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



Air Cooled Modular Chiller

mbt.midea.com

MIDEA BUILDING TECHNOLOGIES **2023**

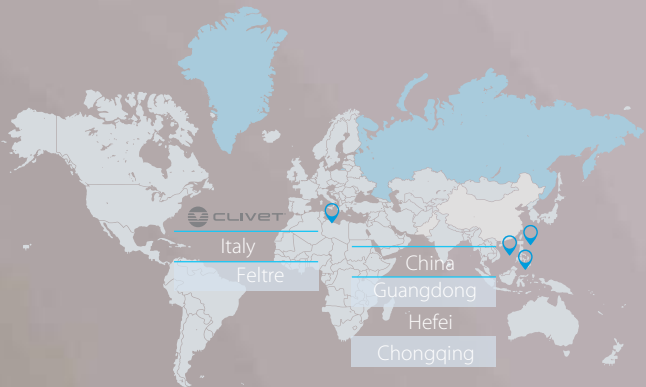
Midea MBT

Midea MBT (Midea Building Technologies) is a key division of the Midea Group, a leading provider of comprehensive solutions of intelligent building, involving energy sources, elevators, control systems, and heating, ventilation & air conditioning. Midea MBT has continued with the tradition of innovation upon which it was founded and emerged as a global leader in the HVAC and building management industry. A strong drive for advancement has resulted in an extensive R&D department that has placed Midea MBT at the forefront of a competitive edge. Through these independent projects and joint-cooperation with other global enterprises, Midea has supplied thousands of innovative solutions to customers worldwide.

3 businesses constitute the significant components of Midea intelligent building solutions



4 production bases can achieve fast delivery



Over 100 testing labs cover all different real application sceneries

Security construction

Environmental Simulation

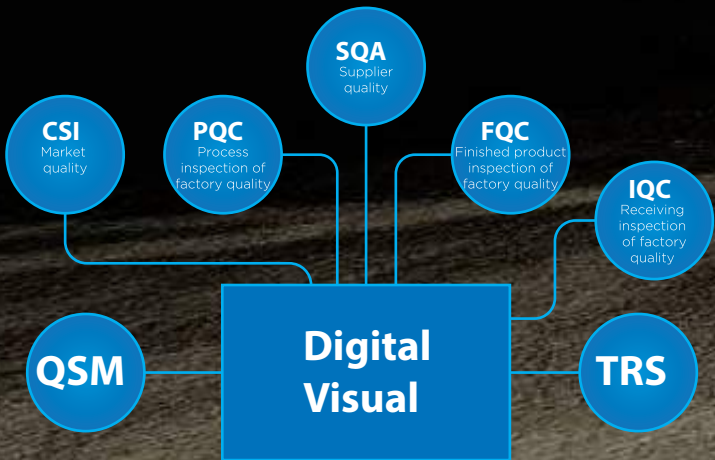
Reliable & long-lasting operation

EMC lab

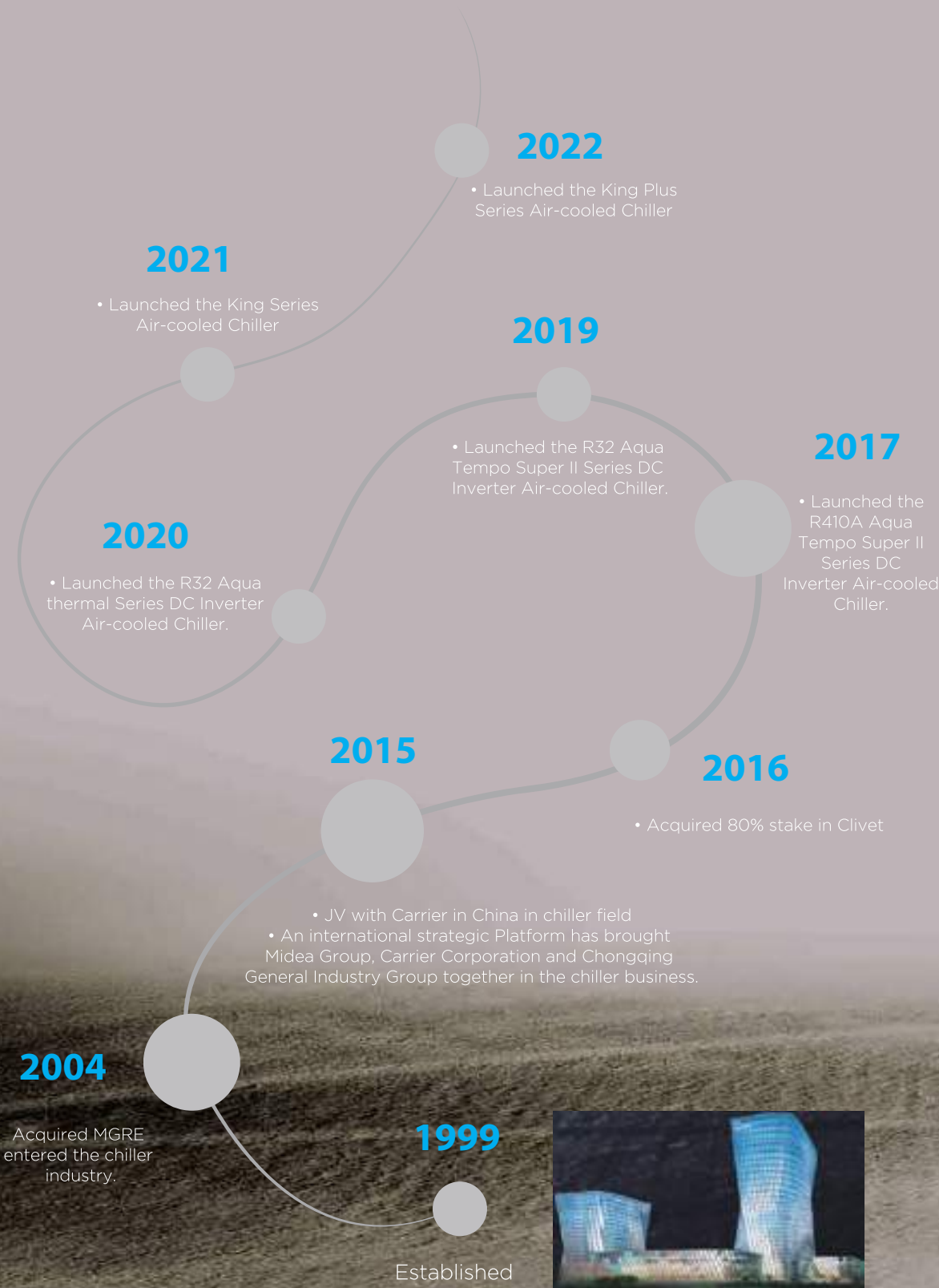
Noise

Performance

All products can be visualized and digitalized throughout entire process



Midea Air-cooled Modular Chiller History



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.

The “ **2** (HQ Spare parts center) + **10** (Regional Spare parts center) + **N** (Country Spare parts inventory)” Spare Parts Layout can ensure the timely supply of global after-sales spare parts.



Technical Support Platform (TSP)

TSP is a platform for customers to provide professional technical support. Through TSP, you can inquire product information, documentation, spare parts and trouble-shooting, initiate technical questions and quality complaint process, and also support self-service spare parts order.

Website address: <https://tsp.midea.com/>



My order

Inquire spare parts from exploded view and place spare parts order directly in TSP.

Document inquiry and download

View or download product technical documentation online, such as catalogs, images, training PPTs, etc.

Technical inquiry & FAQ

Initiate technical questions online, and our technicians answer them online in time. Find a quick solution in the FAQ.

Troubleshooting

Query the error code and solution by SN, model name, error code or product type.

Complain

Initiate the product quality complaint process online, and our after-sales engineers handle related complaints in time.

Mobile Intelligence Service App (MISA)

MISA is the mobile terminal of TSP, with the same functions as TSP. The mobile service makes technical support more timely and convenient.

<https://link.midea.com>



Technical Enquiry



Trouble shooting



FAQ



Complain



Search product manuals



Spare Parts list



Download



Scan above to download the mobile app

Feedback



Thank you very much for your attention and advice

MBT Learning Academy



Objective

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

Training Centers

Our world class training centers provide knowledge and skills necessary to efficiently deploy MBT 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. MBT Training Center

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

The Midea MBT 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 MBT 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 MBT 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 MBT products. Technical person and engineers from different parts of the world are invited to take part in these trainings.

Online Trainings: The trainings to the Global customers can also be done online with the help of Team and Midea Meeting software. This way, the customers do not need to be physically present for the training. Amid the COVID-19 pandemic, MBT 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 MBT 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 MBT products.

Training Certificates:

The attendees for Global trainings are provided a training certificate highlighting the courses discussed in the training, signed by Mr. Henry Cheng, General Manager of MBT 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.

For further enquiries about the Global Trainings conducted by MBT Learning Academy, please send email at the following email address:
peeyush@midea.com



Office building

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



Komar University

- Country: Iraq
- City: Sulaymaniyah
- Outdoor Units: Air-cooled screw & scroll chiller
- Indoor Units: FCU & AHU
- Total Capacity: 2,350kW

Industry



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

Content

- ▶ 16 R410A Aqua Tempo Super II Series
- ▶ 32 Aqua thermal Series
- ▶ 48 Aqua Tempo Super Series
- ▶ 62 Aqua Tempo Power Series
- ▶ 74 King Series
- ▶ 90 King Plus Series

R410A Aqua Tempo Super II Series



Product lineup

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

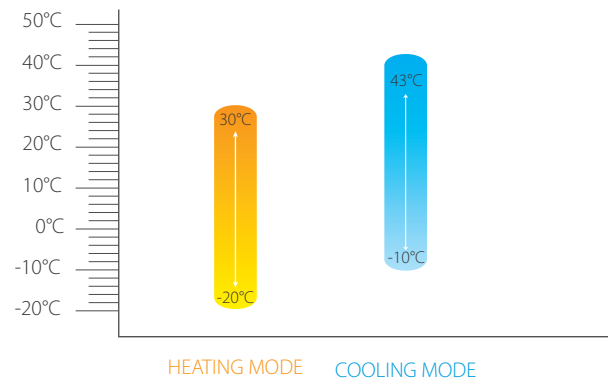
Overview

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.



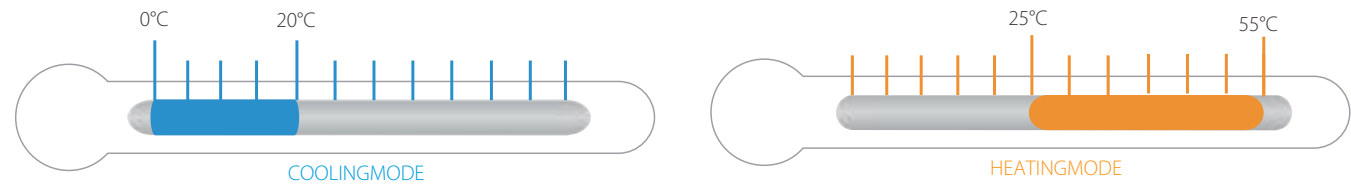
Ambient temperature*

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

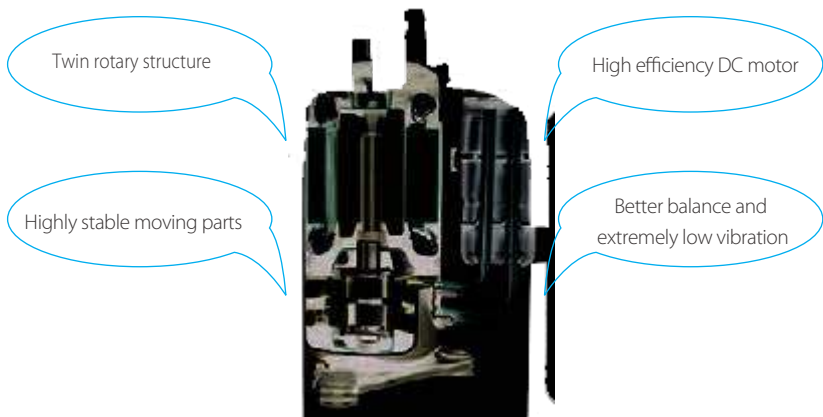


Note: For cooling mode, if outlet water temperature is less than 5°C, anti-freeze liquid is needed. 0°C water temperature can be reached by changing DIP switch setting.

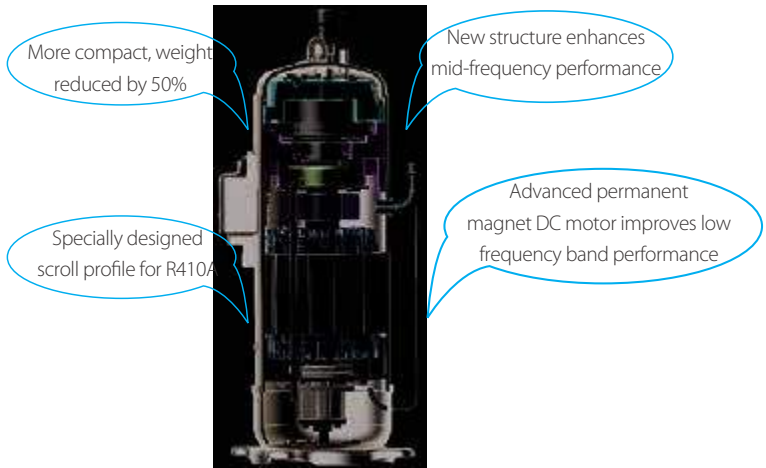
High quality components

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%.



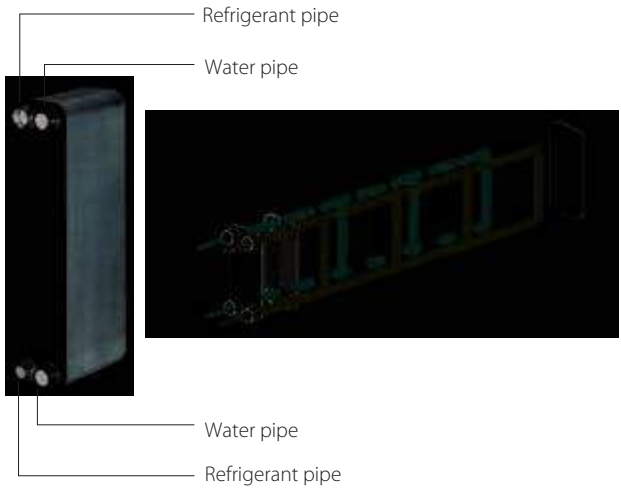
Compressor for 30/60kW models



EVI Compressor for 90kW model

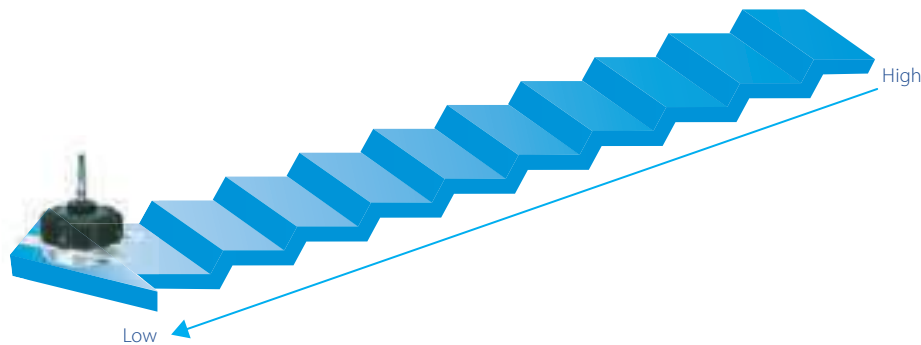
High efficiency plate heat exchanger

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.



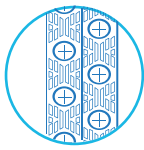
DC fan motor

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



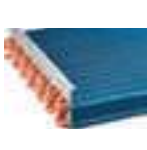
Fin

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

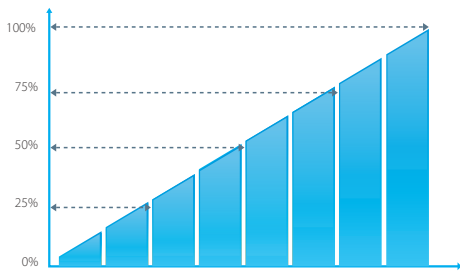
Heat exchanger copper pipe

> 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

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

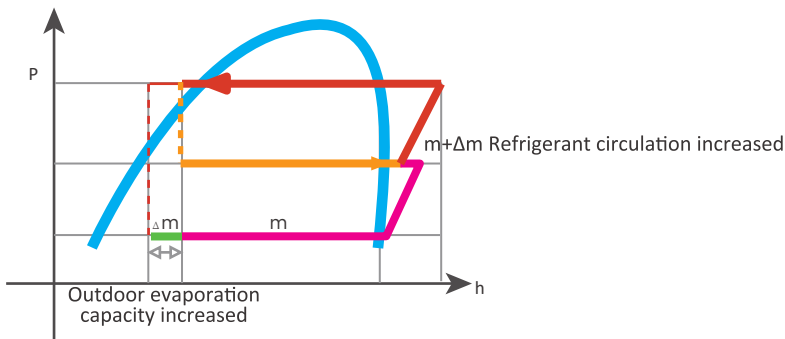
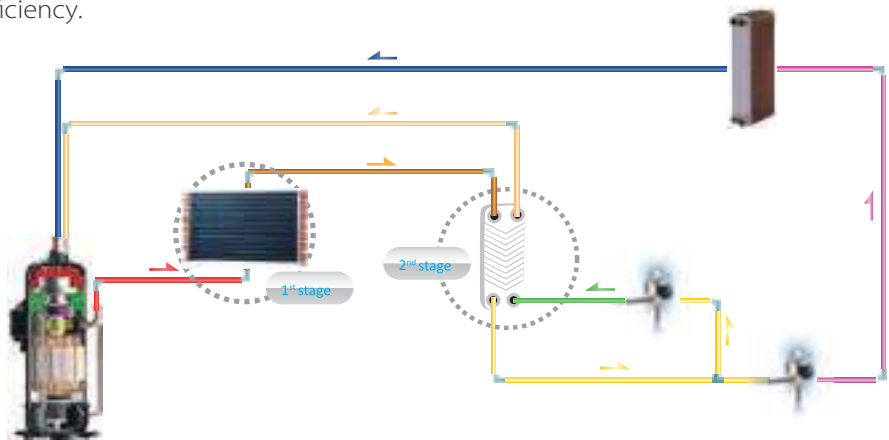


Plate Heat Exchanger Subcooling

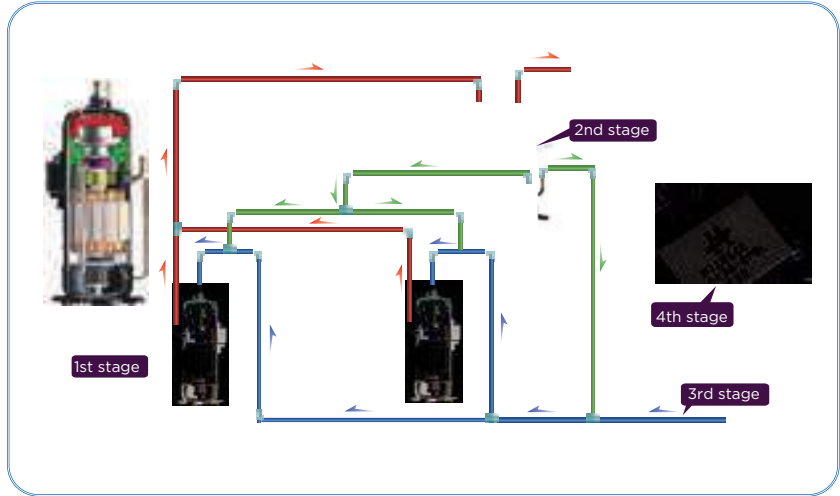
For 90kW model, plate heat exchanger as a secondary intercooler boosts up refrigerant subcooling and improves 10% energy efficiency.



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.

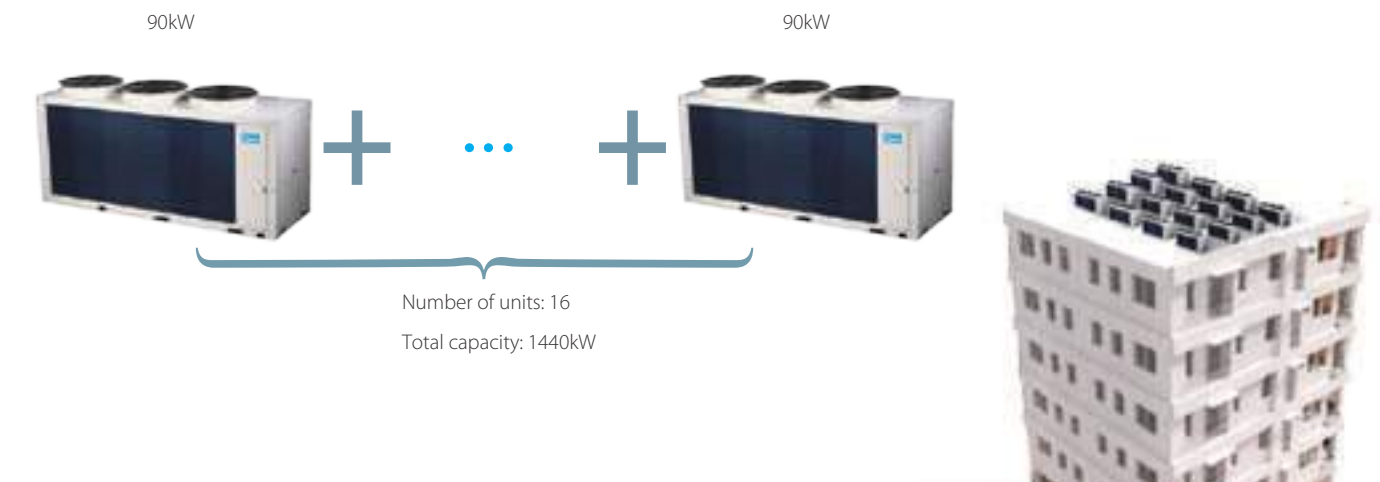
- Compressor internal oil separation.
- High-efficiency centrifugal oil separator (with separation efficiency of up to 99%) ensures that oil is separated from the discharge gas and returned to the compressors in a timely fashion.
- Oil balance pipe ensures oil distribution to keep compressor running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



Flexibility

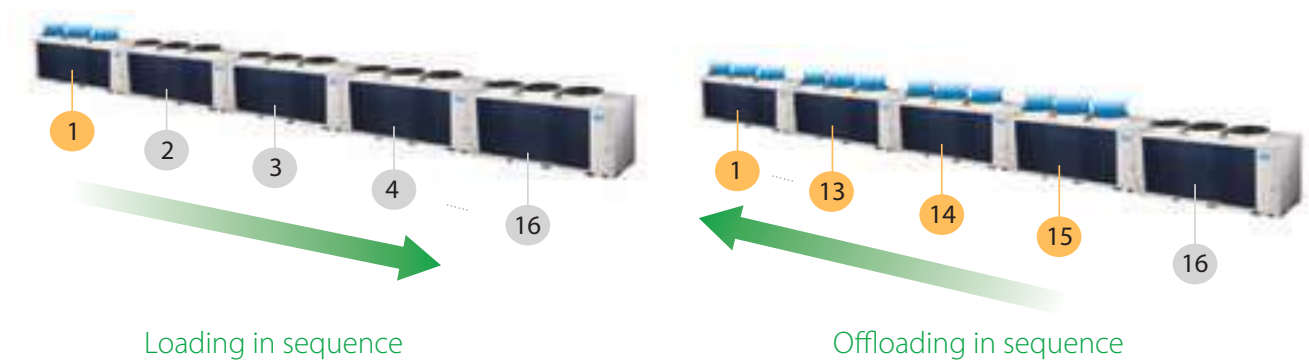
Modular design

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.



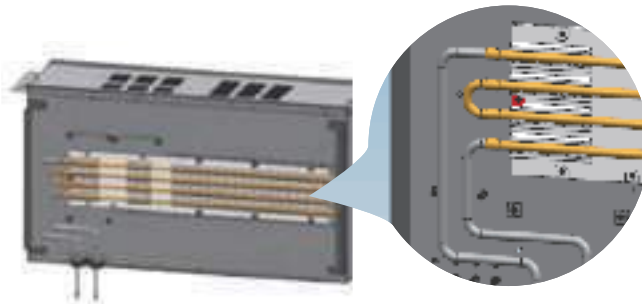
Alternate defrost operation

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.



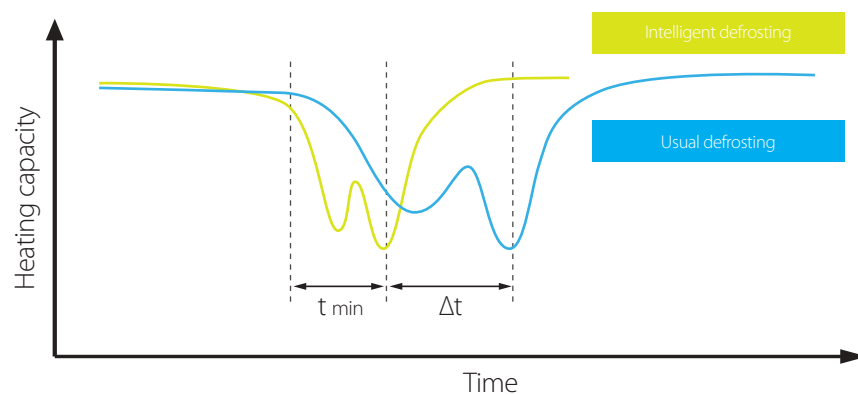
Refrigerant Cooling PCB

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.



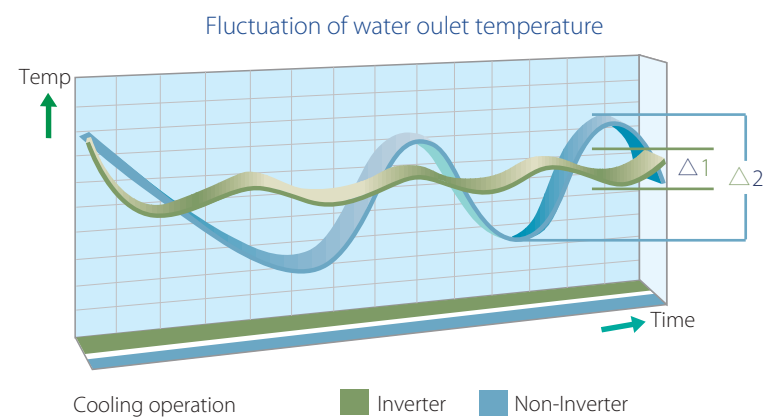
Intelligent defrosting technology

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.



Back-up function

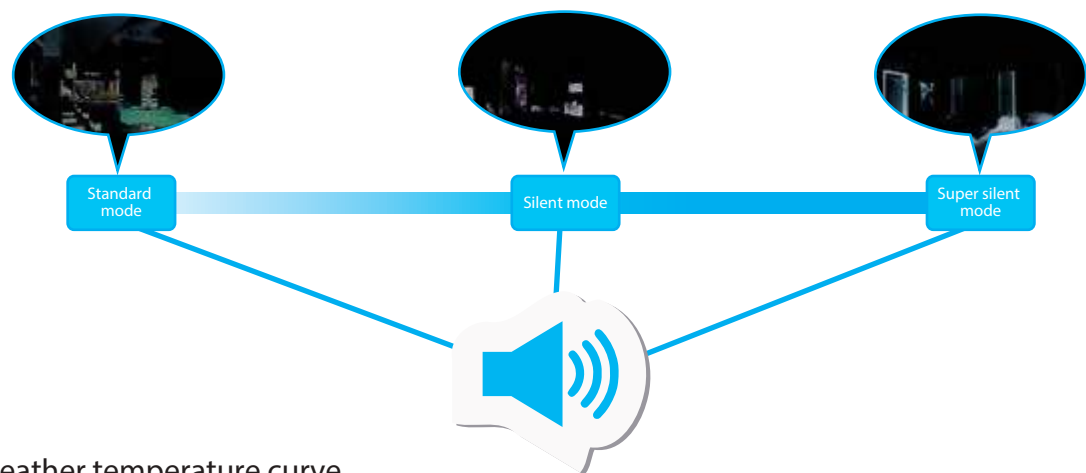
In a combination system, if one unit fails, other units can be used as backup and continue the operation.



Multiple function

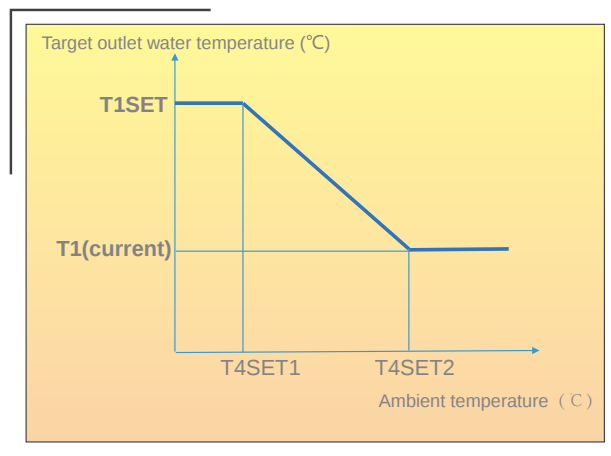
Multiple silent modes

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 sw

For cooling and heating mod

atched just by one-touch.



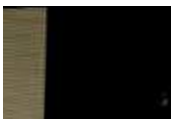
Anti-corrosion Protection

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 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

Convenient control

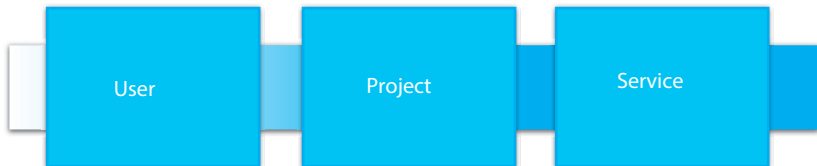
- Touch key wired controller as standard accessory to control the chillers.



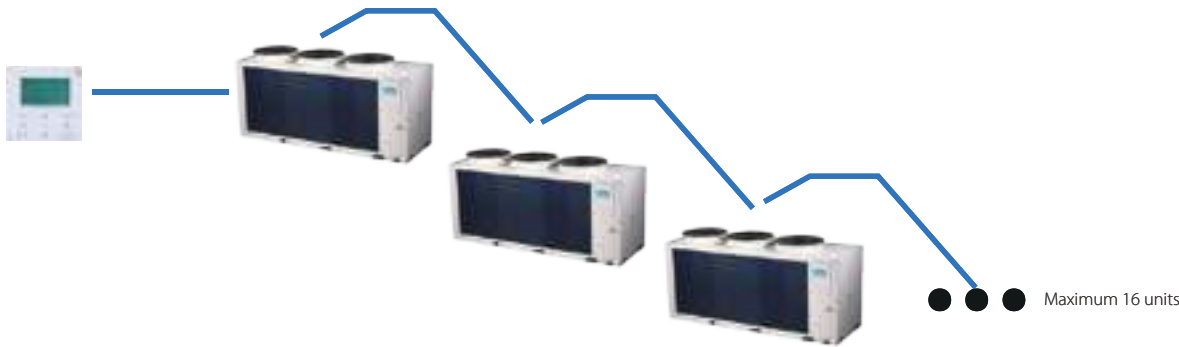
Model	KJRM-120H/BMWKO3-E
Appearance	
Main Functions	Touch key operation Parameter setting an LCD display Real-time clock function Multiple timer Power-off memory function Modbus Address setting Parallel function Buzzer prompt tone and alarm functions Weekly schedule Double set point function
Max. connection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

Three user levels

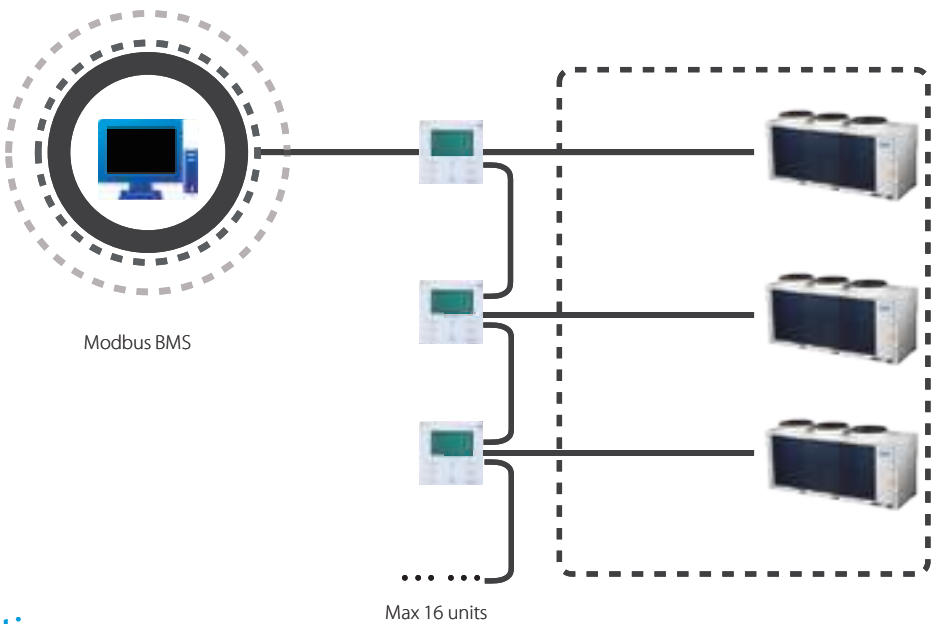
Three different user levels ensure users can easily access control functions and allow engineers convenient access to operating parameters.



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



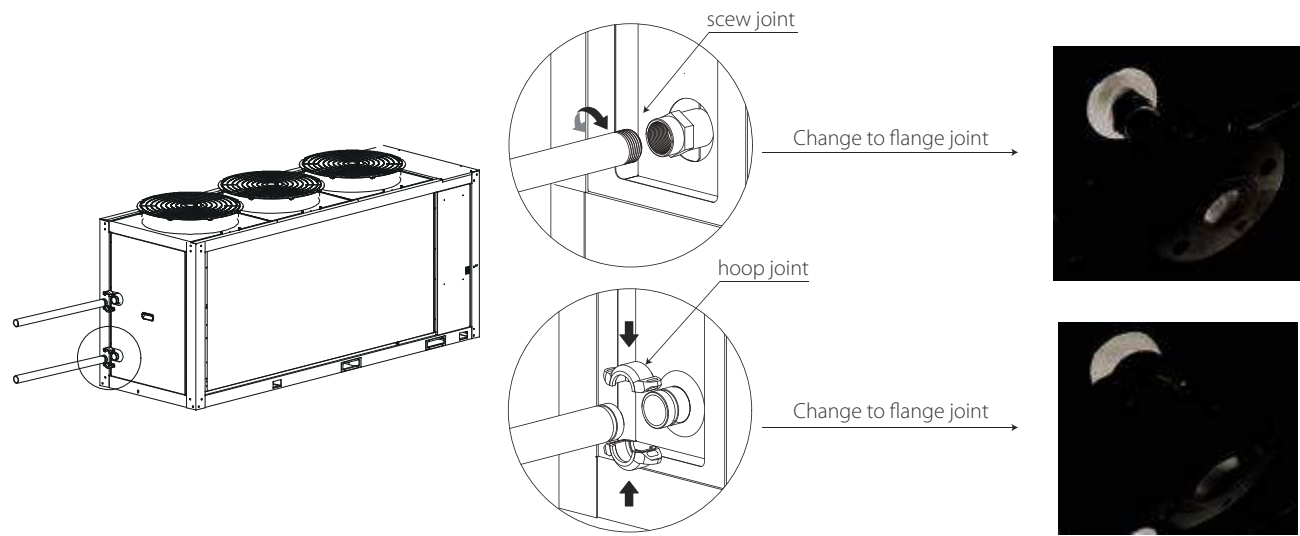
Air purge valve



Pressure relief valve

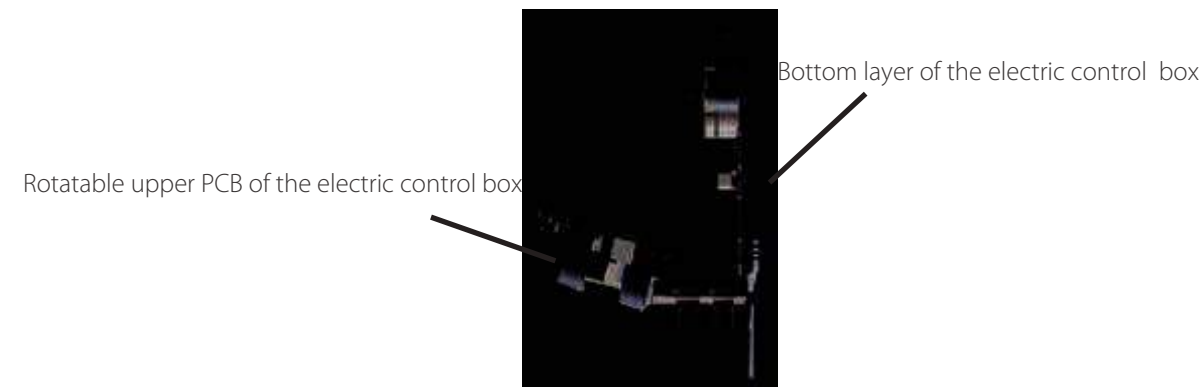
Water pipe connection

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 Midea 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			MC-SU30-RN1L	MC-SU30M-RN1L	MC-SU60-RN1L	MC-SU60M-RN1L	MC-SU90-RN1L	MC-SU90M-RN1L
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	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	748/777
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



Aqua thermal Series

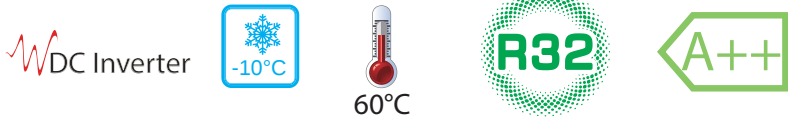


Product lineup

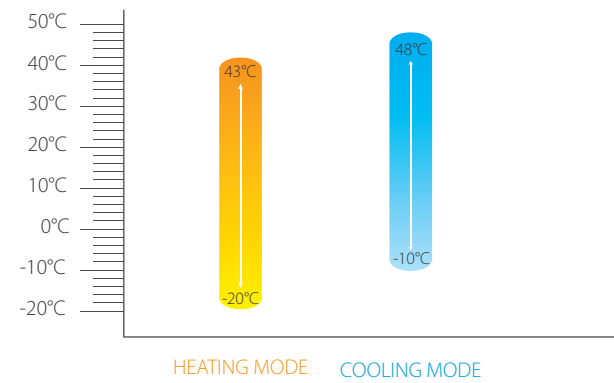
Capacity(kW)	75	90	140	180
Appearance				
380-415V/3Ph/50Hz	●	●	●	●

Overview

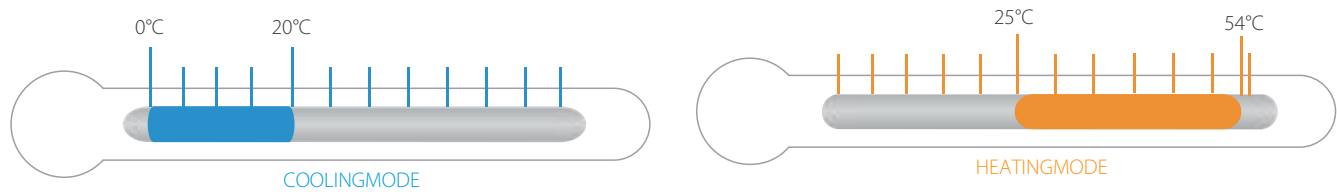
Refrigerant R32 75% less impact on global warming;
DC Inverter technology allows precise consumption on real load;
One-stop solution for heating, cooling and domestic hot water(Customization);
Maximum water temperature up to 60°C for DHW mode(Customization);
Minimum operation ambient temperature down to -10 °C for cooling mode;
High energy efficiency level A++ for energy saving (Water outlet temperature at 35°C);
Space saving;
Maximum 2240kW combination capacity;
Maximum 256 units controlled through Modbus;
Hydraulic model for customization;



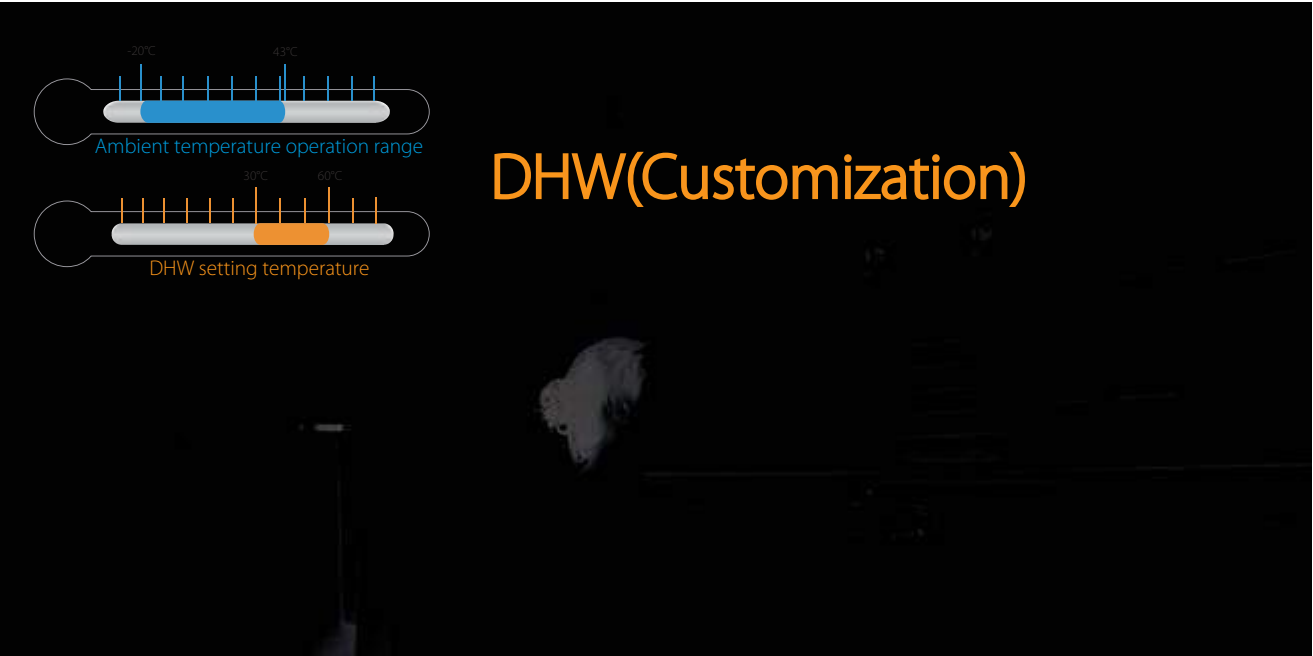
Ambient temperature



Outlet water temperature

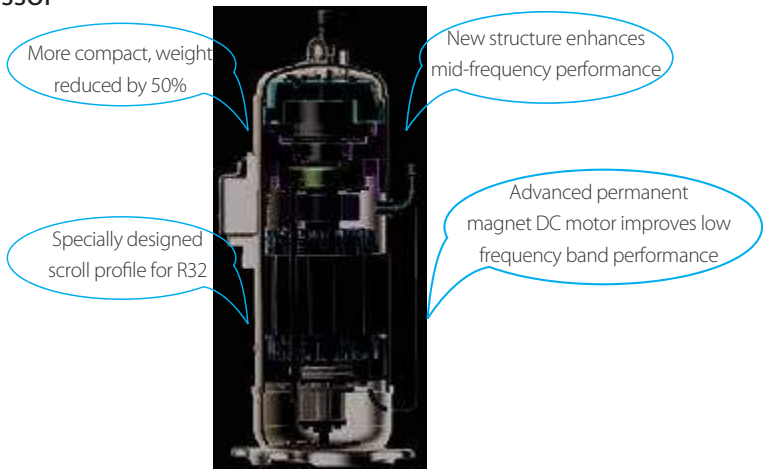


Note: For cooling mode, if outlet water temperature is less than 5°C, anti-freeze liquid is needed. 0°C water temperature can be reached by changing DIP switch setting.



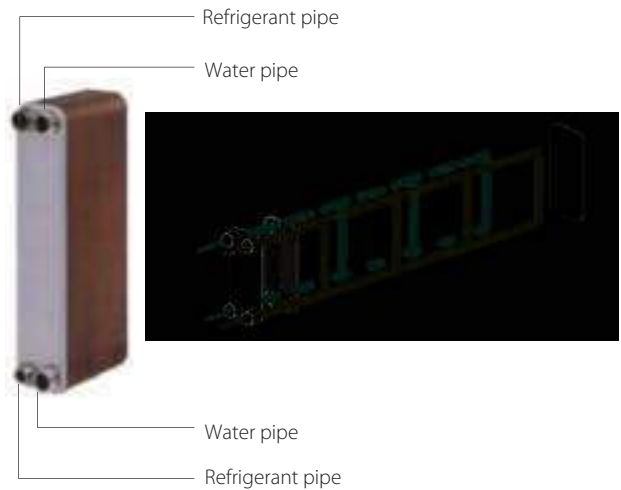
High quality components

DC Inverter compressor



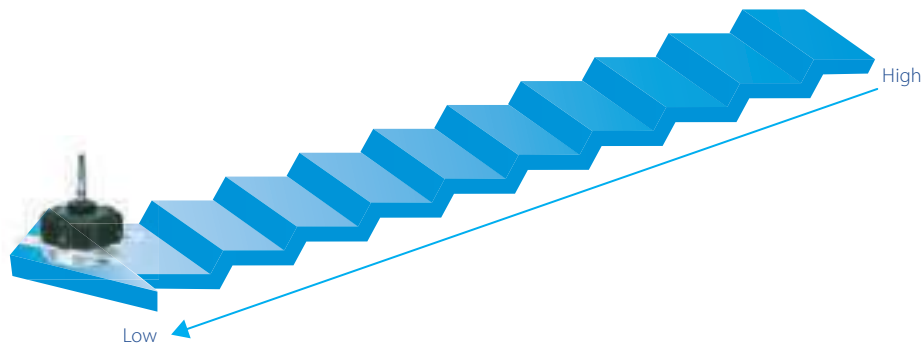
High efficiency plate heat exchanger

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.

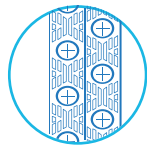


High performance heat exchanger

Enlarge heat-exchanging area

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

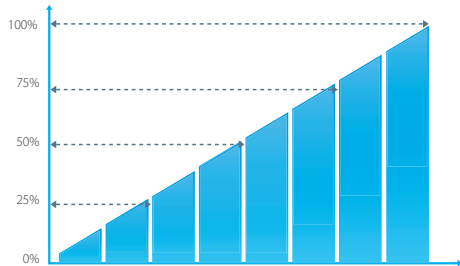
- > Standard products:
200h of neutral salt mist
- > Heavy anti-corrosion products:
1000h of neutral salt mist
140h of acid salt mis

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, unit can run heating mode stably down to -20 ℃ , and the heating capacity can be improved greatly.



EVI compressor

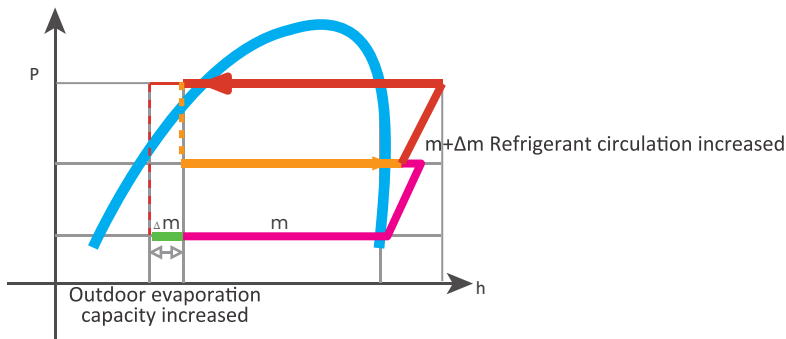
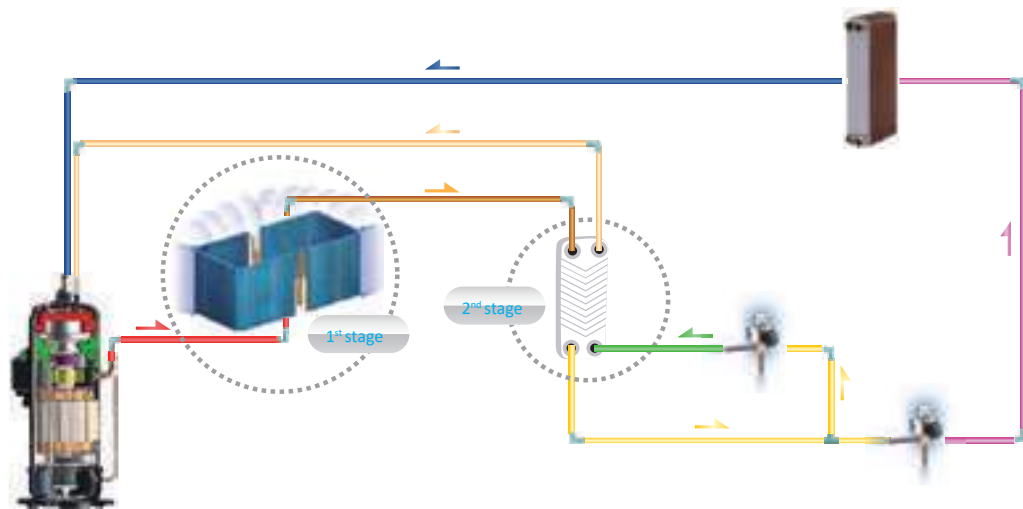


Plate Heat Exchanger Subcooling

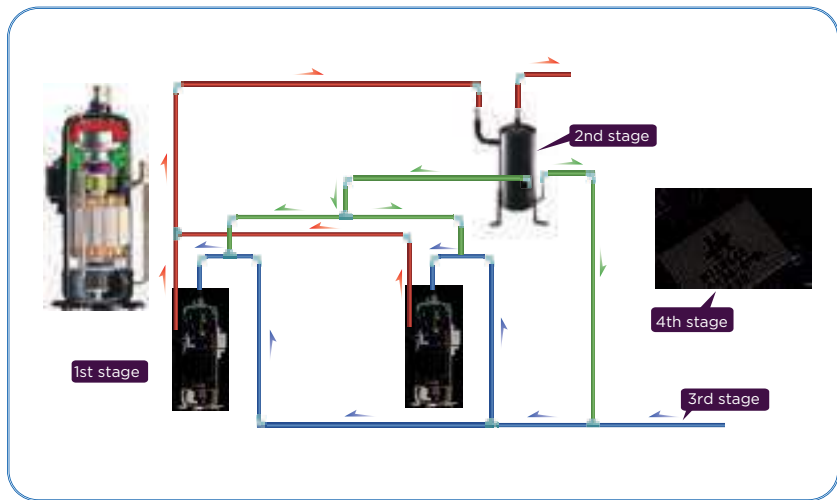
Plate Heat Exchanger as a secondary intercooler boosts up refrigerant subcooling and improves 10% energy efficiency.



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.



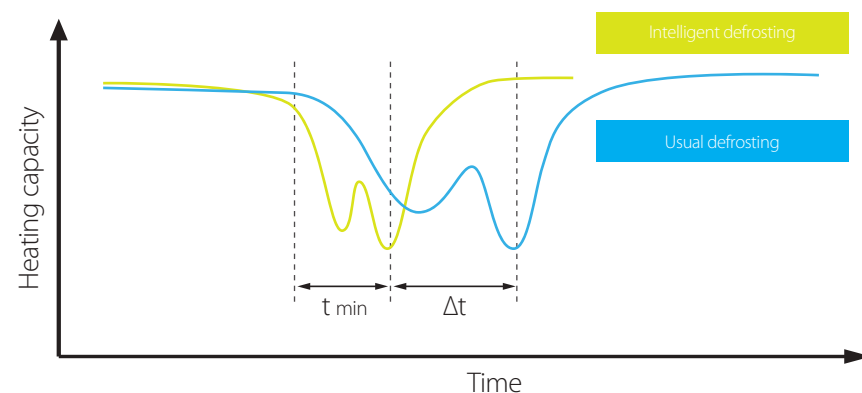
Refrigerant Cooling PCB

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.



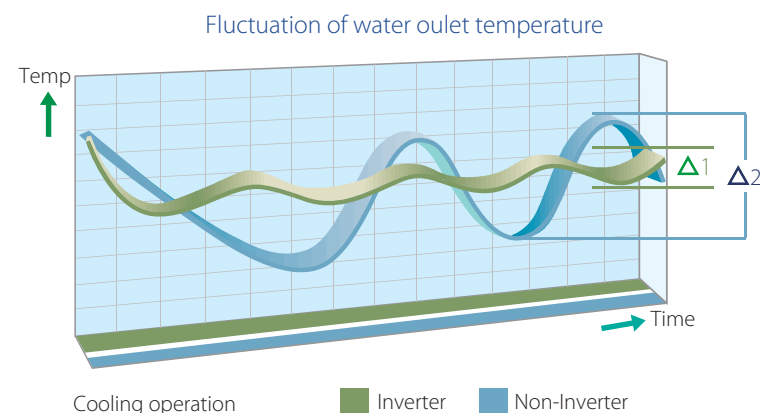
Intelligent defrosting technology

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

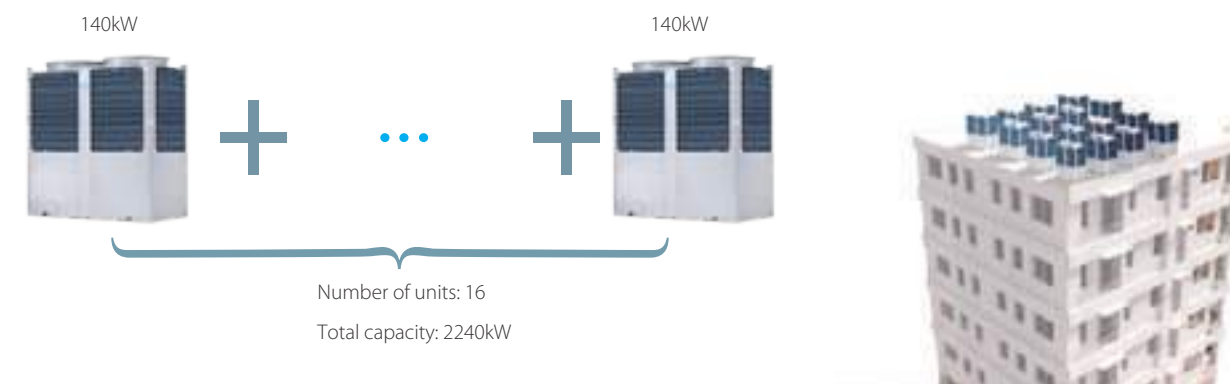
The DC inverter compressor reaches full capacity rapidly, providing quicker cooling or heating with lower levels of temperature fluctuation during the cooling/heating operation.



Flexibility

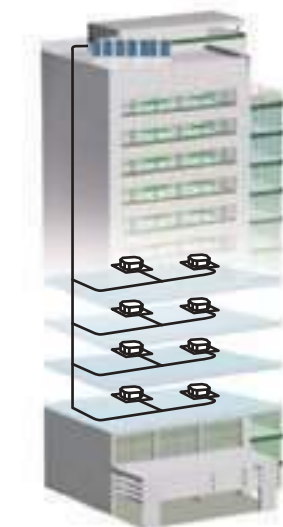
Modular design

Modularity is perfect when an extension of capacity becomes required as the building load range from 75kW to 2240kW.



Space saving and simplified installation

Single unit covers an area of only 1.92m², 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

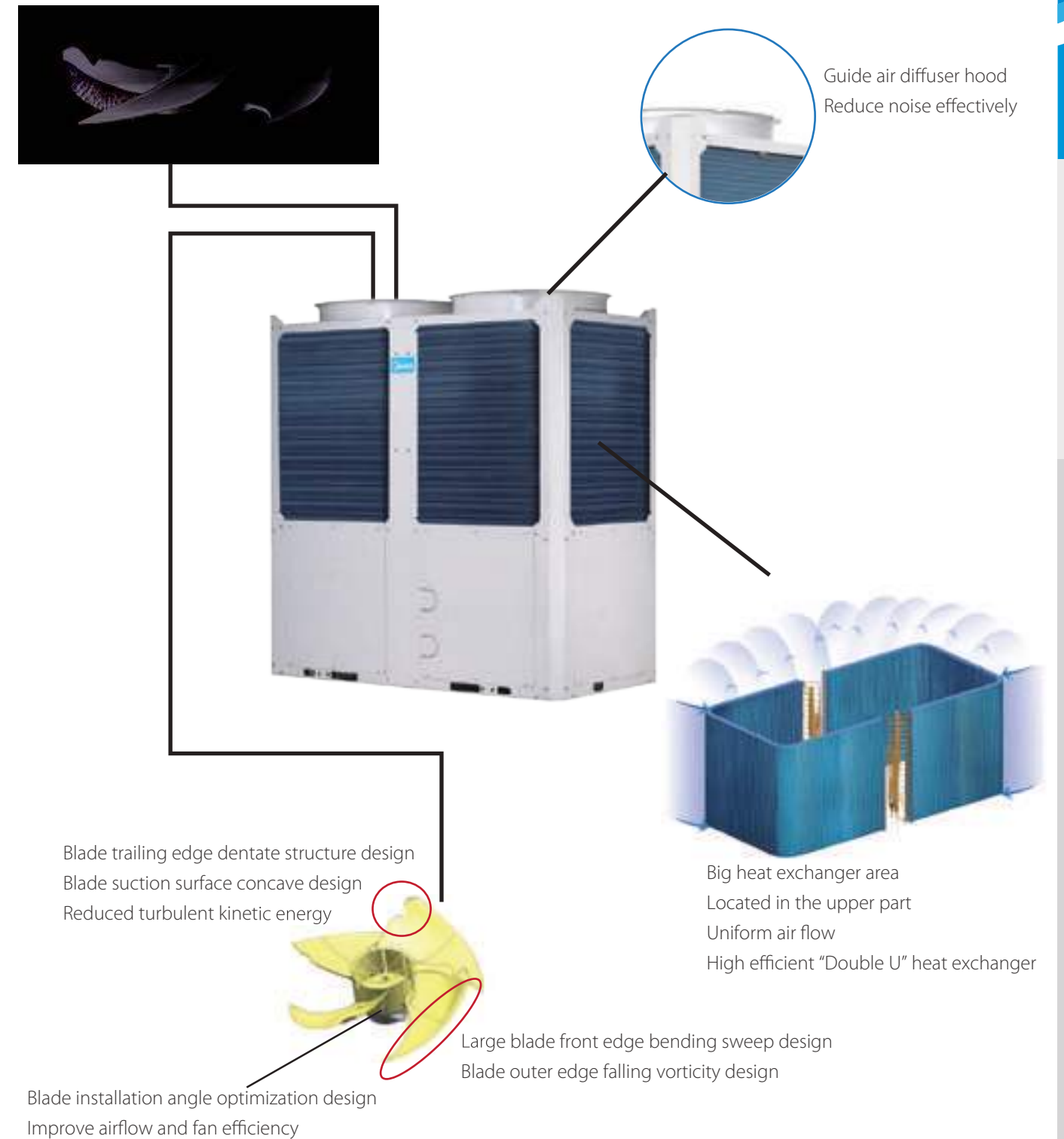
Alternative cycle duty operation

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.



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.



Multiple function

Multiple client modes

The diagram illustrates the four noise reduction modes available in the device. A central speaker icon is connected to four modes: Standard mode, Silent mode, Super silent mode, and Night silent mode. Each mode is represented by a blue box with a corresponding image above it showing a different level of noise reduction. The modes are arranged horizontally, with Standard mode on the left and Night silent mode on the right. The Silent mode and Super silent mode are in the middle. The Night silent mode is the most effective, showing a dark, quiet environment.

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.



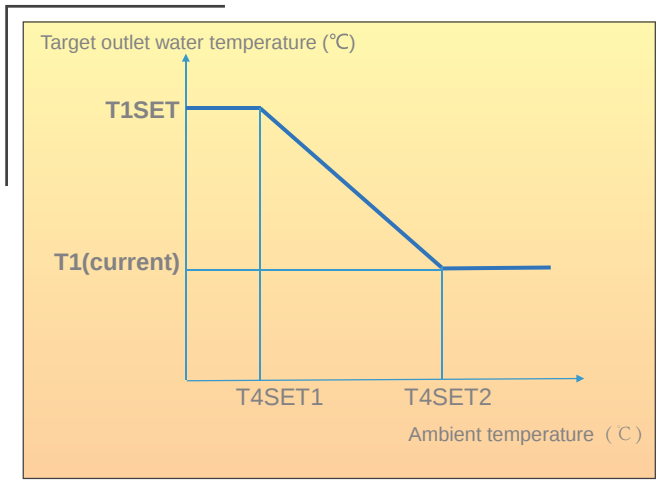
7 Levels of energy saving

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.

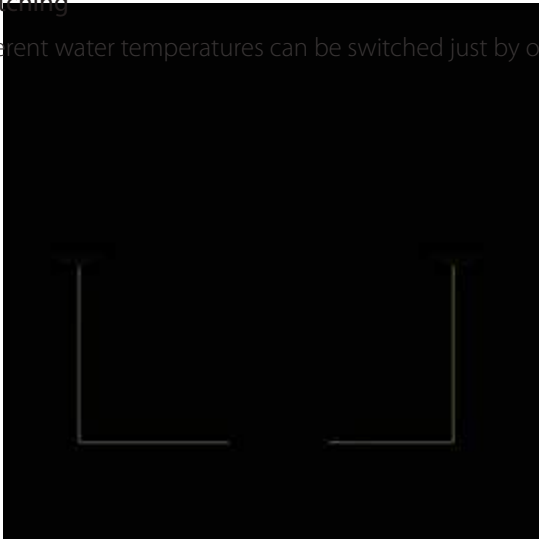


Remote alarm, on/off control, cooling/heating control.



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 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

Convenient control

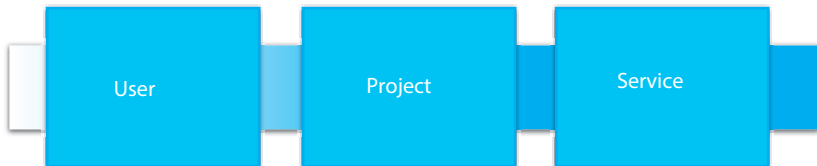
Touch key wired controller as standard accessory to control the chillers



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

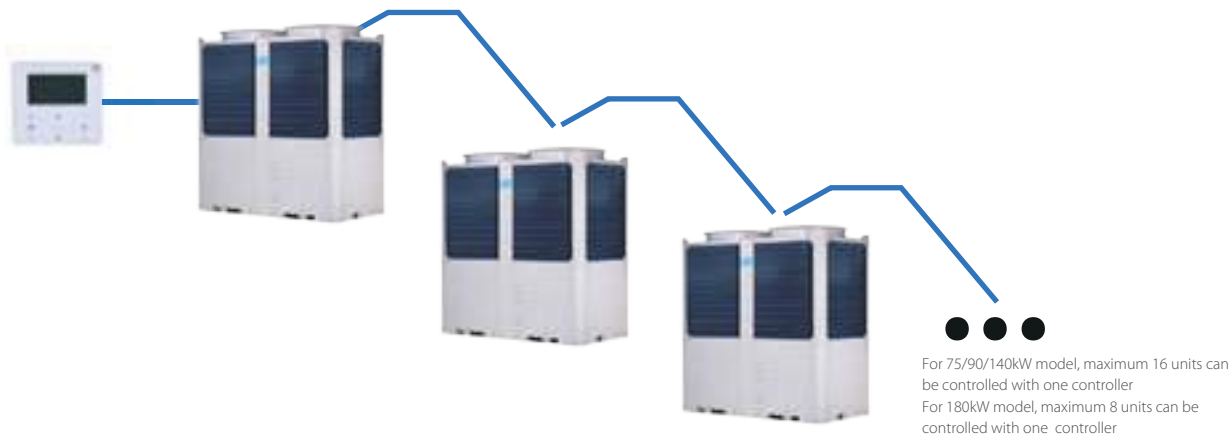
Three user levels

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

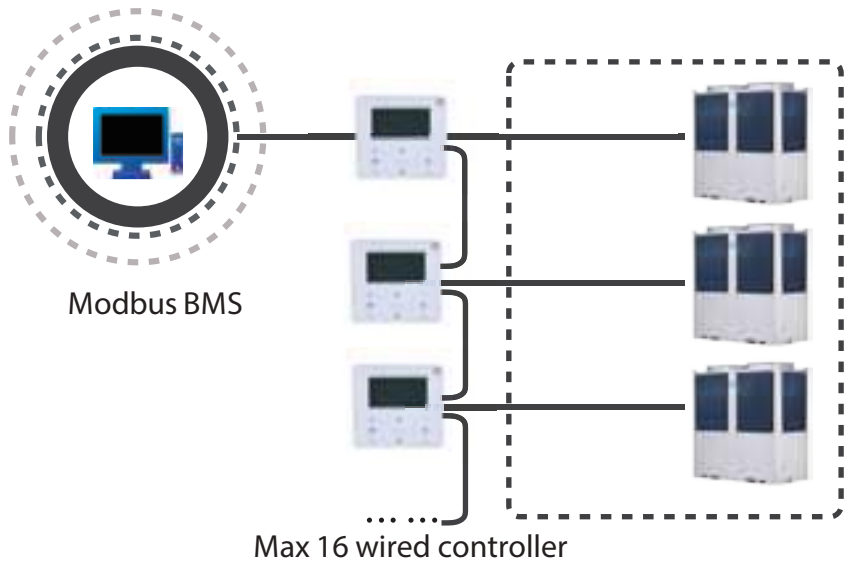


Group control for up to maximum 16 units with one wired controller

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



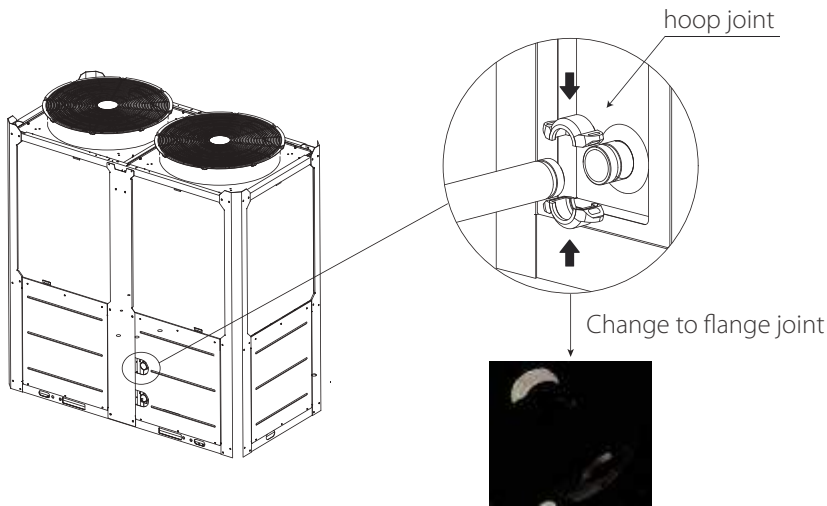
Air purge valve



Pressure relief valve

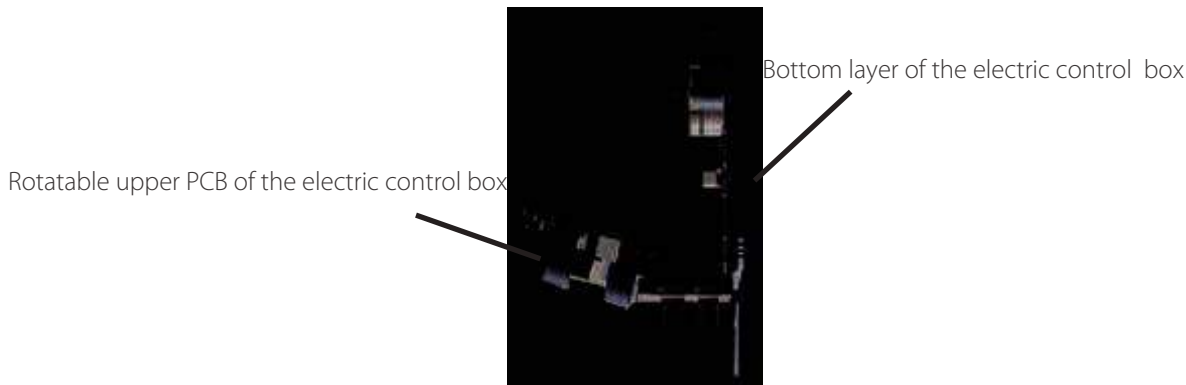
Water pipe connection

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



Rotatable electric control box(Only for 90/180kW model)

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			MC-SU75-RN8L-B	MC-SU90-RN8L-B	MC-SU140-RN8L-B	MC-SU180-RN8L-B
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	70	82	130	164
	Rated input	kW	26.8	27.8	50.5	56
	EER		2.61	2.95	2.57	2.93
Heating ²	Capacity	kW	75	90	138	180
	Rated input	kW	23.7	28.1	44.5	57
	COP		3.16	3.20	3.10	3.16
Compressor	Type		Scroll	Scroll	Scroll	Scroll
	Quantity		1	2	2	4
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		2	2	2	4
Water side heat exchanger	Type		Plate	Plate	Plate	Plate
Refrigerant system	Type		R32	R32	R32	R32
	Charged volume ³	kg	9	16[11.5+4.5]	15.5[11.5+4]	32[(5.5+10.5)*2]
Throttle	Type		EXV	EXV	EXV	EXV
Sound power level		dB	86	83	92	92
Net dimensions (WxHxD)		mm	2000*1770*960	2200*2315*1135	2220*2300*1135	2752*2413*2220
Packing dimensions (WxHxD)		mm	2085*1890*1030	2250*2445*1180	2250*2425*1180	2810*2446*2245
Net/Gross weight		kg	440/455	635/660	670/690	1400/1420
Water pipe connection		mm	DN50	DN50	DN65	DN80
Ambient temperature range	Cooling	°C	-10~48	-10 ~ 48	-10~48	-10~48
	Heating	°C	-20~43	-20 ~ 43	-20~43	-20~43
	DHW(Customization)	°C	-20~43	-20 ~ 43	-20~43	-20~43
LWT setting range	Cooling	°C	0~20	0 ~ 20	0~20	0~20
	Heating	°C	25~54	25 ~ 54	25~54	25~54
	DHW(Customization)	°C	30~60	30 ~ 60	30~60	30~60

- 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. [A+B],A means refrigerant volume charged in factory, B means refrigerant volume charged on site.
 - 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.

Specifications

Model name			MC-SU75M-RN8L-B	MC-SU90M-RN8L-B	MC-SU140M-RN8L-B	MC-SU180M-RN8L-B
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	69.7	82	129.5	163.0
	Rated input	kW	27.3	28.3	51.4	57.7
	EER		2.55	2.90	2.52	2.82
Heating ²	Capacity	kW	75.4	90	138.6	181.2
	Rated input	kW	24.3	29	45.6	59.1
	COP		3.10	3.10	3.04	3.07
Compressor	Type		Scroll	Scroll	Scroll	Scroll
	Quantity		1	2	2	4
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		2	2	2	4
Water side heat exchanger	Type		Plate	Plate	Plate	Plate
Refrigerant system	Type		R32	R32	R32	R32
	Charged volume ³	kg	9	16[11.5+4.5]	15.5[11.5+4]	32[(5.5+10.5)*2]
Pump	Power supply	V/Ph/Hz	380~415/3/50	380~415/3/50	380~415/3/50	380~415/3/50
	Rated input	kW	1.5	1.5	2.2	1.5
	Rated current	A	3.15	3.15	4.45	3.15
	Rate of flow	m3/h	10	10	22	10
	Head of delivery	m	27.1	40.5	16.2	40.5
	Quantity	/	1	1	1	2
Expansion tank	Volume	L	12	12	24	12*2
	Precharge pressure	Mpa	0.15	0.15	0.15	0.15
	Test pressure	Mpa	1	1	1	1
Throttle		Type	EXV	EXV	EXV	EXV
Sound power level		dB	86	83	93	92
Net dimensions(WxHxD)		mm	2000*1770*960	2200*2315*1135	2220*2300*1135	2752*2413*2220
Packing dimensions (WxHxD)		mm	2085*1890*1030	2250*2445*1180	2250*2425*1180	2810*2446*2245
Net/Gross weight		kg	475/490	686/711	746/767	1500/1504
Water pipe connection		mm	DN50	DN50	DN65	DN80
Ambient temperature range	Heating	℃	-10~48	-10 ~ 48	-10~48	-10~48
	Cooling	℃	-20~43	-20 ~ 43	-20~43	-20~43
	DHW(Customization)	℃	-20~43	-20 ~ 43	-20~43	-20~43
LWT setting range	Heating	℃	0~20	0 ~ 20	0~20	0~20
	Cooling	℃	25~54	25 ~ 54	25~54	25~54
	DHW(Customization)	℃	30~60	30 ~ 60	30~60	30~60

- Notes:
- 1. Water inlet/outlet temperature12/7℃; Outdoor ambient temperature 35℃ DB.
 - 2. Water inlet/outlet temperature 40/45℃; outdoor ambient temperature 7℃ DB/6℃ WB.
 - 3. [A+B],A means refrigerant volume charged in factory, B means refrigerant volume charged on site.
 - 4. Capacity and efficiency data calculated in accordance with EN14511; EN14825
 - 5. For cooling mode, if water temperature reaches 0℃, anti-freeze liquid is needed.



Aqua Tempo Super Series



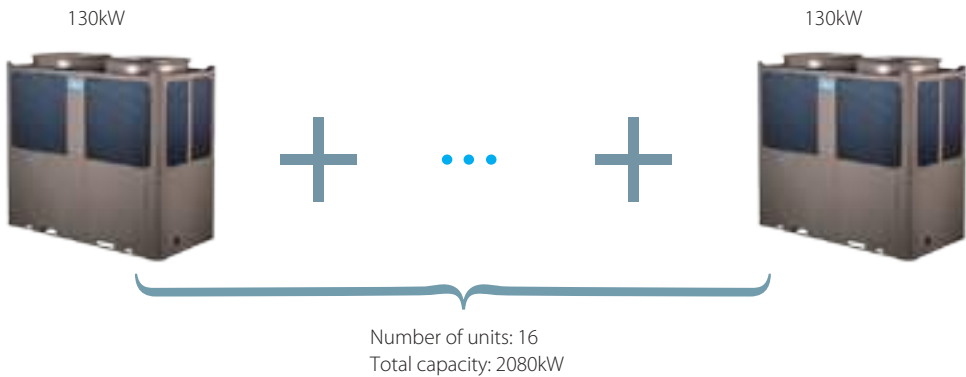
Capacity (kW)	35	65	80	130
Appearance				
Series				
SS-LA	●	●	●	●

SS-LA: Super series with low ambient temperature cooling function

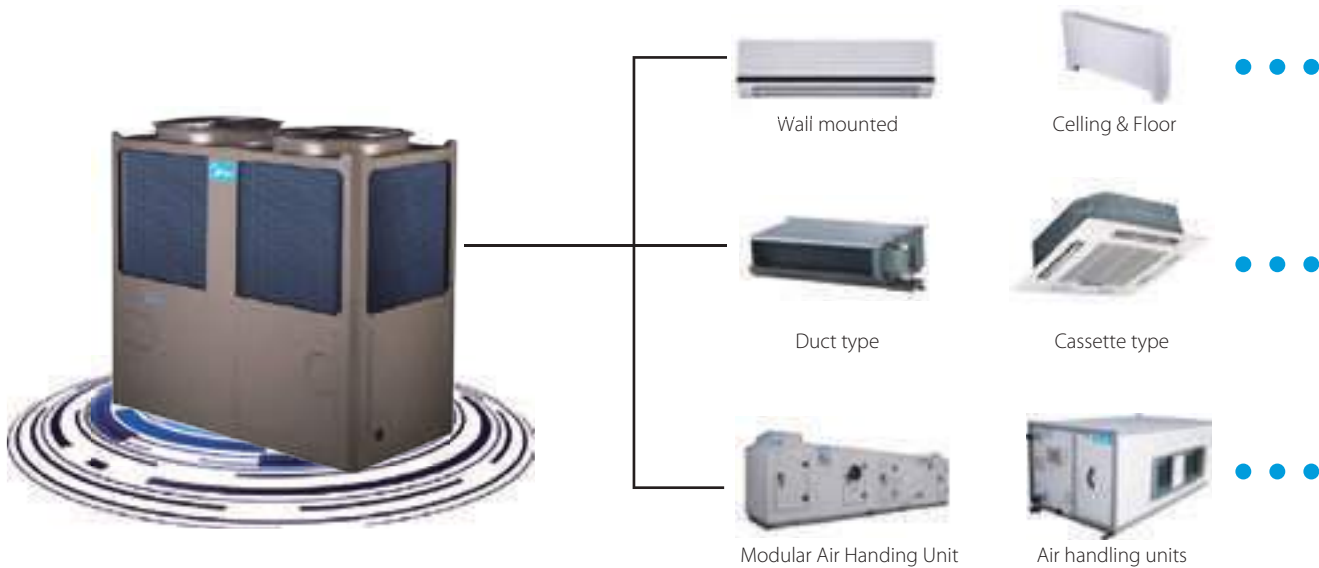
Features

Wide application range

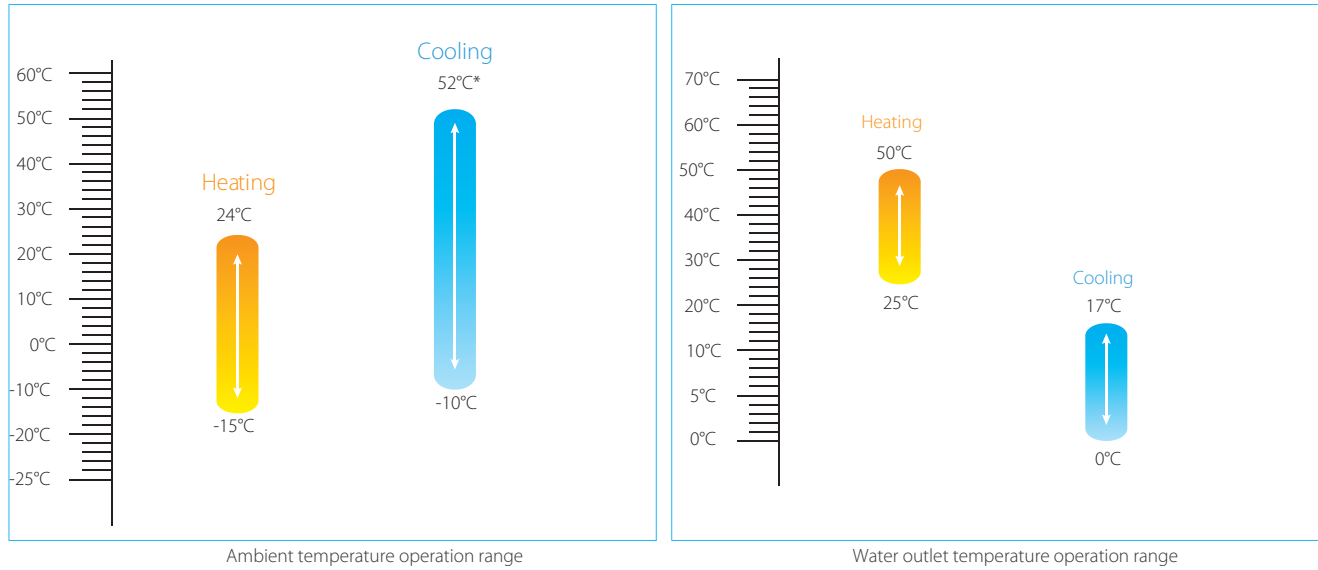
- Aqua Tempo Super chillers with cooling capacity ranging from 35kW to 130kW, combination capacity can be up to 2080kW.



- Freely combine with fan coil units and air handling units. Home owners may choose the best types according to their functional needs.



- Wide ambient temperature and water outlet temperature operation ranges



*It is the maximum range that can be covered by the series. For specific models' range, please refer to the specifications.

High quality components

- H shape high performance heat exchanger

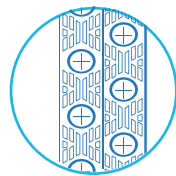
The chillers use new structure design, H shape condenser, 360°air intake, increase the heat exchanging area, efficiently enhance the heat exchange efficiency, and decrease the covering area.



H shape condenser uses inner grooved copper tube and hydrophilic aluminum foil, greatly improve the heat exchange efficiency.

● 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

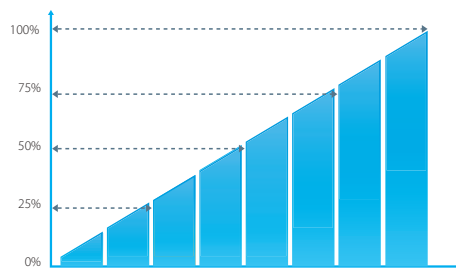
Heat exchanger copper pipe

> Standard products:
24h of neutral salt mist

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

● EXV for more precise flow control

Patented liquid distribution components to maximize performance and minimize defrost impact.
500 steps EXV plus capillary for stable and accurate gas flow control.
Fast response resulting in higher efficiency and improved reliability.



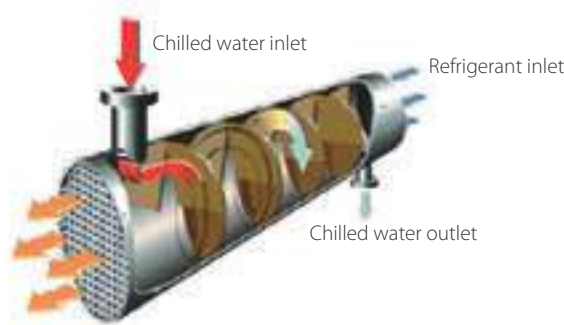
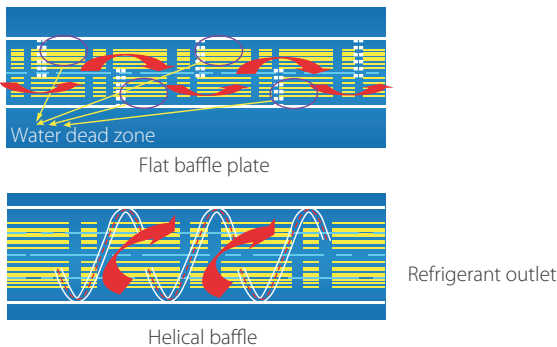
● Tube-in-tube & shell-tube heat exchanger



Inner-threaded copper pipe
Anti-corrosion materials



Inner grooved copper pipe, increased area of heat exchange, improved efficiency.
Anti-corrosion shell increases the life span of heat exchanger.

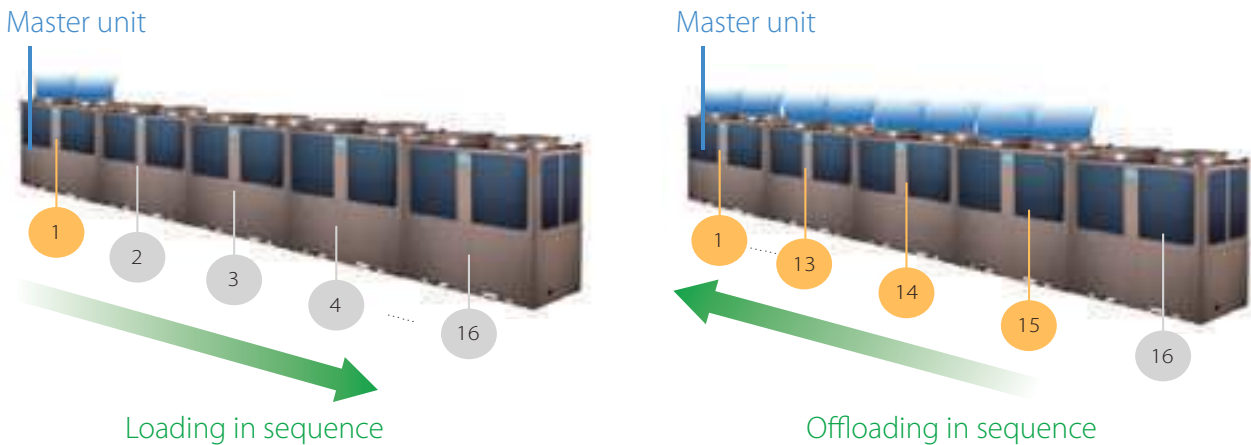


For shell-tube heat exchanger, the module adopts the new helical baffle design to avoid the rectangular place of water dead zone, greatly improve the heat exchange efficiency.

High reliability

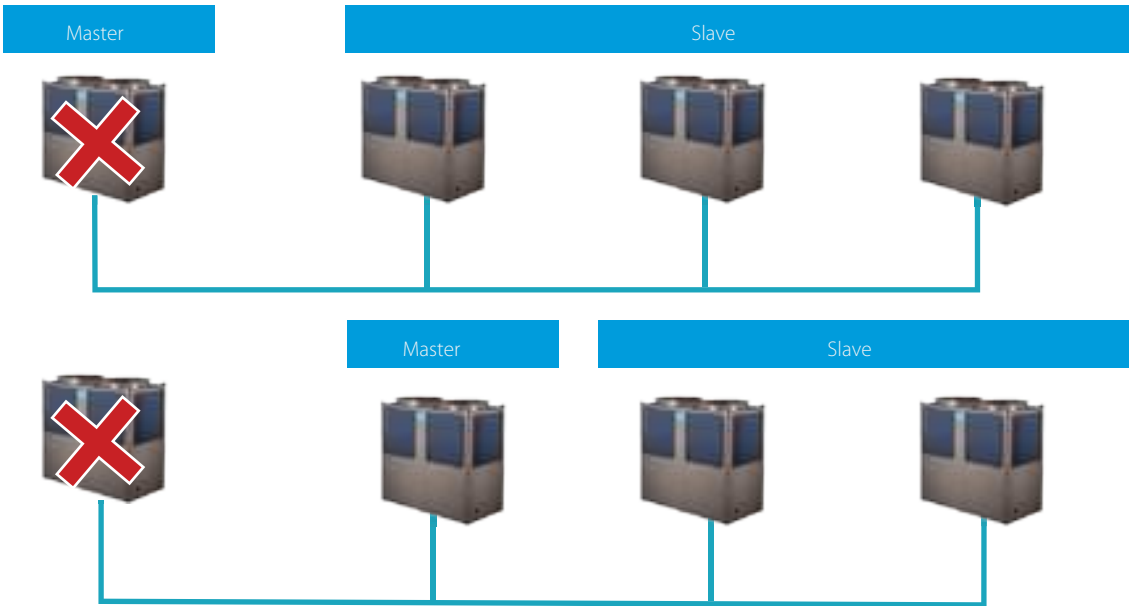
● Alternative cycle duty operation

In one combination module, all slave units operate as alternative in cycle duty to keep equal running time, realize higher stability, better reliability and longer lifespan.
For example, 16 modules combination, no.1 is master unit, others are slave units.



● Back-up functions

In a combination system, if one module fails, other modules can be used as backup and continue the operation.



● Reliable protections

Multiple protections are adopted to ensure system stable running.



High/low pressure protection of compressor



Power phases sequence protection



Evaporator low temperature protection in cooling



System anti-freezing protection in winter



Frequent compressor ON/OFF protection



Over-current protection of compressor



Discharge temperature protection of compressor



System high temperature protection



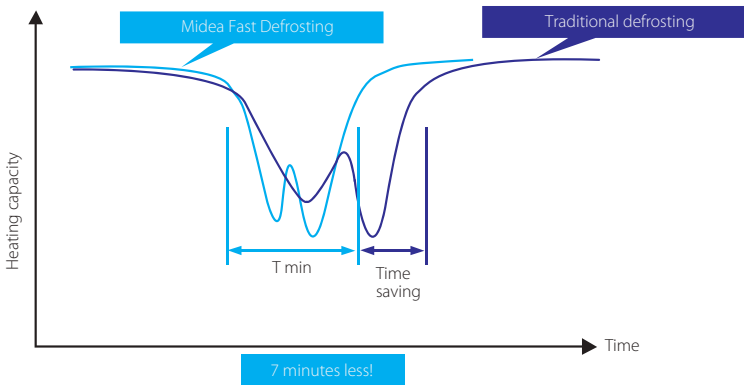
Water flow protection



Sensor malfunction protection

● Intelligent defrosting technology

Model alternative defrosting technology ensures little fluctuation on water temperature.
Manual defrosting program is available for service purpose.



Flexible installation

● Compact structure design

Super power chiller uses compact structure design, light weight, easy for transportation and installation.



1: Big air flow but low noise fan
Big torque high efficiency fan motor

2: Scroll compressor
High efficiency
Low noise

3: Control box
Easy to maintain

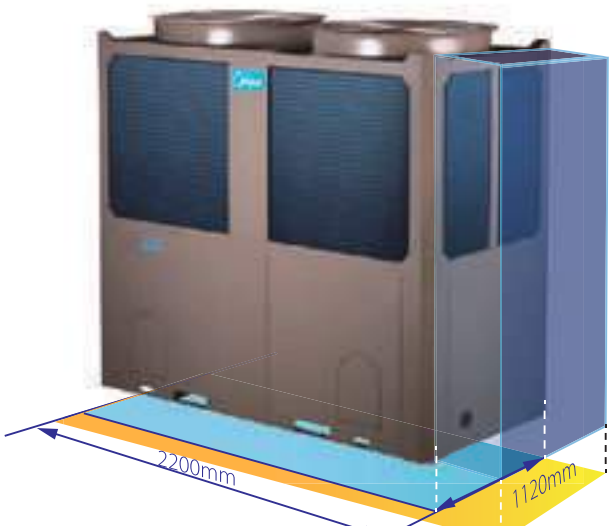
4: Multi folder frame
Low vibration.
Durable and stable

5: Helical baffle
Efficiency increase 10%

6: EXV
500 steps

7: Inner grooved copper tube
Capacity & efficiency increase

Compact design saves space and transportation cost.



Easy control

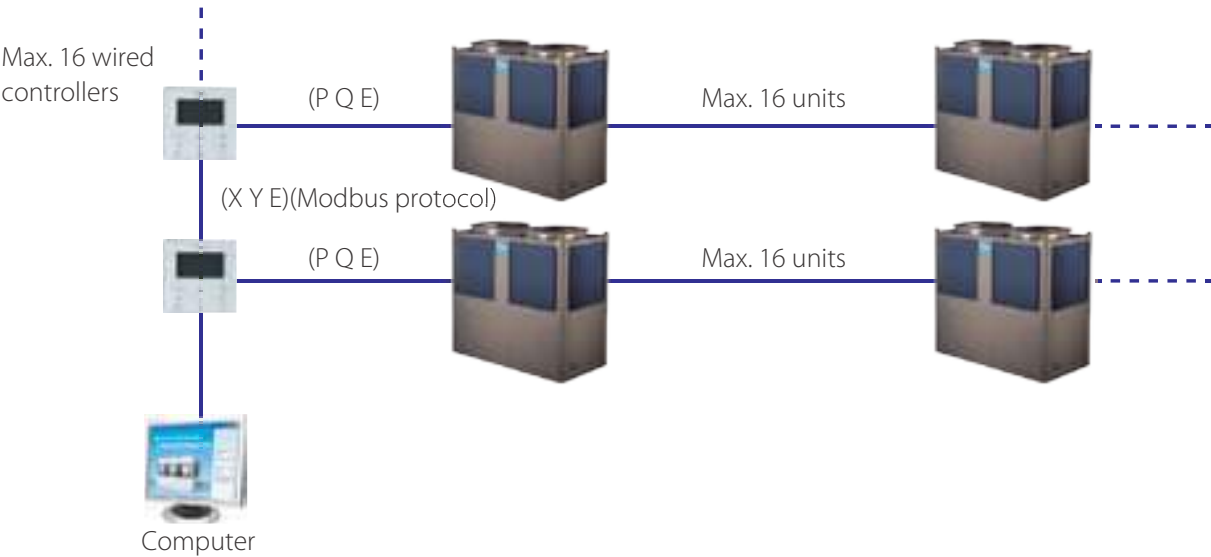
- Touch key wired controller as standard accessory to control the chillers.



Model	KJRM-120D/BMK-E(standard)	KJR-120A/MBTE(optional)
Appearance		
Main Functions	Touch key operation Parameter setting and LCD display Real time clock control. Multiple timer Power-off memory function Modbus(Customized) Address setting Parallel function	Mechanical butoon Parameter setting and LCD display Real time clock control. Multiple timer Power-off memory function Address setting Parallel function Weekly timing function
Max. connection PCBs	16	16

● Modbus function

Modbus is an open protocol that is widely used, especially in BMS building control systems. Modbus function can be customized by adding X, Y, E ports on wired controller KJRM-120D/BMK-E. It can connect Max. 16 wired controllers and each controller can control Max. 16 units.



● Convenient operation

Remote on/off function, remote heating/cooling function and alarm function can be easily realized by connecting switches or light/sound devices with PCB.



Note: When use the remote control function, KJRM-120D/BMK-E should not be connected to the unit and water setting temperature is default. If water temperature setting is needed, KJR-120A/MBTE wired controller can be used to connect to the unit.

Specifications

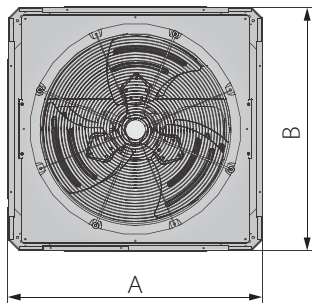
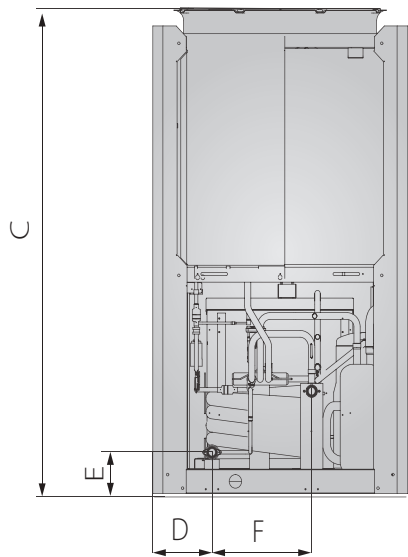
SS-LA series

Model			MC-SS35-RN1L-B	MC-SS65/RN1L	MC-SS80/RN1L	MC-SS130/RN1L
Series			SS-LA	SS-LA	SS-LA	SS-LA
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	35	65	80	130
	Input	kW	11.5	20.4	25.8	42.3
	EER		3.04	3.19	3.10	3.07
Heating ²	Capacity	kW	37	69	85	138
	Input	kW	11.3	21.5	26.5	43
	COP		3.27	3.21	3.21	3.21
Compressor	Type		Fixed Scroll	Fixed Scroll	Fixed Scroll	Fixed Scroll
	Quantity	Pieces	1	1	2	2
Air side heat exchanger	Type		Finned tube	Finned tube	Finned tube	Finned tube
	Fan motor type		AC Motor	AC Motor	AC Motor	AC Motor
	Quality of fan motor	Pieces	1	2	2	2
Water side heat exchanger	Type		Tube-in-tube	Shell-tube	Shell-tube	Shell-tube
Refrigerant	Type		R410A	R410A	R410A	R410A
	Charged volume	kg	6	10.5	13	21
Throttle type			EXV	EXV	EXV	EXV
Sound pressurer level ³		dB(A)	65	67	67	68
Unit net dimension(DxHxW)		mm	1,020×1,770×980	2,000×1,770×960	2,000×1,770×960	2,200×2,060×1,120
Packing dimension(DxHxW)		mm	1,070×1,900×1,030	2,090×1,890×1,030	2,090×1,890×1,030	2,250×2,200×1,180
Net/Gross weight		kg	300/310	530/590	645/710	965/1,035
Pipe connections		mm	DN40	DN65	DN65	DN65
Ambient temperature range	Cooling	℃	-10~52	-10~46	-10~46	-10~46
	Heating	℃	-15~24	-15~24	-15~24	-15~24
LWT setting range	Cooling	℃	5~17	5~17	5~17	5~17
	Heating	℃	40~50	40~50	40~50	40~50
LWT setting range	Cooling	℃	0~17	0~17	0~17	0~17
	Heating	℃	25~50	25~50	25~50	25~50

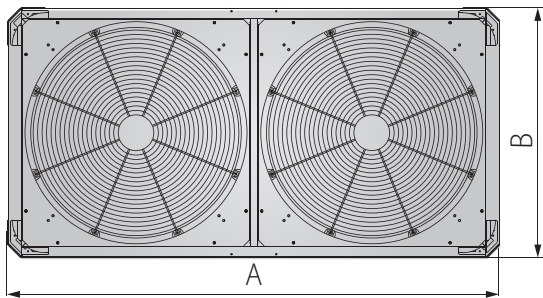
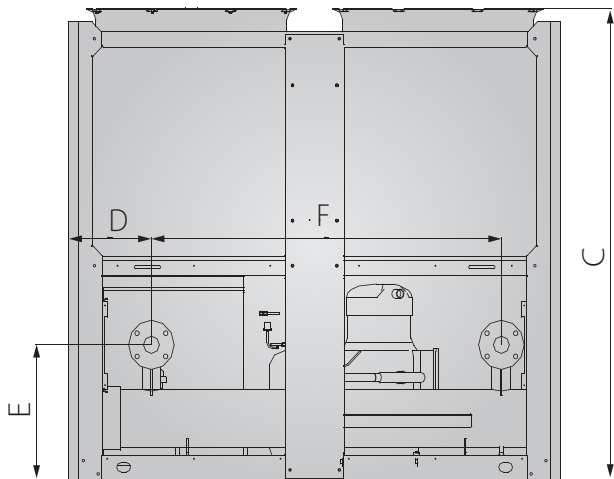
Notes:
1. Water inlet/outlet temperature: 12/7℃; Outdoor ambient temperature 35℃ DB.
2. Water inlet/outlet temperature: 40/45℃; Outdoor ambient temperature 7℃ DB/6℃ WB.
3. 1m away in open field.
4. The data is for low water outlet temperature function

Dimensions (Unit:mm)

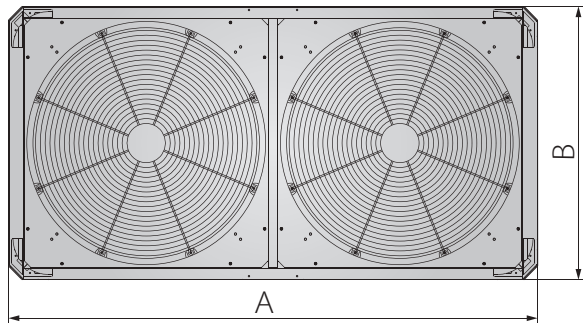
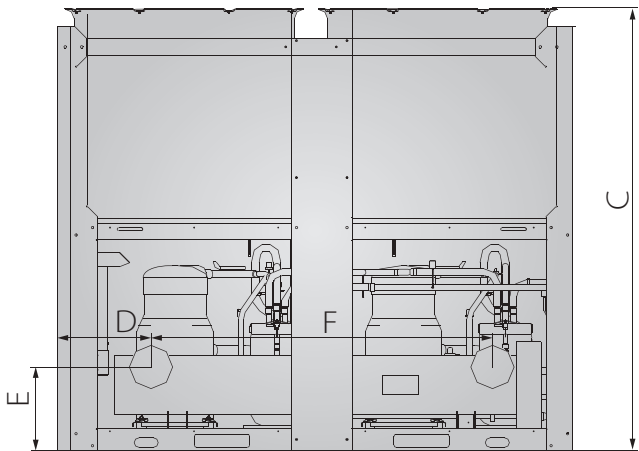
MC-SS35-RN1L-B



MC-SS65/RN1L
MC-SS80/RN1L



MC-SS130/RN1L



Model	A	B	C	D	E	F
MC-SS35-RN1L-B	1020	980	1770	237	152	400
MC-SS65/RN1L MC-SS80/RN1L	2000	960	1770	336	506	1420
MC-SS130/RN1L	2200	1120	2060	390	347	1420

Aqua Tempo Power Series



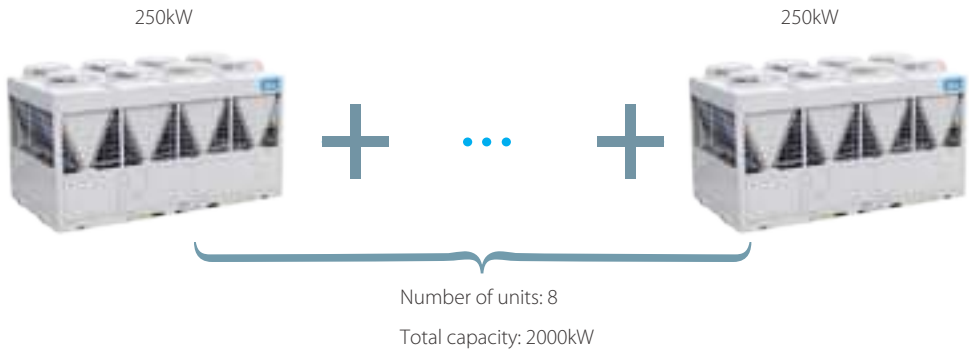
Series	Power supply					
PS	380V/3N/50Hz	60kW	120kW	180kW	/	250kW
PS	220V/3N/60Hz	60kW	120kW	180kW	/	/
PS-LA	380V/3N/50Hz	/	/	/	200kW	250kW

PS: Standard Power Series
PS-LA: Power Series with low ambient temperature cooling function

Features

Wide application range

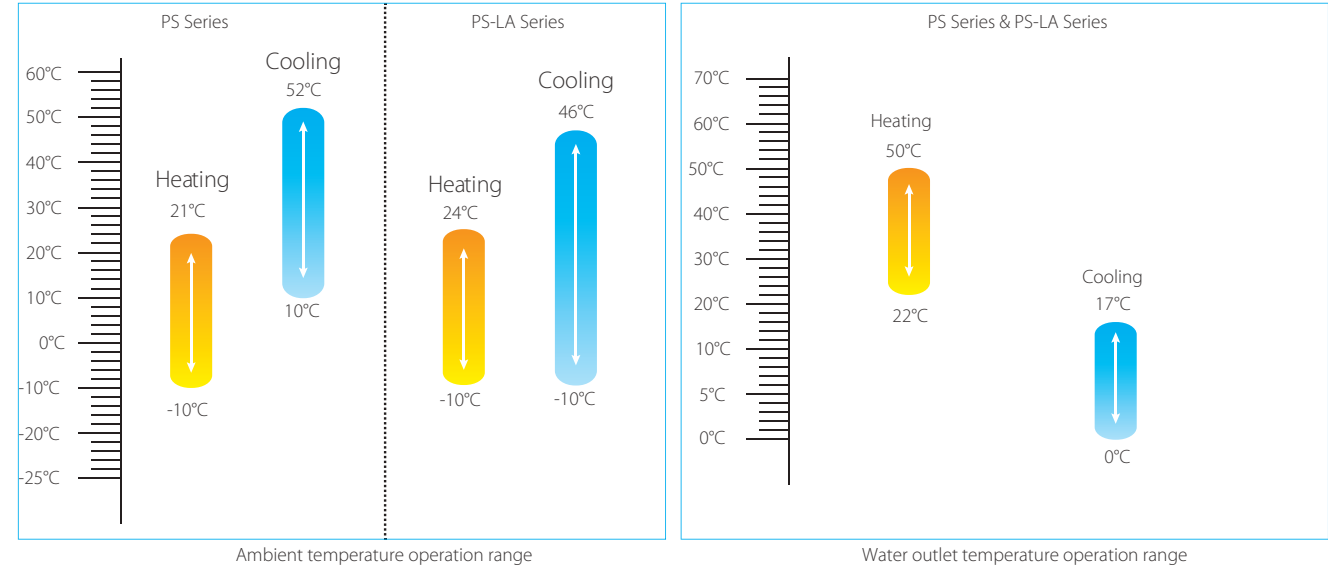
- Aqua Tempo Power Chillers with cooling capacity ranging from 60kW to 250kW, combination model's maximum capacity ups to 2000kW.



- Freely combine with fan coil units and air handling units. Project owners may choose the best types according to their design taste (for interior) or functional needs.



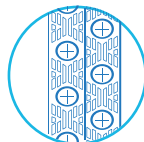
- Wide ambient temperature and water outlet temperature operation ranges



Advanced technology

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

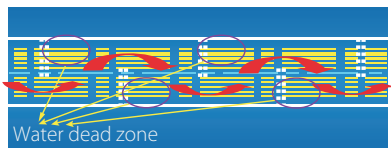
> Heavy anti-corrosion products:
150h of neutral salt mist

- Tube-in-tube & shell-tube heat exchanger



Inner grooved copper pipe, increase area of heat exchanger, improve efficient.

Anti-corrosion shell increases the useful life of heat exchanger.



Flat baffle plate



Helical baffle

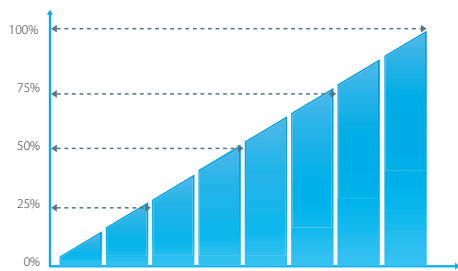
Refrigerant outlet



For shell-tube heat exchanger, the module adopts the new helical baffle design to avoid the rectangular place of water dead zone, greatly improve the heat exchange efficiency.

● EXV for more precise flow control

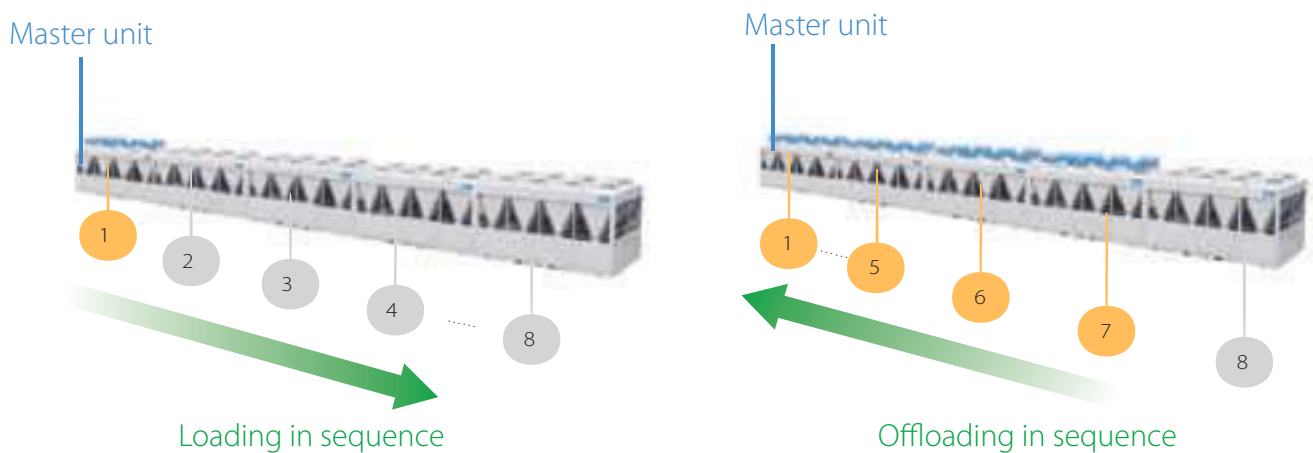
Patented liquid distribution components to maximize performance and minimize defrost impact.
500 steps EXV plus capillary for stable and accurate gas flow control.
Fast response resulting in higher efficiency and improved reliability.



High reliability

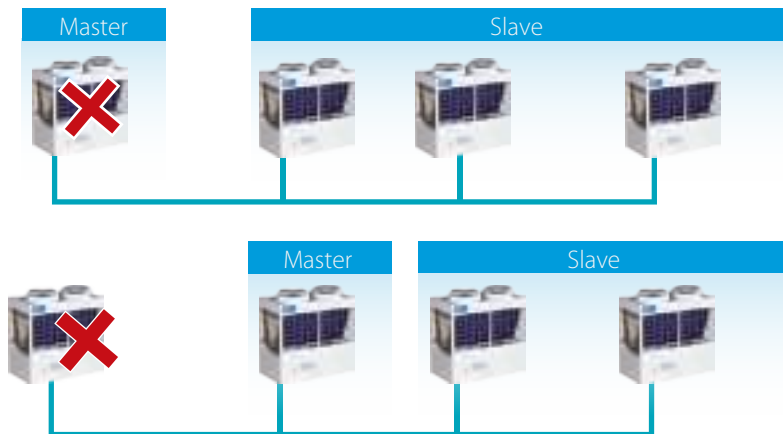
● Alternative cycle duty operation

In one combination module, all slave units operate as alternative in cycle duty to keep equal running time, realize higher stability, better reliability and longer lifespan.
For example, five modules combination, no.1 is master unit, others are slave units.



● Back-up functions

In a combination system, if one module fails, other modules can be used as backup and continue the operation.



● Reliable protections

Multiple protections are adopted to ensure system stable running.

High/low pressure protection of compressor

Power phases sequence protection

Evaporator low temperature protection in cooling

System anti-freezing protection in winter

Frequent compressor ON/OFF protection

Over-current protection of compressor

Air discharge temperature protection of compressor

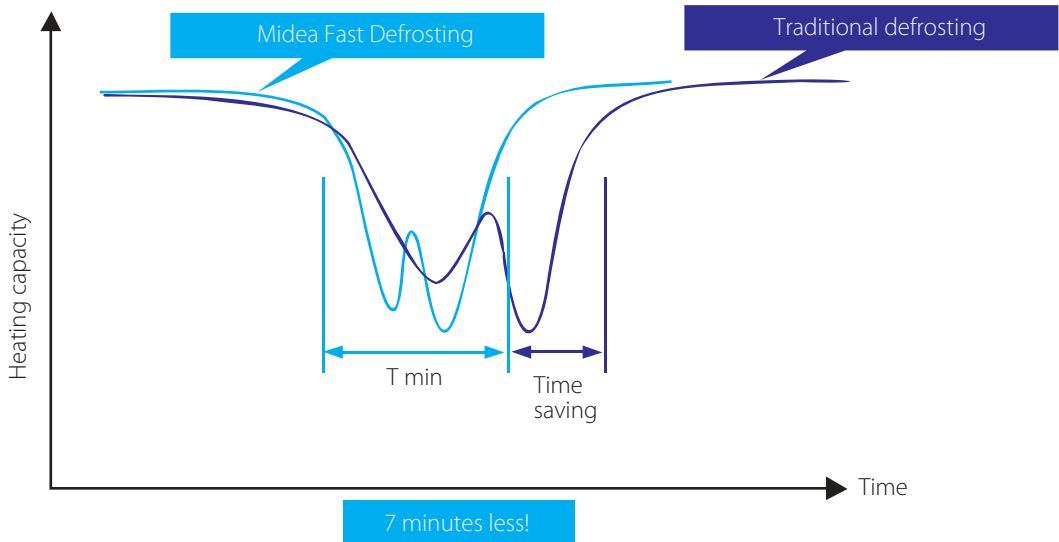
System high temperature protection

Water flow protection

Sensor malfunction protection

● Intelligent defrosting technology

Model alternative defrosting technology ensures little fluctuation on water temperature.
Manual defrosting program is available for service purpose.



Easy control

Model	KJRM-120D/BMK-E(standard)	KJR-120A/MBTE(optional)
Appearance		
Main Functions	Touch key operation Parameter setting and LCD display Real time clock control. Multiple timer Power-off memory function Modbus(Customized) Address setting Parallel function	Mechanical butoon Parameter setting and LCD display Real time clock control. Multiple timer Power-off memory function Address setting Parallel function Weekly timing function
Max. connection PCBs	16	16

Specifications

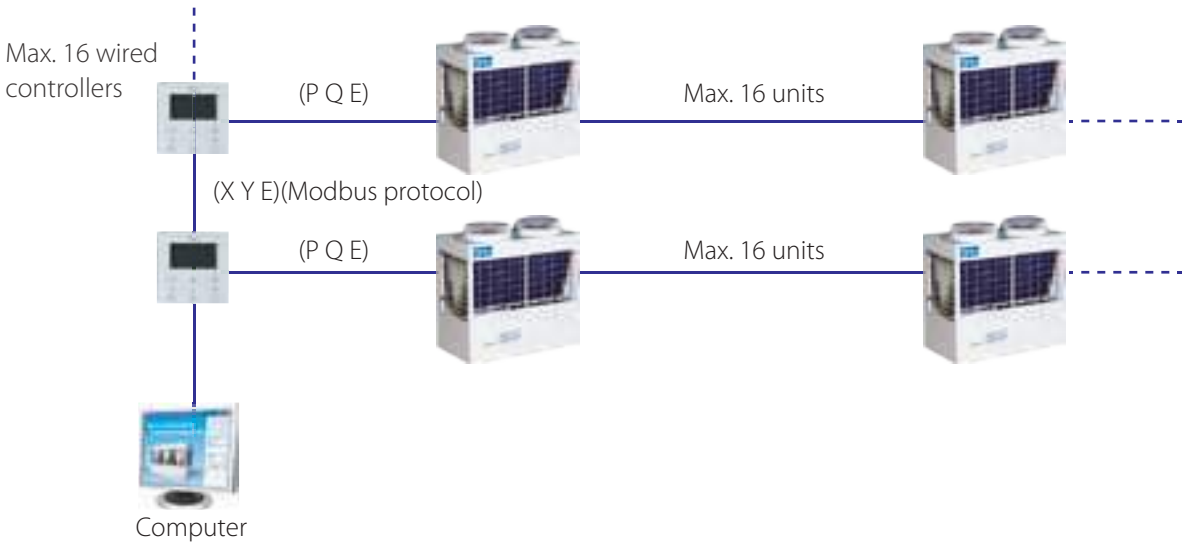
PS-LA series

Model			MGBL-F200W/RN1	MGBL-F250W/RN1
Power supply		V/Ph/Hz	380-415/3/50	380-415/3/50
Cooling ¹	Capacity	kW	185	250
	Input	kW	63.0	78.3
	EER		2.94	3.19
Heating ²	Capacity	kW	200	270
	Input	kW	61.0	80.0
	COP		3.28	3.38
Compressor	Type		Fixed Scroll	Fixed Scroll
	Quantity	Pieces	6	8
Air side heat exchanger	Type		Fin-coil	Fin-coil
	Fan motor type		AC Motor	AC Motor
	Quantity of fan motor	Pieces	6	8
Water side heat exchanger		Type	Shell-tube	Shell-tube
Refrigerant	Type		R410A	R410A
	Charged volume	kg	42.0	60.0
Throttle type			EXV	EXV+Capillary
Sound pressure level ³		dB(A)	74	74
Unit net dimension(D×H×W)		mm	2,850×2,110×2,000	3800×2130×2000
Packing dimension(D×H×W)		mm	2,980×2,260×2,135	3900×2200×2100
Net/ Gross weight		kg	1730/1870	2,450/2,500
Water piping connection		mm	DN80	DN100
Maximum combinations			8	8
Ambient temperature range	Cooling	°C	-10~46	-10~46
	Heating	°C	-10~24	-10~24
LWT setting range	Cooling	°C	5~17	5~17
	Heating	°C	40~50	40~50
LWT setting range ⁴	Cooling	°C	0~17	0~17
	Heating	°C	22~50	22~50

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. 1m away in open field.
4. The data is for low water outlet temperature function.Under the using condition of this function, the system must be added antifreeze agent.

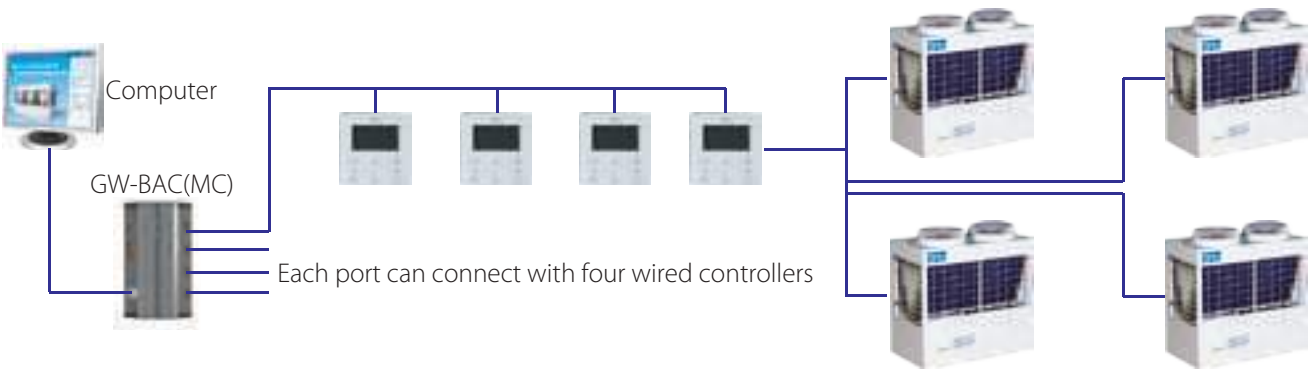
● Modbus function

Modbus is an open protocol that is widely used, especially in BMS building control systems. Modbus function can be customized by adding X, Y, E ports on wired controller KJRM-120D/BMK-E. It can connect Max. 16 wired controllers and each controller can control Max. 16 units.



● Bacnet gateway

The modular chiller system can be composed of BACnet gateways GW-BAC(MC), wired controller KJRM-120D/BMK-E and modular chillers. The BACnet gateway can connect maximum 16 wired controllers.



● Convenient operation

Remote on/off function, remote heating/cooling function and alarm function can be easily realized by connecting switches or light/sound devices with PCB.



Note:
1. When use remote function, KJRM-120D/BMK-E should not be connected to the unit and water setting temperature is default. If water temperature setting is needed, KJR-120A/MBTE wired controller can be used to connect to he unit.
2. Remote on/off function, remote heating/cooling function are standard for MGBT-F250W/RN1, MGBL-F200W/RN1, MGBL-F250W/RN1 models while they are customized for other models.
3. Alarm function are customized for all models. Please note that once the alarm function is customized, the backup heater(field supplied) for enhancing heating capacity can not be controlled by modular chiller.

50Hz PS series

Model			MGBT-F60W/RN1	MGBT-F120W/RN1	MGBT-F180W/RN1	MGBT-F250W/RN1
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	60	120	180	250
	Input	kW	19.3	38.5	57.9	78.3
	EER		3.11	3.12	3.11	3.19
Cooling ²	Capacity	kW	52	104	156	216
	Input	kW	22.1	43.0	64.5	86.3
	EER		2.35	2.42	2.42	2.50
Heating ³	Capacity	kW	64	128	195	270
	Input	kW	19.8	41.5	59.4	80.0
	COP		3.23	3.08	3.28	3.38
Compressor	Type		Fixed Scroll	Fixed Scroll	Fixed Scroll	Fixed Scroll
	Quantity	Pieces	2	4	6	8
Air side heat exchanger	Type		Finned tube	Finned tube	Finned tube	Finned tube
	Fan motor type		AC Motor	AC Motor	AC Motor	AC Motor
	Quality of fan motor	Pieces	2	4	6	8
Water side heat exchanger	Type		Shell-tube	Shell-tube	Shell-tube	Shell-tube
Refrigerant	Type		R410A	R410A	R410A	R410A
	Charged volume	kg	12.0	26.0	39.0	60.0
Throttle type			EXV	EXV	EXV	EXV
Sound pressurer level ⁴		dB(A)	67	70	74	74
Unit net dimension(DxHxW)		mm	2,000×1,880×900	2,000×2,090×1,685	2,850×2,110×2,000	3,800×2,130×2,000
Packing dimension(DxHxW)		mm	2,090×2,095×985	2,080×2,240×1,755	2,980×2,260×2,135	3,900×2,200×2,100
Net/ Gross weight		kg	580/650	1,090/1,270	1,730/2,000	2,450/2,600
Water piping connection		mm	DN100	DN65	DN80	DN100
Maximum combinations			16	8	5	8
Ambient temperature range	Cooling	℃	10~52	10~52	10~52	10~52
	Heating	℃	-10~21	-10~21	-10~21	-10~21
LWT setting range	Cooling	℃	5~17	5~17	5~17	5~17
	Heating	℃	45~50	45~50	45~50	45~50
LWT setting range ⁵	Cooling	℃	0~17(customized)	0~17(customized)	0~17(customized)	0~17
	Heating	℃	22~50(customized)	22~50(customized)	22~50(customized)	22~50

Notes:
1. Water inlet/outlet: 12℃/ 7℃; Outdoor ambient temp. of 35℃ DB.
2. Water inlet/outlet: 12℃ / 7℃; Outdoor ambient temp. of 46℃ DB.
3. Water inlet/outlet: 40℃/ 45℃; Outdoor ambient temp. 7℃ DB/6℃ WB.
4. 1m away in open field.
5. The data is for low water outlet temperature function. Under the using condition of this function, the system must be added antifreeze agent.

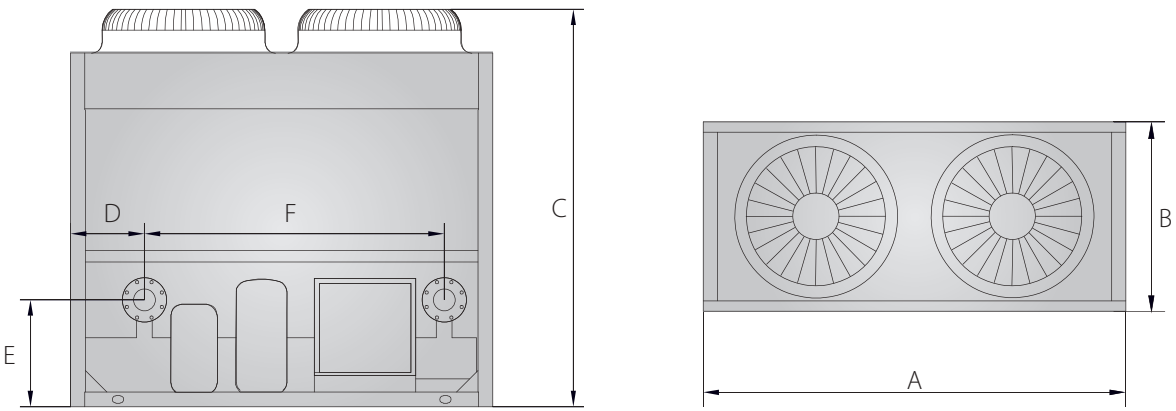
60Hz PS series

Model			MGBT-F60W/DN1	MGBT-F120W/DN1	MGBT-F180W/DN1
Power supply		V/Ph/Hz	220/3/60	220/3/60	220/3/60
Cooling1	Capacity	kW	60	120	180
	Input	kW	19.5	39.0	58.5
	EER		3.08	3.08	3.08
Cooling2	Capacity	kW	52	104	156
	Input	kW	22.1	43.0	64.5
	EER		2.35	2.42	2.42
Heating3	Capacity	kW	65	130	195
	Input	kW	20.0	40.0	60.0
	COP		3.25	3.25	3.25
Compressor	Type		Fixed Scroll	Fixed Scroll	Fixed Scroll
	Quantity	Pieces	2	4	6
Air side heat exchanger	Type		Fin-coil	Fin-coil	Fin-coil
	Fan motor type		AC Motor	AC Motor	AC Motor
	Quality of fan motor	Pieces	2	4	6
Water side heat exchanger	Type		Shell-tube	Shell-tube	Shell-tube
Refrigerant	Type		R410A	R410A	R410A
	Charged volume	kg	13	26	42
Throttle type			EXV	EXV	EXV
Sound pressurer level ⁴		dB(A)	67	70	74
Unit net dimension(DxHxW)		mm	2,000×1,880×900	2,000×2,080×1,685	2,850×2,110×2,000
Packing dimension(DxHxW)		mm	2,090×2,055×985	2,080×2,240×1,755	2,980×2,260×2,135
Net/ Gross weight		kg	580/650	1,180/1,300	1730/2,000
Pipe connections		mm	DN100	DN65	DN80
Maximum combinations			16	8	5
Ambient temperature range	Cooling	℃	10~52	10~52	10~52
	Heating	℃	-10~21	-10~21	-10~21
LWT setting range	Cooling	℃	5~17	5~17	5~17
	Heating	℃	45~50	45~50	45~50
LWT setting range ⁵	Cooling	℃	0~17(customized)	0~17(customized)	0~17(customized)
	Heating	℃	22~50(customized)	22~50(customized)	22~50(customized)

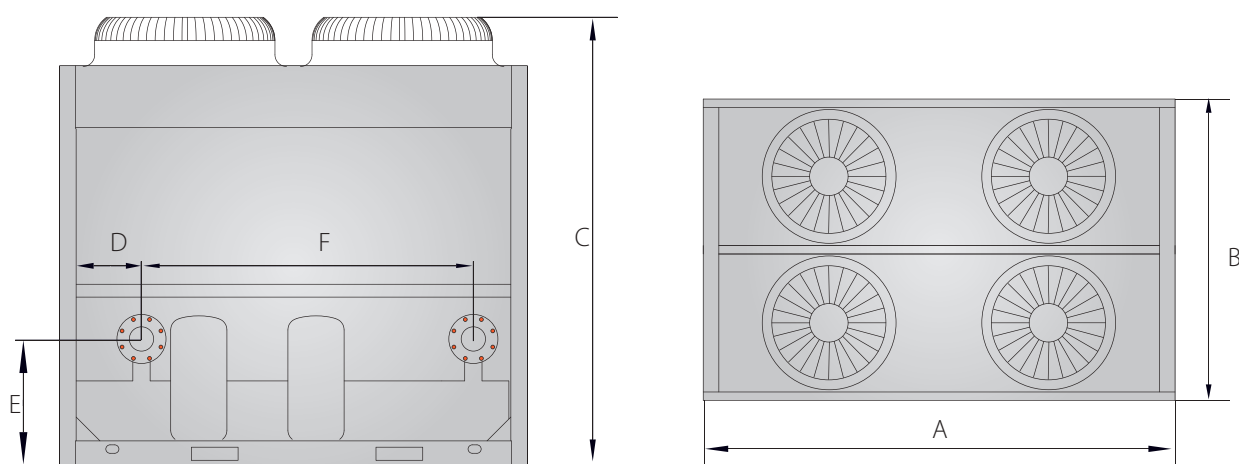
Notes:
1. Water inlet/outlet: 12℃/ 7℃; Outdoor ambient temp. of 35℃ DB.
2. Water inlet/outlet: 12℃ / 7℃; Outdoor ambient temp. of 46℃ DB.
3. Water inlet/outlet: 40℃/ 45℃; Outdoor ambient temp. 7℃ DB/6℃ WB.
4. 1m away in open field.
5. The data is for low water outlet temperature function. Under the using condition of this function, the system must be added antifreeze agent.

Dimensions (Unit:mm)

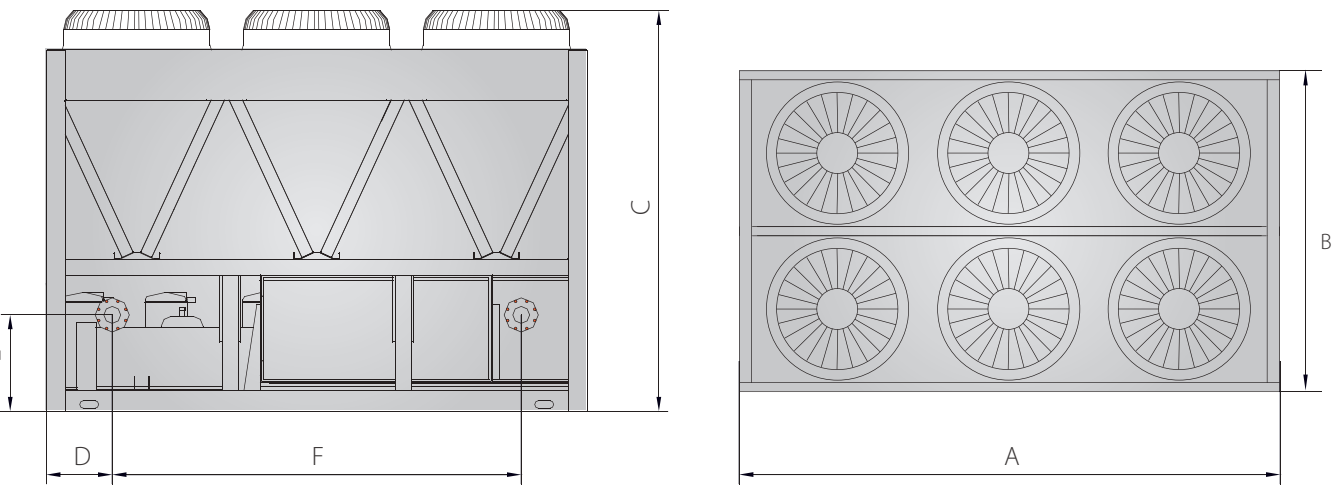
60kW module



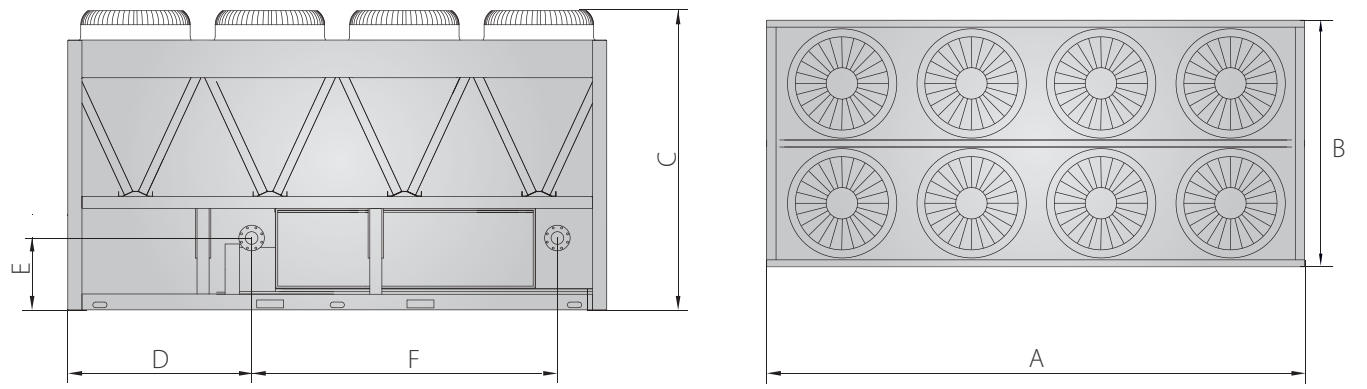
120kW module



180/200kW module



250kW module



Model	A	B	C	D	E	F
MGBT-F60W/RN1 MGBT-F60W/DN1	2000	900	1880	350	506	1420
MGBT-F120W/RN1 MGBT-F120W/DN1	2000	1685	2080	350	506	1420
MGBT-F180W/RN1 MGBT-F180W/DN1	2850	2000	2110	347	506	2156
MGBL-F200W/RN1	2850	2000	2110	347	506	2156
MGBT-F250W/RN1 MGBL-F250W/RN1	3800	2000	2130	1235	573	2156

King Series



Midea King Series Air Cooled Heat Pump Modular Chiller

Eight core advantages:



Stylish appearance



Energy control technology



Flexible installation



Environment-friendly



Energy-efficient



Stable Performance



Module combination



Smart control

Exquisite process

Symmetrical appearance structure design, showing the beauty of manufacturing process

Innovative design

Elegant and exquisite design of hidden heat exchanger pipeline

Upgraded strength

Multi-folder column structure, greatly improving the structural strength of the unit



Quick panel disassembly, excellent pipeline protection

Easy maintenance

Thicker metal plate, sturdy and durable, shock-absorbing

Sturdy and durable

Lifting hole retained to make handling convenient

User-friendly design

Outline

The air cooled heat pump modular chiller is a central air conditioning unit that uses air as its cooling and heating source and water as the heat transfer medium. The unit can form a centralized air conditioning system together with FCU and AHU for cooling in summer and heating in winter. Midea King series air cooled heat pump units employ a modular design, and include 65 kW and 130 kW modules. Up to 16 modules can be connected in parallel to form a combination product from 65 kW to 2,080 kW.

This unit is widely used in newly built and rebuilt large and small industrial and civil construction projects, places with high requirements for operating noise and surrounding environment, and places with water shortage or inconvenient to install cooling towers. The unit is especially suitable for buildings like hotels, restaurants, supermarkets, shopping malls, office buildings, cinemas and theatres, and factories.

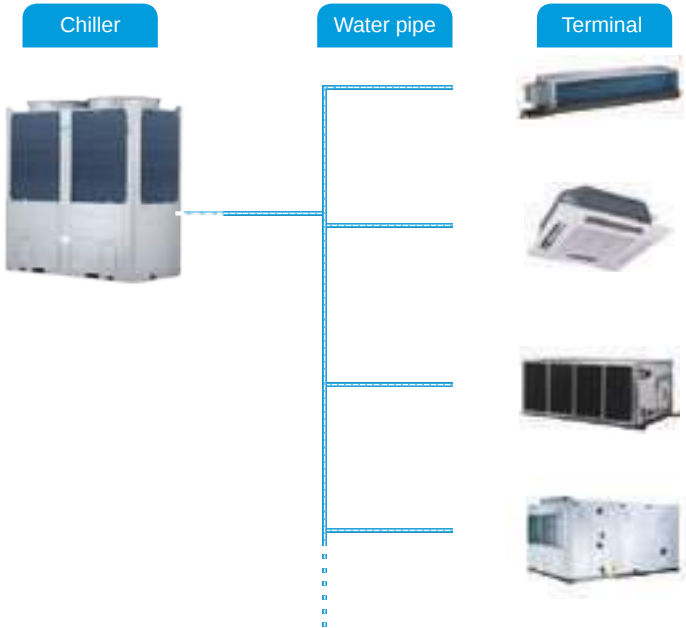
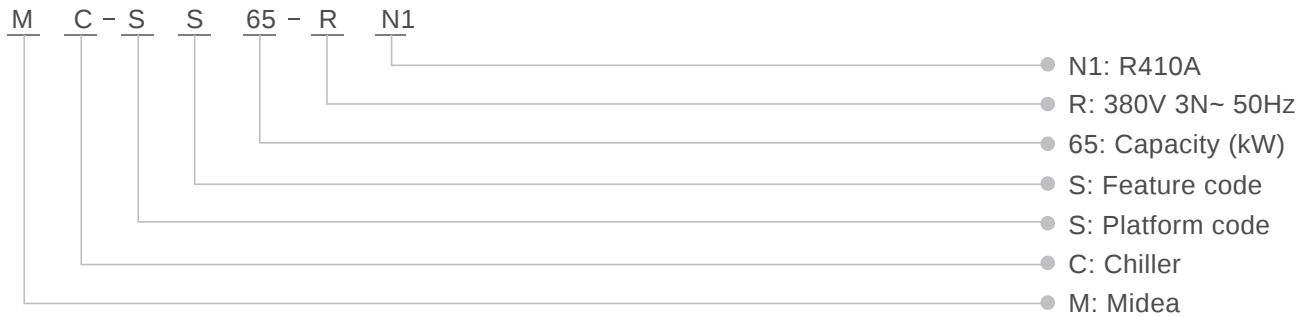


65 kW



130 kW

Nomenclature



Excellent design

Air-side heat exchanger

The ring-type air return heat exchanger makes the airflow distribution uniform and heat exchange sufficient.



Fan and motor

The large-air-flow and low-noise fan and large-torque and high-efficiency motor achieve high efficiency and low noise.



Electric control box

The electric control box adopts professional components to ensure quality. The electric control box is designed on the front side to make installation fast and maintenance convenient.



Water-side heat exchanger

The new type of spiral baffle plate evaporator increases the efficiency.



Compressor

The compressor is large in capacity, efficient, and durable.



Liquid storage tank

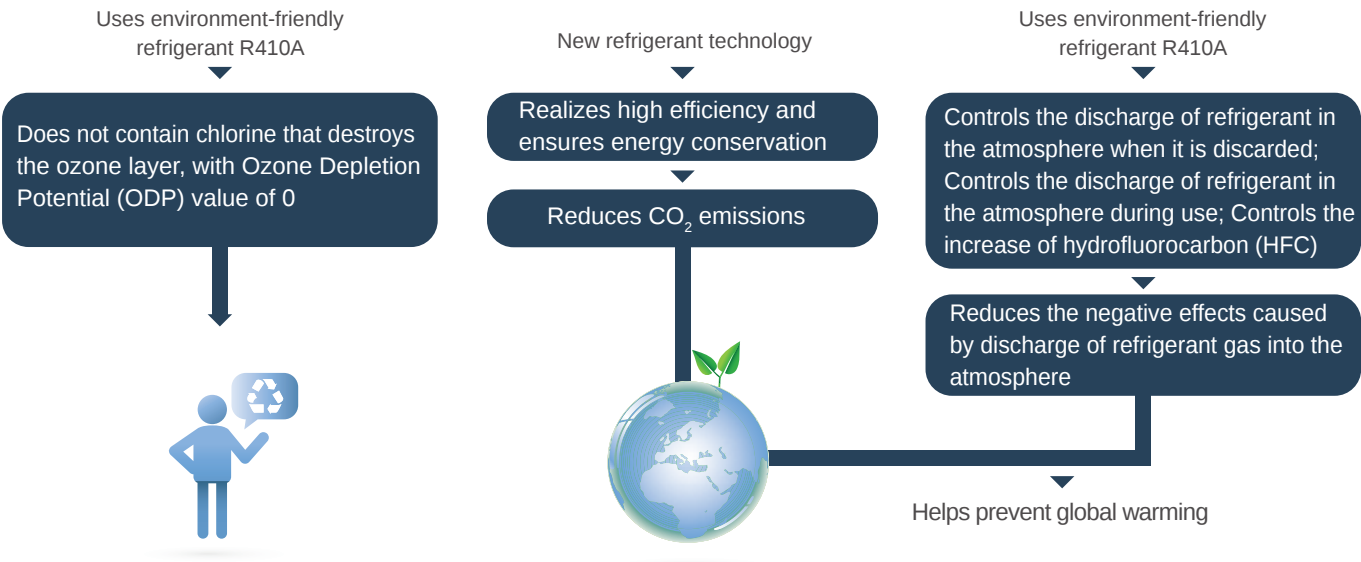
The large-sized low-pressure liquid storage tank is used to ensure that the system operates reliably.



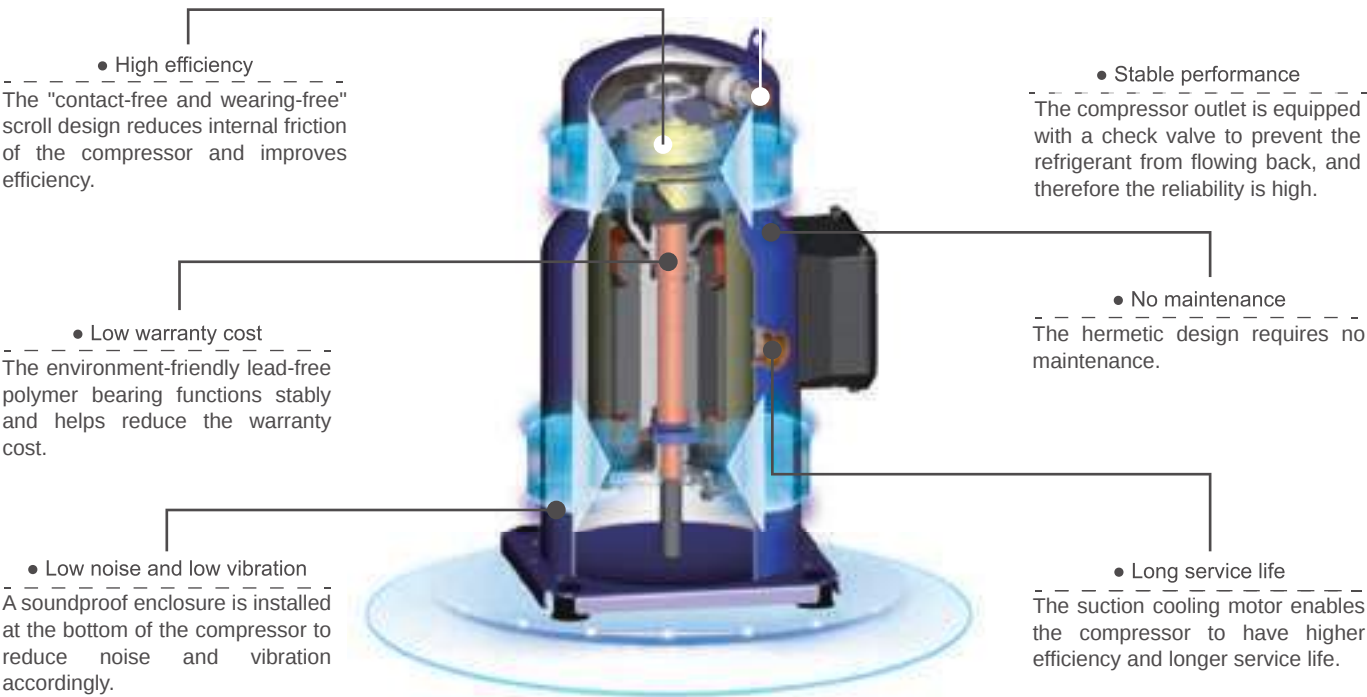
Features

Environment-friendly

Eco-friendly refrigerant R410A is used, with a higher cooling efficiency. R410A does not contain chlorine that destroys the ozone layer, and its Ozone Depletion Potential (ODP) value is 0. R410A also effectively reduces CO₂ emission.



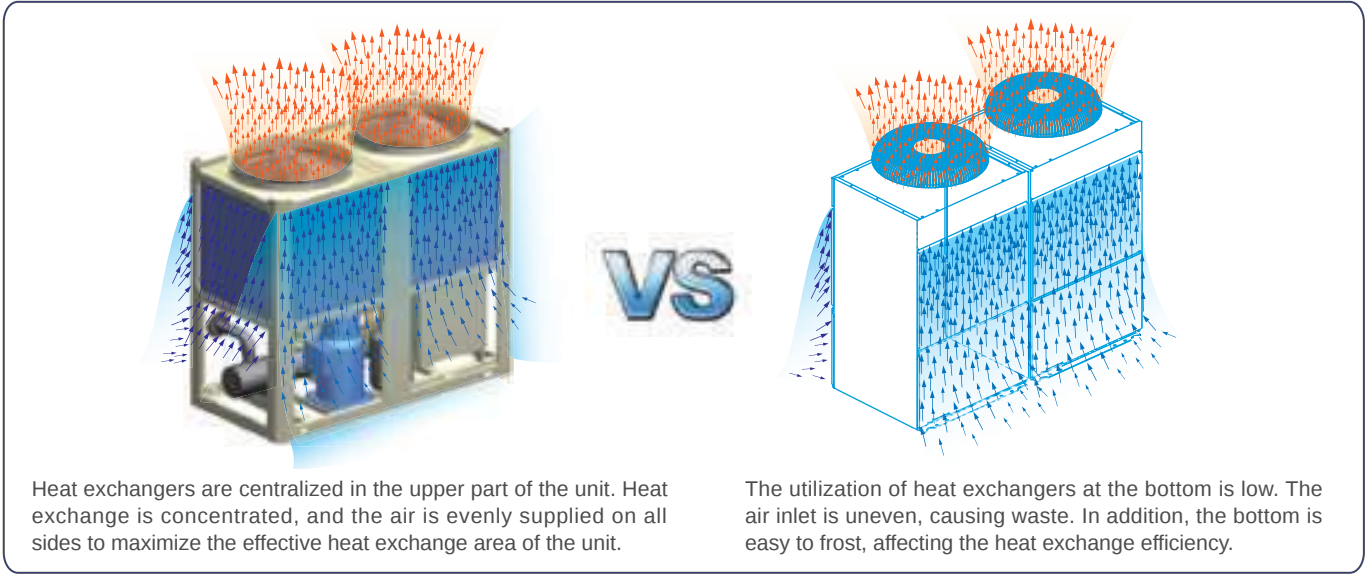
◆ Hermetic scroll compressor technology, stronger in power



Note: The actual compressor prevails.

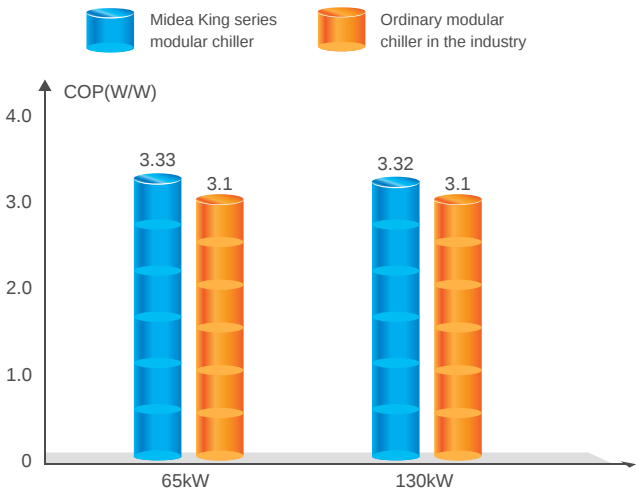
◆ Efficient heat exchanger, greatly improving heat exchange efficiency

• High-efficiency air-side heat exchanger
Based on the professional analog calculation of temperature field, heat exchangers are deployed in the upper part near the fan. With air inlet on all sides, the airflow is more uniform, and the utilization efficiency of heat exchangers is higher. Moreover, the bottom of the unit is not easy to frost in winter.



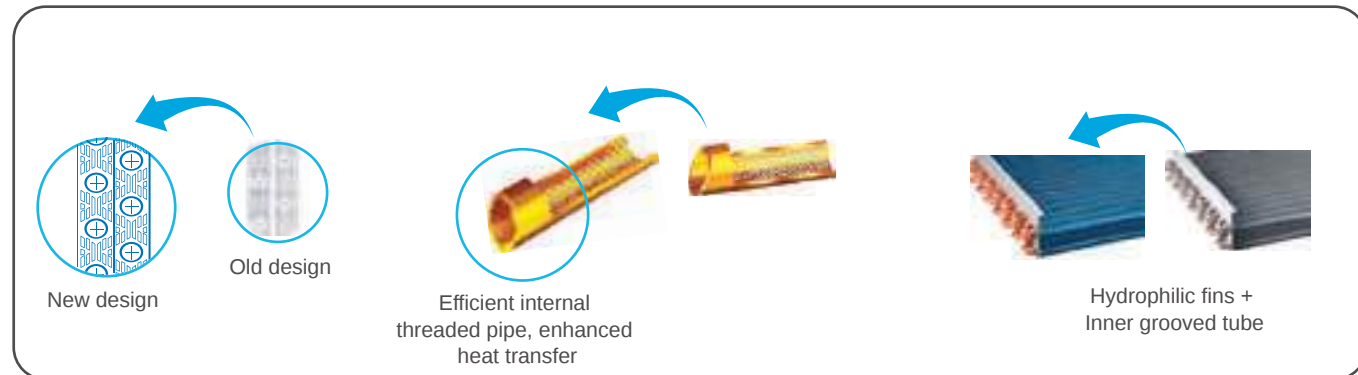
Energy-efficient

Midea King series modular chiller integrates an efficient compressor, a new-generation efficient heat exchange system, a high-precision electronic expansion valve, and other professional components. The COP of the full series units reaches the leading level in the industry.



Features

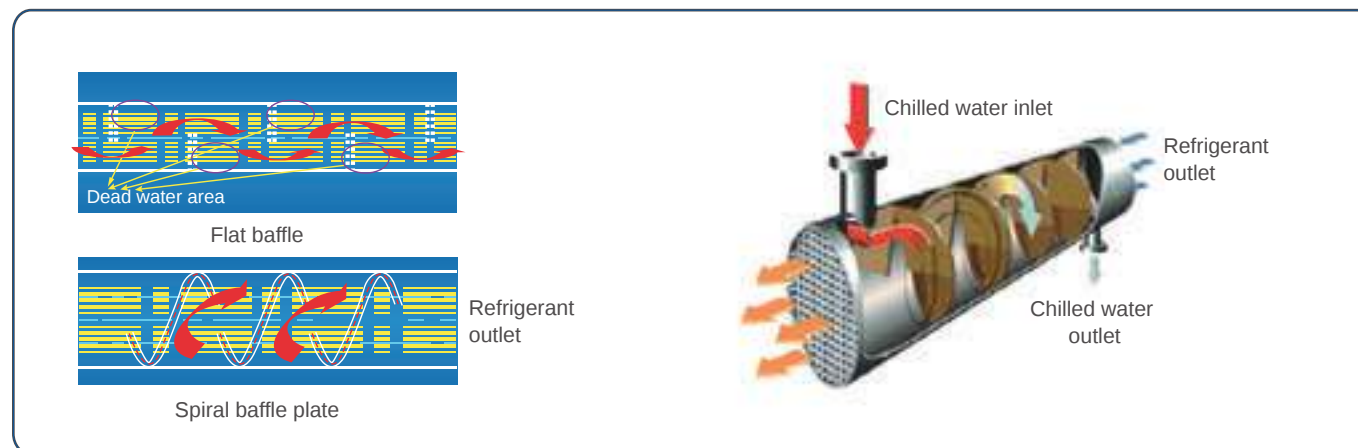
High performance heat exchanger



The newly designed window fins and extended heat exchange area save more power and enhance the heat exchange performance. Hydrophilic aluminum foil fins and inner grooved copper tube optimize heat exchange efficiency. The specially coated blue fins can improve durability and prevent corrosion by air, water and other corrosive agents, ensuring a longer service life of the coil.

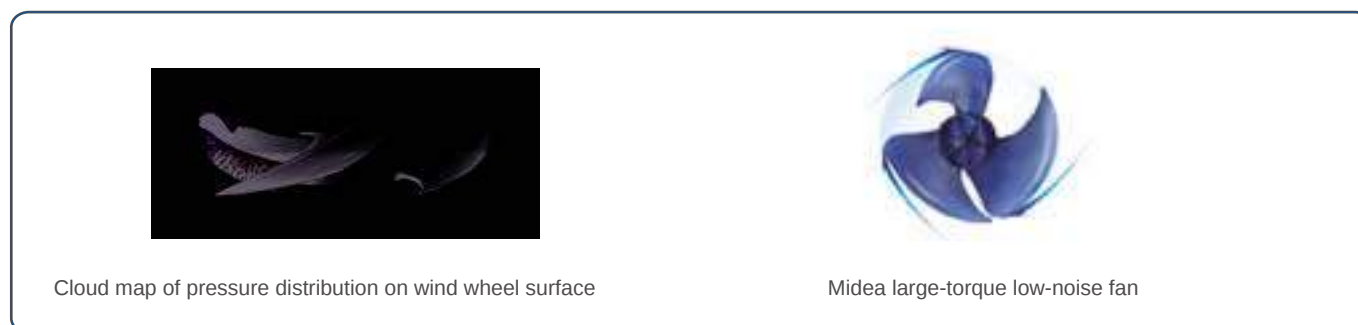
Efficient water-side heat exchanger

For a shell-and-tube heat exchanger, the module adopts the new type of spiral baffle plate design to avoid the dead water area from forming a rectangular space, which greatly improves the heat exchange efficiency.



High-efficiency low-noise fan, working with energy-saving motor

With CFD optimized impeller, the air-side heat exchange effect is better. Together with the excellent working speed of the motor, the airflow noise is lower and the sound quality is softer.

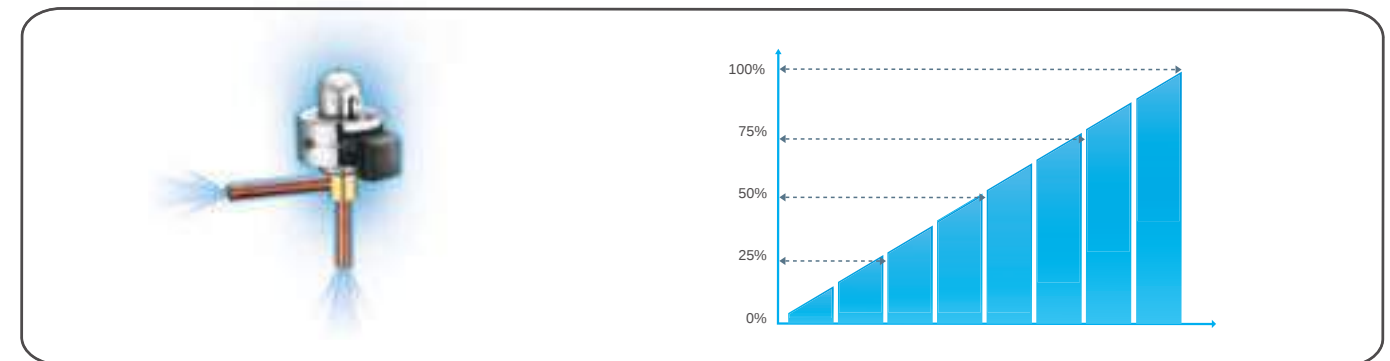


The energy-saving motor undergoes the optimization design of motor coil to reduce the loss effectively, improve operation efficiency, and guarantee low heat release of the motor, low power consumption and long operation life.



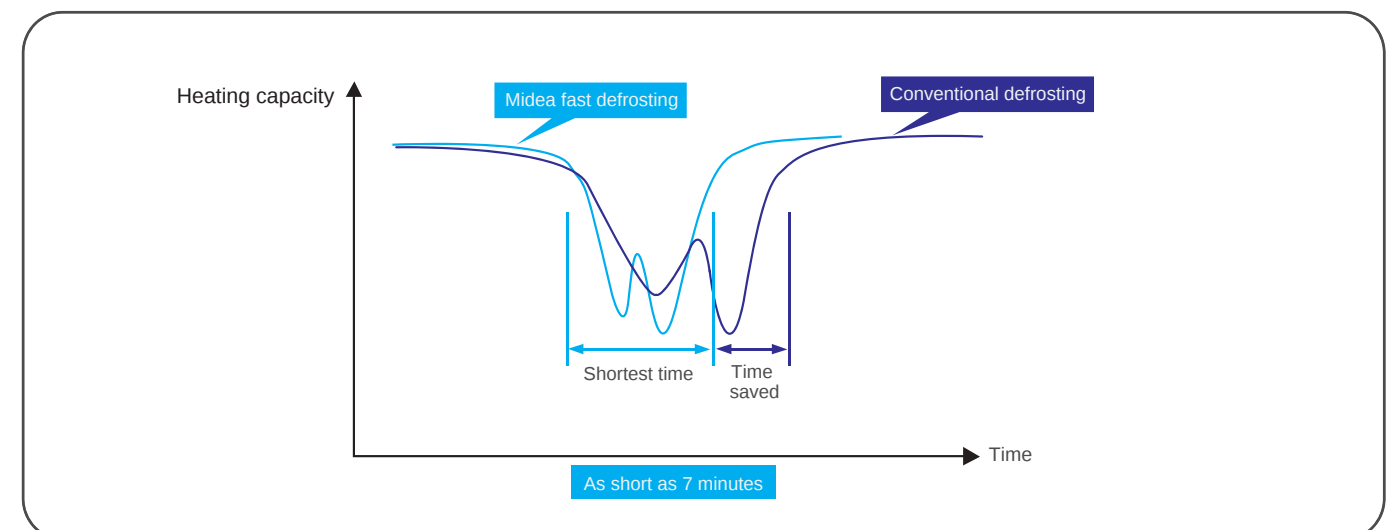
EXV, more precise flow control

Liquid-phase distributed components maximize the performance and minimize the effects of defrosting. Together with capillary tube, 500-stage EXV can stably and precisely control airflow, with fast response, higher efficiency, and better reliability.



Intelligent defrosting technology

Alternate operation among units can ensure that the water temperature fluctuates little. The manual defrosting procedure can be used for service purposes.



Features

Stable and reliable

Hot gas bypass technology

The hot gas bypass technology can better improve the safety and stability of the unit in heating conditions, and expand the operating range of the heating conditions.

Alternate operation technology between modules

Based on the system load, the unit sets the module that is started preferably in turn and equally allocates the running time of each module, greatly enhancing the reliability of the unit and prolonging its service life.

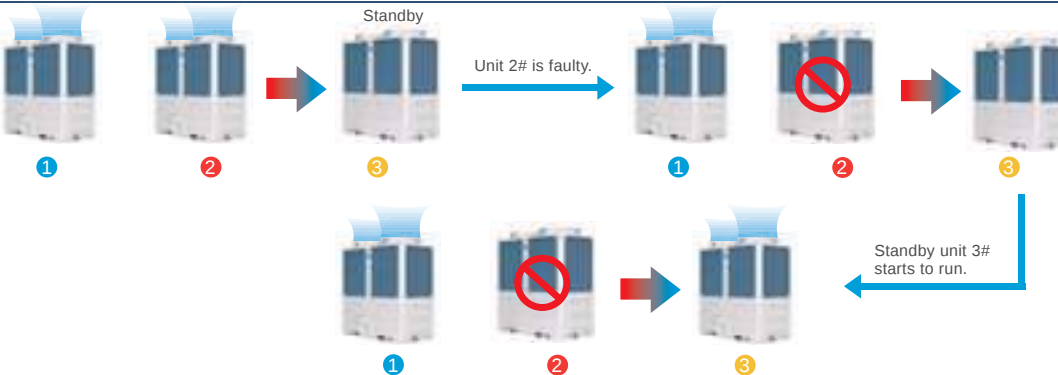


Alternate technology between combined modules

Note: These figures take the combination of four modules as an example.

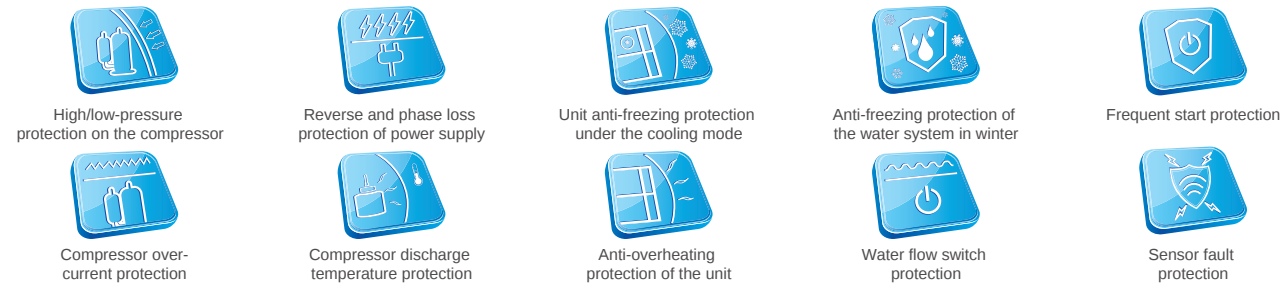
Module Standby Operation Technology

With the special standby operation technology and the single-module multi-system design, different modules in the same system are standby to each other, ensuring that the system can keep running in an emergency when one or more compressors or modular chillers fail.

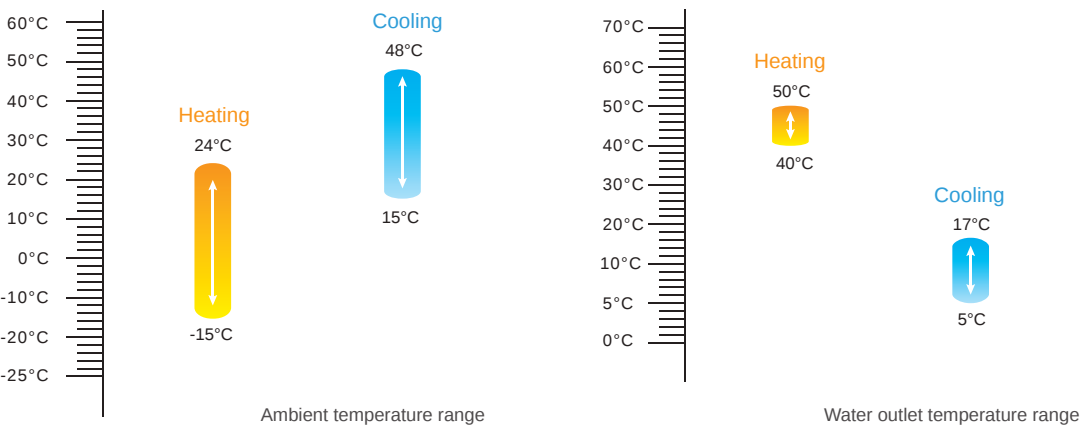


Various protection functions, ensuring safe operation of the system

The system adopts modular structure, and the unit starts up in stages, reducing the impact of the unit startup current on the power grid. The unit is equipped with high/low pressure switch, anti-freezing protection device, flow controller, overload protection device, power phase sequence protection device, and operation control equipment. When a failure occurs, the controller will automatically give an alarm in real time.



Wide ranges of water outlet temperature and ambient temperature



Convenient installation

Modular design, flexible installation

- Unit modules of different capacities can be combined freely, and up to 16 units can be connected in parallel, with strong compatibility and scalability. Based on the characteristics of the installation site, the user can select a variety of combination methods to connect 1-16 modules in parallel, with the cooling capacity up to 2,080 kW, which fully meets different needs.
- Air cooled modular chillers in the same system start up in stages, and operate in balance, reducing the impact of the unit startup current on the power grid.



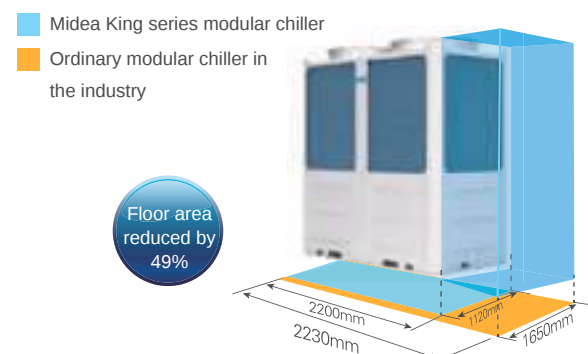
Notes: 130 kW module is taken as an example

A maximum of 16 units can be connected in parallel, with capacity up to 2080 kW in a single system.

Features

◆ Compact structure, reducing floor area

The unit has a compact size and occupies a small area, truly saving space and effectively reducing transportation costs.



Note: A 130 kW modular chiller is used for comparison.

◆ Convenient to disassemble and easy to install

All surrounding panels of the unit can be disassembled, facilitating daily maintenance.



Smart control

◆ Micro PC control board, intelligent and real-time adjustment

The micro PC control board features product operation control, safety protection, and many other functions. Among them, the high-speed processing chip can quickly obtain the operating parameters of the host system, and deliver control instructions in time to realize rapid processing, implement smart control of the unit, and ensure the stable operation of the unit.



◆ New touch wired controller, easy to control the system

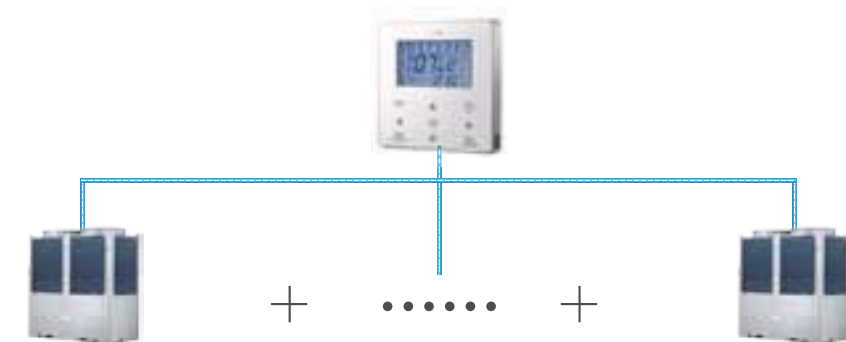
- Stylish and elegant wired controller
- Large LCD screen, backlit display, easier to read
- Real-time clock display and timing
- Setting of the temperature, mode, etc.
- Touch keys, elegant and durable, preventing dust from entering



KJRM-120D/BMK-E

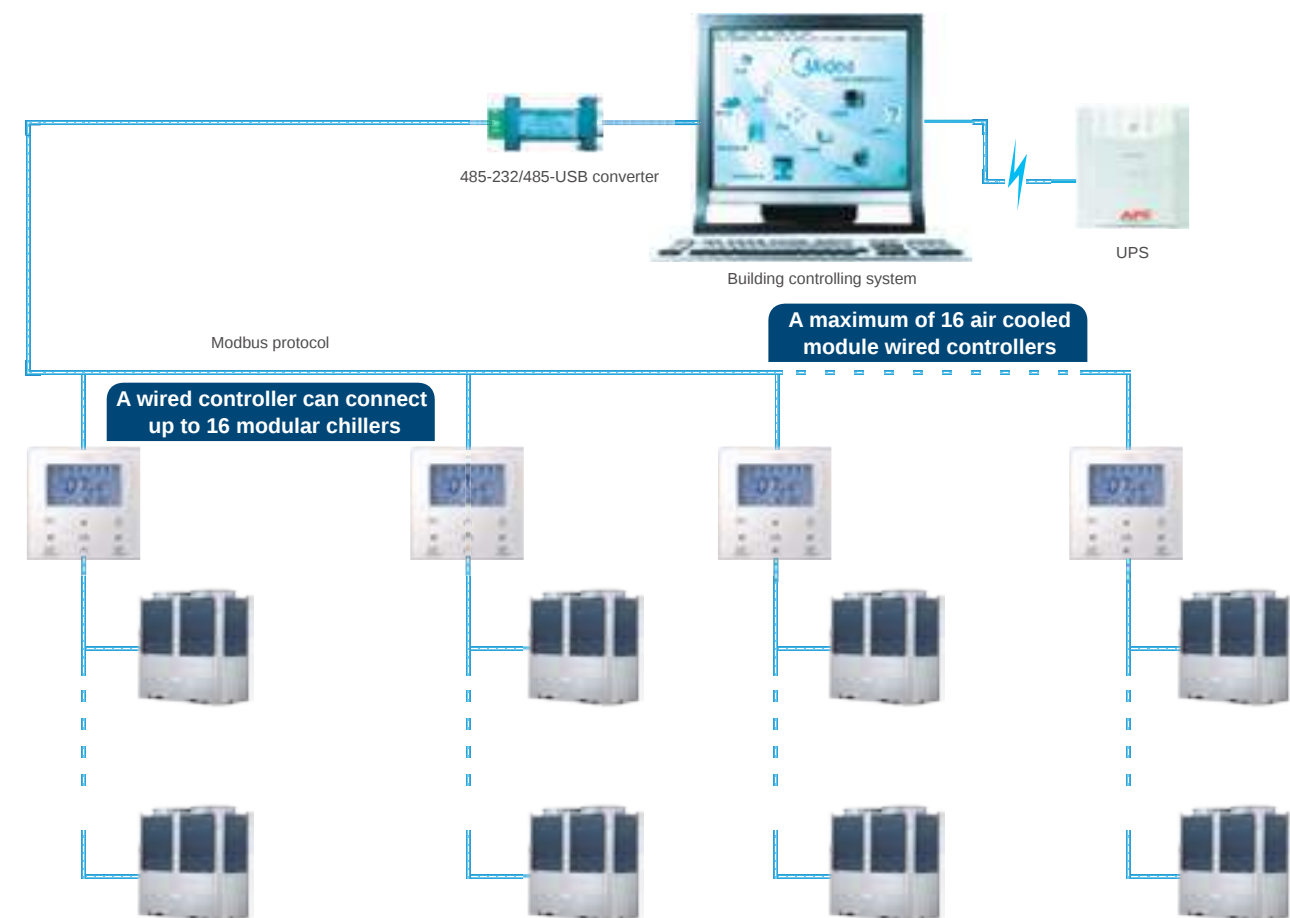
◆ Smart control system, user-friendly

A single wired controller can control up to 16 modular chillers in a centralized manner, manage the start and stop sequence of the units, and enable users to learn unit operating status and fault status in time.



◆ Smart building control, enhancing management reliability

Modbus is a widely used open protocol, especially in the building management system (BMS). Midea air cooled modular chillers can connect to the BMS in the Modbus protocol to realize remote control of up to 256 air cooled modules.



Specifications

King series

Model			MC-SS65-RN1	MC-SS130-RN1
			65	130
Capacities	Cooling capacity	kW	65	130
		x 10³kcal/h	55.9	111.8
	Heating capacity	kW	71	142
		x 10³kcal/h	61	122.1
Electric parameters	Cooling power	kW	19.5	39.2
	Cooling current	A	36.4	73.1
	Heating power	kW	20.4	40.8
	Heating current	A	38.1	76.1
	Maximum power consumption	kW	30.1	60.2
	Maximum current	A	55	110
	Power supply specifications		380V 3N ~ 50Hz	
Compressor	Quantity	Pcs	1	2
Refrigerant	Type		R410A	
	Charge amount	kg	11.5	10x2
AC water-side heat exchanger	Water flow rate	m³/h	11.2	22.4
	Resistance loss	kPa	48	60
	Loading capacity	MPa	1.0	
	Diameters of water inlet and outlet pipes	mm	DN65	DN65
	Type		Shell and tube	
Air-side heat exchanger	Air flow	m³/h	27000	48000
	Number of fans	Pcs	2	2
	Type		Fin coil	
Dimensions	Width	mm	2000	2200
	Depth	mm	960	1120
	High	mm	1770	2315
Weight	Net weight	kg	525	875
	Operating weight	kg	560	938
Operating noise		dB(A)	65	68

Notes: (1) Water inlet/outlet temperature12/7°C; Outdoor ambient temperature 35°C DB.
Water inlet/outlet temperature 40/45°C; Outdoor ambient temperature 7°C DB/6°C WB.
(2) Water side fouling factor: 0.086m²·°C/kW.



King Plus Series



Midea King Plus Series Air Cooled Heat Pump Modular Chiller

Eight core advantages:



Stylish appearance



Energy control technology



Flexible installation



Environment-friendly



Energy-efficient



Stable Performance



Module combination



Smart control

Exquisite process

Symmetrical appearance structure design, showing the beauty of manufacturing process

Innovative design

Elegant and exquisite design of hidden heat exchanger pipeline

Upgraded strength

Multi-folder column structure, greatly improving the structural strength of the unit



Quick panel disassembly, excellent pipeline protection

Easy maintenance

Thicker metal plate, sturdy and durable, shock-absorbing

Sturdy and durable

Lifting hole retained to make handling convenient

User-friendly design

Outline

The air cooled heat pump modular chiller is a central air conditioning unit that uses air as its cooling and heating source and water as the heat transfer medium. The unit can form a centralized air conditioning system together with FCU and AHU for cooling in summer and heating in winter. Midea King Plus series air cooled heat pump units employ a modular design. Up to 16 units of 130kW (8 units of 260kW) can be connected in parallel to form a combination product from 130 kW to 2,080 kW.

This unit is widely used in newly built and rebuilt large and small industrial and civil construction projects, places with high requirements for operating noise and surrounding environment, and places with water shortage or inconvenient to install cooling towers. The unit is especially suitable for buildings like hotels, restaurants, supermarkets, shopping malls, office buildings, cinemas and theatres, and factories.

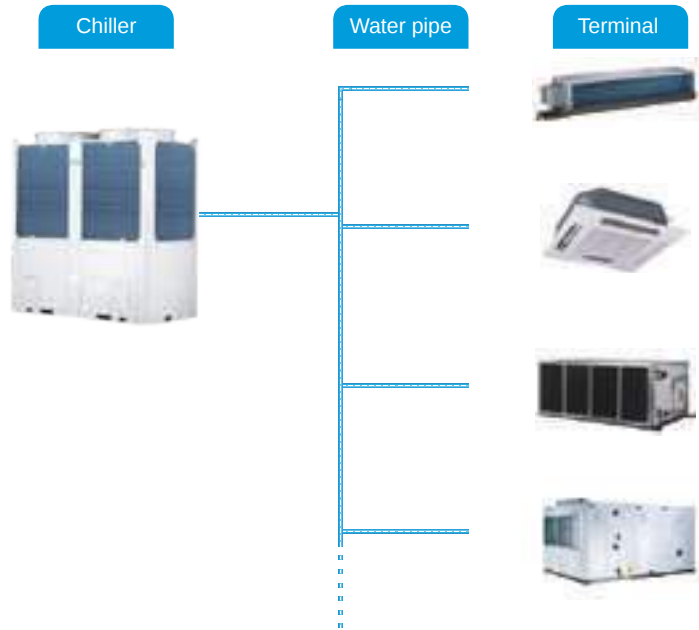


130 kW



260 kW

Nomenclature



Excellent design

Air-side heat exchanger

The ring-type air return heat exchanger makes the airflow distribution uniform and heat exchange sufficient.



Fan and motor

The large-air-flow and low-noise fan and large-torque and high-efficiency motor achieve high efficiency and low noise.



Electric control box

The electric control box adopts professional components to ensure quality. The electric control box is designed on the front side to make installation fast and maintenance convenient.



Water-side heat exchanger

The new type of spiral baffle plate evaporator increases the efficiency.



Compressor

The compressor is large in capacity, efficient, and durable.



Liquid storage tank

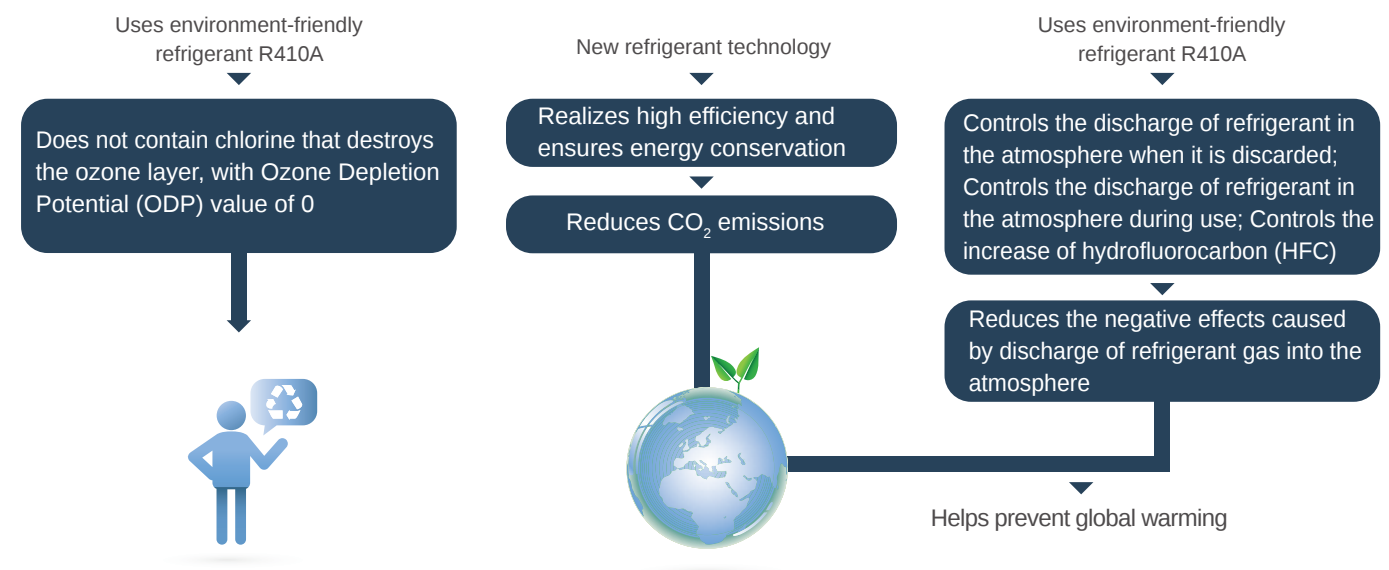
The large-sized low-pressure liquid storage tank is used to ensure that the system operates reliably.



Features

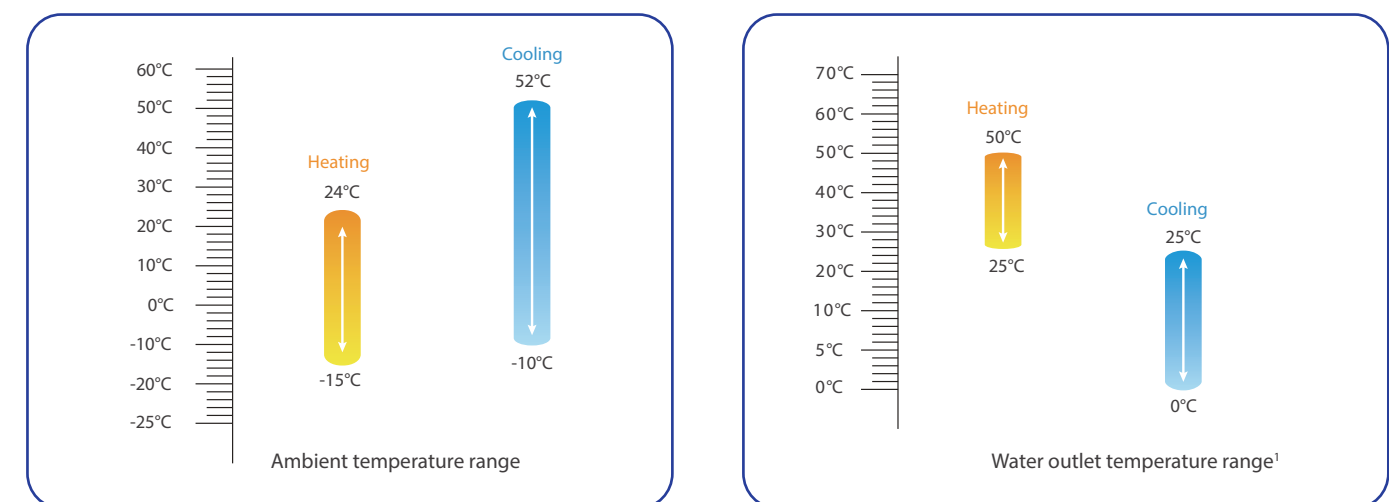
Environment-friendly

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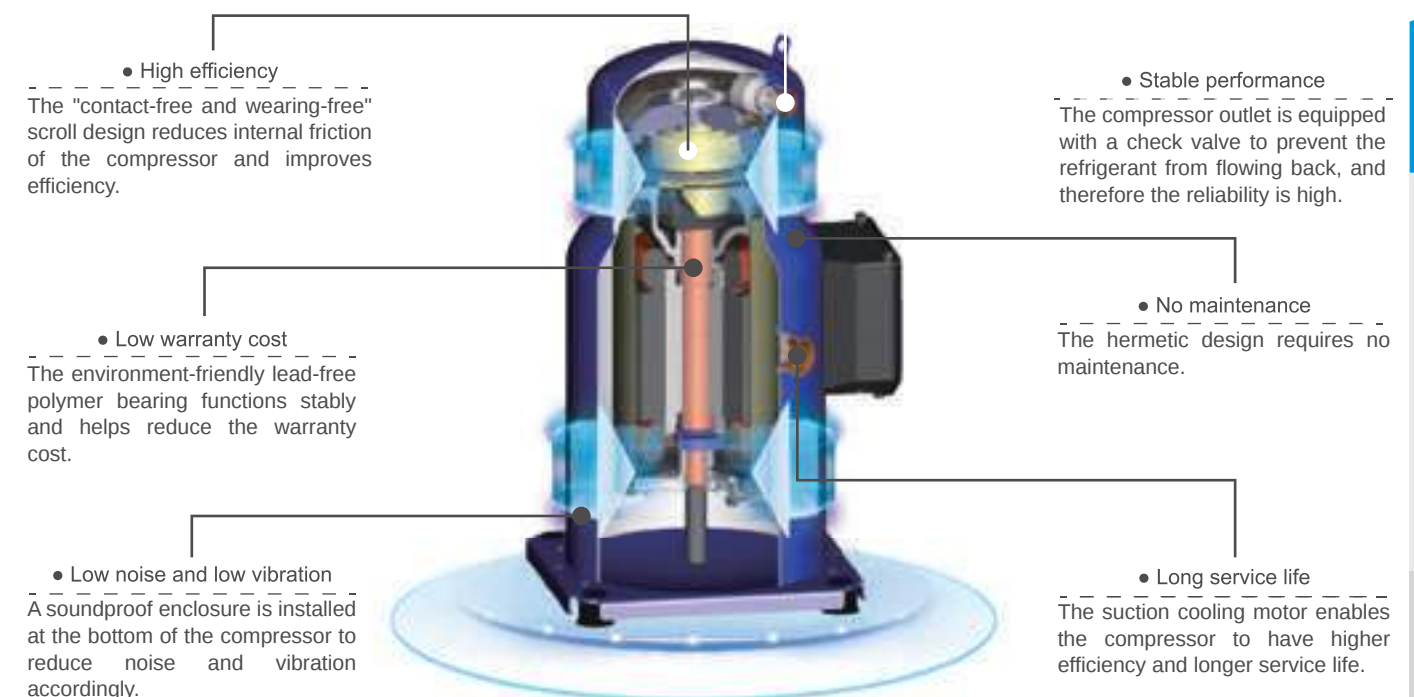
Wide operation range

Midea King series modular chiller integrates an efficient compressor, a new-generation efficient heat exchange system, a high-precision electronic expansion valve, and other professional components. The COP of the full series units reaches the leading level in the industry.



Note: 1. Antifreeze liquid is needed when water outlet temperature reaches 0°C

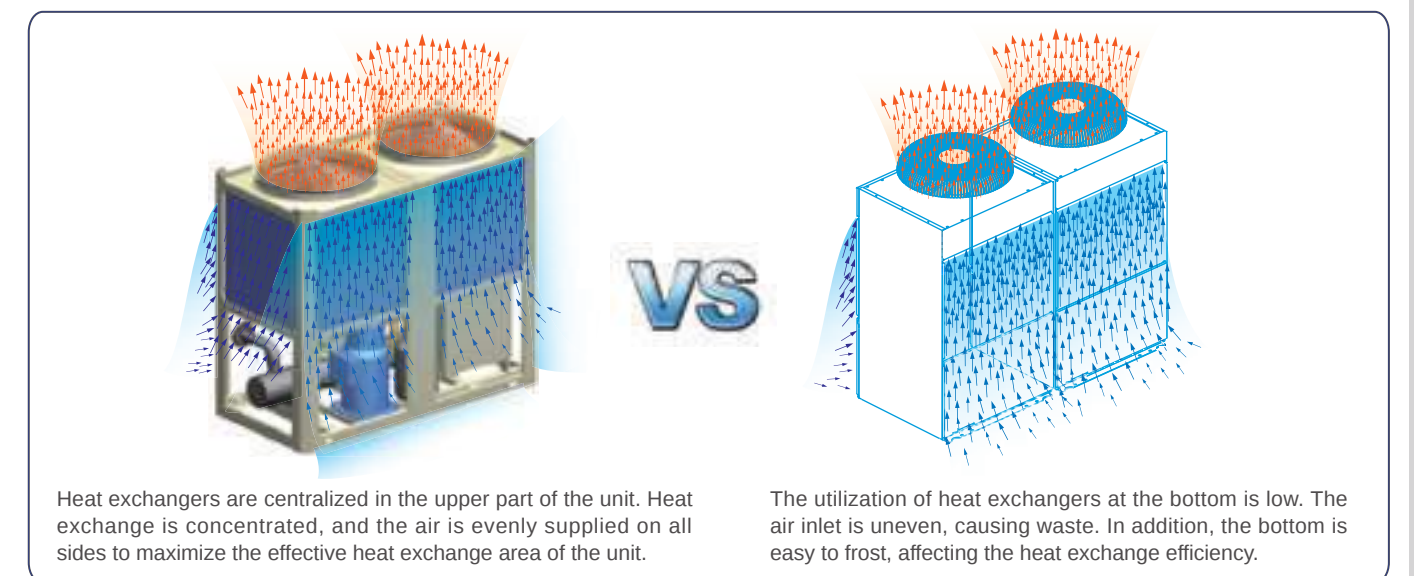
Hermetic scroll compressor technology, stronger in power



Note: The actual compressor prevails.

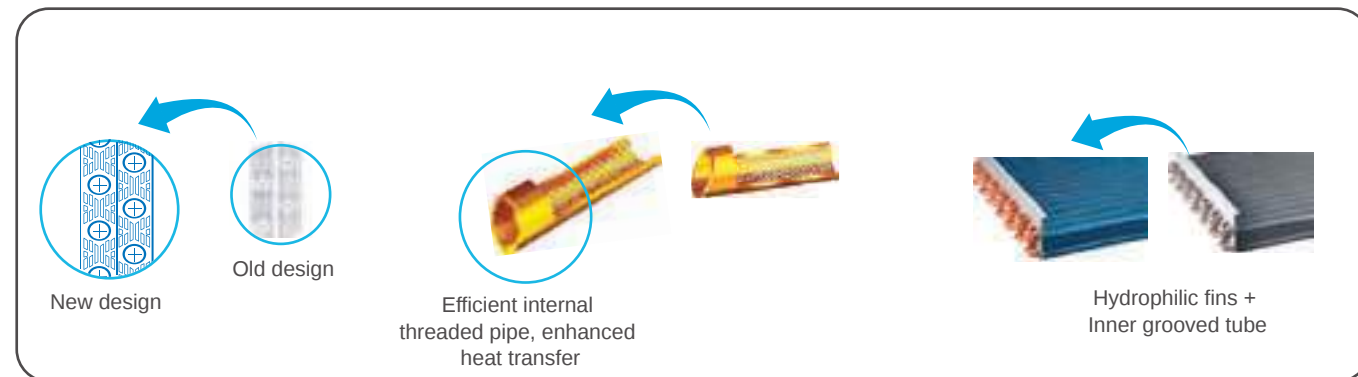
Efficient heat exchanger, greatly improving heat exchange efficiency

High-efficiency air-side heat exchanger
Based on the professional analog calculation of temperature field, heat exchangers are deployed in the upper part near the fan. With air inlet on all sides, the airflow is more uniform, and the utilization efficiency of heat exchangers is higher. Moreover, the bottom of the unit is not easy to frost in winter.



Features

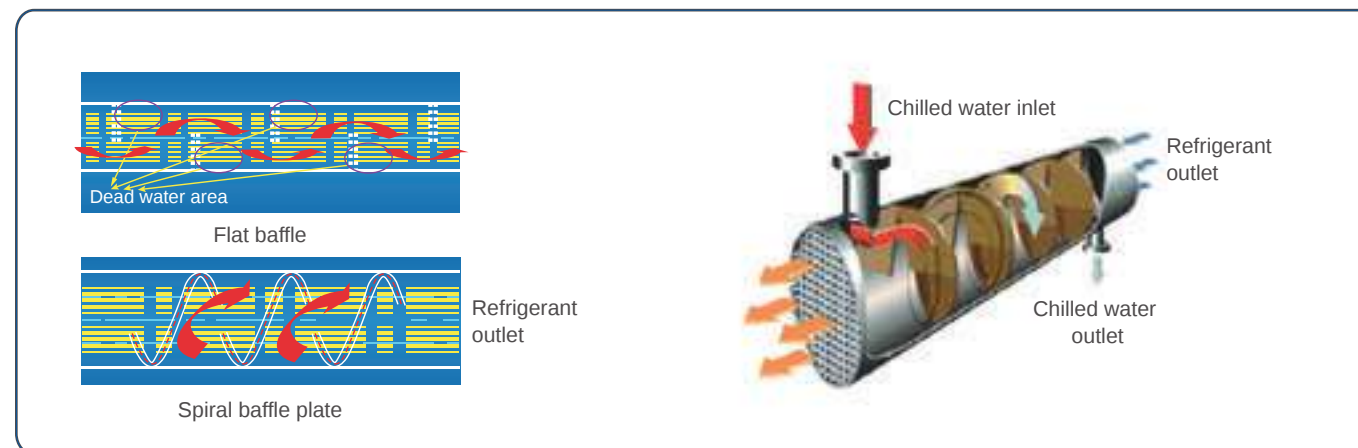
• High performance heat exchanger



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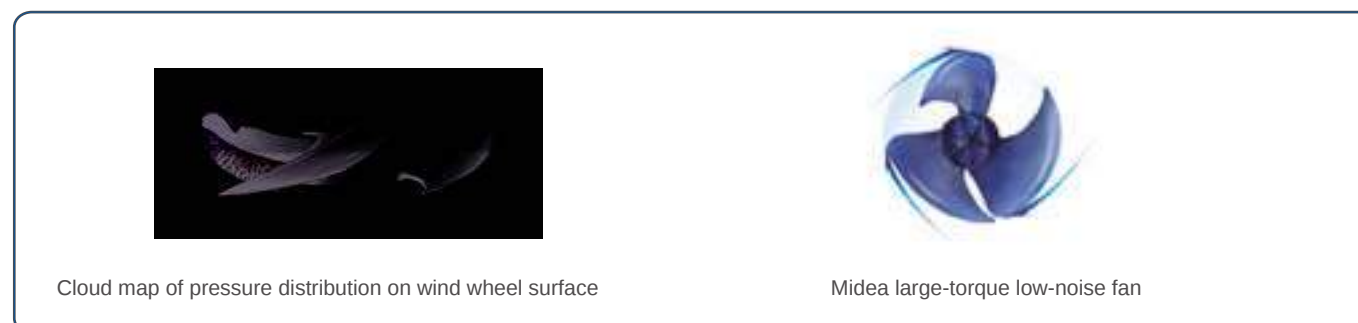
• Efficient water-side heat exchanger

For a shell-and-tube heat exchanger, the module adopts the new type of spiral baffle plate design to avoid the dead water area from forming a rectangular space, which greatly improves the heat exchange efficiency.



◆ High-efficiency low-noise fan, working with energy-saving motor

With CFD optimized impeller, the air-side heat exchange effect is better. Together with the excellent working speed of the motor, the airflow noise is lower and the sound quality is softer.

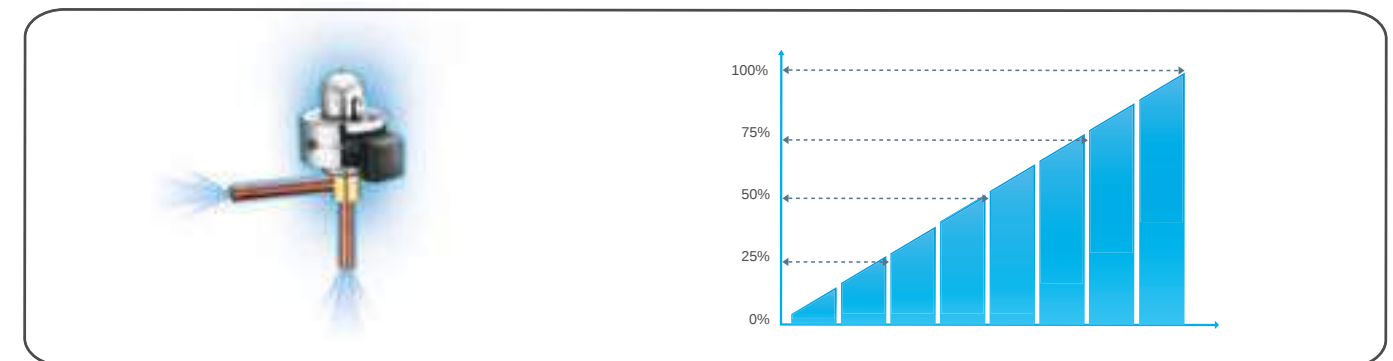


The energy-saving motor undergoes the optimization design of motor coil to reduce the loss effectively, improve operation efficiency, and guarantee low heat release of the motor, low power consumption and long operation life.



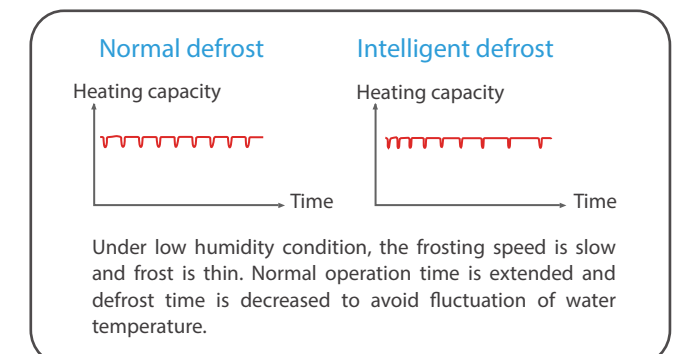
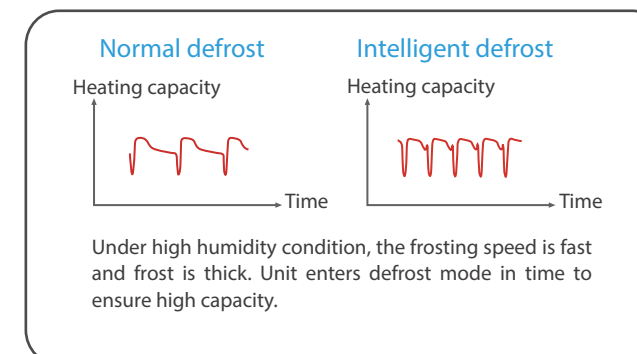
◆ EXV, more precise flow control

Liquid-phase distributed components maximize the performance and minimize the effects of defrosting. Together with capillary tube, 500-stage EXV can stably and precisely control airflow, with fast response, higher efficiency, and better reliability.



◆ Intelligent defrosting technology

Unit enters defrost mode and adjusts defrost period according to ambient temperature, frost forming speed etc to reduce capacity attenuation and fluctuation of water temperature,



Features

Stable and reliable

◆ Alternate operation

Based on the system load, the unit sets the module that is started preferably in turn and equally allocates the running time of each module, greatly enhancing the reliability of the unit and prolonging its service life.

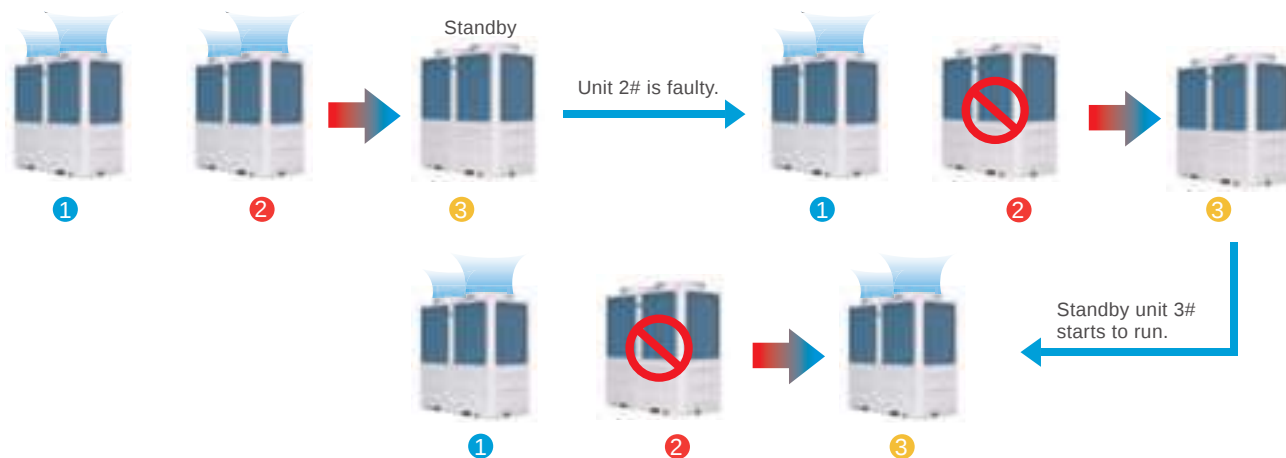


Alternate technology between combined modules

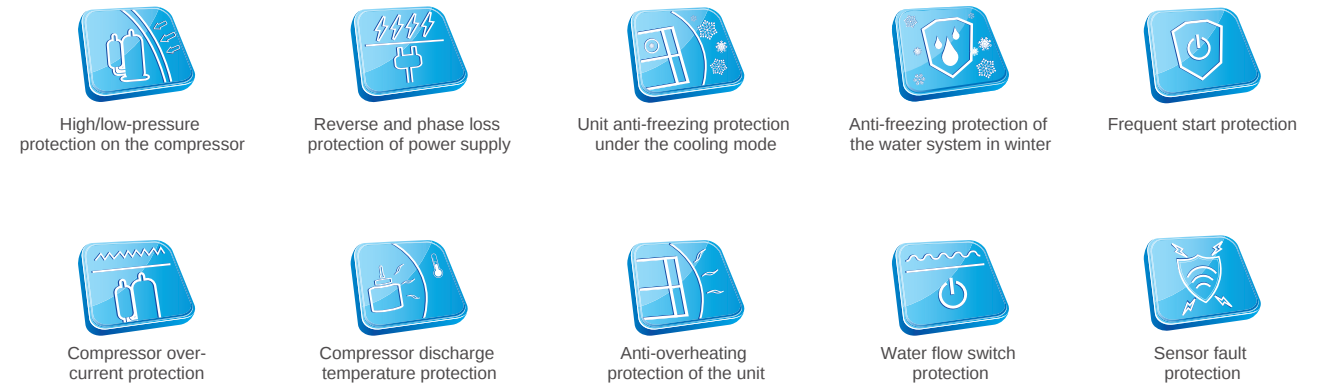
Note: These figures take the combination of four modules as an example.

◆ Module Standby Operation

With the special standby operation technology, different modules in the same system are standby to each other, ensuring that the system can keep running in an emergency when one or more compressors or modular chillers fail.



◆ Various protection



Convenient installation

◆ Modular design

- Unit modules of different capacities can be combined freely, and up to 16 units of 130kW (8 units of 260kW) can be connected in parallel, with strong compatibility and scalability. Based on the characteristics of the installation site, the user can select a variety of combination methods to connect 1-16 modules in parallel, with the cooling capacity up to 2,080 kW, which fully meets different needs.
- Air cooled modular chillers in the same system start up in stages, and operate in balance, reducing the impact of the unit startup current on the power grid.

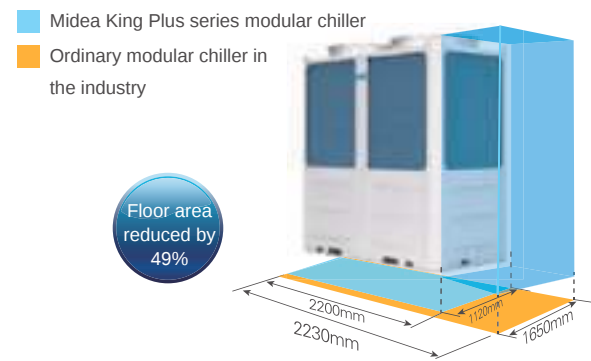


A maximum of 16 units can be connected in parallel, with capacity up to 2080 kW in a single system.

Features

◆ Compact structure

The unit has a compact size and occupies a small area, truly saving space and effectively reducing transportation costs.



Note: A 130 kW modular chiller is used for comparison.

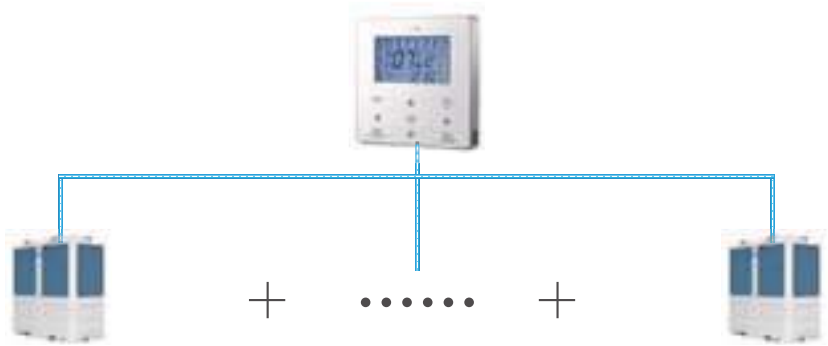
◆ Easy installation

All surrounding panels of the unit can be disassembled, facilitating daily maintenance.

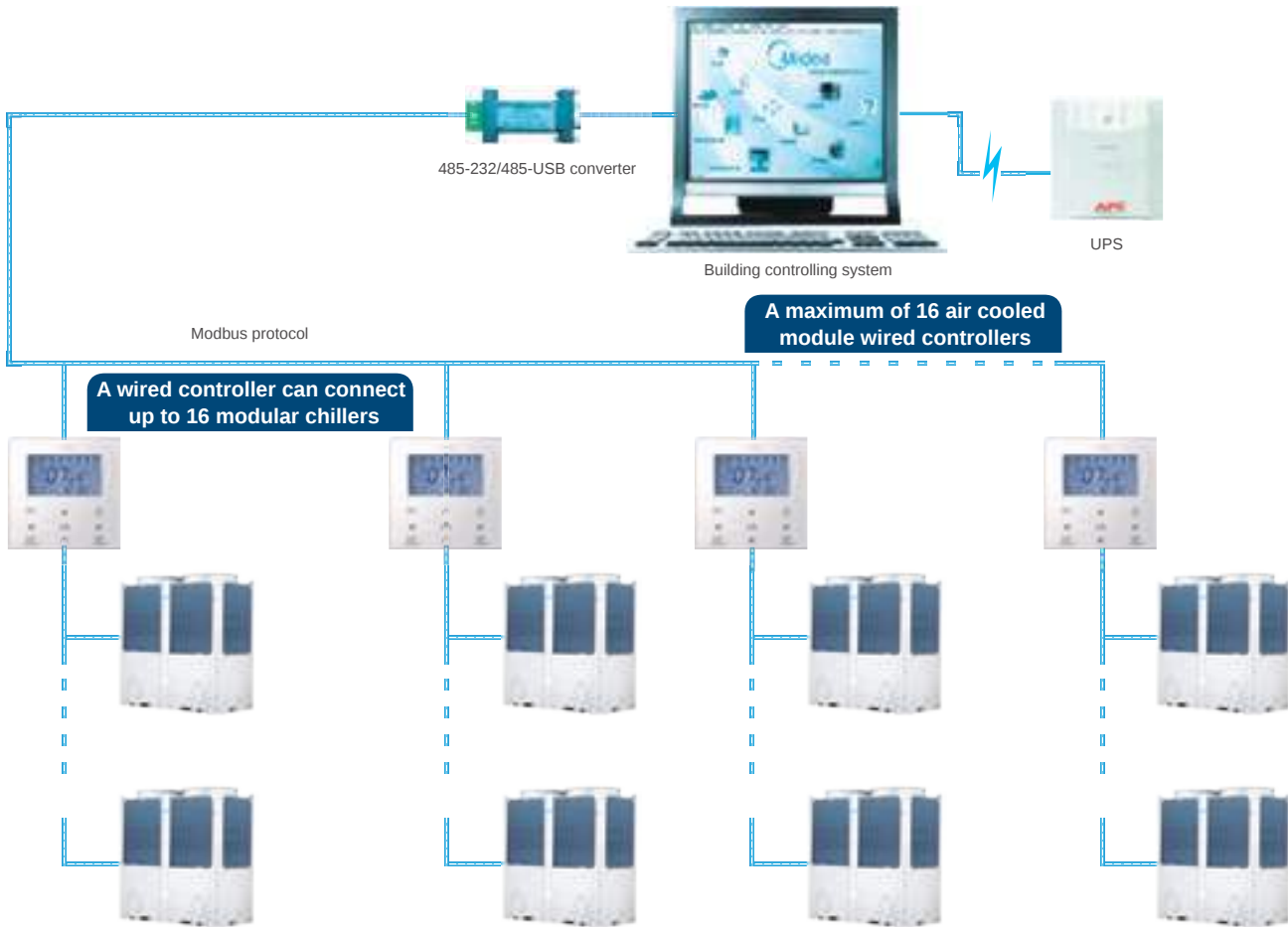


◆ Smart control system, user-friendly

A single wired controller can control up to 16 modular chillers in a centralized manner, manage the start and stop sequence of the units, and enable users to learn unit operating status and fault status in time.



●Smart building control, enhancing management reliability
Modbus is a widely used open protocol, especially in the building management system (BMS). Midea air cooled modular chillers can connect to the BMS in the Modbus protocol to realize remote control of up to 256 air cooled modules.



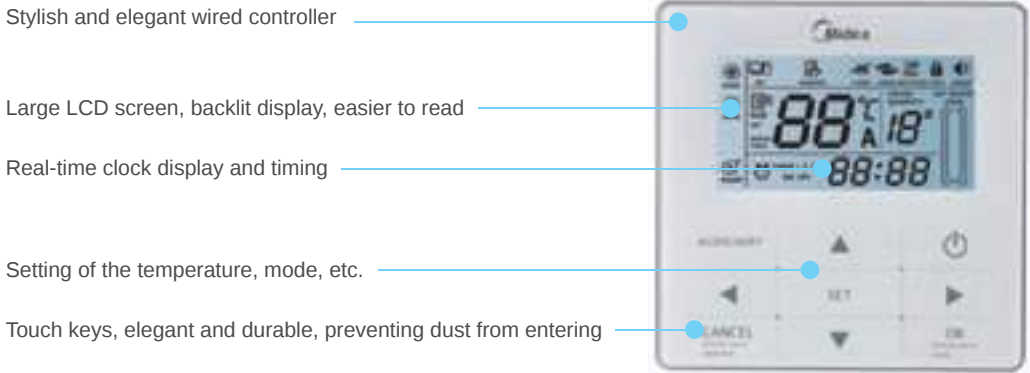
Smart control

◆ Micro PC control board

The micro PC control board features product operation control, safety protection, and many other functions. Among them, the high-speed processing chip can quickly obtain the operating parameters of the host system, and deliver control instructions in time to realize rapid processing, implement smart control of the unit, and ensure the stable operation of the unit.



◆ New touch wired controller



KJRM-120D/BMK-E

Specifications

King Plus series

Model name			MC-SS130-RN1TL	MC-SS260-RN1TL
Power supply		V/Ph/Hz	380-415/3/50	380-415/3/50
Cooling(A35W7)	Capacity	kW	130	265
	Rated input	kW	42.3	84.0
	EER		3.07	3.15
Heating(A7W45)	Capacity	kW	138	280
	Rated input	kW	43.0	84.8
	COP		3.21	3.30
Compressor	Type		Scroll(Fixed)	Scroll(Fixed)
Air side heat exchanger	Type		Finned tube	Finned tube
Fan	Fan motor type		DC motor	DC motor
Water side heat exchanger	Type		Shell-tube	Shell-tube
	Rated water flow	m³/h	22.4	45.6
	Water pressure drop	kPa	40	60
Refrigerant system	Refrigerant type		R410A	R410A
	Refrigerant charge	kg	20	40
	Throttle type		EXV	EXV
Net dimensions (W×H×D)	mm		1120*2300*2200	2753*2415*2220
Packed dimensions (W×H×D)	mm		1180*2445*2250	2810*2450*2290
Net weight	kg		831	1890
Gross weight	kg		852	1900
Pipe connections	Water inlet/outlet	mm	DN65	DN100
Water pressure range	MPa		1.0	1.0
Ambient temperature range	Cooling	℃	-10~52	-10~52
	Heating	℃	-15~24	-15~24
Water outlet temperature¹	Cooling	℃	0~25	0~25
	Heating	℃	25~50	25~50

Note: 1.Antifreeze liquid is needed when water outlet temperature is below 5℃

