



SHORT DUCT TECHNICAL MANUAL

DC SYSTEM

220-240V/50&60Hz

INDOOR UNITS

Revision V 2303



Model Numbers:

CC-CPAL007-1S, CC-CPAL009-1S, CC-CPAL012-1S
CC-CPAL016-1S, CC-CPAL020-1S, CC-CPAL024-1S



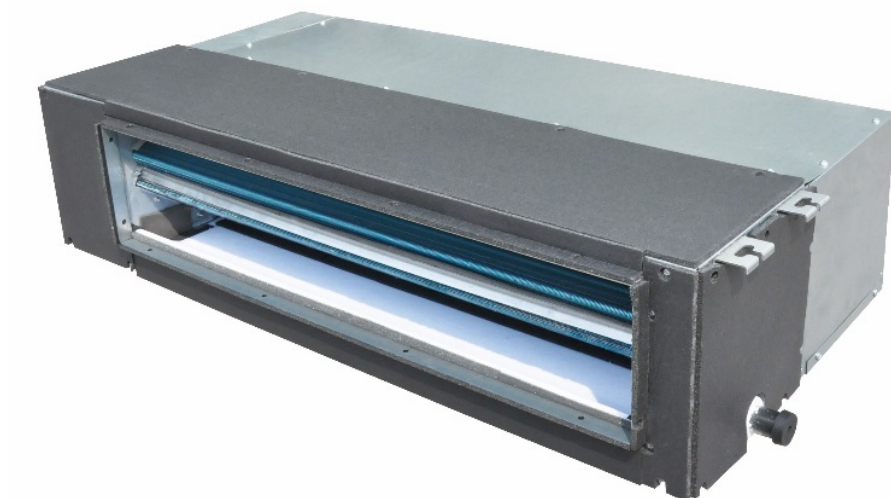
WARNING

- 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



2. Specifications

Model			CC-CPAL007-1S	CC-CPAL009-1S	CC-CPAL012-1S
Power supply			220-240V/1N/50Hz	220-240V/1N/50Hz	220-240V/1N/50Hz
Capacity	Cooling	kW	2.2	2.8	3.6
	Heating	kW	2.5	3.2	4
Rated input		kW	0.05	0.05	0.06
Fan motor	Model		DR-310-27F-8	DR-310-27F-8	DR-310-27F-8
	Type		DC	DC	DC
	Brand		Yongan	Yongan	Yongan
	Speed (Hi/Med/Low)	r/min	850/640/550	850/640/550	850/640/550
	ESP	Pa	30	30	30
Indoor coil	Number of rows		2	2	2
	Fin type		Hydrophilic aluminum	Hydrophilic aluminum	Hydrophilic aluminum
	Tube diameter and type	mm	Ø7, Innergroove tube	Ø7, Innergroove tube	Ø7, Innergroove tube
Air flow (High speed)		m³/h	450	450	500
Sound pressure level		dB(A)	24~29	24~29	25~32
Body	Dimension (W×H×D)	mm	814×210×467	814×210×467	814×210×467
	Packing (W×H×D)	mm	910×240×510	910×240×510	910×240×510
	Net/Gross weight	kg	16/18.5	16/18.5	16.5/19
Refrigerant type			R410A	R410A	R410A
Throttle type			EXV	EXV	EXV
Design pressure		MPa	4.5	4.5	4.5
Liquid pipe / Gas pipe		mm	Ø6.35/ Ø9.53	Ø6.35/ Ø9.53	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	Ø25	Ø25	Ø25
Controller	Standard		Wired controller	Wired controller	Wired controller
	Optional		Remote controller	Remote controller	Remote 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-CPAL016-1S	CC-CPAL020-1S	CC-CPAL024-1S
Power supply			220-240V/1N/50Hz	220-240V/1N/50Hz	220-240V/1N/50Hz
Capacity	Cooling	kW	4.5	5.6	7.1
	Heating	kW	5	6.3	8
Rated input		kW	0.075	0.095	0.115
Fan motor	Model		DR-310-27F-8	DR-310-55F-8	DR-310-68F-8
	Type		DC	DC	DC
	Brand		Yongan	Yongan	Yongan
	Speed (Hi/Med/Low)	r/min	850/640/550	1070/870/800	1150/880/820
	ESP	Pa	30	30	30
Indoor coil	Number of rows		2	2	2
	Fin type		Hydrophilic aluminum	Hydrophilic aluminum	Hydrophilic aluminum
	Tube diameter and type	mm	Ø7, Innergroove tube	Ø7, Innergroove tube	Ø7, Innergroove tube
Air flow (High speed)		m³/h	620	800	1000
Sound pressure level		dB(A)	32~37	28~38	30~39
Body	Dimension (W×H×D)	mm	814×210×467	1010×210×467	1214×210×467
	Packing (W×H×D)	mm	910×240×510	1110×240×510	1310×240×510
	Net/Gross weight	kg	16.5/19	20/23	25/28
Refrigerant type			R410A	R410A	R410A
Throttle type			EXV	EXV	EXV
Design pressure		MPa	4.5	4.5	4.5
Liquid pipe / Gas pipe		mm	Ø6.35/ Ø12.7	Ø6.35/ Ø12.7	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	Ø25	Ø25	Ø25
Controller	Standard		Wired controller	Wired controller	Wired controller
	Optional		Remote controller	Remote controller	Remote 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

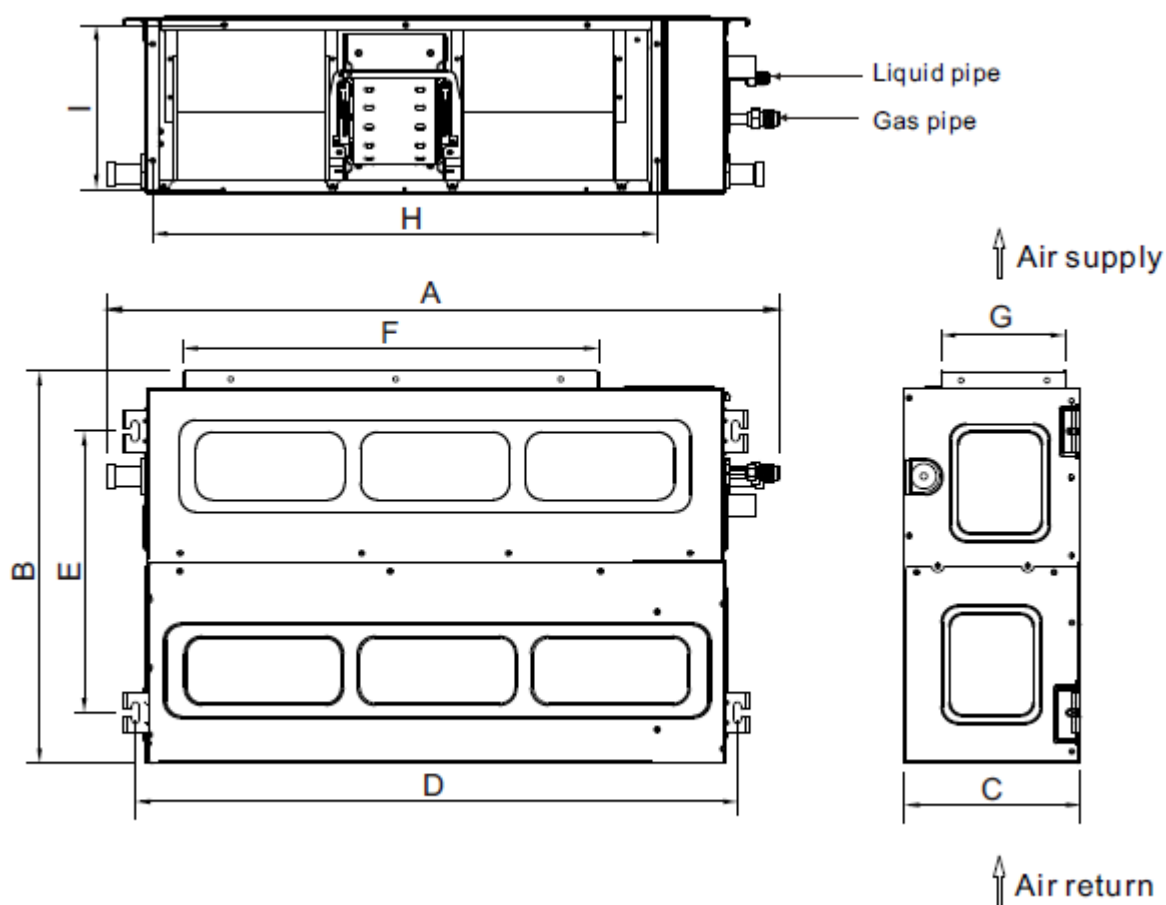
2) Nominal heating capacities are based on the following condition.

- 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.

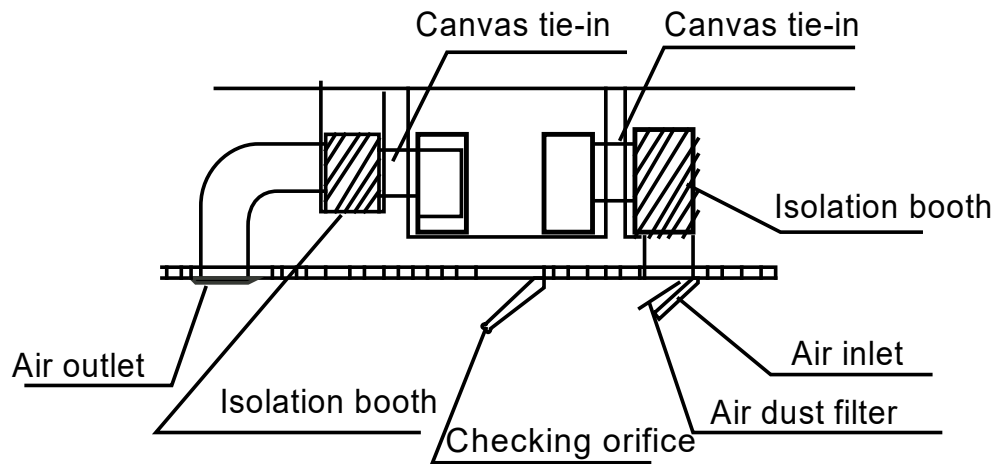
3. Dimensions



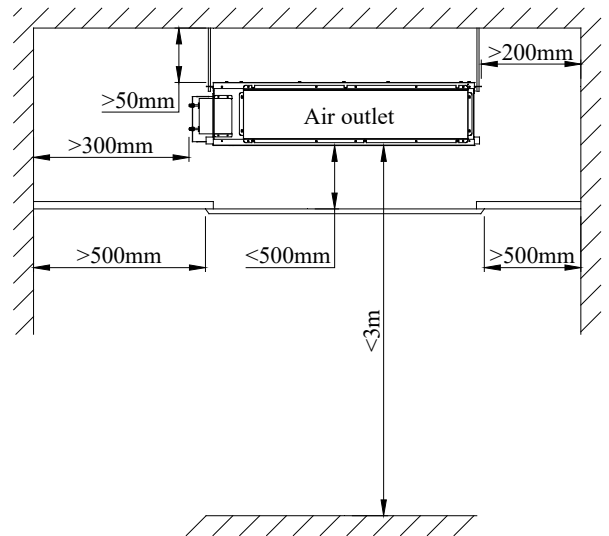
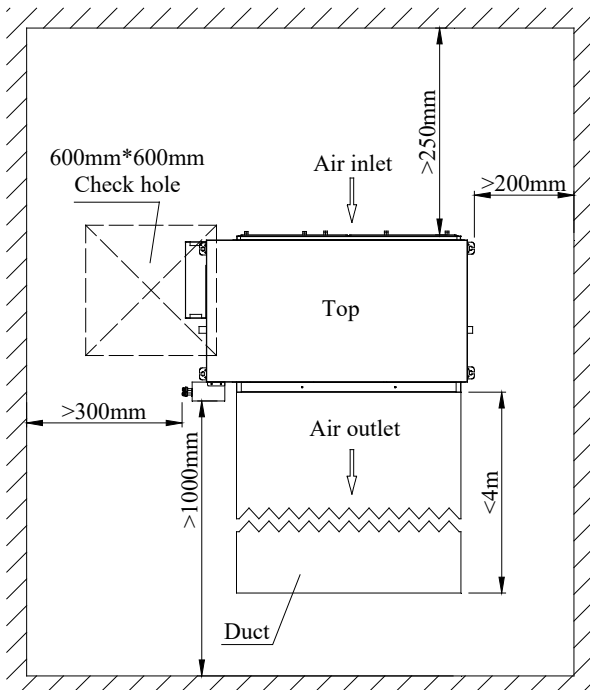
Mode	Body dimension (mm)			Installation dimension (mm)		Air outlet dimension (mm)		Air inlet dimension (mm)	
	A	B	C	D	E	F	G	H	I
CC-CPAL007-1S	814	467	210	728	335	503	150	611	200
CC-CPAL009-1S	814	467	210	728	335	503	150	611	200
CC-CPAL012-1S	814	467	210	728	335	503	150	611	200
CC-CPAL016-1S	814	467	210	728	335	503	150	611	200
CC-CPAL020-1S	1010	467	210	928	335	705	150	811	200
CC-CPAL024-1S	1214	467	210	1128	335	905	150	1011	200

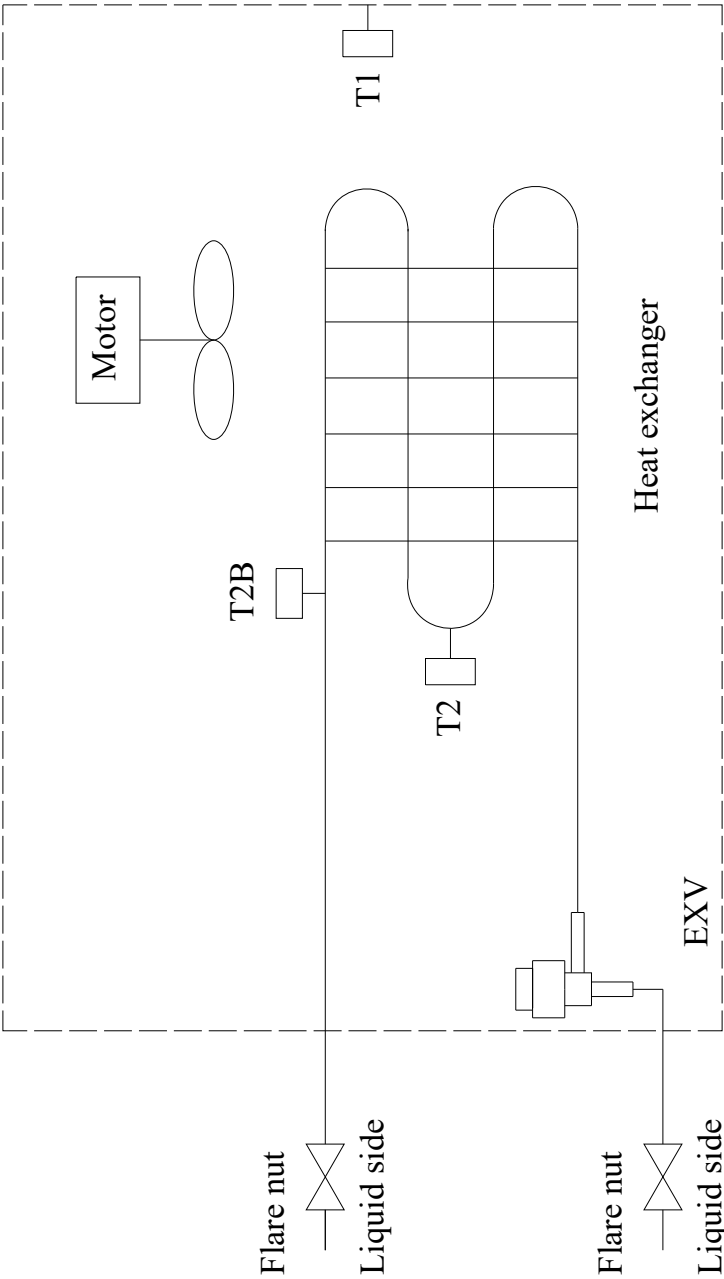
4. Service space

- Ensure the needed spaces 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.
- Below is the recommended duct installation method:



- Keep minimum 600*600 space for checking and maintenance:



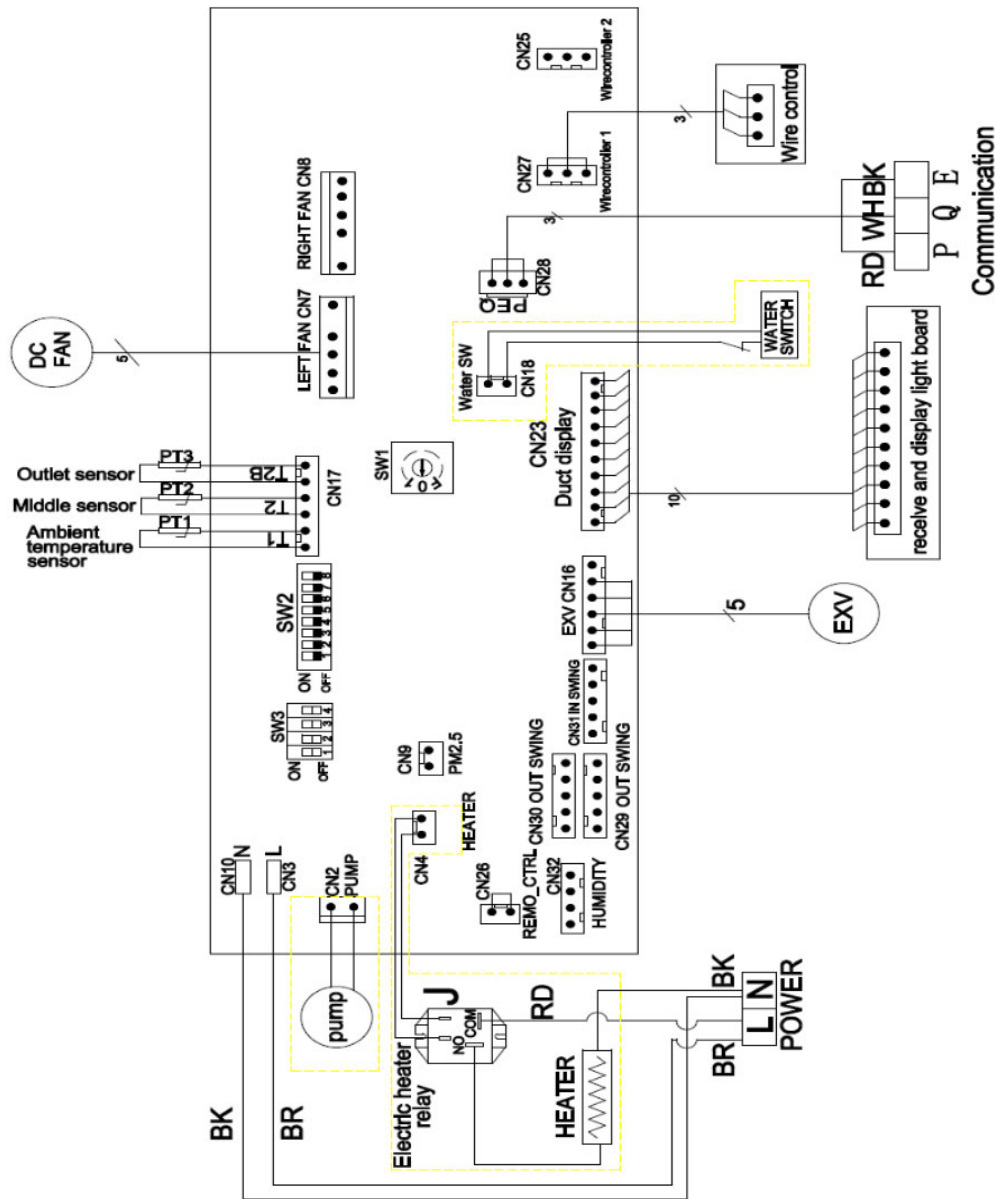


Notes:

- 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



Notes:

1) Color code:

RD: Red; OR: Orange; BK: Black; BR: Brown; WH: White

2) T1: Room temperature sensor

3) T2: Temperature sensor of middle heat exchanger

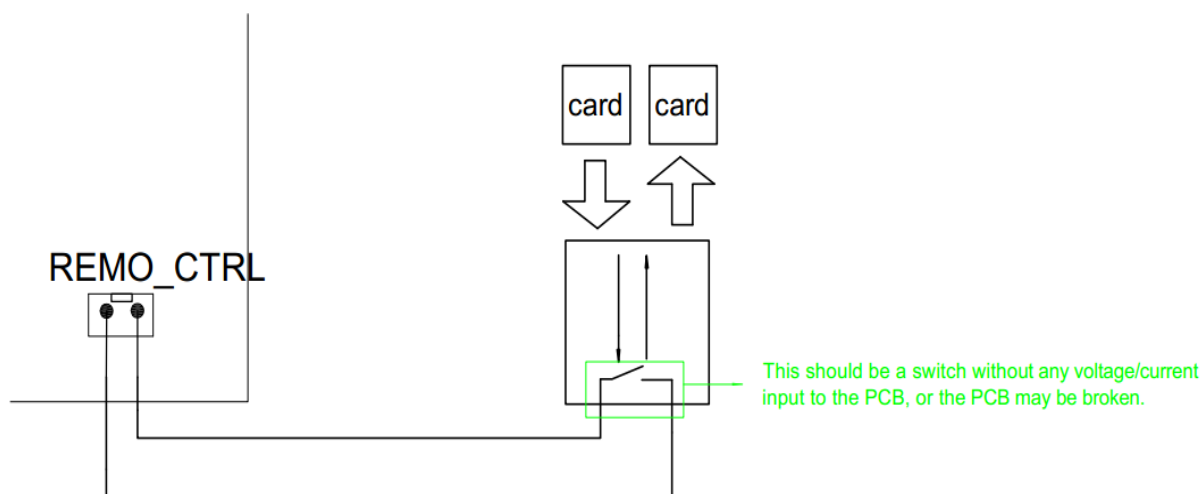
4) T2B: Temperature sensor of heat exchanger outlet

5) EXV: Electrical expansion valve

6) Electrical heater is optional, please contact to Comfortstar's technician for the detail.

Comfortstar 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	4.0/4.5/4.6	5.1/5.6	6.0/6.3/6.6/7.1
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	9

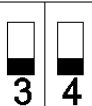
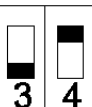
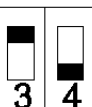
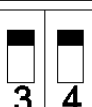
6.2.2 SW3

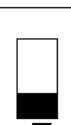
Name	Switch number 1&2&3 of SW3	Switch number 4 of SW3
Function	Type selection	Indoor unit address elimination
Setting		ONDP 1 2 3 4 Automatic Addressing mode and (Factory default)

SW3 NO1,2,3		Type	ON DP ☐ ☐ ☐ ☒ 1 2 3 4 Test mode (to allow clear address)
ON	☐	Short duct unit	
OFF	☒		
ON	☐	Slim duct unit	
OFF	☒		
ON	☐	Medium ESP duct unit	
OFF	☒		
ON	☐	Floor ceiling unit	
OFF	☒		
ON	☐	Floor standing unit	
OFF	☒		
ON	☐	Reserve	
OFF	☒		
ON	☐	Reserve	
OFF	☒		

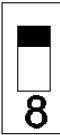
Name	Switch number 1 of SW2		
Function	Refrigeration temperature compensation temperature value select bits		
Setting	SW2 NO.1	ON ☐	3°C Factory default
		OFF ☒	
		ON ☐	1°C
		OFF ☒	

Name	Switch number 2 of SW2		
Function	Heating temperature compensation temperature value select bits		
Setting	SW2 NO.2	ON ☐	6°C Factory default
		OFF ☒	
		ON ☐	2°C
		OFF ☒	

Name	Switch number 3,4 of SW2		
Function	Anti-cold wind off the fan temperature selection bit		
Setting	SW2 NO.3&4		Temperature selection
	ON  Factory default	15°C	
	OFF 		
	ON 	20°C	
	OFF 		
	ON 	24°C	
	OFF 		
	ON 	26°C	
	OFF 		

Name	Switch number 5 of SW2		
Function	Heating stop the fan time to choose		
Setting	SW2 NO.5	ON  Factory default	4min
		OFF 	
		ON 	8min
		OFF 	

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

Name	Switch number 8 of SW2
Function	HIGH/SUPER HIGH SPEED
Setting	SW2 NO.8 ON OFF ON OFF   SUPER HIGH SPEED (Factory default) HIGH SPEED

Name	Switch number 7 of SW2
Function	reserved
Setting	ON OFF         1 2 3 4 5 6 7 8

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	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
2.2	10	1.52	1.37	1.80	1.44	2.07	1.62	2.20	1.62	2.40	1.72	2.56	1.74	2.67	1.56
	12	1.52	1.37	1.80	1.44	2.07	1.62	2.20	1.62	2.40	1.72	2.56	1.74	2.64	1.55
	14	1.52	1.37	1.80	1.44	2.07	1.62	2.20	1.62	2.40	1.72	2.54	1.73	2.62	1.54
	16	1.52	1.37	1.80	1.44	2.07	1.62	2.20	1.62	2.40	1.72	2.52	1.71	2.60	1.52
	18	1.52	1.37	1.80	1.44	2.07	1.62	2.20	1.62	2.40	1.72	2.50	1.70	2.57	1.51
	19	1.52	1.37	1.80	1.44	2.07	1.62	2.20	1.62	2.40	1.72	2.47	1.68	2.55	1.49
	21	1.52	1.37	1.80	1.44	2.07	1.62	2.20	1.62	2.40	1.72	2.45	1.67	2.52	1.48
	23	1.52	1.37	1.80	1.44	2.07	1.62	2.20	1.62	2.40	1.72	2.43	1.65	2.50	1.47
	25	1.52	1.37	1.80	1.44	2.07	1.62	2.20	1.62	2.40	1.70	2.40	1.63	2.48	1.45
	27	1.52	1.37	1.80	1.44	2.07	1.62	2.20	1.62	2.37	1.69	2.38	1.62	2.45	1.44
	29	1.52	1.37	1.80	1.44	2.07	1.62	2.20	1.62	2.35	1.67	2.36	1.60	2.43	1.43
	31	1.52	1.37	1.80	1.44	2.07	1.62	2.20	1.62	2.33	1.65	2.34	1.59	2.41	1.41
	33	1.52	1.37	1.80	1.44	2.07	1.62	2.20	1.62	2.31	1.62	2.31	1.57	2.38	1.40
	35	1.52	1.37	1.80	1.44	2.07	1.62	2.20	1.62	2.27	1.61	2.29	1.56	2.36	1.38
	37	1.52	1.37	1.80	1.44	2.07	1.62	2.20	1.61	2.24	1.57	2.27	1.53	2.31	1.36
	39	1.52	1.37	1.80	1.44	2.07	1.62	2.20	1.60	2.22	1.56	2.24	1.51	2.29	1.34
	41	1.52	1.37	1.80	1.44	2.05	1.62	2.18	1.59	2.20	1.54	2.22	1.49	2.26	1.33
	43	1.52	1.37	1.80	1.44	2.02	1.62	2.16	1.58	2.18	1.53	2.20	1.48	2.24	1.31
	46	1.52	1.37	1.76	1.41	1.96	1.62	2.13	1.58	2.16	1.51	2.18	1.46	2.22	1.30
	48	1.52	1.37	1.74	1.39	1.89	1.57	2.07	1.56	2.13	1.49	2.11	1.45	2.16	1.29
2.8	10	1.50	1.37	1.73	1.38	1.83	1.55	2.00	1.52	2.07	1.48	2.05	1.43	2.09	1.27
	10	1.94	1.75	2.29	1.83	2.64	2.06	2.80	2.06	3.05	2.19	3.26	2.22	3.39	1.99
	12	1.94	1.75	2.29	1.83	2.64	2.06	2.80	2.06	3.05	2.19	3.26	2.22	3.36	1.97
	14	1.94	1.75	2.29	1.83	2.64	2.06	2.80	2.06	3.05	2.19	3.23	2.20	3.33	1.96
	16	1.94	1.75	2.29	1.83	2.64	2.06	2.80	2.06	3.05	2.19	3.20	2.18	3.30	1.94
	18	1.94	1.75	2.29	1.83	2.64	2.06	2.80	2.06	3.05	2.19	3.18	2.16	3.27	1.92
	19	1.94	1.75	2.29	1.83	2.64	2.06	2.80	2.06	3.05	2.19	3.15	2.14	3.24	1.90
	21	1.94	1.75	2.29	1.83	2.64	2.06	2.80	2.06	3.05	2.19	3.12	2.12	3.21	1.88
	23	1.94	1.75	2.29	1.83	2.64	2.06	2.80	2.06	3.05	2.19	3.09	2.10	3.18	1.87
	25	1.94	1.75	2.29	1.83	2.64	2.06	2.80	2.06	3.05	2.17	3.06	2.08	3.15	1.85
	27	1.94	1.75	2.29	1.83	2.64	2.06	2.80	2.06	3.02	2.15	3.03	2.06	3.12	1.83
	29	1.94	1.75	2.29	1.83	2.64	2.06	2.80	2.06	2.99	2.13	3.00	2.04	3.09	1.81
	31	1.94	1.75	2.29	1.83	2.64	2.06	2.80	2.06	2.96	2.11	2.97	2.02	3.06	1.80
	33	1.94	1.75	2.29	1.83	2.64	2.06	2.80	2.06	2.93	2.07	2.94	2.00	3.03	1.78
	35	1.94	1.75	2.29	1.83	2.64	2.06	2.80	2.06	2.89	2.04	2.91	1.98	3.00	1.76
	37	1.94	1.75	2.29	1.83	2.64	2.06	2.80	2.05	2.85	2.00	2.88	1.94	2.94	1.73
	39	1.94	1.75	2.29	1.83	2.64	2.06	2.80	2.03	2.83	1.98	2.86	1.92	2.91	1.71
	41	1.94	1.75	2.29	1.83	2.60	2.06	2.77	2.02	2.80	1.96	2.83	1.90	2.88	1.69
	43	1.94	1.75	2.29	1.83	2.58	2.06	2.74	2.01	2.77	1.94	2.80	1.88	2.85	1.67
	46	1.94	1.75	2.24	1.79	2.49	2.06	2.72	2.01	2.74	1.92	2.77	1.86	2.83	1.66
	48	1.94	1.75	2.22	1.77	2.41	1.99	2.63	1.99	2.72	1.90	2.69	1.84	2.74	1.64
3.6	10	1.90	1.75	2.20	1.75	2.32	1.97	2.55	1.93	2.63	1.88	2.60	1.82	2.66	1.62
	10	2.49	2.25	2.94	2.35	3.39	2.64	3.60	2.64	3.92	2.81	4.20	2.85	4.36	2.56
	12	2.49	2.25	2.94	2.35	3.39	2.64	3.60	2.64	3.92	2.81	4.20	2.85	4.32	2.54
	14	2.49	2.25	2.94	2.35	3.39	2.64	3.60	2.64	3.92	2.81	4.16	2.83	4.29	2.51
	16	2.49	2.25	2.94	2.35	3.39	2.64	3.60	2.64	3.92	2.81	4.12	2.80	4.25	2.49
	18	2.49	2.25	2.94	2.35	3.39	2.64	3.60	2.64	3.92	2.81	4.08	2.78	4.21	2.47
	19	2.49	2.25	2.94	2.35	3.39	2.64	3.60	2.64	3.92	2.81	4.05	2.75	4.17	2.45
	21	2.49	2.25	2.94	2.35	3.39	2.64	3.60	2.64	3.92	2.81	4.01	2.73	4.13	2.42
	23	2.49	2.25	2.94	2.35	3.39	2.64	3.60	2.64	3.92	2.81	3.97	2.70	4.09	2.40
	25	2.49	2.25	2.94	2.35	3.39	2.64	3.60	2.64	3.92	2.79	3.93	2.67	4.05	2.38
	27	2.49	2.25	2.94	2.35	3.39	2.64	3.60	2.64	3.88	2.76	3.90	2.65	4.01	2.36
	29	2.49	2.25	2.94	2.35	3.39	2.64	3.60	2.64	3.85	2.73	3.86	2.62	3.98	2.33
	31	2.49	2.25	2.94	2.35	3.39	2.64	3.60	2.64	3.81	2.71	3.82	2.60	3.94	2.31
	33	2.49	2.25	2.94	2.35	3.39	2.64	3.60	2.64	3.77	2.66	3.78	2.57	3.90	2.29
	35	2.49	2.25	2.94	2.35	3.39	2.64	3.60	2.64	3.72	2.63	3.75	2.55	3.86	2.26
	37	2.49	2.25	2.94	2.35	3.39	2.64	3.60	2.63	3.66	2.58	3.71	2.50	3.78	2.22
	39	2.49	2.25	2.94	2.35	3.39	2.64	3.60	2.61	3.64	2.55	3.67	2.47	3.74	2.20
	41	2.49	2.25	2.94	2.35	3.35	2.64	3.56	2.60	3.60	2.52	3.64	2.44	3.71	2.17
	43	2.49	2.25	2.94	2.35	3.31	2.64	3.53	2.59	3.56	2.50	3.60	2.42	3.67	2.15
	46	2.49	2.25	2.88	2.30	3.20	2.64	3.49	2.58	3.53	2.47	3.56	2.39	3.64	2.13
	48	2.49	2.25	2.85	2.28	3.10	2.56	3.38	2.55	3.49	2.44	3.46	2.37	3.53	2.11
	50	2.45	2.25	2.83	2.26	2.99	2.54	3.28	2.48	3.38	2.42	3.35	2.34	3.42	2.08

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
4.5	10	3.12	2.81	3.68	2.94	4.24	3.30	4.50	3.30	4.90	3.52	5.24	3.57	5.45	3.20
	12	3.12	2.81	3.68	2.94	4.24	3.30	4.50	3.30	4.90	3.52	5.24	3.57	5.41	3.17
	14	3.12	2.81	3.68	2.94	4.24	3.30	4.50	3.30	4.90	3.52	5.20	3.53	5.36	3.14
	16	3.12	2.81	3.68	2.94	4.24	3.30	4.50	3.30	4.90	3.52	5.15	3.50	5.31	3.11
	18	3.12	2.81	3.68	2.94	4.24	3.30	4.50	3.30	4.90	3.52	5.10	3.47	5.26	3.09
	19	3.12	2.81	3.68	2.94	4.24	3.30	4.50	3.30	4.90	3.52	5.06	3.44	5.21	3.06
	21	3.12	2.81	3.68	2.94	4.24	3.30	4.50	3.30	4.90	3.52	5.01	3.41	5.16	3.03
	23	3.12	2.81	3.68	2.94	4.24	3.30	4.50	3.30	4.90	3.52	4.96	3.37	5.11	3.00
	25	3.12	2.81	3.68	2.94	4.24	3.30	4.50	3.30	4.90	3.48	4.92	3.34	5.07	2.97
	27	3.12	2.81	3.68	2.94	4.24	3.30	4.50	3.30	4.85	3.45	4.87	3.31	5.02	2.94
	29	3.12	2.81	3.68	2.94	4.24	3.30	4.50	3.30	4.81	3.42	4.82	3.28	4.97	2.92
	31	3.12	2.81	3.68	2.94	4.24	3.30	4.50	3.30	4.76	3.38	4.78	3.25	4.92	2.89
	33	3.12	2.81	3.68	2.94	4.24	3.30	4.50	3.30	4.72	3.32	4.73	3.22	4.87	2.86
	35	3.12	2.81	3.68	2.94	4.24	3.30	4.50	3.30	4.65	3.29	4.68	3.18	4.83	2.83
	37	3.12	2.81	3.68	2.94	4.24	3.30	4.50	3.29	4.58	3.22	4.64	3.12	4.73	2.77
	39	3.12	2.81	3.68	2.94	4.24	3.30	4.50	3.27	4.54	3.19	4.59	3.09	4.68	2.75
	41	3.12	2.81	3.68	2.94	4.19	3.30	4.46	3.25	4.50	3.15	4.54	3.06	4.63	2.72
	43	3.12	2.81	3.68	2.94	4.14	3.30	4.41	3.24	4.46	3.12	4.50	3.02	4.58	2.69
	46	3.12	2.81	3.61	2.88	4.01	3.30	4.36	3.22	4.41	3.09	4.46	2.99	4.54	2.66
	48	3.12	2.81	3.57	2.85	3.87	3.21	4.23	3.19	4.36	3.06	4.32	2.96	4.41	2.63
	50	3.06	2.81	3.53	2.82	3.74	3.17	4.09	3.11	4.23	3.02	4.19	2.93	4.28	2.60
5.6	10	3.88	3.50	4.58	3.65	5.28	4.11	5.60	4.11	6.10	4.38	6.53	4.44	6.79	3.98
	12	3.88	3.50	4.58	3.65	5.28	4.11	5.60	4.11	6.10	4.38	6.53	4.44	6.73	3.95
	14	3.88	3.50	4.58	3.65	5.28	4.11	5.60	4.11	6.10	4.38	6.47	4.40	6.67	3.91
	16	3.88	3.50	4.58	3.65	5.28	4.11	5.60	4.11	6.10	4.38	6.41	4.36	6.61	3.88
	18	3.88	3.50	4.58	3.65	5.28	4.11	5.60	4.11	6.10	4.38	6.35	4.32	6.55	3.84
	19	3.88	3.50	4.58	3.65	5.28	4.11	5.60	4.11	6.10	4.38	6.29	4.28	6.49	3.80
	21	3.88	3.50	4.58	3.65	5.28	4.11	5.60	4.11	6.10	4.38	6.24	4.24	6.42	3.77
	23	3.88	3.50	4.58	3.65	5.28	4.11	5.60	4.11	6.10	4.38	6.18	4.20	6.36	3.73
	25	3.88	3.50	4.58	3.65	5.28	4.11	5.60	4.11	6.10	4.33	6.12	4.16	6.30	3.70
	27	3.88	3.50	4.58	3.65	5.28	4.11	5.60	4.11	6.04	4.29	6.06	4.12	6.24	3.66
	29	3.88	3.50	4.58	3.65	5.28	4.11	5.60	4.11	5.98	4.25	6.00	4.08	6.18	3.63
	31	3.88	3.50	4.58	3.65	5.28	4.11	5.60	4.11	5.93	4.21	5.94	4.04	6.12	3.59
	33	3.88	3.50	4.58	3.65	5.28	4.11	5.60	4.11	5.87	4.13	5.88	4.00	6.06	3.56
	35	3.88	3.50	4.58	3.65	5.28	4.11	5.60	4.11	5.78	4.09	5.83	3.96	6.00	3.52
	37	3.88	3.50	4.58	3.65	5.28	4.11	5.60	4.09	5.70	4.01	5.77	3.88	5.88	3.45
	39	3.88	3.50	4.58	3.65	5.28	4.11	5.60	4.07	5.66	3.97	5.71	3.84	5.82	3.42
	41	3.88	3.50	4.58	3.65	5.21	4.11	5.54	4.05	5.60	3.93	5.66	3.80	5.76	3.38
	43	3.88	3.50	4.58	3.65	5.15	4.11	5.49	4.03	5.54	3.89	5.60	3.76	5.70	3.35
	46	3.88	3.50	4.49	3.58	4.98	4.11	5.43	4.01	5.49	3.84	5.54	3.72	5.66	3.31
	48	3.88	3.50	4.44	3.54	4.82	3.99	5.26	3.97	5.43	3.80	5.38	3.68	5.49	3.28
	50	3.81	3.50	4.40	3.51	4.65	3.95	5.10	3.86	5.26	3.76	5.21	3.64	5.32	3.24
7.1	10	4.92	4.44	5.80	4.63	6.69	5.21	7.10	5.21	7.73	5.55	8.27	5.63	8.60	5.05
	12	4.92	4.44	5.80	4.63	6.69	5.21	7.10	5.21	7.73	5.55	8.27	5.63	8.53	5.00
	14	4.92	4.44	5.80	4.63	6.69	5.21	7.10	5.21	7.73	5.55	8.20	5.58	8.45	4.96
	16	4.92	4.44	5.80	4.63	6.69	5.21	7.10	5.21	7.73	5.55	8.13	5.53	8.38	4.91
	18	4.92	4.44	5.80	4.63	6.69	5.21	7.10	5.21	7.73	5.55	8.05	5.47	8.30	4.87
	19	4.92	4.44	5.80	4.63	6.69	5.21	7.10	5.21	7.73	5.55	7.98	5.42	8.22	4.82
	21	4.92	4.44	5.80	4.63	6.69	5.21	7.10	5.21	7.73	5.55	7.91	5.37	8.15	4.78
	23	4.92	4.44	5.80	4.63	6.69	5.21	7.10	5.21	7.73	5.55	7.83	5.32	8.07	4.73
	25	4.92	4.44	5.80	4.63	6.69	5.21	7.10	5.21	7.73	5.50	7.76	5.27	7.99	4.69
	27	4.92	4.44	5.80	4.63	6.69	5.21	7.10	5.21	7.66	5.44	7.68	5.22	7.92	4.64
	29	4.92	4.44	5.80	4.63	6.69	5.21	7.10	5.21	7.58	5.39	7.61	5.17	7.84	4.60
	31	4.92	4.44	5.80	4.63	6.69	5.21	7.10	5.21	7.51	5.34	7.54	5.12	7.76	4.56
	33	4.92	4.44	5.80	4.63	6.69	5.21	7.10	5.21	7.44	5.24	7.46	5.07	7.69	4.51
	35	4.92	4.44	5.80	4.63	6.69	5.21	7.10	5.21	7.33	5.18	7.39	5.02	7.61	4.47
	37	4.92	4.44	5.80	4.63	6.69	5.21	7.10	5.19	7.22	5.08	7.31	4.92	7.46	4.38
	39	4.92	4.44	5.80	4.63	6.69	5.21	7.10	5.15	7.17	5.03	7.24	4.87	7.38	4.33
	41	4.92	4.44	5.80	4.63	6.60	5.21	7.03	5.13	7.10	4.98	7.17	4.82	7.31	4.29
	43	4.92	4.44	5.80	4.63	6.53	5.21	6.96	5.11	7.03	4.93	7.10	4.77	7.23	4.24
	46	4.92	4.44	5.69	4.54	6.32	5.21	6.89	5.09	6.96	4.87	7.03	4.72	7.17	4.20
	48	4.92	4.44	5.63	4.49	6.11	5.06	6.67	5.03	6.89	4.82	6.82	4.67	6.96	4.15
	50	4.83	4.44	5.57	4.45	5.89	5.01	6.46	4.90	6.67	4.77	6.60	4.62	6.75	4.11

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
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	-12.6	1.79	1.79	1.79	1.79	1.79	1.79
	-11	-10.5	1.82	1.85	1.85	1.85	1.85	1.85
	-10	-9.5	1.90	1.90	1.90	1.90	1.90	1.90
	-9.1	-8.5	1.95	1.95	1.95	1.95	1.95	1.95
	-7.6	-7	1.98	1.98	1.98	1.98	1.98	1.98
	-5.6	-5	2.05	2.05	2.05	2.05	2.05	2.05
	-3.7	-3	2.16	2.16	2.16	2.16	2.16	2.16
	-0.7	0	2.31	2.31	2.31	2.31	2.31	2.18
	2.2	3	2.44	2.44	2.44	2.44	2.39	2.18
	4.1	5	2.50	2.50	2.50	2.50	2.39	2.18
	6	7	2.60	2.60	2.50	2.50	2.39	2.18
	7.9	9	2.68	2.68	2.60	2.50	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	2.02	2.02	2.02	2.02	2.02	2.02
	-13	-12.6	2.14	2.14	2.14	2.14	2.14	2.14
	-11	-10.5	2.24	2.24	2.24	2.24	2.24	2.24
	-10	-9.5	2.34	2.34	2.34	2.34	2.34	2.34
	-9.1	-8.5	2.40	2.40	2.40	2.40	2.40	2.40
	-7.6	-7	2.43	2.43	2.43	2.43	2.43	2.43
	-5.6	-5	2.53	2.53	2.53	2.53	2.53	2.53
	-3.7	-3	2.66	2.66	2.66	2.66	2.66	2.66
	-0.7	0	2.85	2.85	2.85	2.85	2.85	2.69
	2.2	3	3.01	3.01	3.01	3.01	2.94	2.69
	4.1	5	3.10	3.10	3.10	3.10	2.94	2.69
	6	7	3.20	3.20	3.20	3.10	2.94	2.69
	7.9	9	3.30	3.30	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	-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
	9.8	11	4.24	4.24	4.00	3.88	3.68	3.36
	11.8	13	4.40	4.32	4.00	3.88	3.68	3.36
	13.7	15	4.52	4.32	4.00	3.88	3.68	3.36

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
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
	9.8	11	5.30	5.30	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
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
	9.8	11	8.48	8.48	8.00	7.76	7.36	6.72
	11.8	13	8.80	8.64	8.00	7.76	7.36	6.72
	13.7	15	9.04	8.64	8.00	7.76	7.36	6.72

8 Electrical characteristics

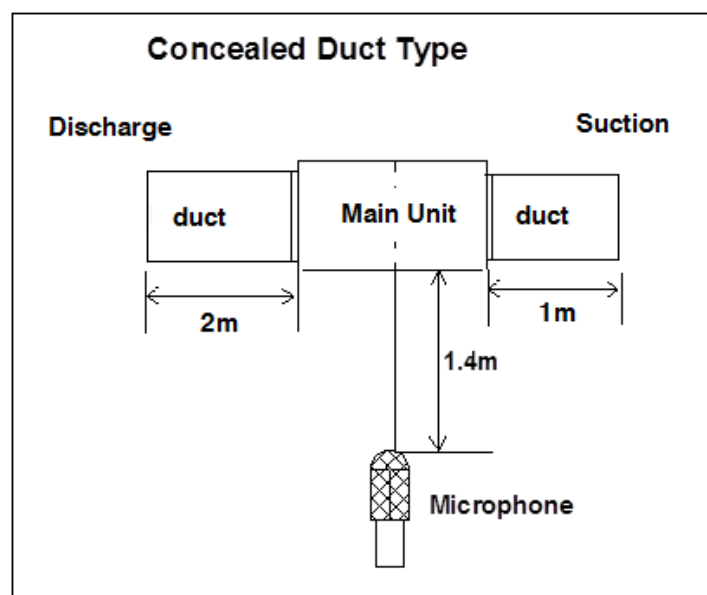
Model	Indoor unit				MFC	Power cable			Signal cable
	Hz	Voltage	Minimum	Maximum		L ≤ 20m	L ≤ 50m	Grounded	
CC-CPAL007-1S	50Hz	220-240V	198	264	15	2*2.5mm ²	2*4.0mm ²	2.5mm ²	2*0.75 mm ²
CC-CPAL009-1S	50Hz	220-240V	198	264	15	2*2.5mm ²	2*4.0mm ²	2.5mm ²	2*0.75 mm ²
CC-CPAL012-1S	50Hz	220-240V	198	264	15	2*2.5mm ²	2*4.0mm ²	2.5mm ²	2*0.75 mm ²
CC-CPAL016-1S	50Hz	220-240V	198	264	15	2*2.5mm ²	2*4.0mm ²	2.5mm ²	2*0.75 mm ²
CC-CPAL020-1S	50Hz	220-240V	198	264	15	2*2.5mm ²	2*4.0mm ²	2.5mm ²	2*0.75 mm ²
CC-CPAL024-1S	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) Output: Fan motor rated powerOutput (W)
- 6) FLC: Full Load Current (A)

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 1.4m

9.2 Test data (Sound pressure level)

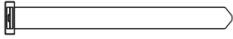
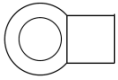
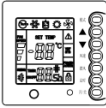
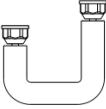
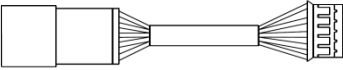
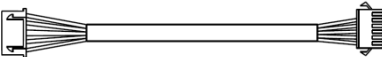
Model	Sound pressure level (dB(A))		
	High speed	Medium speed	Low speed
CC-CPAL007-1S	29	26	24
CC-CPAL009-1S	29	26	24
CC-CPAL012-1S	32	28	25
CC-CPAL016-1S	37	35	32
CC-CPAL020-1S	38	32	28
CC-CPAL024-1S	39	34	30

Notes:

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

10 Accessories

10.1 Standard accessories.

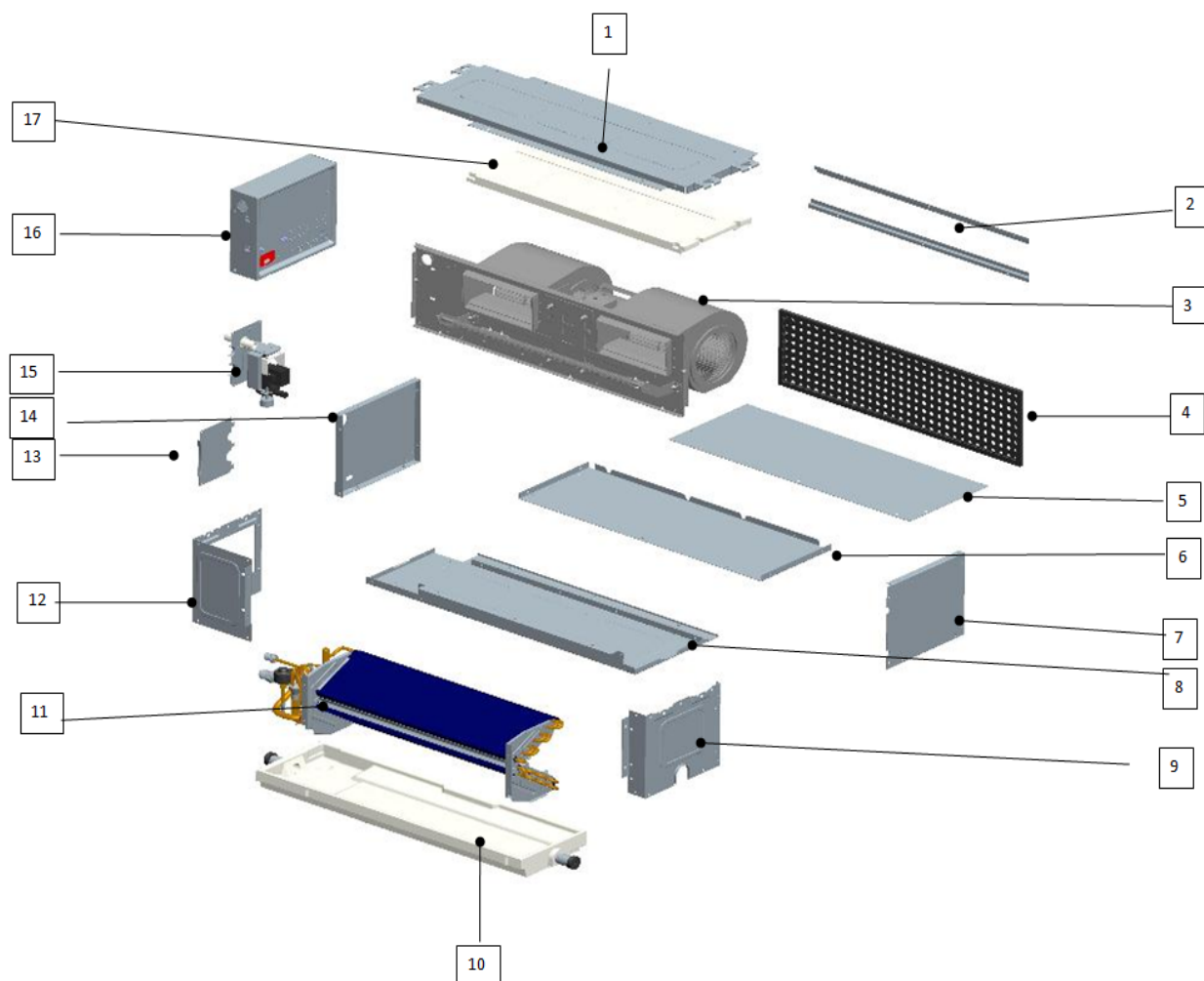
Item	Quantity	Shape	Usage
Installation manual for indoor unit	1	/	Must deliver to customer
Insulation sheath	2		Thermal insulation for the jointing part of piping
Strapping tapes	6		Bind up the wires and pipes
Round shape insulation termination points	6		For wiring
U shape insulation termination points	3		For wiring
Wired controller	1		For controlling indoor unit
EXV connection pipe	1		Connecting with EXV box and indoor unit liquid pipe
Wired controller connection wire group	1		For connecting wired controller to indoor PCB
Wired controller connection wire group	1		For connecting wired controller to indoor PCB
Bag	3		For bagging accessories

10.2 Local buy accessories.

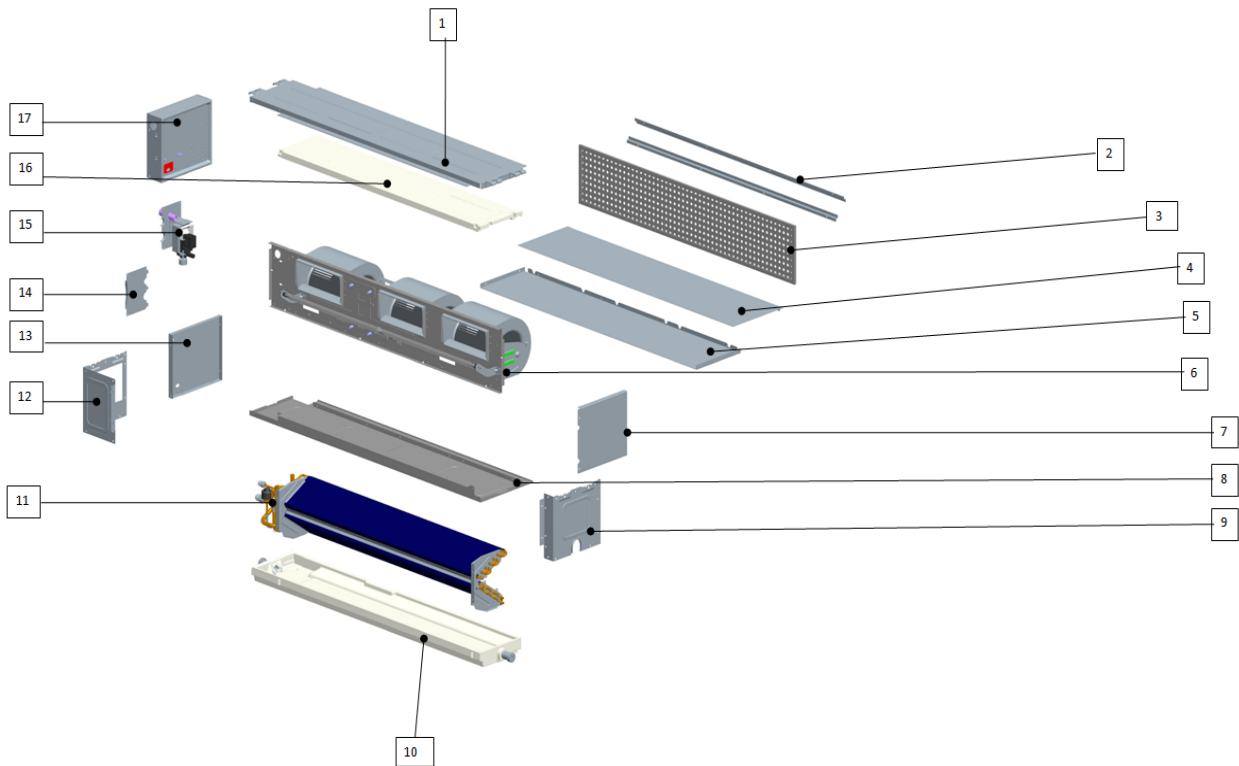
Item	Specification		
	2.2KW/2.8kW	3.6KW/4.5KW/5.6kW	7.1kW
Liquid side copper pipe	Ø6.35mm*0.8mm		Ø9.53mm*0.8mm
Gas side copper pipe	Ø9.53mm*0.8mm	Ø12.7mm*1.00mm	Ø15.9mm*1.0mm
Drainage pipe	PVC		
Pipe insulation	Thickness ≥ 10mm		
Power cables	2*2.5 mm ² (When total cable length is ≤20m) 2*4.0 mm ² (When 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-CPAL007-1S, CC-CPAL009-1S, CC-CPAL012-1S, CC-CPAL016-1S, CC-CPAL020-1S



No.	Part name	Quantity	No.	Part name	Quantity
1	Cover assembly attached cotton	1	11.1.4	Splitter assembly	1
1.1.2	Hanger	4	11.2	Damping rubber	2
2	Filter baffles	2	11.3	Sheath pipe insulation	1
3	Moter assembly	1	11.4	Sheath pipe insulation	1
3.1	Fixing board assy attached cotton for fan	1	11.5	EXV coil	1
3.2	Wind scroll case	2	12	Left pannel attached cotton assy	1
3.3	Biaxial indoor motor	1	13	Tube cover attached cotton assy	1
4	Filter	1	14	Left air return board attached cotton assy	1
5	Upper panel of air return box	1	15	water pump assembly	1
6	Down panel of air return box	1	15.1	Drainage connecting pipe	1
7	Right panel of air return box	1	15.2	Pump fixed plate attached cotton assy	1
8	Down panel attached cotton assembly	1	15.3	Water Level switch fixed plate	1
8.1	Down panel attached assembly	1	15.4	water pump	1
8.1.1	Down panel	1	15.5	water lever switch	1
8.1.2	Fixing board assy for fan	1	15.6	Drain pipe	1
8.2	Down air outlet cotton	1	16	Eletronic control components	1
8.3	Down pannel cotton	1	16.1	Electronically controlled bottom board	1
9	Right pannel attached cotton assy	1	16.2	Electric control box cover	1
10	Foam water tray	1	16.3	Electric control board plastic base	1
11	Evaporator assy	1	16.4	Eletronic control board for indoor unit	1
11.1	Evaporator pre-welded assy	1	16.5	Terminal	1
11.1.1	Evaporator	2	16.6	Terminal	1
11.1.2	Throttle assembly	1	17	Upper foam	1
11.1.3	Manifold assembly	1			



No.	Part name	Quantity	No.	Part name	Quantity
1	Cover assembly attached cotton	1	11.1.3	Manifold assembly	1
1.1.2	Hanger	4	11.1.4	Splitter assembly	1
2	Filter baffles	2	11.2	Damping rubber	2
3	Filter	1	11.3	Sheath pipe insulation	1
4	Upper panel of air return box	1	11.4	Sheath pipe insulation	1
5	Down panel of air return box	1	11.5	EXV coil	1
6	Moter assembly	1	12	Left pannel attached cotton assy	1
6.1	Fixing board assy attached cotton for fan	1	13	Left air return board attached cotton assy	1
6.2	Wind scroll case	3	14	Tube cover attached cotton assy	1
6.3	Biaxial indoor motor	1	15	water pump assembly	1
7	Right air return board	1	15.1	Drainage connecting pipe	1
8	Down panel attached cotton assembly	1	15.2	Pump fixed plate attached cotton assy	1
8.1	Down panel attached assembly	1	15.3	Water Level switch fixed plate	1
8.1.1	Down panel	1	15.4	water pump	1
8.1.2	Fixing board assy for fan	1	15.5	water lever switch	1
8.2	Down air outlet cotton	1	15.6	Drain pipe	1
8.3	Down pannel cotton	1	16	Upper foam	1
9	Right pannel attached cotton assy	1	17	Eletronic control components	1
10	Foam water tray	1	17.1	Electronically controlled bottom board	1
11	Evaporator assy	1	17.2	Electric control box cover	1
11.1	Evaporator pre-welded assy	1	17.3	Electric control board plastic base	1
11.1.1	Evaporator	2	17.4	Eletronic control board for indoor unit	1
11.1.2	Throttle assembly	1	17.5	Terminal	1
11.1.3	Manifold assembly	1	17.6	Terminal	1