1C202209

Midea Building Technologies Division
Midea Group

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

Postal code: 528311

mbt.midea.com www.midea-group.com tsp.midea.com

Quality Assurance ISO 9001 Environmental Management ISO 14001 Occupational Health and Safety Management ISO 45001

Air Cooled
Modular Chiller

mbt.midea.com

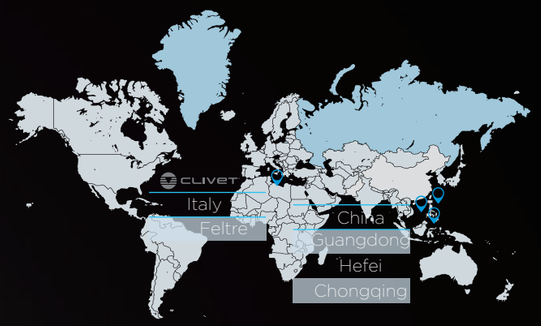
MIDEA BUILDING TECHNOLOGIES **2022**

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.

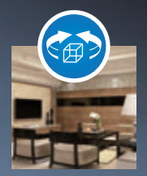
3 businesses constitute the significant compo nents of Midea intelligent building solutions

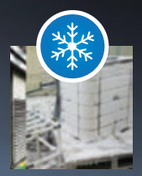
4 production bases can achieve fast delivery



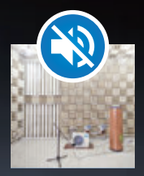
Over **100** testing labs cover all different real application sceneries


Security construction


Environmental Simulation

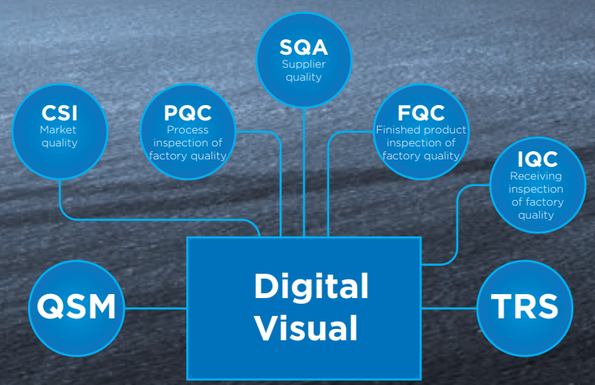

Reliable & long-lasting operation


EMC lab


Noise


Performance

All products can be visualized and digitalized throughout entire process



Midea VRF History

2020-2022
- Launched the R32 Aqua thermal Series DC Inverter Air-cooled Chiller.
- Acquired the Chinese national brand Linvol Elevator and entered the elevator industry.

2019
- Launched the R32 Aqua Tempo Super II Series DC Inverter Air-cooled Chiller.

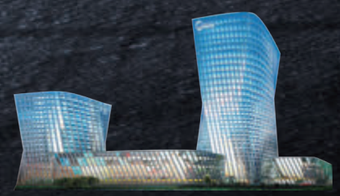
2017
- Launched the R410A Aqua Tempo Super II Series DC Inverter Air-cooled Chiller.

2016
- Acquired 80% stake in Clivet

2015
- JV with Carrier in China in chiller field
- An international strategic Platform has brought Midea Group, Carrier Corporation and Chongqing General Industry Group together in the chiller business.

2004
Acquired MGRE entered the chiller industry.

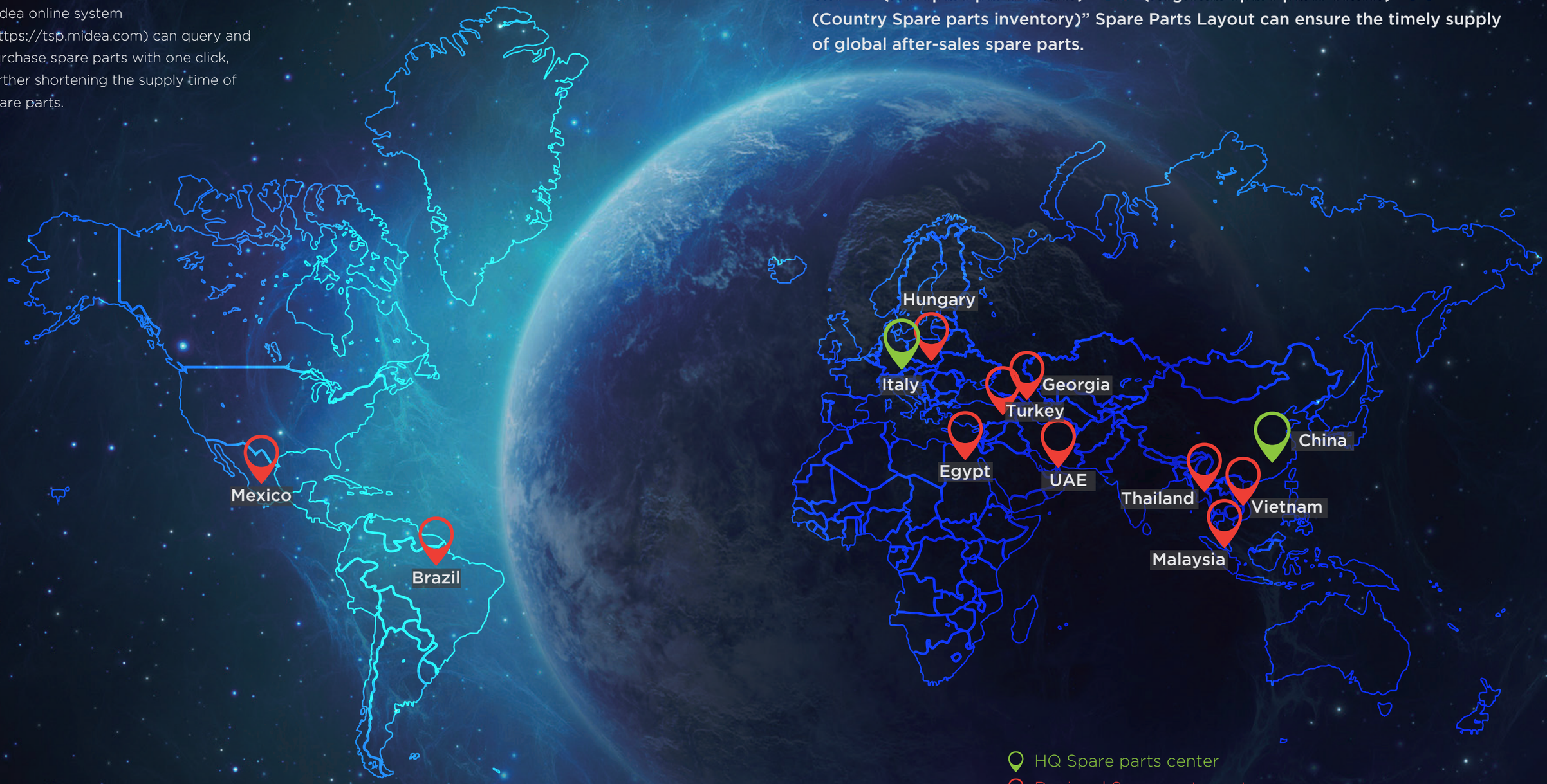
1999
Established



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 com-plaint 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 engi-neers 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

FAQ

Complain

Technical Enquiry

Search product manuals

Trouble shooting

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.

Midea Meeting

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

FINNING CAT Office Building

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

Vimpelcom Office Building

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

Transportation

Sulaymaniyah Airport

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

Hotels & Resorts

Great Wall Plaza

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

Complex

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

Grand Comfort Material Market

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

City Mall

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

Hospitals & Healthcare

MRI Center Canovanas

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

KUKA Robotics in Hungary

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

Zetes Power Station

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

Content

R410A Aqua Tempo
Super II Series

Product lineup

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

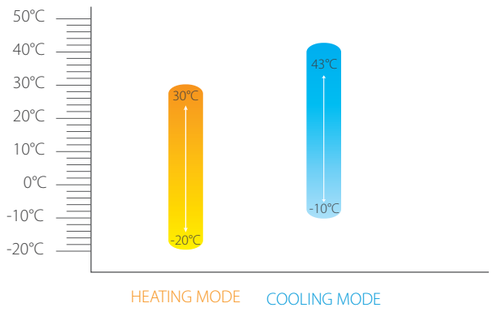
Overview

R410A refrigerant zero impact on the ozone layer;
DC Inverter technology allows precise consumption on real load;
Minimum water temperature down to 0 ℃ (Anti-freeze liquid needed);
Minimum operation ambient temperature down to -10 ℃ 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.

DC Inverter -10°C A++ R410A

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.

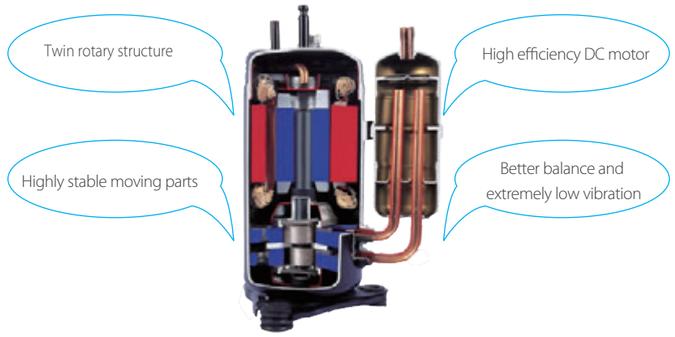
Outlet water temperature

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.

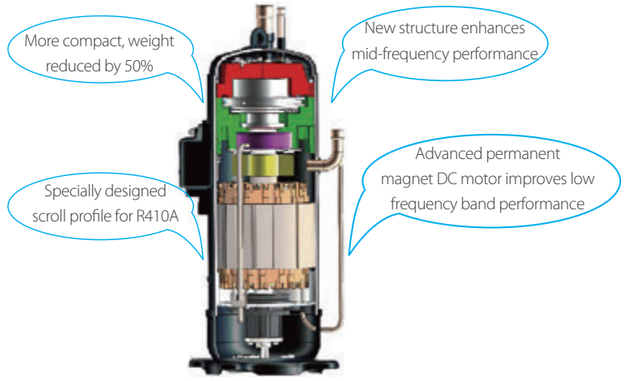
High quality components

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%.



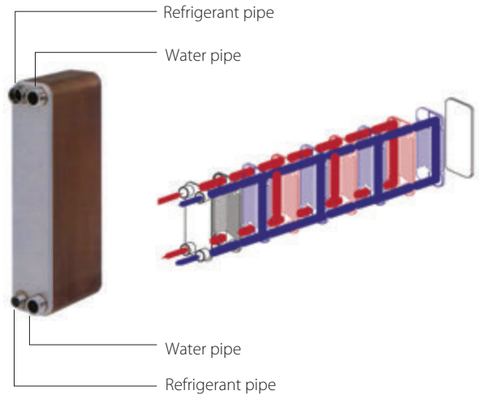
Compressor for 30/60kW models



EVI Compressor for 90kW model

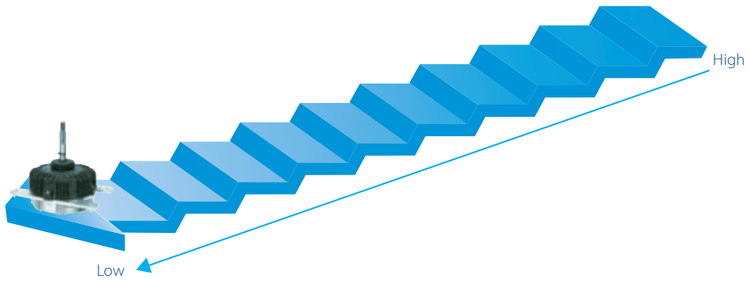
High efficiency plate heat exchanger

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.

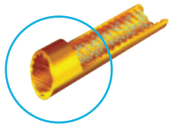


High performance heat exchanger

Enlarge heat-exchanging area

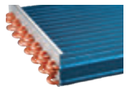
Fin

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

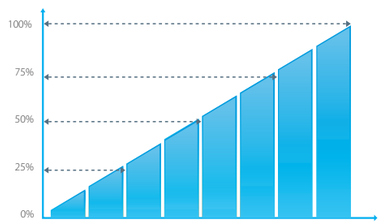
> Heavy anti-corrosion products:
1000h of neutral salt mist
140h of acid salt mis

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

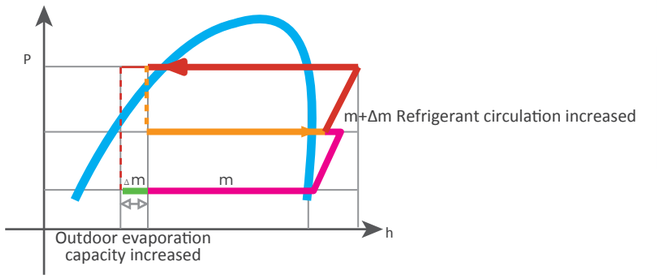
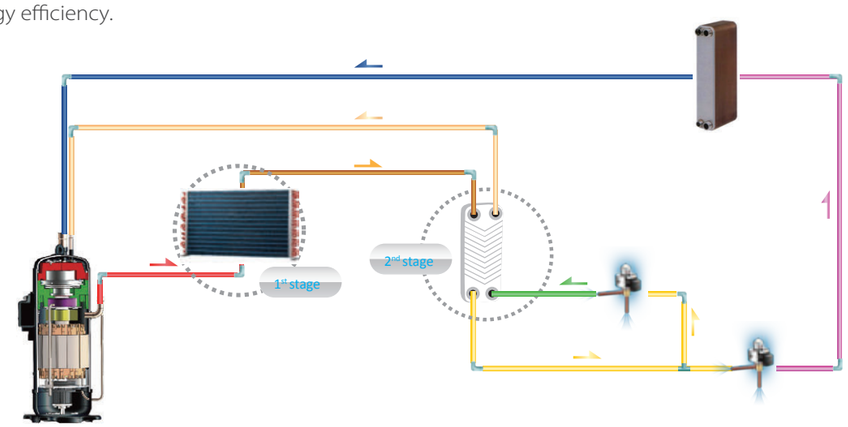


Plate Heat Exchanger Subcooling

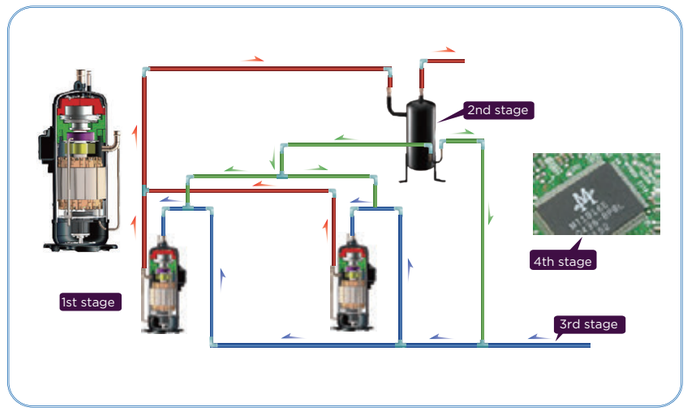
For 90kW model, plate heat exchanger as a secondary intercooler boosts up refrigerant subcooling and improves 10% energy efficiency.



Precise Oil Control Technology

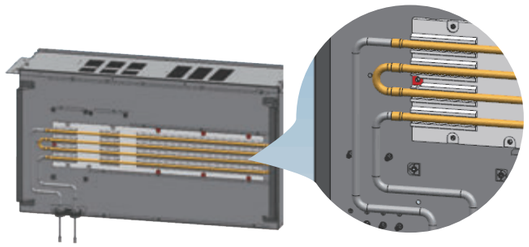
Four stages of oil control technology ensure all outdoor compressor oil is always kept at a safe level, eliminating any compressor oil shortage problems.

- 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.



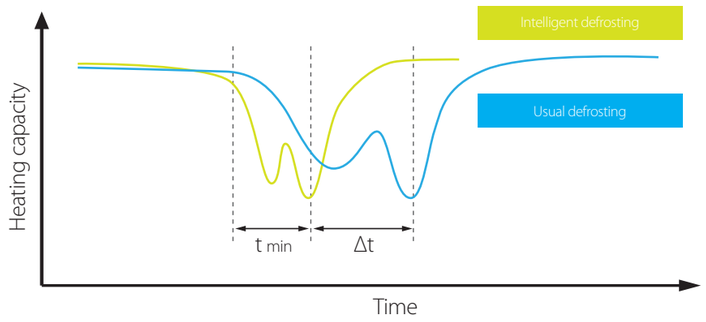
Refrigerant Cooling PCB

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



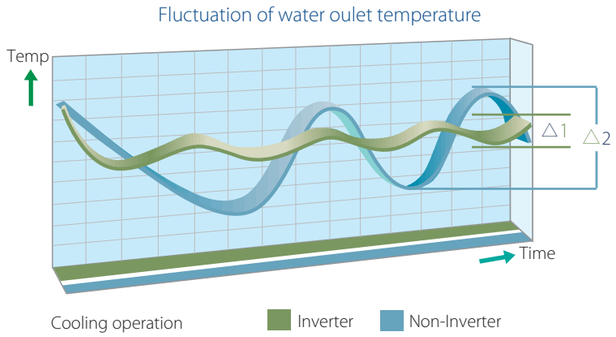
Intelligent defrosting technology

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



Rapid cooling or heating

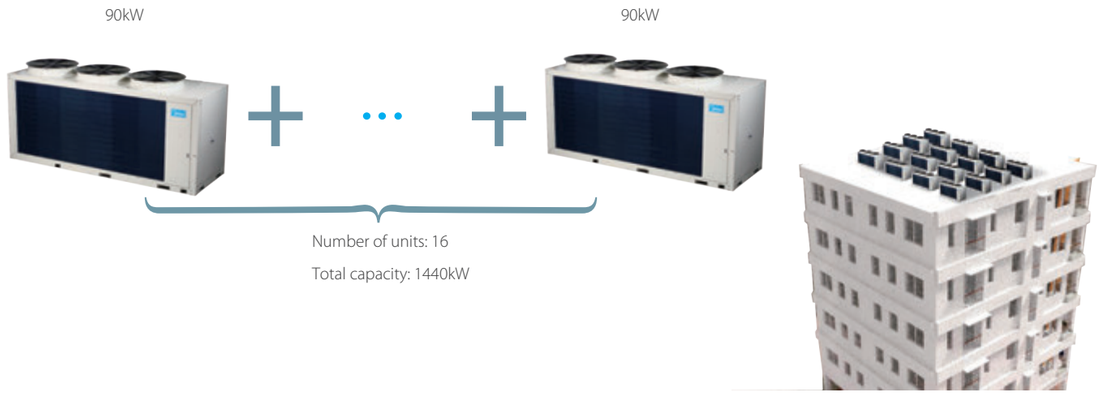
The DC inverter compressor reaches full capacity rapidly, providing quicker cooling or heating with lower levels of temperature fluctuation during the cooling/heating operation.



Flexibility

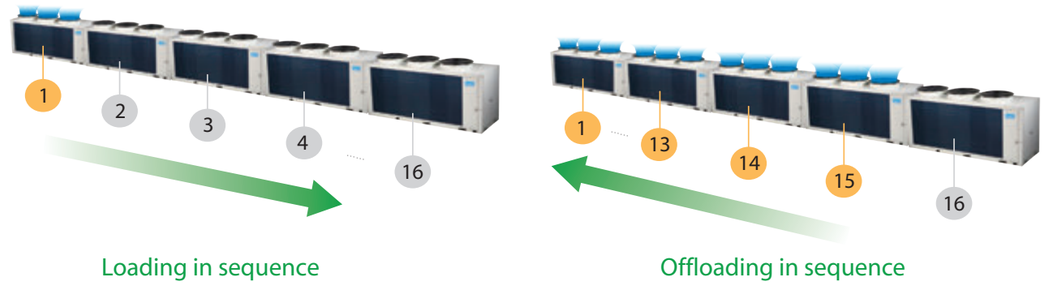
Modular design

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



Alternative cycle duty operation

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



Alternate defrost operation

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

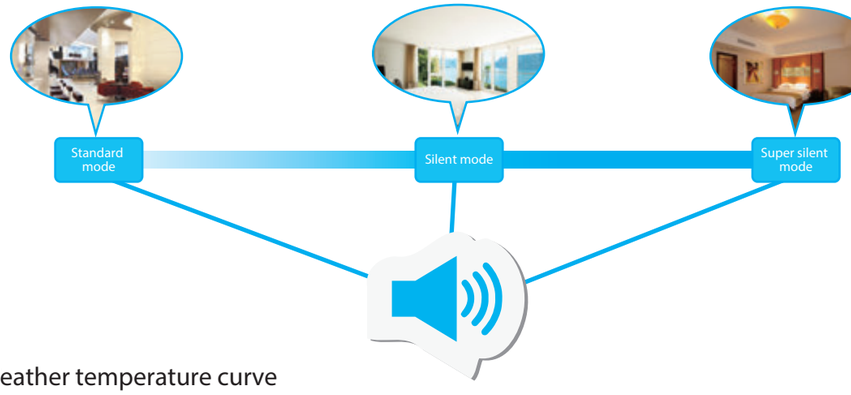
Back-up function

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

Multiple function

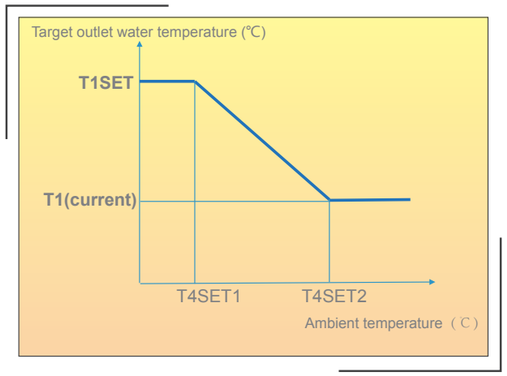
Multiple slient modes

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



Weather temperature curve

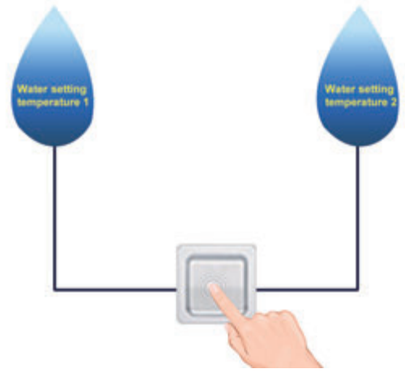
With the help of weather temperature curve function, water temperature will automatically change as outside air temperature changes. When outdoor air temperature increases/decreases, the heating load will decrease/increase and water temperature will decrease/increase automatically. When outdoor air temperature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



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

One-touch water temperature switching

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



Anti-corrosion Protection

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

Fan motor

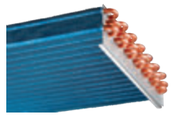
Standard products:
72h of neutral salt mist

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

Painted sheet metal(portion)

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

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



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

Screws / bolts / gaskets

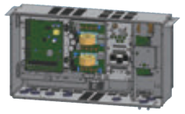
Standard products:
300h of neutral salt mist

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

Electric control box case

Standard products:
96h of neutral salt mist

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



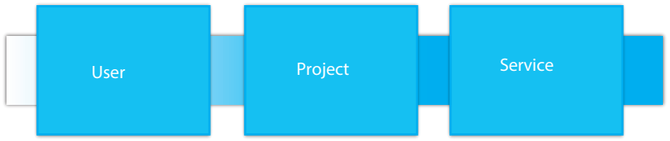
Convenient control

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

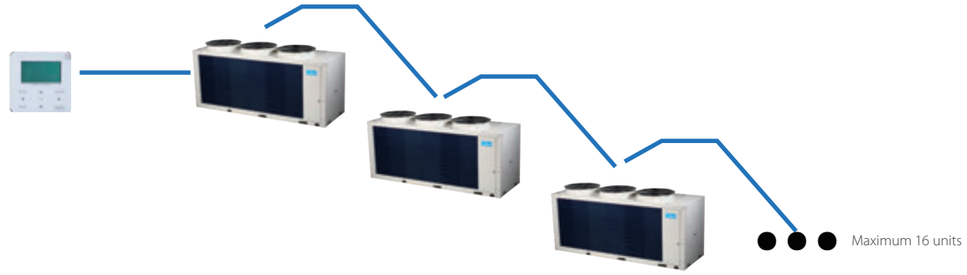
Model	KJRM-120H/BMWKO3-E
Appearance	
Main Functions	Touch key operation Parameter setting an LCD display Real-time clock function Multiple timer Power-off memory function Modbus Address setting Parallel function Buzzer prompt tone and alarm functions Weekly schedule Double set point function
Max. connection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

Three user levels

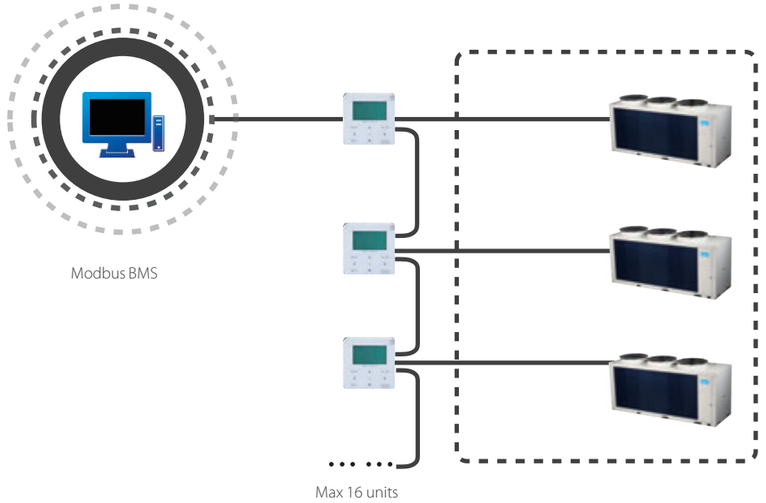
Three different user levels ensure users can easily access control functions and allow engineers convenient access to operating parameters.



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.

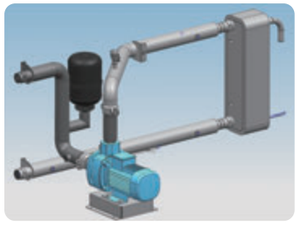


Multilingual wired controller using Modbus communication protocol



Easy installation

Built-in components



hydraulic module
(customization option)

water flow switch

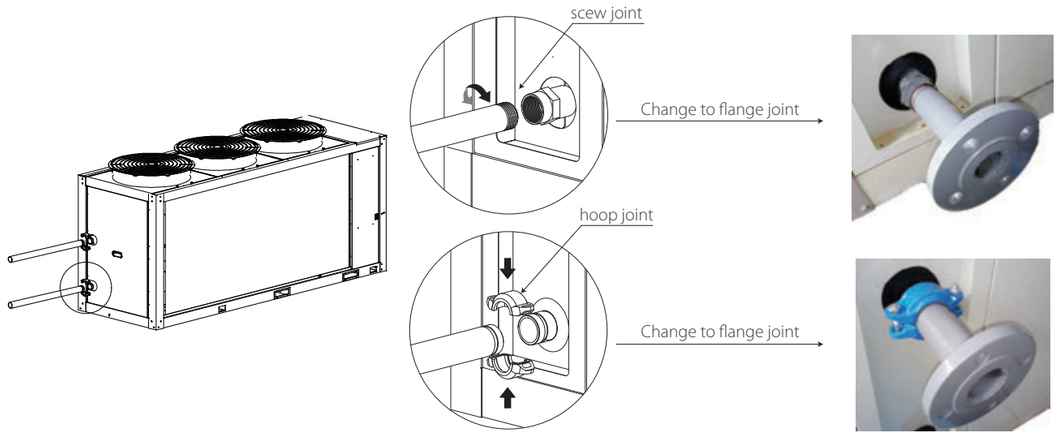
wired controller

Air purge valve

Pressure relief valve

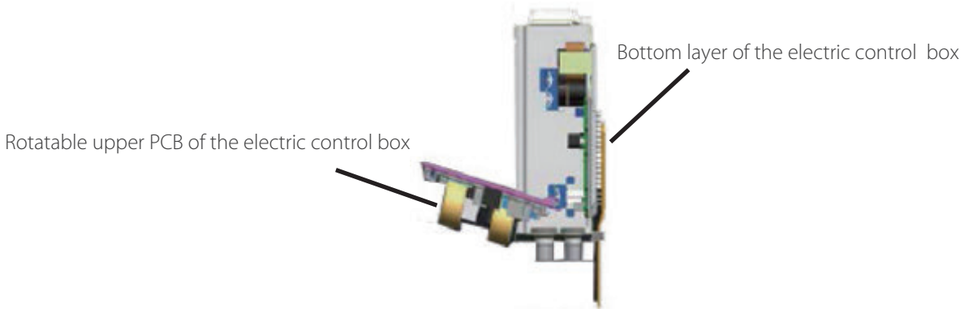
Water pipe connection

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	℃	-10 to 43	-10 to 43	-10 to 43	-10 to 43	-10 to 43	-10 to 43
	Heating	℃	-15 to 30	-15 to 30	-15 to 30	-15 to 30	-20 to 30	-20 to 30
LWT setting range	Cooling	℃	0 to 20	0 to 20	0 to 20	0 to 20	0 to 20	0 to 20
	Heating	℃	25 to 55	25 to 55	25 to 55	25 to 55	25 to 55	25 to 55

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

Bring you a new world

Eco friendly refrigerant R32
Lower GWP 675 (GWP: Global Warming Potential)
Zero impact on the ozone layer
Less carbon emission

Higher heat transfer coefficient
Better performance in poor conditions
Less pressure loss
No temperature glide

Easier to get
Less charged volume
Less cost

R32

R32 Aqua Tempo
Super Ⅱ Series

Product lineup

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

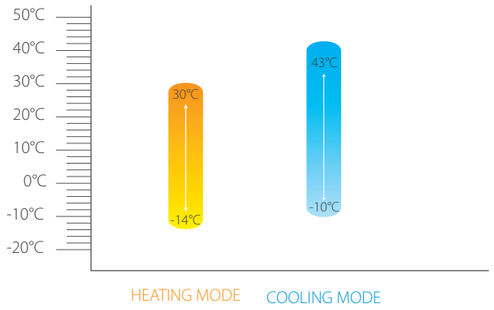
Overview

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

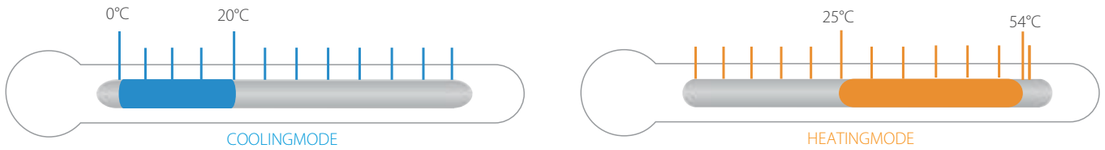
DC Inverter -10°C R32 A++

Ambient temperature

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



Outlet water temperature

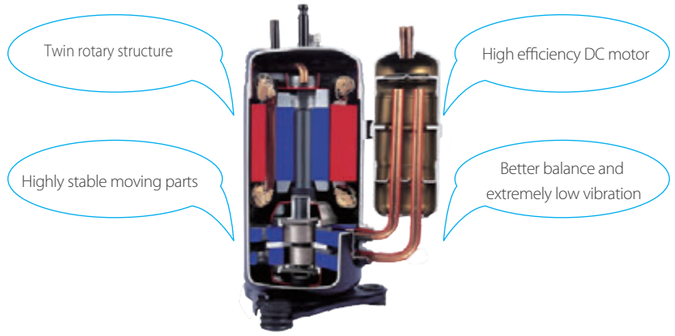


Note: For cooling mode, if outlet water temperature is less than 5°C, anti-freeze liquid is needed. 0°C water temperature can be reached by changing DIP switch setting.

High quality components

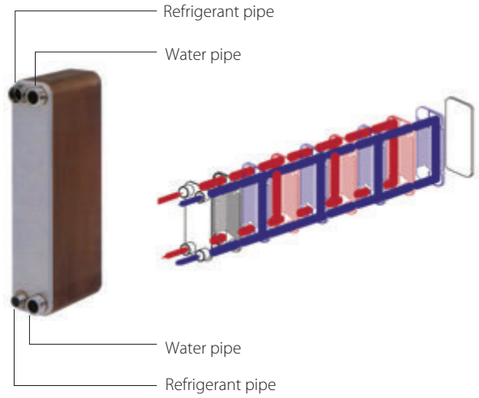
DC Inverter compressor

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



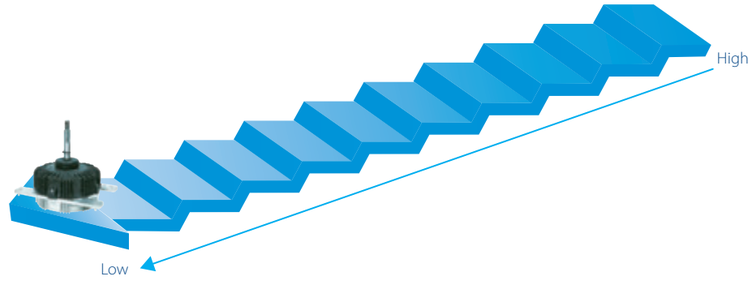
High efficiency plate heat exchanger

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



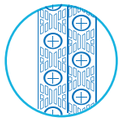
DC fan motors

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



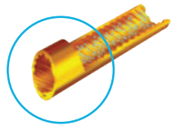
High performance heat exchanger

Enlarge heat-exchanging area



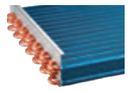
Fin

Enhance heat transfer



Inner-threaded pipe

High efficiency



Fin + inner-threaded pipes

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

Heat exchanger aluminum foil

> Standard products:
200h of neutral salt mist

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

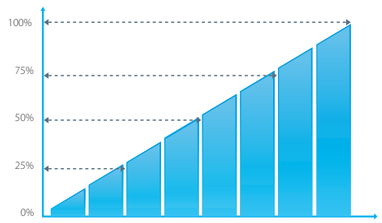
Heat exchanger copper pipe

> Standard products:
24h of neutral salt mist

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

Precise flow control

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

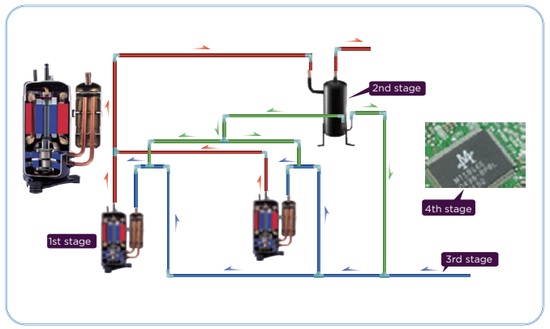


Advanced technology

Precise Oil Control Technology

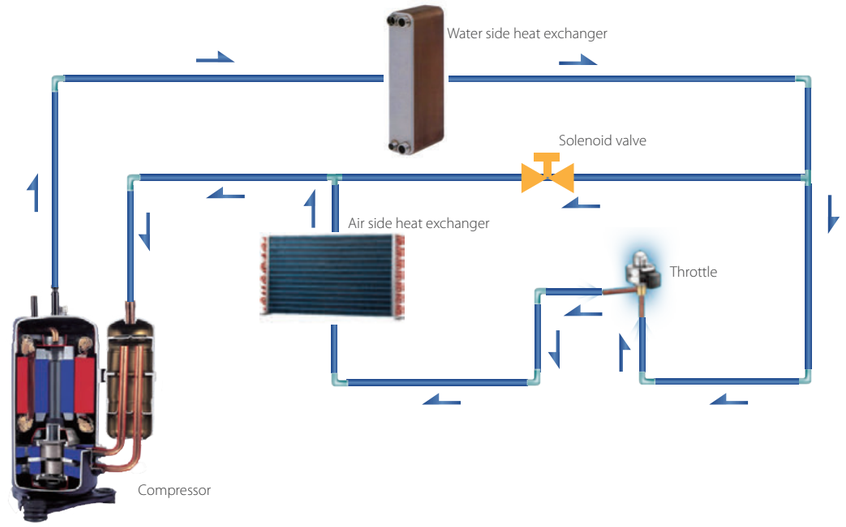
Four stages of oil control technology ensure all outdoor compressor oil is always kept at a safe level, eliminating any compressor oil shortage problems.

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



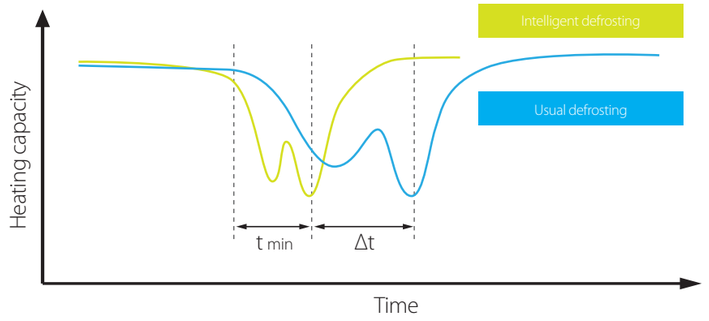
Spray liquid cooling control

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



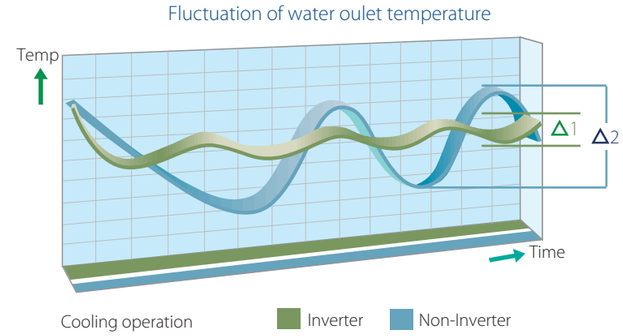
Intelligent defrosting technology

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



Rapid cooling or heating

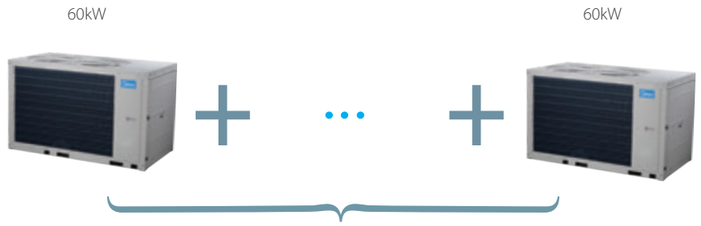
The DC inverter compressor reaches full capacity rapidly, providing quicker cooling or heating with lower levels of temperature fluctuation during the cooling/heating operation.



Flexibility

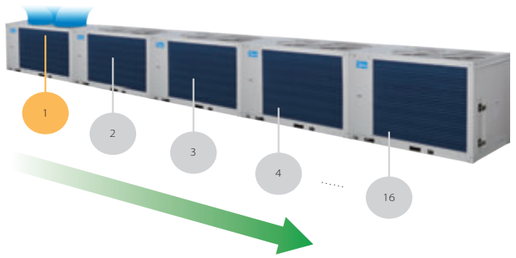
Modular design

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

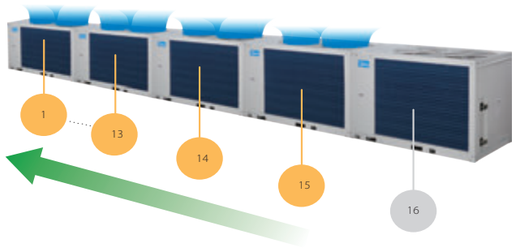


Alternative cycle duty operation

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



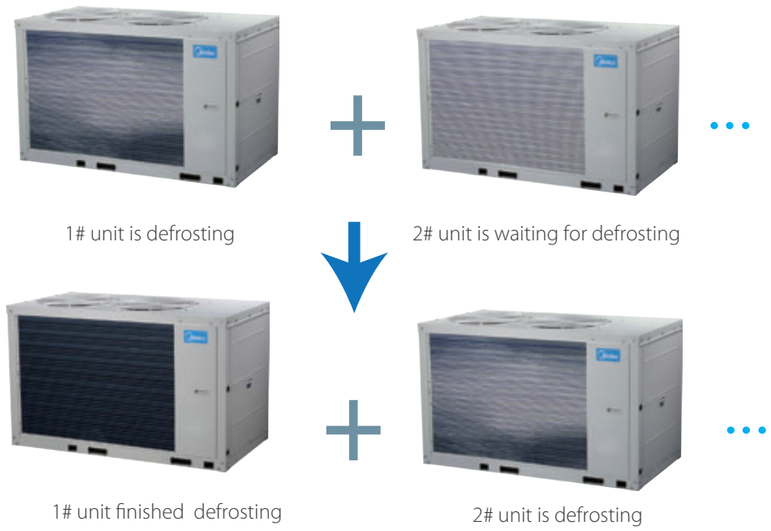
Loading in sequence



Offloading in sequence

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.



1# unit is defrosting

2# unit is waiting for defrosting

1# unit finished defrosting

2# unit is defrosting

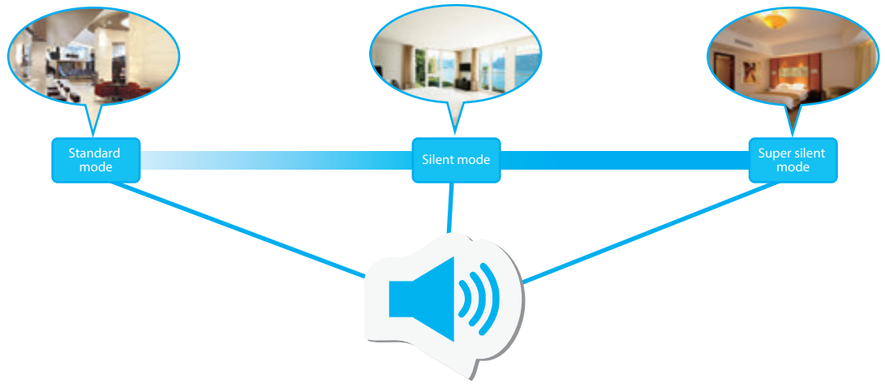
Back-up function

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

Multiple function

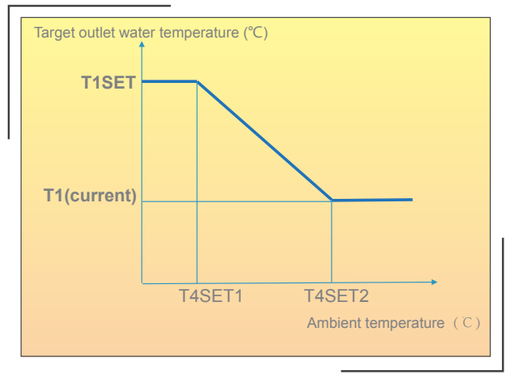
Multiple slient modes

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



Weather temperature curve

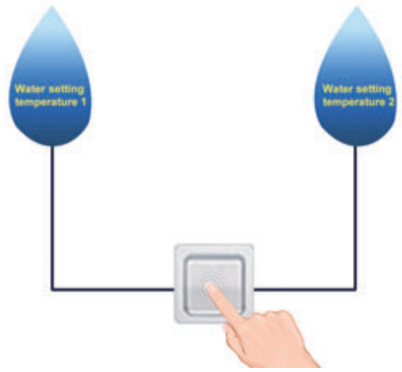
With the help of weather temperature curve function, water temperature will automatically change as outside air temperature changes. When outdoor air temperature increases/decreases, the heating load will decrease/increase and water temperature will decrease/increase automatically. When outdoor air temperature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



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

One-touch water temperature switching

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



Anti-corrosion Protection

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

Fan motor

Standard products:
72h of neutral salt mist

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

Painted sheet metal

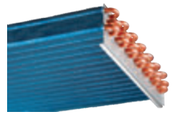
Standard products:
500h of neutral salt mist
1000h of moisture and heating test
500h of light aging test

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

Screws / bolts / gaskets

Standard products:
300h of neutral salt mist

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



Heat exchanger aluminum foil

Standard products:
200h of neutral salt mist

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

Heat exchanger copper pipe

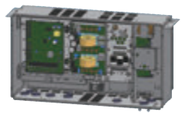
Standard products:
24h of neutral salt mist

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

Electric control box case

Standard products:
96h of neutral salt mist

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



Anti-snow mode

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

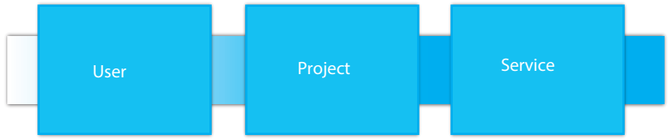
Convenient control

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

Model	KJRM-120H/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

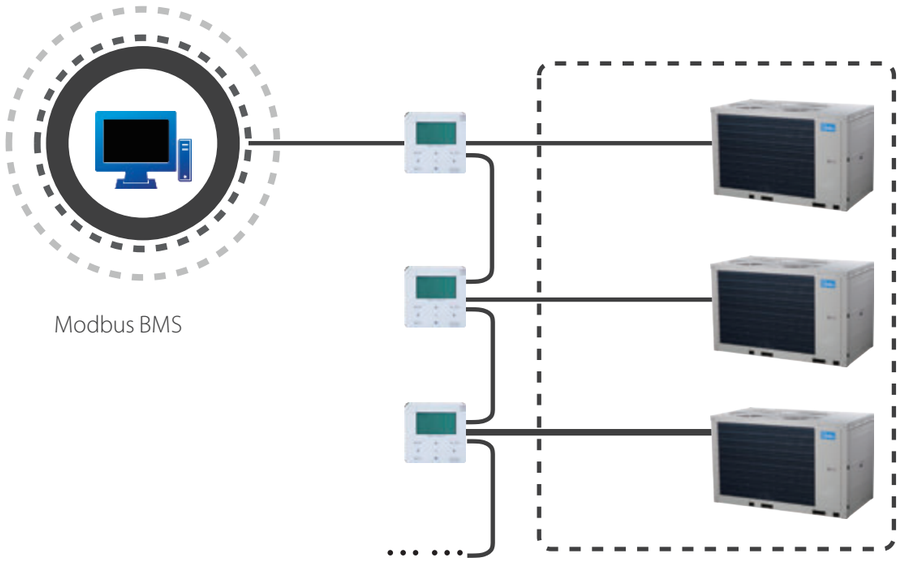
Three different user levels ensure users can easily access control functions and allow engineers convenient access to operating parameters.



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.

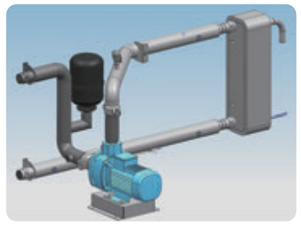
Maximum 16 units

Multilingual wired controller using Modbus communication protocol



Easy installation

Built-in components



Hydraulic module
(customization option)

Water flow switch

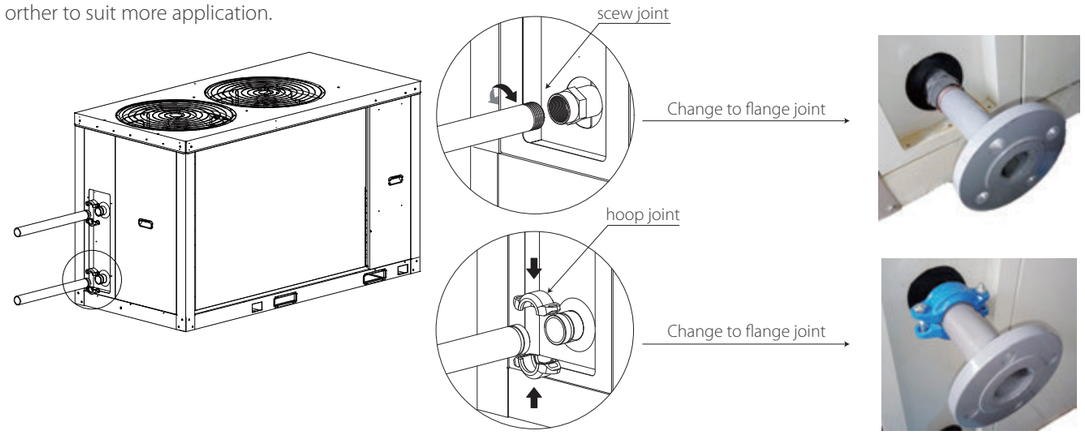
Wired controller

Air purge valve

Pressure relief valve

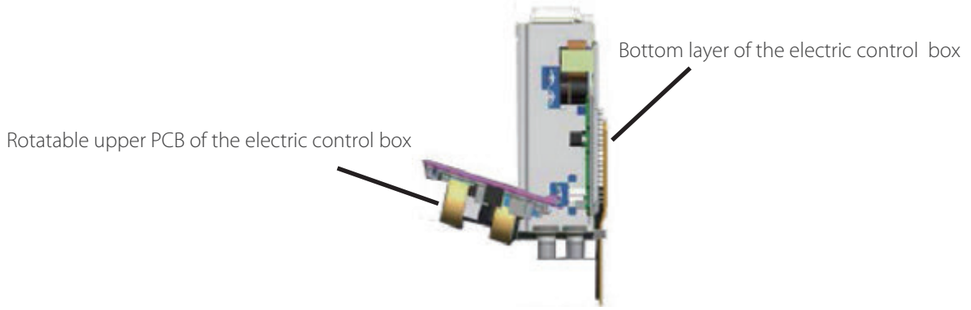
Water pipe connection

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



Rotatable electric control box with explosion-proof design

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



Specifications

Model			MC-SU30-RN8L	MC-SU30M-RN8L	MC-SU60-RN8L	MC-SU60M-RN8L
Power supply		V/Ph/Hz	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50
Cooling[1]	Capacity	kW	27.5	27.5	55	55
	Rated input	kW	10.3	11	21.5	23
	EER		2.67	2.5	2.56	2.39
Heating[2]	Capacity	kW	32	32	62	62
	Rated input	kW	10	10.7	20	21.5
	COP		3.2	2.99	3.1	2.88
Seasonal space heating energy efficiency class			A++	A++	A++	A+
Compressor		Type	Rotary	Rotary	Rotary	Rotary
		Quantity	1	1	2	2
Air side heat exchanger		Type	Finned tube	Finned tube	Finned tube	Finned tube
Fan motor	Type		DC motor	DC motor	DC motor	DC motor
	Quantity		1	1	2	2
Water side heat exchanger	Type		Plate	Plate	Plate	Plate
Pump head(For hydronic module)		m	/	15	/	15
Refrigerant system	Type		R32	R32	R32	R32
	Charged volume[3]	kg	7.9	7.9	14	14
Throttle		Type	EXV	EXV	EXV + Capillary	EXV + Capillary
Sound power level		dB(A)	78	78	86	86
Net dimensions (W×H×D)		mm	1870×1175×1000	1870×1175×1000	2220×1325×1055	2220×1325×1055
Packed dimensions (W×H×D)		mm	1910×1225×1035	1910×1225×1035	2250×1370×1090	2250×1370×1090
Net/Gross weight		kg	300/310	315/325	480/490	515/525
Water pipe connections		mm	DN40	DN40	DN50	DN50
Ambient temperature range	Cooling	℃	-10 to 43	-10 to 43	-10 to 43	-10 to 43
	Heating	℃	-14 to 30	-14 to 30	-14 to 30	-14 to 30
LWT setting range	Cooling	℃	0 to 20	0 to 20	0 to 20	0 to 20
	Heating	℃	25 to 54	25 to 54	25 to 54	25 to 54

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

Aqua thermal Series

Product lineup

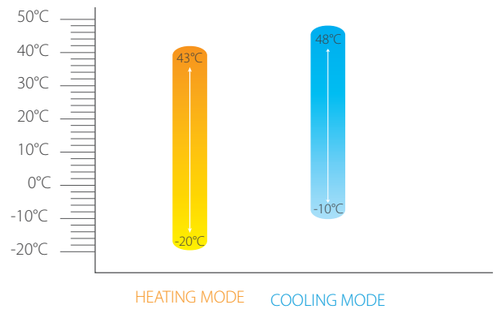
Capacity(kW)	75	90	140	180
Appearance				
380-415V/3Ph/50Hz	●	●	●	●

Overview

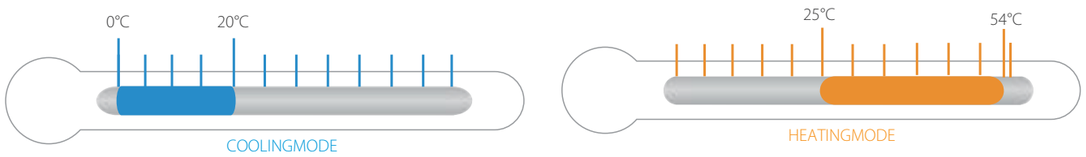
Refrigerant R32 75% less impact on global warming;
DC Inverter technology allows precise consumption on real load;
One-stop solution for heating, cooling and domestic hot water(Customization);
Maximum water temperature up to 60℃ for DHW mode(Customization);
Minimum operation ambient temperature down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

DC Inverter -10°C 60°C R32 A++

Ambient temperature



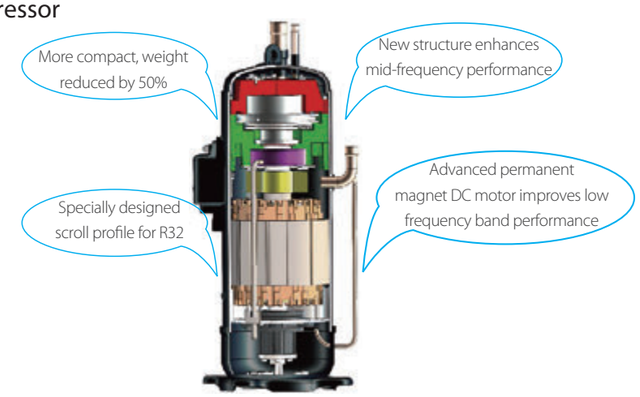
Outlet water temperature



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

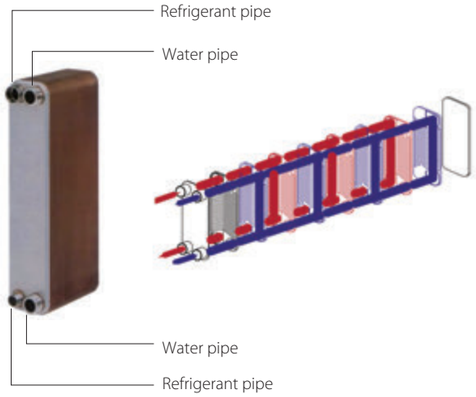
High quality components

DC Inverter compressor



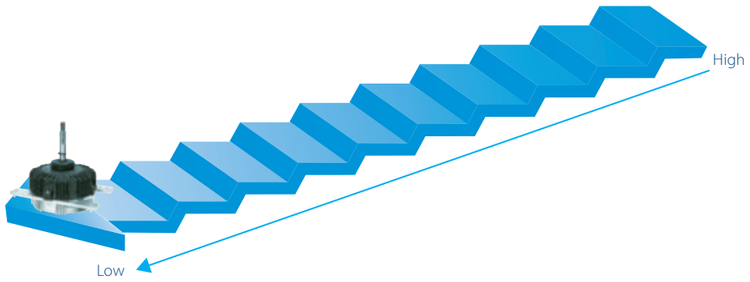
High efficiency plate heat exchanger

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



DC fan motors

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

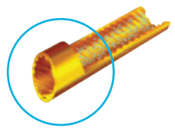


High performance heat exchanger

Enlarge heat-exchanging area

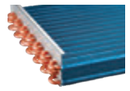
Fin

Enhance heat transfer



Inner-threaded pipe

High efficiency



Fin + inner-threaded pipes

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

Heat exchanger aluminum foil
> Standard products:
200h of neutral salt mist

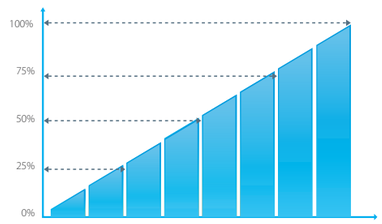
> Heavy anti-corrosion products:
1000h of neutral salt mist
140h of acid salt mis

Heat exchanger copper pipe
> Standard products:
24h of neutral salt mist

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

Precise flow control

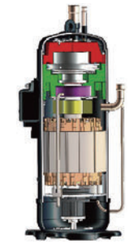
Patented liquid distribution components maximize performance and minimize impact of defrosting operation. 500-step EXV with capillary tube allows stable and accurate gas flow control. Fast response results in higher efficiency and improved reliability.



Advanced technology

Enhanced Vapor Injection (EVI) Compressor

Thanks to the vapor injection DC inverter compressor, unit can run heating mode stably down to -20℃, and the heating capacity can be improved greatly.



EVI compressor

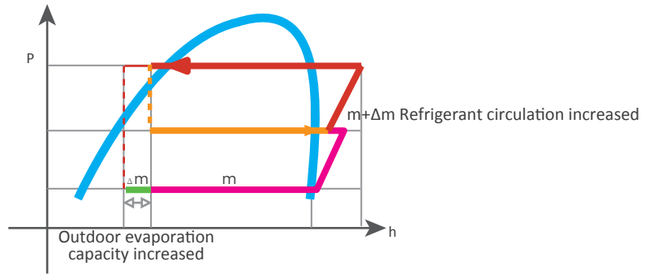
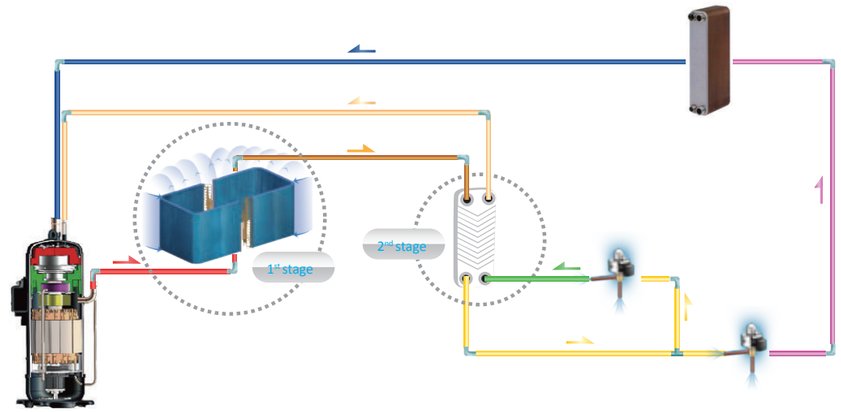


Plate Heat Exchanger Subcooling

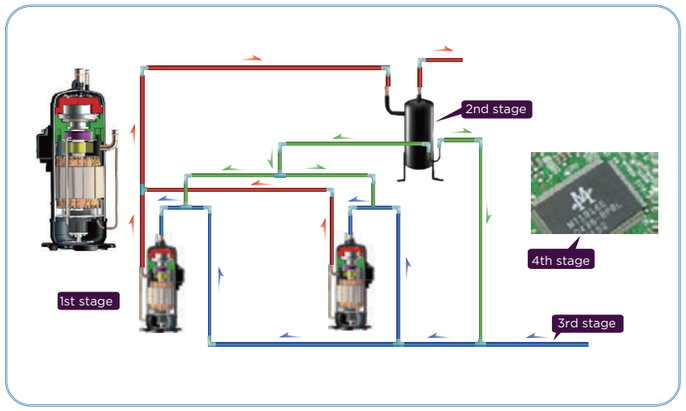
Plate Heat Exchanger as a secondary intercooler boosts up refrigerant subcooling and improves 10% energy efficiency.



Precise Oil Control Technology

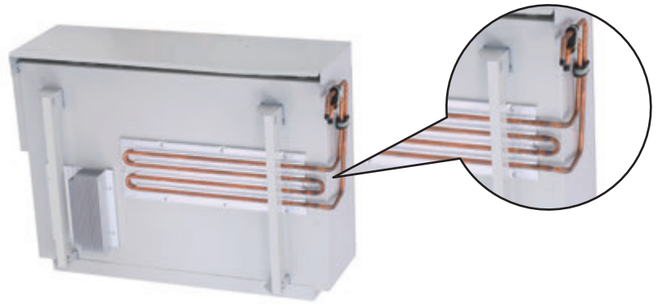
Four stages of oil control technology ensure all outdoor compressor oil is always kept at a safe level, eliminating any compressor oil shortage problems.

- 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.



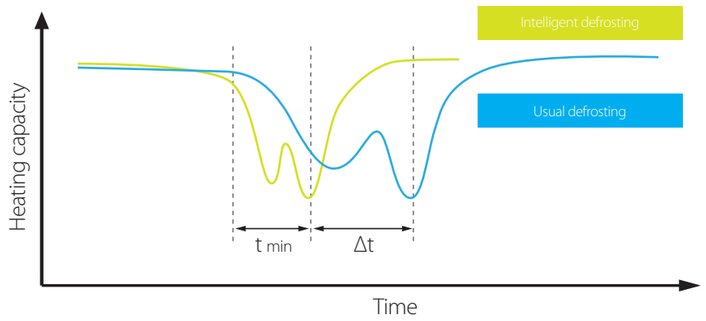
Refrigerant Cooling PCB

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.



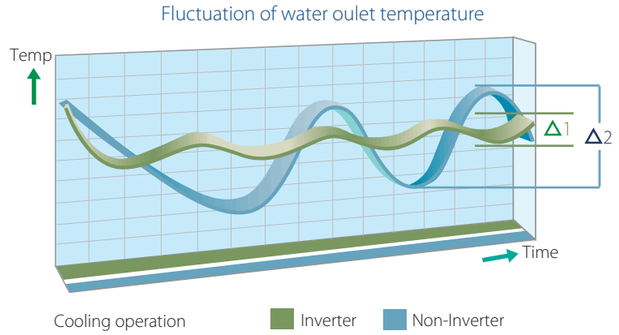
Intelligent defrosting technology

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

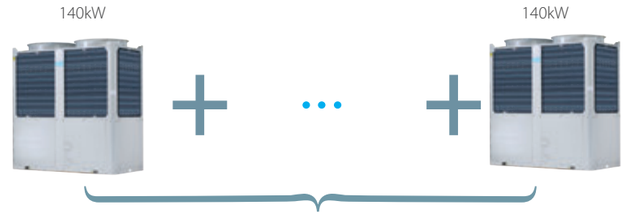
The DC inverter compressor reaches full capacity rapidly, providing quicker cooling or heating with lower levels of temperature fluctuation during the cooling/heating operation.



Flexibility

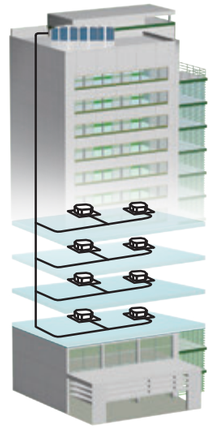
Modular design

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



Space saving and simplified installation

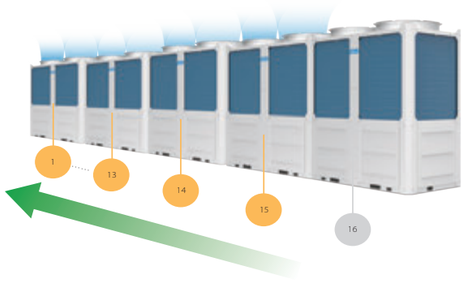
Single unit covers an area of only 1.92m² , which greatly saves lots of space for group control. The hydraulic models (customized) has the water pump components inside the unit, which can save the installation cost and time and make installation easier.



High reliability

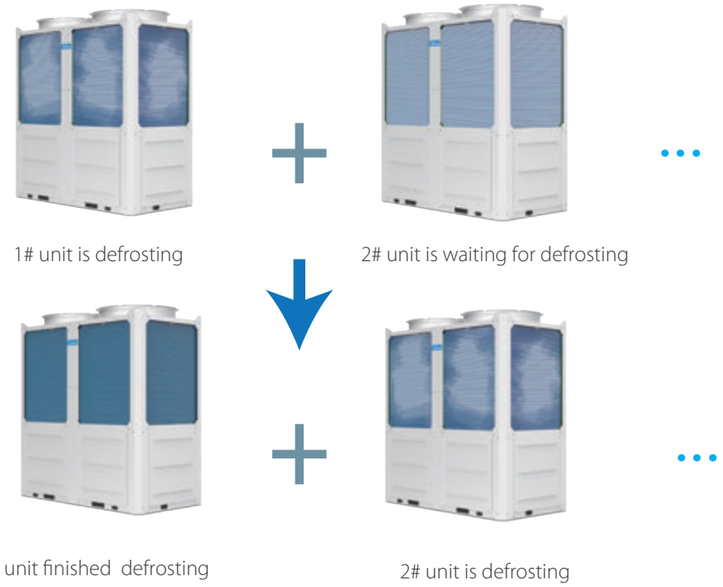
Alternative cycle duty operation

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.



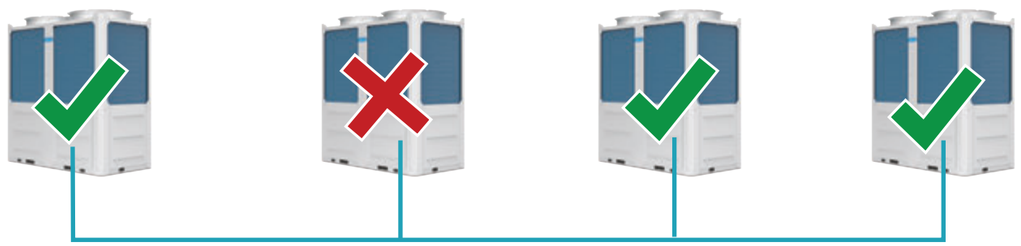
Alternate defrost operation

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



Back-up function

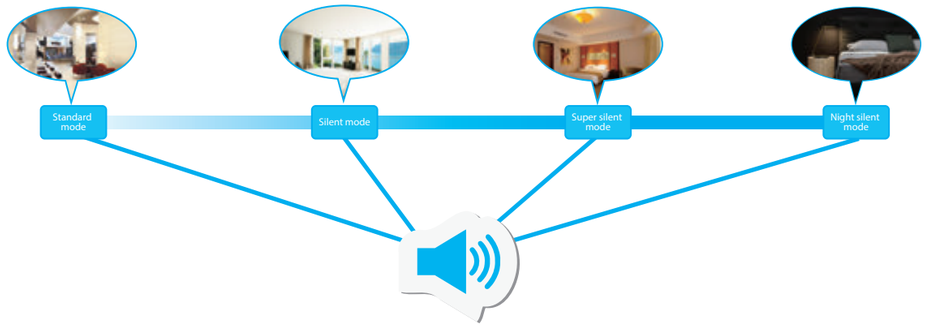
In a combination system, if one unit failed, other units can be back-up instead of the failed one for continuing operation.



Multiple function

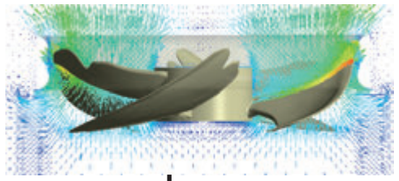
Multiple slient modes

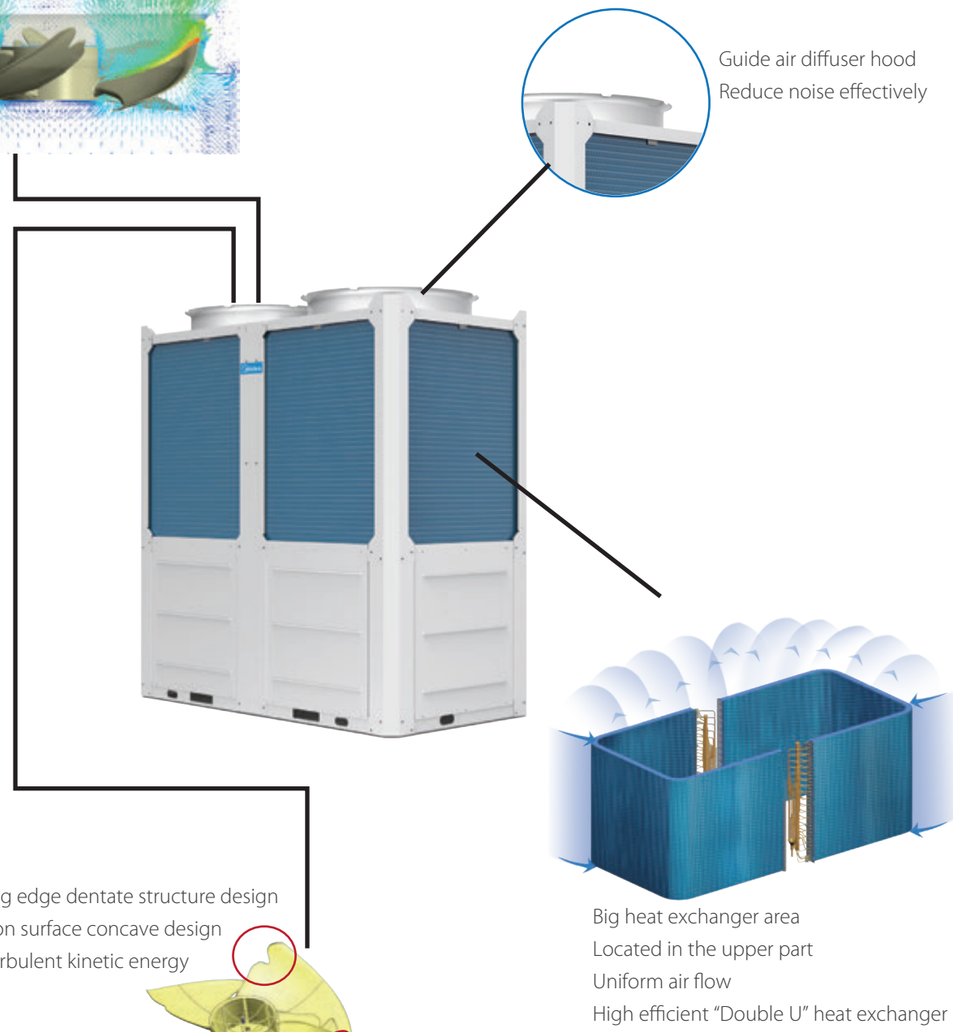
Different silent modes enable noise reduction to suit time of day and ambient noise levels.



Multiple optimization design makes noise reduction

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





USB function

Convenient program upgrade

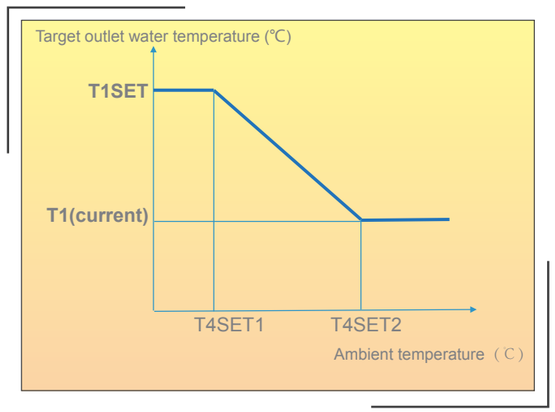
No need to carry any other heavy equipments but only USB can realize program upgrade of indoor unit and outdoor unit.

7 Levels of energy saving

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

Weather temperature curve

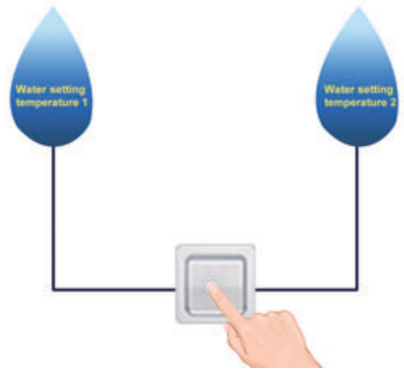
With the help of Weather temperature curve function, water temperature will automatically change as outside air temperature changes. When outdoor air temperature increases/decreases, the heating load will decrease/increase and water temperature will decrease/increase automatically. When outdoor air temperature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



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

One-touch water temperature switching

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



Anti-corrosion Protection

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

Fan motor

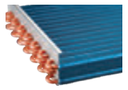
Standard products:
72h of neutral salt mist

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

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



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

Screws / bolts / gaskets

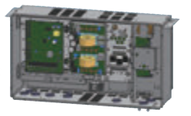
Standard products:
300h of neutral salt mist

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

Electric control box case

Standard products:
96h of neutral salt mist

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



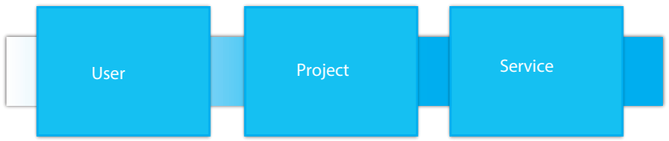
Convenient control

Touch key wired controller as standard accessory to control the chillers

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

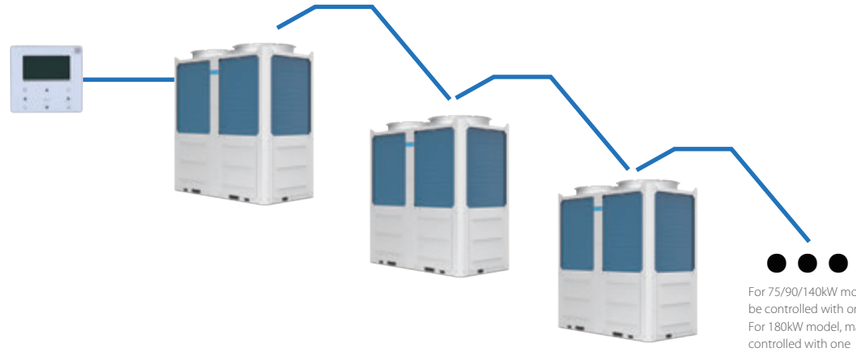
Three user levels

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



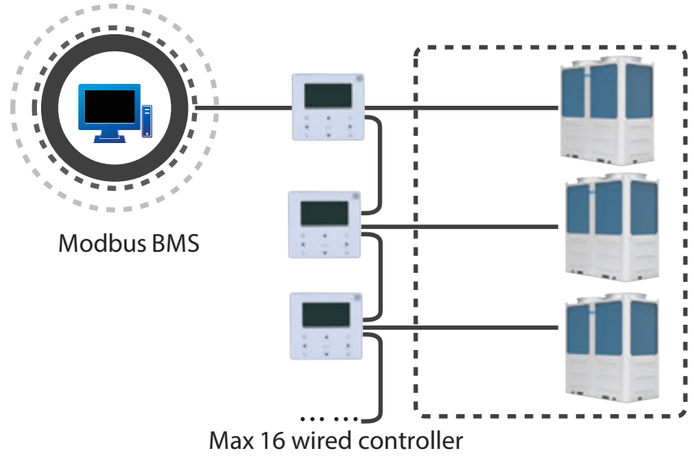
Group control for up to maximum 16 units with one wired controller

Each unit can connect with one controller for setting and one controller for monitoring.



For 75/90/140kW model, maximum 16 units can be controlled with one controller
For 180kW model, maximum 8 units can be controlled with one controller

Multilingual wired controller using Modbus communication protocol



Easy installation

Built-in components

Hydraulic module
(customization option)

Water flow switch

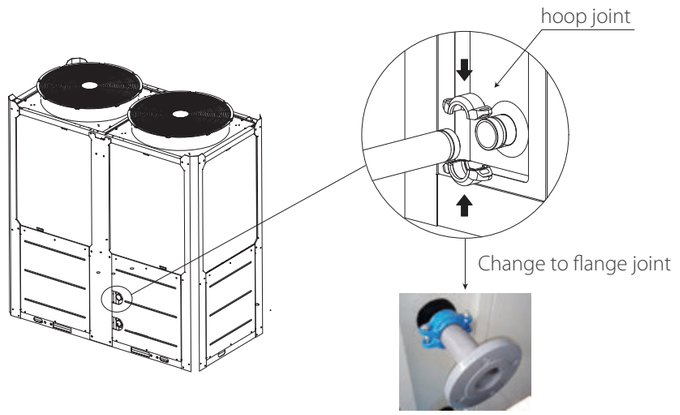
Wired controller

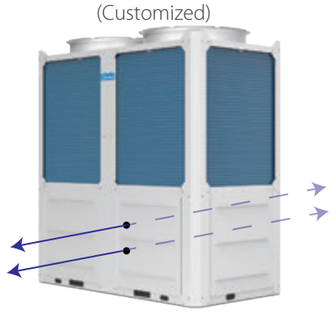
Air purge valve

Pressure relief valve

Water pipe connection

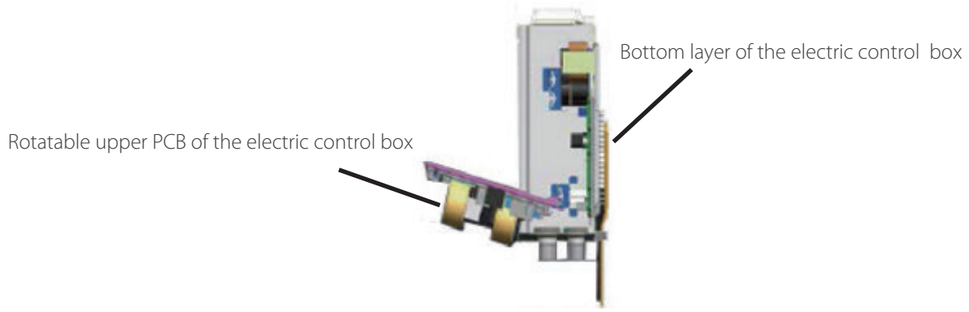
Only water piping installation is needed, no need to install refrigerant piping. Unit uses hoop connection which can be changed to flange connection by using Midea accessory in orther to suit more application.



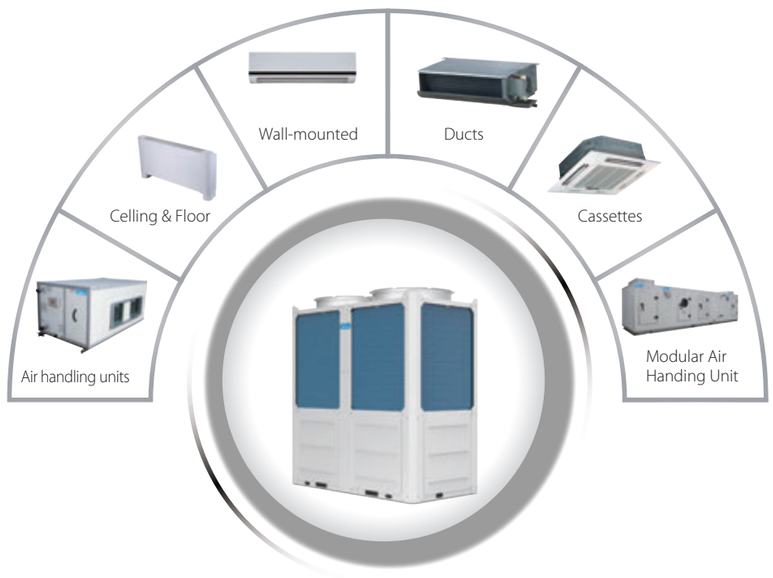


Rotatable electric control box(Only for 90/180kW model)

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
Seasonal space heating energy efficiency class (LWT at 35℃)			A++	A++	A++	A+
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[(10.5+5.5)*2]
Throttle		Type	EXV	EXV	EXV	EXV
Sound power level		dB	86	83	92	92
Net dimensions (W×H×D)		mm	2000*1770*960	2200*2315*1135	2220*2300*1135	2752*2413*2220
Packing dimensions (W×H×D)		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	℃	-10~48	-10 ~ 48	-10~48	-10~48
	Heating	℃	-20~43	-20 ~ 43	-20~43	-20~43
	DHW(Customization)	℃	-20~43	-20 ~ 43	-20~43	-20~43
LWT setting range	Cooling	℃	0~20	0 ~ 20	0~20	0~20
	Heating	℃	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°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 0C, anti-freeze liquid is needed.

Aqua Tempo Super Series

Product Lineup

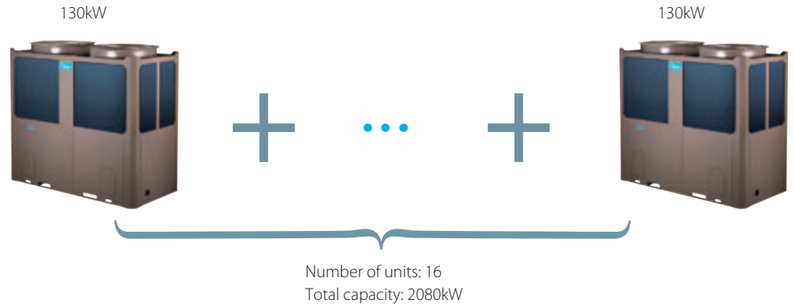
Capacity (kW)	35	65	80	130
Appearance / Series				
SS-LA	●	●	●	●

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

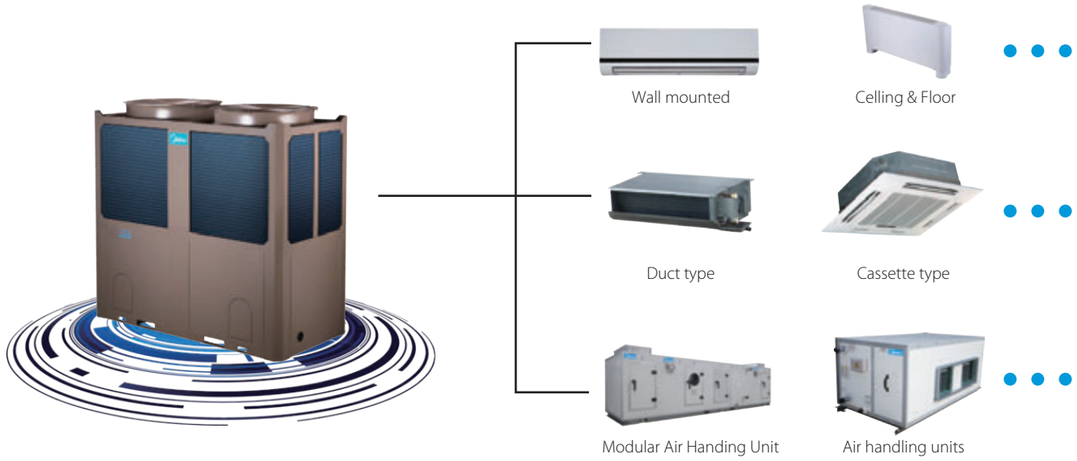
Features

Wide application range

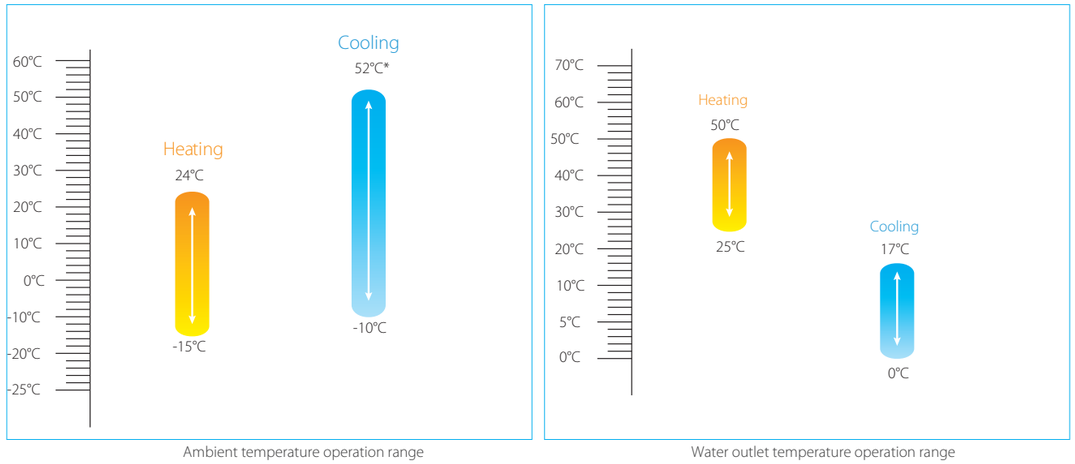
- Aqua Tempo Super chillers with cooling capacity ranging from 35kW to130kW, combination capacity can be up to 2080kW.



- 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

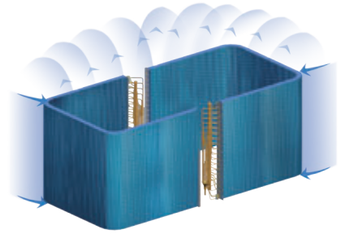


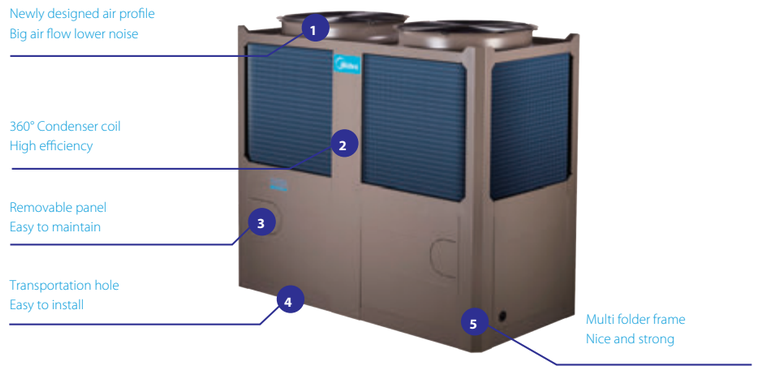
*It is the maximum range that can be covered by the series. For specific models' range, please refer to the specifications.

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.

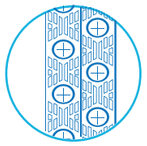




H shape condenser uses inner grooved copper tube and hydrophilic aluminum foil, greatly improve the heat exchange efficiency.

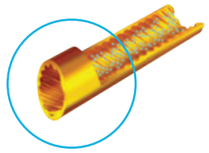
● High performance heat exchanger

Enlarge heat-exchanging area



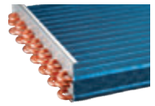
Fin

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

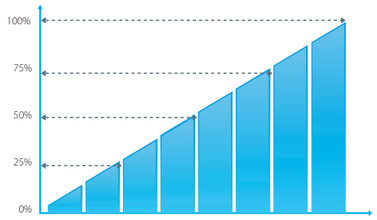
> Heavy anti-corrosion products:
1000h of neutral salt mist
140h of acid salt mis

Heat exchanger copper pipe
> Standard products:
24h of neutral salt mist

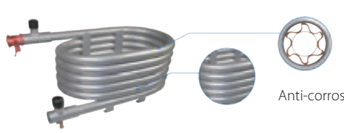
> Heavy anti-corrosion products:
150h of neutral salt mist

● 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.

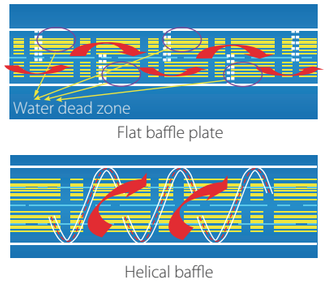


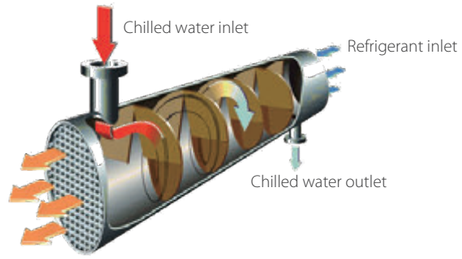
● Tube-in-tube & shell-tube heat exchanger



Inner grooved copper pipe, increased area of heat exchange, improved efficiency.

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





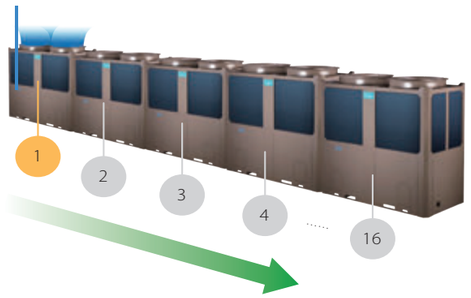
For shell-tube heat exchanger, the module adopts the new helical baffle design to avoid the rectangular place of water dead zone, greatly improve the heat exchange efficiency.

High reliability

● Alternative cycle duty operation

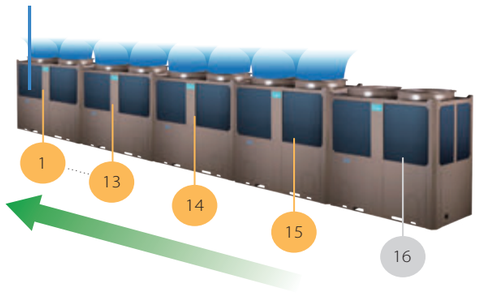
In one combination module, all slave units operate as alternative in cycle duty to keep equal running time, realize higher stability, better reliability and longer lifespan.
For example, 16 modules combination, no.1 is master unit, others are slave units.

Master unit



Loading in sequence

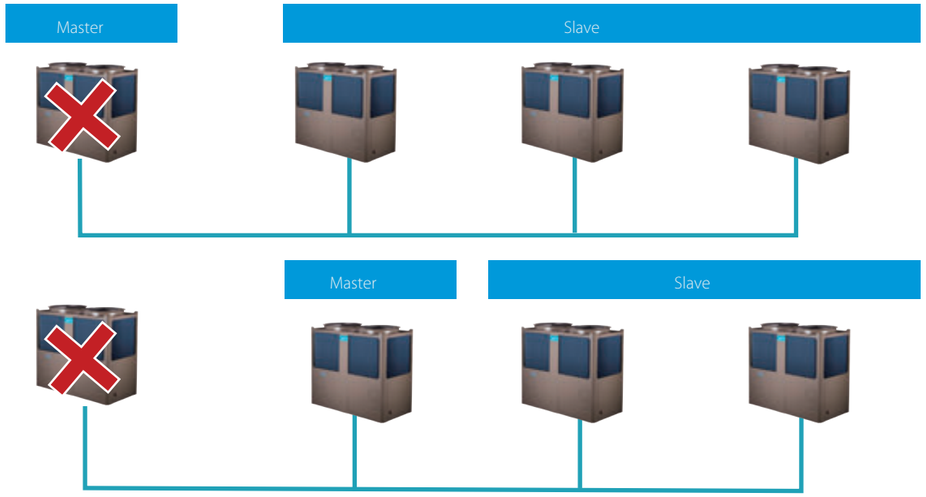
Master unit



Offloading in sequence

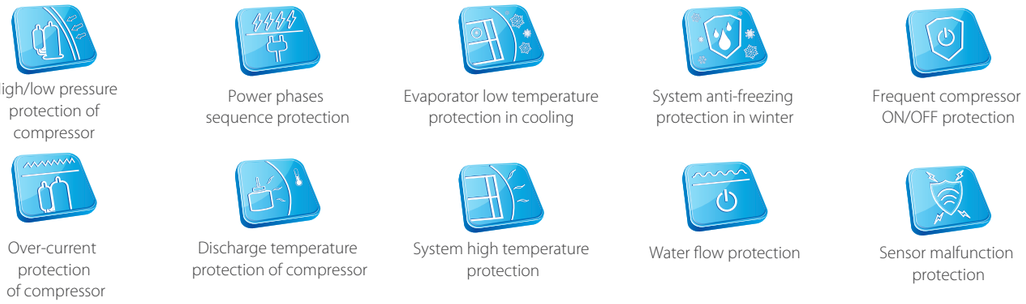
● Back-up functions

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



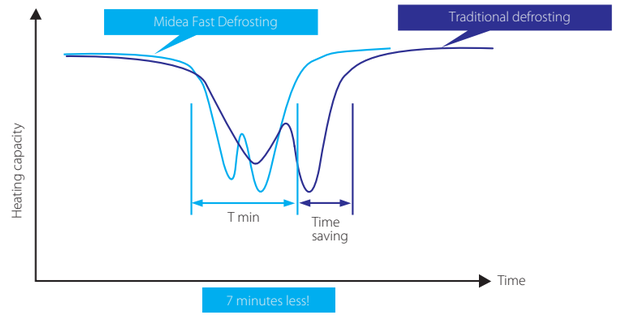
● **Reliable protections**

Multiple protections are adopted to ensure system stable running.



● **Intelligent defrosting technology**

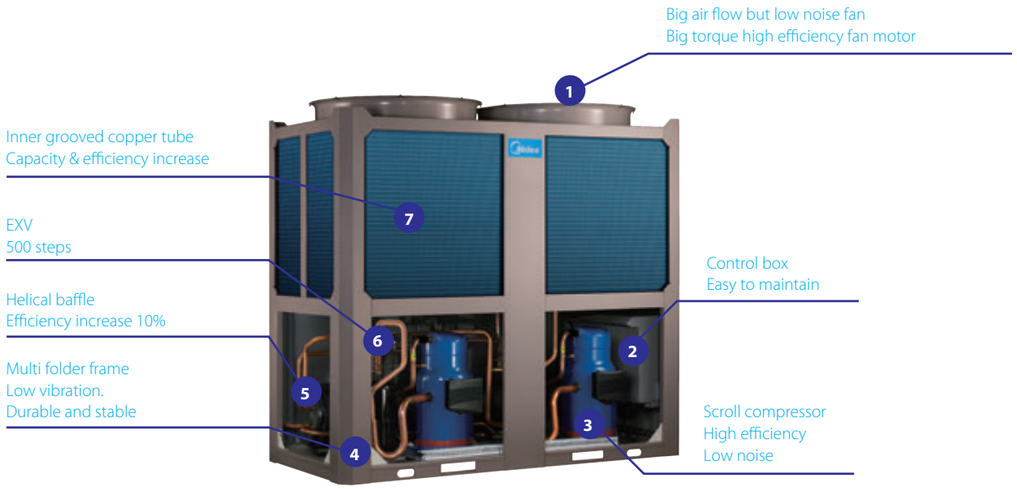
Model alternative defrosting technology ensures little fluctuation on water temperature.
Manual defrosting program is available for service purpose.



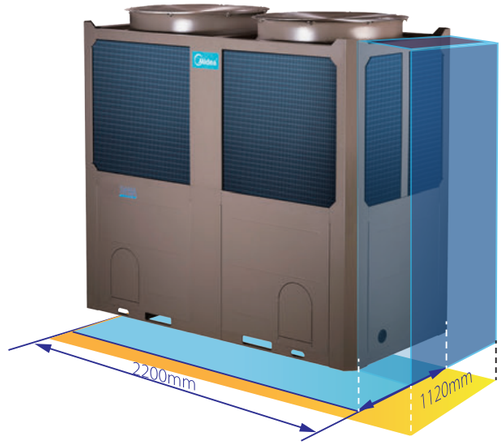
Flexible installation

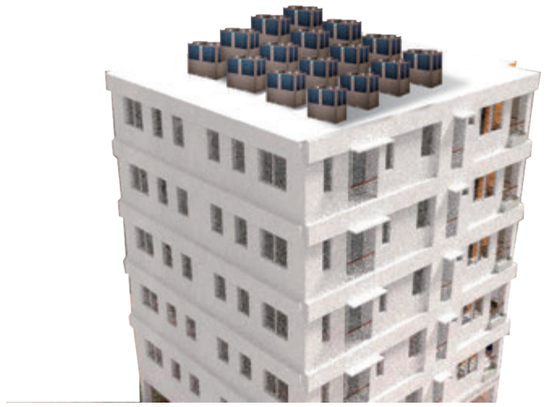
● **Compact structure design**

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



Compact design saves space and transportation cost.





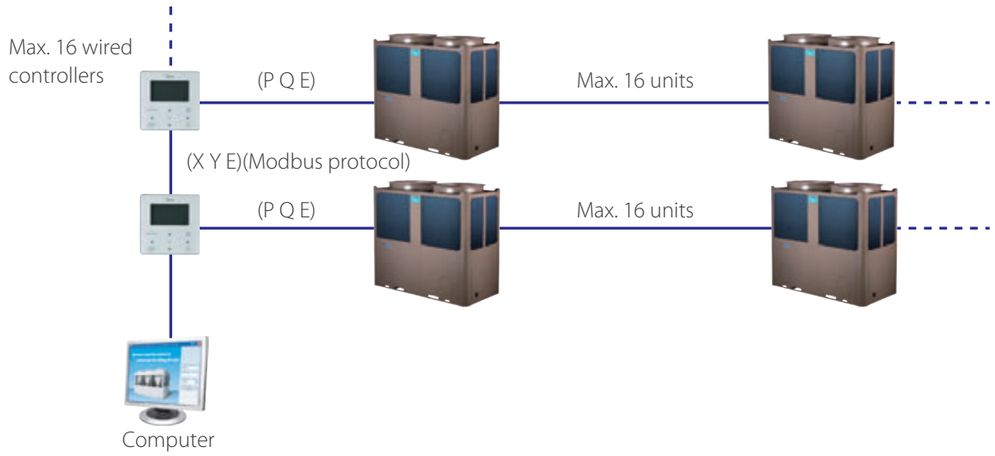
Easy control

● 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

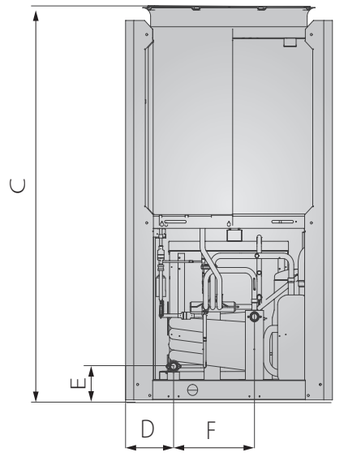
SS-LA series

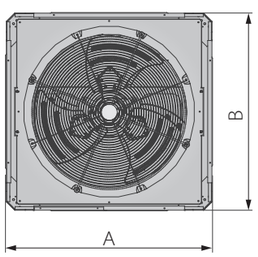
Model			MC-SS35-RN1L-B	MC-SS65/RN1L	MC-SS80/RN1L	MC-SS130/RN1L
Series			SS-LA	SS-LA	SS-LA	SS-LA
Power supply		V/Ph/Hz	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50
Cooling[1]	Capacity	kW	35	65	80	130
	Input	kW	11.5	20.4	25.8	42.3
	EER		3.04	3.19	3.10	3.07
Heating[2]	Capacity	kW	37	69	85	138
	Input	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(D×H×W)		mm	1,020×1,770×980	2,000×1,770×960	2,000×1,770×960	2,200×2,060×1,120
Packing dimension(D×H×W)		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

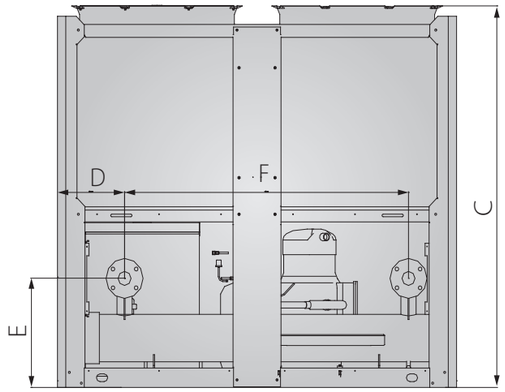
Dimensions (Unit:mm)

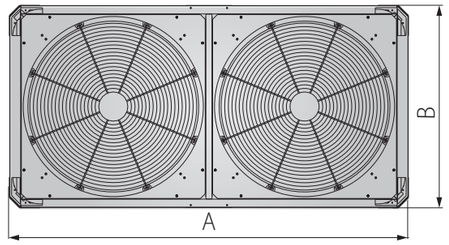
MC-SS35-RN1L-B



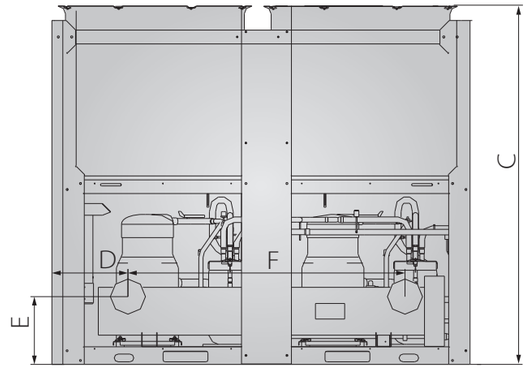


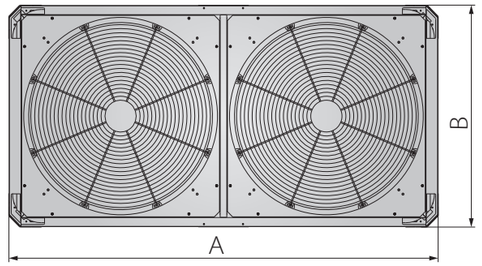
MC-SS65/RN1L
MC-SS80/RN1L





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

Product Lineup

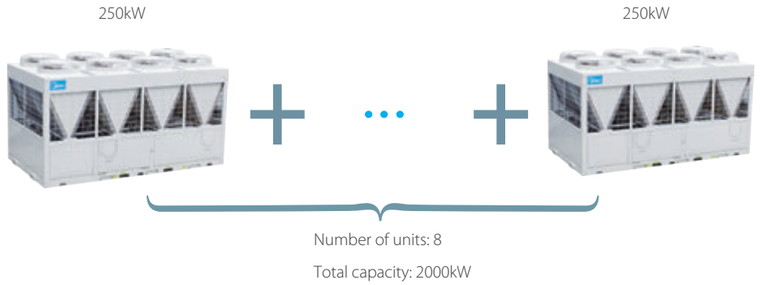
Series	Power supply					
PS	380V/3N/50Hz	60kW	120kW	180kW	/	250kW
PS	220V/3N/60Hz	60kW	120kW	180kW	/	/
PS-LA	380V/3N/50Hz	/	/	/	200kW	250kW

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

Features

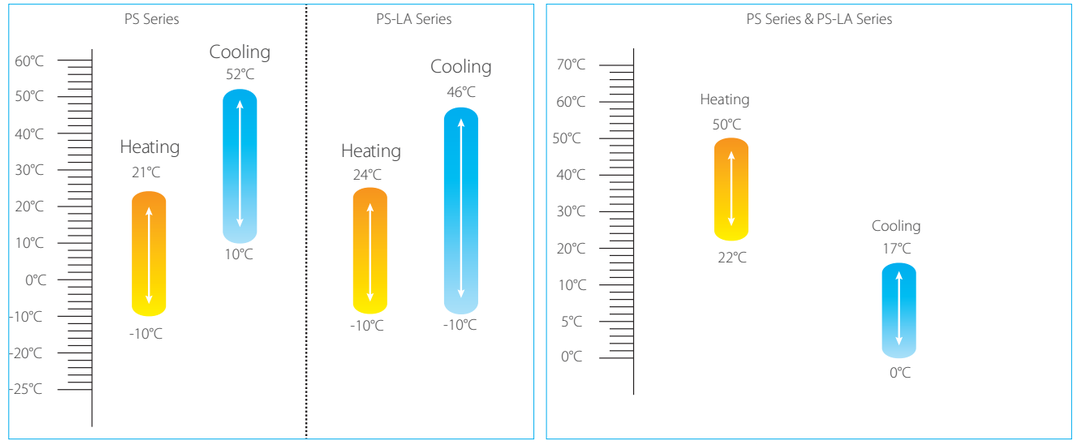
Wide application range

- 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.

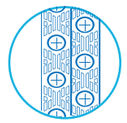
- Wide ambient temperature and water outlet temperature operation ranges



Advanced technology

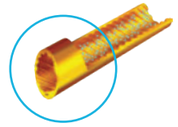
High performance heat exchanger

Enlarge heat-exchanging area



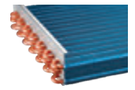
Fin

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.

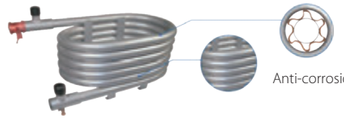
Heat exchanger aluminum foil
> Standard products:
200h of neutral salt mist

> 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

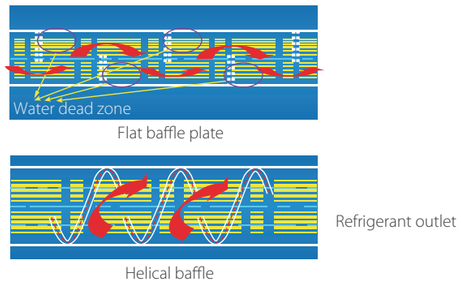
> Heavy anti-corrosion products:
150h of neutral salt mist

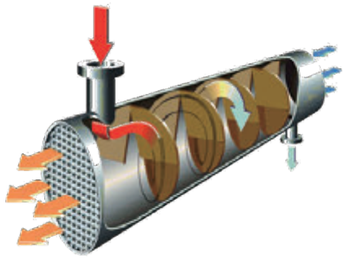
- **Tube-in-tube & shell-tube heat exchanger**



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

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

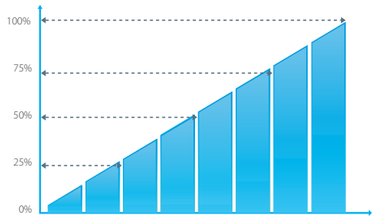




For shell-tube heat exchanger, the module adopts the new helical baffle design to avoid the rectangular place of water dead zone, greatly improve the heat exchange efficiency.

● EXV for more precise flow control

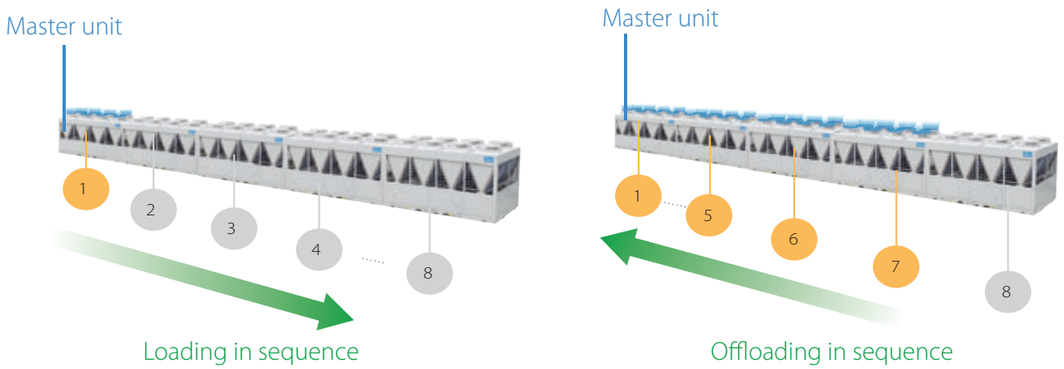
Patented liquid distribution components to maximize performance and minimize defrost impact.
500 steps EXV plus capillary for stable and accurate gas flow control.
Fast response resulting in higher efficiency and improved reliability.



High reliability

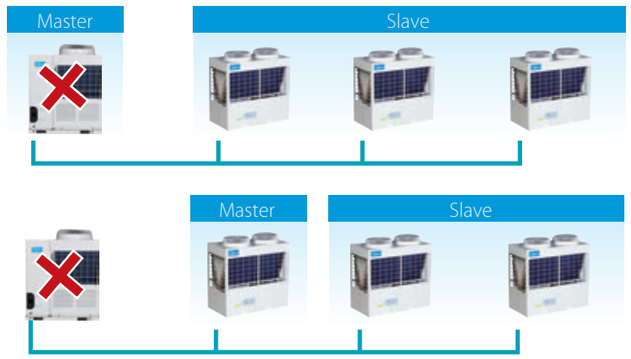
● Alternative cycle duty operation

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.



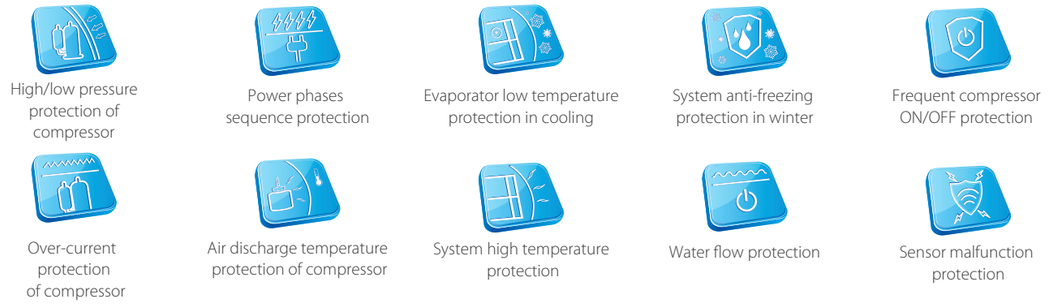
● Back-up functions

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



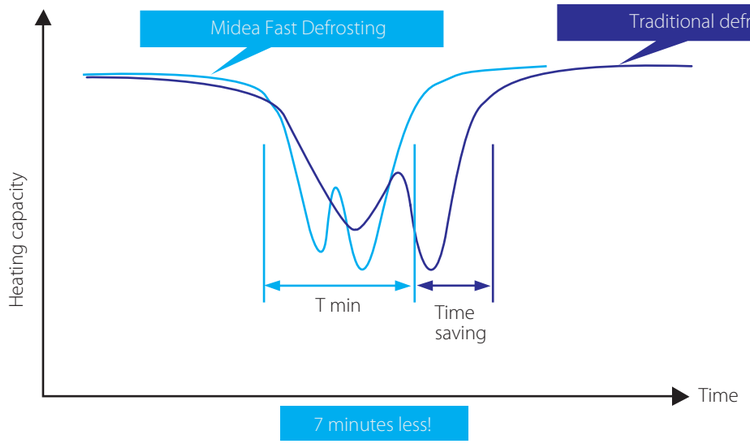
● Reliable protections

Multiple protections are adopted to ensure system stable running.



● Intelligent defrosting technology

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

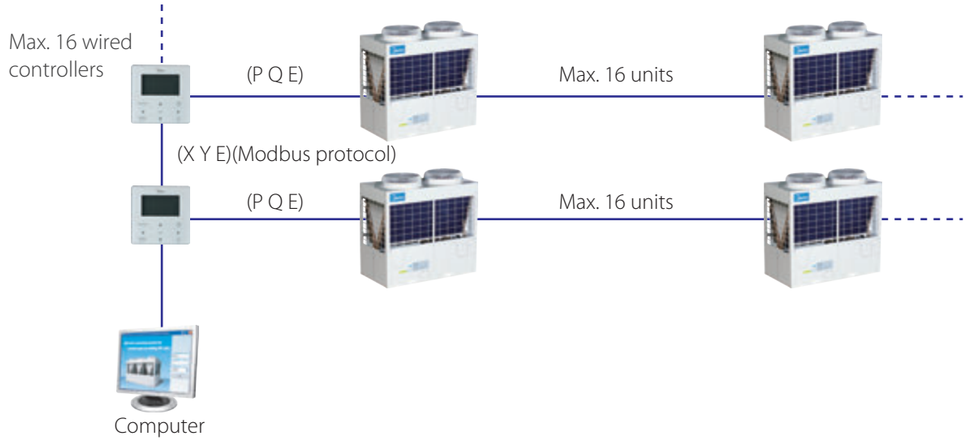


Easy control

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

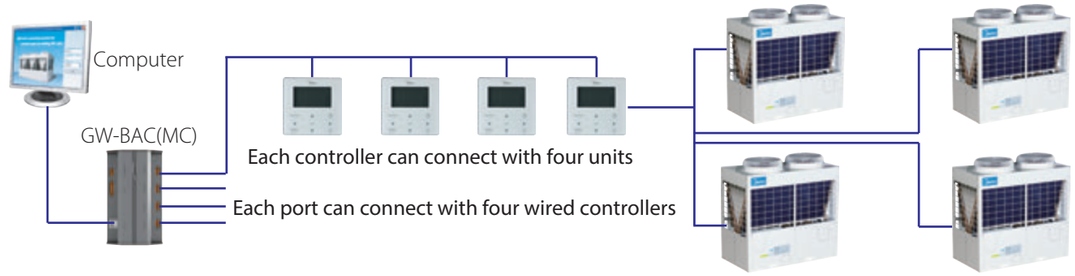
● **Modbus function**

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.



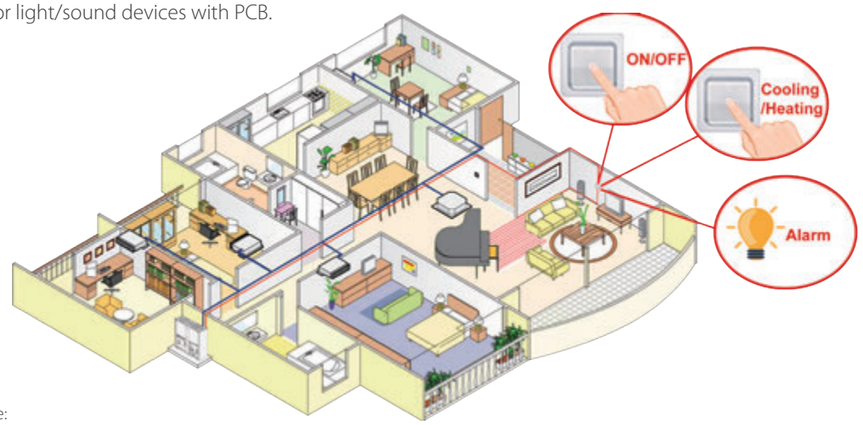
● **Bacnet gateway (Available for 60Hz modular chiller)**

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. Each controller can connect with up to 16 modular chillers.



● 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.

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	2,450/2,600
Water piping connection		mm	DN80	DN100
Maximum combinations			8	8
Ambient temperature range	Cooling	℃	-10~46	-10~46
	Heating	℃	-10~24	-10~24
LWT setting range	Cooling	℃	5~17	5~17
	Heating	℃	40~50	40~50
LWT setting range[4]	Cooling	℃	0~17	0~17
	Heating	℃	22~50	22~50

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.Under the using condition of this function, the system must be added antifreeze agent.

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(D×H×W)		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(D×H×W)		mm	2,090x2,095x985	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.

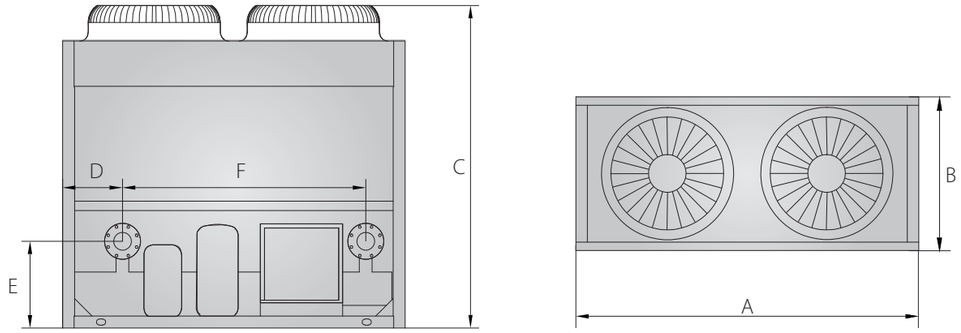
60Hz PS series

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 level4		dB(A)	67	70	74
Unit net dimension(D×H×W)		mm	2,000×1,880×900	2,000×2,080×1,685	2,850×2,110×2,000
Packing dimension(D×H×W)		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)

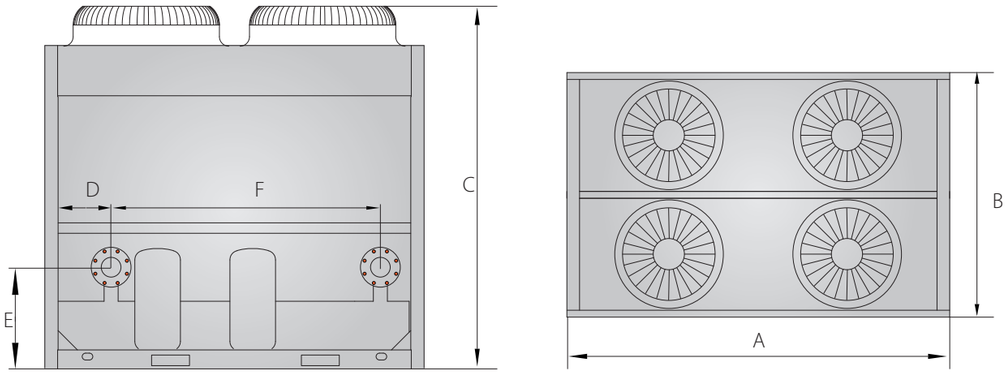
Notes:
1. Water inlet/outlet: 12℃/ 7℃; Outdoor ambient temp. of 35℃ DB.
2. Water inlet/outlet: 12℃ / 7℃; Outdoor ambient temp. of 46℃ DB.
3. Water inlet/outlet: 40℃/ 45℃; Outdoor ambient temp. 7℃ DB/6℃ WB.
4. 1m away in open field.
5. The data is for low water outlet temperature function. Under the using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

Dimensions (Unit:mm)

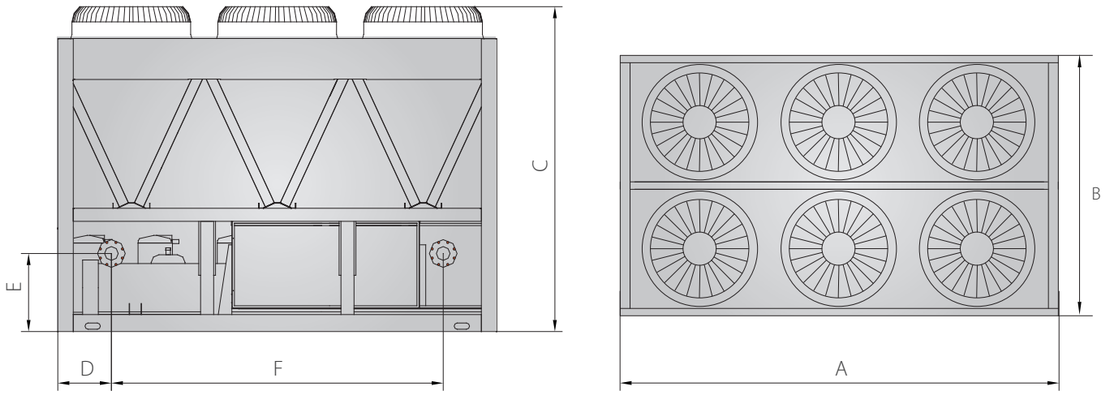
60kW module



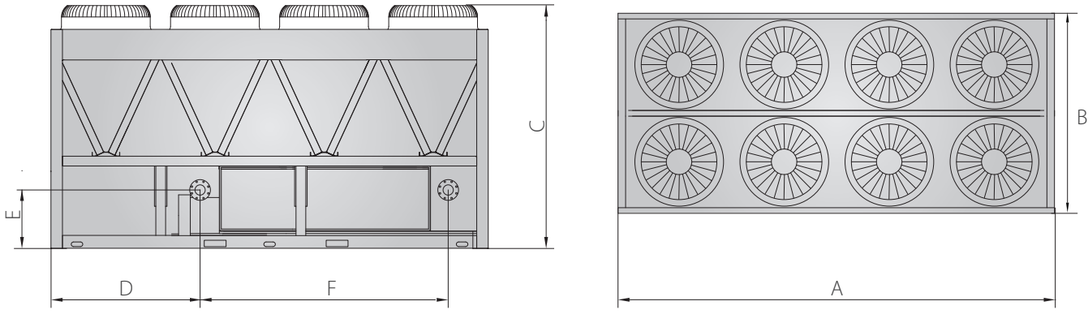
120kW module



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

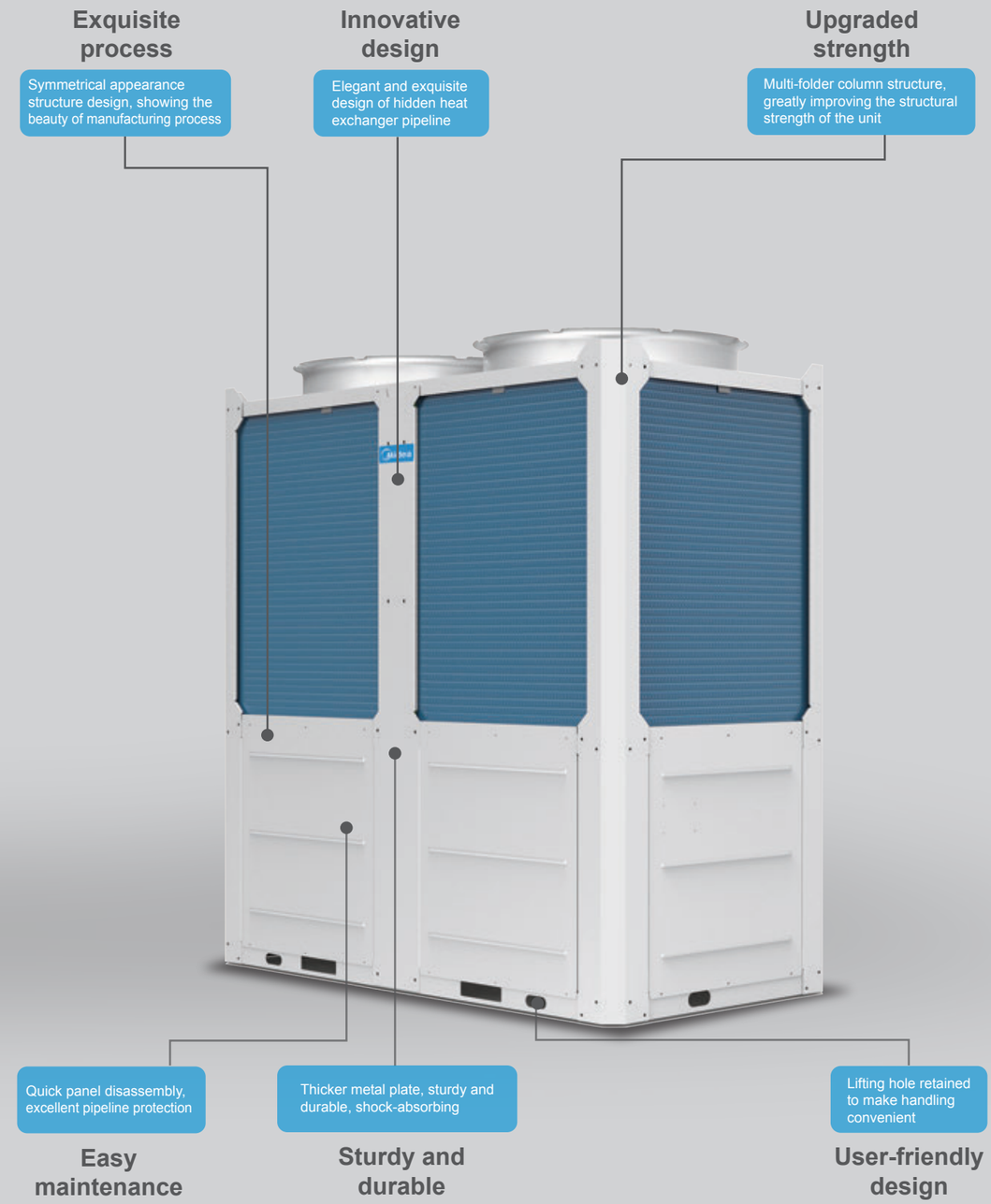
Environment-friendly

Energy-efficient

Stable Performance

Module combination

Smart control



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

M C – S S 65 – R N1

- N1: R410A
- R: 380V 3N~ 50Hz
- 65: Capacity (kW)
- S: Feature code
- S: Platform code
- C: Chiller
- M: Midea

Chiller

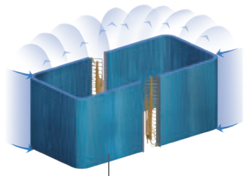
Water pipe

Terminal

Excellent design

Air-side heat exchanger

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

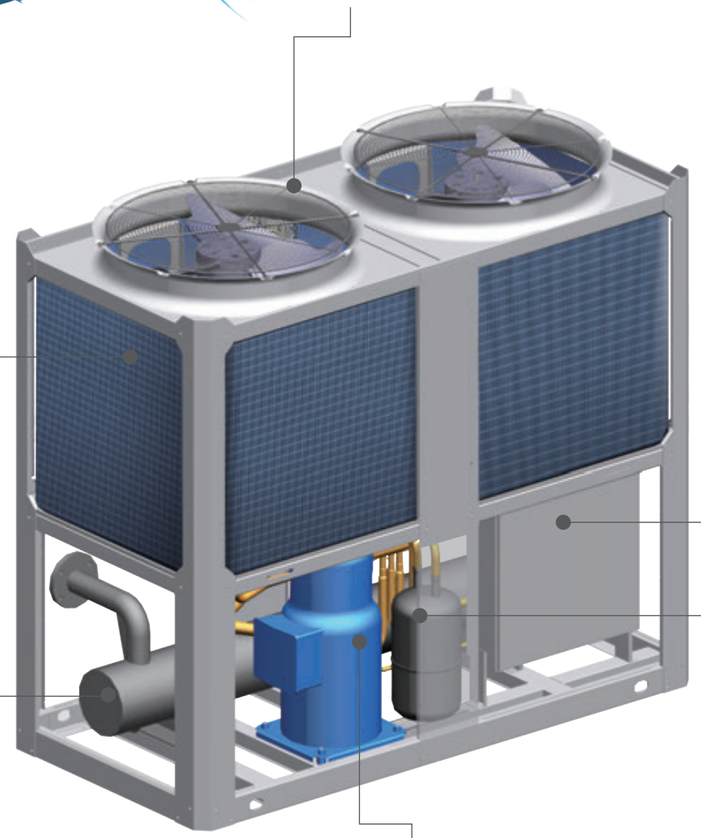


Fan and motor

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

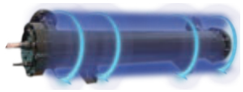
Electric control box

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.

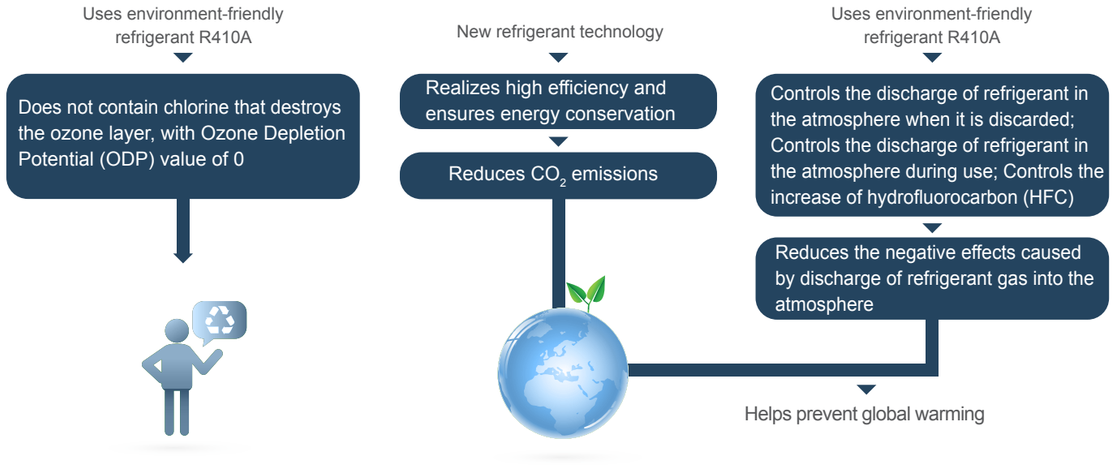
Liquid storage tank

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

Features

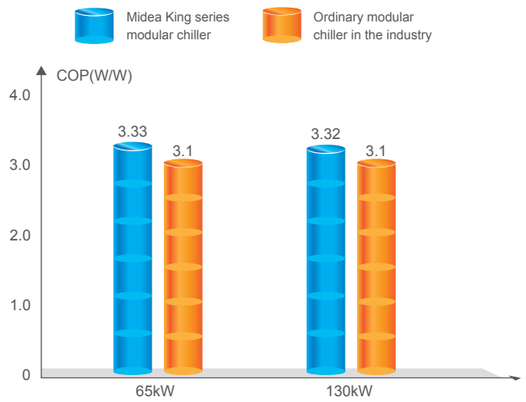
Environment-friendly

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 CO_2 emission.

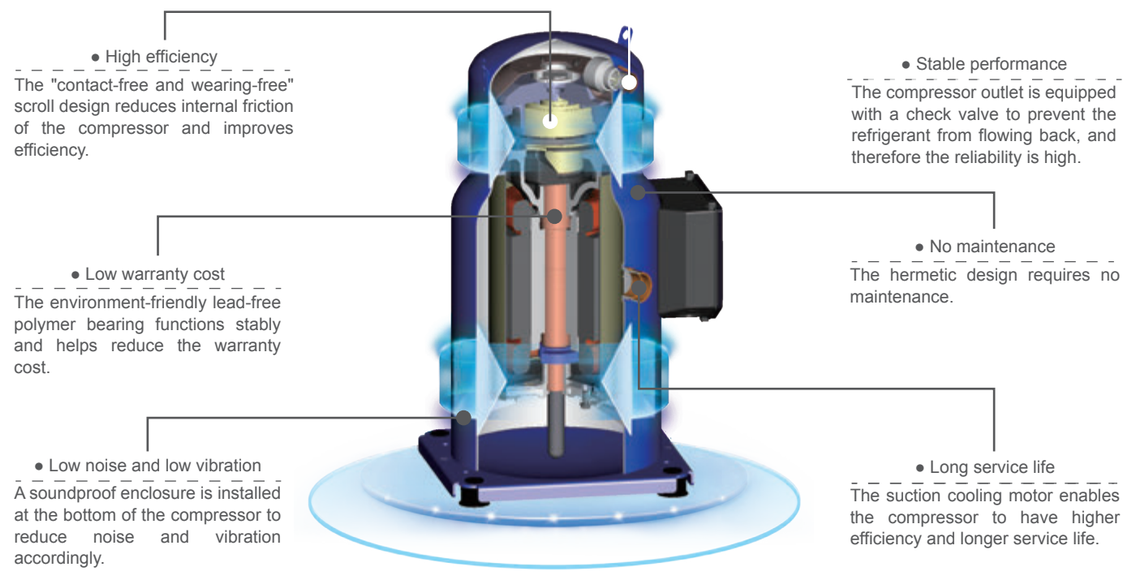


Energy-efficient

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.



◆ Hermetic scroll compressor technology, stronger in power

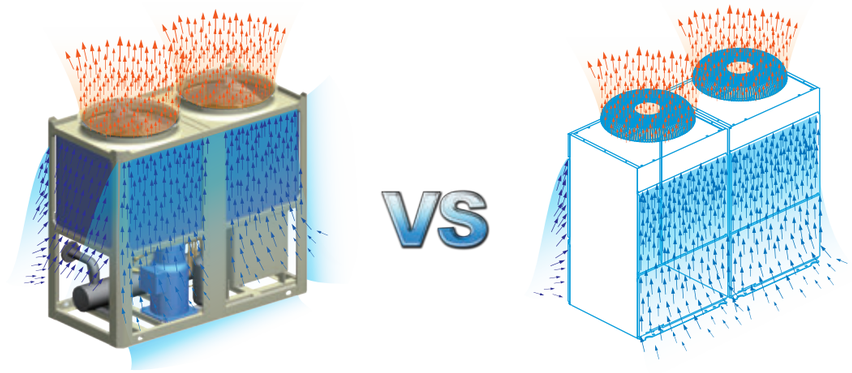


Note: The actual compressor prevails.

◆ 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.

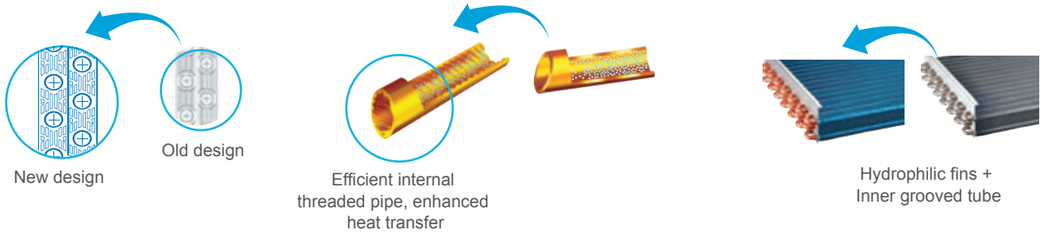


Heat exchangers are centralized in the upper part of the unit. Heat exchange is concentrated, and the air is evenly supplied on all sides to maximize the effective heat exchange area of the unit.

The utilization of heat exchangers at the bottom is low. The air inlet is uneven, causing waste. In addition, the bottom is easy to frost, affecting the heat exchange efficiency.

Features

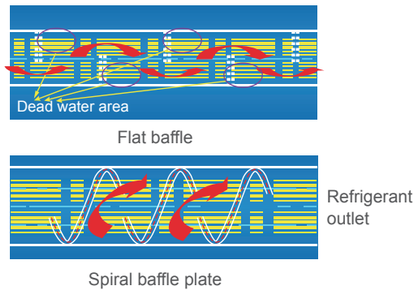
- High performance heat exchanger

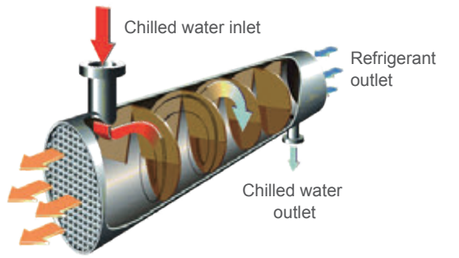


The newly designed window fins and extended heat exchange area save more power and enhance the heat exchange performance.
Hydrophilic aluminum foil fins and inner grooved copper tube optimize heat exchange efficiency.
The specially coated blue fins can improve durability and prevent corrosion by air, 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.

Cloud map of pressure distribution on wind wheel surface

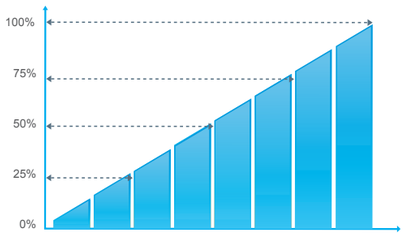
Midea large-torque low-noise fan

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.

Midea high efficiency motor

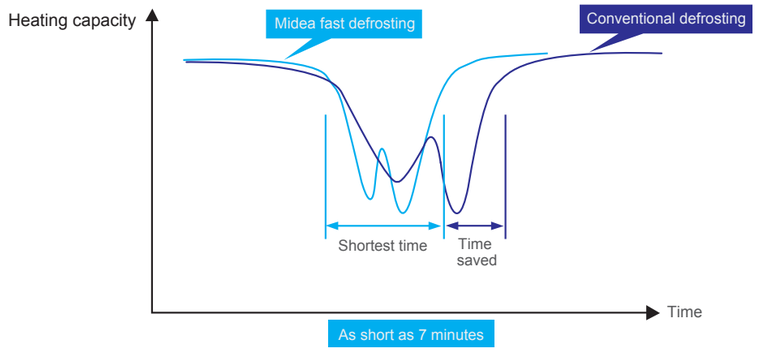
EXV, more precise flow control

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

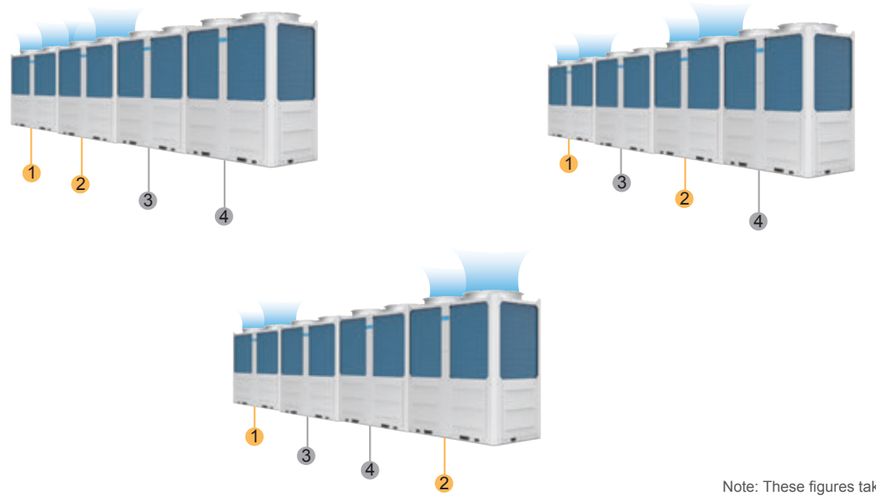
Stable and reliable

◆ 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.

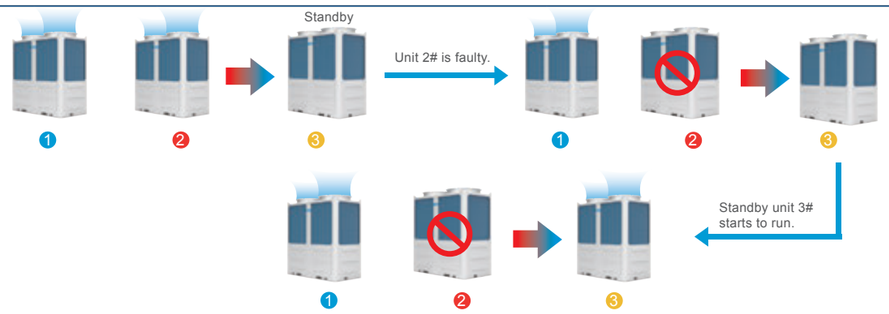


Alternate technology between combined modules

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

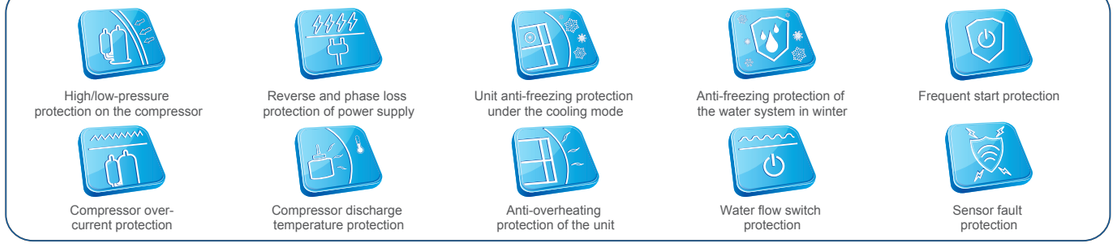
◆ Module Standby Operation Technology

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.

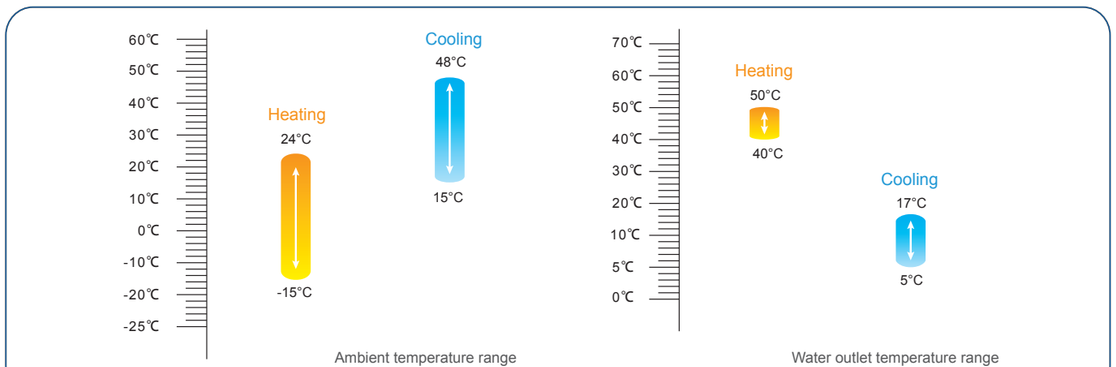


◆ Various protection functions, ensuring safe operation of the system

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.

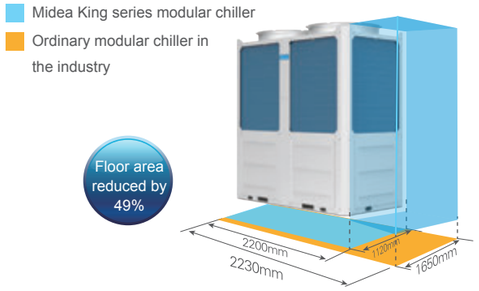
Notes: 130 kW module is taken as an example

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

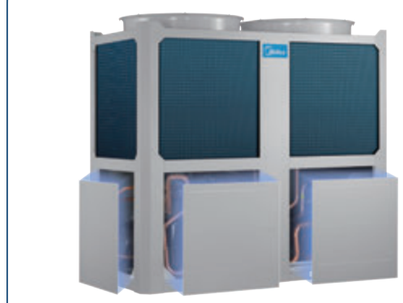
The unit has a compact size and occupies a small area, truly saving space and effectively reducing transportation costs.



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

Convenient to disassemble and easy to install

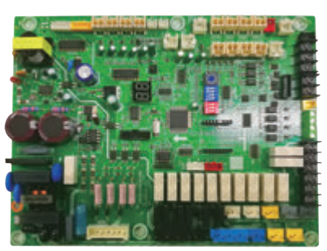
All surrounding panels of the unit can be disassembled, facilitating daily maintenance.



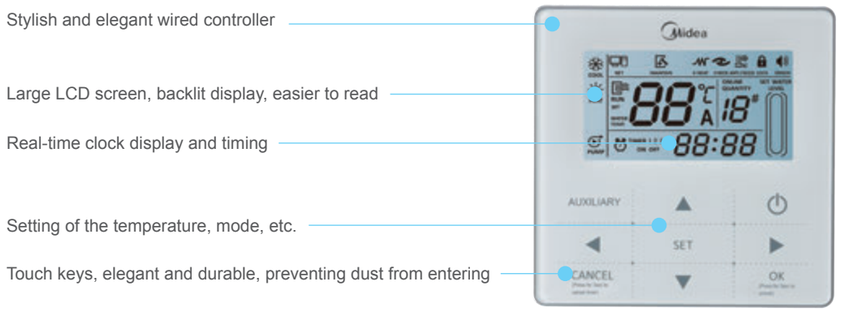
Smart control

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.



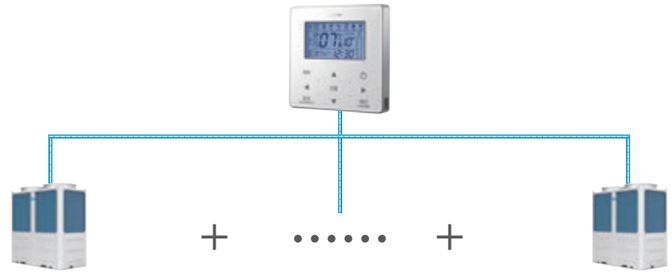
New touch wired controller, easy to control the system



KJRM-120D/BMK-E

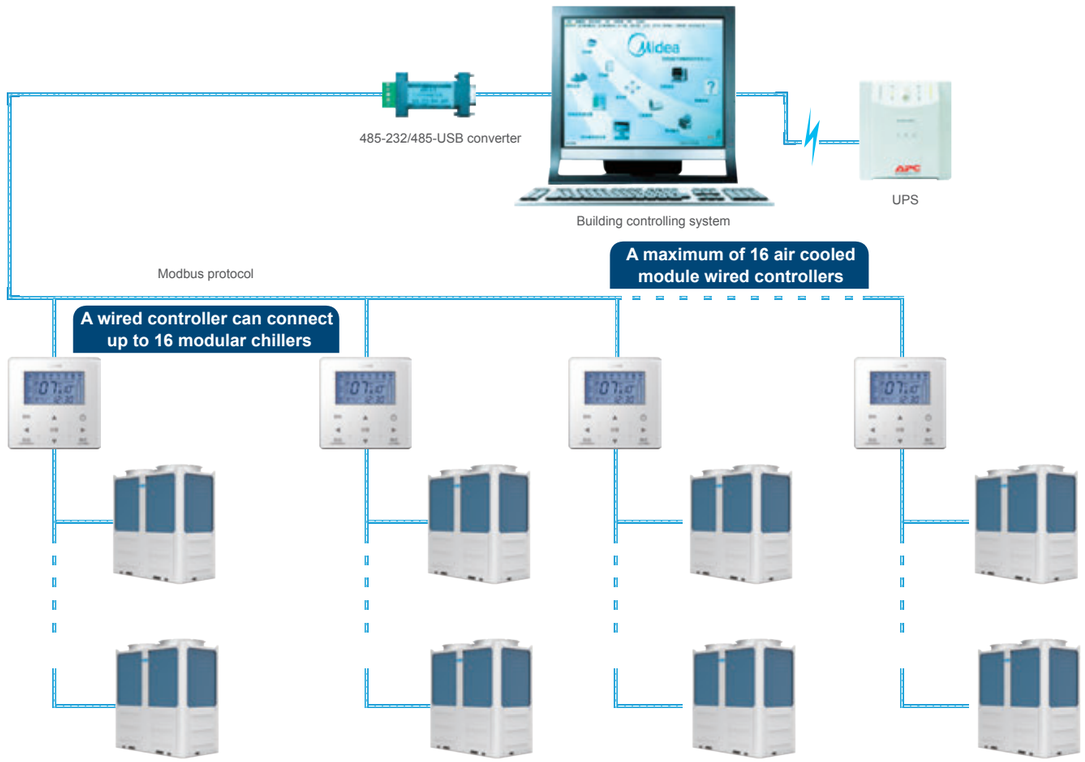
Smart control system, user-friendly

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

Performance Parameters of a Single Module

Model			MC-SS65-RN1	MC-SS130-RN1
			65	130
Capacities	Cooling capacity	kW	65	130
		x 10^3kcal/h	55.9	111.8
	Heating capacity	kW	71	142
		x 10^3kcal/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	m^3/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	m^3/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: 0.086m^2·°C/kW.

Performance Parameters of 65 kW Parallel Modules

Model			MC-SS65-RN1															
			65	130	195	260	325	390	455	520	585	650	715	780	845	910	975	1040
Capacities	Cooling capacity	kW	65	130	195	260	325	390	455	520	585	650	715	780	845	910	975	1040
		x 10^3kcal/h	55.9	111.8	167.7	223.6	279.5	335.4	391.3	447.2	503.1	559	614.9	670.8	726.7	782.6	838.5	894.4
	Heating capacity	kW	71	142	213	284	355	426	497	568	639	710	781	852	923	994	1065	1136
		x 10^3kcal/h	61	122	183	244	305	366	427	488	549	610	671	732	793	854	915	976
Electric parameters	Cooling power	kW	19.5	39	58.5	78	97.5	117	136.5	156	175.5	195	241.5	234	253.5	273	292.5	312
	Cooling current	A	36.4	72.8	109.2	145.6	182	218.4	254.8	291.2	327.6	364	400.4	436.8	473.2	509.6	546	582.4
	Heating power	kW	20.4	40.8	61.2	81.6	102	122.4	142.8	163.2	183.6	204	224.4	244.8	265.2	285.6	306	326.4
	Heating current	A	38.1	76.2	144.3	152.4	190.5	228.6	266.7	304.8	342.9	381	419.1	457.2	495.3	533.4	571.5	609.6
	Maximum power consumption	kW	30.1	60.2	90.3	120.4	150.5	180.6	210.7	240.8	270.9	301	331.1	361.2	391.3	421.4	451.5	481.6
	Maximum current	A	55	110	165	220	275	330	385	440	495	550	605	660	715	770	825	880
	Power supply specifications		380V 3N ~ 50Hz															
Refrigerant	Type		R410A															
	Charge amount	kg	11.5	23	34.5	46	57.5	69	80.5	92	103.5	115	126.5	138	149.5	161	172.5	184
AC water-side heat exchanger	Water flow rate	m^3/h	11.2	22.4	33.6	44.8	56	67.2	78.4	89.6	100.8	112	123.2	134.4	145.6	156.8	168	179.2
	Resistance loss	kPa	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
	Loading capacity	MPa	1.0															
	Diameters of water inlet and outlet pipes	mm	DN65	DN65	DN65	DN65	DN65	DN65	DN65	DN65	DN65	DN65	DN65	DN65	DN65	DN65	DN65	DN65
	Type		Shell and tube															
Air-side heat exchanger	Air flow	m^3/h	27000	27000×2	27000×3	27000×4	27000×5	27000×6	27000×7	27000×8	27000×9	27000×10	27000×11	27000×12	27000×13	27000×14	27000×15	27000×16
	Type		Fin coil															
Dimensions	Width	mm	2000	2000×2	2000×3	2000×4	2000×5	2000×6	2000×7	2000×8	2000×9	2000×10	2000×11	2000×12	2000×13	2000×14	2000×15	2000×16
	Depth	mm	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960
	High	mm	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770	1770
Weight	Net weight	kg	525	1050	1575	2100	2625	3150	3675	4200	4725	5250	5775	6300	6825	7350	7875	8400
	Operating weight	kg	560	1120	1680	2240	2800	3360	3920	4480	5040	5600	6160	6720	7280	7840	8400	8960

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: 0.086m^2·°C/kW.
(3) In this parameter table of parallel modules, Dimensions indicate the sizes of horizontally connected modules, excluding the spacing between modules.

Specifications

● Performance Parameters of 130 kW Parallel Modules

Model			MC-SS130-RN1															
			130	260	390	520	650	780	910	1040	1170	1300	1430	1560	1690	1820	1950	2080
Capacities	Cooling capacity	kW	130	260	390	520	650	780	910	1040	1170	1300	1430	1560	1690	1820	1950	2080
		× 10^3kcal/h	111.8	223.6	335.4	447.2	559	670.8	782.6	894.4	1006.2	1118	1229.8	1341.6	1453.4	1565.2	1677	1788.8
	Heating capacity	kW	142	284	426	568	710	852	994	1136	1278	1420	1562	1704	1846	1988	2130	2272
		× 10^3kcal/h	122.1	244.2	366.3	488.4	610.5	732.6	854.7	976.8	1098.9	1221	1343.1	1465.2	1587.3	1709.4	1831.5	1953.6
Electric parameters	Cooling power	kW	39.2	78.4	117.6	156.8	196	235.2	274.4	313.6	352.8	392	431.2	470.4	509.6	548.8	588	627.2
	Cooling current	A	73.1	146.2	219.3	292.4	365.5	438.6	511.7	584.8	657.9	731	804.1	877.2	950.3	1023.4	1096.5	1169.6
	Heating power	kW	40.8	81.6	122.4	163.2	204	244.8	285.6	326.4	367.2	408	448.8	489.6	530.4	571.2	612	652.8
	Heating current	A	76.1	152.2	228.3	304.4	380.5	456.6	532.7	608.8	684.9	761	837.1	913.2	989.3	1065.4	1141.5	1217.6
	Maximum power consumption	kW	60.2	120.4	180.6	240.8	301	361.2	421.4	481.6	541.8	602	662.2	722.4	782.6	842.8	903	963.2
	Maximum current	A	110	220	330	440	550	660	770	880	990	1100	1210	1320	1430	1540	1650	1760
	Power supply specifications		380V 3N ~ 50Hz															
Refrigerant	Type		R410A															
	Charge amount	kg	10x2	10x4	10x6	10x8	10x10	10x12	10x14	10x16	10x18	10x20	10x22	10x24	10x26	10x28	10x30	10x32
AC water-side heat exchanger	Water flow rate	m^3/h	22.4	44.8	67.2	89.6	112	134.4	156.8	179.2	201.6	224	246.4	268.8	291.2	313.6	336	358.4
	Resistance loss	kPa	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
	Loading capacity	MPa	1.0															
	Diameters of water inlet and outlet pipes	mm	DN65	DN65	DN65	DN65	DN65	DN65	DN65	DN65	DN65	DN65	DN65	DN65	DN65	DN65	DN65	DN65
	Type		Shell and tube															
Air-side heat exchanger	Air flow	m^3/h	48000	48000×2	48000×3	48000×4	48000×5	48000×6	48000×7	48000×8	48000×9	48000×10	48000×11	48000×12	48000×13	48000×14	48000×15	48000×16
	Type		Fin coil															
Dimensions	Width	mm	2200	2200×2	2200×3	2200×4	2200×5	2200×6	2200×7	2200×8	2200×9	2200×10	2200×11	2200×12	2200×13	2200×14	2200×15	2200×16
	Depth	mm	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120
	High	mm	2315	2315	2315	2315	2315	2315	2315	2315	2315	2315	2315	2315	2315	2315	2315	2315
Weight	Net weight	kg	875	1750	2625	3500	4375	5250	6125	7000	7875	8750	9625	10500	11375	12250	13125	14000
	Operating weight	kg	938	1876	2814	3752	4690	5628	6566	7504	8442	9380	10318	11256	12194	13132	14070	15008

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: 0.086m^2·°C/kW.
(3) In this parameter table of parallel modules, Dimensions indicate the sizes of horizontally connected modules, excluding the spacing between modules.

Performance Parameter Correction under Variable Operating Conditions

● Cooling capacity table

Water Outlet Temperature (°C)	Ambient Temperature (°C)				
	25	30	35	40	45
5	1.07	1.00	0.94	0.84	0.81
6	1.10	1.03	0.97	0.87	0.83
7	1.14	1.07	1.00	0.91	0.86
8	1.17	1.10	1.03	0.94	0.88
9	1.20	1.13	1.06	0.98	0.91
10	1.23	1.16	1.09	1.01	0.93
11	1.27	1.19	1.12	1.04	0.96
12	1.31	1.23	1.15	1.07	0.99
13	1.34	1.26	1.17	1.09	1.01
14	1.37	1.29	1.20	1.12	1.03
15	1.41	1.32	1.23	1.14	1.06

● Heating capacity table

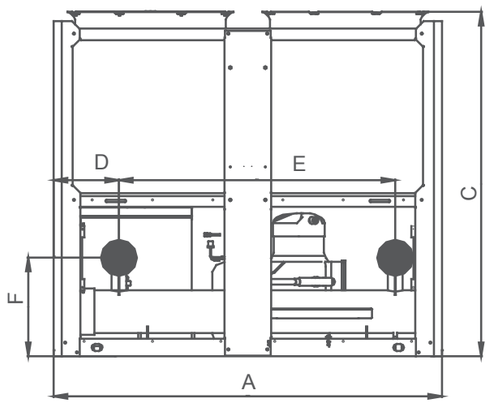
Water Outlet Temperature (°C)	Ambient Temperature (°C)							
	15	10	7	5	0	-5	-10	-15
30	1.23	1.10	1.30	0.99	0.89	0.81	0.73	0.58
35	1.21	1.09	1.02	0.98	0.87	0.79	0.70	0.55
40	1.20	1.08	1.01	0.96	0.86	0.77	0.67	0.53
45	1.19	1.07	1.00	0.95	0.84	0.75	0.65	0.50
50	1.17	1.05	0.98	0.94	0.83	0.74	0.64	/

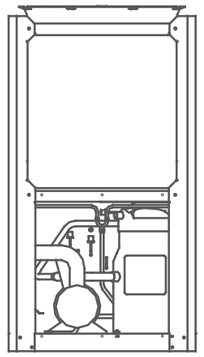
Note: (1) Actual cooling (heating) capacity of the unit = Nominal cooling (heating) capacity of the unit x Performance correction coefficient

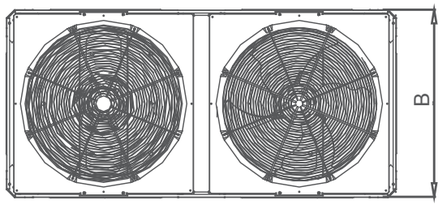
Notes:
In winter when the ambient temperature is very low, water in the heat exchanger and pipeline may freeze and therefore damage the equipment and pipeline when the unit is shut down at night. To prevent freezing, the unit cannot be powered off (because the unit has automatic anti-freezing function). If the unit may still freeze, drain the water pipe. If the drainage is difficult, anti-freezing mixture ethylene glycol or propylene glycol can be used.
Do not use salt anti-freezing mixtures. Otherwise, the unit may be corroded and damaged.

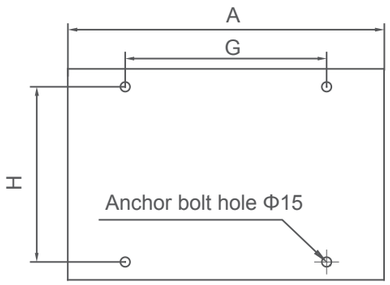
Dimensions

External Dimension Diagram









Bottom view

External dimensions (unit: mm)

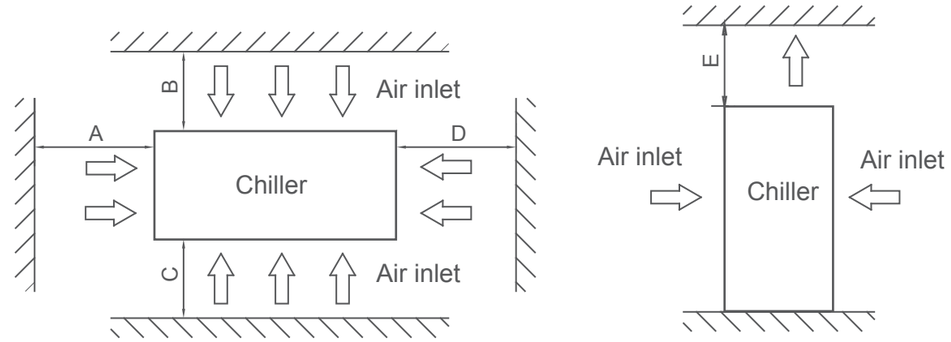
Model	A	B	C	D	E	F	G	H	L
MC-SS65-RN1	2000	960	1770	336	1420	506	1550	862	/
MC-SS130-RN1	2200	1120	2315	390	1420	350	1460	1017	/

Installation and Maintenance

- Units can be installed on the ground or proper place on a roof, provided that sufficient ventilation can be guaranteed.
- Do not install units in places where strict requirements of noise and vibration are declared.
- Units should be installed in places without direct sunlight, and far from boiler tubes or other environment that might corrode condenser coil and copper pipe components of unit.
  For units that are installed in places where unauthorized people can approach, safety measures such as protective fence can be set to avoid vandalism or accidental damage on the control box and causing the exposure of operating electrical devices.
- The base height for installation should be at least 300 mm. Ground leakage is required in the installation place to ensure smooth drainage.
- For installation on the ground, the steel base of the unit must be placed on a flat concrete foundation. Concrete plinths must be extended deep under the frozen soil. Do not connect the unit base to any building base; otherwise, noise and vibration can be transferred and exert affection on others. Installation holes available on the unit base can be used to firmly connect the unit and the foundation.
- To install a unit on a roof, ensure that the roof is solid enough to bear the weight of the unit and maintenance personnel. The unit can be supported by a concrete foundation or channel steel rack which is usually used for the installation on the ground. The installation holes of bearing steel channel and unit shock absorber must be at the same center line. Sufficient spaces must be preserved for installing the shock absorber.
- For places with specific installation requirements, consult the building contractor, architectural designer or other professionals.

Distance for unit installation

- Recommended distance for unit installation (diagram)



- Recommended distance for unit installation (parameter table)

Installation distance(mm)				
A	B	C	D	E
≥1500	≥1500	≥1500	≥1500	≥3000

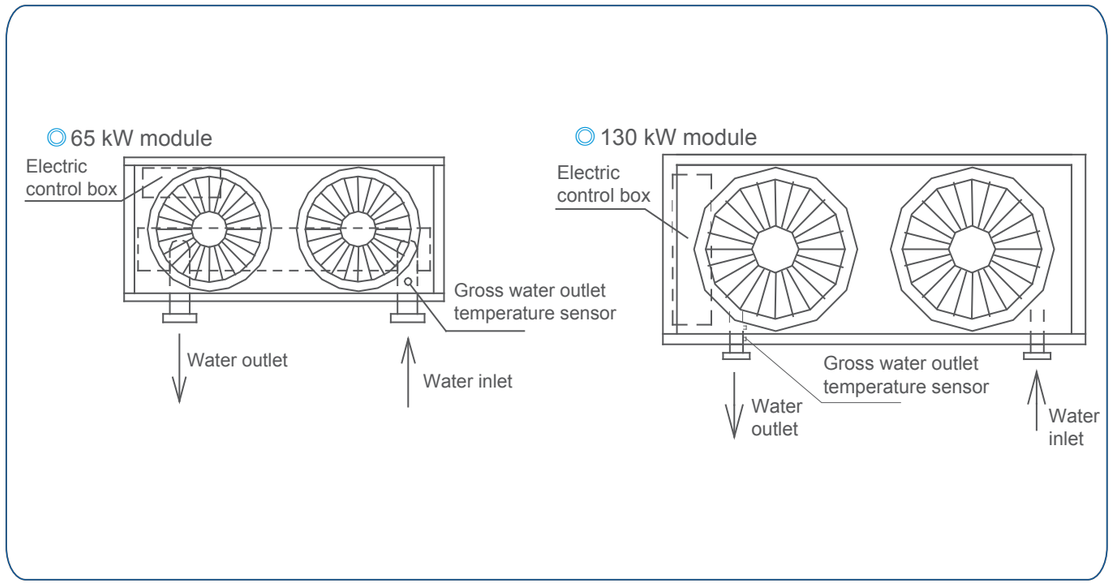
- Requirement for distance when multiple modular chillers are connected in parallel:

To prevent condenser air from flowing back, and avoid operating failure of the units, distance between the units and obstacles must follow that in the preceding table when multiple modular chillers are installed in parallel. The distance between neighbouring modules cannot be smaller than 600 mm. Otherwise, the air flow through the coil can be restricted or discharge air backflow can occur, which may negatively impact unit performance or cause unit failure.

Installation and Maintenance

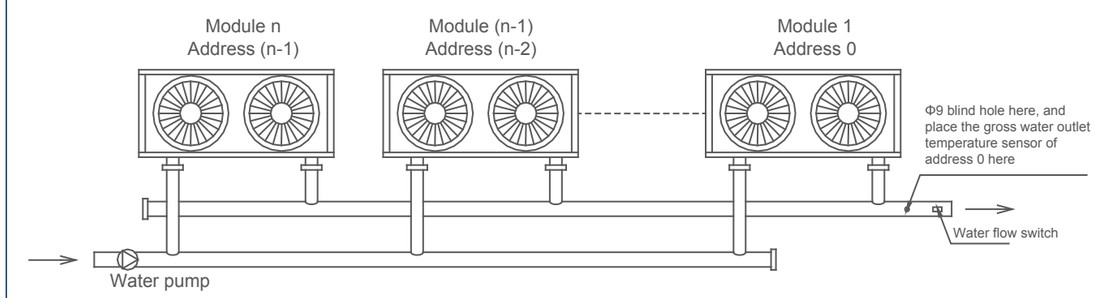
◆ Water system pipeline connection diagram

- Single-module water system pipeline installation



- Multi-module combination water system pipeline installation

◎ 65 kW, 130 kW module installation method (no more than 16 modules)



◆ Network communication schematic