TECHNICAL MANUAL

ONE WAY CASSETTE

MDV-D22Q1/N1-D

MDV-D36Q1/N1-D

MDV-D71Q1/N1-D

One-way Cassette

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1. Features

1.1 New panel design

The new panel is equipped with digital display function, which can show temperature, warning message and check running parameters.



1.2 Compact design

For capacity 1.8kW to 3.6kW, needs only 153mm space above the ceiling. And 189mm for 4.5~7.1kW models.



1.3 Parts inside installation

The throttling components and water pump are internally installed which means lower cost, no extra accessories or installation time.

1.4 Large airflow and low noise

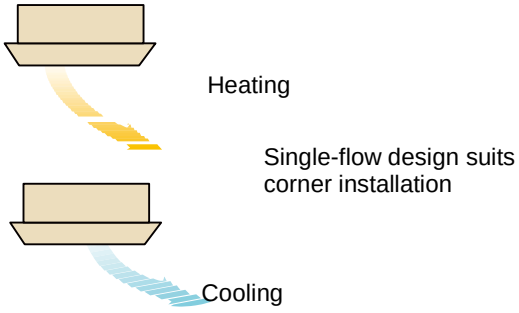
Large airflow, for high ceiling application (installation height can reach up to 3.2m for 1.8~3.6kW models and 4.0m for 4.5~7.1kW models) guarantees comfort in large space.

1.5 Improved air quality

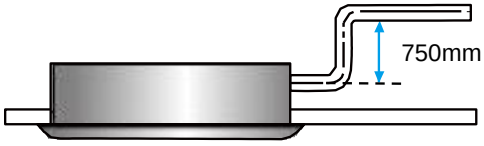
Two folding type air filters and two standard formaldehyde absorption nets improve the air quality greatly. The design of a long air outlet and a wide guide fan blade, which enlarges the range of flow transportation.

1.6 Auto swing

Auto swing mechanism guarantees even airflow distribution and a better room temperature balance.



1.7 Built-in water pump with 750mm pump head



1.8 Prevent condensation in air outlet by the patent of a new structure design

By the adoption of this structure, the guide wing will always be wrapped up by dry cold air, cutting off the contact route of moist hot air and the cold guide wing. As a result, the water vapor in most hot air gets no change to condense in the surface of guide wing.

1.9 Auto restart

When the indoor unit is powered off, it will auto restart when powered on again after 3 minutes and operate in the previous state.

2. Specifications

Model				**MDV-D22Q1/N1-D**
Power supply			1 phase, 220-240V, 50Hz	
Cooling	Capacity	kW	1.8	2.2
	Input	W	41	41
	Rated current	A	0.24	0.24
Heating	Capacity	kW	2.2	2.6
	Input	W	41	41
	Rated current	A	0.24	0.24
Indoor fan motor	Model		RPS12N	
	Type		AC	
	Input(H/M/L)	W	29.5/26.7/25.0	29.5/26.7/25.0
	Capacitor	μF	0.8	
	Speed (H/M/L)	r/min	1180/955/710	
Indoor coil	Number of rows		2	
	Tube pitch(a) × row pitch(b)	mm	21×13.37	
	Fin spacing	mm	1.5	
	Fin type		Hydrophilic aluminum	
	Tube outside dia. and type	mm	Φ7 Inner groove tube	
	Coil length × height × width	mm	760×252.4×26.74	
	Number of circuits		2	
Indoor air flow (H/M/L)		m^3/h	523/404/275	
Sound pressure level (H/M/L)		dB(A)		38/34/30
Indoor unit	Dimension (W×H×D)	mm	1054×153×425	
	Packing (W×H×D)	mm	1155×245×490	
	Net/Gross weight	kg	12.5/16	
Panel	Dimension (W×H×D)	mm	1180×25×465	
	Packing (W×H×D)	mm	1232×107×517	
	Net/Gross weight	kg	3.5/5.2	
Refrigerant type			R410A	
Throttle		Type	Electronic expansion valve	
Design pressure(H/L)		MPa	4.4/2.6	
Pipe connections	Liquid pipe	mm	Φ6.35	
	Gas pipe	mm	Φ12.7	
	Drain pipe	mm	OD Φ25	
Standard Controller			Wireless remote controller	

Notes: 1. Nominal cooling capacities are based on the following conditions: return air temperature: 27℃DB,19℃WB, outdoor temperature:35℃DB, equivalent refrigerant piping: 7.5m(horizontal).

2. Nominal heating capacities are based on the following conditions: return air temperature: 20℃DB, outdoor temperature: 7℃DB,6℃WB, equivalent refrigerant piping: 7.5m(horizontal)

Specifications

Model				**MDV-D36Q1/N1-D**
Power supply			1 phase, 220-240V, 50Hz	
Cooling	Capacity	kW		3.6
	Input	W		41
	Rated current	A		0.25
Heating	Capacity	kW		4
	Input	W		41
	Rated current	A		0.25
Indoor fan motor	Model		RPS12N	
	Type		AC	
	Input(H/M/L)	W		31.0/27.2/25.3
	Capacitor	μF	1	
	Speed (H/M/L)	r/min	1270/1050/790	
Indoor coil	Number of rows		2	
	Tube pitch(a) × row pitch(b)	mm	21×13.37	
	Fin spacing	mm	1.5	
	Fin type		Hydrophilic aluminum	
	Tube outside dia. and type	mm	Φ7 Inner groove tube	
	Coil length × height × width	mm	760×252.4×26.74	
	Number of circuits		3	
Indoor air flow (H/M/L)		m^3/h	573/456/315	
Sound pressure level (H/M/L)		dB(A)		40/38/34
Indoor unit	Dimension (W×H×D)	mm	1054×153×425	
	Packing (W×H×D)	mm	1155×245×490	
	Net/Gross weight	kg	13/16.5	
Panel	Dimension (W×H×D)	mm	1180×25×465	
	Packing (W×H×D)	mm	1232×107×517	
	Net/Gross weight	kg	3.5/5.2	
Refrigerant type			R410A	
Throttle		Type	Electronic expansion valve	
Design pressure(H/L)		MPa	4.4/2.6	
Pipe connections	Liquid pipe	mm	Φ6.35	
	Gas pipe	mm	Φ12.7	
	Drain pipe	mm	OD Φ25	
Standard Controller			Wireless remote controller	

Notes: 1. Nominal cooling capacities are based on the following conditions: return air temperature: 27℃DB,19℃WB, outdoor temperature:35℃DB, equivalent refrigerant piping: 7.5m(horizontal)

2. Nominal heating capacities are based on the following conditions: return air temperature: 20℃DB, outdoor temperature: 7℃DB,6℃WB, equivalent refrigerant piping: 7.5m(horizontal)

Specifications

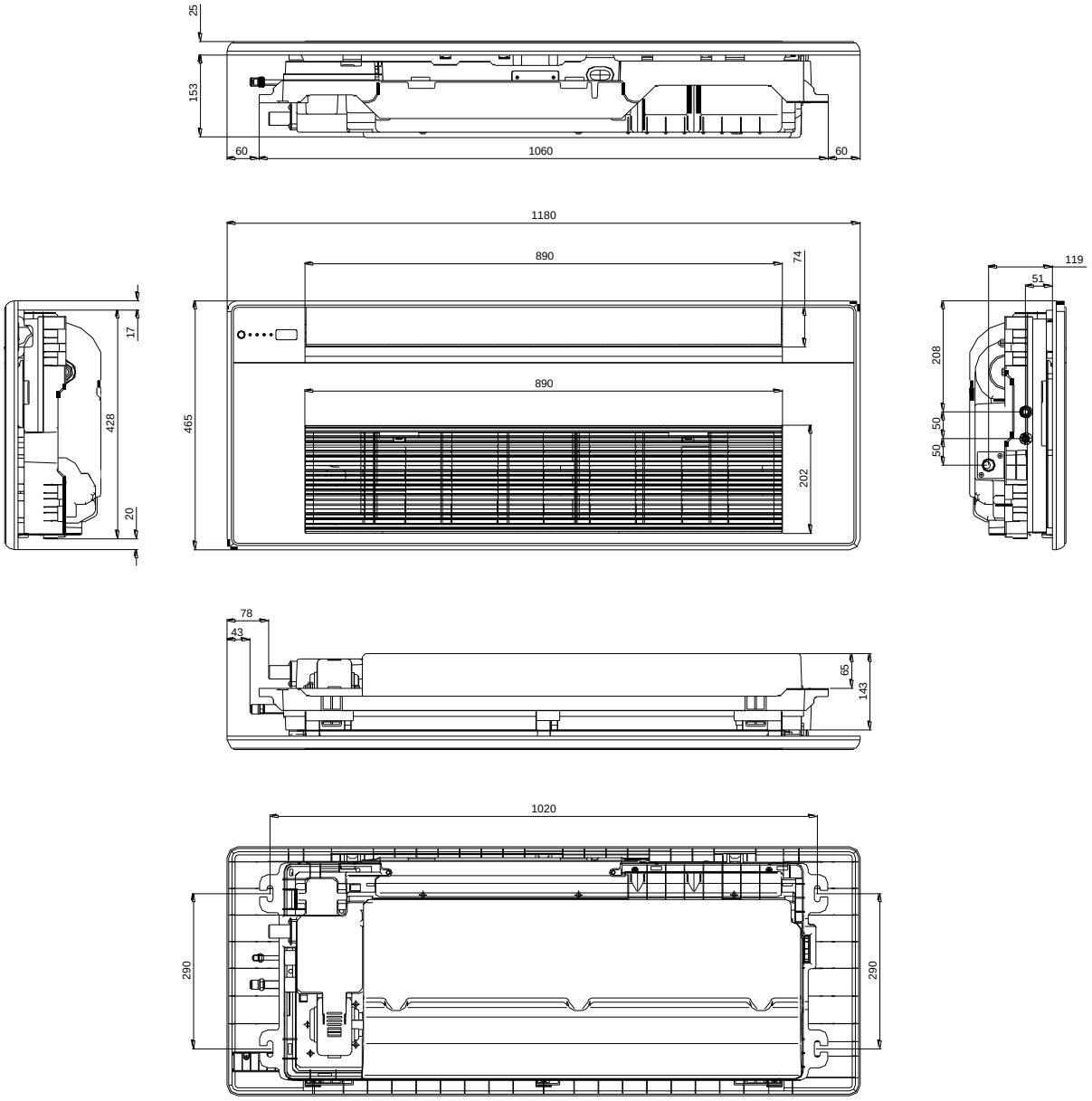
Model			MDV-D71Q1/N1-D
Power supply			1 phase, 220-240V, 50Hz
Cooling	Capacity	kW	7.1
	Input	W	60
	Rated current	A	0.36
Heating	Capacity	kW	8
	Input	W	55
	Rated current	A	0.36
Indoor fan motor	Model		YDK43-4
	Type		AC
	Input(H/M/L)	W	56.2/40.2/28.7
	Capacitor	μF	3
	Speed (H/M/L)	r/min	1150/1020/850
Indoor coil	Number of rows		2
	Tube pitch(a) × row pitch(b)	mm	21×13.37
	Fin spacing	mm	1.5
	Fin type		Hydrophilic aluminum
	Tube outside dia. and type	mm	Φ7 Inner groove tube
	Coil length × height × width	mm	955×336×26.74
	Number of circuits		5
Indoor air flow (H/M/L)		m^3/h	933/749/592
Sound pressure level (H/M/L)		dB(A)	44/41/37
Indoor unit	Dimension (W×H×D)	mm	1275×189×450
	Packing (W×H×D)	mm	1370×295×505
	Net/Gross weight	kg	19.5/23.8
Panel	Dimension (W×H×D)	mm	1350×25×505
	Packing (W×H×D)	mm	1410×95×560
	Net/Gross weight	kg	4/5.4
Refrigerant type			R410A
Throttle		Type	Electronic expansion valve
Design pressure(H/L		MPa	4.4/2.6
Pipe connections	Liquid pipe	mm	Φ9.53
	Gas pipe	mm	Φ15.9
	Drain pipe	mm	ODΦ25
Standard Controller			Wireless remote controller

Notes: 1. Nominal cooling capacities are based on the following conditions: return air temperature: 27℃DB,19℃WB, outdoor temperature:35℃DB, equivalent ref. Piping: 7.5m(horizontal)

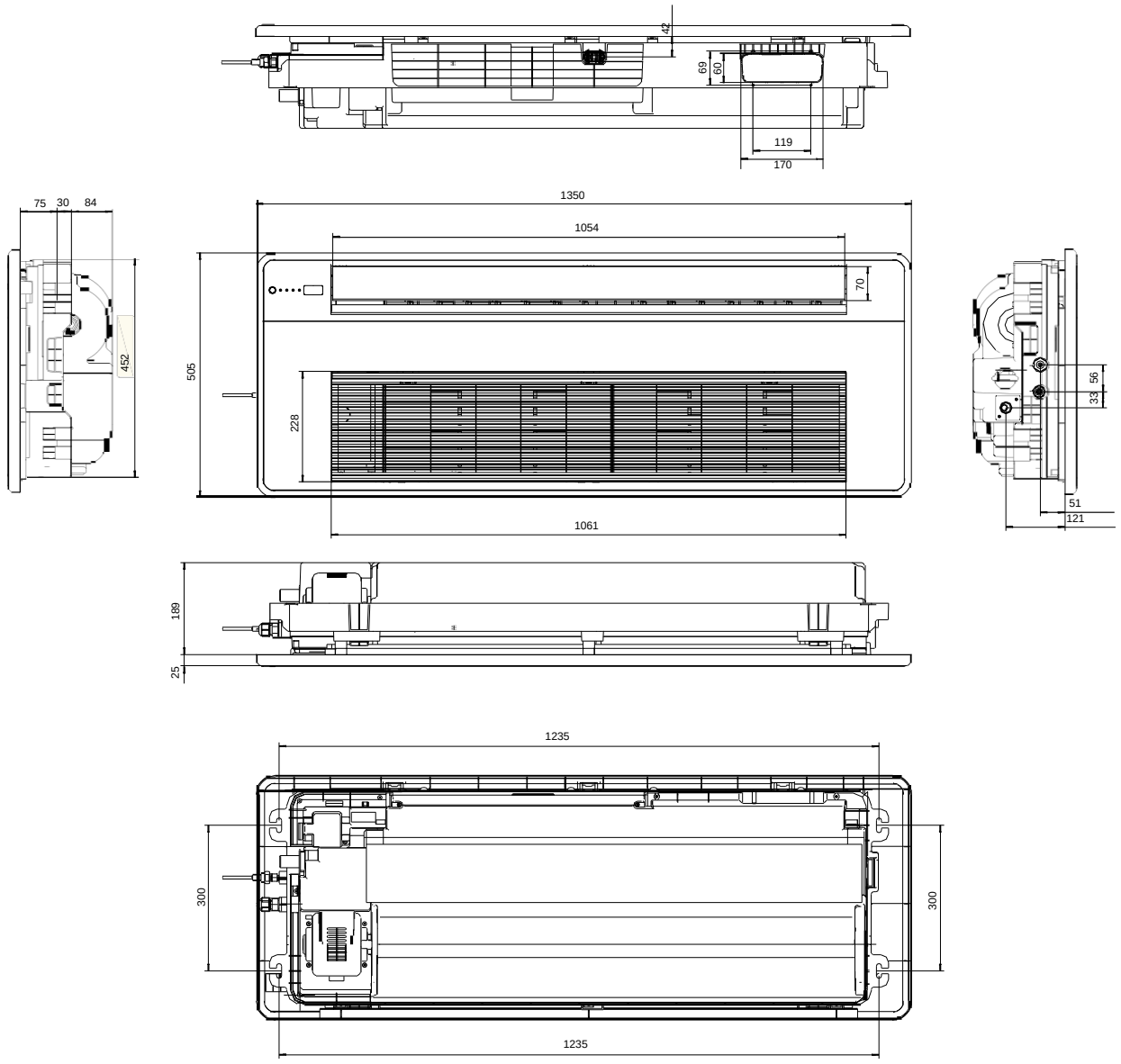
2. Nominal heating capacities are based on the following conditions: return air temperature: 20℃DB,outdoor temperature: 7℃DB,6℃WB,equivalent ref. Piping: 7.5m(horizontal)

3. Dimensions

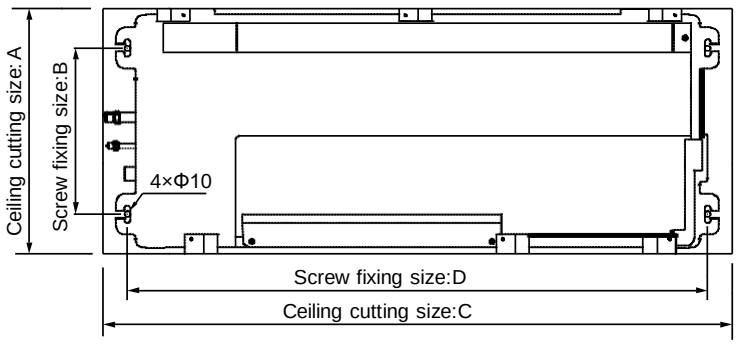
MDV-D22Q1/N1-D MDV-D36Q1/N1-D



MDV-D71Q1/N1-D



Please use the installation paper plate to make sure the position of the installation screws.



	18-36	45-71
A	430	470
B	290	300
C	1100	1290
D	1015	1235

Unit：mm

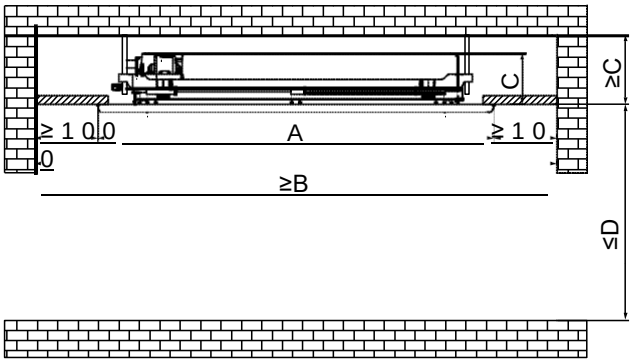
4. Service Spaces

Please avoid installing in the following places:
A place with flammable gas or material.
A saline place such as a seashore vicinity.
A place with sulphur gas.
A place with oil gas, such as kitchen.
A place with high-humidity air.
An unbearable place.
A place where high-frequency waves are generated.
The appliance shall not be installed in the laundry.
Please comply with the related national electric standard to make electric insulation for construction and metal parts of air-conditioner.
Please choose the place where the ventilation is good.

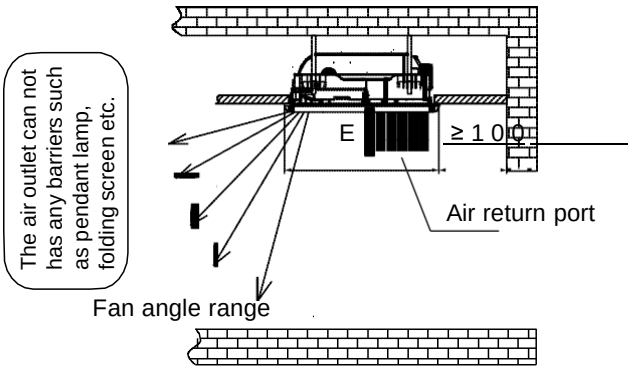
Ceiling space requires ≥Cm.

The installation height of the unit can not be higher than D mm, or it will affect the operation effect.

Unit：mm

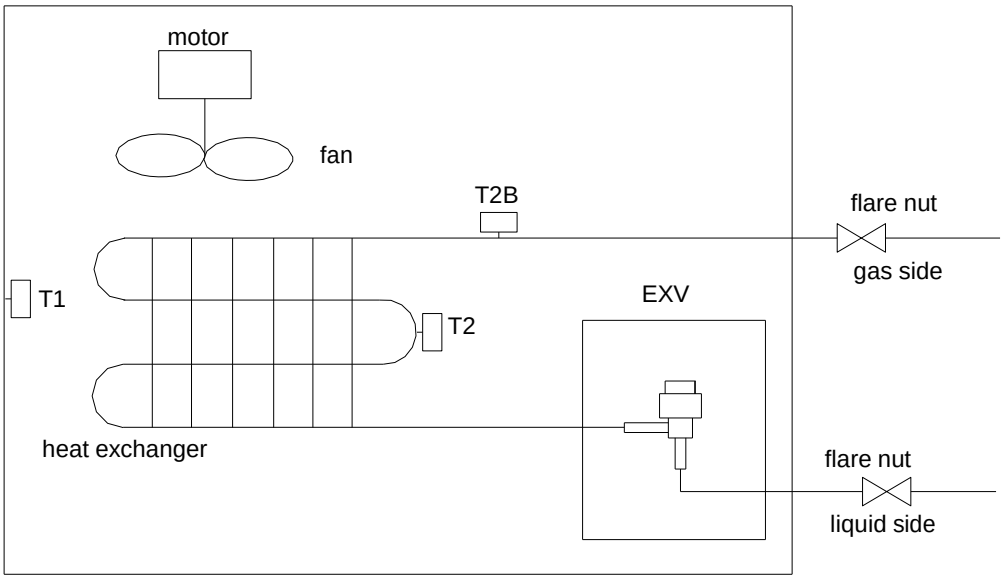


Unit：mm



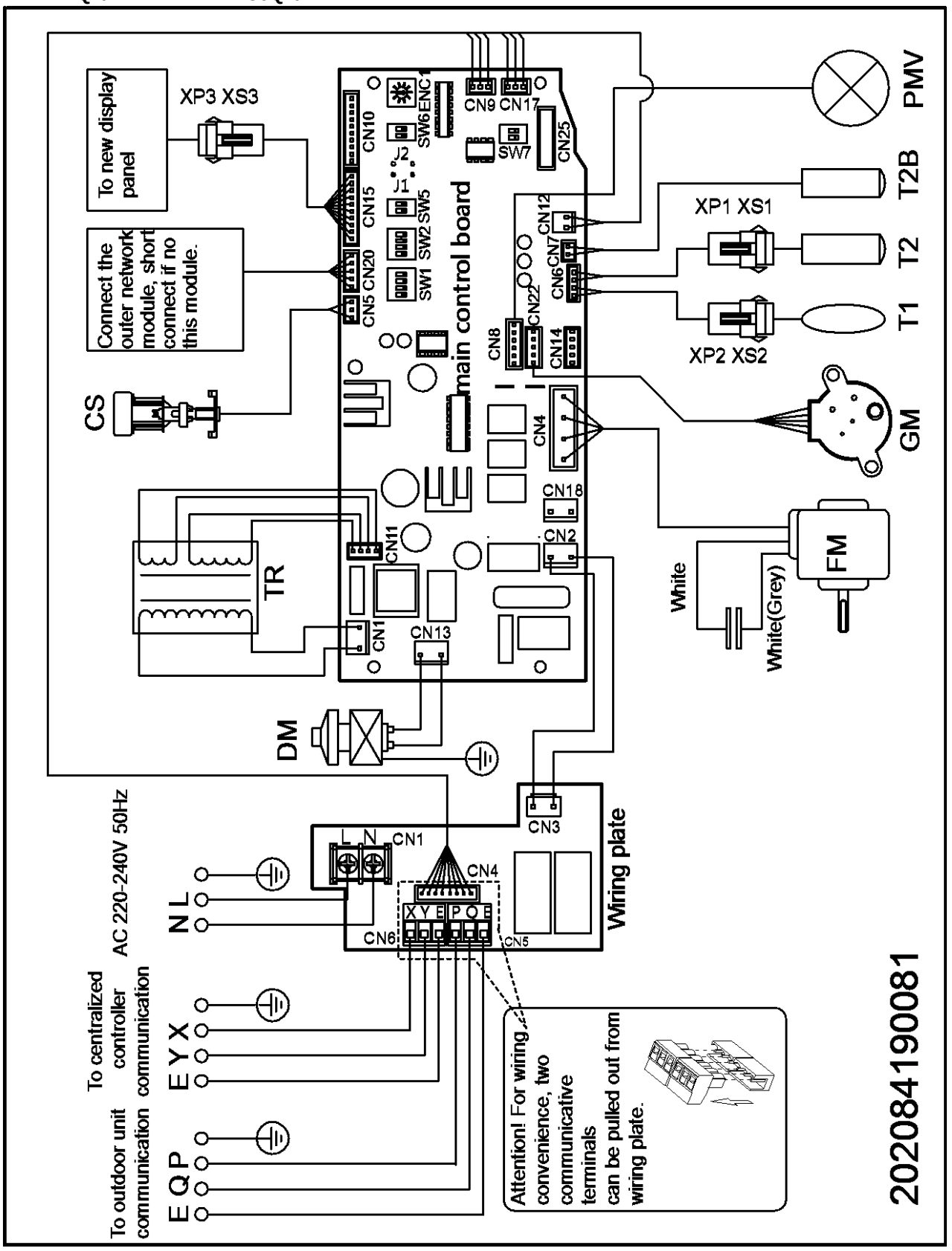
	18-36	45-71
A	1180	1350
B	1380	1550
C	153	189
D	3200	4000
E	465	505

5. Piping Diagrams

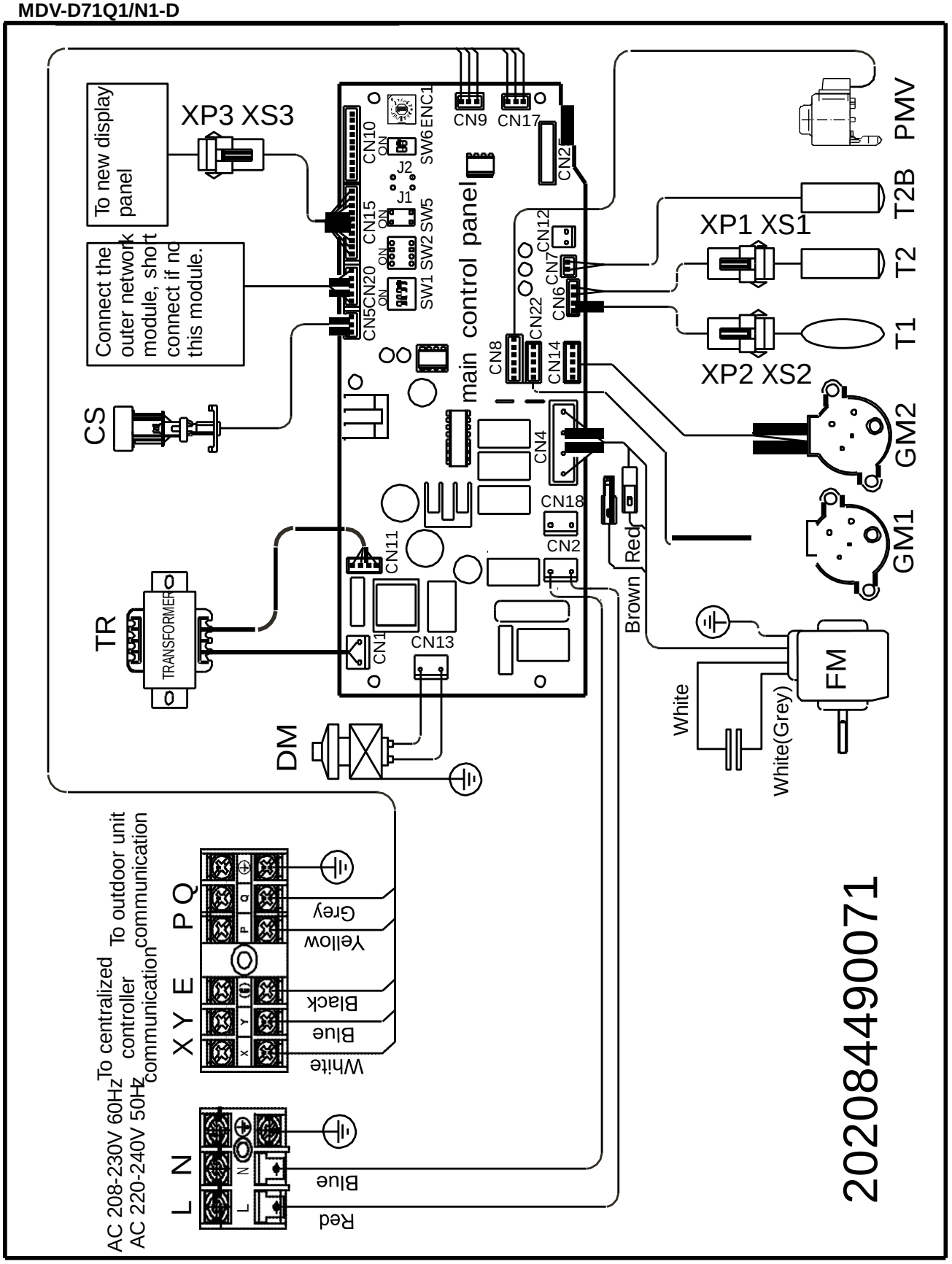


6. Wiring Diagrams

MDV-D22Q1/N1-D MDV-D36Q1/N1-D



MDV-D71Q1/N1-D



HP set switch ENC1 definition list		Code	Name
Code	Indoor Unit Capacity Value	FM	Fan motor
		GM	Swinging motor
0	1800W(0.6HP)	DM	Water drainage pump
0	2200W(0.8HP)	CS	Water level switch
1	2800W(1.0HP)	PMV	Electronic expansion valve
2	3600W(1.2HP)	T1	Indoor temp. sensor
3	4500W(1.5HP)	T2	Mid-pipe temp. sensor of evaporator
4	5600W(2.0HP)	T2B	Outlet temp. sensor of evaporator
5	7100W(2.5HP)	XP1-3	Butt connection socket
6	8000W(3.0HP)	XS1-3	Butt connection socket
7	9000W(3.2HP)	TR	Power transformer
8	11200W(4.0HP)		
9	14000W(5.0HP)		
⚠ CAUTION			
1	The E-heating component is optional, not for all models.		
2	All dial code switches (include HP switch) cannot be adjusted by the user!		
3	Power wire fixed screw must be fastened, otherwise may cause fire!		
4	After air-conditioner installation and maintenance, put back the electric control box cover, otherwise may cause fire and electric shock!		

7. Capacity Tables

7.1 Cooling

TC: total capacity **SC**: sensible capacity
WB: wet-bulb temperature **DB**: dry-bulb temperature

Indoor Unit size (kW)	Outdoor temperature (℃ DB)	Indoor temperature (℃ WB/DB)													
		14/20		16/23		18/26		19/27		20/28		22/30		24/32	
		TC	SC	TC	SC	TC	SC	TC	SC	TC	SC	TC	SC	TC	SC
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
1.8	10.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	2.1	1.3	2.4	1.3
	12.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	2.1	1.3	2.3	1.2
	14.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	2.1	1.3	2.3	1.2
	16.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	2.1	1.3	2.3	1.2
	18.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	2.1	1.3	2.3	1.2
	20.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	2.1	1.3	2.2	1.1
	21.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	2.1	1.3	2.2	1.1
	23.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	2.1	1.2	2.2	1.1
	25.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	2.1	1.2	2.1	1.1
	27.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	2.1	1.2	2.1	1.1
	29.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	2.0	1.2	2.1	1.1
	31.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	2.0	1.2	2.1	1.1
	33.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	2.0	1.2	2.0	1.2
	35.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	1.9	1.1	2.0	1.2
	37.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	1.9	1.1	1.9	1.1
	39.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.8	1.2	1.9	1.1	1.9	1.1
	42.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.8	1.2	1.9	1.1	1.9	1.1
	44.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.8	1.2	1.9	1.1	1.9	1.1
	46.0	1.2	1.1	1.5	1.2	1.7	1.2	1.8	1.2	1.8	1.2	1.9	1.1	1.9	1.1
2.2	10.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.6	1.6	2.9	1.5
	12.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.6	1.6	2.8	1.5
	14.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.6	1.6	2.8	1.5
	16.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.6	1.6	2.8	1.5
	18.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.6	1.6	2.8	1.4
	20.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.6	1.6	2.7	1.4
	21.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.6	1.6	2.7	1.4
	23.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.5	1.5	2.7	1.4
	25.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.5	1.5	2.6	1.4
	27.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.5	1.5	2.6	1.4
	29.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.4	1.4	2.5	1.4
	31.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.4	1.4	2.5	1.4
	33.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.4	1.4	2.4	1.4
	35.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.3	1.3	2.4	1.4
	37.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.3	1.3	2.3	1.4
	39.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.2	1.5	2.3	1.3	2.3	1.4
	42.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.2	1.5	2.3	1.3	2.3	1.4
	44.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.2	1.5	2.3	1.3	2.3	1.4
	46.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.2	1.5	2.3	1.3	2.3	1.4
2.8	10.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	3.0	1.9	3.3	2.0	3.7	2.0
	12.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	3.0	1.9	3.3	2.0	3.6	2.0
	14.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	3.0	1.9	3.3	2.0	3.6	2.0
	16.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	3.0	1.9	3.3	2.0	3.5	1.9
	18.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	3.0	1.9	3.3	2.0	3.5	1.9
	20.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	3.0	1.9	3.3	2.0	3.4	1.9
	21.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	3.0	1.9	3.3	2.0	3.4	1.9

Indoor Unit size (kW)	Outdoor temperature (℃ DB)	Indoor temperature (℃ WB/DB)													
		14/20		16/23		18/26		19/27		20/28		22/30		24/32	
		TC	SC	TC	SC	TC	SC	TC	SC	TC	SC	TC	SC	TC	SC
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
2.8	23.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	3.0	1.9	3.3	2.0	3.4	1.9
	25.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	3.0	1.9	3.2	1.9	3.3	1.9
	27.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	3.0	1.9	3.2	1.9	3.3	1.9
	29.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	3.0	1.9	3.1	1.8	3.2	1.8
	31.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	3.0	1.9	3.1	1.8	3.2	1.7
	33.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	3.0	1.9	3.1	1.8	3.1	1.7
	35.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	2.9	1.9	3.0	1.8	3.1	1.7
	37.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	2.9	1.9	3.0	1.8	3.0	1.7
	39.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	2.9	1.9	3.0	1.9	3.0	1.7
	42.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	2.9	1.9	3.0	1.9	3.0	1.7
	44.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	2.9	1.9	3.0	1.9	3.0	1.7
	46.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	2.9	1.9	3.0	1.9	3.0	1.7
3.6	10.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.3	2.4	4.7	2.5
	12.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.3	2.4	4.7	2.5
	14.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.3	2.4	4.6	2.4
	16.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.3	2.4	4.5	2.4
	18.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.3	2.4	4.5	2.4
	20.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.3	2.4	4.4	2.3
	21.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.3	2.4	4.4	2.3
	23.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.1	2.3	4.3	2.2
	25.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.1	2.3	4.2	2.2
	27.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.0	2.2	4.2	2.2
	29.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.0	2.2	4.1	2.2
	31.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.2	2.6	4.1	2.2
	33.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.2	2.6	3.9	2.1
	35.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.2	2.6	3.9	2.1
	37.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.7	2.4	3.8	2.3	3.9	2.1
	39.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.7	2.4	3.8	2.3	3.8	2.1
	42.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.7	2.4	3.8	2.3	3.8	2.1
	44.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.7	2.4	3.8	2.3	3.8	2.1
	46.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.7	2.4	3.8	2.3	3.8	2.1
4.5	10.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	5.3	3.4	5.9	3.0
	12.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	5.3	3.4	5.9	3.0
	14.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	5.3	3.4	5.8	3.0
	16.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	5.3	3.4	5.6	2.9
	18.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	5.3	3.4	5.7	3.0
	20.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	5.3	3.4	5.7	3.0
	21.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	5.3	3.4	5.6	3.0
	23.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	5.3	3.4	5.5	3.0
	25.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	5.2	3.0	5.4	2.9
	27.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	5.1	3.0	5.2	2.8
	29.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	5.1	2.9	5.2	2.8
	31.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	5.0	2.9	5.1	2.7
	33.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	4.9	2.8	5.1	2.7
	35.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	4.8	2.8	5.0	2.7
	37.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	4.8	2.9	4.9	2.6
	39.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.6	2.8	4.7	2.8	4.8	2.6
	42.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.6	2.8	4.7	2.8	4.8	2.6

Indoor Unit size (kW)	Outdoor temperature (℃ DB)	Indoor temperature (℃ WB/DB)													
		14/20		16/23		18/26		19/27		20/28		22/30		24/32	
		TC	SC	TC	SC	TC	SC	TC	SC	TC	SC	TC	SC	TC	SC
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
4.5	44.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.6	2.8	4.7	2.8	4.8	2.6
	46.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.6	2.8	4.7	3.1	4.8	2.6
5.6	10.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	6.6	3.6	7.3	3.5
	12.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	6.6	3.6	7.2	3.5
	14.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	6.6	3.6	7.1	3.5
	16.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	6.6	3.6	7.0	3.4
	18.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	6.6	3.6	6.8	3.4
	20.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	6.6	3.6	6.7	3.3
	21.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	6.6	3.6	6.6	3.3
	23.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	6.6	3.6	6.6	3.3
	25.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	6.6	3.6	6.5	3.2
	27.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	6.4	3.5	6.4	3.2
	29.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	6.3	3.5	6.4	3.3
	31.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	6.2	3.4	6.2	3.2
	33.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	6.2	3.4	6.2	3.2
	35.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	6.0	3.3	6.0	3.1
	37.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	5.9	3.2	6.0	3.1
	39.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.7	3.4	5.8	3.2	6.0	3.1
	42.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.7	3.4	5.8	3.2	6.0	3.1
	44.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.7	3.4	5.8	3.2	6.0	3.1
	46.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.7	3.7	5.8	3.2	6.0	3.1
7.1	10.0	4.9	3.6	5.8	4.0	6.7	4.3	7.1	4.5	7.5	4.4	8.4	4.5	9.2	4.6
	12.0	4.9	3.6	5.8	4.0	6.7	4.3	7.1	4.5	7.5	4.4	8.4	4.5	9.1	4.5
	14.0	4.9	3.6	5.8	4.0	6.7	4.3	7.1	4.5	7.5	4.4	8.4	4.5	9.0	4.5
	16.0	4.9	3.6	5.8	4.0	6.7	4.3	7.1	4.5	7.5	4.4	8.4	4.5	8.9	4.4
	18.0	4.9	3.6	5.8	4.0	6.7	4.3	7.1	4.5	7.5	4.4	8.4	4.5	8.7	4.3
	20.0	4.9	3.6	5.8	4.0	6.7	4.3	7.1	4.5	7.5	4.4	8.4	4.5	8.5	4.2
	21.0	4.9	3.6	5.8	4.0	6.7	4.3	7.1	4.5	7.5	4.4	8.4	4.5	8.4	4.2
	23.0	4.9	3.6	5.8	4.0	6.7	4.3	7.1	4.5	7.5	4.4	8.4	4.5	8.3	4.1
	25.0	4.9	3.6	5.8	4.0	6.7	4.3	7.1	4.5	7.5	4.4	8.4	4.5	8.2	4.1
	27.0	4.9	3.6	5.8	4.0	6.7	4.3	7.1	4.5	7.5	4.4	8.1	4.3	8.2	4.1
	29.0	4.9	3.6	5.8	4.0	6.7	4.3	7.1	4.5	7.5	4.5	8.0	4.3	8.1	4.1
	31.0	4.9	3.6	5.8	4.0	6.7	4.3	7.1	4.5	7.5	4.5	7.9	4.3	7.8	4.0
	33.0	4.9	3.6	5.8	4.0	6.7	4.3	7.1	4.5	7.5	4.5	7.8	4.2	7.8	4.0
	35.0	4.9	3.6	5.8	4.0	6.7	4.3	7.1	4.5	7.5	4.5	7.6	4.1	7.7	3.9
	37.0	4.9	3.6	5.8	4.0	6.7	4.3	7.1	4.5	7.4	4.4	7.5	4.1	7.6	4.0
	39.0	4.9	3.6	5.8	4.0	6.7	4.3	7.1	4.5	7.2	4.3	7.4	4.1	7.6	4.0
	42.0	4.9	3.6	5.8	4.0	6.7	4.3	7.1	4.5	7.2	4.3	7.4	4.1	7.6	4.0
	44.0	4.9	3.6	5.8	4.0	6.7	4.3	7.1	4.5	7.2	4.3	7.4	4.1	7.6	4.0
	46.0	4.9	3.6	5.8	4.0	6.7	4.3	7.1	4.5	7.2	4.3	7.4	4.1	7.6	4.0

7.2 Heating

TC: total capacity **WB**: wet-bulb temperature **DB**: dry-bulb temperature

Indoor Unit size (kW)	Outdoor temperature (℃)		Indoor temperature (℃ DB)					
			16.00	18.00	20.00	21.00	22.00	24.00
			TC	TC	TC	TC	TC	TC
	WB	DB	kW	kW	kW	kW	kW	kW
1.8	-20	-19.8	1.23	1.23	1.23	1.23	1.23	1.23
	-19	-18.8	1.32	1.32	1.32	1.32	1.32	1.32
	-17	-16.7	1.39	1.39	1.39	1.39	1.39	1.39
	-15	-14.7	1.43	1.43	1.43	1.43	1.43	1.43
	-13.00	-12.60	1.52	1.52	1.52	1.52	1.52	1.52
	-11.00	-10.50	1.54	1.56	1.56	1.56	1.56	1.56
	-10.00	-9.50	1.61	1.61	1.61	1.61	1.61	1.61
	-9.10	-8.50	1.65	1.65	1.65	1.65	1.65	1.65
	-7.60	-7.00	1.67	1.67	1.67	1.67	1.67	1.67
	-5.60	-5.00	1.74	1.74	1.74	1.74	1.74	1.74
	-3.70	-3.00	1.83	1.83	1.83	1.83	1.83	1.83
	-0.70	0.00	1.96	1.96	1.96	1.96	1.96	1.85
	2.20	3.00	2.07	2.07	2.07	2.07	2.02	1.85
	4.10	5.00	2.13	2.13	2.13	2.13	2.02	1.85
	6.00	7.00	2.20	2.20	2.20	2.13	2.02	1.85
	7.90	9.00	2.27	2.27	2.20	2.13	2.02	1.85
	9.80	11.00	2.33	2.33	2.20	2.13	2.02	1.85
	11.80	13.00	2.42	2.38	2.20	2.13	2.02	1.85
	13.70	15.00	2.49	2.38	2.20	2.13	2.02	1.85
2.2	-20	-19.8	1.46	1.46	1.46	1.46	1.46	1.46
	-19	-18.8	1.56	1.56	1.56	1.56	1.56	1.56
	-17	-16.7	1.64	1.64	1.64	1.64	1.64	1.64
	-15	-14.7	1.69	1.69	1.69	1.69	1.69	1.69
	-13.00	-12.60	1.79	1.79	1.79	1.79	1.79	1.79
	-11.00	-10.50	1.82	1.85	1.85	1.85	1.85	1.85
	-10.00	-9.50	1.90	1.90	1.90	1.90	1.90	1.90
	-9.10	-8.50	1.95	1.95	1.95	1.95	1.95	1.95
	-7.60	-7.00	1.98	1.98	1.98	1.98	1.98	1.98
	-5.60	-5.00	2.05	2.05	2.05	2.05	2.05	2.05
	-3.70	-3.00	2.16	2.16	2.16	2.16	2.16	2.16
	-0.70	0.00	2.31	2.31	2.31	2.31	2.31	2.18
	2.20	3.00	2.44	2.44	2.44	2.44	2.39	2.18
	4.10	5.00	2.52	2.52	2.52	2.52	2.39	2.18
	6.00	7.00	2.60	2.60	2.60	2.52	2.39	2.18
	7.90	9.00	2.68	2.68	2.60	2.52	2.39	2.18
	9.80	11.00	2.76	2.76	2.60	2.52	2.39	2.18
	11.80	13.00	2.86	2.81	2.60	2.52	2.39	2.18
	13.70	15.00	2.94	2.81	2.60	2.52	2.39	2.18
2.8	-20	-19.8	1.79	1.79	1.79	1.79	1.79	1.79
	-19	-18.8	1.92	1.92	1.92	1.92	1.92	1.92
	-17	-16.7	2.02	2.02	2.02	2.02	2.02	2.02
	-15	-14.7	2.08	2.08	2.08	2.08	2.08	2.08
	-13.00	-12.60	2.21	2.21	2.21	2.21	2.21	2.21
	-11.00	-10.50	2.24	2.27	2.27	2.27	2.27	2.27
	-10.00	-9.50	2.34	2.34	2.34	2.34	2.34	2.34
	-9.10	-8.50	2.40	2.40	2.40	2.40	2.40	2.40

Indoor Unit size (kW)	Outdoor temperature (℃)		Indoor temperature (℃ DB)					
			16.00	18.00	20.00	21.00	22.00	24.00
			TC	TC	TC	TC	TC	TC
	WB	DB	kW	kW	kW	kW	kW	kW
2.8	-7.60	-7.00	2.43	2.43	2.43	2.43	2.43	2.43
	-5.60	-5.00	2.53	2.53	2.53	2.53	2.53	2.53
	-3.70	-3.00	2.66	2.66	2.66	2.66	2.66	2.66
	-0.70	0.00	2.85	2.85	2.85	2.85	2.85	2.69
	2.20	3.00	3.01	3.01	3.01	3.01	2.94	2.69
	4.10	5.00	3.10	3.10	3.10	3.10	2.94	2.69
	6.00	7.00	3.20	3.20	3.20	3.10	2.94	2.69
	7.90	9.00	3.30	3.30	3.20	3.10	2.94	2.69
	9.80	11.00	3.39	3.39	3.20	3.10	2.94	2.69
	11.80	13.00	3.52	3.46	3.20	3.10	2.94	2.69
	13.70	15.00	3.62	3.46	3.20	3.10	2.94	2.69
3.6	-20	-19.8	2.24	2.24	2.24	2.24	2.24	2.24
	-19	-18.8	2.40	2.40	2.40	2.40	2.40	2.40
	-17	-16.7	2.52	2.52	2.52	2.52	2.52	2.52
	-15	-14.7	2.60	2.60	2.60	2.60	2.60	2.60
	-13.00	-12.60	2.76	2.76	2.76	2.76	2.76	2.76
	-11.00	-10.50	2.80	2.84	2.84	2.84	2.84	2.84
	-10.00	-9.50	2.92	2.92	2.92	2.92	2.92	2.92
	-9.10	-8.50	3.00	3.00	3.00	3.00	3.00	3.00
	-7.60	-7.00	3.04	3.04	3.04	3.04	3.04	3.04
	-5.60	-5.00	3.16	3.16	3.16	3.16	3.16	3.16
	-3.70	-3.00	3.32	3.32	3.32	3.32	3.32	3.32
	-0.70	0.00	3.56	3.56	3.56	3.56	3.56	3.36
	2.20	3.00	3.76	3.76	3.76	3.76	3.68	3.36
	4.10	5.00	3.88	3.88	3.88	3.88	3.68	3.36
	6.00	7.00	4.00	4.00	4.00	3.88	3.68	3.36
	7.90	9.00	4.12	4.12	4.00	3.88	3.68	3.36
	9.80	11.00	4.24	4.24	4.00	3.88	3.68	3.36
	11.80	13.00	4.40	4.32	4.00	3.88	3.68	3.36
	13.70	15.00	4.52	4.32	4.00	3.88	3.68	3.36
4.5	-20	-19.8	2.80	2.80	2.80	2.80	2.80	2.80
	-19	-18.8	3.00	3.00	3.00	3.00	3.00	3.00
	-17	-16.7	3.15	3.15	3.15	3.15	3.15	3.15
	-15	-14.7	3.25	3.25	3.25	3.25	3.25	3.25
	-13.00	-12.60	3.35	3.35	3.35	3.35	3.35	3.35
	-11.00	-10.50	3.50	3.50	3.50	3.50	3.50	3.50
	-10.00	-9.50	3.65	3.65	3.65	3.65	3.65	3.65
	-9.10	-8.50	3.75	3.75	3.75	3.75	3.75	3.75
	-7.60	-7.00	3.80	3.80	3.80	3.80	3.80	3.80
	-5.60	-5.00	3.95	3.95	3.95	3.95	3.95	3.95
	-3.70	-3.00	4.15	4.15	4.15	4.15	4.15	4.15
	-0.70	0.00	4.45	4.45	4.45	4.45	4.45	4.20
	2.20	3.00	4.70	4.70	4.70	4.70	4.60	4.20
	4.10	5.00	4.85	4.85	4.85	4.85	4.60	4.20
	6.00	7.00	5.00	5.00	5.00	4.85	4.60	4.20
	7.90	9.00	5.15	5.15	5.00	4.85	4.60	4.20
	9.80	11.00	5.30	5.30	5.00	4.85	4.60	4.20
	11.80	13.00	5.50	5.40	5.00	4.85	4.60	4.20

Indoor Unit size (kW)	Outdoor temperature (℃)		Indoor temperature (℃ DB)					
			16.00	18.00	20.00	21.00	22.00	24.00
			TC	TC	TC	TC	TC	TC
	WB	DB	kW	kW	kW	kW	kW	kW
4.5	13.70	15.00	5.65	5.40	5.00	4.85	4.60	4.20
5.6	-20	-19.8	3.53	3.53	3.53	3.53	3.53	3.53
	-19	-18.8	3.78	3.78	3.78	3.78	3.78	3.78
	-17	-16.7	3.97	3.97	3.97	3.97	3.97	3.97
	-15	-14.7	4.10	4.10	4.10	4.10	4.10	4.10
	-13.00	-12.60	4.22	4.22	4.22	4.22	4.22	4.22
	-11.00	-10.50	4.41	4.41	4.41	4.41	4.41	4.41
	-10.00	-9.50	4.60	4.60	4.60	4.60	4.60	4.60
	-9.10	-8.50	4.73	4.73	4.73	4.73	4.73	4.73
	-7.60	-7.00	4.79	4.79	4.79	4.79	4.79	4.79
	-5.60	-5.00	4.98	4.98	4.98	4.98	4.98	4.98
	-3.70	-3.00	5.23	5.23	5.23	5.23	5.23	5.23
	-0.70	0.00	5.61	5.61	5.61	5.61	5.61	5.29
	2.20	3.00	5.92	5.92	5.92	5.92	5.80	5.29
	4.10	5.00	6.11	6.11	6.11	6.11	5.80	5.29
	6.00	7.00	6.30	6.30	6.30	6.11	5.80	5.29
	7.90	9.00	6.49	6.49	6.30	6.11	5.80	5.29
	9.80	11.00	6.68	6.68	6.30	6.11	5.80	5.29
	11.80	13.00	6.93	6.80	6.30	6.11	5.80	5.29
	13.70	15.00	7.12	6.80	6.30	6.11	5.80	5.29
7.1	-20	-19.8	4.48	4.48	4.48	4.48	4.48	4.48
	-19	-18.8	4.80	4.80	4.80	4.80	4.80	4.80
	-17	-16.7	5.04	5.04	5.04	5.04	5.04	5.04
	-15	-14.7	5.20	5.20	5.20	5.20	5.20	5.20
	-13.00	-12.60	5.36	5.36	5.36	5.36	5.36	5.36
	-11.00	-10.50	5.60	5.60	5.60	5.60	5.60	5.60
	-10.00	-9.50	5.84	5.84	5.84	5.84	5.84	5.84
	-9.10	-8.50	6.00	6.00	6.00	6.00	6.00	6.00
	-7.60	-7.00	6.08	6.08	6.08	6.08	6.08	6.08
	-5.60	-5.00	6.32	6.32	6.32	6.32	6.32	6.32
	-3.70	-3.00	6.64	6.64	6.64	6.64	6.64	6.64
	-0.70	0.00	7.12	7.12	7.12	7.12	7.12	6.72
	2.20	3.00	7.52	7.52	7.52	7.52	7.36	6.72
	4.10	5.00	7.76	7.76	7.76	7.76	7.36	6.72
	6.00	7.00	8.00	8.00	8.00	7.76	7.36	6.72
	7.90	9.00	8.24	8.24	8.00	7.76	7.36	6.72
	9.80	11.00	8.48	8.48	8.00	7.76	7.36	6.72
	11.80	13.00	8.80	8.64	8.00	7.76	7.36	6.72
	13.70	15.00	9.04	8.64	8.00	7.76	7.36	6.72

8. Electrical Characteristics

Model	Indoor Unit				Power Supply		IFM	
	Hz	Voltage(V)	Min. (V)	Max. (V)	MCA	MFA	KW	FLA
MDV-D22Q1/N1-D	50	220-240	198	264	0.24	15	0.012	0.192
MDV-D36Q1/N1-D	50	220-240	198	264	0.25	15	0.012	0.2
MDV-D71Q1/N1-D	50	220-240	198	264	0.36	15	0.43	0.288

Remark:

MCA: Min. Current Amps. (A)

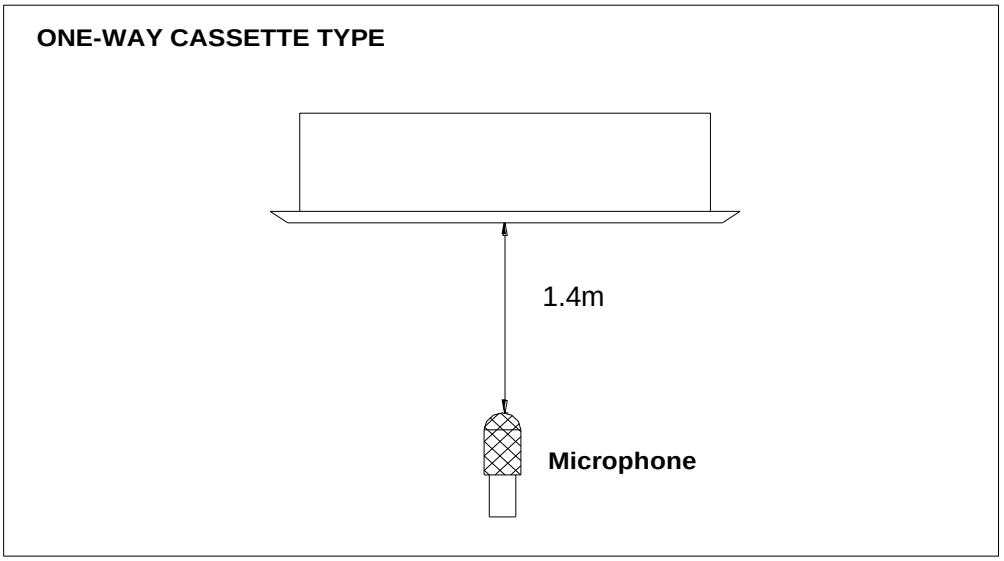
MFA: Max. Fuse Amps. (A)

KW: Fan Motor Rated Output (kW)

FLA: Full Load Amps. (A)

IFM: Indoor Fan Motor

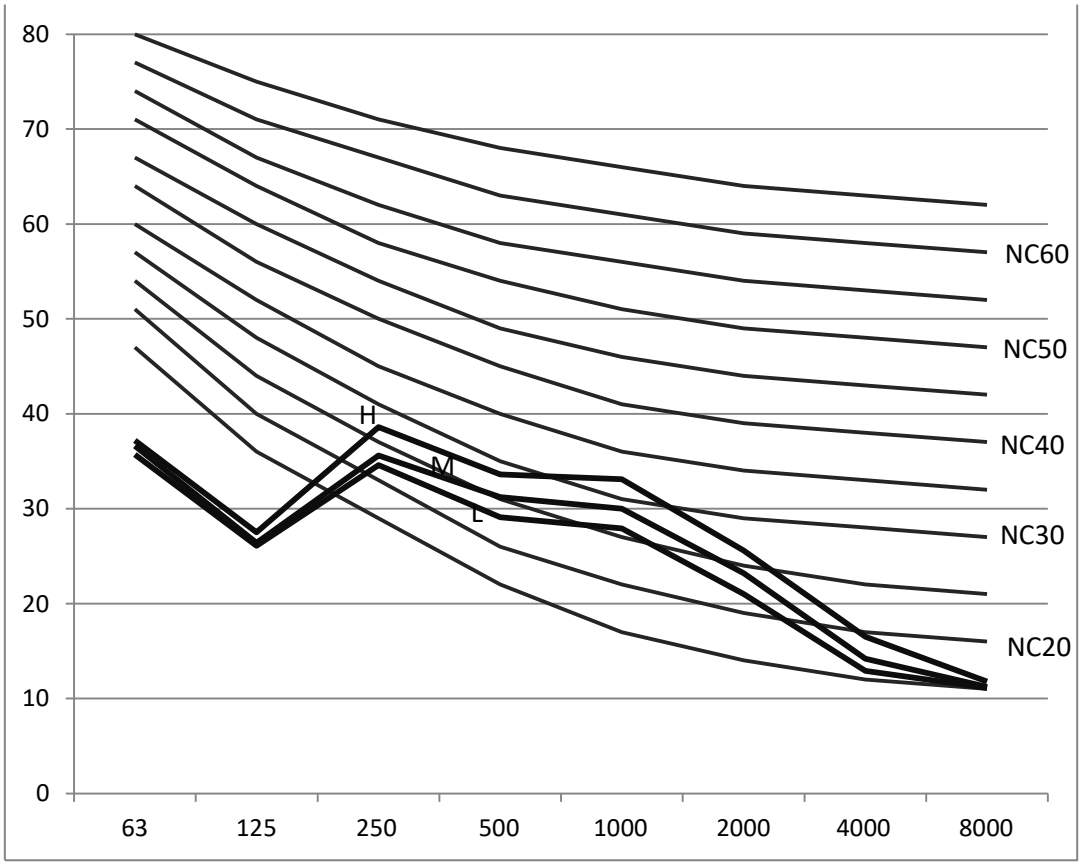
9. Sound Levels



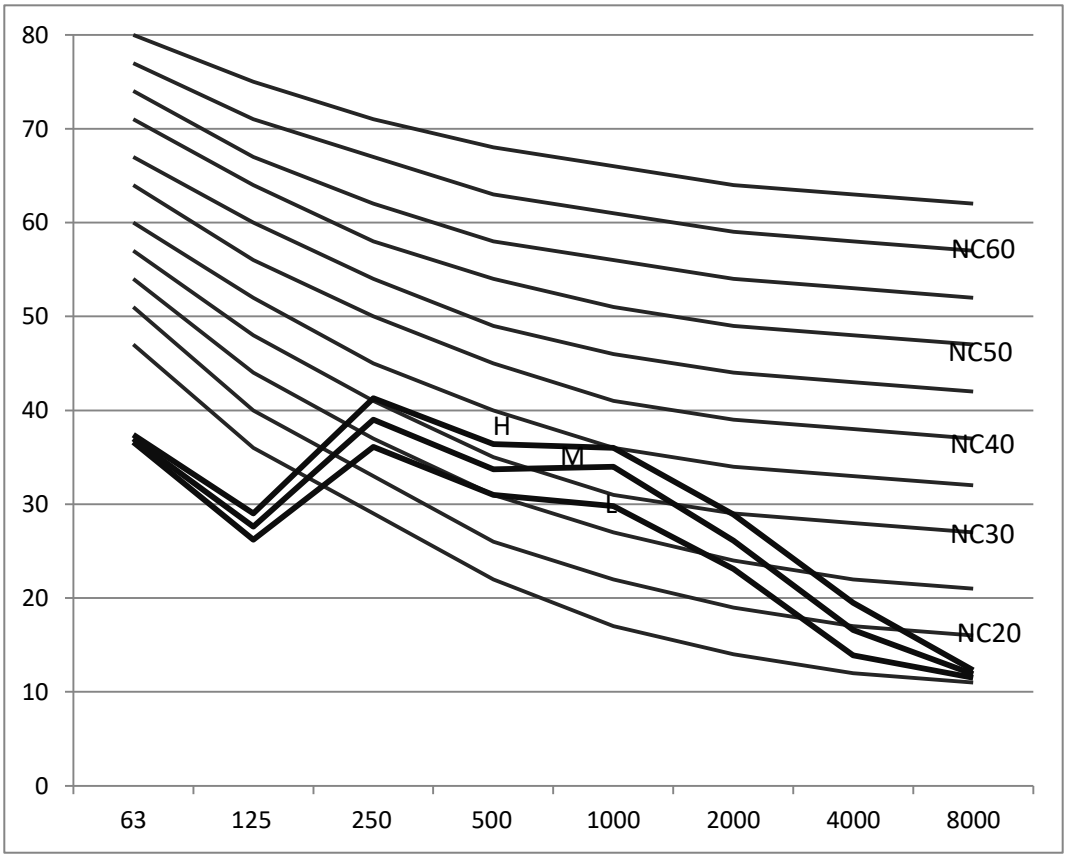
9.2 Test value

Model	Sound test value dB(A)		
	H	M	L
MDV-D22Q1/N1-D	38	34	30
MDV-D36Q1/N1-D	40	38	34
MDV-D71Q1/N1-D	44	41	37

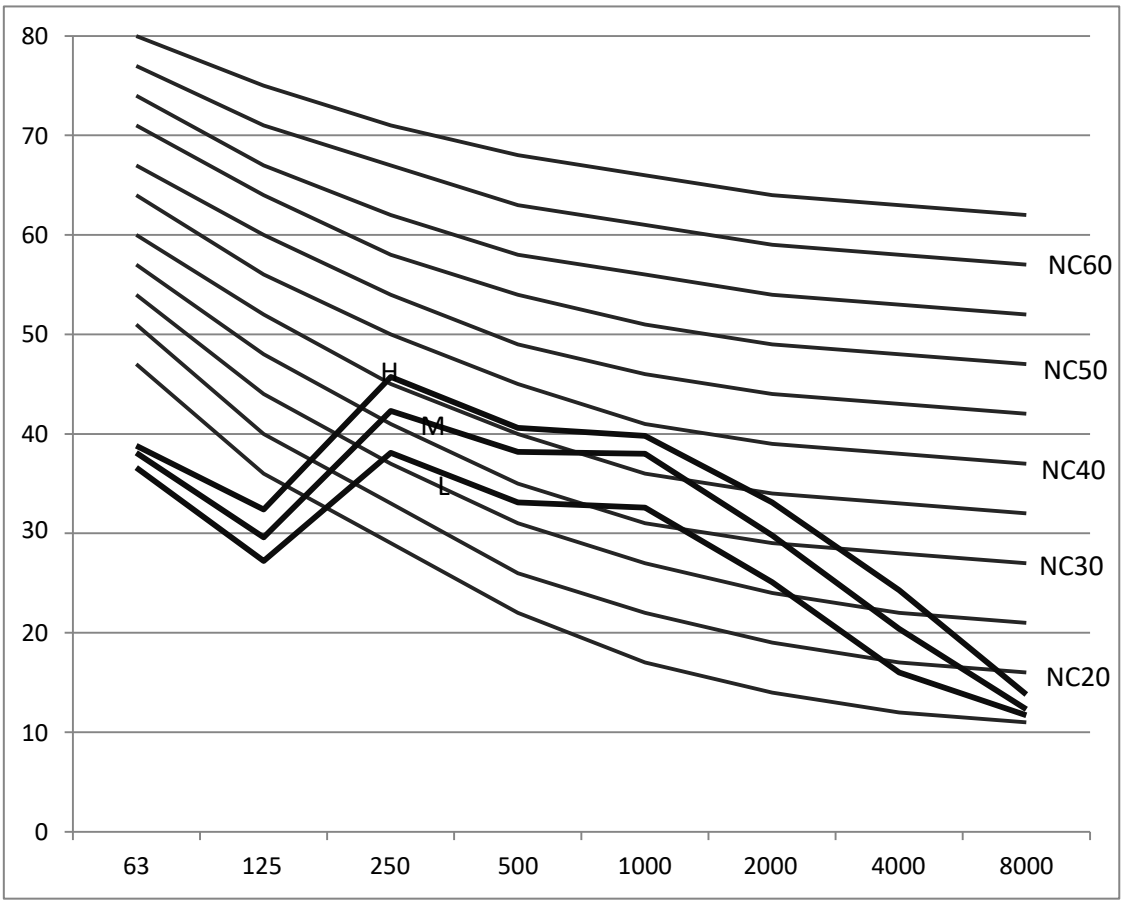
MDV-D22Q1/N1-D



MDV-D36Q1/N1-D



MDV-D71Q1/N1-D



10. Accessories

Standard accessories

Name	Quantity	Outline	Function
Indoor unit installation manual	1	/	Hand to the user
Installation paper plate	1		For installing the suspender and cutting the ceiling
Protection sleeve for refrigerant inlet and outlet pipes	2		For heat insulation of the pipe connections
Fastening belt	10		For fastening
Flexible drainage pipe	1		For the connection between the air-conditioner and the drainage pipe
Clasp	1		For fastening the flexible drainage pipe
Big gasket	8		Necessary fastener for hanging the air-conditioner
Screw	8		Necessary fastener for hanging the air-conditioner
Panel installation bolt	6/7		For installing the panel to the air-conditioner
Operation manual for remote controller	1		Please hand to the user
Remote controller	1		For remotely controlling the unit
Remote controller support	1		For placing the remote controller
Battery	2		Battery for remote controller
Cross-recessed countersunk head self tapping screw	2		For fixing the remote controller support
Small flathead screwdriver	1		Use for installing the wires and dial codes
Copper	1		Use for pipe connection of engineering installation

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4 Appendix.....¡Error! Marcador no definido.

1 Display Panels

1.1 Types of Display Panel

Two types of display panel are used on VRF indoor units: digital display panels (the new style display panels) and the four LED display panels (the old style display panels). Examples of the two styles are shown in Figures 3.1 and 3.2.

Figure 3.1: Example of digital display panel (new style display panel)



Figure 3.2: Example of four LED display panel (old style display panel)



1.2 Output Under Normal Operating Conditions

Table 3.1: Display panel output under normal operating conditions

Unit state		Display output		
		Digital display panels		Four LED display panels[1]
		Lights	Digital display	
Standby		OPERATION light flashes slowly	- -	OPERATION LED flashes slowly
Auto-restart delay[2]				
Shutting-down		All lights off[3]	- -	All LEDs off[3]
Operating	Normal operation	OPERATION light on	Cooling and heating modes: set temperature Fan only mode: indoor ambient temperature	OPERATION LED on
	Cold draft prevention[4] or outdoor unit defrosting operation[5]	OPERATION and DEF./FAN lights on	Set temperature	OPERATION and DEF./FAN LEDs on
A timer has been set		TIMER light on[6]	n/a	TIMER LED on[6]

Notes:

1. Flashing slowly means flashing once per second.
2. Refer to 2.4.2 "Auto-restart setting".
3. Unless a timer has been set, in which case the TIMER light/LED will be on.
4. In heating mode, cold draft prevention ensures that the indoor unit fan only runs when the indoor heat exchanger mid-point temperature is above a certain temperature. Refer to Tables 2.1 to 2.6 in 2.1 "PCB Switch and Jumper Settings".
5. In heating mode, outdoor units perform the defrosting operation in order to recover heating capacity. Refer to the outdoor unit technical documentation.
6. The statuses of the other lights/LEDs are determined by whether the unit is currently in standby, auto-restart delay, shutting-down or operating.

1.3 Digital Display Parameter Output

On pressing the button on a digital display panel the parameters given in Table 3.2 are displayed (unless the unit is in an error state, in which case the digital display displays the error code). On the first press, parameter no. 1 is displayed, on the second press, parameter no. 2 is displayed, and so on. If the button is not pressed for 10 seconds, the display returns to its normal output, as described in Table 3.1.

Figure 3.3: Button on a digital display panel

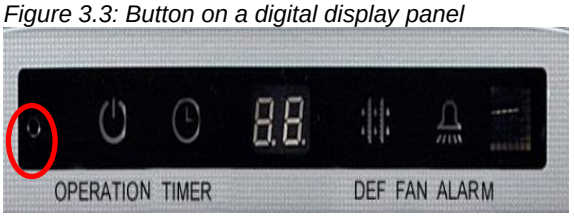


Table 3.2: Digital display output when button on a digital display panel is pressed

Parameter no.	Parameters	Remarks
1	Communication address[1]	0 - 63
2	Capacity as set on switch ENC1 on indoor unit main PCB	Unit: HP
3	Network address[1]	0 - 63
4	Set temperature	
5	Indoor ambient temperature	Minimum value -9°C
6	Reserved - indoor ambient temperature[2]	Minimum value -9°C
7	Indoor heat exchanger mid-point temperature	Minimum value -9°C
8	Indoor heat exchanger outlet temperature	Minimum value -9°C
9	Most recent error code	"E-" is displayed if no error code has occurred since the unit was powered on
10	--	

Notes:

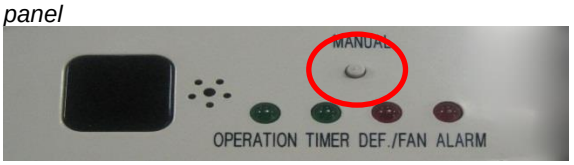
1. On indoor units, the communication address and network address are the same and are routinely referred to simply as the unit's "address".
2. Parameter no. 6 is reserved for future use. Currently, it displays the indoor ambient temperature.

1.4 Four LED Display Parameter Output

1.4.1 Unit address

On pressing the MANUAL button on a four LED display panel continuously for 5 seconds the unit's address is indicated by the statuses of the four LEDs and the alarm.

Figure 3.4: MANUAL button on a four LED display panel



The unit address is indicated by the combination of the states (on, off or flashing) of the four LEDs and the state (sounding or not sounding) of the alarm. Determining a unit's address involves two steps.

Step 1: Determine address range

- The alarm state (sounding or not sounding) and LED states (on or flashing) indicate which of four address ranges the unit address lies in. Refer to Table 3.3.

Table 3.3: Unit address range indicated by alarm and LED states

Alarm state	LED states[1]	Address range	Address range base value
Not sounding	On	0 - 15	0
	Flashing	16 - 31	16
Sounding	On	32 - 47	32
	Flashing	48 - 63	48

Notes:

1. If the LEDs are all off, the unit address is either:
   - 0 or 16 if the alarm is not sounding.
   - 32 or 48 if the alarm is sounding.

Step 2: Determine unit address

Table 3.4: LED 'contributions' to address summation

LED	Contribution[1]
OPERATION	8
TIMER	4
DEF./FAN	2
ALARM	1

Notes:

1. The 'contribution' of each LED is the value that should be added into the address summation if that LED is either on or flashing.

- Which LEDs are on/flashing indicates what number should be added to the address range base value to obtain the unit address.
- Calculate the sum of the 'contributions' indicated by the LEDs that are either on or flashing, using the contribution values shown in Table 3.4.
- Add the sum of the LED contributions to the address range base value (from Table 3.3) to obtain the unit address.
- Note: If the LEDs are all off, the unit address is either 0 or 16 if the alarm is not sounding, or 32 or 48 if the alarm is sounding. It is not possible to distinguish between 0 and 16, or between 32 and 48.

Four examples of using LED and alarm statuses to determine unit address are shown in Table 3.5. In the first example, the alarm is not sounding, the OPERATION, TIMER and DEF./FAN LEDs are all on and the ALARM LED is off. Refer to Table 3.3. The address range base value is 0. Refer to Table 3.4. The LED contributions are 8, 4 and 2. The unit address is the sum of 0, 8, 4 and 2.

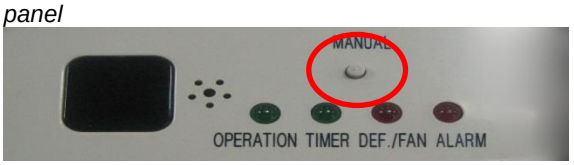
Table 3.5: Address determination procedure examples

Example no.	Alarm state	LED states		Address range	Address range base value	Sum of LED contributions	Unit address
1	Not sounding	OPERATION	On	0 - 15	0	14 (= 8 + 4 + 2)	14 (= 0 + 14)
		TIMER	On				
		DEF./FAN	On				
		ALARM	Off				
2	Not sounding	OPERATION	Flashing	16 - 31	16	15 (= 8 + 4 + 2 + 1)	31 (= 16 + 15)
		TIMER	Flashing				
		DEF./FAN	Flashing				
		ALARM	Flashing				
3	Sounding	OPERATION	On	32 - 47	32	14 (= 8 + 4 + 2)	46 (= 32 + 14)
		TIMER	On				
		DEF./FAN	On				
		ALARM	Off				
4	Sounding	OPERATION	Flashing	48 - 63	48	15 (= 8 + 4 + 2 + 1)	63 (= 48 + 15)

1.4.2 Unit capacity setting

On pressing the MANUAL button on a four LED display panel continuously for 10 seconds the unit's capacity setting (as set on switch ENC1 on the indoor unit main PCB) is indicated by the statuses of the four LEDs.

Figure 3.5: MANUAL button on a four LED display panel



The unit's ENC1 capacity setting is indicated by the combination of the statuses (on or off) of the four LEDs. For units with two main PCBs, the display only indicates the ENC1 capacity setting of main PCB A.

- Which LEDs are on indicates what numbers should be summed to obtain the main PCB capacity setting.
- Calculate the sum of the 'contributions' indicated by the LEDs that are on, using the contribution values shown in Table 3.6. For this summation, base 16 (hexadecimal) should be used.
- The sum of the contributions indicates the capacity setting of the main PCB.

Table 3.6: LED 'contributions' to capacity setting summation

LED	Contribution[1]
OPERATION	8
TIMER	4
DEF./FAN	2
ALARM	1

Notes:
1. The 'contribution' of each LED is the value that should be added into the capacity setting summation if that LED is on.

Four examples of using LED statuses to determine unit capacity setting are shown in Table 3.7.

Table 3.7: Capacity setting determination procedure examples

Example no.	Unit type / model	No. of main PCBs	LED states		Sum of LED contributions	ENC1 capacity setting[1]
1	Four-way Cassette	1	OPERATION	Off	1	1
			TIMER	Off		
			DEF./FAN	Off		
			ALARM	On		
2	Wall-mounted M Series	1	OPERATION	Off	5 (= 4 + 1)	5
			TIMER	On		
			DEF./FAN	Off		
			ALARM	On		
3	High Static Pressure Duct MI-140T1/DHN1-B	1	OPERATION	On	9 (= 8 + 1)	9
			TIMER	Off		
			DEF./FAN	Off		
			ALARM	On		
4	High Static Pressure Duct MI-200T1/DHN1-B	2	OPERATION	On	B (= 8 + 2 + 1)	B
			TIMER	Off		
			DEF./FAN	On		
			ALARM	On		

Notes:
1. For units with two main PCBs, the display only indicates the ENC1 capacity setting of main PCB A.

2 Errors

2.1 Error Code Table

Table 4.1: Error code table

Error code	Content	Display output	
		Four LED display[1]	Digital display
E0	Mode conflict	DEF./FAN LED flashes rapidly	E0
E1	Communication error between indoor and outdoor units	TIMER LED flashes rapidly	E1
E2	Indoor ambient temperature sensor error	OPERATION LED flashes rapidly	E2
E3	Indoor heat exchanger mid-point temperature sensor error	OPERATION LED flashes rapidly	E3
E4	Indoor heat exchanger outlet temperature sensor error	OPERATION LED flashes rapidly	E4
E6	Fan error	TIMER LED flashes slowly	E6
E7	EEPROM mismatch	DEF./FAN LED flashes slowly	E7
Ed	Outdoor unit error	ALARM LED flashes slowly	Ed
EE	Water level error	ALARM LED flashes rapidly	EE
FE	Indoor unit has not been assigned an address	OPERATION and TIMER LEDs flash	FE
n/a	Louver swing failure[2]	n/a	n/a

Notes:

1. Flashing rapidly means flashing twice per second; flashing slowly means flashing once per second.
2. In the event of a louver swing failure, no error code is displayed. For troubleshooting guidance for louver swing failure, refer to 5.10 "Louver Swing Failure Troubleshooting".

2.2 Impact on Other Units

Table 4.2 shows the impact of an error on one indoor unit on the outdoor units and on the other indoor units in the system. The actual state of the outdoor units and the other indoor units is determined not only by the impacts shown in Table 4.2, but also by any other errors that may have separately arisen on the outdoor units or other indoor units.

Table 4.2: Impact of indoor unit error on outdoor units and on other indoor units

Indoor unit error	Impact on outdoor units	Impact on other indoor units
E0	Minimal impact[1]	No impact
E1	H7 error[2]	Ed error[3]
E2	Minimal impact[4]	No impact
E3	Minimal impact[4]	No impact
E4	Minimal impact[4]	No impact
E6	Minimal impact[4]	No impact
E7	Minimal impact[4]	No impact
Ed	n/a[5]	n/a[5]
EE	Minimal impact[4]	No impact
FE	H7 error[2]	Ed error[3]

Notes:

1. The outdoor units continue to operate and ignore the load requirement from the indoor unit that has gone into mode conflict with the outdoor units.
2. Outdoor unit error code H7 indicates that the number of indoor units detected by the master outdoor unit is not the same as the number set on the master outdoor unit's main PCB.
3. Error Ed may not be displayed on the other indoor units. Indoor unit error codes have the following order of priority: FE-E1-E2-E3-E4-E6-E7-Ed-EE-E0. So if, for example, one unit has an E2 error, it continues to display E2 even if an E1 or FE error occurs on another indoor unit (giving rise to an outdoor unit H7 error) since error Ed is lower in the order of priority than error E2.
4. The outdoor units continue to operate but detect no load requirement from the indoor unit that has experienced an E2, E3, E4, E6, E7 or EE error, and adjust their output accordingly, in the same way as they do when a user puts an indoor unit into standby.
5. An indoor unit Ed error is caused by (and not the cause of) an outdoor unit error. The outdoor units will be displaying their own error code.

3 Troubleshooting

3.1 Warning

Warning

- All electrical work must be carried out by competent and suitably qualified, certified and accredited professionals and in accordance with all applicable legislation (all national, local and other laws, standards, codes, rules, regulations and other legislation that apply in a given situation).
- Power-off the unit before connecting or disconnecting any connections or wiring, otherwise electric shock (which can cause physical serious injuries) may occur or damage to components may occur.

3.2 E0 Troubleshooting

3.2.1 Display output



or

DEF./FAN LED flashes twice per second

3.2.2 Description

- Mode conflict.

3.2.3 Impact on other units

- Refer to 4.2 “Impact on Other Units”.

3.2.4 Possible causes

- The indoor unit’s operating mode conflicts with that of the outdoor units.

3.2.5 Explanation

There are five priority mode options, which are set on the outdoor units. If an indoor unit's operating mode conflicts with that of the outdoor units, the indoor unit displays the mode conflict error. The five priority modes are:

1. **Heating priority mode (default):**
   a) **During cooling operation:** If an indoor unit requests heating, the outdoor units stop and then restart in heating mode after 5 minutes. Indoor units requesting heating then start in heating mode and indoor units requesting cooling display the mode conflict error.
   b) **During heating operation:** If an indoor unit requests cooling, the outdoor units ignore the request and continue to run in heating mode. The indoor unit requesting cooling displays the mode conflict error. If all the indoor units requesting heating are later turned off and one or more indoor units are still requesting cooling, the outdoor units restart in cooling mode after 5 minutes and any indoor units requesting cooling then start in cooling mode.
2. **Cooling priority mode:**
   a) **During heating operation:** If an indoor unit requests cooling, the outdoor units stop and then restart in cooling mode after 5 minutes. Indoor units requesting cooling then start in cooling mode and indoor units requesting heating display the mode conflict error.
   b) **During cooling operation:** If an indoor unit requests heating, the outdoor units ignore the request and continue to run in cooling mode. The indoor unit requesting heating displays the mode conflict error. If all the indoor units requesting cooling are later turned off and one or more indoor units are still requesting heating, the outdoor units restart in heating mode after 5 minutes and any indoor units requesting heating then start in heating mode.
3. **VIP priority mode or voting priority mode:** 63 is the VIP address. If the VIP indoor unit is operating, the outdoor units operate in the mode of the VIP indoor unit. Indoor units that are in a mode different to that of the VIP unit display the mode conflict error. If there is no unit with address 63 or the unit at address 63 is in standby, the outdoor units operate in voting priority mode. In voting priority mode, the outdoor units operate in whichever of heating and cooling modes is being requested by the larger number of indoor units.
4. **Heating only mode:** The outdoor units only operate in heating mode. Indoor units requesting heating operate in heating mode. Indoor units requesting cooling or in fan only mode display the mode conflict error.
5. **Cooling only mode:** The outdoor units only operate in cooling mode. Indoor units requesting cooling operate in cooling mode; indoor units in fan only mode operate in fan only mode. Indoor units requesting heating display the mode conflict error.

3.3. E1 Troubleshooting

3.3.1. Display output



or

TIMER LED flashes twice per second

3.3.2. Description

- Communication error between indoor and outdoor units.

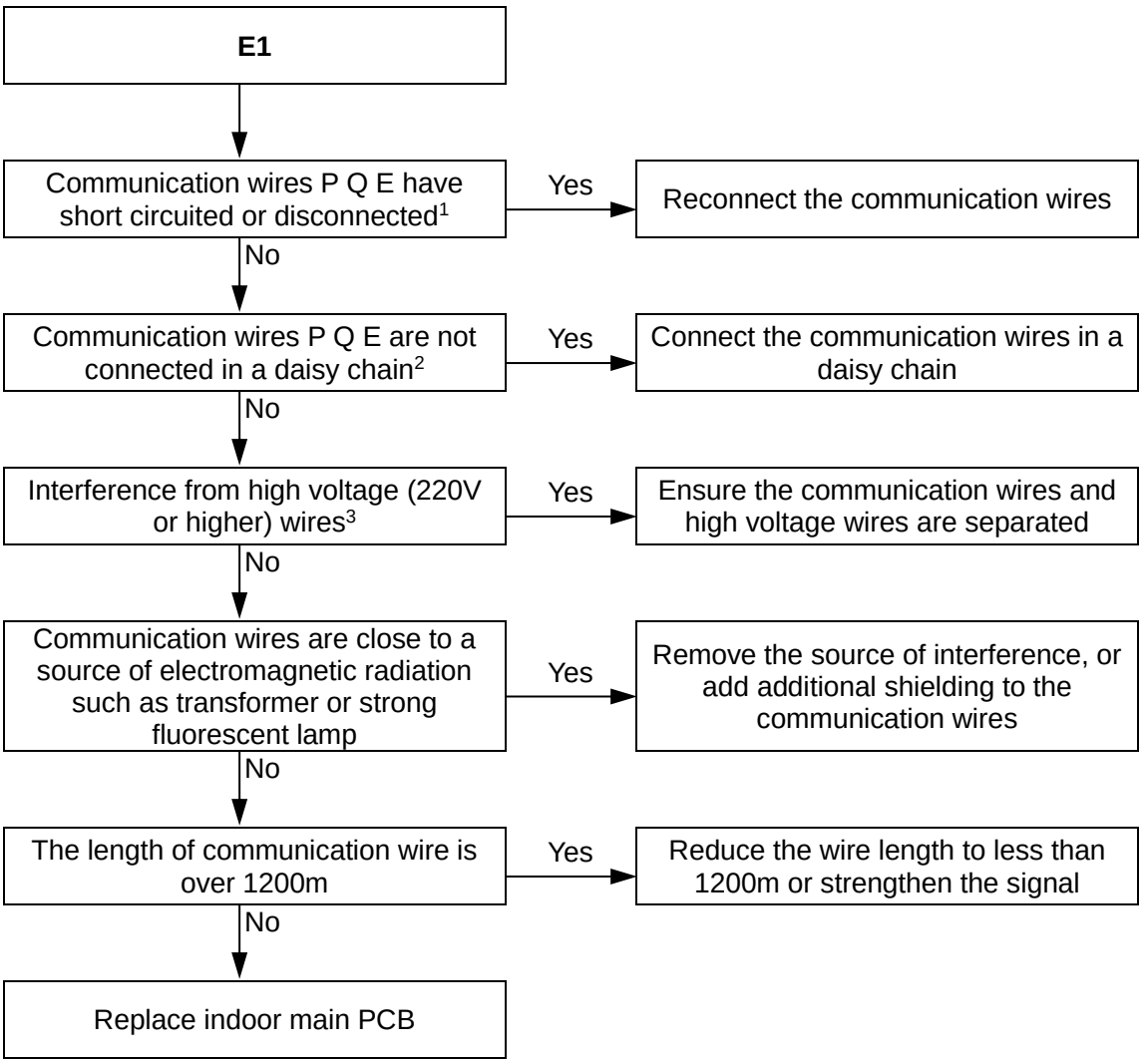
3.3.3. Impact on other units

- Refer to 4.2 “Impact on Other Units”.

3.3.4. Possible causes

- Communication wires between indoor and outdoor units not connected properly.
- Interference from high voltage wires or other sources of electromagnetic radiation.
- Communication wire too long.
- Damaged main PCB.

3.3.5. Procedure



Notes:

1. Measure the resistance among P, Q and E. The normal resistance between P and Q is 120Ω, between P and E is infinite, between Q and E is infinite.
2. The P Q E communication wires should be connected one unit after another in a daisy chain from the master outdoor unit to the final indoor unit. After the final indoor unit, the communication wiring should NOT be continued back to the outdoor units – that is, do not attempt to form a closed loop.
3. The refrigerant piping, power wiring and communication wiring are typically run in parallel. However the communication wiring should not be bound together with the refrigerant piping or power wiring. To prevent signal interference, the power wiring and communication wiring should not be run in the same conduit. If the power supply is less than 10A, a separation of at least 300mm between power wiring and communication wiring conduits should be maintained; if the power supply is in the range 10A to 50A then a separation of at least 500mm should be maintained.

3.4. E2, E3, E4 Troubleshooting

3.4.1. Display output



or **OPERATION LED flashes twice per second**

or **OPERATION LED flashes twice per second**

or **OPERATION LED flashes twice per second**

3.4.2. Description

- E2 indicates an indoor ambient temperature sensor error.
- E3 indicates an indoor heat exchanger mid-point temperature sensor error.
- E4 indicates an indoor heat exchanger outlet temperature sensor error.

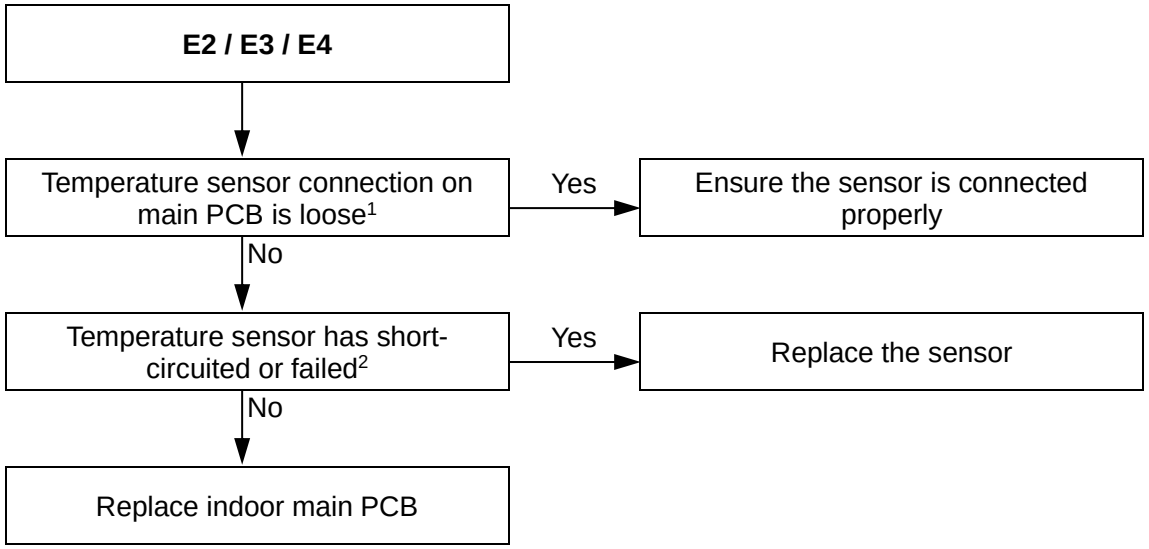
3.4.3. Impact on other units

- Refer to 4.2 “Impact on Other Units”.

3.4.4. Possible causes

- Temperature sensor not connected properly or has malfunctioned.
- Damaged main PCB.

3.4.5. Procedure



Notes:

1. The indoor ambient temperature sensor connection port, indoor heat exchanger mid-point temperature sensor connection port and indoor heat exchanger outlet temperature sensor connection port on each type of indoor unit main PCB are labeled in Figures 1.1 to 1.19 in 1, “Main PCB Ports”.
2. Measure sensor resistance. If the resistance is too low, the sensor has short-circuited. If the resistance is not consistent with the sensor’s resistance characteristics table, the sensor has failed. Refer to Table 6.1 in 6.1 “Temperature Sensor Resistance Characteristics”.

3.5. E6 Troubleshooting

3.5.1. Display output



or

TIMER LED flashes once per second

3.5.2. Description

- Fan error.
- Either the main PCB cannot detect the fan, or the difference between the actual fan speed and the target fan speed exceeds the limit.

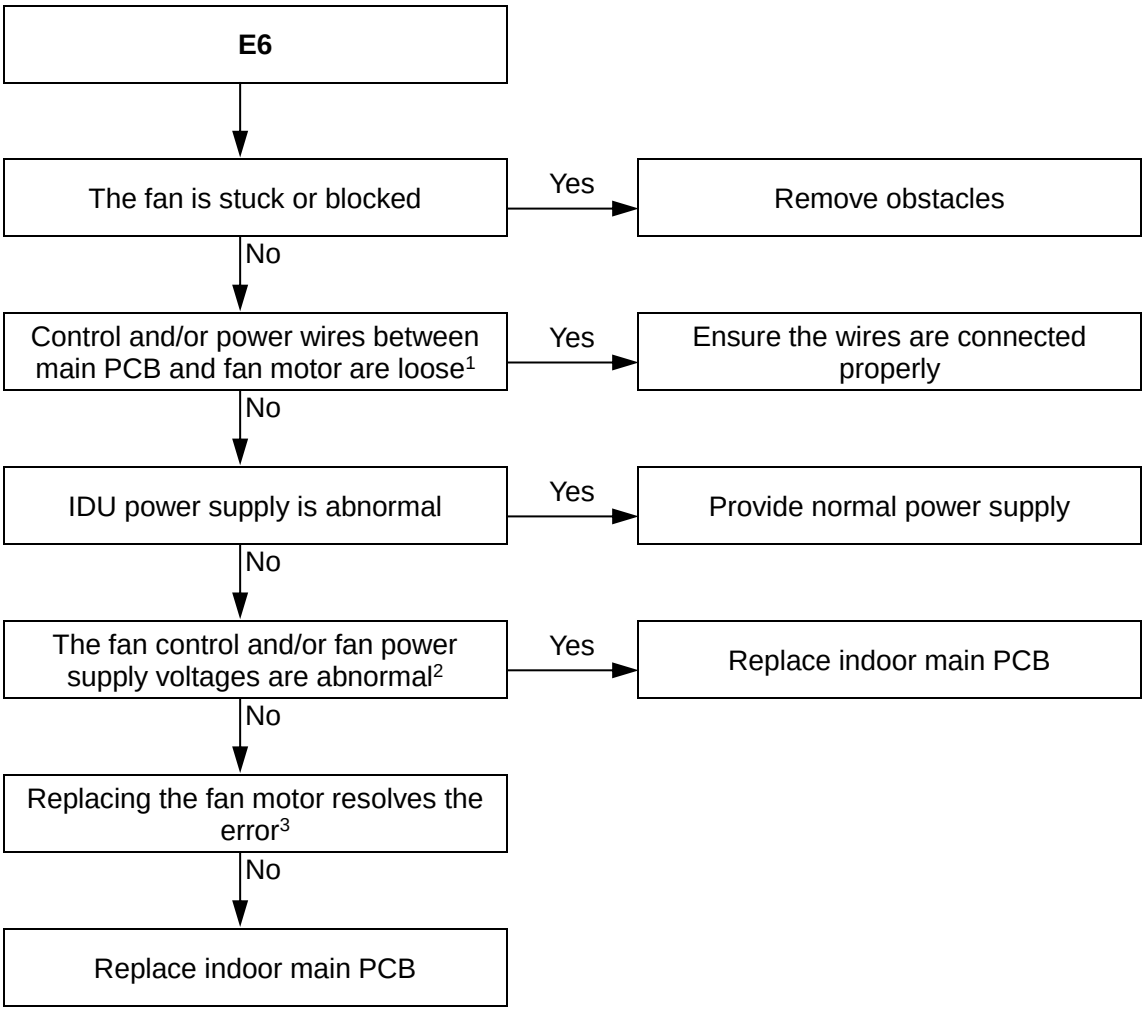
3.5.3. Impact on other units

- Refer to 4.2 “Impact on Other Units”.

3.5.4. Possible causes

- Fan stuck or blocked.
- Fan motor not connected properly or has malfunctioned.
- Power supply abnormal.
- Damaged main PCB.

3.5.5. Procedure



Notes:

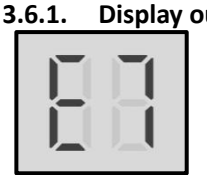
1. The fan connection on each type of indoor unit main PCB is labeled in Figures 1.1 to 1.19 in 1, "Main PCB Ports".
2. Measure the voltage between the red and black wires and between the white and black wires at the fan connection on the indoor unit main PCB. The normal voltage between the red and black wires is 310V (DC); the normal voltage between the white and black wires is 15V (DC). The fan connection on each type of indoor unit main PCB is labeled in Figures 1.1 to 1.19 in 1, "Main PCB Ports". Refer also to Figure 5.1.
3. Remove the fan motor and install a new one. Power-on the unit, set it to run with fan speed set to low, and see if the unit runs normally or not.

Figure 5.1: Fan connection wiring on indoor unit main PCBs



3.6. E7 Troubleshooting

3.6.1. Display output



or

DEF./FAN LED flashes twice per second

3.6.2. Description

- EEPROM mismatch.

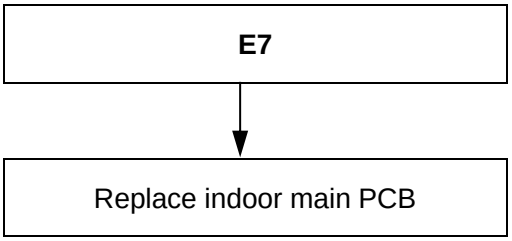
3.6.3. Impact on other units

- Refer to 4.2 “Impact on Other Units”.

3.6.4. Possible causes

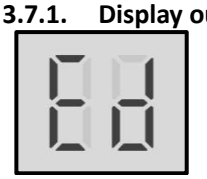
- Damaged main PCB.

3.6.5. Procedure



3.7. Ed Troubleshooting

3.7.1. Display output



or

ALARM LED flashes once per second

3.7.2. Description

- Outdoor unit error.

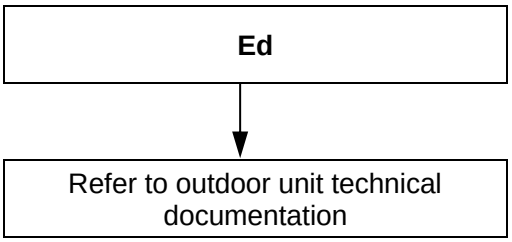
3.7.3. Impact on other units

- Refer to 4.2 “Impact on Other Units”.

3.7.4. Possible causes

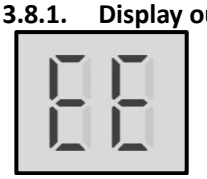
- Outdoor unit error.

3.7.5. Procedure



3.8. EE Troubleshooting

3.8.1. Display output



or

ALARM LED flashes twice per second

3.8.2. Description

- Water level error.

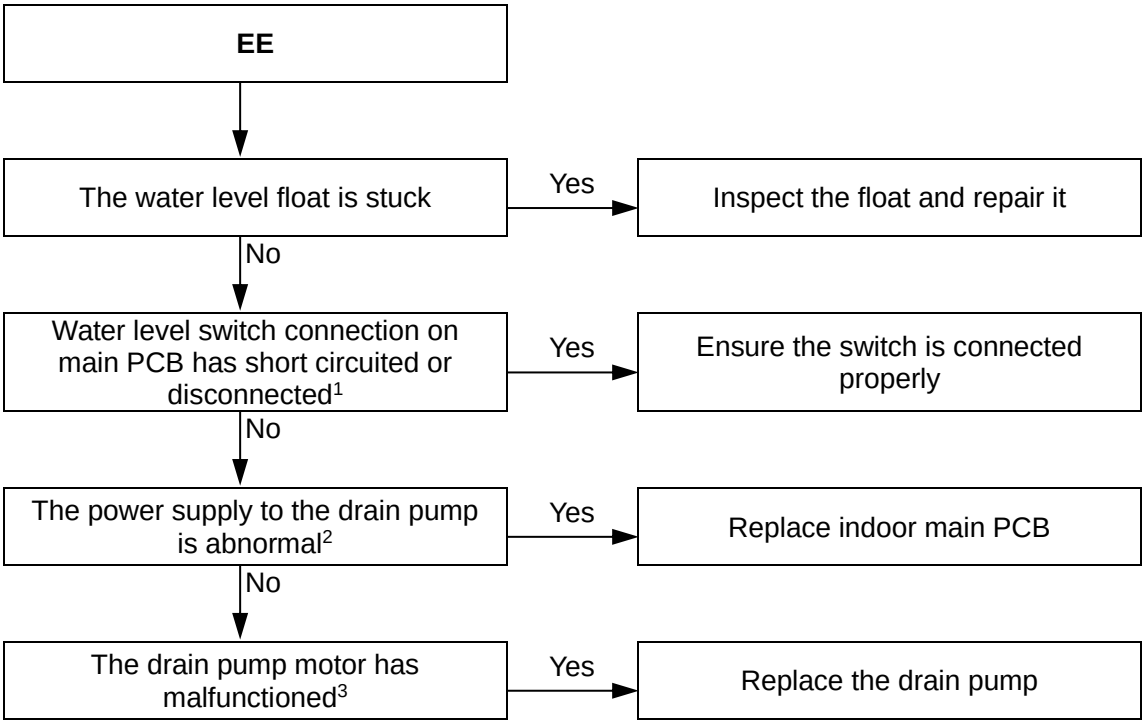
3.8.3. Impact on other units

- Refer to 4.2 “Impact on Other Units”.

3.8.4. Possible causes

- Water level float stuck.
- Water level switch not connected properly.
- Damaged main PCB.
- Drain pump has malfunctioned.

3.8.5. Procedure

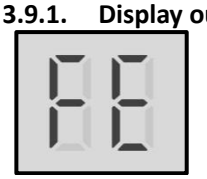


Notes:

1. The water level switch connection port on each type of indoor unit main PCB is labeled in Figures 1.1 to 1.19 in 1, “Main PCB Ports”.
2. Measure the voltage between the two pins of the drain pump connection on the indoor unit main PCB. The normal voltage range is 220 to 240 V (AC). The drain pump connection port on each type of indoor unit main PCB is labeled in Figures 1.1 to 1.19 in 1, “Main PCB Ports”.
3. Measure the resistance between the two power supply terminals on the drain pump motor. If the resistance is either zero or infinite, the motor has malfunctioned.

3.9. FE Troubleshooting

3.9.1. Display output



or

OPERATION and TIMER LEDs flash

3.9.2. Description

- Indoor unit has not been assigned an address.

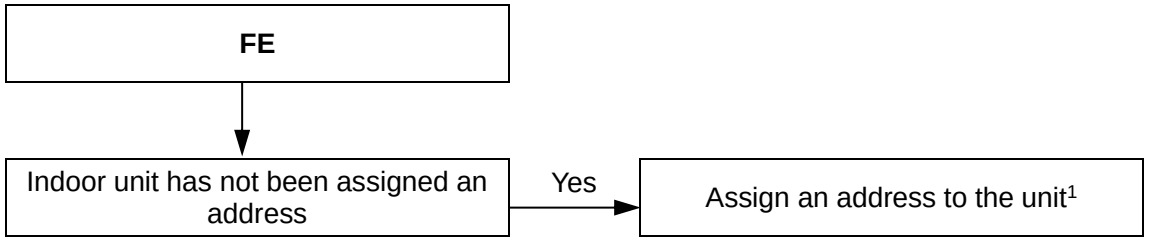
3.9.3. Impact on other units

- Refer to 4.2 “Impact on Other Units”.

3.9.4. Possible causes

- Indoor unit has not been assigned an address.

3.9.5. Procedure



Notes:

1. Indoor unit addresses can be manually assigned using indoor unit remote/wired controllers. Alternatively, indoor unit addresses can be automatically assigned by the master outdoor unit. Refer to the outdoor unit technical documentation. Note: Each unit in a system should be assigned a unique address - unit addresses should not be repeated within one system.

3.10. Louver Swing Failure Troubleshooting

3.10.1. Display output

- No special display output or error code.

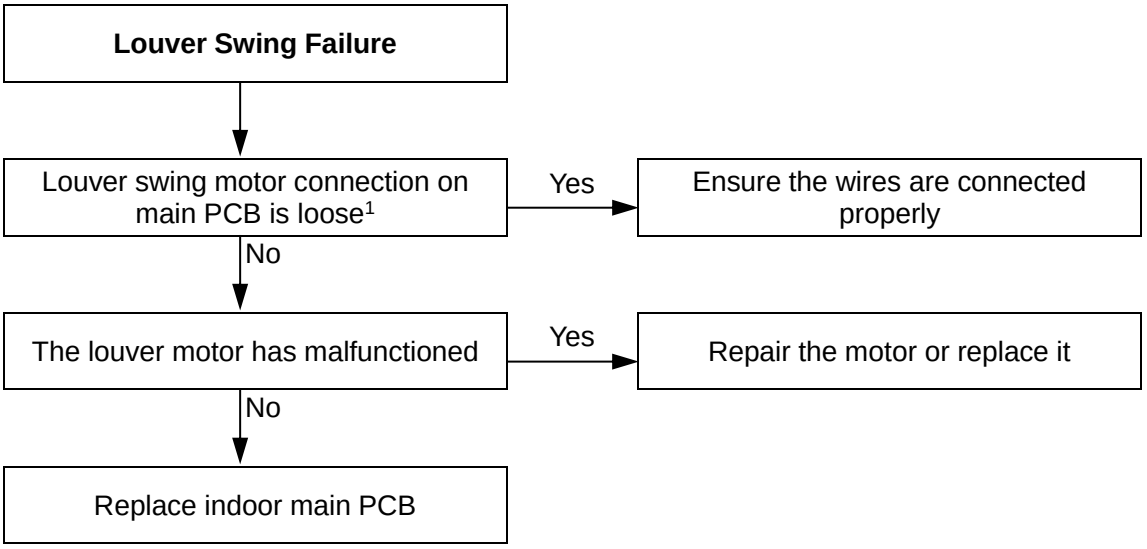
3.10.2. Description

- Louvers fail to respond to instruction from wired or remote controller.

3.10.3. Possible causes

- Louver swing motor not connected properly or has malfunctioned.
- Damaged main PCB.

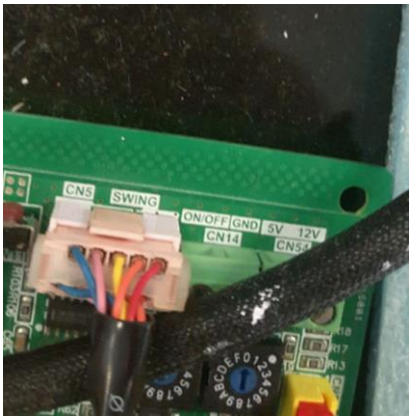
3.10.4. Procedure



Notes:

1. The louver swing motor connection on each type of indoor unit main PCB is labeled in Figures 1.1 to 1.19 in 1, "Main PCB Ports".
2. Measure the resistance between the red wire and each of the other four wires (orange, yellow, pink and blue) at the louver swing motor connection on the main PCB. The resistances between the red wire and each of the other four wires should all be the same, should not be zero and should not be infinite. If the resistances are not the same, or if any of the resistances are zero or infinite, the louver swing motor has malfunctioned. The louver swing motor connection on each type of indoor unit main PCB is labeled in Figures 1.1 to 1.19 in 1, "Main PCB Ports". Refer also to Figure 5.2.

Figure 5.2: Louver swing motor connection wiring on indoor unit main PCBs



4. Appendix

4.1 Temperature Sensor Resistance Characteristics

Table 6.1: Indoor ambient temperature sensor, indoor heat exchanger mid-point temperature sensor and indoor heat exchanger outlet temperature sensor resistance characteristics

Temperature (°C)	Resistance (kΩ)	Temperature (°C)	Resistance (kΩ)	Temperature (°C)	Resistance (kΩ)	Temperature (°C)	Resistance (kΩ)
-20	115.3	**20**	12.64	**60**	2.358	**100**	0.6297
-19	108.1	**21**	12.06	**61**	2.272	**101**	0.6115
-18	101.5	**22**	11.50	**62**	2.191	**102**	0.5939
-17	96.34	**23**	10.97	**63**	2.112	**103**	0.5768
-16	89.59	**24**	10.47	**64**	2.037	**104**	0.5604
-15	84.22	**25**	10.00	**65**	1.965	**105**	0.5445
-14	79.31	**26**	9.551	**66**	1.896	**106**	0.5291
-13	74.54	**27**	9.124	**67**	1.830	**107**	0.5143
-12	70.17	**28**	8.720	**68**	1.766	**108**	0.4999
-11	66.09	**29**	8.336	**69**	1.705	**109**	0.4860
-10	62.28	**30**	7.971	**70**	1.647	**110**	0.4726
-9	58.71	**31**	7.624	**71**	1.591	**111**	0.4596
-8	56.37	**32**	7.295	**72**	1.537	**112**	0.4470
-7	52.24	**33**	6.981	**73**	1.485	**113**	0.4348
-6	49.32	**34**	6.684	**74**	1.435	**114**	0.4230
-5	46.57	**35**	6.400	**75**	1.387	**115**	0.4116
-4	44.00	**36**	6.131	**76**	1.341	**116**	0.4006
-3	41.59	**37**	5.874	**77**	1.291	**117**	0.3899
-2	39.82	**38**	5.630	**78**	1.254	**118**	0.3796
-1	37.20	**39**	5.397	**79**	1.2133	**119**	0.3695
0	35.20	**40**	5.175	**80**	1.174	**120**	0.3598
1	33.33	**41**	4.964	**81**	1.136	**121**	0.3504
2	31.56	**42**	4.763	**82**	1.100	**122**	0.3413
3	29.91	**43**	4.571	**83**	1.064	**123**	0.3325
4	28.35	**44**	4.387	**84**	1.031	**124**	0.3239
5	26.88	**45**	4.213	**85**	0.9982	**125**	0.3156
6	25.50	**46**	4.046	**86**	0.9668	**126**	0.3075
7	24.19	**47**	3.887	**87**	0.9366	**127**	0.2997
8	22.57	**48**	3.735	**88**	0.9075	**128**	0.2922
9	21.81	**49**	3.590	**89**	0.8795	**129**	0.2848
10	20.72	**50**	3.451	**90**	0.8525	**130**	0.2777
11	19.69	**51**	3.318	**91**	0.8264	**131**	0.2708
12	18.72	**52**	3.192	**92**	0.8013	**132**	0.2641
13	17.80	**53**	3.071	**93**	0.7771	**133**	0.2576
14	16.93	**54**	2.959	**94**	0.7537	**134**	0.2513
15	16.12	**55**	2.844	**95**	0.7312	**135**	0.2451
16	15.34	**56**	2.738	**96**	0.7094	**136**	0.2392
17	14.62	**57**	2.637	**97**	0.6884	**137**	0.2334
18	13.92	**58**	2.540	**98**	0.6682	**138**	0.2278
19	13.26	**59**	2.447	**99**	0.6486	**139**	0.2223



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