

● Specifications of Air-cooled Modular Precision Air Conditioner (Bottom Air Supply)

IDU	Model	MAD																										
		1025T1			1030T1			1040T2			1050T2			2060T2			2070T2			2080T2			2090T2			2100T2		
		N1S4	N104	N004	N1S4	N104	N004	N1S4	N104	N004	N1S4	N104	N004	N1S4	N104	N004	N1S4	N104	N004	N1S4	N104	N004	N1S4	N104	N004	N1S4	N104	N004
ODU	Model	MA0431N			MA0541N			MA0331N			MA0431N			MA0541N			MA0601N			MA0752N			MA0982N			MA0982N		
	Qty	1									2																	
Configuration	Number of modules	1						1.5			2						2.5											
	Number of systems	Single system									Dual system																	
	Refrigerant	R410A																										
	Power supply system	380V 3N - 50Hz																										
Cooling capacity parameters	Total cooling capacity (kW)	26.7			31.2			42.4			51.7			63.1			72.5			80.5			93.1			100.5		
	Total sensible heat (kW)	24.3			28.1			38.6			46.5			57.4			65.3			73.3			83.8			90.5		
	Sensible heat ratio	0.91			0.90			0.91			0.90			0.91			0.90			0.91			0.90			0.90		
	Cooling-air ratio	3.42			3.39			3.14			3.64			3.37			3.39			3.21			3.49			3.56		
	AEER	3.51			3.55			3.65			3.70			3.68			3.70			3.94			3.62			3.70		
IDU fan	Air flow (m³/h)	7800			9200			13500			14200			18700			21400			25100			26700			28200		
	Qty	1											2															
	Type	Backward centrifugal EC fan																										
Compressor	Qty	1					2																					
	Type	Scroll compressor, fixed speed																										
Throttle	Type	Electronic expansion valve																										
Evaporator	Type	Fin type (V-shaped: top air supply; A-shaped: bottom air supply)																										
Electric heater	Heating power (kW)	6					9					12																
	Type	PTC electric heater																										
Humidifier	Humidification (kg/h)	5					10																					
	Type	Electrode humidifier																										
Air filter	Level	G4																										
	Number of filters	2					4					8																
Piping	Gas/liquid pipe diameter (mm)	Φ22/Φ16 (standard 10 m connecting tube)																										
	Humidifier inlet pipe joint (ID mm)	G3/4(φ10)																										
	Humidifier outlet pipe (ID mm)	Φ32.5																										
	Condensate drainage pipe joint (ID mm)	G3/4(Φ19)																										
IDU	Dimensions (W×D×H mm)	910×1010×2000					1460×1010×2000					1810×1010×2000					2360×1010×2000											
	Max. unit weight, fully loaded (kg)	360			365		570			570		680			680		800			835			835					
ODU	Fan type	External rotor axial																										
	ODU weight (kg)	105			180		105			105		180			180		210			260			260					
	Dimensions (W×D×H mm)	1550×988×690			1750×1295×690			1550×988×690					1750×1295×690					2045×1290×690					2460×1290×690					
Power distribution	Max. input current of the unit (A)	30	21	33	24	58	44.5	59.5	45.5	80	51.5	81.5	64.5	82	65	98	79.5	102	83.5									
	IDU and ODU connection cable specifications (mm²)	4×1.5		4×1.5		4×2.5		4×2.5		4×2.5		4×2.5		4×2.5		4×2.5		4×2.5										
	IDU cable specifications (mm²)	5×6		5×6		5×16		5×16		5×25		5×25		5×25		5×35		5×35										

- Notes:**
- 1. Cooling capacity under declared operating condition: indoor temperature 24°C (DB)/17°C (WB), outdoor temperature 35°C (DB).
 - 2. In cooling mode, the lowest ambient temperature allowable is -25°C.
 - 3. The longest length allowable of a connecting tube is 60 m. The level difference between IDU and ODU should be in the range of -5 to +20 m. The difference is positive when the ODU is placed higher than the IDU, and is negative otherwise. For applications exceeding the stipulated range, please contact the manufacturer.
 - 4. The static pressure measured under standard condition is 20 Pa. For higher requirements, please contact Midea.
 - 5. Module 0.5 is an independent electric control module. For example, 2.5 represents two cooling system modules + one independent electric control module.
 - 6. 004 indicates cooling only, 104 indicates electric heater available, and 1S4 indicates both electric heater and humidifier available.
 - 7. Cable parameters are based on fully-loaded configuration.

Commercial Air Conditioner Division
Midea Group

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

Postal code: 528311

Tel: +86-757-26338346 Fax: +86-757-22390205

cac.midea.com global.midea.com

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

MIDEA participates in the ECP programme for VRF with diploma no.16.05.007. Check ongoing validity of certification: www.eurovent-certification.com.



Product overview

With the development of information network technology, precision air conditioners are playing an increasingly important role at data centers and equipment rooms. Reliable and efficient cooling over long periods of time is the primary concern of IT and infrastructure managers. In addition, with the growth of data in volumes and of data storage capacity, interest in expanding and transforming the data centers has also grown in the industry recently.

Midea's air-cooled modular precision air conditioner adopts a new modular structure capable of rapidly adapting to changes in load. It is highly efficient, convenient and reliable, making it an ideal choice to cool places requiring high sensible heat, and high precision in temperature or humidity, such as hospitals, banks and equipment rooms of financial institutions.



IDU										
M	A	U	2	100	T	2	N	1	S	4
1	2	3	4	5	6	7	8	9	10	11

No.	Function	Description
1	Precision air conditioner model	/
2	Cooling mode	"A" indicates air cooling
3	Air supply mode	"U" indicates top air supply while "D" indicates bottom air supply
4	Number of modules	"2" indicates two modules
5	Cooling capacity	In kW; represented by a three-digit number
6	Power supply system	T-3 phase
7	Number of compressors	"2" indicates two compressors
8	Refrigerant type	"R" indicates R22, "N" indicates R410A
9	Electric heater category	"0" indicates electric heater unavailable, "1" indicates electric heater available
10	Humidifier	S - Humidification, 0 - No humidification
11	Design S/N	1, 2, 3, 4...

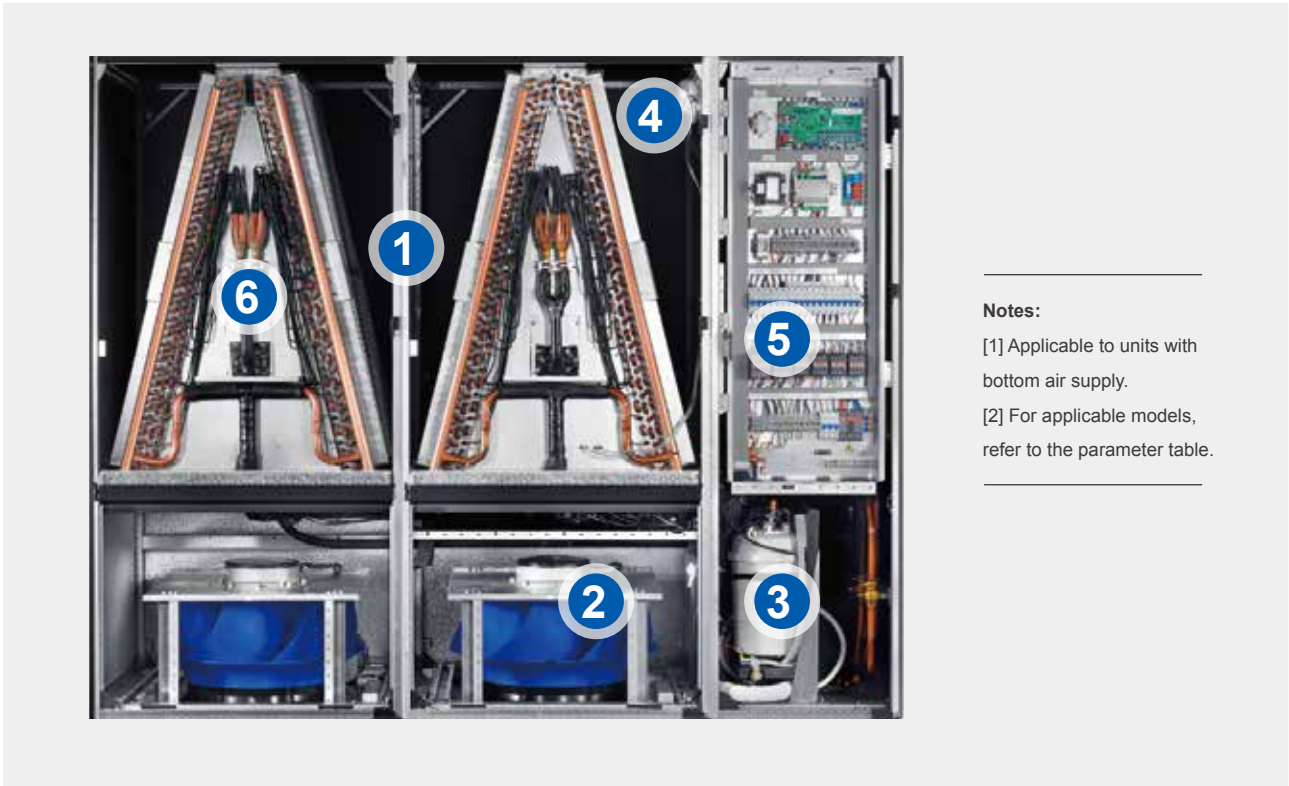
ODU			
MA	098	2	N
1	2	3	4

No.	Function	Description
No.	Function	Description
1	Series name	/
2	Nominal heat exchange amount	In kW; represented by a three-digit number
3	Number of ODU fans	"2" indicates two fans
4	Refrigerant type	N-R410A, omitted for R22



Smart Control

Product introduction



1

100% modular structure for easy installation and capacity expansion

- Up to two modules combined to achieve a maximum cooling capacity of 100 kW

2

Efficient air supply system

- Efficient EC fan
- Fan's air flow designed in a sunken manner to reduce air resistance [1]
- Greatly improved fan efficiency
- Pneumatically driven system
- Double-capacity G4 filter to reduce fan resistance

3

Constant temperature and humidity, accuracy up to $\pm 1^{\circ}\text{C}/\pm 5\%$

- Electrode humidifier provided to ensure constant humidity at equipment room
- PTC electric heater
- Standard air return temperature and humidity sensors
- Optional air supply temperature and humidity sensors

4

Front panel for convenient use

- Rotatable electric control box
- Extractable PTC on the front side
- Extractable filter on the front side
- 100% maintenance on the front side

5

Intelligent control system

- 3.5-inch keyboard screen
- Eight units under centralized control
- Standard RS485 monitoring
- Electric control modules

6

Efficient cooling system with less power consumption

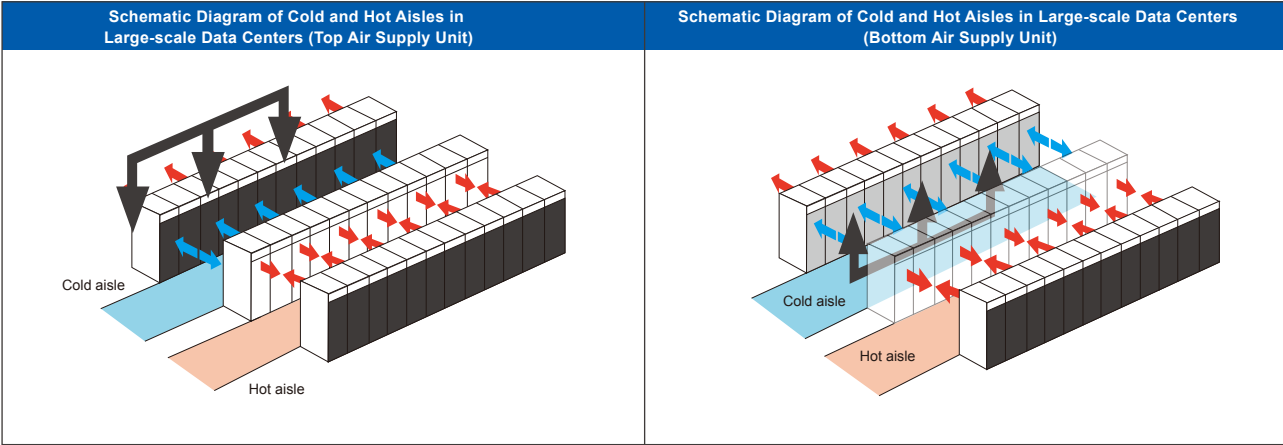
- Efficient scroll compressor
- Wide V/A evaporator
- Hydrophilic fins
- Efficient turbulence-flow inner-grooved copper tubes
- Standard electronic expansion valve^[2]

Product features

Environment-friendly and efficient

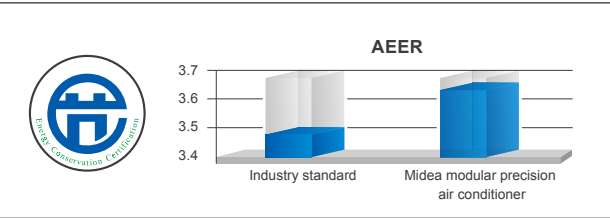
1 Sealed cold and hot aisles

The introduction of hot and cold aisles allows the cabinets to be arranged "face-to-face and back-to-back" in large data centers. In this way, cool air and warm/hot air generated by cabinets can be separated, thus avoiding adverse impact on cooling performance. Sealed cold and hot aisles facilitate efficient utilization of cooling capacity and eliminate local hot spots.



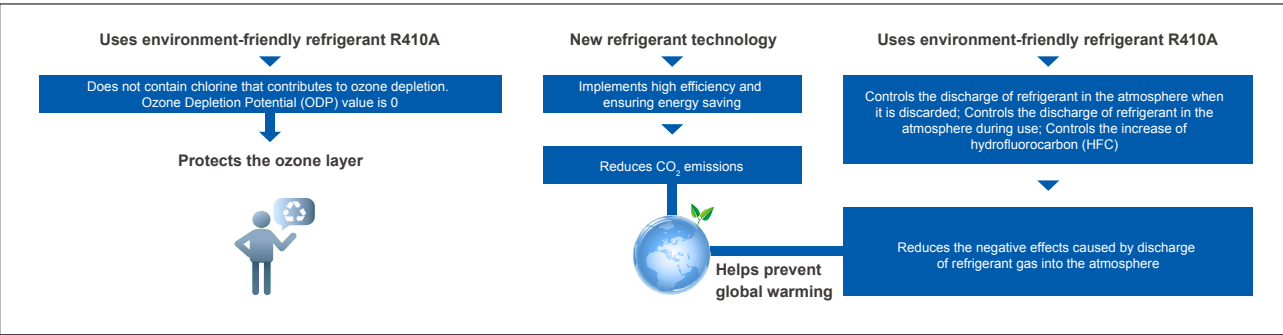
2 National energy-saving product

The whole series are certified energy-saving products, and can be used in green equipment rooms and green data centers to achieve lower PUE.



3 Environment-friendly

The operating pressure of refrigerant R410A is about 1.33 times that of refrigerant R22. Therefore, R410A features a higher cooling efficiency. In addition, R410A does not contribute to ozone depletion and is therefore very eco-friendly.



Stable and reliable

1 Ambient temperature for cooling: -25°C to $+48^{\circ}\text{C}$.

2 100°C isothermal electrode humidification ensures a clean and sterile environment; Humidifier starts working once enabled, and improves the accuracy by 2%, ensuring stable and reliable operation.

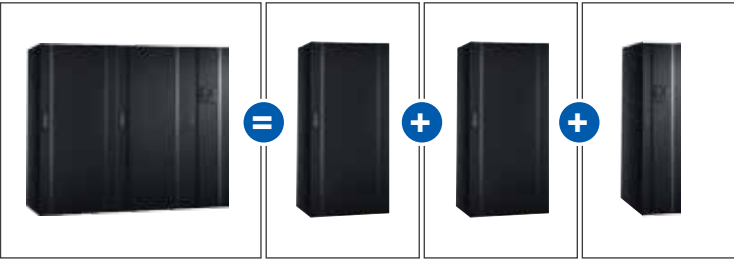


Product features

Ease of use

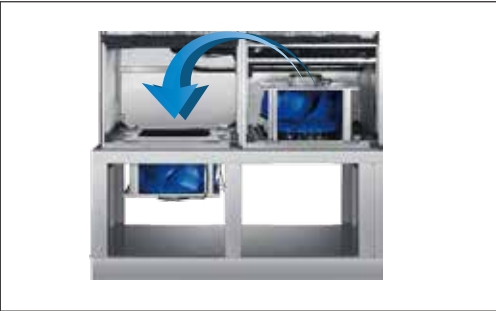
1 New modular structure

Midea's air-cooled modular precision air conditioner adopts a new modular structure featuring independent heat exchangers and fans for all modules. With detachable water pipes, the unit is easy to install on site and to transport via elevator and through narrow passages. Therefore, it avoids the trouble of destroying walls or doors. Compact design and cooling capacity of 25kW - 100kW.



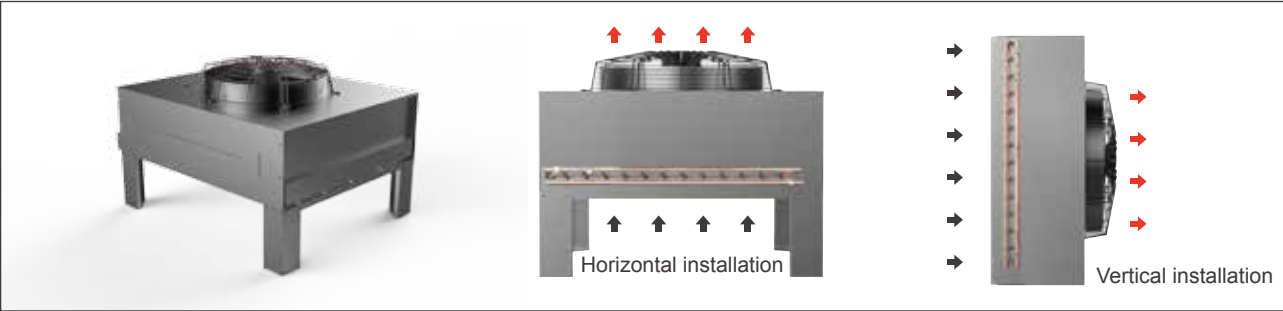
2 Patented fan to be installed in a sunken manner

Upon startup, the fan quickly turns over and sinks down to the bottom. Compared with traditional installation that requires lifting and sinking operations, this automatic operation is performed with a time saving of at least 30 minutes. Patent number: CN20172120037.5



3 Flexible installation

The ODU can be installed either horizontally or vertically depending on the circumstances.



Smart

1 Smart control

- A LED-backlit LCD screen displays unit's operating status, sensor data, and operating status indicators of main parts.
- Password protection can prevent unauthorized modification to internal parameters.
- Up to 400 alarm records can be stored and easy query is supported.
- Standard RS485 interface is available for monitoring via a web backend with the help of a data converter.



Multiple Protective Measures

Low/high pressure protection

Discharge temperature protection

Compressor current protection

Evaporator low temperature protection

High temperature protection of condenser

Electric heater overload protection

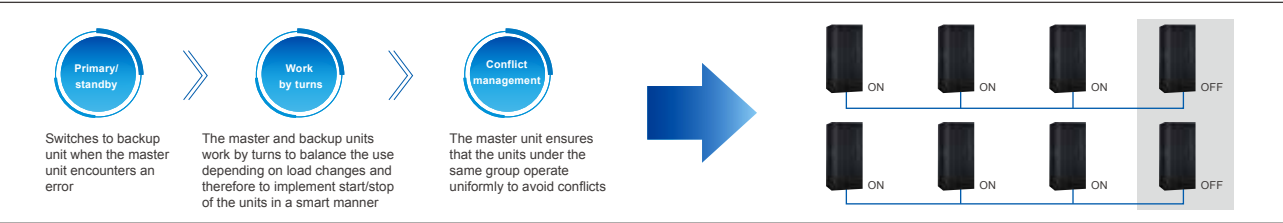
Sensor fault protection

Smoke and fire alarm

Leakage protection

Power supply protection

2 Group control to ensure on-demand allocation



Product parameters

Specifications of Air-cooled Modular Precision Air Conditioner (Top Air Supply)

IDU	Model	MAU																																			
		1025T1			1030T1			1040T2			1050T2			2060T2			2070T2			2080T2			2090T2			2100T2											
		N1S4	N104	N004	N1S4	N104	N004	N1S4	N104	N004	N1S4	N104	N004	N1S4	N104	N004	N1S4	N104	N004	N1S4	N104	N004	N1S4	N104	N004	N1S4	N104	N004									
ODU	Model	MA0431N			MA0541N			MA0331N			MA0431N			MA0541N			MA0601N			MA0752N			MA0982N			MA0982N											
	Qty	1			2																																
Configuration	Number of modules	1			1.5						2						2.5																				
	Number of systems	Single system			Dual system																																
	Refrigerant	R410A																																			
	Power supply system	380V 3N - 50Hz																																			
Cooling capacity parameters	Total cooling capacity (kW)	26.2			31.0			44.9			52.8			64.2			74.3			82.5			94.3			102.0											
	Total sensible heat (kW)	23.8			27.9			40.9			47.5			58.4			66.9			75.1			84.9			91.8											
	Sensible heat ratio	0.91			0.90			0.91			0.90			0.91			0.90			0.91			0.90			0.90											
	Cooling-air ratio	3.45			3.44			3.25			3.64			3.34			3.23			3.20			3.47			3.58											
	AEER	3.55			3.62			3.70			3.72			3.70			3.70			3.82			3.60			3.67											
IDU fan	Air flow (m³/h)	7600			9000			13800			14500			19200			23000			25800			27200			28500											
	Qty	1						2																													
	Type	Backward centrifugal EC fan																																			
Compressor	Qty	1			2																																
	Type	Scroll compressor, fixed speed																																			
Throttle	Type	Electronic expansion valve																																			
Evaporator	Type	Fin type (V-shaped: top air supply; A-shaped: bottom air supply)																																			
Electric heater	Heating power (kW)	6			9						12																										
	Type	PTC electric heater																																			
Humidifier	Humidification (kg/h)	5			10																																
	Type	Electrode humidifier																																			
Air filter	Level	G4																																			
	Number of filters	2			4						8																										
Piping	Gas/liquid pipe diameter (mm)	Φ22/Φ16 (standard 10 m connecting tube)																																			
	Humidifier inlet pipe joint (ID mm)	G3/4(Φ10)																																			
	Humidifier outlet pipe (ID mm)	Φ32.5																																			
	Condensate drainage pipe joint (ID mm)	G3/4(Φ19)																																			
IDU	Dimensions (W×D×H mm)	910×1010×2000			1460×1010×2000						1810×1010×2000						2360×1010×2000																				
	Max. unit weight, fully loaded (kg)	365			370			560			560			695			695			805			825			825											
ODU	Fan type	External rotor axial																																			
	ODU weight (kg)	105			180			105			105			180			180			200			260			260											
	Dimensions (W×D×H mm)	1550×988×690			1750×1295×690			1550×988×690						1750×1295×690						2045×1290×690			2460×1290×690														
Power distribution	Max. input current of the unit (A)	30		21		33		24		58		44.5		59.5		45.5		80		63.5		81.5		64.5		82		65		98		79.5		102		83.5	
	IDU and ODU connection cable specifications (mm²)	4×1.5			4×1.5			4×2.5			4×2.5			4×2.5			4×2.5			4×2.5			4×2.5			4×2.5			4×2.5								
	IDU cable specifications (mm²)	5×6			5×6			5×16			5×16			5x25			5×25			5×25			5×35			5×35											

- Notes:**
- Cooling capacity under declared operating condition: indoor temperature 24°C (DB)/17°C (WB), outdoor temperature 35°C (DB).
 - In cooling mode, the lowest ambient temperature allowable is -25°C.
 - The longest length allowable of a connecting tube is 60 m. The level difference between IDU and ODU should be in the range of -5 to +20 m. The difference is positive when the ODU is placed higher than the IDU, and is negative otherwise. For applications exceeding the stipulated range, please contact the manufacturer.
 - The static pressure measured under standard condition is 20 Pa. For higher requirements, please contact Midea.
 - Module 0.5 is an independent electric control module. For example, 2.5 represents two cooling system modules + one independent electric control module.
 - 004 indicates cooling only, 104 indicates electric heater available, and 1S4 indicates both electric heater and humidifier available.
 - Cable parameters are based on fully-loaded configuration.