Specifications

Indoor unit	Model		MAU				
			1030T1N1S4	1050T2N1S4	2070T2N1S4	2080T2N1S4	2100T2N1S4
Outdoor unit	Model		MA0541N	MA0431N	MA0601N	MA0752N	MA0982N
	quantity		1	2	2	2	2
Configuration	Number of indoor unit modules		1	1.5	2	2.5	
	Number of systems		1	2	2	2	2
	Refrigerant	Type	R410A				
		charge (kg)	16	14*2	15*2	19.5*2	23*2
	Power supply system		380V 3N ~ 50Hz				
Cooling capacity parameters	Total cooling capacity (kw)		31.2	52.5	74.3	82.5	100.2
	Total sensible heat (kw)		28.4	47.5	66.9	75.1	90.2
	Sensible heat ratio		0.91	0.90	0.90	0.91	0.90
	Cooling-air ratio		3.47	3.62	3.23	3.3	3.52
	AEER		3.95	3.6	3.7	4.05	3.6
Direction of air supply			Top Air Supply , Front Bottom Air Return				
Indoor unit fan	Air flow (m³/h)		9000	14500	23000	25000	28500
	quantity		1	1	2	2	2
	Type		Backward centrifugal EC fan				
Sound preesure leve	indoor unit (dB(A))		67	73	73	74	73
	outdoor unit (dB(A))		68	68	68	71	69
Compressor	quantity		1	2	2	2	2
	Type		Scroll compressor, fixed speed				
Throttle	Type		Electronic expansion valve				
Evaporator	Type		Finned tube,"V"-shaped				
Electric heater	Heating power (kw)		8.5	9	12	12	12
	Type		PTC electric heater				
Humidifier	Humidification (kg/h)		5	10	10	10	10
	Type		Electrode humidifier				
Air filter	Level		G4				
	Number of filters		4	4	8	8	8
Piping	Gas/liquid pipe diameter (mm)		ø22.2/ø15.9 (L≤40m) ø25.4/ø15.9 (40＜L≤60m)	ø22.2/ø15.9 (L≤60m)	ø22.2/ø15.9 (L≤30m) ø25.4/ø19.1 (30＜L≤60m)	ø22.2/ø15.9 (L≤20m) ø25.4/ø19.1 (20＜L≤40m) ø28.6/ø19.1 (40＜L≤60m)	ø22.2/ø15.9 (L≤20m) ø25.4/ø19.1 (20＜L≤40m) ø28.6/ø19.1 (40＜L≤60m)
	Humidifier inlet pipe joint (ID mm)		Thread connection, unit reserved internal thread G3/4(ø10)				
	Humidifier drainage pipe joint (ID mm)		Φ32.5				
	Condensate drainage pipe joint (ID mm)		G3/4 (ø19)				
Indoor unit	Dimensions (WxDxH mm)		905×1010×2000	1460×1010×2000	1810×1010×2000	2360×1010×2000	2360×1010×2000
	Packing (WxDxH mm)		1010×1115×2180	1555×1115×2180	1912×1115×2180	2490×1160×2175	2490×1160×2175
	Net/gross weight (kg)		395/425	570/620	695/755	805/870	825/900
Outdoor unit	Fan type		External rotor axial				
	Vertical installation Dimensions (WxDxH mm)		1750×690×1295	1550×690×988	1750×690×1295	2045×690×1290	2550×690×1290
	Horizontal installation Dimensions (WxDxH mm)		1750×1295×1050	1550×988×1050	1750×1295×1050	2045×1290×1050	2550×1290×1050
	Packing (WxDxH mm)		1890×820×1475	1700×940×1190	1890×820×1475	2200×820×1475	2700×820×1475
	Net/gross weight (kg)		180/250	105*2/210*2	180*2/250*2	210*2/300*2	262*2/355*2
Power distribution	Maximum input power (kw)		23.5	35	44.5	45	55
	Maximum input current (A)		38	59.5	81.5	82	98
	IDU and ODU connection cable specifications (mm²)		4×0.75	4×0.75	4×0.75	4×0.75	4×0.75
	outdoor unit power supply cable specifications (mm²)		4×2.5	4×2.5	4×2.5	4×2.5	4×2.5
	Recommended Wiring (Number of cores x wire diameter mm²)		5×10	5×16	5×25	5×25	5×35
Operating temperature range			18 to 40°C (Indoor unit) / -20°C to 45°C (Outdoor unit)				

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 -20°C.
3. The longest length allowable of a connecting tube is 60 m.The level difference between indoor unit and outdoor unit should be in the range of -5 to +20 m.
   The difference is positive when the outdoor unit is placed higher than the indoor unit, 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. Cable parameters are based on fully-loaded configuration.
7. Factory does not pre-charge refrigerant.
8. The sound pressure level is measured at a distance of 1 m from the unit and at a height of 1 m in a semi-anechoic chamber. The test conditions: indoor temperature 24°C (DB)/17°C (WB),outdoor temperature 35°C (DB).
9. The refrigerant charge in the above table is the value when using 10m pipe connection.

Midea

In-Room Air-cooled Precision Air Conditioner R410A

IT-based cooling solutions

50Hz

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.

-20°C

R410A Eco-friendly refrigerant

Smart Control

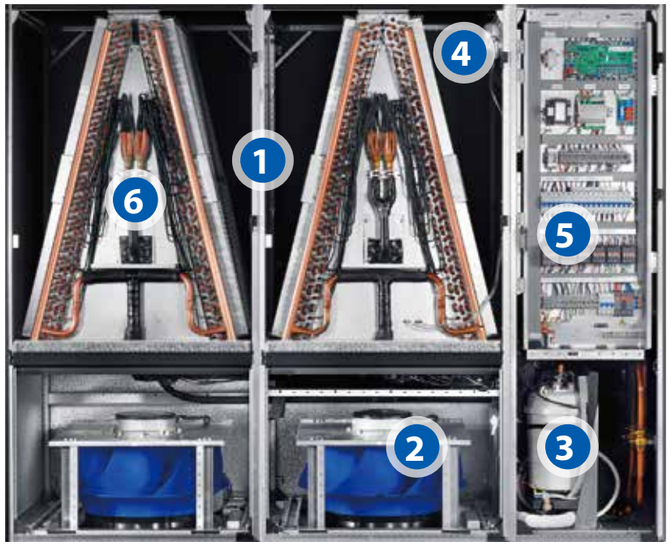
IDU										
M	A	D/U	2	100	T	2	N	1	S	4
1	2	3	4	5	6	7	8	9	10	11

No.	Function	Description
1	Precision air conditioner model	/
2	Cooling mode	"A" indicates air cooling
3	Air supply mode	"D" indicates bottom air supply; "U" indicates top 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"-3phase
7	Number of compressors	"2" indicates two compressors
8	Refrigerant type	"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 code	1,2,3.....

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" indicates R410A

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 ±1°C/±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]

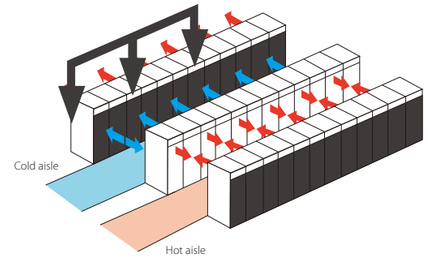
Product features

Environment-friendly and efficient

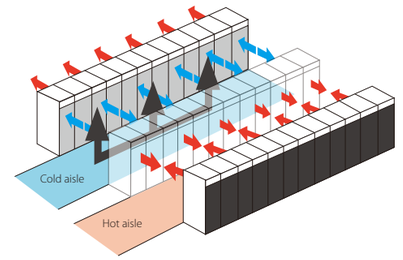
❶ Sealed cold and hot aisles

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.

Schematic Diagram of Cold and Hot Aisles in Large-scale Data Centers (Top Air Supply Unit)

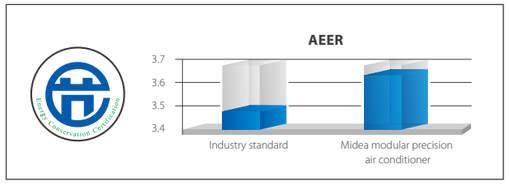


Schematic Diagram of Cold and Hot Aisles in Large-scale Data Centers (Bottom Air Supply Unit)



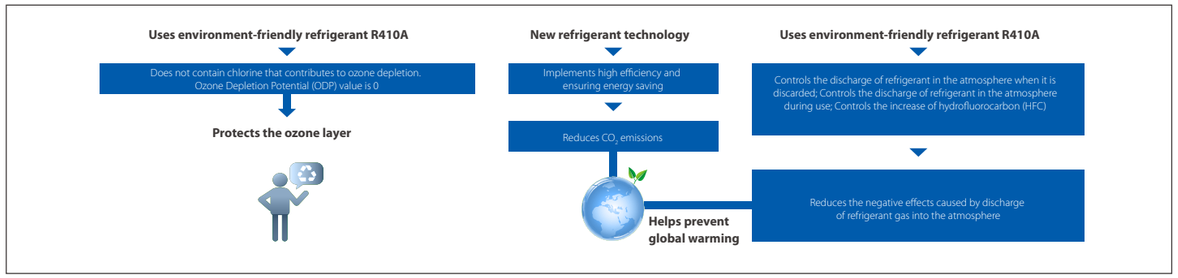
❷ National energy-saving product

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



❸ 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

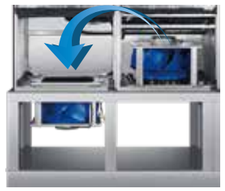
❶ 100°C isothermal electrode humidification ensures a clean and sterile environment; Humidifier starts working once enabled, and improves the accuracy by 2%, ensuring stable and reliable operation.

Product features

Ease of use

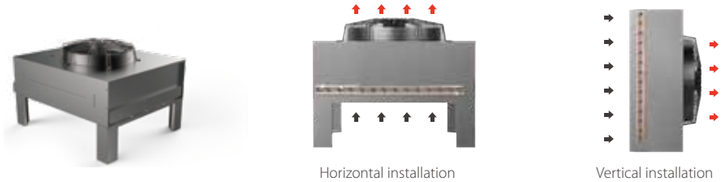
❶ Patented fan to be installed in a sunken manner

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.



❷ Flexible installation

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



Horizontal installation

Vertical installation

Smart

❶ 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.

❷ Multiple Protective Measures

Low/high pressure protection

Discharge temperature protection

Compressor current protection

Evaporator low temperature protection

Electric heater overload protection

Sensor fault protection

Smoke and fire alarm (provide port)

Water leakage protection

Power supply protection

❸ Group control to ensure on-demand allocation

Primary/ standby

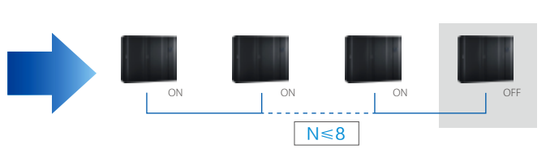
Switches to backup unit when the master unit encounters an error

Work by turns

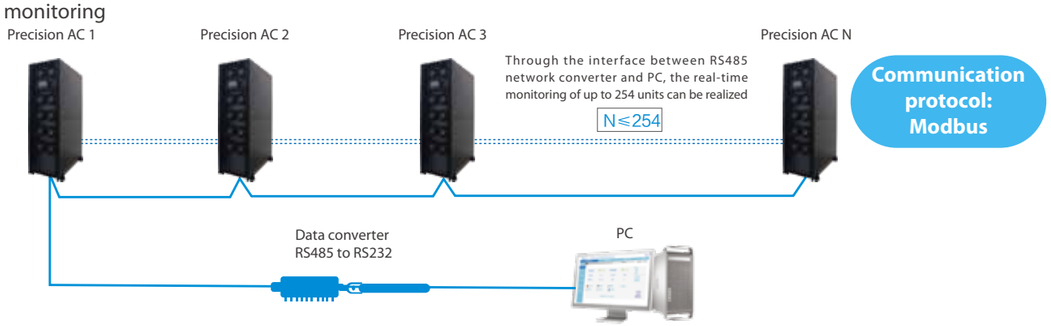
The master and backup units work by turns to balance the use depending on load changes and therefore to implement start/stop of the units in a smart manner

Conflict management

The master unit ensures that the units under the same group operate uniformly to avoid conflicts



❹ Remote monitoring



Specifications

Indoor unit	Model		MAD				
			1030T1N1S4	1050T2N1S4	2070T2N1S4	2080T2N1S4	2100T2N1S4
Outdoor unit	Model		MA0541N	MA0431N	MA0601N	MA0752N	MA0982N
	quantity		1	2			
Configuration	Number of indoor unit modules		1	1.5	2	2.5	
	Number of systems		1	2			
	Refrigerant	Type	R410A				
		charge (kg)	16	14*2	15*2	19.5*2	23*2
	Power supply system		380V 3N~50Hz				
Cooling capacity parameters	Total cooling capacity (kw)		30.9	50.5	72.5	80.5	100.2
	Total sensible heat (kw)		27.8	45.5	65.3	73.3	90.2
	Sensible heat ratio		0.90	0.90	0.90	0.91	0.90
	Cooling-air ratio		3.55	4.01	3.52	3.5	3.57
	AEER		3.85	3.6	3.7	4	3.6
	Direction of air supply		Bottom Air Supply ,Top Air Return				
Indoor unit fan	Air flow (m³/h)		8700	12600	20600	23000	28100
	quantity		1	1	2	2	2
	Type		Backward centrifugal EC fan				
Sound preesure leve	indoor unit (dB(A))		66	73	73	73	73
	outdoor unit (dB(A))		68	68	68	71	69
Compressor	quantity		1	2	2	2	2
	Type		Scroll compressor, fixed speed				
Throttle	Type		Electronic expansion valve				
Evaporator	Type		Finned tube,"A"-shaped				
Electric heater	Heating power (kw)		8.5	9	12	12	12
	Type		PTC electric heater				
Humidifier	Humidification (kg/h)		5	10	10	10	10
	Type		Electrode humidifier				
Air filter	Level		G4				
	Number of filters		4	4	8		
Piping	Gas/liquid pipe diameter (mm)		ø22.2/ø15.9 (L≤40m) ø25.4/ø15.9 (40＜L≤60m)	ø22.2/ø15.9 (L≤60m)	ø22.2/ø15.9 (L≤30m) ø25.4/ø19.1 (30＜L≤60m)	ø22.2/ø15.9 (L≤20m) ø25.4/ø19.1 (20＜L≤40m) ø28.6/ø19.1 (40＜L≤60m)	ø22.2/ø15.9 (L≤10m) ø25.4/ø19.1 (10＜L≤20m) ø28.6/ø19.1 (20＜L≤60m)
	Humidifier inlet pipe joint (ID mm)		Thread connection, unit reserved internal thread G3/4(ø10)				
	Humidifier drainage pipe joint (ID mm)		Φ32.5				
	Condensate drainage pipe joint (ID mm)		G3/4 (ø19)				
Indoor unit	Dimensions (W×D×H mm)		905×1010×2000	1460×1010×2000	1810×1010×2000	2360×1010×2000	2360×1010×2000
	Packing (W×D×H mm)		1010×1115×2180	1555×1115×2180	1912×1115×2180	2490×1160×2175	2490×1160×2175
	Net/gross weight (kg)		390/420	570/620	680/740	800/865	835/910
Outdoor unit	Fan type		External rotor axial				
	Vertical installation Dimensions (W×D×H mm)		1750×690×1295	1550×690×988	1750×690×1295	2045×690×1290	2550×690×1290
	Horizontal installation Dimensions (W×D×H mm)		1750×1295×1050	1550×988×1050	1750×1295×1050	2045×1290×1050	2550×1290×1050
	Packing (W×D×H mm)		1890×820×1475	1700×940×1190	1890×820×1475	2200×820×1475	2700×820×1475
	Net/gross weight (kg)		180/250	105*2/210*2	180*2/250*2	210*2/300*2	262*2/355*2
Power distribution	Maximum input power (kw)		23.5	35	44.5	45	55
	Maximum input current (A)		38	59.5	81.5	82	98
	IDU and ODU connection cable specifications (mm²)		4×0.75	4×0.75	4×0.75	4×0.75	4×0.75
	outdoor unit power supply cable specifications (mm²)		4×2.5	4×2.5	4×2.5	4×2.5	4×2.5
	Recommended Wiring (Number of cores x wire diameter mm²)		5×10	5×16	5×25	5×25	5×35
Operating temperature range			18 to 40℃ (Indoor unit)-20℃ to 45℃ (Outdoor unit)				

Notes:
1. Cooling capacity under declared operating condition: indoor temperature 24℃ (DB)/17℃ (WB), outdoor temperature 35℃ (DB)
2. In cooling mode, the lowest ambient temperature allowable is -20℃.
3. The longest length allowable of a connecting tube is 60 m.The level difference between indoor unit and outdoor unit should be in the range of -5 to +20 m. The difference is positive when the outdoor unit is placed higher than the indoor unit, 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. Cable parameters are based on fully-loaded configuration.
7. Factory does not pre-charge refrigerant.
8. The sound pressure level is measured at a distance of 1 m from the unit and at a height of 1 m in a semi-anechoic chamber. The test conditions: indoor temperature 24℃ (DB)/17℃ (WB),outdoor temperature 35℃ (DB).
9. The refrigerant charge in the above table is the value when using 10m pipe connection.