DISCOVER
easyCOMFORT

Midea Group
Midea Building Technologies Division

1C202501

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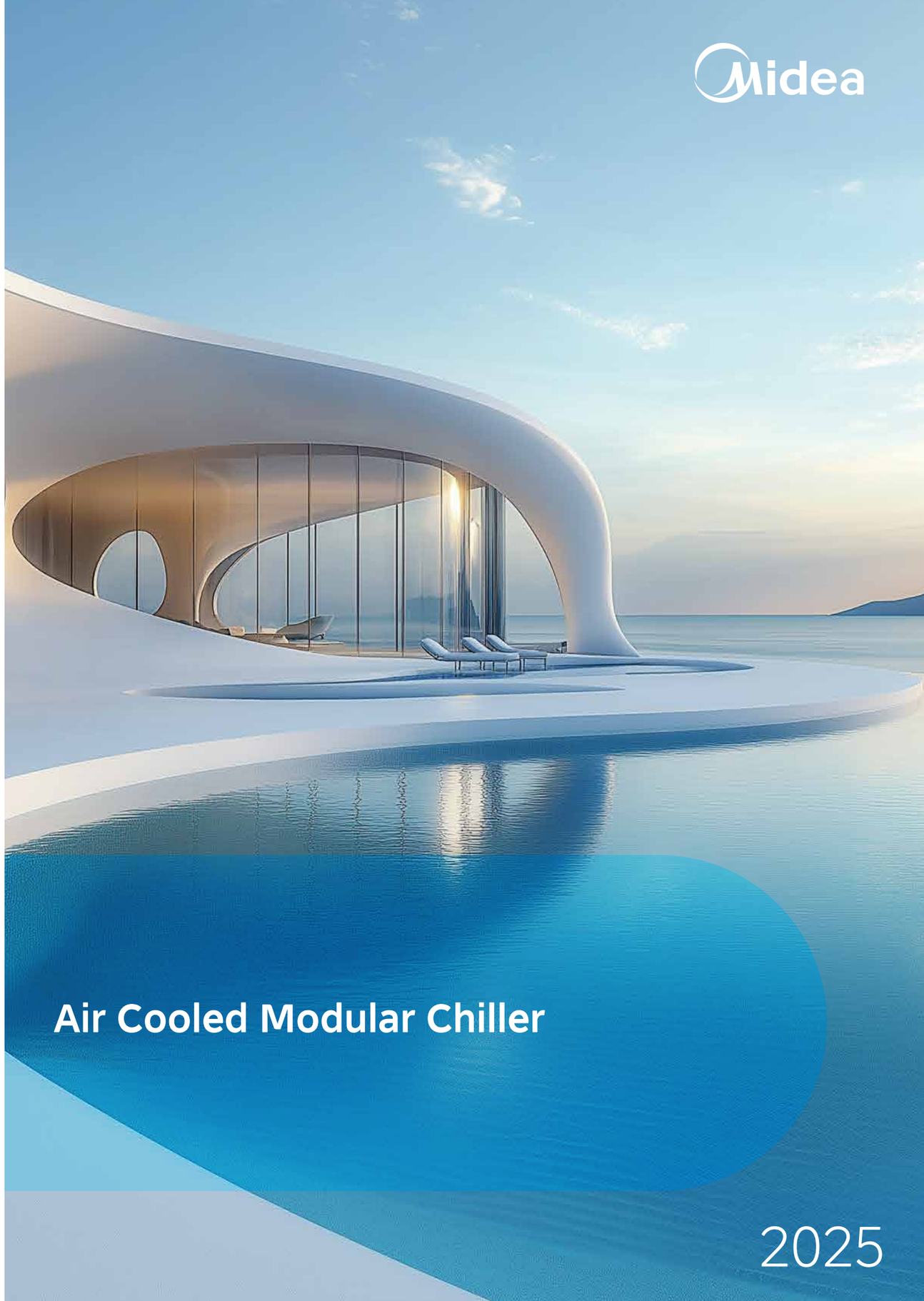
Quality Assurance ISO 9001
Environmental Management ISO 14001
Occupational Health and Safety Management ISO 45001



Midea

# Air Cooled Modular Chiller

2025

# MBT

Midea Building Technologies (MBT) is a key division of the Midea Group, a leading provider of comprehensive, intelligent-building solutions including energy sources, elevators, control systems and heating, ventilation and air conditioning.

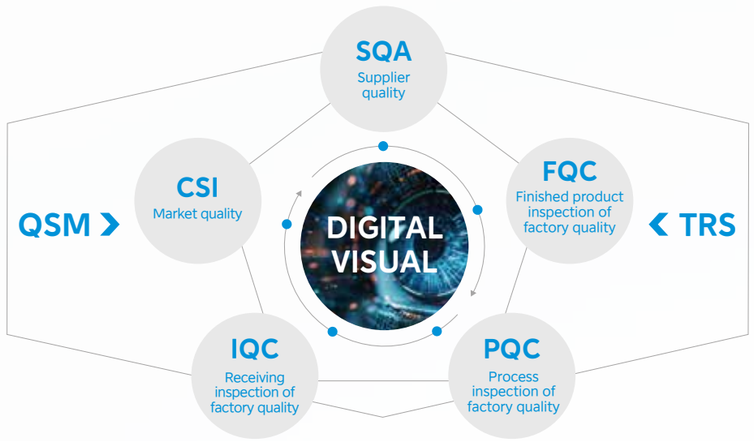
Built on a foundation of innovation, Midea has emerged as a global leader in the HVAC and building management industry. Our unwavering dedication to research and development coupled with an extensive network of global partners has given birth to cutting-edge technologies that provide innovative solutions to our customers around the world.

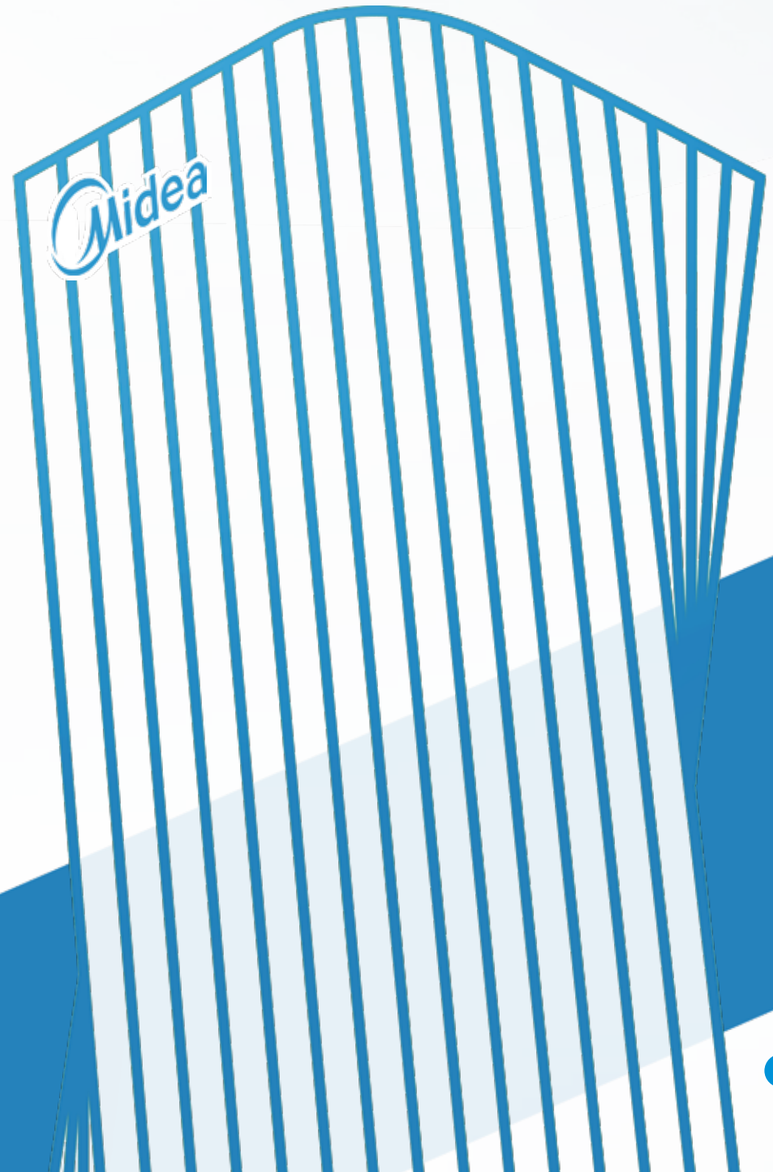
**Committed to providing users with intelligent, digital, low carbon overall building solution**


**4 global manufacturing locations assure timely delivery with less sensitivity to supply chain interruption.**


**Over 100 testing labs cover a wide range of real application scenarios.**


**All products can be visualized and digitalized throughout entire process.**



# MIDEA LARGE TONNAGE CHILLER HISTORY

**1999**
Established

**2004**
Acquired MGRE entered the chiller industry

**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

**2016**
Acquired 80% stake in Clivet

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

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

**2020**
Launched the R32 Aqua thermal Series DC Inverter Air-cooled Chiller

**2021**
Launched the King Series Air-cooled Chiller

**2022**
Launched the King Plus Series Air-cooled Chiller

# INTERNATIONAL SERVICE MANAGEMENT

Our International Service Management (ICS) system provides customers with professional technical support. Through ICS, you can download product information/documentation, get help with technical questions and troubleshooting, submit complaints and order parts using our self-service interface.

https://ics.midea.com


### My order

Inquire about spare parts from an exploded view and place orders for spare parts directly in ICS.

### Document inquiry and download

View or download product technical documentation online, such as catalogs, images, training PPTs and other assets.

### Technical inquiry & FAQ

Ask technical questions online and receive a prompt response from our technicians or browse the FAQ for answers to commonly asked questions.

### Troubleshooting

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

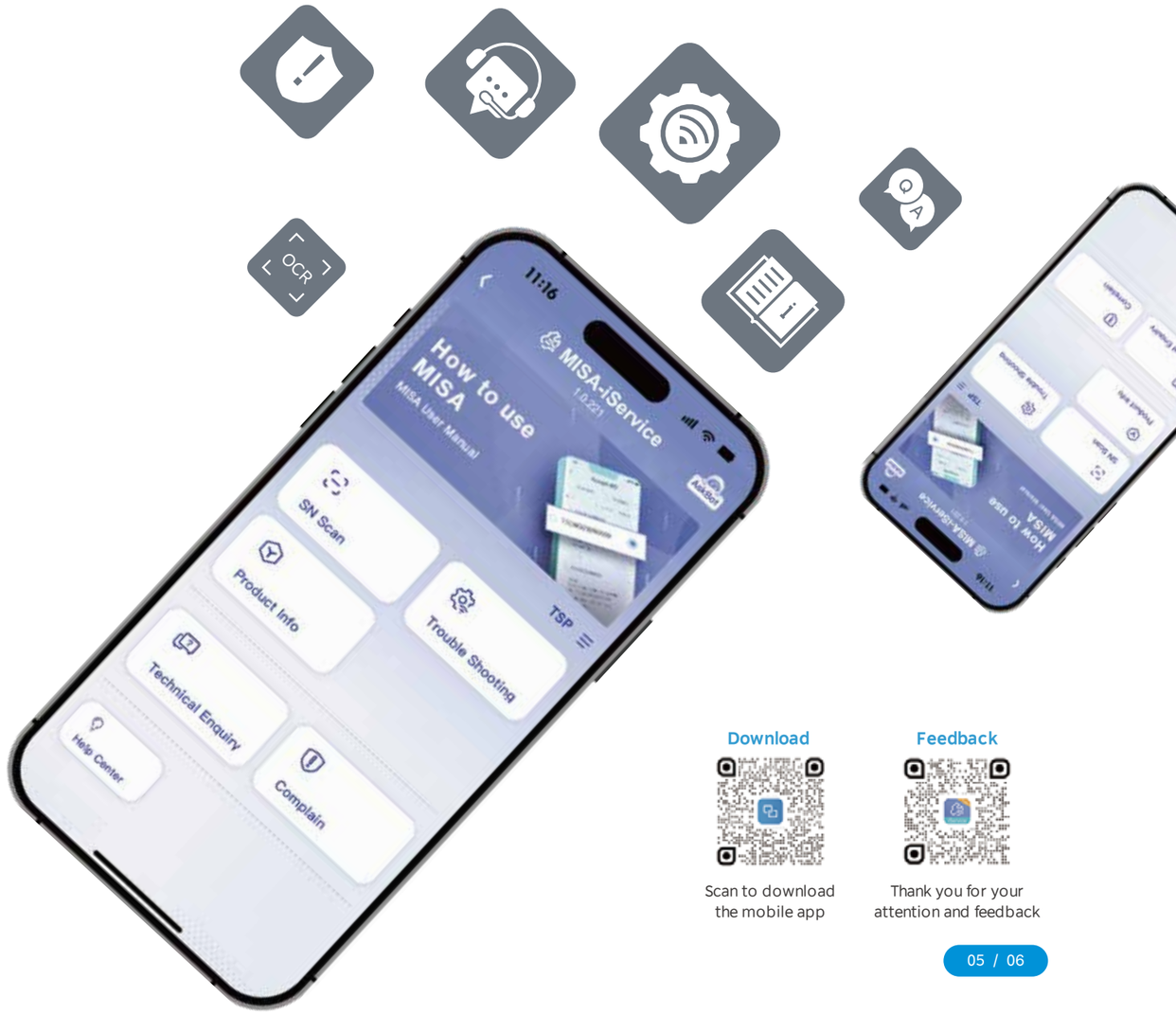
### Complain

Submit product quality complaints online, and our after-sales engineers will respond promptly.

# MOBILE INTELLIGENCE SERVICE APP

The Mobile Intelligence Service App (MISA) is the mobile version of ICS and features the same functionality. MISA often makes getting technical support timelier and more convenient.

https://link.midea.com




**Download**

Scan to download the mobile app

**Feedback**

Thank you for your attention and feedback

# GLOBAL BULK WAREHOUSE LAYOUT OVERVIEW

**Europe**

- Italy
- Germany
- France
- Hungary
- UK
- Poland
- Turkey
- Spain
- Romania
- Greece

**Southeast Asia**

- Vietnam
- Indonesia
- Thailand
- Malaysia
- Philippines

**Latin America**

- Puerto Rico
- Mexico
- Venezuela
- Brazil

**Asia and Africa**

- China
- Russia
- Georgia
- Egypt
- South Africa
- UAE
- Qatar
- Iraq
- India
- Uzbekistan

**Australia**

- Australia

## Available Spare Parts centers 30

**Europe (10):**

Italy/Germany/France/UK/Spain/Poland/Hungary/Greece/Turkey/Romania

**Asia-Africa (10):**

China/Russia/Georgia/UAE/Egypt/Uzbekistan/India/South Africa/Iraq/Qatar

**Latin America (5):**

Mexico/Puerto Rico/Venezuela/Brazil/Australia

**South-East Asia (5):**

Vietnam/Thailand/Malaysia/Indonesia/Philippines

# 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:TheseThese 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

# Content

# 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

# Aqua thermal Series

# FEATURES

## Product lineup

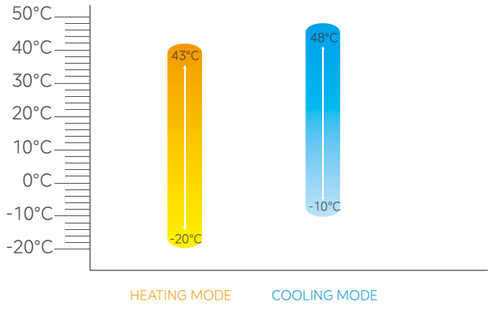
| Capacity(kW) | 75 | 90 | 140 | 180 |
|---|---|---|---|---|
| Appearance |  | | | |
| 380-415V/3Ph/50Hz | ● | ● | ● | ● |

## Overview

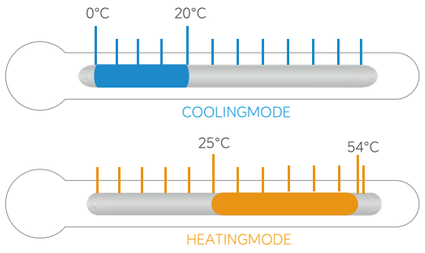
Refrigerant R32 75% less impact on global warming;
DC Inverter technology allows precise consumption on real load;
One-stop solution for heating, cooling and domestic hot water(Customization);
Maximum water temperature up to 60°C for DHW mode(Customization);
Minimum operation ambient temperature down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

DCInverter -10°C 60°C R32 A++

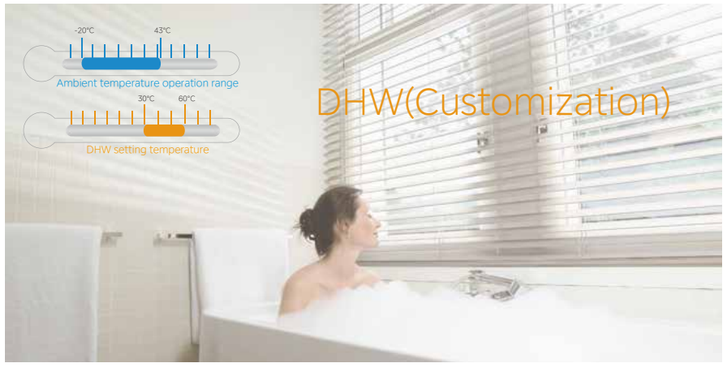
## Ambient temperature




## Outlet water temperature

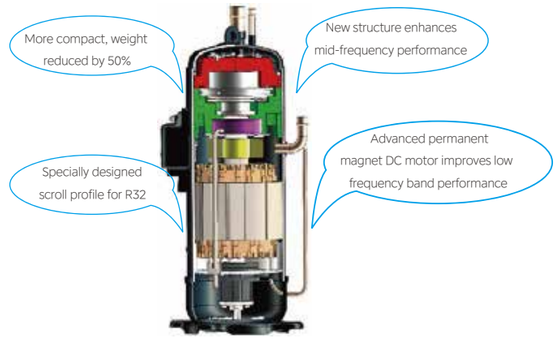



Note: For cooling mode, if outlet water temperature is less than 5°C, anti-freeze liquid is needed.0°C water temperature can be reached by changing DIP switch setting.



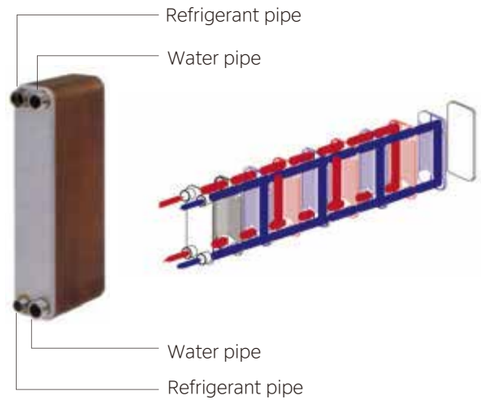

## High quality components

### DC Inverter compressor



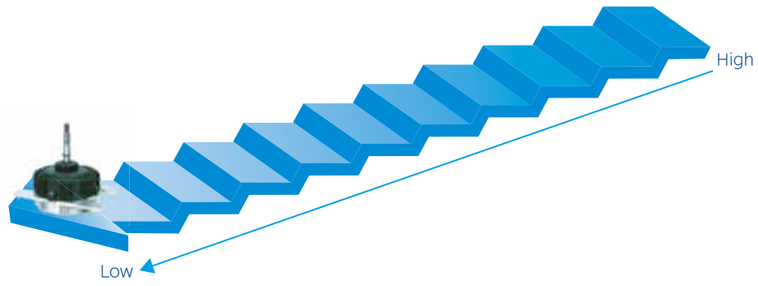

### High effciency plate heat exchanger

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

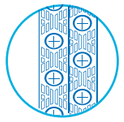
Fan speed is controlled according to the system pressure and system load, reducing power consumption by 30%.
There are 32-step vector control.



# FEATURES

## High performance heat exchanger

Enlarge heat-exchanging area

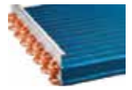


Fin

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

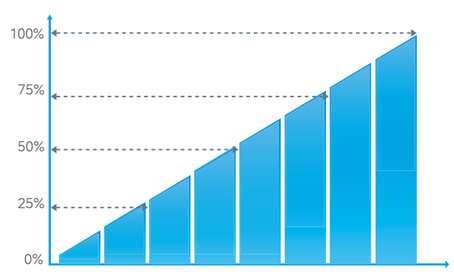
### Heat exchanger copper pipe

› 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.

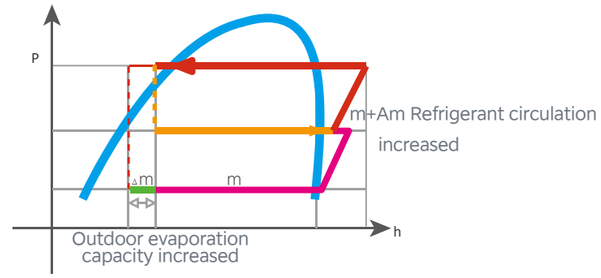



## Advanced technology

### Enhanced Vapor Injection (EVI) Compressor

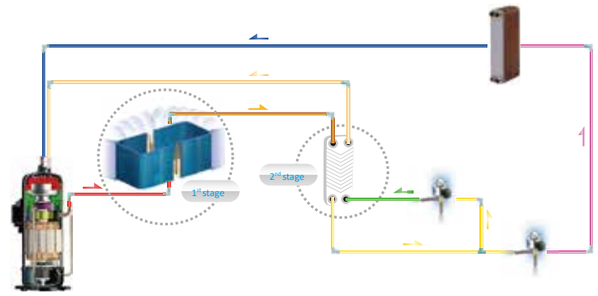
Thanks to the vapor injection DC inverter compressor, unitcan run heating mode stably down to -20℃, and the heating capacity can be improved greatly.

EVI compressor




### Plate Heat Exchanger Subcooling

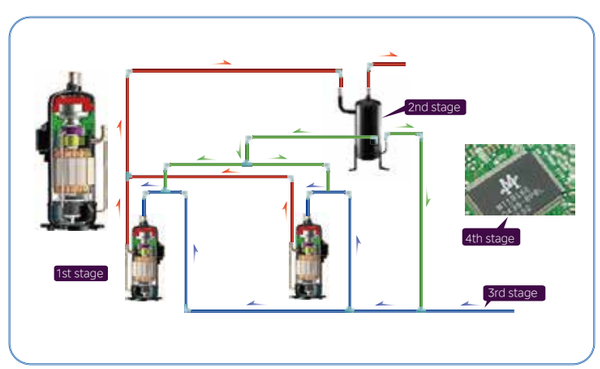
Plate Heat Exchanger as a secondary intercooler boosts up refrigerant subcooling and improves 10% energy efficiency.




### Precise Oil Control Technology

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

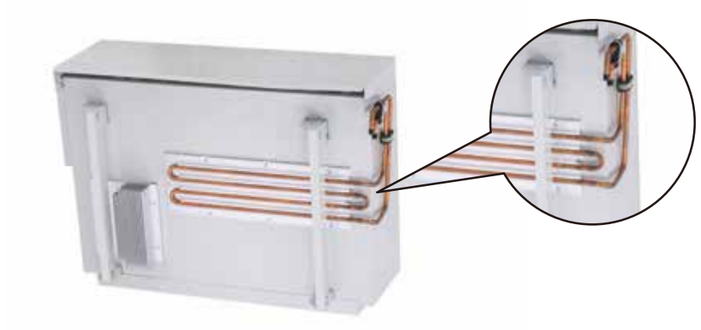
- Compressor internal oil separation.
- High-ecffiiency centrifugal oil separator (with separation efficiency of up to 99%) ensures that oil is separated from the discharge gas and returned to the compressors in a timely fashion.
- Oil balance pipe ensures oil distribution to keep compressor running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



# FEATURES

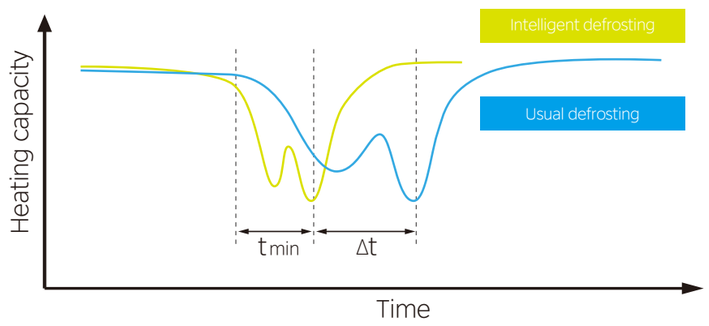
### Refrigerant Cooling PCB

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.



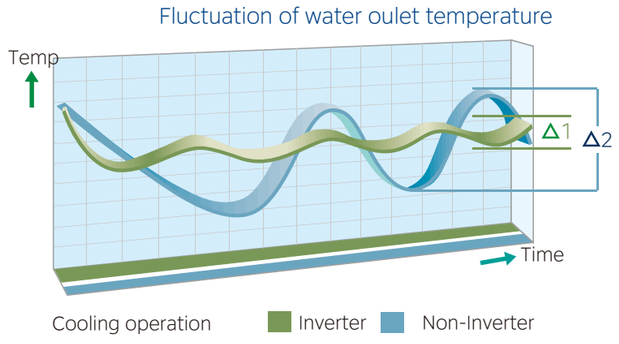
### Intelligent defrosting technology

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

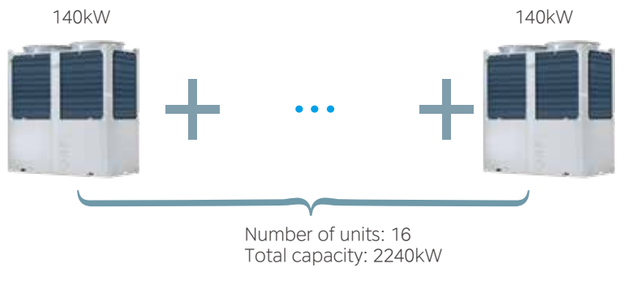
The DC inverter compressor reaches full capacity rapidly, providing quicker cooling or heating with lower levels of temperature fluctuation during the cooling/heating operation.




## Flexibility

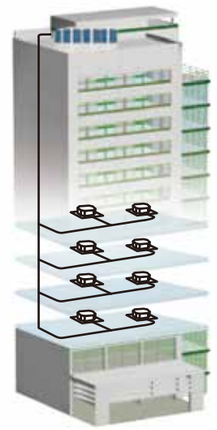
Modular design

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




### Space saving and simplifed 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

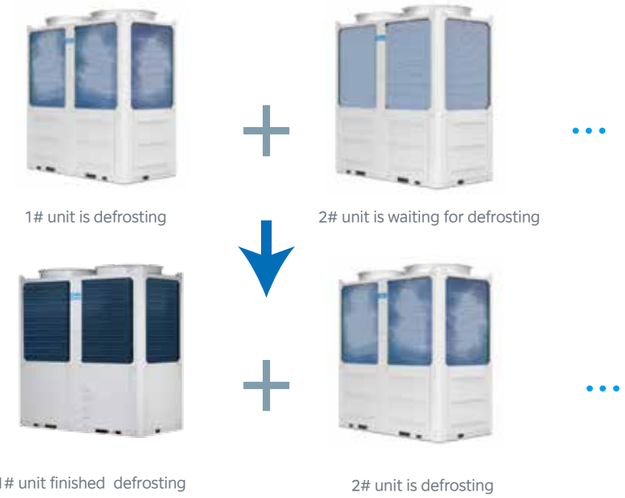
In one combination system, all units operate as alternative in cycle duty to keep equal running time, realize higher stability,better reliability and longer lifespan.


Loading in sequence


Offloading in sequence

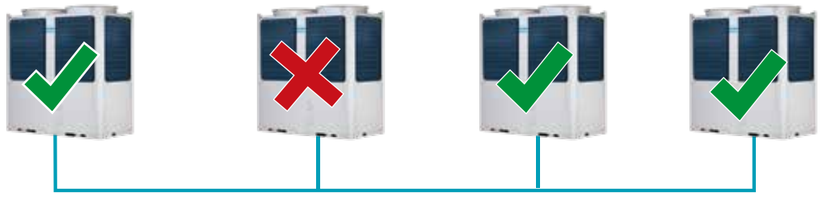
## Alternate defrost operation

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.




## 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.



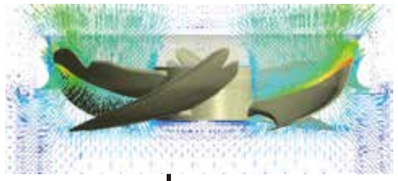
# Multiple function

## Multiple slient modes

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


## Multiple optimization design makes noise reduction

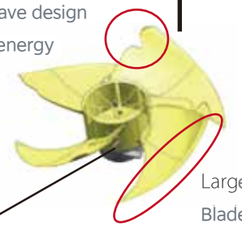
Optimized fan blade edge by CFD programs with analyzing air pressure distribution
Realize higher air volume, lower noise level.



Guide air diffuser hood
Reduce noise effectively

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

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



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

Blade installation angle optimization design
Improve airflow and fan efficiency

# FEATURES

## 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

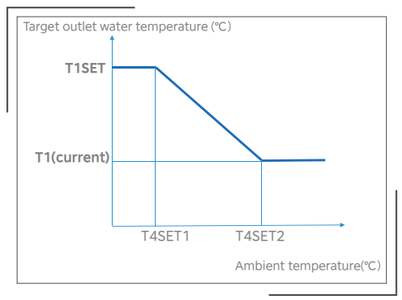
For projects with temporary electricity supply restrictions, the outdoor unit supports 7 levels of energy management which can  be set to output 40-100% capacity. It prevents tripping during electricity supply restriction conditions and remains system continue to operate.

7 Levels of capacity output

100% output
90% output
80% output
70% output
60% output
50% output
40% output

### Weather temperature curve

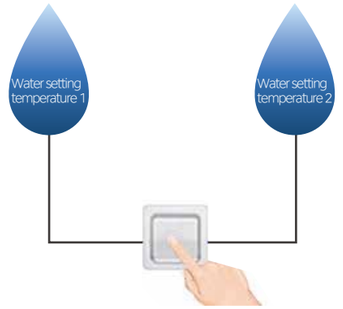
With the help of Weather temperature curve function, water temperature will automatically change as outside air temperature changes. When outdoor air temperature increases/decreases, the heating load will decrease/increase and water temperature will decrease/increase automatically. When outdoor air temperature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

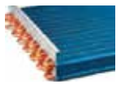
Heavy anti-corrosion products:
240h of neutral salt mist

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

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

Screws/bolts/gaskets
Standard products:
300h of neutral salt mist

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



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

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

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

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

Electric control box case
Standard products:
96h of neutral salt mist

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

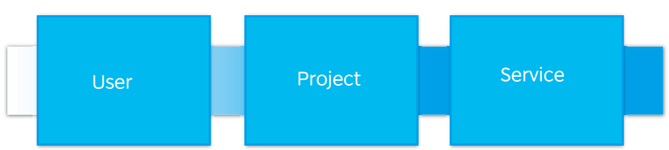
## Convenient control

Touch key wired controller as standard accessory to control the chillers


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

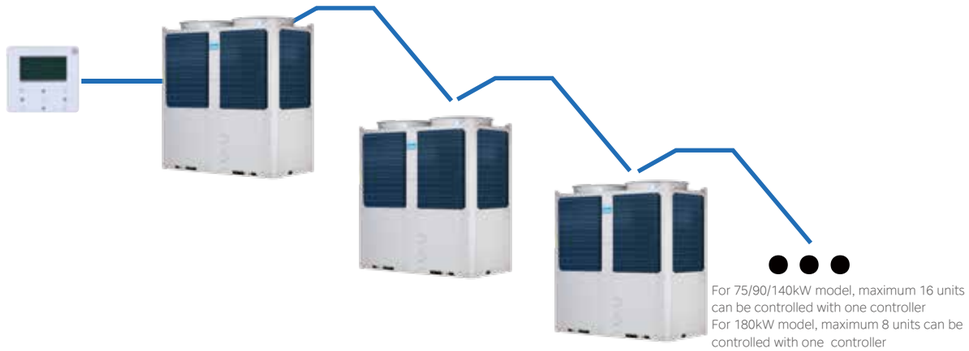
### Three user levels

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



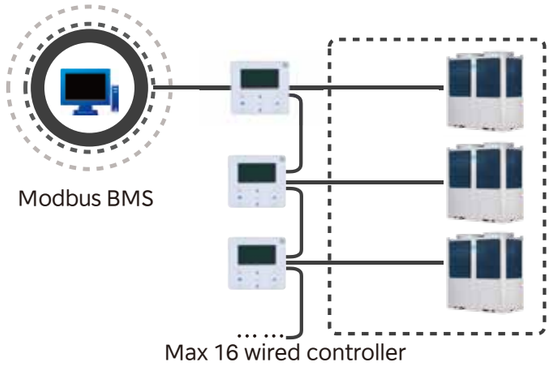

### Group control for up to maximum 16 units with one wired controller

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

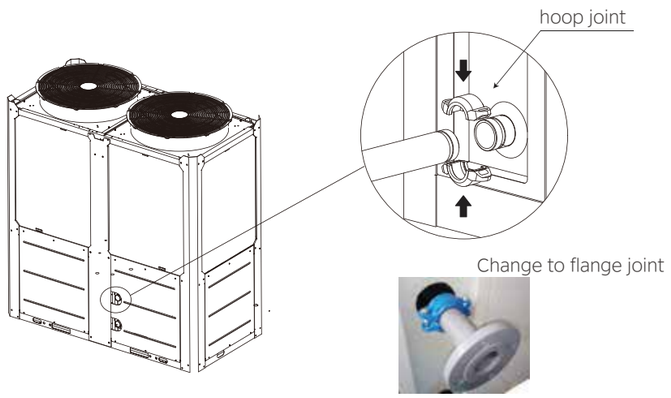
Air purge valve

Pressure relief valve

# FEATURES

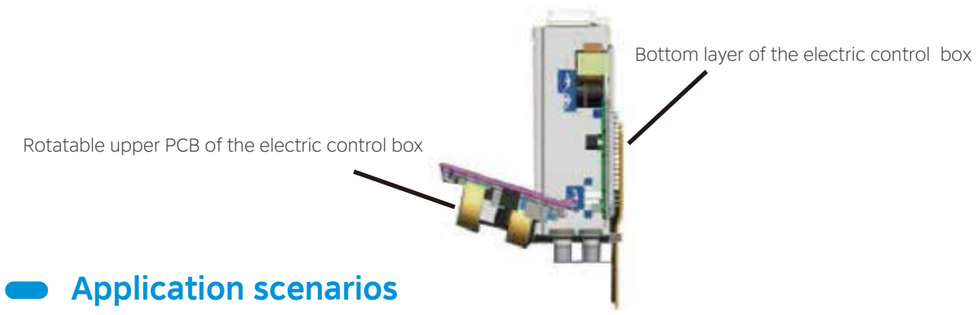
## Water pipe connection

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

## Standard

| Model | | | MC-SU75-RN8L-B | MC-SU90-RN8L-B | MC-SU140-RN8L-B | MC-SU180-RN8L-B |
|---|---|---|---|---|---|---|
| Power supply | | V/Ph/Hz | 380~415/3/50 | 380~415/3/50 | 380~415/3/50 | 380~415/3/50 |
| Cooling[1] | Capacity | kW | 70 | 82 | 130 | 164 |
| | Rated input | kW | 26.8 | 27.8 | 50.5 | 56 |
| | EER | | 2.61 | 2.95 | 2.57 | 2.93 |
| Heating[2] | Capacity | kW | 75 | 90 | 138 | 180 |
| | Rated input | kW | 23.7 | 28.1 | 44.5 | 57 |
| | COP | | 3.16 | 3.20 | 3.10 | 3.16 |
| Compressor | Type | | Scroll | Scroll | Scroll | Scroll |
| | Quantity | | 1 | 2 | 2 | 4 |
| Air side heat exchanger | Type | | Finned tube | Finned tube | Finned tube | Finned tube |
| Fan motor | Type | | DC motor | DC motor | DC motor | DC motor |
| | Quantity | | 2 | 2 | 2 | 4 |
| Water side heat exchanger | Type | | Plate | Plate | Plate | Plate |
| Refrigerant system | Type | | R32 | R32 | R32 | R32 |
| | Charged volume[3] | kg | 9 | 16[11.5+4.5] | 15.5[11.5+4] | 32[(5.5+10.5)*2] |
| Throttle | | Type | EXV | EXV | EXV | EXV |
| Sound power level | | dB | 86 | 83 | 92 | 92 |
| Net dimensions(W×H×D) | | mm | 2000x1775x960 | 2220x2315x1120 | 2220x2300x1120 | 2755x2415x2220 |
| 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 | °C | -10~48 | -10 ~ 48 | -10~48 | -10~48 |
| | Heating | °C | -20~43 | -20 ~ 43 | -20~43 | -20~43 |
| | DHW(Customization) | °C | -20~43 | -20 ~ 43 | -20~43 | -20~43 |
| LWT setting range | Cooling | °C | 0~20 | 0 ~ 20 | 0~20 | 0~20 |
| | Heating | °C | 25~54 | 25 ~ 54 | 25~54 | 25~54 |
| | DHW(Customization) | °C | 30~60 | 30 ~ 60 | 30~60 | 30~60 |

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

# Specifications

## Built-in hydraulic module

| Model name | | | MC-SU75M-RN8L-B | MC-SU90M-RN8L-B | MC-SU140M-RN8L-B | MC-SU180M-RN8L-B |
|---|---|---|---|---|---|---|
| Power supply | | V/Ph/Hz | 380~415/3/50 | 380~415/3/50 | 380~415/3/50 | 380~415/3/50 |
| Cooling[1] | Capacity | kW | 69.7 | 82 | 129.5 | 163.0 |
| | Rated input | kW | 27.3 | 28.3 | 51.4 | 57.7 |
| | EER | | 2.55 | 2.90 | 2.52 | 2.82 |
| Heating[2] | Capacity | kW | 75.4 | 90 | 138.6 | 181.2 |
| | Rated input | kW | 24.3 | 29 | 45.6 | 59.1 |
| | COP | | 3.10 | 3.10 | 3.04 | 3.07 |
| Compressor | Type | | Scroll | Scroll | Scroll | Scroll |
| | Quantity | | 1 | 2 | 2 | 4 |
| Air side heat exchanger | Type | | Finned tube | Finned tube | Finned tube | Finned tube |
| Fan motor | Type | | DC motor | DC motor | DC motor | DC motor |
| | Quantity | | 2 | 2 | 2 | 4 |
| Water side heat exchanger | Type | | Plate | Plate | Plate | Plate |
| Refrigerant system | Type | | R32 | R32 | R32 | R32 |
| | Charged volume[3] | kg | 9 | 16[11.5+4.5] | 15.5[11.5+4] | 32[(5.5+10.5)*2] |
| Pump | Power supply | V/Ph/Hz | 380~415/3/50 | 380~415/3/50 | 380~415/3/50 | 380~415/3/50 |
| | Rated input | kW | 1.5 | 1.5 | 2.2 | 1.5 |
| | Rated current | A | 3.15 | 3.15 | 4.45 | 3.15 |
| | Rate of flow | m³/h | 10 | 10 | 22 | 10 |
| | Head of delivery | m | 27.1 | 40.5 | 16.2 | 40.5 |
| | Quantity | / | 1 | 1 | 1 | 2 |
| Expansion tank | Volume | L | 12 | 12 | 24 | 12*2 |
| | Precharge pressure | Mpa | 0.15 | 0.15 | 0.15 | 0.15 |
| | Test pressure | Mpa | 1 | 1 | 1 | 1 |
| Throttle | | Type | EXV | EXV | EXV | EXV |
| Sound power level | | dB | 86 | 83 | 93 | 92 |
| Net dimensions(W×H×D) | | mm | 2000x1775x960 | 2220x2315x1120 | 2220x2300x1120 | 2755x2415x2220 |
| Packing dimensions(W×H×D) | | mm | 2085*1890*1030 | 2250*2445*1180 | 2250*2425*1180 | 2810*2446*2245 |
| Net/Gross weight | | kg | 475/490 | 686/711 | 746/767 | 1500/1504 |
| Water pipe connection | | mm | DN50 | DN50 | DN65 | DN80 |
| Ambient temperature range | Heating | °C | -10~48 | -10 ~ 48 | -10~48 | -10~48 |
| | Cooling | °C | -20~43 | -20 ~ 43 | -20~43 | -20~43 |
| | DHW(Customization) | °C | -20~43 | -20 ~ 43 | -20~43 | -20~43 |
| LWT setting range | Heating | °C | 0~20 | 0 ~ 20 | 0~20 | 0~20 |
| | Cooling | °C | 25~54 | 25 ~ 54 | 25~54 | 25~54 |
| | DHW(Customization) | °C | 30~60 | 30 ~ 60 | 30~60 | 30~60 |

Notes:

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

# (King series) Aqua Tempo Super Series

## Product Lineup

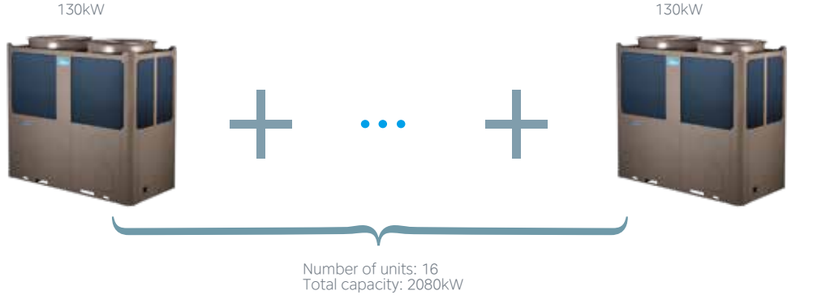
| Capacity (kW) | 35 | 65 | 80 |
|---|---|---|---|
| Appearance / Series |  |  | |
| SS-LA | ● | ● | ● |

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

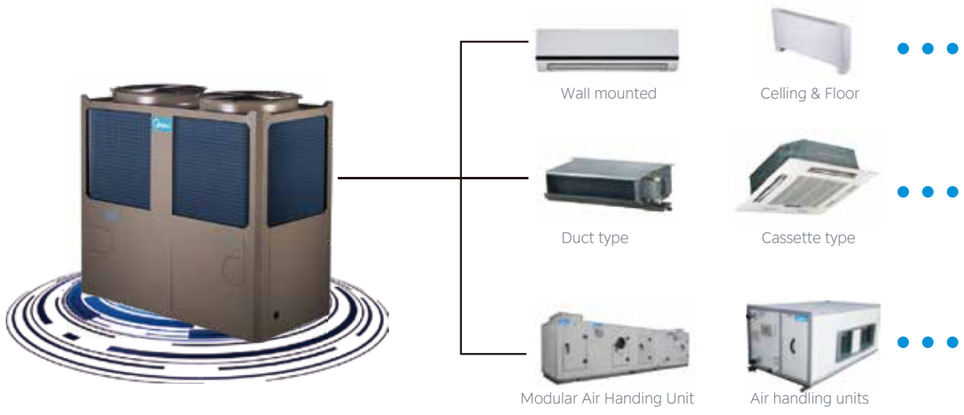
# Features

## Wide application range

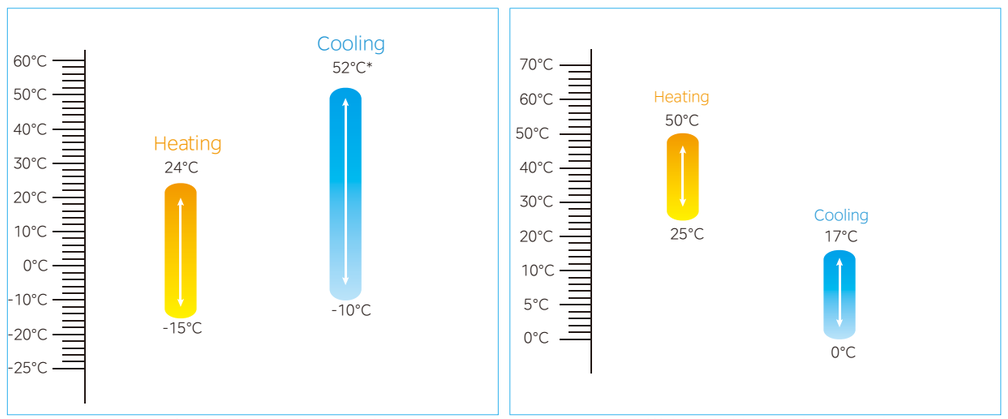
- Aqua Tempo Super chillers with cooling capacity ranging from 35kW to130kW, combination capacity can be up to 2080kW.




- 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




Ambient temperature operation range

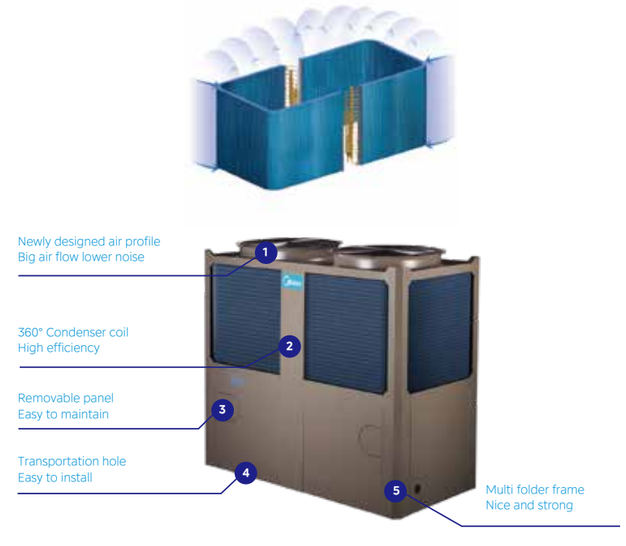
Water outlet temperature operation range

*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.

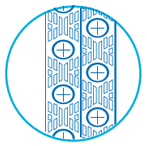



H shape condenser uses inner grooved copper tube and hydrophilic aluminum foil, greatly improve the heat exchange efficiency.

# FEATURES

## ● High performance heat exchanger

Enlarge heat-exchanging area

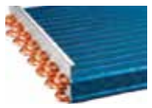


Fin

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

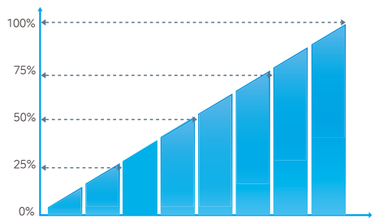
> Heavy anti-corrosion products:
150h of neutral salt mist

## ● 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 effciency and improved reliability




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

Inner-threaded copper pipe

Anti-corrosion materials

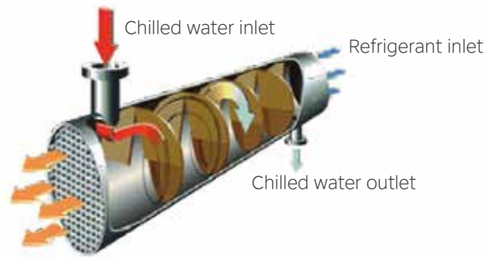
Inner grooved copper pipe, increased area of heat exchange, improved efficiency.

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


Flat baffle plate

Helical baffle

Refrigerant outlet




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

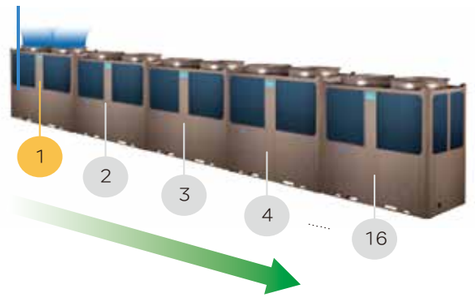
# High reliability

## ● 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.

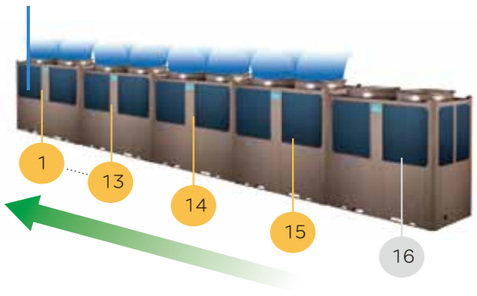
For example, 16 modules combination, no.1 is master unit, others are slave units.

Master unit




Loading in sequence

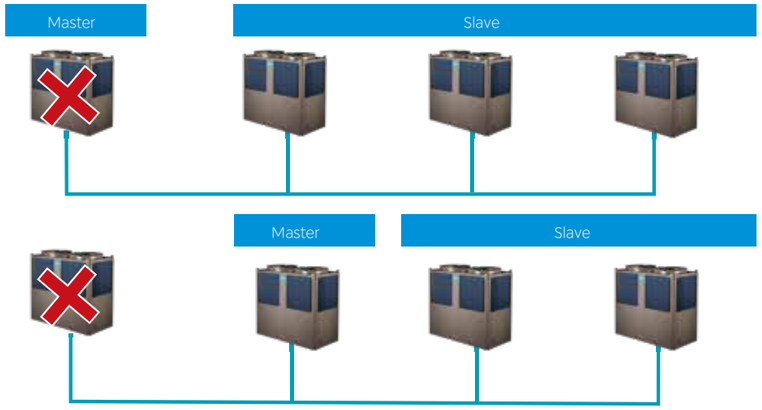
Master unit




Offloading in sequence

## ● Back-up functions

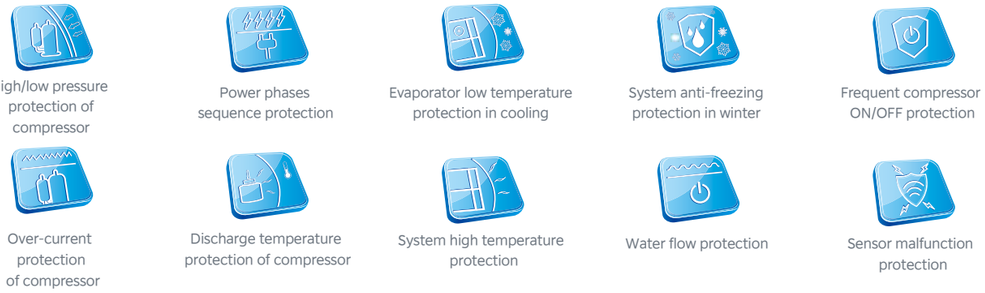
In a combination system, if one module fails, other modules can be used as backup and continue the operation.



# FEATURES

## ● Reliable protections

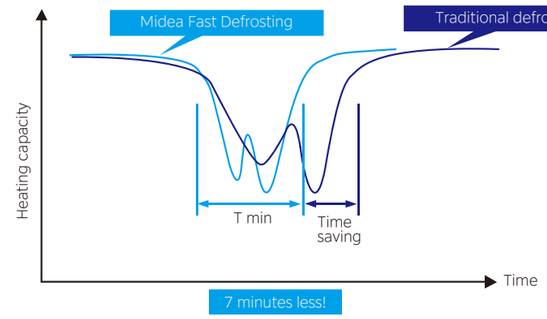
Multiple protections are adopted to ensure system stable running.




## ● Intelligent defrosting technology

Model alternative defrosting technology ensures little fluctuation on water temperature.

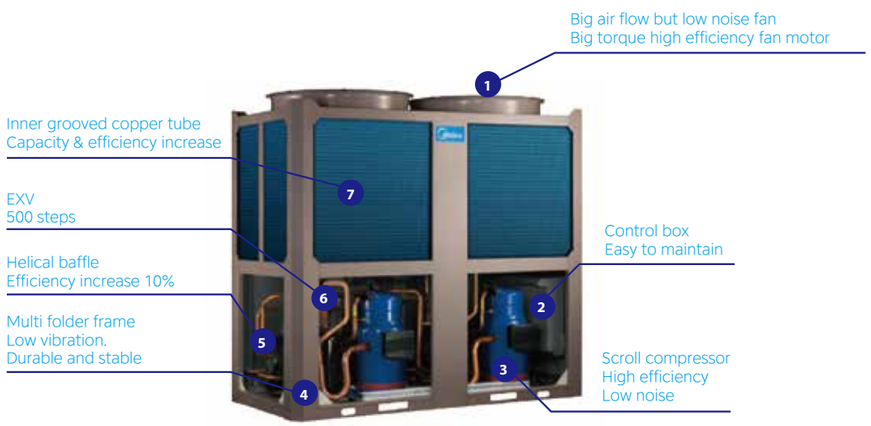
Manual defrosting program is available for service purpose.




# 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.


## ● Convenient operation

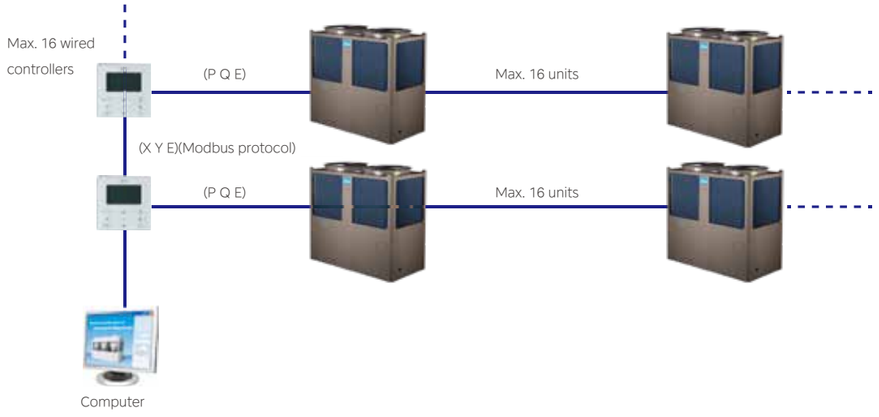
Remote on/off function, remote heating/cooling function and alarm function can be easily realized by connecting switches or light/sound devices with PCB.


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.

# FEATURES

● 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.




## 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<br>Parameter setting and LCD display<br>Real time clock control.<br>Multiple timer<br>Power-off memory function<br>Modbus(Customized)<br>Address setting<br>Parallel function | Mechanical butoon<br>Parameter setting and LCD display<br>Real time clock control.<br>Multiple timer<br>Power-off memory function<br>Address setting<br>Parallel function<br>Weekly timing function |
| Max. connection PCBs | 16 | 16 |

# Specifications

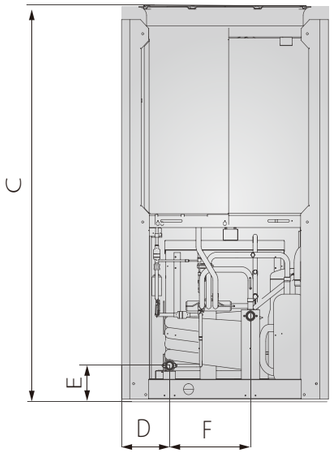
## SS-LA series

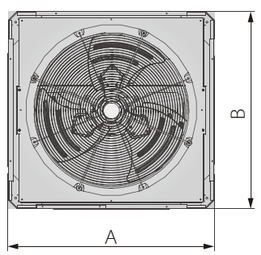
| Model | | | MC-SS35-RN1L-B | MC-SS65/RN1L | MC-SS80/RN1L |
|---|---|---|---|---|---|
| Series | | | SS-LA | SS-LA | SS-LA |
| Power supply | | V/Ph/Hz | 380-415/3/50 | 380-415/3/50 | 380-415/3/50 |
| Cooling[1] | Capacity | kW | 35 | 65 | 80 |
| | Input | kW | 11.5 | 20.4 | 25.8 |
| | EER | | 3.04 | 3.19 | 3.10 |
| Heating[2] | Capacity | kW | 37 | 69 | 85 |
| | Input | kW | 11.3 | 21.5 | 26.5 |
| | COP | | 3.27 | 3.21 | 3.21 |
| Compressor | Type | | Fixed Scroll | Fixed Scroll | Fixed Scroll |
| | Quantity | Pieces | 1 | 1 | 2 |
| Air side heat exchanger | Type | | Finned tube | Finned tube | Finned tube |
| | Fan motor type | | AC Motor | AC Motor | AC Motor |
| | Qualitity of fan motor | Pieces | 1 | 2 | 2 |
| Water side heat exchanger | Type | | Tube-in-tube | Shell-tube | Shell-tube |
| Refrigerant | Type | | R410A | R410A | R410A |
| | Charged volume | kg | 6 | 10.5 | 13 |
| Throttle type | | | EXV | EXV | EXV |
| Sound pressurer level[3] | | dB(A) | 65 | 67 | 67 |
| Unit net dimension(D×H×W) | | mm | 1,020×1,770×980 | 2,000×1,770×960 | 2,000×1,770×960 |
| Packing dimension(D×H×W) | | mm | 1,070×1,900×1,030 | 2,090×1,890×1,030 | 2,090×1,890×1,030 |
| Net/Gross weight | | kg | 300/310 | 530/590 | 645/710 |
| Pipe connections | | mm | DN40 | DN65 | DN65 |
| Ambient temperature range | Cooling | °C | -10~52 | -10~46 | -10~46 |
| | Heating | °C | -15~24 | -15~24 | -15~24 |
| LWT setting range | Cooling | °C | 5~17 | 5~17 | 5~17 |
| | Heating | °C | 40~50 | 40~50 | 40~50 |
| LWT setting range | Cooling | °C | 0~17 | 0~17 | 0~17 |
| | Heating | °C | 25~50 | 25~50 | 25~50 |

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

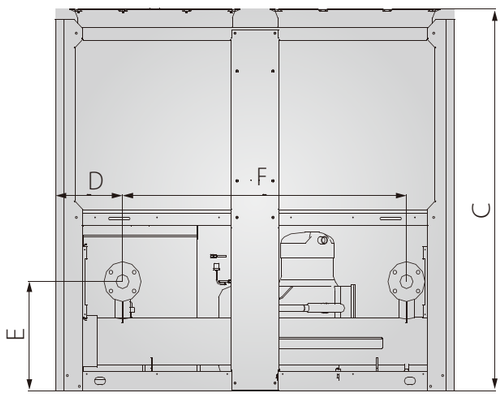
# Dimensions (Unit:mm)

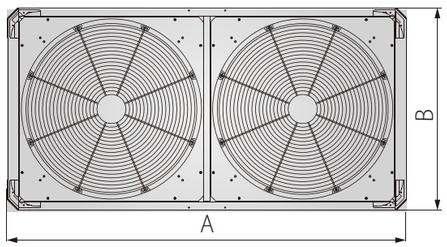
MC-SS35-RN1L-B




MC-SS65/RN1L
MC-SS80/RN1L




| Model | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| MC-SS35-RN1L-B | 1020 | 980 | 1770 | 237 | 152 | 400 |
| MC-SS65/RN1L<br>MC-SS80/RN1L | 2000 | 960 | 1770 | 336 | 506 | 1420 |

# (King Plus series)
# Aqua Tempo Power Series

## Product Lineup

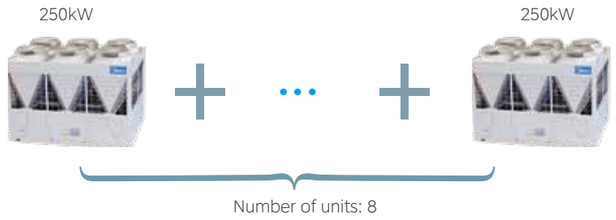
| Series | Power supply |  |  |  |  |
|---|---|---|---|---|---|
| PS | 380V/3N/50Hz | 60kW | 120kW | 180kW | / |
| PS | 220V/3N/60Hz | 60kW | 120kW | 180kW | / |
| PS-LA | 380V/3N/50Hz | / | / | / | 200kW |

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

# Features

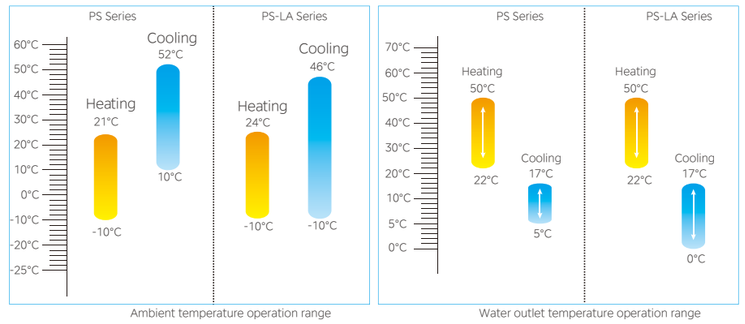
## Wide application range

- 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

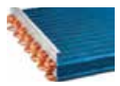
Enlarge heat-exchanging area

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

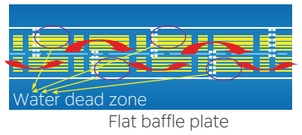
- Tube-in-tube & shell-tube heat exchanger

Inner-threaded copper pipe

Anti-corrorosion materials

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

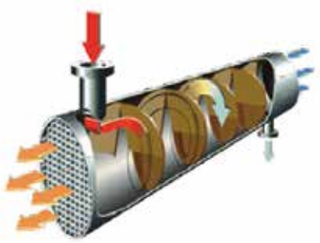
Anti-corrosion shell increases the useful life of heat exchanger.




Flat baffle plate

Helical baffle

Refrigerant outlet



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

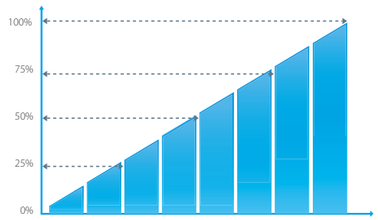
# FEATURES

- 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.

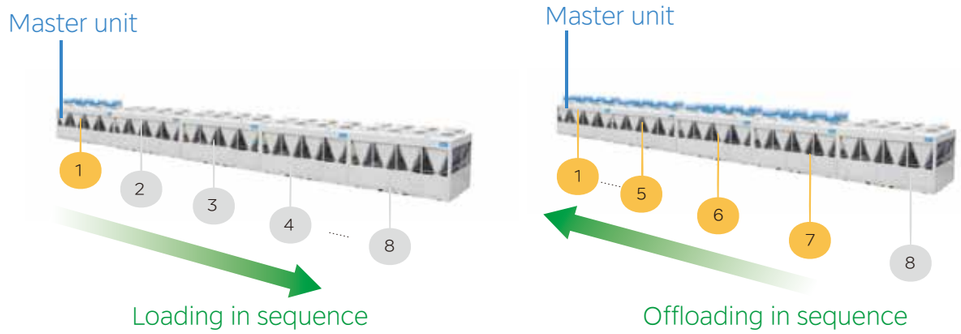



## High reliability

- Alternative cycle duty operation

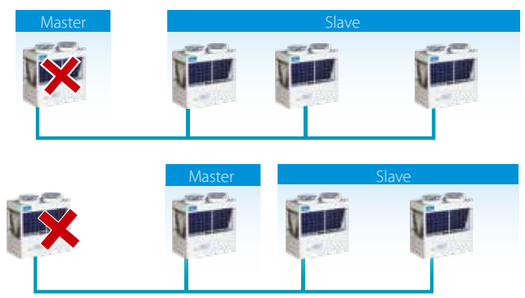
In one combination module, all slave units operate as alternative in cycle duty to keep equal running time, realize higher stability, better reliability and longer lifespan.

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.



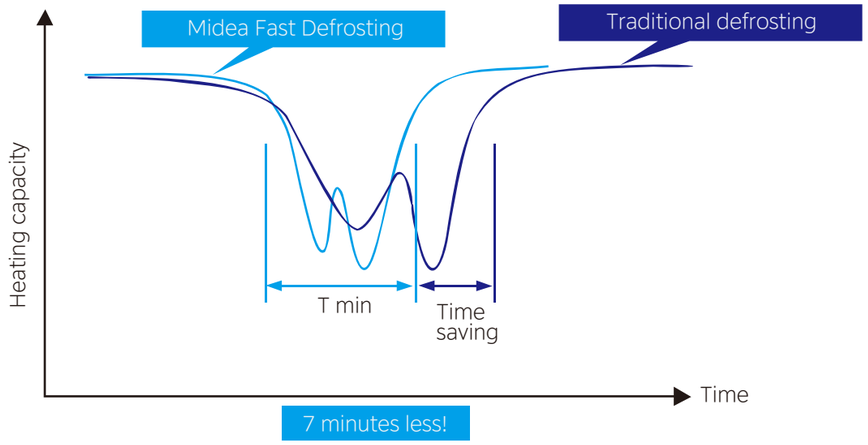

- Reliable protections

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.



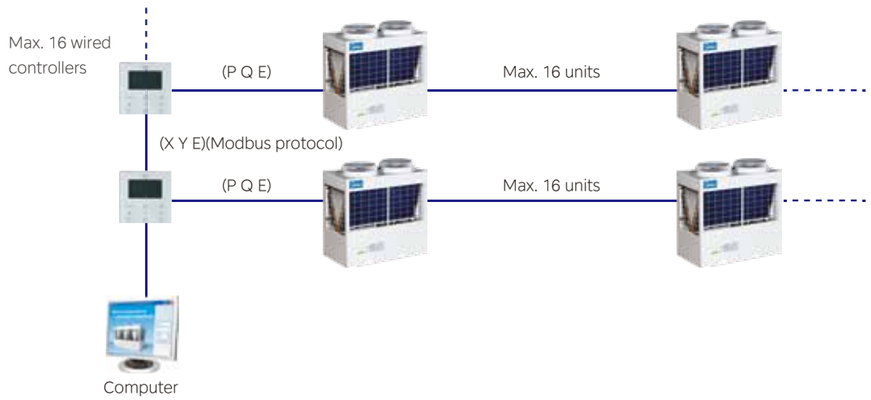

## Easy control

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

# FEATURES

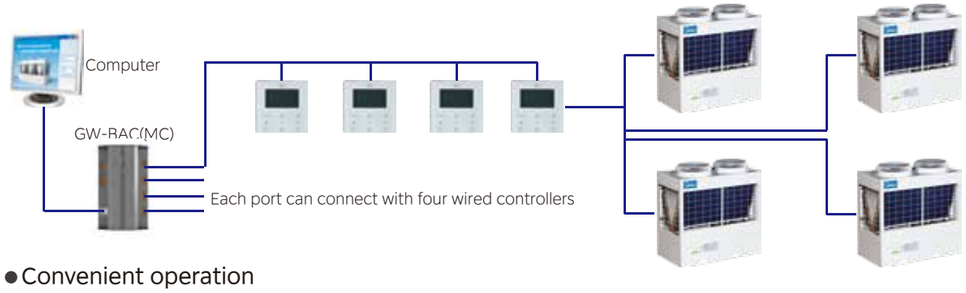
## ● Modbus function

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




## ● Bacnet gateway

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




## ● Convenient operation

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


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

# Specifications

## PS-LA series

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

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

## 50Hz PS series

| Model | | | MGBT-F60W/RN1 | MGBT-F120W/RN1 | MGBT-F180W/RN1 |
|---|---|---|---|---|---|
| Power supply | | V/Ph/Hz | 380-415/3/50 | 380-415/3/50 | 380-415/3/50 |
| Cooling[1] | Capacity | kW | 60 | 120 | 180 |
| | Input | kW | 19.3 | 38.5 | 57.9 |
| | EER | | 3.11 | 3.12 | 3.11 |
| Cooling[2] | Capacity | kW | 52 | 104 | 156 |
| | Input | kW | 22.1 | 43.0 | 64.5 |
| | EER | | 2.35 | 2.42 | 2.42 |
| Heating[3] | Capacity | kW | 64 | 128 | 195 |
| | Input | kW | 19.8 | 41.5 | 59.4 |
| | COP | | 3.23 | 3.08 | 3.28 |
| Compressor | Type | | Fixed Scroll | Fixed Scroll | Fixed Scroll |
| | QuantityPieces | | 2 | 4 | 6 |
| Air side heat exchanger | Type | | Finned tube | Finned tube | Finned tube |
| | Fan motor type | | AC Motor | AC Motor | AC Motor |
| | Qualitity 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 | 12.0 | 26.0 | 39.0 |
| Throttle type | | | EXV | EXV | EXV |
| Sound pressurer level[4] | | dB(A) | 67 | 70 | 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 |
| Packing dimension(D×H×W) | | mm | 2,090x2,095x985 | 2,080×2,240×1,755 | 2,980×2,260×2,135 |
| Net/ Gross weight | | kg | 580/650 | 1,090/1,270 | 1,730/2,000 |
| Water piping connection | | mm | DN100 | DN65 | DN80 |
| Maximum combinations | | | 16 | 8 | 5 |
| Ambient temperature range | Cooling | °C | 10~52 | 10~52 | 10~52 |
| | Heating | °C | -10~21 | -10~21 | -10~21 |
| LWT setting range | Cooling | °C | 5~17 | 5~17 | 5~17 |
| | Heating | °C | 45~50 | 45~50 | 45~50 |
| LWT setting range[5] | Cooling | °C | 5~17 | 5~17 | 5~17 |
| | Heating | °C | 22~50(customized) | 22~50(customized) | 22~50(customized) |

Notes:
1. Water inlet/outlet: 12°C/ 7°C; Outdoor ambient temp. of 35°C DB.
2. Water inlet/outlet: 12°C / 7°C; Outdoor ambient temp. of 46°C DB.
3. Water inlet/outlet: 40°C/ 45°C; Outdoor ambient temp. 7°C DB/6°C 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.

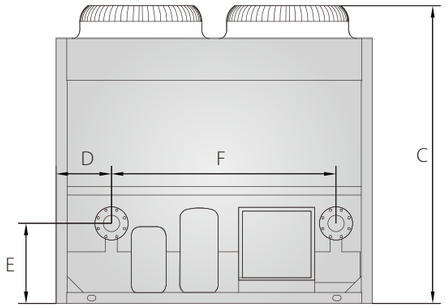
## 60Hz PS series

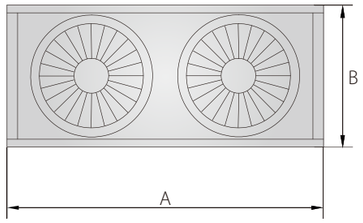
| Model | | | MGBT-F60W/DN1 | MGBT-F120W/DN1 | MGBT-F180W/DN1 |
|---|---|---|---|---|---|
| Power supply | | V/Ph/Hz | 220/3/60 | 220/3/60 | 220/3/60 |
| Cooling[1] | Capacity | kW | 60 | 120 | 180 |
| | Input | kW | 19.5 | 39.0 | 58.5 |
| | EER | | 3.08 | 3.08 | 3.08 |
| Cooling[2] | Capacity | kW | 52 | 104 | 156 |
| | Input | kW | 22.1 | 43.0 | 64.5 |
| | EER | | 2.35 | 2.42 | 2.42 |
| Heating[3] | 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 |
| | Qualitity of fan motor | Pieces | 2 | 4 | 6 |
| Water side heat exchanger | Type | | Shell-tube | Shell-tube | Shell-tube |
| Refrigerant | Type | | R410A | R410A | R410A |
| | Charged volume | kg | 13 | 26 | 42 |
| Throttle type | | | EXV | EXV | EXV |
| Sound pressurer level[4] | | dB(A) | 67 | 70 | 74 |
| Unit net dimension(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 | °C | 10~52 | 10~52 | 10~52 |
| | Heating | °C | -10~21 | -10~21 | -10~21 |
| LWT setting range | Cooling | °C | 5~17 | 5~17 | 5~17 |
| | Heating | °C | 45~50 | 45~50 | 45~50 |
| LWT setting range[5] | Cooling | °C | 5~17 | 5~17 | 5~17 |
| | Heating | °C | 22~50(customized) | 22~50(customized) | 22~50(customized) |

Notes:
1. Water inlet/outlet: 12°C/ 7°C; Outdoor ambient temp. of 35°C DB.
2. Water inlet/outlet: 12°C / 7°C; Outdoor ambient temp. of 46°C DB.
3. Water inlet/outlet: 40°C/ 45°C; Outdoor ambient temp. 7°C DB/6°C 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.

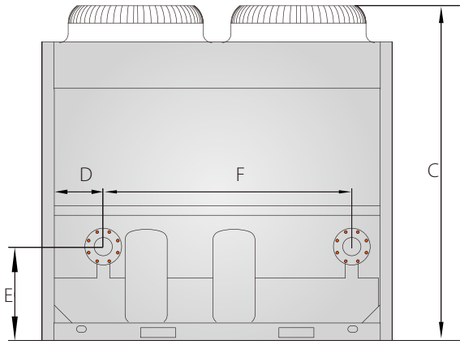
# Dimensions (Unit:mm)

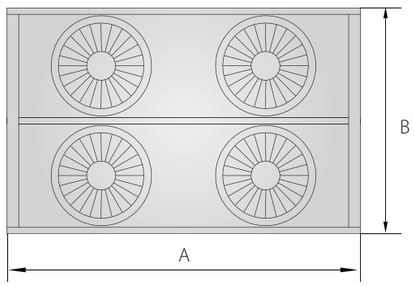
## 60kW module



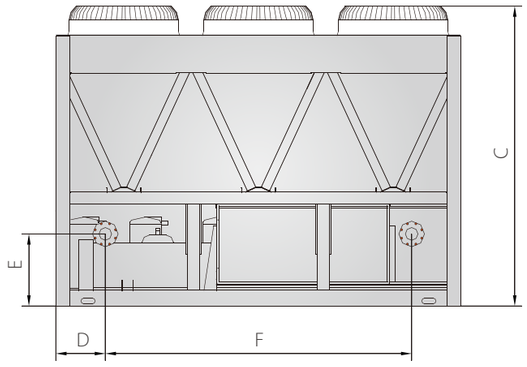



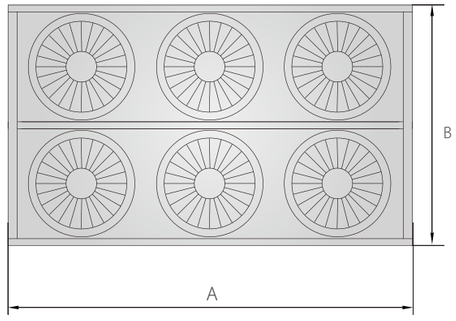

## 120kW module




## 180/200kW module




| Model | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| MGBT-F60W/RN1<br>MGBT-F60W/DN1 | 2000 | 900 | 1880 | 350 | 506 | 1420 |
| MGBT-F120W/RN1<br>MGBT-F120W/DN1 | 2000 | 1685 | 2080 | 350 | 506 | 1420 |
| MGBT-F180W/RN1<br>MGBT-F180W/DN1 | 2850 | 2000 | 2110 | 347 | 506 | 2156 |
| MGBL-F200W/RN1 | 2850 | 2000 | 2110 | 347 | 506 | 2156 |

# King Series

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

# OVERVIEW

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






# FEATURES

## Excellent design

**Air-side heat exchanger**

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

**Fan and motor**

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

**Electric control box**

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

**Water-side heat exchanger**

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

**Compressor**

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

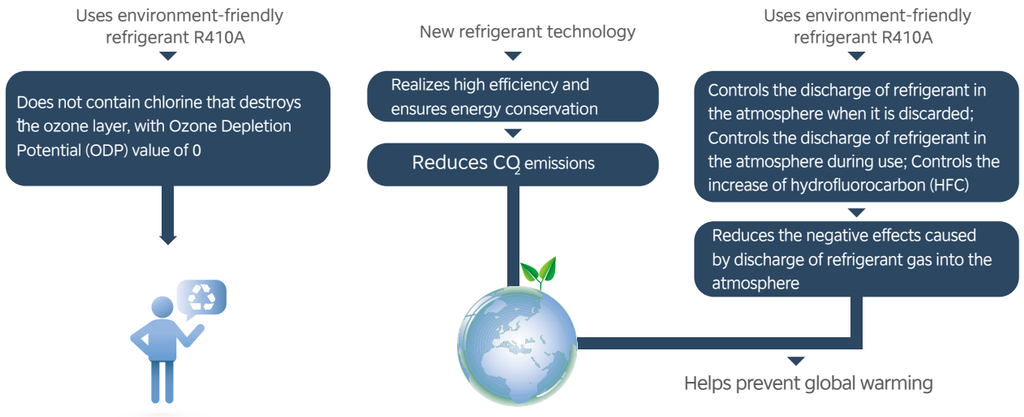
**Liquid storage tank**

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

# FEATURES

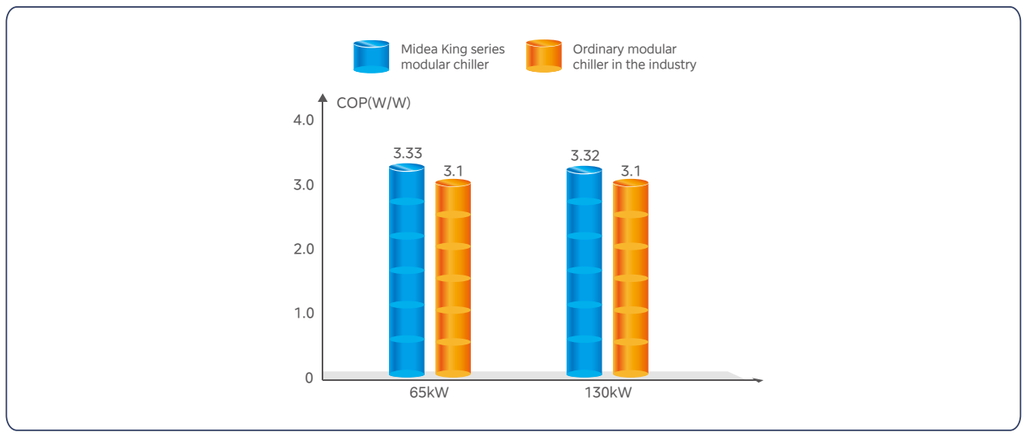
## Environment-friendly

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

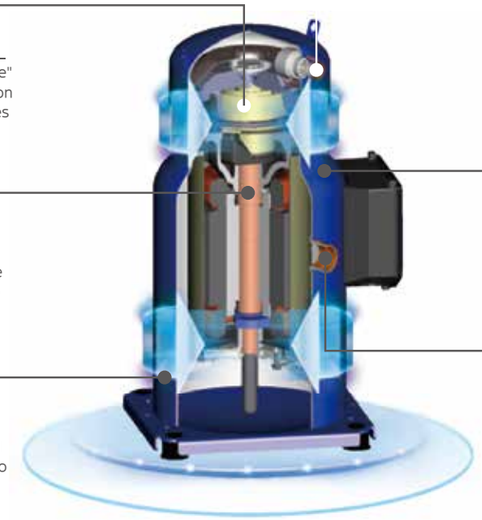



## Energy-efficient

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



**• High efficiency**
The "contact-free and wearing-free" scroll design reduces internal friction of the compressor and improves efficiency.

**• Low warranty cost**
The environment-friendly lead-free polymer bearing functions stably and helps reduce the warranty cost.

**• Low noise and low vibration**
A soundproof enclosure is installed at the bottom of the compressor to reduce noise and vibration accordingly.

**• Stable performance**
The compressor outlet is equipped with a check valve to prevent the refrigerant from flowing back, and therefore the reliability is high.

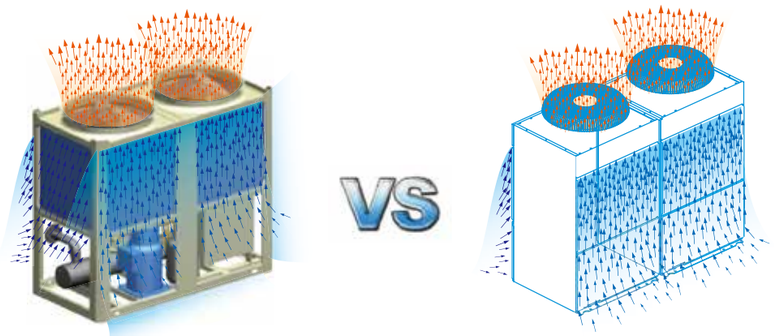
**• No maintenance**
The hermetic design requires no maintenance.

**• Long service life**
The suction cooling motor enables the compressor to have higher efficiency and longer service life.

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.

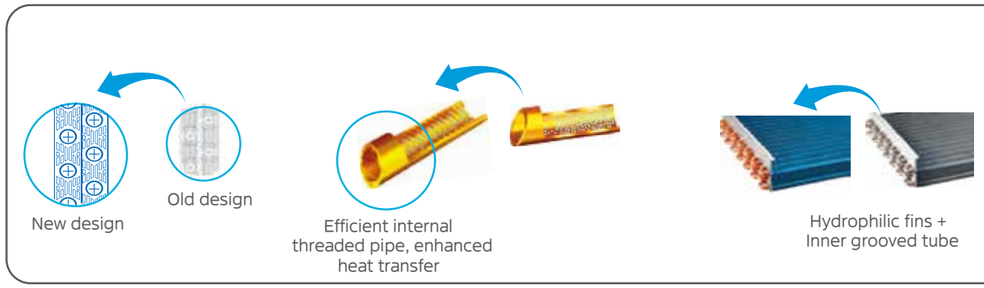



Heat exchangers are centralized in the upper part of the unit. Heat exchange is concentrated, and the air is evenly supplied on all sides to maximize the effective heat exchange area of the unit.

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.

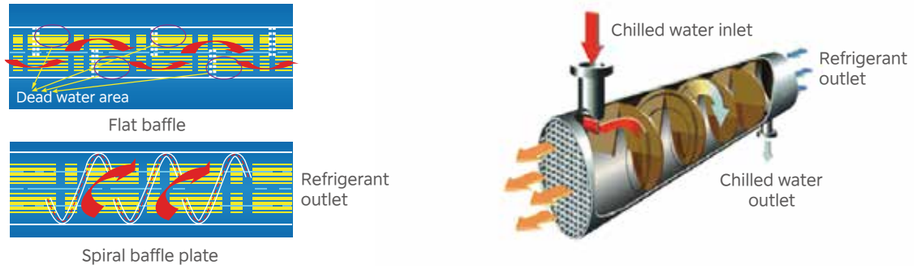
# FEATURES

• 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

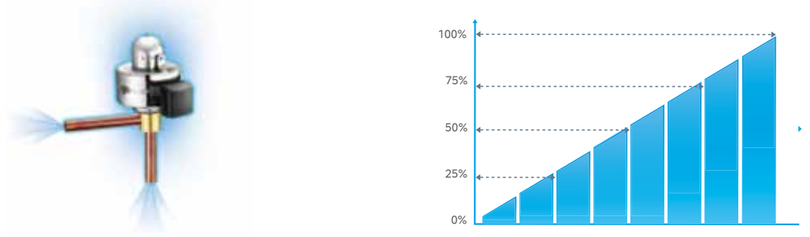
Midea large-torque low-noise fan

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

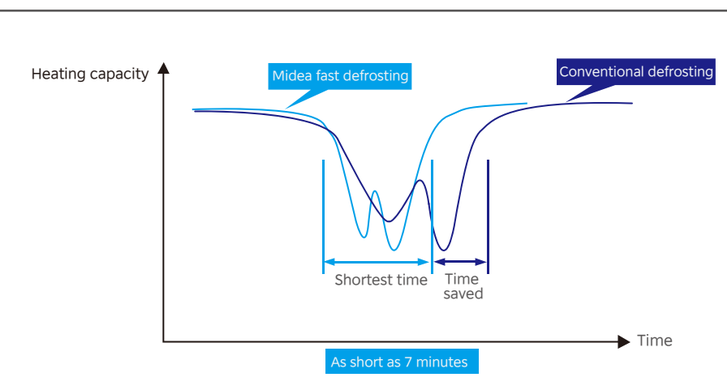
## EXV, more precise flow control

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

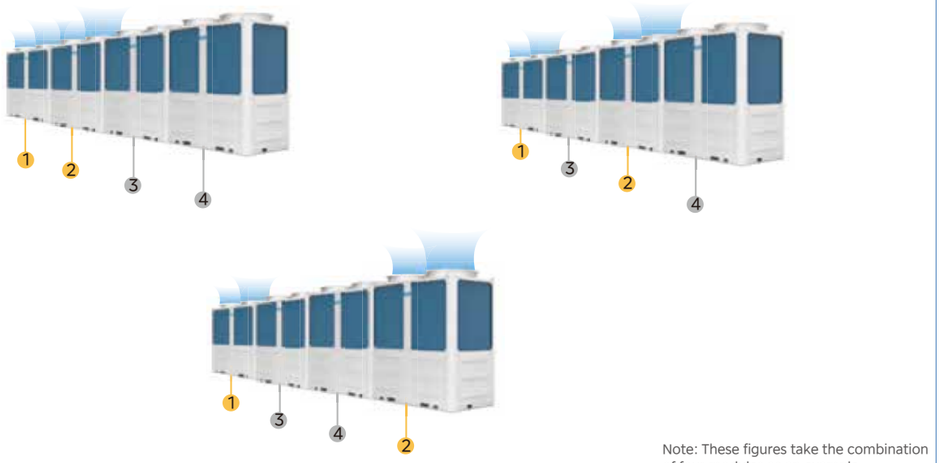
## Stable and reliable

### 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.

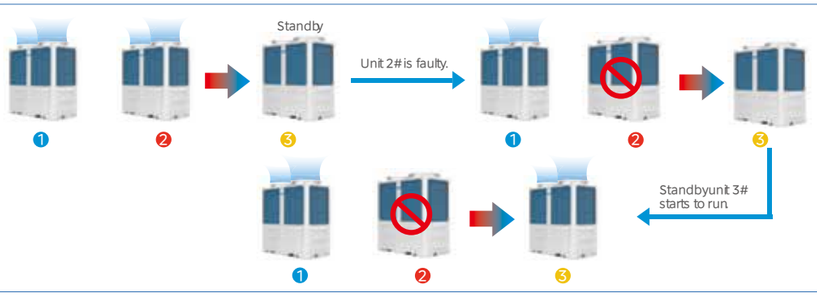



Alternate technology between combined modules

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

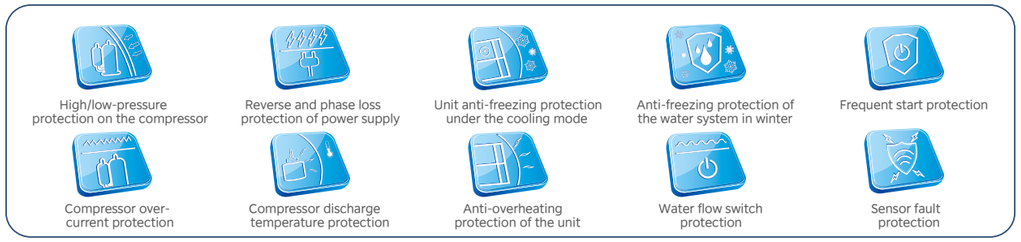
### Module Standby Operation Technology

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.

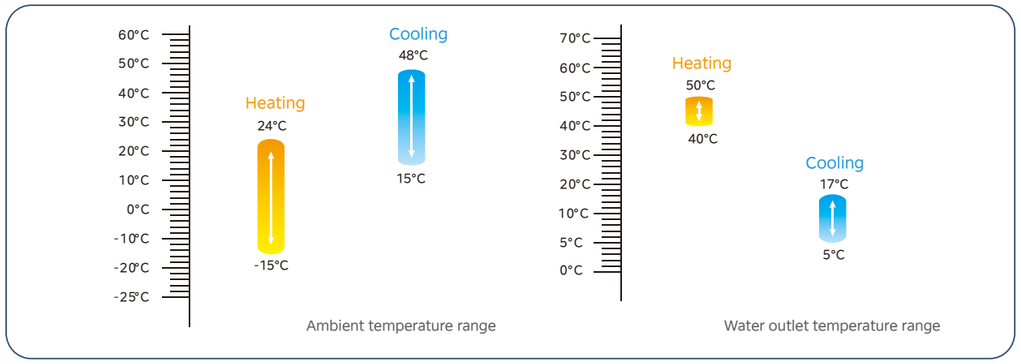



### Various protection functions, ensuring safe operation of the system

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.



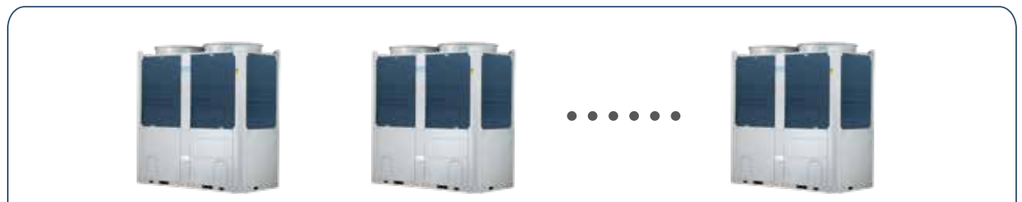

### Wide ranges of water outlet temperature and ambient temperature




## Convenient installation

### Modular design, flexible installation

- Unit modules of diferent caacities can be combined freely, and upto 16 units can be connected in parael, with strona compatibilitv 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 modwlar chilers in the same svstem start up in stages, and operate in balance, reducing the impact of the unit startup current on the power grid.



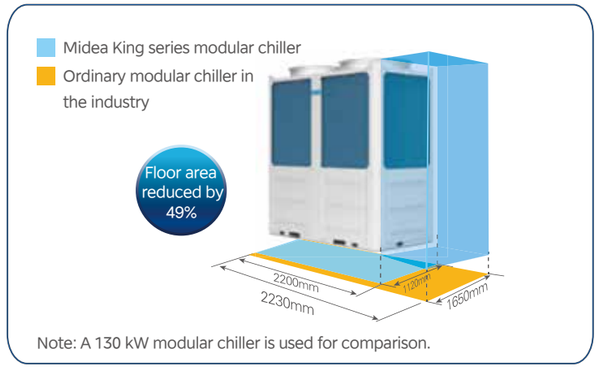
Notes: 130 kW module is taken as an example

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

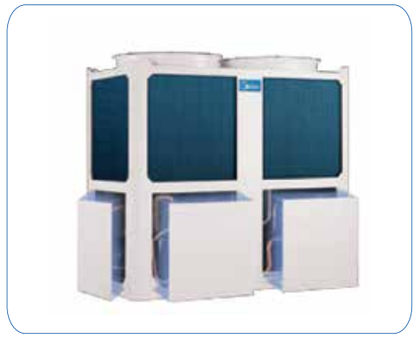
The unit has a compact size and occupies a small area, truly saving space and effectively reducing transportation costs.




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.

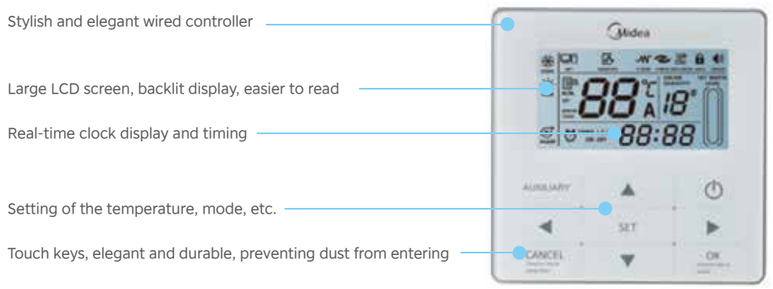


## Smart control

### 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-speedprocessing 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.

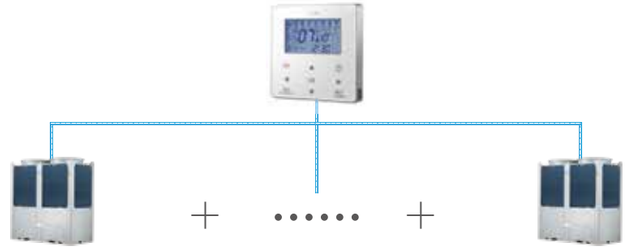
### New touch wired controller, easy to control the system




KJRM-120D/BMK-E

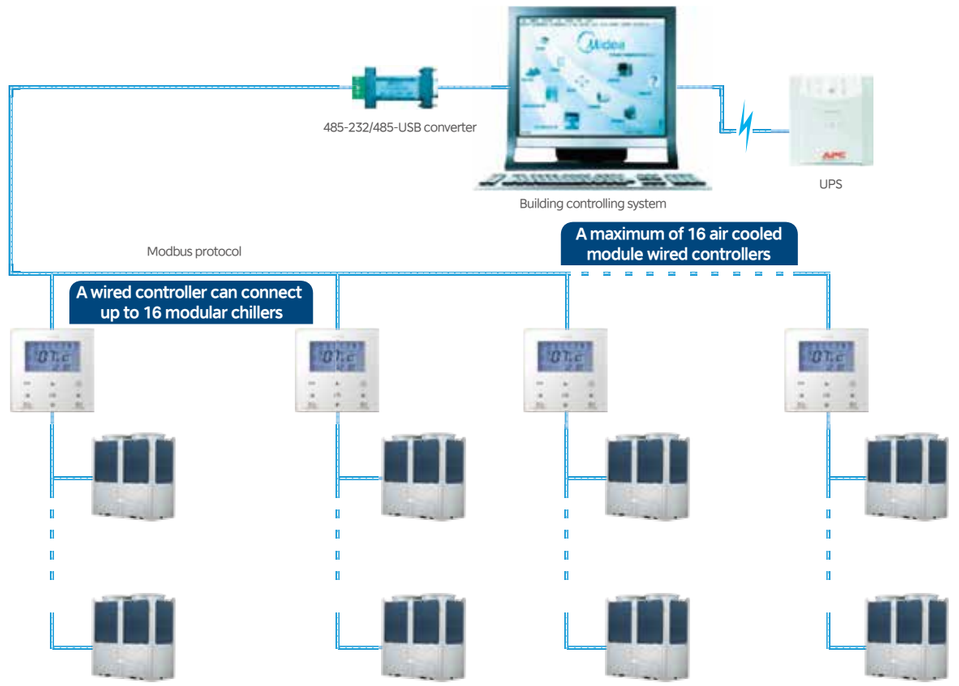
### Smart control system, user-friendly

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

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

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

# King Plus Series

King Plus Series

# Midea King Plus Series Air Cooled Heat Pump Modular Chiller

## Eight core advantages:

Stylish appearance

Energy control technology

Flexible installation

Environment-friendly

Energy-efficient

Stable Performance

Module combination

Smart control

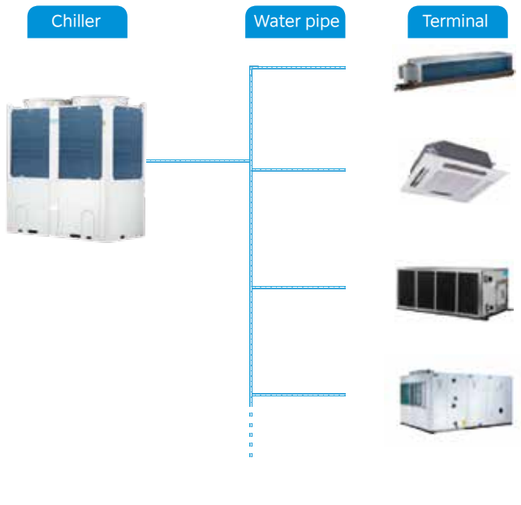
# FEATURES

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

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

130 kW

260 kW




## 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

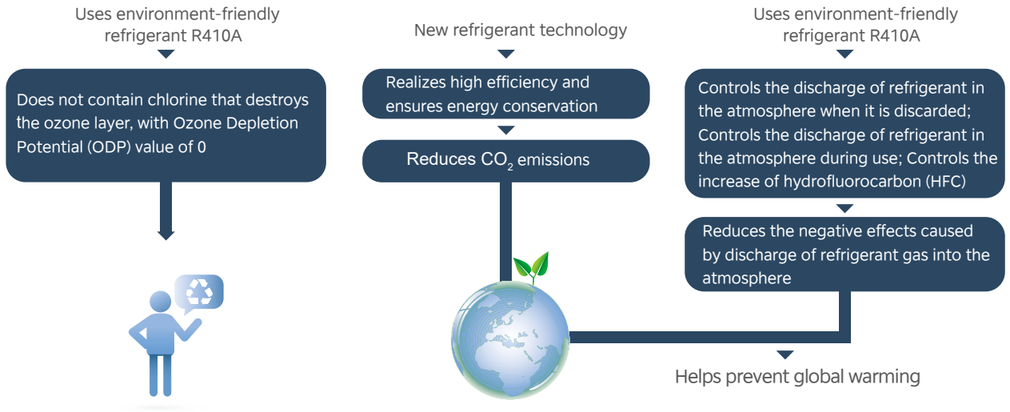
The compressor is large in capacity, efficient, and durable.

### Liquid storage tank

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

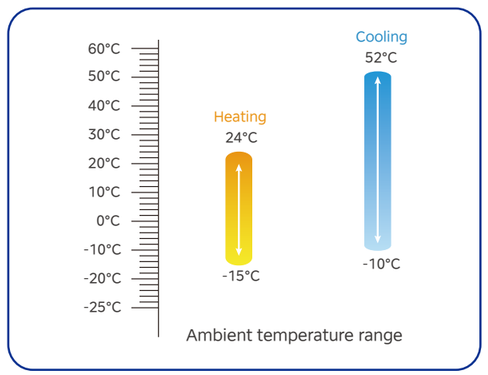
## Environment-friendly

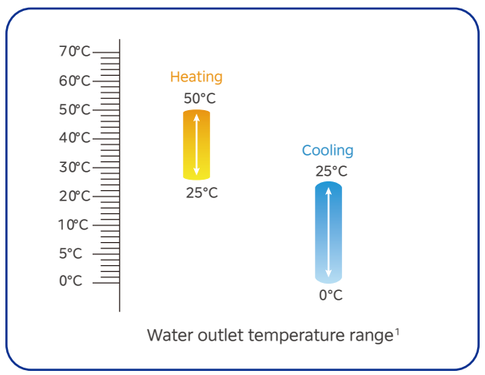
Eco-friendly refrigerant R410A is used, with a higher cooling efficiency. R410A does not contain chlorine that destroys the ozone layer, and its Ozone Depletion Potential (ODP) value is 0. R410A also effectively reduces CO2 emission.




## Wide operation range

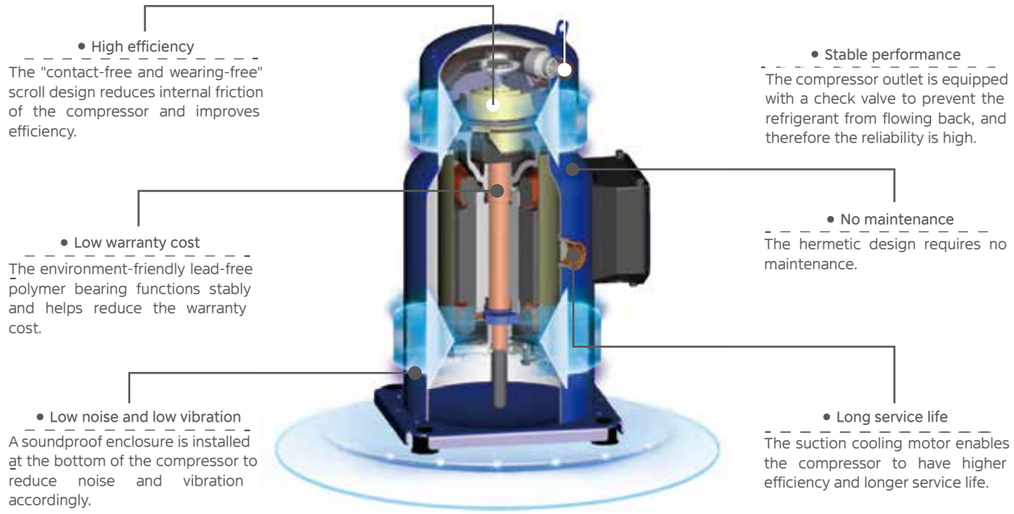
Midea King series modular chiller integrates an efficient compressor, a new-generation efficient heat exchange system, a high-precision electronic expansion valve, and other professional components. The COP of the full series units reaches the leading level in the industry.




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

### Hermetic scroll compressor technology, stronger in power

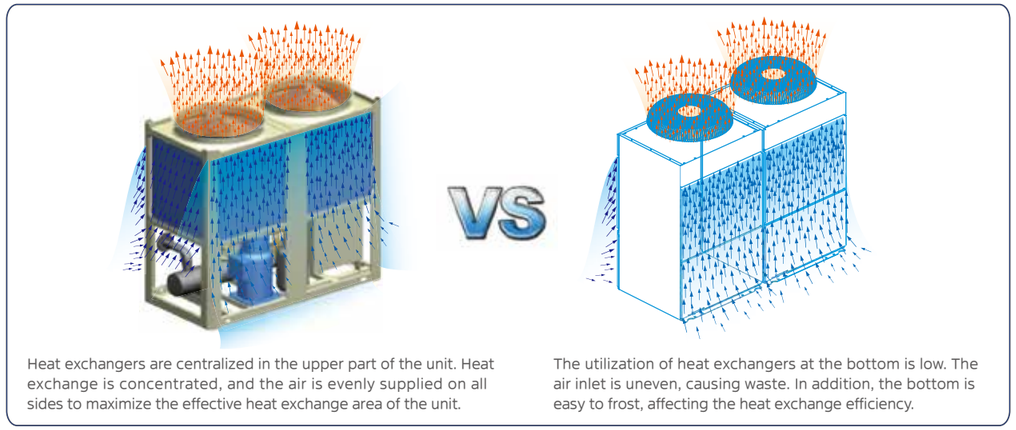



Note: The actual compressor prevails.

### Efficient heat exchanger, greatly improving heat exchange efficiency

• High-efficiency air-side heat exchanger

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

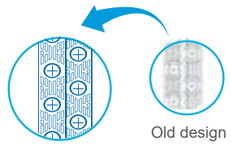


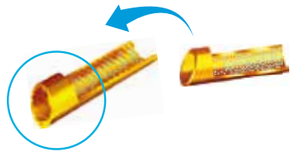

Heat exchangers are centralized in the upper part of the unit. Heat exchange is concentrated, and the air is evenly supplied on all sides to maximize the effective heat exchange area of the unit.

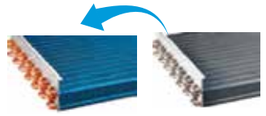
The utilization of heat exchangers at the bottom is low. The air inlet is uneven, causing waste. In addition, the bottom is easy to frost, affecting the heat exchange efficiency.

# 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.

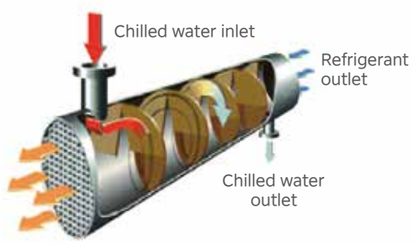
## • Efficient water-side heat exchanger

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.


Flat baffle

Refrigerant outlet

Spiral baffle plate




## 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

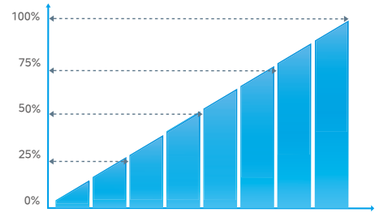
Midea large-torque low-noise fan

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

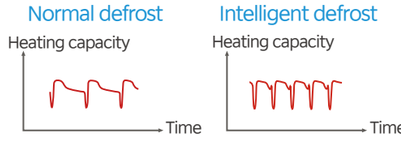
## EXV, more precise flow control

Liquid-phase distibuted components maximize the peformance and minimize the efects of defrosting. Together with capilary tube, 500-stageXV can stablv and precisely control airflow, with fast response, hiaher eficiency, and better reliability.

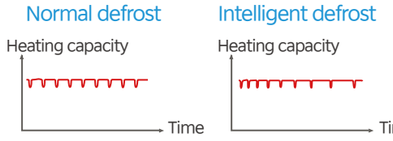



## Intelligent defrosting technology

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




Under high humidity condition, the frosting speed is fast and frost is thick. Unit enters defrost mode in time to ensure high capacity.




Under low humidity condition, the frosting speed is slow and frost is thin. Normal operation time is extended and defrost time is decreased to avoid fluctuation of water temperature.

## Stable and reliable

### Alternate operation

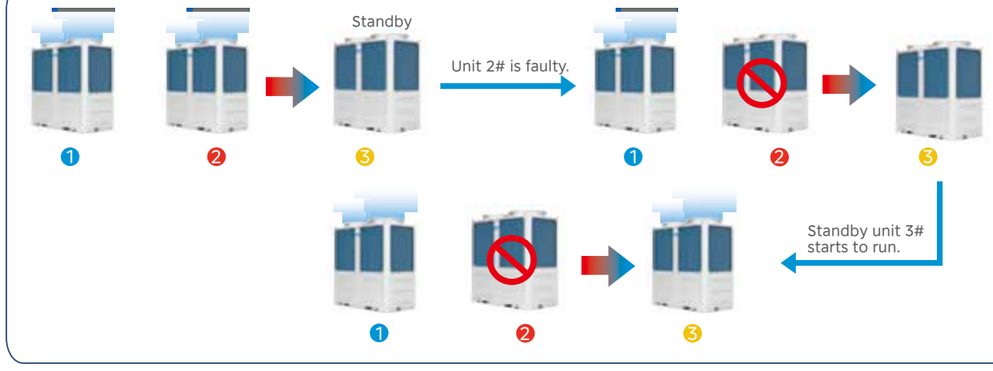
Based on the system load, the unit sets the module that is started preferably in turn and equally allocates the running time of each module, greatly enhancing the reliability of the unit and prolonging its service life.


Alternate technology between combined modules

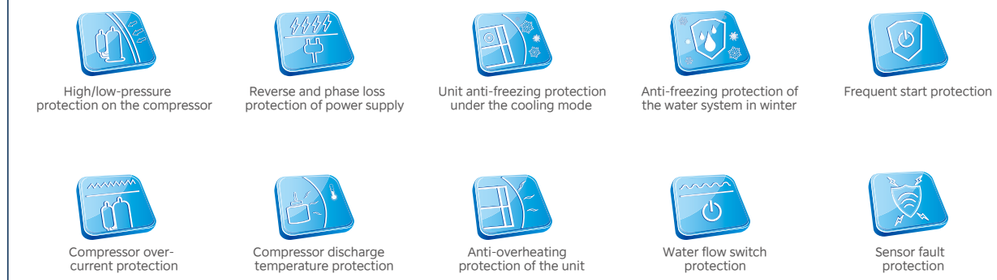
Note: These figures take the combination of four modules as an example.

### Module Standby Operation

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




### Various protection




## Convenient installation

### Modular design

• Unit modules of diferent capacites can be combined freely, and up to 16 units of 130kW (8 units of 260kW) can be connected in parallel, with strong compatibility and scalability. Based on the characteristics of the installation site, the user can select a variety of combination methods to connect 1-16 modules in parallel, with the cooling capacity up to 2,080 kW, which fully meets different needs.

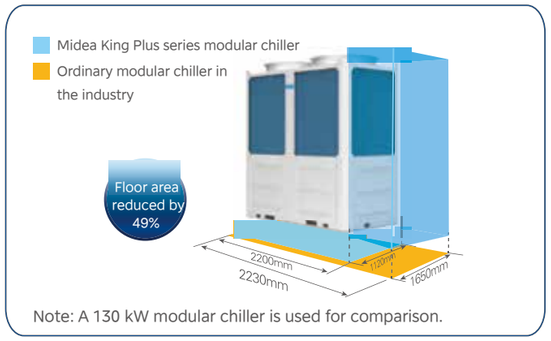
• Air cooled modular chilers in the same system start up in stages, and operate in balance, reducing the impact of the unit startup current on the power grid.

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

# FEATURES

### Compact structure

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



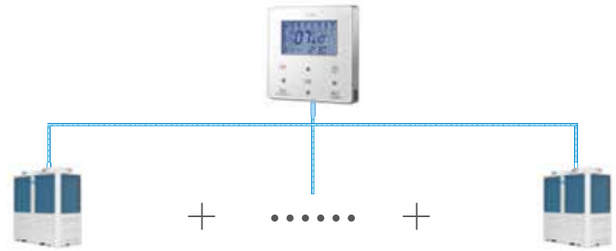

Note: A 130 kW modular chiller is used for comparison.

### Easy installation

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

### Smart control system, user-friendly

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



## Smart control

### Micro PC control board

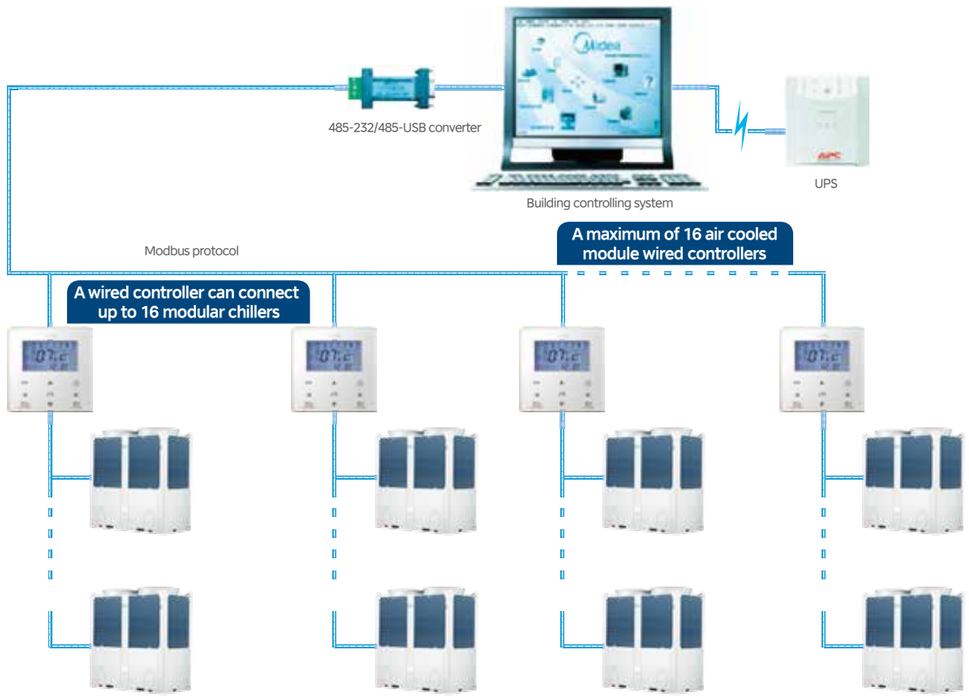
The micro PC control board features product operation control, safety protection, and many other functions. Among them, the high-speed processing chip can quickly obtain the operating parameters of the host system, and deliver control instructions in time to realize rapid processing,implement smart control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

### New touch wired controller


KJRM-120D/BMK-E

•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

| Model name | | | MC-SS130-RN1TL | MC-SS260-RN1TL |
|---|---|---|---|---|
| Power supply | | V/Ph/Hz | 380-415/3/50 | 380-415/3/50 |
| Cooling(A35W7) | Capacity | kW | 130 | 265 |
| | Rated input | kW | 42.3 | 84.0 |
| | EER | | 3.07 | 3.15 |
| Heating(A7W45) | Capacity | kW | 138 | 280 |
| | Rated input | kW | 43.0 | 84.8 |
| | COP | | 3.21 | 3.30 |
| Compressor | Type | | Scroll(Fixed) | Scroll(Fixed) |
| Air side heat exchanger | Type | | Finned tube | Finned tube |
| Fan | Fan motor type | | DC motor | DC motor |
| Water side heat exchanger | Type | | Shell-tube | Shell-tube |
| | Rated water flow | $m^3/h$ | 22.4 | 45.6 |
| | Water pressure drop | kPa | 40 | 60 |
| Refrigerant system | Refrigerant type | | R410A | R410A |
| | Refrigerant charge | kg | 20 | 40 |
| | Throttle type | | EXV | EXV |
| Net dimensions(W×H×D) | mm | | 1120*2300*2200 | 2753*2415*2220 |
| Packing dimensions(W×H×D) | mm | | 1180*2445*2250 | 2810*2450*2290 |
| Net weight | kg | | 831 | 1890 |
| Gross weight | kg | | 852 | 1900 |
| Pipe connections | Water inlet/outlet | mm | DN65 | DN100 |
| Water pressure range | MPa | | 1.0 | 1.0 |
| Ambient temperature range | Cooling | °C | -10~52 | -10~52 |
| | Heating | °C | -15~24 - | -15~24 |
| Water outlet temperature[1] | Cooling | °C | 0~25 | 0~25 |
| | Heating | °C | 25~50 | 25~50 |

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

# REFERENCE PROJECTS

## Office building

FINNING CAT Office Building

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

Vimpelcom Offce 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 & Resports

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

# REFERENCE PROJECTS


### City Mall

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

## Hospitals & Healthcare

### Komar University

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

## Industry


### KUKA Robotics in Hungary

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

### Zetes Power Station

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