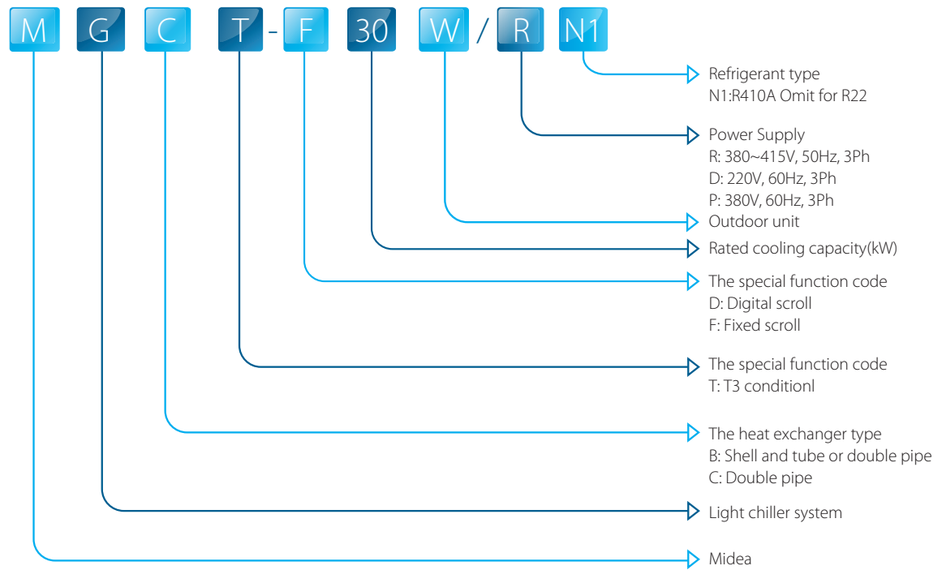
Tropical Air Cooled Scroll Chiller

With single unit capacities ranging from 30kW to 180kW, Midea tropical air cooled scroll chillers bring high reliability cooling and heating to projects large and small. With an ambient temperature upper operating limit of 52°C in cooling mode, Midea Aqua Tempo Power tropical chillers are able to cope with the hottest of climates.

Nomenclature



Aqua Tempo Power

Features

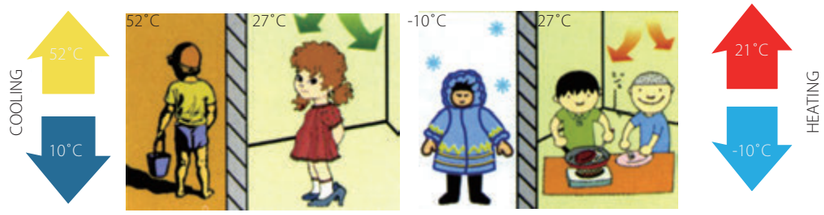
Wide application range »

❖ Four basic models with cooling capacity ranging from 30kW to 180kW, combination model's maximum capacity ups to 1440kW.

180kW 180kW 1440kW

❖ 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.

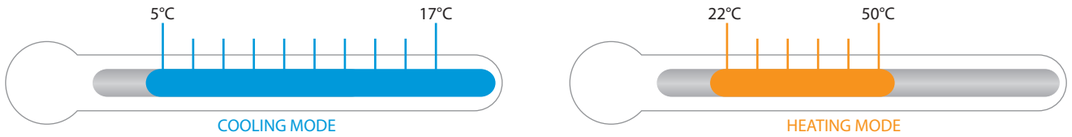
❖ Wide ambient temperature operating range



The ambient temperature operating range is 10°C to 52°C in cooling mode and -10°C to 21°C in heating mode.

❖ Wide outlet water temperature range

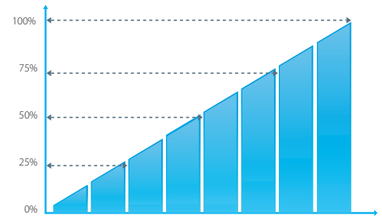
Water outlet temperature range is from 5°C to 17°C. in cooling mode and from 22°C to 50°C in heating mode.



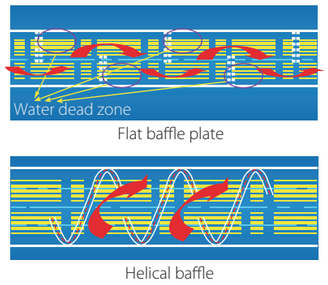
Advanced technology »

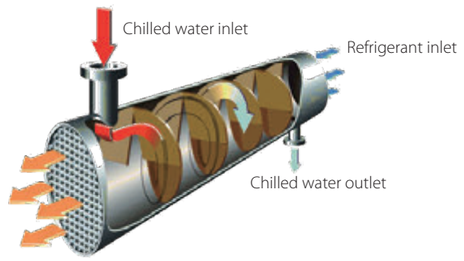
❖ EXV for more precisely flow control

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



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

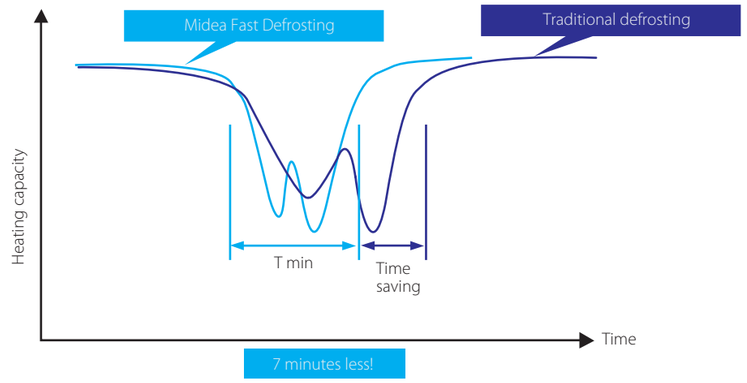




For shell-tube heat exchanger, the module adopts the new helical baffle design to avoid the rectangular place of water dead zone, greatly improve the heat exchange efficiency.

❖ Intelligent defrosting technology

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



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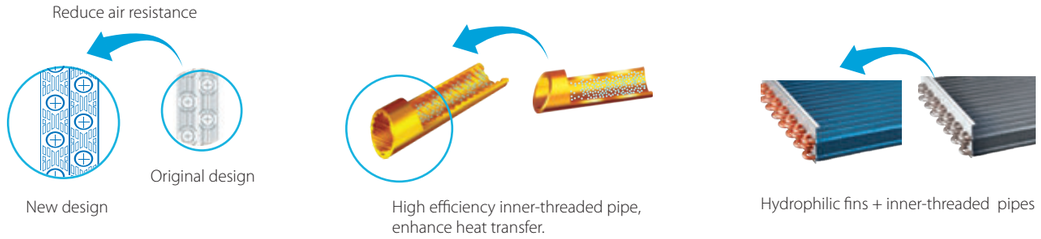
❖ High performance heat exchanger



The new designed window fins enlarge the heat-exchanging area, decrease the air resistance, save more power and enhance heat exchange performance.
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.

❖ Back-up functions

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

❖ Reliable protections

Multiple protections are adopted to ensure system stable running.

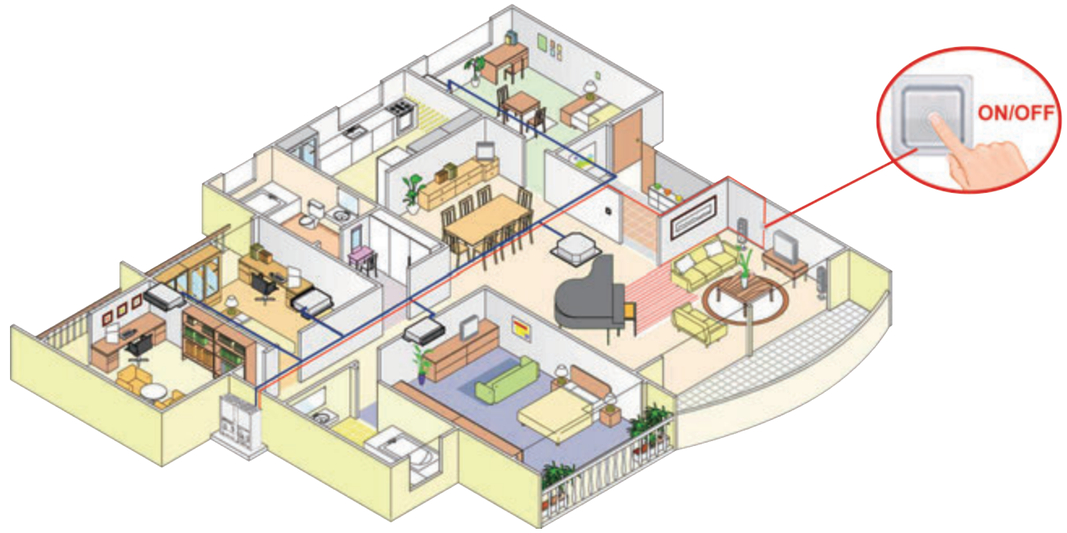
- High/low pressure protection of compressor
- Power phases sequence protection
- Evaporator low temperature protection in cooling
- System anti-freezing protection in winter
- Frequently ON/OFF protection of compressor
- Over-current protection of compresor
- Air discharge temperature protection of compressor
- System high temperature protection
- Water flow protection
- Sensor malfunction protection

Easy control »

❖ Touch key wire controller as standard accessory to control the chillers.

❖ Remote control functions for convenient operation

There are ON/OFF, Heat/Cool and Alarm terminals ports on PCB, connect switches from these terminal ports and remote control functions can be easily realized.



Note: When use the remote control function, the wired controller will be invalid for ON/OFF and mode selection.

Aqua Tempo Power

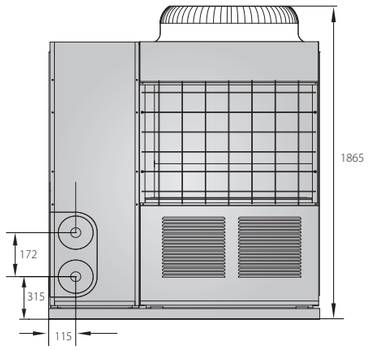
Specifications

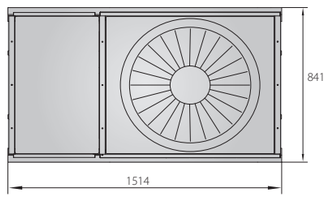
Model			MGBT-F30W/DN1	MGBT-F60W/DN1	MGBT-F120W/DN1	MGBT-F180W/DN1
Power supply		V/Ph/Hz	220/3/60	220/3/60	220/3/60	220/3/60
Cooling[1]	Capacity	kW	30	60	130	180
	Input	kW	10.0	19.5	39.0	58.5
	EER		3.00	3.08	3.08	3.08
Cooling[2]	Capacity	kW	25.8	51.6	103.2	154.8
	Input	kW	12.0	23.4	46.8	70.2
	EER		2.15	2.21	2.21	2.21
Heating[3]	Capacity	kW	32	65	130	195
	Input	kW	9.8	20.0	40.0	60.0
	COP		3.27	3.25	3.25	3.25
Max. running current		A	45.0	90.0	180.0	270.0
Compressor	Type		Fixed Scroll	Fixed Scroll	Fixed Scroll	Fixed Scroll
	Quantity	Pieces	2	2	4	6
Air side heat exchanger	Type		Fin-coil	Fin-coil	Fin-coil	Fin-coil
	Fan motor type		AC Motor	AC Motor	AC Motor	AC Motor
	Quality of fan motor	Pieces	1	2	4	6
	Air flow	m^3/h	12,000	24,000	48,000	72,000
Water side heat exchanger	Type		Double-pipe	Shell-tube	Shell-tube	Shell-tube
	Water pressure drop	kPa	60	12	25	30
	Volume	L	10	42	64	90
	Water flow volume	m^3/h	5.2	10.3	20.6	31
Refrigerant	Type		R410A	R410A	R410A	R410A
	Charged volume	kg	7.0	14.0	28.0	42.0
	Throttle type		EXV	EXV	EXV	EXV
Sound pressurer level[4]		dB(A)	65	67	70	74
Unit net dimension(D×H×W)		mm	1,514×1,865×841	2,000×1,880×900	2,000×2,090×1,685	2,850×2,110×2,000
Packing dimension(D×H×W)		mm	1,590×2,065×995	2,106×2,090×998	2,090×2,240×1,755	2,980×2,260×2,135
Net/ Gross weight		kg	380/420	580/650	1,180/1,270	1730/2,000
Pipe connections	Water inlet/outlet	mm	DN40	DN100	DN65	DN80
Controller			Wired controller	Wired controller	Wired controller	Wired controller
Maximum combinations			16	16	8	5
Ambient temperature range	Cooling	℃	10~52	10~52	10~52	10~52
	Heating	℃	-10~21	-10~21	-10~21	-10~21
Water outlet temperature range	Cooling	℃	5~17	5~17	5~17	5~17
	Heating	℃	45~50	45~50	45~50	45~50

Note: Specifications are based on the following conditions:
1. Cooling :Chilled water inlet/outlet: 12°C/ 7°C, and outdoor ambient temp. of 35°C DB.
2. chilled water inlet/outlet: 12°C / 7°C, and outdoor ambient temp. of 46°C DB.
3. Heating : warm water inlet/outlet: 40°C/ 45°C, and outdoor ambient temp. 7°C DB/6°C WB.
4. 1m away in open field.

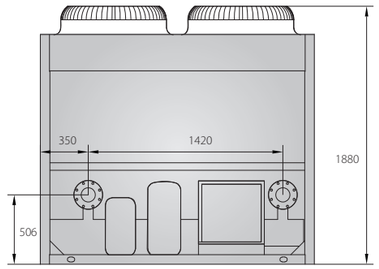
Dimensions (Unit:mm)

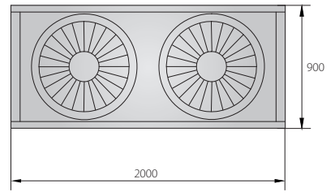
30kW module »



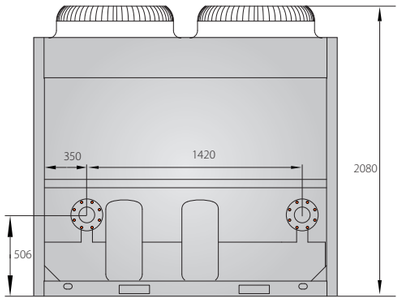


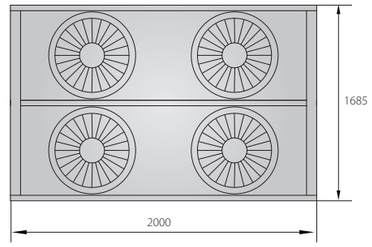
60kW module »



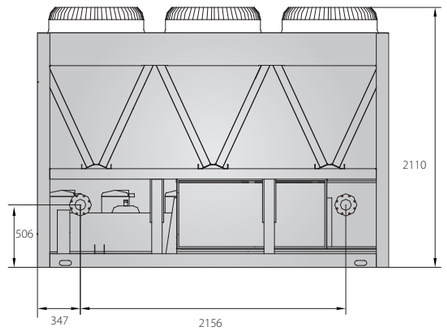


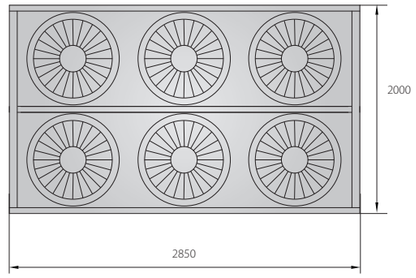
120kW module »





180kW module »





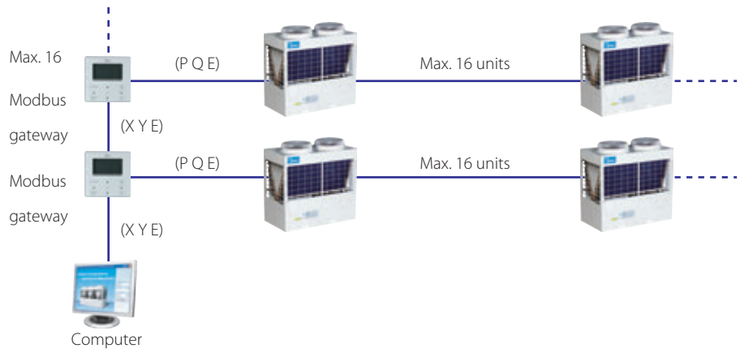
Aqua Tempo Power

Control System

Wired controller »

Model	KJRM-120D/BMK-E(standard)	KJR-120A/MBTE(optional)
Appearance		
Main Functions	❖ Parameter setting and display. ❖ Real time clock control. ❖ Manual reset. ❖ Remote control icon display. ❖ Hysteresis temperature setting. ❖ Touch key operation	❖ Parameter setting and display. ❖ Real time clock control. ❖ Manual reset. ❖ Remote control icon display. ❖ Hysteresis temperature setting. ❖ Weekly timing function.
Max. connection PCBs	16	16
Compatible Gateway	Modbus & Lon Works	Lon Works

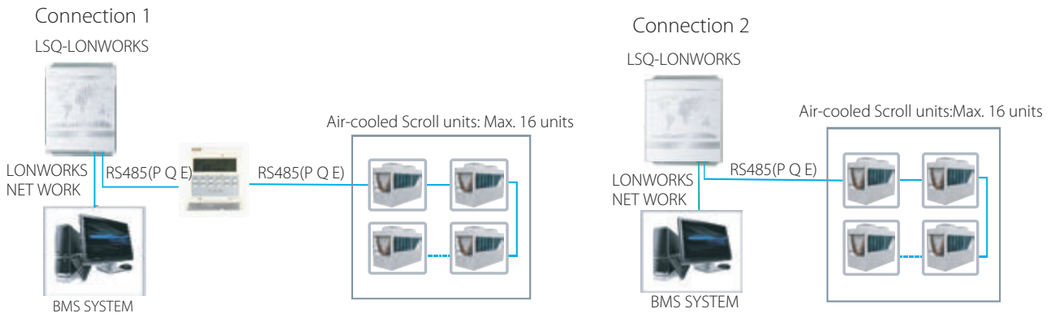
Modbus gateway can be customized by adding X, Y, E ports on wired controller KJRM-120D/BMK-E. It can connect Max. 16 wired controllers and each controller can control Max. 16 units.



LonWorks gateway »

LonWorks gateway controls the central A/C to facilitate the building management system (BMS). Main settings of LonWorks: operation Mode, outlet water temperature, hysteresis temperature and clear alarm.

There are two connection methods for LonWorks:



Standard features/options

Description	Standard features	Options
Hermetic scroll compressor	●	
Compressor crankcase heaters	●	
Compressor circuit breakers	●	
Compressor overload protection	●	
Condenser fan-direct drive, axial type	●	
Condenser fan(Metal)	●	
Condenser fan guard	●	
Condenser motor circuit breakers		●
Aluminum fins condenser coils	●	
Low pressure switch	●	
High pressure switch	●	
Wired controller KJRM-120D/BMK-E	●	
Wired controller KJR-120A/MBTE		●
BMS gateway(Lonworks)		●
MODBUS gateway		●
Remote control input	●	
Alarm signal output	●	
Anti-freezing protection	●	
Over-load protection	●	
Power phases sequence protection	●	
Anti-corrosion fins		●
Water flow switch		●
Three phase power protector		●

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