MDV1C202101

HVAC & Building Technologies Division

Midea Group

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

HVAC BUILDING TECHNOLOGIES

2022

Heat pump solution & Modular chiller

MDV

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

1999
Established

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

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

2011
Launched the M thermal initial generation products.

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

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

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

2018
Launched the Eco Series M thermal Mono type

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

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

Midea Global Spare Parts Center

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

A

B

MHBT Learning Academy

Objective

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

Training Centers

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

1. Midea HBT Training Center

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

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

Products: VRF, M thermal

2. Chongqing Midea Training Center

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

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

Products: Centrifugal Chiller, Screw/Scroll Chiller and Terminals

VRF training

M thermal training

Chiller training

Global Technical Trainings

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

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

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

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

Products: VRF, M thermal, Chillers and Terminals

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

Training Certificates:

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

Registration:

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

Arctic Series

Reference projects

Aston Kuta Bali Hotel (Five Star)

- Country: Indonesia
- City: Bali
- Completion Year: 2010
- Unit: ATW heat pump

Sheraton Bandara Resort Hotel (Five Star)

- Country: Indonesia
- City: Jakarta
- Completion Year: 2011
- Unit: ATW heat pump

Grand Aston Tunjungan (Five Star)

- Country: Indonesia
- City: Surabaya
- Completion Year: 2013
- Unit: ATW heat pump

The Royale Springhill Residences

- Country: Indonesia
- City: Jakarta
- Completion Year: 2010
- Unit: ATW heat pump

FINNING CAT Office Building

- Country: Chile
- City: Santiago
- Outdoor Units: Air-cooled 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 & Resources

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

Heat pump solution

MDV thermal Arctic Series

Focus on your comfort

Split 4~16kW

Mono 4~30kW

Product lineup

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

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

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

Overview

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

DC Inverter | -25℃ | 60℃ | R32 | A+++

Compatible with different kinds of terminals

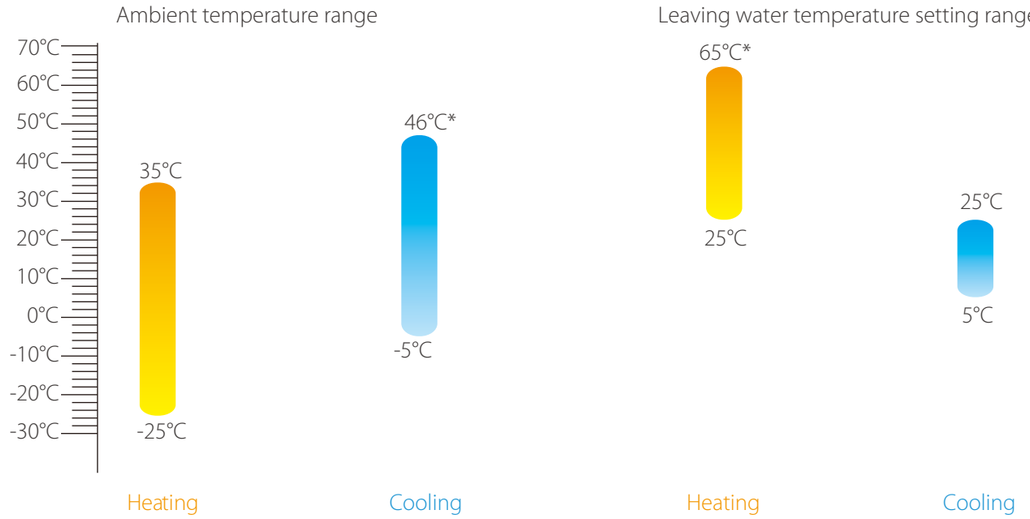
Fan coil unit

Radiator

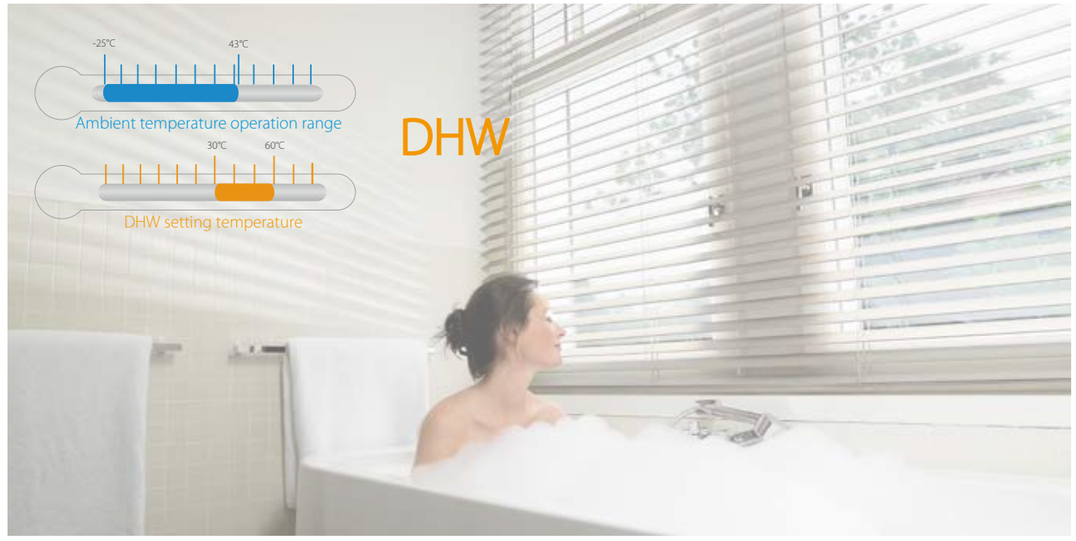
Water tank

Floor heating loop

Wide operation range



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



Mlutiple function

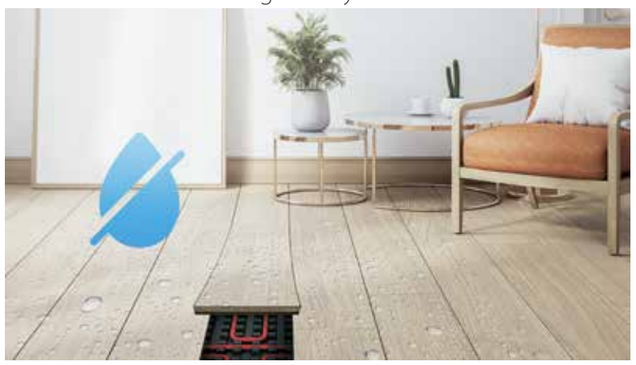
DHW Operation Priority | AUTO mode | Disinfect mode[1] | Eco mode | Preset water temperature | Fast DHW | Day schedule | Weekly schedule

Note:
1. Only when the immersion heater of tank is available can the disinfection water temperature reaches 70℃.

High reliability

Preheating and drying up for floor

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



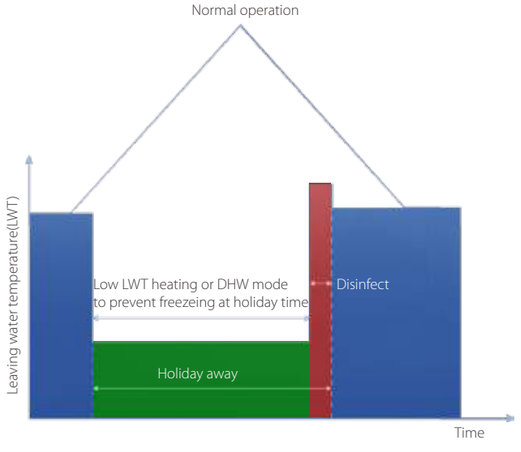
Power limitation function

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

Holiday function

Holiday away

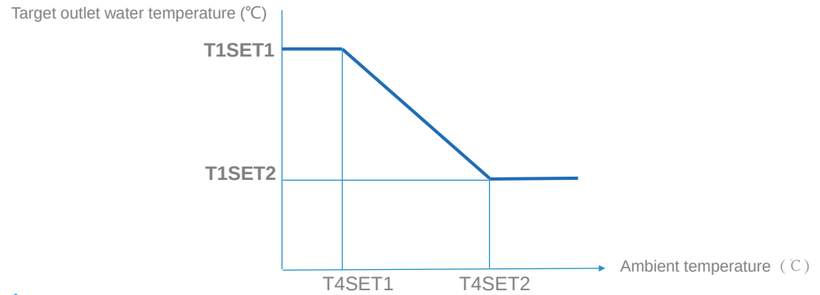
Holiday away function is a mode for improving system reliability and saving energy. Unit operates in heating mode and/or DHW mode with low water temperature to prevent water from freezing in the winter during holiday outside. The user can pre-set , the disinfection mode before he returns home to make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



Smart control

Weather temperature curve

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

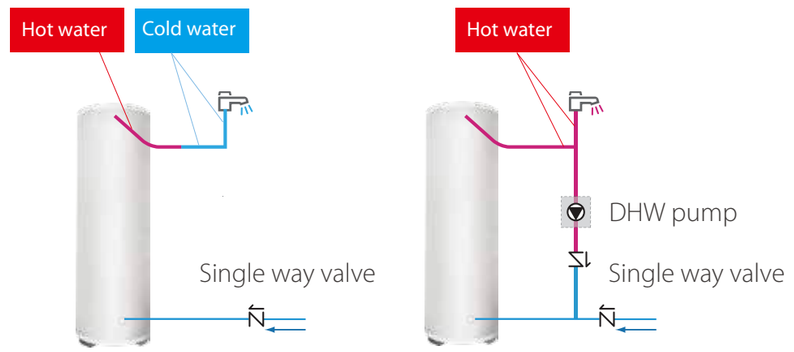


Smart Grid

Heat pump adjusts the operation according to different electrical signals. Power consumption of the system can be automatically adjusted according to the peak and valley power to reduce the power consumption to a great extent.
Cheap electrical signal: DHW mode will be effective to produce hot water
Normal electrical signal: Operates according to users' need.
Expensive electrical signal: Set the maximum operating time for heating mode and cooling mode.

DHW pump function

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



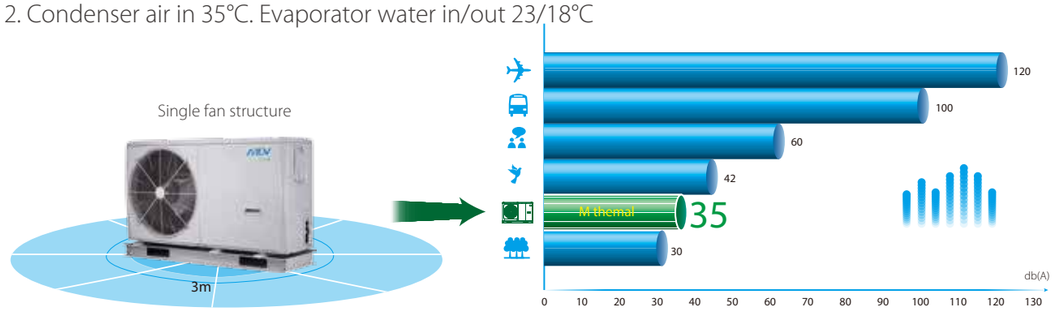
Comfort

Silent mode

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

Test condition:

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

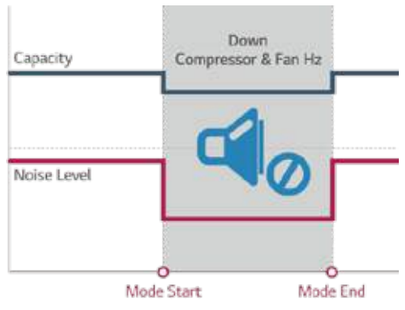


Multiple optimization design makes noise reduction:

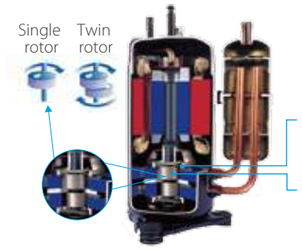
Triple noise reduction

Silent mode decrease the sound effectively

Level 2 is more silent than level1.



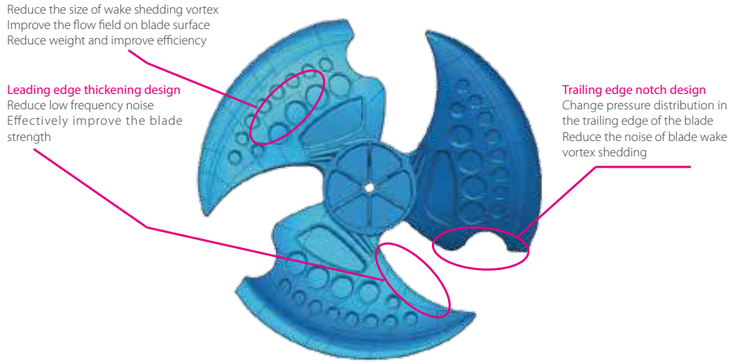
Twin rotary compressor



Better balance and extremely low vibration:
- Twin eccentric cams
- 2 balance weights

Highly stable moving parts:
- Optimize compressor drive technology
- Highly robust bearings
- Compact structure

Bionic fan design



Optimized piping distribution

Convenient

USB function

Convenient program upgrade

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

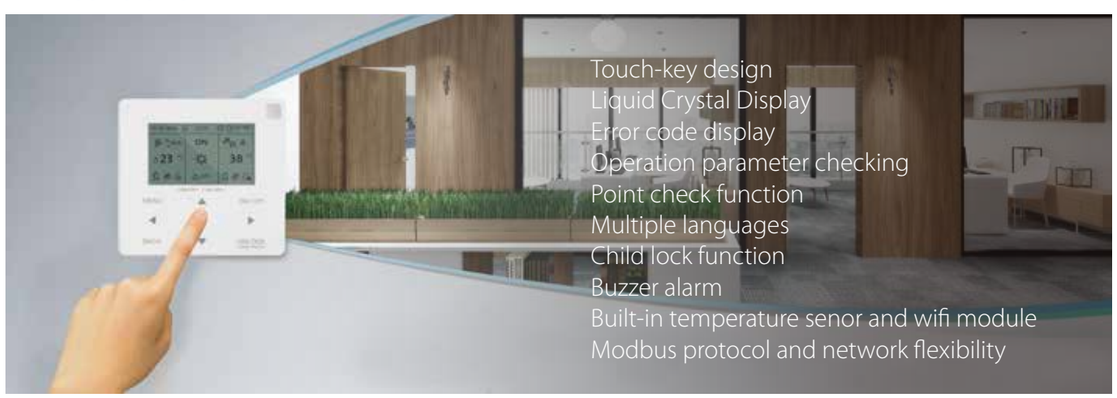
Parameter setting transmission between wired controllers

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

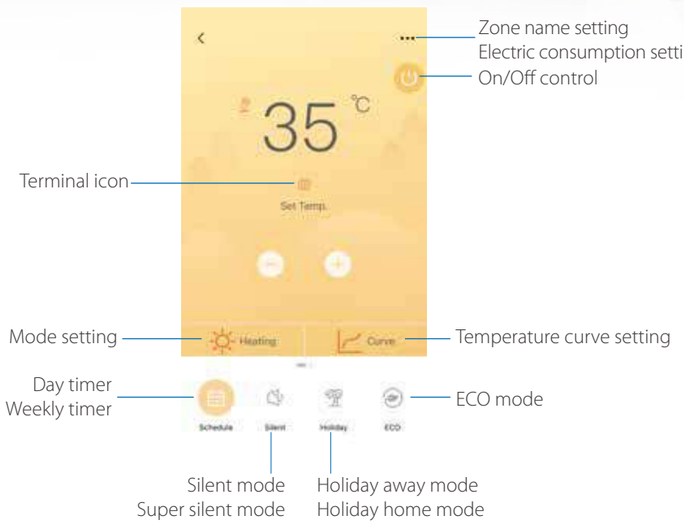
Holiday home

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

Wifi controller



APP control



Comfort Home APP

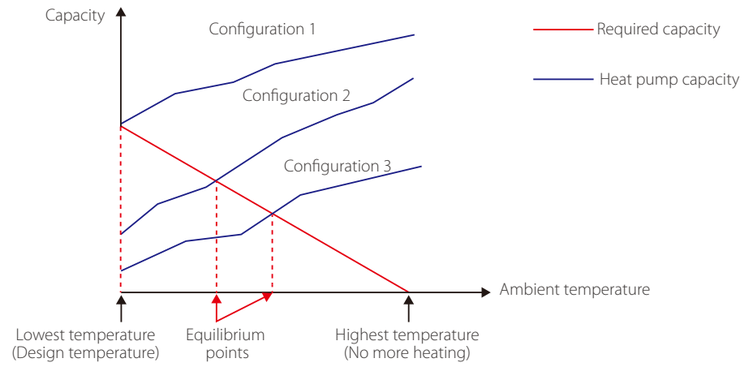
Easy setting
Double zones control
Monitor system status
Know power consumption
Convenient remote control
Suggestion for energy saving
Schedule function and timer setting

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

Typical Applications

System configurations

MDV thermal system can be configured to run with the electric heater either enabled or disabled and can also be used in conjunction with an auxiliary heat source such as a boiler.
The chosen configuration affects the size of heat pump that is required. Three typical configurations are described below.



Configuration 1: Heat pump only

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

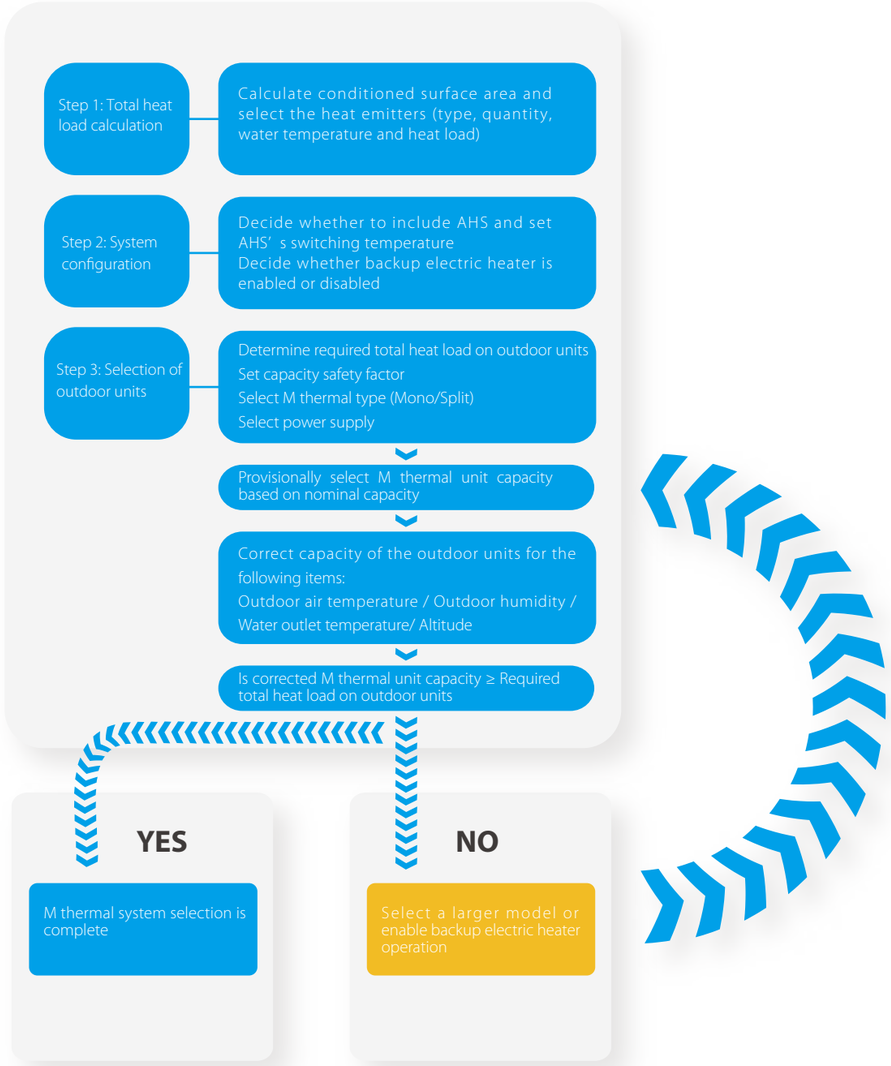
Configuration 2: Heat pump and backup electric heater

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

Configuration 3: Heat pump with auxiliary heat source

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

Selection Procedure



Leaving Water Temperature (LWT)

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

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

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

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

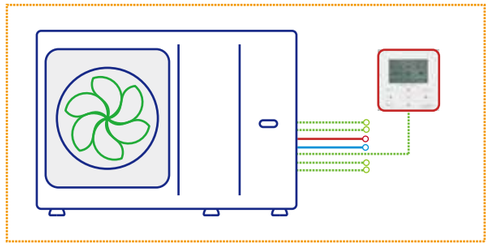
Smart Grid certification indicates MDV thermal can fully utilize electricity from different sources or different price levels, which means like photovoltaic, and the peak valley of urban electricity supply to satisfy different modes operation, which is benefit for cost saving.

M thermal Mono outdoor unit

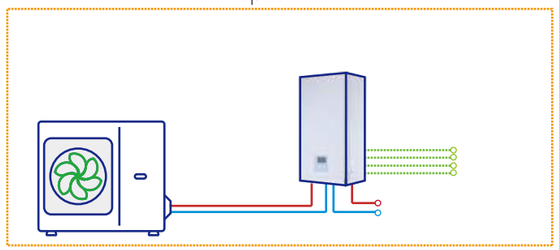
Typical application

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

Mono

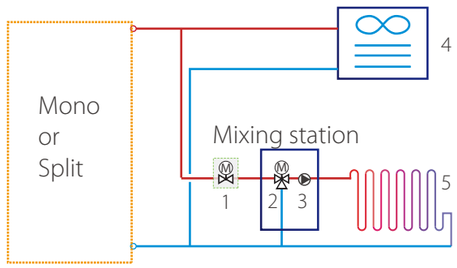


Split



Heating and cooling

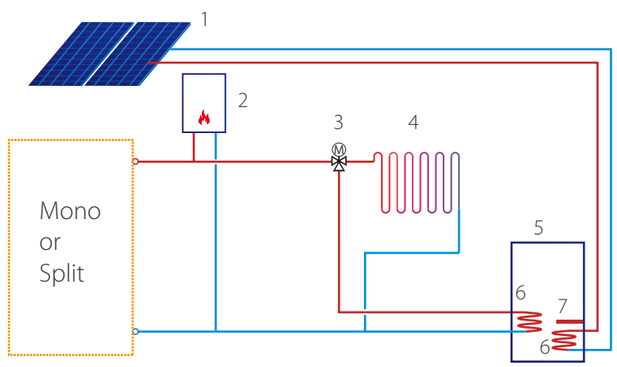
Floor heating loops is used for space heating and fan coil unit is used for both space heating and cooling. For heating mode, floor heating loops and fan coil unit require different operating water temperature. To achieve these two temperature, a mixing station(field supplied) which is consists of 3-way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



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

Heating, DHW and hybrid heat source

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



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

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

Double zones control

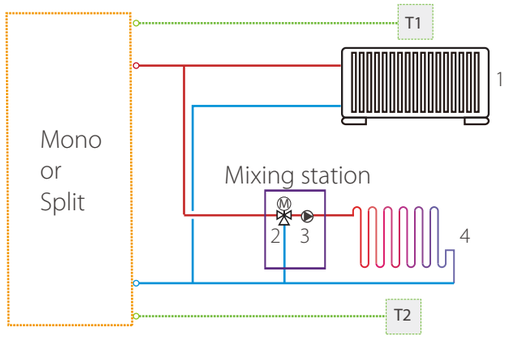
Double zones control is only available for heating mode. It can control different areas to reach different temperature to meet various needs of daily use.

1. Using wired controller only

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

2. Using wired controller and thermostat

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

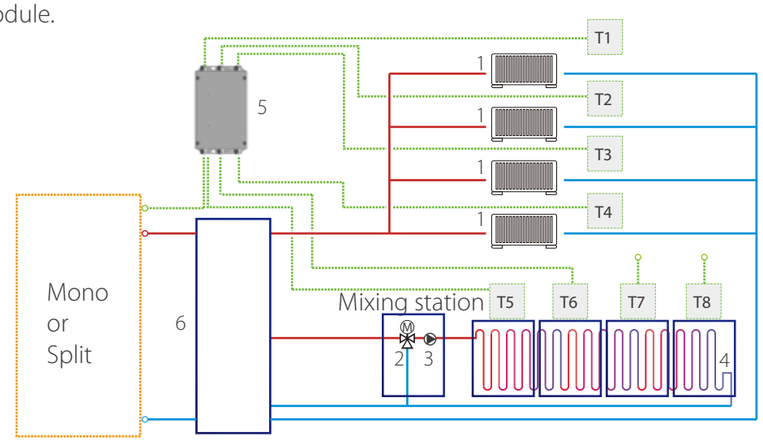


Notes:
1. Radiator(field supplied)
2. 3-way valve(field supplied)
3. Water pump(field supplied)
4. Floor heating loop(field supplied)

Abbreviation
T: Room thermostat(field supplied)

Multiple rooms control(customized)

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

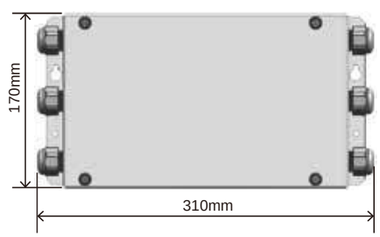


Notes:
1. Radiator(field supplied)
2. 3-way valve(field supplied)
3. Water pump(field supplied)
4. Floor heating loop
5. M-kit(customized)
6. Balance tank(field supplied)

Abbreviation
T: Room thermostat(field supplied)

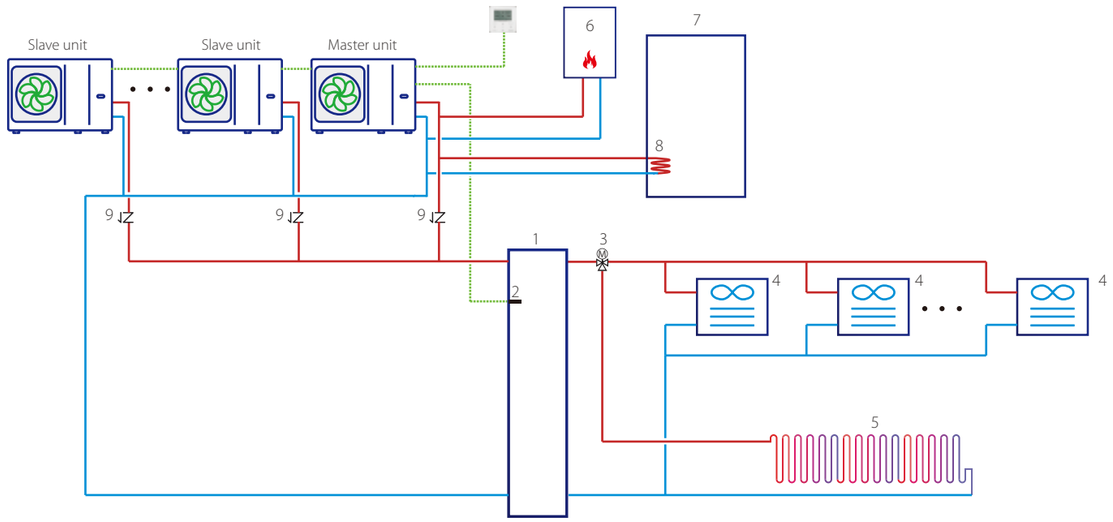
M-kit

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



Cascade system*

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



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

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

Arctic Series Mono

Outdoor unit model MDVC-			V4W D2ER8-A	V6W D2ER8-A	V8W D2ER8-A	V10W D2ER8-A	V12W D2ER8-A	V14W D2ER8-A	V16W D2ER8-A	V12W D2BR8-A	V14W D2BR8-A	V16W D2BR8-A
Power supply		V/Ph/Hz	220-240/1/50							380-415/3/50		
Heating[1]	Capacity	kW	4.20	6.35	8.40	10.0	12.1	14.5	15.9	12.1	14.5	15.9
	Rated input	kW	0.82	1.28	1.63	2.02	2.44	3.15	3.53	2.44	3.15	3.53
	COP		5.10	4.95	5.15	4.95	4.95	4.60	4.50	4.95	4.60	4.50
Heating[2]	Capacity	kW	4.30	6.30	8.10	10.0	12.3	14.1	16.0	12.3	14.1	16.0
	Rated input	kW	1.13	1.70	2.10	2.67	3.32	3.92	4.57	3.32	3.92	4.57
	COP		3.80	3.70	3.85	3.75	3.70	3.60	3.50	3.70	3.60	3.50
Heating[3]	Capacity	kW	4.40	6.00	7.50	9.50	11.9	13.8	16.0	11.9	13.8	16.0
	Rated input	kW	1.49	2.03	2.36	3.06	3.90	4.68	5.61	3.90	4.68	5.61
	COP		2.95	2.95	3.18	3.10	3.05	2.95	2.85	3.05	2.95	2.85
Cooling[4]	Capacity	kW	4.50	6.50	8.30	9.90	12.00	13.50	14.90	12.00	13.50	14.90
	Rated input	kW	0.82	1.35	1.64	2.18	3.04	3.75	4.38	3.04	3.75	4.38
	EER		5.50	4.80	5.05	4.55	3.95	3.60	3.40	3.95	3.60	3.40
Cooling[5]	Capacity	kW	4.70	7.00	7.45	8.20	11.5	12.4	14.0	11.5	12.4	14.0
	Rated input	kW	1.36	2.33	2.22	2.52	4.18	4.96	5.60	4.18	4.96	5.60
	EER		3.45	3.00	3.35	3.25	2.75	2.50	2.50	2.75	2.50	2.50
Seasonal space heating energy efficiency class[6]	Water outlet at 35℃	class	A+++									
	Water outlet at 55℃	class	A++									
Refrigerant	Type(GWP)		R32(675)									
	Charged volume	kg	1.40		1.40		1.75					
Sound power Level[7]		dB	55	58	59	60	65	65	68	65	65	68
Net dimension (W×H×D)		mm	1295×792×429		1385×945×526							
Packing dimension (W×H×D)		mm	1375×965×475		1465×1120×560							
Net/Gross weight		kg	98/121		121/148		144/170			160/188		
Water pump	Max. pump head	m	9									
Water piping connection		mm	R1"		R5/4"							
Ambient temperature range	Cooling	℃	-5～43									
	Heating	℃	-25～35									
	DHW	℃	-25～43									
LWT setting range	Cooling	℃	5～25									
	Heating	℃	25～65									
	DHW	℃	30～60									
Backup E-heater[8]	Standard mounted	kW	/									
	Optional	kW	3	3	3/9	3/9	3/9	3/9	3/9	3/9	3/9	3/9
	Capacity steps		1	1	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3
	Power supply 3kW	V/Ph/Hz	220-240/1/50									
	Power supply 9kW	V/Ph/Hz	380-415/3/50									

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

Arctic Series Mono

Model			MDVC-V18WD2BR8-A	MDVC-V22WD2BR8-A	MDVC-V26WD2BR8-A	MDVC-V30WD2BR8-A
Power supply		V/Ph/Hz	380-415/3/50			
Heating[1]	Capacity	kW	18.00	22.00	26.00	30.10
	Rated input	kW	3.83	5.00	6.37	7.70
	COP		4.70	4.40	4.08	3.91
Heating[2]	Capacity	kW	18.00	22.00	26.00	30.00
	Rated input	kW	5.14	6.47	8.39	10.35
	COP		3.50	3.40	3.10	2.90
Heating[3]	Capacity	kW	18.00	22.00	26.00	30.00
	Rated input	kW	6.55	8.30	10.61	13.04
	COP		2.75	2.65	2.45	2.30
Cooling[4]	Capacity	kW	18.50	23.00	27.00	31.00
	Rated input	kW	3.90	5.00	6.28	7.75
	EER		4.75	4.60	4.30	4.00
Cooling[5]	Capacity	kW	17.00	21.00	26.00	29.50
	Rated input	kW	5.57	7.12	9.63	11.57
	EER		3.05	2.95	2.70	2.55
Seasonal space heating energy efficiency class[6]	Water outlet at 35°C	class	A+++	A+++	A+++	A++
	Water outlet at 55°C	class	A++	A++	A+	A+
Refrigerant	Type(GWP)		R32(675)			
	Charged volume		5.0			
Sound power level[7]		dB	71	73	75	77
Net dimension (W×H×D)		mm	1129×1558×440			
Packing dimension (W×H×D)		mm	1220×1735×565			
Net/Gross weight			177/206			
Water pump	Max. pump head	m	12.0	12.0	12.0	12.0
Water piping connection		inch	1-1/4" BSP	1-1/4" BSP	1-1/4" BSP	1-1/4" BSP
Ambient temperature range	Cooling	℃	-5-46			
	Heating	℃	-25-35			
	DHW	℃	-25-43			
LWT setting range	Cooling	℃	5-25			
	Heating	℃	25-60			
	DHW	℃	30-60			

Notes:
1.Evaporator air in 7℃, 85% R.H., Condenser water in/out 30/35℃.
2.Evaporator air in 7℃, 85% R.H., Condenser water in/out 40/45℃.
3.Evaporator air in 7℃, 85% R.H., Condenser water in/out 47/55℃.
4.Condenser air in 35℃. Evaporator water in/out23/18℃.
5.Condenser air in 35℃. Evaporator water in/out 12/7℃.
6. Seasonal space heating energy efficiency class testes in average climate general.
7.Testing standard: EN12102-1.
8. Relevant EU standards and legislation: EN14511; EN14825; EN50564; EN12102; (EU) No 811/2013; (EU) No 813/2013; OJ 2014/C 207/02:2014.

Arctic Series Split

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

Arctic Series Split outdoor unit

Outdoor unit model MDVA-			V4W D2ER8-A	V6W D2ER8-A	V8W D2ER8-A	V10W D2ER8-A	V12W D2ER8-A	V14W D2ER8-A	V16W D2ER8-A	V12W D2BR8-A	V14W D2BR8-A	V16W D2BR8-A
Power supply		V/Ph/Hz	220-240/1/50							380-415/3/50		
Refrigerant	Type(GWP)		R32(675)									
	Charged volume	kg	1.50		1.65		1.84					
Sound power Level[1]		dB	56	58	59	60	64	65	68	64	65	68
Net dimension (W×H×D)		mm	1008×712×426		1118×865×523							
Packing dimension (W×H×D)		mm	1065×800×485		1180×890×560							
Net/Gross weight		kg	58/64		77/88		96/110			112/125		
Pipe size O.D.	Liquid	mm	6.35		9.52							
	Gas	mm	15.88		15.88							
Connection method			Flared									
Between indoor and outdoor unit	Height difference	m	Max.20									
	Pipe length	m	2-30									
Additional refrigerant	Chargment	g/m	20		38							
	Max. pipe length for no additional refrigerant	m	15									
Ambient temperature range	Cooling	°C	-5~43									
	Heating	°C	-25~35									
	DHW	°C	-25~43									

Note：1.Testing standard: EN12102-1.

Arctic Series Split hydronic box

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

Note: 1.Testing standard: EN12102-1.

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

MDV Aqua Mini Series

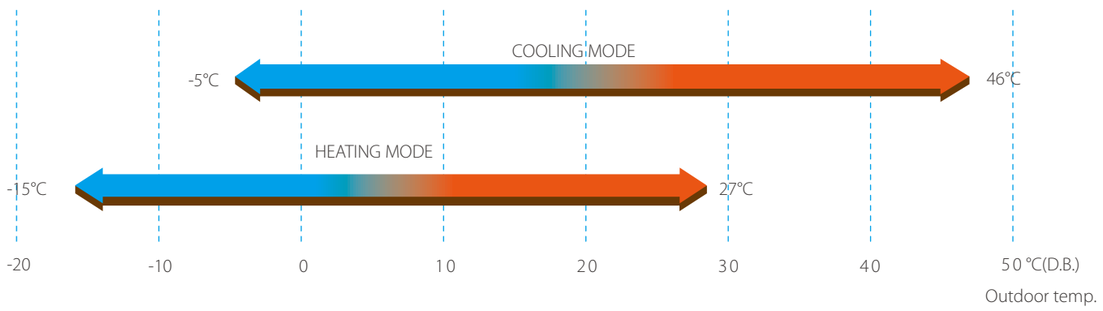
EUROVENT CERTIFIED PERFORMANCE
www.eurovent-certification.com

Features

Wide application range

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

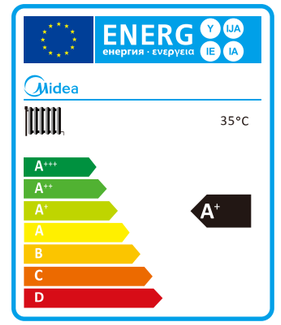
- Wide operation temperature range



- Wide range of outlet water temperature from 4~54 ℃.

A+ rated energy efficiency at part load

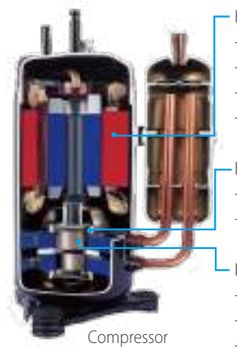
The DC inverter chiller integrates the latest technological innovations and ensures precise temperature regulation and highly efficient energy usage, making a significant contribution to limiting the impact on the environment.



DC Inverter Technology

- DC inverter compressor

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



Compressor
(Twin Rotary) structure

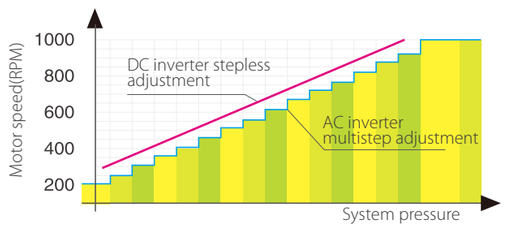
High efficiency DC motor:
- Creative motor core design
- High density neodymium magnet
- Concentrated type stator
- Wider operating frequency range

Better balance and Extremely Low Vibration:
- Twin eccentric cams
- 2 balance weights

Highly Stable Moving Parts:
- Optimal material matching rollers and vanes
- Optimize compressor drive technology
- Highly robust bearings
- Compact structure

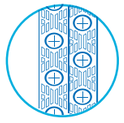
- DC fan motor

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



High performance heat exchanger

Enlarge heat-exchanging area



Fin

Enhance heat transfer

Inner-threaded pipe

High efficiency

Fin + inner-threaded pipes

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

Heat exchanger aluminum foil

> Standard products:
200h of neutral salt mist

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

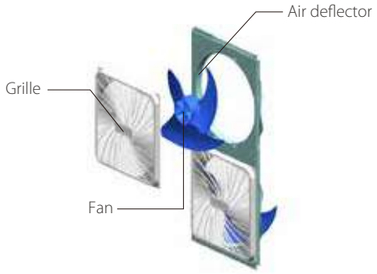
Heat exchanger copper pipe

> Standard products:
24h of neutral salt mist

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

Advanced technology

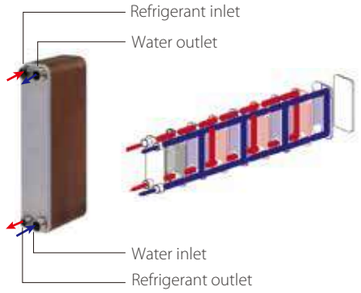
- DC inverter technology, optimally designed fan shape and air discharge grille ensure low sound values.



Powerful Large Propeller

Newly Designed Fan Guard

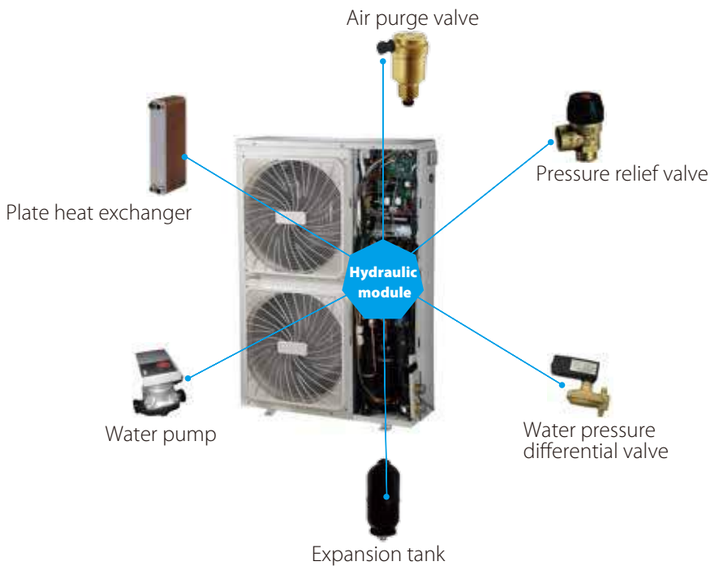
- EXV is used for stable and accurate gas flow control.
- High efficiency plate heat exchanger
  Plate heat exchanger uses metal plates to transfer heat between refrigerant and water. The fluids are exposed to a much larger surface area because the fluids spread out over the plates, so both heat transfer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



- High efficiency water pump
  The water pump used is compliance with Erp directive.

Easy installation

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



Easy control

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

- With built-in controller in the panel, to perform all related operations as the user interface, as well as fast diagnosis and history data.
  - ON/OFF & Mode selection
  - Temperature adjust
  - Timer setting
  - Fast diagnosis

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

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

Specifications

5/7kW model

10/12kW model

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

Notes:

1. Ambient temperature 35℃. Water in/out 12/7℃
2. Ambient temperature 35℃. Water in/out 23/18℃
3. Ambient temperature 7℃ ℃85% R.H., Water in/out 40/45℃
4. Ambient temperature 7℃ ℃85% R.H., Water in/out 30/35℃
5. The above data test reference standard EN14511; EN14825; EN50564; EN12102; (EU)No:811; (EU)No:813; OJ 2014/C 207/02

Specifications

Model			MDVG -V12WD2BR1	MDVG -V14WD2BR1	MDVG -V16WD2BR1
Power supply		V/Ph/Hz	380-415/ 3/50		
Cooling[1]	Capacity	kW	11.2	12.5	14.5
	Rated input	kW	3.38	3.90	4.70
	EER		3.31	3.20	3.10
Cooling[2]	Capacity	kW	12.2	14.2	15.6
	Rated input	kW	2.60	3.10	3.60
	EER		4.69	4.58	4.33
Heating[3]	Capacity	kW	12.3	13.8	16.0
	Rated input	kW	3.72	4.25	4.85
	COP		3.31	3.25	3.30
Heating[4]	Capacity	kW	13.0	15.1	16.5
	Rated input	kW	2.85	3.35	3.92
	COP		4.56	4.51	4.21
Seasonal space heating energy efficiency class			A+	A+	A+
Compressor	Type		Rotary		
Outdoor fan	Motor type		DC motor		
Air heat exchanger	Type		Fin-coil		
	Type		Plate		
Water pump	Pump head	m	7.0	7.0	7.0
Refrigerant	Type		R410A		
	Charged volume	kg	2.8	2.9	3.2
Throttle type			Electronic expansion valve		
Sound power level		dB	68	70	72
Unit net dimension (WxHxD)		mm	970×1,327×400		
Packing dimension (WxHxD)		mm	1,082×1,456×435		
Net/ Gross weight		kg	110/121	111/122	111/122
Water piping connection		inch	1-1/4"		
Ambient temperature range	Cooling	℃	-5-46		
	Heating	℃	-15-27		
LWT setting range	Cooling	℃	4-20		
	Heating	℃	35-54		

Notes:

1. Ambient temperature 35℃. Water in/out 12/7℃
2. Ambient temperature 35℃. Water in/out 23/18℃
3. Ambient temperature 7℃ ℃85% R.H., Water in/out 40/45℃
4. Ambient temperature 7℃ ℃85% R.H., Water in/out 30/35℃
5. The above data test reference standard EN14511; EN14825; EN50564; EN12102; (EU)No:811; (EU)No:813; OJ 2014/C 207/02