DC Inverter Multi-split System Technical Manual - 50Hz/R410a

A/1/LCAC/2/TM/2.0

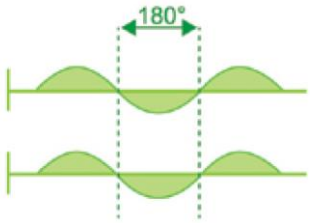
Contents

Part 1. General Information

1. Features

1.1 Compressor

1.1.1 180° sine wave compressor control, higher efficiency and lower power consumption and noise.



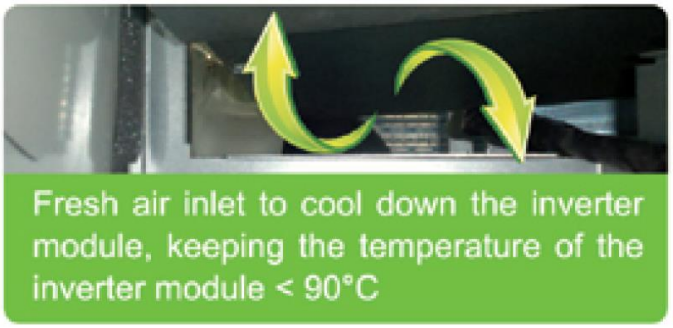
1.1.2 Built-in high temp. protection, guarantee safety revolution.

1.2 Operation range

High temperature and low temperature operation stability.cooling:10-46℃,heating:-15-24℃

1.3 Electrical design

1.3.1 Total new design for the E-box. Optimizing design of the E-box, fresh air cooling down the temperature of the inverter module.



1.3.2 Adopting high performance main chip of NEC for the electronic control, higher reliability and operation speed.

1.4 System design

1.4.1 Anticorrosive components design, leading to longer service live.

Plastic-coating EXV loop design.

1.4.2 Profit from EXV design, the system can control the refrigerant flow much more precisely, leading to precise capacity output, make the users much more comfortable and save energy.

1.5 Free match

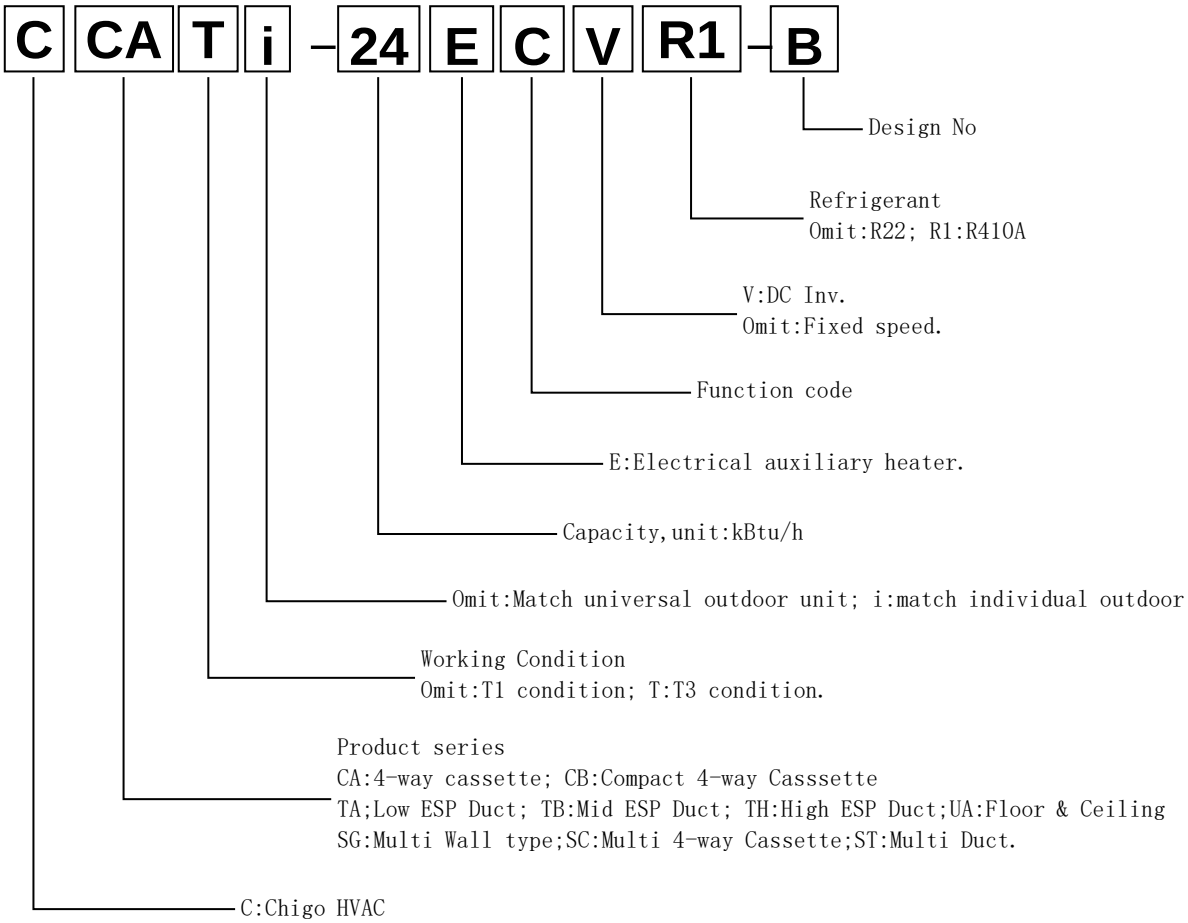
1.5.1 Different indoor units for choice. You can choose different indoor units appearance for your favorite.

1.5.2 Much more indoor units for free combination, meeting for different requirement such as office, house use, villa and etc.

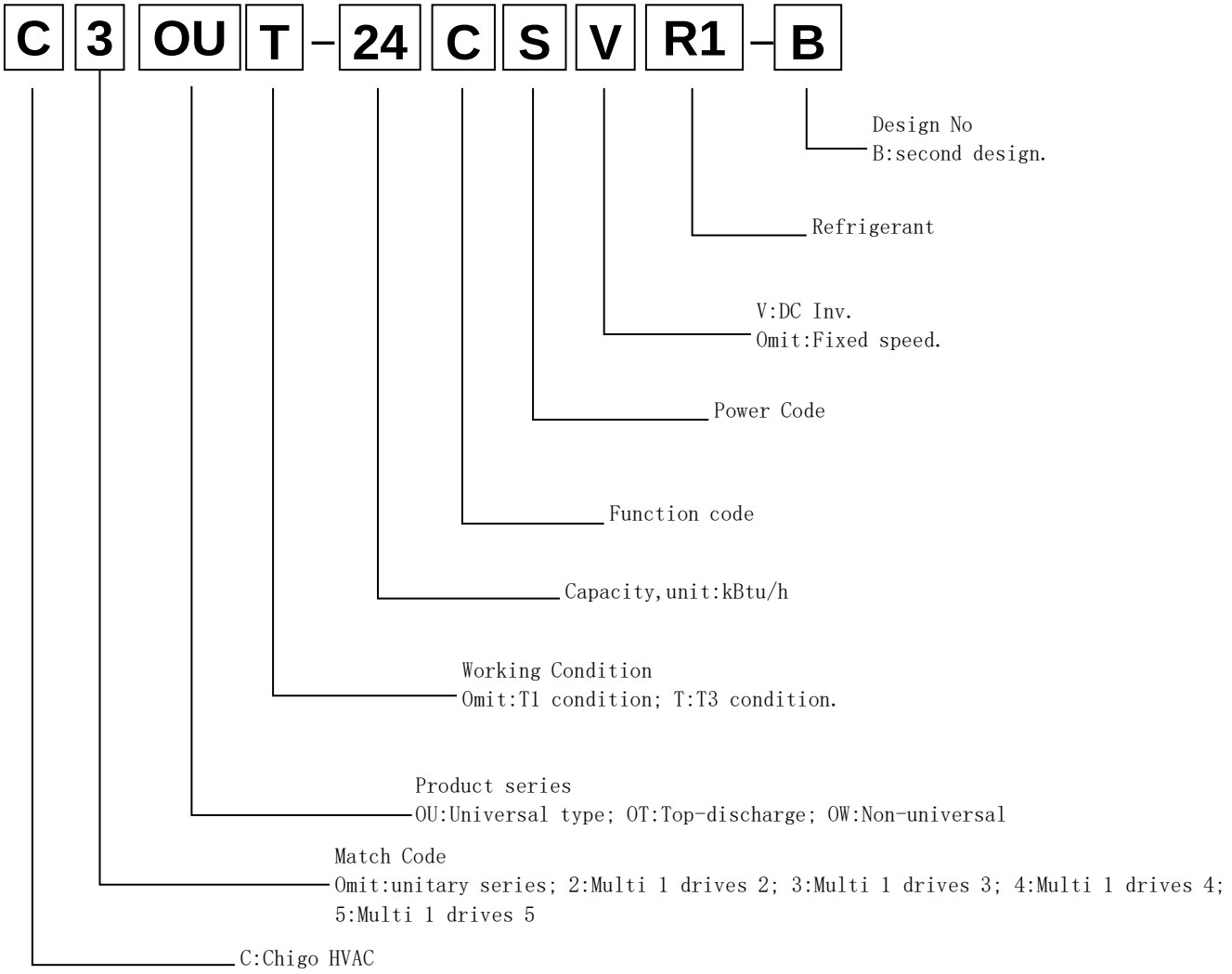
1.5.3 One or more indoor units' connection combination for your choice.

2. Nomenclature

2.1 Indoor Units



2.2 Outdoor Units



3. Products Line-up

3.1 Indoor Units

Model name	Dimension (W×H×D)(mm)	Net/Gross weight (kg)	Power supply
Wall Mounted			
CSG-07HVR1-A(J150)	878×290×227	8.5/10	220~240V/1Ph/50Hz
CSG-07HVR1-A(J155)	878×290×227	8.5/10.5	220~240V/1Ph/50Hz
CSG-07HVR1-A(J156)	878×290×227	8.5/11	220~240V/1Ph/50Hz
CSG-09HVR1-A(J150)	878×290×227	8.5/10	220~240V/1Ph/50Hz
CSG-09HVR1-A(J155)	878×290×227	8.5/10.5	220~240V/1Ph/50Hz
CSG-09HVR1-A(J156)	878×290×227	8.5/11	220~240V/1Ph/50Hz
CSG-12HVR1-A(J150)	878×290×227	8.5/10	220~240V/1Ph/50Hz
CSG-12HVR1-A(J155)	878×290×227	8.5/10.5	220~240V/1Ph/50Hz
CSG-12HVR1-A(J156)	878×290×227	8.5/11	220~240V/1Ph/50Hz
CSG-18HVR1-A(P150)	953×347×270	10.5/13	220~240V/1Ph/50Hz
CSG-18HVR1-A(P155)	953×347×270	10.5/13	220~240V/1Ph/50Hz
CSG-18HVR1-A(P156)	953×347×270	10.5/13.5	220~240V/1Ph/50Hz
CSG-24HVR1-A(W150)	1180×362×288	13.5/16	220~240V/1Ph/50Hz
CSG-24HVR1-A(W155)	1180×362×288	13.5/16.5	220~240V/1Ph/50Hz
CSG-24HVR1-A(W156)	1180×362×288	13.5/16.5	220~240V/1Ph/50Hz
Ducted unit			
CST-07HVR1-A	814×210×467	17/19.5	220~240V/1Ph/50Hz
CST-09HVR1-A	814×210×467	17/19.5	220~240V/1Ph/50Hz
CST-12HVR1-A	814×210×467	17/19.5	220~240V/1Ph/50Hz
CST-18HVR1-A	1010×210×467	20.5/24	220~240V/1Ph/50Hz
Cassette unit			
CSC-07HVR1-A	565×267×565	16.5/22	220~240V/1Ph/50Hz
CSC-09HVR1-A	565×267×565	16.5/22	220~240V/1Ph/50Hz
CSC-12HVR1-A	565×267×565	16.5/22	220~240V/1Ph/50Hz
CSC-18HVR1-A	565×267×565	16.5/22	220~240V/1Ph/50Hz

3.2 Outdoor Units

Model name	Dimension (W×H×D) (mm)	Net/Gross weight (kg)	Power supply
DC Dual-split			
C2OU-16HDR1-A	944×608×345	41/44	220~240V/1Ph/50Hz
C2OU-18HDR1-A	944×608×345	41/44	220~240V/1Ph/50Hz
DC Tri-split			
C3OU-21HDR1-A	989×843×392	57/67	220~240V/1Ph/50Hz
C3OU-27HDR1-A	989×843×392	62/72	220~240V/1Ph/50Hz
DC Fourfold-split			
C4OU-28HDR1-A	1090×997×399	87/98.5	220~240V/1Ph/50Hz
C4OU-36HDR1-A	1090×997×399	91/102.5	220~240V/1Ph/50Hz
DC Fivefold-split			
C5OU-42HDR1-A	1090×997×399	91/102.5	380~415V/3Ph/50Hz

4. External Appearance

4.1 Indoor Units

<table>
<tr><th colspan="2">Wall Mounted</th></tr>
<tr><td> 
150</td><td> 
155 Series</td></tr>
<tr><td colspan="2"> 
156 Series</td></tr>
</table>

Ducted Units	4-way Cassette
	

4.2 Outdoor Units

DC Dual-split

DC Triple split

DC Fourfold &Fivefold split

5. Combination Table

Outdoor Unit	Qty. of indoor units	Combination Table (kBtu/h)
C2OU-16HDR1-A	1	7
	1	9
	1	12
	1	18
	2	7+7
	2	7+9
	2	7+12
	2	9+9
	2	9+12
	2	12+12
C2OU-18HDR1-A	1	7
	1	9
	1	12
	1	18
	2	7+7
	2	7+9
	2	7+12
	2	7+18
	2	9+9
	2	9+12
	2	12+12
	2	9+18
C3OU-21HDR1-A	2	7+7
	2	7+9
	2	7+12
	2	7+18
	2	9+9
	2	9+12

	2	12+12
	2	9+18
	3	7+7+7
	3	7+7+9
	3	7+9+9
	3	7+7+12
	3	7+9+12
	3	9+9+9
	3	9+9+12
C3OU-27HDR1-A	2	7+7
	2	7+9
	2	7+12
	2	7+18
	2	7+24
	2	9+9
	2	9+12
	2	12+12
	2	9+18
	2	9+24
	2	12+18
	3	7+7+7
	3	7+7+9
	3	7+7+12
	3	7+7+18
	3	7+9+9
	3	7+9+12
	3	7+9+18
	3	7+12+12
	3	9+9+9

	3	9+9+12
	3	9+12+12
	3	9+9+18
	3	12+12+12
C4OU-28HDR1-A	2	24+7
	2	18+12
	3	12+12+9
	4	7+7+7+7
C4OU-36HDR1-A	2	24+12
	2	18+18
	3	12+12+12
	4	9+9+9+9
C5OU-42HDR1-A	2	24+18
	3	18+12+12
	4	12+12+12+9
	5	9+9+9+9+9

Part 2. Indoor Units

Wall-Mounted Type

1. Features

The wall-mounted indoor unit has several different types for your choice, such as 150 style, 155 style and 156 style. The different style panels can satisfy your different requirements. All the units have various functions, such as the function of auto-restart, sleep mode are standard, golden fins and some filter for optional.

2. Specifications

Model name				CSG-07HVR1-A	CSG-09HVR1-A	CSG-12HVR1-A
Power supply		V-Ph-Hz		220~240-1-50	220~240-1-50	220~240-1-50
Electricity supplying type				Outdoor unit supply		
Cooling	Capacity	Btu/h		7000	9000	12000
	Input	W		40	40	40
	Rated current	A		0.2	0.2	0.2
Heating	Capacity	Btu/h		8000	10000	13000
	Input	W		40	40	40
	Rated current	A		0.2	0.2	0.2
Indoor fan motor	Model			YDK-16-4 9	YDK-16-4 3	YDK-16-4 3
	Type			AC	AC	AC
	Brand			CHIGO	CHIGO	CHIGO
	Input	W		26	26	26
	Capacitor	μF		1	1	1
	Speed (H/M/L)	r/min		900/800/740	1000/850/740	1100/900/760
Indoor coil	Number of rows			2	2	2
	Tube pitch × row pitch	mm		21×12.7	21×12.7	21×12.7
	Fin spacing	mm		1.5	1.5	1.5
	Fin type			Hydrophilic	Hydrophilic	Hydrophilic
	Tube outside diameter	mm		Φ7	Φ7	Φ7
	Tube type			Inner screw	Inner screw	Inner screw
	Number of circuits			2	2	2
Indoor air flow (H/M/L)		m^3/h		400/350/320	500/400/320	550/400/330
Indoor noise level(H/M/L)		dB(A)		30/2724	33/28/24	36/30/25
Indoor unit	Net Dimension (W×H ×D)	mm		878×290×227	878×290×227	878×290×227
	PackingDimension(W×H×D)	mm	150	865×365×285	865×365×285	865×365×285
			155	885×375×315	885×375×315	885×375×315
			156	950×365×300	950×365×300	950×365×300
	Net/Gross weight	kg	150	8.5/10	8.5/10	8.5/10
			155	8.5/10.5	8.5/10.5	8.5/10.5
			156	8.5/11	8.5/11	8.5/11
Refrigerant Type				R410A	R410A	R410A
Refrigerant pipe (Liquid side/ Gas side)		mm		Φ6.35/Φ9.52	Φ6.35/Φ9.52	Φ6.35/Φ9.52
Drainage water pipe diameter		mm		DN25	DN25	DN25
Controller(standard)				Remote Controller	Remote Controller	Remote Controller
Application area		m^2		10-15	12-18	16-23

Model name				CSG-18HVR1-A	CSG-24HVR1-A
Power supply		V-ph-Hz		220~240-1-50	220~240-1-50
Electricity Supplying type				Outdoor unit supply	
Cooling	Capacity	Btu/h		18000	24000
	Input	W		60	66
	Rated current	A		0.27	0.3
Heating	Capacity	Btu/h		19000	25000
	Input	W		60	66
	Rated current	A		0.27	0.3
Indoor fan motor	Model			YDK-23-4 A6	YDK-18-4 A7
	Type			AC	AC
	Brand			CHIGO	CHIGO
	Input	W		36	33
	Capacitor	μF		1.2	1.2
	Speed (H/M/L)	r/min		1250/1050/950	1200/1090/850
Indoor coil	Number of rows			2	2
	Tube pitch × row pitch	mm		21×12.7	21×12.7
	Fin spacing	mm		1.6	1.6
	Fin type			Hydrophilic	Hydrophilic
	Tube outside diameter	mm		Φ7	Φ7
	Tube type			Inner screw	Inner screw
	Number of circuits			4	5
Indoor air flow (H/M/L)		m^3/h		750/580/500	1000/900/700
Indoor noise level (H/M/L)		dB(A)		44/40/36	45/42/38
Indoor unit	Net Dimension (W×H ×D)	mm		953×347×270	1180×362×288
	Packing Dimension (W×H×D)	mm	150	983×377×300	1145×392×318
			155	990×395×325	1190×405×345
			156	1075×380×310	1235×390×330
	Net/Gross weight	kg	150	10.5/13	13.5/16
			155	10.5/13	13.5/16.5
			156	10.5/13.5	13.5/16.5
Refrigerant Type				R410A	R410A
Refrigerant pipe (Liquid side/ Gas side)		mm		Φ6.35/Φ12.7	Φ9.52/Φ15.88
Drainage water pipe diameter		mm		DN25	DN25
Controller(standard)				Remote Controller	Remote Controller
Application area		m^2		23-34	34-51

Notes:

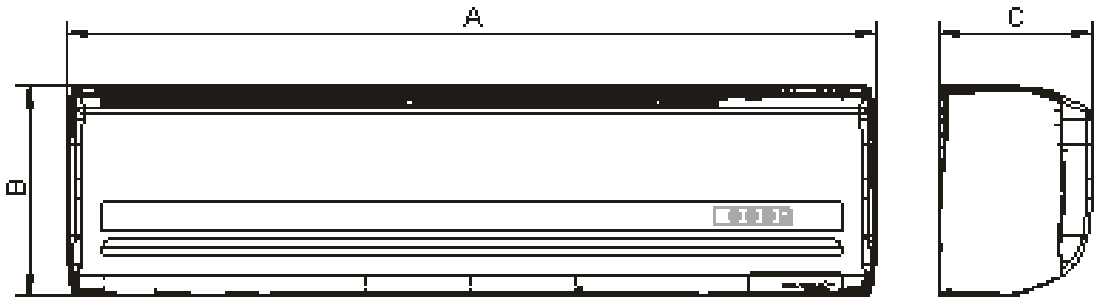
1. The cooling conditions: indoor side 27°C(80.6°F) DB, 19°C(60°F)WB outdoor side 35°C(95°F) DB.

2. The heating conditions: indoor side 20°C(68°F) DB, 15°C(44.6°F)WB outdoor side 7°C(42.8°F)DB.

3. Sound level: measured at a point 1 m in front of the unit at a height of 1.5 m. During actual operation, these values are normally somewhat higher as a result of ambient conditions.

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

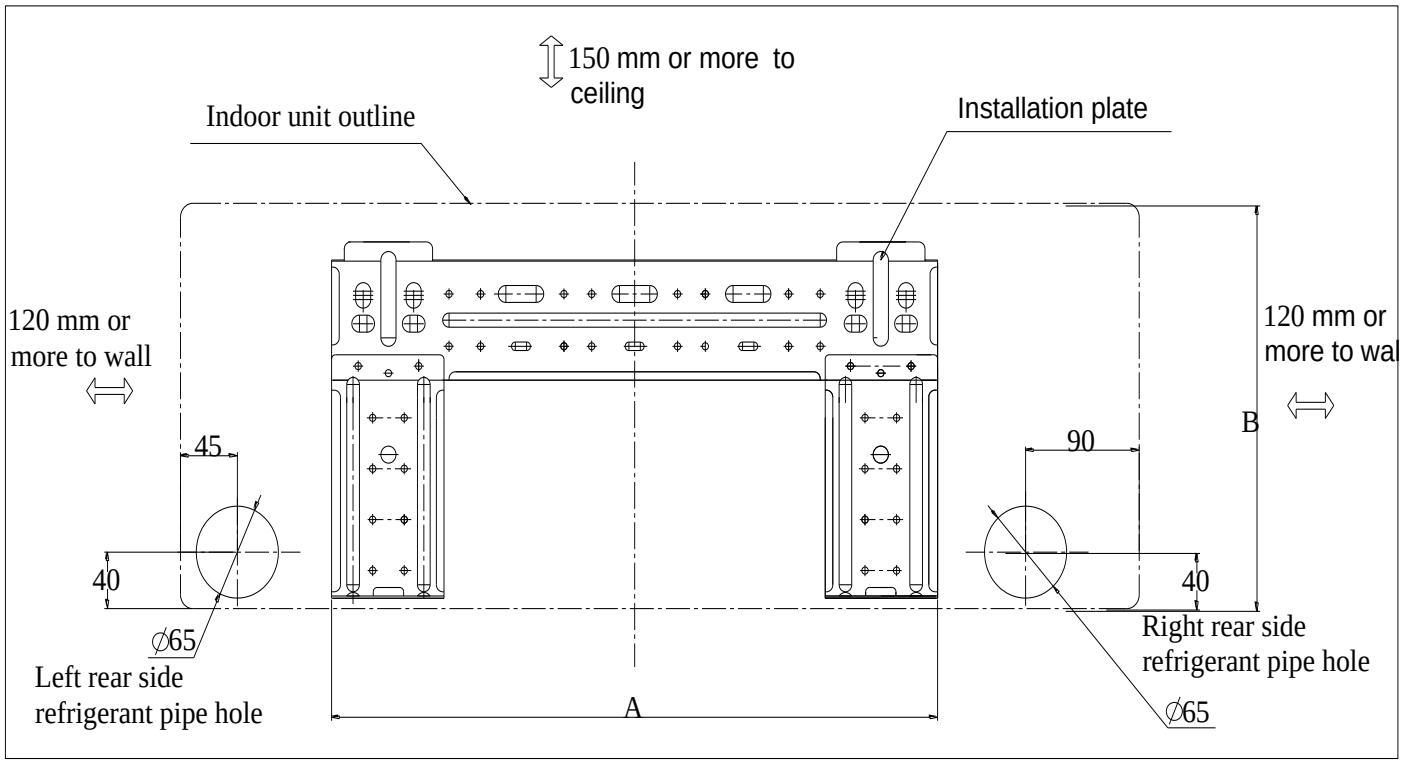
3. Dimensions



Unit: mm

Capacity	A	B	C
07/09/12k Btu/h	878	290	227
18k Btu/h	953	347	270
24k Btu/h	1180	362	288

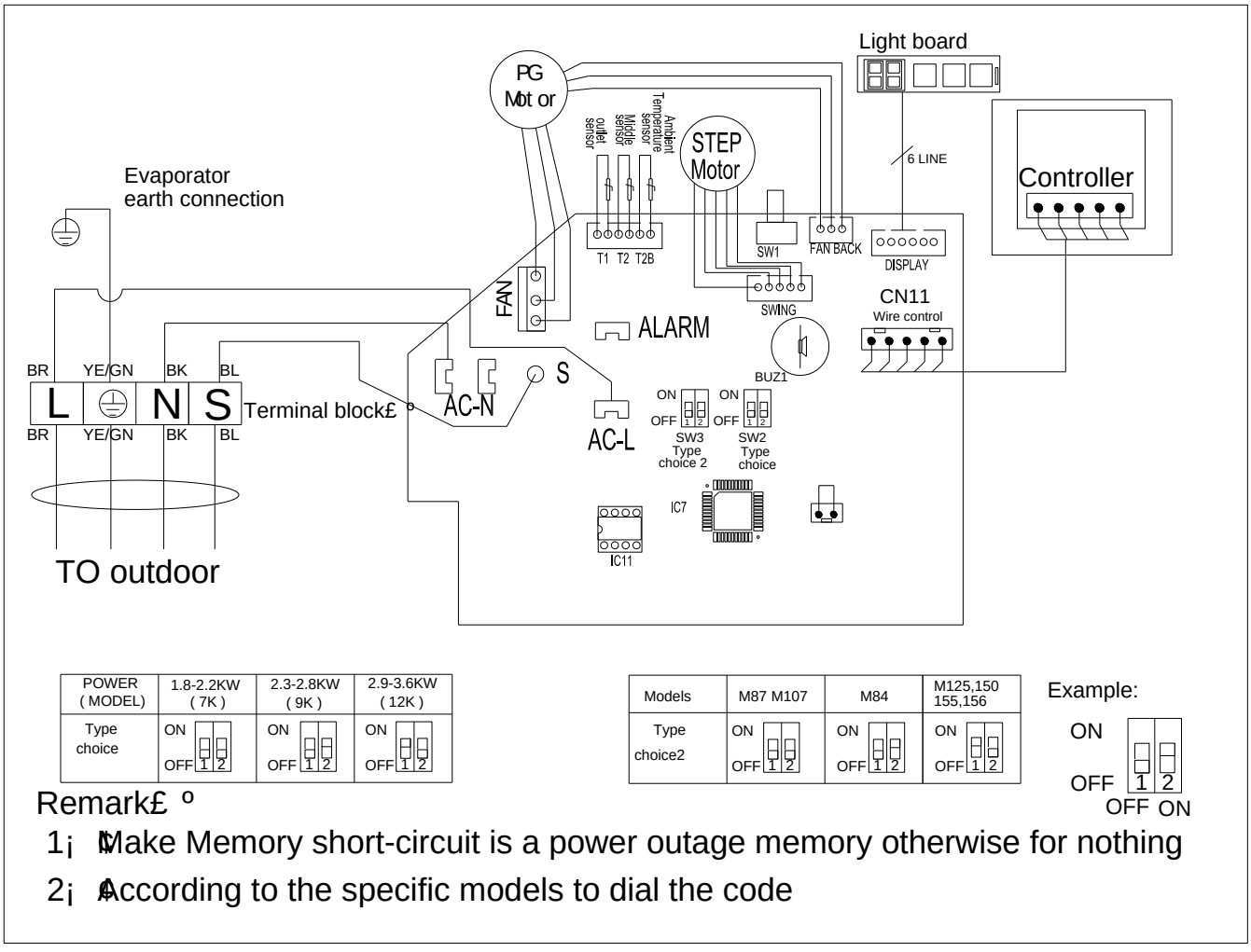
4. Service Space



Model	A(mm)	B(mm)
≤12000Btu/h	870	280
18000Btu/h	990	300
24000Btu/h	1200	310

5. Wiring Diagrams

CSG-07HVR1-A/CSG-09HVR1-A/CSG-12HVR1-A



POWER (MODEL)	1.8-2.2KW (7K)	2.3-2.8KW (9K)	2.9-3.6KW (12K)
Type choice	ON OFF 1 2	ON OFF 1 2	ON OFF 1 2

Models	M87 M107	M84	M125,150 155,156
Type choice2	ON OFF 1 2	ON OFF 1 2	ON OFF 1 2

Example:

ON

OFF 1 2

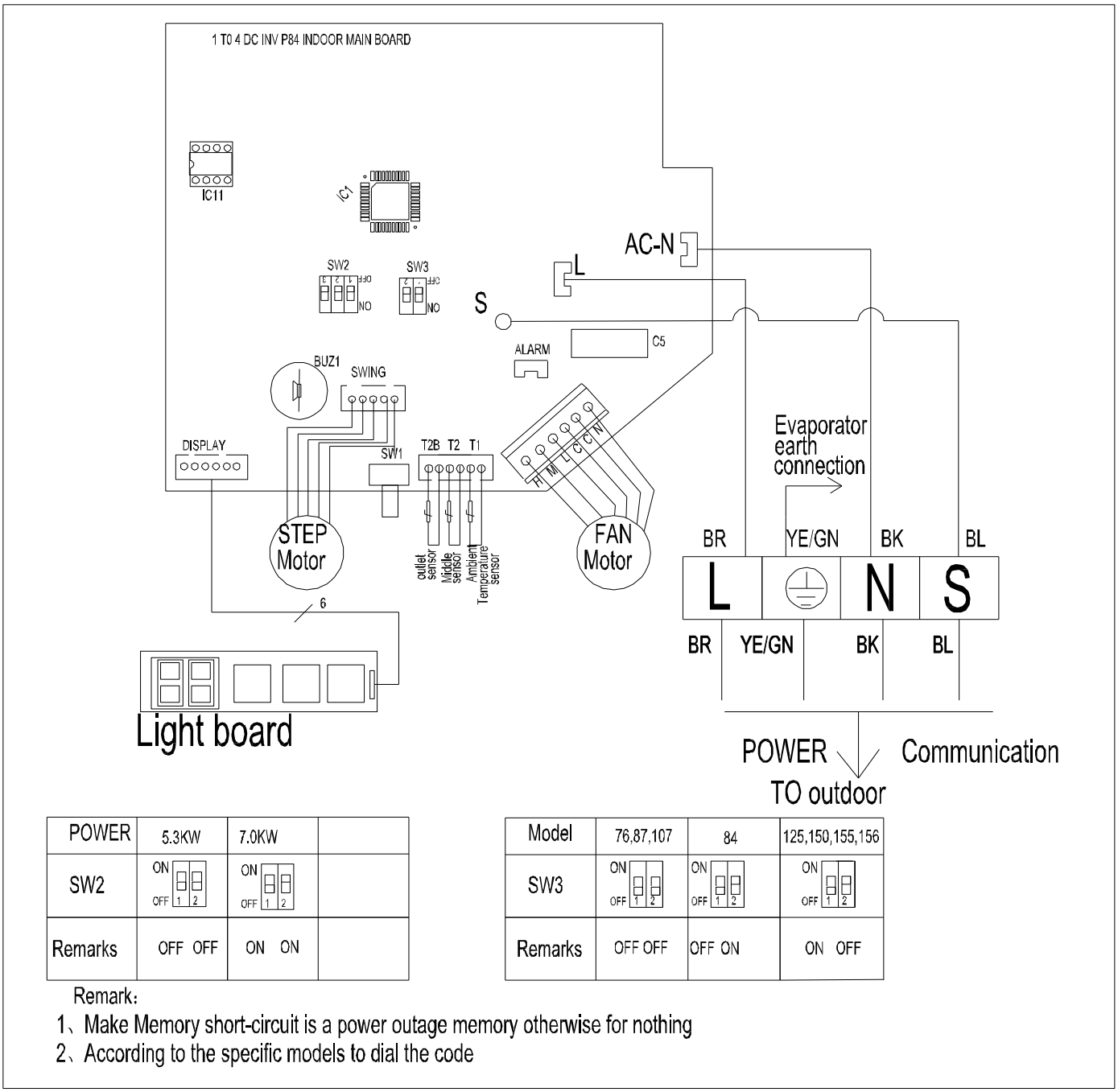
OFF ON

Remark£ º

1¡ ÏMake Memory short-circuit is a power outage memory otherwise for nothing

2¡ ÁAccording to the specific models to dial the code

CSG-18HVR1-A、CSG-24HVR1-A



POWER	5.3KW	7.0KW	
SW2	ON OFF 1 2	ON OFF 1 2	
Remarks	OFF OFF	ON ON	

Model	76,87,107	84	125,150,155,156
SW3	ON OFF 1 2	ON OFF 1 2	ON OFF 1 2
Remarks	OFF OFF	OFF ON	ON OFF

Remark：

1、Make Memory short-circuit is a power outage memory otherwise for nothing

2、According to the specific models to dial the code

6. Capacity Table

Cooling

TC: Total Capacity; **SC**: Sensible Capacity **WB**: Wet-bulb temp. **DB**: Dry-bulb temp.

Indoor Unit size	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
07kBtu/h (2.1kW)	10	1.42	1.37	1.70	1.44	2.07	1.62	2.10	1.52	2.24	1.62	2.52	1.64	2.58	1.60
	12	1.42	1.37	1.70	1.44	2.07	1.62	2.10	1.52	2.24	1.62	2.52	1.64	2.57	1.58
	14	1.42	1.37	1.70	1.44	2.07	1.62	2.10	1.52	2.24	1.62	2.50	1.63	2.55	1.57
	16	1.42	1.37	1.70	1.44	2.07	1.62	2.10	1.52	2.24	1.62	2.49	1.61	2.53	1.55
	18	1.42	1.37	1.70	1.44	2.07	1.62	2.10	1.52	2.24	1.62	2.47	1.60	2.51	1.53
	20	1.42	1.37	1.70	1.44	2.07	1.62	2.10	1.52	2.24	1.62	2.46	1.59	2.49	1.52
	21	1.42	1.37	1.70	1.44	2.07	1.62	2.10	1.52	2.24	1.62	2.44	1.57	2.47	1.50
	23	1.42	1.37	1.70	1.44	2.07	1.62	2.10	1.52	2.24	1.62	2.42	1.55	2.45	1.48
	25	1.42	1.37	1.70	1.44	2.07	1.62	2.10	1.52	2.24	1.62	2.40	1.54	2.44	1.47
	27	1.42	1.37	1.70	1.44	2.07	1.62	2.10	1.52	2.21	1.61	2.38	1.53	2.42	1.45
	29	1.42	1.37	1.70	1.44	2.07	1.62	2.10	1.52	2.19	1.60	2.34	1.52	2.40	1.44
	31	1.42	1.37	1.70	1.44	2.07	1.62	2.10	1.52	2.16	1.58	2.33	1.49	2.38	1.42
	33	1.42	1.37	1.70	1.44	2.07	1.62	2.10	1.52	2.13	1.56	2.32	1.47	2.36	1.40
	35	1.42	1.37	1.70	1.44	2.07	1.62	2.10	1.52	2.11	1.55	2.30	1.45	2.35	1.38
	37	1.42	1.37	1.70	1.44	2.07	1.62	2.10	1.51	2.08	1.53	2.29	1.43	2.33	1.36
	39	1.42	1.37	1.70	1.44	2.07	1.62	2.10	1.50	2.06	1.51	2.26	1.42	2.31	1.33
09kBtu/h (2.6kW)	10	1.84	1.75	2.18	1.82	2.51	1.91	2.60	1.95	2.77	2.14	3.14	2.18	3.33	2.11
	12	1.84	1.75	2.18	1.82	2.51	1.91	2.60	1.95	2.77	2.14	3.13	2.16	3.30	2.07
	14	1.84	1.75	2.18	1.82	2.51	1.91	2.60	1.95	2.77	2.14	3.11	2.15	3.28	2.03
	16	1.84	1.75	2.18	1.82	2.51	1.91	2.60	1.95	2.77	2.14	3.09	2.13	3.25	2.00

	18	1.84	1.75	2.18	1.82	2.51	1.91	2.60	1.95	2.77	2.14	3.06	2.11	3.22	1.96
	20	1.84	1.75	2.18	1.82	2.51	1.91	2.60	1.95	2.77	2.14	3.03	2.09	3.20	1.91
	21	1.84	1.75	2.18	1.82	2.51	1.91	2.60	1.95	2.77	2.14	3.00	2.07	3.17	1.87
	23	1.84	1.75	2.18	1.82	2.51	1.91	2.60	1.95	2.77	2.14	2.96	2.04	3.14	1.83
	25	1.84	1.75	2.18	1.82	2.51	1.91	2.60	1.95	2.77	2.13	2.92	2.01	3.12	1.80
	27	1.84	1.75	2.18	1.82	2.51	1.91	2.60	1.95	2.74	2.12	2.89	1.97	3.10	1.76
	29	1.84	1.75	2.18	1.82	2.51	1.91	2.60	1.95	2.71	2.10	2.86	1.95	3.07	1.72
	31	1.84	1.75	2.18	1.82	2.51	1.91	2.60	1.95	2.67	2.08	2.83	1.92	3.05	1.68
	33	1.84	1.75	2.18	1.82	2.51	1.91	2.60	1.95	2.64	2.05	2.81	1.90	3.01	1.65
	35	1.84	1.75	2.18	1.82	2.51	1.91	2.60	1.95	2.62	2.04	2.78	1.87	2.97	1.61
	37	1.84	1.75	2.18	1.82	2.51	1.91	2.60	1.94	2.58	2.01	2.74	1.85	2.91	1.57
	39	1.84	1.75	2.18	1.82	2.51	1.91	2.60	1.92	2.55	1.96	2.69	1.82	2.86	1.55

TC: Total Capacity; **SC**: Sensible Capacity **WB**: Wet-bulb temp. **DB**: Dry-bulb temp.

Indoor Unit size	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
12kBtu/h (3.5kW)	10	2.48	2.19	2.94	2.35	3.31	2.64	3.50	2.64	3.88	2.78	4.16	2.82	4.34	2.60
	12	2.48	2.19	2.94	2.35	3.31	2.64	3.50	2.64	3.88	2.78	4.16	2.79	4.31	2.58
	14	2.48	2.19	2.94	2.35	3.31	2.64	3.50	2.64	3.88	2.78	4.14	2.78	4.28	2.55
	16	2.48	2.19	2.94	2.35	3.31	2.64	3.50	2.64	3.88	2.78	4.11	2.73	4.24	2.52
	18	2.48	2.19	2.94	2.35	3.31	2.64	3.50	2.64	3.88	2.78	4.08	2.70	4.20	2.49
	20	2.48	2.19	2.94	2.35	3.31	2.64	3.50	2.64	3.88	2.78	4.06	2.67	4.17	2.44
	21	2.48	2.19	2.94	2.35	3.31	2.64	3.50	2.64	3.88	2.78	4.04	2.62	4.13	2.41
	23	2.48	2.19	2.94	2.35	3.31	2.64	3.50	2.64	3.88	2.78	4.01	2.59	4.10	2.39
	25	2.48	2.19	2.94	2.35	3.31	2.64	3.50	2.64	3.88	2.76	3.97	2.56	4.07	2.36
	27	2.48	2.19	2.94	2.35	3.31	2.64	3.50	2.64	3.86	2.72	3.95	2.52	4.04	2.32
	29	2.48	2.19	2.94	2.35	3.31	2.64	3.50	2.64	3.84	2.70	3.91	2.49	4.01	2.29
	31	2.48	2.19	2.94	2.35	3.31	2.64	3.50	2.64	3.81	2.67	3.89	2.47	3.98	2.26
	33	2.48	2.19	2.94	2.35	3.31	2.64	3.50	2.64	3.77	2.64	3.85	2.43	3.95	2.23
	35	2.48	2.19	2.94	2.35	3.31	2.64	3.50	2.64	3.75	2.61	3.82	2.40	3.92	2.19
	37	2.48	2.19	2.94	2.35	3.31	2.64	3.50	2.62	3.72	2.59	3.78	2.37	3.89	2.16
	39	2.48	2.19	2.94	2.35	3.31	2.64	3.50	2.60	3.69	2.56	3.73	2.34	3.85	2.12
18kBtu/h (5.3kW)	10	3.71	3.11	4.42	3.42	4.33	3.83	5.30	3.94	5.78	4.07	6.20	4.16	6.43	3.86
	12	3.71	3.11	4.42	3.42	4.33	3.83	5.30	3.94	5.78	4.07	6.18	4.13	6.40	3.83
	14	3.71	3.11	4.42	3.42	4.33	3.83	5.30	3.94	5.78	4.07	6.15	4.11	6.37	3.80
	16	3.71	3.11	4.42	3.42	4.33	3.83	5.30	3.94	5.78	4.07	6.12	4.06	6.35	3.76
	18	3.71	3.11	4.42	3.42	4.33	3.83	5.30	3.94	5.78	4.07	6.07	4.03	6.31	3.71
	20	3.71	3.11	4.42	3.42	4.33	3.83	5.30	3.94	5.78	4.07	6.05	4.00	6.28	3.67
	21	3.71	3.11	4.42	3.42	4.33	3.83	5.30	3.94	5.78	4.07	6.01	3.96	6.23	3.62
	23	3.71	3.11	4.42	3.42	4.33	3.83	5.30	3.94	5.78	4.07	5.96	3.92	6.20	3.57

	25	3.71	3.11	4.42	3.42	4.33	3.83	5.30	3.94	5.78	4.02	5.91	3.89	6.16	3.52
	27	3.71	3.11	4.42	3.42	4.33	3.83	5.30	3.94	5.73	3.97	5.87	3.86	6.13	3.47
	29	3.71	3.11	4.42	3.42	4.33	3.83	5.30	3.94	5.70	3.93	5.84	3.83	6.10	3.41
	31	3.71	3.11	4.42	3.42	4.33	3.83	5.30	3.94	5.67	3.90	5.81	3.80	6.07	3.37
	33	3.71	3.11	4.42	3.42	4.33	3.83	5.30	3.94	5.62	3.88	5.76	3.77	6.03	3.31
	35	3.71	3.11	4.42	3.42	4.33	3.83	5.30	3.94	5.57	3.85	5.72	3.73	5.97	3.27
	37	3.71	3.11	4.42	3.42	4.33	3.83	5.30	3.92	5.52	3.81	5.67	3.70	5.93	3.23
	39	3.71	3.11	4.42	3.42	4.33	3.83	5.30	3.90	5.48	3.78	5.61	3.65	5.87	3.19
24kBtu/h (7.1kW)	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
	20	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	5.49	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

Heating

TC: Total Capacity; **WB**: Wet-bulb temp. **DB**: Dry-bulb temp.

Indoor Unit size	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
07kBtu/h (2.1kW)	-15.00	-14.70	1.59	1.59	1.59	1.59	1.59	1.59
	-13.00	-12.60	1.69	1.69	1.69	1.69	1.69	1.69
	-11.00	-10.50	1.72	1.72	1.72	1.72	1.72	1.72
	-10.00	-9.50	1.90	1.90	1.90	1.90	1.90	1.90
	-9.10	-8.50	1.95	1.95	1.95	1.95	1.95	1.95
	-7.60	-7.00	1.98	1.98	1.98	1.98	1.98	1.98
	-5.60	-5.00	2.05	2.05	2.05	2.05	2.05	2.05
	-3.70	-3.00	2.16	2.16	2.16	2.16	2.16	2.16
	-0.70	0.00	2.22	2.22	2.22	2.22	2.22	2.18
	2.20	3.00	2.28	2.28	2.28	2.28	2.26	2.18
	4.10	5.00	2.35	2.35	2.35	2.35	2.26	2.18
	6.00	7.00	2.40	2.40	2.40	2.40	2.26	2.18
	7.90	9.00	2.48	2.48	2.40	2.40	2.26	2.18
	9.80	11.00	2.57	2.57	2.40	2.40	2.26	2.18
	11.80	13.00	2.66	2.63	2.40	2.40	2.26	2.18
	13.70	15.00	2.73	2.70	2.40	2.40	2.26	2.18
09kBtu/h (2.6kW)	-15.00	-14.70	1.72	1.72	1.72	1.72	1.72	1.72
	-13.00	-12.60	1.84	1.84	1.84	1.84	1.84	1.84
	-11.00	-10.50	1.94	1.94	1.94	1.94	1.94	1.94
	-10.00	-9.50	2.04	2.04	2.04	2.04	2.04	2.04
	-9.10	-8.50	2.10	2.10	2.10	2.10	2.10	2.10
	-7.60	-7.00	2.13	2.13	2.13	2.13	2.13	2.13
	-5.60	-5.00	2.23	2.23	2.23	2.23	2.23	2.23

	-3.70	-3.00	2.36	2.36	2.36	2.36	2.36	2.36
	-0.70	0.00	2.55	2.55	2.55	2.55	2.55	2.39
	2.20	3.00	2.71	2.71	2.71	2.71	2.68	2.39
	4.10	5.00	2.80	2.80	2.80	2.80	2.68	2.39
	6.00	7.00	2.90	2.90	2.90	2.80	2.68	2.39
	7.90	9.00	3.00	3.00	2.90	2.80	2.68	2.39
	9.80	11.00	3.09	3.09	2.90	2.80	2.68	2.39
	11.80	13.00	3.22	3.16	2.90	2.80	2.68	2.39
	13.70	15.00	3.32	3.16	2.90	2.80	2.68	2.39

TC: Total Capacity; **WB**: Wet-bulb temp. **DB**: Dry-bulb temp.

Indoor Unit size	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
12kBtu/h (3.5kW)	-15.00	-14.70	2.40	2.40	2.40	2.40	2.40	2.40
	-13.00	-12.60	2.48	2.48	2.48	2.48	2.48	2.48
	-11.00	-10.50	2.60	2.60	2.60	2.60	2.60	2.60
	-10.00	-9.50	2.72	2.72	2.72	2.72	2.72	2.72
	-9.10	-8.50	2.80	2.80	2.80	2.80	2.80	2.80
	-7.60	-7.00	2.84	2.84	2.84	2.84	2.84	2.84
	-5.60	-5.00	2.96	2.96	2.96	2.96	2.96	2.96
	-3.70	-3.00	3.12	3.12	3.12	3.12	3.12	3.12
	-0.70	0.00	3.36	3.36	3.36	3.36	3.36	3.16
	2.20	3.00	3.56	3.56	3.56	3.56	3.48	3.16
	4.10	5.00	3.68	3.68	3.68	3.68	3.48	3.16
	6.00	7.00	3.80	3.80	3.80	3.68	3.48	3.16
	7.90	9.00	3.92	3.92	3.80	3.68	3.48	3.16
	9.80	11.00	4.04	4.04	3.80	3.68	3.48	3.16
	11.80	13.00	4.20	4.12	3.80	3.68	3.48	3.16
	13.70	15.00	4.32	4.12	3.80	3.68	3.48	3.16
18kBtu/h (5.3kW)	-15.00	-14.70	3.50	3.50	3.50	3.50	3.50	3.50
	-13.00	-12.60	3.62	3.62	3.62	3.62	3.62	3.62
	-11.00	-10.50	3.81	3.81	3.81	3.81	3.81	3.81
	-10.00	-9.50	4.00	4.00	4.00	4.00	4.00	4.00
	-9.10	-8.50	4.13	4.13	4.13	4.13	4.13	4.13
	-7.60	-7.00	4.19	4.19	4.19	4.19	4.19	4.19
	-5.60	-5.00	4.38	4.38	4.38	4.38	4.38	4.38
	-3.70	-3.00	4.63	4.63	4.63	4.63	4.63	4.63

	-0.70	0.00	5.01	5.01	5.01	5.01	5.01	4.69
	2.20	3.00	5.32	5.32	5.32	5.32	5.20	4.69
	4.10	5.00	5.51	5.51	5.51	5.51	5.20	4.69
	6.00	7.00	5.60	5.60	5.60	5.51	5.20	4.69
	7.90	9.00	5.89	5.89	5.60	5.51	5.20	4.69
	9.80	11.00	6.08	6.08	5.60	5.51	5.20	4.69
	11.80	13.00	6.63	6.20	5.60	5.51	5.20	4.69
	13.70	15.00	6.52	6.20	5.60	5.51	5.20	4.69
	-15.00	-14.70	4.80	4.80	4.80	4.80	4.80	4.80
	-13.00	-12.60	4.96	4.96	4.96	4.96	4.96	4.96
	-11.00	-10.50	5.20	5.20	5.20	5.20	5.20	5.20
	-10.00	-9.50	5.44	5.44	5.44	5.44	5.44	5.44
	-9.10	-8.50	5.60	5.60	5.60	5.60	5.60	5.60
	-7.60	-7.00	5.68	5.68	5.68	5.68	5.68	5.68
	-5.60	-5.00	5.92	5.92	5.92	5.92	5.92	5.92
24kBtu/h	-3.70	-3.00	6.22	6.22	6.22	6.22	6.22	6.22
(7.1kW)	-0.70	0.00	6.72	6.72	6.72	6.72	6.72	6.32
	2.20	3.00	7.12	7.12	7.12	7.12	6.96	6.32
	4.10	5.00	7.36	7.36	7.36	7.36	6.96	6.32
	6.00	7.00	7.40	7.40	7.40	7.36	6.96	6.32
	7.90	9.00	7.84	7.84	7.40	7.36	6.96	6.32
	9.80	11.00	8.08	8.08	7.40	7.36	6.96	6.32
	11.80	13.00	8.40	8.24	7.40	7.36	6.96	6.32
	13.70	15.00	8.64	8.24	7.40	7.36	6.96	6.32

7. Electric Characteristics

Model	Indoor Unit				Power Supply	IFM
	Hz	Voltage	Min	Max	MFA	kW
CSG-07HVR1-A(150)	50	220-240V	198	254	3.15	0.016
CSG-07HVR1-A(155)	50	220-240 V	198	254	3.15	0.016
CSG-07HVR1-A(156)	50	220-240 V	198	254	3.15	0.016
CSG-09HVR1-A(150)	50	220-240 V	198	254	3.15	0.016
CSG-09HVR1-A(155)	50	220-240 V	198	254	3.15	0.016
CSG-09HVR1-A(156)	50	220-240 V	198	254	3.15	0.016
CSG-12HVR1-A(150)	50	220-240 V	198	254	3.15	0.016
CSG-12HVR1-A(155)	50	220-240 V	198	254	3.15	0.016
CSG-12HVR1-A(156)	50	220-240 V	198	254	3.15	0.016
CSG-18HVR1-A(150)	50	220-240 V	198	254	3.15	0.023
CSG-18HVR1-A(155)	50	220-240 V	198	254	3.15	0.023
CSG-18HVR1-A(156)	50	220-240 V	198	254	3.15	0.023
CSG-24HVR1-A(150)	50	220-240 V	198	254	3.15	0.018
CSG-24HVR1-A(155)	50	220-240 V	198	254	3.15	0.018
CSG-24HVR1-A(156)	50	220-240 V	198	254	3.15	0.018

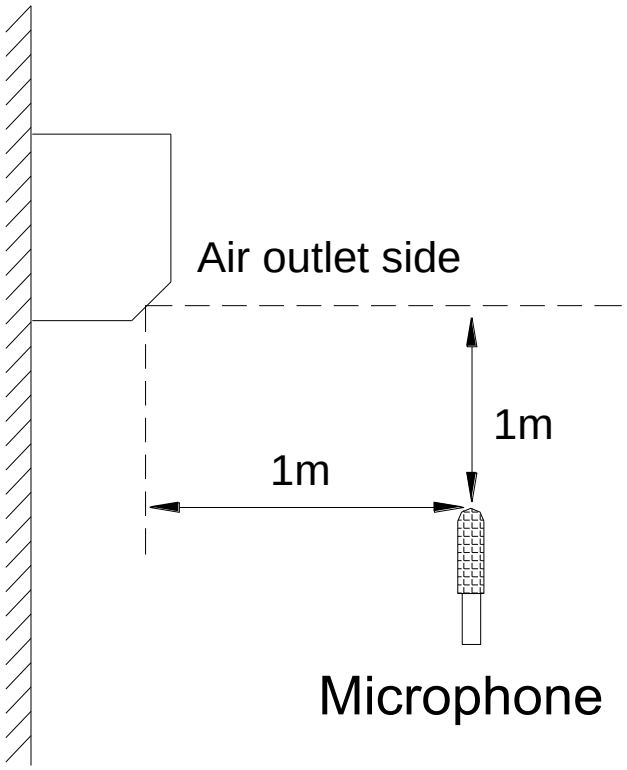
Remark:

MFA: Max. Fuse Amps. (A)

KW: Fan Motor Rated Output (kW)

IFM: Indoor Fan Motor

8. Sound Level

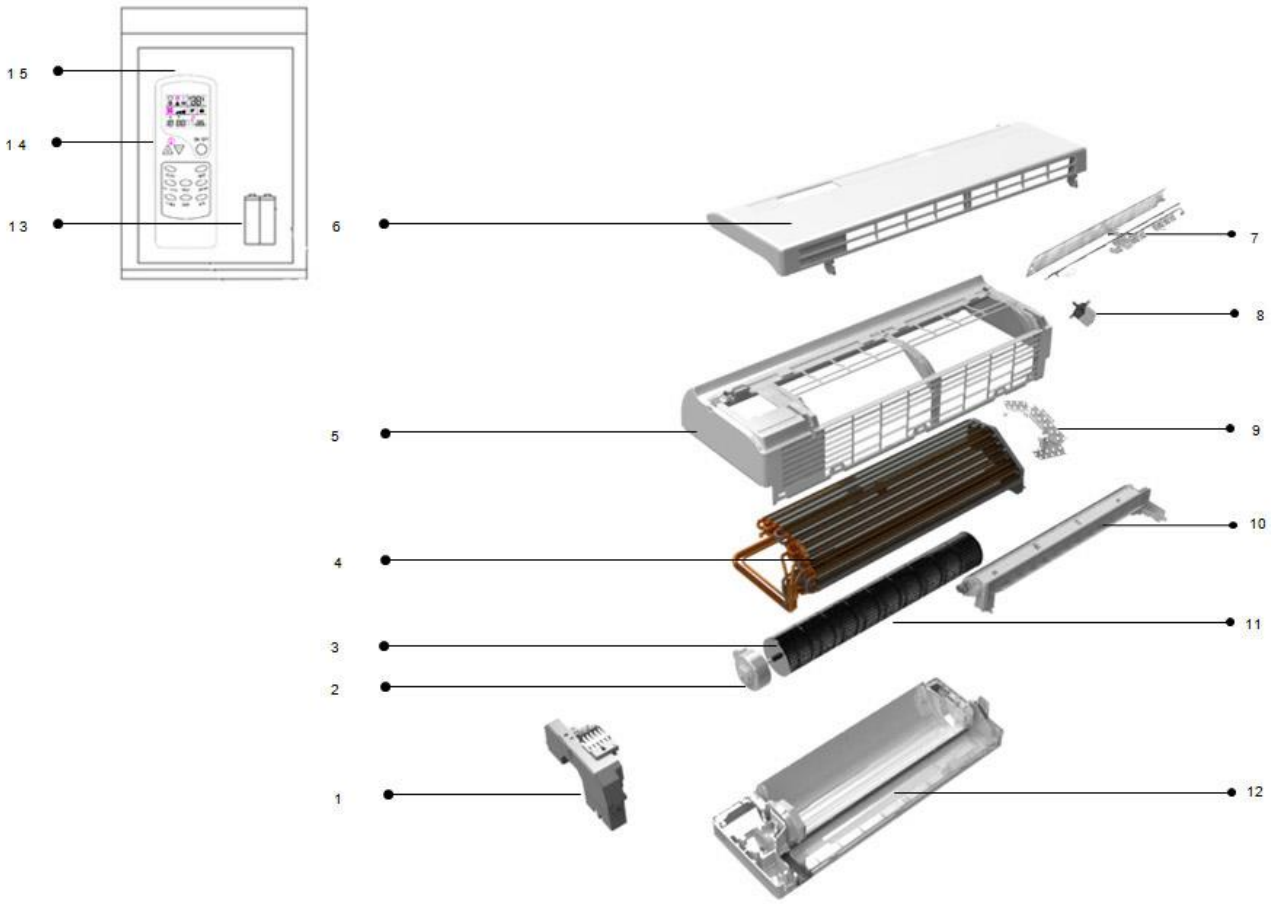


Model	Noise leveldB(A)
	High speed
CSG-07HVR1-A(150)	30
CSG-07HVR1-A(155)	30
CSG-07HVR1-A(156)	30
CSG-09HVR1-A(150)	33
CSG-09HVR1-A(155)	33
CSG-09HVR1-A(156)	33
CSG-12HVR1-A(150)	36
CSG-12HVR1-A(155)	36
CSG-12HVR1-A(156)	36
CSG-18HVR1-A(150)	44

CSG-18HVR1-A(155)	44
CSG-18HVR1-A(156)	44
CSG-24HVR1-A(150)	45
CSG-24HVR1-A(155)	45
CSG-24HVR1-A(156)	45

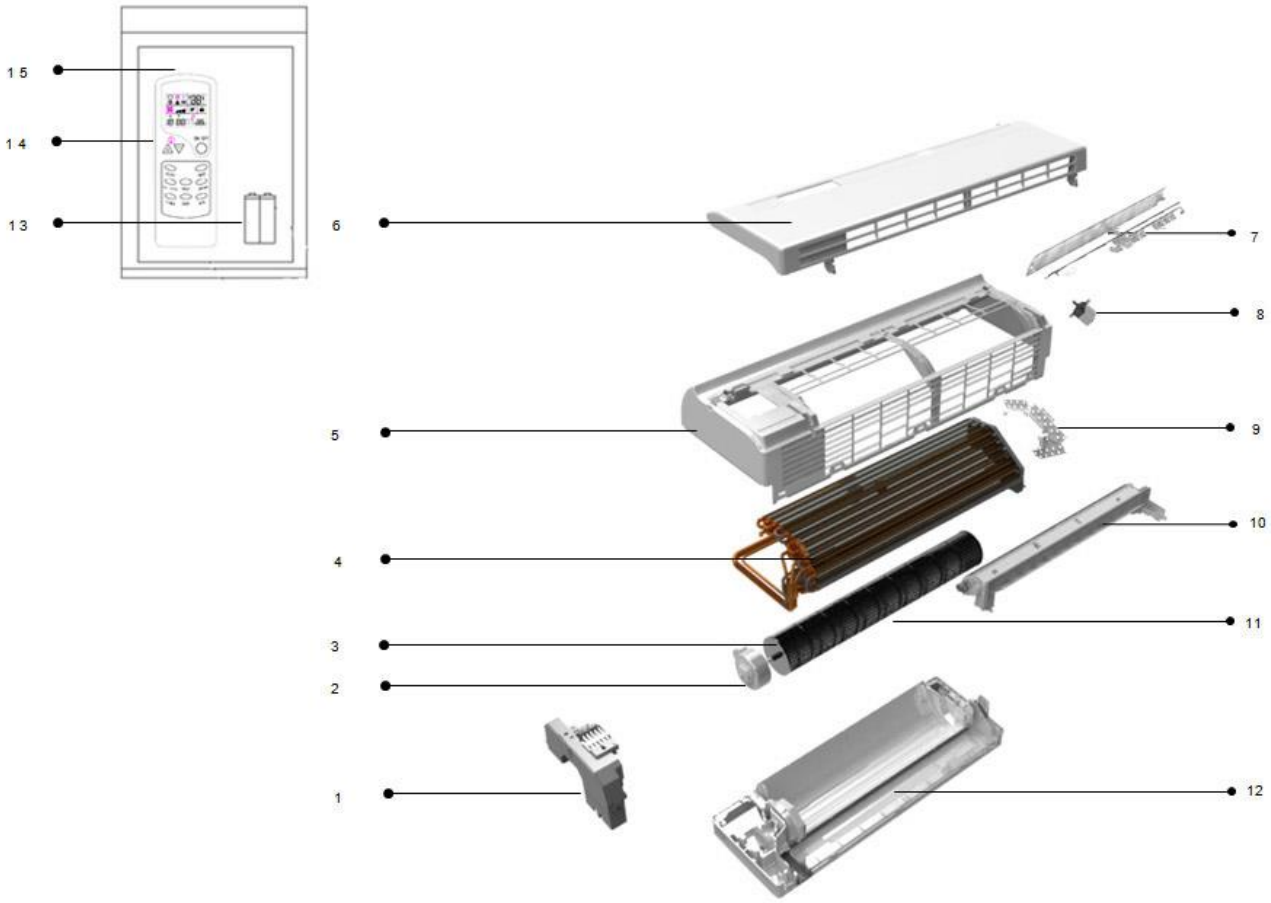
9. Exploded View

150 series



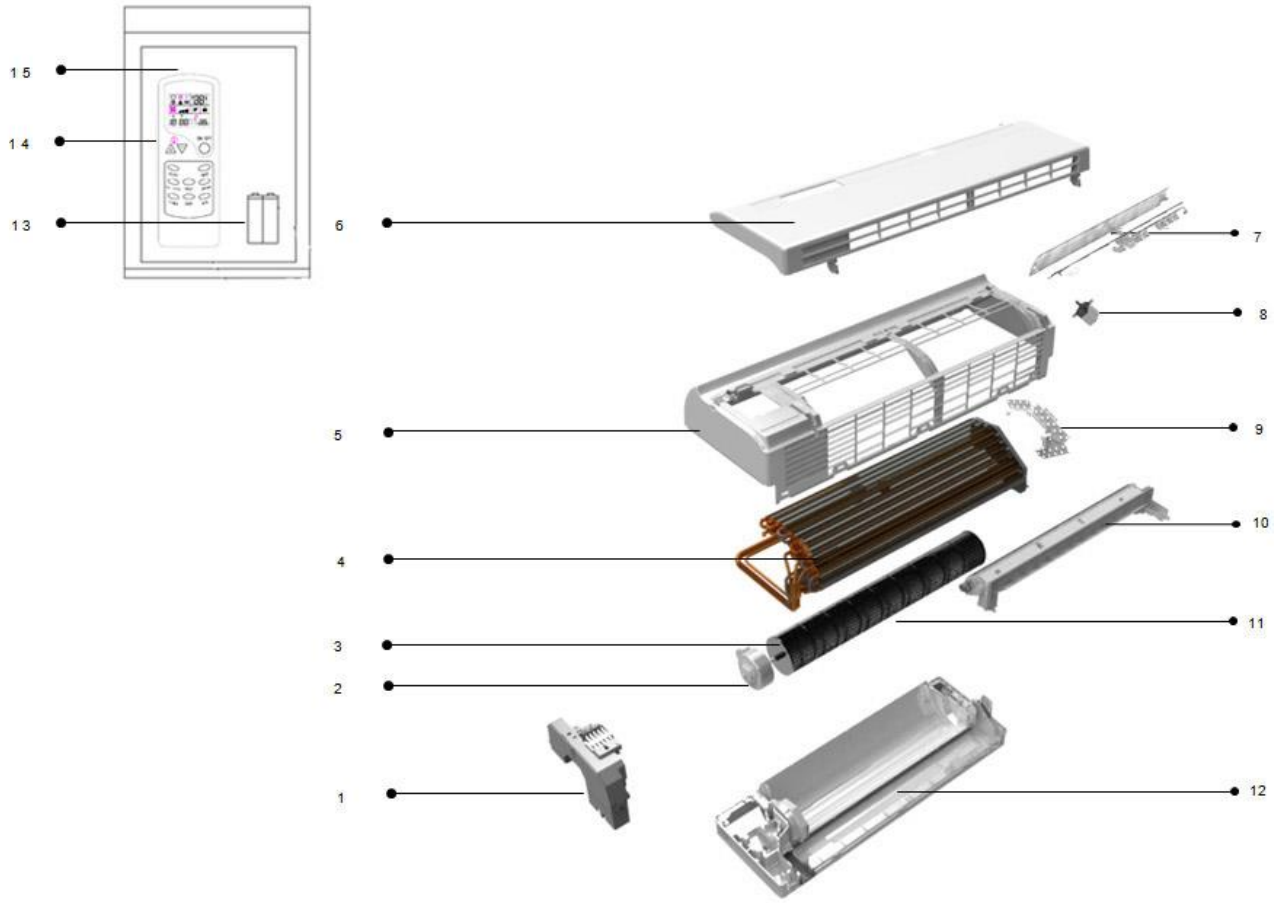
No.	Part Name	Quantity	No.	Part Name	Quantity
1	E-parts components	1	4.3	Insulating tube	1
1.1	indoor terminal	1	5	Middle frame assy	1
1.2	Main control box	1	6	Air outlet panel components	1
1.3	Groove clamp	1	7	Louver assy	1
1.4	Temperature sensor for indoor unit	1	8	Step motor	1
1.5	Indoor E-parts	1	9	Fixing tube panel	1
2	Indoor motor	1	10	Cross flow fan	1
3	Motor cover assy	1	11	Base assy	1
4	Evaporator components	1	12	Remote control battery	1
4.1	Evaporator assy	1	13	Chigo Elf general remote	1
4.2	Evaporator damping rubber strip	1	14	General manual plastic bag of export A/C	1

155 series



No.	Part Name	Quantity	No.	Part Name	Quantity
1	E-parts components	1	4.3	Insulating tube	1
1.1	indoor terminal	1	5	Middle frame assy	1
1.2	Main control box	1	6	Air outlet panel components	1
1.3	Groove clamp	1	7	Louver assy	1
1.4	Temperature sensor for indoor unit	1	8	Step motor	1
1.5	Indoor E-parts	1	9	Fixing tube panel	1
2	Indoor motor	1	10	Cross flow fan	1
3	Motor cover assy	1	11	Base assy	1
4	Evaporator components	1	12	Remote control battery	1
4.1	Evaporator assy	1	13	Chigo Elf general remote	1
4.2	Evaporator damping rubber strip	1	14	General manual plastic bag of export A/C	1

156 series



No.	Part Name	Quantity	No.	Part Name	Quantity
1	E-parts components	1	4.3	Insulating tube	1
1.1	indoor terminal	1	5	Middle frame assy	1
1.2	Main control box	1	6	Air outlet panel components	1
1.3	Groove clamp	1	7	Louver assy	1
1.4	Temperature sensor for indoor unit	1	8	Step motor	1
1.5	Indoor E-parts	1	9	Fixing tube panel	1
2	Indoor motor	1	10	Cross flow fan	1
3	Motor cover assy	1	11	Base assy	1
4	Evaporator components	1	12	Remote control battery	1
4.1	Evaporator assy	1	13	Chigo Elf general remote	1
4.2	Evaporator damping rubber strip	1	14	General manual plastic bag of export A/C	1

10. Accessories

NO.	NAME	SHAPE	QUANTITY
1	Insulating tube		2
2	Ribbon		6
3	Remote controller		1
4	Battery		2
5	Swell stopper		2
6	Self-tapping screw		2
7	Outlet pipe		1
8	Blank valve bag		3

11. Troubleshooting

Display with Fault

Definitions of malfunction	Contents appearing
The first time to switch on and there is no address	FE
Errors of phase sequence or fault of losing phase	E0
Communication failure of indoor and outdoor unit	E1
T1 sensor fault	E2
T2 sensor fault	E3
T2B sensor fault	E4
Malfunction of outdoor unit	E5
Testing fault of zero-crossing signal	E6
EEPROM malfunction	E7
Wind testing fault of PG Electric motor	E8
Alarming fault of water level switch	EE
Model conflict	EF

Display of LED

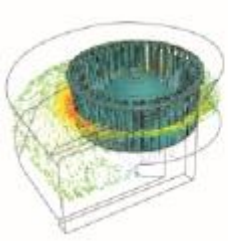
Definitions of malfunction	Contents appearing
Communication failure of indoor and outdoor unit	LED timing light shines quickly
Fault of indoor temperature sensor	LED running shines quickly
Alarming fault of water level	LED alarming light shines quickly
Mode impact fault	LED defrost light shines quickly
Outdoor unit fault	LED alarming light shines slowly
EEPROM malfunction	LED defrost light shines slowly

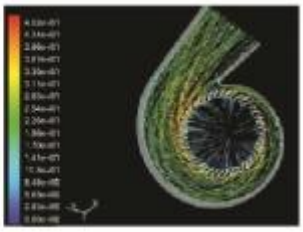
Duct Type

1. Features

1.1 Short body , easy to install.

1.2 Adopting aviation centrifugal fans, and CFD technology design, increasing air-volume and decreasing noise level.





1.3 Three fan speed, meet different requirement.

1.4 High efficiency DC fan motor, low noise and more comfortable. Operate in low frequency and control indoor temperature precisely.

1.5 E-box is body-side design, convenient installation and maintenance.

2. Specifications

Model name			CST-07HVR1-A	CST-09HVR1-A	CST-12HVR1-A	CST-18HVR1-A
Power supply		V-Ph-Hz	220~240/1/50	220~240/1/50	220~240/1/50	220~240/1/50
Electricity supplying type			Outdoor unit supply			
Cooling	Capacity	Btu/h	7000	9000	12000	18000
	Input	W	20	20	30	45
	Rated current	A	0.1	0.1	0.15	0.2
Heating	Capacity	Btu/h	8000	10000	13000	19000
	Input	W	20	20	30	45
	Rated current	A	0.1	0.1	0.15	0.2
Indoor fan motor	Model		DR-310-27F-8	DR-310-27F-8	DR-310-27F-8	DR-310-55F-8
	Type		DC	DC	DC	DC
	Brand		CHIGO	CHIGO	CHIGO	CHIGO
	Input	W	45	45	45	70
	Speed (H/M/L)	r/min	1130/980/920	1130/980/920	1330/1090/1000	1300/1150/1050
Indoor coil	Number of rows		2	2	2	2
	Tube pitch× row pitch	mm	21×12.7	21×12.7	21×12.7	21×12.7
	Fin spacing	mm	1.4	1.4	1.4	1.4
	Fin type		Hydrophilic	Hydrophilic	Hydrophilic	Hydrophilic
	Tube outside diameter	mm	Φ7	Φ7	Φ7	Φ7
	Tube type		Inner screw	Inner screw	Inner screw	Inner screw
	Coil size (W×D×H)	mm	2×(515×27×146)	2×(515×27×146)	2×(515×27×146)	2×(515×27×146)
	Number of circuits		4	4	4	4
Indoor air flow (H/M/L)		m^3/h	550/410/340	550/410/340	680/580/450	800/700/600
Indoor noise level(H)		dB(A)	47	47	52	48
Indoor unit	Net Dimension (W×H ×D)	mm	814×210×467	814×210×467	814×210×467	1010×210×467
	PackingDimension(W×H×D)	mm	910×240×510	910×240×510	910×240×510	1110×240×510
	Net/Gross weight	kg	17/19.5	17/19.5	17/19.5	20.5/24
Refrigerant Type			R410A	R410A	R410A	R410A
Refrigerant pipe (Liquid side/ Gas side)		mm	Φ6.35/Φ9.52	Φ6.35/Φ9.52	Φ6.35/Φ9.52	Φ6.35/Φ12.7
Drainage water pipe diameter		mm	DN25	DN25	DN25	DN25
Controller(standard)			Wired controller	Wired controller	Wired controller	Wired controller
Application area		m^2	10~15	12~18	16~23	23~34

Notes:

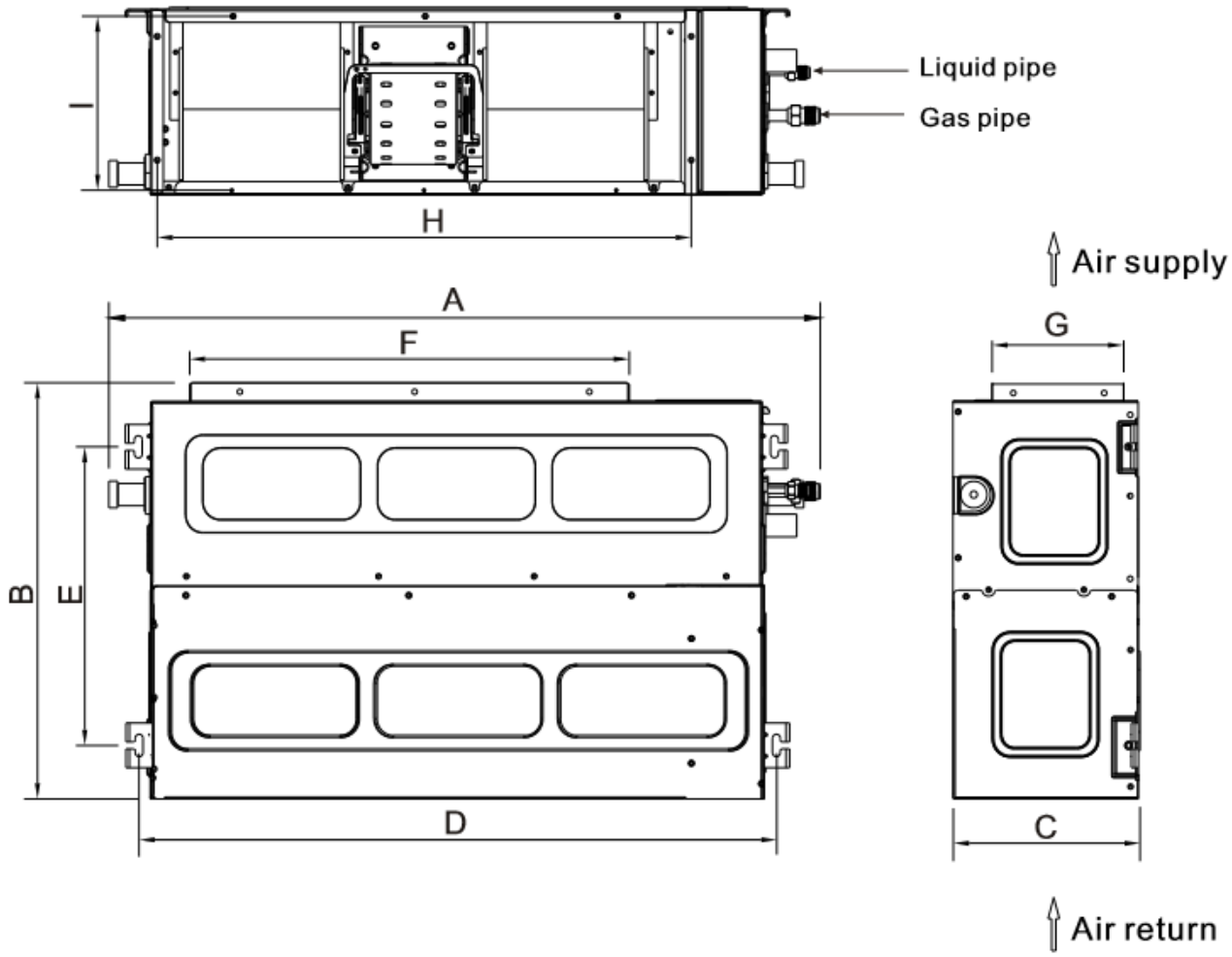
1. The cooling conditions: indoor side 27°C(80.6°F) DB, 19°C(60°F)WB outdoor side 35°C(95°F) DB.

2. The heating conditions: indoor side 20°C(68°F) DB, 15°C(44.6°F)WB outdoor side 7°C(42.8°F)DB.

3. Sound level: measured at a point 1 m in front of the unit at a height of 1.5 m. During actual operation, these values are normally somewhat higher as a result of ambient conditions.

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

3. Dimensions

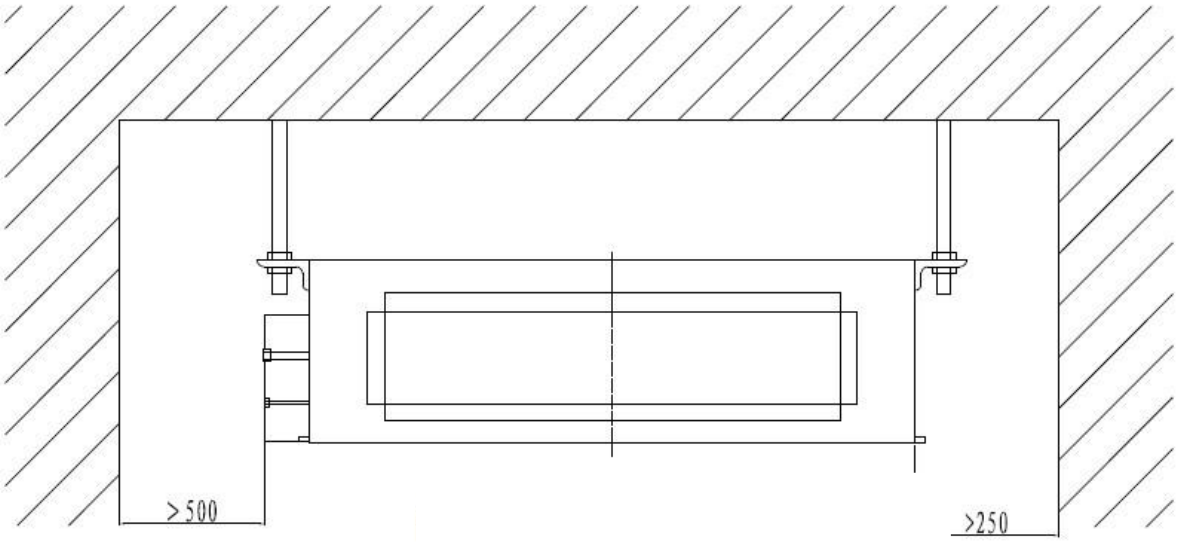


Unit: mm

Size code / Model	Body size			Installing size		Air outlet size		Air return size	
	A	B	C	D	E	F	G	H	I
07/09/12k Btu/h	814	467	210	728	335	503	150	611	200
18k Btu/h	1010	467	210	928	335	705	150	811	200

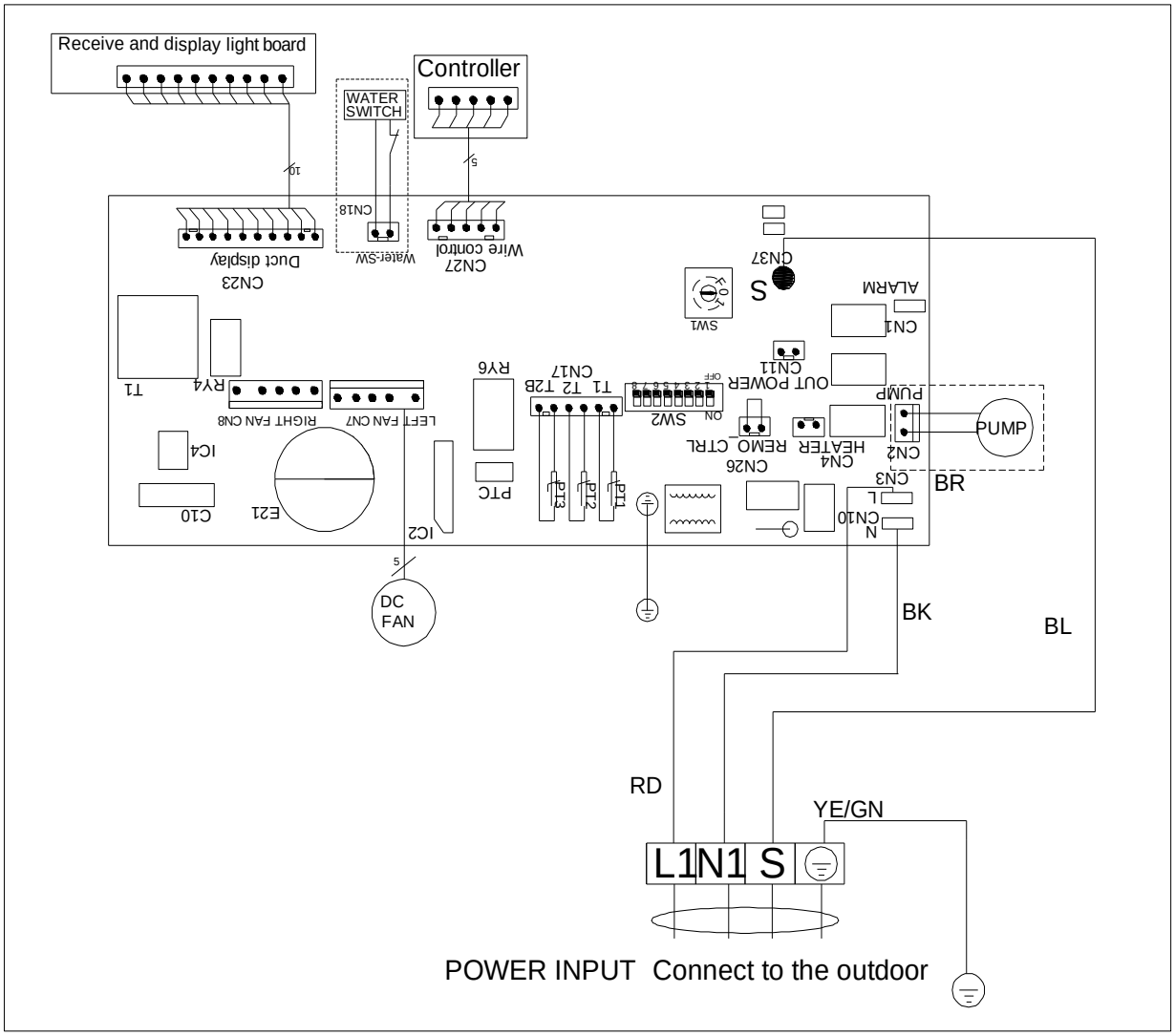
4. Service Space

Ensure enough space required for installation and maintenance.



5. Wiring Diagrams

CST-07HVR1-A/ CST-09HVR1-A/ CST-12HVR1-A/ CST-18HVR1-A



6. Capacity Table

Cooling

TC: Total Capacity; **SC**: Sensible Capacity **WB**: Wet-bulb temp. **DB**: Dry-bulb temp.

Indoor Unit size	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
07kBtu/h (2.1kW)	10	1.42	1.27	1.70	1.34	1.97	1.52	2.10	1.52	2.30	1.62	2.46	1.64	2.57	1.46
	12	1.42	1.27	1.70	1.34	1.97	1.52	2.10	1.52	2.30	1.62	2.46	1.64	2.54	1.45
	14	1.42	1.27	1.70	1.34	1.97	1.52	2.10	1.52	2.30	1.62	2.44	1.63	2.52	1.44
	16	1.42	1.27	1.70	1.34	1.97	1.52	2.10	1.52	2.30	1.62	2.42	1.61	2.50	1.42
	18	1.42	1.27	1.70	1.34	1.97	1.52	2.10	1.52	2.30	1.62	2.40	1.60	2.47	1.41
	20	1.42	1.27	1.70	1.34	1.97	1.52	2.10	1.52	2.30	1.62	2.37	1.58	2.45	1.39
	21	1.42	1.27	1.70	1.34	1.97	1.52	2.10	1.52	2.30	1.62	2.35	1.57	2.42	1.38
	23	1.42	1.27	1.70	1.34	1.97	1.52	2.10	1.52	2.30	1.62	2.33	1.55	2.40	1.37
	25	1.42	1.27	1.70	1.34	1.97	1.52	2.10	1.52	2.30	1.60	2.30	1.53	2.38	1.35
	27	1.42	1.27	1.70	1.34	1.97	1.52	2.10	1.52	2.27	1.59	2.28	1.52	2.35	1.34
	29	1.42	1.27	1.70	1.34	1.97	1.52	2.10	1.52	2.25	1.57	2.26	1.50	2.33	1.33
	31	1.42	1.27	1.70	1.34	1.97	1.52	2.10	1.52	2.23	1.55	2.24	1.49	2.31	1.31
	33	1.42	1.27	1.70	1.34	1.97	1.52	2.10	1.52	2.21	1.52	2.21	1.47	2.28	1.30
	35	1.42	1.27	1.70	1.34	1.97	1.52	2.10	1.52	2.17	1.51	2.19	1.46	2.26	1.28
	37	1.42	1.27	1.70	1.34	1.97	1.52	2.10	1.51	2.14	1.47	2.17	1.43	2.21	1.26
	39	1.42	1.27	1.70	1.34	1.97	1.52	2.10	1.50	2.12	1.46	2.14	1.41	2.19	1.24
09kBtu/h (2.6kW)	10	1.74	1.55	2.09	1.63	2.44	1.86	2.50	1.86	2.85	1.99	3.06	2.02	3.19	1.79
	12	1.74	1.55	2.09	1.63	2.44	1.86	2.60	1.86	2.85	1.99	3.06	2.02	3.16	1.77
	14	1.74	1.55	2.09	1.63	2.44	1.86	2.60	1.86	2.85	1.99	3.03	2.00	3.13	1.76
	16	1.74	1.55	2.09	1.63	2.44	1.86	2.60	1.86	2.85	1.99	3.00	1.98	3.10	1.74

	18	1.74	1.55	2.09	1.63	2.44	1.86	2.60	1.86	2.85	1.99	2.98	1.96	3.07	1.72
	20	1.74	1.55	2.09	1.63	2.44	1.86	2.60	1.86	2.85	1.99	2.95	1.94	3.04	1.70
	21	1.74	1.55	2.09	1.63	2.44	1.86	2.60	1.86	2.85	1.99	2.92	1.92	3.01	1.68
	23	1.74	1.55	2.09	1.63	2.44	1.86	2.60	1.86	2.85	1.99	2.89	1.90	2.98	1.67
	25	1.74	1.55	2.09	1.63	2.44	1.86	2.60	1.86	2.85	1.97	2.86	1.88	2.95	1.65
	27	1.74	1.55	2.09	1.63	2.44	1.86	2.60	1.86	2.82	1.95	2.83	1.86	2.92	1.63
	29	1.74	1.55	2.09	1.63	2.44	1.86	2.60	1.86	2.79	1.93	2.80	1.84	2.89	1.61
	31	1.74	1.55	2.09	1.63	2.44	1.86	2.60	1.86	2.76	1.91	2.77	1.82	2.86	1.60
	33	1.74	1.55	2.09	1.63	2.44	1.86	2.60	1.86	2.73	1.87	2.74	1.80	2.83	1.58
	35	1.74	1.55	2.09	1.63	2.44	1.86	2.60	1.86	2.69	1.84	2.71	1.78	2.80	1.56
	37	1.74	1.55	2.09	1.63	2.44	1.86	2.60	1.85	2.65	1.80	2.68	1.74	2.74	1.53
	39	1.74	1.55	2.09	1.63	2.44	1.86	2.60	1.83	2.63	1.68	2.66	1.72	2.71	1.51

TC: Total Capacity; **SC**: Sensible Capacity **WB**: Wet-bulb temp. **DB**: Dry-bulb temp.

Indoor Unit size	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
12kBtu/h (3.5kW)	10	2.49	2.25	2.94	2.35	3.39	2.64	3.50	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	3.50	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	3.50	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	3.50	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	3.50	2.64	3.92	2.81	4.08	2.78	4.21	2.47
	20	2.49	2.25	2.94	2.35	3.39	2.64	3.50	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	3.50	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	3.50	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	3.50	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	3.50	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	3.50	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	3.50	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	3.50	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	3.50	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	3.50	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	3.50	2.61	3.64	2.55	3.67	2.47	3.74	2.20
18kBtu/h (5.3kW)	10	3.58	3.20	4.28	3.35	4.98	3.81	5.30	3.81	5.80	4.08	6.23	4.14	6.49	3.68
	12	3.58	3.20	4.28	3.35	4.98	3.81	5.30	3.81	5.80	4.08	6.23	4.14	6.49	3.65
	14	3.58	3.20	4.28	3.35	4.98	3.81	5.30	3.81	5.80	4.08	6.17	4.10	6.37	3.61
	16	3.58	3.20	4.28	3.35	4.98	3.81	5.30	3.81	5.80	4.08	6.11	4.06	6.31	3.58
	18	3.58	3.20	4.28	3.35	4.98	3.81	5.30	3.81	5.80	4.08	6.05	4.02	6.25	3.54
	20	3.58	3.20	4.28	3.35	4.98	3.81	5.30	3.81	5.80	4.08	5.99	3.98	6.19	3.50
	21	3.58	3.20	4.28	3.35	4.98	3.81	5.30	3.81	5.80	4.08	5.94	3.94	6.12	3.47
	23	3.58	3.20	4.28	3.35	4.98	3.81	5.30	3.81	5.80	4.08	5.88	3.90	6.06	3.43

	25	3.58	3.20	4.28	3.35	4.98	3.81	5.30	3.81	5.80	4.03	5.82	3.86	6.00	3.40
	27	3.58	3.20	4.28	3.35	4.98	3.81	5.30	3.81	5.74	3.99	5.86	3.82	5.94	3.36
	29	3.58	3.20	4.28	3.35	4.98	3.81	5.30	3.81	5.68	3.95	5.80	3.78	5.88	3.33
	31	3.58	3.20	4.28	3.35	4.98	3.81	5.30	3.81	5.63	3.91	5.64	3.74	5.82	3.29
	33	3.58	3.20	4.28	3.35	4.98	3.81	5.30	3.81	5.57	3.83	5.58	3.70	5.76	3.26
	35	3.58	3.20	4.28	3.35	4.98	3.81	5.30	3.81	5.48	3.79	5.53	3.66	5.70	3.22
	37	3.58	3.20	4.28	3.35	4.98	3.81	5.30	3.79	5.40	3.71	5.47	3.58	5.58	3.15
	39	3.58	3.20	4.28	3.35	4.98	3.81	5.30	3.77	5.36	3.67	5.41	3.54	5.52	3.12

Heating

TC: Total Capacity; **WB**: Wet-bulb temp. **DB**: Dry-bulb temp.

Indoor Unit size	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
07kBtu/h (2.1kW)	-15.00	-14.70	1.59	1.59	1.59	1.59	1.59	1.59
	-13.00	-12.60	1.69	1.69	1.69	1.69	1.69	1.69
	-11.00	-10.50	1.75	1.75	1.75	1.75	1.75	1.75
	-10.00	-9.50	1.80	1.80	1.80	1.80	1.80	1.80
	-9.10	-8.50	1.85	1.85	1.85	1.85	1.85	1.85
	-7.60	-7.00	1.88	1.88	1.88	1.88	1.88	1.88
	-5.60	-5.00	1.95	1.95	1.95	1.95	1.95	1.95
	-3.70	-3.00	2.06	2.06	2.06	2.06	2.06	2.06
	-0.70	0.00	2.21	2.21	2.21	2.21	2.21	2.08
	2.20	3.00	2.34	2.34	2.34	2.34	2.29	2.08
	4.10	5.00	2.40	2.40	2.40	2.40	2.29	2.08
	6.00	7.00	2.50	2.50	2.40	2.40	2.29	2.08
	7.90	9.00	2.58	2.58	2.50	2.40	2.29	2.08
	9.80	11.00	2.66	2.66	2.50	2.40	2.29	2.08
	11.80	13.00	2.76	2.71	2.50	2.40	2.29	2.08
	13.70	15.00	2.84	2.71	2.50	2.40	2.29	2.08
09kBtu/h (2.6kW)	-15.00	-14.70	1.72	1.72	1.72	1.72	1.72	1.72
	-13.00	-12.60	1.84	1.84	1.84	1.84	1.84	1.84
	-11.00	-10.50	1.94	1.94	1.94	1.94	1.94	1.94
	-10.00	-9.50	2.04	2.04	2.04	2.04	2.04	2.04
	-9.10	-8.50	2.10	2.10	2.10	2.10	2.10	2.10
	-7.60	-7.00	2.13	2.13	2.13	2.13	2.13	2.13
	-5.60	-5.00	2.23	2.23	2.23	2.23	2.23	2.23

	-3.70	-3.00	2.36	2.36	2.36	2.36	2.36	2.36
	-0.70	0.00	2.55	2.55	2.55	2.55	2.55	2.39
	2.20	3.00	2.71	2.71	2.71	2.71	2.64	2.39
	4.10	5.00	2.80	2.80	2.80	2.80	2.64	2.39
	6.00	7.00	2.90	2.90	2.90	2.80	2.64	2.39
	7.90	9.00	3.00	3.00	2.90	2.80	2.64	2.39
	9.80	11.00	3.09	3.09	2.90	2.80	2.64	2.39
	11.80	13.00	3.22	3.16	2.90	2.80	2.64	2.39
	13.70	15.00	3.32	3.16	2.90	2.80	2.64	2.39

TC: Total Capacity; **WB**: Wet-bulb temp. **DB**: Dry-bulb temp.

Indoor Unit size	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
12kBtu/h (3.5kW)	-15.00	-14.70	2.40	2.40	2.40	2.40	2.40	2.40
	-13.00	-12.60	2.48	2.48	2.48	2.48	2.48	2.48
	-11.00	-10.50	2.60	2.60	2.60	2.60	2.60	2.60
	-10.00	-9.50	2.72	2.72	2.72	2.72	2.72	2.72
	-9.10	-8.50	2.80	2.80	2.80	2.80	2.80	2.80
	-7.60	-7.00	2.84	2.84	2.84	2.84	2.84	2.84
	-5.60	-5.00	2.96	2.96	2.96	2.96	2.96	2.96
	-3.70	-3.00	3.12	3.12	3.12	3.12	3.12	3.12
	-0.70	0.00	3.36	3.36	3.36	3.36	3.36	3.16
	2.20	3.00	3.56	3.56	3.56	3.56	3.48	3.16
	4.10	5.00	3.68	3.68	3.68	3.68	3.48	3.16
	6.00	7.00	3.80	3.80	3.80	3.68	3.48	3.16
	7.90	9.00	3.92	3.92	3.80	3.68	3.48	3.16
	9.80	11.00	4.04	4.04	3.80	3.68	3.48	3.16
	11.80	13.00	4.20	4.12	3.80	3.68	3.48	3.16
	13.70	15.00	4.32	4.12	3.80	3.68	3.48	3.16
18kBtu/h (5.3kW)	-15.00	-14.70	3.40	3.40	3.40	3.40	3.40	3.40
	-13.00	-12.60	3.52	3.52	3.52	3.52	3.52	3.52
	-11.00	-10.50	3.71	3.71	3.71	3.71	3.71	3.71
	-10.00	-9.50	3.90	3.90	3.90	3.90	3.90	3.90
	-9.10	-8.50	4.03	4.03	4.03	4.03	4.03	4.03
	-7.60	-7.00	4.09	4.09	4.09	4.09	4.09	4.09
	-5.60	-5.00	4.28	4.28	4.28	4.28	4.28	4.28
	-3.70	-3.00	4.53	4.53	4.53	4.53	4.53	4.53

	-0.70	0.00	4.91	4.91	4.91	4.91	4.91	4.59
	2.20	3.00	5.22	5.22	5.22	5.22	5.10	4.59
	4.10	5.00	5.41	5.41	5.41	5.41	5.10	4.59
	6.00	7.00	5.60	5.60	5.60	5.41	5.10	4.59
	7.90	9.00	5.79	5.79	5.60	5.41	5.10	4.59
	9.80	11.00	5.98	5.98	5.60	5.41	5.10	4.59
	11.80	13.00	6.23	6.10	5.60	5.41	5.10	4.59
	13.70	15.00	6.42	6.10	5.60	5.41	5.10	4.59

7. Electric Characteristics

Model	Indoor Unit				Power Supply	IFM
	Hz	Voltage	Min	Max	MFA	kW
CST-07HVR1-A	50	220-240V	198	254	3.15	0.027
CST-09HVR1-A	50	220-240 V	198	254	3.15	0.027
CST-12HVR1-A	50	220-240 V	198	254	3.15	0.027
CST-18HVR1-A	50	220-240 V	198	254	3.15	0.055

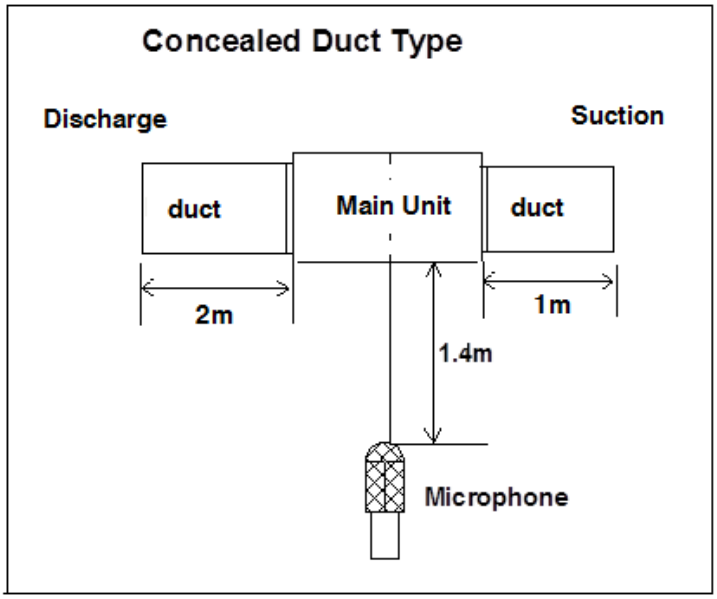
Remark:

MFA: Max. Fuse Amps. (A)

KW: Fan Motor Rated Output (kW)

IFM: Indoor Fan Motor

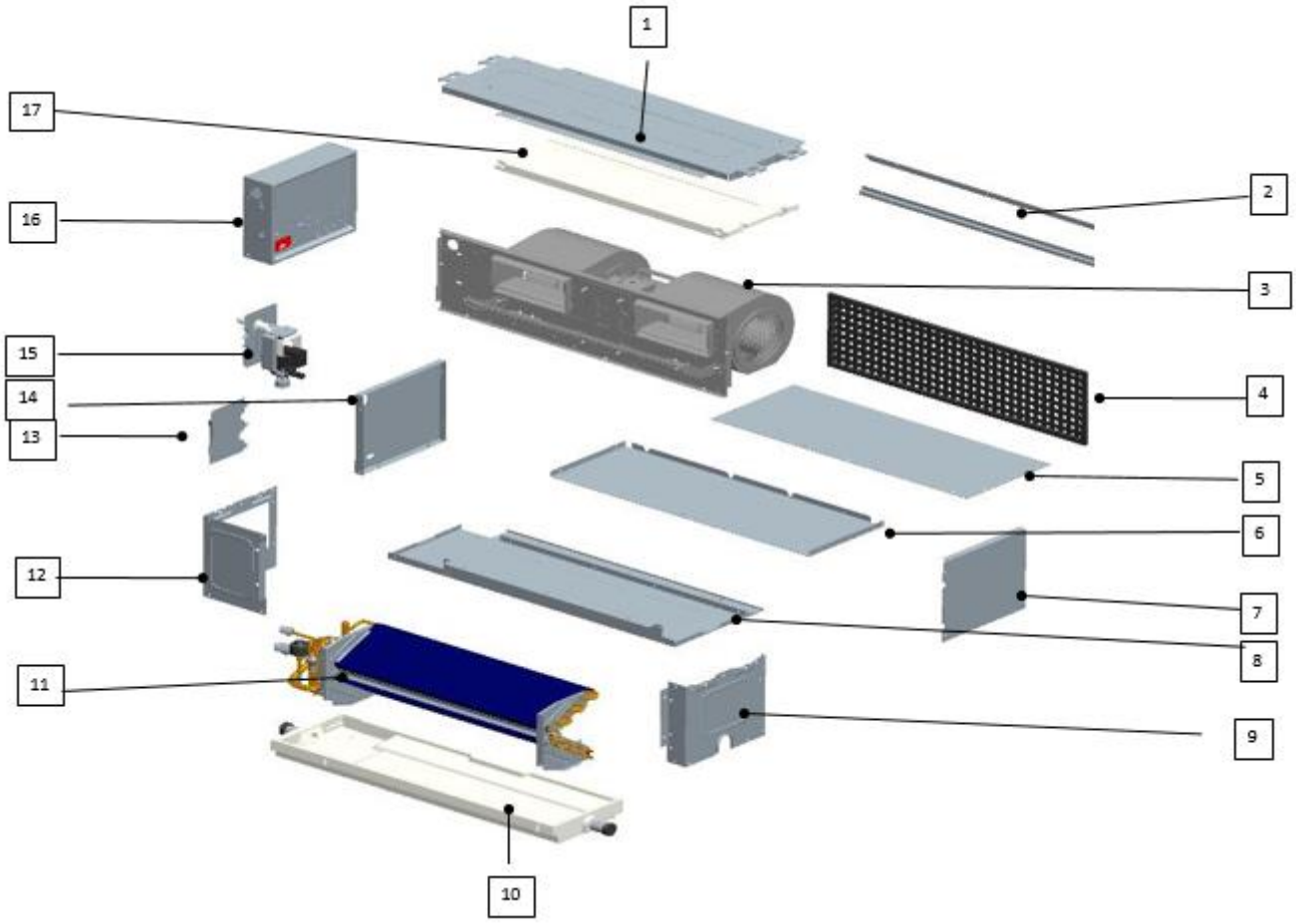
8. Sound Level



Model	Noise leveldB(A)
	High speed
CST-07HVR1-A	30
CST-09HVR1-A	30
CST-12HVR1-A	36
CST-18HVR1-A	32

9. Exploded View

CST-07HVR1-A / CST-09HVR1-A / CST-12HVR1-A / CST-18HVR1-A



No.	Part Name	Quantity	No.	Part Name	Quantity
1	Cover assembly attached cotton	1	11.1.2	Throttle assembly	1
1.1.2	Hanger	4	11.1.3	Manifold assembly	1
2	Filter baffles	2	11.1.4	Splitter assembly	1
3	Motor assembly	1	11.2	Splitter assembly	2
3.1	Fixing board assy attached cotton for fan	1	11.3	Sheath pipe insulation	1
3.2	Motor bracket	1	11.4	Sheath pipe insulation	1
3.3	Wind scroll case	2	11.5	EXV coil	1
3.4	Biaxial indoor motor	1	12	Left pannel attached cotton assy	1
3.5	Motor bracket connect plate	1	13	Tube cover attached cotton assy	1
3.6	Motor bushings right gland	1	14	Left air return board attached cotton assy	1
3.7	Motor bushings left gland	1	15	water pump assembly	1
4	Fliter	1	15.1	Drainage connecting pipe	1
5	Upper panel of air return box	1	15.2	Pump fixed plate attached cotton assy	1
6	Down panel of air return box	1	15.3	Water Level switch fixed plate	1
7	Right panel of air return box	1	15.4	water pump	1
8	Down panel attached cotton assembly	1	15.5	water lever switch	1
8.1	Down panel attached assembly	1	15.6	Drain pipe	1
8.1.1	Down panel	1	16	Eletronic control components	1
8.1.2	Fixing board assy for fan	1	16.1	Electronically controlled bottom board	1
8.2	Down air outlet cotton	1	16.2	Electric control box cover	1
8.3	Down pannel cotton	1	16.3	Electric control board plastic base	1
9	Right pannel attached cotton assy	1	16.4	Eletronic control board for indoor unit	1
10	Foam water tray	1	16.5	Terminal	1
11	Evaporator assy	1	16.6	Transformer	1
11.1	Evaporator pre-welded assy	1	16.7	Terminal	1

	11.1.1	Evaporator	2	17	Upper foam	1

10. Accessories

NO.	NAME	SHAPE	QUANTITY
1	Installation instruction for indoor unit	The manual	1
2	Insulating tube		2
3	Ribbon		6
4	Dome insulated tip		6
5	X-type insulated tip		3
6	Wire controller		1
7	Connecting pipe of electronic expansion valve		1
8	Connection wire for wired controller		1
9	Blank valve bag		3

11. Troubleshooting

Display with Fault

Definitions of malfunction	Contents appearing
Communication failure of indoor and outdoor unit	E1
T1 sensor fault	E2
T2 sensor fault	E3
T2B sensor fault	E4
Malfunction of outdoor unit	E5
EEPROM malfunction	E7
Wind testing fault of PG Electric motor	E8
Alarming fault of water level switch	EE

Display of LED

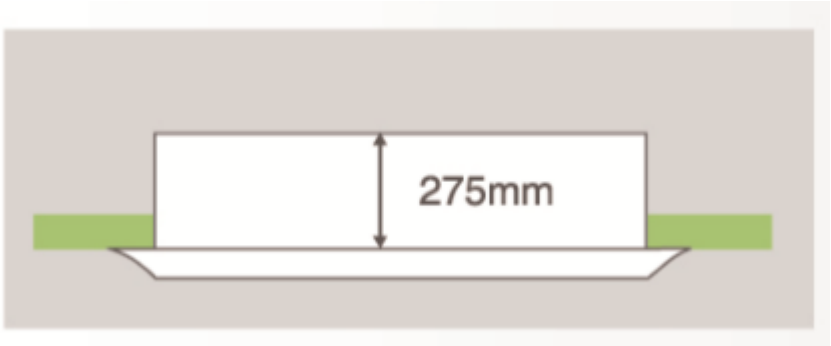
Definitions of malfunction	Contents appearing
Communication failure of indoor and outdoor unit	LED timing light shines quickly
Fault of indoor temperature sensor	LED running shines quickly
Alarming fault of water level	LED alarming light shines quickly
Mode impact fault	LED defrost light shines quickly
Outdoor unit fault	LED alarming light shines slowly
EEPROM malfunction	LED defrost light shines slowly

4-way cassette Type

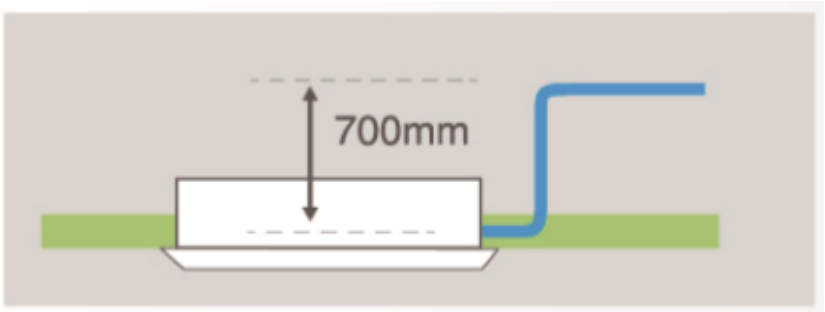
1. Features

1.1 New developed panel. Indoor unit. Indoor unit uniform standard panel, simple and convenient.

1.2 Ultra-thin body design, the min. height is only 230mm, save installation space.

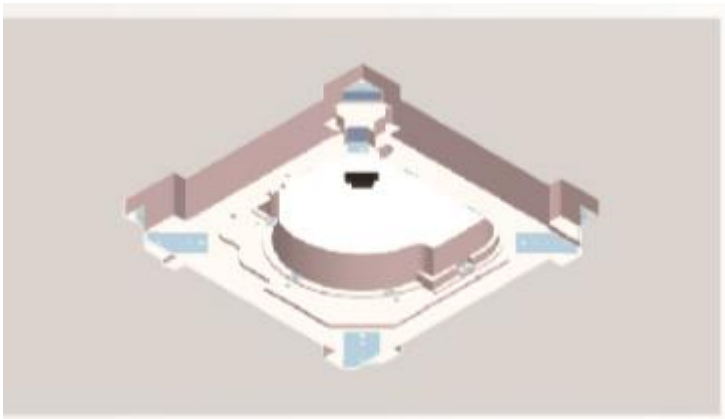


1.3 Built-in water pump ,water head up to 700 mm.

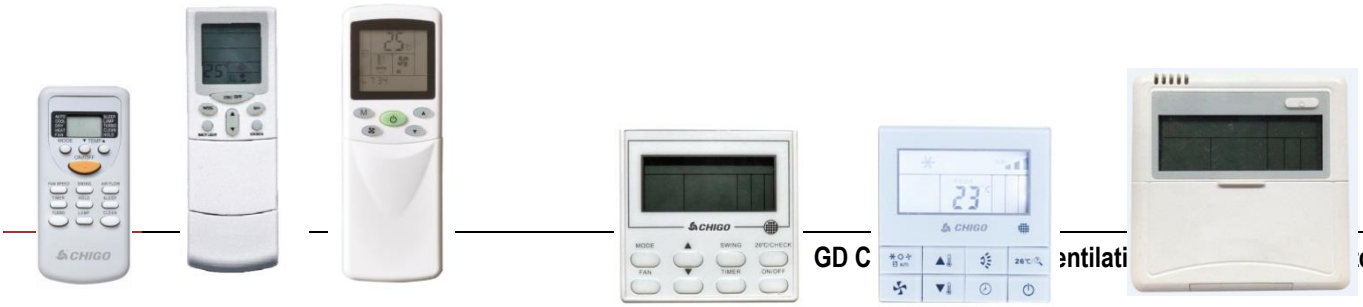


1.4 High efficiency DC fan motor, low noise and more comfortable. Operate in low frequency and control indoor temperature precisely.

1.5 Built in water tray , insulating foam coated by special plastic, preventing the leakage of the condensed water effectively



1.6 Standard for wireless controller; option for wired controller.



Standard optional

2. Specifications

Model name			CSC-07HVR1-A	CSC-09HVR1-A	CSC-12HVR1-A	CSC-18HVR1-A
Power supply		V-Ph-Hz	220~240/1/50	220~240/1/50	220~240/1/50	220~240/1/50
Electricity supplying type			Outdoor unit supply			
Cooling	Capacity	Btu/h	7000	9000	12000	18000
	Input	W	25	25	26	34
	Rated current	A	0.12	0.12	0.12	0.16
Heating	Capacity	Btu/h	8000	10000	13000	19000
	Input	W	25	25	26	34
	Rated current	A	0.12	0.12	0.12	0.16
Indoor fan motor	Model		DR-310-35Q-8-1	DR-310-35Q-8-1	DR-310-35Q-8-1	DR-310-35Q-8-1
	Type		DC	DC	DC	DC
	Brand		Chigo	Chigo	Chigo	Chigo
	Input	W	21/16/12	21/16/12	23/18/13	30/24/18
	Speed (H/M/L)	r/min	670/590/500	670/590/500	690/610/520	790/740/610
Indoor coil	Number of rows		2	2	2	2
	Tube pitch× row pitch	mm	21×13.37	21×13.37	21×13.37	21×13.37
	Fin spacing	mm	1.4	1.4	1.4	1.4
	Fin type		Hydrophilic	Hydrophilic	Hydrophilic	Hydrophilic
	Tube outside diameter	mm	Φ7	Φ7	Φ7	Φ7
	Tube type		Inner screw	Inner screw	Inner screw	Inner screw
	Coil size (W×D×H)	mm	1313×26.74×210	1313×26.74×210	1313×26.74×210	1313×26.74×210
	Number of circuits		4	4	4	4
Indoor air flow (H/M/L)		m^3/h	540/490/410	540/490/410	690/610/520	790/710/610
Indoor noise level(H)		dB(A)	39/36/33	39/36/33	40/37/34	44/41/38
Indoor unit	Net Dimension (W×H ×D)	Body(mm)	565×267×565	565×267×565	565×267×565	565×267×565
		Panel(mm)	650×30×650	650×30×650	650×30×650	650×30×650
	PackingDimension(W×H×D)	Body(mm)	745×375×675	745×375×675	745×375×675	745×375×675
		Panel(mm)	750×95×750	750×95×750	750×95×750	750×95×750
	Net/Gross weight	Body(kg)	16.5/22	16.5/22	16.5/22	16.5/22
		Panel(kg)	2.7/4.0	2.7/4.0	2.7/4.0	2.7/4.0
Refrigerant Type			R410A	R410A	R410A	R410A
Refrigerant pipe (Liquid side/ Gas side)		mm	Φ6.35/Φ9.52	Φ6.35/Φ9.52	Φ6.35/Φ9.52	Φ6.35/Φ12.7
Drainage water pipe diameter		mm	DN25	DN25	DN25	DN25
Controller(standard)			Remote controller	Remote controller	Remote controller	Remote controller
Application area		m^2	10~15	12~18	16~23	23~34

Notes:

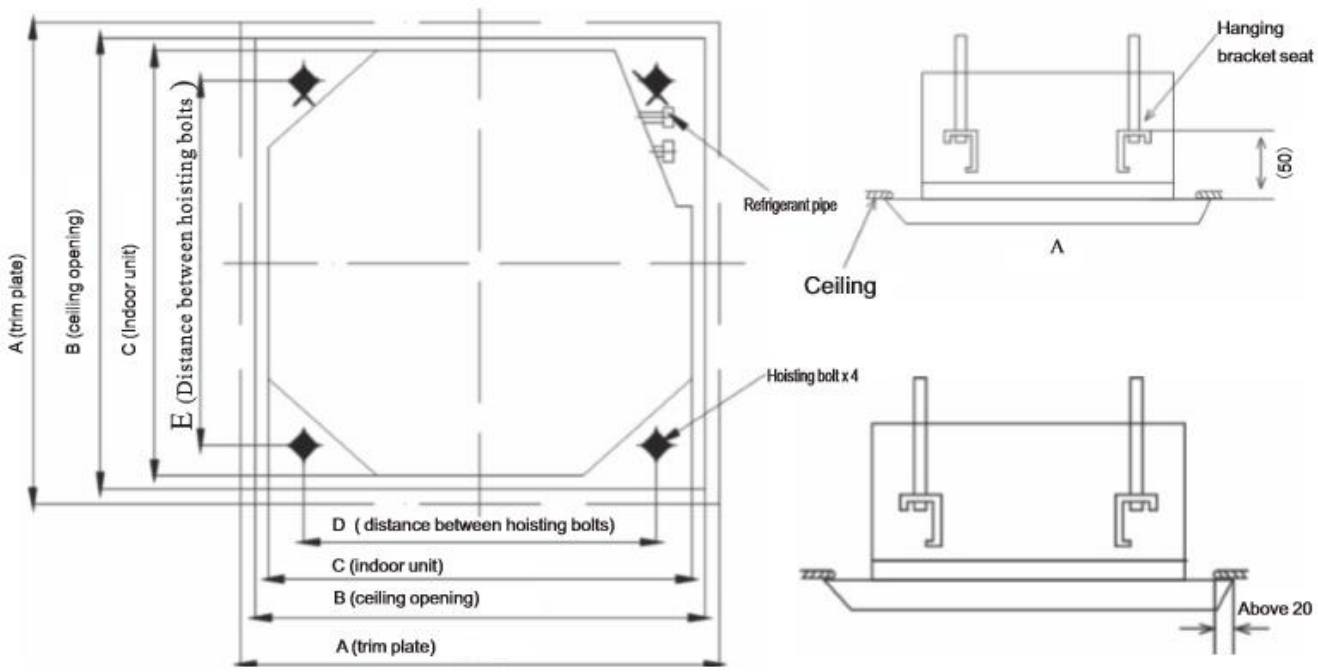
1. The cooling conditions: indoor side 27°C(80.6°F) DB, 19°C(60°F)WB outdoor side 35°C(95°F) DB.

2. The heating conditions: indoor side 20°C(68°F) DB, 15°C(44.6°F)WB outdoor side 7°C(42.8°F)DB.

3. Sound level: measured at a point 1 m in front of the unit at a height of 1.5 m. During actual operation, these values are normally somewhat higher as a result of ambient conditions.

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

3. Dimensions

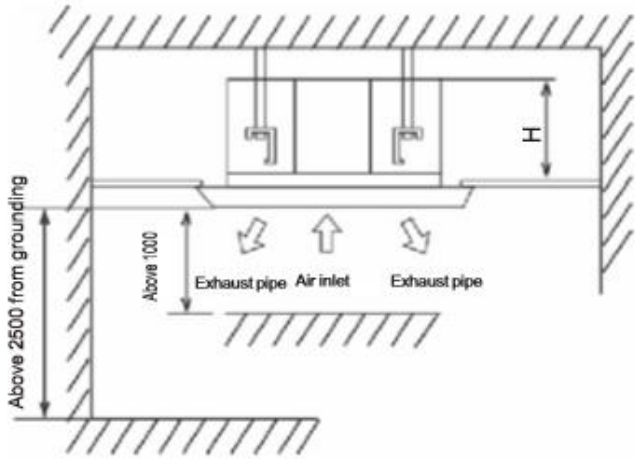


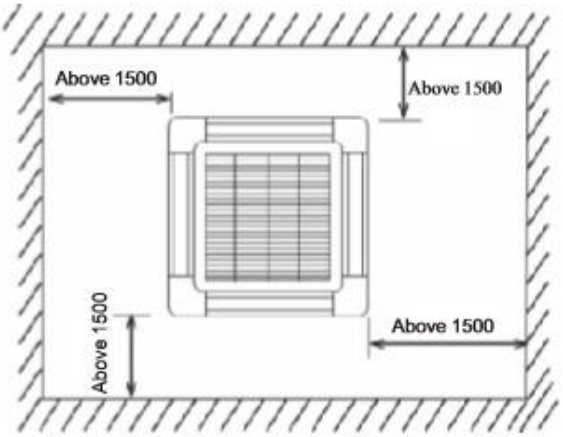
Unit: mm

Model	Size				
	A	B	C	D	E
7K/9K/12K/18K	650	610	565	528	528

4. Service Space

Ensure enough space required for installation and maintenance.





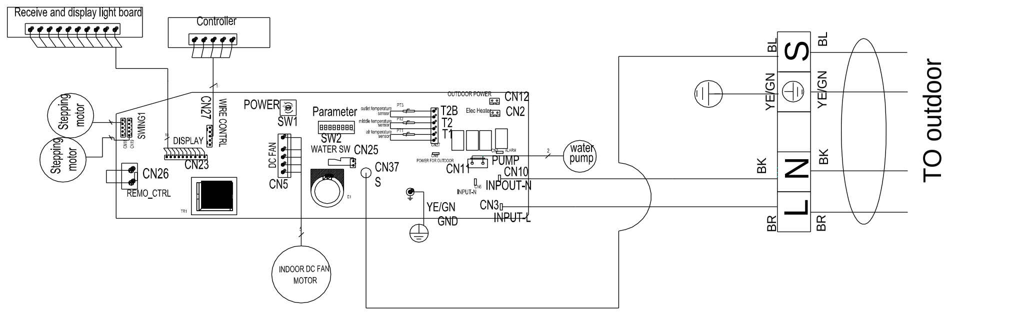
Model	Machine body height(H)
7K/9K/12K/18K	267

5. Wiring Diagrams

CSC-07HVR1-A/ CSC-09HVR1-A/ CSC-12HVR1-A/ CSC-18HVR1-A

Electrical wiring diagram

802040090038



Indoor models Select bits	
SW2 NO.1,2	Indoor models
ON OFF 1 2	Small Ceiling cassette unit

Receive and display light board		
SW2 NO.4	ON OFF 4	LED
	ON OFF 4	Digital tube

SW2 NO.5	ON OFF 5	power-down memory
	ON OFF 5	No power-down memory

SW2 NO.6	Heating temperature compensation
ON OFF 6	6¡ æ
ON OFF 6	2¡ æ

SW2 NO.8	Heating fan stop time
ON OFF 8	4MIN
ON OFF 8	8MIN

SW2 NO.7	Anti-cold wind off the fan temperature selection bit
ON OFF 7	15¡ æ
ON OFF 7	24¡ æ

NOTE:

ON OFF 1	That DIP to ON
ON OFF 1	That DIP to Digital

FACTORY DEFAULT
SW2
ON OFF 1 2 3 4 5 6 7 8

The power (PH) of indoor units can be set throughDIP switch SW1(16- bit disc DIP) on the indoor control panel before delivery, the detailed information is as follows:

	0	0.8	1	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5		
MODEL		7K	9K	12K	18K	24K	27K	30K	36K	40K	45K	48K	54K	60K		
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
POWER		21	26	35	53	70			105			140		160		

6. Capacity Table

Cooling

TC: Total Capacity; **SC**: Sensible Capacity **WB**: Wet-bulb temp. **DB**: Dry-bulb temp.

Indoor Unit size	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
07kBtu/h (2.1kW)	10	1.42	1.27	1.70	1.34	1.97	1.60	2.10	1.60	2.30	1.70	2.46	1.72	2.57	1.54
	12	1.42	1.27	1.70	1.34	1.97	1.60	2.10	1.60	2.30	1.70	2.46	1.72	2.54	1.53
	14	1.42	1.27	1.70	1.34	1.97	1.60	2.10	1.60	2.30	1.70	2.44	1.71	2.52	1.52
	16	1.42	1.27	1.70	1.34	1.97	1.60	2.10	1.60	2.30	1.70	2.42	1.69	2.50	1.50
	18	1.42	1.27	1.70	1.34	1.97	1.60	2.10	1.60	2.30	1.70	2.40	1.68	2.47	1.49
	20	1.42	1.27	1.70	1.34	1.97	1.60	2.10	1.60	2.30	1.70	2.37	1.66	2.45	1.47
	21	1.42	1.27	1.70	1.34	1.97	1.60	2.10	1.60	2.30	1.70	2.35	1.65	2.42	1.46
	23	1.42	1.27	1.70	1.34	1.97	1.60	2.10	1.60	2.30	1.70	2.33	1.63	2.40	1.45
	25	1.42	1.27	1.70	1.34	1.97	1.60	2.10	1.60	2.30	1.68	2.30	1.61	2.38	1.43
	27	1.42	1.27	1.70	1.34	1.97	1.60	2.10	1.60	2.27	1.67	2.28	1.60	2.35	1.42
	29	1.42	1.27	1.70	1.34	1.97	1.60	2.10	1.60	2.25	1.65	2.26	1.58	2.33	1.41
	31	1.42	1.27	1.70	1.34	1.97	1.60	2.10	1.60	2.23	1.63	2.24	1.57	2.31	1.39
	33	1.42	1.27	1.70	1.34	1.97	1.60	2.10	1.60	2.21	1.60	2.21	1.55	2.28	1.38
	35	1.42	1.27	1.70	1.34	1.97	1.60	2.10	1.60	2.17	1.59	2.19	1.54	2.26	1.36
	37	1.42	1.27	1.70	1.34	1.97	1.60	2.10	1.59	2.14	1.55	2.17	1.51	2.21	1.34
	39	1.42	1.27	1.70	1.34	1.97	1.60	2.10	1.58	2.12	1.54	2.14	1.49	2.19	1.32
09kBtu/h (2.6kW)	10	1.92	1.77	2.20	1.84	2.47	2.10	2.60	2.10	2.80	2.20	2.96	2.22	3.07	2.04
	12	1.92	1.77	2.20	1.84	2.47	2.10	2.60	2.10	2.80	2.20	2.96	2.22	3.04	2.03
	14	1.92	1.77	2.20	1.84	2.47	2.10	2.60	2.10	2.80	2.20	2.94	2.21	3.02	2.02
	16	1.92	1.77	2.20	1.84	2.47	2.10	2.60	2.10	2.80	2.20	2.92	2.19	3.00	2.00

	18	1.92	1.77	2.20	1.84	2.47	2.10	2.60	2.10	2.80	2.20	2.90	2.18	2.97	1.99
	20	1.92	1.77	2.20	1.84	2.47	2.10	2.60	2.10	2.80	2.20	2.87	2.16	2.95	1.97
	21	1.92	1.77	2.20	1.84	2.47	2.10	2.60	2.10	2.80	2.20	2.85	2.15	2.92	1.96
	23	1.92	1.77	2.20	1.84	2.47	2.10	2.60	2.10	2.80	2.20	2.83	2.13	2.90	1.95
	25	1.92	1.77	2.20	1.84	2.47	2.10	2.60	2.10	2.80	2.18	2.80	2.11	2.88	1.93
	27	1.92	1.77	2.20	1.84	2.47	2.10	2.60	2.10	2.77	2.17	2.78	2.10	2.85	1.92
	29	1.92	1.77	2.20	1.84	2.47	2.10	2.60	2.10	2.75	2.15	2.76	2.08	2.83	1.91
	31	1.92	1.77	2.20	1.84	2.47	2.10	2.60	2.10	2.73	2.13	2.74	2.07	2.81	1.89
	33	1.92	1.77	2.20	1.84	2.47	2.10	2.60	2.10	2.71	2.10	2.71	2.05	2.78	1.88
	35	1.92	1.77	2.20	1.84	2.47	2.10	2.60	2.10	2.67	2.09	2.69	2.04	2.76	1.86
	37	1.92	1.77	2.20	1.84	2.47	2.10	2.60	2.09	2.64	2.05	2.67	2.01	2.71	1.84
	39	1.92	1.77	2.20	1.84	2.47	2.10	2.60	2.08	2.62	2.04	2.64	1.99	2.69	1.82

TC: Total Capacity; **SC**: Sensible Capacity **WB**: Wet-bulb temp. **DB**: Dry-bulb temp.

Indoor Unit size	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
12kBtu/h (3.5kW)	10	2.39	2.15	2.84	2.25	3.29	2.62	3.50	2.62	3.82	2.79	4.10	2.83	4.26	2.54
	12	2.39	2.15	2.84	2.25	3.29	2.62	3.50	2.62	3.82	2.79	4.10	2.83	4.22	2.52
	14	2.39	2.15	2.84	2.25	3.29	2.62	3.50	2.62	3.82	2.79	4.06	2.81	4.19	2.49
	16	2.39	2.15	2.84	2.25	3.29	2.62	3.50	2.62	3.82	2.79	4.02	2.78	4.15	2.47
	18	2.39	2.15	2.84	2.25	3.29	2.62	3.50	2.62	3.82	2.79	3.98	2.76	4.11	2.45
	20	2.39	2.15	2.84	2.25	3.29	2.62	3.50	2.62	3.82	2.79	3.95	2.73	4.07	2.43
	21	2.39	2.15	2.84	2.25	3.29	2.62	3.50	2.62	3.82	2.79	3.91	2.71	4.03	2.40
	23	2.39	2.15	2.84	2.25	3.29	2.62	3.50	2.62	3.82	2.79	3.87	2.68	3.99	2.38
	25	2.39	2.15	2.84	2.25	3.29	2.62	3.50	2.62	3.82	2.77	3.83	2.65	3.95	2.36
	27	2.39	2.15	2.84	2.25	3.29	2.62	3.50	2.62	3.78	2.74	3.80	2.63	3.91	2.34
	29	2.39	2.15	2.84	2.25	3.29	2.62	3.50	2.62	3.75	2.71	3.76	2.60	3.88	2.31
	31	2.39	2.15	2.84	2.25	3.29	2.62	3.50	2.62	3.71	2.69	3.72	2.58	3.84	2.29
	33	2.39	2.15	2.84	2.25	3.29	2.62	3.50	2.62	3.67	2.64	3.68	2.55	3.80	2.27
	35	2.39	2.15	2.84	2.25	3.29	2.62	3.50	2.62	3.62	2.61	3.65	2.53	3.76	2.24
	37	2.39	2.15	2.84	2.25	3.29	2.62	3.50	2.61	3.56	2.56	3.61	2.48	3.68	2.20
	39	2.39	2.15	2.84	2.25	3.29	2.62	3.50	2.59	3.54	2.53	3.57	2.45	3.64	2.18
18kBtu/h (5.3kW)	10	3.92	3.61	4.48	3.74	5.04	4.10	5.30	4.10	5.70	4.32	6.04	4.37	6.25	4.00
	12	3.92	3.61	4.48	3.74	5.04	4.10	5.30	4.10	5.70	4.32	6.04	4.37	6.21	3.97
	14	3.92	3.61	4.48	3.74	5.04	4.10	5.30	4.10	5.70	4.32	6.00	4.33	6.16	3.94
	16	3.92	3.61	4.48	3.74	5.04	4.10	5.30	4.10	5.70	4.32	5.95	4.30	6.11	3.91
	18	3.92	3.61	4.48	3.74	5.04	4.10	5.30	4.10	5.70	4.32	5.90	4.27	6.06	3.89
	20	3.92	3.61	4.48	3.74	5.04	4.10	5.30	4.10	5.70	4.32	5.86	4.24	6.01	3.86
	21	3.92	3.61	4.48	3.74	5.04	4.10	5.30	4.10	5.70	4.32	5.81	4.21	5.96	3.83
	23	3.92	3.61	4.48	3.74	5.04	4.10	5.30	4.10	5.70	4.32	5.76	4.17	5.91	3.80

	25	3.92	3.61	4.48	3.74	5.04	4.10	5.30	4.10	5.70	4.28	5.72	4.14	5.87	3.77
	27	3.92	3.61	4.48	3.74	5.04	4.10	5.30	4.10	5.65	4.25	5.67	4.11	5.82	3.74
	29	3.92	3.61	4.48	3.74	5.04	4.10	5.30	4.10	5.61	4.22	5.62	4.08	5.77	3.72
	31	3.92	3.61	4.48	3.74	5.04	4.10	5.30	4.10	5.56	4.18	5.58	4.05	5.72	3.69
	33	3.92	3.61	4.48	3.74	5.04	4.10	5.30	4.10	5.52	4.12	5.53	4.02	5.67	3.66
	35	3.92	3.61	4.48	3.74	5.04	4.10	5.30	4.10	5.45	4.09	5.48	3.98	5.63	3.63
	37	3.92	3.61	4.48	3.74	5.04	4.10	5.30	4.09	5.38	4.02	5.44	3.92	5.53	3.57
	39	3.92	3.61	4.48	3.74	5.04	4.10	5.30	4.07	5.34	3.99	5.39	3.99	5.48	3.55

Heating

TC: Total Capacity; **WB**: Wet-bulb temp. **DB**: Dry-bulb temp.

Indoor Unit size	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
07kBtu/h (2.1kW)	-15.00	-14.70	1.46	1.46	1.46	1.46	1.46	1.46
	-13.00	-12.60	1.56	1.56	1.56	1.56	1.56	1.56
	-11.00	-10.50	1.58	1.60	1.60	1.60	1.60	1.60
	-10.00	-9.50	1.65	1.65	1.65	1.65	1.65	1.65
	-9.10	-8.50	1.70	1.70	1.70	1.70	1.70	1.70
	-7.60	-7.00	1.72	1.72	1.72	1.72	1.72	1.72
	-5.60	-5.00	1.80	1.80	1.80	1.80	1.80	1.80
	-3.70	-3.00	1.89	1.89	1.89	1.89	1.89	1.89
	-0.70	0.00	2.04	2.04	2.04	2.04	2.04	1.92
	2.20	3.00	2.16	2.16	2.16	2.16	2.11	1.92
	4.10	5.00	2.30	2.40	2.40	2.30	2.11	1.92
	6.00	7.00	2.40	2.40	2.40	2.30	2.11	1.92
	7.90	9.00	2.47	2.47	2.40	2.30	2.11	1.92
	9.80	11.00	2.54	2.54	2.40	2.30	2.11	1.92
	11.80	13.00	2.64	2.59	2.40	2.30	2.11	1.92
	13.70	15.00	2.71	2.59	2.40	2.30	2.11	1.92
09kBtu/h (2.6kW)	-15.00	-14.70	1.72	1.72	1.72	1.72	1.72	1.72
	-13.00	-12.60	1.84	1.84	1.84	1.84	1.84	1.84
	-11.00	-10.50	1.94	1.94	1.94	1.94	1.94	1.94
	-10.00	-9.50	2.04	2.04	2.04	2.04	2.04	2.04
	-9.10	-8.50	2.10	2.10	2.10	2.10	2.10	2.10
	-7.60	-7.00	2.13	2.13	2.13	2.13	2.13	2.13
	-5.60	-5.00	2.23	2.23	2.23	2.23	2.23	2.23

	-3.70	-3.00	2.36	2.36	2.36	2.36	2.36	2.36
	-0.70	0.00	2.55	2.55	2.55	2.55	2.55	2.39
	2.20	3.00	2.71	2.71	2.71	2.71	2.64	2.39
	4.10	5.00	2.80	2.80	2.80	2.80	2.64	2.39
	6.00	7.00	2.90	2.90	2.90	2.80	2.64	2.39
	7.90	9.00	3.00	3.00	2.90	2.80	2.64	2.39
	9.80	11.00	3.09	3.09	2.90	2.80	2.64	2.39
	11.80	13.00	3.22	3.16	2.90	2.80	2.64	2.39
	13.70	15.00	3.32	3.16	2.90	2.80	2.64	2.39

TC: Total Capacity; **WB**: Wet-bulb temp. **DB**: Dry-bulb temp.

Indoor Unit size	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
12kBtu/h (3.5kW)	-15.00	-14.70	2.40	2.40	2.40	2.40	2.40	2.40
	-13.00	-12.60	2.48	2.48	2.48	2.48	2.48	2.48
	-11.00	-10.50	2.60	2.60	2.60	2.60	2.60	2.60
	-10.00	-9.50	2.72	2.72	2.72	2.72	2.72	2.72
	-9.10	-8.50	2.80	2.80	2.80	2.80	2.80	2.80
	-7.60	-7.00	2.84	2.84	2.84	2.84	2.84	2.84
	-5.60	-5.00	2.96	2.96	2.96	2.96	2.96	2.96
	-3.70	-3.00	3.12	3.12	3.12	3.12	3.12	3.12
	-0.70	0.00	3.36	3.36	3.36	3.36	3.36	3.16
	2.20	3.00	3.56	3.56	3.56	3.56	3.48	3.16
	4.10	5.00	3.68	3.68	3.68	3.68	3.48	3.16
	6.00	7.00	3.80	3.80	3.80	3.68	3.48	3.16
	7.90	9.00	3.92	3.92	3.80	3.68	3.48	3.16
	9.80	11.00	4.04	4.04	3.80	3.68	3.48	3.16
	11.80	13.00	4.20	4.12	3.80	3.68	3.48	3.16
	13.70	15.00	4.32	4.12	3.80	3.68	3.48	3.16
18kBtu/h (5.3kW)	-15.00	-14.70	3.85	3.85	3.85	3.85	3.85	3.85
	-13.00	-12.60	3.95	3.95	3.95	3.95	3.95	3.95
	-11.00	-10.50	4.10	4.10	4.10	4.10	4.10	4.10
	-10.00	-9.50	4.15	4.15	4.15	4.15	4.15	4.15
	-9.10	-8.50	4.35	4.35	4.35	4.35	4.35	4.35
	-7.60	-7.00	4.40	4.40	4.40	4.40	4.40	4.40
	-5.60	-5.00	4.55	4.55	4.55	4.55	4.55	4.55
	-3.70	-3.00	4.75	4.75	4.75	4.75	4.75	4.75

	-0.70	0.00	5.05	5.05	5.05	5.05	5.05	4.80
	2.20	3.00	5.30	5.30	5.30	5.30	5.20	4.80
	4.10	5.00	5.45	5.45	5.45	5.45	5.20	4.80
	6.00	7.00	5.60	5.60	5.60	5.45	5.20	4.80
	7.90	9.00	5.75	5.75	5.60	5.45	5.20	4.80
	9.80	11.00	5.90	5.90	5.60	5.45	5.20	4.80
	11.80	13.00	6.10	6.00	5.60	5.45	5.20	4.80
	13.70	15.00	6.25	6.00	5.60	5.45	5.20	4.80

7. Electric Characteristics

Model	Indoor Unit				Power Supply	IFM
	Hz	Voltage	Min	Max	MFA	kW
CSC-07HVR1-A	50	220-240V	198	254	3.15	0.035
CSC-09HVR1-A	50	220-240 V	198	254	3.15	0.035
CSC-12HVR1-A	50	220-240 V	198	254	3.15	0.035
CSC-18HVR1-A	50	220-240 V	198	254	3.15	0.035

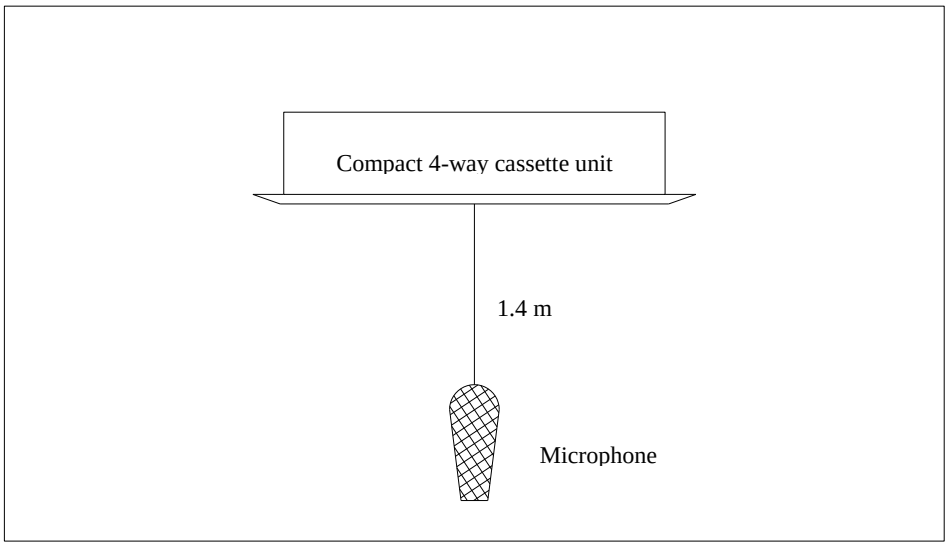
Remark:

MFA: Max. Fuse Amps. (A)

KW: Fan Motor Rated Output (kW)

IFM: Indoor Fan Motor

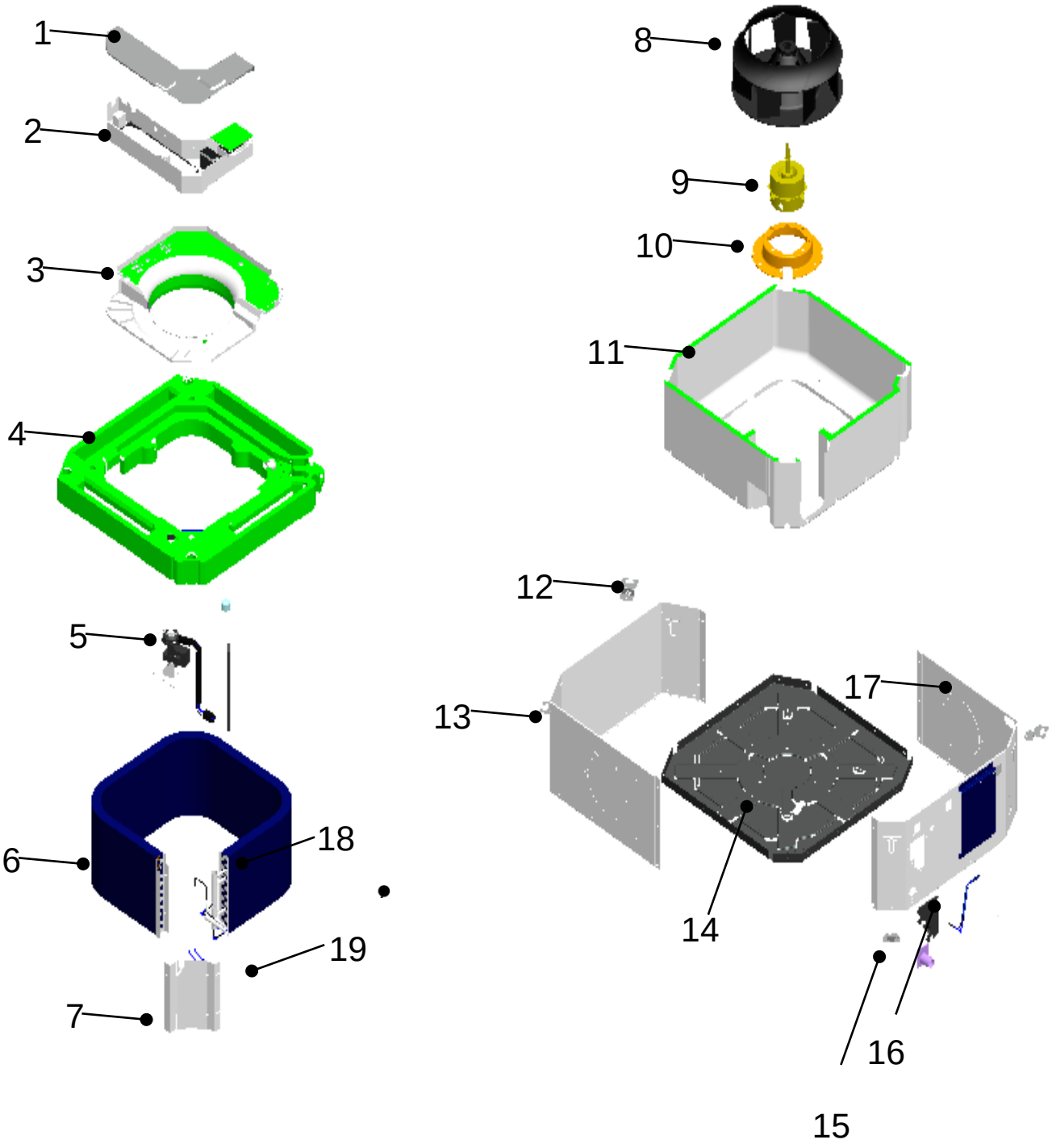
8. Sound Level



Model	Noise leveldB(A)
	High speed
CSC-07HVR1-A	39
CSC-09HVR1-A	39
CSC-12HVR1-A	40
CSC-18HVR1-A	44

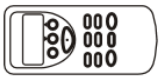
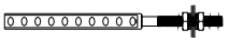
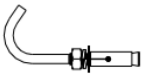
9. Exploded View

CSC-07HVR1-A / CSC-09HVR1-A / CSC-12HVR1-A / CSC-18HVR1-A



No.	Part Name	Quantity	No.	Part Name	Quantity
1	Electrical lifted the lid	1	6.1	Welded components evaporator	1
2	Electronic components	1	6.2	Back to the trachea components	1
2.1	Electric control board seats	1	6.3	Evaporator bypass capillary components	1
2.2	Electrical box welded components	1	7	End plate fixed plate component	1
2.3	The temperature sensor group	1	8	Centrifugal wind leaf	1
2.4	Stepper motor line	2	9	Fan motor	1
2.5	Terminal station	1	10	The motor bracket	1
2.6	Quad lamp plate connection	1	11	Chassis bubble component	1
2.7	Indoor plate component	1	12	Lug 2	3
3	Guide solar or lunar halo	1	13	After the coaming components	1
4	Bubble water pans components	1	14	Chassis parts	1
5	Pump parts	1	14.1	Chassis external thermal insulation cotton	1
5.1	Drainage to take over the component	1	14.2	Chassis welded components	1
5.2	The water pump	1	14.3	Fan wire fixed plate	1
5.3	Water pump gasket 2	1	15	Lug 1	1
5.4	Water pump gasket 1	1	16	Refrigerant tube support plate component	1
5.5	Water pump about seat	1	17	Dash panel stick cotton component	1
5.6	Water pump brace	1	18	Water level switch	1
6	The evaporator components	1	19	The evaporator pressure	1

10. Accessories

NO.	NAME	SHAPE	QUANTITY
1	Insulating tube		2
2	Large-sized heat insulating mattress		1
3	Ribbon		10
4	Dome insulated tip		6
5	X-type insulated tip		3
6	Remote controller		1
7	Battery		2
8	Screw configuration		4
9	Hoop		2
10	Drain pipe		1
11	Expandable screw		4
12	Blank valve bag		4

11. Troubleshooting

Display with Fault

Definitions of malfunction	Contents appearing
Communication failure of indoor and outdoor unit	E1
T1 sensor fault	E2
T2 sensor fault	E3
T2B sensor fault	E4
Malfunction of outdoor unit	E5
EEPROM malfunction	E7
Wind testing fault of PG Electric motor	E8
Alarming fault of water level switch	EE

Display of LED

Definitions of malfunction	Contents appearing
Communication failure of indoor and outdoor unit	LED timing light shines quickly
Fault of indoor temperature sensor	LED running shines quickly
Alarming fault of water level	LED alarming light shines quickly
Mode impact fault	LED defrost light shines quickly
Outdoor unit fault	LED alarming light shines slowly
EEPROM malfunction	LED defrost light shines slowly

Part 3. Outdoor Units

1. Features

1.1 One outdoor unit match many indoor units, free combination, suit for small office, house, villa and etc. Sometimes the bigger buildingalso needs one set outdoor unit only because of the small A/C space of the building; DC Inverter Multi Series which is simple and direct should be a better choice, and the location space needs is small.

1.2 Soft start, the start current of the compressor is small and smooth.

1.3 Easy piping and wiring connection, no welding and only flare nut connection which makes the installation work easy and convenient.

2. Specifications

ODU			C2OU-16HDR1-A	C2OU-18HDR1-A	C3OU-21HDR1-A	C3OU-27HDR1-A	C4OU-28HDR1-A	C4OU-36HDR1-A	C5OU-42HDR1-A
IDU combination		KBtu/h	7+7 7+9	9+9 9+12	7+7+7 7+9+9 18+7	9+9+9 12+9+9 18+9	7+7+7+7 12+12+9 18+12 24+7	9+9+9+9 12+12+12 18+18 24+12	9+9+9+9+9 12+12+12+9 18+12+12 24+18
Power supply		V/ph/Hz	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50
Capacity									
Cooling	Capacity	Btu/h	7000-16000	7000-18000	7000-21000	7000-27000	7000-28000	7000-36000	7000-42000
		Kw	2.1-4.8	2.1-5.3	2.1-6.2	2.1-8	2.1-8.2	2.1-10.5	2.1-12.5
	Input	W	1450	1650	1850	2472	3500	4900	5100
	Rated current	A	6.5	7.3	8.2	10.9	19	27	28
	EER	W/W	3.24	3.2	3.3	3.2	3.3	2.9	2.9
	SEER		6.4	6.4	6.4	6.1	6.4	6.4	6
Heating	Capacity	Btu/h	8000-18000	8000-20000	8000-23000	8000-29000	8000-30000	8000-38000	7000-44000
		Kw	2.4-5.3	2.4-5.9	2.4-6.8	2.4-8.5	2.4-8.8	2.4-11.2	2.4-12.9
	Input	W	1420	1640	1820	2350	3400	4500	4500
	Rated current	A	6.4	7.2	8.1	10.4	19	25	25
	COP	W/W	3.65	3.6	3.7	3.6	3.4	3.2	3.2
	SCOP		4.2	4.1	4	4	4	4	4
power off		W	61.7	66.5	70.6	74.7			
Physical data									
Compressor	Model		DA150S1C-20FZ	DA150S1C-20FZ	DA150S1C-20FZ	DA250S2C-30MT	DA250S2C-30MT	ATF310D43UMT	ATF310D43UMT
	Type		DC	DC	DC	DC	DC	DC	DC
	Brand		GMCC	GMCC	GMCC	GMCC	GMCC	GMCC	GMCC

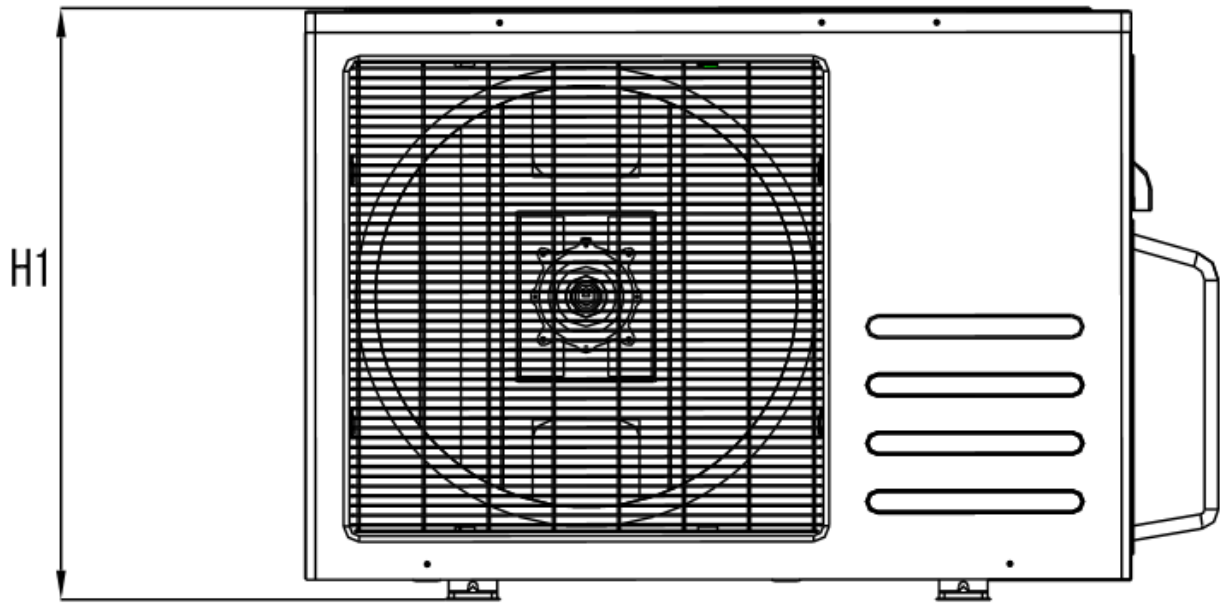
	Capacity	W	4490	4490	4490	7690	7690	9435	9435
	Input	W	1145	1145	1145	2120	2120	2575	2575
	Refrigerant oil	ml	VG74(500ml)	VG74(500ml)	VG74(500ml)	VG74(820ml)	VG74(820ml)	VG74(1000ml)	VG74(1000ml)
	Refrigerant quantity	g	1800	1800	2600	2600	3800	3800	3800
	Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Pipe length without additional charge	m	5	5	5	5	5	5	5
	Refrigerant charge(Pipe length>5m)		forφ6.35（Pipe length-5）*15g/m，forφ9.52（Pipe length-5）*20g/m Note：Piping length means that liquid side of each indoor unit.						
Fan motor	Model		DR-310-60-8	DR-310-60-8	DR-310-72-8	DR-310-72-8	DR-310-180-8	DR-310-180-8	DR-310-180-8
	Type		DC	DC	DC	DC	DC	DC	DC
	Input	W	68	68	78	78	180	180	180
	Speed	r/min	850	850	800	800	750	750	750
Outdoor coil	Number of rows		2	2	2	2	2	2	2
	Tube pitch(a) x Row pitch(b)	mm	22*19.05	22*19.05	22*19.05	22*19.05	22*19.05	22*19.05	22*19.05
	Fin type		Hydrophilic	Hydrophilic	Hydrophilic	Hydrophilic	Hydrophilic	Hydrophilic	Hydrophilic
	Fin spacing	mm	1.6	1.6	1.6	1.6	1.82	1.82	1.82
	Tube outside dia. and type	mm	7.94	7.94	7.94	7.94	9.52	9.52	9.52
			Inner screw	Inner screw	Inner screw	Inner screw	Inner screw	Inner screw	Inner screw
	Number of circuits		4	4	7	7	7	7	7
Noise		dB(A)	54	54	55	55	59	61	62
Sound power noise level		dB(A)	65	65	66	68	71	73	74
Net dimension(W×H×D)		mm	940×609×352	940×609×352	991×839×388	991×839×388	1190×994×400	1190×994×400	1190×994×400
packing dimension(W×H×D)		mm	995×680×415	995×680×415	1030×960×435	1030×960×435	1145×1120×475	1145×1120×475	1145×1120×475
Net/Gross weight		kg	41/44	41/44	57/67	62/72	77.7/89.1	82.6/94	84.5/95.9
Piping data									
Liquid side/Gas side		mm	2×(6.35/9.52)	2×(6.35/9.52)	3×(6.35/9.52)	3×(6.35/9.52)	4×(6.35/9.52)	4×(6.35/9.52)	5×(6.35/9.52)

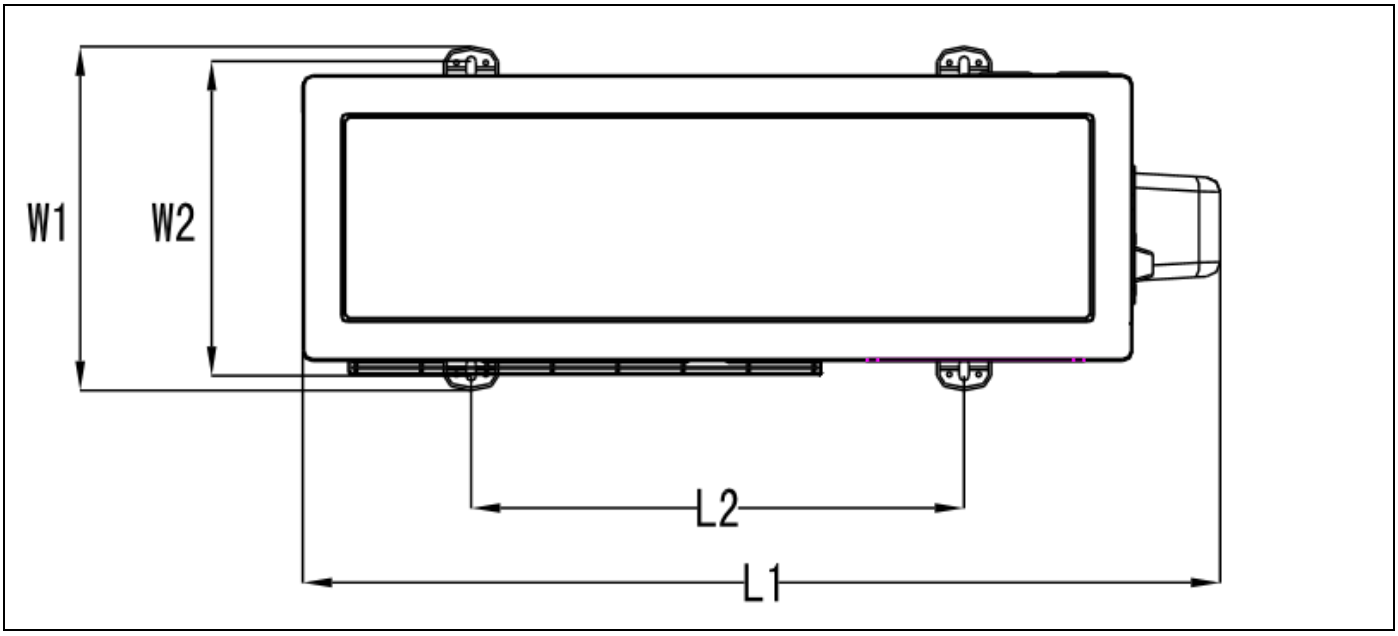
Max. pipe length	m	30	30	45	45	60	60	75
Max. height difference between indoor unit and outdoor unit(outdoor unit below)	m	10	10	10	10	10	10	10
Max. height difference between indoor unit and outdoor unit(outdoor unit above)	m	10	10	10	10	10	10	10
Max. height difference between indoor unit and indoorunit	m	5	5	5	5	5	5	5
Main power of outdoor unit cable		3*2.5mm²	3*2.5mm²	3*4mm²	3*4mm²			
Connecting wire of indoor unit and outdoor unit		4*1mm²	4*1mm²	4*1mm²	4*1mm²	4*1mm²	4*1mm²	4*1mm²
Ambient temperature	℃	-15~48	-15~48	-15~48	-15~48	-15~48	-15~48	-15~48
Application area	m^2	2*（10~15）	2*（12~18）	3*（10~15）	3*（12~18）	4*（10~15）	4*（12~18）	5*（12~18）

Notes:

1. The cooling conditions: indoor side 27°C(80.6°F) DB, 19°C(60°F)WB outdoor side 35°C(95°F) DB.
2. The heating conditions: indoor side 20°C(68°F) DB, 15°C(44.6°F)WB outdoor side 7°C(42.8°F)DB.
3. Sound level: measured at a point 1 m in front of the unit at a height of 1.5 m. During actual operation, these values are normally somewhat higher as a result of ambient conditions.
4. The above data may be changed without notice for future improvement on quality and performance.

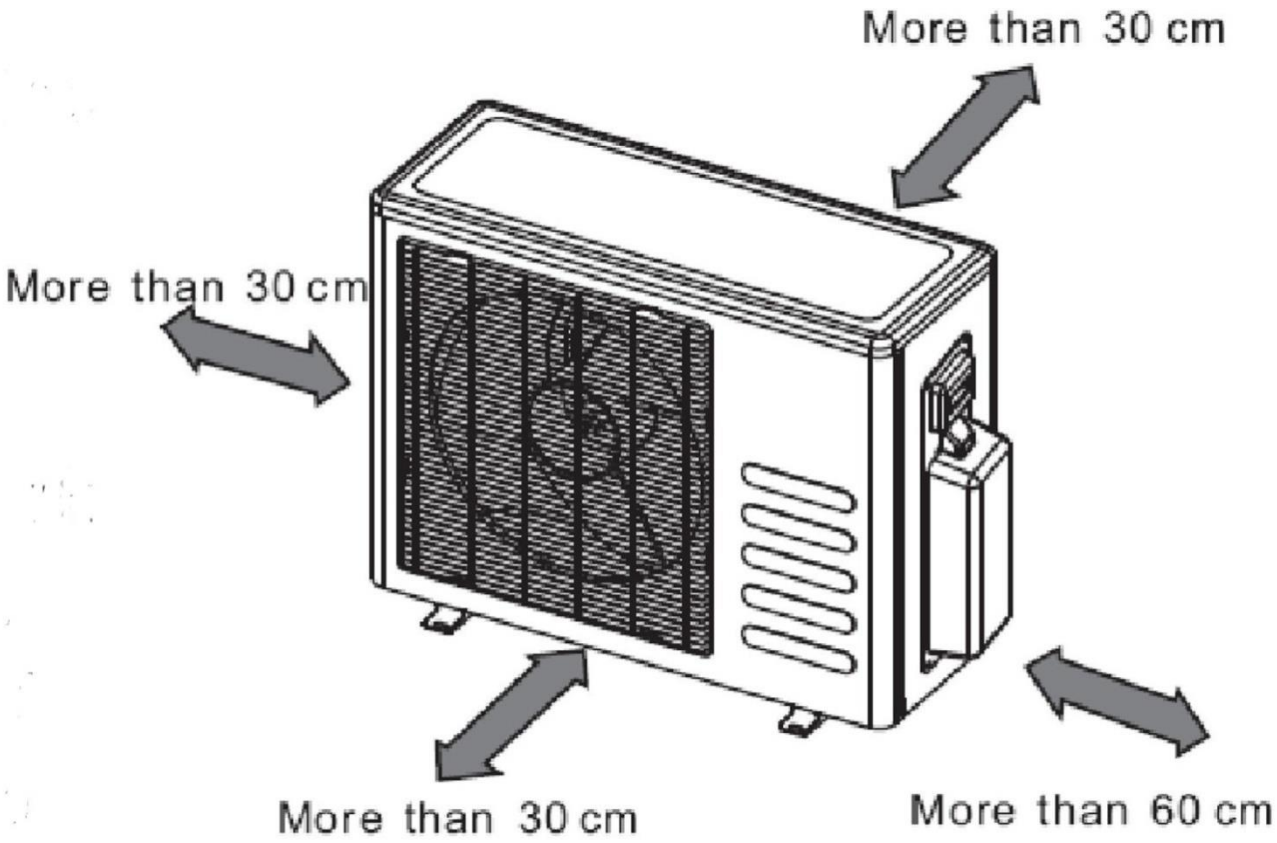
3. Dimensions





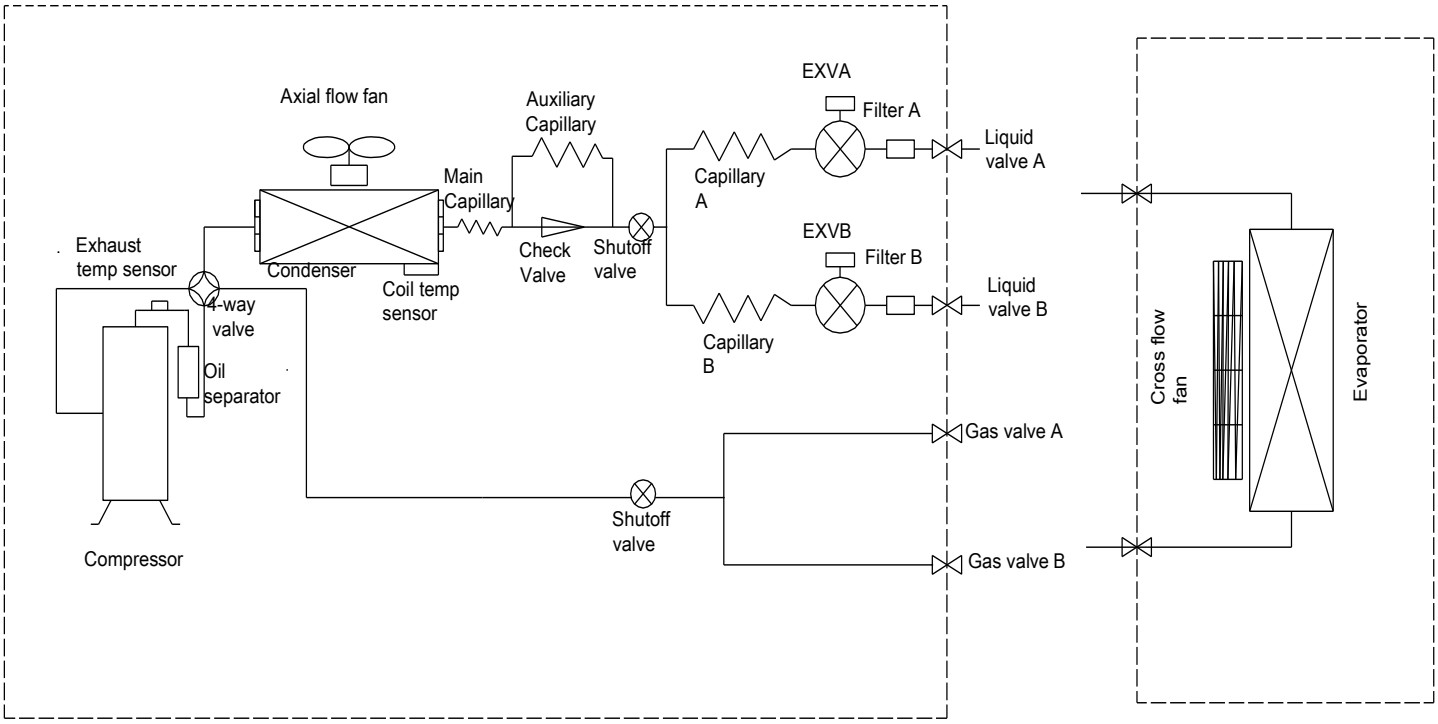
Outdoor unit dimension		Mounting dimensions	
mm(L1×H×W1)		L2(mm)	W2(mm)
16K/18K	940×609×352	505	322
21K/27K	991×839×388	600	361
28K~42K	1090 ×994×400	694	374

4. Service Space

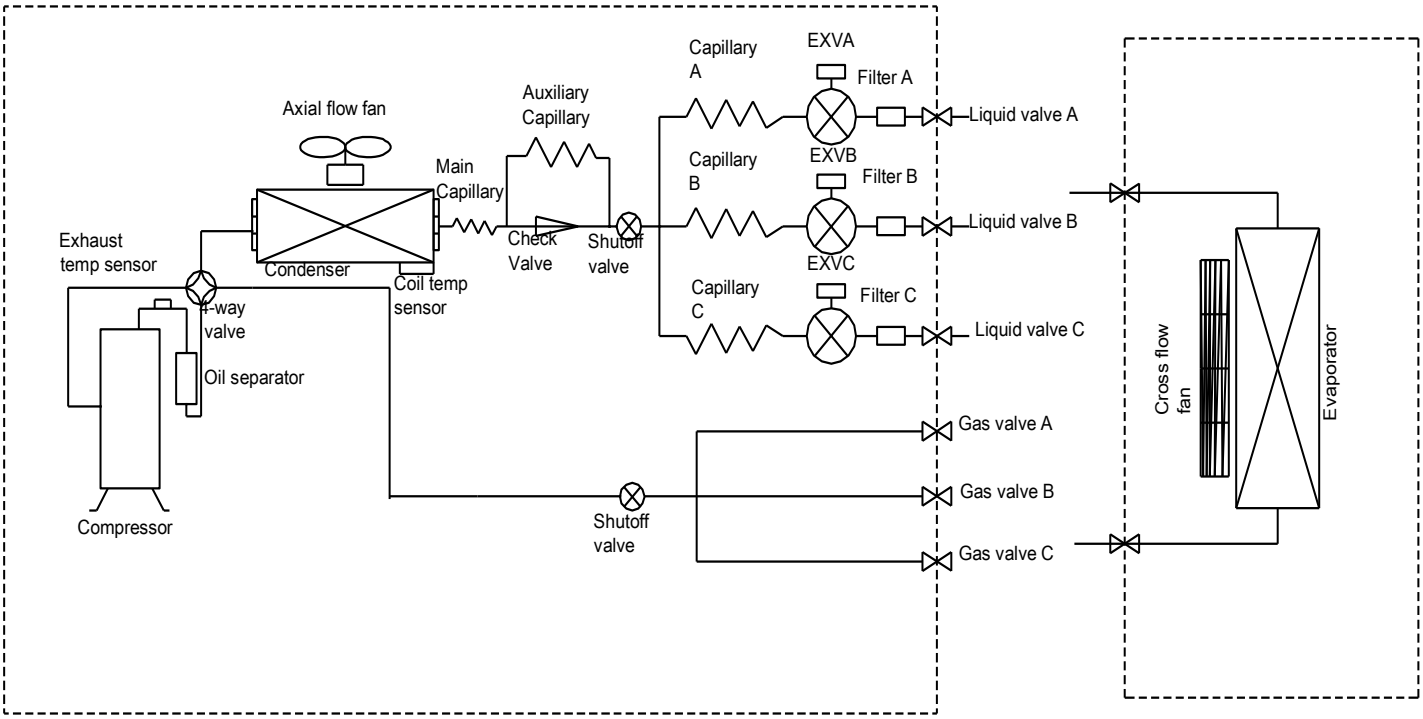


5. Piping Diagrams

C2OU-16HDR1-A C2OU-18HDR1-A

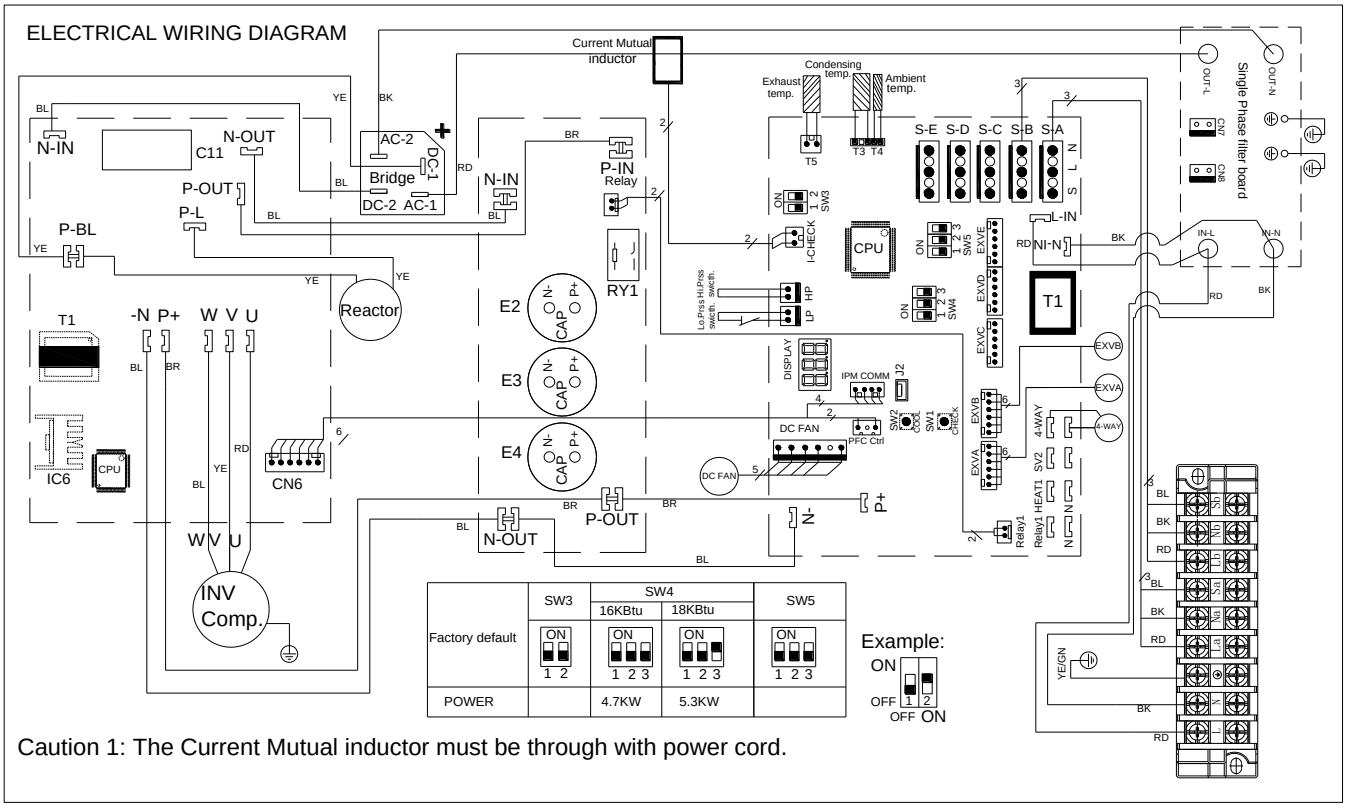


C3OU-21HDR1-A C3OU-27HDR1-A



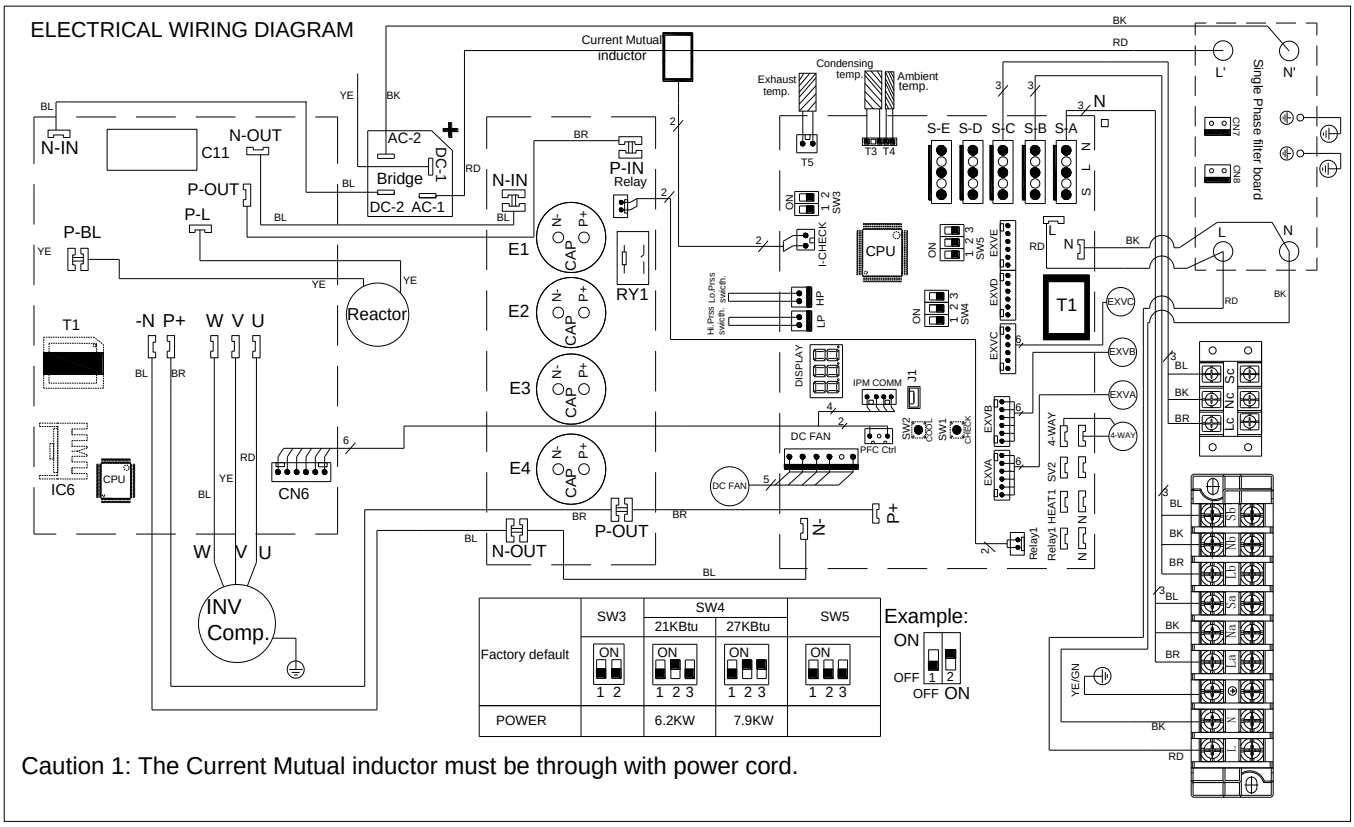
6. Wiring Diagrams

C2OU-16HDR1-A C2OU-18HDR1-A

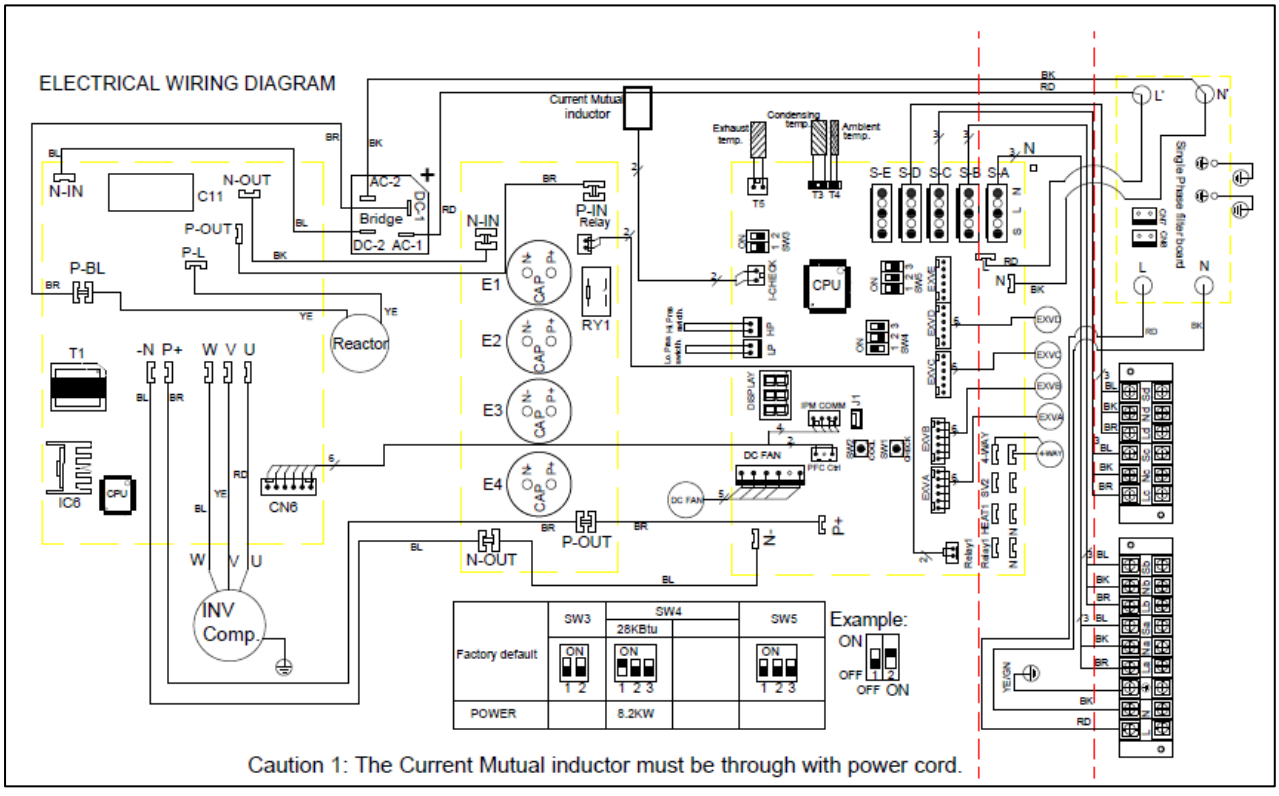


Caution 1: The Current Mutual inductor must be through with power cord.

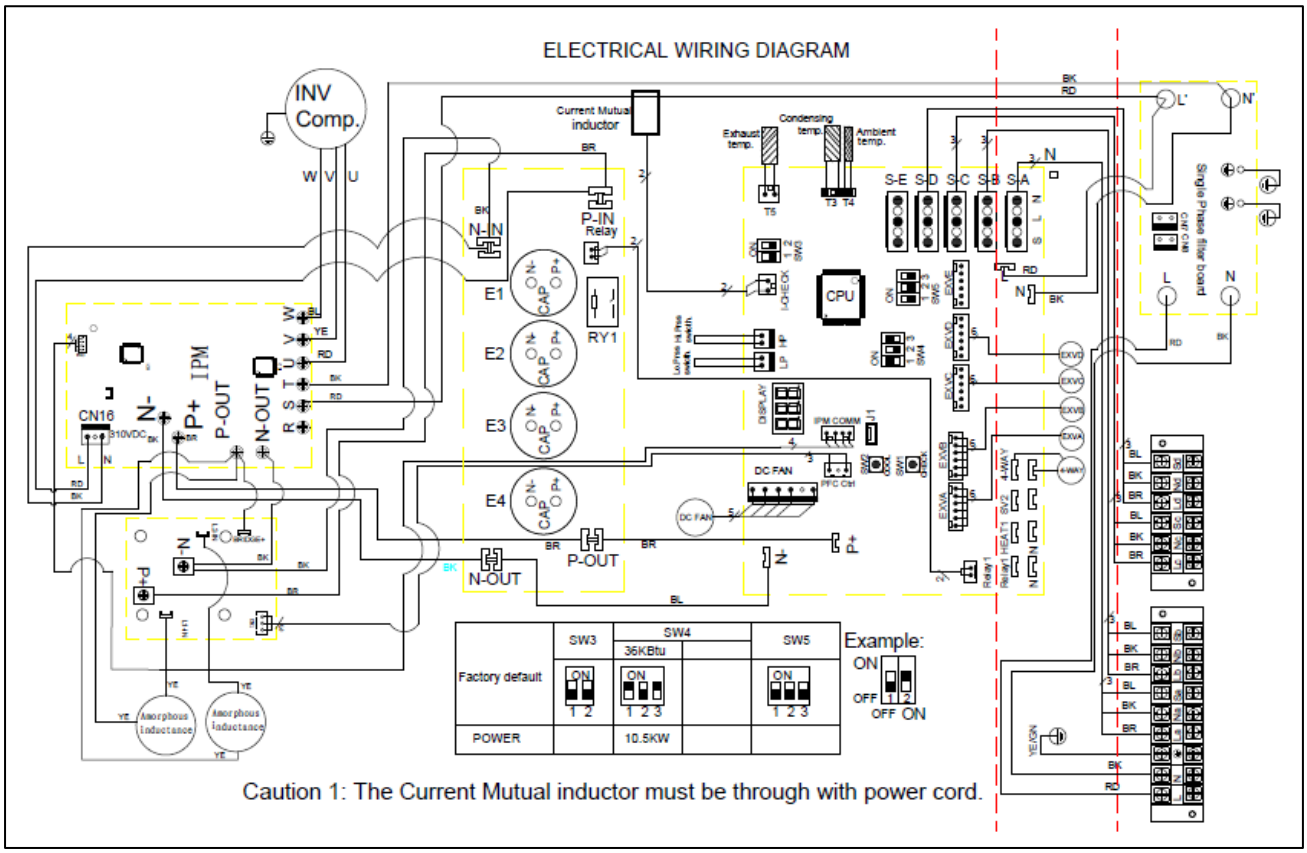
C3OU-21HDR1-A C3OU-27HDR1-A



C4OU-28HDR1-A



C4OU-36HDR1-A



7. Combination Capacity Table

C2OU-16HDR1-A

Cooling

Combination	Outdoor temperature (°C DB)	Indoor temperature (°C)													
		DB:20.8,WB:14		DB:23.3,WB:16		DB:25.8,WB:18		DB:27,WB:19		DB:28.2,WB:20		DB:30.7,WB:22		DB:32,WB:24	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
100%	-14	5.80	0.21	5.83	0.23	5.86	0.25	5.89	0.27	5.92	0.29	5.96	0.32	6.00	0.35
	-12	5.76	0.26	5.79	0.28	5.82	0.30	5.85	0.32	5.88	0.34	5.92	0.37	5.96	0.40
	-10	5.72	0.31	5.75	0.33	5.78	0.35	5.81	0.37	5.84	0.39	5.88	0.42	5.92	0.45
	-8	5.68	0.36	5.71	0.38	5.74	0.40	5.77	0.42	5.80	0.44	5.84	0.47	5.88	0.50
	-6	5.64	0.41	5.67	0.43	5.70	0.45	5.73	0.47	5.76	0.49	5.80	0.52	5.84	0.55
	-4	5.60	0.46	5.63	0.48	5.66	0.50	5.69	0.52	5.72	0.54	5.76	0.57	5.80	0.60
	-2	5.56	0.51	5.59	0.53	5.62	0.55	5.65	0.57	5.68	0.59	5.72	0.62	5.76	0.65
	0	5.52	0.56	5.55	0.58	5.58	0.60	5.61	0.62	5.64	0.64	5.68	0.67	5.72	0.70
	2	5.48	0.61	5.51	0.63	5.54	0.65	5.57	0.67	5.60	0.69	5.64	0.72	5.68	0.75
	4	5.44	0.66	5.47	0.68	5.50	0.70	5.53	0.72	5.56	0.74	5.60	0.77	5.64	0.80
	6	5.40	0.71	5.43	0.73	5.46	0.75	5.49	0.77	5.52	0.79	5.56	0.82	5.60	0.85
	8	5.36	0.76	5.39	0.78	5.42	0.80	5.45	0.82	5.48	0.84	5.52	0.87	5.56	0.90
	10	5.32	0.81	5.35	0.83	5.38	0.85	5.41	0.87	5.44	0.89	5.48	0.92	5.52	0.95
	12	5.28	0.86	5.31	0.88	5.34	0.90	5.37	0.92	5.40	0.94	5.44	0.97	5.48	1.00
	14	5.24	0.91	5.27	0.93	5.30	0.95	5.33	0.97	5.36	0.99	5.40	1.02	5.44	1.05
	16	5.20	0.96	5.23	0.98	5.26	1.00	5.29	1.02	5.32	1.04	5.36	1.07	5.40	1.10
	18	5.16	1.01	5.19	1.03	5.22	1.05	5.25	1.07	5.28	1.09	5.32	1.12	5.36	1.15
	20	5.12	1.06	5.15	1.08	5.18	1.10	5.21	1.12	5.24	1.14	5.28	1.17	5.32	1.20
	22	5.08	1.11	5.11	1.13	5.14	1.15	5.17	1.17	5.20	1.19	5.24	1.22	5.28	1.25

	24	5.04	1.16	5.07	1.18	5.10	1.20	5.13	1.22	5.16	1.24	5.20	1.27	5.24	1.30
	26	5.00	1.21	5.03	1.23	5.06	1.25	5.09	1.27	5.12	1.29	5.16	1.32	5.20	1.35
	28	4.96	1.26	4.99	1.28	5.02	1.30	5.05	1.32	5.08	1.34	5.12	1.37	5.16	1.40
	30	4.92	1.31	4.95	1.33	4.98	1.35	5.01	1.37	5.04	1.39	5.08	1.42	5.12	1.45
	32	4.88	1.36	4.91	1.38	4.94	1.40	4.97	1.42	5.00	1.44	5.04	1.47	5.08	1.50
	34	4.85	1.41	4.88	1.43	4.91	1.45	4.94	1.47	4.97	1.49	5.01	1.52	5.05	1.55
	36	4.78	1.46	4.81	1.48	4.84	1.50	4.87	1.52	4.90	1.54	4.94	1.57	4.98	1.60
	38	4.71	1.51	4.74	1.53	4.77	1.55	4.80	1.57	4.83	1.59	4.87	1.62	4.91	1.65
	40	4.64	1.56	4.67	1.58	4.70	1.60	4.73	1.62	4.76	1.64	4.80	1.67	4.84	1.70
	42	4.57	1.61	4.60	1.63	4.63	1.65	4.66	1.67	4.69	1.69	4.73	1.72	4.77	1.75
	44	4.50	1.66	4.53	1.68	4.56	1.70	4.59	1.72	4.62	1.74	4.66	1.77	4.70	1.80
	46	4.43	1.71	4.46	1.73	4.49	1.75	4.52	1.77	4.55	1.79	4.59	1.82	4.63	1.85
	48	4.36	1.76	4.39	1.78	4.42	1.80	4.45	1.82	4.48	1.84	4.52	1.87	4.56	1.90
	50	4.29	1.81	4.32	1.83	4.35	1.85	4.38	1.87	4.41	1.89	4.45	1.92	4.49	1.95

Heating

Combination	Outdoor air temperature		Indoor temperature(°C DB)											
			16		18		20		21		22		24	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	°C DB	°C WB	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
100%	-15	-16.2	4.98	1.51	4.91	1.46	4.83	1.40	4.76	1.35	4.69	1.30	4.61	1.24
	-13.7	-15	5.01	1.54	4.94	1.49	4.86	1.43	4.79	1.38	4.72	1.33	4.64	1.27
	-11.8	-13	5.04	1.57	4.97	1.52	4.89	1.46	4.82	1.41	4.75	1.36	4.67	1.30
	-9.8	-11	5.07	1.60	5.00	1.55	4.92	1.49	4.85	1.44	4.78	1.39	4.70	1.33
	-9.5	-10	5.10	1.63	5.03	1.58	4.95	1.52	4.88	1.47	4.81	1.42	4.73	1.36
	-8.5	-9.1	5.13	1.66	5.06	1.61	4.98	1.55	4.91	1.50	4.84	1.45	4.76	1.39
	-7	-7.6	5.16	1.69	5.09	1.64	5.01	1.58	4.94	1.53	4.87	1.48	4.79	1.42
	-5	-5.6	5.19	1.72	5.12	1.67	5.04	1.61	4.97	1.56	4.90	1.51	4.82	1.45
	-3	-3.7	5.22	1.75	5.15	1.70	5.07	1.64	5.00	1.59	4.93	1.54	4.85	1.48
	0	-0.7	5.25	1.78	5.18	1.73	5.10	1.67	5.03	1.62	4.96	1.57	4.88	1.51
	3	2.2	5.28	1.81	5.21	1.76	5.13	1.70	5.06	1.65	4.99	1.60	4.91	1.54
	5	4.1	5.31	1.84	5.24	1.79	5.16	1.73	5.09	1.68	5.02	1.63	4.94	1.57
	7	6	5.34	1.87	5.27	1.82	5.19	1.76	5.12	1.71	5.05	1.66	4.97	1.60
	9	7.9	5.37	1.90	5.30	1.85	5.22	1.79	5.15	1.74	5.08	1.69	5.00	1.63
	11	9.8	5.40	1.93	5.33	1.88	5.25	1.82	5.18	1.77	5.11	1.72	5.03	1.66
	13	11.8	5.43	1.96	5.36	1.91	5.28	1.85	5.21	1.80	5.14	1.75	5.06	1.69
	15	13.7	5.46	1.99	5.39	1.94	5.31	1.88	5.24	1.83	5.17	1.78	5.09	1.72
	17	14.2	5.49	2.02	5.42	1.97	5.34	1.91	5.27	1.86	5.20	1.81	5.12	1.75
	19	14.8	5.52	2.05	5.45	2.00	5.37	1.94	5.30	1.89	5.23	1.84	5.15	1.78
	21	15	5.55	2.08	5.48	2.03	5.40	1.97	5.33	1.92	5.26	1.87	5.18	1.81
	23	16.8	5.58	2.11	5.51	2.06	5.43	2.00	5.36	1.95	5.29	1.90	5.21	1.84
	25	18.2	5.61	2.14	5.54	2.09	5.46	2.03	5.39	1.98	5.32	1.93	5.24	1.87
	27	19	5.64	2.17	5.57	2.12	5.49	2.06	5.42	2.01	5.35	1.96	5.27	1.90
	29	19.8	5.67	2.20	5.60	2.15	5.52	2.09	5.45	2.04	5.38	1.99	5.30	1.93

C2OU-18HDR1-A

Cooling

Combination	Outdoor temperature (°C DB)	Indoor temperature (°C)													
		DB:20.8,WB:14		DB:23.3,WB:16		DB:25.8,WB:18		DB:27,WB:19		DB:28.2,WB:20		DB:30.7,WB:22		DB:32,WB:24	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
100%	-14	6.35	0.3	6.38	0.32	6.41	0.34	6.44	0.36	6.47	0.38	6.51	0.41	6.55	0.44
	-12	6.31	0.35	6.34	0.37	6.37	0.39	6.4	0.41	6.43	0.43	6.47	0.46	6.51	0.49
	-10	6.27	0.4	6.3	0.42	6.33	0.44	6.36	0.46	6.39	0.48	6.43	0.51	6.47	0.54
	-8	6.23	0.45	6.26	0.47	6.29	0.49	6.32	0.51	6.35	0.53	6.39	0.56	6.43	0.59
	-6	6.19	0.5	6.22	0.52	6.25	0.54	6.28	0.56	6.31	0.58	6.35	0.61	6.39	0.64
	-4	6.15	0.55	6.18	0.57	6.21	0.59	6.24	0.61	6.27	0.63	6.31	0.66	6.35	0.69
	-2	6.11	0.6	6.14	0.62	6.17	0.64	6.2	0.66	6.23	0.68	6.27	0.71	6.31	0.74
	0	6.07	0.65	6.1	0.67	6.13	0.69	6.16	0.71	6.19	0.73	6.23	0.76	6.27	0.79
	2	6.03	0.7	6.06	0.72	6.09	0.74	6.12	0.76	6.15	0.78	6.19	0.81	6.23	0.84
	4	5.99	0.75	6.02	0.77	6.05	0.79	6.08	0.81	6.11	0.83	6.15	0.86	6.19	0.89
	6	5.95	0.8	5.98	0.82	6.01	0.84	6.04	0.86	6.07	0.88	6.11	0.91	6.15	0.94
	8	5.91	0.85	5.94	0.87	5.97	0.89	6	0.91	6.03	0.93	6.07	0.96	6.11	0.99
	10	5.87	0.9	5.9	0.92	5.93	0.94	5.96	0.96	5.99	0.98	6.03	1.01	6.07	1.04
	12	5.83	0.95	5.86	0.97	5.89	0.99	5.92	1.01	5.95	1.03	5.99	1.06	6.03	1.09
	14	5.79	1	5.82	1.02	5.85	1.04	5.88	1.06	5.91	1.08	5.95	1.11	5.99	1.14
	16	5.75	1.05	5.78	1.07	5.81	1.09	5.84	1.11	5.87	1.13	5.91	1.16	5.95	1.19
	18	5.71	1.1	5.74	1.12	5.77	1.14	5.8	1.16	5.83	1.18	5.87	1.21	5.91	1.24
	20	5.67	1.15	5.7	1.17	5.73	1.19	5.76	1.21	5.79	1.23	5.83	1.26	5.87	1.29
	22	5.63	1.2	5.66	1.22	5.69	1.24	5.72	1.26	5.75	1.28	5.79	1.31	5.83	1.34
	24	5.59	1.25	5.62	1.27	5.65	1.29	5.68	1.31	5.71	1.33	5.75	1.36	5.79	1.39
	26	5.55	1.3	5.58	1.32	5.61	1.34	5.64	1.36	5.67	1.38	5.71	1.41	5.75	1.44
	28	5.51	1.35	5.54	1.37	5.57	1.39	5.6	1.41	5.63	1.43	5.67	1.46	5.71	1.49

	30	5.47	1.4	5.5	1.42	5.53	1.44	5.56	1.46	5.59	1.48	5.63	1.51	5.67	1.54
	32	5.43	1.45	5.46	1.47	5.49	1.49	5.52	1.51	5.55	1.53	5.59	1.56	5.63	1.59
	34	5.39	1.5	5.42	1.52	5.45	1.54	5.48	1.56	5.51	1.58	5.55	1.61	5.59	1.64
	36	5.35	1.55	5.38	1.57	5.41	1.59	5.44	1.61	5.47	1.63	5.51	1.66	5.55	1.69
	38	5.31	1.6	5.34	1.62	5.37	1.64	5.4	1.66	5.43	1.68	5.47	1.71	5.51	1.74
	40	5.27	1.65	5.3	1.67	5.33	1.69	5.36	1.71	5.39	1.73	5.43	1.76	5.47	1.79
	42	5.23	1.7	5.26	1.72	5.29	1.74	5.32	1.76	5.35	1.78	5.39	1.81	5.43	1.84
	44	5.19	1.75	5.22	1.77	5.25	1.79	5.28	1.81	5.31	1.83	5.35	1.86	5.39	1.89
	46	5.15	1.8	5.18	1.82	5.21	1.84	5.24	1.86	5.27	1.88	5.31	1.91	5.35	1.94
	48	5.11	1.85	5.14	1.87	5.17	1.89	5.2	1.91	5.23	1.93	5.27	1.96	5.31	1.99
	50	5.07	1.9	5.1	1.92	5.13	1.94	5.16	1.96	5.19	1.98	5.23	2.01	5.27	2.04

Heating

Combination	Outdoor air temperature		Indoor temperature(°C DB)											
			16		18		20		21		22		24	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	°C DB	°C WB	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
100%	-15	-16.2	5.48	1.64	5.41	1.59	5.33	1.53	5.26	1.48	5.19	1.43	5.11	1.37
	-13.7	-15	5.51	1.67	5.44	1.62	5.36	1.56	5.29	1.51	5.22	1.46	5.14	1.40
	-11.8	-13	5.54	1.70	5.47	1.65	5.39	1.59	5.32	1.54	5.25	1.49	5.17	1.43
	-9.8	-11	5.57	1.73	5.50	1.68	5.42	1.62	5.35	1.57	5.28	1.52	5.20	1.46
	-9.5	-10	5.60	1.76	5.53	1.71	5.45	1.65	5.38	1.60	5.31	1.55	5.23	1.49
	-8.5	-9.1	5.63	1.79	5.56	1.74	5.48	1.68	5.41	1.63	5.34	1.58	5.26	1.52
	-7	-7.6	5.66	1.82	5.59	1.77	5.51	1.71	5.44	1.66	5.37	1.61	5.29	1.55
	-5	-5.6	5.69	1.85	5.62	1.80	5.54	1.74	5.47	1.69	5.40	1.64	5.32	1.58
	-3	-3.7	5.72	1.88	5.65	1.83	5.57	1.77	5.50	1.72	5.43	1.67	5.35	1.61
	0	-0.7	5.75	1.91	5.68	1.86	5.60	1.80	5.53	1.75	5.46	1.70	5.38	1.64
	3	2.2	5.78	1.94	5.71	1.89	5.63	1.83	5.56	1.78	5.49	1.73	5.41	1.67
	5	4.1	5.81	1.97	5.74	1.92	5.66	1.86	5.59	1.81	5.52	1.76	5.44	1.70
	7	6	5.84	2.00	5.77	1.95	5.69	1.89	5.62	1.84	5.55	1.79	5.47	1.73
	9	7.9	5.87	2.03	5.80	1.98	5.72	1.92	5.65	1.87	5.58	1.82	5.50	1.76
	11	9.8	5.90	2.06	5.83	2.01	5.75	1.95	5.68	1.90	5.61	1.85	5.53	1.79
	13	11.8	5.93	2.09	5.86	2.04	5.78	1.98	5.71	1.93	5.64	1.88	5.56	1.82
	15	13.7	5.96	2.12	5.89	2.07	5.81	2.01	5.74	1.96	5.67	1.91	5.59	1.85
	17	14.2	5.99	2.15	5.92	2.10	5.84	2.04	5.77	1.99	5.70	1.94	5.62	1.88
	19	14.8	6.02	2.18	5.95	2.13	5.87	2.07	5.80	2.02	5.73	1.97	5.65	1.91
	21	15	6.05	2.21	5.98	2.16	5.90	2.10	5.83	2.05	5.76	2.00	5.68	1.94
	23	16.8	6.08	2.24	6.01	2.19	5.93	2.13	5.86	2.08	5.79	2.03	5.71	1.97
	25	18.2	6.11	2.27	6.04	2.22	5.96	2.16	5.89	2.11	5.82	2.06	5.74	2.00
	27	19	6.14	2.30	6.07	2.25	5.99	2.19	5.92	2.14	5.85	2.09	5.77	2.03
	29	19.8	6.17	2.33	6.10	2.28	6.02	2.22	5.95	2.17	5.88	2.12	5.80	2.06

C3OU-21HDR1-A

Cooling

Combination	Outdoor temperature (°C DB)	Indoor temperature (°C)													
		DB:20.8,WB:14		DB:23.3,WB:16		DB:25.8,WB:18		DB:27,WB:19		DB:28.2,WB:20		DB:30.7,WB:22		DB:32,WB:24	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
100%	-14	6.78	0.25	6.82	0.27	6.86	0.29	6.89	0.32	6.93	0.34	6.97	0.37	7.02	0.41
	-12	6.74	0.30	6.77	0.33	6.81	0.35	6.84	0.37	6.88	0.40	6.93	0.43	6.97	0.47
	-10	6.69	0.36	6.73	0.39	6.76	0.41	6.80	0.43	6.83	0.46	6.88	0.49	6.93	0.53
	-8	6.64	0.42	6.68	0.44	6.71	0.47	6.75	0.49	6.78	0.51	6.83	0.55	6.88	0.58
	-6	6.60	0.48	6.63	0.50	6.67	0.53	6.70	0.55	6.74	0.57	6.78	0.61	6.83	0.64
	-4	6.55	0.54	6.59	0.56	6.62	0.58	6.66	0.61	6.69	0.63	6.74	0.67	6.78	0.70
	-2	6.50	0.60	6.54	0.62	6.57	0.64	6.61	0.67	6.64	0.69	6.69	0.73	6.74	0.76
	0	6.46	0.66	6.49	0.68	6.53	0.70	6.56	0.73	6.60	0.75	6.64	0.78	6.69	0.82
	2	6.41	0.71	6.45	0.74	6.48	0.76	6.52	0.78	6.55	0.81	6.60	0.84	6.64	0.88
	4	6.36	0.77	6.40	0.80	6.43	0.82	6.47	0.84	6.50	0.87	6.55	0.90	6.60	0.94
	6	6.32	0.83	6.35	0.85	6.39	0.88	6.42	0.90	6.46	0.92	6.50	0.96	6.55	0.99
	8	6.27	0.89	6.31	0.91	6.34	0.94	6.38	0.96	6.41	0.98	6.46	1.02	6.50	1.05
	10	6.22	0.95	6.26	0.97	6.29	0.99	6.33	1.02	6.36	1.04	6.41	1.08	6.46	1.11
	12	6.18	1.01	6.21	1.03	6.25	1.05	6.28	1.08	6.32	1.10	6.36	1.13	6.41	1.17
	14	6.13	1.06	6.16	1.09	6.20	1.11	6.24	1.13	6.27	1.16	6.32	1.19	6.36	1.23
	16	6.08	1.12	6.12	1.15	6.15	1.17	6.19	1.19	6.22	1.22	6.27	1.25	6.32	1.29
	18	6.04	1.18	6.07	1.20	6.11	1.23	6.14	1.25	6.18	1.28	6.22	1.31	6.27	1.35
	20	5.99	1.24	6.02	1.26	6.06	1.29	6.09	1.31	6.13	1.33	6.18	1.37	6.22	1.40
	22	5.94	1.30	5.98	1.32	6.01	1.35	6.05	1.37	6.08	1.39	6.13	1.43	6.18	1.46
	24	5.90	1.36	5.93	1.38	5.97	1.40	6.00	1.43	6.04	1.45	6.08	1.49	6.13	1.52
	26	5.85	1.42	5.88	1.44	5.92	1.46	5.95	1.49	5.99	1.51	6.04	1.54	6.08	1.58
	28	5.80	1.47	5.84	1.50	5.87	1.52	5.91	1.54	5.94	1.57	5.99	1.60	6.04	1.64

	30	5.76	1.53	5.79	1.56	5.83	1.58	5.86	1.60	5.90	1.63	5.94	1.66	5.99	1.70
	32	5.71	1.59	5.74	1.61	5.78	1.64	5.81	1.66	5.85	1.68	5.90	1.72	5.94	1.75
	34	5.67	1.65	5.71	1.67	5.74	1.70	5.78	1.72	5.81	1.74	5.86	1.78	5.91	1.81
	36	5.59	1.71	5.63	1.73	5.66	1.75	5.70	1.78	5.73	1.80	5.78	1.84	5.83	1.87
	38	5.51	1.77	5.54	1.79	5.58	1.81	5.62	1.84	5.65	1.86	5.70	1.90	5.74	1.93
	40	5.43	1.82	5.46	1.85	5.50	1.87	5.53	1.90	5.57	1.92	5.62	1.95	5.66	1.99
	42	5.35	1.88	5.38	1.91	5.42	1.93	5.45	1.95	5.49	1.98	5.53	2.01	5.58	2.05
	44	5.26	1.94	5.30	1.97	5.33	1.99	5.37	2.01	5.40	2.04	5.45	2.07	5.50	2.11
	46	5.18	2.00	5.22	2.02	5.25	2.05	5.29	2.07	5.32	2.09	5.37	2.13	5.42	2.16
	48	5.10	2.06	5.14	2.08	5.17	2.11	5.21	2.13	5.24	2.15	5.29	2.19	5.33	2.22
	50	5.02	2.12	5.05	2.14	5.09	2.16	5.12	2.19	5.16	2.21	5.21	2.25	5.25	2.28

Heating

Combination	Outdoor air temperature		Indoor temperature(°C DB)											
			16		18		20		21		22		24	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	°C DB	°C WB	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
100%	-15	-16.2	5.83	1.45	5.74	1.52	5.65	1.58	5.57	1.64	5.49	1.71	5.39	1.77
	-13.7	-15	5.86	1.49	5.78	1.56	5.69	1.61	5.60	1.67	5.52	1.74	5.43	1.80
	-11.8	-13	5.90	1.52	5.81	1.59	5.72	1.65	5.64	1.71	5.56	1.78	5.46	1.84
	-9.8	-11	5.93	1.56	5.85	1.63	5.76	1.68	5.67	1.74	5.59	1.81	5.50	1.87
	-9.5	-10	5.97	1.59	5.88	1.66	5.79	1.72	5.71	1.78	5.63	1.85	5.53	1.91
	-8.5	-9.1	6.00	1.63	5.92	1.70	5.83	1.75	5.74	1.81	5.66	1.88	5.57	1.94
	-7	-7.6	6.04	1.66	5.95	1.73	5.86	1.79	5.78	1.85	5.70	1.92	5.60	1.98
	-5	-5.6	6.07	1.70	5.99	1.77	5.90	1.82	5.81	1.88	5.73	1.95	5.64	2.01
	-3	-3.7	6.11	1.73	6.02	1.80	5.93	1.86	5.85	1.92	5.77	1.99	5.67	2.05
	0	-0.7	6.14	1.77	6.06	1.84	5.97	1.90	5.88	1.95	5.80	2.02	5.71	2.08
	3	2.2	6.18	1.80	6.09	1.87	6.00	1.93	5.92	1.99	5.84	2.06	5.74	2.12
	5	4.1	6.21	1.84	6.13	1.91	6.04	1.97	5.95	2.02	5.87	2.09	5.78	2.15
	7	6	6.25	1.87	6.16	1.94	6.07	2.00	5.99	2.06	5.91	2.13	5.81	2.19
	9	7.9	6.28	1.91	6.20	1.98	6.11	2.04	6.02	2.09	5.94	2.16	5.85	2.22
	11	9.8	6.32	1.94	6.24	2.01	6.14	2.07	6.06	2.13	5.98	2.20	5.88	2.26
	13	11.8	6.35	1.98	6.27	2.05	6.18	2.11	6.09	2.16	6.01	2.23	5.92	2.29
	15	13.7	6.39	2.01	6.31	2.08	6.21	2.14	6.13	2.20	6.05	2.27	5.95	2.33
	17	14.2	6.42	2.05	6.34	2.12	6.25	2.18	6.16	2.23	6.08	2.30	5.99	2.36
	19	14.8	6.46	2.08	6.38	2.15	6.28	2.21	6.20	2.27	6.12	2.34	6.02	2.40
	21	15	6.49	2.12	6.41	2.19	6.32	2.25	6.24	2.30	6.15	2.37	6.06	2.43
	23	16.8	6.53	2.15	6.45	2.22	6.35	2.28	6.27	2.34	6.19	2.41	6.09	2.47
	25	18.2	6.56	2.19	6.48	2.26	6.39	2.32	6.31	2.37	6.22	2.44	6.13	2.50
	27	19	6.60	2.22	6.52	2.29	6.42	2.35	6.34	2.41	6.26	2.48	6.16	2.54
	29	19.8	6.63	2.26	6.55	2.33	6.46	2.39	6.38	2.44	6.29	2.52	6.20	2.57

C3OU-27HDR1-A

Cooling

Combination	Outdoor temperature (°C DB)	Indoor temperature (°C)													
		DB:20.8,WB:14		DB:23.3,WB:16		DB:25.8,WB:18		DB:27,WB:19		DB:28.2,WB:20		DB:30.7,WB:22		DB:32,WB:24	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
100%	-14	9.47	0.45	9.51	0.48	9.55	0.51	9.60	0.54	9.64	0.57	9.70	0.61	9.76	0.66
	-12	9.41	0.52	9.45	0.55	9.49	0.58	9.54	0.61	9.58	0.64	9.64	0.69	9.70	0.73
	-10	9.35	0.60	9.39	0.63	9.44	0.66	9.48	0.69	9.52	0.72	9.58	0.76	9.64	0.80
	-8	9.29	0.67	9.33	0.70	9.38	0.73	9.42	0.76	9.47	0.79	9.52	0.83	9.58	0.88
	-6	9.23	0.75	9.27	0.78	9.32	0.80	9.36	0.83	9.41	0.86	9.47	0.91	9.52	0.95
	-4	9.17	0.82	9.21	0.85	9.26	0.88	9.30	0.91	9.35	0.94	9.41	0.98	9.47	1.03
	-2	9.11	0.89	9.15	0.92	9.20	0.95	9.24	0.98	9.29	1.01	9.35	1.06	9.41	1.10
	0	9.05	0.97	9.09	1.00	9.14	1.03	9.18	1.06	9.23	1.09	9.29	1.13	9.35	1.18
	2	8.99	1.04	9.03	1.07	9.08	1.10	9.12	1.13	9.17	1.16	9.23	1.21	9.29	1.25
	4	8.93	1.12	8.97	1.15	9.02	1.18	9.06	1.21	9.11	1.24	9.17	1.28	9.23	1.33
	6	8.87	1.19	8.91	1.22	8.96	1.25	9.00	1.28	9.05	1.31	9.11	1.36	9.17	1.40
	8	8.81	1.27	8.85	1.30	8.90	1.33	8.94	1.36	8.99	1.39	9.05	1.43	9.11	1.48
	10	8.75	1.34	8.79	1.37	8.84	1.40	8.88	1.43	8.93	1.46	8.99	1.51	9.05	1.55
	12	8.69	1.42	8.73	1.45	8.78	1.48	8.82	1.51	8.87	1.54	8.93	1.58	8.99	1.62
	14	8.63	1.49	8.68	1.52	8.72	1.55	8.76	1.58	8.81	1.61	8.87	1.65	8.93	1.70
	16	8.57	1.57	8.62	1.59	8.66	1.62	8.70	1.65	8.75	1.68	8.81	1.73	8.87	1.77
	18	8.51	1.64	8.56	1.67	8.60	1.70	8.65	1.73	8.69	1.76	8.75	1.80	8.81	1.85
	20	8.45	1.71	8.50	1.74	8.54	1.77	8.59	1.80	8.63	1.83	8.69	1.88	8.75	1.92
	22	8.39	1.79	8.44	1.82	8.48	1.85	8.53	1.88	8.57	1.91	8.63	1.95	8.69	2.00
	24	8.33	1.86	8.38	1.89	8.42	1.92	8.47	1.95	8.51	1.98	8.57	2.03	8.63	2.07
	26	8.27	1.94	8.32	1.97	8.36	2.00	8.41	2.03	8.45	2.06	8.51	2.10	8.57	2.15
	28	8.21	2.01	8.26	2.04	8.30	2.07	8.35	2.10	8.39	2.13	8.45	2.18	8.51	2.22

	30	8.15	2.09	8.20	2.12	8.24	2.15	8.29	2.18	8.33	2.21	8.39	2.25	8.45	2.30
	32	8.09	2.16	8.14	2.19	8.18	2.22	8.23	2.25	8.27	2.28	8.33	2.33	8.39	2.37
	34	8.03	2.24	8.08	2.27	8.12	2.30	8.17	2.33	8.21	2.36	8.27	2.40	8.33	2.44
	36	7.97	2.31	8.02	2.34	8.06	2.37	8.11	2.40	8.15	2.43	8.21	2.47	8.27	2.52
	38	7.91	2.38	7.96	2.41	8.00	2.44	8.05	2.47	8.09	2.50	8.15	2.55	8.21	2.59
	40	7.86	2.46	7.90	2.49	7.94	2.52	7.99	2.55	8.03	2.58	8.09	2.62	8.15	2.67
	42	7.80	2.53	7.84	2.56	7.89	2.59	7.93	2.62	7.97	2.65	8.03	2.70	8.09	2.74
	44	7.74	2.61	7.78	2.64	7.83	2.67	7.87	2.70	7.91	2.73	7.97	2.77	8.03	2.82
	46	7.68	2.68	7.72	2.71	7.77	2.74	7.81	2.77	7.86	2.80	7.91	2.85	7.97	2.89
	48	7.62	2.76	7.66	2.79	7.71	2.82	7.75	2.85	7.80	2.88	7.86	2.92	7.91	2.97
	50	7.56	2.83	7.60	2.86	7.65	2.89	7.69	2.92	7.74	2.95	7.80	3.00	7.86	3.04

Heating

Combination	Outdoor air temperature		Indoor temperature(°C DB)											
			16		18		20		21		22		24	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	°C DB	°C WB	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
100%	-15	-16.2	8.17	2.04	8.06	2.13	7.94	2.21	7.84	2.28	7.74	2.37	7.62	2.44
	-13.7	-15	8.21	2.09	8.11	2.18	7.99	2.25	7.89	2.33	7.78	2.41	7.66	2.49
	-11.8	-13	8.26	2.13	8.15	2.22	8.03	2.30	7.93	2.37	7.83	2.46	7.71	2.53
	-9.8	-11	8.30	2.18	8.20	2.27	8.08	2.34	7.97	2.41	7.87	2.50	7.75	2.58
	-9.5	-10	8.35	2.22	8.24	2.31	8.12	2.38	8.02	2.46	7.91	2.55	7.80	2.62
	-8.5	-9.1	8.39	2.27	8.29	2.36	8.17	2.43	8.06	2.50	7.96	2.59	7.84	2.67
	-7	-7.6	8.44	2.31	8.33	2.40	8.21	2.47	8.11	2.55	8.00	2.64	7.89	2.71
	-5	-5.6	8.48	2.36	8.38	2.44	8.26	2.52	8.15	2.59	8.05	2.68	7.93	2.76
	-3	-3.7	8.53	2.40	8.42	2.49	8.30	2.56	8.20	2.64	8.09	2.73	7.97	2.80
	0	-0.7	8.57	2.44	8.47	2.53	8.35	2.61	8.24	2.68	8.14	2.77	8.02	2.85
	3	2.2	8.62	2.49	8.51	2.58	8.39	2.65	8.29	2.73	8.18	2.82	8.06	2.89
	5	4.1	8.66	2.53	8.56	2.62	8.44	2.70	8.33	2.77	8.23	2.86	8.11	2.94
	7	6	8.70	2.58	8.60	2.67	8.48	2.74	8.38	2.82	8.27	2.91	8.15	2.98
	9	7.9	8.75	2.62	8.65	2.71	8.53	2.79	8.42	2.86	8.32	2.95	8.20	3.03
	11	9.8	8.79	2.67	8.69	2.76	8.57	2.83	8.47	2.91	8.36	3.00	8.24	3.07
	13	11.8	8.84	2.71	8.73	2.80	8.62	2.88	8.51	2.95	8.41	3.04	8.29	3.12
	15	13.7	8.88	2.76	8.78	2.85	8.66	2.92	8.56	3.00	8.45	3.09	8.33	3.16
	17	14.2	8.93	2.80	8.82	2.89	8.70	2.97	8.60	3.04	8.50	3.13	8.38	3.20
	19	14.8	8.97	2.85	8.87	2.94	8.75	3.01	8.65	3.09	8.54	3.17	8.42	3.25
	21	15	9.02	2.89	8.91	2.98	8.79	3.06	8.69	3.13	8.59	3.22	8.47	3.29
	23	16.8	9.06	2.94	8.96	3.03	8.84	3.10	8.73	3.17	8.63	3.26	8.51	3.34
	25	18.2	9.11	2.98	9.00	3.07	8.88	3.15	8.78	3.22	8.68	3.31	8.56	3.38
	27	19	9.15	3.03	9.05	3.12	8.93	3.19	8.82	3.26	8.72	3.35	8.60	3.43
	29	19.8	9.20	3.07	9.09	3.16	8.97	3.23	8.87	3.31	8.76	3.40	8.65	3.47

C4OU-28HDR1-A

Cooling

Combination	Outdoor temperature (°C DB)	Indoor temperature (°C)													
		DB:20.8,WB:14		DB:23.3,WB:16		DB:25.8,WB:18		DB:27,WB:19		DB:28.2,WB:20		DB:30.7,WB:22		DB:32,WB:24	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
100%	-14	13.22	0.63	13.28	0.67	13.33	0.71	13.40	0.75	13.46	0.80	13.54	0.85	13.62	0.92
	-12	13.14	0.73	13.19	0.77	13.25	0.81	13.32	0.85	13.37	0.89	13.46	0.96	13.54	1.02
	-10	13.05	0.84	13.11	0.88	13.18	0.92	13.23	0.96	13.29	1.01	13.37	1.06	13.46	1.12
	-8	12.97	0.94	13.02	0.98	13.09	1.02	13.15	1.06	13.22	1.10	13.29	1.16	13.37	1.23
	-6	12.89	1.05	12.94	1.09	13.01	1.12	13.07	1.16	13.14	1.20	13.22	1.27	13.29	1.33
	-4	12.80	1.14	12.86	1.19	12.93	1.23	12.98	1.27	13.05	1.31	13.14	1.37	13.22	1.44
	-2	12.72	1.24	12.77	1.28	12.84	1.33	12.90	1.37	12.97	1.41	13.05	1.48	13.14	1.54
	0	12.63	1.35	12.69	1.40	12.76	1.44	12.82	1.48	12.89	1.52	12.97	1.58	13.05	1.65
	2	12.55	1.45	12.61	1.49	12.68	1.54	12.73	1.58	12.80	1.62	12.89	1.69	12.97	1.75
	4	12.47	1.56	12.52	1.61	12.59	1.65	12.65	1.69	12.72	1.73	12.80	1.79	12.89	1.86
	6	12.38	1.66	12.44	1.70	12.51	1.75	12.56	1.79	12.63	1.83	12.72	1.90	12.80	1.95
	8	12.30	1.77	12.35	1.81	12.42	1.86	12.48	1.90	12.55	1.94	12.63	2.00	12.72	2.07
	10	12.22	1.87	12.27	1.91	12.34	1.95	12.40	2.00	12.47	2.04	12.55	2.11	12.63	2.16
	12	12.13	1.98	12.19	2.02	12.26	2.07	12.31	2.11	12.38	2.15	12.47	2.21	12.55	2.26
	14	12.05	2.08	12.12	2.12	12.17	2.16	12.23	2.21	12.30	2.25	12.38	2.30	12.47	2.37
	16	11.96	2.19	12.03	2.22	12.09	2.26	12.15	2.30	12.22	2.35	12.30	2.42	12.38	2.47
	18	11.88	2.29	11.95	2.33	12.01	2.37	12.08	2.42	12.13	2.46	12.22	2.51	12.30	2.58

	20	11.80	2.39	11.87	2.43	11.92	2.47	11.99	2.51	12.05	2.55	12.13	2.62	12.22	2.68
	22	11.71	2.50	11.78	2.54	11.84	2.58	11.91	2.62	11.96	2.67	12.05	2.72	12.13	2.79
	24	11.63	2.60	11.70	2.64	11.75	2.68	11.82	2.72	11.88	2.76	11.96	2.83	12.05	2.89
	26	11.54	2.71	11.61	2.75	11.67	2.79	11.74	2.83	11.80	2.88	11.88	2.93	11.96	3.00
	28	11.46	2.81	11.53	2.85	11.59	2.89	11.66	2.93	11.71	2.97	11.80	3.04	11.88	3.10
	30	11.38	2.92	11.45	2.96	11.50	3.00	11.57	3.04	11.63	3.09	11.71	3.14	11.80	3.21
	32	11.29	3.02	11.36	3.06	11.42	3.10	11.49	3.14	11.54	3.18	11.63	3.25	11.71	3.31
	34	11.21	3.13	11.28	3.17	11.34	3.21	11.41	3.25	11.46	3.29	11.54	3.35	11.63	3.41
	36	11.13	3.22	11.20	3.27	11.25	3.31	11.32	3.35	11.38	3.39	11.46	3.45	11.54	3.52
	38	11.04	3.32	11.11	3.36	11.17	3.41	11.24	3.45	11.29	3.49	11.38	3.56	11.46	3.62
	40	10.97	3.43	11.03	3.48	11.08	3.52	11.15	3.56	11.21	3.60	11.29	3.66	11.38	3.73
	42	10.89	3.53	10.94	3.57	11.01	3.62	11.07	3.66	11.13	3.70	11.21	3.77	11.29	3.83
	44	10.81	3.64	10.86	3.69	10.93	3.73	10.99	3.77	11.04	3.81	11.13	3.87	11.21	3.94
	46	10.72	3.74	10.78	3.78	10.85	3.83	10.90	3.87	10.97	3.91	11.04	3.98	11.13	4.03
	48	10.64	3.85	10.69	3.89	10.76	3.94	10.82	3.98	10.89	4.02	10.97	4.08	11.04	4.15
	50	10.55	3.95	10.61	3.99	10.68	4.03	10.74	4.08	10.81	4.12	10.89	4.19	10.97	4.24

Heating

Combination	Outdoor air temperature		Indoor temperature(°C DB)											
			16		18		20		21		22		24	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	°C DB	°C WB	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
100%	-15	-16.2	11.44	2.86	11.28	2.98	11.12	3.09	10.98	3.19	10.84	3.32	10.67	3.42
	-13.7	-15	11.49	2.93	11.35	3.05	11.19	3.15	11.05	3.26	10.89	3.37	10.72	3.49
	-11.8	-13	11.56	2.98	11.41	3.11	11.24	3.22	11.10	3.32	10.96	3.44	10.79	3.54
	-9.8	-11	11.62	3.05	11.48	3.18	11.31	3.28	11.16	3.37	11.02	3.50	10.85	3.61
	-9.5	-10	11.69	3.11	11.54	3.23	11.37	3.33	11.23	3.44	11.07	3.57	10.92	3.67
	-8.5	-9.1	11.75	3.18	11.61	3.30	11.44	3.40	11.28	3.50	11.14	3.63	10.98	3.74
	-7	-7.6	11.82	3.23	11.66	3.36	11.49	3.46	11.35	3.57	11.20	3.70	11.05	3.79
	-5	-5.6	11.87	3.30	11.73	3.42	11.56	3.53	11.41	3.63	11.27	3.75	11.10	3.86
	-3	-3.7	11.94	3.36	11.79	3.49	11.62	3.58	11.48	3.70	11.33	3.82	11.16	3.92
	0	-0.7	12.00	3.42	11.86	3.54	11.69	3.65	11.54	3.75	11.40	3.88	11.23	3.99
	3	2.2	12.07	3.49	11.91	3.61	11.75	3.71	11.61	3.82	11.45	3.95	11.28	4.05
	5	4.1	12.12	3.54	11.98	3.67	11.82	3.78	11.66	3.88	11.52	4.00	11.35	4.12
	7	6	12.18	3.61	12.04	3.74	11.87	3.84	11.73	3.95	11.58	4.07	11.41	4.17
	9	7.9	12.25	3.67	12.11	3.79	11.94	3.91	11.79	4.00	11.65	4.13	11.48	4.24
	11	9.8	12.31	3.74	12.17	3.86	12.00	3.96	11.86	4.07	11.70	4.20	11.54	4.30
	13	11.8	12.38	3.79	12.22	3.92	12.07	4.03	11.91	4.13	11.77	4.26	11.61	4.37
	15	13.7	12.43	3.86	12.29	3.99	12.12	4.09	11.98	4.20	11.83	4.33	11.66	4.42
	17	14.2	12.50	3.92	12.35	4.05	12.18	4.16	12.04	4.26	11.90	4.38	11.73	4.48
	19	14.8	12.56	3.99	12.42	4.12	12.25	4.21	12.11	4.33	11.96	4.44	11.79	4.55
	21	15	12.63	4.05	12.47	4.17	12.31	4.28	12.17	4.38	12.03	4.51	11.86	4.61
	23	16.8	12.68	4.12	12.54	4.24	12.38	4.34	12.22	4.44	12.08	4.56	11.91	4.68
	25	18.2	12.75	4.17	12.60	4.30	12.43	4.41	12.29	4.51	12.15	4.63	11.98	4.73
	27	19	12.81	4.24	12.67	4.37	12.50	4.47	12.35	4.56	12.21	4.69	12.04	4.80
	29	19.8	12.88	4.30	12.73	4.42	12.56	4.52	12.42	4.63	12.26	4.76	12.11	4.86

C4OU-36HDR1-A

Cooling

Combination	Outdoor temperature (°C DB)	Indoor temperature (°C)													
		DB:20.8,WB:14		DB:23.3,WB:16		DB:25.8,WB:18		DB:27,WB:19		DB:28.2,WB:20		DB:30.7,WB:22		DB:32,WB:24	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
100%	-14	18.51	0.88	18.59	0.94	18.66	1.00	18.76	1.06	18.84	1.11	18.96	1.19	19.07	1.29
	-12	18.39	1.02	18.47	1.07	18.55	1.13	18.64	1.19	18.72	1.25	18.84	1.35	18.96	1.43
	-10	18.27	1.17	18.35	1.23	18.45	1.29	18.53	1.35	18.61	1.41	18.72	1.49	18.84	1.56
	-8	18.16	1.31	18.23	1.37	18.33	1.43	18.41	1.49	18.51	1.54	18.61	1.62	18.72	1.72
	-6	18.04	1.47	18.12	1.52	18.22	1.56	18.29	1.62	18.39	1.68	18.51	1.78	18.61	1.86
	-4	17.92	1.60	18.00	1.66	18.10	1.72	18.18	1.78	18.27	1.84	18.39	1.92	18.51	2.01
	-2	17.80	1.74	17.88	1.80	17.98	1.86	18.06	1.92	18.16	1.97	18.27	2.07	18.39	2.15
	0	17.69	1.90	17.77	1.95	17.86	2.01	17.94	2.07	18.04	2.13	18.16	2.21	18.27	2.31
	2	17.57	2.03	17.65	2.09	17.75	2.15	17.82	2.21	17.92	2.27	18.04	2.36	18.16	2.44
	4	17.45	2.19	17.53	2.25	17.63	2.31	17.71	2.36	17.80	2.42	17.92	2.50	18.04	2.60
	6	17.34	2.33	17.41	2.38	17.51	2.44	17.59	2.50	17.69	2.56	17.80	2.66	17.92	2.74
	8	17.22	2.48	17.30	2.54	17.39	2.60	17.47	2.66	17.57	2.72	17.69	2.79	17.80	2.89
	10	17.10	2.62	17.18	2.68	17.28	2.74	17.36	2.79	17.45	2.85	17.57	2.95	17.69	3.03
	12	16.98	2.78	17.06	2.83	17.16	2.89	17.24	2.95	17.34	3.01	17.45	3.09	17.57	3.17
	14	16.87	2.91	16.96	2.97	17.04	3.03	17.12	3.09	17.22	3.15	17.34	3.22	17.45	3.32
	16	16.75	3.07	16.85	3.11	16.93	3.17	17.00	3.22	17.10	3.28	17.22	3.38	17.34	3.46
	18	16.63	3.21	16.73	3.26	16.81	3.32	16.91	3.38	16.98	3.44	17.10	3.52	17.22	3.62

	20	16.51	3.34	16.61	3.40	16.69	3.46	16.79	3.52	16.87	3.58	16.98	3.67	17.10	3.75
	22	16.40	3.50	16.50	3.56	16.57	3.62	16.67	3.67	16.75	3.73	16.87	3.81	16.98	3.91
	24	16.28	3.64	16.38	3.69	16.46	3.75	16.55	3.81	16.63	3.87	16.75	3.97	16.87	4.05
	26	16.16	3.79	16.26	3.85	16.34	3.91	16.44	3.97	16.51	4.03	16.63	4.10	16.75	4.20
	28	16.05	3.93	16.14	3.99	16.22	4.05	16.32	4.10	16.40	4.16	16.51	4.26	16.63	4.34
	30	15.93	4.08	16.03	4.14	16.10	4.20	16.20	4.26	16.28	4.32	16.40	4.40	16.51	4.50
	32	15.81	4.22	15.91	4.28	15.99	4.34	16.08	4.40	16.16	4.46	16.28	4.55	16.40	4.63
	34	15.69	4.38	15.79	4.44	15.87	4.50	15.97	4.55	16.05	4.61	16.16	4.69	16.28	4.77
	36	15.58	4.51	15.67	4.57	15.75	4.63	15.85	4.69	15.93	4.75	16.05	4.83	16.16	4.93
	38	15.46	4.65	15.56	4.71	15.64	4.77	15.73	4.83	15.81	4.89	15.93	4.98	16.05	5.06
	40	15.36	4.81	15.44	4.87	15.52	4.93	15.62	4.98	15.69	5.04	15.81	5.12	15.93	5.22
	42	15.24	4.94	15.32	5.00	15.42	5.06	15.50	5.12	15.58	5.18	15.69	5.28	15.81	5.36
	44	15.13	5.10	15.21	5.16	15.30	5.22	15.38	5.28	15.46	5.34	15.58	5.41	15.69	5.51
	46	15.01	5.24	15.09	5.30	15.19	5.36	15.26	5.41	15.36	5.47	15.46	5.57	15.58	5.65
	48	14.89	5.39	14.97	5.45	15.07	5.51	15.15	5.57	15.24	5.63	15.36	5.71	15.46	5.80
	50	14.78	5.53	14.85	5.59	14.95	5.65	15.03	5.71	15.13	5.77	15.24	5.86	15.36	5.94

Heating

Combination	Outdoor air temperature		Indoor temperature(°C DB)											
			16		18		20		21		22		24	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	°C DB	°C WB	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
100%	-15	-16.2	16.01	4.00	15.80	4.17	15.56	4.33	15.37	4.47	15.17	4.65	14.94	4.78
	-13.7	-15	16.09	4.10	15.90	4.27	15.66	4.41	15.46	4.57	15.25	4.72	15.01	4.88
	-11.8	-13	16.19	4.17	15.97	4.35	15.74	4.51	15.54	4.65	15.35	4.82	15.11	4.96
	-9.8	-11	16.27	4.27	16.07	4.45	15.84	4.59	15.62	4.72	15.43	4.90	15.19	5.06
	-9.5	-10	16.37	4.35	16.15	4.53	15.92	4.66	15.72	4.82	15.50	5.00	15.29	5.14
	-8.5	-9.1	16.44	4.45	16.25	4.63	16.01	4.76	15.80	4.90	15.60	5.08	15.37	5.23
	-7	-7.6	16.54	4.53	16.33	4.70	16.09	4.84	15.90	5.00	15.68	5.17	15.46	5.31
	-5	-5.6	16.62	4.63	16.42	4.78	16.19	4.94	15.97	5.08	15.78	5.25	15.54	5.41
	-3	-3.7	16.72	4.70	16.50	4.88	16.27	5.02	16.07	5.17	15.86	5.35	15.62	5.49
	0	-0.7	16.80	4.78	16.60	4.96	16.37	5.12	16.15	5.25	15.95	5.43	15.72	5.59
	3	2.2	16.90	4.88	16.68	5.06	16.44	5.19	16.25	5.35	16.03	5.53	15.80	5.66
	5	4.1	16.97	4.96	16.78	5.14	16.54	5.29	16.33	5.43	16.13	5.61	15.90	5.76
	7	6	17.05	5.06	16.86	5.23	16.62	5.37	16.42	5.53	16.21	5.70	15.97	5.84
	9	7.9	17.15	5.14	16.95	5.31	16.72	5.47	16.50	5.61	16.31	5.78	16.07	5.94
	11	9.8	17.23	5.23	17.03	5.41	16.80	5.55	16.60	5.70	16.39	5.88	16.15	6.02
	13	11.8	17.33	5.31	17.11	5.49	16.90	5.64	16.68	5.78	16.48	5.96	16.25	6.12
	15	13.7	17.40	5.41	17.21	5.59	16.97	5.72	16.78	5.88	16.56	6.06	16.33	6.19
	17	14.2	17.50	5.49	17.29	5.66	17.05	5.82	16.86	5.96	16.66	6.13	16.42	6.27
	19	14.8	17.58	5.59	17.39	5.76	17.15	5.90	16.95	6.06	16.74	6.21	16.50	6.37
	21	15	17.68	5.66	17.46	5.84	17.23	6.00	17.03	6.13	16.84	6.31	16.60	6.45
	23	16.8	17.76	5.76	17.56	5.94	17.33	6.08	17.11	6.21	16.91	6.39	16.68	6.55
	25	18.2	17.86	5.84	17.64	6.02	17.40	6.17	17.21	6.31	17.01	6.49	16.78	6.62
	27	19	17.93	5.94	17.74	6.12	17.50	6.25	17.29	6.39	17.09	6.57	16.86	6.72
	29	19.8	18.03	6.02	17.82	6.19	17.58	6.33	17.39	6.49	17.17	6.66	16.95	6.80

C5OU-42HDR1-A

Cooling

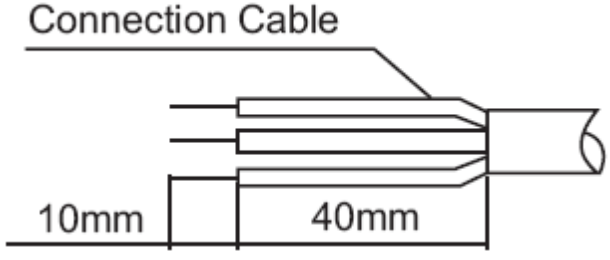
Combination	Outdoor temperature (°C DB)	Indoor temperature (°C)													
		DB:20.8,WB:14		DB:23.3,WB:16		DB:25.8,WB:18		DB:27,WB:19		DB:28.2,WB:20		DB:30.7,WB:22		DB:32,WB:24	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
100%	-14	25.91	1.23	26.02	1.31	26.13	1.40	26.27	1.48	26.38	1.56	26.54	1.67	26.70	1.81
	-12	25.75	1.42	25.86	1.50	25.97	1.59	26.10	1.67	26.21	1.75	26.38	1.89	26.54	2.00
	-10	25.58	1.64	25.69	1.72	25.83	1.81	25.94	1.89	26.05	1.97	26.21	2.08	26.38	2.19
	-8	25.42	1.83	25.53	1.92	25.67	2.00	25.77	2.08	25.91	2.16	26.05	2.27	26.21	2.41
	-6	25.25	2.05	25.36	2.13	25.50	2.19	25.61	2.27	25.75	2.35	25.91	2.49	26.05	2.60
	-4	25.09	2.24	25.20	2.33	25.34	2.41	25.45	2.49	25.58	2.57	25.75	2.68	25.91	2.82
	-2	24.93	2.44	25.04	2.52	25.17	2.60	25.28	2.68	25.42	2.76	25.58	2.90	25.75	3.01
	0	24.76	2.65	24.87	2.74	25.01	2.82	25.12	2.90	25.25	2.98	25.42	3.09	25.58	3.23
	2	24.60	2.85	24.71	2.93	24.84	3.01	24.95	3.09	25.09	3.17	25.25	3.31	25.42	3.42
	4	24.43	3.06	24.54	3.15	24.68	3.23	24.79	3.31	24.93	3.39	25.09	3.50	25.25	3.64
	6	24.27	3.26	24.38	3.34	24.52	3.42	24.63	3.50	24.76	3.58	24.93	3.72	25.09	3.83
	8	24.11	3.47	24.22	3.56	24.35	3.64	24.46	3.72	24.60	3.80	24.76	3.91	24.93	4.05
	10	23.94	3.67	24.05	3.75	24.19	3.83	24.30	3.91	24.43	3.99	24.60	4.13	24.76	4.24
	12	23.78	3.89	23.89	3.97	24.02	4.05	24.13	4.13	24.27	4.21	24.43	4.32	24.60	4.43
	14	23.61	4.08	23.75	4.16	23.86	4.24	23.97	4.32	24.11	4.41	24.27	4.51	24.43	4.65
	16	23.45	4.30	23.59	4.35	23.70	4.43	23.80	4.51	23.94	4.60	24.11	4.73	24.27	4.84
	18	23.28	4.49	23.42	4.57	23.53	4.65	23.67	4.73	23.78	4.82	23.94	4.93	24.11	5.06

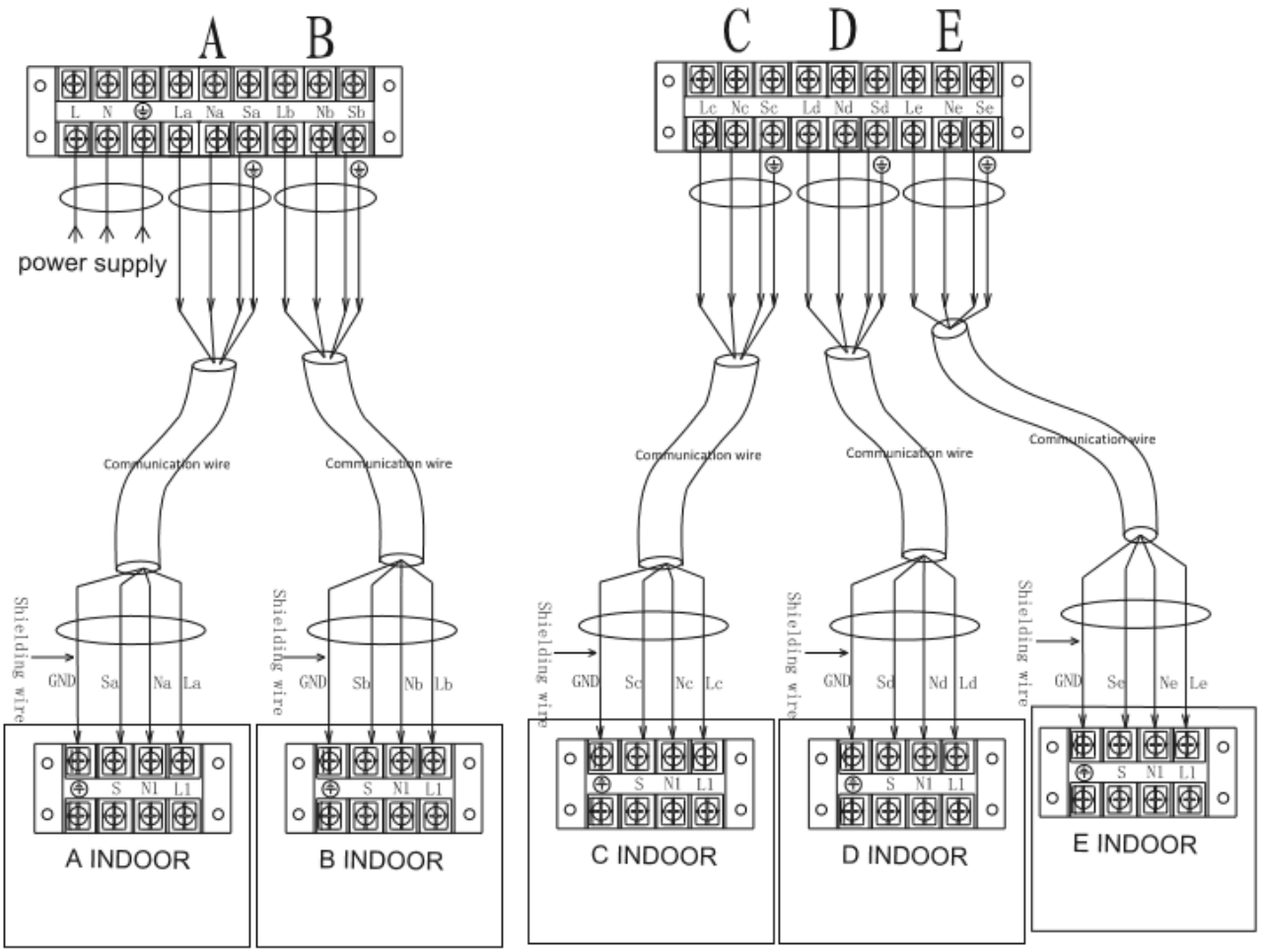
	20	23.12	4.68	23.26	4.76	23.37	4.84	23.50	4.93	23.61	5.01	23.78	5.14	23.94	5.25
	22	22.96	4.90	23.09	4.98	23.20	5.06	23.34	5.14	23.45	5.23	23.61	5.34	23.78	5.47
	24	22.79	5.09	22.93	5.17	23.04	5.25	23.18	5.34	23.28	5.42	23.45	5.55	23.61	5.66
	26	22.63	5.31	22.76	5.39	22.87	5.47	23.01	5.55	23.12	5.64	23.28	5.75	23.45	5.88
	28	22.46	5.50	22.60	5.58	22.71	5.66	22.85	5.75	22.96	5.83	23.12	5.96	23.28	6.07
	30	22.30	5.72	22.44	5.80	22.55	5.88	22.68	5.96	22.79	6.05	22.96	6.16	23.12	6.29
	32	22.14	5.91	22.27	5.99	22.38	6.07	22.52	6.16	22.63	6.24	22.79	6.38	22.96	6.48
	34	21.97	6.13	22.11	6.21	22.22	6.29	22.35	6.38	22.46	6.46	22.63	6.57	22.79	6.68
	36	21.81	6.32	21.94	6.40	22.05	6.48	22.19	6.57	22.30	6.65	22.46	6.76	22.63	6.90
	38	21.64	6.51	21.78	6.59	21.89	6.68	22.03	6.76	22.14	6.84	22.30	6.98	22.46	7.09
	40	21.51	6.73	21.62	6.81	21.73	6.90	21.86	6.98	21.97	7.06	22.14	7.17	22.30	7.31
	42	21.34	6.92	21.45	7.00	21.59	7.09	21.70	7.17	21.81	7.25	21.97	7.39	22.14	7.50
	44	21.18	7.14	21.29	7.22	21.42	7.31	21.53	7.39	21.64	7.47	21.81	7.58	21.97	7.72
	46	21.01	7.33	21.12	7.41	21.26	7.50	21.37	7.58	21.51	7.66	21.64	7.80	21.81	7.91
	48	20.85	7.55	20.96	7.63	21.10	7.72	21.21	7.80	21.34	7.88	21.51	7.99	21.64	8.13
	50	20.69	7.74	20.79	7.83	20.93	7.91	21.04	7.99	21.18	8.07	21.34	8.21	21.51	8.32

Heating

Combination	Outdoor air temperature		Indoor temperature(°C DB)											
			16		18		20		21		22		24	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	°C DB	°C WB	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
100%	-15	-16.2	22.42	5.60	22.12	5.84	21.79	6.06	21.51	6.26	21.24	6.50	20.91	6.70
	-13.7	-15	22.53	5.73	22.25	5.98	21.92	6.17	21.65	6.39	21.35	6.61	21.02	6.83
	-11.8	-13	22.67	5.84	22.36	6.09	22.03	6.31	21.76	6.50	21.49	6.75	21.16	6.94
	-9.8	-11	22.78	5.98	22.50	6.23	22.17	6.42	21.87	6.61	21.60	6.86	21.27	7.08
	-9.5	-10	22.91	6.09	22.61	6.34	22.28	6.53	22.01	6.75	21.71	7.00	21.40	7.19
	-8.5	-9.1	23.02	6.23	22.75	6.48	22.42	6.67	22.12	6.86	21.84	7.11	21.51	7.33
	-7	-7.6	23.16	6.34	22.86	6.59	22.53	6.78	22.25	7.00	21.95	7.24	21.65	7.44
	-5	-5.6	23.27	6.48	22.99	6.70	22.67	6.91	22.36	7.11	22.09	7.35	21.76	7.57
	-3	-3.7	23.41	6.59	23.10	6.83	22.78	7.02	22.50	7.24	22.20	7.49	21.87	7.68
	0	-0.7	23.52	6.70	23.24	6.94	22.91	7.16	22.61	7.35	22.34	7.60	22.01	7.82
	3	2.2	23.65	6.83	23.35	7.08	23.02	7.27	22.75	7.49	22.45	7.74	22.12	7.93
	5	4.1	23.76	6.94	23.49	7.19	23.16	7.41	22.86	7.60	22.58	7.85	22.25	8.07
	7	6	23.87	7.08	23.60	7.33	23.27	7.52	22.99	7.74	22.69	7.99	22.36	8.18
	9	7.9	24.01	7.19	23.74	7.44	23.41	7.66	23.10	7.85	22.83	8.09	22.50	8.31
	11	9.8	24.12	7.33	23.85	7.57	23.52	7.77	23.24	7.99	22.94	8.23	22.61	8.42
	13	11.8	24.26	7.44	23.96	7.68	23.65	7.90	23.35	8.09	23.08	8.34	22.75	8.56
	15	13.7	24.37	7.57	24.09	7.82	23.76	8.01	23.49	8.23	23.19	8.48	22.86	8.67
	17	14.2	24.50	7.68	24.20	7.93	23.87	8.15	23.60	8.34	23.32	8.59	22.99	8.78
	19	14.8	24.61	7.82	24.34	8.07	24.01	8.26	23.74	8.48	23.43	8.70	23.10	8.92
	21	15	24.75	7.93	24.45	8.18	24.12	8.40	23.85	8.59	23.57	8.84	23.24	9.03
	23	16.8	24.86	8.07	24.59	8.31	24.26	8.51	23.96	8.70	23.68	8.95	23.35	9.16
	25	18.2	25.00	8.18	24.70	8.42	24.37	8.64	24.09	8.84	23.82	9.08	23.49	9.27
	27	19	25.11	8.31	24.83	8.56	24.50	8.75	24.20	8.95	23.93	9.19	23.60	9.41
	29	19.8	25.24	8.42	24.94	8.67	24.61	8.86	24.34	9.08	24.04	9.33	23.74	9.52

8. Field Wiring




A
B
C
D
E
L N La Na Sa Lb Nb Sb
Lc Nc Sc Ld Nd Sd Le Ne Se
power supply
Communication wire
Shielding wire
GND Sa Na La
GND Sb Nb Lb
GND Sc Nc Lc
GND Sd Nd Ld
GND Se Ne Le
S N1 L1
A INDOOR
B INDOOR
C INDOOR
D INDOOR
E INDOOR

9. Electric Characteristics

Model	Outdoor Unit				Power Supply		OFM
	Hz	Voltage	Min.	Max.	TOCA	MFA	kW
C2OU-16HDR1-A	50	220-240	198	264	11.4	32	0.06
C2OU-18HDR1-A	50	220-240	198	264	12.3	32	0.06
C3OU-21HDR1-A	50	220-240	198	264	14.2	32	0.072
C3OU-27HDR1-A	50	220-240	198	264	17.2	32	0.072
C4OU-28HDR1-A	50	220-240	198	264	19	48	0.18
C4OU-36HDR1-A	50	220-240	198	264	27	48	0.18
C5OU-42HDR1-A	50	220-240	198	264	28	48	0.18

Remark:

TOCA: Total Over-current Amps. (A)

MFA: Max. Fuse Amps. (A)

MSC: Max. starting Amps. (A)

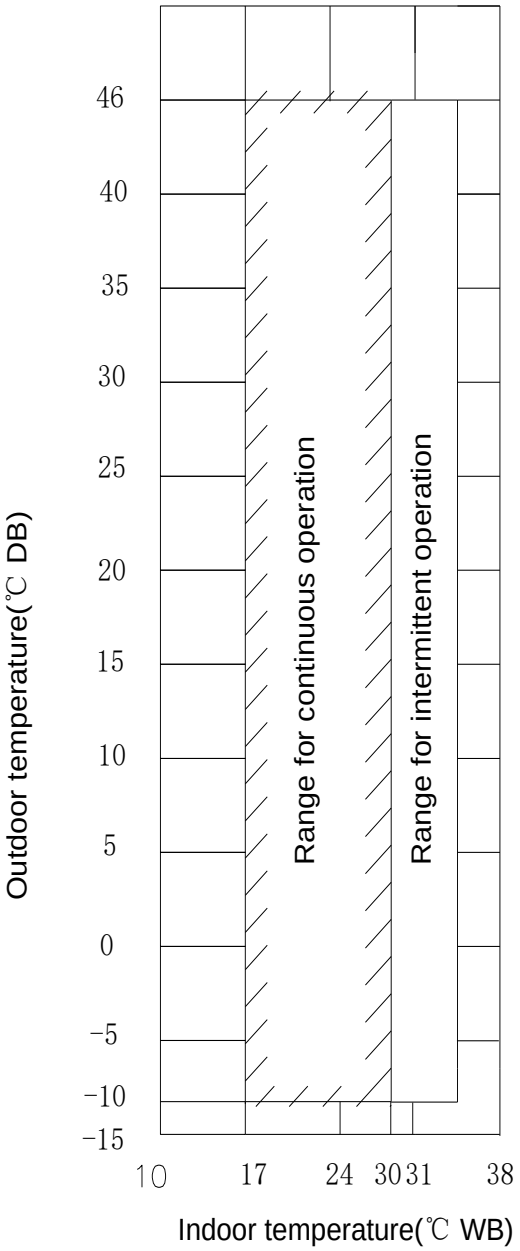
RLA: Rated Locked Amps. (A)

OFM: Fan Motor.

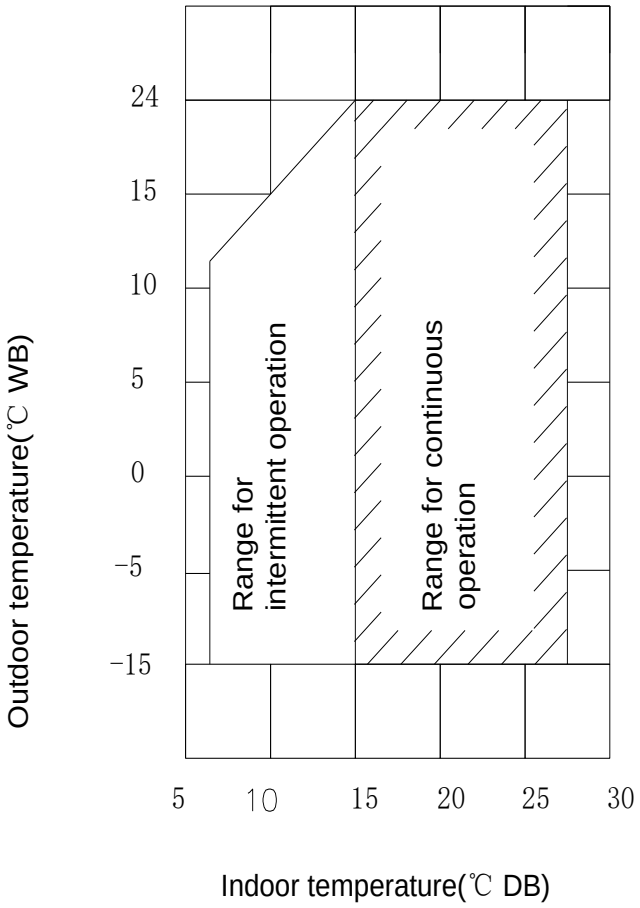
KW: Rated Motor Output (kW)

10. Operation Limits

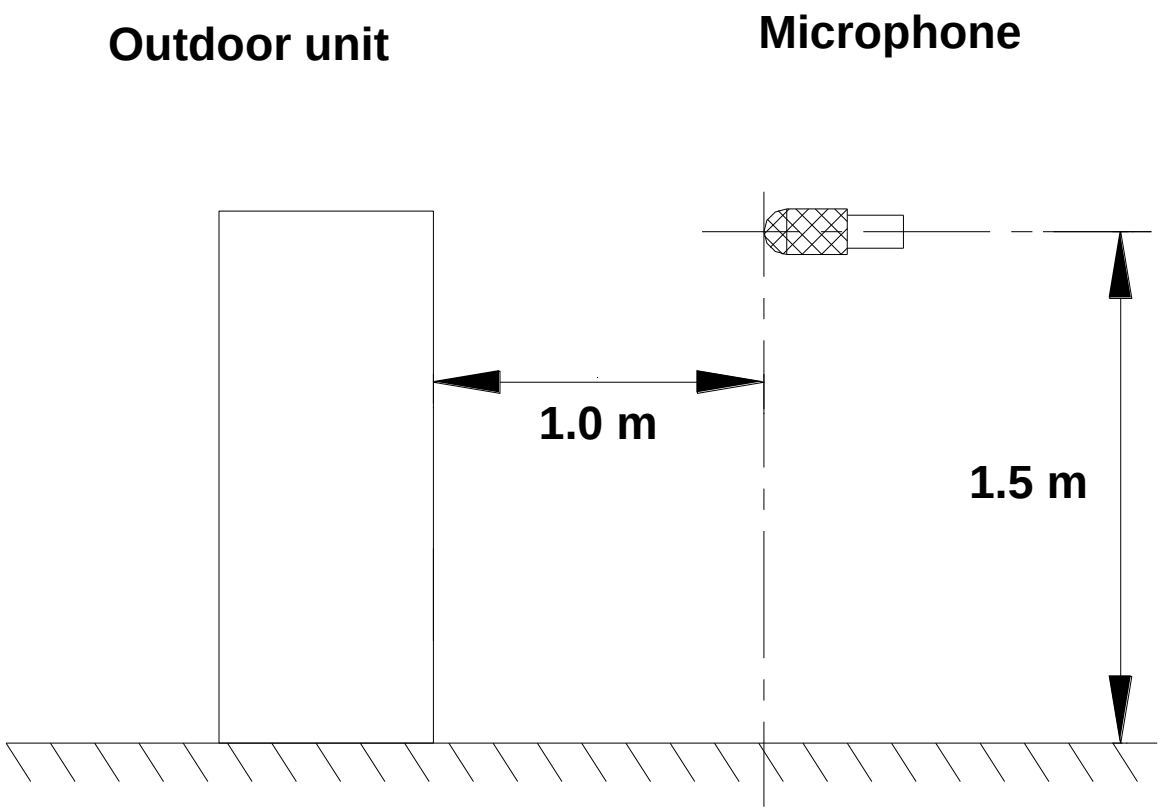
Cooling



Heating



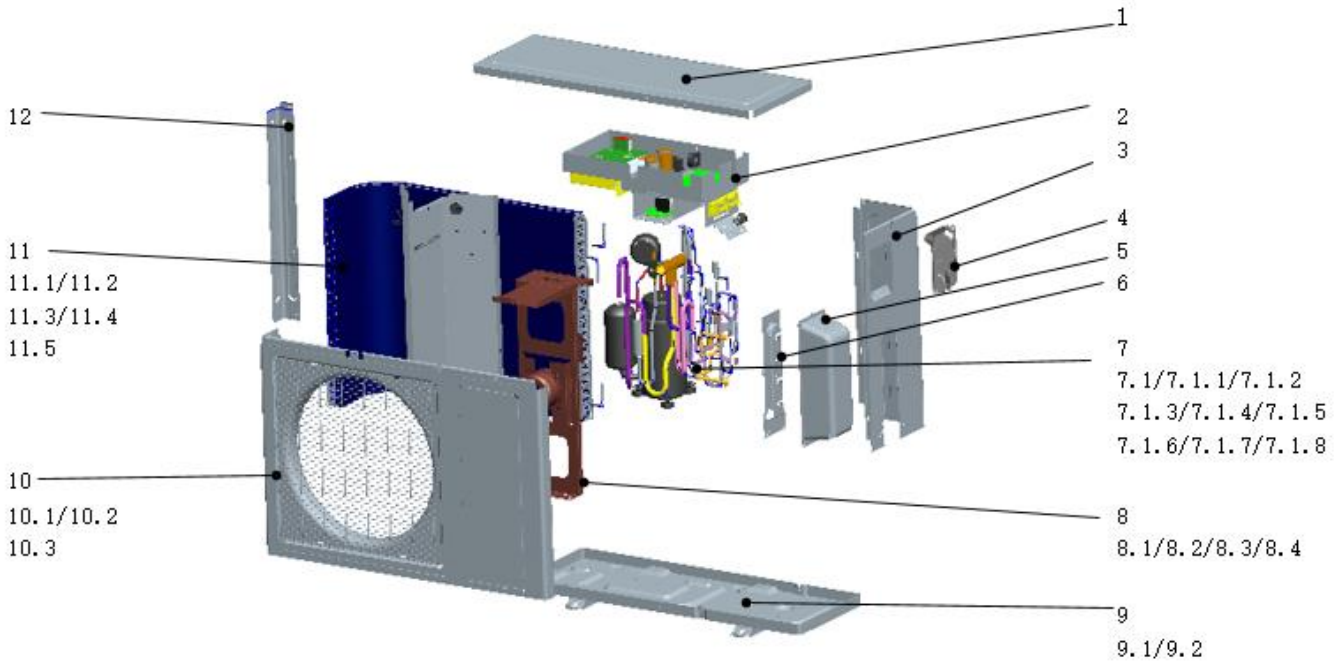
11. Sound Levels



Model	Noise level dB(A)
	H
C2OU-16HDR1-A	54
C2OU-18HDR1-A	54
C3OU-21HDR1-A	55
C3OU-27HDR1-A	55
C4OU-28HDR1-A	59
C4OU-36HDR1-A	61
C4OU-36HDR1-A	62

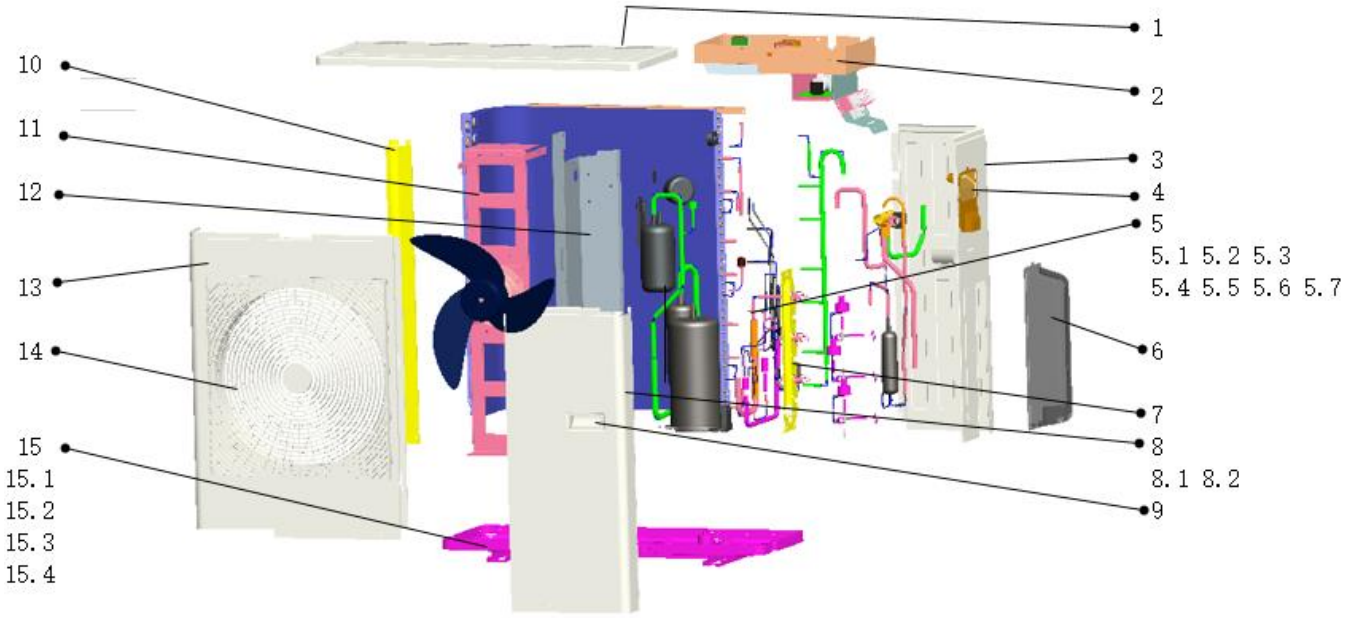
12. Exploded View

C2OU-16HDR1-A / C2OU-18HDR1-A



No.	Part Name	Quantity	No.	Part Name	Quantity
1	Cover	1	7.3	Electronic expansion valve component	1
2	Electronic control unit	1	7.4	Inverter compressor	1
2.1	Capacitor board	1	8	Fan holder component	1
2.2	Single-phase rectifier	1	8.1	DC fan motor	1
2.3	E-parts module board	1	8.2	Fan holder	1
2.4	Electric cabinet	1	8.3	Axial-flow fan	1
2.5	Single phase filter plate	1	9	Chassis component	1
2.6	Terminal	1	10	Front panel component	1
3	Right clapboard	1	11	Condenser component	1
4	Handle	1	11.1	Collector componet	1
5	Valve seat cover	1	11.2	L-type pipe	1
6	Valve seat plate	1	11.3	Distributing component	1
7	Piping components	1	11.4	Condenser	1
7.1	4-Ways valve component	1	11.5	Bend pipe	1
7.2	Suction pipe	1	12	Left stand column	1

C3OU-21HDR1-A / C3OU-27HDR1-A



No.	Part Name	Quantity	No.	Part Name	Quantity
1	Cover	1	5.5	Inverter Compressor	1
2	E-Parts Assy	1	6	Valve Protect Panel	1
2.1	Module Board Assy	1	7	Valve Board	1
2.2	Capacitor board	1	8	Front Maintenance Board	1
2.3	Electronic Control Panel	1	9	Little Handle	1
2.4	Electronic Control Box	1	10	Left Clapboard	1
2.5	Cooling Fin	1	11	Fan holder component	1
2.6	Singal Phase Filter Board	1	11.1	DC fan motor	1
3	Right clapboard	1	11.2	Axial-flow fan	1
4	Handle	1	11.3	Fan holder	1
5	Gas Circuit Component	1	12	Separating Board	1
5.1	Electric Expansion Valve Assy	1	13	Panel	1
5.2	Condenser Component	1	14	Plastic Front Net	1
5.3	Four-Way Valve Assy	1	15	Chassis Assy	1
5.4	Low Pressure Valve Component	1	15.1	Chassis	1

13. Troubleshooting

Fault Code	Fault Contents	Remark
E1	Outdoor unit phase-sequence fault	
E2	Communication fault between the outdoor unit and the host	20-minutes break at first or 2-minutes break later
E4	Environmental temperature sensor fault	
E6	Condenser pipe temperature sensor fault	
E9	AC over-voltage / under-voltage protection	
E10	EEPROM fault	
H0	DSP and 0513 communication failure	
H4	Display P6 protection for 3 times within 30 minutes	
H5	Display P2 protection for 3 times within 30 minutes	20-minute break at first or 2-minute break later
H6	Display P4 protection for 3 times within 30 minutes	Restore when powering on
H9	Display P9 protection for 3 times within 30 minutes	Restore when powering on
H10	Display P3 protection for 3 times within 30 minutes	Restore when powering on
P1	High pressure protection	
P2	Low pressure protection	Display H5 after P2 protection for 3 times within 30 minutes
P3	Various frequency over-current protection	
P4	Exhaust overheating protection	Display H6 for 3 times within 100 minutes
P5	T3 high temperature protection	
P6	Module protection	Display H4 after P6 protection for 3 times within 30 minutes
P9	DC fan fault	Display H9 after P9 protection for 2 times within 10 minutes

P10	Anti-typhoon protection	
P11	T2 high temperature protection	
L0	DC compressor module fault	
L1	DC bus low voltage protection	
L2	DC bus high voltage protection	
L4	MCE fault/sync/closed loop	
L5	Zero speed protection	
L7	Phase sequence error protection	
L8	Protection when the speed change of two successive periods exceed 15Hz	
L9	Protection of speed change(>15Hz) for the previous time and next time	

Part 4. Installation

1. Selecting installation place

Read completely, then follow step by step:

■ Indoor unit

- Do not expose the indoor unit to heat or steam.
- Select a place where there are no obstacles in front or around the unit.
- Make sure that condensation drainage can be conveniently routed away.
- Do not install near a doorway.
- Ensure that the space on the left and right of the unit is more than 15cm.
- Use a stud finder to locate studs to prevent unnecessary damage to the wall.
- The indoor unit should be installed on the wall at a height of 2.0 meters or more from the floor.
- The indoor unit should be installed allowing a minimum clearance of 15cm from the ceiling.
- Any variations in pipe length will/may require adjustment to refrigerant charge.
- There should not be any direct sunlight. Otherwise, the sun will fade the plastic cabinet and affect its appearance. If unavoidable, sunlight prevention should be taken into consideration.

■ Outdoor unit

- If an awning is built over the outdoor unit to prevent direct sunlight or rain exposure, make sure that heat radiation from the condenser is not restricted.
- Ensure that the clearance around the back of the unit is more than 30cm and left side is more than 30cm. The front of the unit should have more than 200cm of clearance and the connection side (right side) should have more than 60cm of clearance.
- Do not place animals and plants in the path of the air inlet or outlet.
- Take the air conditioner weight into account and select a place where noise and vibration will not be an issue.
- Select a place so that the warm air and noise from the air conditioner do not disturb

neighbors.

2. Rooftop installation

- If the outdoor unit is installed on a roof structure, be sure to level the unit.
- Ensure the roof structure and anchoring method are adequate for the unit location.
- Consult local codes regarding rooftop mounting.
- If the outdoor unit is installed on roof structures or external walls, this may result in excessive noise and vibration, and may also be classed as a non serviceable installation.

3. REFRIGERANT PIPE CONNECTION

3.1 Flaring work

- Main cause for refrigerant leakage is due to defect in the flaring work.

  Carry out correct flaring work using the following procedure:

■ Cut the pipes and the cable

1. Use the piping kit accessory or pipes purchased locally.
2. Measure the distance between the indoor and the outdoor unit.
3. Cut the pipes a little longer than the measured distance.
4. Cut the cable 1.5m longer than the pipe length.

■ Burr removal

1. Completely remove all burrs from the cut cross section of pipe/tube.
2. Put the end of the copper tube/pipe in a downward direction as you remove burrs in order to avoid dropping burrs into the tubing.

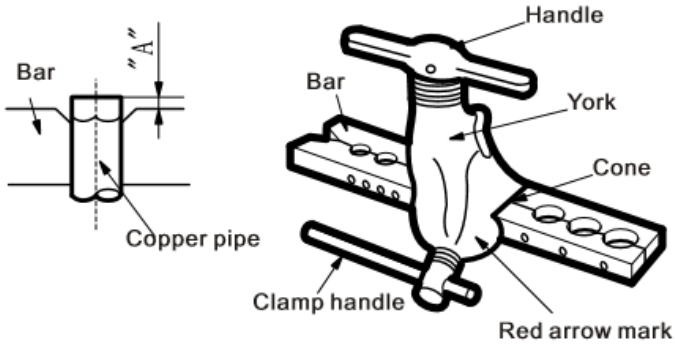
■ Putting nut on

Remove flare nuts attached to indoor and outdoor unit, then put them on pipe/tube having completed burr removal.(not possible to put them on after flaring work).

■ Flaring work

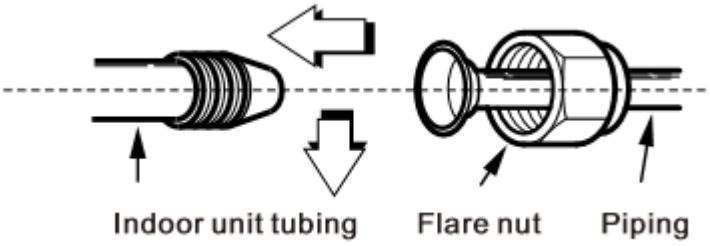
Firmly hold copper pipe in a die in the dimension shown in the table below.

Outer diam. (mm)	A(mm)	
	Max.	Min.
φ6.35	1.3	0.7
φ9.52	1.6	1.0
φ12.7	1.8	1.0
φ15.88	2.0	1.2

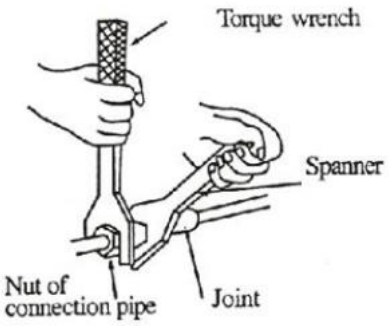


3.2 Tightening Connection

- Align the center of the pipes.
- Sufficiently tighten the flare nut with fingers, and then tighten it with a spanner and torque wrench.



Outer diam. (mm)	Tightening torque (N.cm)	Additional tightening torque (N.cm)
φ6.35	1000	1200
φ9.52	1500	1800
φ12.7	2000	2300
φ15.88	2800	3200



Caution

Excessive torque can break nut depending on installation conditions.

Make sure of piping length and height difference according with following form

One IDU	Length	Max.15m
Dual split	Total length	Max.30m
	Difference in height between indoor and outdoor units	Max.10m
	Difference in height between indoor units	Max. 5m
Triple split	Total length	Max.45m
	Difference in height between indoor and outdoor units	Max.10m
	Difference in height between indoor units	Max. 5m
Quadruple split	Total length	Max.60m
	Difference in height between indoor and outdoor units	Max.10m
	Difference in height between indoor units	Max. 5m
Quintuple split	Total length	Max.75m
	Difference in height between indoor and outdoor units	Max.10m
	Difference in height between indoor units	Max. 5m

3.3 Connection pipe diameter:

Indoor unit	Liquid	Gas	Accessories
7K/9K/12K	φ6.35	φ9.52	/
18K	φ6.35	φ12.7	Adapter
24K	φ9.52	φ15.88	Adapter component

3.4 The caution for indoor unit connection

1.For 7K/9K/12K unit:

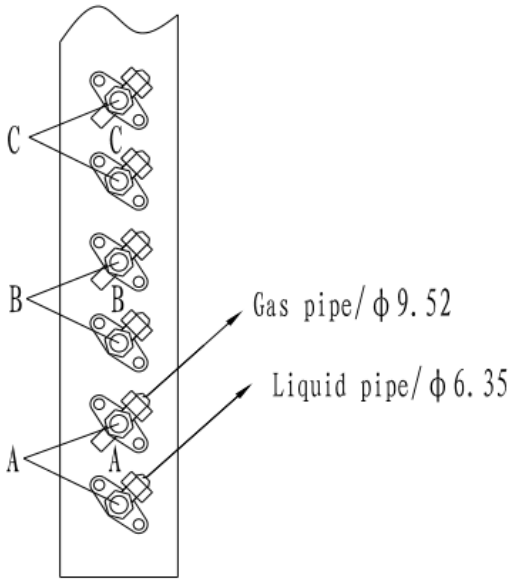
(1)For one 7K/9K/12K indoor unit gas/liquid pipe,

it should connect to the same group gas/liquid pipe.

eg. Connect to Group A gas/liquid pipe together, as figure shown below.

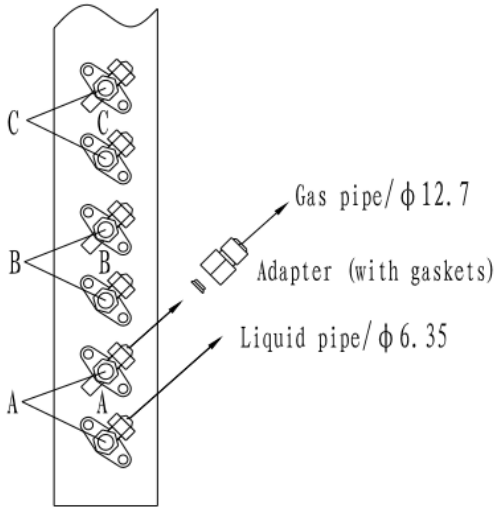
(2)The Group number of copper pipe,

it should be the same as communication wire group number.



2. For 18K unit:

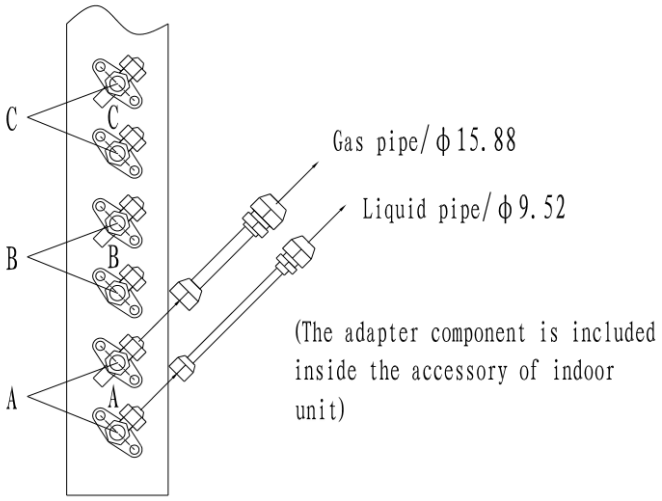
For gas pipe connection, adapter and sealed copper gasket should be used , change the pipe connector diameter of outdoor unit from 9.52mm to 12.7mm, and connector diameter of indoor unit is 12.7mm.



3. For 24K unit:

(1). For gas pipe connection, adapter component should be used, change the pipe connector diameter of outdoor unit from 9.52mm to 15.8mm,and connector diameter of indoor unit is 15.88mm.

(2) For liquid pipe connection, adapter component should be used, change the pipe connector diameter of outdoor unit from 6.35mm to 9.52mm,and connector diameter of indoor unit is 9.52mm.



(3)The adapter component is included inside the accessory

of indoor uint.

4. AIR PURGING

4.1 Air purging

Air and moisture in the refrigerant system have undesirable effects as indicated below:

● Pressure in the system rises.

● Operating current rises.

● Cooling or heating efficiency drops.

● Moisture in the refrigerant circuit may freeze and block capillary tubing.

● Water may lead to corrosion of parts in the refrigeration system.

Therefore, the indoor unit and tubing between the indoor and outdoor unit must be leak tested and evacuated to remove any non-condensable and moisture from the system.

4.1.1 Air purging with vacuum pump

● Preparation

Check that each tube (both liquid and gas side tubes) between the indoor and outdoor units have been properly connected and all wiring for the test run has been completed. Remove the service valve caps from both the gas and the liquid side on the outdoor unit. Note that both the liquid and the gas side service valves on the outdoor unit are kept closed at this stage.

● Pipe length and refrigerant amount:

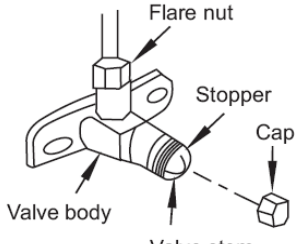
Connective pipe length	Air purging method	Additional amount of refrigerant to be charged
Less than 5m	Use vacuum pump.	----------
More than 5m	Use vacuum pump.	R410A: (Pipe length-5m)×15g/m forφ6.35 R410A: (Pipe length-5m)×20g/m forφ9.52

Note: Pipe length means the liquid side of each indoor unit.

●When relocate the unit to another place ,perform evacuation using vacuum pump.

● Make sure the refrigerant added into the air-conditioner is liquid form in any case.

Caution in handling the packed valve

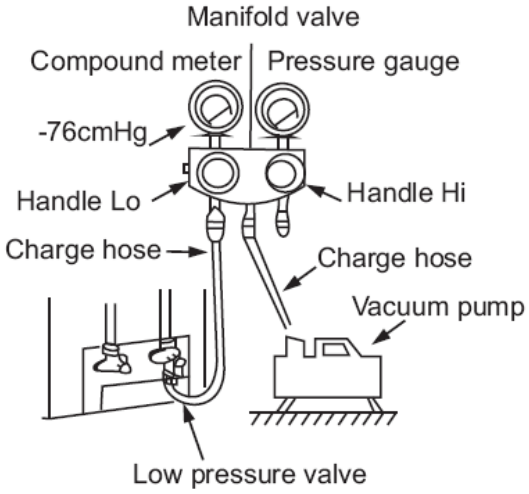


● Open the valve stem until it hits against the stopper. Do not try to open it further.

● Securely tighten the valve stem cap with a spanner or the like.

● Valve stem cap tightening torque.

4.1.2 When using the vacuum pump



● Preparation

(For method of using a manifold valve, refer to its operation manual.)

1. Completely tighten the flare nuts, A, B, C, D, connect the manifold Valve charge hose to a charge port of the low-pressure valve on the gas pipe side.

2. Connect the charge hose connection to the vacuum pump.

3. Fully open the handle Lo of the manifold valve.

4. Operate the vacuum pump to evacuate. After starting evacuation, Slightly loose the flare nut of the Lo valve on the gas pipe side and check that the air is entering(Operation noise of the vacuum pump changes and a compound meter indicates 0 instead of minus)

5 after the evacuation is complete, fully close the handle Lo of the manifold valve and stop the operation of the vacuum pump. Make evacuation for 15 minutes or more and check that the compound meter indicates-76cmHg (-1x105Pa).

6. Turn the stem of the packed valve B about45° counterclockwise for 6~7 seconds after the gas coming out, then tighten the flare nut again. Make sure the pressure display in the pressure indicator is a little higher than the atmosphere pressure.

7. Remove the charge hose from the Low pressure charge hose.

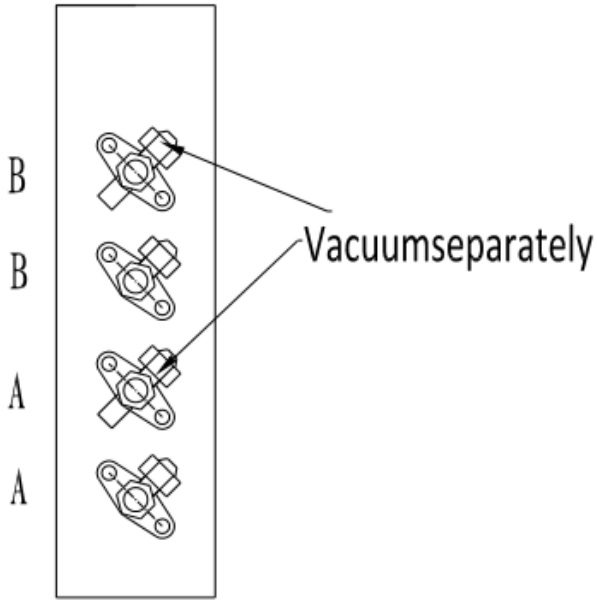
8. Fully open the packed valve stems B and A.

9. Securely tighten the cap of the packed valve.

Vacuum

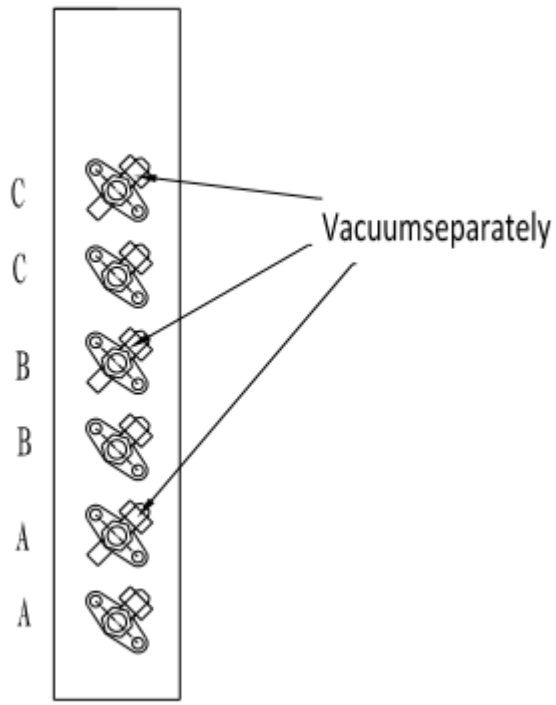
1.For one drive two unit:

Vacuum for two indoor units separately.



2.For one drive three unit:

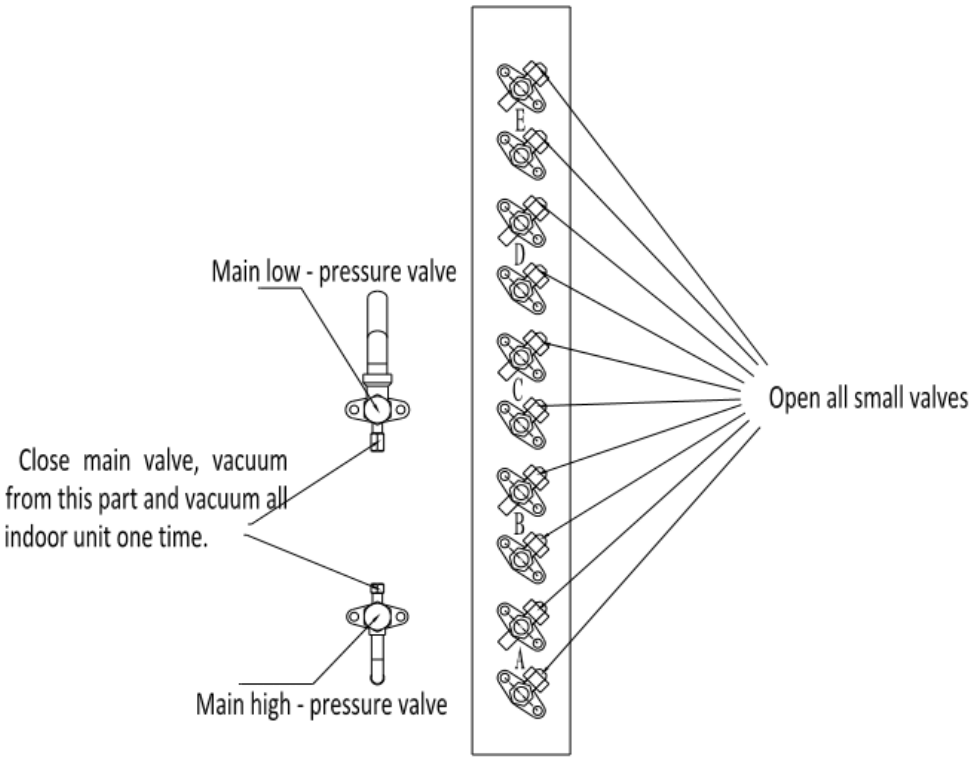
Vacuum for three indoor units separately.



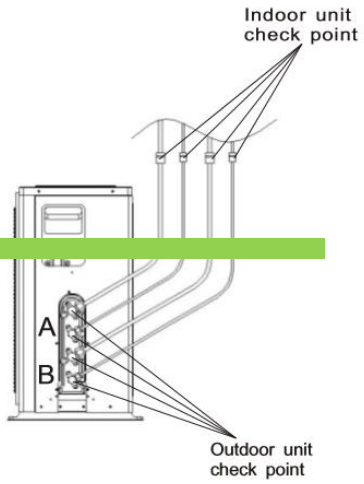
3.For one drive four and one drive five units:

a. Vacuum from the main valve, no need vacuum for each indoor unit;

b. Make sure main valve close before vacuum, then open all small valves for indoor units , keep the small valve close if there is no indoor unit.



5. Safety and leakage check



5.1 Electrical safety check

Perform the electric safe check after completing installation:

1. Insulated resistance

The insulated resistance must be more than2MΩ.

2. Grounding work

After finishing grounding work, measure the grounding resistance by visual detection and grounding resistance tester. Make sure the grounding resistance is less than 4Ω.

3.Ectrical leakage check (performing during test running)

During test operation after finishing installation, the serviceman can use the electroprobe and multimeter to perform the electrical leakage check. Turn off the unit immediately if leakage happens. Check and find out the solution ways till the unit operate properly.

5.2 Gas leak check

● **Soap water method**:

Apply a soap water or a liquid neutral detergent on the indoor unit connection or outdoor unit connections by a soft brush to check for leakage of the connecting points of the piping. If bubbles come out, the pipes have leakage.

● **Leak detector**

Use the leak detector to check for leakage.

Caution:

A,B,C,D and E are packed valve of outdoor unit.

Note:

The illustration is for explanation purpose only. The actual order of A,B,C,D and E on the machine may be slightly different from the unit you purchased. The actual shape shall prevail.

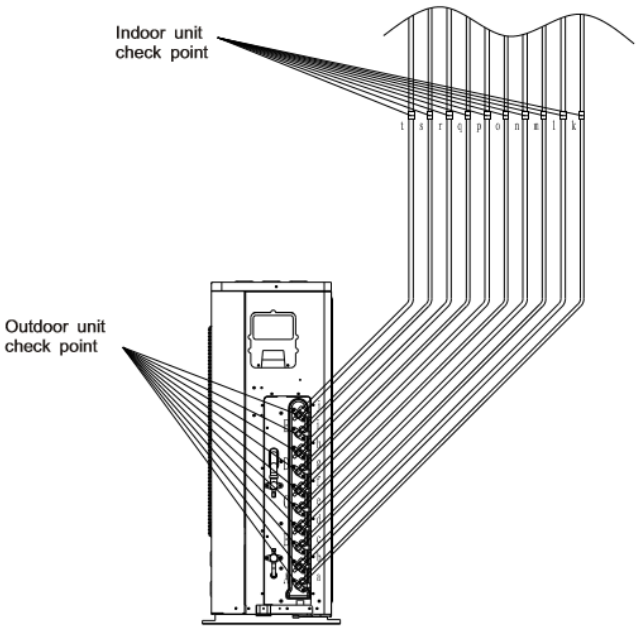


Fig 43

A, b, c, d, e, f, g, h, k, l, m, n, o, p, q and r are points for Quadruple split type.
a, b, c, d, e, f, g, h, i, j, k, l, m, n,o, p, q, r, s and t are points for Quintuple split type.

6. Water Drainage

Gradient and Supporting

1) Keep the drainpipe sloping downwards at a gradient of at least 1/100. Keep the drainpipe as short as possible and eliminate the air bubble.

2) The horizontal drainpipe should be short. When the pipe is too long, a prop stand must be installed to keep the gradient of 1/100 and prevent bending. Refer to the following table for the specification of the prop stand.

	Diameter	Distance between the prop stands
Hard PVC pipe	25~40mm	1.5~2m

3) Precautions

① The diameter of drainpipe should meet the drainage requirement at least.

② the drainpipe should be heat-insulated to prevent atomization.

③ Drainpipe should be installed before installing indoor unit. After powering on, there is some water in water-receiver plate. Please check if the drain pump can operate correctly.

④ All connection should be firm.

⑤ Wipe color on PVC pipe to note connection.

⑥ Climbing, horizontal and bending conditions are prohibited.

⑦ The dimension of drainpipe can’t less than the connecting dimension of indoor drainpipe.

⑧ Heat-insulation should be done well to prevent condensation.

⑨ Indoor units with different drainage type can’t share one convergent drainpipe.

7. Insulation Work

7.1 Insulation material and thickness

1) Insulation material

Insulation material should adopt the material which is able to endure the pipe's temperature: no less than 70°C in the high-pressure side, no less than 120°C in the low-pressure side(For the cooling type machine, no requirements at the low-pressure side.)

Example: Heat pump type----Heat-resistant Polyethylene foam (withstand above 120°C)

Cooling only type---- Polyethylene foam (withstand above 100°C)

2) Thickness choice for insulation material

Insulation material thickness is as follows:

	Pipe diameter (mm)	Adiabatic material thickness
Refrigerant pipe	φ6.4—φ25.4	10mm
	φ28.6—φ38.1	15mm
Drainage pipe	Inner diameterΦ20—Φ32	6mm

7.2 Refrigerant pipe insulation

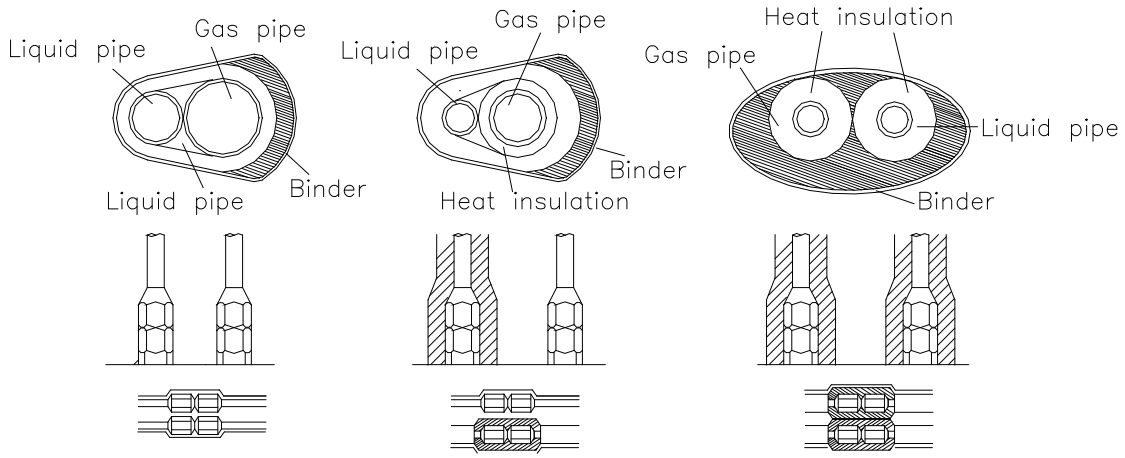
1) Work Procedure

① Before laying the pipes, the non-jointing parts and non-connection parts should be heat insulated.

② When the gas proof test is eligible, the jointing area, expanding area and the flange area should be heat insulated.

2) Insulation for non-jointing parts and non-connection parts.

wrong	Right	
Gas pipe and liquid pipe should not be	Insulate the gas pipe (cooling only)	Insulate the gas pipe and liquid pipe

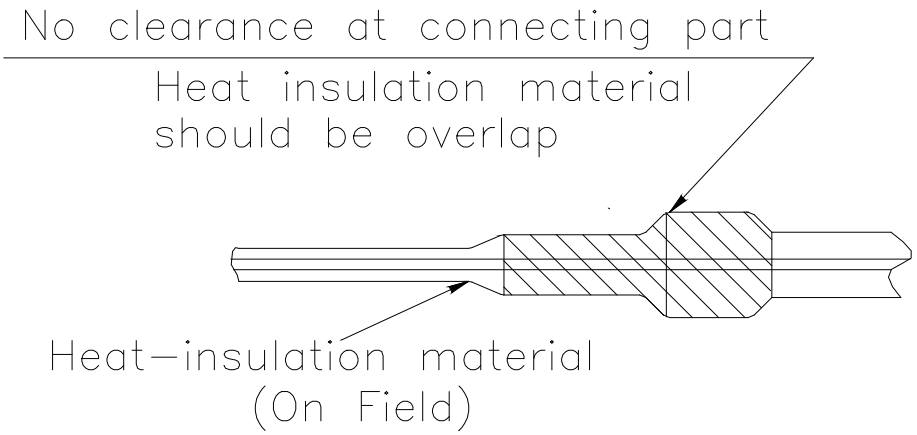


For construction convenience, before laying pipes, use insulation material to insulate the pipes to be deal with, at the same time, at two ends of the pipe, remain some length not to be insulated, in order to be welded and check the leakage after laying the pipes.

3) Insulate for the jointing area, expanding area and the flange area

① Insulate for the jointing area, expanding area and the flange area should be done after checking leakage of the pipes

② Make sure there's no clearance in the joining part of the accessorial insulation material and local preparative insulation material.



7.3 Drainage pipe insulation

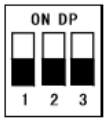
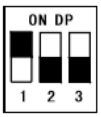
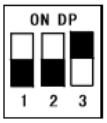
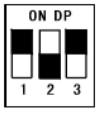
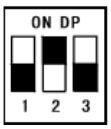
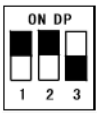
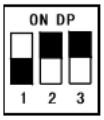
The connection part should be insulated, or else water will be condensing at the non-insulation part.

Note

1) The jointing area, expanding area and the flange area should be heat insulated after passing the pressure test
2) The gas and liquid pipe should be heat insulated individually, the connecting part should be heat insulated individually.
3) Use the attached heat-insulation material to insulate the pipe connections (pipes' tie-in, expand nut) of the indoor unit.

Part 5. Test Running

1. Dialing setting of main control board

Switch No.	Dialing Illustration	
SW3	16k 	28k 
	18k 	36k 
	21k 	42k 
	27k 	

2. Outdoor unit spot-check instructions

No.	Spot-check Content	No.	Spot-check Content
1	Current frequency/number of indoor units (stand by display)	17	Opening degree of electronic expansion for indoor "A" valve = spot-check display value × 8
2	Capacity of outdoor unit	18	Opening degree of electronic expansion for indoor "B" valve = spot-check display value × 8
3	Total capacity need of indoor unit	19	Opening degree of electronic expansion for indoor "C" valve = spot-check display value × 8
4	Total capacity needs of corrected host	20	Opening degree of electronic expansion for indoor "D" valve = spot-check display value × 8
5	Operation mode (0-4)	21	Opening degree of electronic expansion for indoor "E" valve = spot-check display value × 8
6	Actual running ability of outdoor unit	22	AC transformer current
7	Gears of fan (0-7)	23	Secondary side current
8	T2 / T2 B average temperature	24	Input AC voltage
9	T3 temperature of outdoor condenser	25	Secondary side current - (spot-check display × 4)
10	T4 environmental temperature	26	Number of indoor units
11	T5 exhaust temperature	27	Number of indoor unit working
12	Capacity need of indoor unit "A"	28	Last fault protection code (no fault display -)
13	Capacity need of indoor unit "B"	29	Control parameters (only for use of development personnel),display "- -"
14	Capacity need of indoor unit "C"	30	Control parameters (only for use of

			development personnel)
15	Capacity need of indoor unit "D"		
16	Capacity need of indoor unit "E"		

Definition of operation mode: 0-OFF/Fan; 2-Cooling; 3-Heating; 4-Forced cooling.

3. Inspection and confirmation before debugging

1. Check and make sure the refrigerating pipeline and communication line connecting with the indoor and outdoor units are connected with the same refrigerating system. Otherwise, some running faults occur.

2. The power supply voltage is within the rated voltage of ±10%.

3. Check and make sure the power supply line and the control line are correctly connected.

4. Before power-on, make sure there is no short circuit.

5. Check if all units have passed 24-hour nitrogen pressure-maintaining (40kgf /cm2) test.

6. Make sure the debugged system is fully vacuumized, dried and filled with the refrigerant as specified.

4. Preparation before debugging

1. Calculate the refilling volume of refrigerant for each set of units according to the length of on-site liquid pipe.

2. Prepare the required refrigerant.

3. Prepare the system plan, system piping diagram and control wiring diagram.

4. Mark the set address codes on the system plan.

5. Turn on the power supply switch of the outdoor unit in advance, and make sure it is power-on for more than 12 hours, so that the heater heats the compressor oil.

6. Fully open air pipe check valve, liquid pipe check valve and oil balance valve of the outdoor unit. If they are fully opened, the machine may be damaged.

7. Check if the power supply phase sequence of the outdoor unit is correct.

8. Check if all dialing switches of the indoor and outdoor units are set according to the technical requirements of the product.

5. Filling of names of connecting systems

When the multiple indoor units are arranged, in order to distinguish the connecting systems of indoor and outdoor units, all systems shall be named respectively and recorded on the nameplate on the electronic control box cover of the outdoor unit.

6. Precautions against refrigerant leak

1. The refrigerant of the air conditioner is harmless and nonflammable.

2. The room for the air conditioner shall have an appropriate space. In case of refrigerant leak, it cannot go beyond the critical concentration. In addition, necessary measures can be taken.

3. The critical gas concentration harmless to the human body is 0.3 kg/m.

4. Confirm the critical concentration according to the following steps and take corresponding measures.

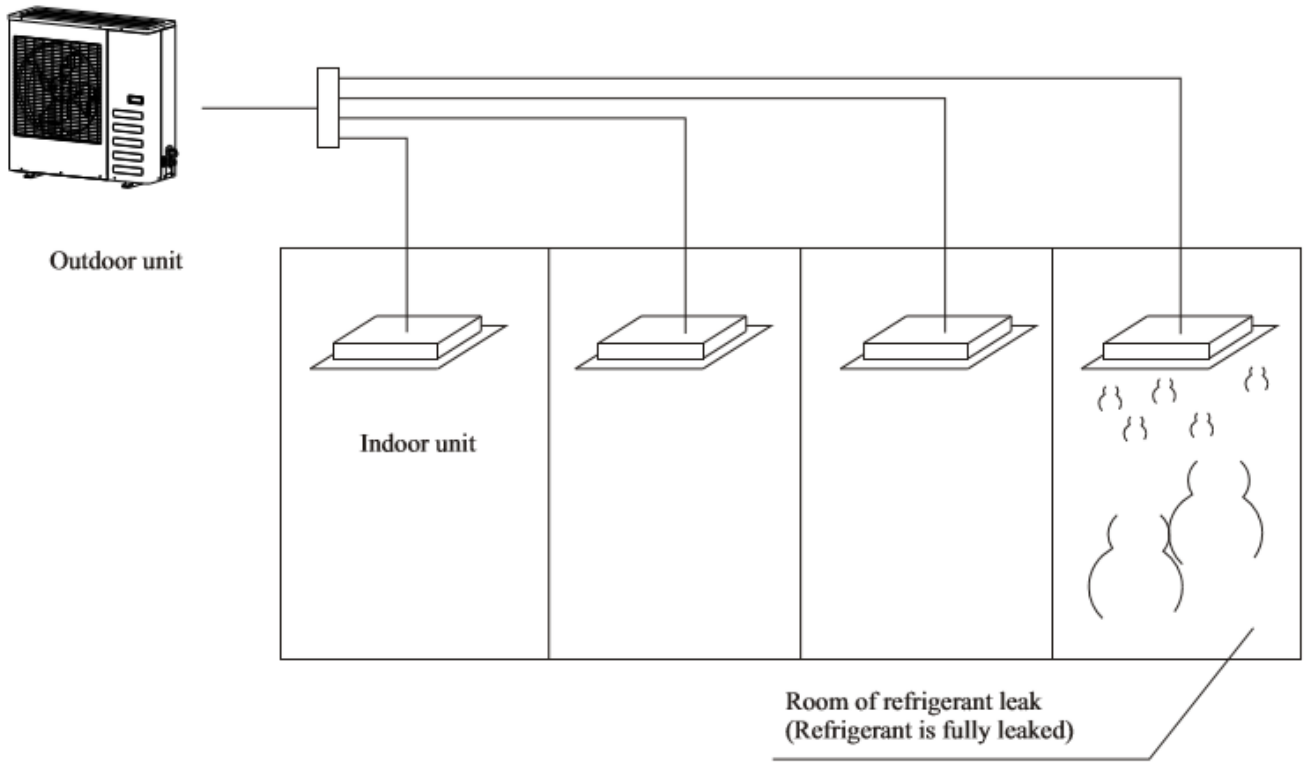
a) Calculate the filling volume of refrigerant (A[kg])

Volume of refrigerant = filling volume of refrigerant before delivery (see the nameplate) + refilling volume of refrigerant corresponding to the length of pipe.

b) Calculate the indoor volume (B [m^3]) (by the minimum volume)

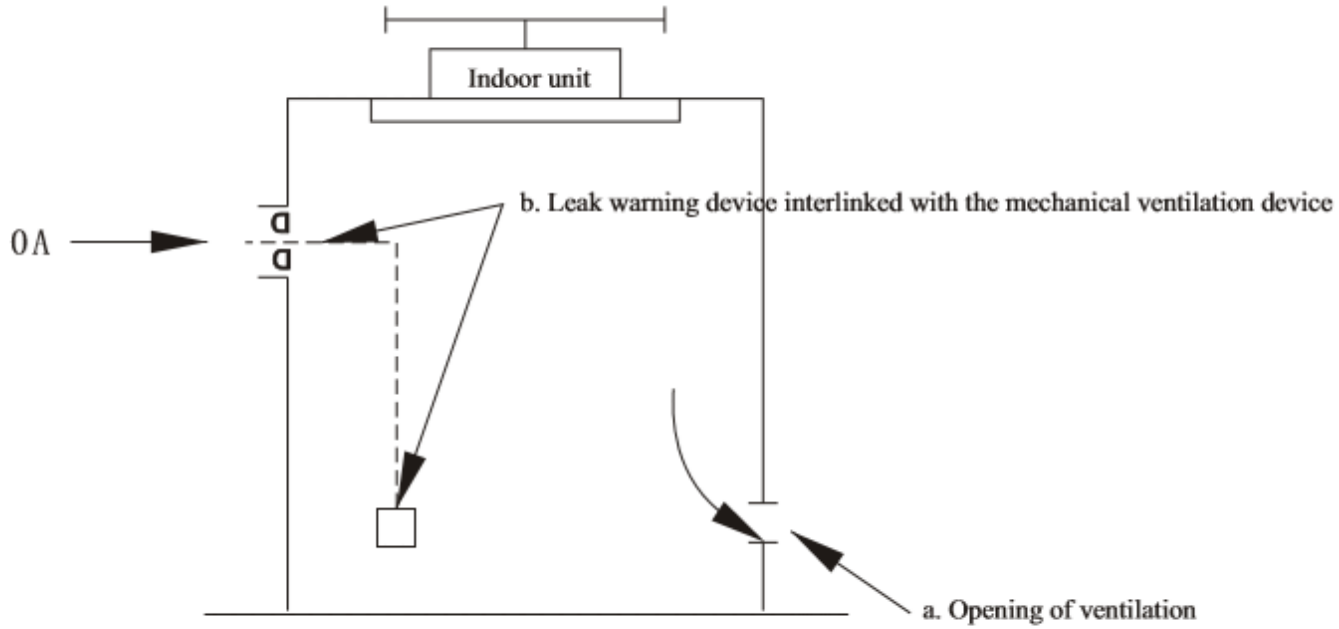
c) Calculate the refrigerant concentration.

$$\frac{A[kg]}{B[m^3]} \leq Critical\ concentration: 0.3[Kg/m^3]$$



5. Measures against exceeding the critical concentration

a) To reduce the refrigerant concentration below the critical concentration, install a mechanical ventilation device (for frequent ventilation).

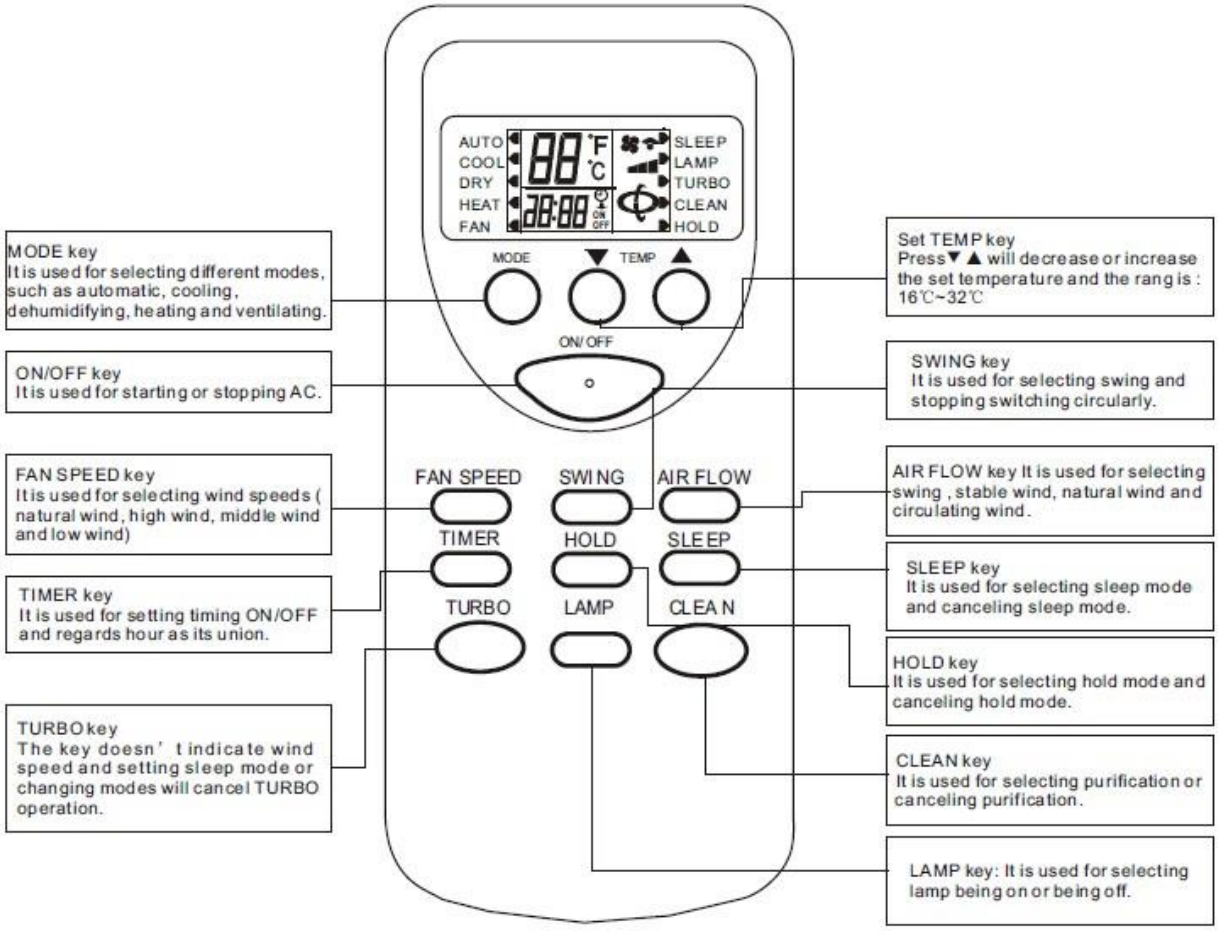


(The leak warning device shall be installed in the gathering place of refrigerant.)

Part 6. Controller

1. Wireless Remote Controller

ZH/JT-01



USE OF REMOTE CONTROLLER

The controller below is the Jingling Common Remote Controller, SWING key, TURBO key, LAMP key and CLEAN key is applicable for special latest developed new models instead of normal ones.

FUNCTION KEY

A. ON/OFF key:

Press the key and the remote control will switch circularly in the order: ON→OFF→ON. When it is powered on at first from off state to on state, the default setting of work condition is (The set temperature is 25℃ and the

mode , wind speed, swing and air door are all automatic and there is no lamp, no turbo, no purification, no sleep, no timing and no hold function). When it is not powered on firstly from off state to on state, the work condition is as the same as the state before stopping. It will cancel damp, purification, sleep, turbo and timing running mode.

B. MODE key:

Press the key to switch modes in the order: automatic cooling →dehumidify →heating →ventilating →automatic.

C. " ▼ " key:

In dehumidifying mode and automatic mode, pressing the key cannot change the temperature. In other mode, press the key once and the temperature will decrease 1℃ in the order: 32℃→31℃→…→17℃→16℃ .

D. " ▲ " key:

In dehumidifying mode and automatic mode, pressing the key cannot change the temperature. In other mode, press the key once and the temperature will increase 1℃ in the order: 16℃→17℃→…→31℃→32℃.

E. SWING key:

In dehumidifying mode, the swing mode is in the stable wind mode without change. In other mode, press the key to switch modes in the order: swing → stable wind→ natural wind →swing

F. AIR FLOW key:

The default air flow is in the swing mode when starting firstly and press the key to switch modes in the order: swing →stop →swing.

G. WIND SPEED key:

The default wind speed is in the automatic wind mode when starting firstly. The remote control won't react by pressing the key because the wind speed can't be adjusted and in low speed in dehumidifying mode. In other mode, press the key to switch modes in the order: Automatic wind→ high speed →middle speed→ low speed →automatic wind

H. TIMER key:

The default mode is in no timing state, press the key to set timing time with hour as its union. The switch order is: 1H→2H→…→24H→cancel→1H…. Press the key to set timing starting in the off state and set timing stopping in the on state. After setting timing function, the time keeps decreasing per hour until the time decreasing to the timing on or timing off and the timing display will be cancelled at the same time. Pressing MODE key can't cancel timing in timing mode which will send out the order of timing time by pressing other

key.

I. TURBO key:

The default state for the control is no turbo and the key don't work in the automatic mode, dehumidifying mode and ventilating mode (It will not display any contents and not send out any codes). The control, however, will switch between on and off by pressing the key in other mode. The wind speed isn't indicated in turbo mode and it will be cancelled for changing modes and setting sleep mode.

J. SLEEP key:

Press the key to switch modes in the order: sleep→ cancel sleep→ sleep. The sleep function won't be cancelled for changing modes. Press the key to set sleep mode and the wind speed will automatically be switched to low speed and it can adjust the wind speed by pressing the WIND SPEED key (except dehumidifying mode).

K. LOCK key:

The default state is in no LOCK key state, press the key to select modes in order: LOCK key →cancel LOCK key→ LOCK key; In LOCK key mode, all keys except LOCK key of the remote control can't work . (NOTE: In LOCK key mode, the remote and operation panel of the unit both will be locked automatically by pressing the key and press the key again, they will be unlocked. As for the split unit, it only holds the control rather than urgent keys and the panel will make a reaction.)

L. LAMP key:

The default state is in no LAMP key state, press the key to select modes in order: LAMP key →cancel LAMP key→ LAMP key; In LAMP key mode, pressing MODE key can't cancel the show of LAMP key.

M. CLEAN key:

The default state is in no purification state, press the key to select modes in order: CLEAN →cancel CLEAN→ CLEAN; In purification mode, pressing CLEAN key can't cancel purification function. Press the key when the remote control is closed, the control will switch modes in the order: CLEAN →cancel CLEAN→ CLEAN; when you stop the unit and turn on the purification switch, except the wind, the stable swing and air door swing speed aren't adjusted.

2. Wired Controller

ZKX-CMVE-05

I. Use-method

The control panel of wire controller is responsible for controlling the operation status of the system by the button and displaying the working status of the entire system by its LCD screen, and is responsible for communicating with the control board of the system.

Fig1 Appearance of Wire Controller

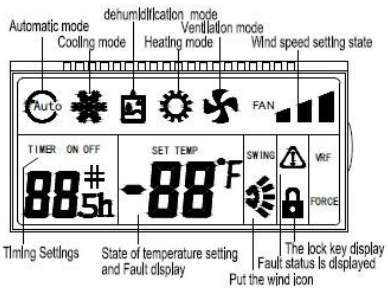


Fig2 LCD display content of Wire Controller

Operation and Instruction:

"ON/OFF" Button:

1) Control the On/Off status of the system.

2) Press and hold the On/Off button when the wire controller is powered on, to go into the self-test mode. And then you can release the button.

"MODE" Button:

When the air conditioning is powered on, every time you press mode button or the mode button of remote controller, the mode will change in the following sequence.

Auto Mode→Refrigeration→Dehumidification→Heating→Ventilation→Auto Mode

1) Press the Timer button in the Off status to go into the Timing On for 1 hour, and then press the Timer button plus 1 until it is timing on for 24h. At this time, if you press the Timer button, it will deactivate Timing On.

2) Press the Timer button in the On status to go into the Timing Off for 1 hour, and then press the Timer button plus 1 until it is timing off for 24h. At this time, if you press the Timer button, it will deactivate Timing Off.

"FAN SPEED" Button:

1) The Fan Speed button is valid in the "Cooling mode", "Heating mode" and "Ventilation mode".

2) Press the Fan Speed button of the wire controller or the Volume button of the remote controller in the Cooling mode、Heating mode or Ventilation mode, and the volume changes as follows:

High speed→Middle speed→Low speed→Auto wind

3) There is no Auto wind in the Ventilation mode.

"SWING" Button:

1) Press it to display the Swing icon. The Swing icon will swing back and forth.

2) Press the Swing button, and the upper and lower wind deflectors will swing within the specified range automatically, and the left and right wind deflectors will swing within the specified range automatically, and press it again to stop the swing.

26℃/CHECK Button Function:

1) Short press this button , Enter a state of energy saving of 26 ℃, namely the setting temperature is 26 ℃. this function under the boot of Refrigeration and Heating mode is effective.

2) Long press this button , will enter the query condition; It will exit the query condition , when you press this button again and five seconds is not operating in the condition of the query.

By pressing "▲" and" ▼"Button to check the temperature in the query condition. 1 is Indoor environment temperature , 2 is Indoor pipe temperature , 3 is outdoor pipe temperature

Description of DIP Switch:

	2 ON	2 OFF
3 ON	-4℃	-2℃
3 OFF	2℃	0℃
	ON	OFF
1	The old protocol	The new protocol
4	with power failure memory	without power failure memory

1) The second and third bits of the DIP switch will select the compensation value of the indoor temperature. The compensation value is -4℃ when the second and third bits are ON, and the

"TEMP+" and "TEMP- "Button ("▲", "▼") :

1) Boot state, press "▲" and" ▼'Button, increase/decrease the setting temperature . Refrigeration, Dehumidification, Ventilation and Heating mode Scope of temperature setting: 16 ℃ ~ 32 ℃ ; The setting temperature do not adjust in Auto Mode .

2) Press the "▲" and "▼" button for 3s simultaneously to lock this button. At this time, It will display the locking icon in LCD. Deactivate this button, and press the "▲" and " ▼" button again simultaneously.

"TIMER" Button

Set Timing On or Timing Off. The wire controller to set the time range as 1-24h.

compensation value is 0℃ when the second and third bits are OFF. The compensation value is 2℃ when the second bit is ON and the third bit is OFF, and the compensation value is -2℃ when the second bit is OFF and the third bit is On (for the wire controller sensor only).

2) The first bit of the DIP switch indicates to select the new or old protocol. Light commercial units select the new protocol.

3) The fourth bit ON of the DIP switch indicates it is With Power Failure Memory function, and the fourth bit OFF indicates it is Without Power Failure Memory.

NOTE: Just need to dial the code when matching the old type . Detailed please see after-sales guidance !

II. Installation of Wire Controller

Safety Precautions

! Read the safety precautions carefully before installation.

! The following is the important content to be paid for the safety, be sure to follow it.

! The meaning of each part:

⚠Warning:	Indicate it may cause the death or serious injury for theimproper operation.
⚠Note:	Indicate it may cause the death or serious injury for theimproper operation.

⚠Notes:

- Please do not install the wire controller in damp or direct sunlight places.
- Please do not hit, throw and frequent disassembling the wire controller.
- Please do not operating the wire controller with Wet hand ; Don't make any fluid into the wire controller .
- Please do not do dismantling the wire controller without authorization. Please consult after-sales maintenance personnel If you have a problem .
- To prevent water and dust into the wire controller, Affect the wire controller normal use. Please dismantle the wire controller When the indoor decoration and maintenancee .

Installation and disassembly of the wire controller

1、The installation position and requirements of the wire controller

1) Please do not install the wire controller in damp or direct sunlight places.

2) Please do not install the wire controller in the places, where is near the high temperature or easy to splash water.

3) To avoid the interference of the neighbors' remote controller which has the same model , then cause abnormal work. Please do not install the wire controller where the face up to the window.

4) Before installation , please cut off the power which is Buried in the wall mounting holes. The whole installation process does not allow operation with power.

5) In order to avoid the unit by reason of electromagnetic interference caused by abnormal work . When wiring , please pay attention to the following matters.

A) Ensure that communication line access right, otherwise will lead to communication failures.

B) If the air conditioning unit is installed on the places , which is influence by electromagnetic interference . the wire controller signal lines must use shielded twisted-pair cable .

6) The standard accessories which is installation need to prepare : installed inside a wall socket bottom box, controller base plate, screw the M4 x 25, control panel.

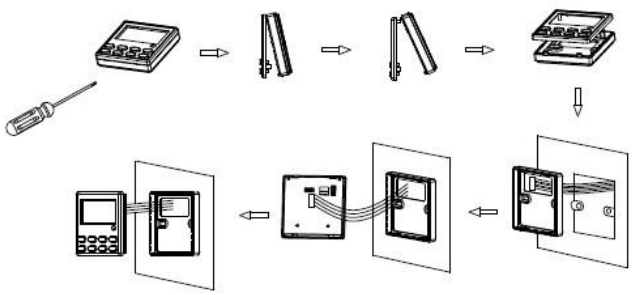
2、The installation of the wire controller

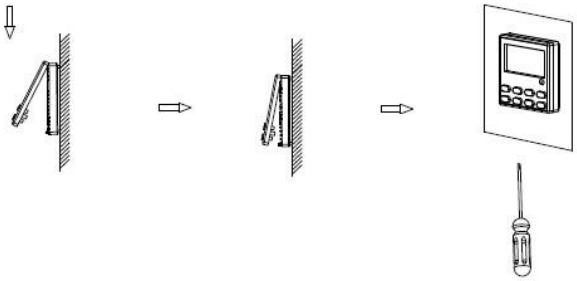
First of all, the wire controller signal line connection mode is as follows:

1) Open interior electrical lifted the lid, and the signal wires through the rubber ring;

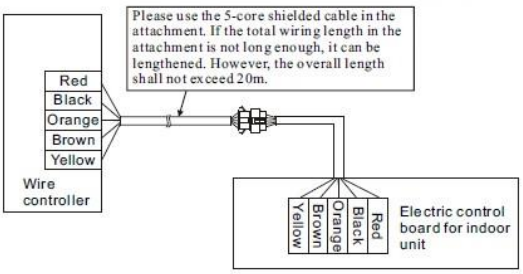
2) Plug the wire controller signal lines within the five core needle base on the indoor machine circuit boards, and using cable tie line tied tightly fixed.

Next, the wire controller installation steps as shown in the figure below:





Connect the wire controller in the way as shown in the figure below



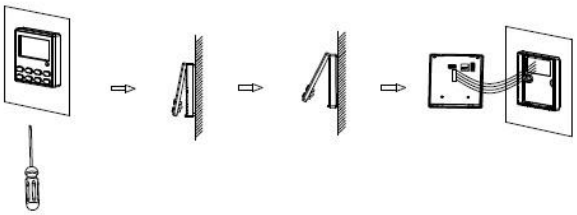
Brief description of the installation process is as follows

1) The signal lines of short through rectangle hole of the wire controller bottom plate, and then pull out five core twisted pair from the wall installation hole. Finally connect the line and the other end.

2) Use screws M4 x 25 to fix the controller base plate on the mounting holes of the wall.

3) Put the wire controller panel and floor buttons together, and this installation is complete. When installation, please reserve a certain length of the line at the bottom of box, to facilitate maintenance later removed.

3、Disassembly of the wire controller



! After the completion of the installation, confirm there is no abnormity for the commissioning, and deliver the instruction to customers for storage.

⚠Note:

- It may cause the rear cover deformed if the screw is tightened too much.
- It is necessary to reserve a certain length for the connecting cable of the wire controller during the installation, so as to take down the wire controller for the maintenance.