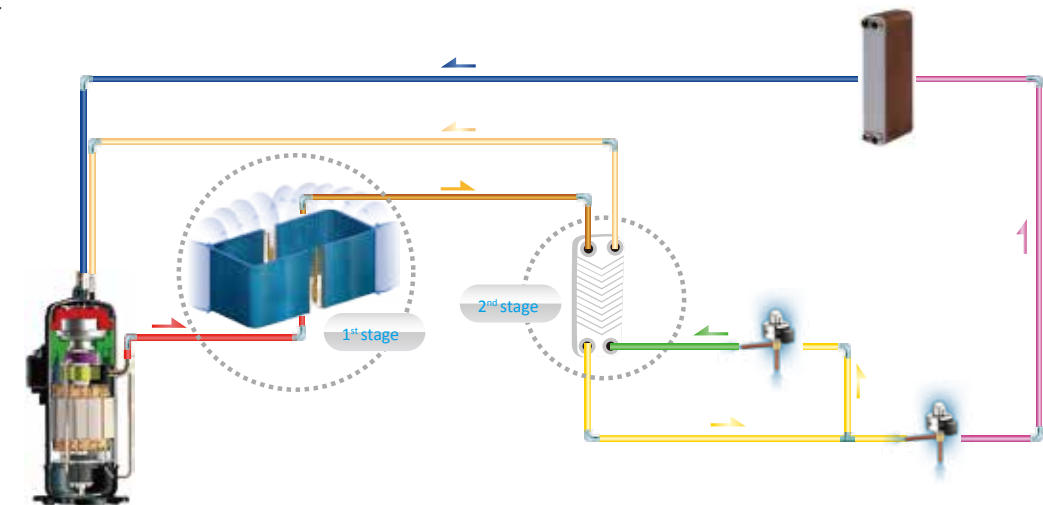


Plate Heat Exchanger Subcooling

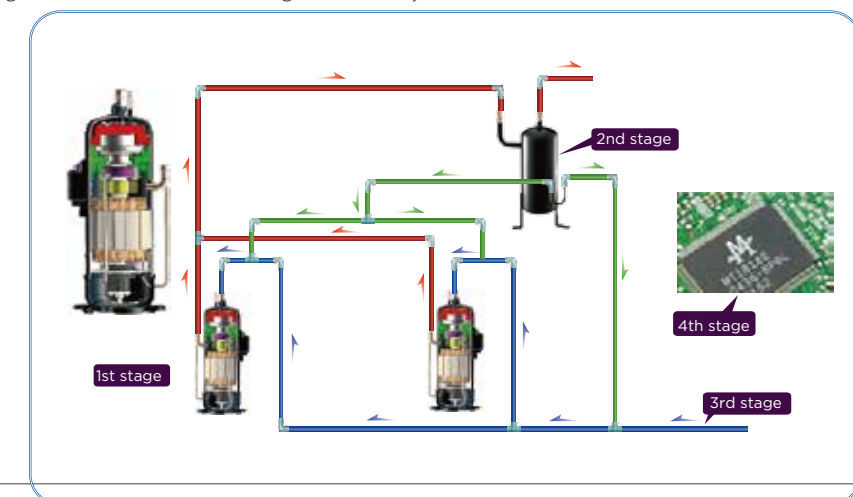
Plate Heat Exchanger as a secondary intercooler boosts up refrigerant subcooling and improves 10% energy efficiency.



Precise Oil Control Technology

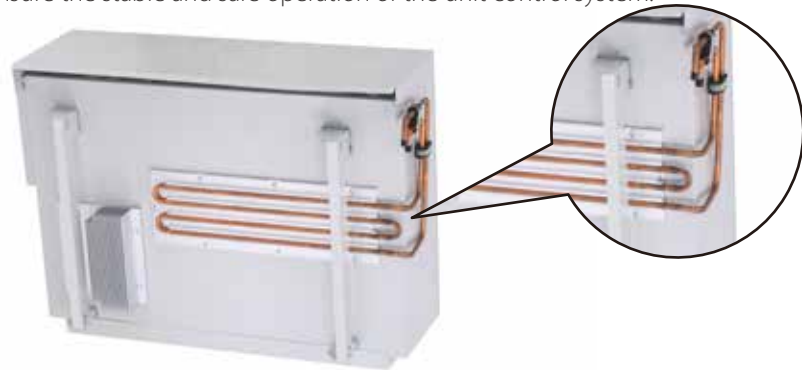
Four stages of oil control technology ensure all outdoor compressor oil is always kept at a safe level, eliminating any compressor oil shortage problems.

- Compressor internal oil separation.
- High-efficiency centrifugal oil separator (with separation efficiency of up to 99%) ensures that oil is separated from the discharge gas and returned to the compressors in a timely fashion.
- Oil balance pipe ensures oil distribution to keep compressor running normally.
- Auto oil return program monitors the running time and system status to ensure reliable oil return.



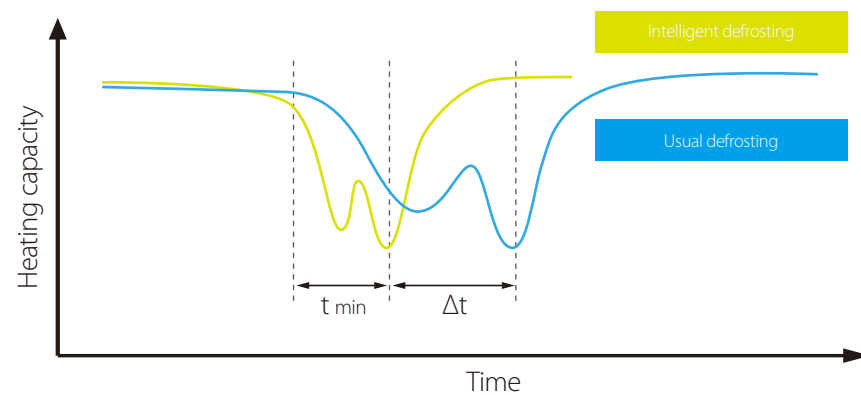
Refrigerant Cooling PCB

The 90kW model uses refrigerant cooling technology to cool the electric control box. Refrigerant cooling PCB technology reduces electric control heating under harsh working conditions, effectively reduce the temperature of electronic control components, ensure the stable and safe operation of the unit control system.



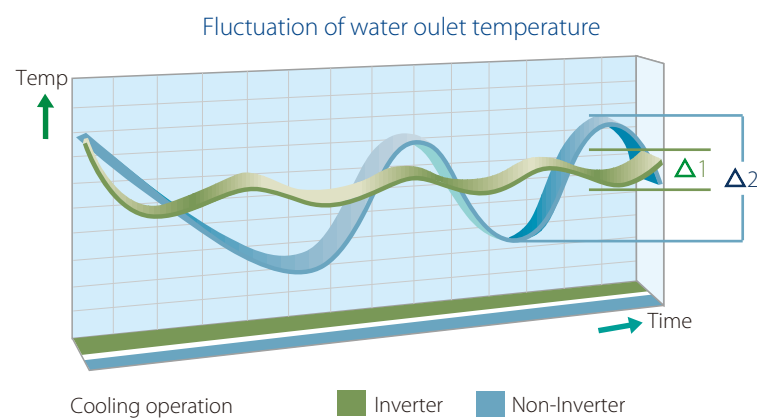
Intelligent defrosting technology

The intelligent defrosting program calculates the time required for defrosting according to the actual system status, eliminating heat losses from unnecessary defrosting. A specialized defrosting valve reduces time required for defrosting to as little as four minutes.



Rapid cooling or heating

The DC inverter compressor reaches full capacity rapidly, providing quicker cooling or heating with lower levels of temperature fluctuation during the cooling/heating operation.



Flexibility

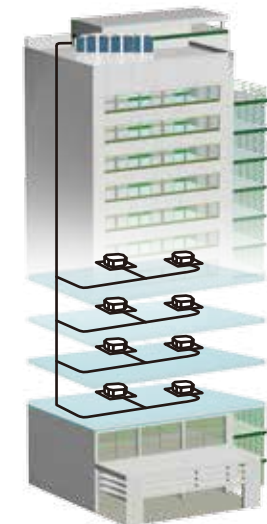
Modular design

Modularity is perfect when an extension of capacity becomes required as the building load range from 90kW to 1440kW.



Space saving and simplified installation

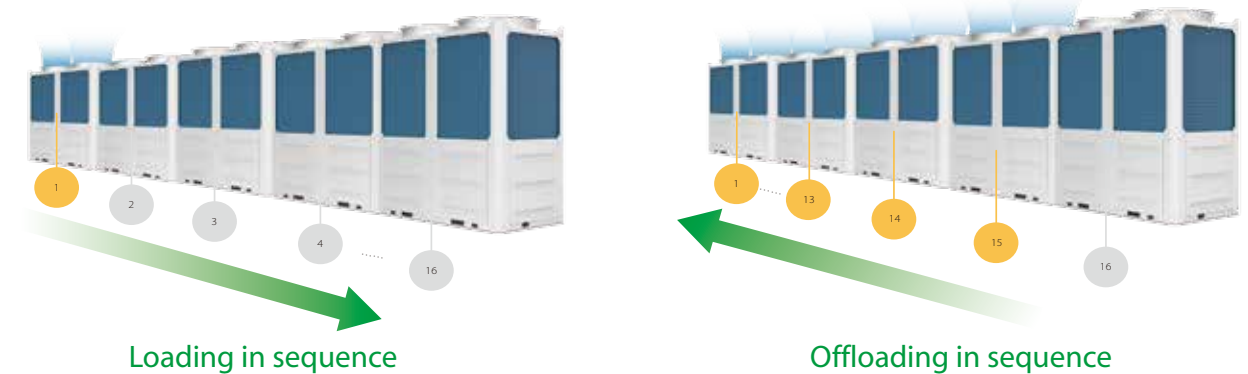
Single unit covers an area of only 2.5m², which greatly saves lots of space for group control. The hydraulic models (customized) has the water pump components inside the unit, which can save the installation cost and time and make installation easier.



High reliability

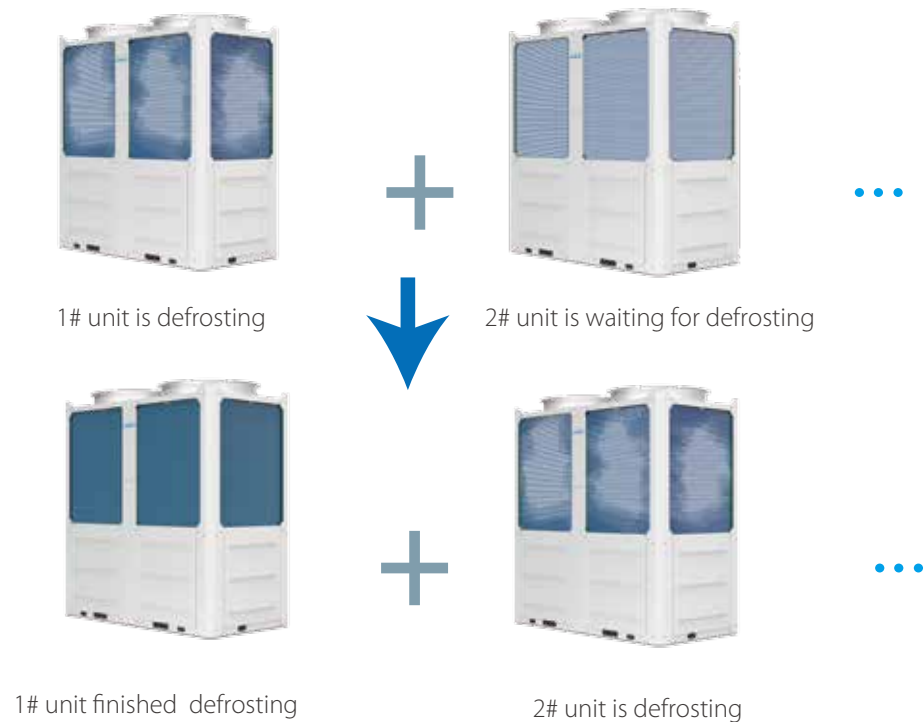
Alternative cycle duty operation

In one combination system, all units operate as alternative in cycle duty to keep equal running time, realize higher stability, better reliability and longer lifespan.



Alternate defrost operation

By detecting the water temperature, the proportion of defrosting unit can be determined intelligently so as to realize small water temperature fluctuation during the alternate defrosting period.



Back-up function

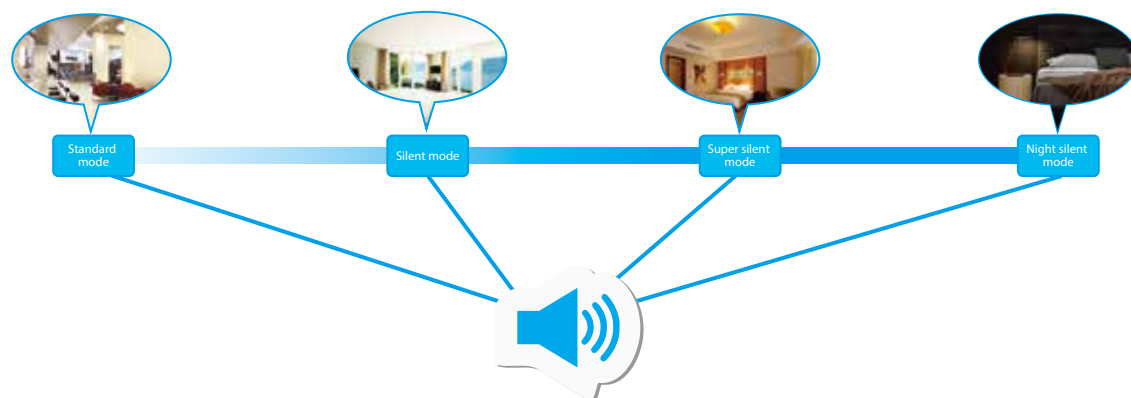
In a combination system, if one unit failed, other units can be back-up instead of the failed one for continuing operation.



Multiple function

Multiple silent modes

Different silent modes enable noise reduction to suit time of day and ambient noise levels.

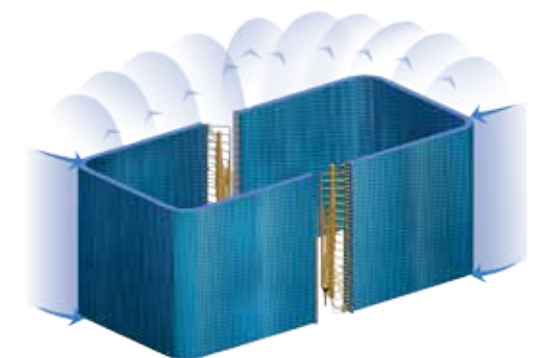
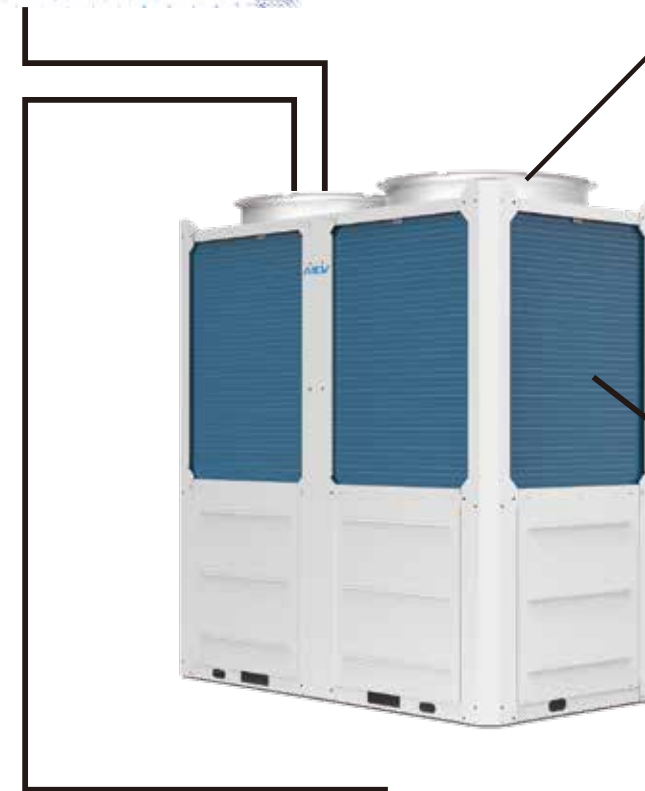


Multiple optimization design makes noise reduction

Optimized fan blade edge by CFD programs with analyzing air pressure distribution
Realize higher air volume, lower noise level.

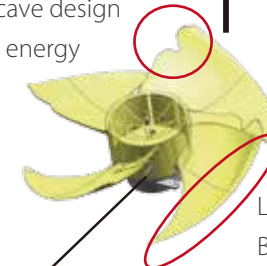


Guide air diffuser hood
Reduce noise effectively



Big heat exchanger area
Located in the upper part
Uniform air flow
High efficient "Double U" heat exchanger

Blade trailing edge dentate structure design
Blade suction surface concave design
Reduced turbulent kinetic energy



Blade installation angle optimization design
Improve airflow and fan efficiency

Large blade front edge bending sweep design
Blade outer edge falling vorticity design

USB function

Convenient program upgrade

No need to carry any other heavy equipments but only USB can realize program upgrade of indoor unit and outdoor unit.



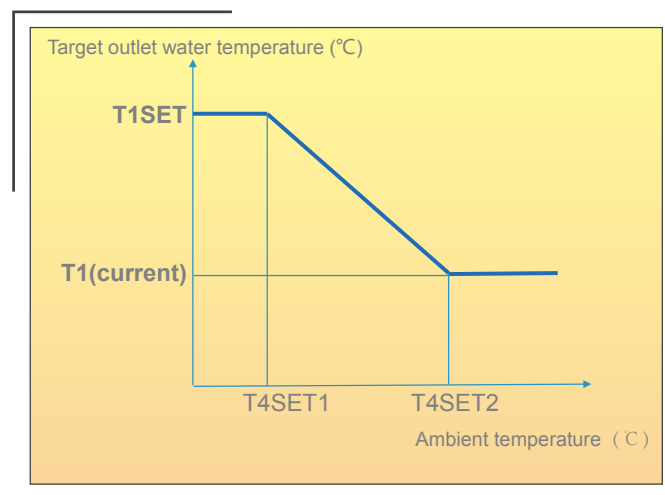
7 Levels of energy saving

For projects with temporary electricity supply restrictions, the outdoor unit supports 7 levels of energy management which can be set to output 40-100% capacity. It prevents tripping during electricity supply restriction conditions and remains system continue to operate.

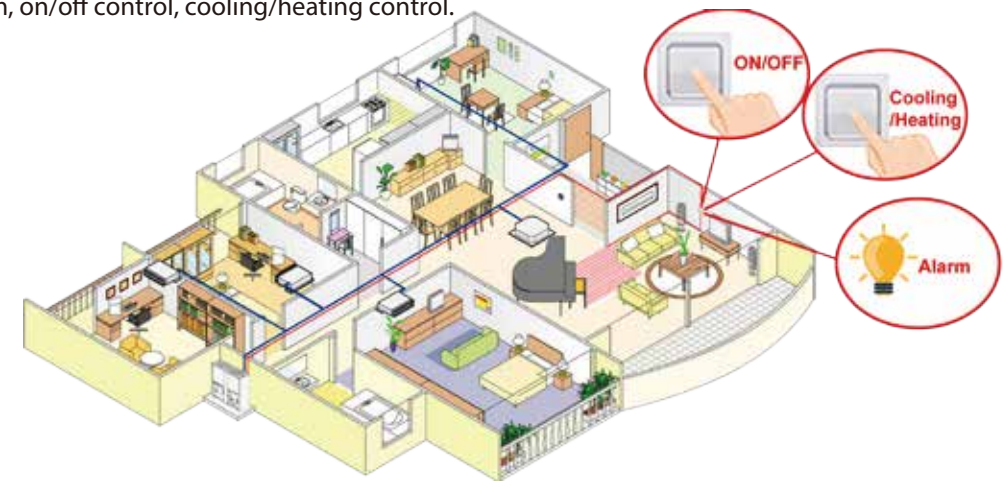


Weather temperature curve

With the help of Weather temperature curve function, water temperature will automatically change as outside air temperature changes. When outdoor air temperature increases/decreases, the heating load will decrease/increase and water temperature will decrease/increase automatically. When outdoor air temperature decreases/increases, the cooling load will decrease/increase and water temperature will increase/decrease automatically.

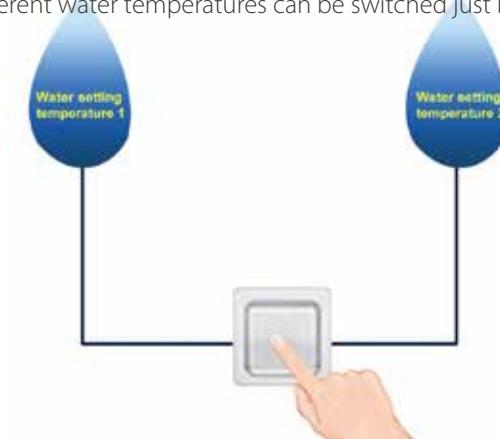


Remote alarm, on/off control, cooling/heating control.



One-touch water temperature switching

For cooling and heating mode, different water temperatures can be switched just by one-touch.



Anti-corrosion Protection

Outdoor units are given anti-corrosion treatment for non-extreme conditions as standard and can also be customized with heavy anti-corrosion treatment on main components for surface protection against corrosive air, acid rain and saline air (for installations in coastal regions) to extend machine life span. The integrity of the anti-corrosion treatment is ensured by subjecting major components and parts to salt mist testing, moisture and heating testing and light aging testing.

Fan motor

Standard products:
72h of neutral salt mist

Heavy anti-corrosion products:
240h of neutral salt mist



Painted sheet metal

Standard products:
500h of neutral salt mist
1000h of moisture and heating test
500h of light aging test

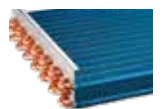
Heavy anti-corrosion products:
1000h of neutral salt mist
2000h of moisture and heating test
720h of light aging test



Screws / bolts / gaskets

Standard products:
300h of neutral salt mist

Heavy anti-corrosion products:
720h of neutral salt mist



Heat exchanger aluminum foil

Standard products:
200h of neutral salt mist

Heavy anti-corrosion products:
1000h of neutral salt mist
140h of acid salt mist

Heat exchanger copper pipe

Standard products:
24h of neutral salt mist

Heavy anti-corrosion products:
150h of neutral salt mist



Electric control box case

Standard products:
96h of neutral salt mist

Heavy anti-corrosion products:
240h of neutral salt mist

Convenient control

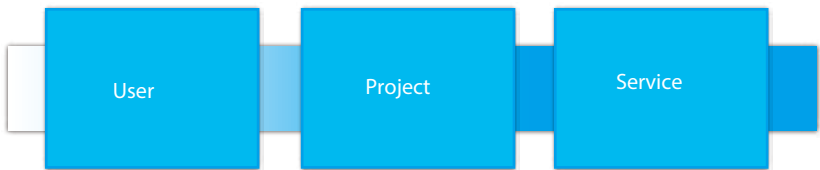
- Touch key wired controller as standard accessory to control the chillers.



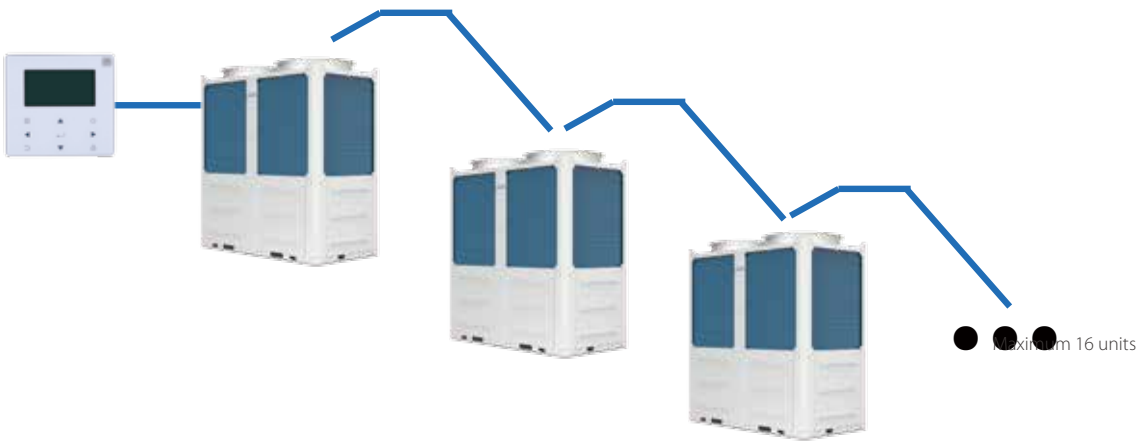
Model	KJRM-120H2/BMWKO-E
Appearance	
Main Functions	Touch key operation Parameter setting on LCD display Real-time clock function Multiple timer Power-off memory function Modbus Address setting Parallel function Buzzer prompt tone and alarm functions Weekly schedule Double set point function Energy saving function
Max. connection PCBs	16

Three user levels

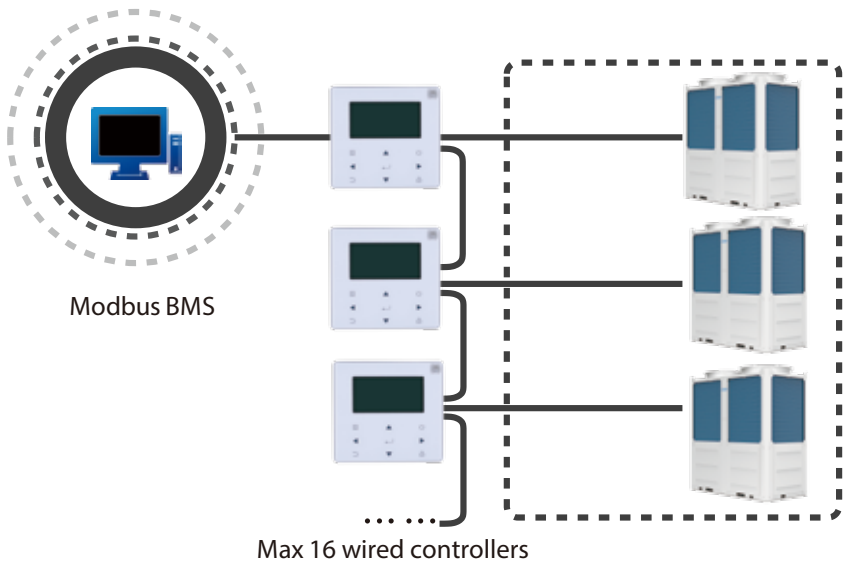
Three different user levels ensure users can easily access control functions and allow engineers convenient access to operating parameters.



Group control for up to maximum 16 units with one wired controller
Each unit can connect with one controller for setting and one controller for monitoring.



Multilingual wired controller using Modbus communication protocol



Easy installation

Built-in components



Hydraulic module
(customization option)



Water flow switch



Wired controller



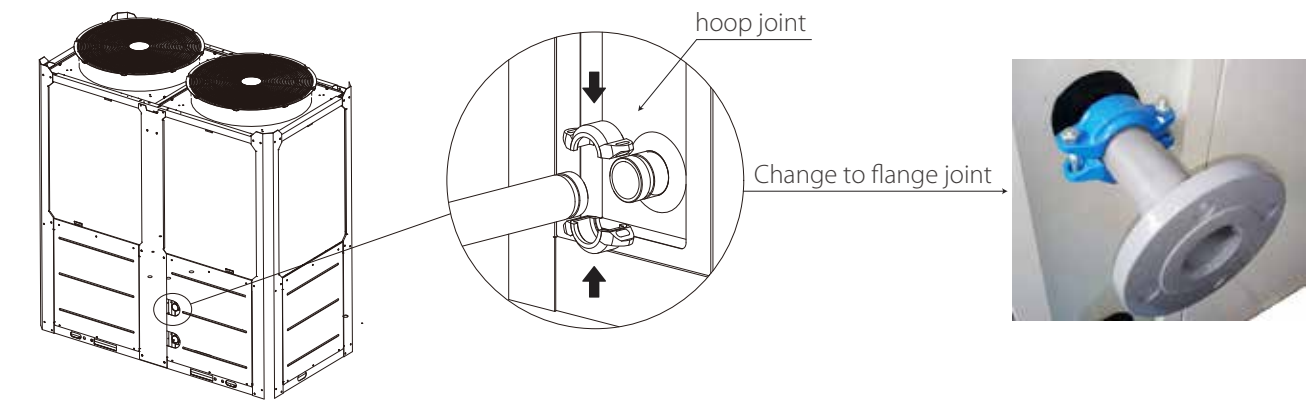
Air purge valve



Pressure relief valve

Water pipe connection

Only water piping installation is needed, no need to install refrigerant piping.
Unit uses hoop connection and it can be changed to flange connection by using MDV accessory in order to suit more application.

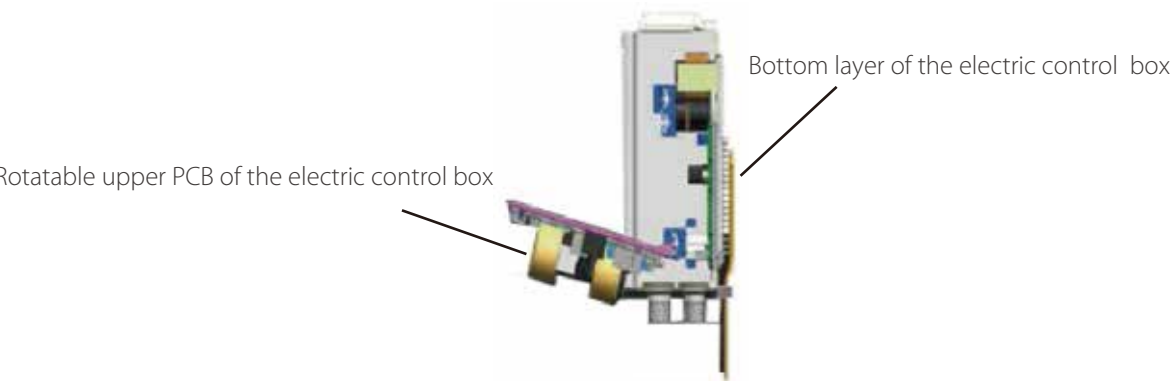


Both sides for inlet and outlet pipe(Customized) to suit more application scenarios.



Rotatable electric control box with explosion-proof design

The bottom layer can be easily achieved through the rotatable upper PCB, making the maintenance easier.
Due to the micro combustibility of R32, the electric control box adopts explosion-proof design to ensure safety and reliability



Specifications



Model			MDVM-V90D2BR8-A
Power supply		V/Ph/Hz	380~415/3/50
Cooling ¹	Capacity	kW	82
	Rated input	kW	27.8
	EER		2.95
Heating ²	Capacity	kW	90
	Rated input	kW	28.1
	COP		3.20
Seasonal space heating energy efficiency class (LWT at 35 °C)			A++
Compressor	Type		Scroll
	Quantity		2
Air side heat exchanger	Type		Finned tube
Fan motor	Type		DC motor
	Quantity		2
Water side heat exchanger	Type		Plate
Refrigerant system	Type		R32
	Charged volume	kg	16
Throttle	Type		EXV
Sound power level		dB	83
Net dimensions (W×H×D)		mm	2200*2315*1135
Packing dimensions (W×H×D)		mm	2250*2445*1180
Net/Gross weight		kg	635/660
Water pipe connection		mm	DN50
Ambient temperature range	Cooling	°C	-10 ~ 48
	Heating	°C	-20 ~ 43
LWT setting range	Cooling	°C	0 ~ 20
	Heating	°C	25 ~ 54

Notes:
1. Water inlet/outlet temperature12/7°C; Outdoor ambient temperature 35°C DB.
2. Water inlet/outlet temperature 40/45°C; outdoor ambient temperature 7°C DB/6°C WB.
3. Capacity and efficiency data calculated in accordance with EN14511; EN14825
4. For cooling mode, if water temperature reaches 0°C, anti-freeze liquid is needed.

MDV Aqua Mini Series



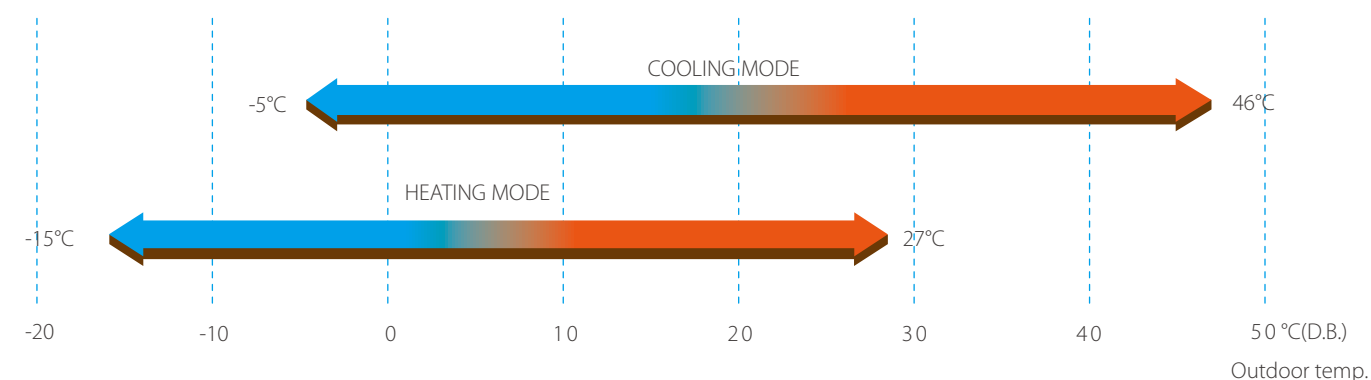
Features

Wide application range

- Seven models with wide range capacity from 5~16kW.
- Multiple power supply options.
- Freely combine with fan coil units and floor coils. Home owners may choose the best types according to their design taste (for interior) or functional needs.



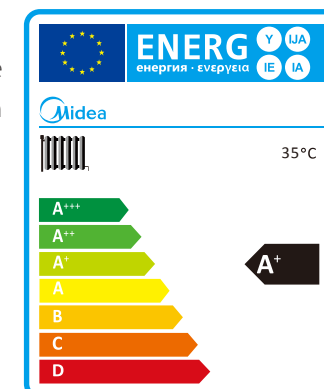
Wide operation temperature range



Wide range of outlet water temperature from 4~54 °C.

A+ rated energy efficiency at part load

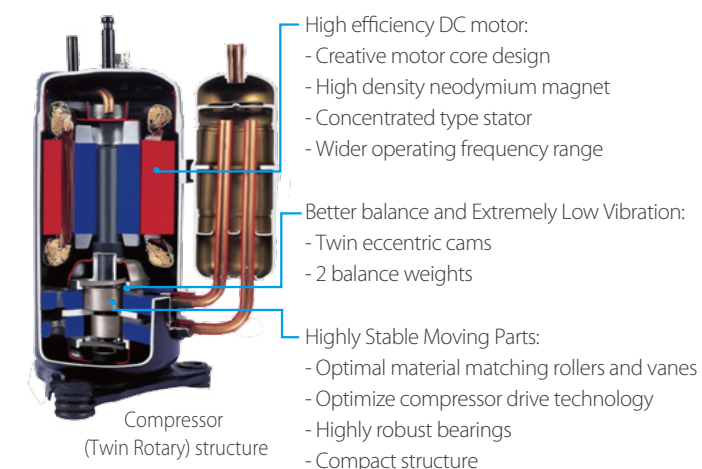
The DC inverter chiller integrates the latest technological innovations and ensures precise temperature regulation and highly efficient energy usage, making a significant contribution to limiting the impact on the environment.



DC Inverter Technology

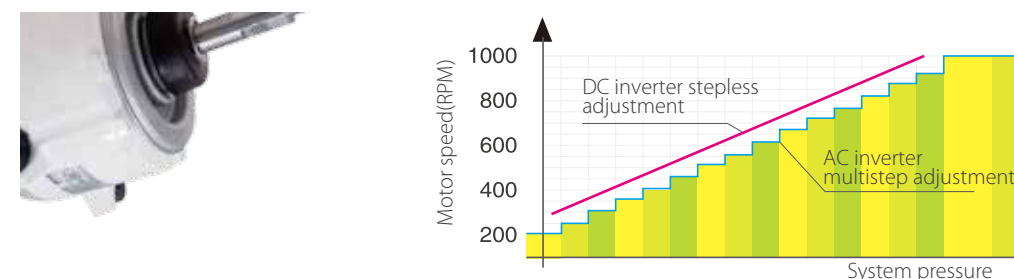
● DC inverter compressor

Twin rotary DC inverter compressor is used. The output of the outdoor unit can be adjusted precisely according to the energy demanded.



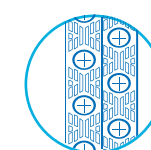
● DC fan motor

High efficiency DC fan motor saves power up to 50%.



High performance heat exchanger

Enlarge heat-exchanging area



Fin

Enhance heat transfer



Inner-threaded pipe

High efficiency



Fin + inner-threaded pipes

Hydrophilic film fins and inner-threaded copper pipes optimize heat exchange efficiency. The specially coated blue fins enhance durability and protect against corrosion from air, water and other corrosive agents, assures a longer coil service life.

Heat exchanger aluminum foil

> Standard products:
200h of neutral salt mist

> Heavy anti-corrosion products:
1000h of neutral salt mist
140h of acid salt mis

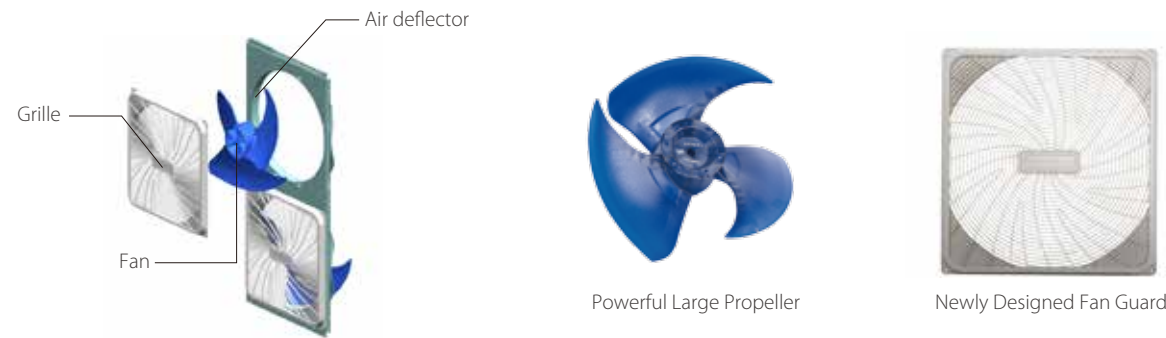
Heat exchanger copper pipe

> Standard products:
24h of neutral salt mist

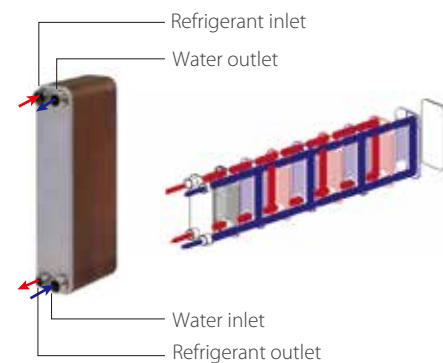
> Heavy anti-corrosion products:
150h of neutral salt mist

Advanced technology

- DC inverter technology, optimally designed fan shape and air discharge grille ensure low sound values.

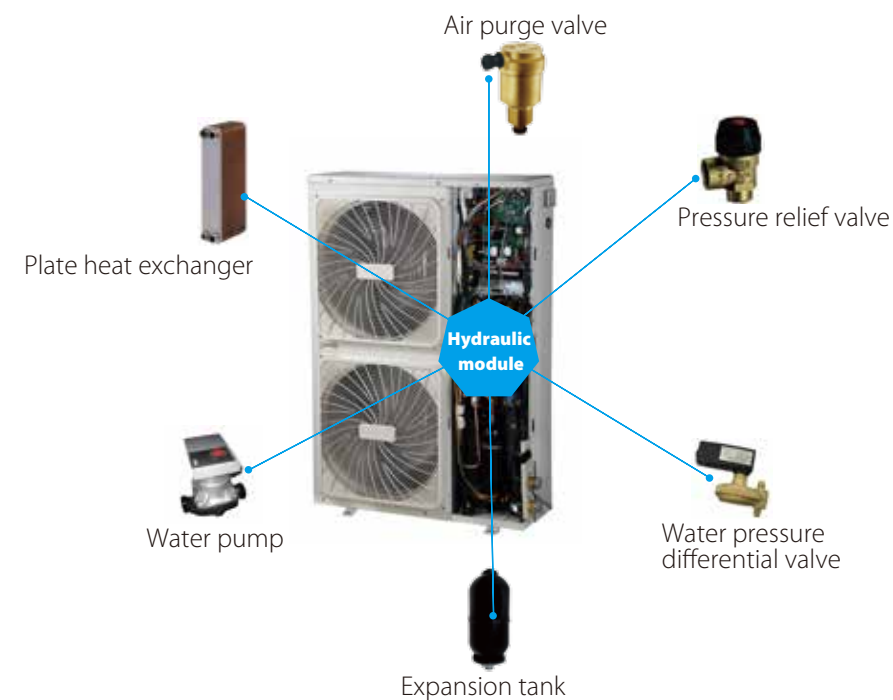


- EXV is used for stable and accurate gas flow control.
- High efficiency plate heat exchanger
Plate heat exchanger uses metal plates to transfer heat between refrigerant and water. The fluids are exposed to a much larger surface area because the fluids spread out over the plates, so both heat transfer efficiency and heat exchanger speed are greatly improved.
- Multi protections including voltage protection, current protection, anti-freezing protection and water flow protection ensure system safety running.
- High efficiency water pump
The water pump used is compliance with Erp directive.



Easy installation

- Compact structure design and leak-tight refrigerant circuit save you much installation labor.
- The chillers are equipped with a hydronic module integrated into the unit chassis, which save onsite installation time and cost. Installation is complete with only water pipe connection and electrical connection.



Easy control

- Remote ON/OFF control, remote cooling/heating control, remote alarm functions.



- With built-in controller in the panel, to perform all related operations as the user interface, as well as fast diagnosis and history data.

- ON/OFF & Mode selection
- Temperature adjust
- Timer setting
- Fast diagnosis



- Optional wired controller for easy operation.
 - Touch key operation
 - LCD displays operation parameters
 - Multiple timers
 - Real-time clock



Note: When the wired controller is connected, the built-in controller is only for display, check and diagnosis functions.

Specifications



Model			MDVG -V5WD2ER1	MDVG -V7WD2ER1	MDVG -V10WD2ER1	MDVG -V12WD2ER1
Power supply		V/Ph/Hz	220-240/1/50			
Cooling ¹	Capacity	kW	5.0	7.0	10.0	11.2
	Rated input	kW	1.55	2.25	2.95	3.50
	EER		3.23	3.11	3.39	3.20
Cooling ²	Capacity	kW	5.6	8.0	10.6	12.2
	Rated input	kW	1.15	1.85	2.50	2.65
	EER		4.87	4.32	4.24	4.60
Heating ³	Capacity	kW	6.2	8.0	11.0	12.3
	Rated input	kW	1.90	2.5	3.14	3.78
	COP		3.26	3.20	3.50	3.25
Heating ⁴	Capacity	kW	6.2	8.6	11.5	13.0
	Rated input	kW	1.35	2.10	2.65	2.92
	COP		4.59	4.10	4.34	4.45
Seasonal space heating energy efficiency class			A+	A+	A+	A+
Compressor	Type		Rotary			
Outdoor fan	Motor type		DC Motor			
Air heat exchanger	Type		Fin-coil			
Water heat exchanger	Type		Plate			
Water pump	Pump head	m	6.2	6.2	7.0	7.0
Refrigerant	Type		R410A			
	Charged volume	kg	2.5	2.5	2.8	2.8
Throttle type			Electronic expansion valve			
Sound power level		dB	63	66	68	68
Unit net dimension (W×H×D)		mm	1,008×963×396	1,008×963×396	970×1,327×400	970×1,327×400
Packing dimension (W×H×D)		mm	1,120×1,100×435	1,120×1,100×435	1,082×1,456×435	1,082×1,456×435
Net/ Gross weight		kg	81/91	81/91	110/121	110/121
Water piping connection		inch	1"	1"	1-1/4"	1-1/4"
Ambient temperature range	Cooling	℃	-5-46			
	Heating	℃	-15-27			
LWT setting range	Cooling	℃	4-20			
	Heating	℃	35-54			

Notes:

1. Ambient temperature 35°C. Water in/out 12/7°C
2. Ambient temperature 35°C. Water in/out 23/18°C
3. Ambient temperature 7°C °C85% R.H., Water in/out 40/45°C
4. Ambient temperature 7°C °C85% R.H., Water in/out 30/35°C
5. The above data test reference standard EN14511; EN14825; EN50564; EN12102; (EU)No:811; (EU)No:813; OJ 2014/C 207/02

Specifications



Model			MDVG -V12WD2BR1	MDVG -V14WD2BR1	MDVG -V16WD2BR1
Power supply		V/Ph/Hz	380-415/ 3/50		
Cooling ¹	Capacity	kW	11.2	12.5	14.5
	Rated input	kW	3.38	3.90	4.70
	EER		3.31	3.20	3.10
Cooling ²	Capacity	kW	12.2	14.2	15.6
	Rated input	kW	2.60	3.10	3.60
	EER		4.69	4.58	4.33
Heating ³	Capacity	kW	12.3	13.8	16.0
	Rated input	kW	3.72	4.25	4.85
	COP		3.31	3.25	3.30
Heating ⁴	Capacity	kW	13.0	15.1	16.5
	Rated input	kW	2.85	3.35	3.92
	COP		4.56	4.51	4.21
Seasonal space heating energy efficiency class			A+	A+	A+
Compressor	Type		Rotary		
Outdoor fan	Motor type		DC motor		
Air heat exchanger	Type		Fin-coil		
	Type		Plate		
Water pump	Pump head	m	7.0	7.0	7.0
Refrigerant	Type		R410A		
	Charged volume	kg	2.8	2.9	3.2
Throttle type			Electronic expansion valve		
Sound power level		dB	68	70	72
Unit net dimension (WxHxD)		mm	970x1,327x400		
Packing dimension (WxHxD)		mm	1,082x1,456x435		
Net/ Gross weight		kg	110/121	111/122	111/122
Water piping connection		inch	1-1/4"		
Ambient temperature range	Cooling	°C	-5-46		
	Heating	°C	-15-27		
LWT setting range	Cooling	°C	4-20		
	Heating	°C	35-54		

Notes:

1. Ambient temperature 35°C. Water in/out 12/7°C
2. Ambient temperature 35°C. Water in/out 23/18°C
3. Ambient temperature 7°C °C85% R.H., Water in/out 40/45°C
4. Ambient temperature 7°C °C85% R.H., Water in/out 30/35°C
5. The above data test reference standard EN14511; EN14825; EN50564; EN12102; (EU)No:811; (EU)No:813; OJ 2014/C 207/02