Operation Manual

Digital Variable Multi Air Conditioner

MDS080B（R）5～MDS500B（R）5

MOODY INTERNATIONAL CERTIFICATION ISO 9001 Approval

UKAS QUALITY MANAGEMENT No.014 - A

McQuay® Air Conditioning

MDS0905-A1
Part No: M08019460091

⚠ Warning

Please keep well the units Operation Manual and Installation Manual for further reference

Content

Note: Installation and maintenance are to be performed only by qualified persons who are familiar with local code and regulation, and experienced with this type of appliance
Caution: Sharp edges and coil surfaces are a potential injury hazard. Please avoid touching them
Warning: Moving machinery and electrical power is hazardous. And it may cause severe personal injury or death. Disconnect and lock off power before installing or servicing the unit

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1 General Introduction

MDS(Multi-Digital Scroll) units are most suitable for commercial building, office room, hotel, which includes the outdoor units and multi-indoor units; The most advantage of this product range is unconventional outdoor units with digital scroll compressor, To meet different requirements, there are many indoor units for options: ceiling concealed indoor units, ceiling cassette indoors units and ceiling duct indoor units, When indoors are ceiling duct type, if there is a special requirement, the indoor units can add the electrical heater and steam coil to extend the heating capacity.

● **Outdoor Units: MDS-B Series**

Product Range: MDS080B(R)5、MDS100B(R)5、MDS120B(R)5、MDS140B(R)5、MDS160B(R)5、MDS180B(R)5、MDS200B(R)5、MDS220B(R)5、MDS240B(R)5、MDS260B(R)5、MDS280B(R)5 、MDS300B(R)5、MDS320B(R)5、MDS340B(R)5、MDS360B(R)5、MDS380B(R)5、MDS400B(R)5、MDS420B(R)5、MDS440B(R)5、MDS460B(R)5、MDS480B(R)5、MDS500B(R)5

Feature: The outdoor units are designed that the return air from front and back side panel and vertical air discharge. Units are compact, and elegant design with low noise; the compressor is with advanced technology of digital scroll, can meet the stageless energy level adjustment from 10% to 100%.

Nomenclature:

MDS 300 B R M 5 -F AB E

- Applied region Omitted: China, B: Australia, U: America, E: Other region.
- Description of the unit
- Power supply features F: 380-415V/3N~/50Hz; P: 208-230V/3~/60Hz
- For R410A refrigerant
- Combined feature of unit M: master unit, S: slave unit;
- Single or total combined unit: Omitted
- Heat pump (omitted if cooling only)
- Design serial No.
- Cooling capacity No.300 means 30HP
- McQuay multi digital scroll unit

● **Ceiling Concealed Indoor Units：MCC-TP Series**

Product Range: MCC009TP、MCC011TP、MCC015TP、MCC018TP、MCC020TP、MCC028TP、MCC032TP、MCC035TP、MCC045TP、MCC050TP、MCC060TP

Feature: Concealed type, space saving, ESP is optional.

Nomenclature:

M CC 050 T P -36 R B F A M A R

- McQuay
- Ceiling conceal indoor unit
- Cooling capacity No.(HP)
- Design serial No.
- For R410A refrigerant
- Type of additional heater
  - W: hot water coil
  - 36: 3600W electric heater
  - Omitted: no additional heater
- Type of connecting pipe
  - R: right connecting pipe
  - L: left connecting pipe
- Air return model
  - B: rear air return plenum
  - D: lower air return plenum
  - C: no air return plenum
- F: using air filter, X: no air filter
- Power supply features A: 220-240V~/50Hz; K: 208-230V~/60Hz.
- Matching outdoor units: MDS series
- Design alternation No.
- Applied region Omitted: China, B: Australia, U: America, R: RoHS, E: Other region

● **Ceiling Cassette Indoor Units：MCK-UP/TP Series**

Product Range: MCK011UP、MCK015UP、MCK018UP、MCK020UP、MCK028TP、MCK032TP、MCK035TP、MCK045TP、MCK050TP、MCK060TP

Feature: 4 ways air supply evenly, streamlined design, in-build high efficiency filter.

Nomenclature:

M CK 032 T P -A M A R

- McQuay
- Ceiling cassette
- Cooling capacity No.(HP)
- Design serial No.
- For R410A refrigerant
- Power supply features
  - A: 220-240V~/50Hz;
  - K: 208-230V~/60Hz.
- Matching outdoor units: MDS series
- Design alternation No.
- Applied region
  - Omitted: China
  - B: Australia
  - U: America
  - R: RoHS
  - E: Other region.

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● **Ceiling Duct Indoors Units：MDB-TP Series**

Product Range:：MDB032TP、MDB035TP、MDB045TP、MDB050TP、MDB060TP

Feature: Installed above ceiling with air supply duct working, meet the requirement for long distance air supply.

Nomenclature:

M DB 050 T P-10-A M A R

- M — McQuay
- DB — Air-cooled cooling duct indoor unit
- 050 — Cooling capacity No.(HP)
- T — Design serial No.
- P — For R410A refrigerant
- 10 — External static pressure: 10 means 100Pa
- A — Power supply features A: 220-240V~/50Hz; K: 208-230V~/60Hz.
- M — Matching outdoor units: MDS series
- A — Design alternation No.
- R — Applied region Omitted: China, B: Australia, R: RoHS, U: America, E: Other region.

● **Horizontal Ceiling mounted and Vertical floor standing indoor units：MCM-TP Series**

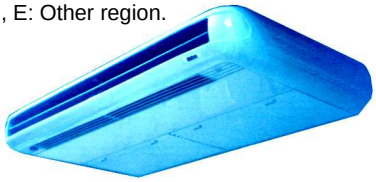
Product Range: MCM020TP、MCM028TP、MCM045TP、MCM050TP

Feature: elegant design, friendly installation.

Nomenclature:

M CM 050 T P-A M A R

- M — McQuay
- CM — Ceiling exposed/floor standing unit
- 050 — Cooling capacity No.(HP)
- T — Design serial No.
- P — For R410A refrigerant
- A — Power supply features A: 220-240V~/50Hz; K: 208-230V~/60Hz.
- M — Matching outdoor units: MDS series
- A — Design alternation No.
- R — Applied region Omitted: China, B: Australia, U: America, R: RoHS, E: Other region.



● **Wall mounted units: MWM-TP Series**

Product Range: MWM009TP、MWM011TP、MWM015TP、MWM020TP、MWM028TP

Feature: elegant design, friendly installation, In-build high efficiency and mould proof filter, easy to detach and clean.

Nomenclature:

M WM 015 T P-A M A R

- M — McQuay
- WM — Indoor unit: Wall mounted indoor units
- 015 — Cooling capacity No.(HP)
- T — Design serial No.
- P — For R410A refrigerant
- A — Power supply features A: 220-240V~/50Hz; K: 208-230V~/60Hz.
- M — Matching outdoor units: MDS series
- A — Design alternation No.
- R — Applied region Omitted: China, B: Australia, U: America, R: RoHS, E: Other region.

● **External hot water coil box**

Product Range: HWT08-15、HWT18-32、HWT35-50、HWT60

Feature: For MCC-T series indoor units**,** easy to install and simple to maintain.

Nomenclature:

HW T 08-15

- HW — External hot water coil box
- T — T means that unit can be used in MCC "T" series
- 08-15 — 08-15 means it can be used in MCC008–015T

● **External electric heater box**

Product Range: HDP1.2/2.4T08-15、HDP2.4/3.6T18-32、HDP2.4/3.6T35-45、HDP4.8/7.2T35-50、HDP5.4/7.2/10.8T60

Feature: For MCC-T series indoor unit**,** easy to install and simple to maintain.

Nomenclature:

HD P 1.2 T 08-15

- HD — External electric heater box
- P — Heating unit: P means the heating is PTC; Omitted means the heating unit is electric heating pipe
- 1.2 — Heating capactity (kW)
- T — T means that unit can be used in MCC "T" series
- 08-15 — 08-15 means it can be used in MCC008–015T

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● **Outlay condensate pump**

Product Range: MDS-CP08、MDS-CP10、MDS-CP20

Feature: The max discharge is 6m, elegant design, friendly installation, it has water level check and water level alarm.

Nomenclature:

MDS-CP 08
- 08 — Pump model
- CP — Condensate pump
- MDS — Alternative Accessory of MDS

For the air conditioning system, composed by MDS series products, have networking function and centralized control function; And the outdoor units have self- diagnose function, which could display the failure code to check the broken part, can save lot of time and money.

Moreover, it is optional to choose the individual electric power meter, to accurately split the electric power bill of each household.

2 Operation Instruction

● **Setting the indoor temperature**

When the unit is in cooling mode, it is recommended the indoor temperature is 5℃ lower than the outdoor temperature to preserve the electric power.

Too high or too low indoor temperature will make people feel uncomfortable; It is suggested that in cooling mode, temperature setting range: 26～28℃, In heating mode, the temperature setting range18～23℃.

● **Clean the air filter**

When the filter is filled with dirt, will reduce the air flow volume and even cause the units failure in a worst condition; If the units stop running for too long, it is a must to clean the filter first.

● **Close the windows to prevent the heat exchanging between indoor and outdoor**

When cooling and heating, try not to open the windows and doors, prevent the heat exchanging between indoor and outdoor.

To use curtain to prevent the sunshine directly entering the inside room.

● **Keep necessary ventilation**

To keep indoor air quality, it is necessary to let the fresh air into the room at times.

● **To set up the On/Off timer**

When sleeping mode or nobody in house, please set up the On/Off timer to switch off the air conditioning.

3 Unit Maintenance

⚠ Warning

Before maintenance service, please shut off the main power supply and stop indoor and outdoor units

● **Indoor Unit Maintenance**

Part	Maintenance Checking step	Times/ month
Air filter	1. Open the grill 2. Take out the air filter 3. Use brush to clean the air filter under 40℃ water	1
Front Panel	1. Get rid of the dust and dirt by using cloth and detergent , clean the panel	1
Drain Pan and host	1. To check the drain pan and host are clean or not, if it is dirty, clean it 2. To check there is no barrier for the condensing water flow out	3
Evaporator	1. To clean the dirt of fins 2. To clean any barrier of indoor air flow	1
Electrical Part	1. To check the running ampere and voltage is normal or not 2. To check the electrical connection is fixed or loose	12

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● **Outdoor Unit Maintenance**

Part	Maintenance Checking step	Times/ month
Outdoor fan	To check the noise level	1
Outdoor condenser	1. To clean the dirt of fins 2. To remove any barrier which inhibit the air flow	1
Compressor	To check the compressor running noise level and vibrations	1
Electrical Part	1. To check the running ampere and voltage is normal or not 2. To check the electrical connection is fixed or loose 3. To check the controller in normal working conditions	1

4 Safety instruction

4.1 Safety notice items:

● **When units are operating**

Do not use any sharp article to press the bottom of controller.

Do not twist and pull the cable of controller.

Do not use any chemical detergent to clean the wiring controller.

Do not put any barrier between the inlet and outlet of air both indoor and outdoor units.

● **When units are in failure**

Do not repair by yourself, contact with the local service agents for help.

If the wiring controller or remote controller show the malfunction code, contact with the local service agents for help.

If any refrigerant leakage is found, stop the units and call the local service agents for help, and keep the inside room ventilated.

● **Long time not use the air conditioning**

To use the units again after a long time no usage of air conditioning, to run units in fan mode for 4～5 hours.

To shut off the power, do not the unit is in standby status.

When restart the units, please power on 12 hours in advance and let unit in standby status.

● **To relocate the unit**

To reinstall or move the units to other place, contact with the local service agents for help.

Improper installation will cause power leakage and fire disaster.

Improper installation will cause refrigerant leakage and hurt of human being and environment.

4.2 User instruction

Before using the digital scroll unit, the user must know the followings:

- Cooling mode, temperature range : Indoor 15～24℃ (WB), Outdoor 0～48℃ (DB).
- Heating mode, temperature range : Indoor 15～27℃ (DB), Outdoor -15～16℃ (WB).
- Refer to the indoor controller manual to know how to control the indoor unit operation mode.
- If user can not solve the failure problem, contact with the local service agents for help.
- Please keep the children away from the units.
- Only professional technician can do the installation, maintenance and reparation.
- Both indoor and outdoor units power shall be supplied independently, shut off the main power switch before any maintenance.
- When select outdoor units, do the selection properly.
- To prevent the inference of TV, radio and audio.
- Do not put any article at location of air inlet and outlet of indoor units.
- Indoor units shall not be set up to impact each other.
- Do not put any article at location of air inlet and outlet of outdoor units.
- Do not touch any sharp edge of fins and panel etc.
- Do not use the leakage testing detergent.
- When in low ambient temperature, add the heating coil or electrical heater.

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5 Troubleshooting

● If the followings unit malfunction occurred, please follow the below simple checking step to fix :

Symptom	analysis	Solution
Compressor stop and fan work normally	Indoor temperature is higher (heating) or lower (cooling) than setting temperature	Re – set up the temperature
	When heating and defrost mode, indoor unit is just running	Wait for 10minutes
Units do not work	Power is not on	Check and connect the power
	Set up the re-start function	Wait or cancel timer On
	Fuse broken in main power supply	Replace the fuse
Cooling or heating not enough or too much	Air filter is too dirty	Clean or replace the filter
	Return air barrier	Remove the barrier
Remote controller unreadable	Low battery	Replace the battery
	Wrong installation of battery	Install properly
Condensing water in front panel	Humidity is too high	Dehumidify
	Setting temperature is too low	Set up the higher indoor temperature

● If user can not fix the problem, please contact wit the local service agent for assistance, meanwhile record the malfunction code by remote controller and indication light of units self-checking function.

Item	code	Description	Item	code	Description	Item	code	Description
1	E0	System malfunction	26	FB	Water pump(indoor drain pump)	49	15	Sensor broken(slaveTH5 mid coil 2#)
2	E1	Sensor broken (TH1 discharge temp.)	27	FC	Indoor&outdoor communication malfunction	50	16	Sensor broken(slaveTH6 inlet coil 3#)
3	E2	Sensor broken (TH2 inlet coil 1#)	28	FE	Outdoor master and outdoor slave communication malfunction	51	17	Sensor broken(slaveTH7 mid coil 3#)
4	E3	Sensor broken (TH3 mid coil 1#)	29	FF	Fresh air filter clogging	52	18	Sensor broken(slaveTH8 ambient temp.)
5	E4	Sensor broken (TH4 inlet coil 2#)	30	H0	Digital comp overload	53	19	Sensor broken(slaveTH9 outlet coil)
6	E5	Sensor broken (TH5 mid coil 2#)	31	H1	Fixed comp1 overload	54	1A	Sensor broken (slave TH10 subcool outlet)
7	E6	Sensor broken (TH6 inlet coil 3#)	32	H2	Fixed comp2 overload	55	1B	Sensor broken (slave TH11 subcool suction)
8	E7	Sensor broken (TH7 mid coil 3#)	33	H3	Fixed comp3 overload	56	1C	Sensor broken(slaveTH12 suction)
9	E8	Sensor broken (TH8 ambient temp.)	34	H4	High pressure too high	57	1F	Emergency run(slave)
10	E9	Sensor broken (TH9 outlet coil)	35	H5	Sensor broken, high pressure	58	20	Outdoor storage malfunction(slave)
11	EA	Sensor broken (TH10subcool outlet)	36	H6	Discharge temp too high	59	27	Ambient temp exceed the limit(slave)
12	EB	Sensor broken (TH11subcool suction)	37	H7	High pressure too low	60	28	Water temp. too high or low (slave)
13	EC	Sensor broken (TH12suction)	38	L0	Super heat too low	61	29	Insufficient water flow (slave)
14	EF	Emergency run	39	L1	Low pressure too low	62	30	Digital comp overload(slave)
15	F0	Outdoor storage malfunction	40	L2	Sensor broken, low pressure	63	31	Fixed comp1overload(slave)
16	F1	Sensor broken (indoor inlet coil)	41	L3	All indoor units and outdoor units t communication malfunction	64	32	Fixed comp2 overload(slave)
17	F2	Sensor broken (indoor mid coil)	42	L6	Outdoor unit and elec. power dist. communication malfunction	65	33	Fixed comp3 overload(slave)
18	F3	Sensor broken (indoor outlet coil)	43	L7	Ammeter and elec. power dist. communication malfunction	66	34	High pressure too high(slave)
19	F4	Sensor broken (indoor return air)	**The following for the Slave units**			67	35	Sensor broken, high pressure(slave)
20	F5	Sensor broken (indoor supply air)	44	10	System malfunction	68	36	Discharge temp too high(slave)
21	F6	Indoor and controller communication malfunction	45	11	Sensor broken (slaveTH1 discharge temp.)	69	37	High pressure too low(slave)
22	F7	Ambient temp exceed the limit	46	12	Sensor broken(slaveTH2 inlet coil 1#)	70	40	Super heat too low(slave)
23	F8	Water temp. too high or low	47	13	Sensor broken(slaveTH3 mid coil 1#)	71	41	Low pressure too low(slave)
24	F9	Insufficient water flow	48	14	Sensor broken(slaveTH4 inlet coil 2#)	72	42	Sensor broken, low pressure(slave)
25	FA	Controller storage malfunction						

Indication light twinkle related to the code of malfunction:

Type	Heat	Sleep/Fan	Dry	Type	Heat	Sleep/Fan	Dry	Type	Heat	Sleep/Fan	Dry
Sensor , indoor	Off	Off	F	Sensor, outdoor	Off	F	F	Pressure sensor, outdoor	F	F	On
Pump , indoor	Off	F	Off	Overload , compressor	F	F	Off	System failure	F	F	F
Communication	F	Off	Off	Pressure high/low	F	Off	F	Others	F	On	On

Note : “ F” means “ flash” , “ On” means “ light on” , “ Off” means “ light off”

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● When the outdoor units are running, the operating mode was displayed on the PCB board of outdoor controller, it can also display malfunction code. The following is the denotation of the code displayed in PCB board.

Code	Denotation	Code	Denotation	Code	Denotation
	0/O		8		H
	1		9		L
	2		A		N
	3		B		P
	4		C		R
	5/S		D		T
	6		E		U
	7		F		Y

Code	Description	Code	Description	Code	Description	Code	Description
	NULL：outdoor unit stand-by		CSP：outdoor in the course cooling stop		HST：outdoor starting to heat		PROT：outdoor system malfunction protection
	REST：outdoor unit resting		DST：outdoor starting to defrost		HEAT：outdoor/indoor heating		TEST：outdoor hardware testing mode
	CST：outdoor starting to cool		DEF：outdoor/indoor defrosting		HSP：outdoor in the course heating stop		OPEN：open all EXV
	COOL：outdoor/indoor cooling		DSP：outdoor in the course defrost stop		ERRO：outdoor normal malfunction		Othe：Other mode

The table of the malfunction code and description：

Item	Code	Description	Item	Code	Description
0	EC00	0#indoor and outdoor communication malfunction	65	ER65	Sensor broken（TH2 inlet coil 1#）
1~47	ECXY	XY# indoor and outdoor communication malfunction	66	ER66	Sensor broken（TH3 mid coil 1#）
48	ER48	Digital comp overload	67	ER67	Sensor broken（TH4 inlet coil 2#）
49	ER49	Fix comp1 overload	68	ER68	Sensor broken（TH5 mid coil 2#）
50	ER50	Fix comp2 overload	69	ER69	Sensor broken（TH6 inlet coil 3#）
51	ER51	Fix comp3 overload	70	ER70	Sensor broken（TH7 mid coil 3#）
52	ER52	Discharge pressure too high	71	ER71	Sensor broken（TH8 ambient temp.）
53	ER53	Suction pressure too low	72	ER72	Sensor broken（TH9 outlet coil）
54	ER54	Outdoor storage malfunction	73	ER73	Sensor broken（TH10 subcool inlet）
55	ER55	System malfunction	74	ER74	Sensor broken（TH11 subcool outlet）
56	ER56	Discharge temp. too high	75	ER75	Sensor broken（TH12 suction temp.）
57	ER57	Indoor and outdoor communication malfunction	76	ER76	Discharge pressure sensor malfunction
58	ER58	Water temp. too high or low	77	ER77	Suction pressure sensor malfunction
59	ER59	Ambient temp. exceed the limit	78	EC78	All indoor and outdoor communication malfunction
60	ER60	Emergency run	79	ERSE	Inexistent model
61	ER61	Super heat too low	80	R22	Miss feedback wiring or program misused for R410A unit
62	ER62	Insufficient water flow	81	R410	false feedback wiring or program misused for R22 unit
63	ER63	Slave communication malfunction	82	EC79	Outdoor unit and elec. power dist. communication malfunction
64	ER64	Sensor broken (TH1 discharge temp.)	83	EC80	Ammeter and elec. power dist. communication malfunction

Note: ”XY” in “ECXY” means “No.XY” indoor unit.

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6 Technical Parameter

Multi Digital Scroll Units

Model		MDS080B5	MDS080BR5	MDS100B5	MDS100BR5	MDS120B5	MDS120BR5	MDS140B5	MDS140BR5
Cooling capacity	kW	25.0	25.0	28.0	28.0	33.0	33.0	38.0	38.0
	Btu/h	85380	85380	95630	95630	112700	112700	129780	129780
Heating capacity	kW	-	28.0	-	32.0	-	37.0	-	42.0
	Btu/h	-	95630	-	109290	-	126360	-	143440
Power		380-415V/3N～/50Hz							
Sound level dB(A)		56		57		60		60	
W×D×H(mm)		990×840×1840						1290×840×1840	
Weight	kg	275	290	285	300	290	305	335	350
	lb	606	639	628	661	639	672	739	772
Power consumption in cooling (kW)		7.2	7.2	8.0	8.0	9.7	9.7	11.3	11.3
Ampere in cooling (A)		15.2	15.2	16.8	16.8	18.7	18.7	21.8	21.8
Power consumption in heating (kW)		-	7.0	-	7.9	-	9.4	-	10.9
Ampere in heating (A)		-	14.2	-	15.7	-	17.8	-	21.1
Refrigerant		R410A							
Connecting	gas	Welding flange							
	liquid	expanded copper tube							
Liquid Φ(mm(in))		9.52(3/8")		12.7(1/2")					
Gas Φ(mm(in))		22.23(7/8")						28.6(1- 1/8")	
Max. indoors-quantity		13		16		16		20	

Model		MDS160B5	MDS160BR5	MDS180B5	MDS180BR5	MDS200B5	MDS200BR5	MDS220B5	MDS220BR5
Cooling capacity	kW	42.0	42.0	47.0	47.0	53.0	53.0	58.0	58.0
	Btu/h	143440	143440	160510	160510	181000	181000	198080	198080
Heating capacity	kW	-	47.0	-	53.0	-	59.0	-	65.0
	Btu/h	-	160510	-	181000	-	201500	-	221990
Power		380-415V/3N～/50Hz							
Sound level dB(A)		60		61		61		62	
W×D×H(mm)		1290×840×1840				1990×840×1840			
Weight	kg	345	360	355	370	560	590	560	590
	lb	761	794	783	816	1235	1301	1235	1301
Power consumption in cooling (kW)		12.9	12.9	14.5	14.5	16.2	16.2	17.7	17.7
Ampere in cooling (A)		24.1	24.1	28.5	28.5	32.7	32.7	35.7	35.7
Power consumption in heating (kW)		-	11.9	-	13.8	-	14.7	-	16.9
Ampere in heating (A)		-	23.6	-	27.3	-	31.0	-	33.8
Refrigerant		R410A							
Connecting	gas	Welding flange							
	liquid	expanded copper tube							
Liquid Φ(mm(in))		12.7(1/2")				15.88(5/8")			
Gas Φ(mm(in))		28.6(1- 1/8")							
Max. indoors-quantity		20		24		24		24	

Model		MDS240B5	MDS240BR5	MDS260B5	MDS260BR5	MDS280B5	MDS280BR5	MDS300B5	MDS300BR5
Cooling capacity	kW	64.0	64.0	71.0	71.0	75.0	75.0	80.0	80.0
	Btu/h	218570	218570	242480	242480	256140	256140	273210	273210
Heating capacity	kW	-	71.0	-	79.0	-	84.0	-	90.0
	Btu/h	-	242480	-	269800	-	286880	-	307370
Power		380-415V/3N～/50Hz							
Sound level dB(A)		62		62		62		62	
W×D×H(mm)		1990×840×1840		2290×840×1840					
Weight	kg	570	600	625	655	635	665	645	675
	lb	1257	1323	1378	1444	1400	1466	1422	1488
Power consumption in cooling (kW)		19.8	19.8	21.0	21.0	22.6	22.6	24.2	24.2
Ampere in cooling (A)		38.5	38.5	40.5	40.5	42.8	42.8	47.2	47.2
Power consumption in heating (kW)		-	18.5	-	20.3	-	21.3	-	23.2
Ampere in heating (A)		-	35.9	-	38.9	-	41.4	-	45.1
Refrigerant		R410A							
Connecting	gas	Welding flange							
	liquid	expanded copper tube							
Liquid Φ(mm(in))		15.88(5/8")							
Gas Φ(mm(in))		28.6(1- 1/8")		34.9(1- 3/8")					
Max. indoors-quantity		24		32		32		32	

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Model		MDS320B5	MDS320BR5	MDS340B5	MDS340BR5	MDS360B5	MDS360BR5	MDS380B5	MDS380BR5
Cooling capacity	kW	85.0	85.0	89.0	89.0	94.0	94.0	102.0	102.0
	Btu/h	290290	290290	303950	303950	321030	321030	348350	348350
Heating capacity	kW	-	95.0	-	100.0	-	106.0	-	113.0
	Btu/h	-	324440	-	341520	-	362010	-	385920
Power		380-415V/3N～/50Hz							
Sound level dB(A)		63		63		64		64	
W×D×H(mm)		2590×840×1840						3290×840×1840	
Weight	kg	690	720	700	730	710	740	905	950
	lb	1521	1587	1543	1609	1565	1631	1995	2094
Power consumption in cooling (kW)		25.8	25.8	27.4	27.4	29.0	29.0	31.1	31.1
Ampere in cooling (A)		50.3	50.3	52.6	52.6	57.0	57.0	60.3	60.3
Power consumption in heating (kW)		-	24.7	-	25.7	-	27.6	-	29.4
Ampere in heating (A)		-	48.4	-	50.9	-	54.6	-	57.0
Refrigerant		R410A							
Connecting	gas	Welding flange							
	liquid	expanded copper tube							
Liquid Φ(mm(in))		19.05(3/4")							
Gas Φ(mm(in))		34.9(1- 3/8")						41.3(1- 5/8")	
Max. indoors-quantity		32		36		36		36	

Model		MDS400B5	MDS400BR5	MDS420B5	MDS420BR5	MDS440B5	MDS440BR5
Cooling	kW	106.0	106.0	111.0	111.0	117.0	117.0
	Btu/h	362010	362010	379080	379080	399580	399580
Heating	kW	-	118.0	-	124.0	-	130.0
	Btu/h	-	403000	-	423480	-	443970
Power		380-415V/3N～/50Hz					
Sound level dB(A)		65		65		65	
W×D×H(mm)		3290×840×1840				3990×840×1840	
Weight	kg	915	960	925	970	1130	1190
	lb	2017	2116	2039	2138	2491	2624
Power consumption in cooling (kW)		32.7	32.7	34.3	34.3	36.0	36.0
Ampere in cooling (A)		62.6	62.6	67.0	67.0	71.2	71.2
Power consumption in heating (kW)		-	30.4	-	32.3	-	33.2
Ampere in heating (A)		-	59.5	-	63.2	-	66.9
Refrigerant		R410A					
Connecting	gas	Welding flange					
	liquid	expanded copper tube					
Liquid Φ(mm(in))		19.05(3/4")					
Gas Φ(mm(in))		41.3(1- 5/8")					
Max. indoors-quantity		40		40		44	

Model		MDS460B5	MDS460BR5	MDS480B5	MDS480BR5	MDS500B5	MDS500BR5
Cooling	kW	122.0	122.0	128.0	128.0	134.0	134.0
	Btu/h	416650	416650	437140	437140	457630	457630
Heating	kW	-	136.0	-	142.0	-	148.0
	Btu/h	-	464460	-	484960	-	505450
Power		380-415V/3N～/50Hz					
Sound level dB(A)		65		65		65	
W×D×H(mm)		990×840×1840			1290×840×1840		
Weight	kg	1130	1190	1140	1200	1160	1220
	lb	2491	2624	2513	2646	2557	2690
Power consumption in cooling (kW)		37.5	37.5	39.6	39.6	41.8	41.8
Ampere in cooling (A)		74.2	74.2	77.0	77.0	81.2	81.2
Power consumption in heating (kW)		-	35.4	-	37.0	-	39.0
Ampere in heating (A)		-	69.7	-	71.8	-	75.7
Refrigerant		R410A					
Connecting	gas	Welding flange					
	liquid	expanded copper tube					
Liquid Φ(mm(in))		19.05(3/4")					
Gas Φ(mm(in))		41.3(1- 5/8")					
Max. indoors-quantity		44		48		48	

Notes:

1. Cooling condition: Indoor D/W bulb Temp. 27/19℃,outdoor temperature: D/W bulb Temp.35/24℃.
2. Heating condition: Indoor D/W bulb Temp. 20/15℃,outdoor temperature: D/W bulb Temp.7/6℃.
3. Testing power supply: 380V/3N~/50Hz.

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Ceiling concealed Indoor units

Model		MCC009TP	MCC011TP	MCC015TP	MCC018TP	MCC020TP
Cooling capacity	W	2200	2800	3600	4500	5600
	Btu/h	7510	9560	12300	15370	19130
Heating capacity	W	2500	3200	4000	5000	6300
	Btu/h	8540	10930	13660	17080	21520
Power		220-240V～/50Hz				
Sound level dB(A)		31		34	35	
W×D×H(mm)		1054×588×220			1314×610×250	
Weight	kg	22			25	
	lb	49			55	
Power input(W)		47		81	82	
Current(A)		0.21		0.37	0.37	
Fan number		2				
Air flow	H : m³/h	450		580	800	
	H :CFM	265		341	471	
ESP(Pa)		15Pa ,adjustable				
Drain Φ(mm(in))		19.05(3/4")				
Protection		Anti-freezing, overload				
Connection	Gas	expanded copper tube				
	Liquid	expanded copper tube				
LiquidΦ(mm(in))		6.35(1/4")				
GasΦ(mm(in))		9.52(3/8")		12.7(1/2")		

Model		MCC028TP	MCC032TP	MCC035TP	MCC045TP	MCC050TP	MCC060TP
Cooling capacity	W	7100	8000	9000	11200	12500	14000
	Btu/h	24250	27320	30740	38250	42690	47810
Heating capacity	W	8000	9000	10000	12500	14000	16000
	Btu/h	27320	30740	34150	42690	47810	54640
Power		220-240V～/50Hz					
Sound level dB(A)		37	42	43	47		48
W×D×H(mm)		1314×610×250		1664×610×250			1924×610×250
Weight	kg	27	28	39			45
	lb	60	62	86			99
Power input(W)		123	158	210	276		280
Current(A)		0.56	0.72	0.95	1.25		1.27
Fan number		2		3			4
Air flow	H : m³/h	960	1200	1400	1900		2100
	H :CFM	565	706	824	1118		1236
ESP(Pa)		15 ,adjustable	30 ,adjustable	50 ,adjustable			
Drain Φ(mm)		19.05					
Protection		Anti-freezing, overload					
Connection	Gas	expanded copper tube					
	Liquid	expanded copper tube					
LiquidΦ(mm(in))		9.52(3/8")					
GasΦ(mm(in))		15.88(5/8")					

Notes:

1. Cooling condition: Indoor D/W bulb Temp. 27/19℃,outdoor temperature: D/W bulb Temp.35/24℃.
2. Heating condition: Indoor D/W bulb Temp. 20/15℃,outdoor temperature: D/W bulb Temp.7/6℃.
3. Testing power supply: 220V~/50Hz.

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Ceiling Duct Indoor units

Model		MDB032TP	MDB035TP	MDB045TP	MDB050TP	MDB060TP
Cooling capacity	W	8000	9000	11200	12500	14000
	Btu/h	27320	30740	38250	42690	47810
Heating capacity	W	9000	10000	12500	14000	16500
	Btu/h	30740	34150	42690	47810	56350
Power		220-240V～/50Hz				
Sound level dB(A)		41	49	49	48	50
W×D×H(mm)		1007×600×285	929×541×378	1045×541×378	1230×910×350	1430×910×350
Weight	kg	38	39	42	69	75
	lb	84	86	93	152	165
Power consumption (W)		300	460	510	615	790
Current(A)		1.36	2.09	2.32	2.80	3.59
Fan number		2				
Air flow	H :m³/h	1280	1500	1980	2550	3000
	H :CFM	753	883	1165	1501	1766
ESP(Pa)		100	120	120	100	100
Drain Φ(mm)		19.05				
Protection		Anti-freezing, overload				
Connection	Gas	expanded copper tube				
	Liquid	expanded copper tube				
LiquidΦ(mm(in))		9.52(3/8")				
Gas Φ(mm(in))		19.05(3/4")				

Notes:

1. Cooling condition: Indoor D/W bulb Temp. 27/19℃,outdoor temperature: D/W bulb Temp.35/24℃.
2. Heating condition: Indoor D/W bulb Temp. 20/15℃,outdoor temperature: D/W bulb Temp.7/6℃.
3. Testing power supply: 220V~/50Hz.

Vertical floor standing & horizontal ceiling mounted indoor units

Model		MCM020TP	MCM028TP	MCM045TP	MCM050TP
Cooling capacity	W	5600	7100	11200	12500
	Btu/h	19130	24250	38250	42690
Heating capacity	W	6300	8000	12500	14000
	Btu/h	21520	27320	42690	47810
Power		220-240V～/50Hz			
Sound level dB(A)		48	50	52	
W×D×H(mm)		1214×670×214	1214×670×249	1714×670×249	
Weight	kg	39	44	64	
	lb	86	97	141	
Power consumption (W)		81	116	161	
Current(A)		0.40	0.55	0.70	
Number of fan		2	3	4	
Air flow	H :m³/h	1100	1300	1850	1850
	H :CFM	647	765	1089	1089
Drain Φ(mm)		20.5			
Protection		Anti-freezing, overload			
Connection	Gas	expanded copper tube			
	Liquid	expanded copper tube			
LiquidΦ(mm(in))		6.35(1/4")	9.52(3/8")		
Gas Φ(mm(in))		12.7(1/2")	15.88(5/8")		

Notes:

1. Cooling condition: Indoor D/W bulb Temp. 27/19℃,outdoor temperature: D/W bulb Temp.35/24℃.
2. Heating condition: Indoor D/W bulb Temp. 20/15℃,outdoor temperature: D/W bulb Temp.7/6℃.
3. Testing power supply: 220V~/50Hz.

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Cassette indoor units

Model		MCK011UP	MCK015UP	MCK018UP	MCK020UP	MCK028TP	MCK032TP	MCK035TP	MCK045TP	MCK050TP	MCK060TP
Cooling capacity	W	2800	3600	4500	5600	7100	8000	9000	11200	12500	14000
	Btu/h	9560	12300	15370	19130	24250	27320	30740	38250	42690	47810
Heating capacity	W	3200	4000	5000	6300	8000	9000	10000	12500	14000	16000
	Btu/h	10930	13660	17080	21520	27320	30740	34150	42690	47810	54640
Power		220-240V～/50Hz									
Sound level dB(A)		44	44	45	45	42	45	45	46	48	50
W×D×H(mm)		570×570×250				930×930×363					
Weight (Unit+Panel)	kg	22+2	22+2	23+2	23+2	37.5+5	39.5+5	39.5+5	39.5+5	39.5+5	39.5+5
	lb	48+4	48+4	51+4	51+4	83+11	87+11	87+11	87+11	87+11	87+11
Power consumption (W)		56	56	60	60	72	84	110	125	140	155
Current(A)		0.25	0.25	0.27	0.27	0.33	0.38	0.50	0.57	0.64	0.70
Number of fan		1									
Air flow	H :m³/h	697	697	697	697	1200	1300	1300	1530	1650	1800
	H :CFM	410	410	410	410	706	765	765	901	971	1059
Drain Φ(mm)		20.5									
Protection		Anti-freezing , overheat									
Connection	Gas	expanded copper tube									
	Liquid	expanded copper tube									
Liquid Φ(mm(in))		6.35(1/4")				9.52(3/8")					
Gas Φ(mm(in))		9.52(3/8")	12.7(1/2")			15.88(5/8")					

Notes:

1. Cooling condition: Indoor D/W bulb Temp. 27/19℃,outdoor temperature: D/W bulb Temp.35/24℃.
2. Heating condition: Indoor D/W bulb Temp. 20/15℃,outdoor temperature: D/W bulb Temp.7/6℃.
3. Testing power supply: 220V~/50Hz.

Wall Mounted indoor units

Model		MWM009TP	MWM011TP	MWM015TP	MWM020TP	MWM028TP
Cooling capacity	W	2200	2800	3600	5600	7100
	Btu/h	7510	9560	12300	19130	24250
Heating capacity	W	2500	3200	4000	6300	8000
	Btu/h	8540	10930	13660	21520	27320
Power		220-240V～/50Hz				
Sound level dB(A)		39	39	42	44	49
W×D×H(mm)		799×198×260	899×198×260		1062×222×304	
Weight	kg	10	12		16	
	lb	22	26		35	
Power consumption (W)		24	36	40	48	68
Current(A)		0.11	0.16	0.18	0.20	0.31
Number of fan		1				
Air flow	H :m³/h	460	510	590	860	1100
	H :CFM	271	300	347	506	647
Drain Φ(mm)		16.5			20.5	
Protection		Anti-freezing, overload				
Connection	Gas	expanded copper tube				
	Liquid	expanded copper tube				
Liquid Φ(mm(in))		6.35(1/4")				9.52(3/8")
Gas Φ(mm(in))		9.52(3/8")		12.7(1/2")		15.88(5/8")

Notes:

1. Cooling condition: Indoor D/W bulb Temp. 27/19℃,outdoor temperature: D/W bulb Temp.35/24℃.
2. Heating condition: Indoor D/W bulb Temp. 20/15℃,outdoor temperature: D/W bulb Temp.7/6℃.
3. Testing power supply: 220V~/50Hz.

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Accessories: heating coil

Model		HWT08-15			HWT18-32				HWT35-50			HWT60
Matched indoor		MCC009TP	MCC011TP	MCC015TP	MCC018TP	MCC020TP	MCC028TP	MCC032TP	MCC035TP	MCC045TP	MCC050TP	MCC060TP
Heating	W	3600	3600	4200	6300	6300	7200	8000	9000	12000	12000	13500
	Btu/h	12290	12290	14340	21520	21520	24590	27320	30736	40980	40980	46100
Water flow	m³/h	0.31	0.31	0.36	0.54	0.54	0.60	0.67	0.99	0.99	0.99	1.11
	GPM	1.37	1.37	1.59	2.38	2.38	2.64	2.95	4.36	4.36	4.36	4.89
Air pressure drop (Pa)		7	7	13	12	12	17	23	31	31	31	26
Water pressure drop (kPa)		2	2	3	6	6	7	9	11	11	11	17
Net weight	kg	9.5	9.5	9.5	11	11	11	11	14	14	14	15
	lb.	21	21	21	24	24	24	24	31	31	31	33
Rows		2	2	2	2	2	2	2	2	2	2	2

Note: Tested condition: 60℃ Entering water, 50℃ leaving water.

Accessories: Electrical heater

Model of indoor	Model of heater	Capacity(kW)	Power	Ampere(A)	Intersection surface (mm²)
MCC009TP/011TP/015TP	HDP1.2T08-15	1.2	220-240V～/50Hz	5.5	1.5
	HDP2.4T08-15	2.4	220-240V～/50Hz	11	2.5
MCC018TP/020TP/028/TP/032TP	HDP2.4T18-32	2.4	220-240V～/50Hz	11	2.5
	HDP3.6T18-32	3.6	220-240V～/50Hz	16.5	4
MCC035TP/045TP	HDP2.4T35-45	2.4	220-240V～/50Hz	11	2.5
	HDP3.6T35-45	3.6	220-240V～/50Hz	16.5	4
MCC035TP/045TP/050TP	HDP4.8T35-50	4.8	380-415V/3N～/50Hz	10.5	2.5
	HDP7.2T35-50	7.2	380-415V/3N～/50Hz	16	4
MCC060TP	HDP5.4T60	5.4	380-415V/3N～/50Hz	12	4
	HDP7.2T60	7.2	380-415V/3N～/50Hz	16	4
	HDP10.8T60	10.8	380-415V/3N～/50Hz	23.5	4

Notes: 1. Electrical heater power shall be supplied independently, and intersection size shall meet the requirement of cable.

2. Electrical heater shall fix with indoor units tightly.

3. To select the right fuse to couple with electrical heater.

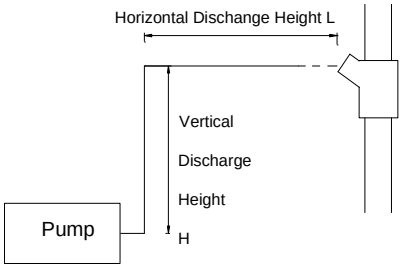
4. Earth connecting is a must for electrical heater.

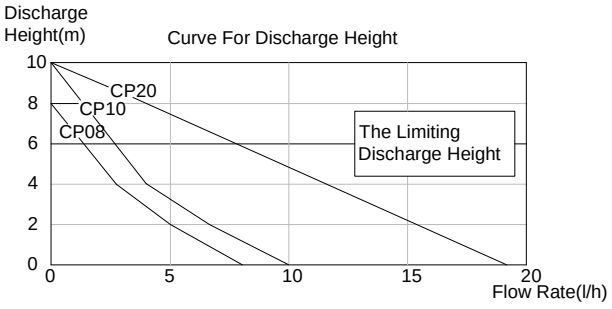
5. Testing power supply: 220V~/50Hz. (380V/3N～/50Hz).

Accessories: Condensate Pump

Model	Power	Max input power(W)	Max water flow (l/h)	Max discharge (m)	Noise dB(A)	Dimension(mm)	Water level (start/stop/alarm)(mm)
MDS-CP08	220-240V～/50Hz	10	8	6	28	77×66×44	18/12/21
MDS-CP10	220-240V～/50Hz	18	10	6	31	77×66×44	18/12/21
MDS-CP20	220-240V～/50Hz	18	18	6	35	77×66×44	18/12/21

Model	MDS-CP08				MDS-CP10				MDS-CP20			
L / H	5m	10m	20m	30m	5m	10m	20m	30m	5m	10m	20m	30m
1m	6.8	6.3	5.3	4.3	9.5	9.0	8.2	7.4	19.0	17.5	15.5	13.5
2m	5.5	5.0	4.1	3.2	7.0	6.5	5.7	4.9	17.5	16.0	14.0	12.0
3m	4.2	3.8	3.0	2.5	5.0	4.6	3.9	3.4	16.0	14.0	12.0	10.0
4m	3.0	2.6	2.2	2.0	4.0	3.6	3.1	2.8	14.0	12.0	10.0	8.5
5m	2.2	2.0	1.8	1.5	3.2	2.7	2.5	2.3	11.5	10.0	8.5	7.0
6m	1.5	1.4	1.2	1.0	2.5	2.2	2.0	1.8	9.5	8.0	7.0	6.0





Notes: 1.The discharge height defined in upside are calculated whit flexible pipework of ID 6mm.

2. Install the condensate pump, you can reference the installation manual.

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7 Maintenance and reparation record:

Item	Failure Description	Action	Result	Person /Date
1				
2				
3				
4				
5				
6				
7				
8				

【Note】Fill in the blank and keep it well

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