

VEFC Series

Floor Ceiling VRF

Technical Manual

220-240V/1/50-60Hz



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1. External appearance



3.6/4.5/5.6kW



7.1/8.0kW



9.0/11.2/14/16kW

3. Specifications

Model			VEFC012Q0A-GWV036	VEFC015Q0A-GWV045	VEFC019Q0A-GWV056
			820044400010	820044400011	820044400012
Power supply			220-240V/1N/50-60Hz	220-240V/1N/50-60Hz	220-240V/1N/50-60Hz
Capacity	Cooling	kW	3.6	4.5	5.6
	Heating	kW	4	5	6.3
Power Input		kW	0.04	0.04	0.05
Fan motor	Model		DR-310-75LD-8	DR-310-75LD-8	DR-310-75LD-8
	Type		DC	DC	DC
	Brand		LIFENG	LIFENG	LIFENG
	Capacitor	μF	-	-	-
	Speed (Rated)	r/min	680/620/590	680/620/590	830/680/620
Indoor coil	Number of rows		3	3	3
	Fin type		Hydrophilic aluminum	Hydrophilic aluminum	Hydrophilic aluminum
	Tube diameter and type	mm	Ø7, Inner groove tube	Ø7, Inner groove tube	Ø7, Inner groove tube
Air flow (max.)		m ³ /h	550	550	700
Sound pressure level		dB(A)	33~38	33~38	35~43
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	mm ²	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	mm ²	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

Note:

- 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			VEFC024Q0A-GWV071	VEFC027Q0A-GWV080	VEFC031Q0A-GWV090
			820044400013	820044400014	820044400015
Power supply			220-240V/1N/50-60Hz	220-240V/1N/50-60Hz	220-240V/1N/50-60Hz
Capacity	Cooling	kW	7.1	8	9
	Heating	kW	8	8.8	10
Power Input		kW	0.06	0.06	0.07
Fan motor	Model		DR-310-120LD-8	DR-310-120LD-8	2*DR-310-75LD-8
	Type		DC	DC	DC
	Brand		YONGAN	YONGAN	LIFENG
	Capacitor	μF	-	-	-
	Speed (Rated)	r/min	860/820/770	860/820/770	910/850/790
Indoor coil	Number of rows		3	3	3
	Fin type		Hydrophilic aluminum	Hydrophilic aluminum	Hydrophilic aluminum
	Tube diameter and type	mm	Ø7, Inner groove tube	Ø7, Inner groove tube	Ø7, Inner groove tube
Air flow (max.)		m ³ /h	1000	1000	1400
Sound pressure level		dB(A)	42~46	42~46	42~47
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	mm ²	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	mm ²	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

Note:

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			VEFC038Q0A-GWV112	VEFC048Q0A-GWV140	VEFC060Q0A-GWV160
			820044400018	820044400016	820044400017
Power supply			220-240V/1N/50-60Hz	220-240V/1N/50-60Hz	220-240V/1N/50-60Hz
Capacity	Cooling	kW	11.2	14	16
	Heating	kW	12.5	15	17
Power Input		kW	0.07	0.1	0.1
Fan motor	Model		2*DR-310-75LD-8	2*DR-310-75LD-8	2*DR-310-75LD-8
	Type		DC	DC	DC
	Brand		LIFENG	LIFENG	LIFENG
	Capacitor	μF	-	-	-
	Speed (Rated)	r/min	910/850/790	1180/1030/850	1180/1030/850
Indoor coil	Number of rows		3	4	4
	Fin type		Hydrophilic aluminum	Hydrophilic aluminum	Hydrophilic aluminum
	Tube diameter and type	mm	Ø7, Innergroove tube	Ø7, Innergroove tube	Ø7, Innergroove tube
Air flow (max.)		m ³ /h	1400	1900	1900
Sound pressure level		dB(A)	42~47	45~54	45~54
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	43.5/49.5	43.5/49.5
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	mm ²	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	mm ²	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

Note:

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

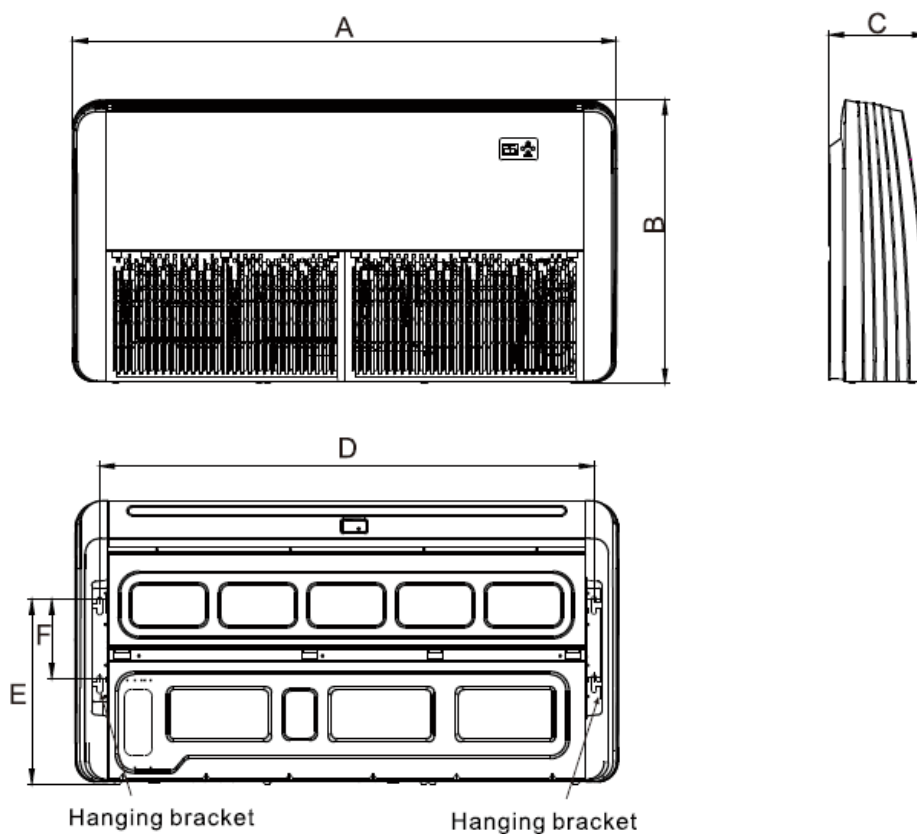
2) Nominal heating capacities are based on the following condition.

- 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.

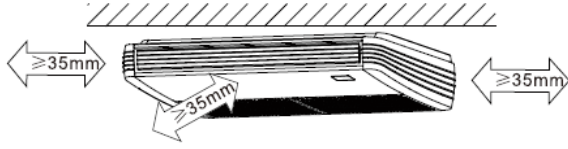
4. Dimension



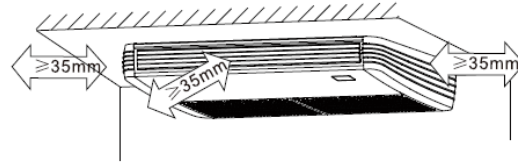
Model	Body dimension (mm)			Installation dimension (mm)		
	A	B	C	D	E	F
VEFC012Q0A-GWV036	1050	675	235	933	440	188
VEFC015Q0A-GWV045	1050	675	235	933	440	188
VEFC019Q0A-GWV056	1050	675	235	933	440	188
VEFC024Q0A-GWV071	1300	675	235	1185	440	188
VEFC027Q0A-GWV080	1300	675	235	1185	440	188
VEFC031Q0A-GWV090	1670	675	235	1553	440	188
VEFC038Q0A-GWV112	1670	675	235	1553	440	188
VEFC048Q0A-GWV140	1670	675	235	1553	440	188
VEFC060Q0A-GWV160	1670	675	235	1553	440	188

5. Service Space

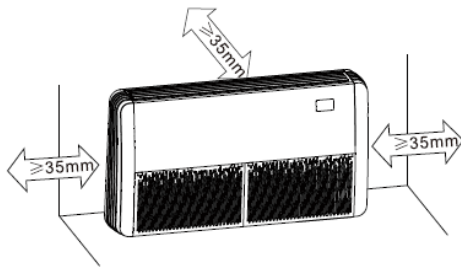
- There is enough room for installation and maintenance.
- The ceiling is horizontal, and its structure can endure the weight of the indoor unit.
- The outlet and the inlet are not impeded, and the influence of external air is the least.
- The air flow can reach throughout the room.
- The connecting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



Hanging Method

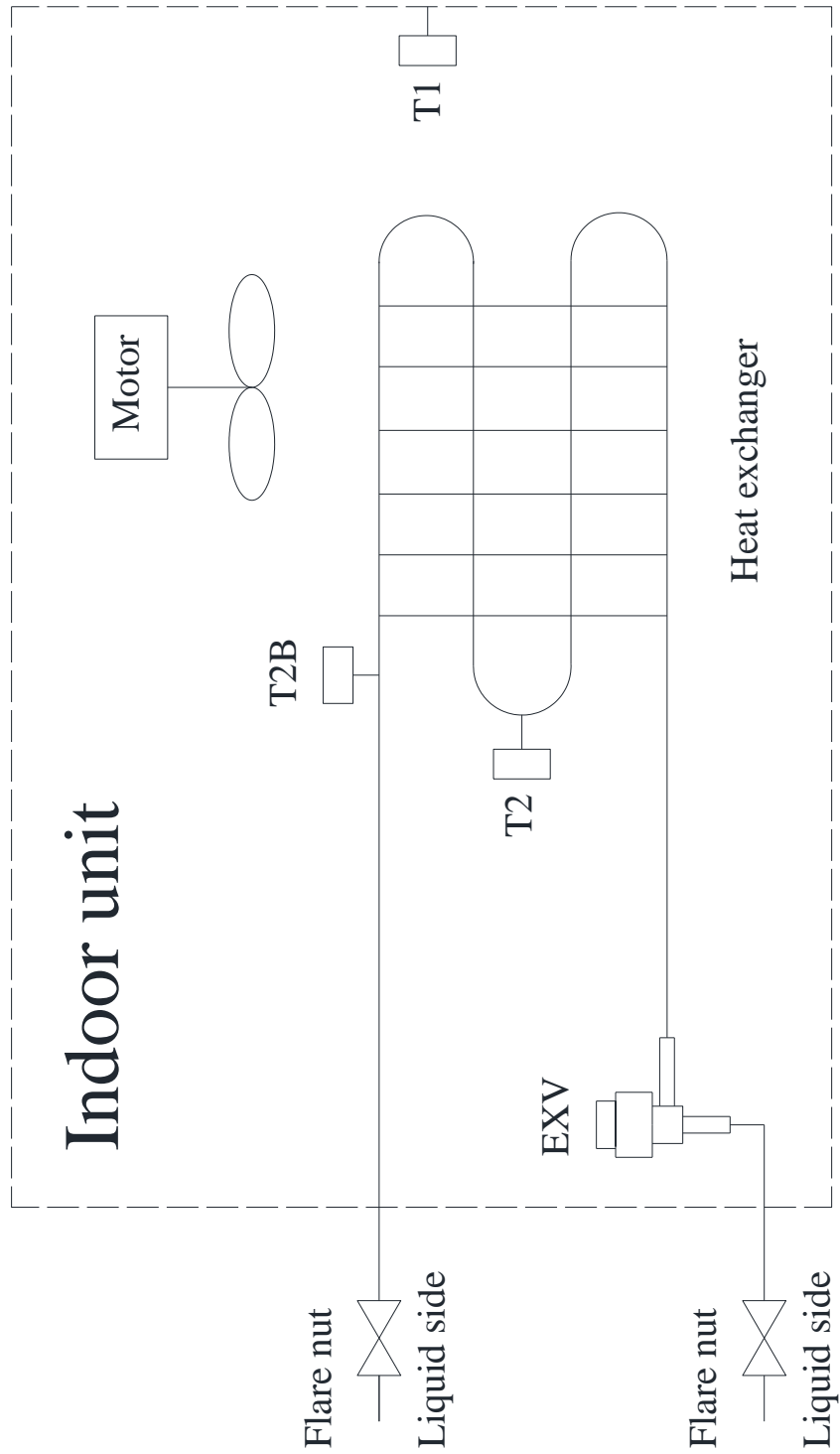


Inlaying Method



Sitting Method

6. Pipe Diagram



Note:

T1: Room temperature sensor

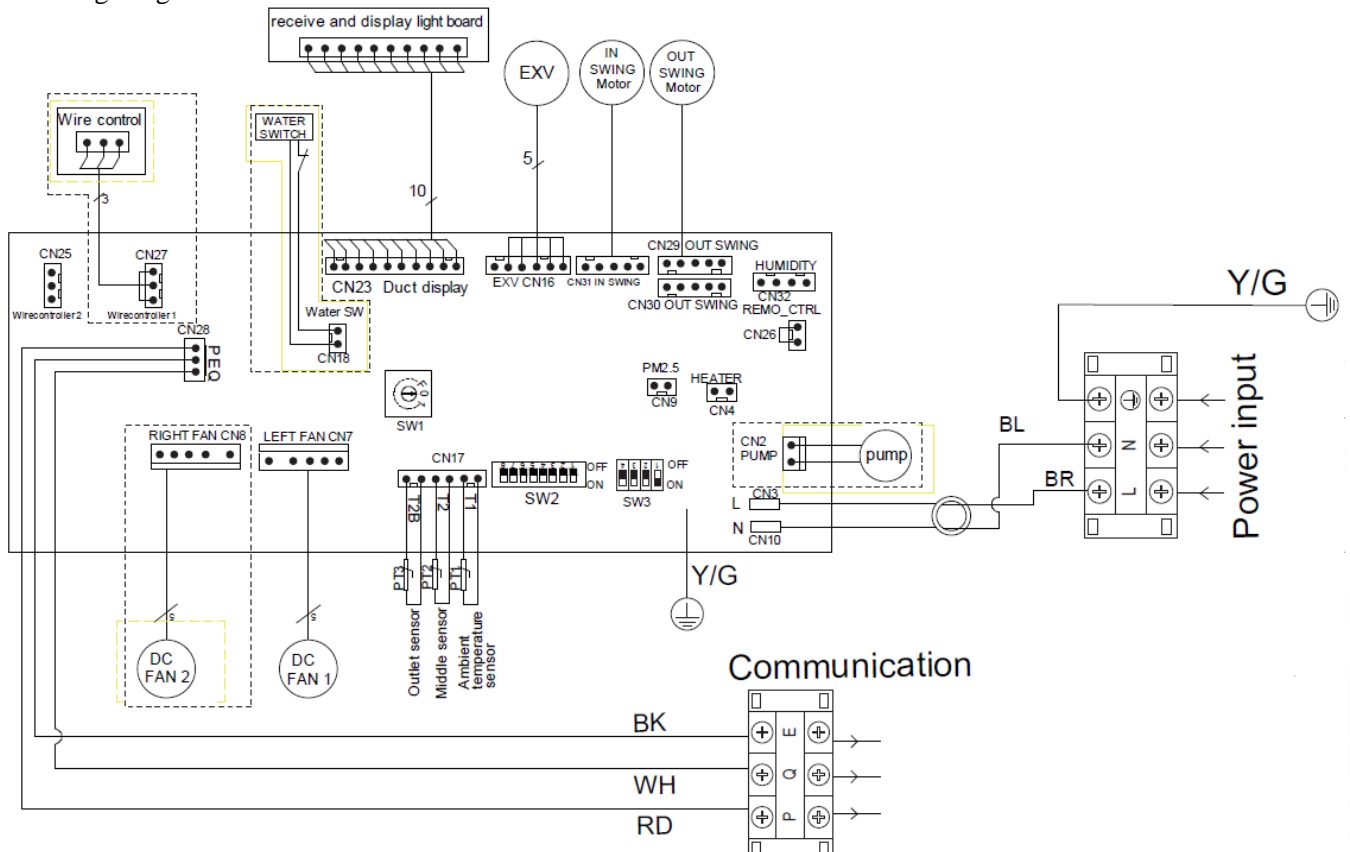
T2: Temperature sensor of middle heat exchanger

T2B: Temperature sensor of heat exchanger outlet

EXV: Electrical expansion valve

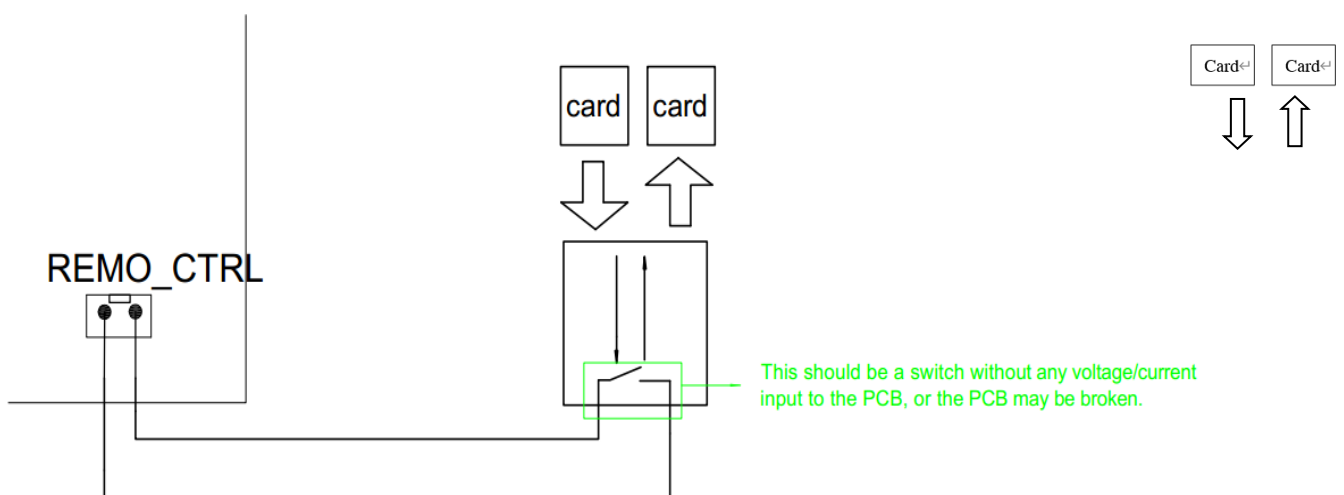
7. Wiring Diagram

7.1 Wiring Diagram



VRF indoor unit connect with card key:

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



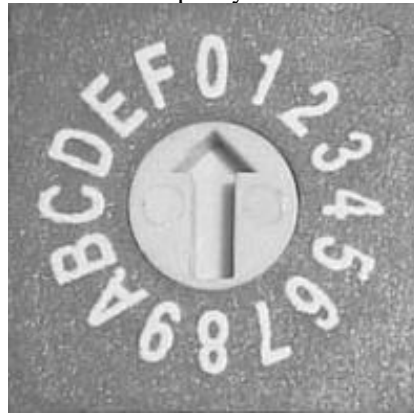
Note:

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.

7.2 Dial switches

7.2.1 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


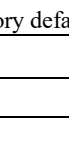

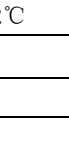
7.2.2 SW3

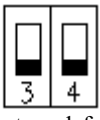
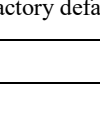
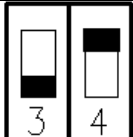
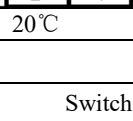
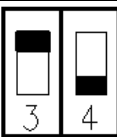
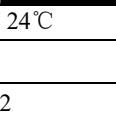
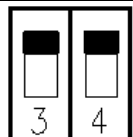
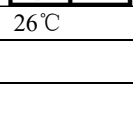
Type selection	
SW3 NO1,2,3	Type
ON OFF 1 2 3	Short duct unit
ON OFF 1 2 3	Slim duct unit
ON OFF 1 2 3	Medium ESP duct unit
ON OFF 1 2 3	Floor ceiling unit
ON OFF 1 2 3	Floor standing unit
ON OFF 1 2 3	Reserve
ON OFF 1 2 3	Reserve


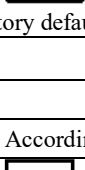

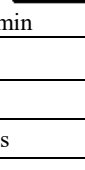
Mode Select bits		
SW3 NO.4	ON OFF 4	Automatic Address-sing mode (Factory default)
	ON OFF 4	Test mode (to allow clear address)

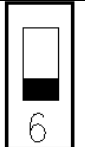
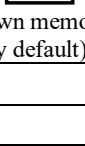
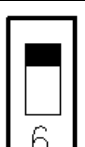
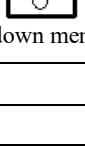
7.2.3 SW2


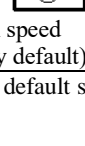

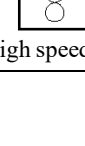
Name	Switch number 1 of SW2	
Function	Refrigerant temperature compensation temperature value select bits	
Setting	ON OFF 3°C (Factory default)	ON OFF 1°C

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

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

Name	Switch number 5 of SW2	
Function	Heating stop the fan time to choose	
Setting	<p>ON </p> <p>OFF </p> <p>4min (Factory default)</p>	<p>ON </p> <p>OFF </p> <p>8min</p>

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

Name	Switch number 8 of SW2	
Function	Fan Speed Choice	
Setting	<p>ON </p> <p>OFF </p> <p>High speed (Factory default)</p>	<p>ON </p> <p>OFF </p> <p>Super high speed</p>

Switch number 7 of SW2, reserved, leave it as default setting (switch dial down).

8.Capacity Table

8.1 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
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
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	
4.5	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
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	
5.6	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 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
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	

8.2 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
	WB	DB	TC kW	TC kW	TC kW	TC kW	TC kW	TC 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
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	
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	
11.8	13	5.50	5.40	5.00	4.85	4.60	4.20	
13.7	15	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	-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 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
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	
8.0	-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
9.8	11	9.54	9.54	8.80	8.73	8.28	7.56	
11.8	13	9.90	9.72	8.80	8.73	8.28	7.56	
13.7	15	10.17	9.72	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 Capacity WB: Wet-bulb Temperature DB: Dry-bulb Temperature

Capacity (kW)	Outdoor temperature (°C)		Indoor temperature (°C DB)					
			16	18	20	21	22	24
	WB	DB	TC	TC	TC	TC	TC	TC
			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
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	
14	-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
	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	
16	-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	

9. Electrical characteristics

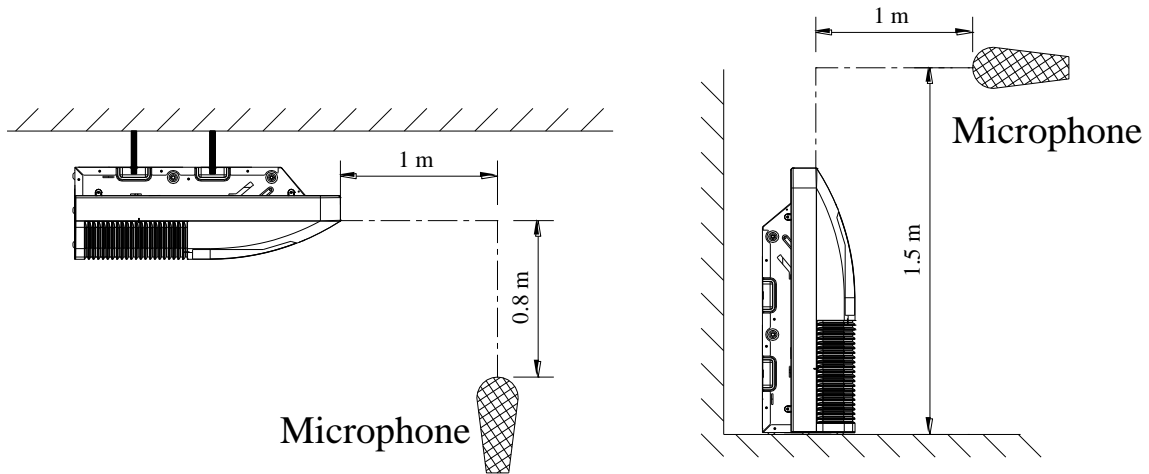
Model	Indoor unit				MFC	Power cable			Signal cable
	Hz	Voltage	Minimum	Maximum		L<20m	L >50m	Grounded	
VEFC012Q0A-GWV036	50/60Hz	220-240V	198	264	15	2*2.5mm ²	2*4.0mm ²	2.5mm ²	2*0.75 mm ²
VEFC015Q0A-GWV045	50/60Hz	220-240V	198	264	15	2*2.5mm ²	2*4.0mm ²	2.5mm ²	2*0.75 mm ²
VEFC019Q0A-GWV056	50/60Hz	220-240V	198	264	15	2*2.5mm ²	2*4.0mm ²	2.5mm ²	2*0.75 mm ²
VEFC024Q0A-GWV071	50/60Hz	220-240V	198	264	15	2*2.5mm ²	2*4.0mm ²	2.5mm ²	2*0.75 mm ²
VEFC027Q0A-GWV080	50/60Hz	220-240V	198	264	15	2*2.5mm ²	2*4.0mm ²	2.5mm ²	2*0.75 mm ²
VEFC031Q0A-GWV090	50/60Hz	220-240V	198	264	15	2*2.5mm ²	2*4.0mm ²	2.5mm ²	2*0.75 mm ²
VEFC038Q0A-GWV112	50/60Hz	220-240V	198	264	15	2*2.5mm ²	2*4.0mm ²	2.5mm ²	2*0.75 mm ²
VEFC048Q0A-GWV140	50/60Hz	220-240V	198	264	15	2*2.5mm ²	2*4.0mm ²	2.5mm ²	2*0.75 mm ²
VEFC060Q0A-GWV160	50/60Hz	220-240V	198	264	15	2*2.5mm ²	2*4.0mm ²	2.5mm ²	2*0.75 mm ²

Note:

- 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)

10. Noise Level

10.1 Test Condition



Notes:

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

10.2 Test data (Sound pressure level)


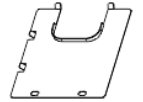
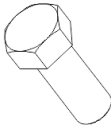
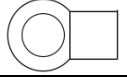



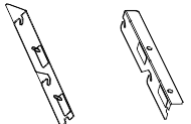

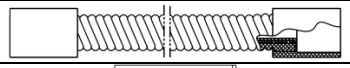

Model	Sound pressure level (dB(A))		
	High speed	Medium speed	Low speed
VEFC012Q0A-GWV036	38	35	33
VEFC015Q0A-GWV045	38	35	33
VEFC019Q0A-GWV056	43	39	35
VEFC024Q0A-GWV071	46	44	42
VEFC027Q0A-GWV080	46	44	42
VEFC031Q0A-GWV090	47	44	42
VEFC038Q0A-GWV112	47	44	42
VEFC048Q0A-GWV140	54	50	45
VEFC060Q0A-GWV160	54	50	45

Notes:

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

11. Accessories

11.1 Standard accessories.

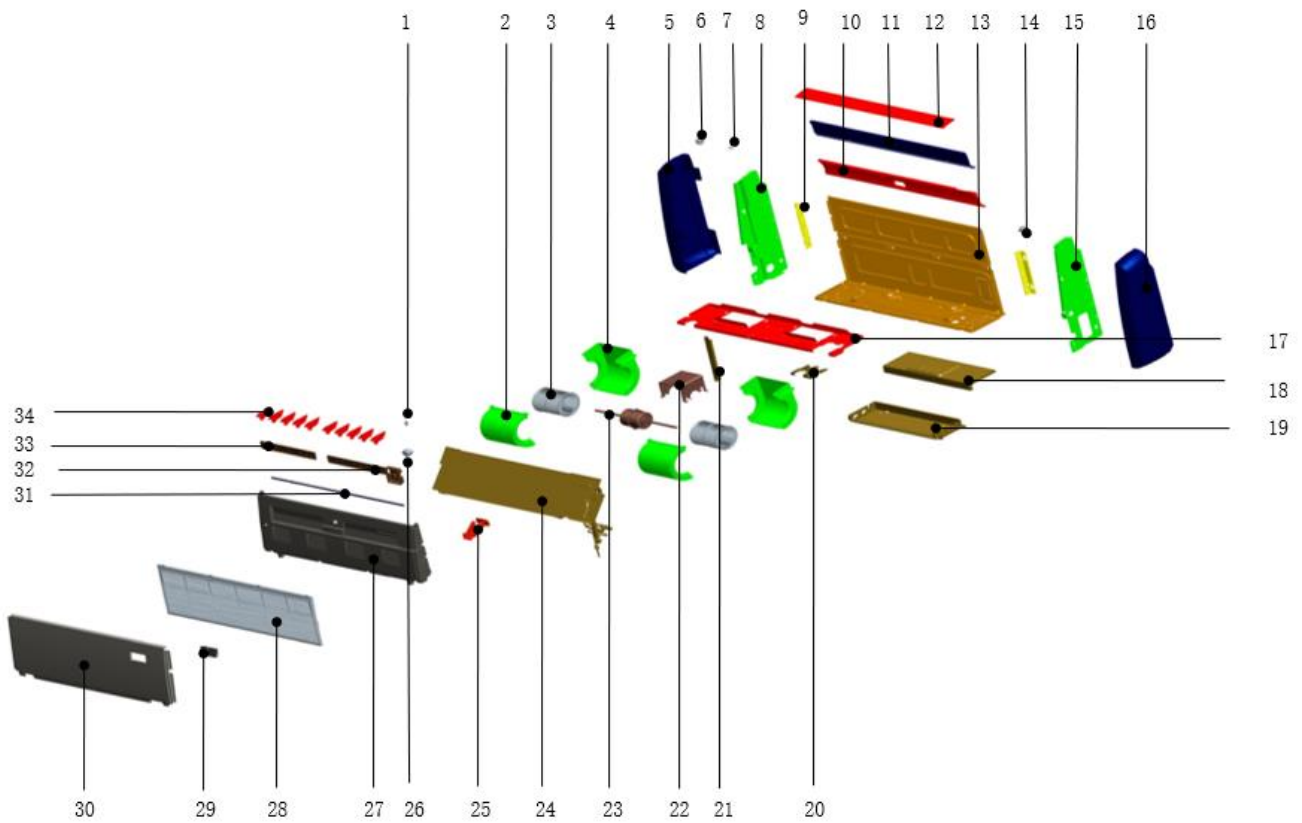
Item	Quantity	Shape	Usage
Installation manual for indoor unit	1	/	Must deliver to customer
Insulation sheath	2		Thermal insulation for the jointing part of piping
Cover board	1		For stopping small animal getting into the unit
Hexagonal head bolt	4		For installation use
Round shape insulation termination 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

11.2 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)		

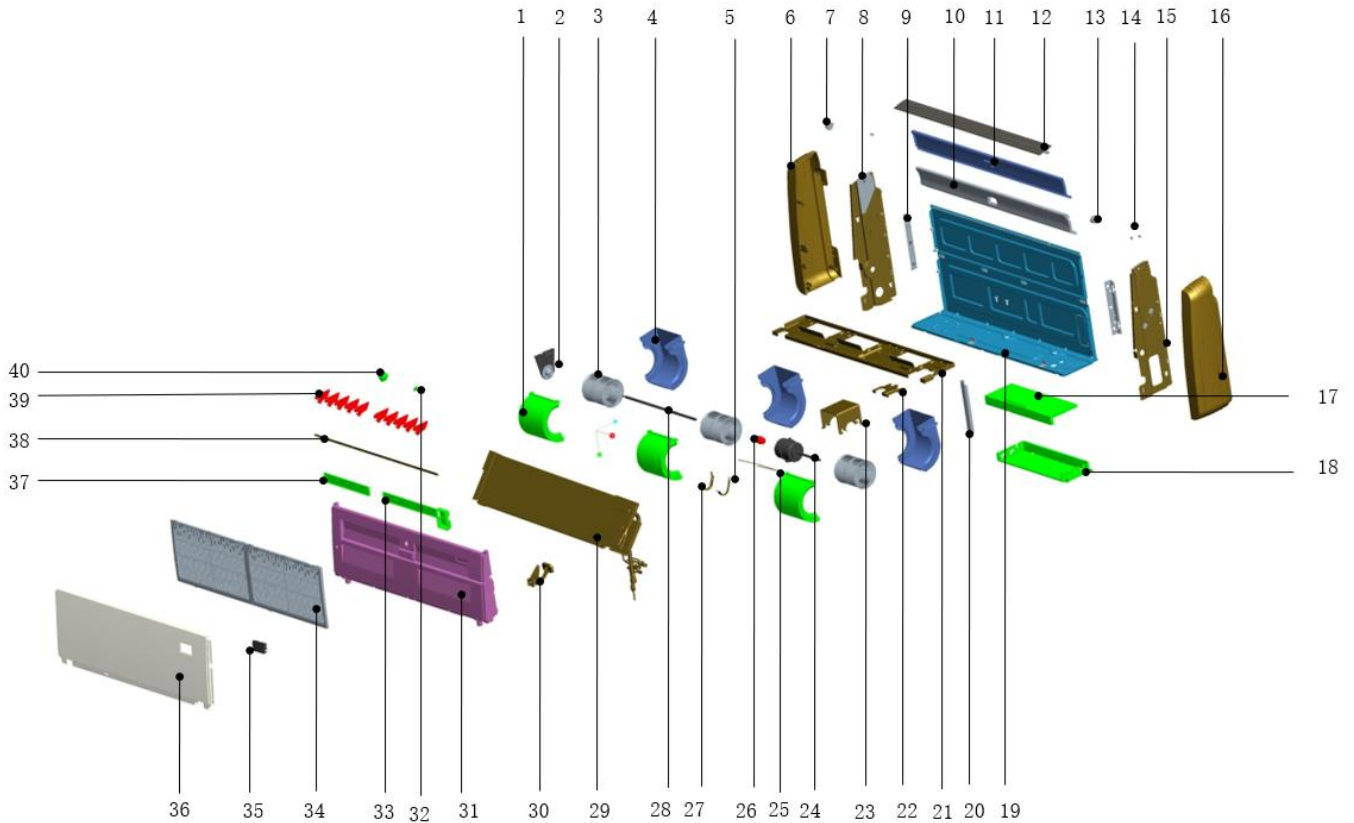
12. Exploded View

• VEFC012Q0A-GWV036, VEFC015Q0A-GWV045, VEFC019Q0A-GWV056



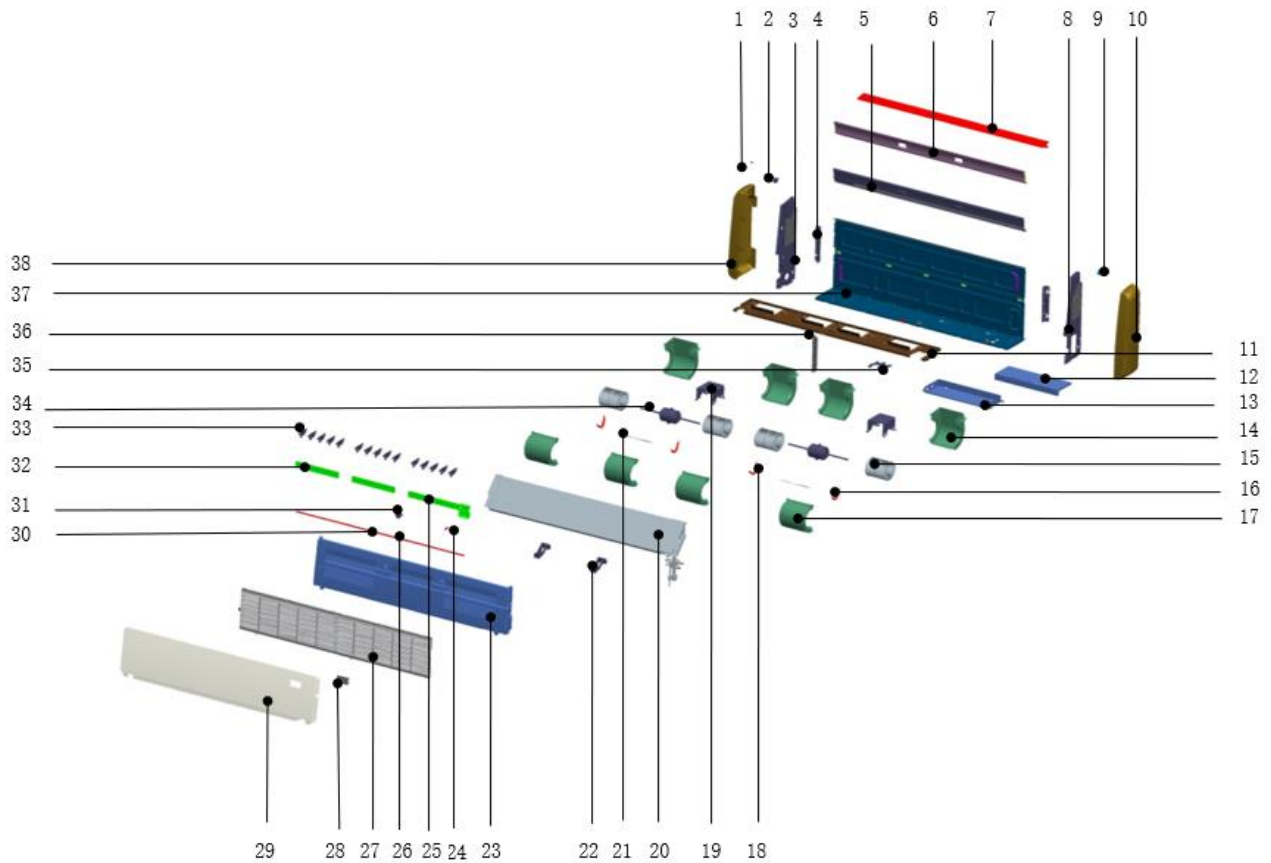
No.	Part Name	Quantity	No.	Part Name	Quantity
1	Horizontal swing leaf active rod	1	19.2	Power terminal	1
2	Lower volute	2	19.3	Communication terminal	1
3	Centrifugal fan	2	19.4	Electric control box	1
4	Upper volute	2	19.5	Fan capacitance	1
5	Left cover	1	20	Piping plate	1
6	Stepper motor (horizontal)	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	Electric control box assembly	1	34	Wind guide blade	9
19.1	Electronic control board for indoor unit	1			

• VEFC024Q0A-GWV071, VEFC027Q0A-GWV080



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			

• VEFC031Q0A-GWV090, VEFC038Q0A-GWV112, VEFC048Q0A-GWV140, VEFC060Q0A-GWV160



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	Electric control box assembly	1	30	Horizontal swing rod 2	1
13.1	Electronic 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	Electric 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			



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