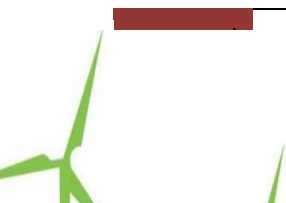


**R32 50Hz Universal Outdoor Series**

**Inverter type**

# **Technical Manual**

**LCAC/2021.07**



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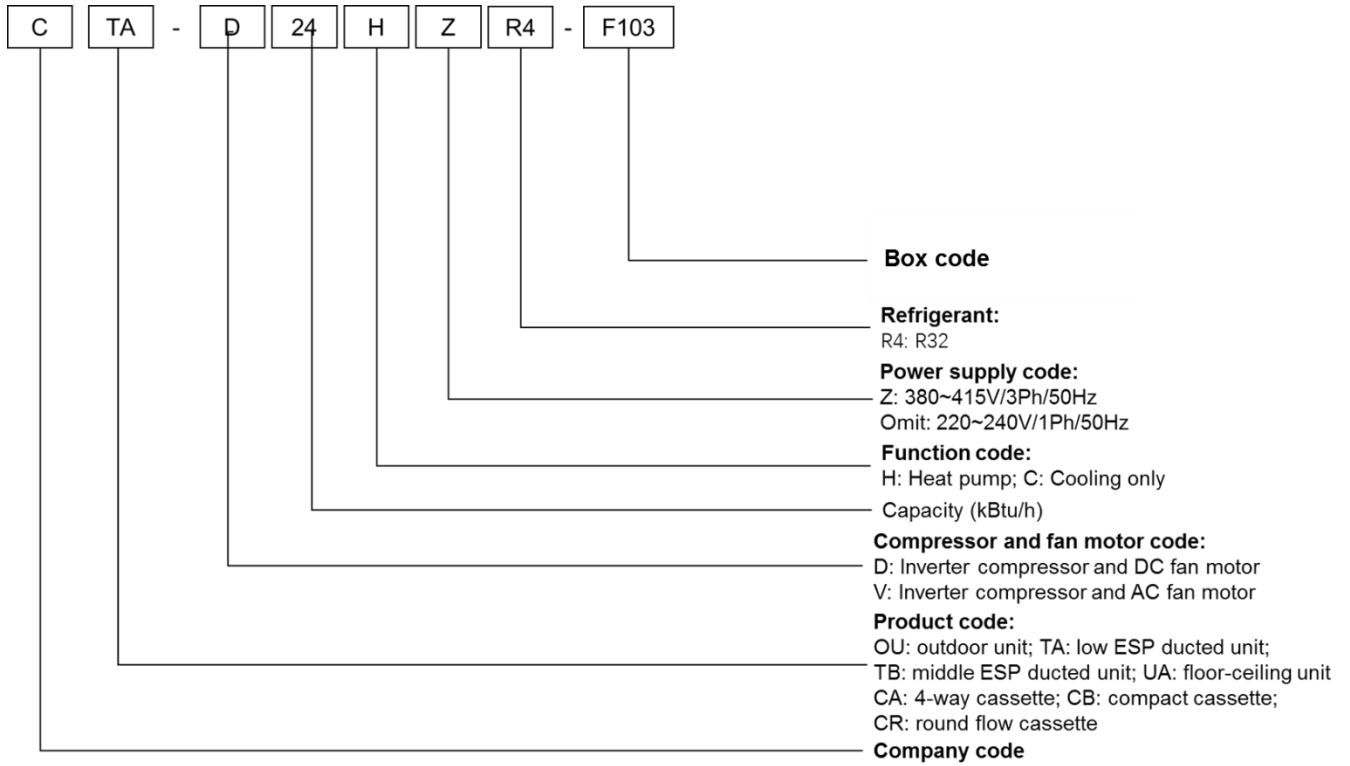
## R32 50Hz Universal Outdoor series

# Part1. General Information

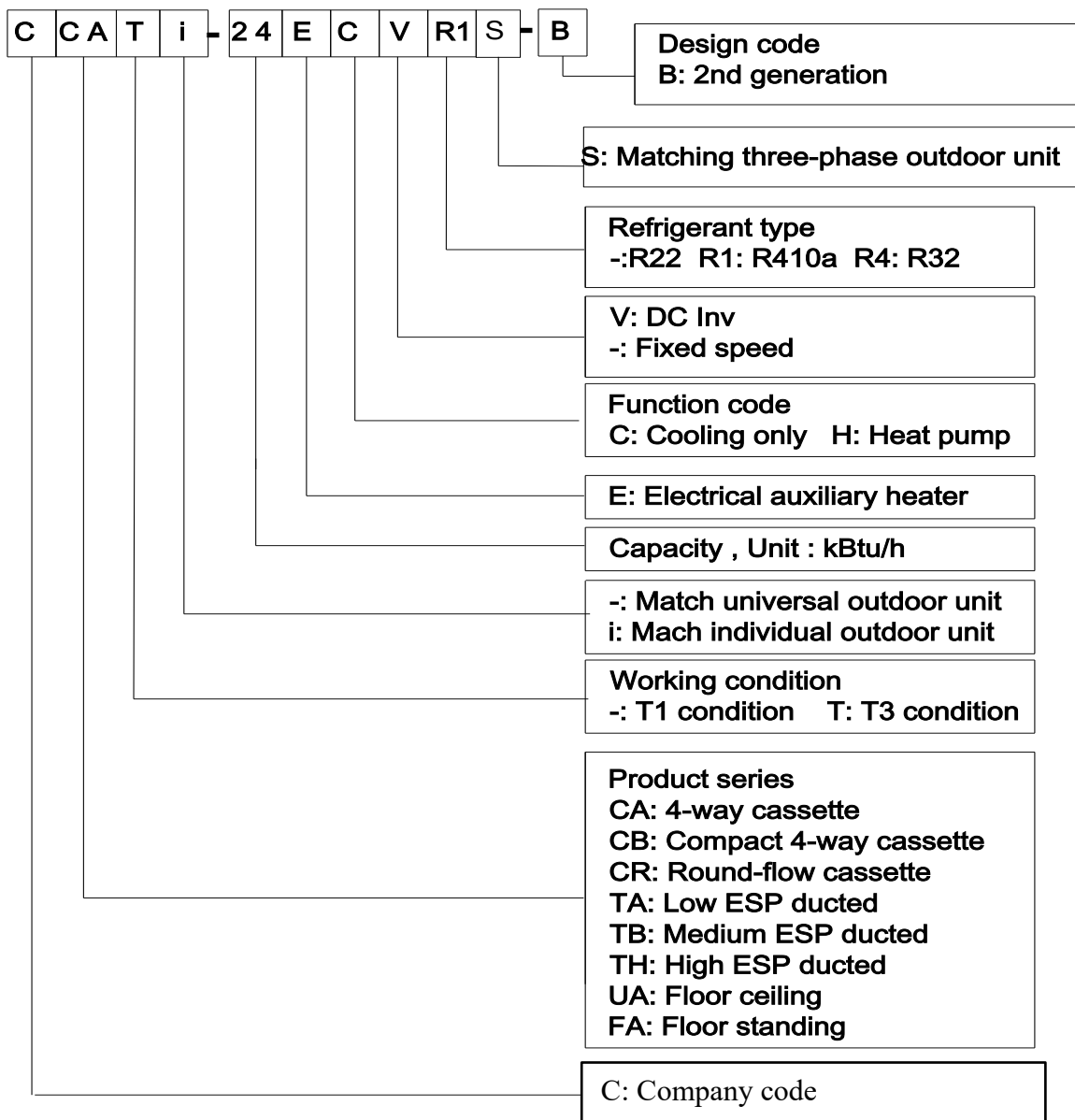
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# 1. Nomenclature

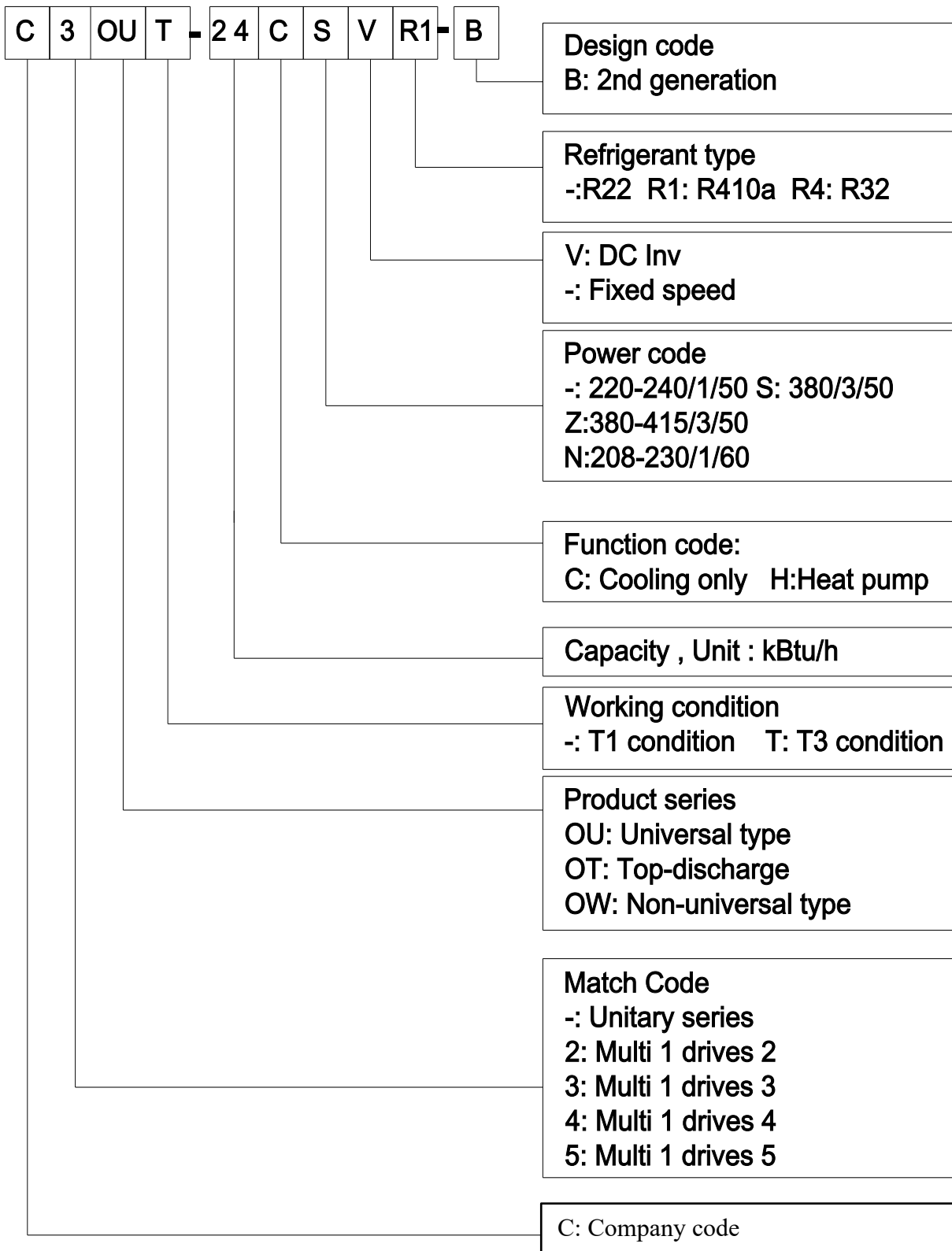
## 1.1 18~36K units



## 1.2 Indoor unit (48&55K)



### 1.3 Outdoor unit (48&55K)



## 2. Model Names of Indoor/Outdoor Units

### 2.1 Indoor Units

Model name	Dimension (W×H×D) (mm)	Net/Gross weight(kg)	Power supply
CCB-D18HR4-Q402	565x267x565	16.5/21.5	220~240V-1Ph-50Hz
CCR-D18HR4-Q303	840×230×840	25/30	220~240V-1Ph-50Hz
CCR-D24HR4-Q303	840×230×840	25/30	220~240V-1Ph-50Hz
CCR-D36HR4-Q305	840×285×840	30.5/36	220~240V-1Ph-50Hz
CCR-48HVR4	840×285×840	32/37.5	220~240V-1Ph-50Hz
CCR-48HVR4S	840×285×840	32/37.5	220~240V-1Ph-50Hz
CCR-55HVR4S	840×285×840	32/37.5	220~240V-1Ph-50Hz
CTA-D18HR4-F102	1010×210×467	22.5/26	220~240V-1Ph-50Hz
CTA-D24HR4-F103	1214×210×467	25/28	220~240V-1Ph-50Hz
CTB-D36HR4-F205	1425×260×643	49/52	220~240V-1Ph-50Hz
CTB-48HVR4	1279×307×830	49/56	220~240V-1Ph-50Hz
CTB-48HVR4S	1279×307×830	49/56	220~240V-1Ph-50Hz
CTB-55HVR4S	1279×307×830	49/56	220~240V-1Ph-50Hz
CTB-D24HR4-F203	1190×260×643	31.8/36.3	220~240V-1Ph-50Hz
CTB-D36HR4-F2051	1425×260×643	38/43	220~240V-1Ph-50Hz
CTB-D48HR4-FS04	1279×307×830	49/56	220~240V-1Ph-50Hz
CTB-D55HR4-FS04	1279×307×830	49/56	220~240V-1Ph-50Hz
CUA-D18HR4-LDBA	1050×675×235	26.5/31	220~240V-1Ph-50Hz
CUA-D24HR4-LDBA	1050×675×235	26.5/31	220~240V-1Ph-50Hz
CUA-D36HR4-LDBB	1250×675×235	31.3/36.2	220~240V-1Ph-50Hz
CUA-48HVR4	1670×680×245	49/56	220~240V-1Ph-50Hz
CUA-48HVR4S	1670×680×245	49/56	220~240V-1Ph-50Hz
CUA-55HVR4S	1670×680×245	49/56	220~240V-1Ph-50Hz

### 2.2 Outdoor Units

Model name	Dimension (W×H×D) (mm)	Net/Gross weight(kg)	Power supply
COU-D18HR4-A01	880×555×345	32.5/35	220~240V-1Ph-50Hz
COU-D24HR4-C01	935×702×383	48.7/52.6	220~240V-1Ph-50Hz
COU-D36HR4-D01	1032×807×445	61.3/65	220~240V-1Ph-50Hz
COU-D36HZR4-D01	1032×807×445	71.2/75	380~415V-3Ph-50Hz
COU-48HDR4	1015×1430×450	109/123.6	220~240V-1Ph-50Hz
COU-48HZDR4	1015×1430×450	109/123.6	380~415V-3Ph-50Hz
COU-55HZDR4	1015×1430×450	112/126.6	380~415V-3Ph-50Hz

### 3. External Appearance

#### 3.1 Indoor unit

Round-way Cassette



Compact 4-way cassette



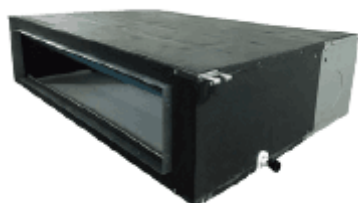
Low ESP Duct



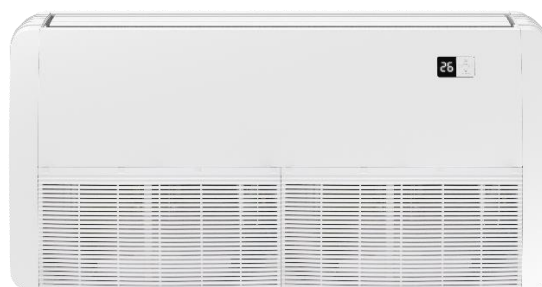
Middle ESP Duct for 36K



Middle ESP Duct for 48/55K



Floor & Ceiling



### 3.2 Outdoor unit

COU-D18HR4-A01



COU-D24HR4-C01



COU-D36HR4-D01, COU-D36HZR4-D01



COU-48HDR4, COU-48HZDR4,  
COU-55HZDR4



## 4. Features

- 4.1 Wide operation range,  $-15^{\circ}\text{C}\sim 50^{\circ}\text{C}$  for cooling and  $-15^{\circ}\text{C}\sim 30^{\circ}\text{C}$  for heating.
- 4.2 Excellent in efficiency, SCOP higher than 4.0, meet the EU's new energy efficiency standards.
- 4.3 Refrigerant cooling design, to cool down the temperature of PCB.
- 4.4 High quality coils. The coil is constructed of advanced inner grooved copper tube and aluminum fins.
- 4.5 Low operation sound level: Well-known stable and quiet running DC fan motor.
- 4.6 Well-known compressor, GMCC and Mitsubishi.
- 4.7 Universal design: convenient for market stock and spare parts stock.
- 4.8 R32 is environment friendly refrigerant.
- 4.9 CE certification, ROHS certification.



## Part2. Indoor Unit

### Round-Way Cassette Type

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## 1. Features



**Standard round-way cassette**



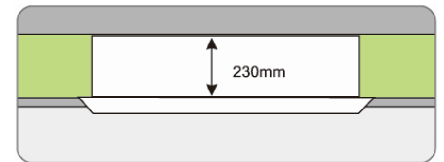
**Compact 4-way cassette**

## 1.1 Standard round-flow cassette

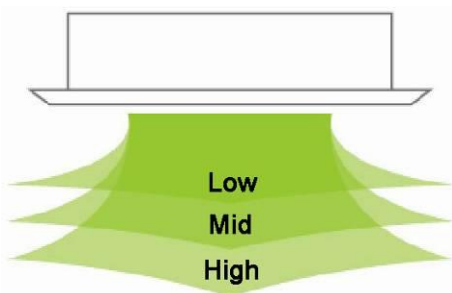
- (1) Brand-new panel design. Indoor unit use uniform panel, simple and convenient.
- (2) Simple, fealty and vogueish appearance suit for different requirements, it's mostly used for office, shopping center, restaurant, meeting room and etc. 18kBTu/h~55kBTu/h, standard type, 950mm\*950mm



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



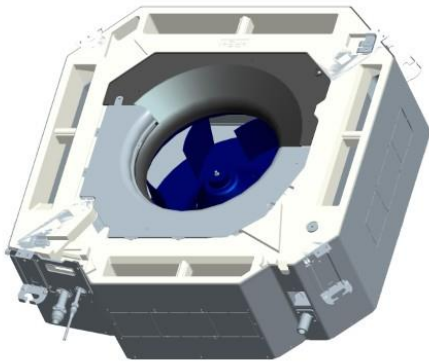
- (4) Round air flow, cold air can reach each corner of the room, providing a stable and comfortable environment.
- (5) 3 fan speed, meet for different requirement.



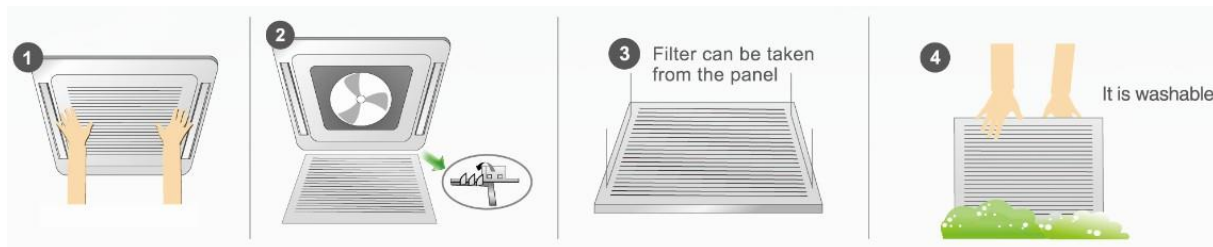
- (6) New streamlined fan design.



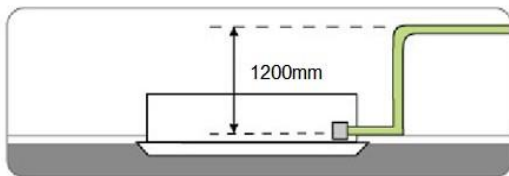
(7) Occupied a small installation space, saving interior space



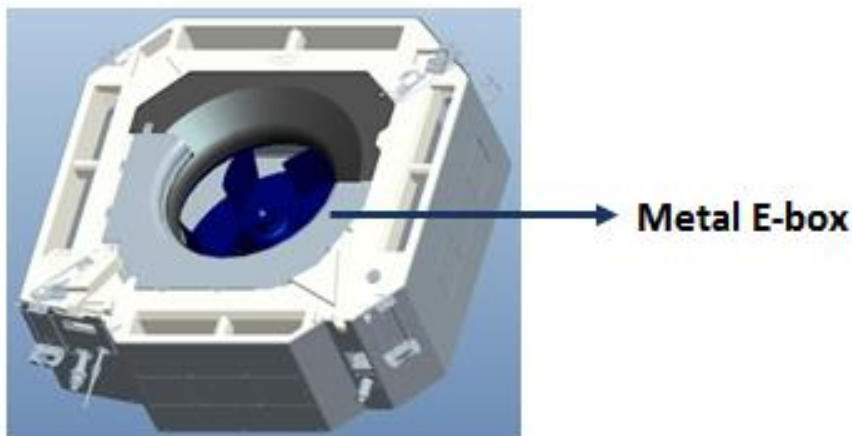
(8) Easy and convenient installation and maintenance, washable filter design.



(9) Built-in water pump, water head up to 1200mm.



(10) Integrated electric control box, The E-box is safely covered by metal plate, for better fire-resistance, save using.



- (11) Add 4 interfaces in body, can be connected with duct to another room. Fresh air makes air quality healthier and more comfortable.



- (12) Multi protection and auto-restart function.
- (13) Low operation sound level: Well-known stable and quiet running DC fan motor.
- (14) Standard for wireless controller; option for wired controller.



Standard



optional



- (15) DC inverter motor, operate in ultra-low frequency in order to precisely control the indoor temperature.

## 1.2 Compact 4-way cassette

(1) Compact type , ultra-thin body design, the Min height is 267mm,saving installation space



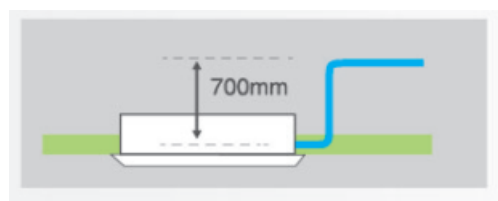
(2) Washable filter, convenient to install and maintain



(3) Streamlined design and 3D spiral fan blade reduces air resistance and operation noise



(4) Built-in water pump, pump head up to 700mm



(5) Foam water tray coated with special plastic convenient to install, preventing the leakage of condensed water effectively.



## 2. Specification

Model			CCB-D18HR4-Q402	CCR-D18HR4-Q303
Indoor power supply		V/Ph/Hz	220~240/1/50	220~240/1/50
Cooling	Capacity	KW	2.0-5.3-5.6	2.0-5.3-5.6
	SEER	W/W	5.6	6.1
	Energy efficiency class		A+	A++
	Year Consumption	kWh/annum	340	310
Heating	Capacity	KW	2.2-5.3-5.8	2.2-5.3-5.8
	SCOP	W/W	4.0	4.0
	Energy efficiency class		A+	A+
	Year Consumption	kWh/annum	1400	1400
Indoor unit power input		W	35	60
Indoor unit current input		A	0.1	0.3
Pdesignc		W	5300	5300
Pdesignh(A)		W	4000	4000
Indoor fan motor	Model		DR-310-35Q-8-1	DR-310-60Q-8
	Brand		Shibaura	Panasonic
	Power output	W	35	60
	Capacitor	μF	-	-
	Speed	r/min	790	850/790/600
	Insulation class			E
Indoor coil	Number of rows		2	2
	Tube pitch(a)×row pitch(b)	mm	21×13.37	21×13.37
	Fin spacing	mm	1.4	1.45
	Fin type		Hydrophilic	Hydrophilic
	Tube outside dia. and type	mm	Φ7	Φ7
			inner grooved	inner grooved
	Coil length×height×width	mm	1317×210×26.74	2000×168×26.74
Number of circuits			4	8
Indoor air flow(High speed)		m <sup>3</sup> /h	650	900/800/650
Indoor noise level	power level	dB(A)	46~55	46~58
	pressure level		36/39/43	36/41/45
Indoor unit	Dimension(W*H*D)	Body(mm)	580x267x580	840×230×840
		Panel(mm)	650x29.8x650	950×50×950
	Packing(W*H*D)	Body(mm)	745x375x675	920×265×920
		Panel(mm)	750x95x750	1030×105×1030
	Net/Gross weight	Body(Kg)	16.5/21.5	25/30
		Panel(Kg)	2.7/4.0	6.5/9.5
Max pressure		MPa	4.5	4.5
Refrigerant type			R32	R32
Refrigerant piping	Liquid side/Gas side	mm	Φ6.35/Φ12.7	Φ6.35/Φ12.7
Drainage pipe		mm	DN25	DN25
Operation temp.		°C	16~32	16~32



Ambient temp.	Cooling	°C	-15~50	-15~50
	Heating	°C	-15~30	-15~30
Application area		m <sup>2</sup>	20-35	20-35

Model			CCR-D24HR4-Q303	CCR-D36HR4-Q305
Indoor power supply		V/Ph/Hz	220~240/1/50	220~240/1/50
Cooling	Capacity	KW	3.5-7.0-8.0	3.6-10.5-12.8
	SEER	W/W	6.1	6.1
	Energy efficiency class		A++	A++
	Year Consumption	kWh/annum	423	645
Heating	Capacity	KW	4.5-7.7-8.5	4.35-11.5-13.2
	SCOP	W/W	4.0	4.0
	Energy efficiency class		A+	A+
	Year Consumption	kWh/annum	2512	3150
Indoor unit power input		W	60	100
Indoor unit current input		A	0.3	0.4
Pdesignc		W	7000	10500
Pdesignh(A)		W	6000	9000
Indoor fan motor	Model		DR-310-60Q-8	DR-310-100Q-8
	Brand		Panasonic	Panasonic
	Power output	W	60	100
	Capacitor	μF	-	-
	Speed	r/min	850/790/600	840/750/650
	Insulation class			E
Indoor coil	Number of rows		2	2
	Tube pitch(a)×row pitch(b)	mm	21×13.37	21×13.37
	Fin spacing	mm	1.45	1.45
	Fin type		Hydrophilic	Hydrophilic
	Tube outside dia. and type	mm	Φ7	Φ7
			inner grooved	inner grooved
	Coil length×height×width	mm	2000×168×26.74	2000×252×26.74
	Number of circuits		8	12
Indoor air flow(High speed)		m <sup>3</sup> /h	1100/1000/850	1800/1700/1550
Indoor noise level	power level	dB(A)	56~63	53~61
	pressure level		43/46/49	43/45/48
Indoor unit	Dimension(W*H*D)	Body(mm)	840×230×840	840×285×840
		Panel(mm)	950×50×950	950×50×950
	Packing(W*H*D)	Body(mm)	920×265×920	920×310×920
		Panel(mm)	1030×105×1030	1030×105×1030
	Net/Gross weight	Body(Kg)	25/30	30.5/36
		Panel(Kg)	6.5/9.5	6.5/9.5
Max pressure		MPa	4.5	4.5
Refrigerant type			R32	R32
Refrigerant piping	Liquid side/Gas side	mm	Φ9.52/Φ15.88	Φ9.52/Φ15.88

Drainage pipe		mm	DN25	DN25
Operation temp.		°C	16~32	16~32
Ambient temp.	Cooling	°C	-15~50	-5~50
	Heating	°C	-15~30	-15~30
Application area		m <sup>2</sup>	28-50	40-70

Model			CCR-48HVR4	CCR-48HVR4S	CCR-55HVR4S
Indoor power supply		V/Ph/Hz	220~240/1/50	220~240/1/50	220~240/1/50
Cooling	Capacity	KW	7.0-14.0-15.5	7.0-14.0-15.5	7.5-16.0-17.0
	SEER	W/W	6.1	6.1	6.1
	Energy efficiency class		A++	A++	A++
	Year Consumption	kWh/annu m	795	795	911
Heating	Capacity	KW	8.0-15.2-16.0	8.0-15.2-16.0	8.5-16.8-17.5
	SCOP	W/W	4.0	4.0	4.0
	Energy efficiency class		A+	A+	A+
	Year Consumption	kWh/annu m	3723	3723	4046
Indoor unit power input		W	100	100	100
Indoor unit current input		A	0.4	0.4	0.4
Pdesignc		W	14000	14000	16000
pdesignh(A)		W	11000	11000	12000
Indoor fan motor	Model		DR-310-100Q-8	DR-310-100Q-8	DR-310-100Q-8
	Brand		Panasonic	Panasonic	Panasonic
	Power output	W	100	100	100
	Capacitor	μF	-	-	-
	Speed	r/min	750/650/550	750/650/550	750/650/550
	Insulation class			E	E
Indoor coil	Number of rows		3	3	3
	Tube pitch(a)xrow pitch(b)	mm	21×13.37	21×13.37	21×13.37
	Fin spacing	mm	1.6	1.6	1.6
	Fin type		Hydrophilic	Hydrophilic	Hydrophilic
	Tube outside dia. and type	mm	Φ7	Φ7	Φ7
			inner grooved	inner grooved	inner grooved
	Coil lengthxheightxwidth	mm	2000×252×40.1	2000×252×40.1	2000×252×40.1
Number of circuits			12	12	12
Indoor air flow(High speed)		m <sup>3</sup> /h	2000/1800/1600	2000/1800/1600	2000/1800/1600
Indoor noise level	power level	dB(A)	54-62	54-62	54-62
	pressure level		45~52	45~52	45~52

Indoor unit	Dimension(W*H*D)	Body(mm)	840×285×840	840×285×840	840×285×840
		Panel(mm)	950×50×950	950×50×950	950×50×950
	Packing(W*H*D)	Body(mm)	920×310×920	920×310×920	920×310×920
		Panel(mm)	1030×100×1030	1030×100×1030	1030×100×1030
	Net/Gross weight	Body(Kg)	32/37.5	32/37.5	32/37.5
		Panel(Kg)	6.5/9.5	6.5/9.5	6.5/9.5
Max pressure		MPa	4.5	4.5	4.5
Refrigerant type			R32	R32	R32
Refrigerant piping	Liquid side/Gas side	mm	Φ9.52/Φ15.88	Φ9.52/Φ15.88	Φ9.52/Φ15.88
Drainage pipe		mm	DN25	DN25	DN25
Operation temp.		°C	16~32	16~32	16~32
Ambient temp.	Cooling	°C	-15 ~ 50	-15 ~ 50	-15 ~ 50
	Heating	°C	-15~30	-15~30	-15~30
Application area		m <sup>2</sup>	56-93	56-93	64-106

**Notes:**

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

Indoor temp: 27°C DB, 19°CWB; Outdoor temp: 35°CDB; Equivalent ref. piping: 5m (horizontal)

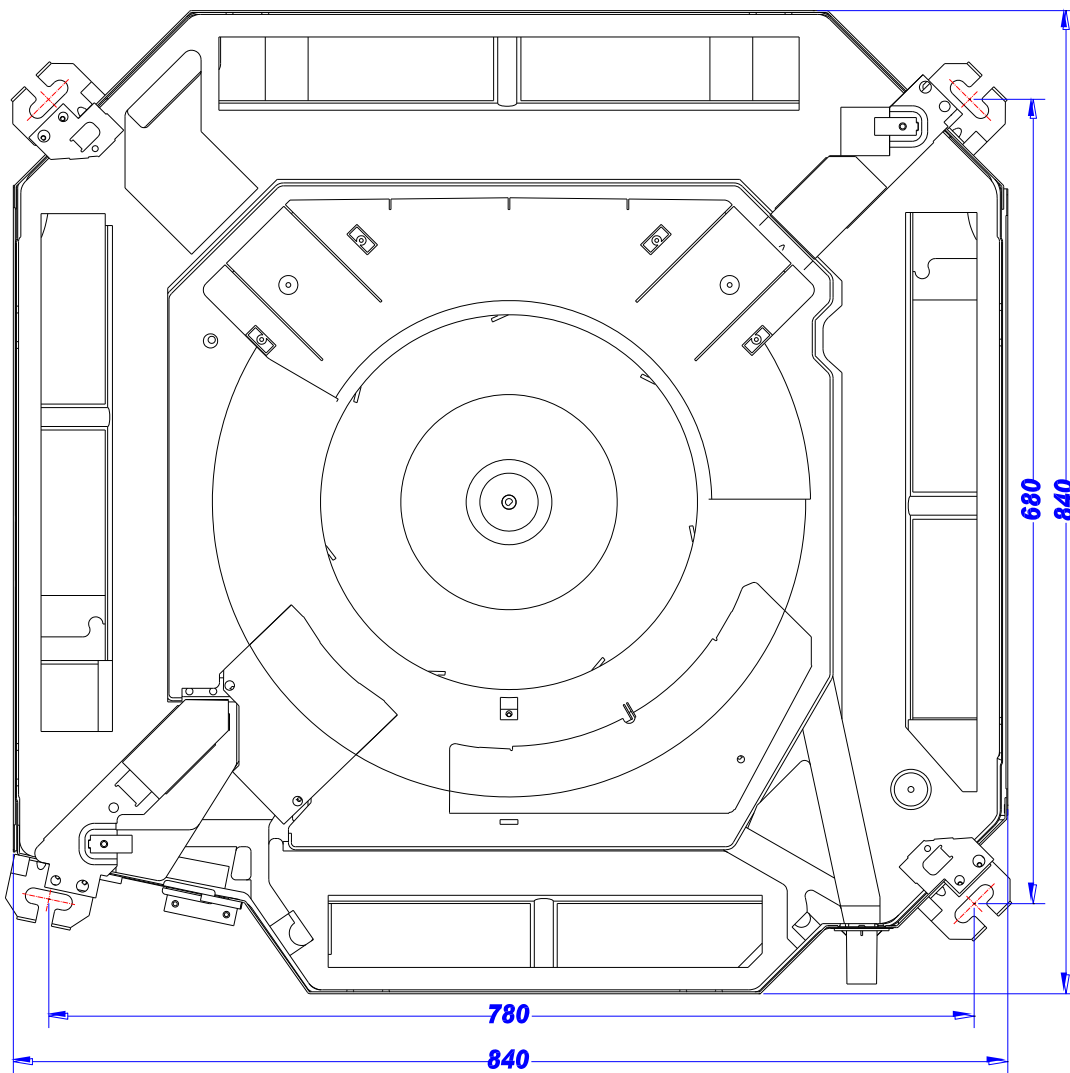
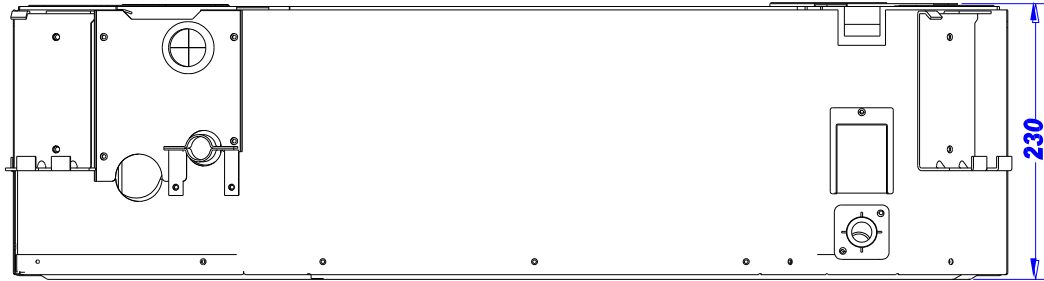
2. Nominal heating capacities are based on the following conditions:

Indoor temp: 21°C DB; Outdoor temp: 7°CDB, 6°CWB; Equivalent ref. piping: 5m (horizontal)

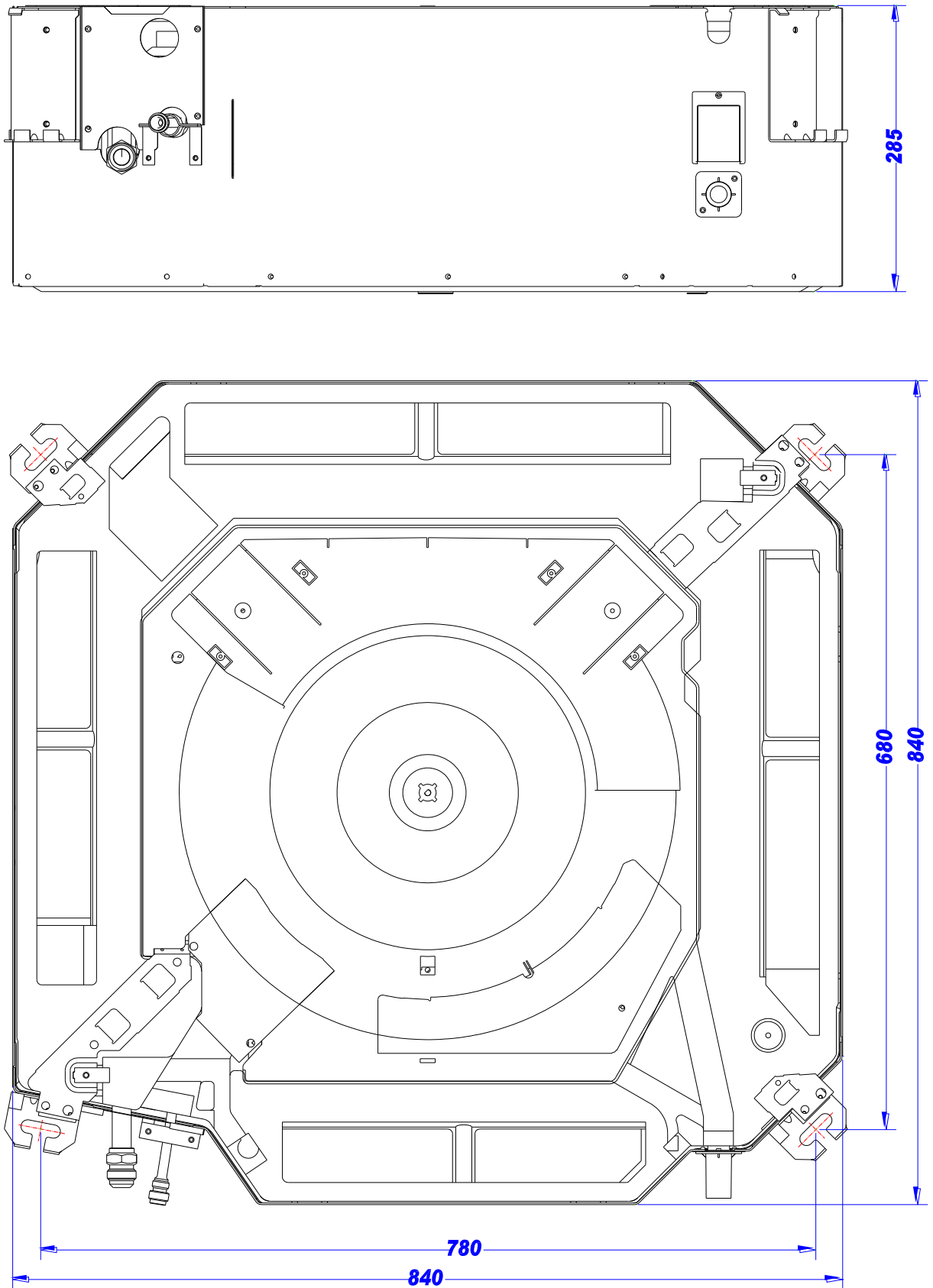
3. Actual noise level may differ, depending on the room structure, etc., since these noise values are from an anechoic room.

### 3. Dimension

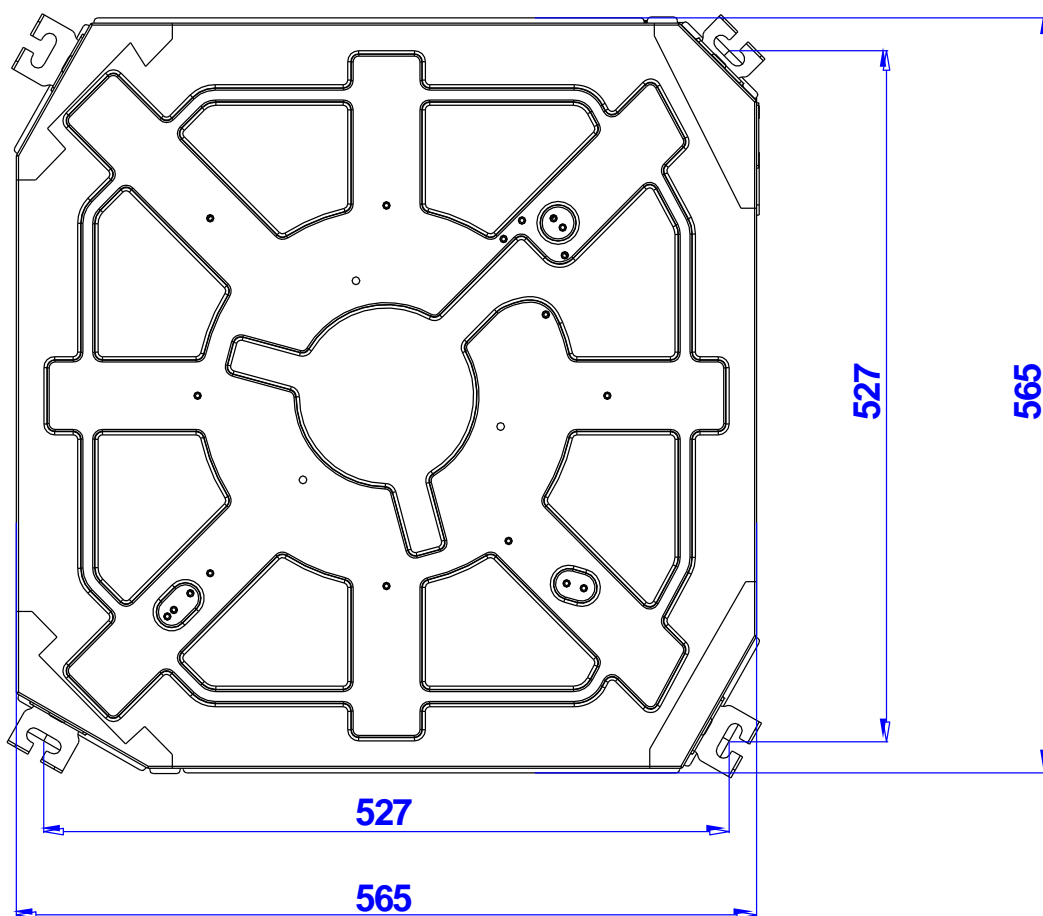
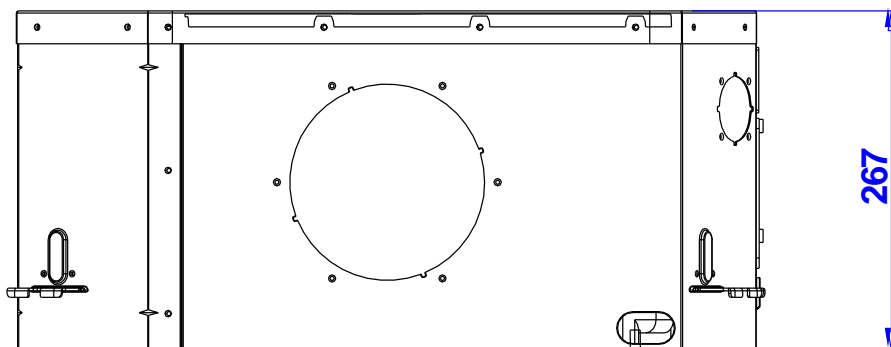
#### 3.1 CCR-D18HR4-Q303, CCR-D24HR4-Q303



3.2 CCR-D36HR4-Q305, CCR-48HVR4, CCR-48HVR4S, CCR-55HVR4S



### 3.3 CCB-D18HR4-Q402

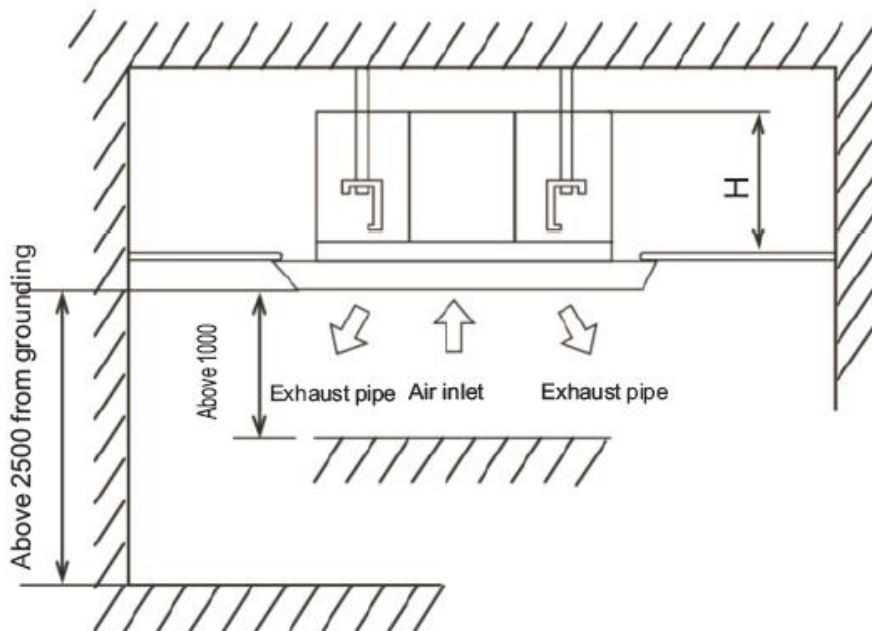


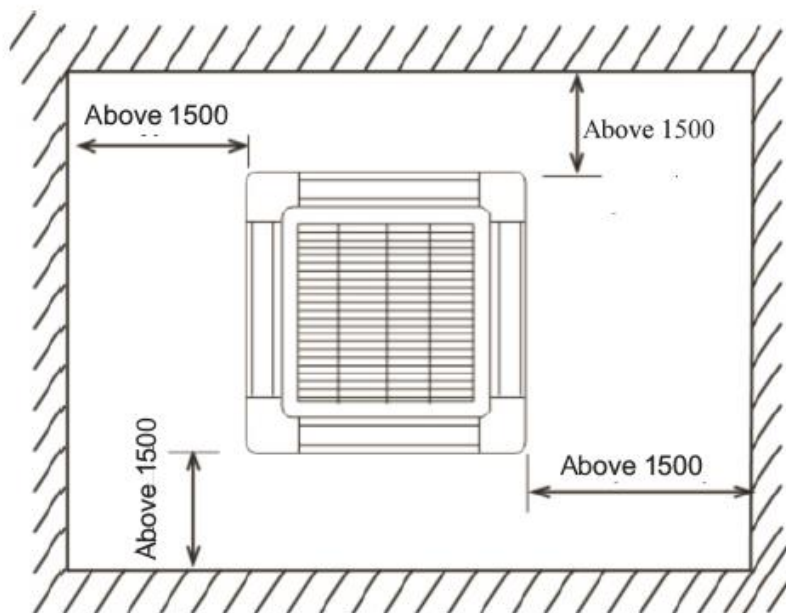
## 4. Service Space

The indoor unit should be installed in a location that meets the following requirements:

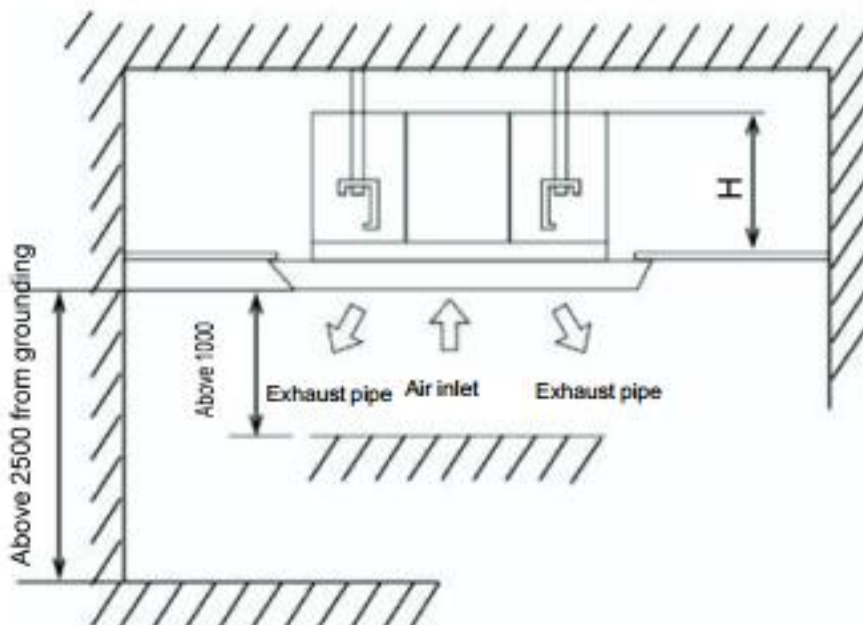
- 4.1 There is enough interspace for installation and maintenance.
- 4.2 The ceiling is horizontal, and its structure can endure the weight of the indoor unit.
- 4.3 The outlet and the inlet are not impeded, and the influence of external air is the least.
- 4.4 The air flow can reach throughout the room.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

### Round-flow cassette:

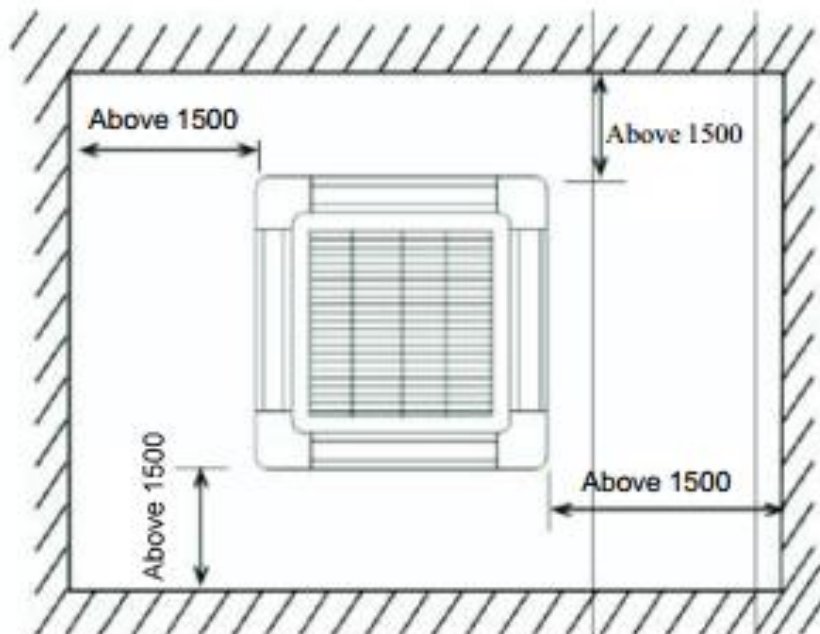




**Compact 4-way cassette**







Model	Height (mm)
3.5kW, 5.3kW	267
5.3kW, 7.0kW	230
10.5kW, 14kW, 16kW	285

## 5. Wiring Diagrams

### 5.1 CCR-D18HR4-Q303, CCR-D24HR4-Q303

# Electrical wiring diagram

802040090188 V.0

Indoor models Select bits	
SW2 NO.1,2	Indoor models
ON	Small Ceiling cassette unit
OFF	Ceiling cassette unit
ON	360° Ceiling cassette unit
OFF	Floor&Ceiling Unit

SW2 NO.3	FAN SPEED CHOICE
ON	High speed
OFF	Super High speed

SW2 NO.4	Display light board
ON	LED
OFF	Digital tube

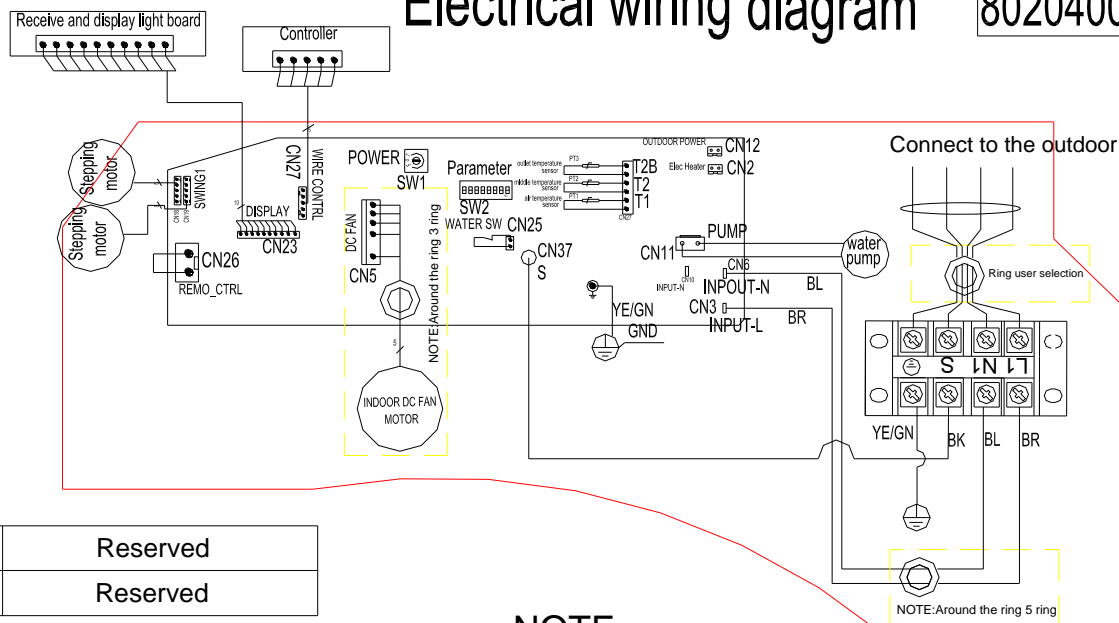
SW2 NO.5	power-down memory
ON	power-down memory
OFF	No power-down memory

SW2 NO.6	Reserved
SW2 NO.7	Reserved

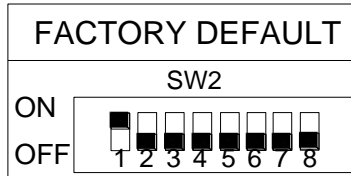
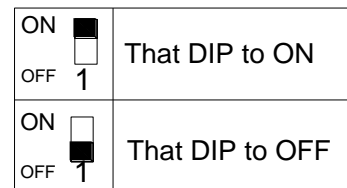
SW2 NO.8	Room temp. sensor T1 for
ON	Electric control panel
OFF	Wire controller

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

HP	Reserved	0.8	1.0	1.5	1.7	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	Reserved	
MODEL	Reserved	21	26	35	47	53	70	80	90	105	125	140	150	160	180	Reserved	
POWER	Reserved	7K	9K	12K	16K	18K	24K	27K	30K	36K	42K	48K	52K	55K	60K	Reserved	
SW1		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F



**NOTE:**



## 5.2 CCR-D36HR4-Q305

### Electrical wiring diagram

802040090189 V.0

Indoor models Select bits	
SW2 NO.1,2	Indoor models
ON OFF <input type="checkbox"/>	Small Ceiling cassette unit
ON OFF <input type="checkbox"/>	Ceiling cassette unit
ON OFF <input type="checkbox"/>	360° Ceiling cassette unit
ON OFF <input type="checkbox"/>	Floor&Ceiling Unit

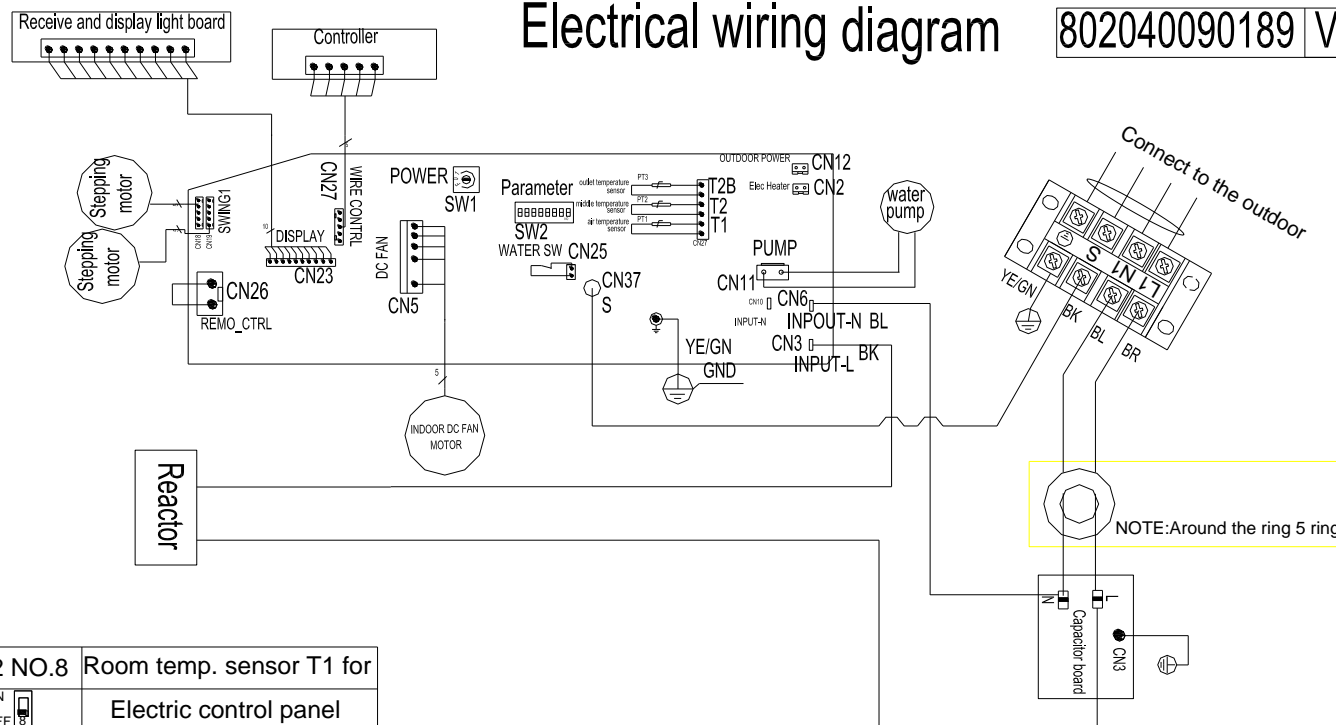
SW2 NO.3	FAN SPEED CHOICE
ON OFF <input type="checkbox"/>	High speed
ON OFF <input type="checkbox"/>	Super High speed

SW2 NO.4	Display light board
ON OFF <input type="checkbox"/>	LED
ON OFF <input type="checkbox"/>	Digital tube

SW2 NO.5	power-down memory
ON OFF <input type="checkbox"/>	power-down memory
ON OFF <input type="checkbox"/>	No power-down memory

SW2 NO.6	Reserved
SW2 NO.7	Reserved

SW2 NO.8	Room temp. sensor T1 for
ON OFF <input type="checkbox"/>	Electric control panel
ON OFF <input type="checkbox"/>	Wire controller



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

HP	Reserved	0.8	1.0	1.5	1.7	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	Reserved	
MODEL	Reserved	21	26	35	47	53	70	80	90	105	125	140	150	160	180	Reserved	
POWER	Reserved	7K	9K	12K	16K	18K	24K	27K	30K	36K	42K	48K	52K	55K	60K	Reserved	
SW1		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F

NOTE:

ON	<input type="checkbox"/>	That DIP to ON
OFF	<input type="checkbox"/>	That DIP to OFF

FACTORY DEFAULT	
SW2	
ON	<input type="checkbox"/>
OFF	<input type="checkbox"/>

NOTE: Around the ring 5 ring

### 5.3 CCR-48HVR4, CCR-48HVR4S, CCR-55HVR4S

Indoor models Select bits	
SW2 NO.1,2	Indoor models
ON <input type="checkbox"/> OFF <input checked="" type="checkbox"/>	Low static pressure duct unit
ON <input type="checkbox"/> OFF <input checked="" type="checkbox"/>	Ceiling cassette unit
ON <input type="checkbox"/> OFF <input checked="" type="checkbox"/>	360° Ceiling cassette unit
ON <input type="checkbox"/> OFF <input checked="" type="checkbox"/>	Floor&Ceiling unit

Receive and display light board	
SW2 NO.4	LED
ON <input type="checkbox"/> OFF <input checked="" type="checkbox"/>	Digital tube

SW2 NO.5	power-down memory
ON <input type="checkbox"/> OFF <input checked="" type="checkbox"/>	No power-down memory

SW2 NO.6 Heating temperature compensation	
ON <input type="checkbox"/> OFF <input checked="" type="checkbox"/>	6; æ
ON <input type="checkbox"/> OFF <input checked="" type="checkbox"/>	2; æ

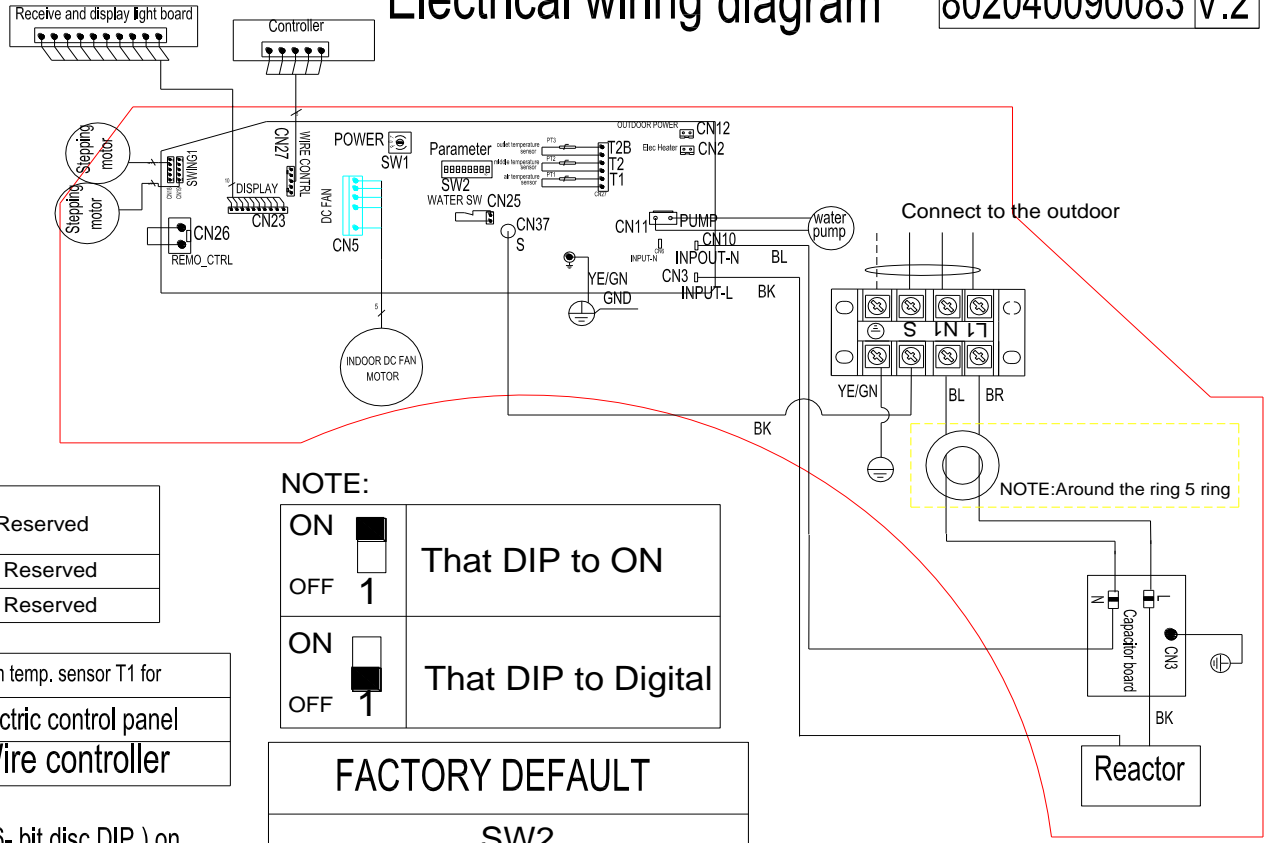
SW2 NO.7	Reserved
ON <input type="checkbox"/> OFF <input checked="" type="checkbox"/>	Reserved
ON <input type="checkbox"/> OFF <input checked="" type="checkbox"/>	Reserved

SW2 NO.8	Room temp. sensor T1 for
ON <input type="checkbox"/> OFF <input checked="" type="checkbox"/>	Electric control panel
ON <input type="checkbox"/> OFF <input checked="" type="checkbox"/>	Wire controller

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

HP	Reserved	0.8	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	Reserved		
MODEL	Reserved	21	26	35	53	70	80	90	105	125	140	150	160	180	Reserved		
POWER	Reserved	7K	9K	12K	18K	24K	27K	30K	36K	42K	48K	52K	55K	60K	Reserved		
SW1		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F

## Electrical wiring diagram 802040090083 V.2



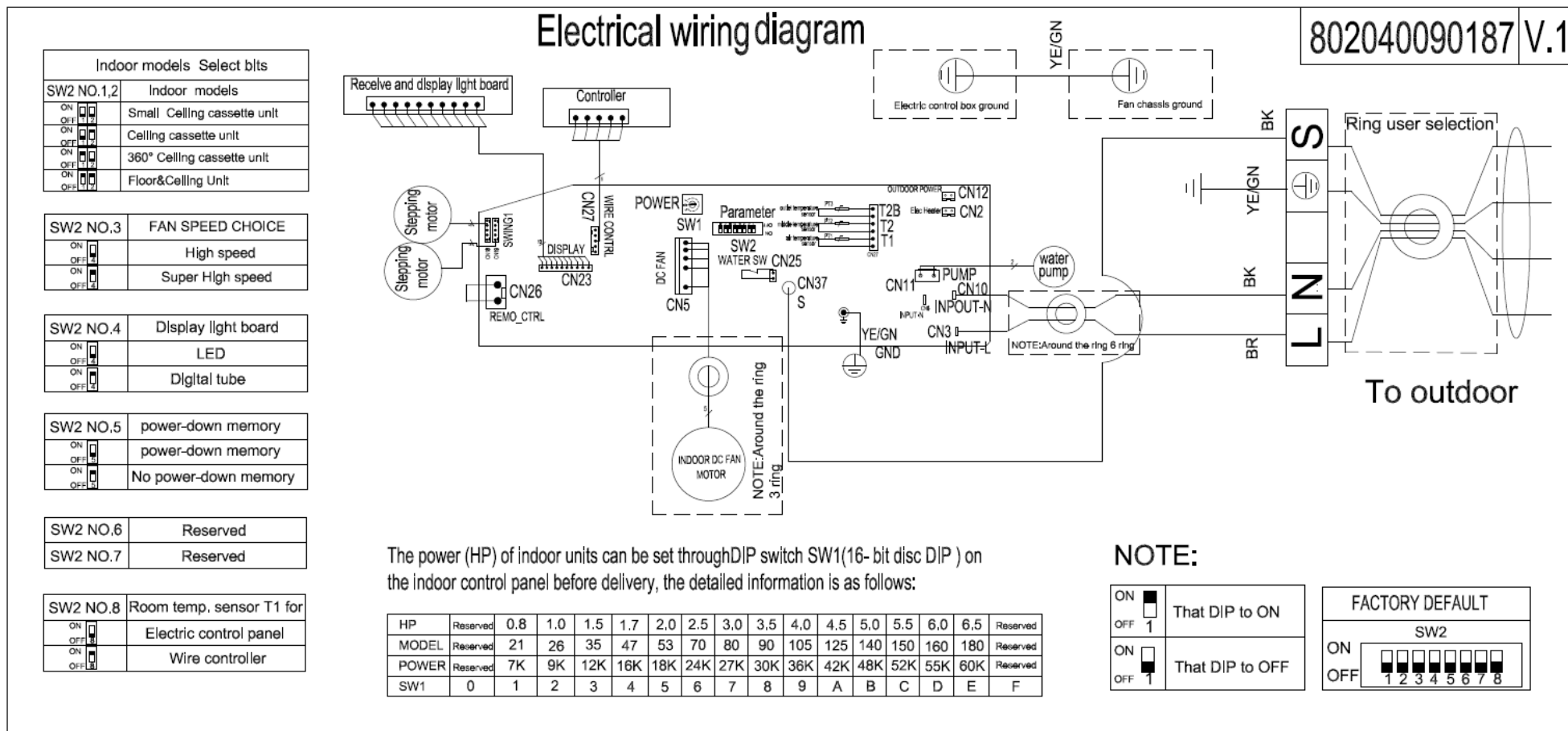
NOTE:

ON <input type="checkbox"/>	That DIP to ON
OFF <input checked="" type="checkbox"/>	
ON <input type="checkbox"/>	That DIP to Digital
OFF <input checked="" type="checkbox"/>	

### FACTORY DEFAULT



5.4 CCB-D18HR4-Q402



## 6. Capacity Table

### 6.1 Cooling

#### 6.1.1 CCR-D18HR4-Q303

MODEL		CCR-D18HR4-Q303						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21°C	25	28°C	32°C	35°C	42°C	49 °C
21°C D	Total capacity kW	5.09	5.06	5.04	5.01	4.99	4.93	4.88
15°C W	Input kW.	1.47	1.48	1.49	1.51	1.52	1.60	1.68
24°C D	Total capacity kW	5.25	5.22	5.20	5.17	5.15	5.09	5.03
17°C W	Input kW.	1.49	1.50	1.51	1.53	1.54	1.62	1.70
27°C D	Total capacity kW	5.41	5.38	5.36	5.32	5.30	5.24	5.18
19°C W	Input kW.	1.51	1.52	1.53	1.55	1.56	1.64	1.72
29°C D	Total capacity kW	5.48	5.44	5.42	5.39	5.36	5.30	5.24
21°C W	Input kW.	1.53	1.55	1.56	1.58	1.59	1.67	1.75
32°C D	Total capacity kW	5.58	5.55	5.52	5.49	5.47	5.40	5.34
23°C W	Input kW.	1.54	1.55	1.57	1.58	1.59	1.67	1.76

#### 6.1.2 CCR-D24HR4-Q303

MODEL		CCR-D24HR4-Q303						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21°C	25	28°C	32°C	35°C	42°C	49 °C
21°C D	Total capacity kW	6.82	6.78	6.75	6.71	6.68	6.61	6.35
15°C W	Input kW.	2.03	2.05	2.06	2.08	2.1	2.2	2.31
24°C D	Total capacity kW	7.04	7.00	6.97	6.92	6.89	6.82	6.74
17°C W	Input kW.	2.05	2.07	2.09	2.11	2.12	2.23	2.34
27°C D	Total capacity kW	7.25	7.21	7.17	7.13	7.00	7.02	6.94
19°C W	Input kW.	2.08	2.1	2.11	2.13	2.15	2.26	2.37
29°C D	Total capacity kW	7.34	7.29	7.26	7.22	7.19	7.11	7.03
21°C W	Input kW.	2.11	2.13	2.15	2.17	2.19	2.3	2.41
32°C D	Total capacity kW	7.48	7.43	7.4	7.35	7.32	7.24	7.16
23°C W	Input kW.	2.12	2.14	2.16	2.18	2.19	2.3	2.42

#### 6.1.3 CCR-D36HR4-Q305, CCR-D36HR4-Q305S

MODEL		CCR-D36HR4-Q305, CCRHVR4S						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21°C	25	28°C	32°C	35°C	42°C	49 °C
21°C D	Total capacity kW	10.09	10.03	9.99	9.93	9.88	9.77	9.66
15°C W	Input kW.	2.96	2.99	3.01	3.03	3.05	3.21	3.37

24°C D	Total capacity kW	10.41	10.35	10.30	10.24	10.19	10.08	9.97
17°C W	Input kW.	3.00	3.03	3.04	3.07	3.09	3.25	3.42
27°C D	Total capacity kW	10.72	10.56	10.61	10.55	10.50	10.38	10.27
19°C W	Input kW.	3.03	3.06	3.08	3.11	3.14	3.29	3.46
29°C D	Total capacity kW	10.85	10.79	10.79	10.67	10.63	10.51	10.39
21°C W	Input kW.	3.08	3.11	3.13	3.17	3.19	3.35	3.51
32°C D	Total capacity kW	11.06	10.99	10.94	10.88	10.83	10.71	10.59
23°C W	Input kW.	3.09	3.12	3.15	3.18	3.20	3.36	3.53

**6.1.4 CCR-48HVR4, CCR-48HVR4S**

MODEL		CCR-48HVR4, CCR-48HVR4S						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21°C	25	28°C	32°C	35°C	42°C	49 °C
21°C D	Total capacity kW	13.45	13.37	13.31	13.23	13.18	13.02	12.89
15°C W	Input kW.	4.66	4.71	4.74	4.80	4.83	5.07	5.33
24°C D	Total capacity kW	13.87	13.79	13.74	13.66	13.60	13.45	13.29
17°C W	Input kW.	4.74	4.77	4.80	4.86	4.89	5.13	5.39
27°C D	Total capacity kW	14.29	14.21	14.16	14.05	14.00	13.84	13.68
19°C W	Input kW.	4.80	4.83	4.86	4.92	4.95	5.19	5.45
29°C D	Total capacity kW	14.48	14.37	14.32	14.24	14.16	14.00	13.84
21°C W	Input kW.	4.86	4.92	4.95	5.01	5.04	5.30	5.54
32°C D	Total capacity kW	14.74	14.66	14.58	14.50	14.45	14.26	14.11
23°C W	Input kW.	4.89	4.92	4.98	5.01	5.04	5.30	5.57

**6.1.5 CCR-55HVR4S**

MODEL		CCR-55HVR4S						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21°C	25	28°C	32°C	35°C	42°C	49 °C
21°C D	Total capacity kW	15.37	15.28	15.22	15.12	15.06	14.88	14.73
15°C W	Input kW.	5.56	5.61	5.64	5.72	5.75	6.05	6.35
24°C D	Total capacity kW	15.85	15.76	15.70	15.61	15.55	15.37	15.18
17°C W	Input kW.	5.64	5.68	5.72	5.79	5.82	6.12	6.42
27°C D	Total capacity kW	16.33	16.24	16.18	16.06	16.00	15.82	15.64
19°C W	Input kW.	5.72	5.75	5.79	5.87	5.90	6.19	6.50
29°C D	Total capacity kW	16.54	16.42	16.36	16.27	16.18	16.00	15.82
21°C W	Input kW.	5.79	5.87	5.90	5.98	6.01	6.31	6.61
32°C D	Total capacity kW	16.85	16.75	16.66	16.57	16.51	16.30	16.12
23°C W	Input kW.	5.82	5.87	5.93	5.98	6.01	6.31	6.64

**6.1.6 CCB-D18HR4-Q402**

MODEL	CCB-D18HR4-Q402
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COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21°C	25	28°C	32°C	35°C	42°C	49 °C
21°C D	Total capacity kW	5.09	5.06	5.04	5.01	4.99	4.93	4.88
15°C W	Input kW.	1.44	1.45	1.46	1.48	1.49	1.57	1.65
24°C D	Total capacity kW	5.25	5.22	5.20	5.17	5.15	5.09	5.03
17°C W	Input kW.	1.46	1.47	1.48	1.50	1.51	1.59	1.66
27°C D	Total capacity kW	5.41	5.38	5.36	5.32	5.30	5.24	5.18
19°C W	Input kW.	1.48	1.49	1.50	1.52	1.53	1.61	1.68
29°C D	Total capacity kW	5.48	5.44	5.42	5.39	5.36	5.30	5.24
21°C W	Input kW.	1.50	1.52	1.53	1.55	1.56	1.64	1.71
32°C D	Total capacity kW	5.58	5.55	5.52	5.49	5.47	5.40	5.34
23°C W	Input kW.	1.51	1.52	1.54	1.55	1.56	1.64	1.72

## 6.2 Heating

### 6.2.1 CCR-D18HR4-Q303

MODEL		CCR-D18HR4-Q303						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24°C D 18°C W	15°C D 14°C W	7°C D 6°C W	3°C DB 2°C WB	-5°C D -6°C W	-7°C D -8°C W	-14°C D -15°C W
15°C	Capacity kW	5.43	5.39	5.37	5.22	4.99	4.91	4.43
	Input kW.	1.51	1.42	1.39	1.37	1.34	1.33	1.27
18°C	Capacity kW	5.38	5.35	5.34	5.18	4.96	4.88	4.40
	Input kW.	1.54	1.45	1.41	1.39	1.36	1.35	1.29
20°C	Capacity kW	5.35	5.32	5.30	5.15	4.92	4.85	4.37
	Input kW.	1.56	1.48	1.44	1.42	1.39	1.38	1.31
22°C	Capacity kW	5.33	5.28	5.26	5.11	4.89	4.81	4.34
	Input kW.	1.59	1.50	1.46	1.44	1.41	1.40	1.33
27°C	Capacity kW	5.21	5.25	5.23	5.08	4.85	4.78	4.30
	Input kW.	1.62	1.53	1.49	1.47	1.44	1.43	1.36

### 6.2.2 CCR-D24HR4-Q303

MODEL		CCR-D24HR4-Q303						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24°C D 18°C W	15°C D 14°C W	7°C D 6°C W	3°C DB 2°C WB	-5°C D -6°C W	-7°C D -8°C W	-14°C D -15°C W
15°C	Capacity kW	7.95	7.83	7.81	7.58	7.25	7.14	6.34
	Input kW.	1.95	1.95	1.95	1.95	1.95	1.95	1.95
18°C	Capacity kW	7.90	7.78	7.75	7.53	7.20	7.09	6.30
	Input kW.	1.98	1.94	1.88	1.86	1.82	1.81	1.71
20°C	Capacity kW	7.86	7.73	7.70	7.47	7.15	7.04	6.25
	Input kW.	2.03	1.98	1.92	1.89	1.86	1.84	1.74
22°C	Capacity kW	7.82	7.67	7.65	7.42	7.10	6.99	6.21
	Input kW.	2.07	2.00	1.95	1.92	1.88	1.87	1.77

27°C	Capacity kW	7.73	7.62	7.59	7.37	7.05	6.94	6.16
	Input kW.	2.11	2.04	1.98	1.96	1.92	1.90	1.80

### 6.2.3 CCR-D36HR4-Q305

MODEL		CCR-D36HR4-Q305,CCR-D36HR4-Q305S						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24°C D 18°C W	15°C D 14°C W	7°C D 6°C W	3°C DB 2°C WB	-5°C D -6°C W	-7°C D -8°C W	-14°C D -15°C W
15°C	Capacity kW	12.11	11.70	11.66	11.32	10.83	10.67	9.61
	Input kW.	3.37	3.30	3.21	3.16	3.09	3.07	2.92
18°C	Capacity kW	12.08	11.62	11.58	11.24	10.75	10.59	9.54
	Input kW.	3.41	3.35	3.26	3.22	3.15	3.12	2.98
20°C	Capacity kW	12.04	11.54	11.50	11.16	10.68	10.52	9.48
	Input kW.	3.47	3.41	3.32	3.27	3.21	3.18	3.03
22°C	Capacity kW	12.00	11.46	11.42	11.09	10.60	10.44	9.41
	Input kW.	3.53	3.47	3.37	3.33	3.26	3.24	3.08
27°C	Capacity kW	11.73	11.38	11.34	11.01	10.53	10.37	9.35
	Input kW.	3.62	3.54	3.43	3.39	3.32	3.30	3.14

### 6.2.4 CCR-48HVR4, CCR-48HVR4S

MODEL		CCR-48HVR4, CCR-48HVR4S						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24°C D 18°C W	15°C D 14°C W	7°C D 6°C W	3°C DB 2°C WB	-5°C D -6°C W	-7°C D -8°C W	-14°C D -15°C W
15°C	Capacity kW	15.59	15.46	15.41	14.97	14.30	14.09	12.70
	Input kW.	5.16	4.85	4.75	4.68	4.58	4.55	4.34
18°C	Capacity kW	15.43	15.35	15.30	14.87	14.22	13.99	12.62
	Input kW.	5.26	4.95	4.82	4.75	4.65	4.62	4.41
20°C	Capacity kW	15.35	15.25	15.20	14.76	14.12	13.91	12.52
	Input kW.	5.33	5.06	4.92	4.85	4.75	4.71	4.48
22°C	Capacity kW	15.28	15.15	15.10	14.66	14.01	13.81	12.44
	Input kW.	5.43	5.13	4.99	4.92	4.82	4.78	4.55
27°C	Capacity kW	14.94	15.05	14.99	14.56	13.91	13.71	12.34
	Input kW.	5.54	5.22	5.09	5.02	4.92	4.89	4.65

### 6.2.5 CCR-55HVR4S

MODEL		CCR-55HVR4S						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24°C D 18°C W	15°C D 14°C W	7°C D 6°C W	3°C DB 2°C WB	-5°C D -6°C W	-7°C D -8°C W	-14°C D -15°C W
15°C	Capacity kW	17.23	17.09	17.03	16.54	15.81	15.58	14.04

	Input kW.	5.72	5.38	5.27	5.20	5.09	5.04	4.81
18°C	Capacity kW	17.06	16.97	16.91	16.43	15.72	15.46	13.96
	Input kW.	5.83	5.49	5.35	5.27	5.15	5.12	4.89
20°C	Capacity kW	16.97	16.86	16.80	16.31	15.61	15.38	13.84
	Input kW.	5.91	5.61	5.46	5.38	5.27	5.23	4.96
22°C	Capacity kW	16.89	16.74	16.69	16.20	15.49	15.26	13.76
	Input kW.	6.03	5.69	5.54	5.46	5.35	5.31	5.04
27°C	Capacity kW	16.51	16.63	16.57	16.08	15.38	15.15	13.64
	Input kW.	6.14	5.80	5.65	5.57	5.46	5.43	5.15

6.2.7 CCB-D18HR4-Q402

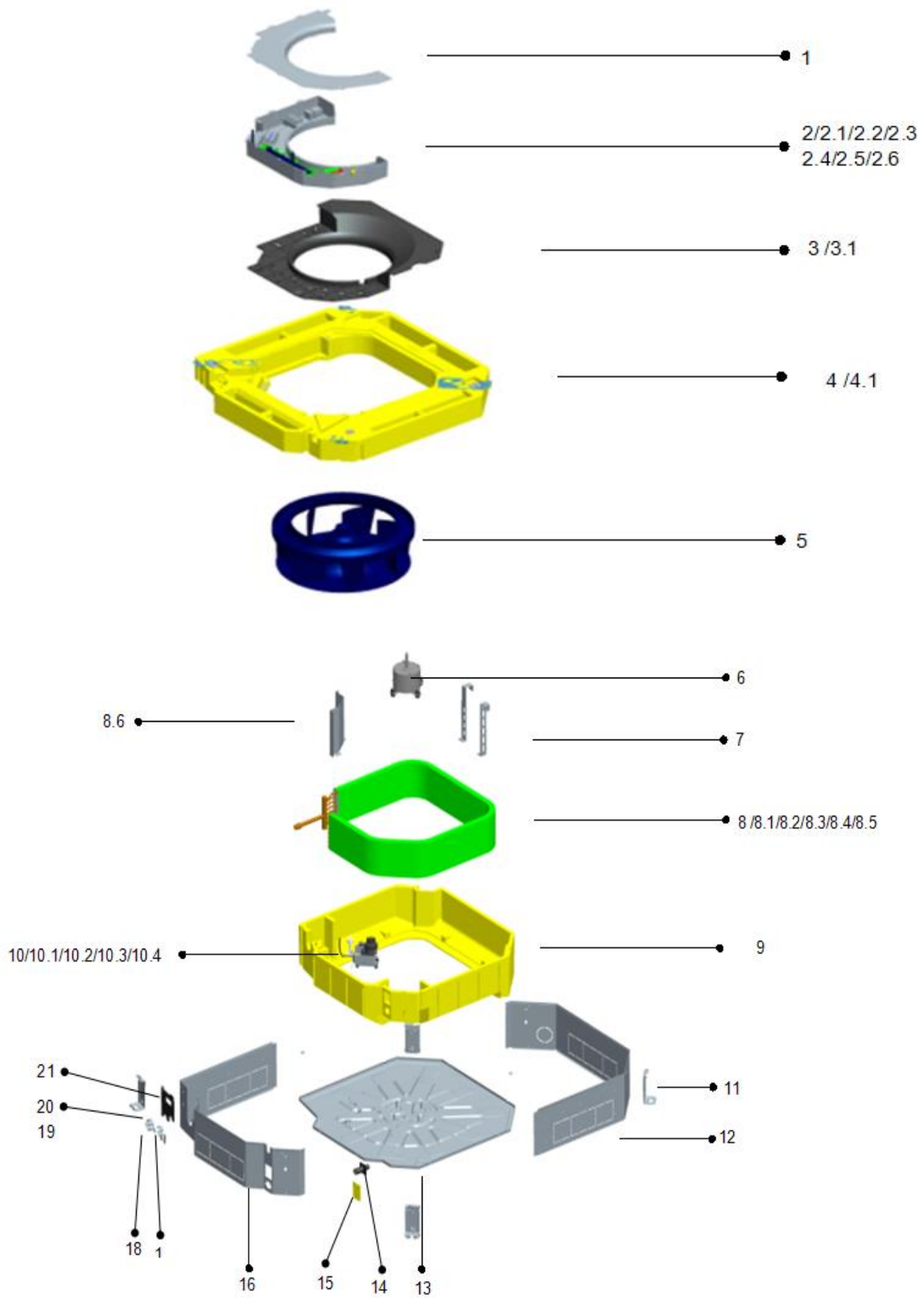
MODEL		CCB-D18HR4-Q402						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24°C D 18°C W	15°C D 14°C W	7°C D 6°C W	3°C DB 2°C WB	-5°C D -6°C W	-7°C D -8°C W	-14°C D -15°C W
15°C	Capacity kW	5.43	5.39	5.37	5.22	4.99	4.91	4.43
	Input kW.	1.48	1.40	1.37	1.35	1.32	1.31	1.25
18°C	Capacity kW	5.38	5.35	5.34	5.18	4.96	4.88	4.40
	Input kW.	1.51	1.42	1.39	1.37	1.34	1.33	1.27
20°C	Capacity kW	5.35	5.32	5.30	5.15	4.92	4.85	4.37
	Input kW.	1.53	1.45	1.42	1.40	1.37	1.36	1.29
22°C	Capacity kW	5.33	5.28	5.26	5.11	4.89	4.81	4.34
	Input kW.	1.56	1.47	1.43	1.42	1.39	1.38	1.31
27°C	Capacity kW	5.21	5.25	5.23	5.08	4.85	4.78	4.30
	Input kW.	1.59	1.50	1.46	1.44	1.42	1.41	1.34

## 7. Electric Characteristics

Model	Indoor Units				Indoor Fan Motor
	Hz	Voltage	Min.	Max.	kW
CCB-D18HR4-Q402	50	220-240V	198V	254V	0.035
CCR-D18HR4-Q303	50	220-240V	198V	254V	0.06
CCR-D24HR4-Q303	50	220-240V	198V	254V	0.06
CCR-D36HR4-Q305	50	220-240V	198V	254V	0.10
CCR-48HVR4	50	220-240V	198V	254V	0.10
CCR-48HVR4S	50	220-240V	198V	254V	0.10
CCR-55HVR4S	50	220-240V	198V	254V	0.10

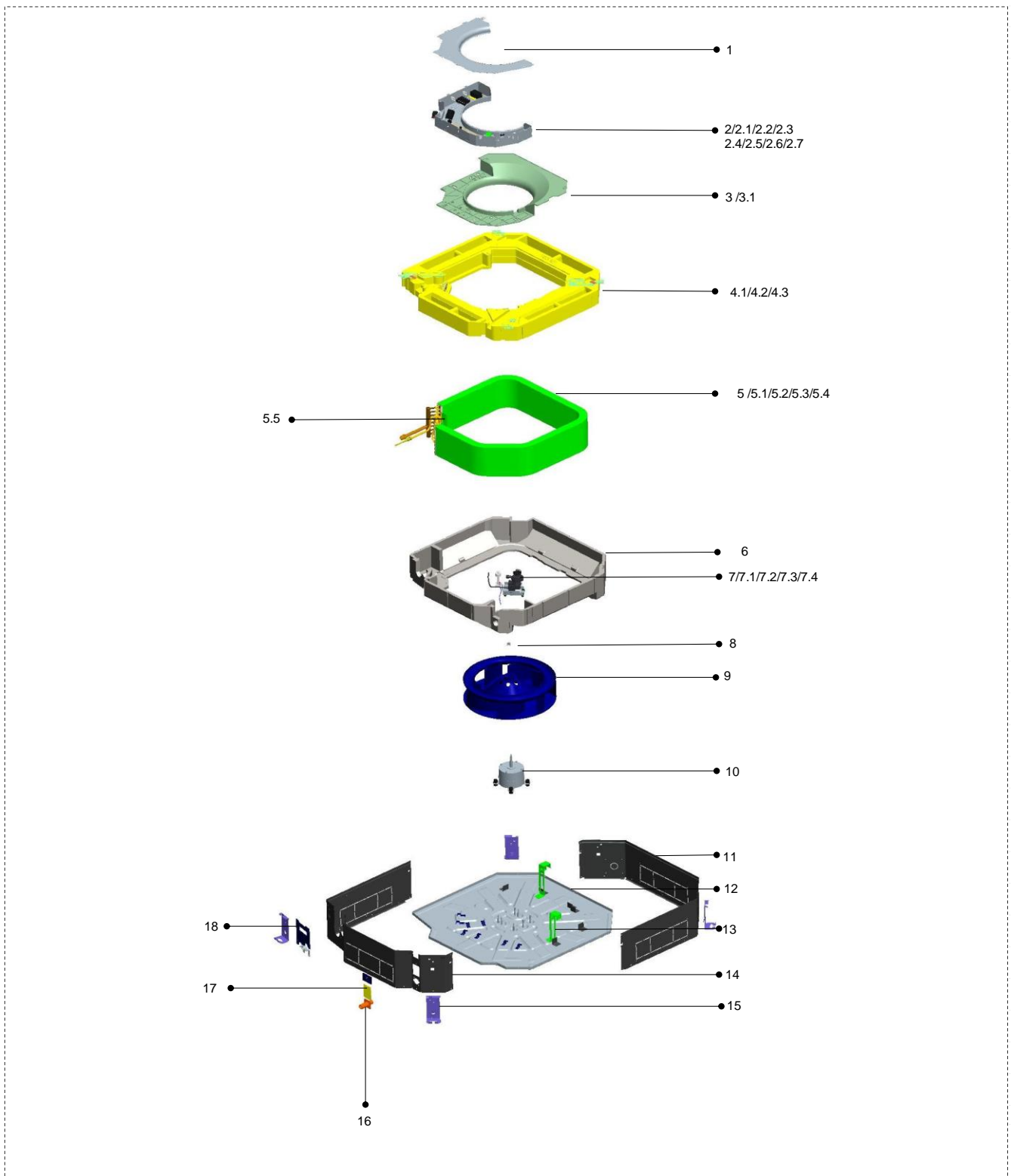
## 8. Exploded View

### 8.1 CCR-D18HR4-Q303, CCR-D24HR4-Q303



No.	Part Name	No.	Part Name
1	E-parts box cover	8.4.2	Evaporator
2	Electric control components for indoor unit	8.4.3	Collecting pipe welding assy
2.1	E-parts board for indoor unit	8.4.4	Current divider capillary assy
2.2	Temperature sensor	8.5	Main fixing board
2.3	Terminal	9	Upper foam components
2.4	Terminal	10	Pre-assembling assy for water pump
2.5	Relay	10.1	Water pump support
2.6	Welded chassis for E-parts box	10.2	Water pump
3	Wind inlet guide assy	10.3	Liquid-level sensor
3.1	Wind inlet guide	10.4	Underlay for water pump support
4	Water pan components	11	Hanger
4.1	Foam pendant	12	Rear brattice
5	Centrifugal fan	13	Chassis assy
6	Fan motor for indoor unit	14	Discharge pipe joint
7	Auxiliary fixing board for evaporator	15	Side maintenance board for water pump
8	Evaporator components	16	Front brattice
8.1	Insulating pipe	17	Lower pipe clamp
8.2	Insulating pipe	18	Lower pipe clamp( $\phi$ 35)
8.3	Evaporator attached cotton	19	Upper pipe clamp
8.4	Evaporator welding assy	20	Upper pipe clamp( $\phi$ 35)
8.4.1	Installation tube for probe	21	Valve panel

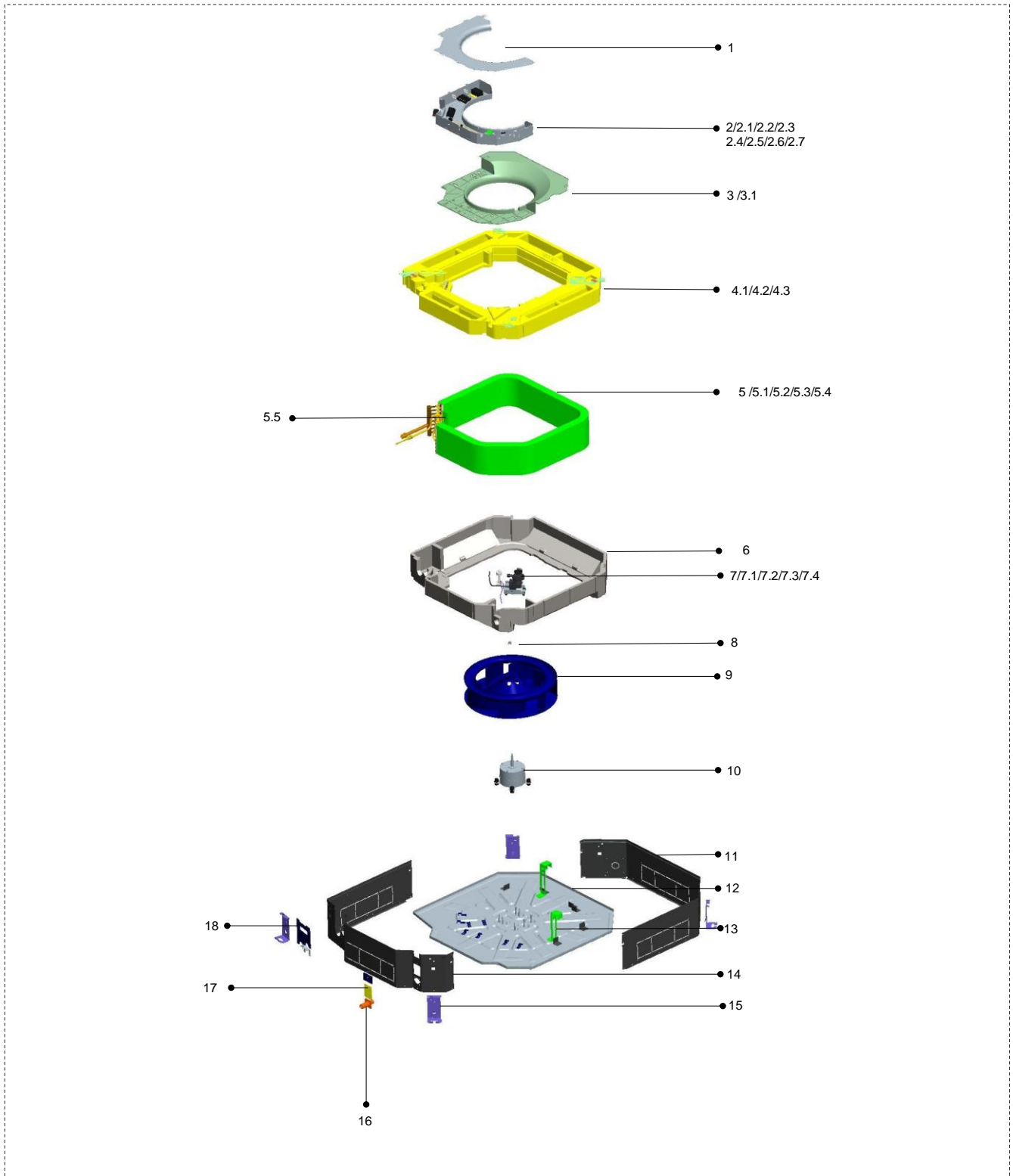
## 8.2 CCR-D36HR4-Q305



No.	Part Name	No.	Part Name
1	E-parts box cover	5.4.3	Current collecting assy for evaporator
2	Electric control components for indoor unit	5.4.4	Current divider capillary assy for evaporator
2.1	Reactor	6	Upper foam components
2.2	Capacitor board	7	Water pump components
2.3	Terminal	7.1	Water pump fan motor holder
2.4	E-parts board for indoor unit	7.2	Water pump
2.5	Temperature sensor group	7.3	Underlay for water pump support
2.6	Welded chassis for E-parts box	8	Wind wheel clasp
3	Wind inlet guide assy	9	Centrifugal fan
3.1	Wind inlet guide	10	Fan motor for indoor unit(YDK-45Q-6P2)
4	Water pan	11	Rear brattice
5	Evaporator components	12	Chassis assy
5.1	Insulating pipe	13	Auxiliary fixing board for evaporator
5.2	Insulating pipe	14	Front brattice
5.3	Insulating pipe	15	Hanger
5.4	Evaporator welding assy	16	Discharge pipe joint
5.4.1	Installation tube for probe	17	Side maintenance board for water pump
5.4.2	Evaporator	18	Valve panel

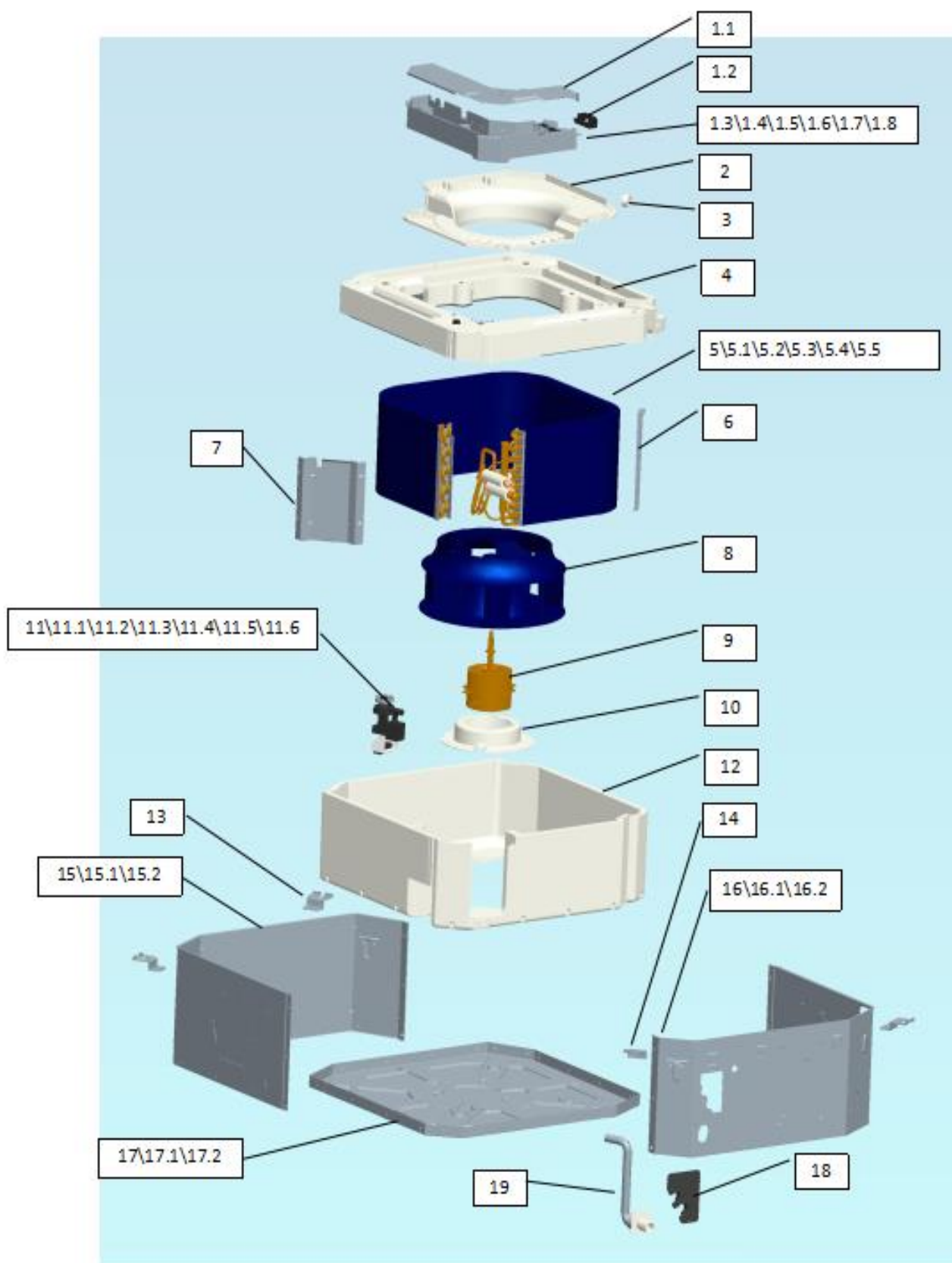


### 8.3 CCR-48HVR4, CCR-48HVR4S, CCR-55HVR4



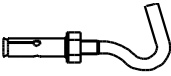







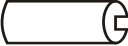

No.	Part Name	No.	Part Name
1	E-parts box cover	5.4.3	Current collecting assy for evaporator
2	Electric control components for indoor unit	5.4.4	Current divider capillary assy for evaporator
2.1	Reactor	6	Upper foam components
2.2	Capacitor board	7	Water pump components
2.3	Terminal	7.1	Water pump fan motor holder
2.4	E-parts board for indoor unit	7.2	Water pump
2.5	Temperature sensor group	7.3	Underlay for water pump support
2.6	Welded chassis for E-parts box	8	Wind wheel clasp
3	Wind inlet guide assy	9	Centrifugal fan
3.1	Wind inlet guide	10	Fan motor for indoor unit(YDK-45Q-6P2)
4	Water pan	11	Rear brattice
5	Evaporator components	12	Chassis assy
5.1	Insulating pipe	13	Auxiliary fixing board for evaporator
5.2	Insulating pipe	14	Front brattice
5.3	Insulating pipe	15	Hanger
5.4	Evaporator welding assy	16	Discharge pipe joint
5.4.1	Installation tube for probe	17	Side maintenance board for water pump
5.4.2	Evaporator	18	Valve panel

### 8.4 CCB-D18HR4-Q402



No.	Part Name	No.	Part Name
1	Electric control components	10	Motor bracket
1.1	E-parts box cover assembly	11	Pump parts
1.2	Pressure line buckle	11.1	Water pump
1.3	Electrical box welding components	11.2	Water pump support frame
1.4	Fan motor capacitor	11.3	Water pump filter
1.5	Terminal	11.4	Water pump gasket 1
1.6	E-parts board for indoor unit	11.5	Water pump gasket 2
1.7	Temperature sensor	11.6	Water level switch
1.8	Temperature sensor	12	Chassis foam components
2	Wind inlet guide	13	Hanging ear 1
3	Pressure line buckle	14	Hanging ear 2
4	Water pan components	15	Rear panel assembly
5	Evaporator components	15.1	Rear panel
5.1	Insulating pipe	15.2	Rear panel insulation cotton
5.2	Insulating pipe	16	Front panel assembly
5.3	attached cotton	16.1	Front panel
5.4	Damping glue	16.2	Front cover insulation cotton
5.5	Evaporator	17	Chassis parts
6	Evaporator tightening	17.1	Chassis welding components
7	End plate fixing plate	17.2	Chassis external insulation cotton
8	Centrifugal leaves	18	Refrigerant tube support plate assembly
9	Main fixing board	19	Drain pipe assembly

## 9. Accessories

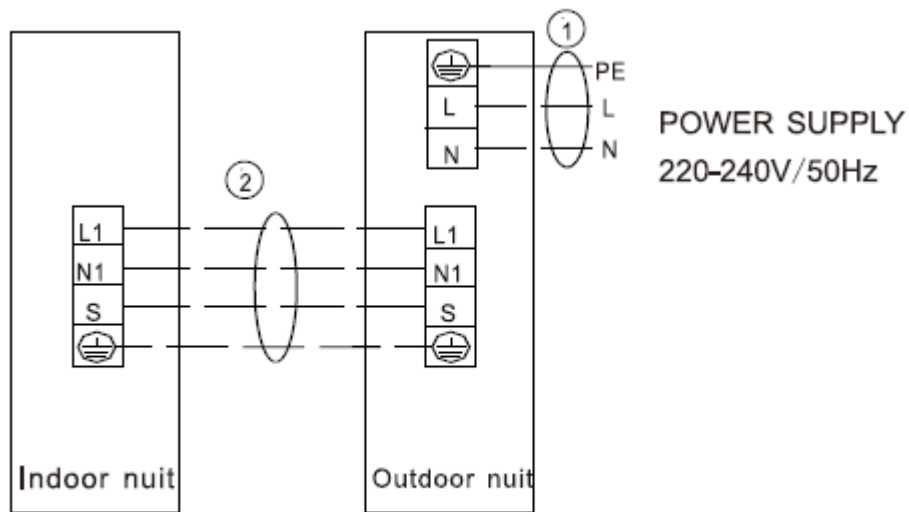
	Name	Shape	Quantity
Installation Fittings	Expansible hook		4
	Installation hook		4
	Installation paper board		1
	Bolt M5		4
Drainpipe Fittings	Out-let pipe sheath		1
	Tightening band		5
Remote controller	Remote controller		1
	Mounting screw(ST2.9×10-C-H)		2
	Alkaline dry batteries (AM4)		2
Others	Operation & installation instruction manual		1

## 10. The Specification of Wiring

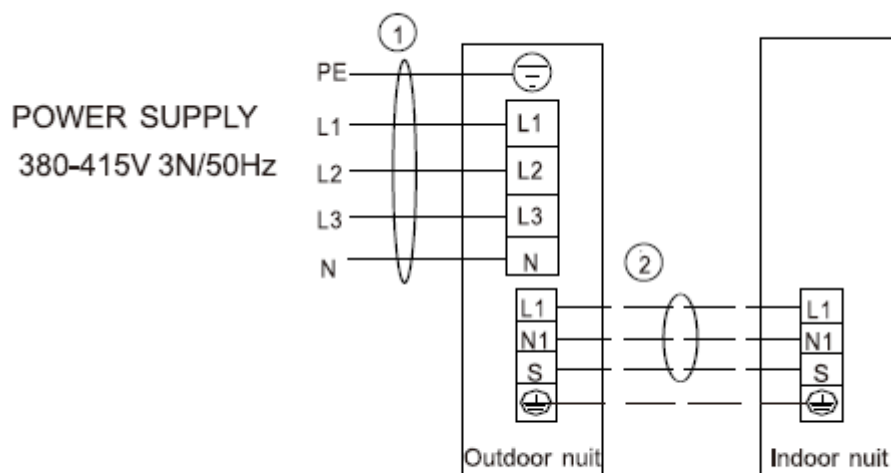
Model		18kBtu/h	24kBtu/h	36kBtu/h (1 phase)	48kBtu/h (1 phase)	
Indoor power supply	V/Ph/Hz	220~240/1/50				
Outdoor power supply	V/Ph/Hz	220~240/1/50				
Connection wiring	Power Supply		From outdoor unit			
	Power	mm <sup>2</sup>	3×14AWG	3×14AWG	3×12AWG	3×12AWG
	Between ODU&IDU	mm <sup>2</sup>	4×16AWG	4×16AWG	4×16AWG	4×16AWG

Model		36kBtu/h (3 phase)	48kBtu/h (3 phase)	55kBtu/h
Indoor power supply	V/Ph/Hz	220~240/1/50		
Outdoor power supply	V/Ph/Hz	380~415/3/50		
Connection wiring	Power Supply		From outdoor unit	
	Power	mm <sup>2</sup>	5×14AWG	
	Between ODU&IDU	mm <sup>2</sup>	4×16AWG	

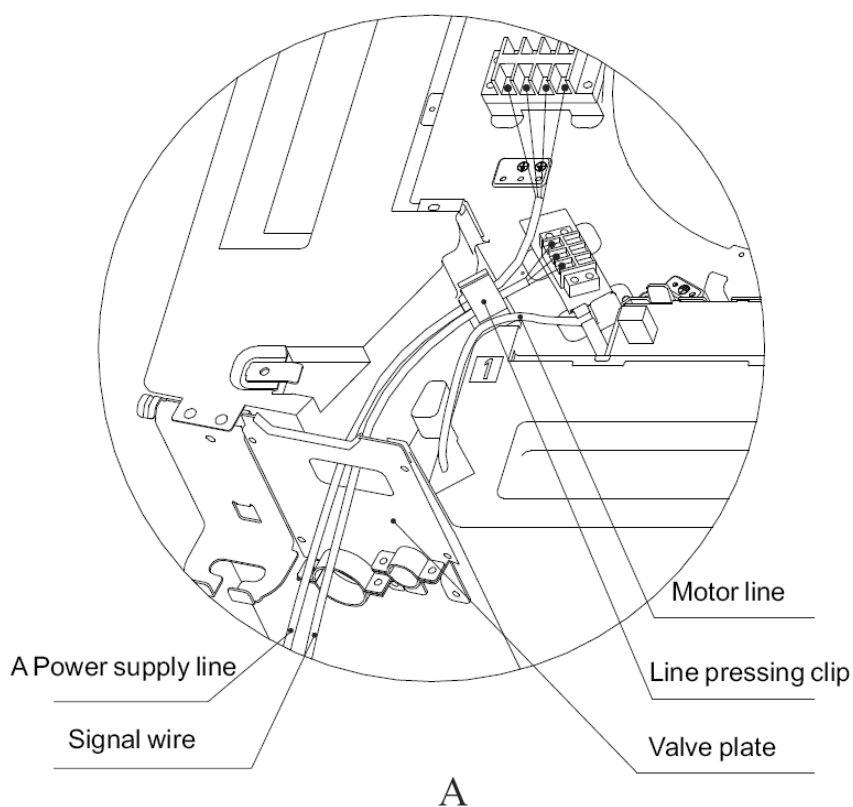
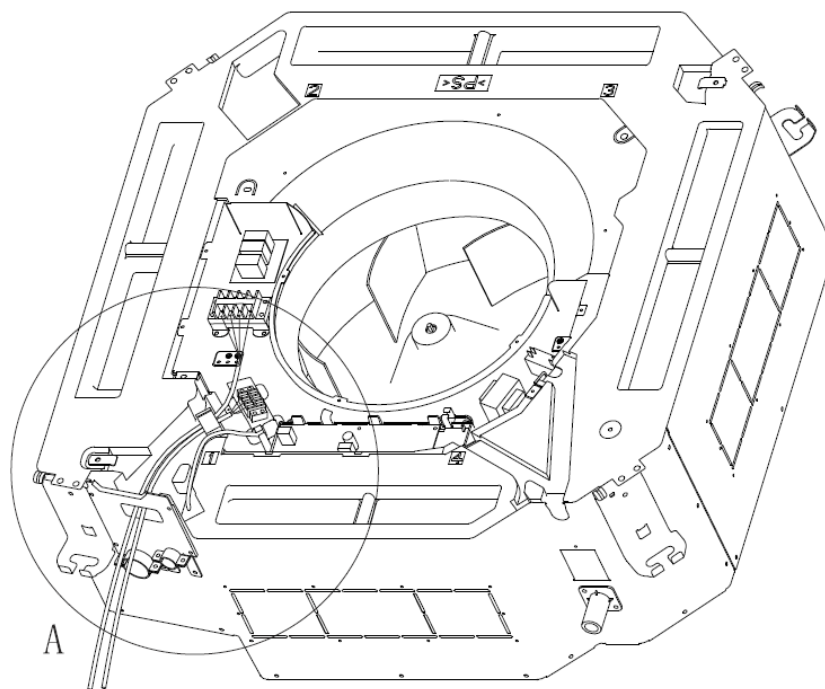
## 11. Field Wiring



Applicable for (220-240V/50Hz) single phase model



Applicable for (380-415V/50Hz)  $\geq$  three phase model





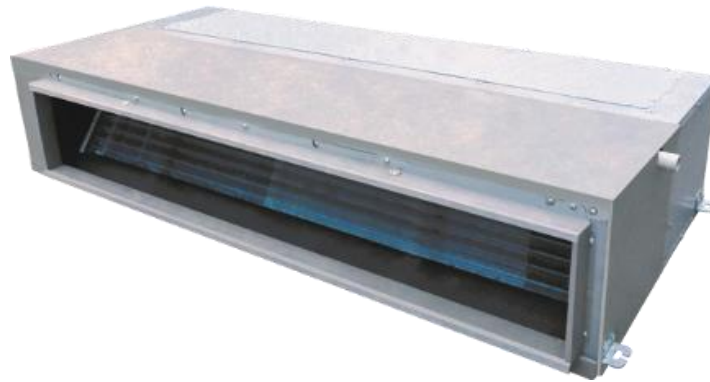
# Duct Type

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13. Trouble shooting .....	<b>Błąd! Nie zdefiniowano zakładki.</b>

## 1. Features



**Low Static Pressure Duct**



**Medium Static Pressure Duct(36K)**



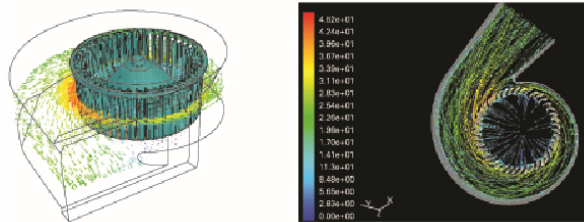
**Medium Static Pressure Duct (48/55K)**

## 1.1 Low ESP Ducted Unit

1. Thin body, min 210mm, easy to install.



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



3. Three fan speed, meet different requirement.



4. High efficiency DC fan motor, low noise and more comfortable. Operate in low frequency and control indoor temperature precisely
5. E-box is body-side design, convenient installation and maintenance.
6. Standard for wireless remote controller, wired controller for option.



Standard



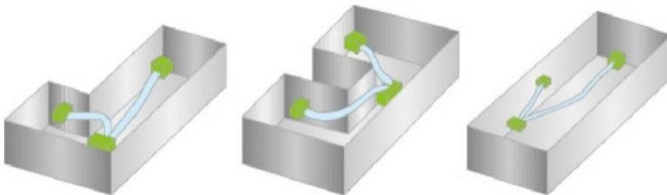
optional

## 1.2 Medium ESP Ducted Unit

1. Adopting aviation centrifugal fans, and CFD technology design, increasing air-volume and decreasing noise level.
2. Three fan speed, meet different requirement.



3. 30-50Pa ESP design for the medium static pressure duct type, duct connected installation meet for different room structure.



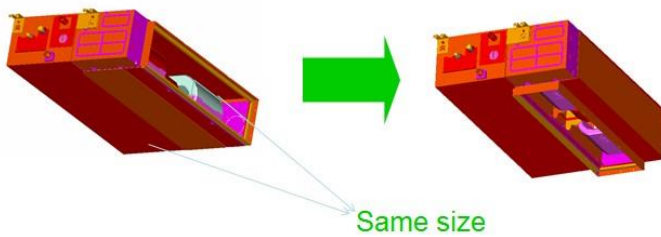
4. Filter can be taken out easily for clear. Easy maintenance.



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



- 6. High efficiency DC fan motor, low noise and more comfortable.
- 7. Two air return type option: air inlet from back is standard and from bottom is optional



- 8. Multi protection and auto-restart function.
- 9. Remote controller is standard, wired controller is optional ;



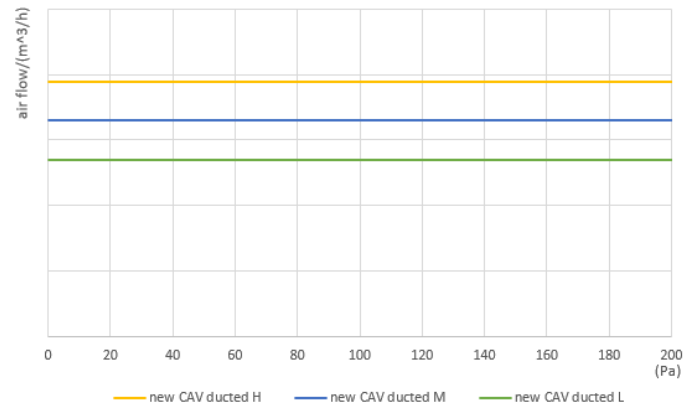
Standard



Optional

### 1.3 Constant air flow ducted unit

- 1. The maximum static pressure is up to 200Pa and the air flow will not decrease even if the ESP increases, which is suitable for different room structure.



2. For 24K, the air flow is 1400/1200/1000m<sup>3</sup>/h. For 36K, the air flow is 1950/1650/1350m<sup>3</sup>/h. For 48K&55K, the air flow is 2400/2040/1680m<sup>3</sup>/h.
3. Use wired controller to enter auto air flow adjustment setting mode. Then the unit will adjust fan speed automatically, according to comparing fan motor running current value to preset current value, to meet different ESP requirement of different duct length.
4. 3-core wired controller is standard.



## 5. Specification

Model		CTA-D18HR4-F102	CTA-D24HR4-F103	CTB-D36HR4-F205
Indoor power supply		V/Ph/Hz	220~240/1/50	220~240/1/50
Cooling	Capacity	KW	2.0-5.3-5.6	3.5-7.0-8.0
	SEER	W/W	6.1	6.1
	Energy efficiency class		A++	A++
	Year Consumption	kWh/annum	315	423
Heating	Capacity	KW	2.2-5.3-5.8	4.5-7.7-8.5
	SCOP	W/W	4.0	4.0
	Energy efficiency class		A+	A+
	Year Consumption	kWh/annum	1795	2205
Indoor unit power input		W	55	68
Indoor unit current input		A	0.2	0.3
Pdesignc		W	5300	7000
Pdesignh(A)		W	4000	6000
Indoor fan motor	Model		DR-310-55F-8	DR-310-68F-8
	Brand		Panasonic	Panasonic
	Power output	W	55	68
	Capacitor	μF	-	-
	Speed	r/min	980/880/750	1080/980/800
	Insulation class		E	E
Indoor coil	Number of rows		3*2	3*2
	Tube pitch(a) × row pitch(b)	mm	21×12.7	21×12.7
	Fin spacing	mm	1.4	1.4
	Fin type		Hydrophilic	Hydrophilic
	Tube outside dia. and type	mm	Φ7	Φ7
			inner grooved	inner grooved
	Coil length× height× width	mm	715×147×38.1	915×147×38.1
Number of circuits		4	6	
Filter		Optional	Optional	
Indoor air flow(H/M/L)		m <sup>3</sup> /h	800/700/600	1050/950/750
Static Pressure	Rated	Pa	30	50
	Range*	Pa	0-60	0-100
Indoor noise level	power level	dB(A)	46~58	56~63
	pressure level		36/40/45	43/45/47
Indoor unit	Dimension(W*H*D)	Body(mm)	1010×210×467	1214×210×467

	Packing(W*H*D)	Body(mm)	1110×240×510	1310×240×510	1490×325×720
	Net/Gross weight	Body(Kg)	22.5/26	25/28	46/50
	Dimension for Plenum Air Outlet	mm× mm	705×150	905×150	1156×197
	Dimension for Plenum Air Inlet	mm× mm	811×200	1011×200	1156×207
Max pressure		MPa	4.5	4.5	4.5
Refrigerant type			R32	R32	R32
Refrigerant piping	Liquid side/Gas side	mm	Φ6.35/Φ12.7	Φ9.52/Φ15.88	Φ9.52/Φ15.88
Drainage pipe		mm	DN25	DN25	DN25
Operation temp		°C	16~32	16~32	16~32
Ambient temp	cooling	°C	-15~50	-15~50	-15~50
	heating	°C	-15~30	-15~30	-15~30
Application area		m <sup>2</sup>	20-35	28-50	40-70

Model			CTB-48HVR4	CTB-48HVR4S	CTB-55HVR4S
Indoor power supply		V/Ph/Hz	220~240/1/50	220~240/1/50	220~240/1/50
Cooling	Capacity	KW	7.0-14.0-15.5	7.0-14.0-15.5	7.5-16.0-17.0
	SEER	W/W	6.1	6.1	6.1
	Energy efficiency class		A++	A++	A++
	Year Consumption	kWh/annum	795	795	911
Heating	Capacity	KW	8.0-15.2-16.0	8.0-15.2-16.0	8.5-16.8-17.5
	SCOP	W/W	4.0	4.0	4.0
	Energy efficiency class		A+	A+	A+
	Year Consumption	kWh/annum	3723	3723	4046
Indoor unit power input		W	240	240	240
Indoor unit current input		A	1.1	1.1	1.1
Pdesignc		W	14000	14000	16000
pdesignh(A)		W	11000	11000	12000
Indoor fan motor	Model		DR-310-240F-8	DR-310-240F-8	DR-310-240F-8
	Brand		KaiBang	KaiBang	KaiBang
	Power output	W	240	240	240
	Capacitor	μF	-	-	-
	Speed	r/min	1200/1150/1050	1200/1150/1050	1200/1150/1050
	Insulation class			E	E
Indoor coil	Number of rows		4	4	4
	Tube pitch(a)×row pitch(b)	mm	22×19.05	22×19.05	22×19.05
	Fin spacing	mm	1.5	1.5	1.5
	Fin type			Hydrophilic	Hydrophilic



	Tube outside dia. and type	mm	Φ7.94	Φ7.94	Φ7.94
			inner grooved	inner grooved	inner grooved
	Coil lengthxheightxwidth	mm	1030×396×76.2	1030×396×76.2	1030×396×76.2
	Number of circuits		8	8	8
Filter			Optional	Optional	Optional
Indoor air flow(H/M/L)		m <sup>3</sup> /h	2500/2350/1980	2500/2350/1980	2500/2350/1980
Static Pressure	Rated	Pa	50	50	50
	Range*	Pa	0-160	0-160	0-160
Indoor noise level	power level	dB(A)	56-64	56-64	56-64
	pressure level		42~47	42~47	42~47
Indoor unit	Dimension(W*H*D)	Body(mm)	1279×307×830	1279×307×830	1279×307×830
	Packing(W*H*D)	Body(mm)	1395×380×920	1395×380×920	1395×380×920
	Net/Gross weight	Body(Kg)	49/56	49/56	49/56
	Dimension for Plenum Air Outlet	mm×mm	973×207	973×207	973×207
	Dimension for Plenum Air Inlet	mm×mm	1077×273	1077×273	1077×273
Max pressure		MPa	4.5	4.5	4.5
Refrigerant type			R32	R32	R32
Refrigerant piping	Liquid side/Gas side	mm	Φ9.52/Φ15.88	Φ9.52/Φ15.88	Φ9.52/Φ15.88
Drainage pipe		mm	DN25	DN25	DN25
Operation temp		°C	16~32	16~32	16~32
Ambient temp	cooling	°C	-15~50	-15~50	-15~50
	heating	°C	-15~30	-15~30	-15~30
Application area		m <sup>2</sup>	56-93	56-93	64-106

### Notes:

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

Indoor temp: 27°CDB, 19°CWB; Outdoor temp: 35°CDB; Equivalent ref. Piping: 5m (horizontal)

2. Nominal heating capacities are based on the following conditions:

Indoor temp: 20°CDB; Outdoor temp: 7°CDB, 6°CWB; Equivalent ref. Piping: 5m (horizontal)

6. Actual noise level may differ, depending on the room structure, etc., since these noise values are from an anechoic room.

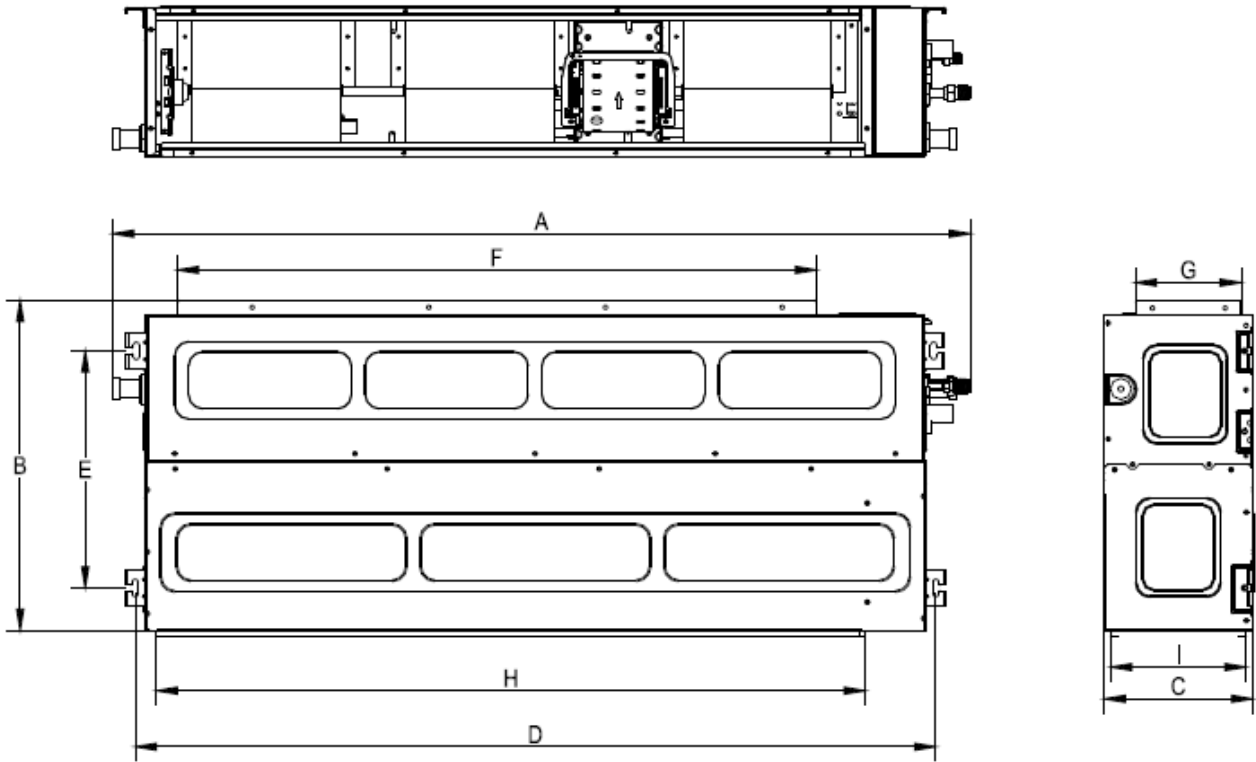
\*: We suggest that for 18K&24K units, external static pressure is lower than 80Pa, for 36K units, external static pressure is lower than 80Pa and for 48K&55K units, external static pressure is lower than 120Pa. If higher static pressure is needed, please contact with supplier.

Model		CTB-D24HR4-F203	CTB-D36HR4-F2051	CTB-D48HR4-FS04	CTB-D55HR4-FS04	
		821039300066	821039300067	820036100007	820036100008	
Indoor power supply		V/Ph/Hz	220~240/1/50	220~240/1/50	220~240/1/50	
Cooling	Capacity	KW	2.9-7.0-8.0	3.6-10.5-12.8	7.0-14.0-15.5	7.5-16.0-17.0
	SEER	W/W	6.1	6.1	6.1	6.1
	Energy efficiency class		A++	A++	A++	A++
	Year Consumption	kWh/annum	430	645	795	911
Heating	Capacity	KW	3.3-7.7-8.5	4.35-11.5-13.2	8.0-15.2-16.0	8.5-16.8-17.5
	SCOP	W/W	4.0	4.0	4.0	4.0
	Energy efficiency class		A+	A+	A+	A+
	Year Consumption	kWh/annum	2150	3150	3723	4046
Indoor unit power input		W	160	300	500	500
Indoor unit current input		A	0.7	1.3	2.3	2.3
Pdesignc		W	7000	10500	14000	16000
pdesignh(A)		W	6000	9000	11000	12000
Indoor fan motor	Model		DRN-310-160-8	DRN-310-300-8	DRN-310-550F-12	DRN-310-550F-12
	Brand		Weiling	Weiling	KaiBang	KaiBang
	Power output	W	160	300	550	550
	Capacitor	μF	-	-	-	-
	Speed	r/min	880/810/740	1075/1010/940	950/880/800	950/880/800
	Insulation class		B	B	E	E
Indoor coil	Number of rows		3	3	4	4
	Tube pitch(a)xrow pitch(b)	mm	21×13.37	21×13.37	21×13.37	21×13.37
	Fin spacing	mm	1.4	1.4	1.5	1.5
	Fin type		Hydrophilic	Hydrophilic	Hydrophilic	Hydrophilic
	Tube outside dia. and type	mm	Φ7	Φ7	Φ7	Φ7
			inner grooved	inner grooved	inner grooved	inner grooved
	Coil lengthxheight xwidth	mm	900×294×40.11	1138×294×40.11	1030×348×53.48	1030×348×53.48
Number of circuits		6	6	9	9	
Filter		Optional	Optional	Standard	Standard	

Indoor air flow(H/M/L)		m <sup>3</sup> /h	1400/1200/1000	1950/1650/1350	2400/2040/1680	2400/2040/1680
Static Pressure	Rated	Pa	30	50	50	50
	Range*	Pa	0~200	0~200	0~200	0~200
Indoor noise level	power level	dB(A)	42~63	45~63	50~64	50~64
	pressure level		31~52	34~52	40~53	40~53
Indoor unit	Dimension(W*H*D)	Body(m m)	1190×260×643	1425×260×643	1279×307×830	1279×307×830
	Packing(W*H*D)	Body(m m)	1255×325×720	1490×325×720	1410×380×945	1410×380×945
	Net/Gross weight	Body(Kg )	31.8/36.3	38/43	49/56	49/56
	Dimension for Plenum Air Outlet	mm×m m	920×197	1156×197	973×207	973×207
	Dimension for Plenum Air Inlet	mm×m m	920×207	1156×207	1077×273	1077×273
Max pressure		MPa	4.5	4.5	4.5	4.5
Refrigerant type			R32	R32	R32	R32
Refrigerant piping	Liquid side/Gas side	mm	Φ9.52/Φ15.88	Φ9.52/Φ15.88	Φ9.52/Φ15.88	Φ9.52/Φ15.88
Drainage pipe		mm	DN25	DN25	DN25	DN25
Operation temp		°C	16~32	16~32	16~32	16~32
Ambient temp	cooling	°C	-15~50	-15~50	-15~50	-15~50
	heating	°C	-15~30	-15~30	-15~30	-15~30
Application area		m <sup>2</sup>	28-50	40-70	56-93	64-106

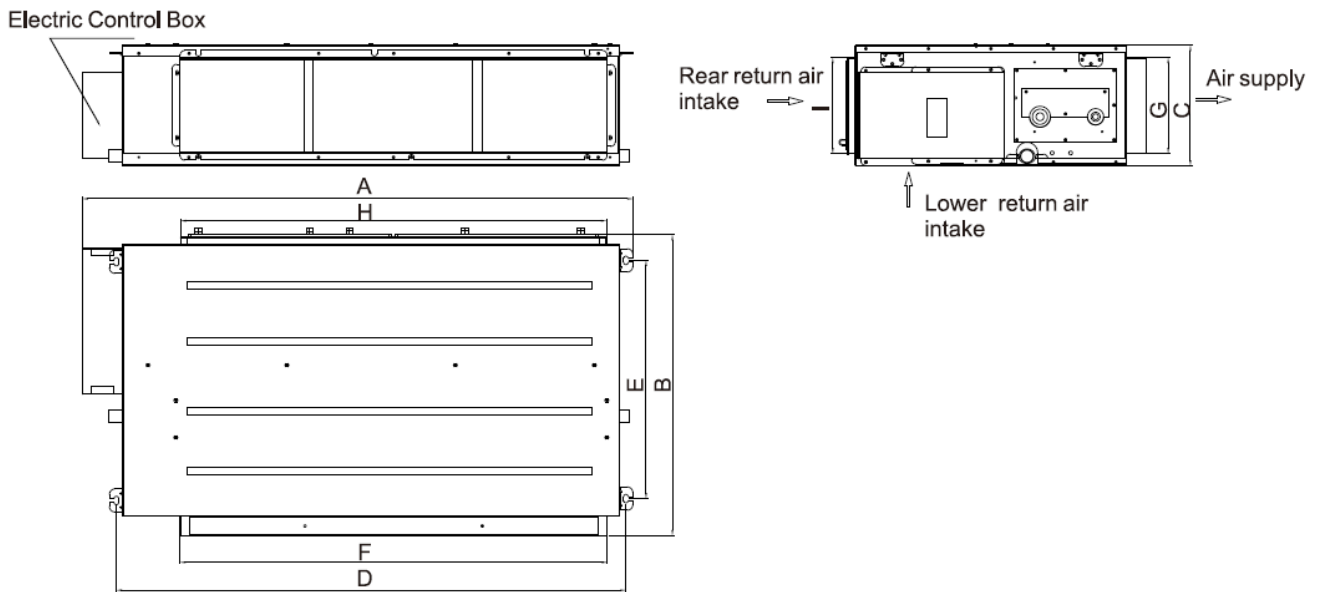
### 3. Dimensions

#### 3.1 CTA-D18HR4-F102, CTA-D24HR4-F103



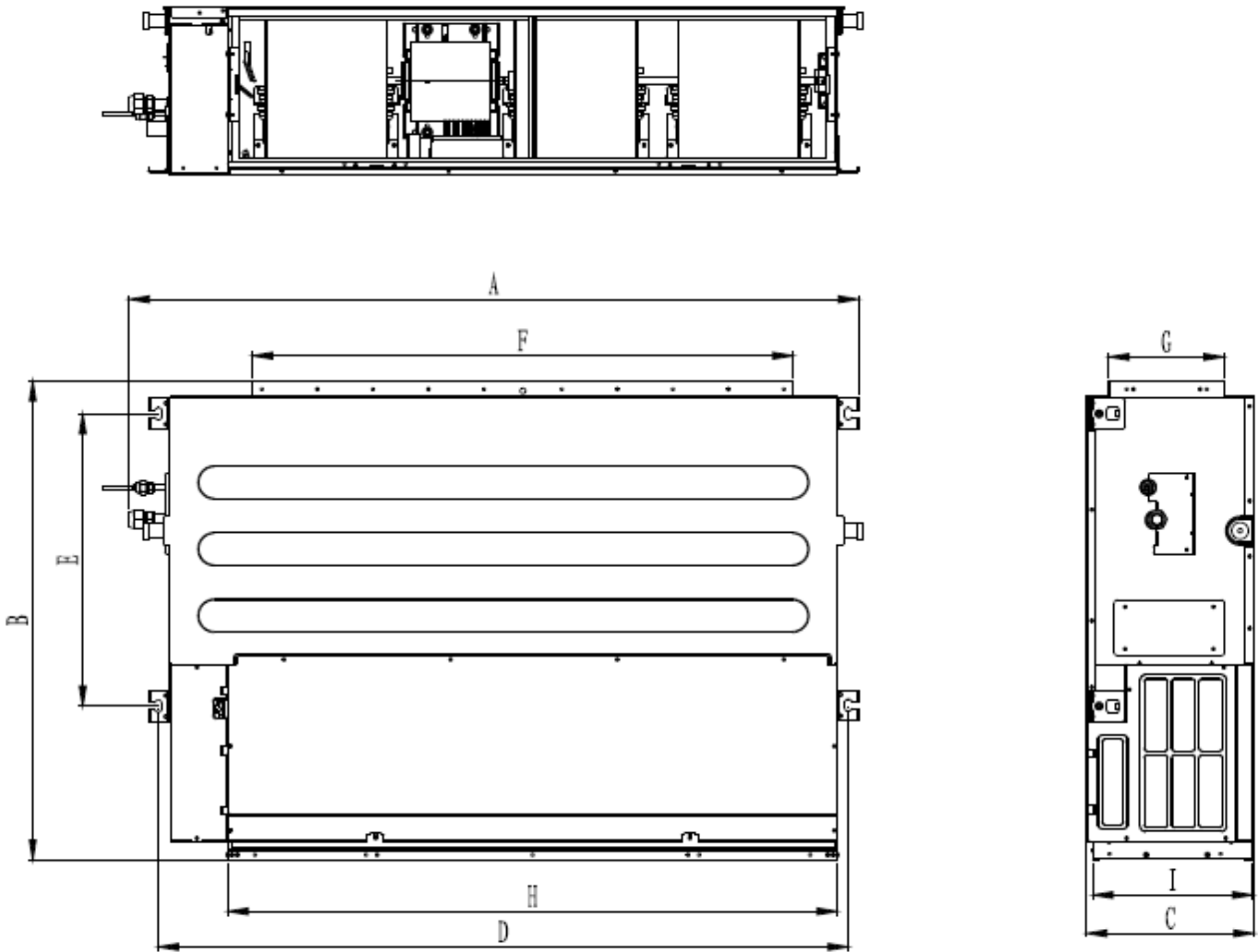
Dimension Capacity	Device body dimension			Installation dimension		Air outlet dimension		Return air dimension	
	A	B	C	D	E	F	G	H	I
18K	1010	467	210	928	335	705	150	799	189
24K	1214	467	210	1128	335	905	150	1004	192

### 3.2 CTB-D24HR4-F203, CTB-D36HR4-F205, CTB-D36HR4-F2051



Indoor unit capacity	Dimension generation	Device body dimension			Installation dimension		Air outlet dimension		Return air intake dimension	
		A	B	C	D	E	F	G	H	I
24K		1190	643	260	1100	515	920	197	920	207
36K		1425	643	260	1337	515	1156	197	1156	207

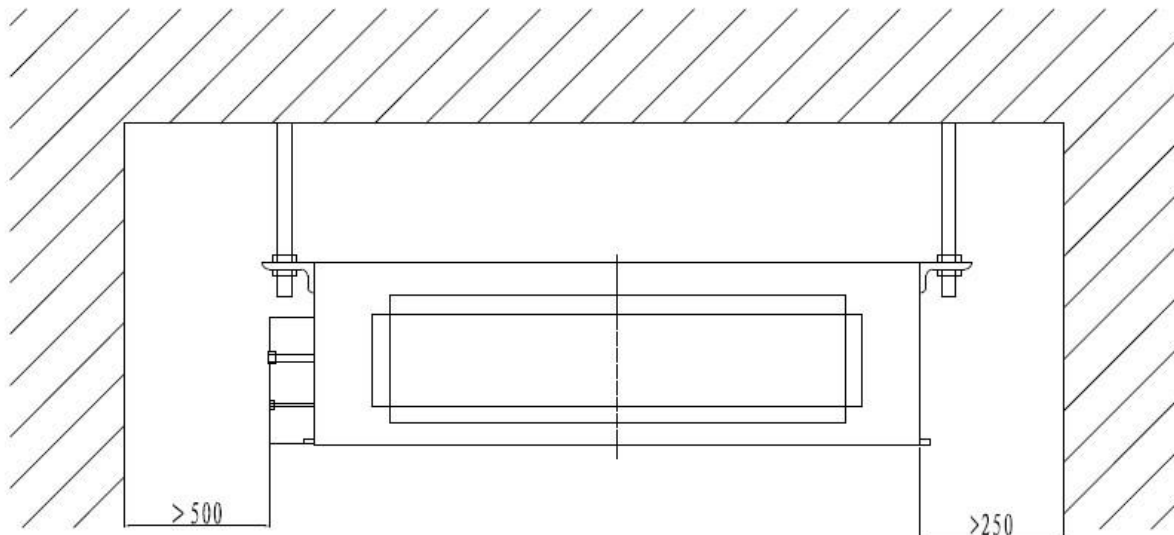
### 3.3 CTB-48HVR4, CTB-48HVR4S, CTB-55HVR4, CTB-D48HR4-FS04, CTB-D55HR4-FS04



Indoor unit capacity	Dimension generation	Device body dimension			Installation dimension		Air outlet dimension		Return air intake dimension	
		A	B	C	D	E	F	G	H	I
48K/55K		1279	863	307	1242	537	973	207	1097	288

## 4. Service Space

Ensure enough space required for installation and maintenance.

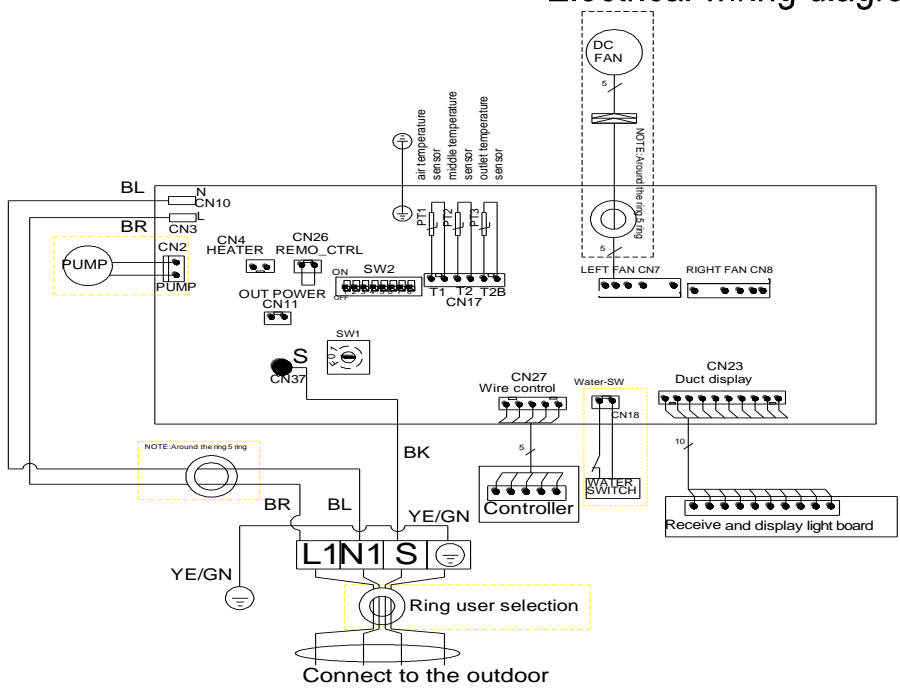


## 5. Wiring Diagrams

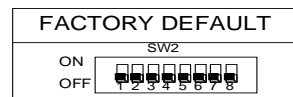
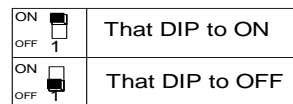
### 5.1 CTA-D18HR4-F102, CTA-D24HR4-F103



### Electrical wiring diagram



**NOTE:**



Indoor models Select bits	
SW2 NO.1,2	Indoor models
ON <input type="checkbox"/> OFF <input type="checkbox"/>	Low static pressure duct unit
ON <input type="checkbox"/> OFF <input type="checkbox"/>	High static pressure duct unit
ON <input type="checkbox"/> OFF <input type="checkbox"/>	Standard static pressure duct unit
ON <input type="checkbox"/> OFF <input type="checkbox"/>	Floor&Ceiling Unit

SW2 NO.3	FAN SPEED CHOICE
ON <input type="checkbox"/> OFF <input type="checkbox"/>	High speed
ON <input type="checkbox"/> OFF <input type="checkbox"/>	Super High speed

SW2 NO.4	Display light board
ON <input type="checkbox"/> OFF <input type="checkbox"/>	LED
ON <input type="checkbox"/> OFF <input type="checkbox"/>	Digital tube

SW2 NO.5	power-down memory
ON <input type="checkbox"/> OFF <input type="checkbox"/>	power-down memory
ON <input type="checkbox"/> OFF <input type="checkbox"/>	No power-down memory

SW2 NO.6	Reserved
SW2 NO.7	Reserved

SW2 NO.8	Room temp. sensor T1 for
ON <input type="checkbox"/> OFF <input type="checkbox"/>	Electric control panel
ON <input type="checkbox"/> OFF <input type="checkbox"/>	Wire controller

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

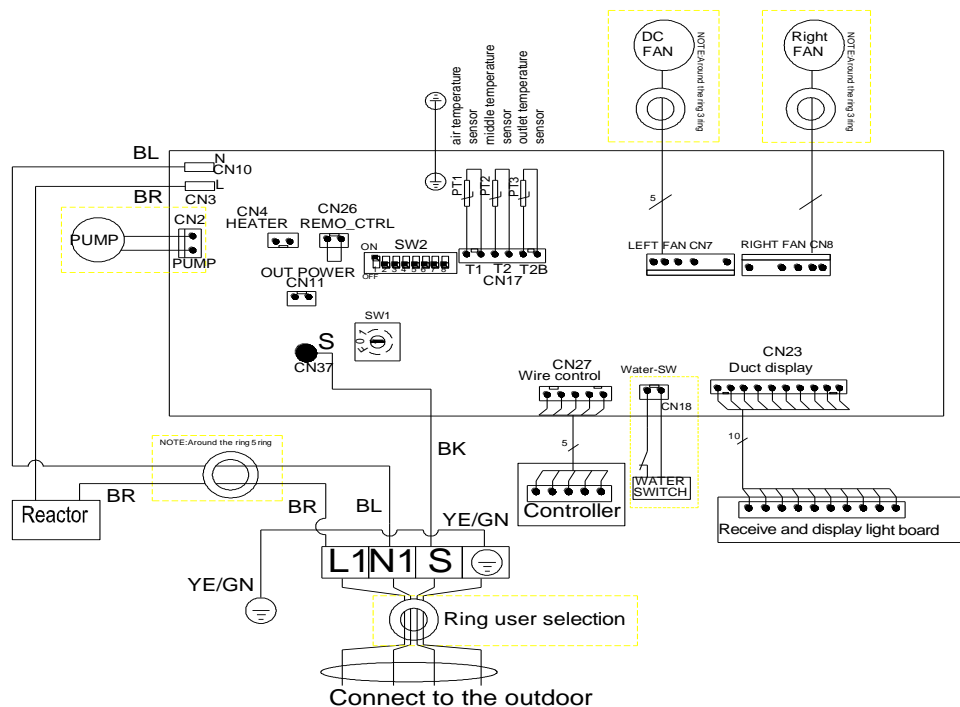
HP	Reserved	0.8	1.0	1.5	1.7	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	Reserved
MODEL	Reserved	21	26	35	47	53	70	80	90	105	125	140	150	160	180	Reserved
POWER	Reserved	7K	9K	12K	16K	18K	24K	27K	30K	36K	42K	48K	52K	55K	60K	Reserved
SW1	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F

NOTE: 1. Without the pump type water level switch output cables short circuit.

## 5.2 CTB-D36HR4-F205

802039390160 V.0

### Electrical wiring diagram



**NOTE:**

- ON That DIP to ON
- OFF 1
- ON That DIP to OFF
- OFF

**FACTORY DEFAULT**



Indoor models Select bits	
SW2 NO.1,2	Indoor models
ON	Low static pressure duct unit
OFF	High static pressure duct unit
ON	Standard static pressure duct unit
OFF	Floor&Ceiling Unit

SW2 NO.3	FAN SPEED CHOICE
ON	High speed
OFF	Super High speed

SW2 NO.4	Display light board
ON	LED
OFF	Digital tube

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

SW2 NO.6	Reserved
SW2 NO.7	Reserved

SW2 NO.8	Room temp. sensor T1 for
ON	Electric control panel
OFF	Wire controller

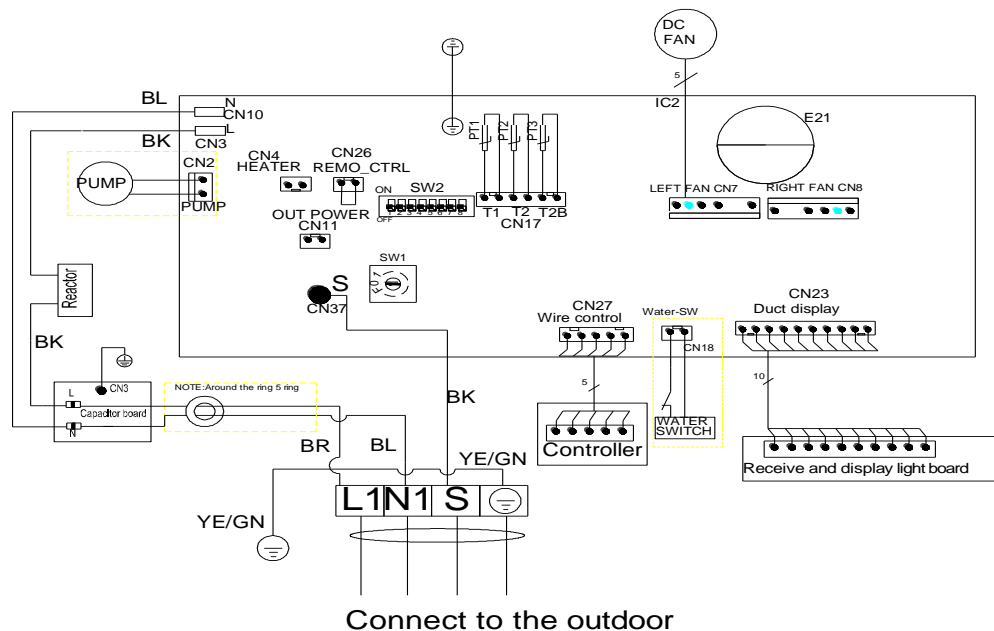
The power (HP) of indoor units can be set through DIP switch SW1(16-bit disc DIP) on the indoor control panel before delivery, the detailed information is as follows:

HP	Reserved	0.8	1.0	1.5	1.7	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	Reserved
MODEL	Reserved	21	26	35	47	53	70	80	90	105	125	140	150	160	180	Reserved
POWER	Reserved	7K	9K	12K	16K	18K	24K	27K	30K	36K	42K	48K	52K	55K	60K	Reserved
SW1	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F

**NOTE:** 1. Without the pump type water level switch output cables short circuit.

### 5.3 CTB-48HVR4, CTB-48HVR4S, CTB-55HVR4S

802039390060 V.2



Connect to the outdoor

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

HP	Reserved	0.8	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	Reserved		
MODEL	Reserved	21	26	35	53	70	80	90	105	125	140	150	160	180	Reserved		
POWER	Reserved	7K	9K	12K	18K	24K	27K	30K	36K	42K	48K	52K	55K	60K	Reserved		
SW1		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F

NOTE:

1. The factory default CN18 need cables short circuit
2. The water pump outlet are connected by a field installation

Indoor models Select bits	
SW2 NO.1,2	Indoor models
ON OFF	Low static pressure duct unit
ON OFF	High static pressure duct unit
ON OFF	Standard static pressure duct unit
ON OFF	Floor&Ceiling unit

FAN SPEED CHOICE	
SW2 NO.3	FAN SPEED
ON OFF	High speed
ON OFF	Super speed

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

NOTE:

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

FACTORY DEFAULT

ON OFF	SW2
	1 2 3 4 5 6 7 8

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

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

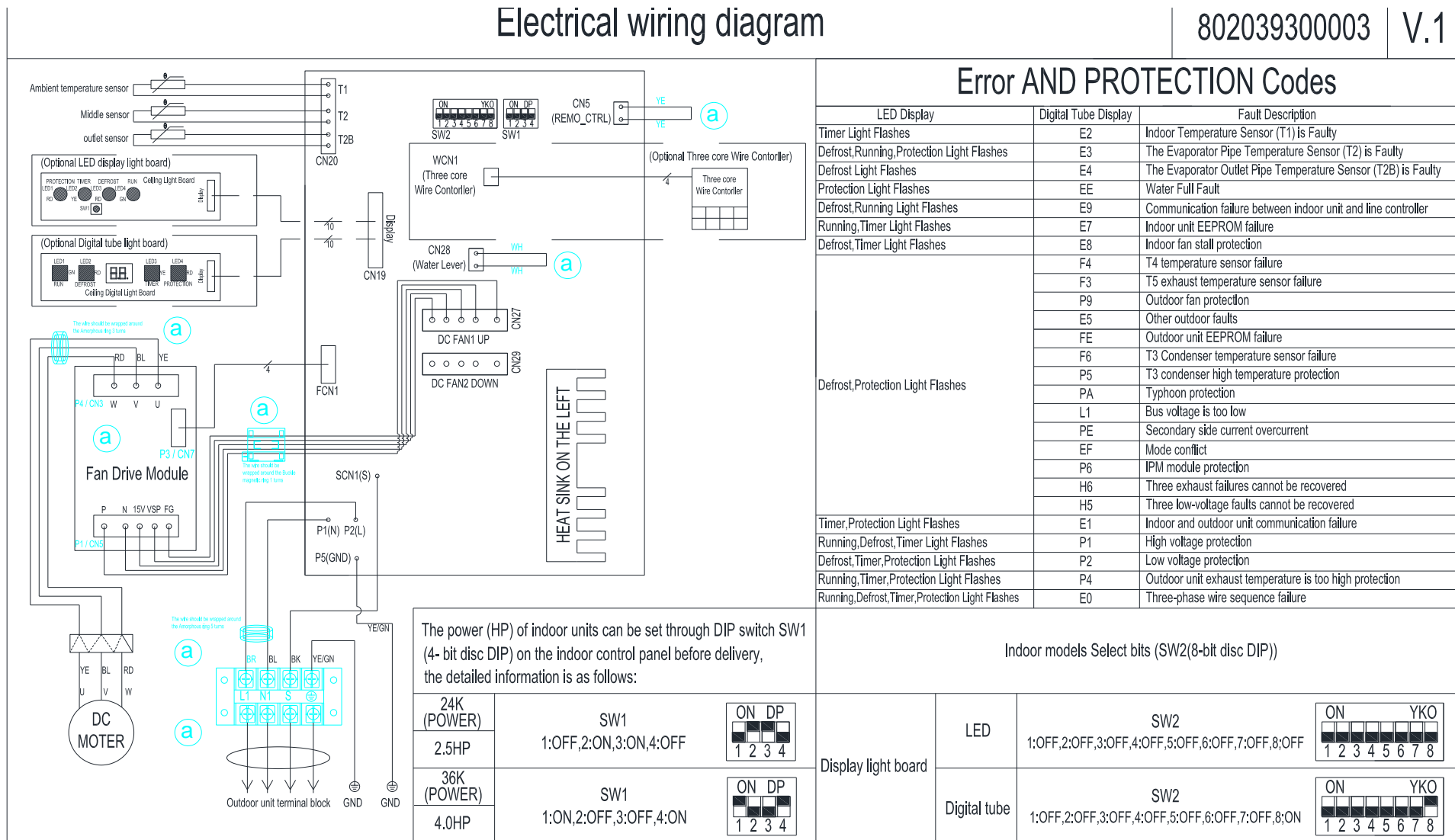
SW2 NO.7	Reserved
ON OFF	Reserved
ON OFF	Reserved

SW2 NO.8	Room temp. sensor T1 for
ON OFF	Electric control panel
ON OFF	Wire controller

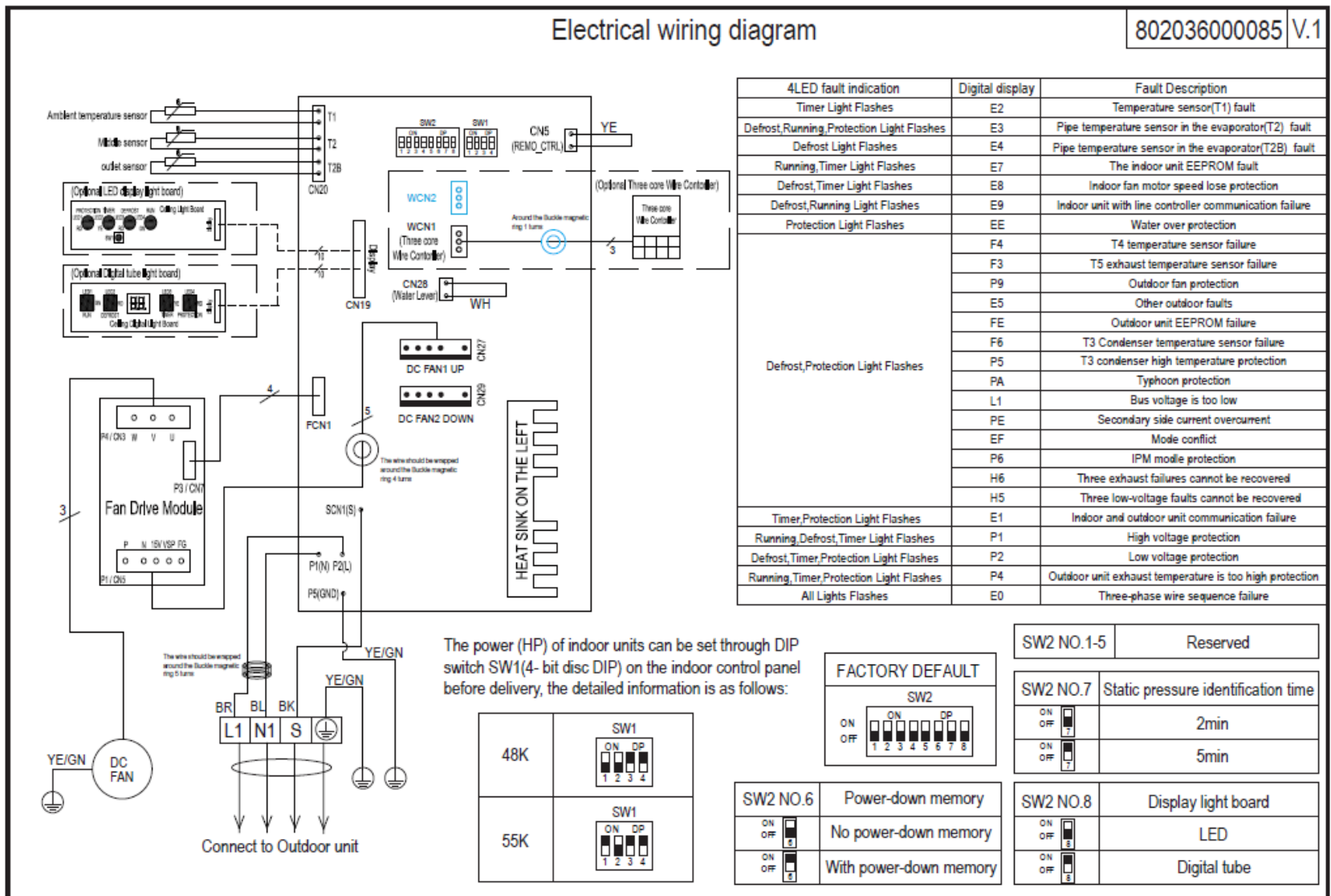
### 5.4 CTB-D24HR4-F203, CTB-D36HR4-F2051

## Electrical wiring diagram

802039300003 | V.1



5.5 CTB-D48HR4-FS04, CTB-D55HR4-FS04



## 6. Capacity Tables

### Cooling

#### 6.1 CTA-D18HR4-F102

MODEL		CTA-D18HR4-F102						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21°C	25°C	30°C	35°C	40°C	45°C	49 °C
21°C DB 15°C WB	Total capacity kW	5.09	5.06	5.03	4.99	4.95	4.91	4.88
	Input kW.	1.46	1.47	1.49	1.51	1.56	1.62	1.67
24°C DB 17°C WB	Total capacity kW	5.25	5.22	5.18	5.15	5.10	5.06	5.03
	Input kW.	1.48	1.49	1.51	1.53	1.59	1.64	1.69
27°C DB 19°C WB	Total capacity kW	5.41	5.38	5.34	5.30	5.26	5.22	5.18
	Input kW.	1.50	1.51	1.53	1.55	1.61	1.66	1.71
29°C DB 21°C WB	Total capacity kW	5.48	5.44	5.40	5.36	5.32	5.28	5.24
	Input kW.	1.52	1.54	1.56	1.58	1.63	1.69	1.74
32°C DB 23°C WB	Total capacity kW	5.58	5.55	5.51	5.47	5.42	5.38	5.34
	Input kW.	1.53	1.54	1.56	1.58	1.64	1.70	1.74

#### 6.2 CTA-D24HR4-F103

MODEL		CTA-D24HR4-F103						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21°C	25°C	30°C	35°C	40°C	45°C	49 °C
21°C DB 15°C WB	Total capacity kW	6.82	6.78	6.73	6.68	6.63	6.58	6.53
	Input kW.	2.04	2.06	2.08	2.11	2.18	2.26	2.32
24°C DB 17°C WB	Total capacity kW	7.04	7.00	6.95	6.89	6.84	6.78	6.74
	Input kW.	2.06	2.08	2.11	2.13	2.21	2.29	2.35
27°C DB 19°C WB	Total capacity kW	7.25	7.21	7.15	7.00	7.04	6.99	6.94
	Input kW.	2.09	2.11	2.13	2.16	2.24	2.32	2.38
29°C DB 21°C WB	Total capacity kW	7.34	7.29	7.24	7.19	7.13	7.07	7.03
	Input kW.	2.12	2.14	2.17	2.20	2.27	2.35	2.42
32°C DB 23°C WB	Total capacity kW	7.48	7.43	7.38	7.32	7.26	7.21	7.16
	Input kW.	2.13	2.15	2.18	2.20	2.28	2.36	2.43

#### 6.3 CTB-D36HR4-F205

MODEL		CTB-D36HR4-F205						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21°C	25°C	30°C	35°C	40°C	45°C	49 °C
21°C DB 15°C WB	Total capacity kW	10.09	10.03	9.96	9.88	9.80	9.73	9.66
	Input kW.	3.07	3.10	3.13	3.17	3.29	3.40	3.50
24°C DB	Total capacity kW	10.41	10.35	10.27	10.19	10.11	10.03	9.97

17°C WB	Input kW.	3.11	3.14	3.18	3.21	3.33	3.45	3.54
27°C DB	Total capacity kW	10.72	10.66	10.58	10.50	10.42	10.33	10.27
19°C WB	Input kW.	3.15	3.18	3.22	3.26	3.37	3.49	3.59
29°C DB	Total capacity kW	10.85	10.79	10.71	10.63	10.54	10.46	10.39
21°C WB	Input kW.	3.20	3.23	3.27	3.31	3.43	3.55	3.65
32°C DB	Total capacity kW	11.06	10.99	10.91	10.83	10.74	10.66	10.59
23°C WB	Input kW.	3.21	3.24	3.28	3.32	3.44	3.56	3.67

## 6.4 CTB-48HVR4, CTB-48HVR4S

MODEL		CTB-48HVR4, CTB-48HVR4S						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21°C	25°C	30°C	35°C	40°C	45°C	49 °C
21°C DB	Total capacity kW	13.45	13.37	13.29	13.18	13.08	12.97	12.89
15°C WB	Input kW.	4.80	4.83	4.89	4.97	5.12	5.32	5.47
24°C DB	Total capacity kW	13.87	13.79	13.68	13.60	13.47	13.37	13.29
17°C WB	Input kW.	4.86	4.89	4.97	5.03	5.21	5.38	5.53
27°C DB	Total capacity kW	14.29	14.21	14.11	14.00	13.89	13.79	13.68
19°C WB	Input kW.	4.93	4.97	5.03	5.09	5.29	5.44	5.61
29°C DB	Total capacity kW	14.48	14.37	14.26	14.16	14.05	13.95	13.84
21°C WB	Input kW.	5.00	5.06	5.12	5.18	5.35	5.53	5.70
32°C DB	Total capacity kW	14.74	14.66	14.55	14.45	14.32	14.21	14.11
23°C WB	Input kW.	5.03	5.06	5.12	5.18	5.38	5.57	5.73

## 6.5 CTB-55HVR4S

MODEL		CTA-55HVR4S						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21°C	25°C	30°C	35°C	40°C	45°C	49 °C
21°C DB	Total capacity kW	15.37	15.28	15.18	15.06	14.94	14.82	14.73
15°C WB	Input kW.	5.70	5.73	5.81	5.89	6.07	6.30	6.49
24°C DB	Total capacity kW	15.85	15.76	15.64	15.55	15.40	15.28	15.18
17°C WB	Input kW.	5.78	5.81	5.89	5.96	6.19	6.38	6.57
27°C DB	Total capacity kW	16.33	16.24	16.12	16.00	15.88	15.76	15.64
19°C WB	Input kW.	5.85	5.89	5.96	6.04	6.27	6.46	6.65
29°C DB	Total capacity kW	16.54	16.42	16.30	16.18	16.06	15.94	15.82
21°C WB	Input kW.	5.93	6.01	6.07	6.15	6.35	6.57	6.77
32°C DB	Total capacity kW	16.85	16.75	16.63	16.51	16.36	16.24	16.12
23°C WB	Input kW.	5.96	6.01	6.07	6.15	6.38	6.61	6.80

## Heating

### 6.6 CTA-D18HR4-F102

MODEL		CTA-D18HR4-F102						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24°C D 18°C W	15°C D 14°C W	7°C D 6°C W	3°C D 2°C W	-5°C D -6°C W	-7°C D -8°C W	-14°C D -15°C W
15°C	Capacity kW	5.43	5.39	5.37	5.22	4.99	4.91	4.43
	Input kW.	1.55	1.42	1.38	1.36	1.33	1.32	1.26
18°C	Capacity kW	5.38	5.35	5.34	5.18	4.96	4.88	4.40
	Input kW.	1.58	1.45	1.40	1.38	1.35	1.35	1.28
20°C	Capacity kW	5.35	5.32	5.30	5.15	4.92	4.85	4.37
	Input kW.	1.60	1.48	1.44	1.41	1.38	1.37	1.31
22°C	Capacity kW	5.33	5.28	5.26	5.11	4.89	4.81	4.34
	Input kW.	1.63	1.50	1.46	1.44	1.40	1.39	1.33
27°C	Capacity kW	5.21	5.25	5.23	5.08	4.85	4.78	4.30
	Input kW.	1.66	1.53	1.49	1.47	1.44	1.42	1.35

### 6.7 CTA-D24HR4-F103

MODEL		CTA-D24HR4-F103						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24°C D 18°C W	15°C D 14°C W	7°C D 6°C W	3°C D 2°C W	-5°C D -6°C W	-7°C D -8°C W	-14°C D -15°C W
15°C	Capacity kW	7.95	7.83	7.81	7.58	7.25	7.14	6.43
	Input kW.	1.96	1.91	1.86	1.83	1.79	1.78	1.69
18°C	Capacity kW	7.90	7.78	7.75	7.53	7.20	7.09	6.39
	Input kW.	1.99	1.94	1.89	1.86	1.82	1.81	1.73
20°C	Capacity kW	7.86	7.73	7.70	7.47	7.15	7.04	6.35
	Input kW.	2.05	1.98	1.93	1.93	1.86	1.84	1.76
22°C	Capacity kW	7.82	7.67	7.65	7.65	7.10	6.99	6.30
	Input kW.	2.08	2.01	1.95	1.95	1.89	1.88	1.78
27°C	Capacity kW	7.73	7.62	7.59	7.59	7.05	6.94	6.26
	Input kW.	2.13	2.05	1.99	1.99	1.93	1.91	1.82

### 6.8 CTB-D36HR4-F205

MODEL		CTB-D36HR4-F205						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24°C D 18°C W	15°C D 14°C W	7°C D 6°C W	3°C D 2°C W	-5°C D -6°C W	-7°C D -8°C W	-14°C D -15°C W
15°C	Capacity kW	12.11	11.70	11.66	11.32	10.83	10.67	9.61
	Input kW.	3.60	3.42	3.32	3.28	3.21	3.19	3.03



18°C	Capacity kW	12.08	11.62	11.58	11.24	10.75	10.59	9.54
	Input kW.	3.65	3.48	3.38	3.33	3.27	3.24	3.09
20°C	Capacity kW	12.04	11.54	11.50	11.16	10.68	10.52	9.48
	Input kW.	3.70	3.55	3.45	3.40	3.32	3.30	3.14
22°C	Capacity kW	12.00	11.46	11.42	11.09	10.60	10.44	9.41
	Input kW.	3.77	3.60	3.50	3.46	3.38	3.36	3.20
27°C	Capacity kW	11.73	11.38	11.34	11.01	10.53	10.37	9.35
	Input kW.	3.87	3.67	3.57	3.52	3.45	3.42	3.26

### 6.9 CTB-48HVR4, CTB-48HVR4S

MODEL		CTB-48HVR4, CTB-48HVR4S						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24°C D 18°C W	15°C D 14°C W	7°C D 6°C W	3°C D 2°C W	-5°C D -6°C W	-7°C D -8°C W	-14°C D -15°C W
15°C	Capacity kW	15.59	15.46	15.41	14.97	14.30	14.09	12.70
	Input kW.	5.45	5.03	4.88	4.81	4.70	4.67	4.45
18°C	Capacity kW	15.43	15.35	15.30	14.87	14.22	13.99	12.62
	Input kW.	5.57	5.09	4.96	4.88	4.77	4.77	4.52
20°C	Capacity kW	15.35	15.25	15.20	14.76	14.12	13.91	12.52
	Input kW.	5.64	5.21	5.06	4.99	4.88	4.84	4.62
22°C	Capacity kW	15.28	15.15	15.10	14.66	14.01	13.81	12.44
	Input kW.	5.75	5.28	5.13	5.06	4.96	4.91	4.70
27°C	Capacity kW	14.94	15.05	14.99	14.56	13.91	13.71	12.34
	Input kW.	5.86	5.38	5.24	5.16	5.06	5.03	4.77

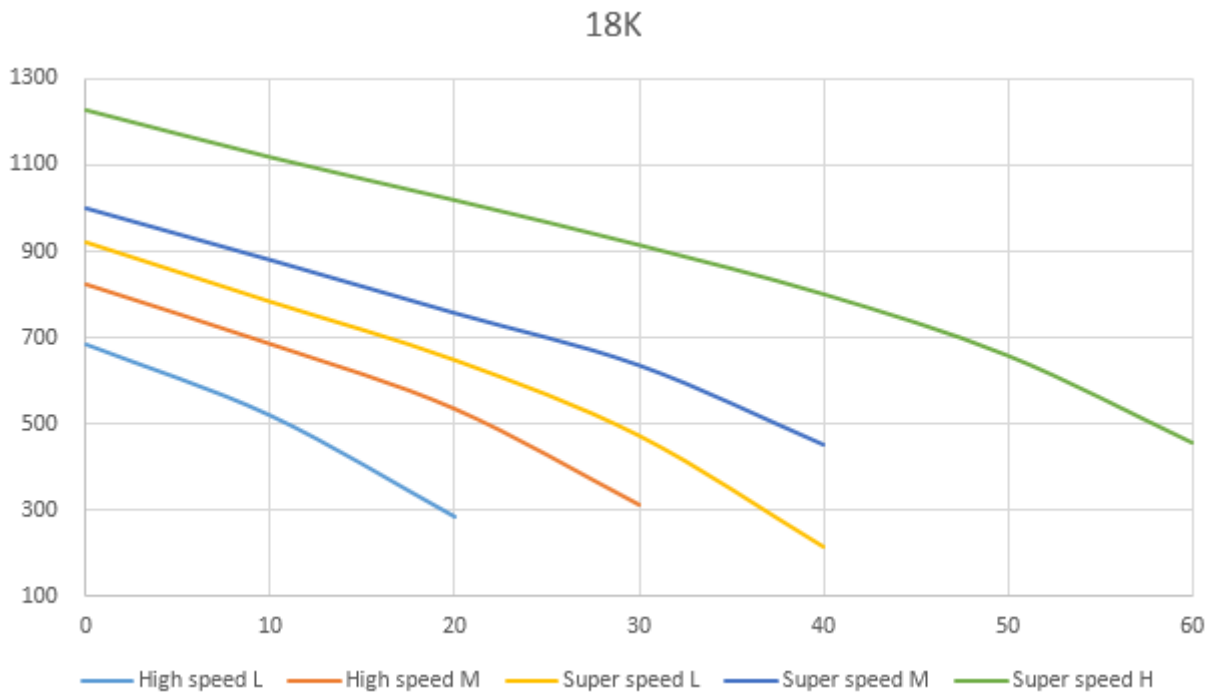
### 6.10 CTB-55HVR4S

MODEL		CTB-55HVR4S						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24°C D 18°C W	15°C D 14°C W	7°C D 6°C W	3°C D 2°C W	-5°C D -6°C W	-7°C D -8°C W	-14°C D -15°C W
15°C	Capacity kW	17.23	17.09	17.03	16.54	15.81	15.58	14.04
	Input kW.	6.04	5.56	5.40	5.32	5.20	5.16	4.92
18°C	Capacity kW	17.06	16.97	16.91	16.43	15.72	15.46	13.96
	Input kW.	6.16	5.64	5.48	5.40	5.28	5.28	5.00
20°C	Capacity kW	16.97	16.86	16.80	16.31	15.61	15.38	13.84
	Input kW.	6.25	5.76	5.60	5.52	5.40	5.36	5.12
22°C	Capacity kW	16.89	16.74	16.69	16.20	15.49	15.26	13.76
	Input kW.	6.35	5.84	5.68	5.60	5.48	5.44	5.20
27°C	Capacity kW	16.51	16.63	16.57	16.08	15.38	15.15	13.64
	Input kW.	6.48	5.96	5.80	5.72	5.60	5.56	5.28

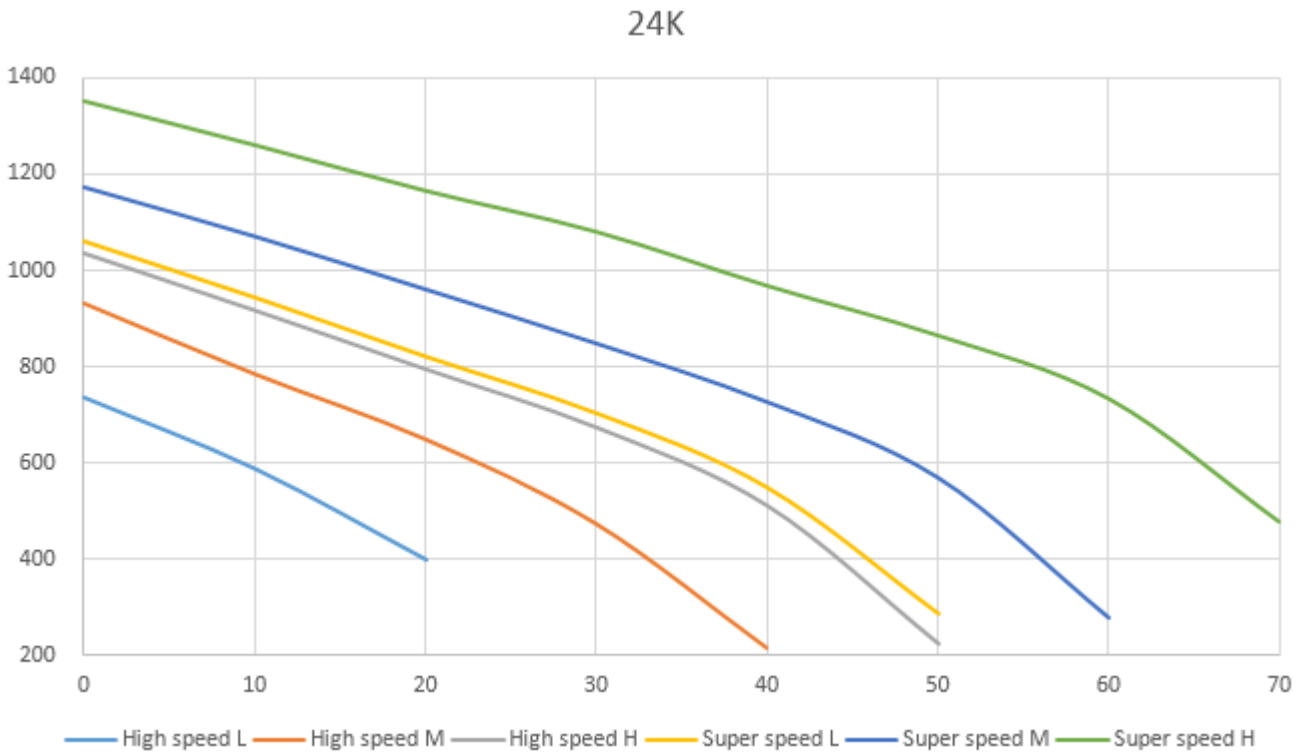


## 7. Static Pressure

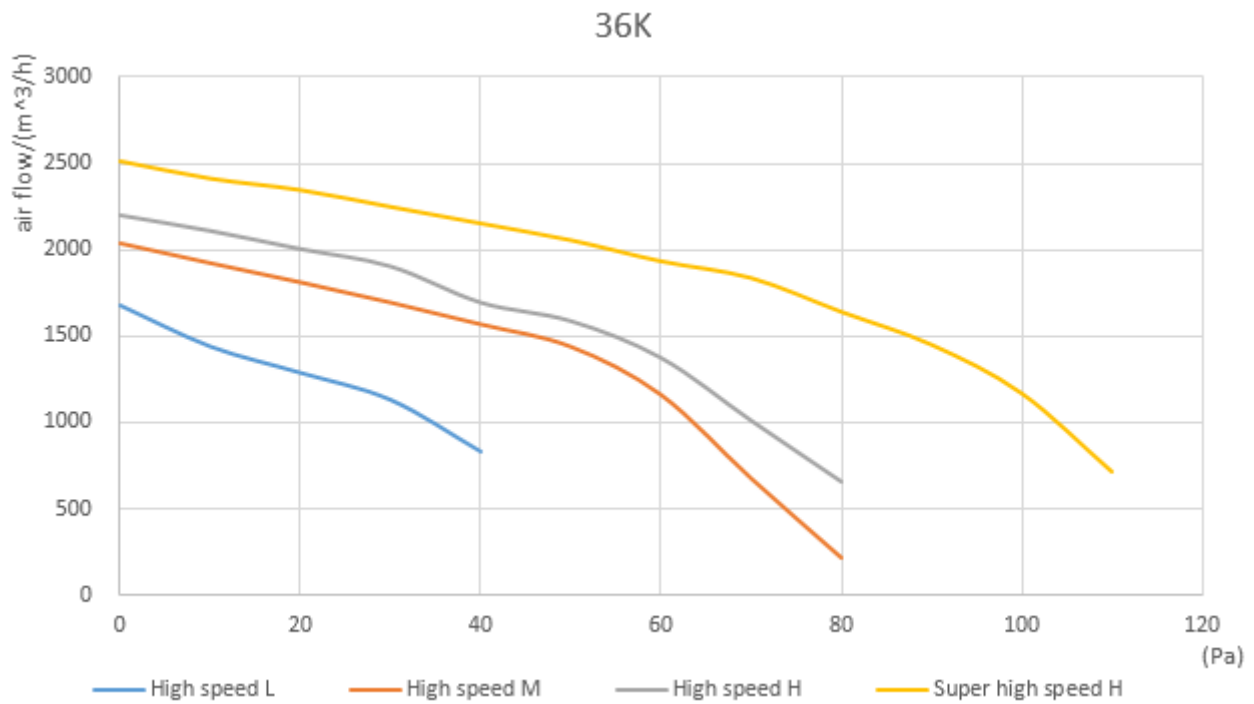
### 7.1 CTA-D18HR4-F102



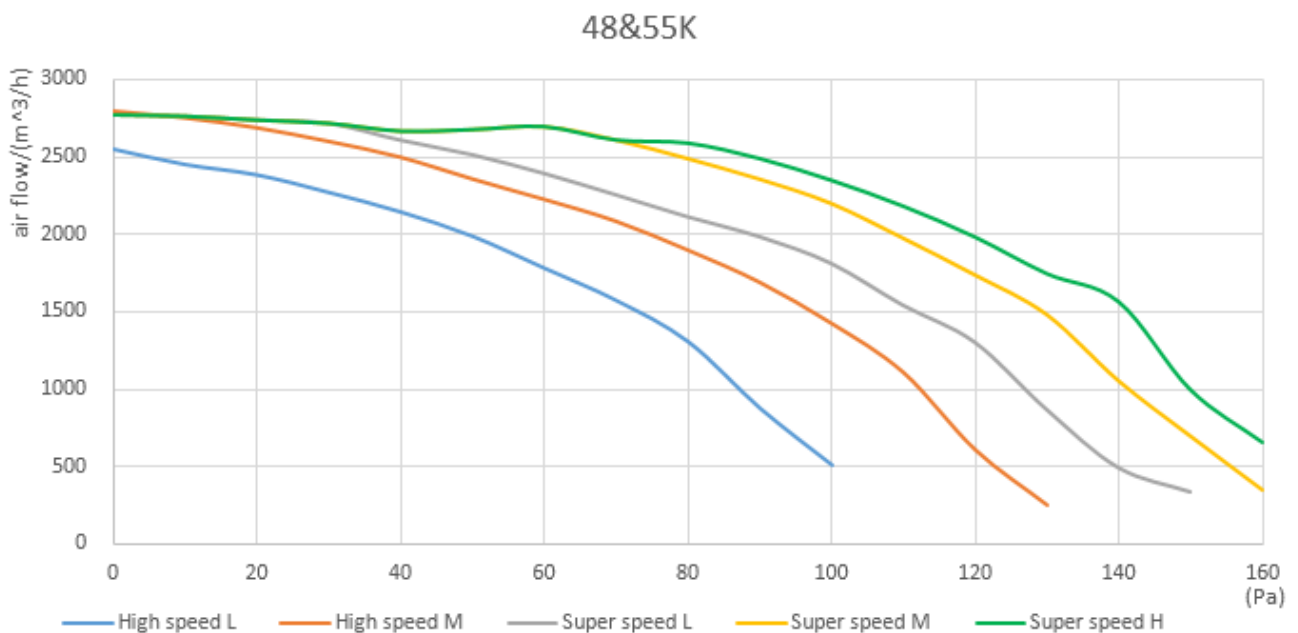
### 7.2 CTA-D24HR4-F103



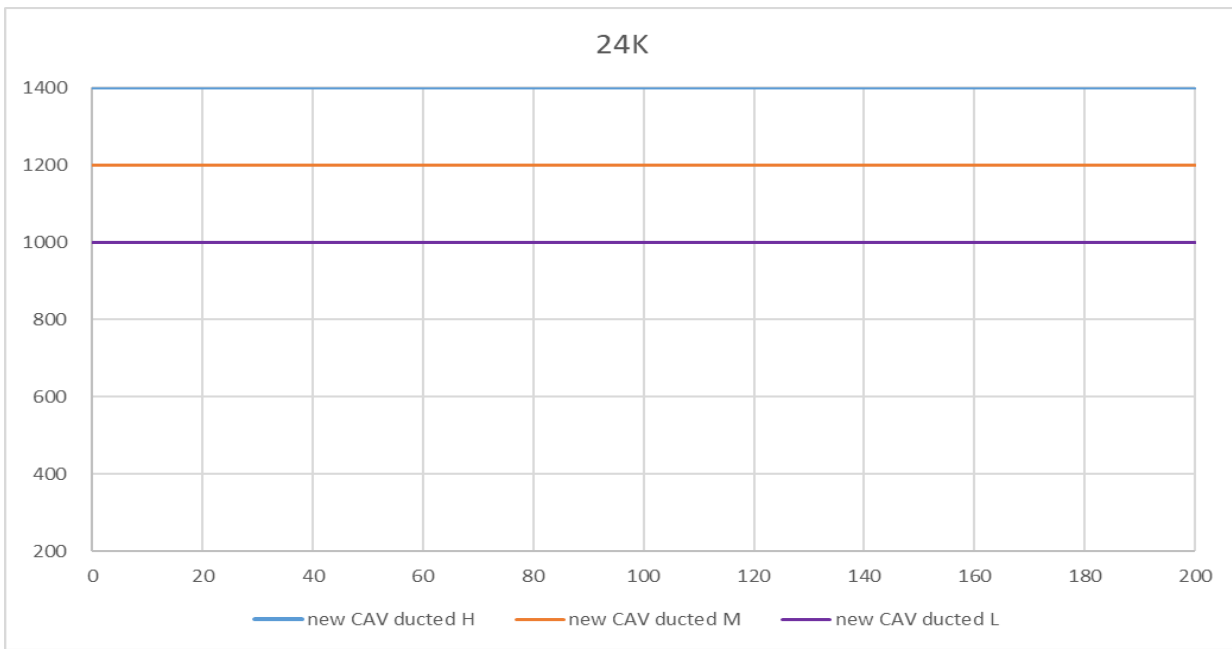
### 7.3 CTB-D36HR4-F205



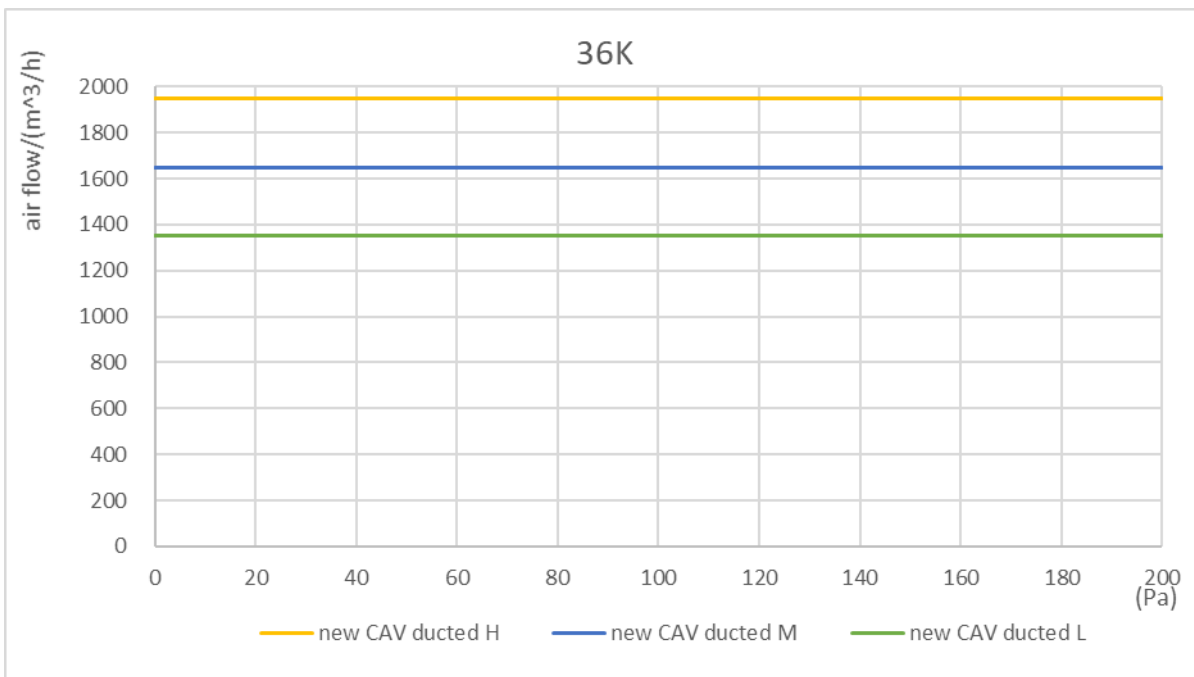
### 7.4 CTB-48HVR4, CTB-48HVR4S, CTB-55HVR4S



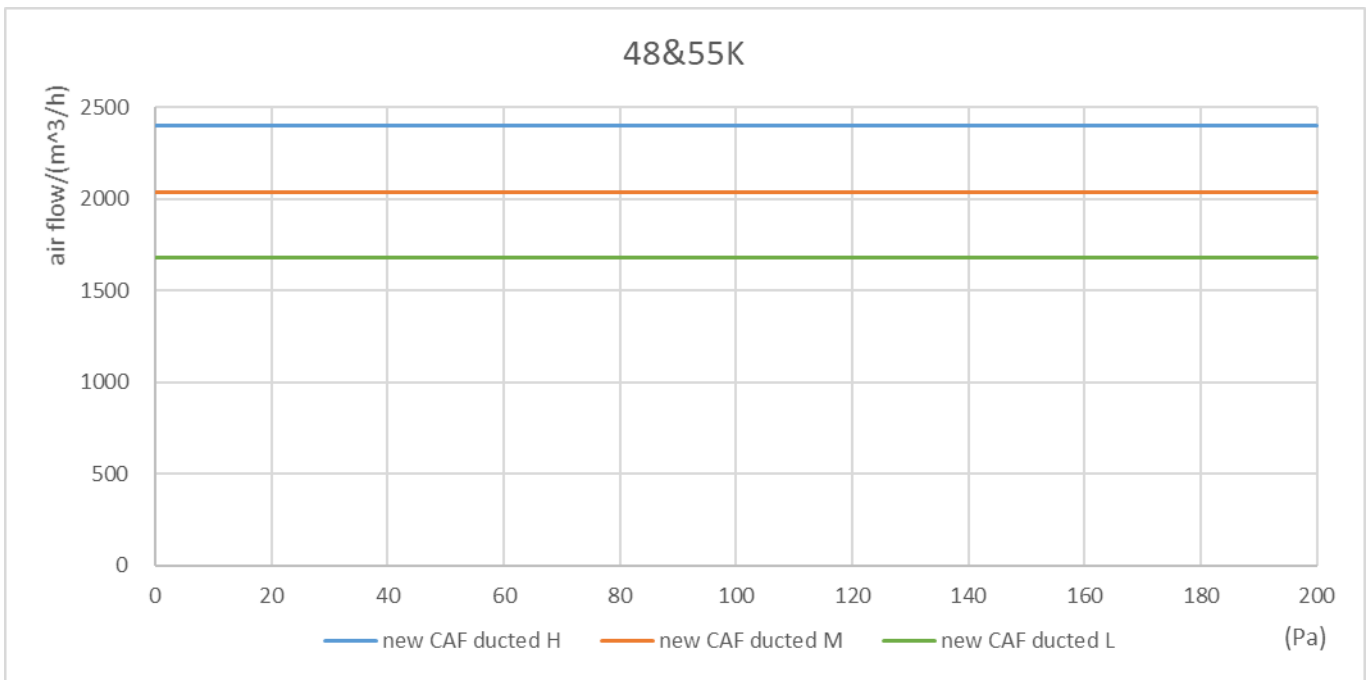
### 7.5 CTB-D24HR4-F203



### 7.6 CTB-D36HR4-F2051



### 7.7 CTB-D48HR4-FS04, CTB-D55HR4-FS04

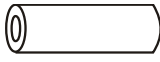







## 8. Electric Characteristics

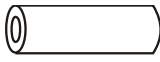









Model	Indoor Units				Indoor Fan Motor
	Hz	Voltage	Min.	Max.	kW
CTA-D18HR4-F102	50	220-240V	198V	254V	0.055
CTA-D24HR4-F103	50	220-240V	198V	254V	0.068
CTB-D36HR4-F205	50	220-240V	198V	254V	0.225
CTB-48HVR4	50	220-240V	198V	254V	0.240
CTB-48HVR4S	50	220-240V	198V	254V	0.240
CTB-55HVR4	50	220-240V	198V	254V	0.240
CTB-D24HR4-F203	50	220-240V	198V	254V	0.160
CTB-D36HR4-F2051	50	220-240V	198V	254V	0.300
CTB-D48HR4-FS04	50	220-240V	198V	254V	0.500
CTB-D55HR4-FS04	50	220-240V	198V	254V	0.500

## 9. Accessories

For common ducted unit,

	Name	Shape	Quantity
Tubing & Fittings	Soundproof/insulation sheath		2
	Binding tape		1
	Seal sponge		1
Drainpipe Fittings	Seal ring		1
Controllers	Remote controller		1
others	Operation & installation instruction manual		1

For constant air flow ducted unit,

	Name	Shape	Quantity
Tubing & Fittings	Soundproof/insulation sheath		2
	Binding tape		1
	Seal sponge		1
	15.88 nut		1
	9.52 nut		1
Drainpipe Fittings	Seal ring		1
Controllers	Wired controller and communication wire		1
others	Operation & installation instruction manual		1
	U-shaped terminal (with insulated handle)		15
	O-shaped terminal (with insulated handle)		3

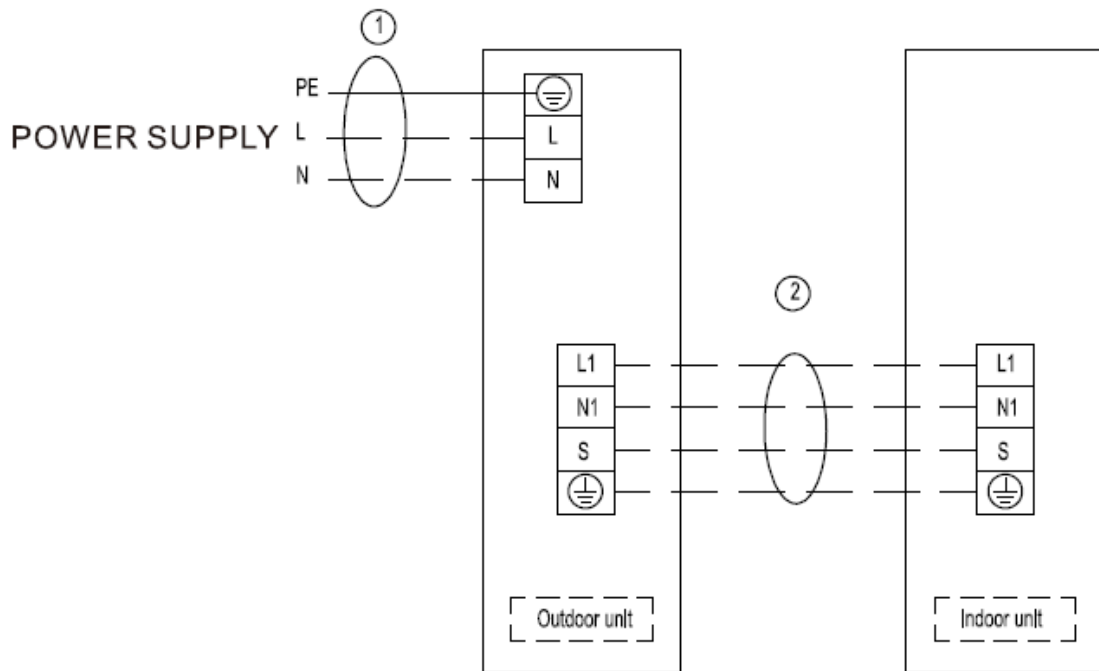


## 10. The Specification of Wiring

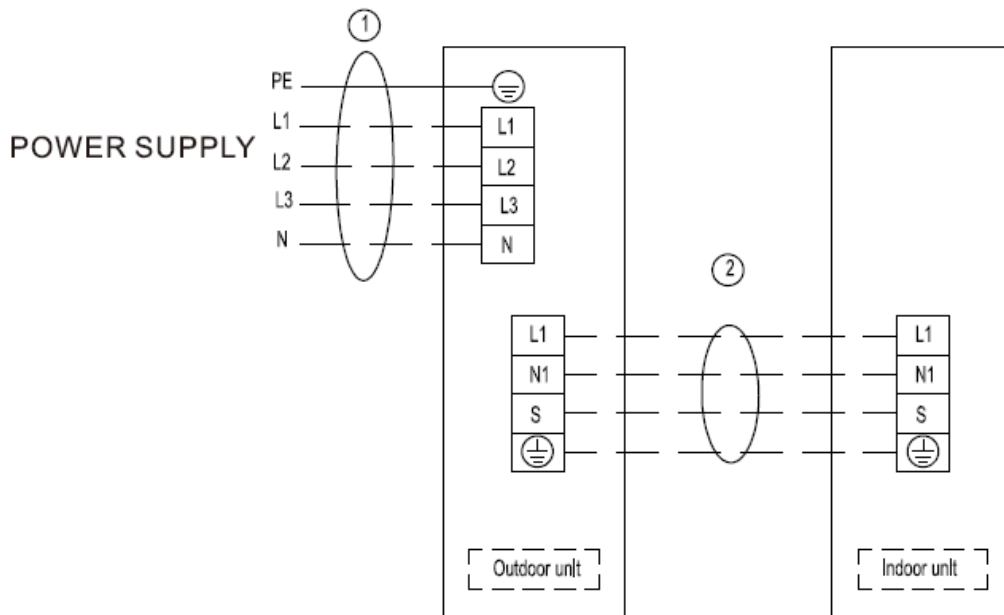
Model		CTA-D18HR4-F102	CTA-D24HR4-F103	CTB-D36HR4-F205	CTB-48HVR4
Indoor power supply	V/Ph/Hz	220~240/1/50			
Outdoor power supply	V/Ph/Hz	220~240/1/50			
Power Supply Method		From outdoor unit			
Outdoor unit Power Supply Wire		3×14AWG	3×14AWG	3×12AWG	3×12AWG
Indoor unit Power Supply Wire		4×16AWG	4×16AWG	4×16AWG	4×16AWG

Model		CTB-D36HR4-F205S	CTB-48HVR4S	CTB-55HVR4S
Indoor power supply	V/Ph/Hz	220~240/1/50	220~240/1/50	220~240/1/50
Outdoor power supply	V/Ph/Hz	380~415/3/50	380~415/3/50	380~415/3/50
Power Supply Method		From outdoor unit		
Outdoor unit Power Supply Wire		5×14AWG	5×12AWG	5×12AWG
Indoor unit Power Supply Wire		4×14AWG	4×14AWG	4×14AWG

## 11. Field Wiring



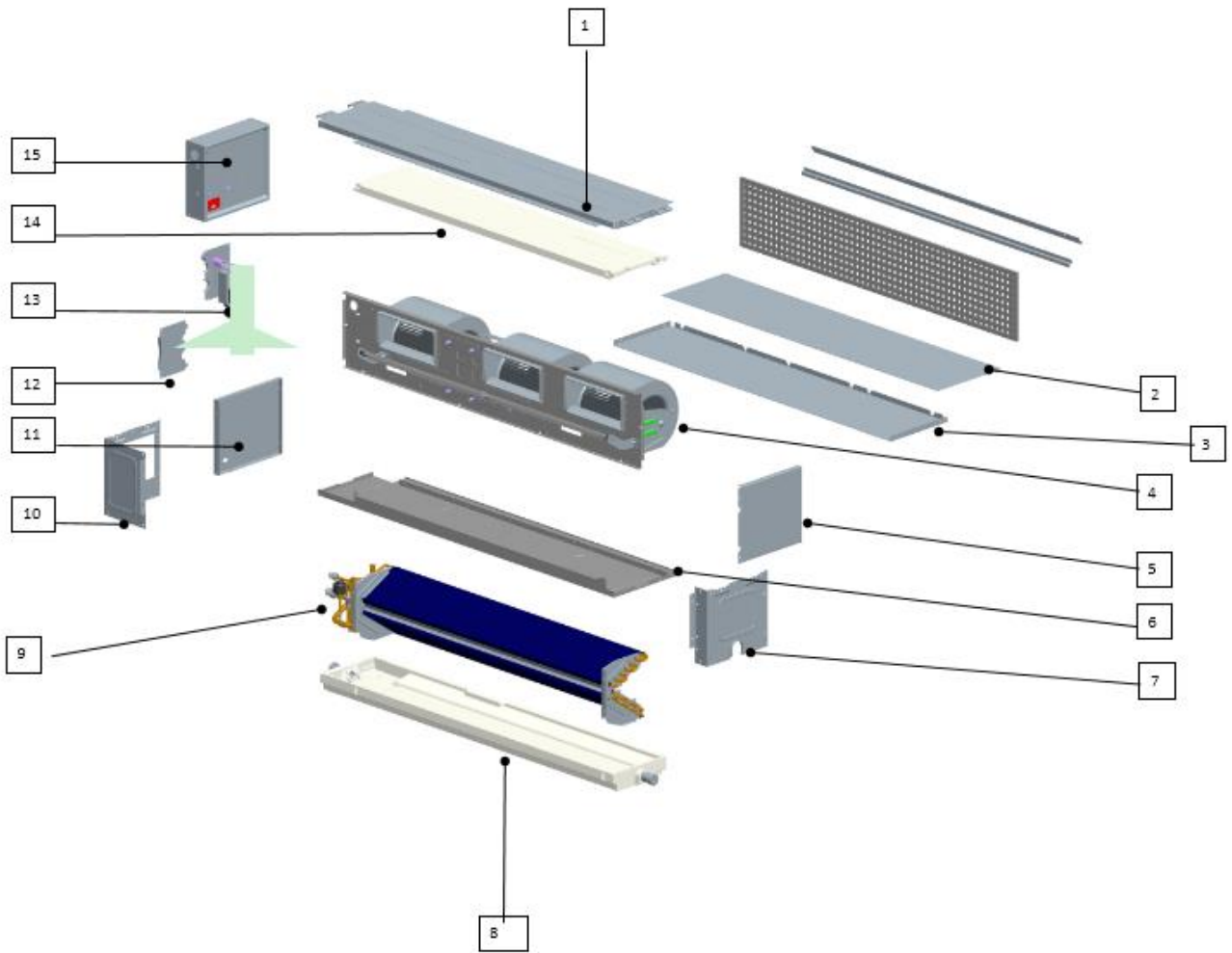
Applicable for (220-240V/50Hz) single phase models



Applicable for (380-415V 3N~/50Hz) three phase models

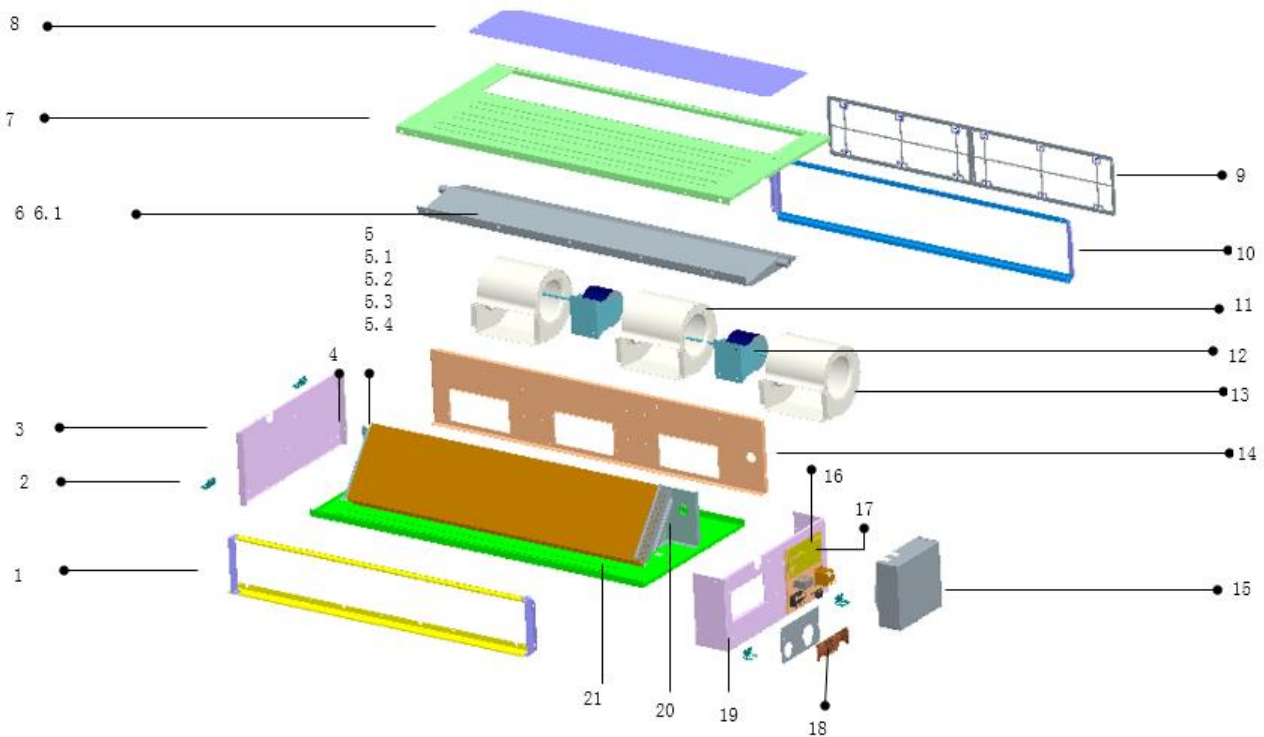
## 12. Exploded View

### 12.1 CTA-D18HR4-F102, CTA-D24HR4-F103



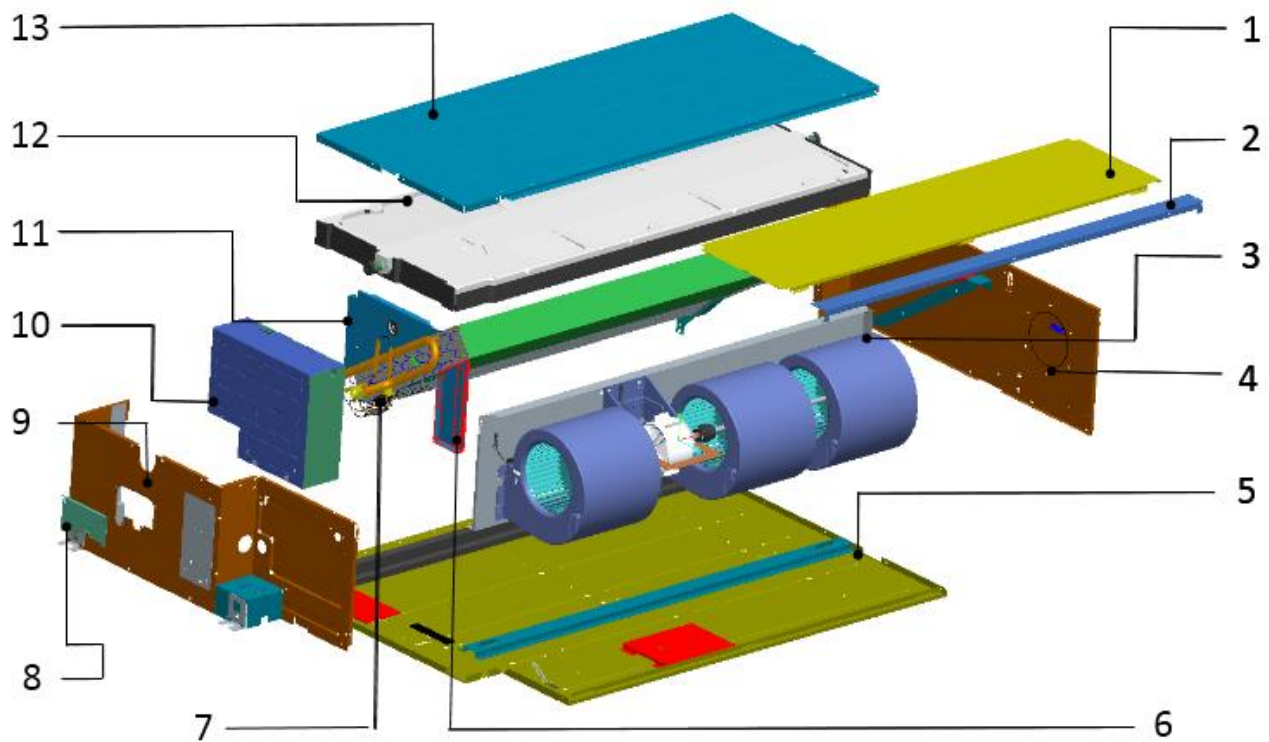
No.	Part Name	No.	Part Name
1	Cover attached cotton assy	9.1.1	Up evaporator
2	panel upper air inlet channel	9.1.2	Down evaporator
3	panel bellow air inlet channel	9.1.3	Collecting pipe assy
4	Motor assy	9.1.4	Shunt assy
4.1	Cotton on fan fixing board assy	9.2	Damped rubber
4.2	Holder for fan motor	9.3	Damped rubber
4.3	Wind turbine volute	9.4	sheath insulation
4.4	Biaxial indoor DC	9.5	sheath insulation
4.5	Motor support joint	10	Left clapboard attached cotton assy
4.6	Right fixing clamp for motor	11	Left inlet clapboard attached cotton assy
4.7	Left fixing clamp for motor	11.1	Left clapboard of air inlet channel
4.8	Axis	11.2	The right plate of air inlet channel
4.9	Bearing holder	12	Cotton posted a pipe cover assy
4.10	The holder of axis assy	12.1	Output pipe of left clapboard
5	The right plate of air inlet channel	12.2	Cotton posted a pipe cover
6	panel bellow attached cotton assy	13	Pump holder attached cotton assy
6.1	Down Panel assy	13.1	Pump holder
6.1.1	Down Panel	13.2	Pump cover sponge
6.1.2	fan fixed plate	14	Up foam
6.2	Down outlet cotton	15	E-parts assy
6.3	Down panel cotton	15.1	Base for electric control
7	Right clapboard cotton assy	15.2	Plastic base for PCB
8	Bubble water pan	15.3	Electronic control board for indoor unit
9	Evaporator	15.4	Terminal
9.1	Evaporator assy		

## 12.2 CTB-D36HR4-F205



No.	Part Name	No.	Part Name
1	Air outlet assy	11.1	Wind turbine volute (left)
2	Hanger	11.2	Wind turbine volute (right)
3	Left side board cotton sticking component	12	Indoor motor1
4	Left connecting panel for evaporator	12.1	Indoor motor2
5	Evaporator components	13	Fixing board assy for fan
5.1	Transition tube	15	E- parts box cover
5.2	Current dividing assy	16	Electronic control components
5.3	Collecting pipe assy	16.1	Main PCB
5.4	Evaporator assy	16.2	Temp sensor
5.5	Installation tube for probe	16.3	Terminal
6	Water pan assy	17	E- parts box base
6.1	Rubber cover for water outlet joint	18	Cover plate with cotton components
7	Lower panel	19	Right side board
8	Air return baffle	20	Right connecting panel for evaporator
9	Air filter	21	Upper panel
10	Air return assy		Wind turbine volute (left)

### 12.3 CTB-48HVR4, CTB-48HVR4S, CTB-55HVR4S



## R32 50Hz Universal Series Technical Manual

No.	Part Name	No.	Part Name
1	Air return baffle	7	Evaporator components
2	Air return baffle support	7.1	Evaporator assy
3	Fan assy	7.2	Output pipe assy
3.1	Middle beam welding assy	7.3	Input pipe assy
3.2	Motor support	8	Sealing board for outlet pipe
3.3	Left upper cover for motor	9	Left side foam assy
3.4	Left lower cover for motor	9.1	Left side board welding assy
3.5	Right upper cover for motor	9.2	Hanger
3.6	Right lower cover for motor	10	Electronic control components
3.7	Motor support joint board	10.1	Electric part box
3.8	Centrifugal fan wheel and Scroll case assy	10.2	Electric part box cover
3.9	Axis support board	10.3	Main control board assy
3.10	Bearing holder	10.4	Terminal
3.11	Bearing holder	10.5	Temp sensor
3.12	Axis	10.6	Temp sensor
3.13	Coupling	10.7	Resistance
3.14	DC Fan motor	10.8	Capacitor board
4	Right side board foam assy	10.9	Magnet ring
4.1	Right side board welding assy	10.10	Reactance
4.2	Hanger	11	Evaporator support panel 1 assy
5	Cover foam assy	12	Water pan components
5.1	Cover assy	13	Chassis components
6	Evaporator support panel 2		

# Floor & Ceiling

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## 1 Features

1. Flexible installation, ceiling suspended and floor standing.



2. Adopting centrifugal fans, higher ESP and longer air flow distance.



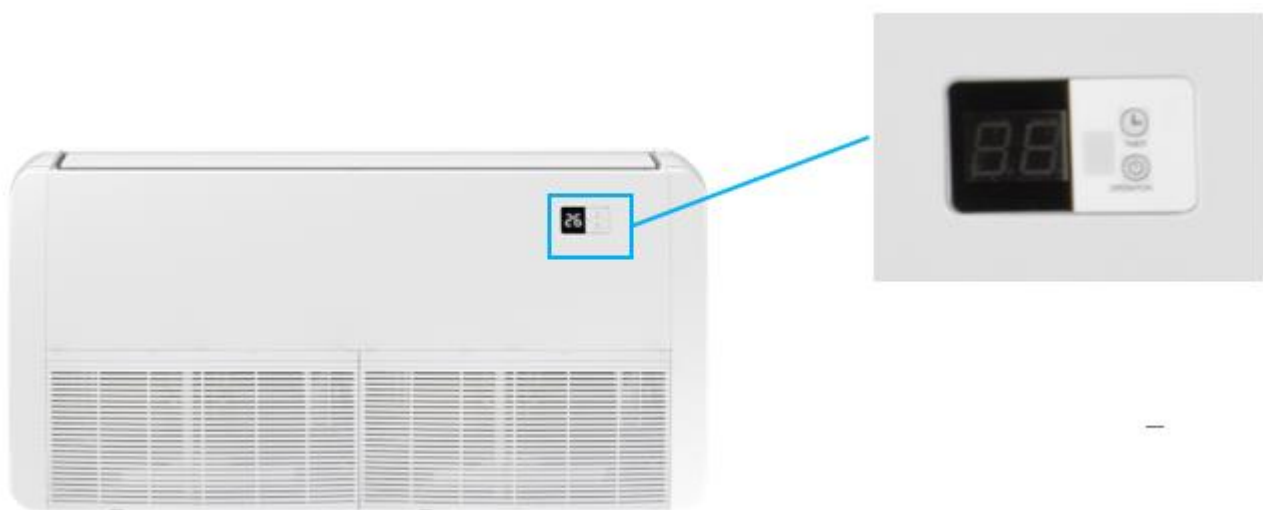
3. Two-way auto-swing function, built-in two louver step motors, vertical and horizontal air-flow adjustment.



4. Washable air filter



5. Digital display.



6. High efficiency DC fan motor, low noise and more comfortable.

7. New upper and lower buckle type wheel case, the upper plastic wheel case can be removed alone, which is convenient adjust the wheel motor.



8. Water pump is optional, pumping head is up to 1200mm.

9. Adopting waterproof plastic film on water collector, avoiding water leakage.



10. Self-diagnostic function and multi protection; Auto-restart function.



11. Standard for wireless controller; option for wired controller



Standard



Optional

## 2 Specifications

Model			CUA-D18HR4-LDBA	CUA-D24HR4-LDBA	CUA-D36HR4-LDBB
Indoor power supply		V/Ph/Hz	220~240/1/50	220~240/1/50	220~240/1/50
Cooling	Capacity	KW	2.0-5.3-5.6	3.5-7.0-8.0	3.6-10.5-12.8
	SEER		6.1	6.1	6.1
	Energy efficiency class		A++	A++	A++
	Year Consumption	kWh/annum	310	430	645
Heating	Capacity	KW	2.2-5.3-5.8	4.5-7.7-8.5	4.35-11.5-13.2
	SCOP		4.0	4.0	4.0
	Energy efficiency class		A+	A+	A+
	Year Consumption	kWh/annum	1400	2150	3150
Indoor unit power input		W	75	75	120
Indoor unit current input		A	0.3	0.3	0.5
Pdesignc		W	5300	7000	10500
Pdesignh(A)		W	4000	6000	9000
Indoor fan motor	Model		DR-310-75LD-8	DR-310-75LD-8	DR-310-120LD-8
	Brand		Panasonic	Panasonic	Panasonic
	Power output	W	75	75	120
	Capacitor	μF	-	-	-
	Speed	r/min	1225/1080/930	1225/1080/930	1400
	Insulation class			E	E
Indoor coil	Number of rows		3	3	3
	Tube pitch(a)x row pitch(b)	mm	21×13.37	21×13.37	21×13.37
	Fin spacing	mm	1.4	1.4	1.4
	Fin type		Hydrophilic	Hydrophilic	Hydrophilic
	Tube outside dia. and type	mm	Φ7	Φ7	Φ7
			inner grooved	inner grooved	inner grooved
	Coil length x height x width	mm	680x252x40.11	680x252x40.11	948x252x40.11
Number of circuits			2	4	4
Indoor air flow(High speed)		m <sup>3</sup> /h	1200	1200	1800
Indoor noise level	power level	dB(A)	48~52	48~52	57~65
	pressure level		36/42/47	43/46/49	45/48/51
Indoor unit	Dimension(W*H*D)	Body(mm)	1050×675×235	1050×675×235	1250×675×235
	Packing(W*H*D)	Body(mm)	1130×765×330	1130×765×330	1380×765×325
	Net/Gross weight	Body(Kg)	26.5/31	26.5/31	31.3/36.2
Max pressure		MPa	4.5	4.5	4.5
Refrigerant type			R32	R32	R32
Refrigerant piping	Liquid side/Gas side	mm	Φ6.35/Φ12.7	Φ9.52/Φ15.88	Φ9.52/Φ15.88
Drainage pipe		mm	DN25	DN25	DN25
Operation temp		°C	16~32	16~32	16~32
Ambient temp	cooling	°C	-15~50	-15~50	-15~50
	heating	°C	-15~30	-15~30	-15~30
Application area		m <sup>2</sup>	20-35	28-50	40-70

Model			CUA-D48HR4-LDBC	CUA-D55HR4-LDBC
Indoor power supply		V/Ph/Hz	220~240/1/50	220~240/1/50
Cooling	Capacity	KW	7.0-14.0-15.5	7.5-16.0-17.0
	SEER		6.1	6.1
	Energy efficiency class		A++	A++
	Year Consumption	kWh/annum	795	911
Heating	Capacity	KW	8.0-14-16.0	8.5-16-17.5
	SCOP		4.0	4.0
	Energy efficiency class		A+	A+
	Year Consumption	kWh/annum	3723	4046
Indoor unit power input		W	250	250
Indoor unit current input		A	1.2	1.2
Pdesignc		W	14000	16000
pdesignh(A)		W	11000	12000
Indoor fan motor	Model		DR-310-75LD-8	DR-310-75LD-8
	Brand		Panasonic	Panasonic
	Power output	W	75*2	75*2
	Capacitor	μF	-	-
	Speed	r/min	1400/1250/1110	1400/1250/1110
	Insulation class			E
Indoor coil	Number of rows		4	4
	Tube pitch(a)xrow pitch(b)	mm	21×13.37	21×13.37
	Fin spacing	mm	1.4	1.4
	Fin type		Hydrophilic	Hydrophilic
	Tube outside dia. and type	mm	Φ7 inner grooved	Φ7 inner grooved
	Coil lengthxheightxwidth	mm	1360*252*53.48	1360*252*53.48
	Number of circuits			6
Indoor air flow(High speed)		m <sup>3</sup> /h	2000/1700/1600	2000/1700/1600
Indoor noise level	power level	dB(A)	58-66	58-66
	pressure level		46-52	46-52
Indoor unit	Dimension(W*H*D)	Body(mm)	1670*675*235	1670*675*235
	Packing(W*H*D)	Body(mm)	1750*770*325	1750*770*325
	Net/Gross weight	Body(Kg)	43/48	43/48
Max pressure		MPa	4.5	4.5
Refrigerant type			R32	R32
Refrigerant piping	Liquid side/Gas side	mm	Φ9.52/Φ15.88	Φ9.52/Φ15.88
Drainage pipe		mm	DN25	DN25
Operation temp		°C	16~32	16~32
Ambient temp	cooling	°C	-15~50	-15~50
	heating	°C	-15~30	-15~30
Application area		m <sup>2</sup>	56-93	64-106

### Notes:

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

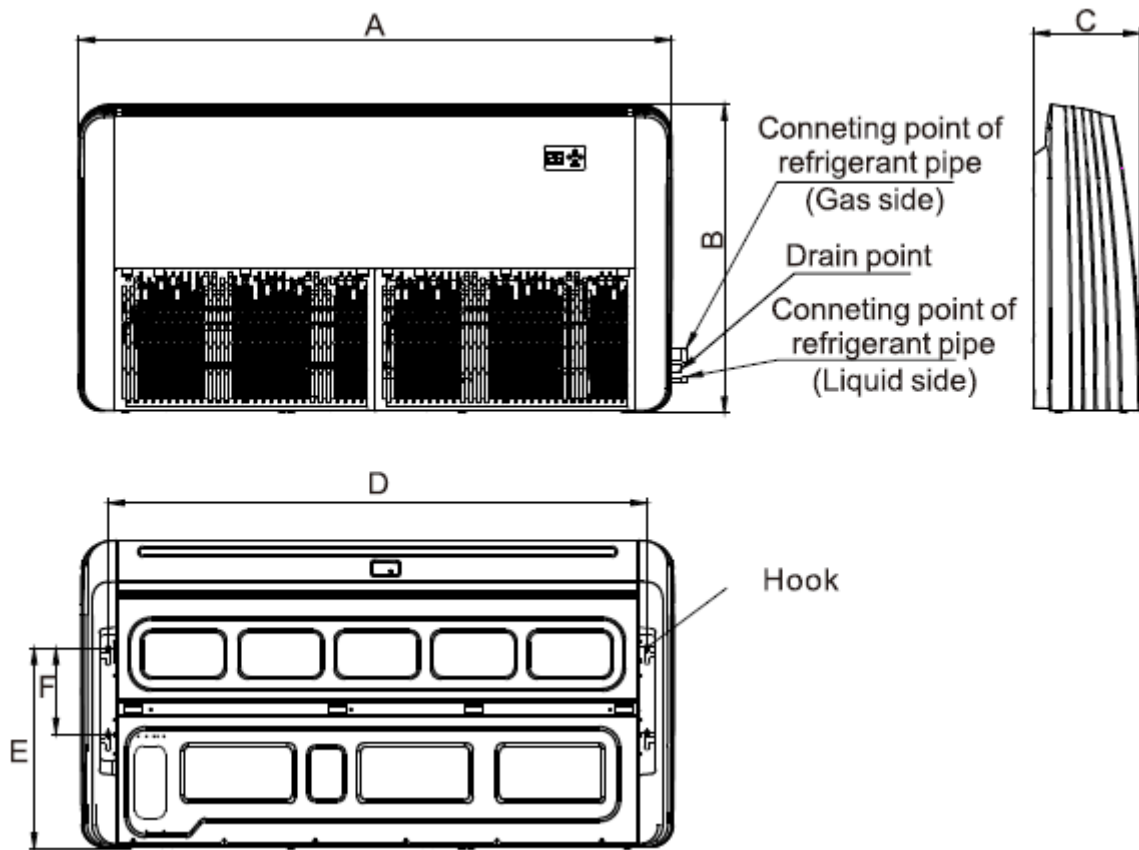
Indoor temp: 27°CDB, 19°CWB; Outdoor temp: 35°CDB; Equivalent ref. Piping: 5m (horizontal)

2. Nominal heating capacities are based on the following conditions:

Indoor temp: 20°CDB; Outdoor temp: 7°CDB, 6°CWB; Equivalent ref. Piping: 5m (horizontal)

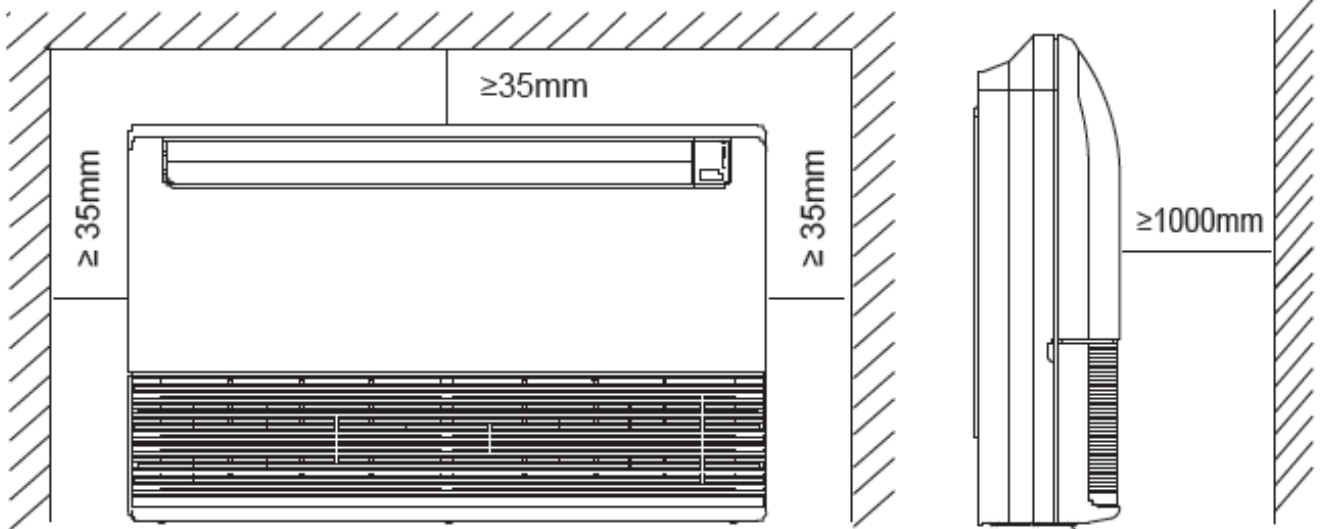
3. Actual noise level may differ, depending on the room structure, etc, since these noise values are from an anechoic room.

### 3 Dimensions



Model(kBtu/h)	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)	F(mm)
18/24	1050	675	235	933	440	188
36	1250	675	235	1185	440	188
48/55	1670	675	235	1553	440	188

## 4 Service Space



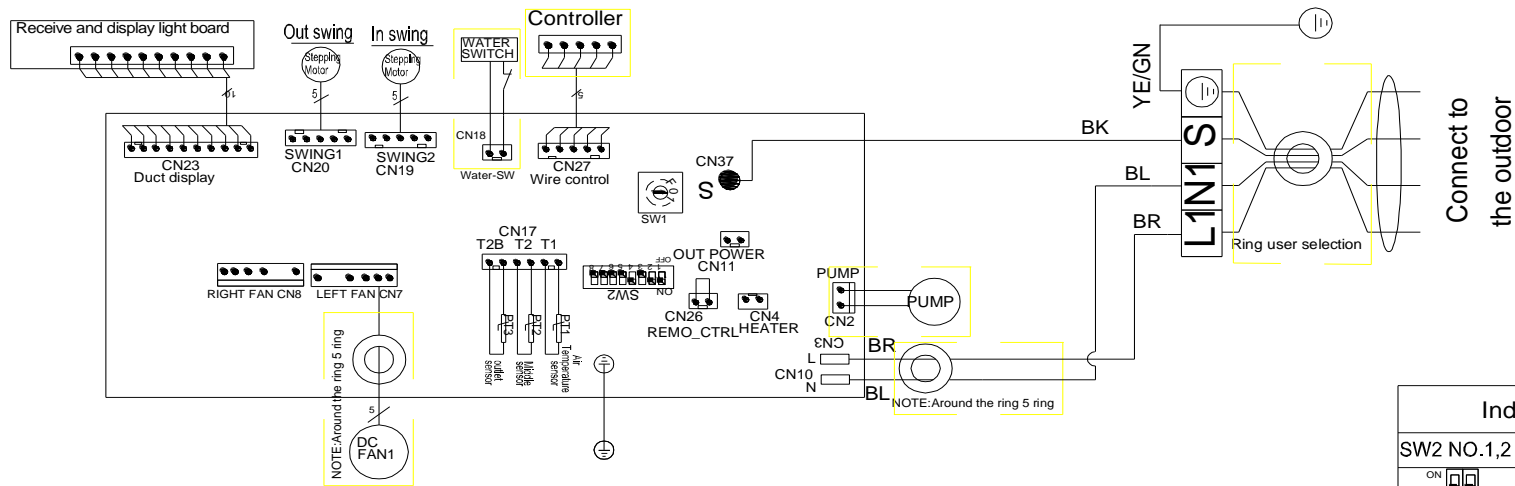


## 5 Wiring Diagrams

### 5.1 CUA-D18HR4-LDBA, CUA-D24HR4-LDBA

Electrical wiring diagram

802039790155 V. 0



Connect to the outdoor

NOTE:

ON		That DIP to ON
OFF		That DIP to OFF

FACTORY DEFAULT

SW2							
ON							
OFF							

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

SW2 NO.6	Reserved
SW2 NO.7	Reserved

SW2 NO.8	Room temp. sensor T1 for
ON	
OFF	
ON	Electric control panel
ON	Wire controller
OFF	

Indoor models Select bits	
SW2 NO.1,2	Indoor models
ON	
OFF	
ON	Low static pressure duct unit
ON	
OFF	
ON	High static pressure duct unit
ON	
OFF	
ON	Standard static pressure duct unit
ON	
OFF	
ON	Floor&Ceiling Unit
OFF	

SW2 NO.3	FAN SPEED CHOICE
ON	
OFF	
ON	High speed
ON	
OFF	
ON	Super High speed

SW2 NO.4	Display light board
ON	
OFF	
ON	LED
ON	
OFF	
ON	Digital tube

Note1: If there is no water pump, CN18 need to short answer.

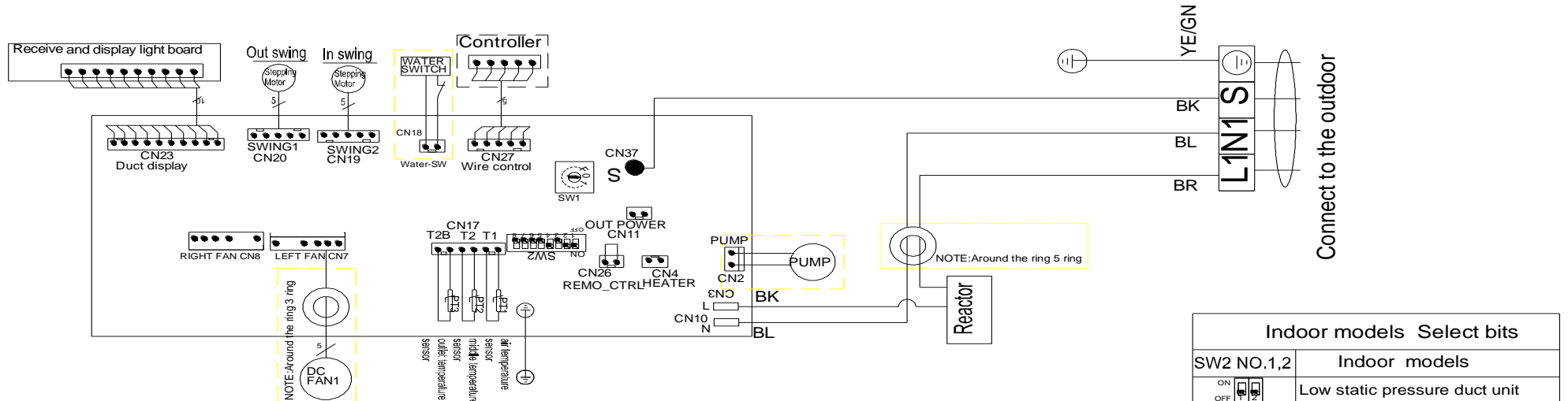
The power (HP) of indoor units can be set through DIP switch SW1 (16-bit disc DIP) on the indoor control panel before delivery, the detailed information is as follows:

HP	Reserved	0.8	1.0	1.5	1.7	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	Reserved	
MODEL	Reserved	21	26	35	47	53	70	80	90	105	125	140	150	160	180	Reserved	
POWER	Reserved	7K	9K	12K	16K	18K	24K	27K	30K	36K	42K	48K	52K	55K	60K	Reserved	
SW1		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F

## 5.2 CUA-D36HR4-LDBB

### Electrical wiring diagram

802039790156.0



NOTE:

ON		That DIP to ON
OFF		That DIP to OFF

#### FACTORY DEFAULT

ON		1		2		3		4		5		6		7		8
OFF		1		2		3		4		5		6		7		8

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

SW2 NO.6		Reserved
SW2 NO.7		Reserved

SW2 NO.8		Room temp. sensor T1 for
ON		Electric control panel
OFF		Wire controller

Indoor models Select bits	
SW2 NO.1,2	Indoor models
ON	Low static pressure duct unit
OFF	High static pressure duct unit
ON	Standard static pressure duct unit
OFF	Floor&Ceiling Unit

SW2 NO.3	FAN SPEED CHOICE
ON	High speed
OFF	Super High speed

SW2 NO.4	Display light board
ON	LED
OFF	Digital tube

Note1: If there is no water pump, CN18 need to short answer.

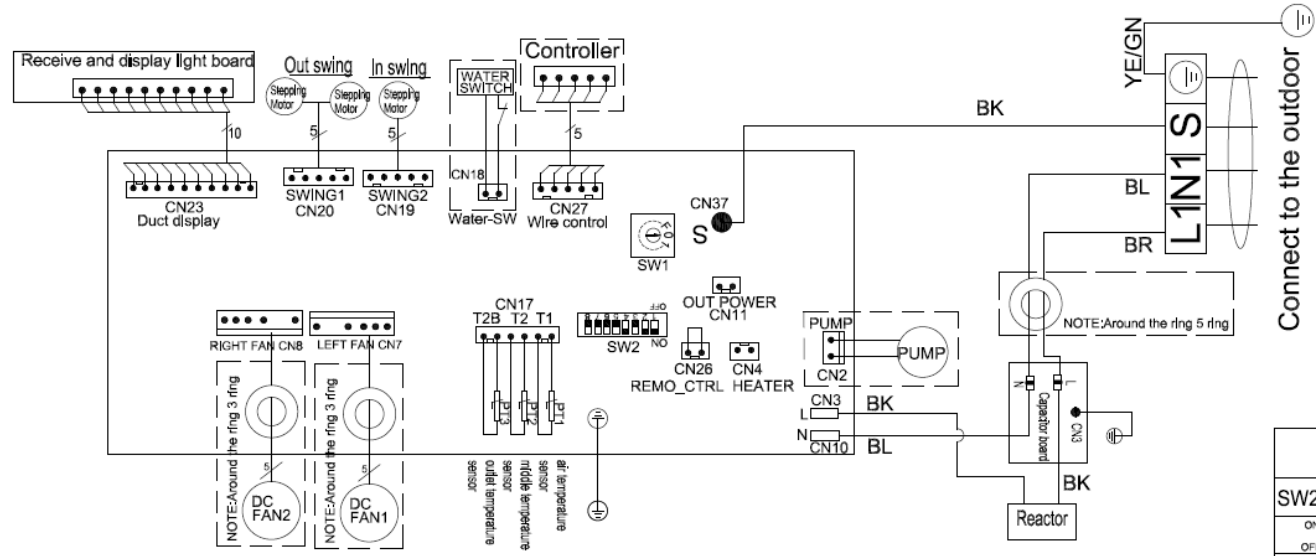
The power (HP) of indoor units can be set through DIP switch SW1 (16-bit disc DIP) on the indoor control panel before delivery, the detailed information is as follows:

HP	Reserved	0.8	1.0	1.5	1.7	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	Reserved
MODEL	Reserved	21	26	35	47	53	70	80	90	105	125	140	150	160	180	Reserved
POWER	Reserved	7K	9K	12K	16K	18K	24K	27K	30K	36K	42K	48K	52K	55K	60K	Reserved
SW1	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F

### 5.3 CUA-D48HR4-LDBC, CUA-D55HR4-LDBC

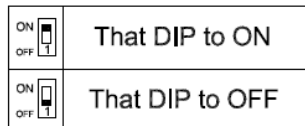
## Electrical wiring diagram

802039790169 V. 0



Connect to the outdoor

NOTE:



FACTORY DEFAULT



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

SW2 NO.6	Reserved
SW2 NO.7	Reserved

SW2 NO.8	Room temp. sensor T1 for
ON	Electric control panel
OFF	Wire controller

Indoor models Select bits	
SW2 NO.1,2	Indoor models
ON	Low static pressure duct unit
OFF	High static pressure duct unit
ON	Standard static pressure duct unit
OFF	Floor&Ceiling Unit

SW2 NO.3	FAN SPEED CHOICE
ON	High speed
OFF	Super High speed

SW2 NO.4	Display light board
ON	LED
OFF	Digital tube

Note1: If there is no water pump, CN18 need to short answer.  
 The power (HP) of indoor units can be set through DIP switch SW1(16-bit disc DIP) on the indoor control panel before delivery, the detailed information is as follows:

HP	Reserved	0.8	1.0	1.5	1.7	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	Reserved	
MODEL	Reserved	21	26	35	47	53	70	80	90	105	125	140	150	160	180	Reserved	
POWER	Reserved	7K	9K	12K	16K	18K	24K	27K	30K	36K	42K	48K	52K	55K	60K	Reserved	
SW1		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F

## 6. Capacity Table

### Cooling

#### 6.1 CUA-D18HR4-LDBA

MODEL		CUA-D18HR4-LDBA						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21°C	25°C	30°C	35°C	40°C	45°C	49°C
21°C D 15°C W	Total capacity kW	5.09	5.06	5.03	4.99	4.95	4.91	4.88
	Input kW.	1.48	1.49	1.51	1.53	1.58	1.64	1.69
24°C D 17°C W	Total capacity kW	5.25	5.22	5.18	5.15	5.10	5.06	5.03
	Input kW.	1.50	1.51	1.53	1.55	1.61	1.66	1.71
27°C D 19°C W	Total capacity kW	5.41	5.38	5.34	5.30	5.26	5.22	5.18
	Input kW.	1.52	1.53	1.55	1.57	1.63	1.69	1.73
29°C D 21°C W	Total capacity kW	5.48	5.44	5.40	5.36	5.32	5.28	5.24
	Input kW.	1.54	1.56	1.58	1.60	1.65	1.71	1.76
32°C D 23°C W	Total capacity kW	5.58	5.55	5.51	5.47	5.42	5.38	5.34
	Input kW.	1.55	1.56	1.58	1.60	1.66	1.72	1.77

#### 6.2 CUA-D24HR4-LDBA

MODEL		CUA-D24HR4-LDBA						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21°C	25°C	30°C	35°C	40°C	45°C	49°C
21°C DB 15°C WB	Total capacity kW	6.82	6.78	6.73	6.68	6.63	6.58	6.53
	Input kW.	2.05	2.07	2.09	2.12	2.19	2.27	2.33
24°C DB 17°C WB	Total capacity kW	7.04	7.00	6.95	6.89	6.84	6.78	6.74
	Input kW.	2.07	2.09	2.12	2.14	2.22	2.30	2.36
27°C DB 19°C WB	Total capacity kW	7.25	7.21	7.15	7.00	7.04	6.99	6.94
	Input kW.	2.10	2.12	2.14	2.17	2.25	2.33	2.39
29°C D 21°C W	Total capacity kW	7.34	7.29	7.24	7.19	7.13	7.07	7.03
	Input kW.	2.13	2.15	2.18	2.21	2.28	2.36	2.43
32°C DB 23°C WB	Total capacity kW	7.48	7.43	7.38	7.32	7.26	7.21	7.16
	Input kW.	2.14	2.16	2.19	2.21	2.29	2.37	2.44

#### 6.3 CUA-D36HR4-LDBB

MODEL		CUA-D36HR4-LDBB						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21°C	25°C	30°C	35°C	40°C	45°C	49°C
21°C DB 15°C WB	Total capacity kW	10.09	10.03	9.96	9.88	9.80	9.73	9.66
	Input kW.	2.97	3.00	3.03	3.07	3.18	3.29	3.39
24°C DB 17°C WB	Total capacity kW	10.41	10.35	10.27	10.19	10.11	10.03	9.97
	Input kW.	3.01	3.04	3.07	3.11	3.22	3.34	3.44

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27°C DB 19°C WB	Total capacity kW	10.72	10.66	10.58	10.50	10.42	10.33	10.27
	Input kW.	3.05	3.08	3.12	3.16	3.26	3.38	3.47
29°C D 21°C W	Total capacity kW	10.85	10.79	10.71	10.63	10.54	10.46	10.39
	Input kW.	3.10	3.13	3.17	3.20	3.32	3.44	3.53
32°C DB 23°C WB	Total capacity kW	11.06	10.99	10.91	10.83	10.74	10.66	10.59
	Input kW.	3.11	3.14	3.18	3.21	3.33	3.45	3.55

### 6.4 CUA-D48HR4-LDBC

MODEL		CUA-48HVR4, CUA-48HVR4S						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21°C	25°C	30°C	35°C	40°C	45°C	49°C
21°C D 15°C W	Total capacity Kw	13.45	13.37	13.29	13.18	13.08	12.97	12.89
	Input kW.	4.72	4.75	4.81	4.88	5.03	5.22	5.37
24°C D 17°C W	Total capacity kW	13.87	13.79	13.68	13.60	13.47	13.37	13.29
	Input kW.	4.78	4.81	4.88	4.94	5.12	5.28	5.44
27°C D 19°C W	Total capacity kW	14.29	14.21	14.11	14.00	13.89	13.79	13.68
	Input kW.	4.85	4.88	4.94	5.00	5.19	5.37	5.50
29°C D 21°C W	Total capacity kW	14.48	14.37	14.26	14.16	14.05	13.95	13.84
	Input kW.	4.91	4.97	5.03	5.09	5.25	5.44	5.60
32°C D 23°C W	Total capacity kW	14.74	14.66	14.55	14.45	14.32	14.21	14.11
	Input kW.	4.94	4.97	5.03	5.09	5.28	5.47	5.63

### 6.5 CUA-D55HR4-LDBC

MODEL		CUA-55HVR4S						
COOLING		OUTDOOR TEMPERATURE DRY						
Indoor Conditions		21°C	25°C	30°C	35°C	40°C	45°C	49°C
21°C D 15°C W	Total capacity Kw	15.37	15.28	15.18	15.06	14.94	14.82	14.73
	Input kW.	5.61	5.65	5.73	5.80	5.98	6.21	6.40
24°C D 17°C W	Total capacity kW	15.85	15.76	15.64	15.55	15.40	15.28	15.18
	Input kW.	5.69	5.73	5.80	5.87	6.10	6.29	6.48
27°C D 19°C W	Total capacity kW	16.33	16.24	16.12	16.00	15.88	15.76	15.64
	Input kW.	5.76	5.80	5.87	5.95	6.17	6.40	6.54
29°C D 21°C W	Total capacity kW	16.54	16.42	16.30	16.18	16.06	15.94	15.82
	Input kW.	5.84	5.92	5.98	6.06	6.25	6.48	6.65
32°C D 23°C W	Total capacity kW	16.85	16.75	16.63	16.51	16.36	16.24	16.12
	Input kW.	5.87	5.92	5.98	6.06	6.29	6.51	6.70

## Heating

### 6.6 CUA-D18HR4-LDBA

MODEL		CUA-D18HR4-LDBA						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24°C D 18°C W	15°C D 14°C W	7°C D 6°C W	3°C D 2°C W	-5°C D -6°C W	-7°C D -8°C W	-14°C D -15°C W
15°C	Capacity kW	5.43	5.39	5.37	5.22	4.99	4.91	4.37
	Input kW.	1.58	1.43	1.40	1.38	1.35	1.34	1.28
18°C	Capacity kW	5.38	5.35	5.34	5.18	4.96	4.88	4.40
	Input kW.	1.61	1.47	1.42	1.40	1.37	1.36	1.30
20°C	Capacity kW	5.35	5.32	5.30	5.15	4.92	4.85	4.37
	Input kW.	1.63	1.49	1.46	1.43	1.40	1.39	1.33
22°C	Capacity kW	5.33	5.28	5.26	5.11	4.89	4.81	4.34
	Input kW.	1.66	1.52	1.48	1.46	1.42	1.41	1.35
27°C	Capacity kW	5.21	5.25	5.23	5.08	4.85	4.78	4.30
	Input kW.	1.70	1.54	1.50	1.48	1.46	1.44	1.37

### 6.7 CUA-D24HR4-LDBA

MODEL		CUA-D24HR4-LDBA						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24°C D 18°C W	15°C D 14°C W	7°C D 6°C W	3°C D 2°C W	-5°C D -6°C W	-7°C D -8°C W	-14°C D -15°C W
15°C	Capacity kW	7.95	7.83	7.81	7.58	7.25	7.14	6.43
	Input kW.	2.03	1.93	1.88	1.85	1.81	1.80	1.72
18°C	Capacity kW	7.90	7.78	7.75	7.53	7.20	7.09	6.39
	Input kW.	2.06	1.97	1.91	1.88	1.84	1.83	1.74
20°C	Capacity kW	7.86	7.73	7.70	7.47	7.15	7.04	6.35
	Input kW.	2.12	2.00	1.94	1.92	1.88	1.86	1.77
22°C	Capacity kW	7.82	7.67	7.65	7.42	7.10	6.99	6.30
	Input kW.	2.16	2.03	1.98	1.95	1.91	1.90	1.80
27°C	Capacity kW	7.73	7.62	7.59	7.37	7.05	6.94	6.26
	Input kW.	2.21	2.07	2.02	1.99	1.95	1.93	1.84

### 6.8 CUA-D36HR4-LDBB

MODEL		CUA-D36HR4-LDBB						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24°C D 18°C W	15°C D 14°C W	7°C D 6°C W	3°C D 2°C W	-5°C D -6°C W	-7°C D -8°C W	-14°C D -15°C W
15°C	Capacity kW	12.11	11.70	11.66	11.32	10.83	10.67	9.61
	Input kW.	3.55	3.33	3.23	3.19	3.12	3.10	2.96

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18°C	Capacity kW	12.08	11.62	11.58	11.24	10.75	10.59	9.54
	Input kW.	3.59	3.38	3.30	3.25	3.18	3.15	3.01
20°C	Capacity kW	12.04	11.54	11.50	11.16	10.68	10.52	9.48
	Input kW.	3.65	3.45	3.34	3.31	3.24	3.22	3.07
22°C	Capacity kW	12.00	11.46	11.42	11.09	10.60	10.44	9.41
	Input kW.	3.71	3.50	3.41	3.36	3.30	3.27	3.11
27°C	Capacity kW	11.73	11.38	11.34	11.01	10.53	10.37	9.35
	Input kW.	3.81	3.57	3.47	3.43	3.35	3.33	3.18

### 6.9 CUA-D48HR4-LDBC

MODEL		CUA-48HVR4, CUA-48HVR4S						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24°C D 18°C W	15°C D 14°C W	7°C D 6°C W	3°C D 2°C W	-5°C D -6°C W	-7°C D -8°C W	-14°C D -15°C W
15°C	Capacity kW	15.59	15.46	15.41	14.97	14.30	14.09	12.52
	Input kW.	5.40	4.90	4.79	4.72	4.61	4.58	4.36
18°C	Capacity kW	15.43	15.35	15.30	14.87	14.22	13.99	12.62
	Input kW.	5.51	5.00	4.87	4.79	4.68	4.65	4.43
20°C	Capacity kW	15.35	15.25	15.20	14.76	14.12	13.91	12.52
	Input kW.	5.58	5.07	4.97	4.90	4.79	4.75	4.54
22°C	Capacity kW	15.28	15.15	15.10	14.66	14.01	13.81	12.44
	Input kW.	5.68	5.19	5.04	4.97	4.87	4.83	4.61
27°C	Capacity kW	14.94	15.05	14.99	14.56	13.91	13.71	12.34
	Input kW.	5.79	5.26	5.11	5.04	4.97	4.94	4.68

### 6.10 CUA-D55HR4-LDBC

MODEL		CUA-55HVR4S						
HEATING		OUTDOOR CONDITIONS						
Indoor Conditions		24°C D 18°C W	15°C D 14°C W	7°C D 6°C W	3°C D 2°C W	-5°C D -6°C W	-7°C D -8°C W	-14°C D -15°C W
15°C	Capacity kW	17.23	17.09	17.03	16.54	15.81	15.58	13.84
	Input kW.	5.99	5.43	5.31	5.24	5.12	5.07	4.83
18°C	Capacity kW	17.06	16.97	16.91	16.43	15.72	15.46	13.96
	Input kW.	6.11	5.55	5.39	5.31	5.19	5.15	4.91
20°C	Capacity kW	16.97	16.86	16.80	16.31	15.61	15.38	13.84
	Input kW.	6.19	5.63	5.51	5.43	5.31	5.27	5.03
22°C	Capacity kW	16.89	16.74	16.69	16.20	15.49	15.26	13.76
	Input kW.	6.30	5.75	5.59	5.51	5.39	5.35	5.12
27°C	Capacity kW	16.51	16.63	16.57	16.08	15.38	15.15	13.64
	Input kW.	6.42	5.83	5.67	5.59	5.51	5.47	5.19

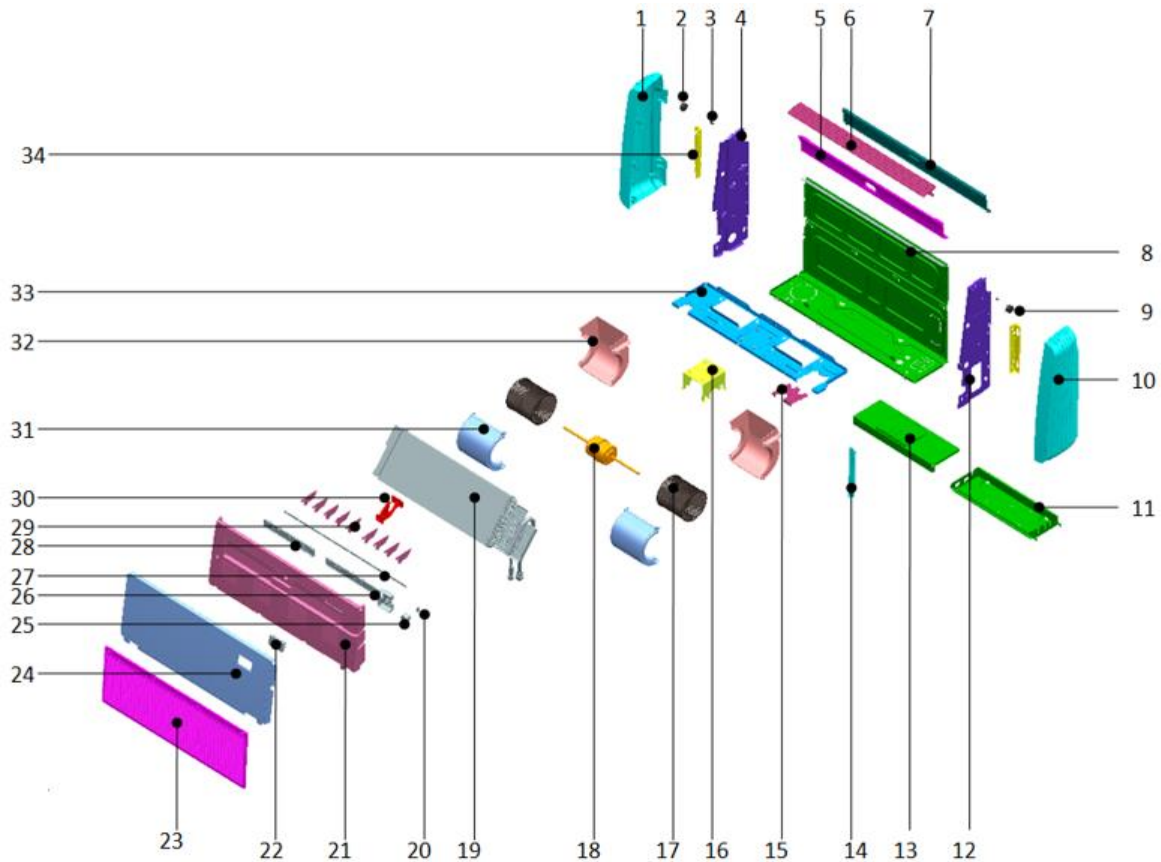
## 7 Electric Characteristics

Model	Indoor Units				Indoor Fan Motor
	Hz	Voltage	Min.	Max.	W
CUA-D18HR4-LDBA	50	220-240V	198	254	75
CUA-D24HR4-LDBA	50	220-240V	198	254	75
CUA-D36HR4-LDBB	50	220-240V	198	254	120
CUA-D48HR4-LDBC	50	220-240V	198	254	75*2
CUA-D55HR4-LDBC	50	220-240V	198	254	75*2



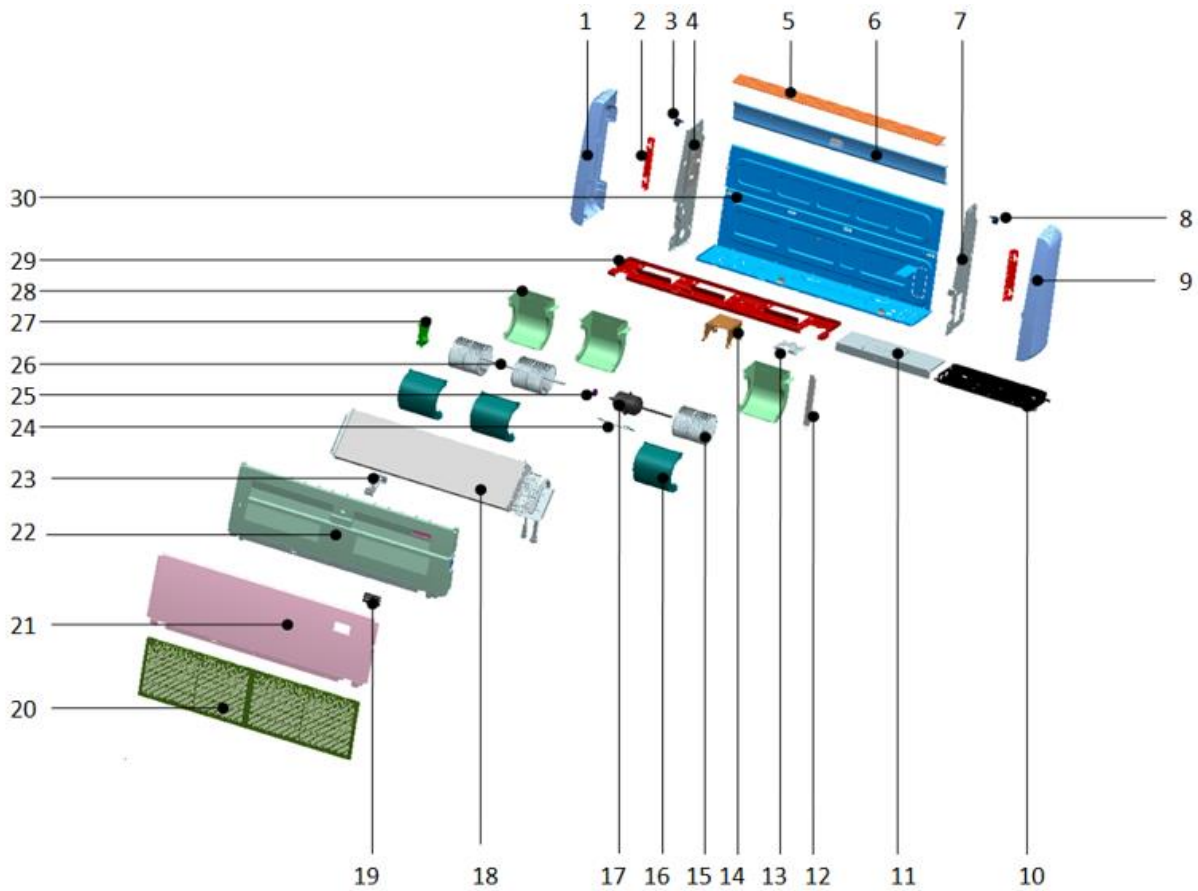
## 8. Exploded View

### 8.1 CUA-D18HR4-LDBA, CUA-D24HR4-LDBA



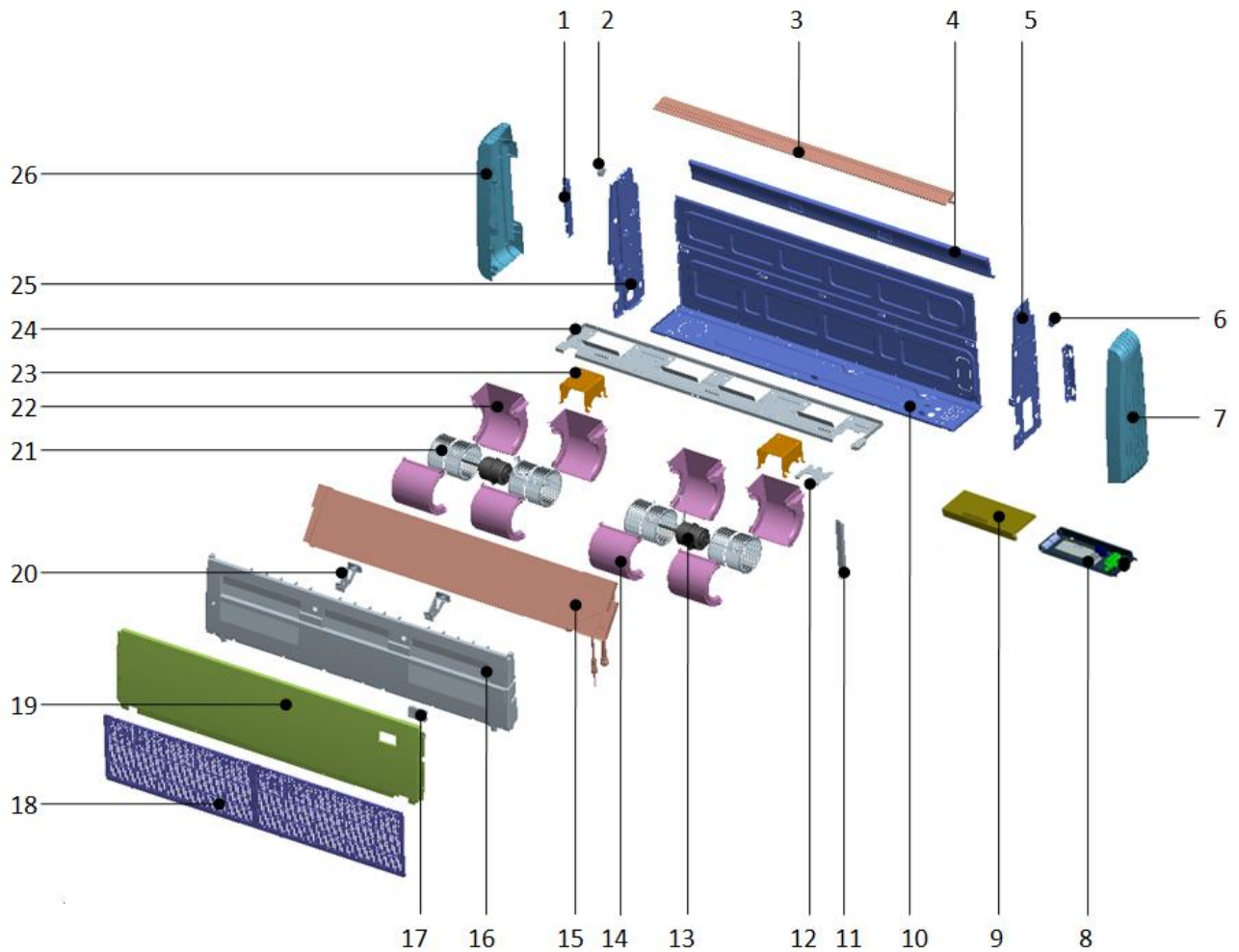
No.	Part Name	No.	Part Name
1	Left cover	19	Evaporator components
2	Stepper motor (horizontal)	20	Horizontal swing leaf active rod
3	Bushing	21	Drip tray foam
4	Left panel assembly	22	Display board components
5	Chassis foam components	23	Return air grille assembly
6	Louver assembly	24	Top cover assembly
7	Rear cover	25	Stepper motor (vertical)
8	Chassis components	26	Louver connecting rod fixing structure 1
9	Stepper motor	27	Louver connecting rod
10	Right cover	28	Louver connecting rod fixing structure 2
11	Indoor electric control box assembly	29	Wind guide blade
12	Right side panel assembly	30	Louver bracket
13	Electric control box cover	31	Upper volute
14	Support bar	32	Lower volute
15	Piping plate	33	Middle beam welding
16	Motor bracket	34	Installation lifting ears
17	Centrifugal fan	35	Temperature sensor group
18	Indoor DC fan motor		

## 8.2 CUA-D36HR4-LDBB









No.	Part Name	No.	Part Name
1	Left cover	19	Evaporator components
2	Stepper motor (horizontal)	20	Horizontal swing leaf active rod
3	Bushing	21	Drip tray foam
4	Left panel assembly	22	Display board components
5	Chassis foam components	23	Return air grille assembly
6	Louver assembly	24	Top cover assembly
7	Rear cover	25	Stepper motor (vertical)
8	Chassis components	26	Louver connecting rod fixing structure 1
9	Stepper motor	27	Louver connecting rod
10	Right cover	28	Louver connecting rod fixing structure 2
11	Indoor electric control box assembly	29	Wind guide blade
12	Right side panel assembly	30	Louver bracket
13	Electric control box cover	31	Upper volute
14	Support bar	32	Lower volute
15	Piping plate	33	Middle beam welding
16	Motor bracket	34	Installation lifting ears
17	Centrifugal fan	35	Temperature sensor group
18	Indoor DC fan motor		

## 8.2 CUA-D48HR4-LDBC, CUA-D55HR4-LDBC



No.	Part Name	No.	Part Name
1	Right mounting plate of evaporator	14	Upper volute
2	Horizontal step motor	15	Evaporator assy
3	Wind guide assembly	16	Indoor PCB
4	Rear cover with cotton	17	Display panel assembly
5	Right side board assembly	18	Back grill assembly
6	Horizontal step motor	19	Top cover assy
7	Right cover	20	Wind guide bracket
8	Indoor PCB assembly	21	Centrifugal fan blade
9	Electric box cover	22	Lower volute
10	Chassis assembly	23	Motor bracket
11	Support bar	24	Middle beam welding assembly
12	Pipe plate	25	Left side board assembly
13	Indoor fan motor	26	Left cover

## 9 Accessories

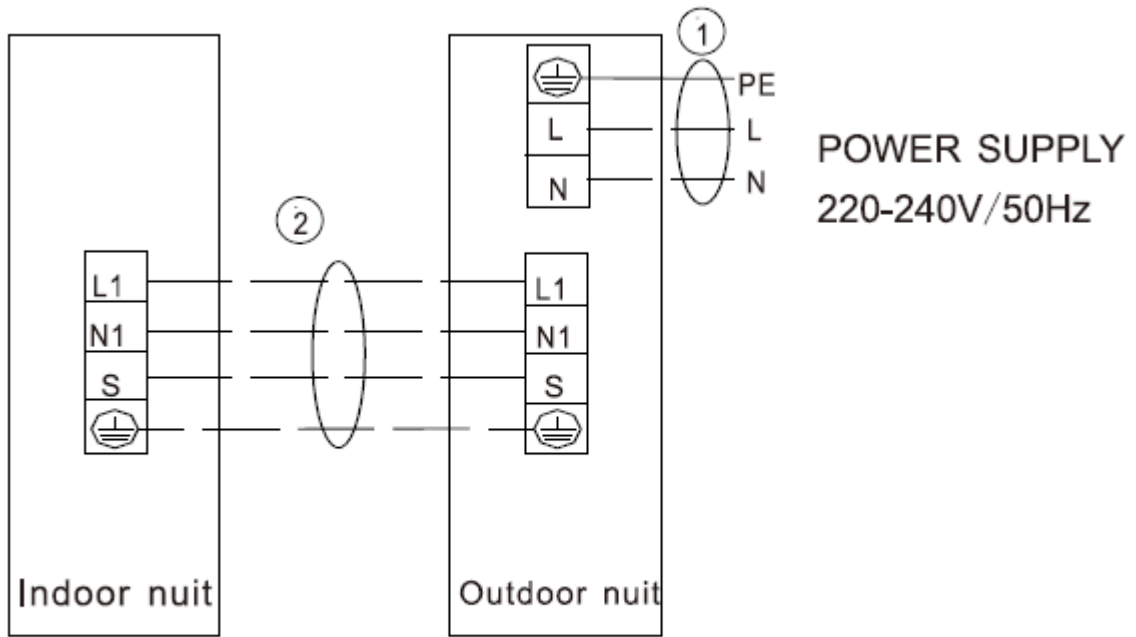
	Name	Shape	Quantity
Installation fittings	1.Hanging arm		2
	2. Remote controller		1
Controller	3. Remote controller holder (optional)		1
	5. Mounting screw (ST2.9×10-C-H)		2
	6. Alkaline dry batteries (AM4)		2
Others	7. Installation & operation instruction manual		1

## 10 The Specification of Power

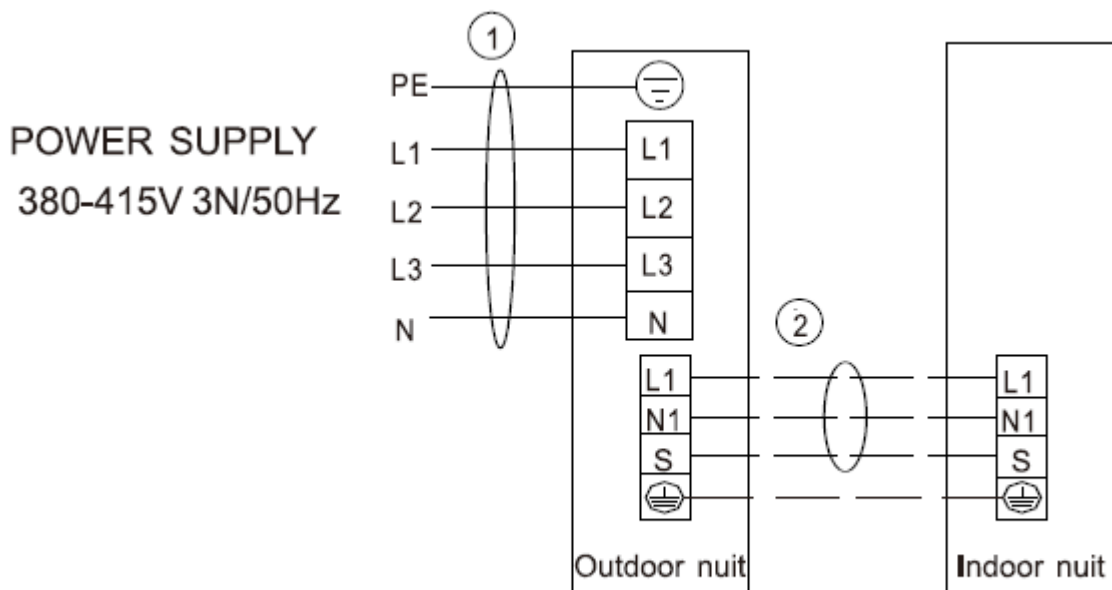
Model		CUA-D18HR4-LDBA	CUA-D24HR4-LDBA	CUA-D36HR4-LDBB	CUA-D48HR4-LDBC
Indoor power supply	V/Ph/Hz	220~240/1/50			
Outdoor power supply	V/Ph/Hz	220~240/1/50			
Power Supply Method		From outdoor unit			
Outdoor unit Power Supply Wire		3×14AWG	3×14AWG	3×12AWG	3×12AWG
Indoor unit Power Supply Wire		4×16AWG	4×16AWG	4×16AWG	4×16AWG

Model		CUA-D48HR4-LDBC	CUA-D55HR4-LDBC
Indoor power supply	V/Ph/Hz	220~240/1/50	220~240/1/50
Outdoor power supply	V/Ph/Hz	380~415/3/50	380~415/3/50
Power Supply Method		From outdoor unit	
Outdoor unit Power Supply Wire		5×14AWG	5×14AWG
Indoor unit Power Supply Wire		4×16AWG	4×16AWG

## 11 Field Wiring



Applicable for (220-240V/50Hz) single phase model



Applicable for (380-415V/50Hz)  $\geq$  three phase model

## Part 3 Outdoor Units

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# 1 Specification

Model			COU-D18HR4-A01	COU-D24HR4-C01
Outdoor power supply		V/Ph/Hz	220~240/1/50	220~240/1/50
Cooling	Power input	W	300-1495-3220	340-2093-3900
	Current input	A	1.3-6.5-14	1.5-9.1-17
Heating	Power input	W	250-1380-3335	305-1863-3500
	Current input	A	1.1-6.0-14.5	1.3-8.1-15.2
Max. power input		W	3680	4000
Max. current input		A	16.0	18.0
Compressor	Model		KSN140D21UFZ	KTM240D57UMT
	Type		DC/Single-rotary	DC/Twin-rotary
	Brand		GMCC	GMCC
	Frequency range	rps	10-120	10-120
	Capacity	W	4370	7715
	Input	W	1135	2085
	Current(RLA)	A	7.5	9.45
	Refrigerant oil	ml	VG74/440	VG74/670
Outdoor fan motor	Model		DRN-310-34-8	DRN-310-75-8
	Brand		WELLING	KAIBANG
	Power output	W	34	75
	Speed	r/min	860	850
	Insulation class		E	B
Outdoor coil	Number of rows		2	2
	Tube pitch(a)*row pitch(b)	mm	25×21.65	25×21.65
	Fin spacing	mm	1.4	1.4
	Fin type		Hydrophilic	Hydrophilic
	Tube outside dia. and type	mm	9.52	9.52
			inner grooved	inner grooved
	Coil length*height*width	mm	815x500x43.3	777×650×43.3
Number of circuits		2	5	
Outdoor air flow(High speed)		m <sup>3</sup> /h	1950	3200
Outdoor noise level	power level	dB(A)	66	68
	pressure level		52	54
Outdoor unit	Dimension(W*H*D)	mm	880×555×345	935×702×382
	Packing(W*H*D)	mm	920×600×380	975×770×435
	Net/Gross weight	kg	32.5/35	48.7/52.6
Refrigerant type/quantity		g	R32/1200	R32/1450
Throttle part			EXV	EXV
Design pressure		MPa	4.5/1.6	4.5/1.6



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Max pressure		MPa	4.5	4.5
Connection wire	Power wiring	mm <sup>2</sup>	3×2.5	3×2.5
	Signal wiring	mm <sup>2</sup>	4×1.5	4×1.5
Refrigerant piping	Liquid side/Gas side	mm	Φ6.35/Φ12.7	Φ9.52/Φ15.88
	Max. pipe length	m	15(30)	20(50)
	Max. high drop	m	8(20)	10(25)
Ambient temp.	Cooling	°C	-15~50	-15~50
	Heating	°C	-15~30	-15~30

Model			COU-D36HR4-D01	COU-D36HZR4-D01
Outdoor power supply		V/Ph/Hz	220~240/1/50	380~415/3/50
Cooling	Power input	W	430-3036-4500	430-3036-4500
	Current input	A	1.9-13.2-22.5	0.6-7.3-8.5
Heating	Power input	W	380-3220-4320	380-3220-4320
	Current input	A	1.7-14.0-19	0.5-7.1-8
Max. power input		W	4900	4900
Max. current input		A	24.0	9.5
Compressor	Model		KTM310D85UMT	KTM310D85UMT
	Type		DC/Twin-rotary	DC/Twin-rotary
	Brand		GMCC	GMCC
	Frequency range	rps	12-120	12-120
	Capacity	W	9800	9800
	Input	W	2685	2685
	Current(RLA)	A	5.4	5.4
	Refrigerant oil	ml	VG74/850	VG74/850
Outdoor fan motor	Model		DRN-310-90-8	DRN-310-90-8
	Brand		KAIBANG	KAIBANG
	Power output	W	90	90
	Speed	r/min	850	850
	Insulation class		B	B
Outdoor coil	Number of rows		2	2
	Tube pitch(a)xrow pitch(b)	mm	25×21.65	25×21.65
	Fin spacing	mm	1.4	1.4
	Fin type		Hydrophilic	Hydrophilic
	Tube outside dia. and type	mm	9.52	9.52
			inner grooved	inner grooved
	Coil lengthxheightxwidth	mm	1003×750×43.3	1003×750×43.3
Number of circuits		4	4	
Outdoor air flow(High speed)		m <sup>3</sup> /h	3500	3500

## R32 50Hz Universal Series Technical Manual

Outdoor noise level	power level	dB(A)	69	69
	pressure level		58	58
Outdoor unit	Dimension(W*H*D)	mm	1032×807×445	1032×807×445
	Packing(W*H*D)	mm	1075×875×495	1075×875×495
	Net/Gross weight	kg	61.3/65	71.2/75
Refrigerant type/quantity		g	R32/2400	R32/2400
Throttle part			EXV	EXV
Design pressure		MPa	4.5/1.6	4.5/1.6
Max pressure		MPa	4.5	4.5
Connection wire	Power wiring	mm <sup>2</sup>	3×4.0	5×2.5
	Signal wiring	mm <sup>2</sup>	4×1.5	4×1.5
Refrigerant piping	Liquid side/Gas side	mm	Φ9.52/Φ15.88	Φ9.52/Φ15.88
	Max. pipe length	m	65	65
	Max. high drop	m	30	30
Ambient temp.	Cooling	°C	-15~50	-15~50
	Heating	°C	-15~30	-15~30

Model		COU-48HDR4	COU-48HZDR4	COU-55HZDR4	
Outdoor power supply		V/Ph/Hz	220~240/1/50	380~415/3/50	380~415/3/50
Cooling	Power input	W	1000-4850-5700	1100-4950-5800	1400-5900-6300
	Current input	A	4.8-23.4-27.5	2.4-7.2-9.5	3.1-8.6-10.5
Heating	Power input	W	1100-4820-5900	1200-4920-6000	1500-5460-6500
	Current input	A	5.3-23.3-28.5	2.7-7.1-10	3.4-7.9-10.8
Max. power input		W	6100	6100	6100
Max. current input		A	29.5	10.9	12.5
Compressor	Model		MVB40FJLMC-L	MVB40FJLMC-L	KTQ420D1UMU
	Type		DC/Twin-rotary	DC/Twin-rotary	DC/Twin-rotary
	Brand		Mitsubishi	Mitsubishi	GMCC
	Frequency range	rps	10-120	10-120	12-120
	Capacity	W	13250	13250	13700
	Input	W	4150	4150	3700
	Current(RLA)	A	15.4	15.4	7.02
	Refrigerant oil	ml	FW68S/1250	FW68S/1250	VG74/1400
Outdoor fan motor	Model		DR-310-100-8-2	DR-310-100-8-2	DR-310-100-8-2
	Brand		Yongan	Yongan	Yongan
	Power output	W	100	100	100
	Speed	r/min	870	870	870
	Insulation class		B	B	B
Outdoor coil	Number of rows		2	2	2

## R32 50Hz Universal Series Technical Manual

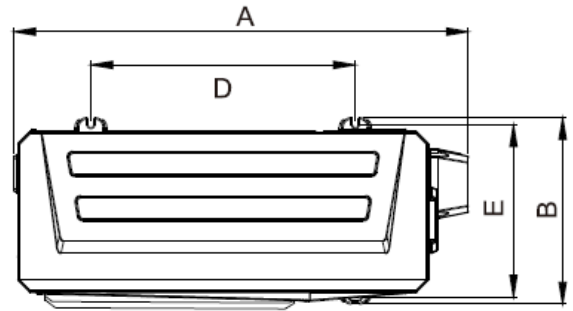
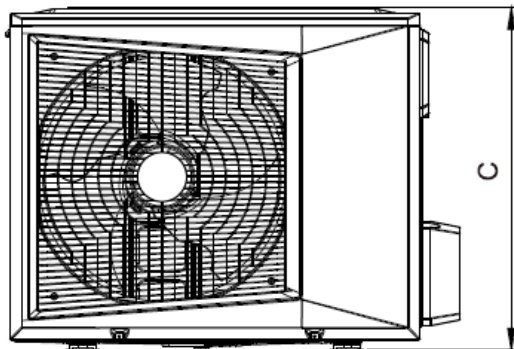
	Tube pitch(a)*row pitch(b)	mm	25×21.65	25×21.65	25×21.65
	Fin spacing	mm	1.6	1.6	1.6
	Fin type		Hydrophilic	Hydrophilic	Hydrophilic
	Tube outside dia. and type	mm	9.52	9.52	9.52
			inner grooved	inner grooved	inner grooved
	Coil length*height*width	mm	995×1350×43.3	995×1350×43.3	995×1350×43.3
	Number of circuits		7	7	7
Outdoor air flow(High speed)		m <sup>3</sup> /h	6100	6100	6100
Outdoor noise level	power level	dB(A)	68	68	68
	pressure level		58	58	58
Outdoor unit	Dimension(W*H*D)	mm	1015×1430×450	1015×1430×450	1015×1430×450
	Packing(W*H*D)	mm	1095×1545×485	1095×1545×485	1095×1545×485
	Net/Gross weight	kg	109/123.6	109/123.6	112/126.6
Refrigerant type/quantity		g	R32/3800	R32/3800	R32/4200
Throttle part			EXV	EXV	EXV
Design pressure		MPa	4.5/1.6	4.5/1.6	4.5/1.6
Max pressure		MPa	4.5	4.5	4.5
Connection wire	Power wiring	mm <sup>2</sup>	3×4.0	5×2.5	5×2.5
	Signal wiring	mm <sup>2</sup>	4×1.5	4×1.5	4×1.5
Refrigerant piping	Liquid side/Gas side	mm	Φ9.52/Φ15.88	Φ9.52/Φ15.88	Φ9.52/Φ15.88
	Max. pipe length	m	65	65	65
	Max. high drop	m	30	30	30
Ambient temp.	Cooling	°C	-15~50	-15~50	-15~50
	Heating	°C	-15~30	-15~30	-15~30

### Notes:

1. Cooling operating temperature range is from -15°C to 50°C, Heating operating temperature range is from -15°C to 30°C.
2. The cooling conditions: indoor side 27°C(80.6°F) DB, 19°C(60°F)WB outdoor side 35°C(95°F) DB.
3. The heating conditions: indoor side 20°C(68°F) DB, 15°C(44.6°F)WB outdoor side 7°C(42.8°F)DB.
4. 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.
5. The above data may be changed without notice for future improvement on quality and performance.

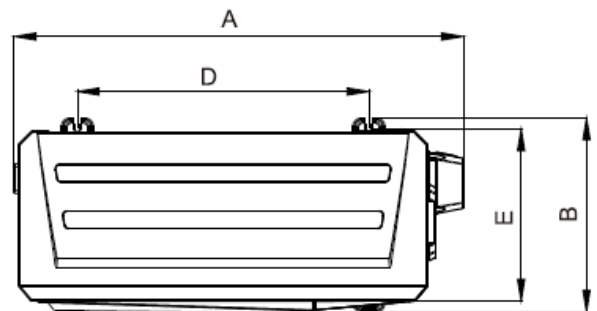
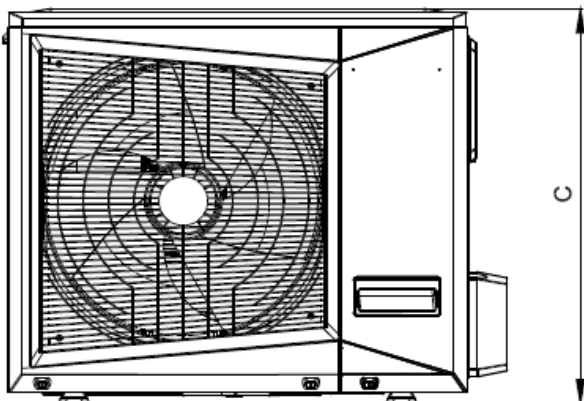
## 2. Dimensions

### 2.1 COU-D18HR4-A01, COU-D24HR4-C01



Machine capacity	Project	A	B	C	D	E
18K		880	345	555	508	314
24K		935	382	702	544	353

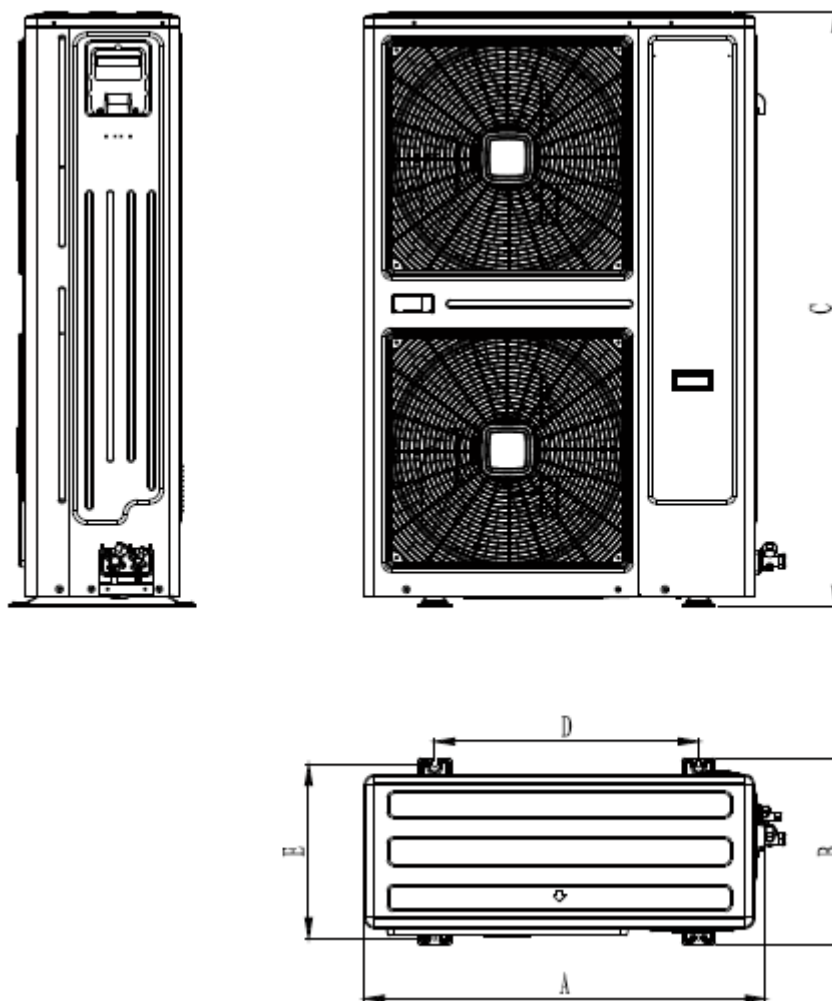
### 2.2 COU-D36HR4-D01, COU-D36HZR4-D01



Unit: mm

Machine capacity	Project	A	B	C	D	E
36K		1032	445	807	670	399

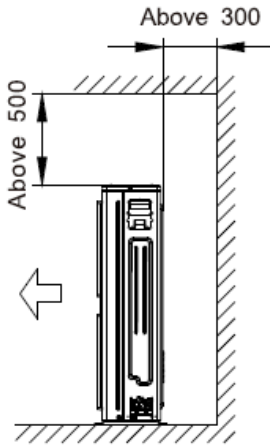
2.3 COU-48HDR4, COU-48HZDR4, COU-60HZVR4



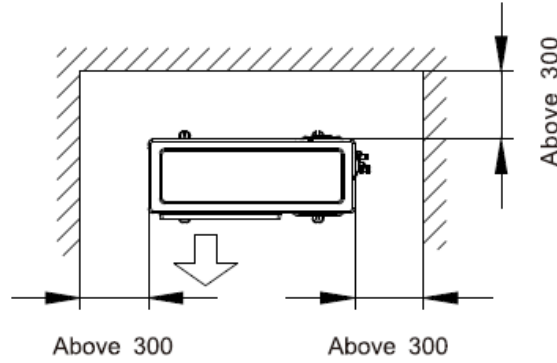
Project / Machine capacity	A	B	C	D	E
14KW/16KW	966	450	1430	636	416

### 3 Service Space

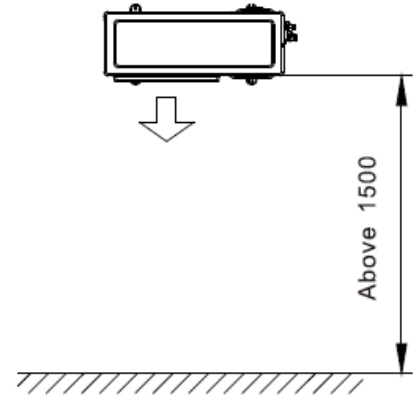
#### 3.1 Single unit installation



When there is barrier at upward side, if possible to keep the space shown in the figure, it does not matter even if there is barrier at back.



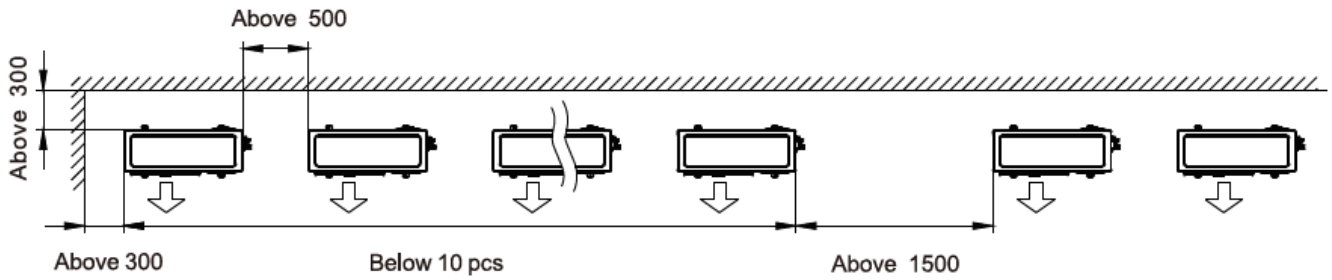
When the front side (outlet for exhaust) is open, if it can keep the space shown in the figure, it does not matter even if there are barriers at three sides. (Open above)



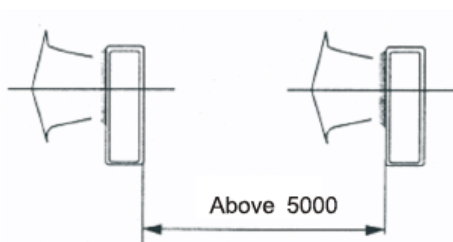
If there is barrier at the front side, the back, both sides and upward side shall be kept open.

#### 3.2 Multi unit installation

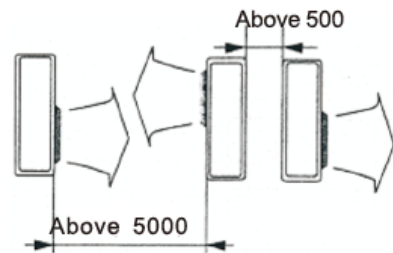
##### A. Parallel setting



##### B. Multi-row arrangement

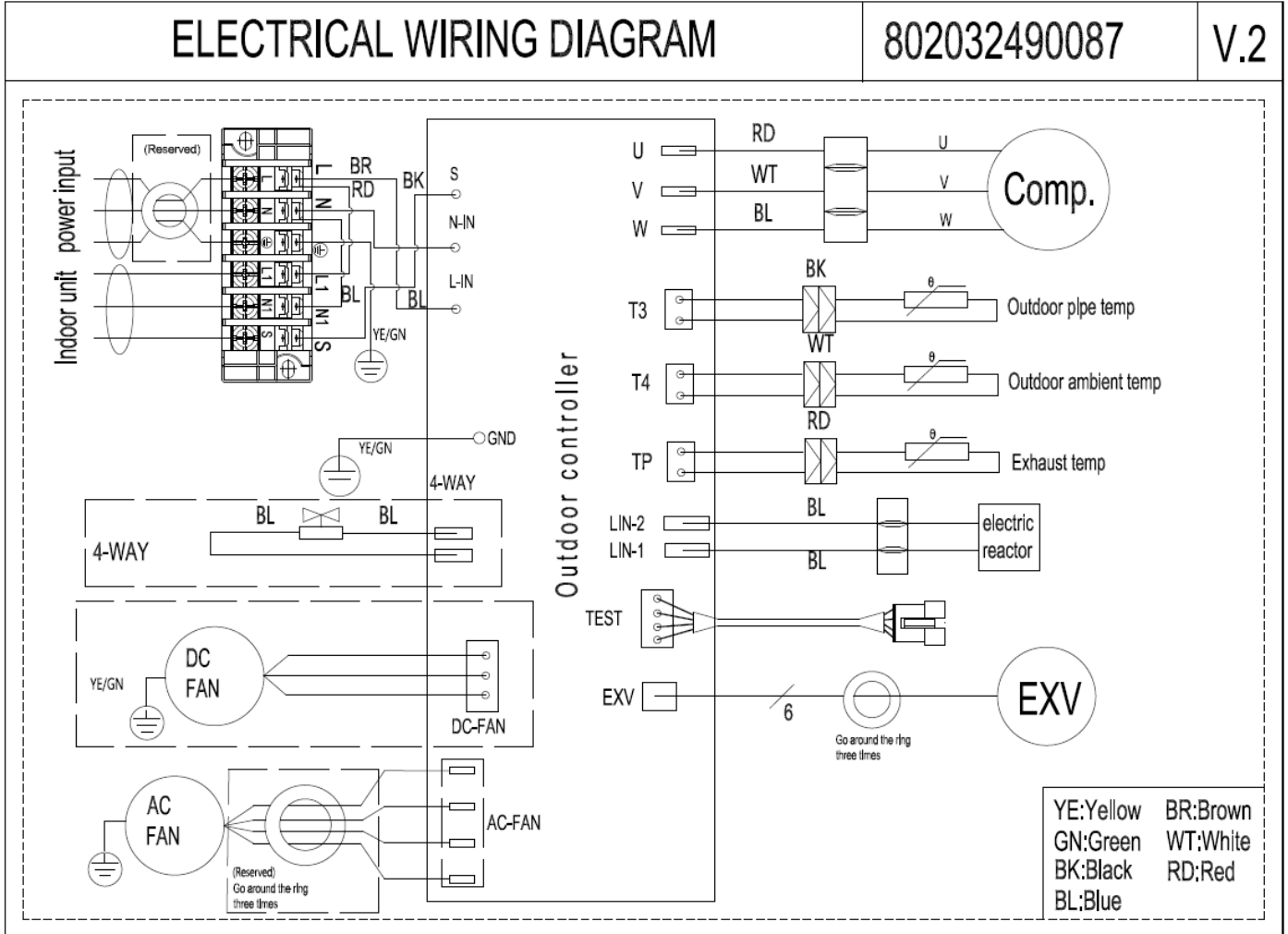


##### C. Blowing arrangement

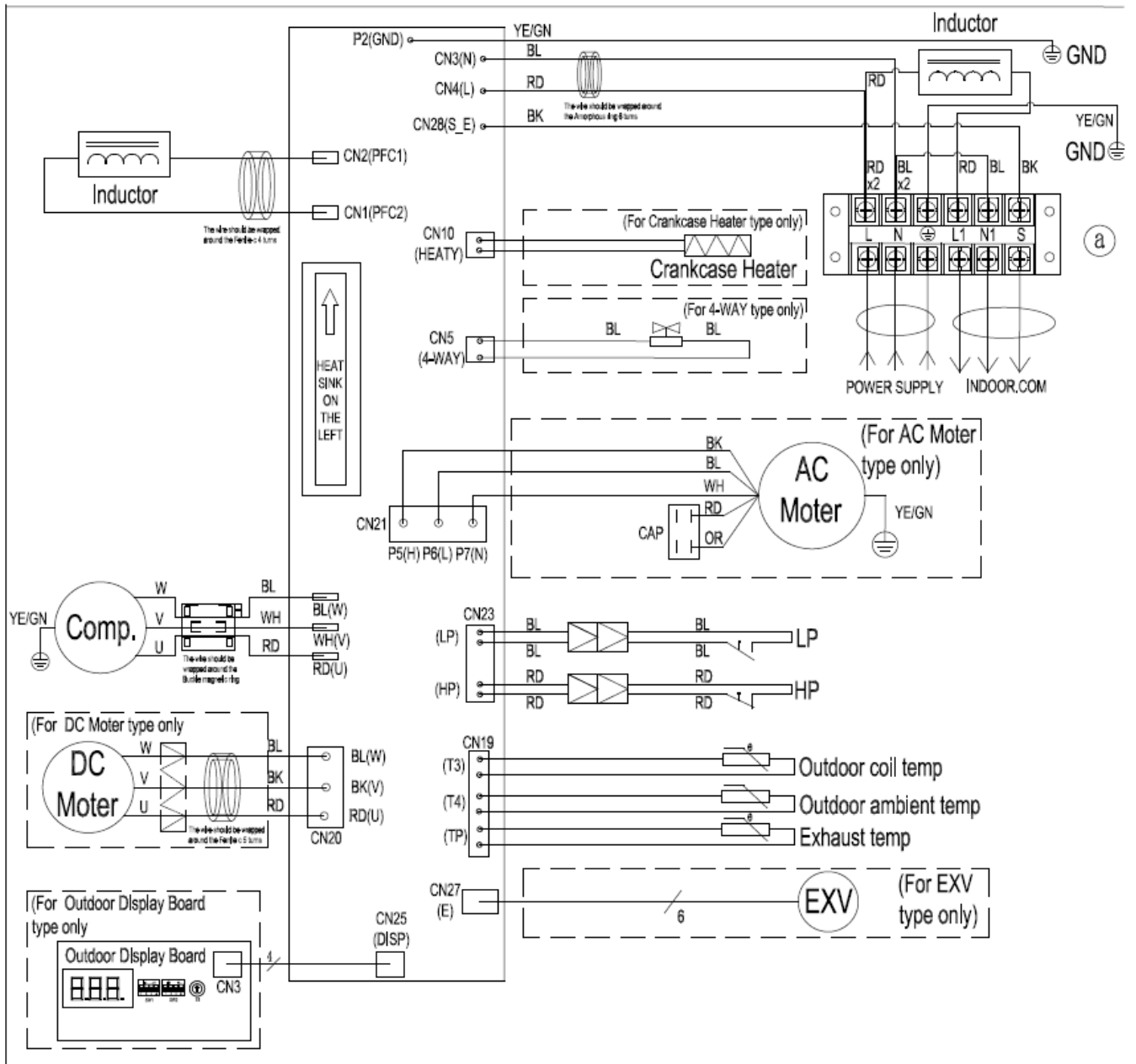


## 4 Wiring Diagrams

### 4.1 COU-D18HR4-A01

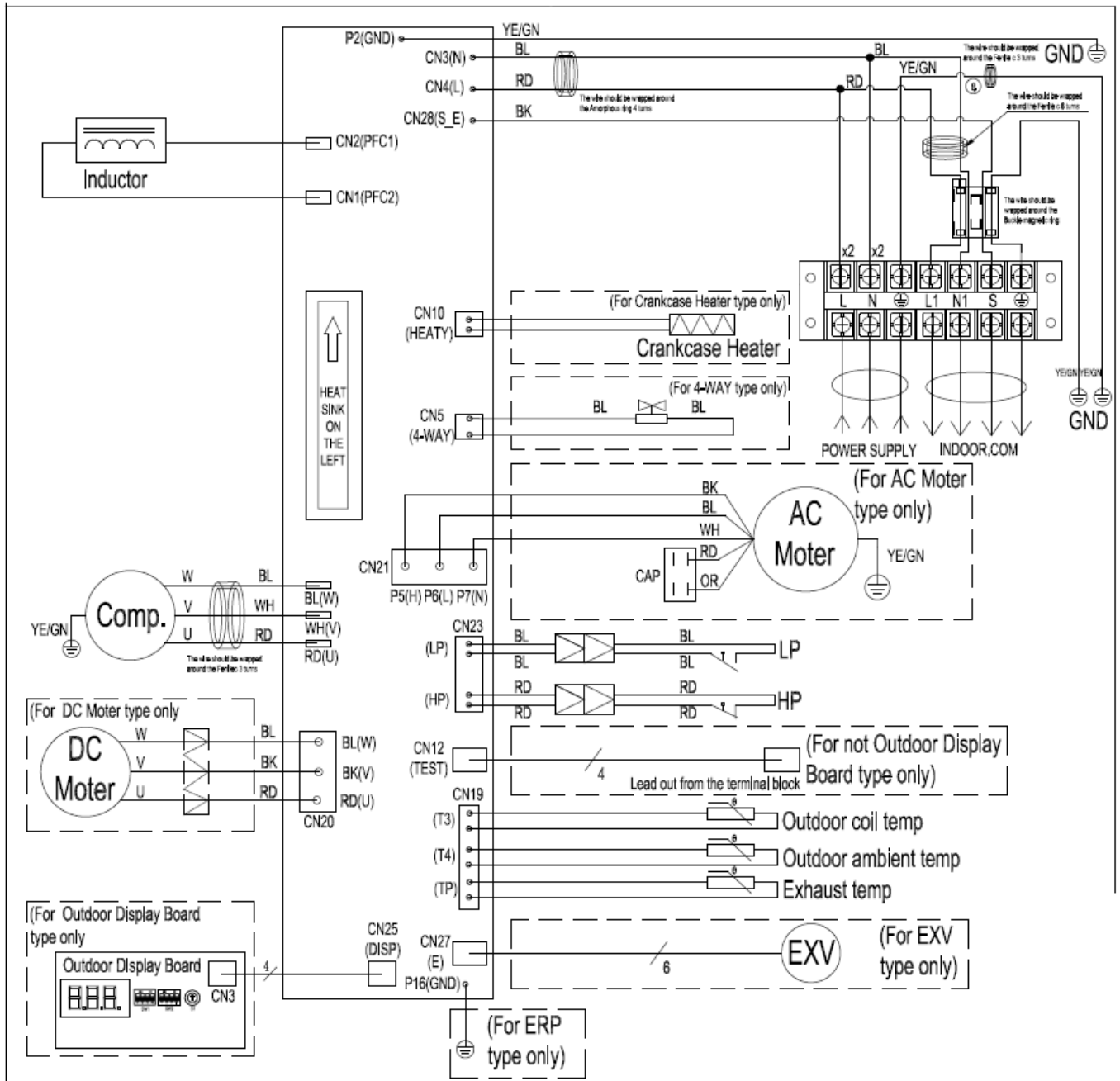


4.2 COU-D24HR4-C01

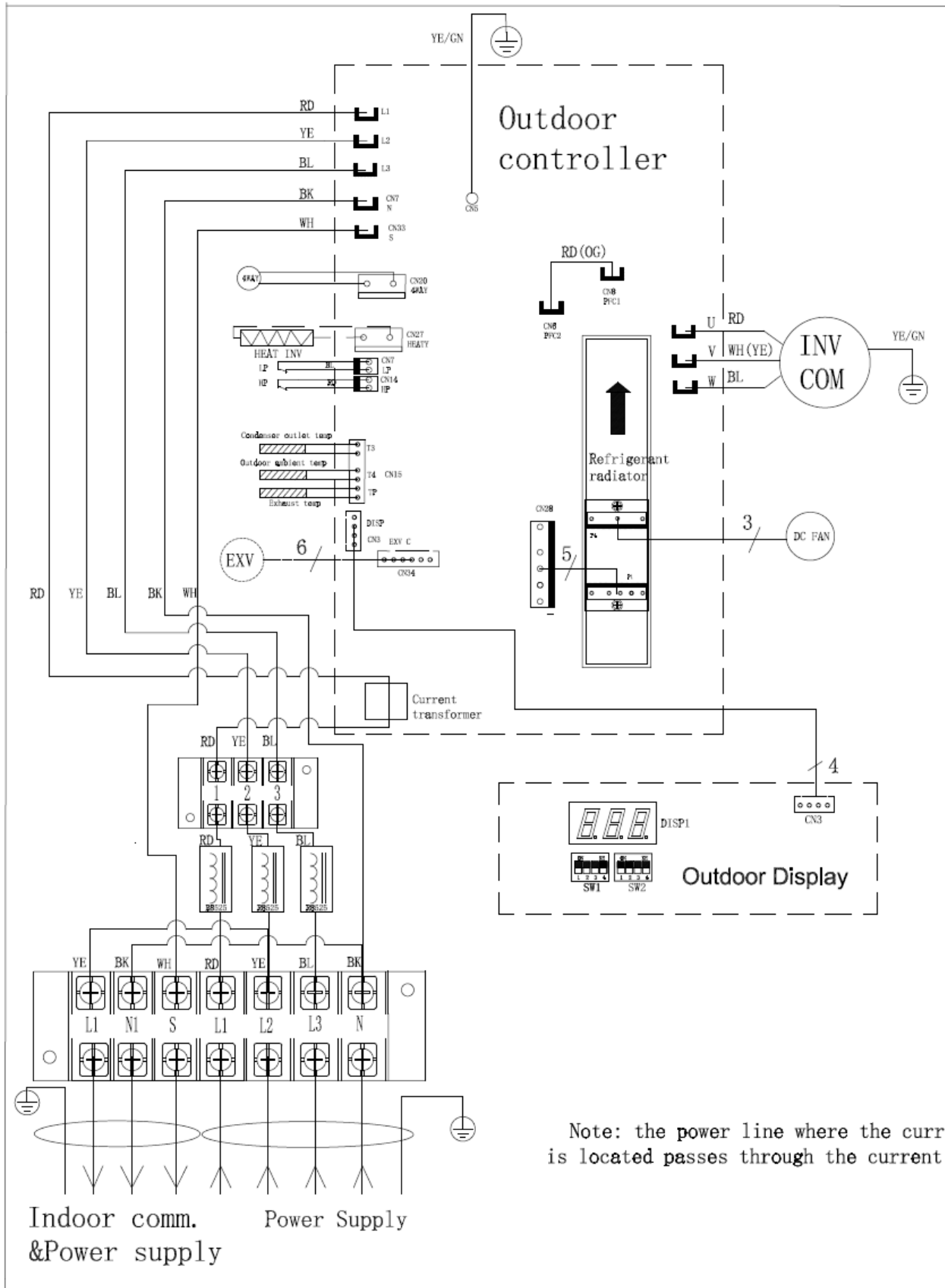




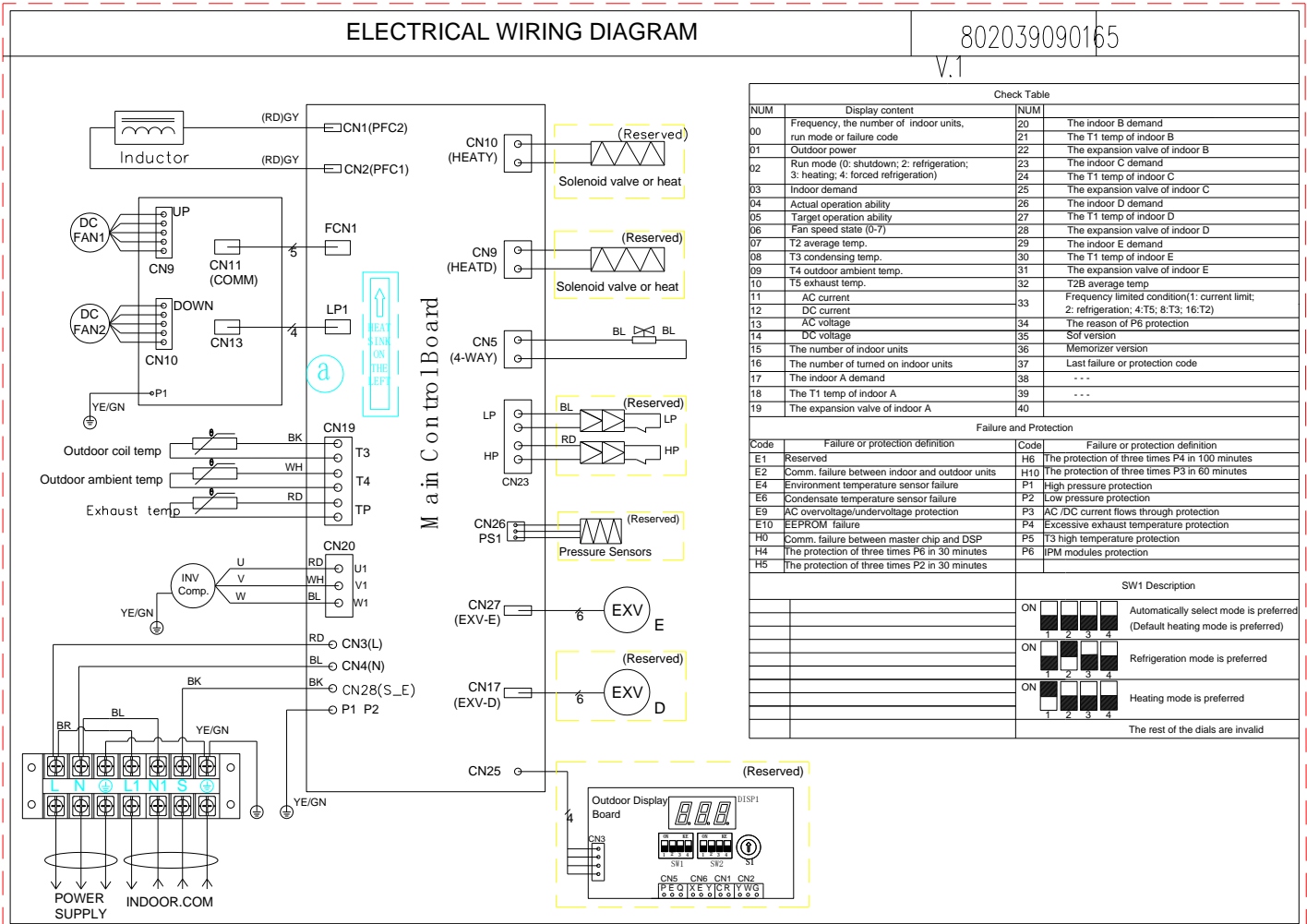
### 4.3 COU-D36HR4-D01



4.4 COU-D36HZR4-D01

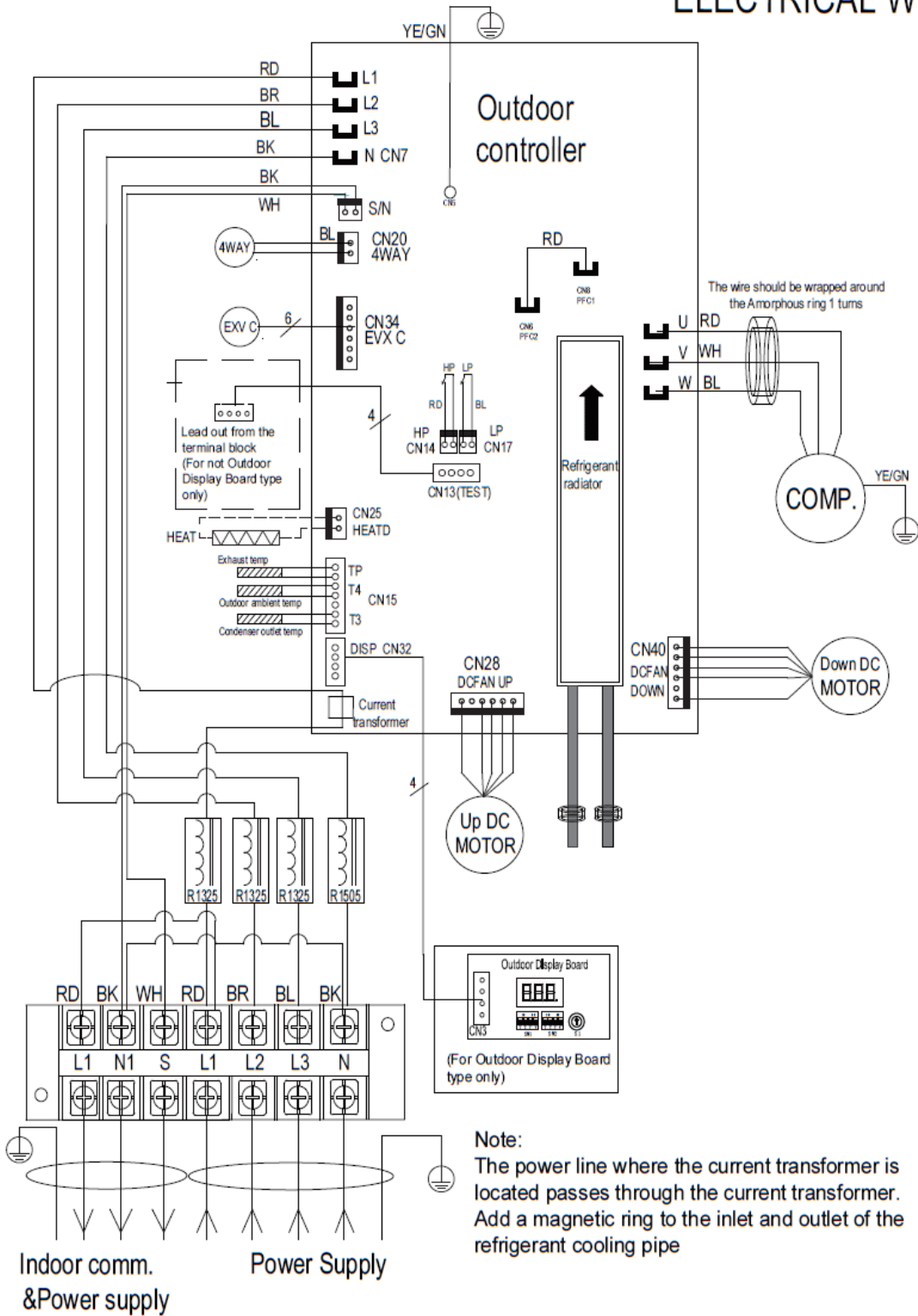


4.5 COU-48HDR4



### 4.5 COU-48HZDR4, COU-55HZDR4

#### ELECTRICAL WIRING



## 5 Electric Characteristics

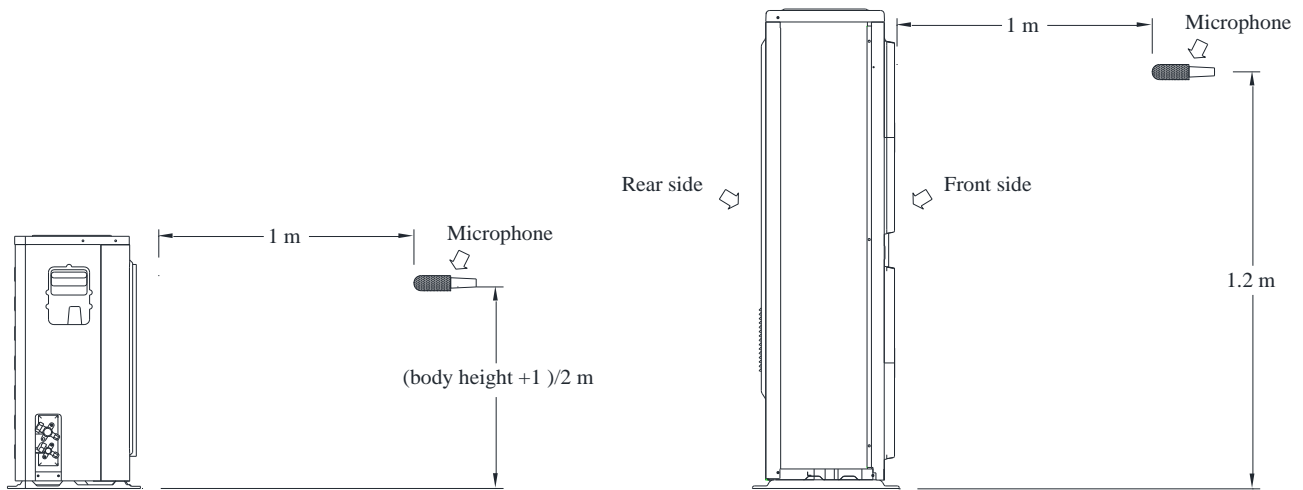
Model	Outdoor Unit				
	Hz	Voltage	Min.	Max.	Outdoor motor (W)
COU-D18HR4-A01	50	220~240V	198	254	34
COU-D24HR4-C01	50	220~240V	198	254	75
COU-D36HR4-D01	50	220~240V	198	254	90
COU-D36HZR4-D01	50	380~415V	342	437	90
COU-48HDR4	50	220~240V	198	254	100*2
COU-48HZDR4	50	380~415V	342	437	100*2
COU-55HZDR4	50	380~415V	342	437	100*2

## 6 Operation Limits

Operation mode	Outdoor temperature(°C)	Room temperature(°C)
Cooling operation	-15~50	16~32
Heating operation	-15~30	16~32

## 7.Sound Levels

18kBtu/h-60kBtu/h

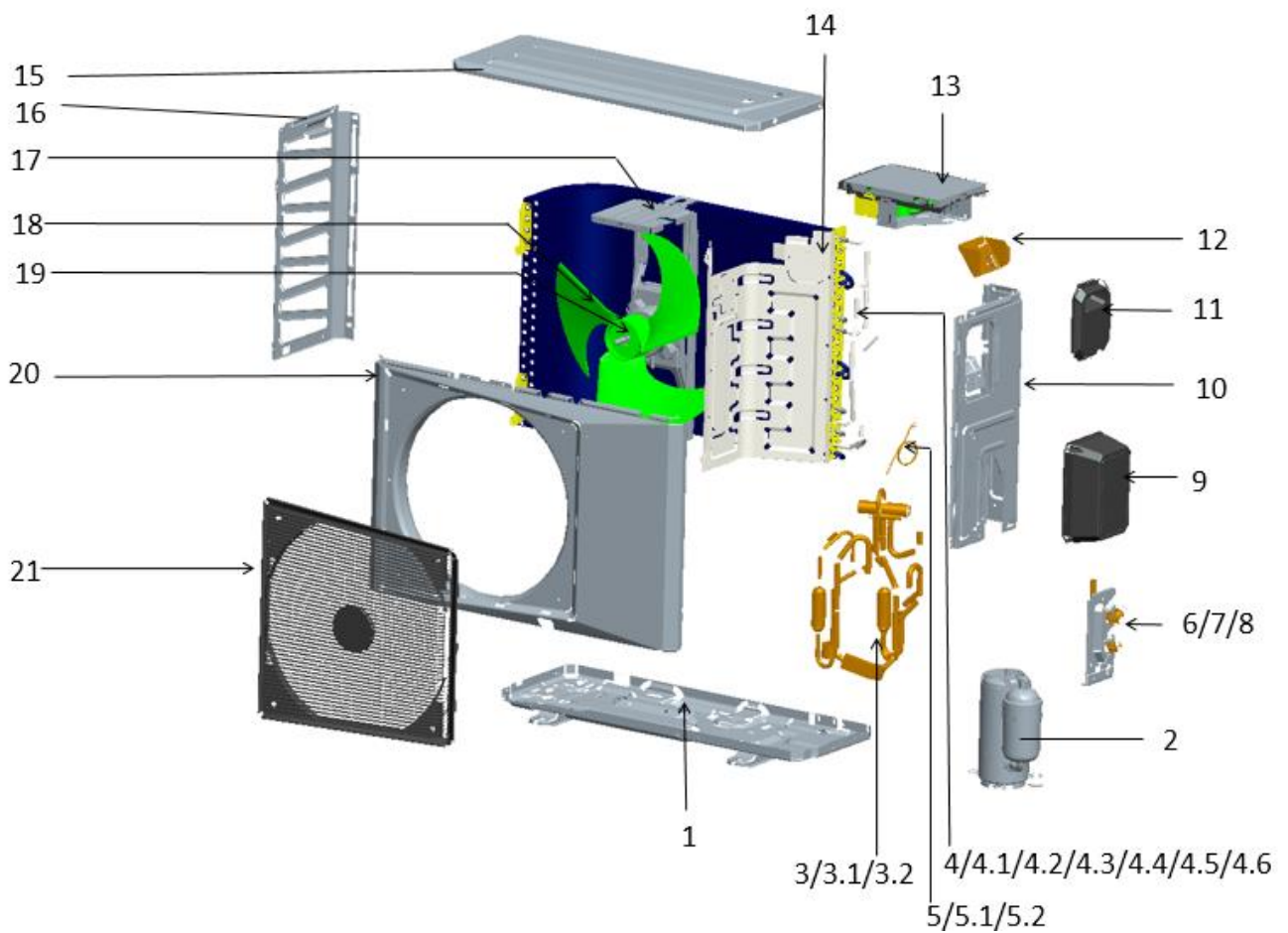
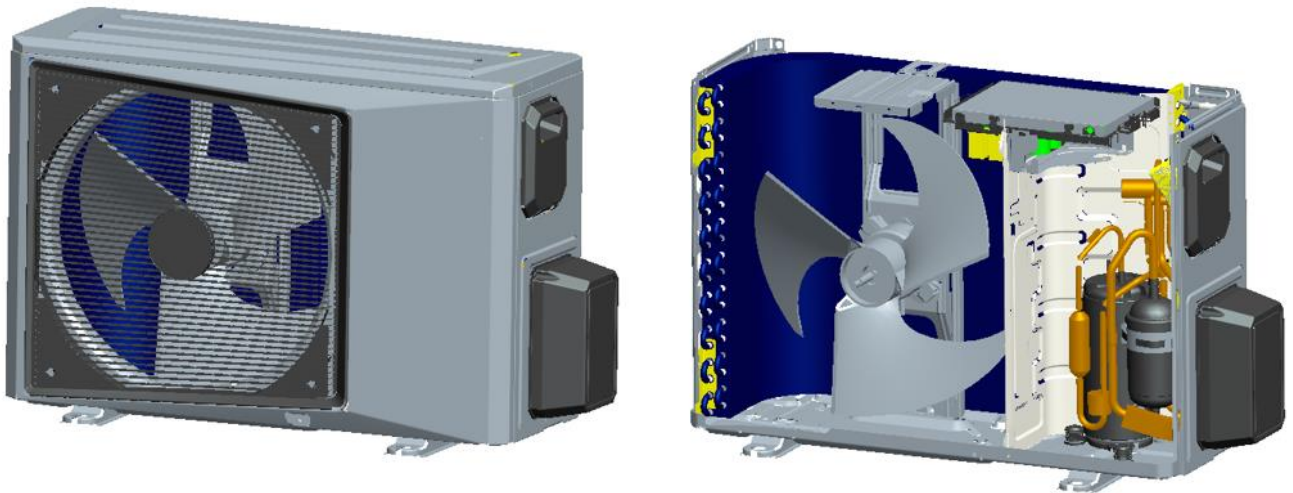


Model	Power level dB(A)	Pressure level
COU-D18HR4-A01	63	52
COU-D18HR4-A01	63	52
COU-D24HR4-C01	67	54
COU-D36HR4-D01-A	68	55
COU-D36HZR4-D01	68	55
COU-48HZDR4	70	58
COU-55HZDR4	70	58

Note: Sound level is measured at a point 1 m in front of the unit, at a height of  $(\text{Unit body height} + 1) / 2$  m.

## 8. Exploded View

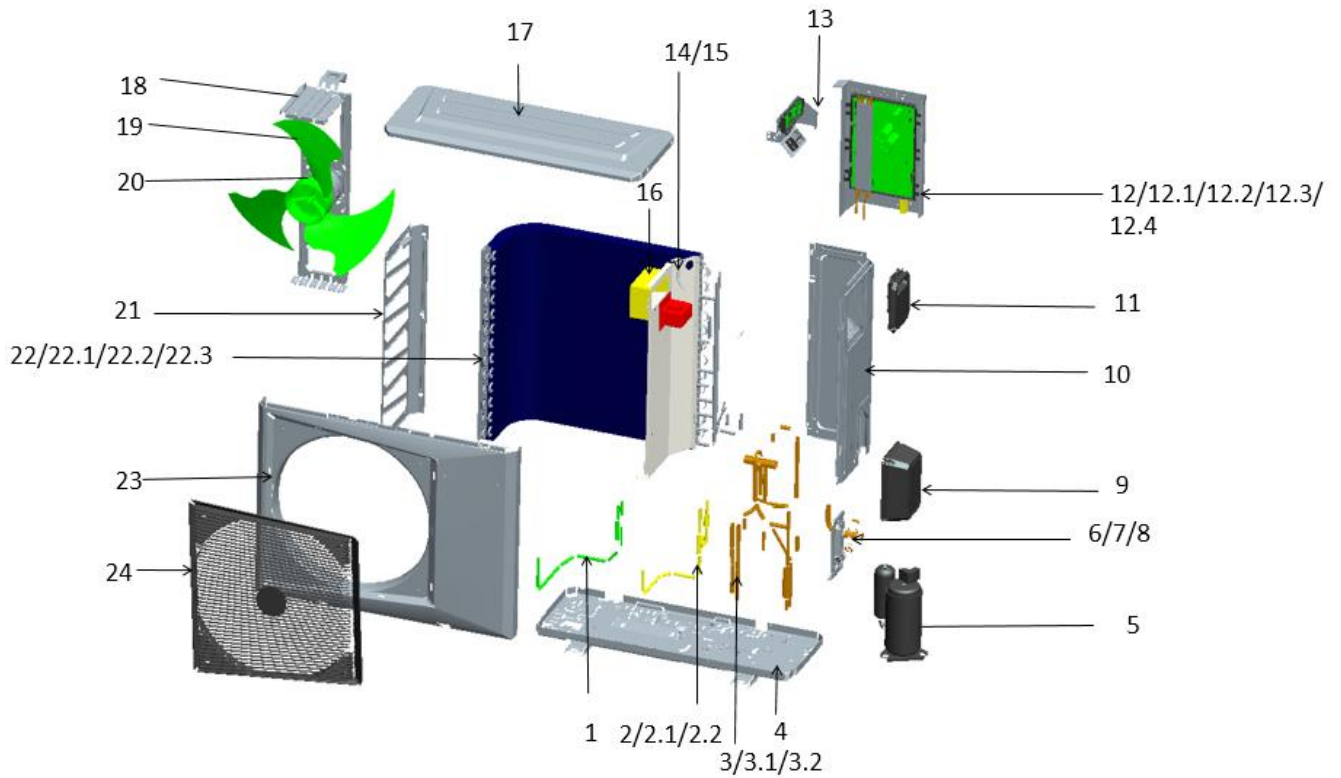
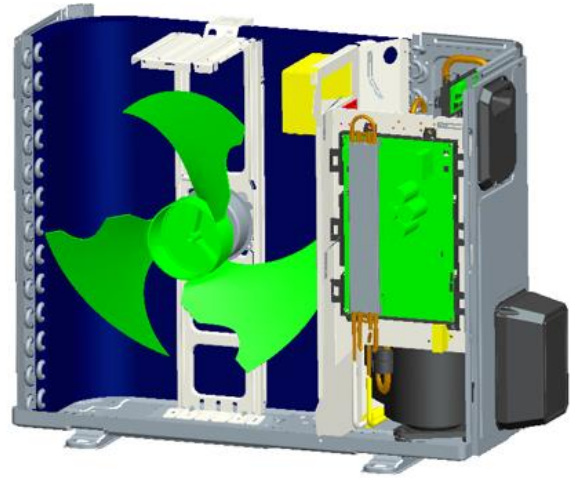
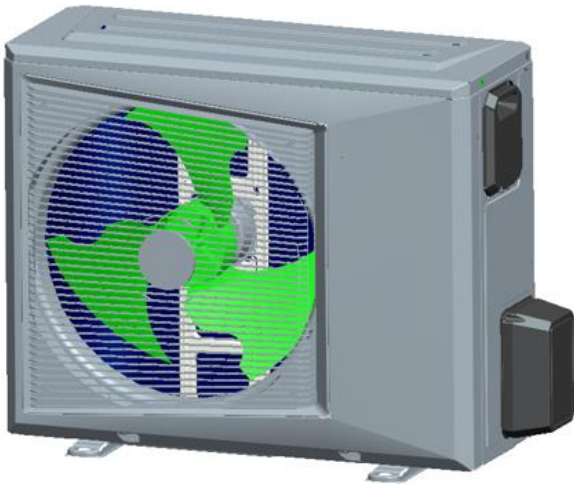
### 8.1 COU-D18HR4-A01





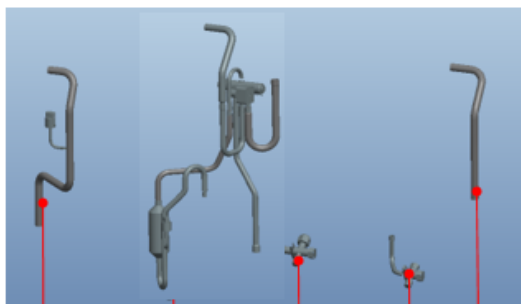
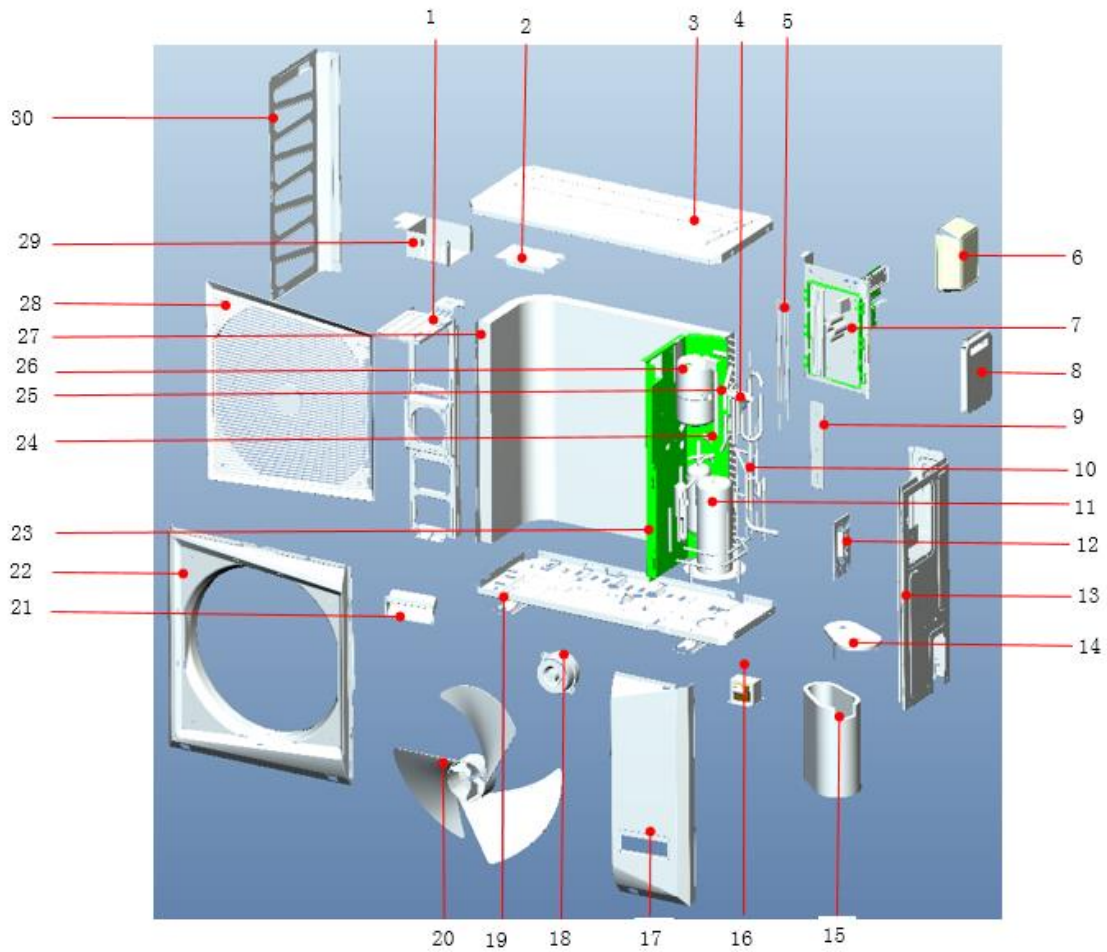
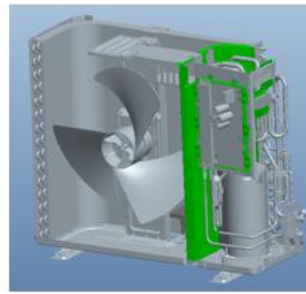
No	Part Name	No.	Part Name
1	Outdoor chassis assy	13	Outdoor main PCB
2	Inverter compressor	14	Separating board
3	4-way valve assy	15	Top cover parts
4	Condenser assy	16	Left clapboard
5	Capillary parts	17	Motor bracket assembly
6	Cut-off valve-C-DN4(T)	18	Axial-flow fan blade
7	Valve holder	19	Outdoor DC fan motor
8	Cut-off valve-C-DN10(T)	20	Front panel
9	Stop valve cover	21	Air outlet net cover (plastic)
10	Right clapboard parts	22	Ambient temperature sensor
11	Big handle	23	Condenser temperature sensor
12	Electronic control mounting plate	24	Discharge temperature sensor

## 8.2 COU-D24HR4-C01

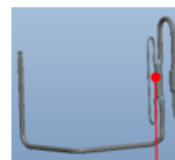


No.	Part Name	No.	Part Name
1	Throttle valve assembly	15	Reactor
2	Electronic expansion valve assembly	16	Waterproof cover
3	4-way valve assy	17	Top cover assembly
4	Outdoor chassis assy	18	Motor bracket assembly
5	Inverter compressor	19	Axial-flow fan blade
6	Cut-off valve-DN13	20	Outdoor DC fan motor
7	Valve holder	21	Left side panel
8	Cut-off valve-DN8	22	Condenser parts
9	Stop valve cover	23	Front panel components
10	Right side panel parts	24	Plastic grille
11	Big handle	25	Discharge temperature sensor
12	Outdoor electronic control module	26	Condenser temperature sensor
13	Terminal block mounting plate	27	Ambient temperature sensor
14	Middle separating board		

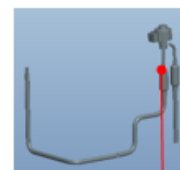
### 8.3 COU-D36HR4-D01



24 4 32 31 25



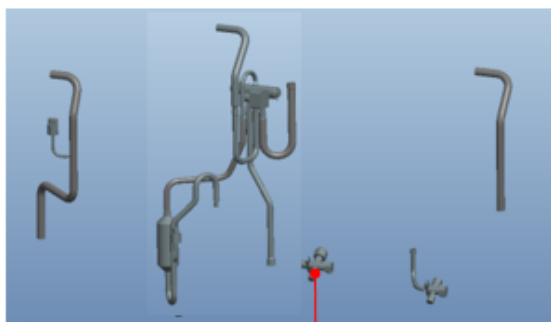
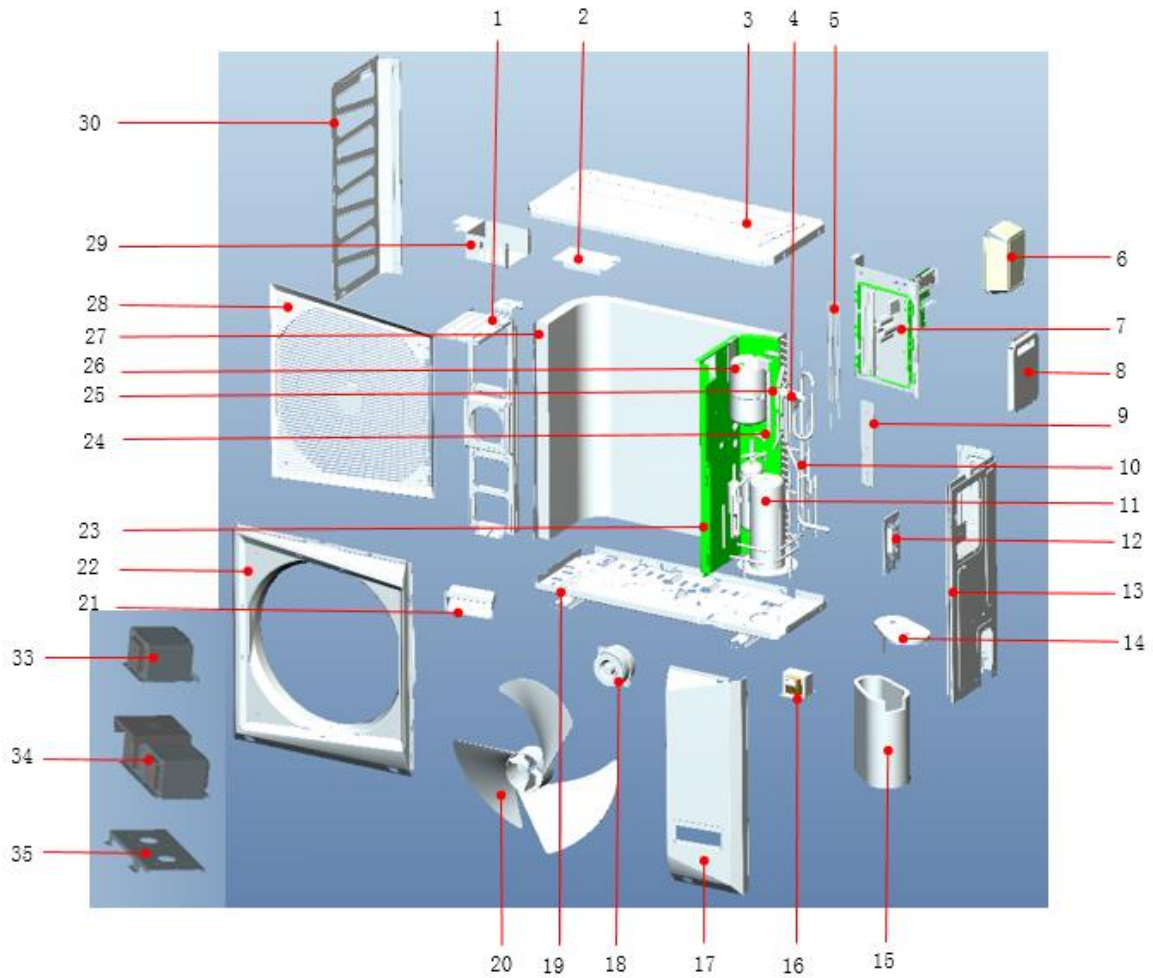
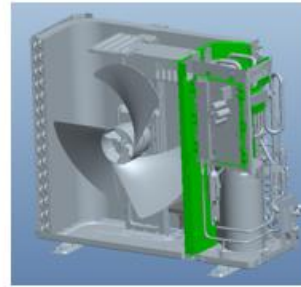
10.1



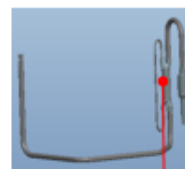
10.2

No.	Part Name	No.	Part Name
1	Motor bracket assembly	19	Chassis assembly
2	Inductor cover	20	Axial flow blade
3	Top cover assembly	21	Small hand spanning
4	Four-way valve assembly	22	Front panel
5	Refrigerant cooling pipe parts	23	Medium baffle assembly
6	stop valve cover	24	Compressor air return pipe parts
7	Outdoor electric control box assembly	25	Gas-liquid separator inlet pipe
8	Big hand spanning	26	Gas-liquid separator
9	Refrigerant cooling cover	27	Condenser components
10	Throttle part	28	Plastic mesh cover
11	Compressor	29	Inductor mount
12	Seat plate	30	Left side plate
13	Right rear side panel parts	31	DN8 stop valve
14	Silencer cotton for compressor top cover	32	DN13(T) stop valve
15	Soundproof cotton	33	Discharge temperature sensor
16	Reactor	34	Condenser temperature sensor
17	Right front side panel	35	Ambient temperature sensor
18	DC fan motor		

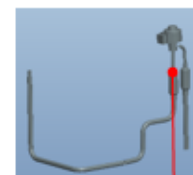
### 8.4 COU-D36HZR4-D01



24 4 32 31 25



10.1

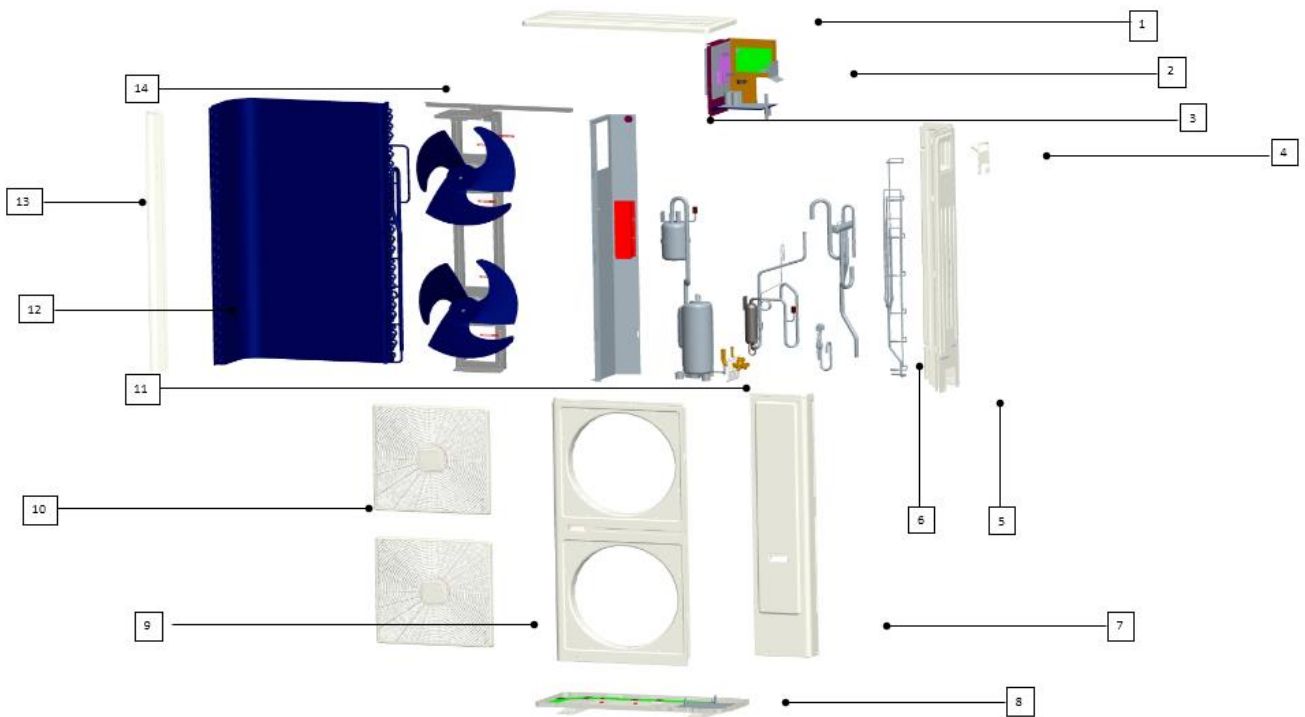


10.2

No.	Part Name	No.	Part Name
1	Motor bracket assembly	20	Axial flow blade
2	Inductor cover	21	Small hand spanning
3	Top cover assembly	22	Front panel
4	Four-way valve assembly	23	Medium baffle assembly
5	Refrigerant cooling pipe assembly	24	Compressor air return pipe parts
6	stop valve	25	Compressor return pipe
7	Outdoor electric control box assembly	26	Gas-liquid separator
8	Big hand spanning	27	Condenser components
9	Refrigerant cooling cover	28	Plastic mesh cover
10	Throttle part	29	Inductor mount
11	Compressor	30	Left side plate
12	Seat plate	31	DN8 stop valve
13	Right rear side panel parts	32	DN13(T) stop valve
14	Silencer cotton for compressor top cover	33	Reactor cover plate paste assembly 1
15	Soundproof cotton	34	Reactor cover plate paste assembly 2
16	Reactor	35	Electrical mounting plate
17	Right front side panel	36	Condenser temperature sensor
18	DC fan motor	37	Ambient temperature sensor
19	Chassis assembly	38	Discharge temperature sensor



### 8.5 COU-48HZDR4, COU-55HZDR4





No.	Part Name	No.	Part Name
1	Top cover pasted with cotton components	11	Inverter compressor
2	Electronic components	12	Condenser parts
3	Middle partition assembly	12.1	Upper condenser parts
3.1	Middle partition	12.2	Manifold assembly
3.2	Line of synthetic	12.3	Condenser shunt assembly
3.3	Winding card	12.4	Sub-cooling outlet pipe
4	Large handle cotton patch assembly	12.5	Condenser connection strip
5	Right board pasted cotton component	12.6	Condenser left connection plate
6	Piping components	12.7	Condenser right connection plate
6.1	Electronic expansion valve assembly	12.8	Lower condenser assembly
6.2	Exhaust pipe assembly	13	Stand column
6.3	4-way valve assembly	14	Motor support parts
6.4	Return pipe assembly	14.1	Motor support assembly
7	Maintenance panel	14.2	Solder assembly of motor bracket connection plate
8	Chassis welding assembly	14.3	Axial-flow fan
9	Front panel	14.4	Single shaft outdoor DC motor
10	Mesh enclosure	11	

## Part 4 Installation

1.Precaution on Installation.....	139
2.Vacuum Dry and Leakage Checking .....	141
3.Additional Refrigerant Charge.....	143
4.Water Drainage .....	145
5.Insulation Work .....	149
6.Test Operation.....	152

## 1. Precaution on Installation

1.1. Measure the necessary length of the connecting pipe, and make it by the following way.

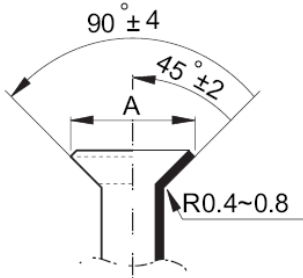
Connect the indoor unit at first, then the outdoor unit.

Bend the tubing in proper way. Do not harm them.

### CAUTIONS:

- Daub the surfaces of the flare pipe and the joint nuts with frozen oil, and wrench it for 3~4 rounds
- With hands before fasten the flare nuts.

**Be sure to use two wrenches simultaneously when you connect or disconnect the pipes.**

Pipe gauge	Tightening torque	Flare dimension A		Flare shape
		Min (mm)	Max	
Φ6.4	15~16N.m (153~163 kgf.cm)	8.3	8.7	
Φ9.5	25~26N.m (255~265kgf.cm)	12.0	12.4	
Φ12.7	35~36N.m (357~367kgf.cm)	15.4	15.8	
Φ15.9	45~47N.m (459~480 kgf.cm)	18.6	19.1	
Φ19.1	65~67N.m (663~684kgf.cm)	22.9	23.3	

- The stop valve of the outdoor unit should be closed absolutely (as original state). Every time you connect it, first loosen the nuts at the part of stop value, then connect the flare pipe immediately (in 5 minutes). If the nuts have been loosened for a long time, dusts and other impurities may enter the pipe system and may cause malfunction later. So please expel the air out of the pipe with refrigerant before connection.
- Expel the air after connecting the refrigerant pipe with the indoor unit and the outdoor unit. Then fasten the nuts at the repair-points.

1.2. Locate The Pipe

- a) Drill a hole in the wall (suitable just for the size of the wall conduit), then set on the fittings such as the wall conduit and its cover.
- b) Bind the connecting pipe and the cables together tightly with binding tapes. Do not let air in, which will cause water leakage by condensation.
- c) Pass the bound connecting pipe through the wall conduit from outside. Be careful of the pipe allocation to do no damage to the tubing.

1.3. Connect the pipes.

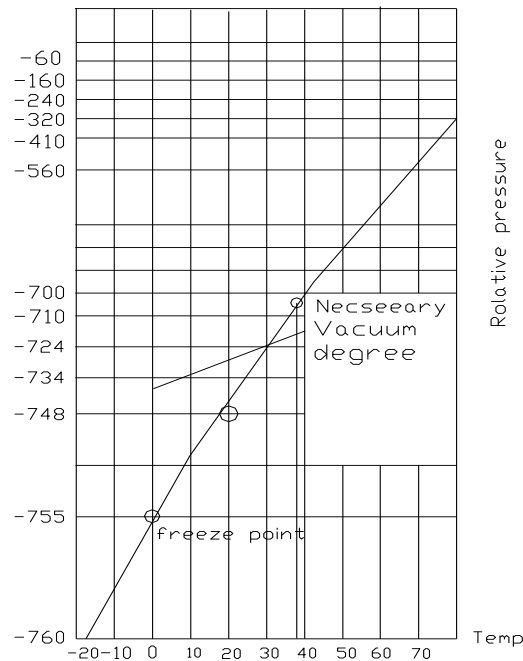
1.4. Then, open the stem of stop valves of the outdoor unit to make the refrigerant pipe connecting the indoor unit with the outdoor unit in fluent flow.

1.5. Be sure of no leakage by checking it with leak detector or soap water.

1.6. Cover the joint of the connecting pipe to the indoor unit with the soundproof / insulating sheath (fittings), and bind it well with the tapes to prevent leakage.

## 2 Vacuum Dry and Leakage Checking

2.1 Vacuum Dry: use vacuum pump to change the moisture (liquid) into steam (gas) in the pipe and discharge it out of the pipe to make the pipe dry. Under one atmospheric pressure, the boiling point of water(steam temperature) is 100°C. Use vacuum pump to make the pressure in the pipe near vacuum state, the boiling point of water falls relatively. When it falls under outdoor temperature, the moisture in the pipe will be vaporized.



### 2.2 Vacuum dry procedure

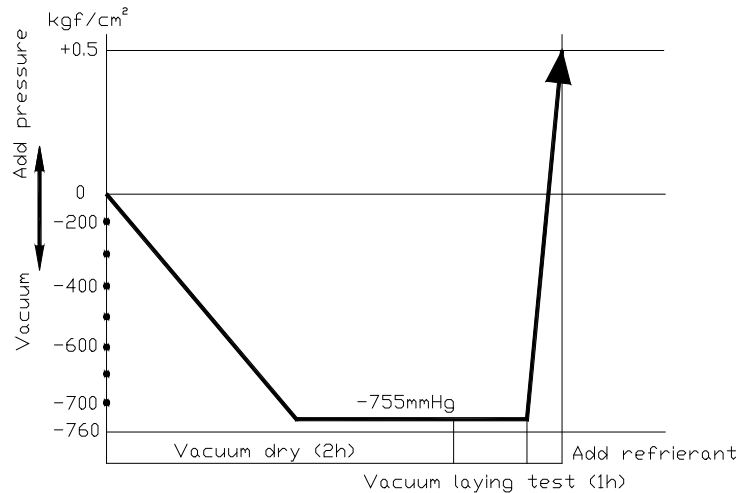
There are two methods of vacuum dry due to different construction environment: common vacuum dry, special vacuum dry.

#### ①. Common vacuum dry procedure

- Vacuum dry (for the first time) -- connect the all-purpose detector to the inlet of liquid pipe and gas pipe, and run the vacuum pump more than two hours (the vacuum pump should be below -755mmHg)
- If the pump can't achieve below -755mmHg after pumping 2 hours, moisture or leakage point will still exist in the pipe. At this time, it should be pumped 1 hour more.
- If the pump can't achieve -755mmHg after pumping 3 hours, please check if there are some leakage points.
- Vacuum placement test: place 1 hour when it achieves -755mmHg, pass if the vacuum watch shows

no rising. If it rises, it shows there's moisture or leakage point.

- Vacuuming from liquid pipe and gas pipe at the same time.
- Sketch map of common vacuum dry procedure.



## ②. Special vacuum dry procedure

- This vacuum dry method is used in the following conditions:
- There's moisture when flushing the refrigerant pipe.
- Rainwater may enter into the pipe.
- Vacuum dry for the first time ..... 2h pumping

## ③. Vacuum destroy for the second time ..... Fill nitrogen to 0.5Kgf/cm<sup>2</sup>

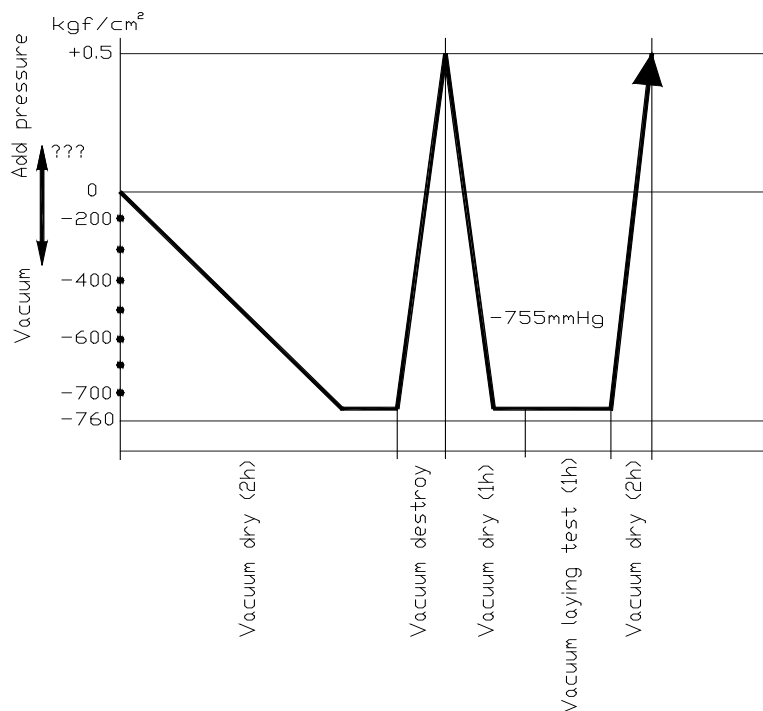
Because nitrogen is for drying gas, it has vacuum drying effect during vacuum destroy. But if the moisture is too much, this method can't dry thoroughly. So, please pay more attention to prevent water entering and forming condensation water.

## ④. Vacuum dry for the second time ..... 1h pumping

Determinant: Pass if achieving below -755mmHg. If -755mmHg can't be achieved in 2h, repeat procedure ③ and ④.

## ⑤. Vacuum placing test ..... 1h

## ⑥. Sketch map of special vacuum dry procedure



### 3 Additional Refrigerant Charge

#### Caution

- Refrigerant cannot be charged until field wiring has been completed.
- Refrigerant may only be charged after performing the leak test and the vacuum pumping.
- When charging a system, care shall be taken that its maximum permissible charge is never exceeded, in view of the danger of liquid hammer.
- Charging with an unsuitable substance may cause explosions and accidents, so always ensure that the appropriate refrigerant is charged.
- Refrigerant containers shall be opened slowly.
- Always use protective gloves and protect your eyes when charging refrigerant.

The outdoor unit is factory charged with refrigerant. Calculate the added refrigerant according to the diameter and the length of the liquid side pipe of the outdoor unit/indoor unit

R(g)	D(mm)	Φ6.4	Φ9.5
L(m)			

Less than 5m (One-way)	—	—
Added Refrigerant When Over 5m (One-way)	$12\text{g/m} \times L$	$24\text{g/m} \times L$

**Remark:**

R (g): Additional refrigerant to be charged

L (m): The length of the refrigerant pipe (one-way)

D (mm): Liquid side piping



## 4 Water Drainage

### 4.1 Gradient and Supporting

4.1.1 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.

4.1.2 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	1~1.5m

#### 4.1.3. Precautions

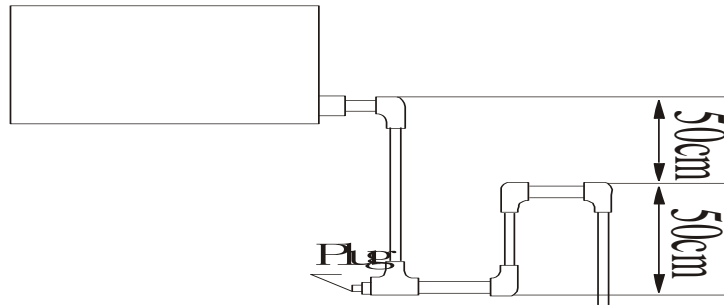
- ① The diameter of drainpipe should meet the drainage requirement at least.
- ② The drainpipe should be heat-insulated to prevent atomization.
- ③ Drainpipe should be installed before installing indoor unit. After powering on, there is some water in water-receiver plate. Please check if the drain pump 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.

### 4.2 Drainpipe Trap

4.2.1. If the pressure at the connection of the drainpipe is negative, it needs to design drainpipe trap.

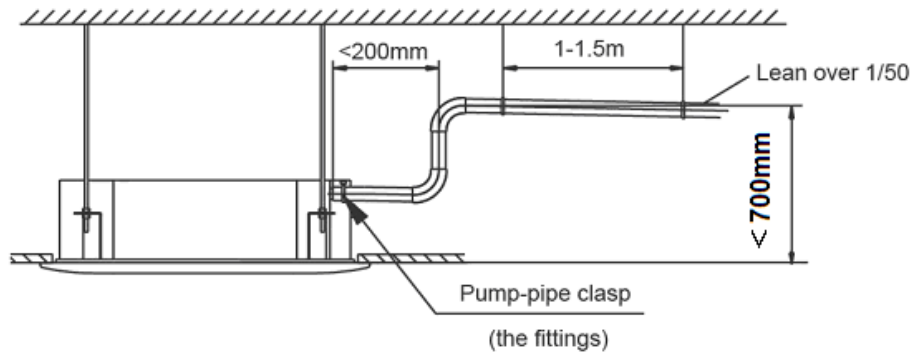
4.2.2. Every indoor unit needs one drainpipe trap.

4.2.3. A plug should be designed to do cleaning.

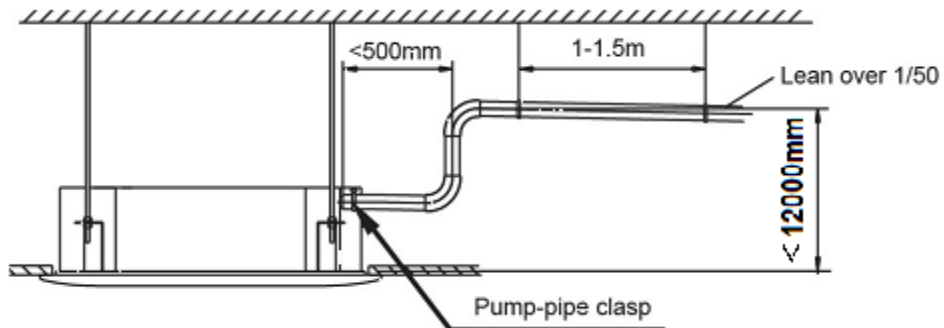


### 4.3 Upwards drainage (drain pump)

For Four-way cassette (compact)



For Round-way cassette



### 4.4 Convergent drainage

4.4.1. The number of indoor units should be as small as possible to prevent the traverse main pipe overlong.

4.4.2. Indoor unit with drain pump and indoor unit without drain pump should be in different drainage system.



### 4.4.3. Selecting the diameter

Number of connecting indoor units → Calculate drainage volume → Select the diameter

Calculate allowed volume = Total cooling capacity of indoor units(HP)×2 (l/ hr)

	Allowed volume(lean 1/50) (l/ hr)	I.D. (mm)	Thick
Hard PVC	$\leq 14$	∅ 25	3.0
Hard PVC	$14 < \leq 88$	∅ 30	3.5
Hard PVC	$88 < \leq 334$	∅ 40	4.0
Hard PVC	$175 < \leq 334$	∅ 50	4.5
Hard PVC	$334 < \leq$	∅ 80	6.0

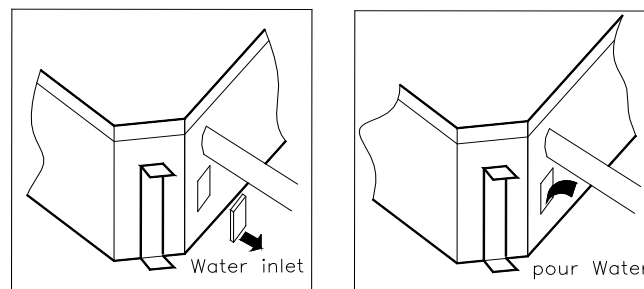
## 4.5 Drainage test

### 4.5.1 Drainage without drain pump

After finishing drainpipe installation, pour some water into the water receiver plate to check if the water flows smoothly.

### 4.5.2 Drainage with drain pump

① Poke the Water Level Switch, remove the cover, use water pipe to pour 2000ml water into the water receipt plate through the water inlet.



② Turn on the power to Cooling operation. Check the pump's operation and switch on the Water Level Switch. Check the pump's sound and look into the transparent hard pipe in the outlet at the same time to check if the water can discharge normally.

③ Stop the air conditioner running, turn off the power, and put back the cover.

- Stop the air conditioner. After 3 minutes, check if it has abnormality. If the collocation of drainpipes is illogical, the water will flow back overfull, which will cause the alarm lamp flashes, even overflow from the water receipt plate.

- Keep on pouring water until it gives an alarm signal for high water level, check if the pump drains water at once. If the water level can't fall below the alarmed water level after 3 minutes, the air conditioner will stop. Turn off the power and drain the remained water, and then turn on the air conditioner.

Note: the drain stuff in the main water receipt plate is for maintenance. Stuff up the drain stuff to prevent water leakage.

## 5 Insulation Work

### 5.1 Insulation material and thickness

#### 5.1.1. 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)

#### 5.1.2. 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

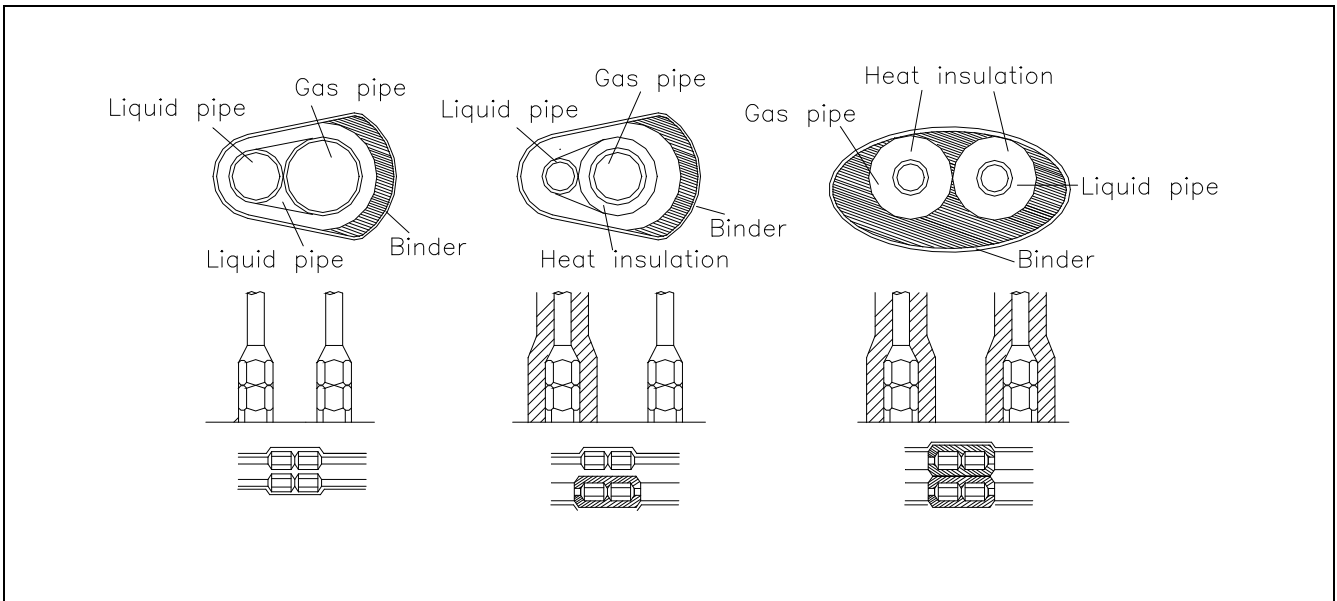
### 5.2 Refrigerant pipe insulation

#### 5.2.1. 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

#### 5.2.2. Insulation for non-jointing parts and non-connection parts

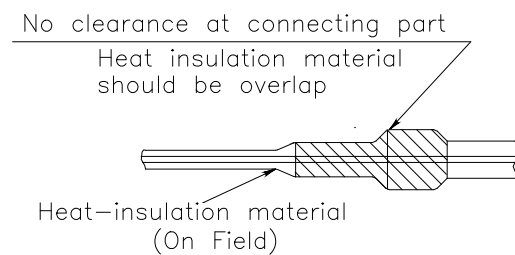
wrong	right	
Gas pipe and liquid pipe should not be put together to insulate	Insulate the gas pipe (cooling only)	Insulate the gas pipe and liquid pipe



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.

### 5.2.3. 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.



## 5.3 Drainage pipe insulation

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

## 5.4 Note

5.4.1 The jointing area, expanding area and the flange area should be heat insulated after passing the pressure test

5.4.2 The gas and liquid pipe should be heat insulated individually, the connecting part should be heat insulated individually.

5.4.3 Use the attached heat-insulation material to insulate the pipe connections (pipes' tie-in, expand nut ) of the indoor unit

## 6. Test Operation

(1) The test operation must be carried out after the entire installation has been completed.

(2) Please confirm the following points before the test operation.

- The indoor unit and outdoor unit are installed properly.
- Tubing and wiring are correctly completed.
- The refrigerant pipe system is leakage-checked.
- The drainage is unimpeded.
- The ground wiring is connected correctly.
- The length of the tubing and the added stow capacity of the refrigerant have been recorded.
- The power voltage fits the rated voltage of the air conditioner.
- There is no obstacle at the outlet and inlet of the outdoor and indoor units.
- The gas-side and liquid-side stop valves are both opened.
- The air conditioner is pre-heated by turning on the power.

(3) According to the user's requirement, install the remote controller when the remote controller's signal can reach the indoor unit smoothly.

(4) Test operation

Set the air conditioner under the mode of "COOLING" with the remote controller, and check the following points.

### Indoor unit

- Whether the switch on the remote controller works well.
- Whether the buttons on the remote controller works well.
- Whether the air flow louver moves normally.
- Whether the room temperature is adjusted well.
- Whether the indicator lights normally.
- Whether the temporary buttons works well.



- 
- Whether the drainage is normal.
  - Whether there is vibration or abnormal noise during operation.

**Outdoor unit**

- Whether there is vibration or abnormal noise during operation.
- Whether the generated wind, noise, or condensed of by the air conditioner have influenced your neighborhood.
- Whether any of the refrigerant is leaked.

## Part 5 Controller

1.Wireless Remote Controller.....	155
2.Wired Controller.....	155

# 1 Wireless Remote Controller

## 1.1 Instructions of remote controller

“HVAC No.2” remote controller (compatibility with wire controller or lamp board): extension code, applicable to most VRV models.

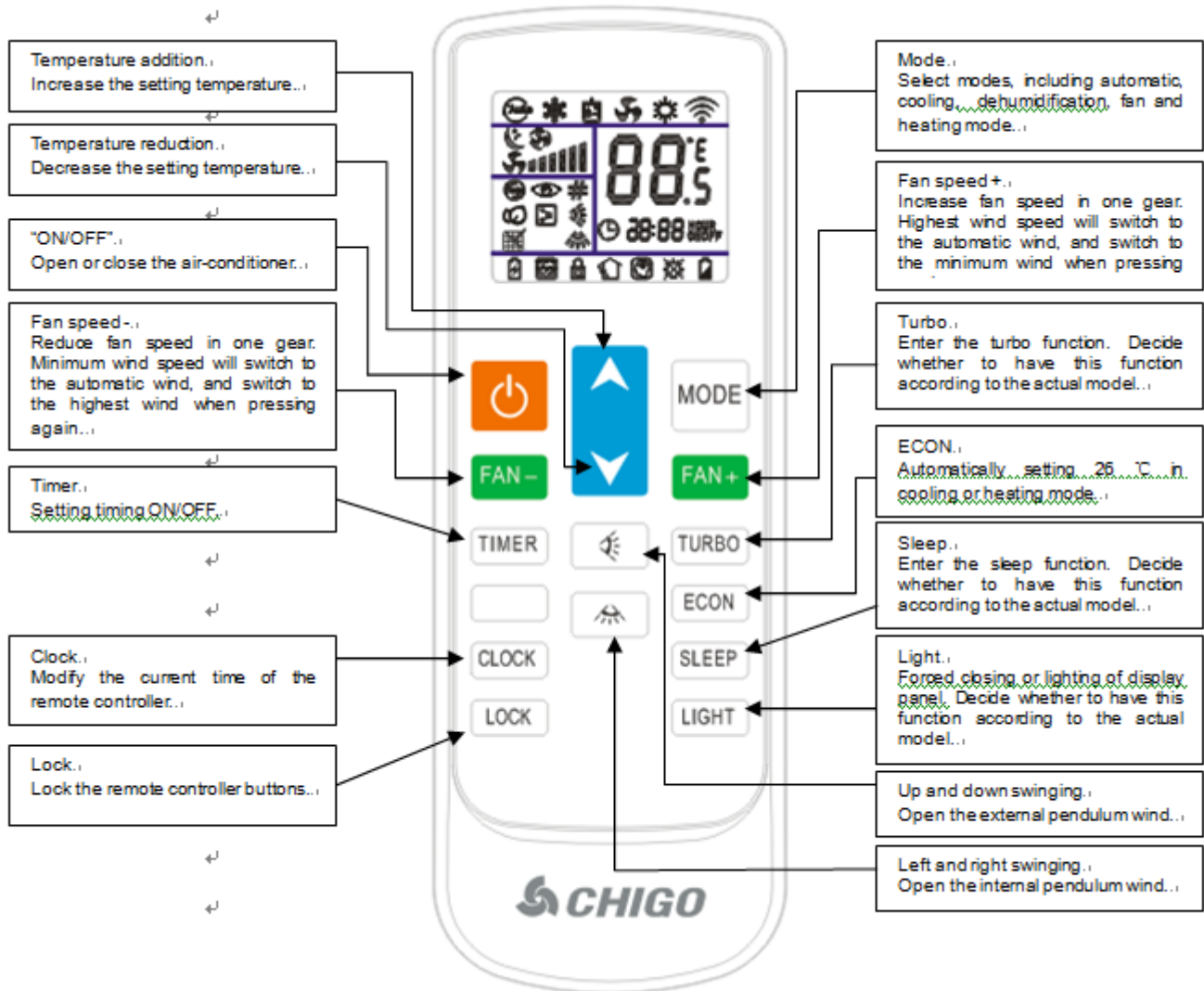
“HVAC No.3” remote controller (compatibility with wire controller or lamp board): general code, applicable to all models (except of Window machine).

### Warning

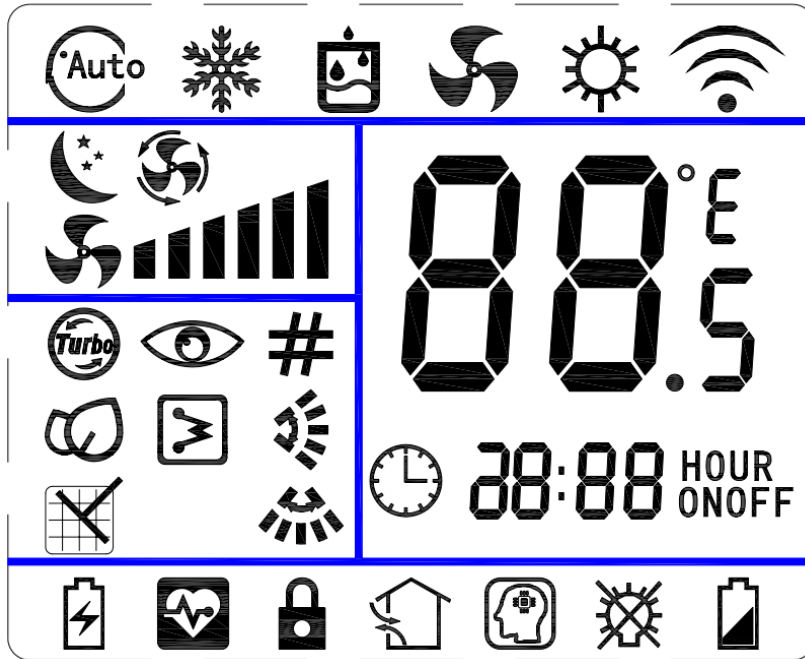
- Do not place remote controller near heat sources such as electric blankets or heating furnances.
- Do not place remote controller in direct sunlight.
- Be careful not to drop, otherwise it may cause damage.
- No obstacle between the signal receiver and the remote controller, so as not to affect

### Warning

- Point the remote controller to the air conditioner, press the button on the remote controller, and send the command signal to the air conditioner.
- If the signal is received correctly, the air conditioner will issue a "beep" prompt.
- If the remote controller is not available, please replace the new battery and try again.



## 1.2 The icon meaning of remote controller






1) The remote controller is equipped with 15 buttons, and the LCD is newly made. All the icons are kept in touch with the touch-screen remote controller.

2) At the first power on, the LCD of the remote controller displays all the icons first and then enters the standby state, displaying only the clock 12:00 and the light icon.

3) Introduction of LCD screen icon:

- Mode display: automatic 、 cooling 、 dehumidification 、 fan and heating .
- Temperature display:  $00^{\circ}\text{E}$  displays temperature, which range between 16 ~ 32°C or 61 ~ 90°F.
- Wind speed display: means wind speed. means automatic wind speed.
- Swinging display: means external pendulum wind. means internal pendulum wind.
- Timer display:  $\text{HOUR ON}$  means TIME ON.  $\text{HOUR OFF}$  means TIME OFF.
- Other display: means clock. means sleep. means TURBO. means ECON. means cleaning. means electric heating. means address. means lock. means lack of electricity.
- Reservation function: means Auto Config. means power saving. means

healthy.  means new wind.  means intelligence.  means lamplight.

## 1.3 Button function of remote controller

### (1) ON/OFF

- ① When pressing this key, the remote controller switches by "on, off, on" circularly.
- ② When the first power on, the working state is set by default: setting temperature 25°C (77°F), automatic mode, automatic fan speed, internal and external pendulum wind, no TURBO, no sleep, no timer, no lock).
- ③ When the power on is not the first time, the state before shutdown is recovered. After shutdown, the sleep, TURBO, ECON and timer functions will be canceled.

### (2) Mode

- ① When pressing this key, the remote controller switches by "automatic, cooling, dehumidification, fan, heating, automatic" circularly.
- ② The dehumidification mode is locked at 25°C and the temperature can not be adjusted. The internal pendulum wind stays unchanged according to the state before switching, but the external pendulum wind is forced to close.

### (3) Temperature reduction ▼

- ① Temperature setting: when pressing this key, the setting temperature will be reduced by 1. The temperature of centigrade model will be reduced progressively by "32°C, 31°C, …… , 17°C, 16°C". The temperature of fahrenheit model will be reduced progressively by "90°F, 89°F, …… , 62°F, 61°F". When pressing this key in dehumidification and fan mode, the temperature will not change.
- ② In the clock setting state (the clock icon will flicker to show the prompt), this key is used to set the clock time.

③ Keep pressing will continuously change the temperature.

(4) **Temperature addition ▲**

① Temperature setting: when pressing this key, the setting temperature will be added by 1. The temperature of centigrade model will be added progressively by "16 °C , 17 °C , ... , 31 °C , 32 °C ". The temperature of fahrenheit model will be added progressively by "61 °F , 62 °F , ... , 89 °F , 90 °F ". When pressing this key in dehumidification and fan mode, the temperature will not change.

② In the clock setting state (the clock icon will flicker to show the prompt), this key is used to set the clock time.

③ Keep pressing will continuously change the temperature.

(5) **Up and down swinging (External pendulum wind)**

① Pressing this key in the dehumidification mode, the external pendulum wind is forced to close.

② Pressing this key in the other modes, the external pendulum switches by "swing, fixed wind, swing" circularly.

(6) **Left and right swinging (Internal pendulum wind)**

① Pressing this key in the dehumidification mode, the internal pendulum wind stays unchanged according to the state before switching.

② Pressing this key in the other modes, the internal pendulum switches by "swing, stop, swing" circularly.

(7) **"FAN -"**

① When the first power on, the remote controller is set to the automatic wind speed by default. In dehumidification mode, the wind speed is fixed to low wind and is not adjustable. By pressing the wind speed key, there is no response to the remote controller.

- ② Pressing this key in the other modes, the wind speed switches by "automatic wind speed, high speed, middle speed, low speed, automatic wind speed " circularly.

#### (8) "FAN +"

- ① When the first power on, the remote controller is set to the automatic wind speed by default. In dehumidification mode, the wind speed is fixed to low wind and is not adjustable. By pressing the wind speed key, there is no response to the remote controller.
- ② Pressing this key in the other modes, the wind speed switches by "automatic wind speed, low speed, middle speed, high speed, automatic wind speed " circularly.

#### (9) Timer

- ① Under the shutdown state, press this key to set the opening time, range from 1 hour to 24 hour.
- ② Under the boot state, press this key to set the shutdown time, range from 1 hour to 24 hour.
- ③ The timing time is according to the cycle of "1h, 2h, ·····, 23h, 24h, cancel, 1h".
- ④ Exit timing adjustment after 3 seconds without key pressing.

#### (10) TURBO

- ① Extension code remote controller has the effect. The remote controller is no TURBO by default, and the TURBO key will not work in automatic mode, dehumidification mode and fan mode.
- ② Pressing this key in the cooling or heating mode, the TURBO mode switches between opening and closing. When in the TURBO mode, it does not display the wind speed. Switching mode or entering sleep function will close TURBO mode.
- ③ If the air conditioner has four gear wind speeds, the TURBO icon will light up and the fan will run in the fourth gear wind speed by pressing this key.



**(11) ECON**

- ① The remote controller is no ECON by default, and the ECON key will not work in automatic mode, dehumidification mode and fan mode.
- ② Pressing this key in the cooling or heating mode, the ECON mode switches between opening and closing. When in the ECON mode, the setting temperature is set to 26°C (77°F) and other settings are unchanged. If closing ECON mode, the remote controller will recover to the setting before opening ECON mode. Switching mode will close ECON mode.

**(12) Sleep**

- ① Pressing this key in the modes except of the fan mode, the sleep function switches between opening and closing. Switching mode will cancel sleep function.
- ② When pressing this key, the wind speed is automatically switched to low wind. However, the wind speed can be adjusted according to the wind speed key (except of the dehumidification mode).

**(13) Light**

- ① When the first power on, there is lamplight by default. Pressing this key force to turn off or turn on the lamplight. Decide whether to have this function according to the actual model.

**(14) Clock**

- ① This key is used to set the clock. Pressing enters the hour adjustment state, and the hour digital tube on the LCD is flickering at the same time. The hour can be set by temperature addition or reduction keys, and it ranges from 0 to 23.
- ② When the hour is set, press this key again to enter the minute adjustment state, and the minute digital tube on the LCD is flickering at the same time. The minute can be set by temperature addition or reduction keys, and it ranges from 00 to 59.
- ③ After adjusting, press the clock key again to confirm the setting and the adjustment

state exits. If do not press the clock key again to confirm, the time adjustment state will exit after 3 seconds, and recover the clock before the adjustment.

#### (15) Lock

- ① There is no lock by default. Pressing this key, the lock function switches between opening and closing.
- ② When it is locked, the remote controller does not work except the lock key.

#### (16) Combinatorial key: “FAN -” + “FAN +”

- ① Extension code remote controller has the effect. Switch 3 gear wind and 6 gear wind. There is 6 gear wind on the LCD. If the 3 gear wind is switched, the first and second gear wind will be "low wind"; the third and fourth gear wind will be "middle wind"; the fifth and sixth gear wind will be "high wind".

#### (17) Combinatorial key: “Mode” + “Lock”

##### ① Enter address setting

- 1) On the shutdown interface, press the combinatorial key on the remote controller for 5 seconds to enter the address setting interface.
- 2) The last address (when the first power on, 00 is displayed) and the "#" icon are displayed and flickering.

##### ② The step instructions of setting address

- 1) At the address setting interface, press the temperature addition or reduction to adjust the setting address, and it ranges from 00 to 63.
- 2) When the first time entering the interface or pressing the temperature addition or reduction key, the address display flickers for 3 seconds and then does not flicker.
- 3) Press the ON / OFF key to enter the sending state and send the address setting code.

##### ③ The step instructions of inquiring address

- 1) At the address setting interface, press the mode key to send the query code.
- 2) At this time, the "#" icon flickers. 3 seconds later, it normally displays the last setting addresses and the "#" icon does not flicker.

#### ④ Exit setting

- 1) Pressing the mode key and lock key at the same time can exit the address setting interface.
- 2) If there is no key pressing associated with address setting for more than 30 minutes, the remote controller will exit the address setting interface.

## 1.4 Battery replacement

- 1) If the air conditioner is unable to receive the signal from the wire controller, or the LCD of wire controller is blurred, it means that the battery is depleted and needs to be replaced.
- 2) Take off the back cover and remove the old batteries. When replacing batteries, please pay attention to the "+" and "-" marking on the battery.
- 3) Install the back cover and set the current time.

### Warning

- Do not mix old and new batteries together.
- When the wire controller is idle for a long time, the battery should be removed.
- In general, the service life of a dry battery that meets the JIS or IEC standards can be up to 6-12 months, but if it exceeds the use time or not in conformity with above

## 2 Wired Controller

ZKX-C/TE-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

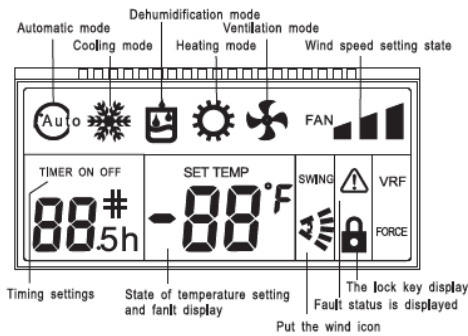


Fig2 LCD display content of Wire Controller

**Operation and Instruction:**

**"ON/OFF" Button:**

Control the On/Off status of the system.

**"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

**"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 °C ~ 32°C. 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.

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.

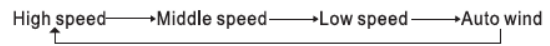
2) Press the Timer button in the On status to go into the Timing Off for 1 hour, and then press the Timer button plus 1 until

it is timing off for 24h. At this time, if you press the Timer button, it will deactivate Timing Off.

**"FAN" 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:



3) There is no Auto wind in the Ventilation mode, and the volume changes as follows:



**"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°C/CHECK" Button:**

1) Short press this button, Enter a state of energy saving of 26 °C, namely the setting temperature is 26°C. 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 do not operate for five seconds in the condition of the query.

**Wired controller checked items:**

Long turn press 26°C/check button, then press the "up" button to check next parameter.

No.	Description	Remark
1	Indoor unit capacity	Capacity = display * 10
2	Indoor unit capacity demand	(Reserved)
3	Amended capacity demand by T4	(Reserved)
4	Amended capacity demand by T2	(Reserved)
5	T1 room temperature	
6	T2 evaporator temperature	
7	T2B evaporator outlet temperature	
8	T3 condenser temperature	
9	T4 ambient temperature	
10	T5/TP discharge temperature	
11	EXV opening degree	Degree = display * 4
12	Compressor running frequency	
13	AC voltage	Voltage = display * 4 (Reserved)

**Description of DIP Switch:**

	ON	OFF
4	with power failure memory	without power failure memory

1) The first,second,third bit of the DIP Switch is no meaning. The factory all dial to the OFF state.

2) 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 function.The factory dials to the OFF state.

## II. Installation of Wire Controller

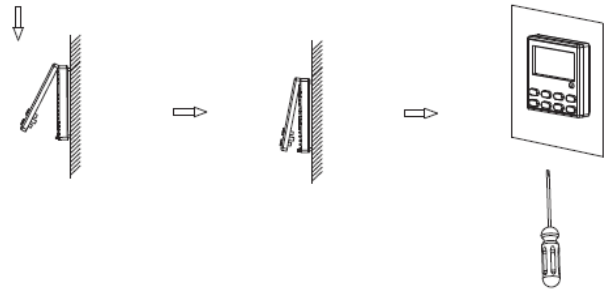
### Safety Precautions

- ! 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:

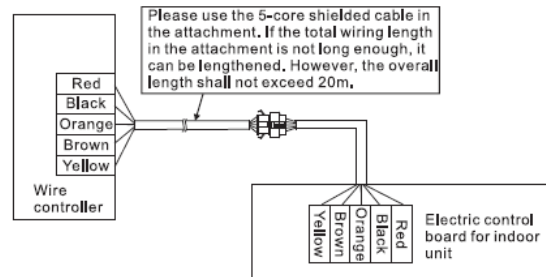
<b>Warning:</b>	Indicate it may cause the death or serious injury for the improper operation.
<b>Note:</b>	Indicate it may cause the death or serious injury for the improper operation.

#### 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 .



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



### Installation and disassembly of the wire controller

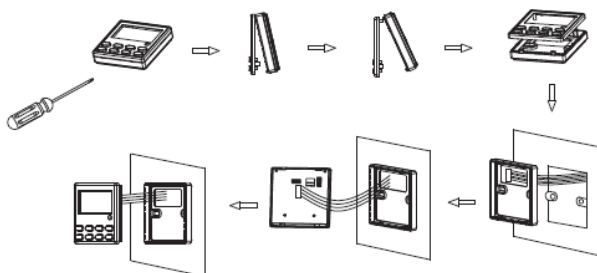
#### 1. The installation position and requirements of the wire controller

- 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:

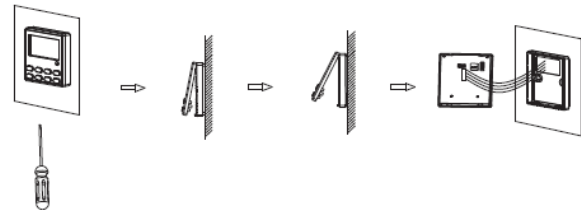
- 1) Open interior electrical lifted the lid, and the signal wires through the rubber ring;
- 2) Plug the wire controller signal lines within the five core needle base on the indoor machine circuit boards, and using cable tie line tied tightly fixed, Next, the wire controller installation steps as shown in the figure below:



#### 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 abnormality 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.

**3-core wired controller (for constant air flow ducted unit)**



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

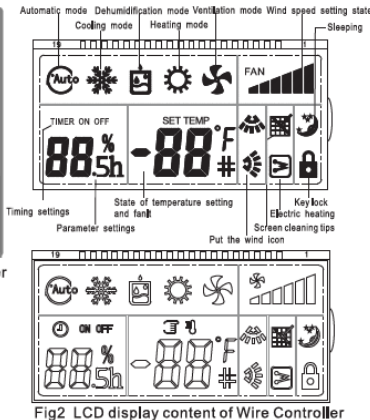


Fig2 LCD display content of Wire Controller

Operation and Instruction:

1. "ON/OFF" Button :

Control the On/Off status of the system.

2. "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

3. "TEMP+" and "TEMP-" Button :

1) Boot state, press "TEMP+" and "TEMP-" Button, increase/decrease the setting temperature. Refrigeration, Dehumidification, Ventilation and Heating mode Scope of temperature setting: 16 °C ~ 32°C. The setting temperature do not adjust in Auto Mode.

2) Press the "TEMP+" and "TEMP-" 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 "TEMP+" and "TEMP-" button again simultaneously.

4. "FAN+" and "FAN-" Button (FAN+ and FAN-)

1) In dehumidification mode: the wind speed is fixed in the second gear and can not be adjusted,  
 2) Adjust the wind speed of the indoor fan, every time you press the key of the wind speed, the wind speed will change according to the figure below.  
 Sixth gear→Fifth gear→Fourth gear→Third gear→Second gear→First gear→Auto wind (DC motor)

Sixth gear→Fourth gear→Second gear→Auto wind (AC motor)

5. "26°C" Button (ON/OFF) :

1) Short press this button will enter a state of energy saving of 26°C, namely the setting temperature is 26°C and fan speed set to 2 gear. This function under system running cooling or heating model is effective.

2) Long press this button will enter the query state, the lower left of the display screen shows the serial number of point inspection, the middle shows the data content of the query, press the temperature + and temperature - key to select the query data;

3) In the query state, press this key for a long time or do nothing 10 seconds or press the open key, then exit the query state interface.

Following table is the data of the query:

1	Indoor unit address
2	HP
3	Capacity
4	T1
5	T2
6	T2B
7	T2B average
8	Electronic expansion valve opening ratio
9	Last time error (no error display "E")
10	Penultimate error (no error display "P")
11	Temperature

6. "Function" Button:

At any time, press this button to enter the function setting interface. Under the function setting interface, each time this button is pressed, the corresponding icon of the item to be set will enter the flickering state. Press the switch key to confirm the settings and exit the function settings interface after the settings are completed.

1) Press the function button, the pendulum icon flickers, and the middle position of the display displays setting parameters: 0-close, 1-open; press "▲"

"or"▼" key to adjust on or off.

2) Press the function button to enter the next setting, the swing icon flickers, and the middle position of the display screen shows setting parameters: 0-close, 1-open; press "▲" or "▼" key to adjust on or off.

3) Press the function key to enter the next setting, when the filter screen cleaning reminder icon flickers, the middle position of the display screen will display setting parameter :1, press "▲" or "▼" key to adjust cancel or not cancel the warning function; If without the icon, the time for regular cleaning is not up; otherwise, skip to the next function setting.

4) Press the function button to enter the next setting, the electric heating setting icon flickers, and the setting parameters will be displayed in the middle position of the display screen: 0-manually close; 1- manually open; 2- auto switch, press "▲" or "▼" key to adjust parameters;

5) Press the function button to enter the next setting, the sleep setting icon flickers. Setting parameters will be displayed in the middle of the display screen: 0-close, 1-open; press "▲" or "▼" key to open or close;

6) Press the function button to enter the next setting, and the key lock icon flickers. Setting parameters will be displayed in the middle of the display screen: 0-close, 1-open; press "▲" or "▼" key to open or close; (effective after exiting the function setting interface)

7) Press the function button to enter the next setting, enter the setting of timing startup time, and the "ON" icon set at a certain time flashes, the current state is displayed at the lower left corner of the display screen; "-" means no setting open time, by pressing "▲" or "▼" key to adjust time to start up, 0.5H; "\*"h means setting starting up after \*\* hour;

8) Press the function button to enter the next setting and enter the time setting of the timer switch, The "OFF" icon of the timer switch flashes and the current state is displayed at the lower left corner of the display screen; "-" refers to no fixed shutdown time, pressing "▲" or "▼" key to setting timing shutdown time, 0.5H; "\*"h means setting shutdown after \*\* hour;

9) Press the function button to enter the next setting, and "-" will be displayed in the middle of the display screen. At this time, enter the function setting entry. Long press "26°C" button to enter the user parameter setting interface; In the user parameters interface, The number on the left side of the display screen displays the serial number of setting items, and the number in the middle of the display screen displays the value of setting parameters.

Following below table .In the user parameter setting interface, press "wind speed +" and "wind speed -" buttons or function buttons to select the serial number of the setting item; press "▲" and "▼" keys to regulate parameter values.

Items	Parameter	Instructions	remarks
1	Fahrenheit / centigrade setting	default °C, °C->°F->°C	Display setting temperature
2	Max temperature setting	Default: 32°C, 24°C-32°C can be adjusted, Default 88°F, 76°F-88°F can be adjusted	Display settings
3	Min temperature setting	Default: 16°C, 16°C-24°C can be adjusted. Default 61°F, 61°F-76°F can be adjusted	Display settings
4	Main interface temperature display	Display setting temperature (default) / display indoor side temperature	Display setting temp/display indoor side temperature
5	select prompt tone of press button	0: voiced (default) 1: silent	Display 0 or 1
6	Clean time setting	2000h/3000h/3500h/4000h /5000h (default:4000h)	Display 20/30/40/50
7	Wire controller master /slave setting	0: master (default) 1: slave	It can be set when two wire controller connected otherwise can't communication
8	VRF system address setting	0-63	
9	Constant air flow setting	0:OFF 1:ON	Only valid for constant air flow ducted units

10) Operation guidance of Constant air flow setting:

After entering No.9 constant air flow setting, press "▲" key to set 1, and press "ON/OFF" button to confirm, and then the controller will flash "AF". If the ducted unit has constant air flow function, the unit will enter the automatic identification mode. After finishing, it will return to main interface automatically. If the ducted unit does not have constant air flow function, the controller will display "AF" and it will return to main interface after a few seconds.

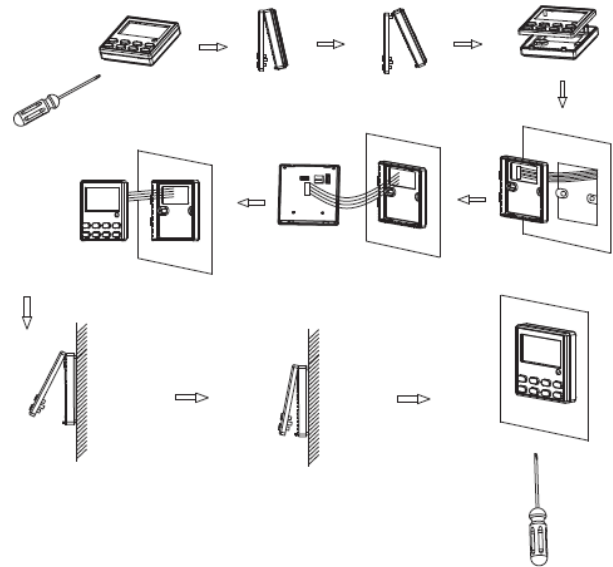
7. Description of DIP Switch:

	2 ON	2 OFF
3 ON	-4°C	-2°C
3 OFF	2°C	0°C
	ON	OFF
1	reserved	reserved
4	with power-off memory	without power-off memory



1) The second and the third switch choice of room temperature compensation value, while the second and the third are ON, the compensation value is -4 degree, when the second and the third are OFF, the compensation value is 0 degree, when the second is ON and the third is OFF, the compensation value is 2 degree, while the second is OFF and the third is ON, the compensation value is -2 degree. (Only for ambient temperature sensors on the wire controller)

2) The fourth ON of the DIP switch indicates that with power-off memory function. And the fourth OFF indicates that without power-off memory function. The factory dials to the OFF state.



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

## 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:

<b>Warning:</b>	Indicate it may cause the death or serious injury for their proper operation.
<b>Note:</b>	Indicate it may cause the death or serious injury for their proper operation.
<b>Notes:</b>	<ul style="list-style-type: none"> <li>• Please do not install the wire controller in damp or direct sunlight places.</li> <li>• Please do not hit, throw and frequent disassembling the wire controller.</li> <li>• Please do not operating the wire controller with Wet hand ; Don't make any fluid into the wire controller .</li> <li>• Please do not do dismantling the wire controller without authorization. Please consult after-sales maintenance personnel If you have a problem .</li> <li>• 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 .</li> </ul>

### Installation and disassembly of the wire controller

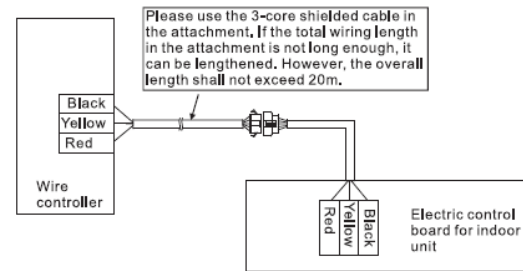
#### 1、The installation position and requirements of the wire controller

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- 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:

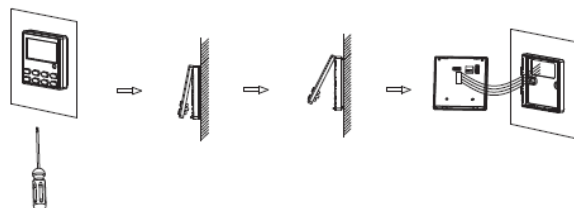
- 1) Open interior electrical lifted the lid, and the signal wires through the rubber ring;
- 2) Plug the wire controller signal lines within the five core needle base on the indoor machine circuit boards, and using cable tie line tied tightly fixed. Next, the wire controller installation steps as shown in the figure below:



#### 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 abnormality 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.

## Part 6 Troubleshooting

### 1. Error codes

#### 1.1 Indoor unit

1. for 18~36K IDU

LED Display	Error code	Error Description
Timer light flash	E2	Room temperature T1 sensor error
Defrost, run, protection light flash	E3	Evaporator temperature T2 sensor error
Defrost light flash	E4	Evaporator outlet temperature T2B sensor error
Protection light flash	EE	Water full filled error
Run, defrost light flash	E9	Indoor unit and wired controller communication error
Run, timer light flash	E7	Indoor EEPROM error
Defrost, timer light flash	E8	Indoor fan motor speed loose protection
Defrost, protection light flash	F4	Outside ambient temperature T4 sensor error
	F5	Discharge temperature T5 sensor error
	P9	Outdoor fan motor protection
	E5	Outdoor unit error
	FE	Outdoor unit EEPROM error
	F6	Condenser temperature T3 sensor error
	P5	Condenser temperature T3 high temperature protection
	PA	Anti-typhoon protection
	L1	DC bus over-voltage
	PE	DC side over-current
	EF	Mode conflict
	P6	Inverter IPM protection
	H6	3 times P4 protection (Reserved)
	H5	3 times P2 protection (Reserved)
Timer, protection light flash	E1	Communication error between indoor and outdoor unit
Run, defrost, timer light flash	P1	High pressure protection
Defrost, time, protection light flash	P2	Low pressure protection

Run, time, protection light flash	P4	Outdoor discharge temperature too high protection
Run, defrost, timer, protection light flash	E0	Three-phase sequence error

## 2. for 48~55K IDU

LED display	Error code	Error description
	E0	Phase protection
Timer light flash quickly	E1	Communication error between ODU and IDU
Running light flash quickly	E2	Indoor room temperature (T1) sensor error
	E3	Indoor coil middle temperature (T2) sensor error
	E4	Indoor coil outlet temperature (T2B) sensor error
Protection light flash slowly	E5	Outdoor unit error
	E6	Zero-cross detection protection (reserved)
Defrost flash slowly	E7	Indoor unit EERPOM error
Timer light flash slowly	E8	Indoor fan motor speed loose protection
Running and protection light flash slowly	E9	Indoor unit and wired controller communication error
Protection light flash quickly	EE	Water level alarm error
Defrost light flash quickly	EF	Mode conflict
Running, defrost, protection light ON	F3	3 times P3 in 60 minutes
Timer light flash quickly and protection light ON	F4	Outdoor ambient temperature sensor error
Timer, protection light ON	F6	Condenser temperature sensor error
	F7	Over-current protection of secondary current
	F8	High evaporator temperature protection in heating mode
Defrost light flash quickly and protection light ON	F9	Over/under voltage protection
	H0	Communication error between ODU main PCB and drive board
Defrost and protection light ON	H4	3 times P6 in 60 minutes
	H5	3 times P2 in 30 minutes
Defrost, timer, protection light ON	H6	3 times P4 in 100 minutes
	H9	2 times P9 in 10 minutes
Running, defrost, protection light ON	P3	Primary or secondary overcurrent protection
	P4	High discharge temperature protection

	P5	High condenser temperature protection
Defrost light flash quickly and timer, protection light ON	P6	Drive or module error
Timer light flash quickly and defrost, protection light ON	P9	DC fan motor protection (ODU)

Note: flash quickly – 1Hz; flash slowly – 2.5Hz

When unit is standby after first time power on, running light flash slowly, after operation, all the lights off when the unit is off or standby.

When unit is running, running light flashes, digital tube shows setting temperature in cooling and heating mode, digital tube shows indoor temperature in fan only mode; defrost light turns on when defrosting, timer light turns on when in timer mode.

## 1.2 Outdoor unit

1. 24K~55K outdoor unit except 48K single phase outdoor unit (shown in outdoor unit display board)

Error code	Description	Error code	Description
E02	Comm. failure between outdoor unit and indoor unit	P06	IPM module protection
E04	ODU T4 (ambient temp.) sensor fault	P07	Anti-freeze protection
E05	T5 (discharge temp.) temperature sensor fault	P09	Outdoor motor stall
E06	T3 (condenser temp.) temperature sensor fault	P11	High evaporator temperature protection
E07	Indoor PCB EEPROM failure	L0	DC compressor failure
E09	AC under-voltage protection	L01	DC cable bus low voltage protection
E10	Outdoor PCB EEPROM failure	L02	DC cable bus high voltage protection
E11	Indoor fan motor failure	L04	MCE fault/sync/close loop
E12	IPM module temperature sensor fault	L05	Zero speed protection
E16	IPM high temperature protection	L07	Compressor phase loss protection
E20~E29	Fan motor failure	L08	Compressor stall
H0	Comm. failure between control chip and comm. Chip in outdoor unit PCB	L0A	Frequency limitation by voltage
H21~36	Compressor failure	L0B	Frequency limitation by evaporator temp.

P01	High pressure protection	L0C	Frequency limitation by condenser temp.
P02	Low pressure protection	L0D	Frequency limitation by discharge temp.
P03	AC/DC over-flow protection	L0E	Frequency limitation by IPM high temp.
P04	Excessive exhaust temperature protection	L0F	Frequency limitation by current
P05	Excessive condenser temperature protection		

## 2. shown in the maintenance controller

Error code	Description	Error code	Description
E01	Communication fault between IDU and ODU	P0C	Current protection
E02	Zero cross detection fault of IDU	P1x	Bus voltage protection
E03	stall fault of indoor fan	P21	Low temperature dehumidification fault
E04	T2B (indoor coil outlet temp.) sensor fault	P22	High and low temp. protection of evaporator
E08	Mode conflict	P23	High temp. protection of condenser
E09	ODU EEPROM error	P24	High and low temp. protection of environment
E0E	IDU EEPROM error	P25	High discharge temperature of compressor
E11	IDU T1 (room temperature) sensor fault	P28	Abnormal discharge in commodity inspection mode (compressor reversal)
E12	IDU T2 (indoor coil middle temp.) sensor fault	P29	T3 abnormal in commodity inspection heating mode (System exception, 4-way valve disconnected)
E13	ODU T3 (outdoor coil outlet temp.) sensor fault	P30	High pressure protection
E14	ODU T4 (ambient temp.) sensor fault	P31	Low pressure protection
E15	ODU discharge temp. sensor fault	H1x	Compressor fault
E16	Module temp. sensor fault	H3x	PFC fault
E17	Suction temp. sensor fault	L01	Lower frequency because of voltage limit
E18	TZA sensor fault	L02	Lower frequency because of high or low temp. limit of evaporator
E19	TZB sensor fault	L03	Lower frequency because of high temp. limit of condenser
E2x	Fan motor fault	L05	Lower frequency because of high discharge temp. of compressor

		L06	Lower frequency because of module temperature limit
		L0C	Lower frequency because of current limit

### 3. 48K single phase outdoor unit (shown in outdoor unit display board)

Display	Definition of fault or protection	Remark
E1	Reserved	
E2	Communication fault between the outdoor unit and indoor unit	
E4	Ambient temperature sensor fault	
E6	Condenser pipe temperature sensor fault	
E9	AC over-voltage / under-voltage protection	
E10	EEPROM fault	
H0	Master chip and DSP communication fault	
H4	Display P6 protection for 3 times within 30 minutes	Unable to restore unless a second power-on
H5	Display P2 protection for 3 times within 30 minutes	Unable to restore unless a second power-on
H6	Display P4 protection for 3 times within 100 minutes	Unable to restore unless a second power-on
H10	3 times of P3 protection occurs within 60 minutes	Unable to restore unless a second power-on
P1	High pressure protection	
P2	Low pressure protection	
P3	Primary / secondary over current protection	
P4	Exhaust overheating protection	
P5	High pipe temperature protection	
P6	Module 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	15Hz protection	
L9	Hz Protection	

## 2. Spot check table

### 2.1 Indoor unit from wired controller

Spot check No.	Content
1	Indoor unit capacity
2	Indoor unit capacity demand
3	Indoor demand after T4 amendment
4	Indoor demand after T2 amendment
5	Indoor room temperature (T1) temperature
6	Indoor coil middle temperature (T2) temperature
7	Indoor coil outlet temperature (T2B) temperature
8	Outdoor unit condenser outlet (T3) temperature
9	Outdoor temperature (T4) temperature
10	Compressor top temperature (T5) temperature (maximum 99 °C)
11	Opening of EXV
12	Running frequency of compressor
13	Primary voltage/4

### 2.2 Outdoor unit from display board

#### 1. 24K~55K outdoor unit except 48K single phase outdoor unit

No.	Content
00	Frequency, the number of indoor units, or error code
01	Outdoor unit power
02	Running mode (0: shutdown; 1: fan; 2: refrigeration; 3: heating; 4: forced refrigeration)
03	Indoor capacity demand
04	The actual operation of outdoor unit
05	The target frequency of compressor
06	Fan speed state (0~7)
07	T2 average temperature
08	T3 condensing temperature
09	T4 outdoor ambient temperature
10	T5 exhaust temperature

11	AC current
12	DC current
13	AC voltage
14	DC voltage
15	The number of indoor units
16	The number of turning on indoor units
17	Indoor unit demand
18	T1 room temperature
19	EXV opening degree

## 2. 48K single phase outdoor unit (shown in outdoor unit display board)

No.	Content
00	Frequency, the number of indoor units, or error code
01	Outdoor unit power
02	Running mode (0: shutdown; 1: fan; 2: refrigeration; 3: heating; 4: forced refrigeration)
03	Indoor capacity demand
04	The actual operation of outdoor unit
05	The target frequency of compressor
06	Fan speed state (0~7)
07	T2 average temperature
08	T3 condensing temperature
09	T4 outdoor ambient temperature
10	T5 exhaust temperature
11	AC current
12	DC current
13	AC voltage
14	DC voltage
15	The number of indoor units
16	The number of turning on indoor units
17	Indoor unit demand
18	T1 room temperature
19	EXV opening degree



20~31	Reserved
32	T2B average temperature
33	Frequency limited condition (1: current limit; 2: refrigeration; 4: T5; 8: T3; 16: T2)
34	The reason of P6 protection
35	Software version
36	Memorizer version
37	Last fault or protection code

## 2.3 Outdoor unit from maintenance controller

Fr	Running frequency
FT	Target frequency
T1	Unit A T1
T2	Unit A T2
Sr	IDU A fan speed
Tb	IDU A T2B
AL	IDU A EXV opening degree
An	Capacity demand of IDU A
Hn	Amended total capacity demand
b1	Unit B T1
b2	Unit B T2
bb	Unit B T2B
bS	Unit B fan speed
bL	Unit B EXV opening degree
bn	Capacity demand of IDU B
TH	Suction temperature
T3	Outdoor unit pipe temperature
T4	Ambient temperature
TP	Discharge temperature
T6	IPM board temperature
od	Mode
dT	Outdoor load target state
CC	Quantity of IDU
Ud	DC voltage

dL	Current
Pr	Outdoor unit fan speed
Lr	Master EXV opening degree

### 3. Troubleshooting

#### 3.1 Indoor unit

##### 1) E1: Communication error between ODU and IDU

Fault reason: The communication between the IDU and ODU is interrupted.

- Check whether the communication lines on the terminal are loose, or in the wrong or short-circuit condition.
- Check whether the connector on indoor and outdoor unit PCB is loose or not
- Measure outdoor communications cable resistance of L1, S, N and judge whether there is open circuit.

##### 2) E2/E3/E4: indoor temperature sensor fault

Fault reason: PCB reads the sensor resistance value abnormally.

- Confirm whether the sensor is firmly connected, and check the sensor socket to ensure that the connection is secure;
- Unplug the sensor, use a multimeter to measure the resistance, check whether there is an open circuit/short circuit, if yes, replace the sensor; check the resistance table to check whether the sensor has resistance drift, otherwise replace the main control board. See appendix 1 for the sensor resistance table.

##### 3) E5: Outdoor unit error

- Check the fault code of the outdoor unit, and solve it according to the specific fault of the outdoor unit.

##### 4) E7: Indoor unit EERPOM error

- Replace the PCB.

##### 5) E8: Indoor fan motor speed loose protection

Fault reason: The main control board detects that the fan speed signal is abnormal (DC motor internal machine)

- Check whether the connection wire between the motor and the PCB is firmly connected, then proceed to the next step.
- If the motor is connected with a three-core cable, measure the voltage between the UVW cables, if there is voltage, replace the motor, otherwise replace the fan module board (normally fan module and the PCB are integrated board)
- If the motor relates to a five-core cable, measure the following voltages in sequence:
  - Check whether the power supply is normal, the power supply phase voltage is 220-240V.
  - Use a multimeter to measure the voltage of Vm-GND and Vcc-GND, whether it is DC310V/380V and DC15V, if not, replace the PCB, otherwise proceed to the next step.
  - Use a multimeter to measure the Vsp-GND voltage (DC0-6.5V), DC0V when the fan is stopped. And voltage fluctuates when there is a demand when the fan is turned on. If not, replace the PCB.
  - Use a multimeter to measure FG-GND, the DC voltage will jump with the fan speed change, otherwise replace the motor.

#### 5) E9: Indoor unit and wired controller communication error

Fault reason: The communication between the PCB and the wire controller is interrupted

- Check whether the communication wire of the wired controller is firmly connected, confirm that the communication wire is not damaged, open/short, and reconnect it firmly.
- If the communication is no problem, replace the wired controller. If it can't be solved, replace the PCB.

#### 6) EE: Water level alarm error

Fault reason: The detection port of the water level switch continues to be open-circuited for more than three minutes.

- Check whether the water level switch is firmly connected; (if the unit is without water pump, the water level switch port needs to be short-circuited)
- Check whether the power voltage of the water pump is normal, and the voltage is 220-240V; check whether the drain port of the water pump is abnormal and whether it is blocked.
- If the power port and drain port of the water pump are normal and the water pump cannot discharge water, replace the water pump.
- Check whether the water level switch is normal. Use a multimeter to measure the resistance of the water level switch. Infinity means disconnection, and resistance means conduction. If the water pump is in working condition and the resistance value of the water level switch is infinite, the water level switch is damaged (CN1/SW can be short-circuited directly, if the fault disappears, the water level switch is faulty. If the fault does not disappear, the water level switch is normal)
- If the above steps are all normal, replace the main control board.

## 3.2 Outdoor unit

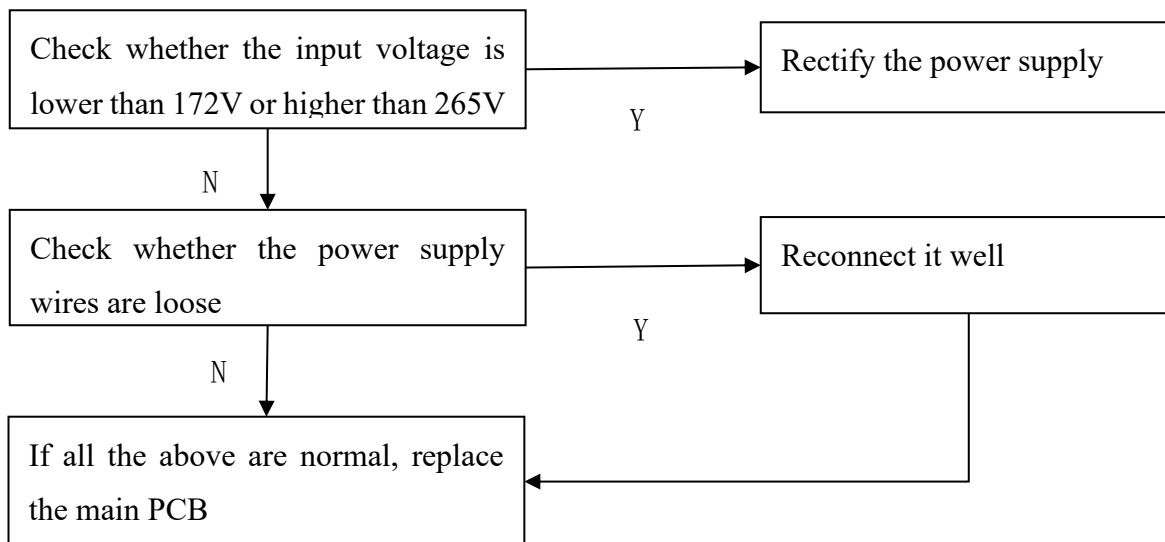
### 7) E4/E5/E6: T4 ambient temperature sensor/T5 exhaust temperature sensor/T3 condenser temperature sensor fault

Reason: Sensor reading error or sensor is damaged

- Confirm whether the sensor is firmly connected to the main board, reconnect it firmly, or if it is faulty, proceed to the next step;
- Unplug the sensor, measure the resistance of the sensor, whether it is open/short, if yes, replace the sensor group, otherwise replace the main board. Temperature and resistance table is in appendix I.

### 8) E9: AC over-voltage / under-voltage protection

Reason: AC supply voltage problem



### 9) E10: Outdoor PCB EEPROM failure

Reason: Outdoor unit main PCB EEPROM failure.

- Replace a new PCB.

### 10) H0: Master chip and DSP communication fault

Reason: Communication failure between main control board chip and drive module

- Replace main PCB.

### 11) P1: High pressure protection

Reason: The open circuit state is detected at the high pressure switch detection port

- Check whether the wiring of the high pressure switch is firm and confirm that the wiring is normal;

- Check whether the condenser has poor heat dissipation and ensure that there is no problem with heat dissipation;
- Connect the pressure gauge and run the unit. Measure the high and low pressure, if the pressure is normal, remove the pressure switch to measure the resistance, if it is infinite, replace the pressure switch; if the pressure switch resistance is 0, replace the main board;
- Connect the pressure gauge to test. If the pressure of the pressure gauge is too high, it is the system reason, and it is necessary to troubleshoot problems such as system blockage, vacuum, and excessive refrigerant.

## 12) P2/H5: Low pressure protection

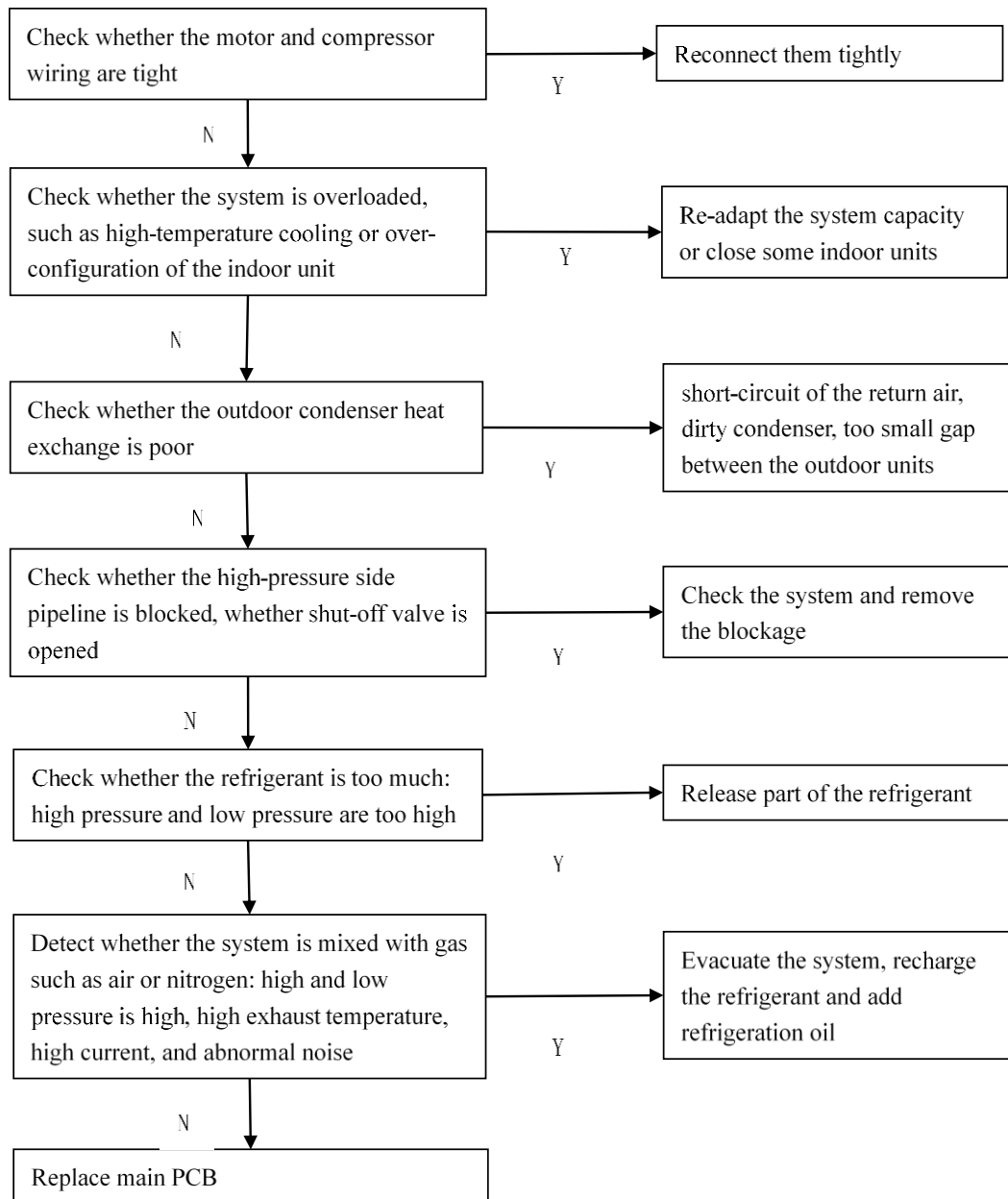
Reason: The open circuit state or abnormal value is detected at the low pressure switch detection port.

- Check whether the wiring of the low pressure switch is firm and confirm that the wiring is normal;
- Check whether the evaporator has poor heat dissipation and ensure that there is no problem with heat dissipation;
- Connect the pressure gauge and run the unit. Measure the high and low pressure, if the pressure is normal, remove the pressure switch to measure the resistance, if it is infinite, replace the pressure switch; if the pressure switch resistance is 0, replace the main board;
- Connecting the pressure gauge to test. If the pressure of the pressure gauge is too low, it is the system reason, and it is necessary to troubleshoot problems such as system blockage, vacuum, and insufficient refrigerant.

## 13) P3/H10: Primary / secondary over current protection

Reason: The main board detects that the operating current is too large

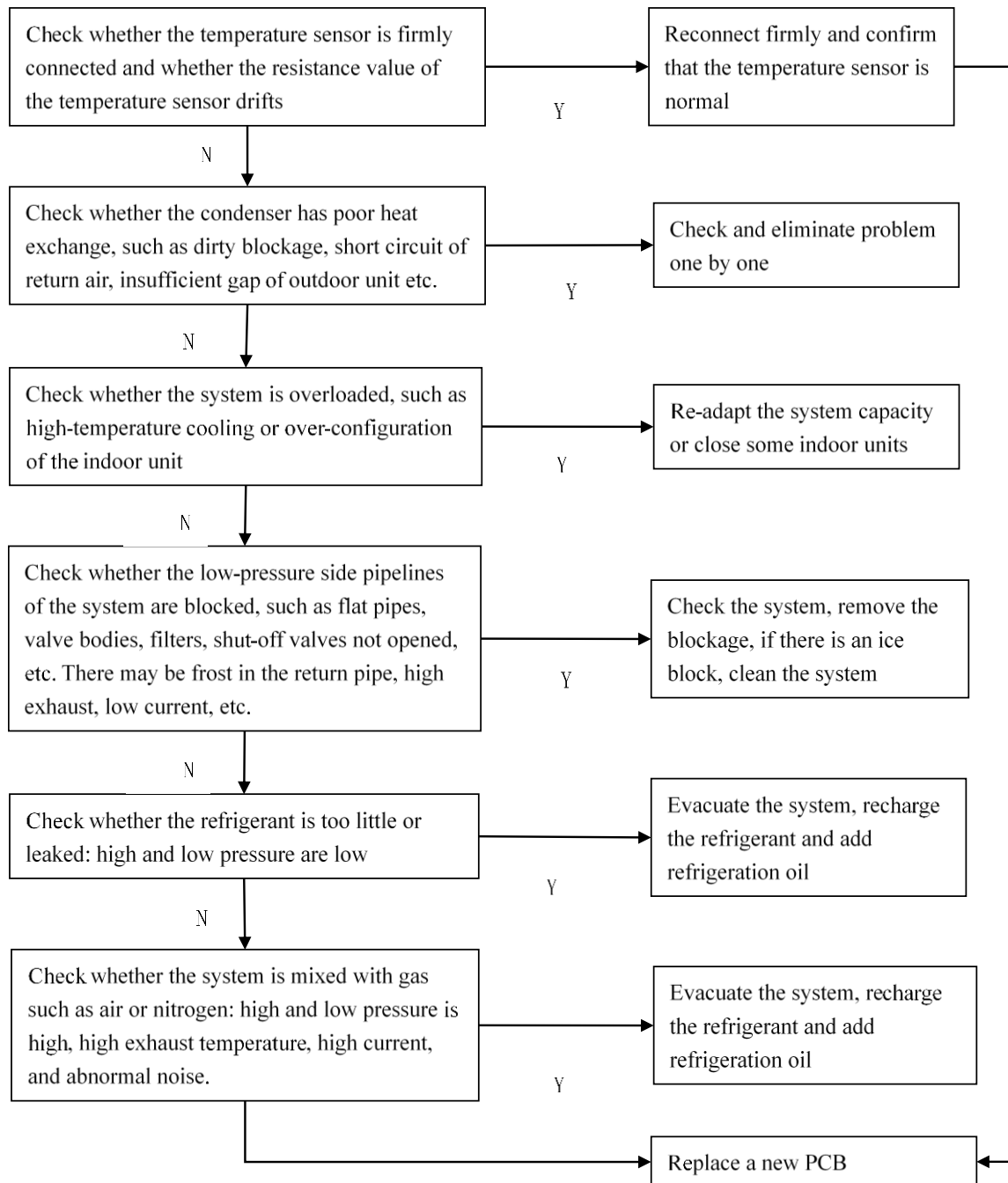
- Check whether the wiring of the motor and compressor is tight and confirm that the wiring is normal;
- Use a clamp meter to measure the primary side AC current and the secondary side compressor DC current, and do spot check, compare the difference between the check value and the clamp meter. If the difference is large, the main board is faulty, replace the main board;
- If the difference between the clamp meter and the check value is not large, the compressor problem or the system problem.



#### 14) P4/H6: Exhaust overheating protection

Reason: Exhaust temperature sensor reads that the temperature is too high

- Connect a pressure gauge to measure whether the low pressure is too low (normally 0.7-0.9MPa). If the pressure is too low, add refrigerant.
- Measure the resistance of the temperature sensor. If it is inaccurate, replace the sensor;
- If the temperature sensor reading is accurate, check the exhaust temperature by spot check and compare it. If the temperature of the main control board is unreasonable, replace the main control board;
- If the above steps are normal, check whether the refrigerant system is normal, such as blockage of the air return pipe, poor evaporation, wear of the compressor, etc.



### 15) P5: High condenser pipe temperature protection

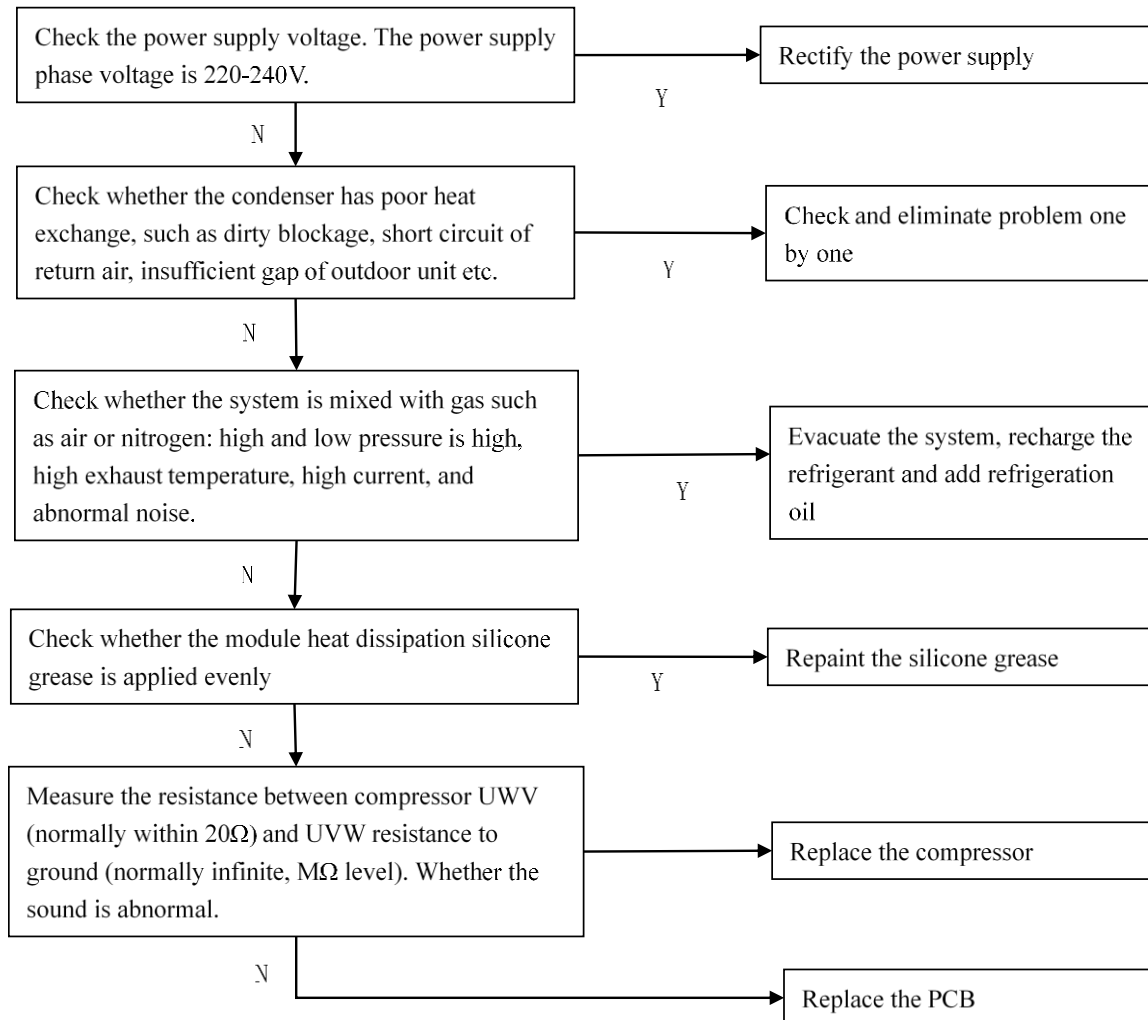
Reason: Condenser temperature sensor reads that the temperature is too high

- Check whether the heat dissipation of the condenser is normal, to ensure that there is no dirty block, poor return air, etc.
- Measure the resistance of the temperature sensor. If it is inaccurate, replace the sensor.
- If the temperature sensor reading is accurate, check the condenser temperature by spot check and compare it, if the temperature of the main control board is unreasonable, replace the main control board.

- The above steps are all normal, check whether the system is normal, such as the indoor unit load is too large, the vacuum problem.

## 16) P6/H4: IPM module protection

Reason: Compressor drive module abnormal



- Check whether the power supply is normal, the power supply phase voltage is 220-240V.
- Check whether the heat dissipation of the condenser is normal, to ensure that there is no dirty blockage, poor return air, etc.;
- Measure the resistance between compressor U and V (normally within 20Ω) and U and W resistance to ground (normally infinite, MΩ level), if the compressor resistance is abnormal, replace the compressor, otherwise proceed to the next step;
- Check whether the module heat dissipation silicone grease is printed evenly and normally, if abnormal, repaint silicone grease, otherwise proceed to the next step;
- The above steps are normal, then run the unit and observe whether the compressor is abnormal, such as abnormal noise, excessive current, etc.;



- Observe whether the system has poor heat dissipation, or module overheating and overcurrent caused by mixing with difficult-to-compress gas, otherwise replace the main control board.

### 17) P9: Outdoor motor stall

Reason: Fan drive module abnormal

- Check whether the power supply is normal, the power supply phase voltage is 220-240V.
- Use a multi-meter to measure the voltages of Vm-GND and Vcc-GND, whether they meet the following table, if not, replace the main control board, otherwise proceed to the next step;
- Use a multi-meter to measure the Vsp-GND voltage, 0V when the fan is stopped. If there is no voltage fluctuation when the fan is turned on, replace the main control board.
- Use a multi-meter to measure DC voltage of FG-GND, the DC voltage fluctuates with the fan speed change, otherwise replace the motor

No.	Color	Port	Remark
1	RED	Vm	DC380V/310V
2	BLACK	GND	Ground
3	WHITE	Vcc	DC 15V
4	YELLOW	Vsp	DC 0-6.5V
5	BLUE	FG	12/r

### 18) P11: High evaporator temperature protection in heating mode

Reason: average T2 evaporator temperature  $\geq 62^{\circ}\text{C}$  for 3s.

- Check whether the indoor unit is normal for heat exchange, the return air is short-circuited, and the return air is blocked. Make sure that the evaporator is not dirty, and the return air problem, then proceed to the next step.
- Check the capacity switch of the indoor, check whether there is a small-capacity unit that has been dialed to a large capacity, correct the dialing code, and proceed to the next step.
- The above steps are normal, replace the PCB.