



FLOOR CEILING INDOOR UNIT

TECHNICAL MANUAL

AC SYSTEM

220-240V/60Hz

INDOOR UNITS

Revision V 2303



Model Numbers:

CC-FCA012-1S, CC-FCA016-1S, CC-FCA020-1S, CC-FCA024-1S, CC-FCA028-1S, CC-FCA030-1S
CC-FCA036-1S, CC-FCA048-1S, CC-FCA060-1S



WARNING

- Installation **MUST** conform with local building codes or, in the absence of local codes, with the National Electrical Code NFPA70/ANSI C1-1993 or current edition and Canadian Electrical Code Part1 CSA C.22.1.
- The information contained in the manual is intended for use by a qualified service technician familiar with safety procedures and equipped with the proper tools and test instruments
- Installation or repairs made by unqualified persons can result in hazards to you and others.
- Failure to carefully read and follow all instructions in this manual can result in equipment malfunction, property damage, personal injury and/or death.

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1. External appearance



3.6/4.5/5.6kW



7.1/8.0kW



9.0/11.2/14/16kW

2. Specifications

Model			CC-FCA012-1S	CC-FCA016-1S	CC-FCA020-1S
Power supply			220-240V/1N/50Hz	220-240V/1N/50Hz	220-240V/1N/50Hz
Capacity	Cooling	kW	3.6	4.5	5.6
	Heating	kW	4	5	6.3
Power Input		kW	0.085	0.085	0.11
Fan motor	Model		YSK-48-4P3	YSK-48-4P3	YSK-48-4P3
	Type		AC	AC	AC
	Brand		Kangbao/Sinjun	Kangbao/Sinjun	Kangbao/Sinjun
	Capacitor	μF	2.5	2.5	2.5
	Speed (Rated)	r/min	1170/960/810	1170/960/810	1170/960/810
Indoor coil	Number of rows		3	3	3
	Fin type		Hydrophilic aluminum	Hydrophilic aluminum	Hydrophilic aluminum
	Tube diameter and type	mm	Ø7, Inner groove	Ø7, Inner groove	Ø7, Inner groove
Air flow (High speed)		m³/h	800	800	800
Sound pressure level		dB(A)	32-46	32-46	32-46
Body	Dimension (W×H×D)	mm	1050*675*235	1050*675*235	1050*675*235
	Packing (W×H×D)	mm	1130*765*330	1130*765*330	1130*765*330
	Net/Gross weight	kg	26.5/31	26.5/31	26.5/31
Refrigerant type			R410A	R410A	R410A
Throttle type			EXV	EXV	EXV
Design pressure		MPa	4.5/1.6	4.5/1.6	4.5/1.6
Liquid pipe / Gas pipe		mm	Ø6.35/ Ø12.7	Ø6.35/ Ø12.7	Ø6.35/ Ø12.7
Connecting wire	Power wire	mm²	2.5*2+2.5(L≤20m)	2.5*2+2.5(L≤20m)	2.5*2+2.5(L≤20m)
			4*2+2.5(20m<L≤50m)	4*2+2.5(20m<L≤50m)	4*2+2.5(20m<L≤50m)
	Signal wire	mm²	0.75*2 shield	0.75*2 shield	0.75*2 shield
Drainage water pipe (Outer diameter)		mm	DN20	DN20	DN20
Controller	Standard		Remote controller	Remote controller	Remote controller
	Optional		Wired controller	Wired controller	Wired controller
Operation temp		°C	16~32	16~32	16~32

Notes:

1) Nominal cooling capacities are based on the following conditions.

- Outdoor temperature: 35°C DB
- Return air temperature: 27°C DB, 19°C WB
- Equivalent piping length: 8m in horizontal

2) Nominal heating capacities are based on the following condition.

- Outdoor temperature: 7°C DB, 6°C WB
- Return air temperature: 20°C DB
- Equivalent piping length: 8m in horizontal

3) Sound pressure level: Semi-anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.4 m.

4) The above data may be changed without notice for future improvement on quality and performance.

Model			CC-FCA024-1S	CC-FCA028-1S	CC-FCA030-1S
Power supply			220-240V/1N/50Hz	220-240V/1N/50Hz	220-240V/1N/50Hz
Capacity	Cooling	kW	7.1	8	9
	Heating	kW	8	8.8	10
Power Input		kW	0.095	0.095	0.16
Fan motor	Model		YSK-50-4P3	YSK-50-4P3	2*YSK-48-4P3
	Type		AC	AC	AC
	Brand		Kangbao/Sinjun	Kangbao/Sinjun	Kangbao/Sinjun
	Capacitor	μF	2.5	2.5	2.5+2.5
	Speed (Rated)	r/min	1050/940/860	1050/940/860	1170/960/810
Indoor coil	Number of rows		3	3	3
	Fin type		Hydrophilic aluminum	Hydrophilic aluminum	Hydrophilic aluminum
	Tube diameter and type	mm	Ø7, Inner groove	Ø7, Inner groove	Ø7, Inner groove
Air flow (High speed)		m³/h	1200	1200	2000
Sound pressure level		dB(A)	41~48	41~48	38~53
Body	Dimension (W×H×D)	mm	1300*675*235	1300*675*235	1670*675*235
	Packing (W×H×D)	mm	1380*765*325	1380*765*325	1750*765*325
	Net/Gross weight	kg	32/37	32/37	41/47
Refrigerant type			R410A	R410A	R410A
Throttle type			EXV	EXV	EXV
Design pressure		MPa	4.5/1.6	4.5/1.6	4.5/1.6
Liquid pipe / Gas pipe		mm	Ø9.53/ Ø15.9	Ø9.53/ Ø15.9	Ø9.53/ Ø15.9
Connecting wire	Power wire	mm²	2.5*2+2.5(L≤20m)	2.5*2+2.5(L≤20m)	2.5*2+2.5(L≤20m)
			4*2+2.5(20m<L≤50m)	4*2+2.5(20m<L≤50m)	4*2+2.5(20m<L≤50m)
	Signal wire	mm²	0.75*2 shield	0.75*2 shield	0.75*2 shield
Drainage water pipe (Outer diameter)		mm	DN25	DN25	DN25
Controller	Standard		Remote controller	Remote controller	Remote controller
	Optional		Wired controller	Wired controller	Wired controller
Operation temp		°C	16~32	16~32	16~32

Notes:

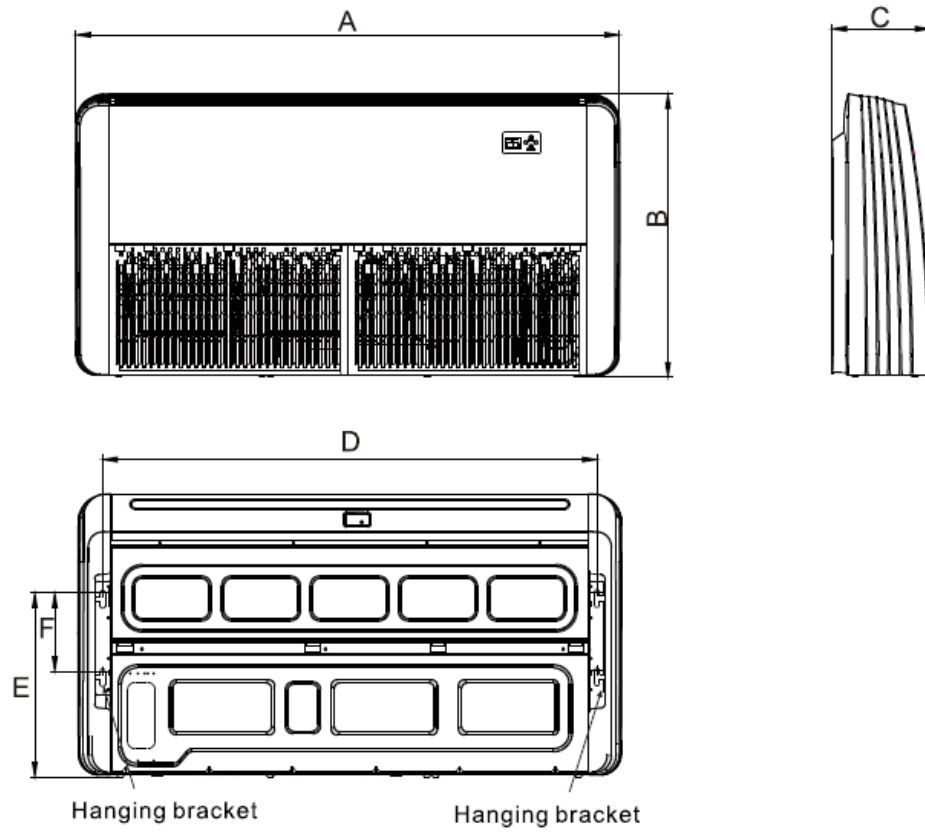
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- 1) *Nominal cooling capacities are based on the following conditions.*
 - *Outdoor temperature: 35°C DB*
 - *Return air temperature: 27°C DB, 19°C WB*
 - *Equivalent piping length: 8m in horizontal*
 - 2) *Nominal heating capacities are based on the following condition.*
 - *Outdoor temperature: 7°C DB, 6°C WB*
 - *Return air temperature: 20°C DB*
 - *Equivalent piping length: 8m in horizontal*
 - 3) *Sound pressure level: Semi-anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.4 m.*
 - 4) *The above data may be changed without notice for future improvement on quality and performance.*

Model			CC-FCA036-1S	CC-FCA048-1S	CC-FCA060-1S
Power supply			220-240V/1N/50Hz	220-240V/1N/50Hz	220-240V/1N/50Hz
Capacity	Cooling	kW	11.2	14	16
	Heating	kW	12.5	15	17
Power Input		kW	0.16	0.2	0.2
Fan motor	Model		2*YSK-48-4P3	2*YSK-48-4P3	2*YSK-48-4P3
	Type		AC	AC	AC
	Brand		Kangbao/Sinjun	Kangbao/Sinjun	Kangbao/Sinjun
	Capacitor	μF	2.5+2.5	2.5+2.5	2.5+2.5
	Speed (Rated)	r/min	1170/960/810	1170/960/810	1170/960/810
Indoor coil	Number of rows		3	3	4
	Fin type		Hydrophilic aluminum	Hydrophilic aluminum	Hydrophilic aluminum
	Tube diameter and type	mm	Ø7, Inner groove	Ø7, Inner groove	Ø7, Inner groove
Air flow (High speed)		m3/h	2000	2000	2000
Sound pressure level		dB(A)	38~53	38~53	38~53
Body	Dimension (W×H×D)	mm	1670*675*235	1670*675*235	1670*675*235
	Packing (W×H×D)	mm	1750*765*325	1750*765*325	1750*765*325
	Net/Gross weight	kg	41/47	41/47	41/47
Refrigerant type			R410A	R410A	R410A
Throttle type			EXV	EXV	EXV
Design pressure		MPa	4.5/1.6	4.5/1.6	4.5/1.6
Liquid pipe / Gas pipe		mm	Ø9.53/ Ø15.9	Ø9.53/ Ø15.9	Ø9.53/ Ø15.9
Connecting wire	Power wire	mm2	2.5*2+2.5(L≤20m)	2.5*2+2.5(L≤20m)	2.5*2+2.5(L≤20m)
			4*2+2.5(20m < L≤50m)	4*2+2.5(20m < L≤50m)	4*2+2.5(20m < L≤50m)
	Signal wire	mm2	0.75*2 shield	0.75*2 shield	0.75*2 shield
Drainage water pipe (Outer diameter)		mm	DN25	DN25	DN25
Controller	Standard		Remote controller	Remote controller	Remote controller
	Optional		Wired controller	Wired controller	Wired controller
Operation temp		°C	16~32	16~32	16~32

Notes:

- Nominal cooling capacities are based on the following conditions.
 - Outdoor temperature: 35°C DB
 - Return air temperature: 27°C DB, 19°C WB
 - Equivalent piping length: 8m in horizontal
- Nominal heating capacities are based on the following condition.
 - Outdoor temperature: 7°C DB, 6°C WB
 - Return air temperature: 20°C DB
 - Equivalent piping length: 8m in horizontal
- Sound pressure level: Semi-anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.4 m.
- The above data may be changed without notice for future improvement on quality and performance.

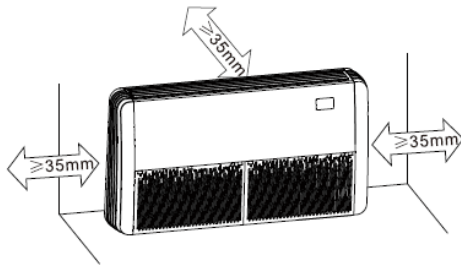
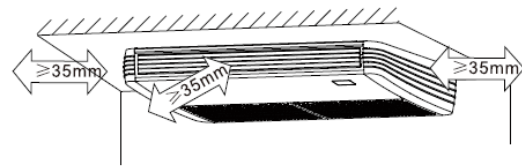
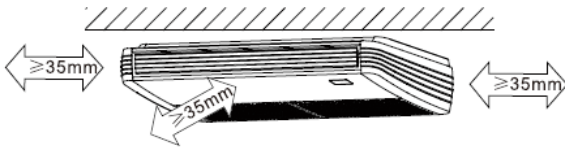
3. Dimensions



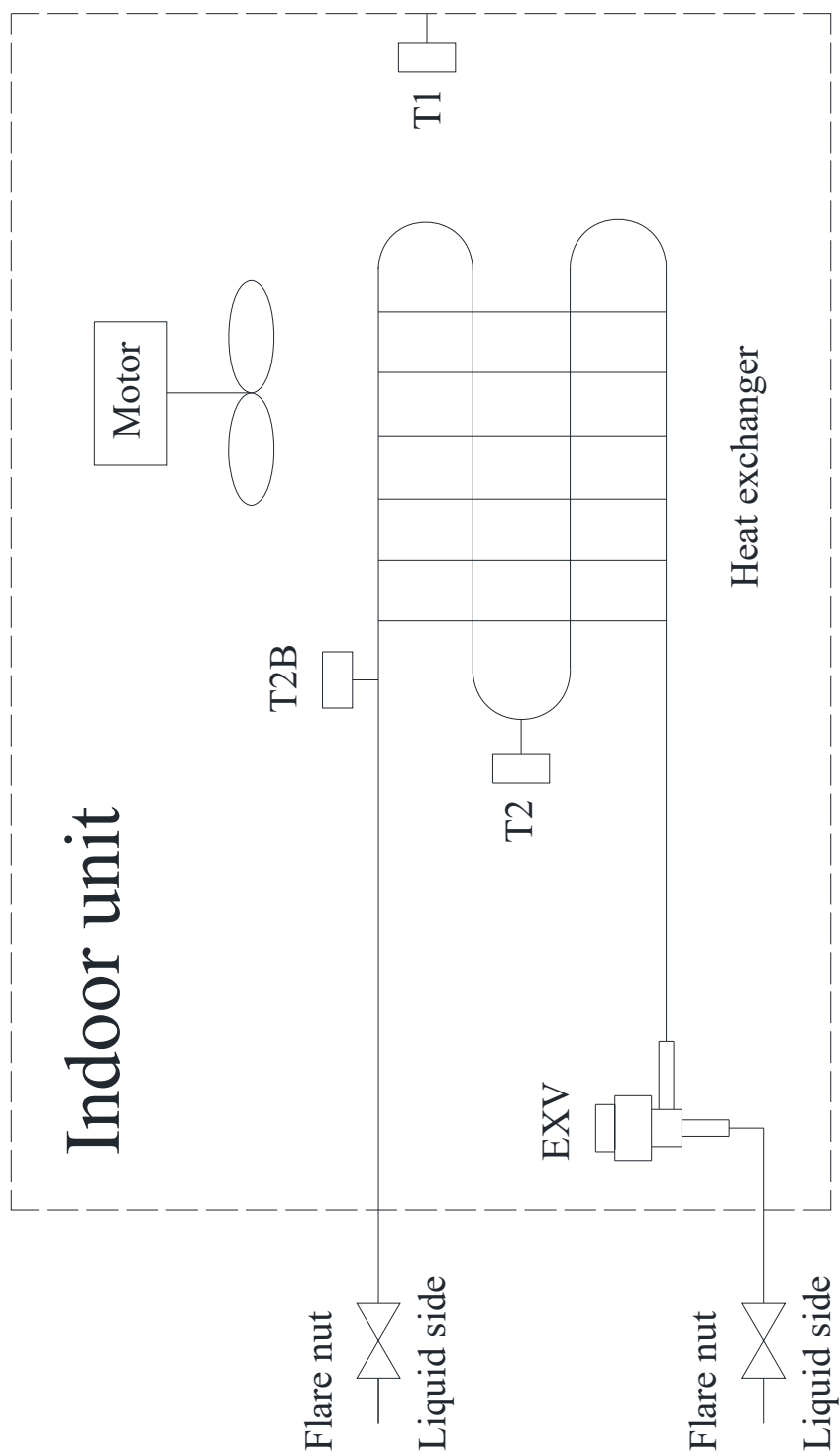
Model	Body dimension (mm)			Installation dimension (mm)		
	A	B	C	D	E	F
CC-FCA012-1S	1050	675	235	933	440	188
CC-FCA016-1S	1050	675	235	933	440	188
CC-FCA020-1S	1050	675	235	933	440	188
CC-FCA024-1S	1300	675	235	1185	440	188
CC-FCA028-1S	1300	675	235	1185	440	188
CC-FCA030-1S	1670	675	235	1553	440	188
CC-FCA036-1S	1670	675	235	1553	440	188
CC-FCA048-1S	1670	675	235	1553	440	188
CC-FCA060-1S	1670	675	235	1553	440	188

4. Service space

- There is enough room for installation and maintenance.
- The ceiling is horizontal, and its structure can endure the weight of the indoor unit.
- The outlet and the inlet are not impeded, and the influence of external air is the least.
- The air flow can reach throughout the room.
- The connecting pipe and drainpipe could be extracted out easily.
- There is no direct radiation from heaters.



5. Piping diagram

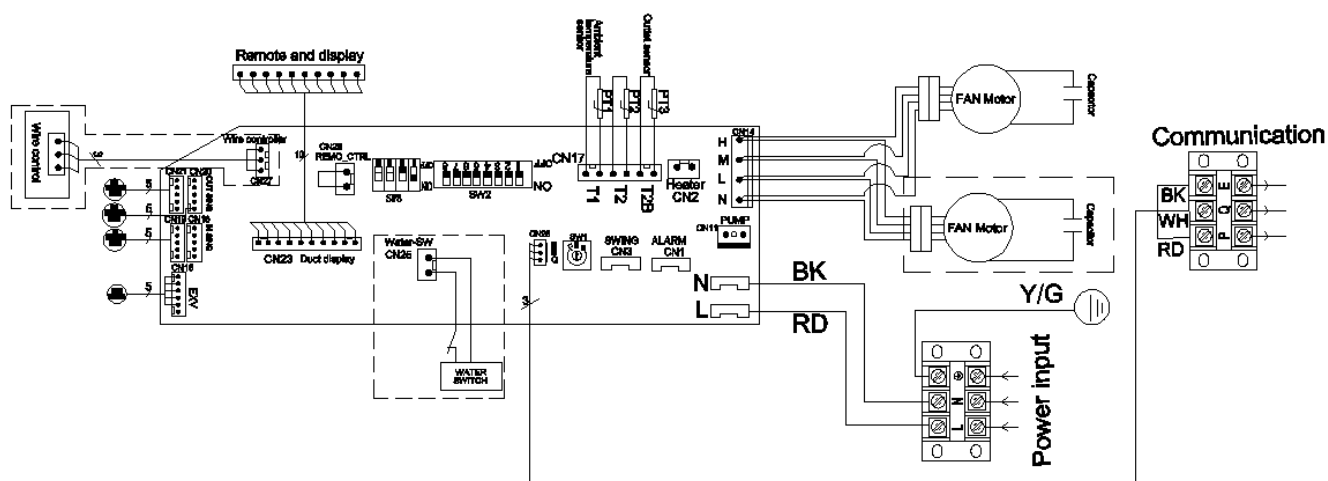


Notes:

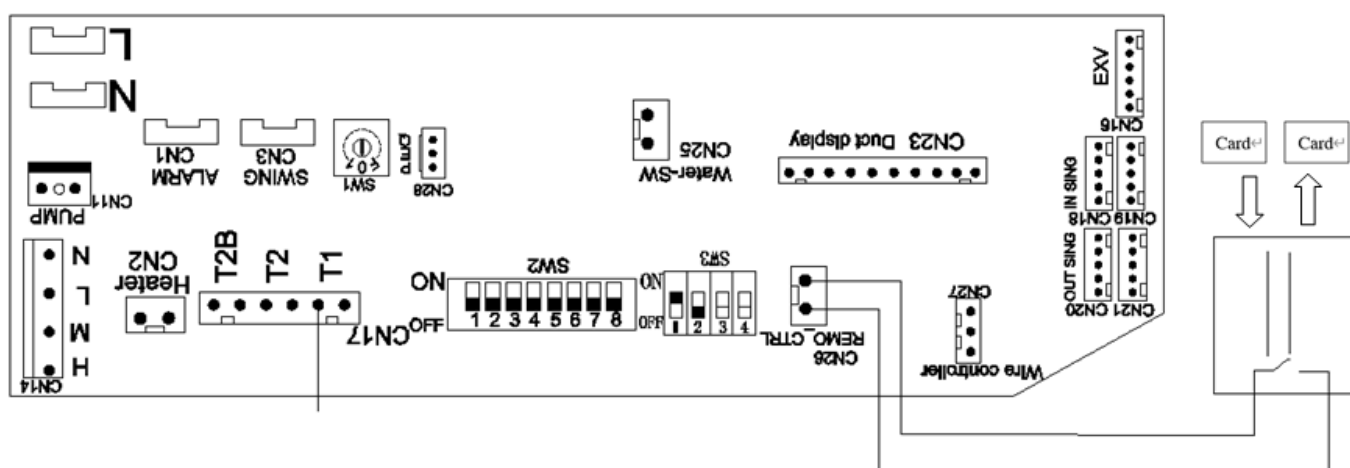
- 1) T1: Room temperature sensor
- 2) T2: Temperature sensor of middle heat exchanger
- 3) T2B: Temperature sensor of heat exchanger outlet
- 4) EXV: Electrical expansion valve

6. Wiring diagram

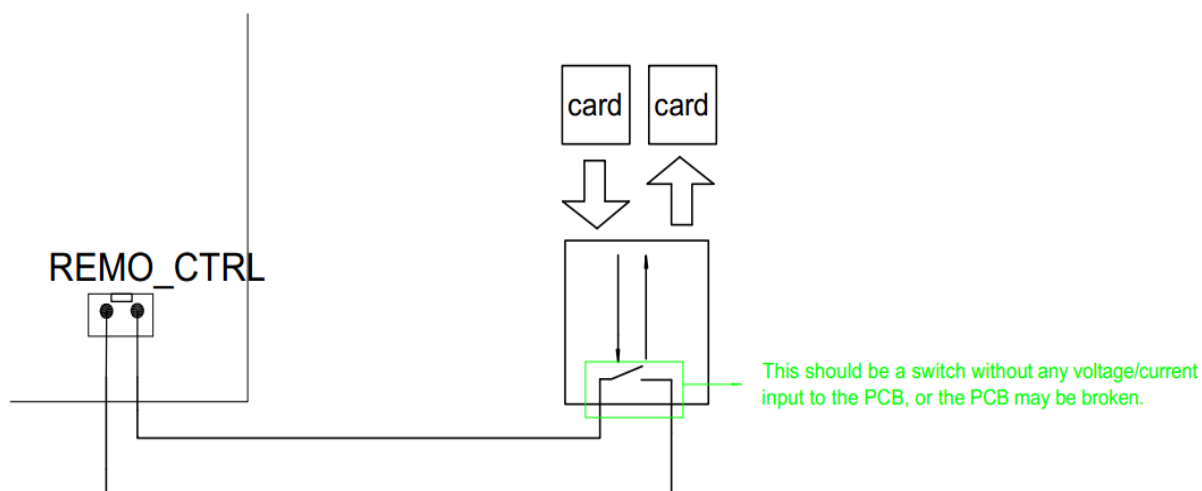
6.1 Wiring diagram



VRF indoor unit connect with card key



Connect the remote control terminal on the indoor PCB to the hotel card module.



NOTE: The terminal in the hotel card module must be a switch without any voltage/current input to the PCB, otherwise the PCB will be broken.

6.2 Dial switches

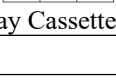
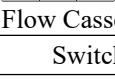
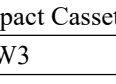
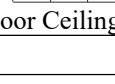
6.2.1 SW1:Capacity switch.

Different number in the switch indicates different capacity. It is set in factory; leave it as default setting,

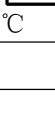


HP	0.8	1	1.2	1.7	2	2.5
Capacity (kW)	1.8/2.2	2.5/2.6/2.8	3.2/3.5/3.6	4.1/4.5/4.6	5.1/5.6	6.0/6.6/7.1
Code	0	1	2	3	4	5
HP	3	3.2	4	5	6	
Capacity (kW)	8.0	8.8/9.0	10.0/11.0/11.2	12.0/12.5/14.0	15.0/16.0	
Code	6	7	8	9	A	

6.2.2 SW3

Name	Switch number 1,2,3 of SW3			
Function	Indoor Unit Type Select			
Setting	ON  OFF  4 way Cassette	ON  OFF  Round Flow Cassette	ON  OFF  Compact Cassette	ON  OFF  Floor Ceiling
Name	Switch number 4 of SW3			
Function	Mode Select bits			
Setting	ON  OFF  Automatic addressing(Factory default)		ON  OFF  Test Mode(allow to clear the address)	

6.2.3 SW2, only available in heating mode.

Name	Switch number 1 of SW2	
Function	Refrigerant temperature compensation temperature value select bits	
Setting	ON  OFF  3°C(Factory default)	ON  OFF  1°C

Name	Switch number 2 of SW2	
Function	Heating temperature compensation temperature value select bits	
Setting	ON  OFF  6°C(Factory default)	ON  OFF  2°C

Name	Switch number 3,4 of SW2			
Function	Anti-cold wind off the fan temperature selection bit			
Setting	 15°C (Factory default)	 20°C	 24°C	 26°C

Name	Switch number 5 of SW2	
Function	Heating stop the fan time to choose	
Setting	 4min (Factory default)	 8min

Name	Switch number 6 of SW2	
Function	According to the contract custom power lost memory functions	
Setting	 Power-down memory (Factory default)	 No Power-down memory

Name	Switch number 8 of SW2	
Function	Fan Speed Choice	
Setting	 Standard Mode (Factory default)	 Mode2

SW2 No.7 , reserved, leave it as default setting (both switches dial down).

7 Capacity tables

7.1 Cooling

TC: Total Capacity SC: Sensible Capacity WB: Wet-bulb Temperature DB: Dry-bulb Temperature

Capacity (kW)	Outdoor temperature (°C DB)	Indoor temperature (°C WB/DB)													
		14/20		16/23		18/26		19/27		20/28		22/30		24/32	
		TC kW	SC kW	TC kW	SC kW	TC kW	SC kW	TC kW	SC kW	TC kW	SC kW	TC kW	SC kW	TC kW	SC kW
3.6	10	2.49	2.25	2.94	2.35	3.39	2.72	3.60	2.72	3.92	2.89	4.20	2.93	4.36	2.64
	12	2.49	2.25	2.94	2.35	3.39	2.72	3.60	2.72	3.92	2.89	4.20	2.93	4.32	2.62
	14	2.49	2.25	2.94	2.35	3.39	2.72	3.60	2.72	3.92	2.89	4.16	2.91	4.29	2.59
	16	2.49	2.25	2.94	2.35	3.39	2.72	3.60	2.72	3.92	2.89	4.12	2.88	4.25	2.57
	18	2.49	2.25	2.94	2.35	3.39	2.72	3.60	2.72	3.92	2.89	4.08	2.86	4.21	2.55
	19	2.49	2.25	2.94	2.35	3.39	2.72	3.60	2.72	3.92	2.89	4.05	2.83	4.17	2.53
	21	2.49	2.25	2.94	2.35	3.39	2.72	3.60	2.72	3.92	2.89	4.01	2.81	4.13	2.50
	23	2.49	2.25	2.94	2.35	3.39	2.72	3.60	2.72	3.92	2.89	3.97	2.78	4.09	2.48
	25	2.49	2.25	2.94	2.35	3.39	2.72	3.60	2.72	3.92	2.87	3.93	2.75	4.05	2.46
	27	2.49	2.25	2.94	2.35	3.39	2.72	3.60	2.72	3.88	2.84	3.90	2.73	4.01	2.44
	29	2.49	2.25	2.94	2.35	3.39	2.72	3.60	2.72	3.85	2.81	3.86	2.70	3.98	2.41
	31	2.49	2.25	2.94	2.35	3.39	2.72	3.60	2.72	3.81	2.79	3.82	2.68	3.94	2.39
	33	2.49	2.25	2.94	2.35	3.39	2.72	3.60	2.72	3.77	2.74	3.78	2.65	3.90	2.37
	35	2.49	2.25	2.94	2.35	3.39	2.72	3.60	2.72	3.72	2.71	3.75	2.63	3.86	2.34
	37	2.49	2.25	2.94	2.35	3.39	2.72	3.60	2.71	3.66	2.66	3.71	2.58	3.78	2.30
	39	2.49	2.25	2.94	2.35	3.39	2.72	3.60	2.69	3.64	2.63	3.67	2.55	3.74	2.28
	41	2.49	2.25	2.94	2.35	3.35	2.72	3.56	2.68	3.60	2.60	3.64	2.52	3.71	2.25
	43	2.49	2.25	2.94	2.35	3.31	2.72	3.53	2.67	3.56	2.58	3.60	2.50	3.67	2.23
	46	2.49	2.25	2.88	2.30	3.20	2.72	3.49	2.66	3.53	2.55	3.56	2.47	3.64	2.21
	48	2.49	2.25	2.85	2.28	3.10	2.64	3.38	2.63	3.49	2.52	3.46	2.45	3.53	2.19
4.5	50	2.45	2.25	2.83	2.26	2.99	2.62	3.28	2.56	3.38	2.50	3.35	2.42	3.42	2.16
	10	3.12	2.81	3.68	2.94	4.24	3.27	4.50	3.27	4.90	3.49	5.24	3.54	5.45	3.17
	12	3.12	2.81	3.68	2.94	4.24	3.27	4.50	3.27	4.90	3.49	5.24	3.54	5.41	3.14
	14	3.12	2.81	3.68	2.94	4.24	3.27	4.50	3.27	4.90	3.49	5.20	3.50	5.36	3.11
	16	3.12	2.81	3.68	2.94	4.24	3.27	4.50	3.27	4.90	3.49	5.15	3.47	5.31	3.08
	18	3.12	2.81	3.68	2.94	4.24	3.27	4.50	3.27	4.90	3.49	5.10	3.44	5.26	3.06
	19	3.12	2.81	3.68	2.94	4.24	3.27	4.50	3.27	4.90	3.49	5.06	3.41	5.21	3.03
	21	3.12	2.81	3.68	2.94	4.24	3.27	4.50	3.27	4.90	3.49	5.01	3.38	5.16	3.00
	23	3.12	2.81	3.68	2.94	4.24	3.27	4.50	3.27	4.90	3.49	4.96	3.34	5.11	2.97
	25	3.12	2.81	3.68	2.94	4.24	3.27	4.50	3.27	4.90	3.45	4.92	3.31	5.07	2.94
	27	3.12	2.81	3.68	2.94	4.24	3.27	4.50	3.27	4.85	3.42	4.87	3.28	5.02	2.91
	29	3.12	2.81	3.68	2.94	4.24	3.27	4.50	3.27	4.81	3.39	4.82	3.25	4.97	2.89
	31	3.12	2.81	3.68	2.94	4.24	3.27	4.50	3.27	4.76	3.35	4.78	3.22	4.92	2.86
	33	3.12	2.81	3.68	2.94	4.24	3.27	4.50	3.27	4.72	3.29	4.73	3.19	4.87	2.83
	35	3.12	2.81	3.68	2.94	4.24	3.27	4.50	3.27	4.65	3.26	4.68	3.15	4.83	2.80
	37	3.12	2.81	3.68	2.94	4.24	3.27	4.50	3.26	4.58	3.19	4.64	3.09	4.73	2.74
	39	3.12	2.81	3.68	2.94	4.24	3.27	4.50	3.24	4.54	3.16	4.59	3.06	4.68	2.72
	41	3.12	2.81	3.68	2.94	4.19	3.27	4.46	3.22	4.50	3.12	4.54	3.03	4.63	2.69
	43	3.12	2.81	3.68	2.94	4.14	3.27	4.41	3.21	4.46	3.09	4.50	2.99	4.58	2.66
	46	3.12	2.81	3.61	2.88	4.01	3.27	4.36	3.19	4.41	3.06	4.46	2.96	4.54	2.63
	48	3.12	2.81	3.57	2.85	3.87	3.18	4.23	3.16	4.36	3.03	4.32	2.93	4.41	2.60
5.6	50	3.06	2.81	3.53	2.82	3.74	3.14	4.09	3.08	4.23	2.99	4.19	2.90	4.28	2.57
	10	3.88	3.50	4.58	3.65	5.28	4.08	5.60	4.08	6.10	4.35	6.53	4.41	6.79	3.95
	12	3.88	3.50	4.58	3.65	5.28	4.08	5.60	4.08	6.10	4.35	6.53	4.41	6.73	3.92
	14	3.88	3.50	4.58	3.65	5.28	4.08	5.60	4.08	6.10	4.35	6.47	4.37	6.67	3.88
	16	3.88	3.50	4.58	3.65	5.28	4.08	5.60	4.08	6.10	4.35	6.41	4.33	6.61	3.85
	18	3.88	3.50	4.58	3.65	5.28	4.08	5.60	4.08	6.10	4.35	6.35	4.29	6.55	3.81
	19	3.88	3.50	4.58	3.65	5.28	4.08	5.60	4.08	6.10	4.35	6.29	4.25	6.49	3.77
	21	3.88	3.50	4.58	3.65	5.28	4.08	5.60	4.08	6.10	4.35	6.24	4.21	6.42	3.74
	23	3.88	3.50	4.58	3.65	5.28	4.08	5.60	4.08	6.10	4.35	6.18	4.17	6.36	3.70
	25	3.88	3.50	4.58	3.65	5.28	4.08	5.60	4.08	6.10	4.30	6.12	4.13	6.30	3.67
	27	3.88	3.50	4.58	3.65	5.28	4.08	5.60	4.08	6.04	4.26	6.06	4.09	6.24	3.63
	29	3.88	3.50	4.58	3.65	5.28	4.08	5.60	4.08	5.98	4.22	6.00	4.05	6.18	3.60
	31	3.88	3.50	4.58	3.65	5.28	4.08	5.60	4.08	5.93	4.18	5.94	4.01	6.12	3.56
	33	3.88	3.50	4.58	3.65	5.28	4.08	5.60	4.08	5.87	4.10	5.88	3.97	6.06	3.53
	35	3.88	3.50	4.58	3.65	5.28	4.08	5.60	4.08	5.78	4.06	5.83	3.93	6.00	3.49
	37	3.88	3.50	4.58	3.65	5.28	4.08	5.60	4.06	5.70	3.98	5.77	3.85	5.88	3.42
	39	3.88	3.50	4.58	3.65	5.28	4.08	5.60	4.04	5.66	3.94	5.71	3.81	5.82	3.39
	41	3.88	3.50	4.58	3.65	5.21	4.08	5.54	4.02	5.60	3.90	5.66	3.77	5.76	3.35
	43	3.88	3.50	4.58	3.65	5.15	4.08	5.49	4.00	5.54	3.86	5.60	3.73	5.70	3.32
	46	3.88	3.50	4.49	3.58	4.98	4.08	5.43	3.98	5.49	3.81	5.54	3.69	5.66	3.28
	48	3.88	3.50	4.44	3.54	4.82	3.96	5.26	3.94	5.43	3.77	5.38	3.65	5.49	3.25
	50	3.81	3.50	4.40	3.51	4.65	3.92	5.10	3.83	5.26	3.73	5.21	3.61	5.32	3.21

TC: Total Capacity SC: Sensible Capacity WB: Wet-bulb Temperature DB: Dry-bulb Temperature															
Capacity (kW)	Outdoor temperature (°C DB)	Indoor temperature (°C 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
7.1	10	4.92	4.44	5.80	4.63	6.69	5.14	7.10	5.14	7.73	5.48	8.27	5.56	8.60	4.98
	12	4.92	4.44	5.80	4.63	6.69	5.14	7.10	5.14	7.73	5.48	8.27	5.56	8.53	4.93
	14	4.92	4.44	5.80	4.63	6.69	5.14	7.10	5.14	7.73	5.48	8.20	5.51	8.45	4.89
	16	4.92	4.44	5.80	4.63	6.69	5.14	7.10	5.14	7.73	5.48	8.13	5.46	8.38	4.84
	18	4.92	4.44	5.80	4.63	6.69	5.14	7.10	5.14	7.73	5.48	8.05	5.40	8.30	4.80
	19	4.92	4.44	5.80	4.63	6.69	5.14	7.10	5.14	7.73	5.48	7.98	5.35	8.22	4.75
	21	4.92	4.44	5.80	4.63	6.69	5.14	7.10	5.14	7.73	5.48	7.91	5.30	8.15	4.71
	23	4.92	4.44	5.80	4.63	6.69	5.14	7.10	5.14	7.73	5.48	7.83	5.25	8.07	4.66
	25	4.92	4.44	5.80	4.63	6.69	5.14	7.10	5.14	7.73	5.43	7.76	5.20	7.99	4.62
	27	4.92	4.44	5.80	4.63	6.69	5.14	7.10	5.14	7.66	5.37	7.68	5.15	7.92	4.57
	29	4.92	4.44	5.80	4.63	6.69	5.14	7.10	5.14	7.58	5.32	7.61	5.10	7.84	4.53
	31	4.92	4.44	5.80	4.63	6.69	5.14	7.10	5.14	7.51	5.27	7.54	5.05	7.76	4.49
	33	4.92	4.44	5.80	4.63	6.69	5.14	7.10	5.14	7.44	5.17	7.46	5.00	7.69	4.44
	35	4.92	4.44	5.80	4.63	6.69	5.14	7.10	5.14	7.33	5.11	7.39	4.95	7.61	4.40
	37	4.92	4.44	5.80	4.63	6.69	5.14	7.10	5.12	7.22	5.01	7.31	4.85	7.46	4.31
	39	4.92	4.44	5.80	4.63	6.69	5.14	7.10	5.08	7.17	4.96	7.24	4.80	7.38	4.26
	41	4.92	4.44	5.80	4.63	6.60	5.14	7.03	5.06	7.10	4.91	7.17	4.75	7.31	4.22
	43	4.92	4.44	5.80	4.63	6.53	5.14	6.96	5.04	7.03	4.86	7.10	4.70	7.23	4.17
	46	4.92	4.44	5.69	4.54	6.32	5.14	6.89	5.02	6.96	4.80	7.03	4.65	7.17	4.13
	48	4.92	4.44	5.63	4.49	6.11	4.99	6.67	4.96	6.89	4.75	6.82	4.60	6.96	4.08
	50	4.83	4.44	5.57	4.45	5.89	4.94	6.46	4.83	6.67	4.70	6.60	4.55	6.75	4.04
8.0	10	5.54	5.00	6.54	5.22	7.54	5.81	8.00	5.80	8.71	6.18	9.32	6.27	9.70	5.62
	12	5.54	5.00	6.54	5.22	7.54	5.81	8.00	5.80	8.71	6.18	9.32	6.27	9.61	5.57
	14	5.54	5.00	6.54	5.22	7.54	5.81	8.00	5.80	8.71	6.18	9.24	6.21	9.52	5.52
	16	5.54	5.00	6.54	5.22	7.54	5.81	8.00	5.80	8.71	6.18	9.16	6.16	9.44	5.47
	18	5.54	5.00	6.54	5.22	7.54	5.81	8.00	5.80	8.71	6.18	9.07	6.10	9.35	5.42
	19	5.54	5.00	6.54	5.22	7.54	5.81	8.00	5.80	8.71	6.18	8.99	6.04	9.27	5.37
	21	5.54	5.00	6.54	5.22	7.54	5.81	8.00	5.80	8.71	6.18	8.91	5.99	9.18	5.31
	23	5.54	5.00	6.54	5.22	7.54	5.81	8.00	5.80	8.71	6.18	8.82	5.93	9.09	5.26
	25	5.54	5.00	6.54	5.22	7.54	5.81	8.00	5.80	8.71	6.12	8.74	5.87	9.01	5.21
	27	5.54	5.00	6.54	5.22	7.54	5.81	8.00	5.80	8.63	6.06	8.66	5.82	8.92	5.16
	29	5.54	5.00	6.54	5.22	7.54	5.81	8.00	5.80	8.55	6.01	8.57	5.76	8.83	5.11
	31	5.54	5.00	6.54	5.22	7.54	5.81	8.00	5.80	8.47	5.95	8.49	5.70	8.75	5.06
	33	5.54	5.00	6.54	5.22	7.54	5.81	8.00	5.80	8.38	5.83	8.41	5.65	8.66	5.01
	35	5.54	5.00	6.54	5.22	7.54	5.81	8.00	5.80	8.26	5.77	8.32	5.59	8.58	4.96
	37	5.54	5.00	6.54	5.22	7.54	5.81	8.00	5.77	8.14	5.66	8.24	5.48	8.41	4.86
	39	5.54	5.00	6.54	5.22	7.54	5.81	8.00	5.74	8.08	5.60	8.16	5.42	8.32	4.81
	41	5.54	5.00	6.54	5.22	7.44	5.81	7.92	5.71	8.00	5.54	8.08	5.36	8.23	4.76
	43	5.54	5.00	6.54	5.22	7.36	5.81	7.84	5.69	7.92	5.48	8.00	5.31	8.15	4.71
	46	5.54	5.00	6.41	5.12	7.12	5.81	7.76	5.66	7.84	5.42	7.92	5.25	8.08	4.66
	48	5.54	5.00	6.34	5.06	6.88	5.63	7.52	5.60	7.76	5.36	7.68	5.19	7.84	4.61
	50	5.44	5.00	6.28	5.01	6.64	5.57	7.28	5.45	7.52	5.30	7.44	5.14	7.60	4.56
9.0	10	6.23	5.62	7.36	5.87	8.48	6.54	9.00	6.54	9.80	6.96	10.49	7.06	10.91	6.33
	12	6.23	5.62	7.36	5.87	8.48	6.54	9.00	6.54	9.80	6.96	10.49	7.06	10.81	6.27
	14	6.23	5.62	7.36	5.87	8.48	6.54	9.00	6.54	9.80	6.96	10.39	7.00	10.71	6.21
	16	6.23	5.62	7.36	5.87	8.48	6.54	9.00	6.54	9.80	6.96	10.30	6.93	10.62	6.16
	18	6.23	5.62	7.36	5.87	8.48	6.54	9.00	6.54	9.80	6.96	10.21	6.87	10.52	6.10
	19	6.23	5.62	7.36	5.87	8.48	6.54	9.00	6.54	9.80	6.96	10.11	6.81	10.43	6.04
	21	6.23	5.62	7.36	5.87	8.48	6.54	9.00	6.54	9.80	6.96	10.02	6.74	10.33	5.99
	23	6.23	5.62	7.36	5.87	8.48	6.54	9.00	6.54	9.80	6.96	9.93	6.68	10.23	5.93
	25	6.23	5.62	7.36	5.87	8.48	6.54	9.00	6.54	9.80	6.90	9.83	6.62	10.13	5.87
	27	6.23	5.62	7.36	5.87	8.48	6.54	9.00	6.54	9.71	6.83	9.74	6.55	10.04	5.82
	29	6.23	5.62	7.36	5.87	8.48	6.54	9.00	6.54	9.61	6.77	9.65	6.49	9.94	5.76
	31	6.23	5.62	7.36	5.87	8.48	6.54	9.00	6.54	9.53	6.70	9.55	6.42	9.84	5.70
	33	6.23	5.62	7.36	5.87	8.48	6.54	9.00	6.54	9.43	6.57	9.46	6.36	9.75	5.65
	35	6.23	5.62	7.36	5.87	8.48	6.54	9.00	6.54	9.30	6.50	9.36	6.30	9.65	5.59
	37	6.23	5.62	7.36	5.87	8.48	6.54	9.00	6.50	9.16	6.37	9.27	6.17	9.46	5.48
	39	6.23	5.62	7.36	5.87	8.48	6.54	9.00	6.46	9.09	6.31	9.18	6.11	9.36	5.42
	41	6.23	5.62	7.36	5.87	8.37	6.54	8.91	6.44	9.00	6.24	9.09	6.04	9.26	5.37
	43	6.23	5.62	7.36	5.87	8.28	6.54	8.82	6.40	8.91	6.17	9.00	5.98	9.17	5.31
	46	6.23	5.62	7.21	5.76	8.01	6.54	8.73	6.38	8.82	6.11	8.91	5.91	9.09	5.25
	48	6.23	5.62	7.14	5.70	7.74	6.34	8.46	6.31	8.73	6.04	8.64	5.85	8.82	5.20
	50	6.12	5.62	7.06	5.64	7.47	6.28	8.19	6.14	8.46	5.98	8.37	5.79	8.55	5.14

TC: Total Capacity SC: Sensible Capacity WB: Wet-bulb Temperature DB: Dry-bulb Temperature															
Capacity (kW)	Outdoor temperature (°C DB)	Indoor temperature (°C 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
11.2	10	7.76	7.00	9.16	7.31	10.56	8.29	11.20	8.28	12.20	8.81	13.05	8.93	13.57	8.02
	12	7.76	7.00	9.16	7.31	10.56	8.29	11.20	8.28	12.20	8.81	13.05	8.93	13.45	7.95
	14	7.76	7.00	9.16	7.31	10.56	8.29	11.20	8.28	12.20	8.81	12.93	8.85	13.33	7.88
	16	7.76	7.00	9.16	7.31	10.56	8.29	11.20	8.28	12.20	8.81	12.82	8.78	13.21	7.81
	18	7.76	7.00	9.16	7.31	10.56	8.29	11.20	8.28	12.20	8.81	12.70	8.70	13.09	7.74
	19	7.76	7.00	9.16	7.31	10.56	8.29	11.20	8.28	12.20	8.81	12.59	8.62	12.97	7.67
	21	7.76	7.00	9.16	7.31	10.56	8.29	11.20	8.28	12.20	8.81	12.47	8.54	12.85	7.60
	23	7.76	7.00	9.16	7.31	10.56	8.29	11.20	8.28	12.20	8.81	12.35	8.46	12.73	7.53
	25	7.76	7.00	9.16	7.31	10.56	8.29	11.20	8.28	12.20	8.73	12.24	8.38	12.61	7.46
	27	7.76	7.00	9.16	7.31	10.56	8.29	11.20	8.28	12.08	8.65	12.12	8.30	12.49	7.39
	29	7.76	7.00	9.16	7.31	10.56	8.29	11.20	8.28	11.96	8.57	12.00	8.22	12.37	7.32
	31	7.76	7.00	9.16	7.31	10.56	8.29	11.20	8.28	11.85	8.48	11.89	8.14	12.25	7.25
	33	7.76	7.00	9.16	7.31	10.56	8.29	11.20	8.28	11.74	8.32	11.77	8.06	12.13	7.18
	35	7.76	7.00	9.16	7.31	10.56	8.29	11.20	8.28	11.57	8.24	11.65	7.98	12.01	7.11
	37	7.76	7.00	9.16	7.31	10.56	8.29	11.20	8.24	11.40	8.08	11.54	7.82	11.77	6.96
	39	7.76	7.00	9.16	7.31	10.56	8.29	11.20	8.19	11.31	7.99	11.42	7.75	11.65	6.89
	41	7.76	7.00	9.16	7.31	10.42	8.29	11.09	8.16	11.20	7.91	11.31	7.67	11.53	6.82
	43	7.76	7.00	9.16	7.31	10.30	8.29	10.98	8.12	11.09	7.83	11.20	7.59	11.41	6.75
	46	7.76	7.00	8.97	7.16	9.97	8.29	10.86	8.08	10.98	7.75	11.09	7.51	11.31	6.68
	48	7.76	7.00	8.88	7.09	9.63	8.04	10.53	8.00	10.86	7.67	10.75	7.43	10.98	6.61
	50	7.62	7.00	8.79	7.02	9.30	7.96	10.19	7.79	10.53	7.58	10.42	7.35	10.64	6.54
14	10	9.69	8.75	11.44	9.14	13.19	10.34	14.00	10.34	15.24	11.00	16.32	11.15	16.97	10.01
	12	9.69	8.75	11.44	9.14	13.19	10.34	14.00	10.34	15.24	11.00	16.32	11.15	16.82	9.92
	14	9.69	8.75	11.44	9.14	13.19	10.34	14.00	10.34	15.24	11.00	16.17	11.05	16.67	9.84
	16	9.69	8.75	11.44	9.14	13.19	10.34	14.00	10.34	15.24	11.00	16.02	10.95	16.52	9.75
	18	9.69	8.75	11.44	9.14	13.19	10.34	14.00	10.34	15.24	11.00	15.88	10.86	16.37	9.66
	19	9.69	8.75	11.44	9.14	13.19	10.34	14.00	10.34	15.24	11.00	15.73	10.76	16.22	9.57
	21	9.69	8.75	11.44	9.14	13.19	10.34	14.00	10.34	15.24	11.00	15.59	10.66	16.06	9.48
	23	9.69	8.75	11.44	9.14	13.19	10.34	14.00	10.34	15.24	11.00	15.44	10.56	15.91	9.40
	25	9.69	8.75	11.44	9.14	13.19	10.34	14.00	10.34	15.24	10.90	15.29	10.46	15.76	9.31
	27	9.69	8.75	11.44	9.14	13.19	10.34	14.00	10.34	15.10	10.79	15.15	10.36	15.61	9.22
	29	9.69	8.75	11.44	9.14	13.19	10.34	14.00	10.34	14.96	10.69	15.01	10.26	15.46	9.13
	31	9.69	8.75	11.44	9.14	13.19	10.34	14.00	10.34	14.82	10.59	14.86	10.16	15.31	9.04
	33	9.69	8.75	11.44	9.14	13.19	10.34	14.00	10.34	14.67	10.39	14.71	10.06	15.16	8.95
	35	9.69	8.75	11.44	9.14	13.19	10.34	14.00	10.34	14.46	10.28	14.57	9.96	15.01	8.87
	37	9.69	8.75	11.44	9.14	13.19	10.34	14.00	10.29	14.24	10.08	14.42	9.77	14.71	8.69
	39	9.69	8.75	11.44	9.14	13.19	10.34	14.00	10.22	14.14	9.98	14.28	9.67	14.56	8.60
	41	9.69	8.75	11.44	9.14	13.02	10.34	13.86	10.18	14.00	9.87	14.14	9.57	14.41	8.51
	43	9.69	8.75	11.44	9.14	12.88	10.34	13.72	10.13	13.86	9.77	14.00	9.47	14.26	8.43
	46	9.69	8.75	11.22	8.95	12.46	10.34	13.58	10.09	13.72	9.67	13.86	9.37	14.14	8.34
	48	9.69	8.75	11.10	8.86	12.04	10.03	13.16	9.99	13.58	9.57	13.44	9.27	13.72	8.25
	50	9.52	8.75	10.99	8.77	11.62	9.93	12.74	9.72	13.16	9.47	13.02	9.17	13.30	8.16
16	10	11.08	10.00	13.08	10.44	15.08	11.82	16.00	11.81	17.42	12.57	18.65	12.75	19.39	11.44
	12	11.08	10.00	13.08	10.44	15.08	11.82	16.00	11.81	17.42	12.57	18.65	12.75	19.22	11.34
	14	11.08	10.00	13.08	10.44	15.08	11.82	16.00	11.81	17.42	12.57	18.48	12.63	19.05	11.24
	16	11.08	10.00	13.08	10.44	15.08	11.82	16.00	11.81	17.42	12.57	18.31	12.52	18.88	11.14
	18	11.08	10.00	13.08	10.44	15.08	11.82	16.00	11.81	17.42	12.57	18.15	12.41	18.70	11.04
	19	11.08	10.00	13.08	10.44	15.08	11.82	16.00	11.81	17.42	12.57	17.98	12.29	18.53	10.94
	21	11.08	10.00	13.08	10.44	15.08	11.82	16.00	11.81	17.42	12.57	17.82	12.18	18.36	10.84
	23	11.08	10.00	13.08	10.44	15.08	11.82	16.00	11.81	17.42	12.57	17.64	12.07	18.18	10.74
	25	11.08	10.00	13.08	10.44	15.08	11.82	16.00	11.81	17.42	12.45	17.48	11.95	18.01	10.64
	27	11.08	10.00	13.08	10.44	15.08	11.82	16.00	11.81	17.26	12.34	17.31	11.84	17.84	10.54
	29	11.08	10.00	13.08	10.44	15.08	11.82	16.00	11.81	17.09	12.22	17.15	11.73	17.67	10.44
	31	11.08	10.00	13.08	10.44	15.08	11.82	16.00	11.81	16.93	12.10	16.98	11.61	17.50	10.33
	33	11.08	10.00	13.08	10.44	15.08	11.82	16.00	11.81	16.77	11.87	16.81	11.50	17.33	10.23
	35	11.08	10.00	13.08	10.44	15.08	11.82	16.00	11.81	16.53	11.75	16.65	11.39	17.16	10.13
	37	11.08	10.00	13.08	10.44	15.08	11.82	16.00	11.76	16.28	11.52	16.48	11.16	16.81	9.93
	39	11.08	10.00	13.08	10.44	15.08	11.82	16.00	11.69	16.16	11.40	16.32	11.05	16.64	9.83
	41	11.08	10.00	13.08	10.44	14.88	11.82	15.84	11.64	16.00	11.29	16.16	10.93	16.47	9.73
	43	11.08	10.00	13.08	10.44	14.72	11.82	15.68	11.58	15.84	11.17	16.00	10.82	16.30	9.63
	46	11.08	10.00	12.82	10.23	14.24	11.82	15.52	11.53	15.68	11.05	15.84	10.71	16.16	9.53
	48	11.08	10.00	12.69	10.13	13.76	11.47	15.04	11.42	15.52	10.93	15.36	10.60	15.68	9.43
	50	10.88	10.00	12.56	10.02	13.28	11.35	14.56	11.11	15.04	10.82	14.88	10.48	15.20	9.33

7.2 Heating

TC: Total Capacity **WB:** Wet-bulb Temperature **DB:** Dry-bulb Temperature

Capacity (kW)	Outdoor temperature (°C)		Indoor temperature (°C DB)					
			16	18	20	21	22	24
			TC	TC	TC	TC	TC	TC
	WB	DB	kW	kW	kW	kW	kW	kW
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	-12.6	2.68	2.68	2.68	2.68	2.68	2.68
	-11	-10.5	2.80	2.80	2.80	2.80	2.80	2.80
	-10	-9.5	2.92	2.92	2.92	2.92	2.92	2.92
	-9.1	-8.5	3.00	3.00	3.00	3.00	3.00	3.00
	-7.6	-7	3.04	3.04	3.04	3.04	3.04	3.04
	-5.6	-5	3.16	3.16	3.16	3.16	3.16	3.16
	-3.7	-3	3.32	3.32	3.32	3.32	3.32	3.32
	-0.7	0	3.56	3.56	3.56	3.56	3.56	3.36
	2.2	3	3.76	3.76	3.76	3.76	3.68	3.36
	4.1	5	3.88	3.88	3.88	3.88	3.68	3.36
	6	7	4.00	4.00	4.00	3.88	3.68	3.36
	7.9	9	4.12	4.12	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	-12.6	3.35	3.35	3.35	3.35	3.35	3.35
	-11	-10.5	3.50	3.50	3.50	3.50	3.50	3.50
	-10	-9.5	3.65	3.65	3.65	3.65	3.65	3.65
	-9.1	-8.5	3.75	3.75	3.75	3.75	3.75	3.75
	-7.6	-7	3.80	3.80	3.80	3.80	3.80	3.80
	-5.6	-5	3.95	3.95	3.95	3.95	3.95	3.95
	-3.7	-3	4.15	4.15	4.15	4.15	4.15	4.15
	-0.7	0	4.45	4.45	4.45	4.45	4.45	4.20
	2.2	3	4.70	4.70	4.70	4.70	4.60	4.20
	4.1	5	4.85	4.85	4.85	4.85	4.60	4.20
	6	7	5.00	5.00	5.00	4.85	4.60	4.20
	7.9	9	5.15	5.15	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	-12.6	4.22	4.22	4.22	4.22	4.22	4.22
	-11	-10.5	4.41	4.41	4.41	4.41	4.41	4.41
	-10	-9.5	4.60	4.60	4.60	4.60	4.60	4.60
	-9.1	-8.5	4.73	4.73	4.73	4.73	4.73	4.73
	-7.6	-7	4.79	4.79	4.79	4.79	4.79	4.79
	-5.6	-5	4.98	4.98	4.98	4.98	4.98	4.98
	-3.7	-3	5.23	5.23	5.23	5.23	5.23	5.23
	-0.7	0	5.61	5.61	5.61	5.61	5.61	5.29
	2.2	3	5.92	5.92	5.92	5.92	5.80	5.29
	4.1	5	6.11	6.11	6.11	6.11	5.80	5.29
	6	7	6.30	6.30	6.30	6.11	5.80	5.29
	7.9	9	6.49	6.49	6.30	6.11	5.80	5.29
	9.8	11	6.68	6.68	6.30	6.11	5.80	5.29
	11.8	13	6.93	6.80	6.30	6.11	5.80	5.29
	13.7	15	7.12	6.80	6.30	6.11	5.80	5.29

TC: Total CapacityWB: Wet-bulb Temperature DB: Dry-bulb Temperature

Capacity (kW)	Outdoor temperature (°C)		Indoor temperature (°C DB)					
			16	18	20	21	22	24
			TC	TC	TC	TC	TC	TC
	WB	DB	kW	kW	kW	kW	kW	kW
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	-12.6	5.36	5.36	5.36	5.36	5.36	5.36
	-11	-10.5	5.60	5.60	5.60	5.60	5.60	5.60
	-10	-9.5	5.84	5.84	5.84	5.84	5.84	5.84
	-9.1	-8.5	6.00	6.00	6.00	6.00	6.00	6.00
	-7.6	-7	6.08	6.08	6.08	6.08	6.08	6.08
	-5.6	-5	6.32	6.32	6.32	6.32	6.32	6.32
	-3.7	-3	6.64	6.64	6.64	6.64	6.64	6.64
	-0.7	0	7.12	7.12	7.12	7.12	7.12	6.72
	2.2	3	7.52	7.52	7.52	7.52	7.36	6.72
	4.1	5	7.76	7.76	7.76	7.76	7.36	6.72
	6	7	8.00	8.00	8.00	7.76	7.36	6.72
	7.9	9	8.24	8.24	8.00	7.76	7.36	6.72
8.0	-20	-19.8	5.04	5.04	5.04	5.04	5.04	5.04
	-19	-18.8	5.40	5.40	5.40	5.40	5.40	5.40
	-17	-16.7	5.67	5.67	5.67	5.67	5.67	5.67
	-15	-14.7	5.85	5.85	5.85	5.85	5.85	5.85
	-13	-12.6	6.03	6.03	6.03	6.03	6.03	6.03
	-11	-10.5	6.30	6.30	6.30	6.30	6.30	6.30
	-10	-9.5	6.57	6.57	6.57	6.57	6.57	6.57
	-9.1	-8.5	6.75	6.75	6.75	6.75	6.75	6.75
	-7.6	-7	6.84	6.84	6.84	6.84	6.84	6.84
	-5.6	-5	7.11	7.11	7.11	7.11	7.11	7.11
	-3.7	-3	7.47	7.47	7.47	7.47	7.47	7.47
	-0.7	0	8.01	8.01	8.01	8.01	8.01	7.56
	2.2	3	8.46	8.46	8.46	8.46	8.28	7.56
	4.1	5	8.62	8.62	8.62	8.62	8.28	7.56
	6	7	9.00	9.00	8.80	8.73	8.28	7.56
	7.9	9	9.27	9.27	8.80	8.73	8.28	7.56
9.0	-20	-19.8	5.60	5.04	5.60	5.60	5.60	5.60
	-19	-18.8	6.00	5.40	6.00	6.00	6.00	6.00
	-17	-16.7	6.30	6.30	6.30	6.30	6.30	6.30
	-15	-14.7	6.50	6.50	6.50	6.50	6.50	6.50
	-13	-12.6	6.70	6.70	6.70	6.70	6.70	6.70
	-11	-10.5	7.00	7.00	7.00	7.00	7.00	7.00
	-10	-9.5	7.30	7.30	7.30	7.30	7.30	7.30
	-9.1	-8.5	7.50	7.50	7.50	7.50	7.50	7.50
	-7.6	-7	7.60	7.60	7.60	7.60	7.60	7.60
	-5.6	-5	7.90	7.90	7.90	7.90	7.90	7.90
	-3.7	-3	8.30	8.30	8.30	8.30	8.30	8.30
	-0.7	0	8.90	8.90	8.90	8.90	8.90	8.40
	2.2	3	9.40	9.40	9.40	9.40	9.20	8.40
	4.1	5	9.70	9.70	9.70	9.70	9.20	8.40
	6	7	10.00	10.00	10.00	9.70	9.20	8.40
	7.9	9	10.30	10.30	10.00	9.70	9.20	8.40
	9.8	11	10.60	10.60	10.00	9.70	9.20	8.40
	11.8	13	11.00	10.80	10.00	9.70	9.20	8.40
	13.7	15	11.30	10.80	10.00	9.70	9.20	8.40

TC: Total CapacityWB: Wet-bulb Temperature DB: Dry-bulb Temperature

Capacity (kW)	Outdoor temperature (°C)		Indoor temperature (°C DB)					
			16	18	20	21	22	24
			TC	TC	TC	TC	TC	TC
	WB	DB	kW	kW	kW	kW	kW	kW
11.2	-20	-19.8	7.00	7.00	7.00	7.00	7.00	7.00
	-19	-18.8	7.50	7.50	7.50	7.50	7.50	7.50
	-17	-16.7	7.88	7.88	7.88	7.88	7.88	7.88
	-15	-14.7	8.13	8.13	8.13	8.13	8.13	8.13
	-13	-12.6	8.38	8.38	8.38	8.38	8.38	8.38
	-11	-10.5	8.75	8.75	8.75	8.75	8.75	8.75
	-10	-9.5	9.13	9.13	9.13	9.13	9.13	9.13
	-9.1	-8.5	9.38	9.38	9.38	9.38	9.38	9.38
	-7.6	-7	9.50	9.50	9.50	9.50	9.50	9.50
	-5.6	-5	9.88	9.88	9.88	9.88	9.88	9.88
	-3.7	-3	10.38	10.38	10.38	10.38	10.38	10.38
	-0.7	0	11.13	11.13	11.13	11.13	11.13	10.50
	2.2	3	11.75	11.75	11.75	11.75	11.50	10.50
	4.1	5	12.13	12.13	12.13	12.13	11.50	10.50
	6	7	12.50	12.50	12.50	12.13	11.50	10.50
	7.9	9	12.88	12.88	12.50	12.13	11.50	10.50
14	9.8	11	13.25	13.25	12.50	12.13	11.50	10.50
	11.8	13	13.75	13.50	12.50	12.13	11.50	10.50
	13.7	15	14.13	13.50	12.50	12.13	11.50	10.50
	-20	-19.8	8.68	8.68	8.68	8.68	8.68	8.68
	-19	-18.8	9.30	9.30	9.30	9.30	9.30	9.30
	-17	-16.7	9.77	9.77	9.77	9.77	9.77	9.77
	-15	-14.7	10.08	10.08	10.08	10.08	10.08	10.08
	-13	-12.6	10.40	10.40	10.40	10.40	10.40	10.40
	-11	-10.5	10.90	10.90	10.90	10.90	10.90	10.90
	-10	-9.5	11.30	11.30	11.30	11.30	11.30	11.30
	-9.1	-8.5	11.60	11.60	11.60	11.60	11.60	11.60
	-7.6	-7	11.80	11.80	11.80	11.80	11.80	11.80
	-5.6	-5	12.30	12.30	12.30	12.30	12.30	12.30
	-3.7	-3	12.90	12.90	12.90	12.90	12.90	12.90
	-0.7	0	13.80	13.80	13.80	13.80	13.80	13.00
	2.2	3	14.60	14.60	14.60	14.60	14.30	13.00
16	4.1	5	15.00	15.00	15.00	15.00	14.30	13.00
	6	7	15.50	15.50	15.00	15.00	14.30	13.00
	7.9	9	16.00	16.00	15.50	15.00	14.30	13.00
	9.8	11	16.40	16.40	15.50	15.00	14.30	13.00
	11.8	13	17.10	16.70	15.50	15.00	14.30	13.00
	13.7	15	17.50	16.70	15.50	15.00	14.30	13.00
	-20	-19.8	10.08	10.08	10.08	10.08	10.08	10.08
	-19	-18.8	10.80	10.80	10.80	10.80	10.80	10.80
	-17	-16.7	11.43	11.43	11.43	11.43	11.43	11.43
	-15	-14.7	11.70	11.70	11.70	11.70	11.70	11.70
	-13	-12.6	12.42	12.42	12.42	12.42	12.42	12.42
	-11	-10.5	12.60	12.78	12.78	12.78	12.78	12.78
	-10	-9.5	13.14	13.14	13.14	13.14	13.14	13.14
	-9.1	-8.5	13.50	13.50	13.50	13.50	13.50	13.50
	-7.6	-7	13.68	13.68	13.68	13.68	13.68	13.68
	-5.6	-5	14.22	14.22	14.22	14.22	14.22	14.22
	-3.7	-3	14.94	14.94	14.94	14.94	14.94	14.94
	-0.7	0	16.02	16.02	16.02	16.02	16.02	15.12
	2.2	3	16.92	16.92	16.92	16.92	16.56	15.12
	4.1	5	17.00	17.00	17.00	17.00	16.56	15.12
	6	7	17.00	17.00	17.00	17.00	16.56	15.12
	7.9	9	17.54	17.54	17.00	17.00	16.56	15.12
	9.8	11	18.08	17.78	17.00	17.00	16.56	15.12
	11.8	13	18.80	18.04	17.00	17.00	16.56	15.12
	13.7	15	19.34	18.44	17.00	17.00	16.56	15.12

8 Electrical characteristics

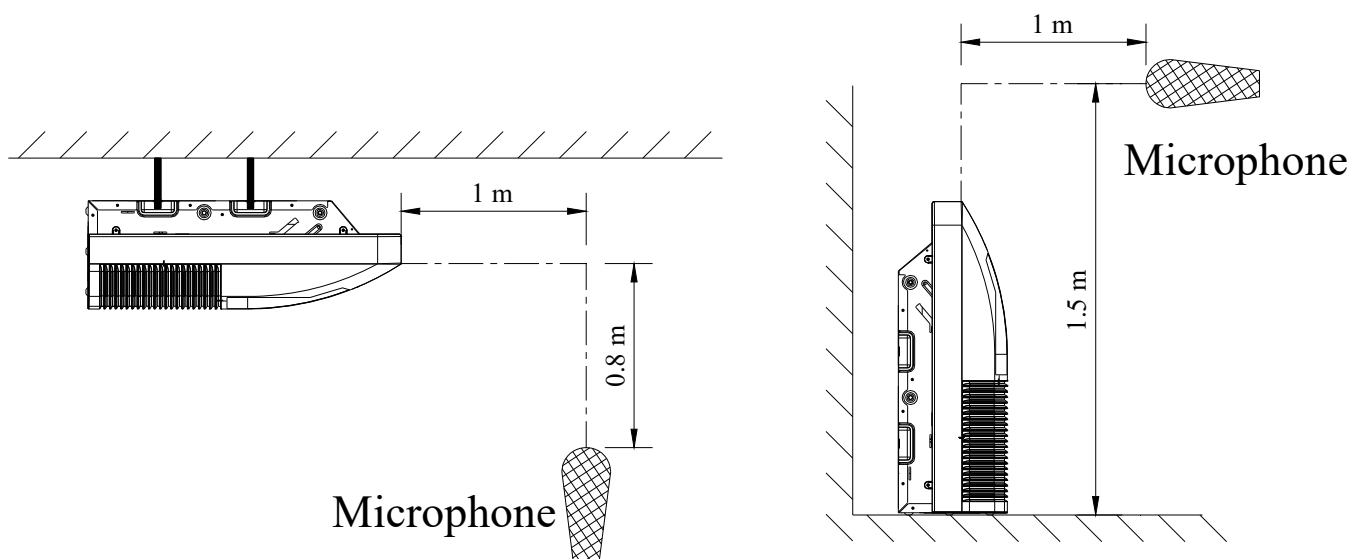
Model	Indoor unit				MFC	Power cable			Signal cable
	Hz	Voltage	Minimum	Maximum		L<20m	L >50m	Grounded	
CC-FCA012-1S	50Hz	220-240V	198	264	15	2*2.5mm ²	2*4.0mm ²	2.5mm ²	2*0.75 mm ²
CC-FCA016-1S	50Hz	220-240V	198	264	15	2*2.5mm ²	2*4.0mm ²	2.5mm ²	2*0.75 mm ²
CC-FCA020-1S	50Hz	220-240V	198	264	15	2*2.5mm ²	2*4.0mm ²	2.5mm ²	2*0.75 mm ²
CC-FCA024-1S	50Hz	220-240V	198	264	15	2*2.5mm ²	2*4.0mm ²	2.5mm ²	2*0.75 mm ²
CC-FCA028-1S	50Hz	220-240V	198	264	15	2*2.5mm ²	2*4.0mm ²	2.5mm ²	2*0.75 mm ²
CC-FCA030-1S	50Hz	220-240V	198	264	15	2*2.5mm ²	2*4.0mm ²	2.5mm ²	2*0.75 mm ²
CC-FCA036-1S	50Hz	220-240V	198	264	15	2*2.5mm ²	2*4.0mm ²	2.5mm ²	2*0.75 mm ²
CC-FCA048-1S	50Hz	220-240V	198	264	15	2*2.5mm ²	2*4.0mm ²	2.5mm ²	2*0.75 mm ²
CC-FCA060-1S	50Hz	220-240V	198	264	15	2*2.5mm ²	2*4.0mm ²	2.5mm ²	2*0.75 mm ²

Notes:

- 1) Minimum: Permitted minimum operating voltage, lower than this value may damage the system
- 2) Maximum: Permitted maximum operating voltage, higher than this value may damage the system
- 3) MC: Minimum Current (A)
- 4) MFC: Maximum Fuse Current (A)
- 5) L: Total length of cable (m)

9 Sound levels

9.1 Test condition



Notes:

Semi-anechoic chamber conversion value, measured at a point 1m in front of the unit at a height of 1.5m

9.2 Test data (Sound pressure level)

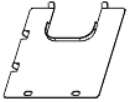
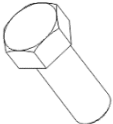
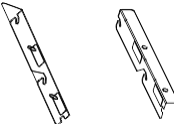
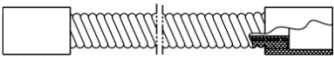
Model	Sound pressure level (dB(A))		
	High speed	Medium speed	Low speed
CC-FCA012-1S	48	42	38
CC-FCA016-1S	48	42	38
CC-FCA020-1S	48	42	38
CC-FCA024-1S	51	48	46
CC-FCA028-1S	51	48	46
CC-FCA030-1S	54	50	46
CC-FCA036-1S	54	50	46
CC-FCA048-1S	54	50	46
CC-FCA060-1S	54	50	46

Notes:

During actual operation, these values are normally somewhat higher as a result of ambient conditions.

10 Accessories

10.1 Standard accessories.

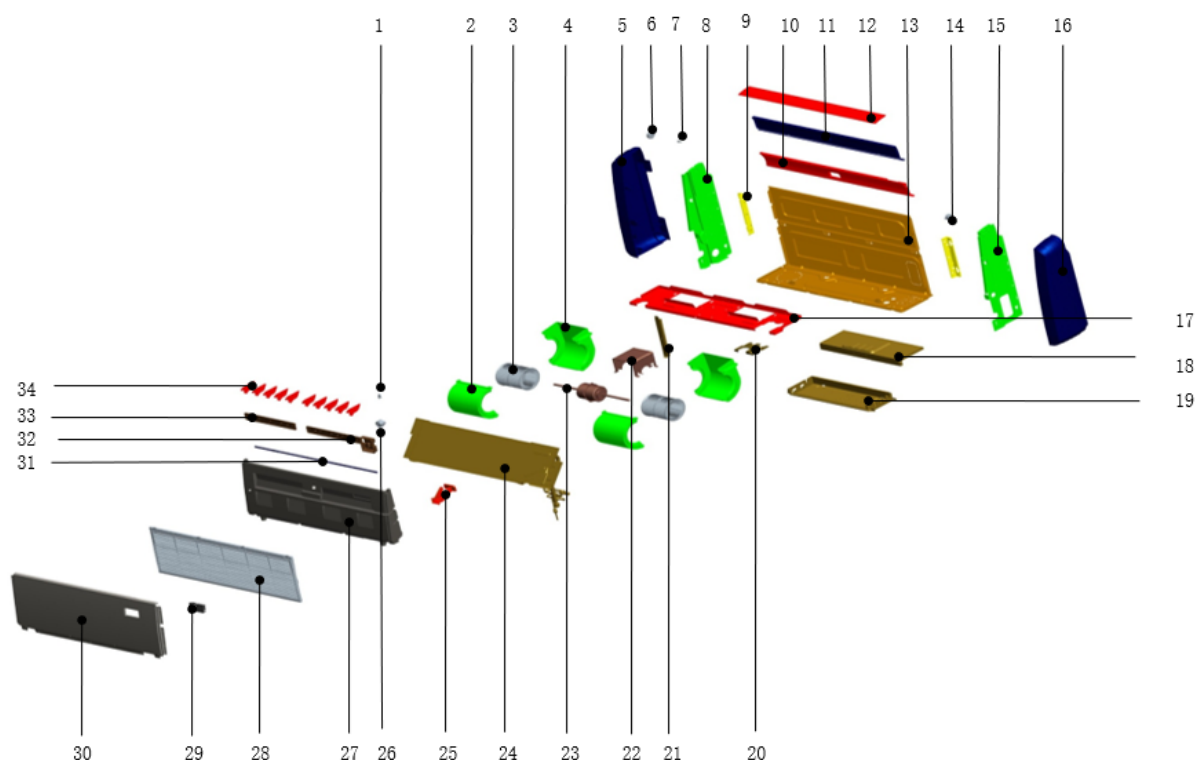
Item	Quantity	Shape	Usage
Installation manual for indoor unit	1	/	Must deliver to customer
Insulation sheath	2		Thermal insulation for the jointing part of piping
Cover board	1		For stopping small animal getting into the unit
Hexagonal head bolt	4		For installation use
Round shape insulation termination points	6		For wiring
U shape insulation termination points	3		For wiring
Remote controller	1		For controlling indoor unit
Batteries	2		Power to remote controller
Left and right hanging holder	2		For hanging indoor unit
Nuts, flat gaskets, spring gaskets	4		For hanging indoor unit
Drainage connection pipe	1		For connecting draining condensate water pipe to indoor unit
Bag	4		For bagging accessories

10.2 Local buy accessories.

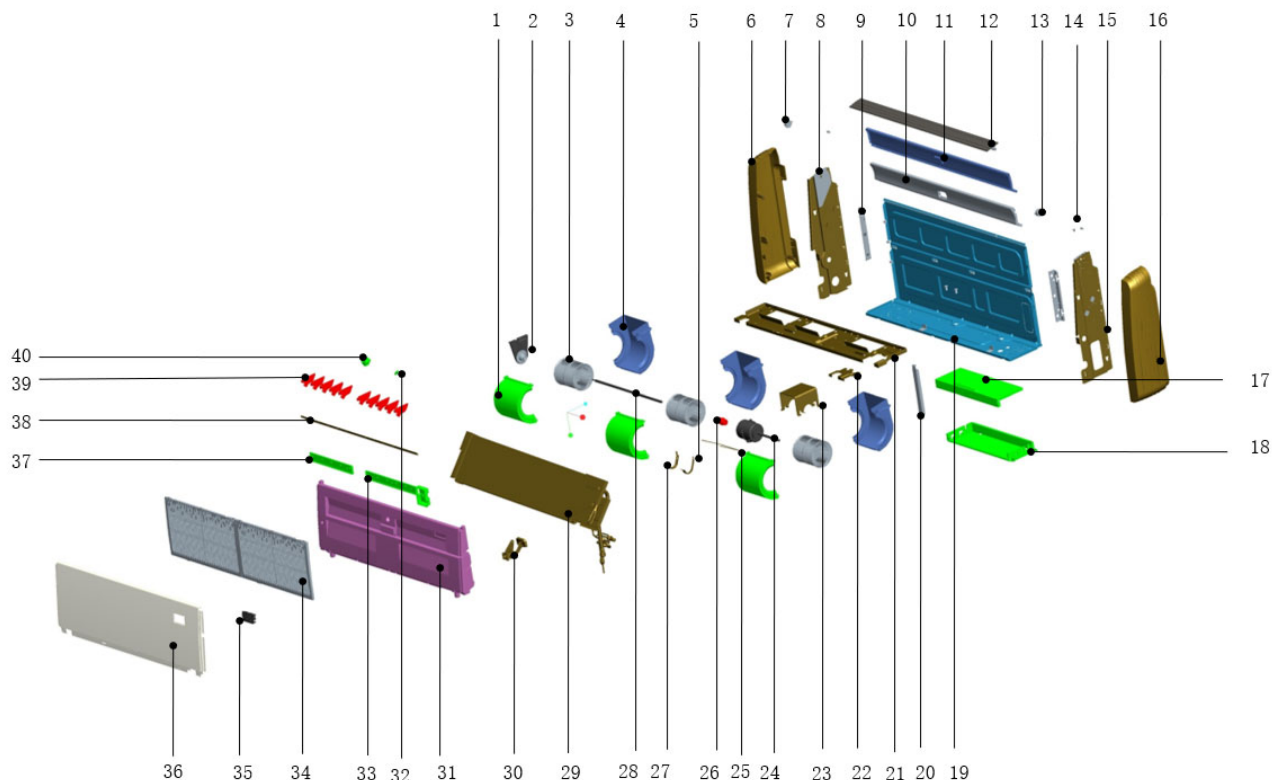
Item	Specification		
	3.5kW~5.6kW	7.1kW~8.0kW	9.0kW~16.0kW
Liquid side copper pipe	Ø6.35mm*0.75mm	Ø9.53mm*0.75mm	
Gas side copper pipe	Ø12.7mm*0.75mm	Ø15.9mm*1.0mm	
Drainage pipe	PVC		
Pipe insulation	Thickness ≥ 10mm		
Power cables	2*2.5 mm ² (When total cable length is ≤20m) 2*4.0 mm ² (When total cable length is ≤50m)		
Grounded cable	2.5 mm ²		
Signal cables	2*0.75 mm ² (AVP, RVP, RVVP)		

11 Exploded view

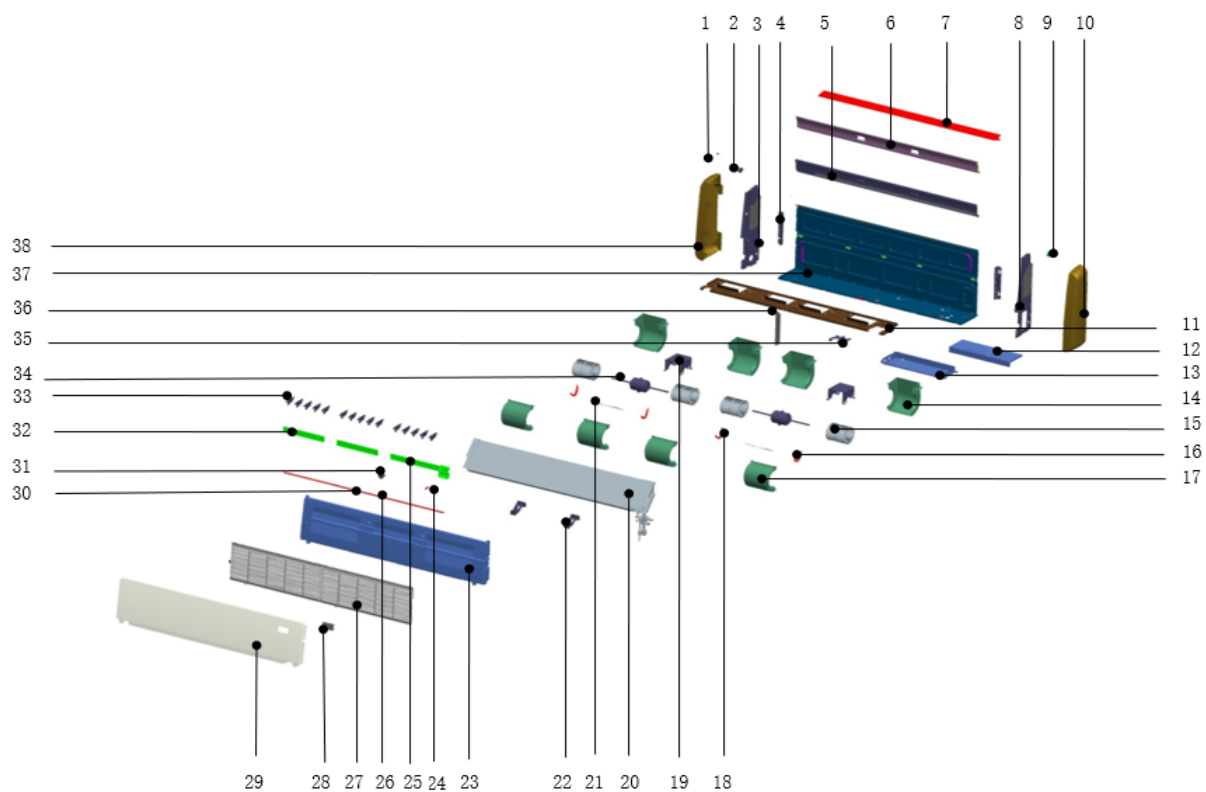
CC-FCA012-1S, CC-FCA016-1S, CC-FCA020-1S



No.	Part Name	Quantity	No.	Part Name	Quantity
1	Horizontal swing leaf active rod	1	19.2	Power terminal	1
2	Lower volute	2	19.3	Communication terminal	1
3	Centrifugal fan	2	19.4	Eectric control box	1
4	Upper volute	2	19.5	Fan capacitance	1
5	Left cover	1	20	Piping plate	1
6	Stepper motor (horizontal)	1	21	Support bar	1
7	Bushing	2	22	Motor bracket	1
8	Left panel assembly	1	23	Indoor DC fan motor	1
9	Installation lifting ears	2	24	Evaporator components	1
10	Chassis foam components	1	25	Louver bracket	1
11	Rear cover	1	26	Stepper motor (vertical)	1
12	Louver assembly	1	27	Drip tray foam	1
13	Chassis components	1	28	Return air grille assembly	1
14	Stepper motor	1	29	Display board components	1
15	Right side panel assembly	1	30	Top cover assembly	1
16	Right cover	1	31	Louver connecting rod	1
17	Middle beam welding	1	32	Louver connecting rod fixing structure 1	1
18	Electric control box cover	1	33	Louver connecting rod fixing structure 2	1
19	Eectric control box assembly	1	34	Wind guide blade	9
19.1	Eletronic control board for indoor unit	1			



No.	Part Name	Quantity	No.	Part Name	Quantity
1	Upper volute	3	19	Chassis assembly	1
2	Motor support assembly	1	20	Support bar	1
3	Centrifugal fan blade	3	21	Middle beam welding assembly	1
4	Lower volute	3	22	Pipe plate	1
5	Right gland of motor shaft sleeve	1	23	Motor bracket	1
6	Left cover	1	24	Indoor fan motor	1
7	step motor	1	25	Motor coaming	1
8	Left side board assembly	1	26	coupling	1
9	Right mounting plate of evaporator	2	27	left gland of motor shaft sleeve	1
10	Chassis foam components	1	28	Connecting shaft	1
11	Rear cover with cotton	1	29	Evaporator assy	1
12	Wind guide assembly	1	30	Wind guide bracket	2
13	step motor	1	31	Water receiving foam	1
14	Bushing	2	32	Horizontal swinging blade driving rod	1
15	Right side board assembly	1	33	Mounting seat of horizontal pendulum blade 1	1
16	Right cover	1	34	Air return grille assembly	2
17	Electric box cover	1	35	Display panel components	1
18	Electric control box assembly	1	36	Top cover assy	1
18.1	Electronic control board for indoor unit	1	37	Mounting seat of horizontal pendulum blade 2	1
18.2	Power terminal	1	38	Horizontal swing rod 1	1
18.3	Communication terminal	1	39	Wind guide blade	10
18.4	Electric control box	1	40	step motor	1
18.5	Fan capacitance	1			



No.	Part Name	Quantity	No.	Part Name	Quantity
1	Bushing	2	18	left gland of motor shaft sleeve	2
2	Horizontal step motor	1	19	Motor bracket	1
3	Left side board assembly	1	20	Evaporator assy	1
4	Right mounting plate of evaporator	2	21	Motor coaming	2
5	back cover plate	1	22	Wind guide bracket	2
6	Chassis foam components	1	23	Water receiving tray assembly of pedestal crane	1
7	Wind guide assembly	1	24	Horizontal swinging blade driving rod	1
8	Right side board assembly	1	25	Mounting seat of horizontal pendulum blade 1	1
9	Horizontal step motor	1	26	Horizontal swing rod 1	1
10	Right cover	1	27	Air return grille assembly	2
11	Middle beam welding assembly	1	28	Display panel components	1
12	Electric box cover	1	29	Top cover assy	1
13	Eectric control box assembly	1	30	Horizontal swing rod 2	1
13.1	Eletronic control board for indoor unit	1	31	step motor	1
13.2	Power terminal	1	32	Mounting seat of horizontal pendulum blade 2	2
13.3	Communication terminal	1	33	Wind guide blade	15
13.4	Eectric control box	1	34	Indoor fan motor	2
13.5	Fan capacitance	1	35	Pipe plate	1
14	Upper volute	4	36	Support bar	1
15	Centrifugal fan blade	4	37	Chassis assembly	1
16	Right gland of motor shaft sleeve	2	38	Left cover	1
17	Lower volute	4			