

# **60Hz R410A LATIN America Top Discharge**

## **Service Manual**

**2020**



# Catalogue

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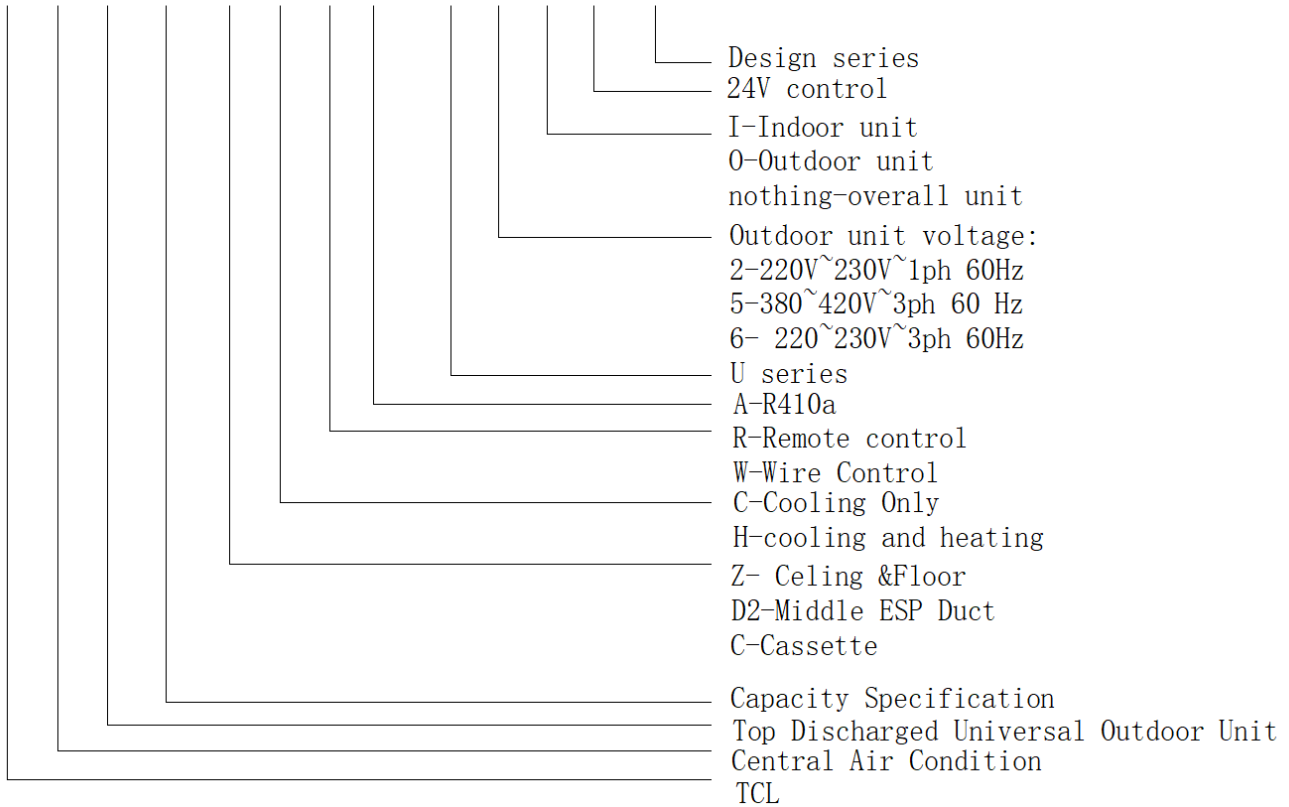
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※ The specifications, designs, and information in this book are subject to change without notice for product improvement.

# Part 1 General Information

## 1. Nomenclature

T C E-36 Z C R A /U 2 I-C(01)



## 2. Model Names of Indoor/Outdoor Units

### 2.1 Indoor units

Cooling only				
Indoor units type	Indoor units model	Capacity (Btu/h)	Capacity(kW)	Power supply
Ceiling & Floor	TCE-24ZCRA/U2I-C(01)	24000	7.1	220V-230V 60Hz 1Ph
	TCE-24ZCRA/U2I-C	24000	7.1	220V-230V 60Hz 1Ph
	TCE-36ZCRA/U2I-C(03)	36000	10.5	220V-230V 60Hz 1Ph
	TCE-36ZCRA/U2I-C(01)	36000	10.5	220V-230V 60Hz 1Ph
	TCE-48ZCRA/U2I-C	48000	14	220V-230V 60Hz 1Ph
	TCE-60ZCRA/U2I-C	55000	16	220V-230V 60Hz 1Ph
	TCE-48ZCRA/U6I-C	48000	14	220V-230V 60Hz 1Ph
	TCE-60ZCRA/U6I-C	55000	16	220V-230V 60Hz 1Ph
	TCE-60ZCRA/U6I-C(01)	55000	16	220V-230V 60Hz 1Ph
	TCE-60ZCRA/U6I-C(02)	55000	16	220V-230V 60Hz 1Ph
	TCE-48ZCRA/U5I-C	48000	14	220V-230V 60Hz 1Ph
	TCE-60ZCRA/U5I-C	55000	16	220V-230V 60Hz 1Ph

	TCB-60ZCRA/U5I-C	55000	16	220V-230V 60Hz 1Ph
	TCE-60ZCRA/U5I-C(02)	55000	16	220V-230V 60Hz 1Ph
<b>Cooling&amp;Heating</b>				
<b>Indoor units type</b>	<b>Indoor units model</b>	<b>Capacity (Btu/h)</b>	<b>Capacity(kW)</b>	<b>Power supply</b>
<b>Ceiling &amp; Floor</b>	TCE-24ZHRA/U2-C(01)	24000	7.1	220V-230V 60Hz 1Ph
	TCE-36ZHRA/U2I-C (01)	36000	10.5	220V-230V 60Hz 1Ph
	TCE-60ZHRA/U6I-C(01)	55000	16	220V-230V 60Hz 1Ph
	TCE-60ZHRA/U5I-C(01)	55000	16	220V-230V 60Hz 1Ph

<b>Cooling only</b>				
<b>Indoor units type</b>	<b>Indoor units model</b>	<b>Capacity (Btu/h)</b>	<b>Capacity(kW)</b>	<b>Power supply</b>
<b>Cassette</b>	TCE-24CCRA/U2I-C	24000	7.1	220V-230V 60Hz 1Ph
	TCE-36CCRA/U2I-C	36000	10.5	220V-230V 60Hz 1Ph
	TCE-36CCRA/U2I-C(01)	36000	10.5	220V-230V 60Hz 1Ph
	TCE-48CCRA/U5I-C	48000	14	220V-230V 60Hz 1Ph
	TCE-48CCRA/U6I-C	48000	14	220V-230V 60Hz 1Ph
	TCE-48CCRA/U2I-C	48000	14	220V-230V 60Hz 1Ph
	TCE-60CCRA/U2I-C	55000	16	220V-230V 60Hz 1Ph
	TCE-60CCRA/U6I-C(01)	55000	16	220V-230V 60Hz 1Ph
	TCE-60CCRA/U6I-C(02)	55000	16	220V-230V 60Hz 1Ph
	TCE-60CCRA/U5I-C(01)	55000	16	220V-230V 60Hz 1Ph
	TCE-60CCRA/U5I-C(02)	55000	16	220V-230V 60Hz 1Ph
<b>Cooling&amp;Heating</b>				
<b>Indoor units type</b>	<b>Indoor units model</b>	<b>Capacity (Btu/h)</b>	<b>Capacity(kW)</b>	<b>Power supply</b>
<b>Cassette</b>	TCE-36CHRA/U2I-C(01)	36000	10.5	220V-230V 60Hz 1Ph
	TCE-60CHRA/U6I-C(01)	55000	16	220V-230V 60Hz 1Ph
	TCE-60CHRA/U5I-C(01)	55000	16	220V-230V 60Hz 1Ph

<b>Cooling only</b>				
<b>Indoor units type</b>	<b>Indoor units model</b>	<b>Capacity (Btu/h)</b>	<b>Capacity(kW)</b>	<b>Power supply</b>
<b>Duct</b>	TCE-24D2CRA/U2-C(01)	24000	7.1	220V-230V 60Hz 1Ph
	TCE-24ZCRA/U2I-C	24000	7.1	220V-230V 60Hz 1Ph
	TCE-36D2CRA/U2I-C(01)	36000	10.5	220V-230V 60Hz 1Ph
	TCE-36D2CRA/U2I-C	36000	10.5	220V-230V 60Hz 1Ph
	TCE-48D2CRA/U2I-C	48000	14	220V-230V 60Hz 1Ph
	TCE-60D2CRA/U2I-C	55000	16	220V-230V 60Hz 1Ph

## 2.2 Outdoor units

Cooling only					
Outdoor units type	Outdoor units model	Capacity (Btu/h)	Power supply	Compressor mode	Compressor brand
outdoor unit	TCE-24ZCRA/U2O(01)	24000	220V-230V 60Hz 1Ph	PA240M2C-3MTU2	CMCC
	TCE-24CA/U2O-C	24000	220V-230V 60Hz 1Ph	ASH232DG-C8DU	HIGHLY
	TCE-36CRA/U2O-C(03)	36000	220V-230V 60Hz 1Ph	ATH356UN-C9EU	HIGHLY
	TCE-36CA/U2O-C(01)	36000	220V-230V 60Hz 1Ph	ATH356UN-C9EU	HIGHLY
	TCE-48CA/U6O-C(02)	48000	220V-230V 60Hz 3Ph	ZP44KUE-TF5-52E	Copeland
	TCE-48CA/U5O-C(02)	48000	380V-420V 60Hz 3Ph	ZP44KUE-TF7-52E	Copeland
	TCE-48CRA/U2O-C(04)	48000	220V-230V 60Hz 1Ph	C-SBP140H16A	SANYO
	TCE-48CA/U6O-C	48000	220V-230V 60Hz 3Ph	ATE470UN3Q9PP	HIGHLY
	TCE-48CA/U5O-C	48000	380V-420V 60Hz 3Ph	ATE470UM3Q9PP	HIGHLY
	TCE-60CA/U6O-C	55000	220V-230V 60Hz 3Ph	ZP54KUE-TF5-52E	Copeland
	TCE-60CA/U5O-C	55000	380V-420V 60Hz 3Ph	ZP54KUE-TF7-52E	Copeland
	TCE-60ZCRA/U6O-C(01)	55000	220V-230V 60Hz 3Ph	ZP54KUE-TF5-52E	Copeland
	TCE-60CA/U6O-C(02)	55000	220V-230V 60Hz 3Ph	ATE498UN3Q9PK	HIGHLY
	TCE-60CA/U5O-C(02)	55000	380V-420V 60Hz 3Ph	ATE498UM3Q9PK	HIGHLY
	TCE-60CA/U2O-C(01)	55000	220V-230V 60Hz 1Ph	C-SBP160H16A	Panasonic
	TCE-60CA/U6O-C(01)	55000	220V-230V 60Hz 3Ph	ZP54KUE-TF5-52E	Copeland
	TCE-60CA/U5O-C(01)	55000	380V-420V 60Hz 3Ph	ABT054UMA	LG
	TCB-60TCA/U5O-C	55000	380V-420V 60Hz 3Ph	ABT054UMA	LG
Cooling&Heating					
Outdoor units type	Outdoor units model	Capacity (Btu/h)	Power supply	Compressor mode	Compressor brand
outdoor unit	TCE-24HA/U2O-C	24000	220V-230V 60Hz 1Ph	PA240M2C-3MTU2	CMCC
	TCE-36HA/U2O-C (01)	36000	220V-230V 60Hz 1Ph	ATH356UN-C9EU	HIGHLY
	TCE-60HA/U6O-C(01)	55000	220V-230V 60Hz 3Ph	ZP54KUE-TF5-52E	Copeland
	TCE-60HA/U5O-C(01)	55000	380V-420V 60Hz 3Ph	ABT054UMA	LG

## 3. External Appearance

### 3.1 Indoor Units

#### Ceiling & Floor type



#### Cassette



#### Duct



### 3.2 Outdoor Units



## 4. Features

This news series has below outstanding improvements and features.

1. Elegant appearance
2. Much better performance and efficiency
3. Compact body with more competitive loading capacity.
4. Reliable and well-known compressors.
5. 24V control start-up, safety.
6. We adapt throttle piston installed in indoor unit, easy to maintain.
7. Easy to install the unit.

## Part 2 Indoor Unit

### 1. Features

#### 1.1 Ceiling & Floor

1) New design, more modern and elegant appearance.

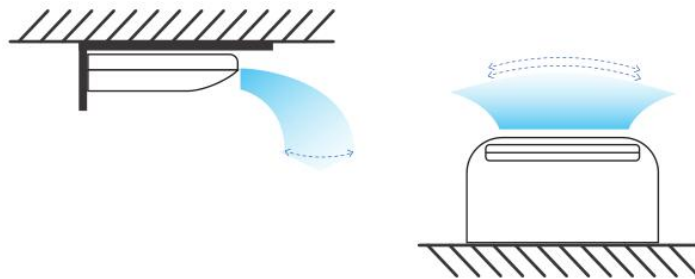


Display middle design  
(optional)

2) Convenient installation.

--The ceiling type can be easily installed into a corner of the ceiling even if the ceiling is very narrow  
--It is especially useful when installation of an air conditioner in the center of the ceiling is impossible due to a structure such as one lighting.

3) vertical direction auto swing and wide-angle air flow.



4) Three level fan speed, more humanism design, meets different air-supply requirement.

5) Dual Direction of Drainage

--Condensing water can be drained either from left or from right.



6) Standard for wireless controller; option for wired controller

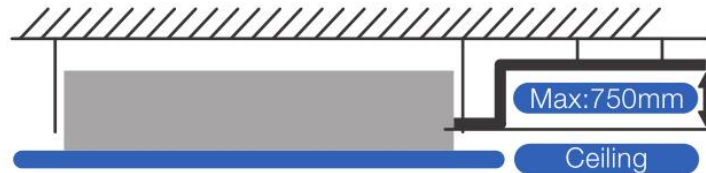


## 1.2 Cassette

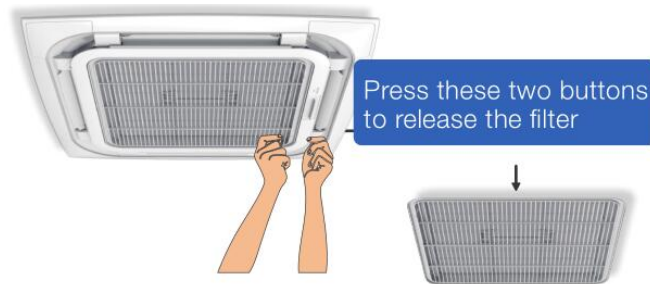
1) New design which is more suitable for room decoration.



2) The condensing water can be lifted up to 750mm, which is convenient for installation.



3) Filters can be removed easily for cleaning and maintenance.



4) Quiet operation by using optimized 3D indoor fan.

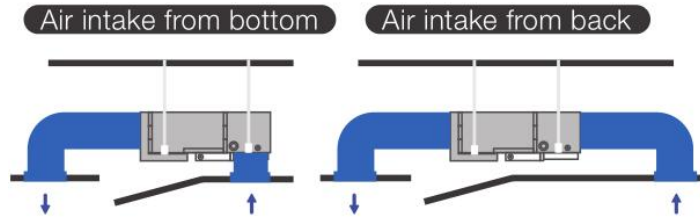


5) Standard for wireless controller; option for wired controller



### 1.3 DUCT

1) It is optional to have air inlet from back or bottom with the same size of plate, which will be very flexible and convenient for installation.



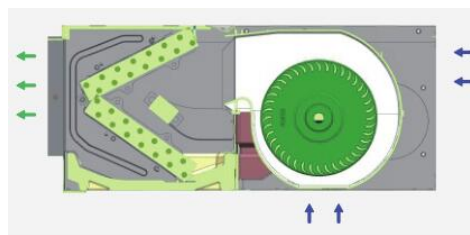
2) Filters can be easily removed for cleaning.



3) The condensing water can be drained either from the left or right.



4) 'V' type design of evaporator increases the area of heat exchanging, and thus, increases its efficiency.



Super slim type only

5) Standard for wireless controller; option for wired controller



## 2. Specifications

### 2.1 Ceiling & Floor

#### Cooling only

Model			TCE-24ZCRA/U2I-C	TCE-24ZCRA/U2I-C(01)
Code			Z2U30302000301	Z2U30302000118
Power supply		V/Ph/Hz	208-230V~/60Hz	220-230V~/60Hz
Cooling	Capacity	Btu/h	24000	24000
	Capacity	W	7034	7034
	Input	W	2670	2530
	Rated current	A	12.0	12.0
	EER	W/W	2.60	2.78
Indoor coil	Number of row		2	3
	Fin spacing	mm	1.5	1.5
	Fin material		Hydrophilic & Louver Fin	Hydrophilic & Louver Fin
	Tube outside diameter	mm	φ7	φ7
	Tube material		Innergroover tube type	Innergroover tube type
	Coil length x height x width	mm	795×294×25.4	795×294×38.1
	Number of circuit		6	6
Indoor fan motor	Brand		BROAD-OCEAN/Lifeng	Broad Ocean/Lifeng
	Model		Y6S443B537/SJ62B	Y6S443B537/SJ62B
	Input	W	149/125/93	149/125/93
	Running current	A	0.691/0.569/0.440	0.691/0.569/0.440
	Capacitor	uF	2.5	2.5
	Applied QTY.		1	1
	Speed (Hi/Me/Lo)	rpm	1200/1085/975/800	1200/1085/975
Indoor air flow (Hi/Me/Lo)		m <sup>3</sup> /h	1200/1050/940	1200/1050/900
Indoor noise level (Hi/Me/Lo)		dB(A)	53/51/48	53/49/46
Indoor dimension	Unit (WxHxD)	mm	1055×235×675	1055×235×675
	Packing (WxHxD)	mm	1130×305×748	1130×305×748
Indoor weight	Net	kg	24	27
	Gross	kg	27	31
Refrigerant	Type		R410A	R410A
Refrigerant pipe	Liquid side	mm	φ9.52	φ9.52
	Gas side	mm	φ15.88	φ15.88
Drainage water pipe diameter		mm	OD25	ODΦ25
Controller			GYKQ-37e	GYKQ-37e
Operation temperature		°C	16~30	16~30

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

Indoor temp: 27°CDB, 19°CWB; Outdoor temp: 35°CDB; Equivalent ref. Piping: 7.5m(horizontal)

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

Model			TCE-36ZCRA/U2I-C	TCE-48ZCRA/U2I-C(01)
Code			Z2U30302000149	Z1U30302000011
Power supply		V/Ph/Hz	208-230V~/60Hz	208-230V~/60Hz
Cooling	Capacity	Btu/h	36000	36000
	Capacity	W	10550	10550
	Input	W	4200	4050
	Rated current	A	17.00	18.5
	EER	W/W	2.51	2.60
Indoor coil	Number of row		3	3
	Fin spacing	mm	1.5	1.5
	Fin material		Hydrophilic & Louver Fin	Hydrophilic & Louver Fin
	Tube outside diameter	mm	φ7	φ7
	Tube material		Innergroover tube type	Innergroover tube type
	Coil length x height x width	mm	940×294×38.1	940×294×38.1
	Number of circuit		8	10
Indoor fan motor	Brand		BROAD-OCEAN/Lifeng	BROAD-OCEAN/Lifeng
	Model		Y6S443C508/SJ132B	Y6S443C508/SJ132B
	Input	W	242/193/173/147	242/193/173/147
	Running current	A	1.1/0.88/0.8/0.68	1.1/0.88/0.8/0.68
	Capacitor	uF	4.5	4.5
	Applied QTY.		1	1
	Speed (Hi/Me/Lo)	rpm	1155/1085/960	1155/1085/960
Indoor air flow (Hi/Me/Lo)		m <sup>3</sup> /h	1450/1300/1150	1620/1400/1250
Indoor noise level (Hi/Me/Lo)		dB(A)	51/50/49	53/49/47
Indoor dimension	Unit (WxHxD)	mm	1275×235×675	1275×675×235
	Packing (WxHxD)	mm	1350x305x748	1350x305x748
Indoor weight	Net	kg	29	29
	Gross	kg	35	35
Refrigerant	Type		R410A	R410A
Refrigerant pipe	Liquid side	mm	9.52	9.52
	Gas side	mm	φ19.05	19.05
Drainage water pipe diameter		mm	OD25	OD25
Controller			GYKQ-37e	GYKQ-37e
Operation temperature		°C	16~30	16~30

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

Indoor temp: 27°CDB, 19°CWB; Outdoor temp: 35°CDB; Equivalent ref. Piping: 7.5m(horizontal)

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

Model			TCE-48ZCRA/U2I	TCE-48ZCRA/U6I-C
Code			Z2U30302000102	Z2U30302000038
Power supply		V/Ph/Hz	208-230V~/60Hz	208-230V~/60Hz
Cooling	Capacity	Btu/h	48000	48000
	Capacity	W	14063	14063
	Input	W	5630	4500
	Rated current	A	24.50	13.00
	EER	W/W	2.50	3.12
Indoor coil	Number of row		2	4
	Fin spacing	mm	1.5	1.5
	Fin material		Hydrophilic & Louver Fin	Hydrophilic & Louver Fin
	Tube outside diameter	mm	φ7	φ7
	Tube material		Innergroover tube type	Innergroover tube type
	Coil length x height x width	mm	1300×294×25.4	1300×294×50.8
	Number of circuit		6	13
Indoor fan motor	Brand		BROAD-OCEAN/Lifeng	BROAD-OCEAN/Lifeng
	Model		Y6S443C807/SJ68A	Y6S443C220/SJ110D
	Input	W	180/150.3/140.7/125.6	195.5/158.3/146.7
	Running current	A	0.85/0.70/0.65/0.56	0.91/0.72/0.67
	Capacitor	uF	6.0	6.0
	Applied QTY.		2	2
	Speed (Hi/Me/Lo)	rpm	1330/1250/1175/1050	1480/1250/1175
Indoor air flow (Hi/Me/Lo)		m <sup>3</sup> /h	2300/2100/1900/1700	2500/2300/2100
Indoor noise level (Hi/Me/Lo)		dB(A)	53/51/48	53/51/48
Indoor dimension	Unit (WxHxD)	mm	1635x235x675	1635x235x675
	Packing (WxHxD)	mm	1710×305×748	1710×305×748
Indoor weight	Net	kg	40	44
	Gross	kg	47	50
Refrigerant	Type		R410A	R410A
Refrigerant pipe	Liquid side	mm	9.52	9.52
	Gas side	mm	φ19.05	19.05
Drainage water pipe diameter		mm	OD25	OD25
Controller			GYKQ-37e	GYKQ-37e
Operation temperature		°C	16~30	16~30

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

Indoor temp: 27°CDB, 19°CWB; Outdoor temp: 35°CDB; Equivalent ref. Piping: 7.5m(horizontal)

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

Model			TCE-48ZCRA/U5I-C	TCB-60ZCRA/U2I-C
Code			Z2U3030200012	Z2U30302000131
Power supply		V/Ph/Hz	380V/3Ph~/60Hz	208-230V~/60Hz
Cooling	Capacity	Btu/h	48000	55000
	Capacity	W	14063	16119
	Input	W	4500	6630
	Rated current	A	8.00	28.6
	EER	W/W	3.12	2.43
Indoor coil	Number of row		4	2
	Fin spacing	mm	1.5	1.5
	Fin material		Hydrophilic & Louver Fin	Hydrophilic & Louver Fin
	Tube outside diameter	mm	φ7	φ7
	Tube material		Innergroover tube type	Innergroover tube type
	Coil length x height x width	mm	1300×294×50.8	1300×294×25.4
	Number of circuit		13	6
Indoor fan motor	Brand		BROAD-OCEAN/Lifeng	BROAD-OCEAN/Lifeng
	Model		Y6S443C220/SJ110D	Y6S443C807/SJ68A
	Input	W	195.5/158.3/146.7	180/150.3/140.7/125.6
	Running current	A	0.91/0.72/0.67	0.85/0.70/0.65/0.56
	Capacitor	uF	6.0	6.0
	Applied QTY.		2	2
	Speed (Hi/Me/Lo)	rpm	1480/1250/1175	1330/1250/1175/1050
Indoor air flow (Hi/Me/Lo)		m <sup>3</sup> /h	2500/2300/2100	2300/2100/1900/1700
Indoor noise level (Hi/Me/Lo)		dB(A)	53/51/48	53/51/48
Indoor dimension	Unit (WxHxD)	mm	1635x235x675	1635x235x675
	Packing (WxHxD)	mm	1710×305×748	1710×305×748
Indoor weight	Net	kg	44	40
	Gross	kg	50	47
Refrigerant	Type		R410A	R410A
Refrigerant pipe	Liquid side	mm	9.52	9.52
	Gas side	mm	19.05	φ19.05
Drainage water pipe diameter		mm	OD25	OD25
Controller			GYKQ-37e	GYKQ-37e
Operation temperature		°C	16 ~ 30	16 ~ 30

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

Indoor temp: 27°CDB, 19°CWB; Outdoor temp: 35°CDB; Equivalent ref. Piping: 7.5m(horizontal)

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

Model			TCE-60ZCRA/U6-C(01)	TCE-60ZCRA/U6I-C
Code			Z2U30302000133	Z2U30302000150
Power supply		V/Ph/Hz	208-230V~/60Hz	208-230V~/60Hz
Cooling	Capacity	Btu/h	55000	55000
	Capacity	W	14550	16119
	Input	W	5290	5050
	Rated current	A	15.70	16.50
	EER	W/W	2.75	3.19
Indoor coil	Number of row		2	4
	Fin spacing	mm	1.5	1.5
	Fin material		Hydrophilic & Louver Fin	Hydrophilic & Louver Fin
	Tube outside diameter	mm	φ7	φ7
	Tube material		Innergroover tube type	Innergroover tube type
	Coil length x height x width	mm	1300×294×25.4	1300×294×50.8
	Number of circuit		6	13
Indoor fan motor	Brand		BROAD-OCEAN/Lifeng	BROAD-OCEAN/Lifeng
	Model		Y6S443C807/SJ68A	Y6S443C220/SJ110D
	Input	W	180/150.3/140.7(*2)	195.5/158.3/146.7
	Running current	A	0.85/0.70/0.65(*2)	0.91/0.72/0.67
	Capacitor	uF	6.0	6.0
	Applied QTY.		2	2
	Speed (Hi/Me/Lo)	rpm	1330/1250/1175	1480/1250/1175
Indoor air flow (Hi/Me/Lo)		m <sup>3</sup> /h	2300/2100/1900	2500/2300/2100
Indoor noise level (Hi/Me/Lo)		dB(A)	54/52/50	53/51/48
Indoor dimension	Unit (WxHxD)	mm	1635x235x675	1635x235x675
	Packing (WxHxD)	mm	1710×305×748	1710×305×748
Indoor weight	Net	kg	40	44
	Gross	kg	47	50
Refrigerant	Type		R410A	R410A
Refrigerant pipe	Liquid side	mm	φ9.52	9.52
	Gas side	mm	φ19.05	19.05
Drainage water pipe diameter		mm	OD25	OD25
Controller			GYKQ-37e	GYKQ-37e
Operation temperature		°C	16~30	16~30

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

Indoor temp: 27°CDB, 19°CWB; Outdoor temp: 35°CDB; Equivalent ref. Piping: 7.5m(horizontal)

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

Model			TCE-60ZCRA/U5I-C	TCB-60ZCRA/U5I-C
Code			Z2U30302000034	Z2U30302000185
Power supply		V/Ph/Hz	380V/3Ph~/60Hz	208-230V~/60Hz
Cooling	Capacity	Btu/h	55000	55000
	Capacity	W	16119	16119
	Input	W	5000	5450
	Rated current	A	8.50	9.0
	EER	W/W	3.22	2.95
Indoor coil	Number of row		4	2
	Fin spacing	mm	1.5	1.5
	Fin material		Hydrophilic & Louver Fin	Hydrophilic & Louver Fin
	Tube outside diameter	mm	φ7	φ7
	Tube material		Innergroover tube type	Innergroover tube type
	Coil length x height x width	mm	1300×294×50.8	1300×294×25.4
	Number of circuit		13	6
Indoor fan motor	Brand		BROAD-OCEAN/Lifeng	BROAD-OCEAN/Lifeng
	Model		Y6S443C220/SJ110D	Y6S443C807/SJ68A
	Input	W	195.5/158.3/146.7	180/150.3/140.7(*2)
	Running current	A	0.91/0.72/0.67	0.85/0.70/0.65(*2)
	Capacitor	uF	6.0	6.0
	Applied QTY.		2	2
	Speed (Hi/Me/Lo)	rpm	1480/1250/1175	1330/1250/1175
Indoor air flow (Hi/Me/Lo)		m <sup>3</sup> /h	2500/2300/2100	2300/2100/1900
Indoor noise level (Hi/Me/Lo)		dB(A)	53/51/48	54/52/50
Indoor dimension	Unit (WxHxD)	mm	1635x235x675	1635x235x675
	Packing (WxHxD)	mm	1710×305×748	1710×305×748
Indoor weight	Net	kg	44	40
	Gross	kg	50	47
Refrigerant	Type		R410A	R410A
Refrigerant pipe	Liquid side	mm	9.52	9.52
	Gas side	mm	19.05	φ19.05
Drainage water pipe diameter		mm	OD25	OD25
Controller			GYKQ-37e	GYKQ-37e
Operation temperature		°C	16~30	16~30

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

Indoor temp: 27°CDB, 19°CWB; Outdoor temp: 35°CDB; Equivalent ref. Piping: 7.5m(horizontal)

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

Model			TCE-60ZCRA/U5I-C(02)	TCE-60ZCRA/U6I-C(02)
Code			Z1U30302000012	Z1U30302000006
Power supply		V/Ph/Hz	208-230V~/60Hz	208-230V~/60Hz
Cooling	Capacity	Btu/h	55000	55000
	Capacity	W	16115	16115
	Input	W	5200	5250
	Rated current	A	8.30	14.8
	EER	W/W	3.10	3.07
Indoor coil	Number of row		2	2
	Fin spacing	mm	1.5	1.5
	Fin material		Hydrophilic & Louver Fin	Hydrophilic & Louver Fin
	Tube outside diameter	mm	φ7	φ7
	Tube material		Innergroover tube type	Innergroover tube type
	Coil length x height x width	mm	1300×294×25.4	1300×294×25.4
	Number of circuit		10	10
Indoor fan motor	Brand		BROAD-OCEAN/Lifeng	BROAD-OCEAN/Lifeng
	Model		Y6S443C807/SJ68A	Y6S443C807/SJ68A
	Input	W	180/150.3/140.7(*2)	180/150.3/140.7(*2)
	Running current	A	0.85/0.70/0.65(*2)	0.85/0.70/0.65(*2)
	Capacitor	uF	6.0	6.0
	Applied QTY.		2	2
	Speed (Hi/Me/Lo)	rpm	1330/1250/1175	1330/1250/1175
Indoor air flow (Hi/Me/Lo)	m <sup>3</sup> /h	2200/1950/1700	2200/1950/1700	
Indoor noise level (Hi/Me/Lo)	dB(A)	55/53/51	55/53/51	
Indoor dimension	Unit (WxHxD)	mm	1635x235x675	1635x235x675
	Packing (WxHxD)	mm	1710×305×748	1710×305×748
Indoor weight	Net	kg	40	40
	Gross	kg	47	47
Refrigerant	Type		R410A	R410A
Refrigerant pipe	Liquid side	mm	9.52	9.52
	Gas side	mm	19.05	19.05
Drainage water pipe diameter	mm	OD25	OD25	
Controller			GYKQ-37e	GYKQ-37e
Operation temperature	°C		16~30	16~30

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

Indoor temp: 27°CDB, 19°CWB; Outdoor temp: 35°CDB; Equivalent ref. Piping: 7.5m(horizontal)

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

**Cooling & heating**

Model			TCE-24ZHRA/U2I-C	TCE-36ZHRA/U2I-C(01)
Code			Z2U3030200040	Z2U3030200094
Power supply		V/Ph/Hz	220-230V~/60Hz	220V~/60Hz/1P
Cooling	Capacity	Btu/h	24000.0	36000.0
	Capacity	W	7034	10550
	Input	W	2530	4190
	Rated current	A	12	18
	EER	W/W	3	3
Heating	Capacity	Btu/h	24000	36000
	Capacity	W	7034	10550
	Input	W	2470	3350
	Rated current	A	11	14
	COP	W/W	2.85	3.15
Indoor coil	Number of row		3	3
	Fin spacing	mm	1.5	1.5
	Fin material		Hydrophilic & Louver Fin	Hydrophilic & Louver Fin
	Tube outside diameter	mm	φ7	φ7
	Tube material		Innergroover tube type	Innergroover tube type
	Coil length x height x width	mm	795×294×38.1	940×294×38.1
	Number of circuit		6	10
Indoor fan motor	Brand		Broad Ocean	Broad-ocean/Lifeng
	Model		TTB-24CW	Y6S443C508/SJ132B
	Input	W	170/146/97/83	279/222/200/170
	Running current	A	0.77/0.68/0.41/560	1.30/1.0/0.92/0.78
	Capacitor	uF	4	5
	Applied QTY.		1.0	1.0
	Speed (Hi/Me/Lo)	rpm	1070/910/630/560	1375/1155/1085/960
Indoor air flow (Hi/Me/Lo)		m <sup>3</sup> /h	1200/1050/900	1830/1560/1470
Indoor noise level (Hi/Me/Lo)		dB(A)	53/49/46	53/50/48
Indoor dimension	Unit (WxHxD)	mm	1055×235×675	1275×235×675
	Packing (WxHxD)	mm	1130x305x748	1350x305x748
Indoor weight	Net	kg	24	29
	Gross	kg	30	35
Refrigerant	Type		R410A	R410A
Refrigerant pipe	Liquid side	mm	φ9.52	9.52
	Gas side	mm	φ15.88	19
Drainage water pipe diameter		mm	ODφ25	OD25
Controller			GYKQ-37e	GYKQ-37e
Operation temperature		°C	16~30	16~30

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

Indoor temp: 27°CDB, 19°CWB; Outdoor temp: 35°CDB; Equivalent ref. Piping: 7.5m(horizontal)

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

Model			TCE-60ZHRA/U6I-C(01)	TCE-60ZHRA/U5I-C(01)
Code			Z2U30302000093	Z2U30302000036
Power supply		V/Ph/Hz	220V~/60Hz/3P	380V~/60Hz/3P
Cooling	Capacity	Btu/h	55000.0	55000.0
	Capacity	W	16000	16000
	Input	W	5950	5950
	Rated current	A	19	10
	EER	W/W	3	3
Heating	Capacity	Btu/h	55000	55000
	Capacity	W	16000	16000
	Input	W	4900	4900
	Rated current	A	15	9
	COP	W/W	3.26	3.26
Indoor coil	Number of row		3	3
	Fin spacing	mm	1.5	1.5
	Fin material		Hydrophilic & Louver Fin	Hydrophilic & Louver Fin
	Tube outside diameter	mm	φ7	φ7
	Tube material		Innergroover tube type	Innergroover tube type
	Coil length x height x width	mm	1300×294×38.1	1300×294×38.1
	Number of circuit		10	10
Indoor fan motor	Brand		Broad-ocean/Lifeng	Broad-ocean/Lifeng
	Model		Y6S443C220/SJ110D	Y6S443C220/SJ110D
	Input	W	222/180/168/146	222/180/168/146
	Running current	A	1/0.83/0.76/0.67	1/0.83/0.76/0.67
	Capacitor	uF	6	6
	Applied QTY.		2.0	2.0
	Speed (Hi/Me/Lo)	rpm	1545/1365/1300/1200	1545/1365/1300/1200
Indoor air flow (Hi/Me/Lo)		m <sup>3</sup> /h	2825/2442/2310	2825/2442/2310
Indoor noise level (Hi/Me/Lo)		dB(A)	58/56/55	58/56/55
Indoor dimension	Unit (WxHxD)	mm	1635x235x675	1635x235x675
	Packing (WxHxD)	mm	1710×305×748	1710×305×748
Indoor weight	Net	kg	41	41
	Gross	kg	48	48
Refrigerant	Type		R410A	R410A
Refrigerant pipe	Liquid side	mm	9.52	9.52
	Gas side	mm	19	19
Drainage water pipe diameter		mm	OD25	OD25
Controller			GYKQ-37e	GYKQ-37e
Operation temperature		°C	16~30	16~30

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

Indoor temp: 27°CDB, 19°CWB; Outdoor temp: 35°CDB; Equivalent ref. Piping: 7.5m(horizontal)

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

## 2.2 Cassette

### Cooling only

Model name		TCE-24CCRA/U2I-C	TCE-36CCRA/U2I-C	
Code		Z2U30303000570	Z2U30303000390	
Power supply	V//Hz/Ph	208-230V~/60Hz	208-230V~/60Hz	
Cooling	Capacity	Btu/h	24000	36000
	Capacity	W	7032	10550
	Input	W	2430	4138
	Rated current	A	11.1	17.60
	EER	W/W	2.89	2.55
Indoor coil	Number of row		2	2
	Fin spacing	mm	1.5	1.3
	Fin material		Hydrophilic & Louver Fin	Hydrophilic & Louver Fin
	Tube outside diameter	mm	φ7	φ7
	Tube material		Innergroover tube type	Innergroover tube type
	Coil length x height x width	mm	1899×168×25.4	1899×252×25.4
	Number of circuit		8	12
Indoor fan motor	Brand		Weiling	Lifeng
	Model		YKT-60-6-241	SJ56G
	Input	W	122	202
	Running current	A	0.53	0.90
	Capacitor	uF	3.0	3.5
	Speed (Hi/Me/Lo)	rpm	640/500/440	730/680/550/430
Indoor air flow (Hi/Me/Lo)	m <sup>3</sup> /h	1200/1050/900	1600/1300/1000	
Indoor noise level (Hi/Me/Lo)	dB(A)	44/39/36	47/44/42	
Indoor dimension	Unit (WxHxD)	mm	830x230x830	830x290x830
	Packing (WxHxD)	mm	925x290x925	925x360x925
Indoor weight	Net	kg	26	28
	Gross	kg	30	33
Panel	Unit (WxHxD)	mm	950×45×950	950×45×950
	Packing (WxHxD)	mm	1035×90×1035	1035×90×1035
	Net/Gross	kg	6.0/9.0	6.0/9.0
Refrigerant	Type		R410A	R410A
Refrigerant pipe	Liquid side	mm	φ9.52	φ9.52
	Gas side	mm	φ15.88	φ19.05
Drainage water pipe diameter	mm	OD25	OD32	
Controller		GYKQ-37e	GYKQ-37e	
Operation temperature	°C	16~30	16~30	

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

Indoor temp: 27°CDB, 19°CWB; Outdoor temp: 35°CDB; Equivalent ref. Piping: 7.5m(horizontal)

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

Model name		TCE-36CCRA/U2I-C(01)	TCE-48CCRA/U2I-C	
Code		Z1U30303000081	Z2U30303000309	
Power supply	V//Hz/Ph	208-230V~/60Hz	208-230V~/60Hz	
Cooling	Capacity	Btu/h	36000	47999.8316
	Capacity	W	10550	14063
	Input	W	4050	5347
	Rated current	A	18.5	22.8
	EER	W/W	2.604938272	2.630072938
Indoor coil	Number of row		2	2
	Fin spacing	mm	1.3	1.3
	Fin material		Hydrophilic & Louver Fin	Hydrophilic & Louver Fin
	Tube outside diameter	mm	φ7	φ7
	Tube material		Innergroover tube type	Innergroover tube type
	Coil length x height x width	mm	1899×252×25.4	1899×252×25.4
	Number of circuit		12	12
Indoor fan motor	Brand		LIFENG	Lifeng
	Model		SJ56G	SJ56G
	Input	W	202	202
	Running current	A	0.89	0.9
	Capacitor	uF	3.5	3.5
	Speed (Hi/Me/Lo)	rpm	730/680/550	730/680/550/430
Indoor air flow (Hi/Me/Lo)	m <sup>3</sup> /h	1650/1480/1220	1600/1300/1000	
Indoor noise level (Hi/Me/Lo)	dB(A)	47/45/43	47/44/42	
Indoor dimension	Unit (WxHxD)	mm	830x290x830	830x290x830
	Packing (WxHxD)	mm	910x320x910	925x360x925
Indoor weight	Net	kg	30	30
	Gross	kg	35	35.5
Panel	Unit (WxHxD)	mm	950x45x950	950×45×950
	Packing (WxHxD)	mm	1035x90x1035	1035×90×1035
	Net/Gross	kg	6/9	6.0/9.0
Refrigerant	Type		R410A	R410A
Refrigerant pipe	Liquid side	mm	9.52	φ9.52
	Gas side	mm	19.05	φ19.05
Drainage water pipe diameter	mm	OD32	OD32	
Controller			GYKQ-37e	GYKQ-37e
Operation temperature	°C		16~30	16~30

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

Indoor temp: 27°CDB, 19°CWB; Outdoor temp: 35°CDB; Equivalent ref. Piping: 7.5m(horizontal)

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

Model name			TCE-60CCRA/U2I-C
Code			Z2U30303000011
Power supply		V//Hz/Ph	208-230V~/60Hz
Cooling	Capacity	Btu/h	54999.828
	Capacity	W	16120
	Input	W	6153
	Rated current	A	26.3
	EER	W/W	2.62
Indoor coil	Number of row		2
	Fin spacing	mm	1.3
	Fin material		Hydrophilic & Louver Fin
	Tube outside diameter	mm	φ7
	Tube material		Innergroover tube type
	Coil length x height x width	mm	1899×252×25.4
	Number of circuit		12
Indoor fan motor	Brand		Lifeng
	Model		SJ56G
	Input	W	202
	Running current	A	0.9
	Capacitor	uF	3.5
	Speed (Hi/Me/Lo)	rpm	730/680/550/430
Indoor air flow (Hi/Me/Lo)		m <sup>3</sup> /h	1600/1300/1000
Indoor noise level (Hi/Me/Lo)		dB(A)	47/44/42
Indoor dimension	Unit (WxHxD)	mm	830x290x830
	Packing (WxHxD)	mm	925x360x925
Indoor weight	Net	kg	30
	Gross	kg	35.5
Panel	Unit (WxHxD)	mm	950×45×950
	Packing (WxHxD)	mm	1035×90×1035
	Net/Gross	kg	6.0/9.0
Refrigerant	Type		R410A
Refrigerant pipe	Liquid side	mm	φ9.52
	Gas side	mm	φ19.05
Drainage water pipe diameter		mm	OD32
Controller			GYKQ-37e
Operation temperature		°C	16~30

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

Indoor temp: 27°CDB, 19°CWB; Outdoor temp: 35°CDB; Equivalent ref. Piping: 7.5m(horizontal)

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

Model name		TCE-60CCRA/U6I-C(01)	TCE-60CCRA/U5I-C(01)
Code		Z2U30303000255	Z2U30303000401
Power supply	V//Hz/Ph	208-230V~/60Hz	208-230V~/60Hz
Cooling	Capacity	Btu/h	55000
	Capacity	W	16000
	Input	W	5450
	Rated current	A	16
	EER	W/W	2.93
Indoor coil	Number of row		2
	Fin spacing	mm	1.3
	Fin material		Hydrophilic & Louver Fin
	Tube outside diameter	mm	φ7
	Tube material		Innergroover tube type
	Coil length x height x width	mm	1899×252×25.4
	Number of circuit		12
Indoor fan motor	Brand		Lifeng
	Model		SJ56G
	Input	W	202
	Running current	A	0.9
	Capacitor	uF	3.5
	Speed (Hi/Me/Lo)	rpm	730/680/550/430
Indoor air flow (Hi/Me/Lo)	m <sup>3</sup> /h	1820/1600/1310	1820/1600/1310
Indoor noise level (Hi/Me/Lo)	dB(A)	46/43/41	46/43/41
Indoor dimension	Unit (WxHxD)	mm	830x290x830
	Packing (WxHxD)	mm	925x360x925
Indoor weight	Net	kg	30
	Gross	kg	35
Panel	Unit (WxHxD)	mm	950×45×950
	Packing (WxHxD)	mm	1035×90×1035
	Net/Gross	kg	6.0/9.0
Refrigerant	Type		R410A
Refrigerant pipe	Liquid side	mm	φ9.52
	Gas side	mm	φ19.05
Drainage water pipe diameter	mm	OD32	OD32
Controller		GYKQ-37e	GYKQ-37e
Operation temperature	°C	16~30	16~30

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

Indoor temp: 27°CDB, 19°CWB; Outdoor temp: 35°CDB; Equivalent ref. Piping: 7.5m(horizontal)

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

Model name		TCE-60CCRA/U5I-C(02)	TCE-60CCRA/U6I-C(02)	
Code		Z1U30303000082	Z1U30303000083	
Power supply	V//Hz/Ph	208-230V~/60Hz	208-230V~/60Hz	
Cooling	Capacity	Btu/h	55000	55000
	Capacity	W	16115	16115
	Input	W	5150	5100
	Rated current	A	8.5	14.6
	EER	W/W	3.13	3.16
Indoor coil	Number of row		2	2
	Fin spacing	mm	1.3	1.3
	Fin material		Hydrophilic & Louver Fin	Hydrophilic & Louver Fin
	Tube outside diameter	mm	φ7	φ7
	Tube material		Innergroover tube type	Innergroover tube type
	Coil length x height x width	mm	1899×252×25.4	1899×252×25.4
	Number of circuit		12	12
Indoor fan motor	Brand		LIFENG	LIFENG
	Model		YDK56-6-9	YDK56-6-9
	Input	W	202	202
	Running current	A	0.89	0.89
	Capacitor	uF	3.5	3.5
	Speed (Hi/Me/Lo)	rpm	730/680/550	730/680/550
Indoor air flow (Hi/Me/Lo)	m <sup>3</sup> /h	1820/1600/1310	1820/1600/1310	
Indoor noise level (Hi/Me/Lo)	dB(A)	47/44/42	47/44/42	
Indoor dimension	Unit (WxHxD)	mm	830x290x830	830x290x830
	Packing (WxHxD)	mm	925x360x925	925x360x925
Indoor weight	Net	kg	30	30
	Gross	kg	35	35
Panel	Unit (WxHxD)	mm	950×45×950	950×45×950
	Packing (WxHxD)	mm	1035×90×1035	1035×90×1035
	Net/Gross	kg	19.05	19.05
Refrigerant	Type		R410A	R410A
Refrigerant pipe	Liquid side	mm	9.52	9.52
	Gas side	mm	19.05	19.05
Drainage water pipe diameter	mm	OD25	OD25	
Controller		GYKQ-37e	GYKQ-37e	
Operation temperature	°C	16~30	16~30	

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

Indoor temp: 27°CDB, 19°CWB; Outdoor temp: 35°CDB; Equivalent ref. Piping: 7.5m(horizontal)

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

Model name			Z2U30303000588	Z2U30303000535
Code			TCE-48CCRA/U5I-C	TCE-48CCRA/U6I-C
Power supply		V//Hz/Ph	208-230V~/60Hz	208-230V~/60Hz
Cooling	Capacity	Btu/h	48000	48000
	Capacity	W	14064	14064
	Input	W	4870	4950
	Rated current	A	8.0	14.30
	EER	W/W	2.88	2.84
Indoor coil	Number of row		2	2
	Fin spacing	mm	1.5	1.5
	Fin material		Hydrophilic & Louver Fin	Hydrophilic & Louver Fin
	Tube outside diameter	mm	φ7	φ7
	Tube material		Innergroover tube type	Innergroover tube type
	Coil length x height x width	mm	1899×252×25.4	1899×252×25.4
	Number of circuit		12	12
Indoor fan motor	Brand		LIFENG	LIFENG
	Model		SJ65E	SJ65E
	Input	W	177	177
	Running current	A	0.80	0.80
	Capacitor	uF	4	4
	Speed (Hi/Me/Lo)	rpm	730/670/620	730/670/620
Indoor air flow (Hi/Me/Lo)		m <sup>3</sup> /h	1750/1640/1490	1750/1640/1490
Indoor noise level (Hi/Me/Lo)		dB(A)	48/45/39	48/45/39
Indoor dimension	Unit (WxHxD)	mm	830x290x830	830x290x830
	Packing (WxHxD)	mm	910x320x910	910x320x910
Indoor weight	Net	kg	30.0	30.0
	Gross	kg	35.0	35.0
Panel	Unit (WxHxD)	mm	950x45x950	950x45x950
	Packing (WxHxD)	mm	1035x90x1035	1035x90x1035
	Net/Gross	kg	6/9	6/9
Refrigerant	Type		R410A	R410A
Refrigerant pipe	Liquid side	mm	9.52	9.52
	Gas side	mm	19.05	19.05
Drainage water pipe diameter		mm	OD25	OD25
Controller			Remote controller	Remote controller
Operation temperature		°C	16 ~30	16 ~30

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

Indoor temp: 27°CDB, 19°CWB; Outdoor temp: 35°CDB; Equivalent ref. Piping: 7.5m(horizontal)

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

**Cooling & heating**

Model name			TCE-36CHRA/U2I-C(01)	TCE-60CHRA/U5I-C(01)
Code			Z2U30303000033	Z2U30303000371
Power supply		V//Hz/Ph	220V~/60Hz/1P	380V~/60Hz/3P
Cooling	Capacity	Btu/h	36000	55000
	Capacity	W	10550	16000
	Input	W	3960	5680
	Rated current	A	17.30	9.20
	EER	W/W	2.66	2.81
Heating	Capacity	Btu/h	36000	55000
	Capacity	W	10550	16000
	Input	W	3420	5200
	Rated current	A	14.90	8.60
	COP	W/W	3.08	3.07
Indoor coil	Number of row		2	2
	Fin spacing	mm	1.5	1.5
	Fin material		Hydrophilic & Louver Fin	Hydrophilic & Louver Fin
	Tube outside diameter	mm	φ7	φ7
	Tube material		Innergroover tube type	Innergroover tube type
	Coil length x height x width	mm	1899×252×25.4	1899×252×25.4
	Number of circuit		12	12
Indoor fan motor	Brand		Lifeng	Lifeng
	Model		SJ56G	SJ56G
	Input	W	202	202
	Running current	A	0.90	0.90
	Capacitor	mF	3.5	3.5
	Speed (Hi/Me/Lo)	rpm	730/680/550/430	730/680/550/430
Indoor air flow (Hi/Me/Lo)		m <sup>3</sup> /h	1820/1600/1310	1820/1600/1310
Indoor noise level (Hi/Me/Lo)		dB(A)	46/43/41	46/43/41
Indoor dimension	Unit (WxHxD)	mm	830x290x830	830x290x830
	Packing (WxHxD)	mm	925x360x925	925x360x925
Indoor weight	Net	kg	30	31
	Gross	kg	35	36
Panel	Unit (WxHxD)	mm	950x45x950	950x45x950
	Packing (WxHxD)	mm	1035x80x1035	1035x80x1035
	Net/Gross	kg	6/9	6/9
Refrigerant	Type		R410A	R410A
Refrigerant pipe	Liquid side	mm	9.52	9.52
	Gas side	mm	19.05	19.05
Drainage water pipe diameter		mm	OD32	OD32
Controller			GYKQ-37e	GYKQ-37e
Operation temperature		°C	16~30	16~30

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

Indoor temp: 27°CDB, 19°CWB; Outdoor temp: 35°CDB; Equivalent ref. Piping: 7.5m(horizontal)

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

Model name			TCE-60CHRA/U6I-C(01)
Code			Z2U30303000221
Power supply		V//Hz/Ph	220V~/60Hz/3P
Cooling	Capacity	Btu/h	55000.00
	Capacity	W	16000.00
	Input	W	5680.00
	Rated current	A	17.40
	EER	W/W	2.81
Heating	Capacity	Btu/h	55000.00
	Capacity	W	16000.00
	Input	W	5200.00
	Rated current	A	15.70
	COP	W/W	3.07
Indoor coil	Number of row		2.00
	Fin spacing	mm	1.50
	Fin material		Hydrophilic & Louver Fin
	Tube outside diameter	mm	φ7
	Tube material		Innergroover tube type
	Coil length x height x width	mm	1899×252×25.4
	Number of circuit		12.00
Indoor fan motor	Brand		Lifeng
	Model		SJ56G
	Input	W	202.00
	Running current	A	0.90
	Capacitor	mF	3.50
	Speed (Hi/Me/Lo)	rpm	730/680/550/430
Indoor air flow (Hi/Me/Lo)		m <sup>3</sup> /h	1820/1600/1310
Indoor noise level (Hi/Me/Lo)		dB(A)	46/43/41
Indoor dimension	Unit (WxHxD)	mm	830x290x830
	Packing (WxHxD)	mm	925x360x925
Indoor weight	Net	kg	31.00
	Gross	kg	36.00
Panel	Unit (WxHxD)	mm	950x45x950
	Packing (WxHxD)	mm	1035x80x1035
	Net/Gross	kg	6/9
Refrigerant	Type		R410A
Refrigerant pipe	Liquid side	mm	9.52
	Gas side	mm	19.05
Drainage water pipe diameter		mm	OD32
Controller			GYKQ-37e
Operation temperature		°C	16~30

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

Indoor temp: 27°CDB, 19°CWB; Outdoor temp: 35°CDB; Equivalent ref. Piping: 7.5m(horizontal)

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

## 2.3 Duct

Model		TCE-24D2CRA/U2I-C	Z2U30304000280	TCE-36D2CRA/U2I-C
Code		Z2U30304000094	TCE-24D2CRA/U2I-C	Z2U30304000060
Power supply		V/Ph/Hz	220-230V~/60Hz	208-230V~/60Hz
Cooling	Capacity	Btu/h	24000	24000
	Capacity	W	7329	7032
	Input	W	2603	2670
	Rated current	A	11.60	12.0
	EER	W/W	2.82	2.63
Indoor coil	Number of row		4	3
	Fin spacing	mm	1.5	1.5
	Fin material		Hydrophilic & Louver Fin	Hydrophilic & Louver Fin
	Tube outside diameter	mm	φ7	φ7
	Tube material		Innergroover tube type	Innergroover tube type
	Coil length x height x width	mm	734x252x50.8	734x252x50.8
	Number of circuit		6	6
Indoor fan motor	Brand		BTOAD-OCEAN	BROAD-OCEAN
	Model		TTB-24CW	Y6S643C246
	Input	W	83	170
	Running current	A	0.77	0.77
	Capacitor	uF	3.5	3.5
	Applied QTY.		1	1
	Speed (Hi/Me/Lo)	rpm	1070/910/630	1070/910/630
Indoor air flow (Hi/Me/Lo)	m <sup>3</sup> /h	1200/1100/850	1200/960/600	1350/1200/950
Indoor noise level (Hi/Me/Lo)	dB(A)	47/45/43	46/43/39	51/49/47
Indoor dimension	Unit (WxHxD)	mm	920x270x570	920x270x605
	Packing (WxHxD)	mm	1115x340x690	1115x340x690
Indoor weight	Net	kg	28	29
	Gross	kg	33	33
Refrigerant	Type		R410A	R410A
Refrigerant pipe	Liquid side	mm	9.52	φ9.52
	Gas side	mm	φ15.88	φ15.88
Drainage water pipe diameter	mm	ODφ25	ODφ25	OD25
Controller			GYKQ-37e	GYKQ-37e
Operation temperature	°C		16~30	16~30

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

Indoor temp: 27°CDB, 19°CWB; Outdoor temp: 35°CDB; Equivalent ref. Piping: 7.5m(horizontal)

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

Model			TCE-48D2CRA/U2I-C	TCE-60D2CRA/U2I-C
Code			Z2U30304000209	Z2U30304000002
Power supply		V/Ph/Hz	208-230V~/60Hz	208-230V~/60Hz
Cooling	Capacity	Btu/h	48000	55000
	Capacity	W	14063	16000
	Input	W	5600	6400
	Rated current	A	25.00	25.30
	EER	W/W	2.51	2.50
Indoor coil	Number of row		4	4
	Fin spacing	mm	1.4	1.4
	Fin material		Hydrophilic & Louver Fin	Hydrophilic & Louver Fin
	Tube outside diameter	mm	φ7	φ7
	Tube material		Innergroover tube type	Innergroover tube type
	Coil length x height x width	mm	1076x378x50.8	1076x378x50.8
	Number of circuit		8	8
Indoor fan motor	Brand		BROAD-OCEAN	BROAD-OCEAN
	Model		Y6S443C807	Y6S443C807
	Input	W	170	180
	Running current	A	1.40	1.40
	Capacitor	uF	10.0	10.0
	Applied QTY.		1	1
	Speed (Hi/Me/Lo)	rpm	1100/980/690	1010/960/730
Indoor air flow (Hi/Me/Lo)		m <sup>3</sup> /h	1800/1600/1100	1850/1500/1200
Indoor noise level (Hi/Me/Lo)		dB(A)	52/50/48	52/50/48
Indoor dimension	Unit (WxHxD)	mm	1200×300×865	1200×300×865
	Packing (WxHxD)	mm	1405×375×925	1405×375×925
Indoor weight	Net	kg	48	48
	Gross	kg	55	55
Refrigerant	Type		R410A	R410A
Refrigerant pipe	Liquid side	mm	9.52	9.52
	Gas side	mm	φ19.05	φ19.05
Drainage water pipe diameter		mm	OD25	OD25
Controller			GYKQ-37e	GYKQ-37e
Operation temperature		°C	16~30	16~30

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

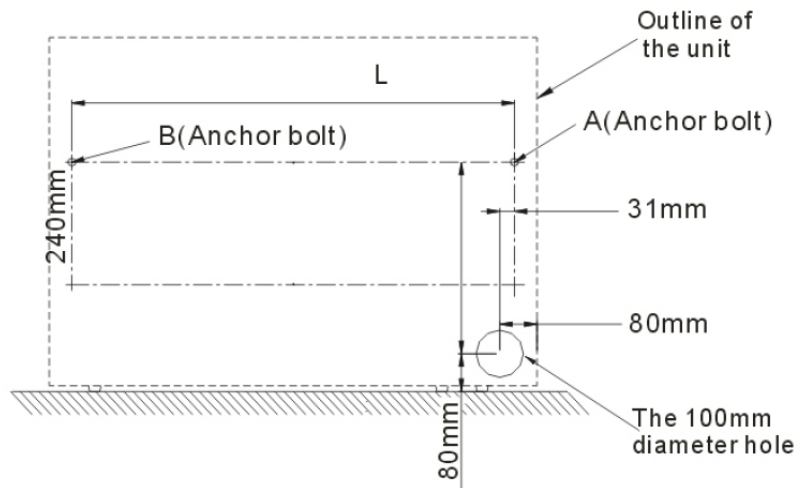
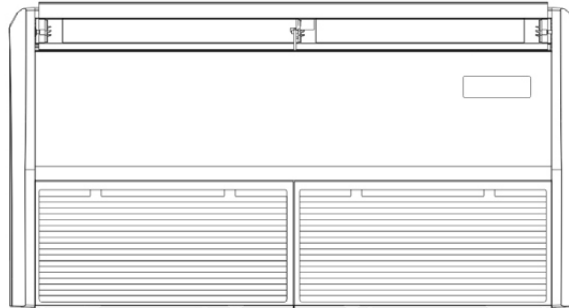
Indoor temp: 27°CDB, 19°CWB; Outdoor temp: 35°CDB; Equivalent ref. Piping: 7.5m(horizontal)

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

### 3. Dimensions

#### 3.1 Ceiling & Floor

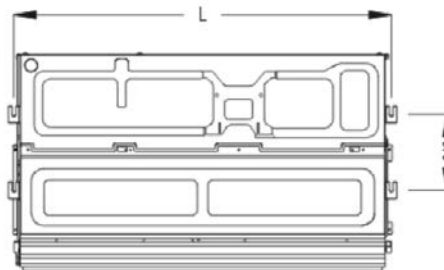
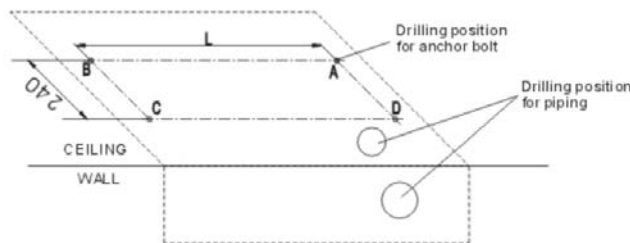
##### a. Floor console installation



**NOTE:**

Cooling Capacity / Dimension	18000 Btu/hr	24000 Btu/hr	36000 Btu/hr	48000 Btu/hr
L	980mm	980mm	1200mm	1560mm

##### b. Ceiling installation



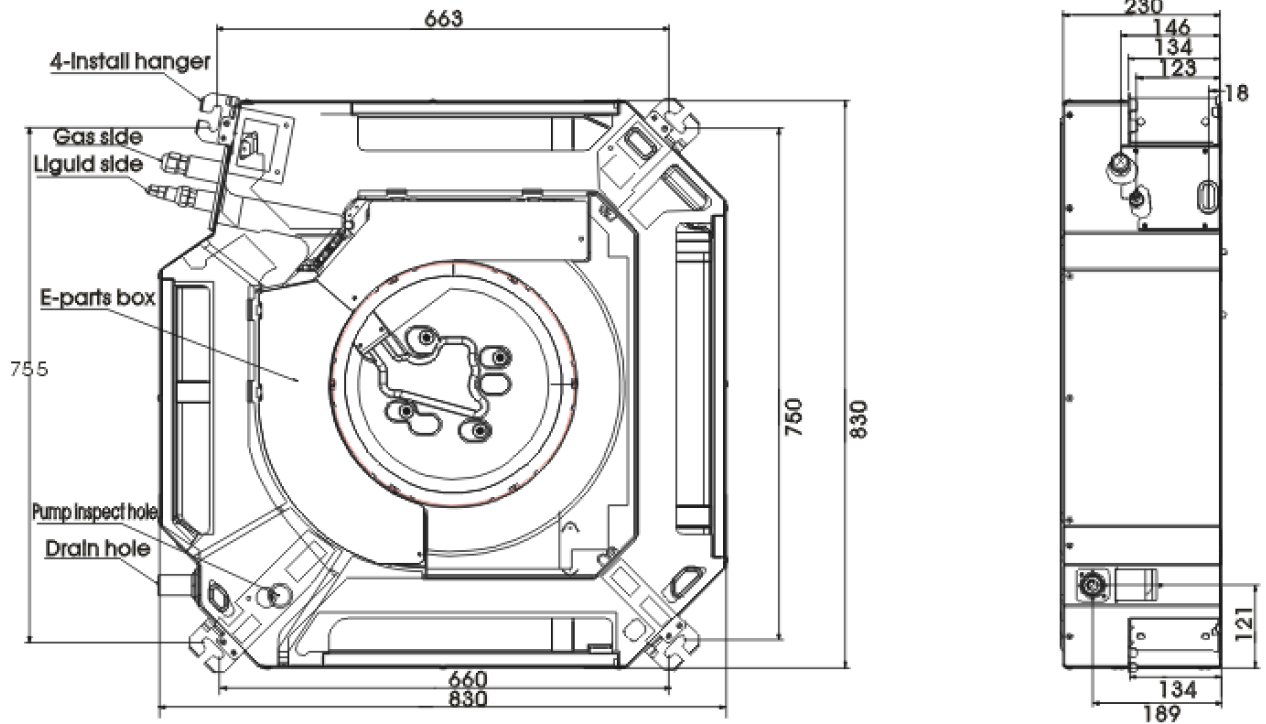
**NOTE:**

Cooling Capacity / Dimension	18000 Btu/hr	24000 Btu/hr	36000 Btu/hr	48000 Btu/hr
L	980mm	980mm	1200mm	1560mm

**Note:** The dimension of 48000Btu/h and 60000Btu/h are the same

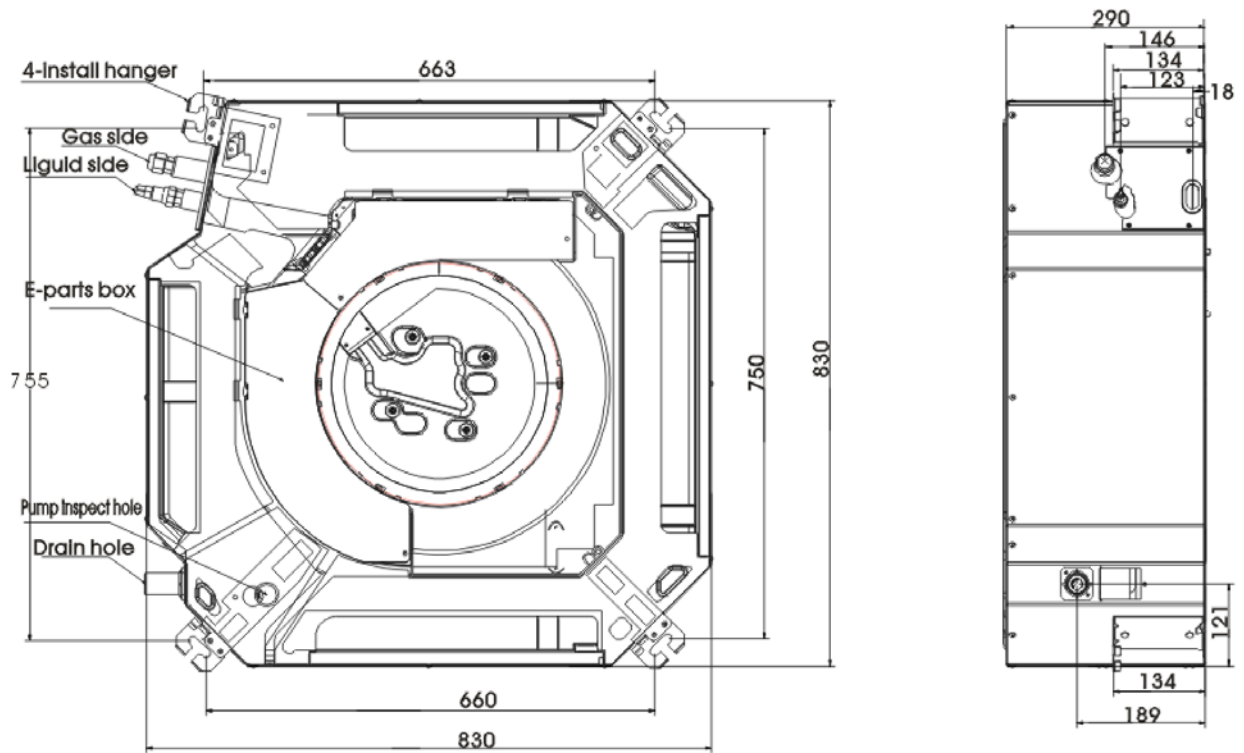
### 3.2 Cassette

#### a. 24000Btu/h

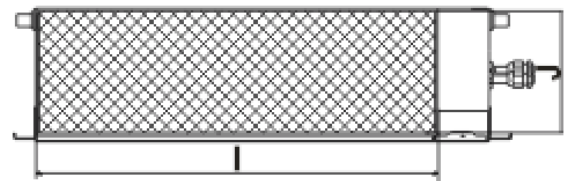
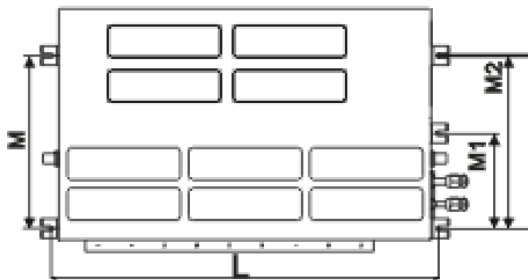
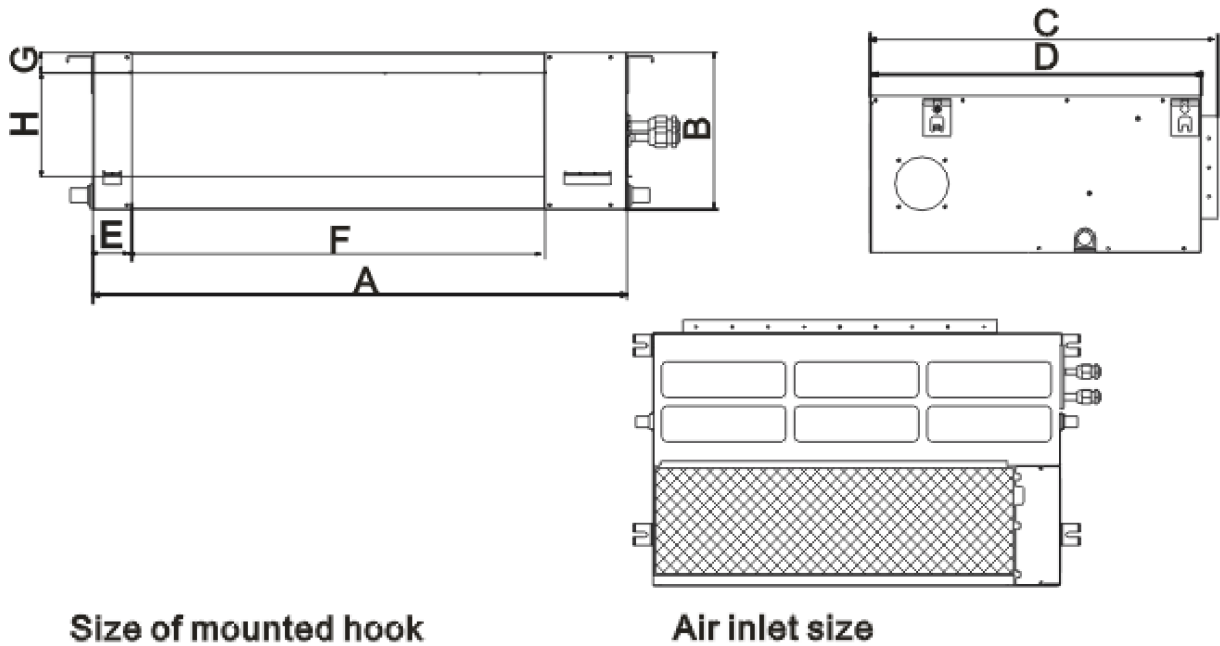


#### b. 36000Btu/h

#### ~~53800Btu/h~~



### 3.3 Duct

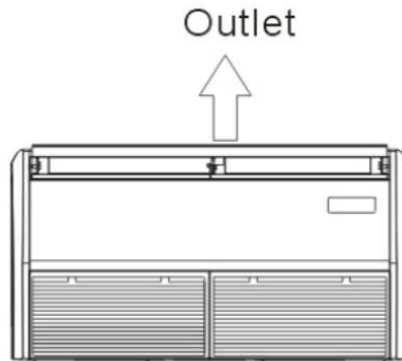


	Outline dimension				Air outlet opening size				Air return opening size		Size of mounted lug			
	A	B	C	D	E	F	G	H	I	J	L	M	M1	M2
9/12D5	700	200	447	450	45	510	17	140	570	172	738	298	158	/
18D5	920	200	447	450	45	730	17	140	790	172	958	298	158	/
18D2	920	210	635	570	65	713	35	119	815	200	958	427	240	/
24D2	920	270	635	570	65	713	35	179	815	260	958	427	/	427
36D2	1140	270	775	710	65	933	35	179	1035	260	1184	541	/	541
48/60D2	1200	300	865	800	80	968	40	204	1094	268	1238	585	/	585

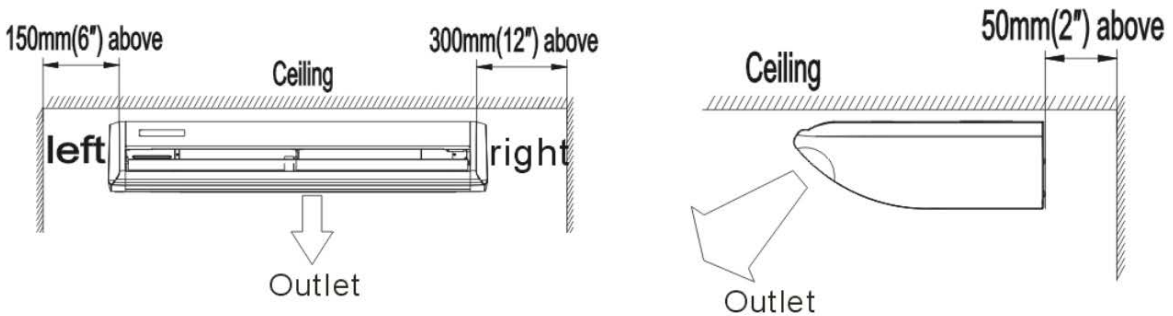
# 4. Service Space

## 4.1 Ceiling & Floor

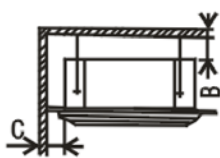
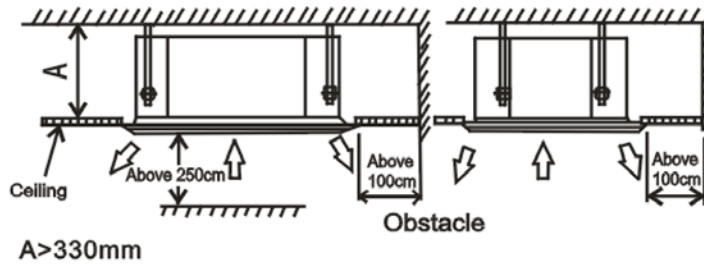
### a. Floor console



### b. Under ceiling

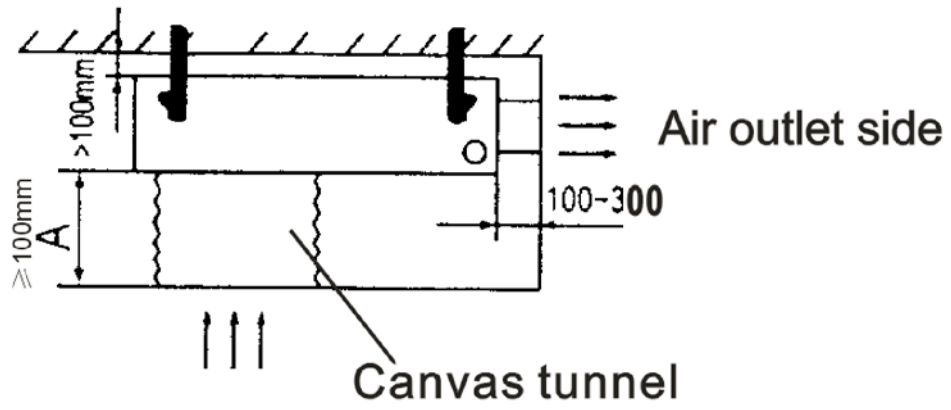


## 4.2 Cassette



Wall material	Flammable material	Fire-proof material or other nonflammable materials other than metal	Fire-proof structure
Up(B)	Above 5cm	Above 5cm	Above 5cm
Sides(C)	Above 100cm	Above 100cm	——

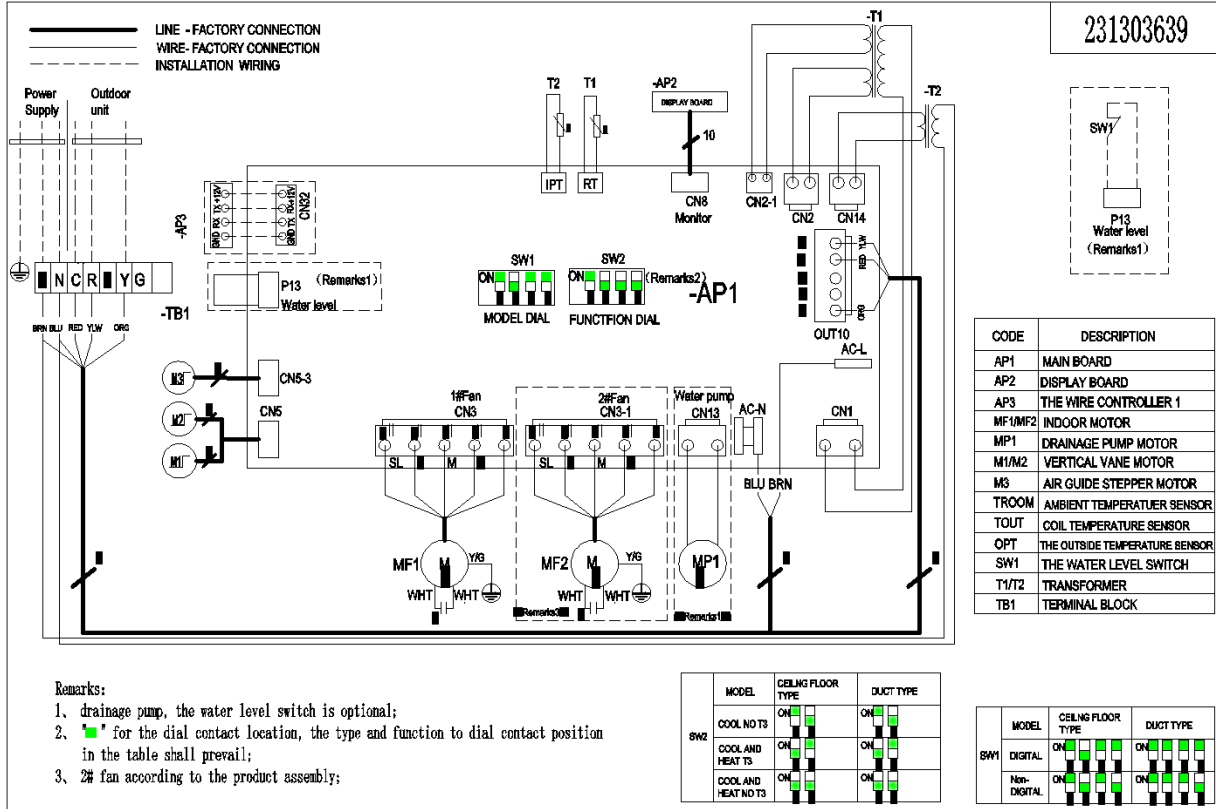
### 4.3 Duct



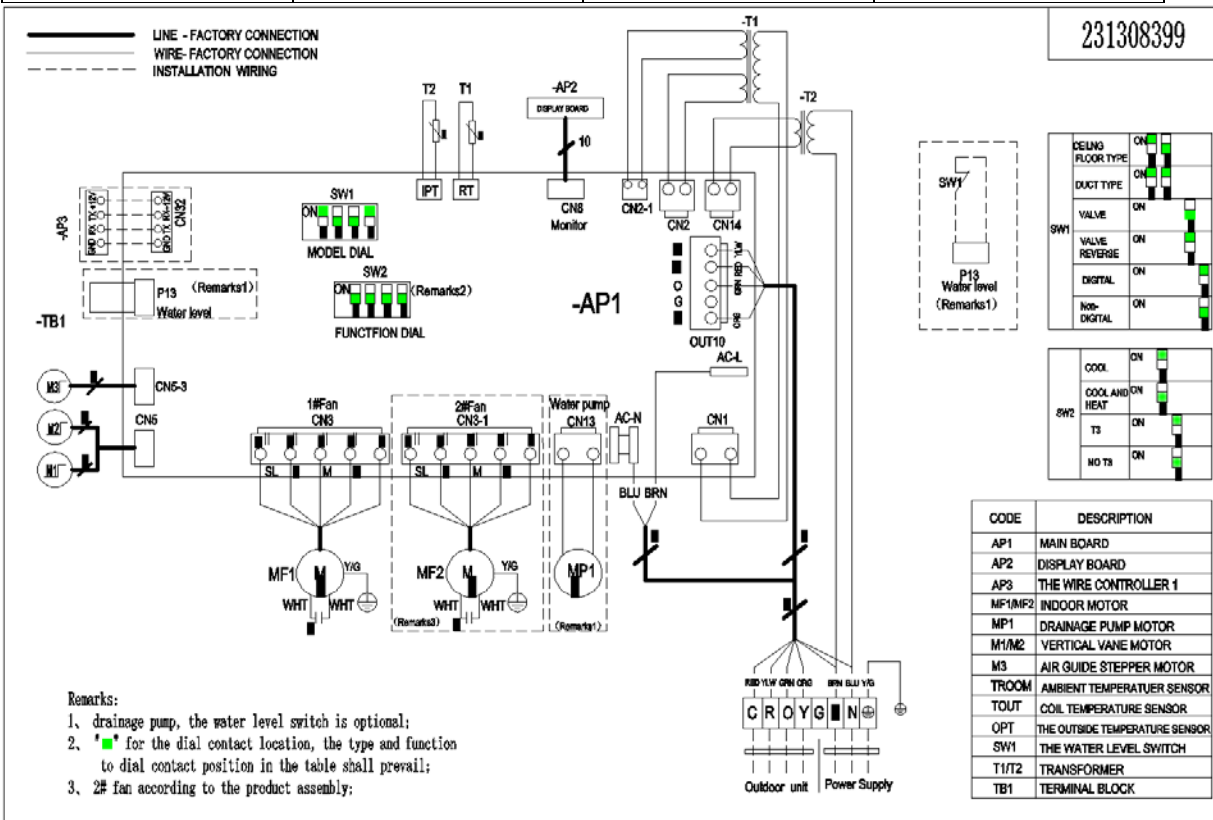
# 5. Wiring Diagrams

## 5.1 Ceiling & floor

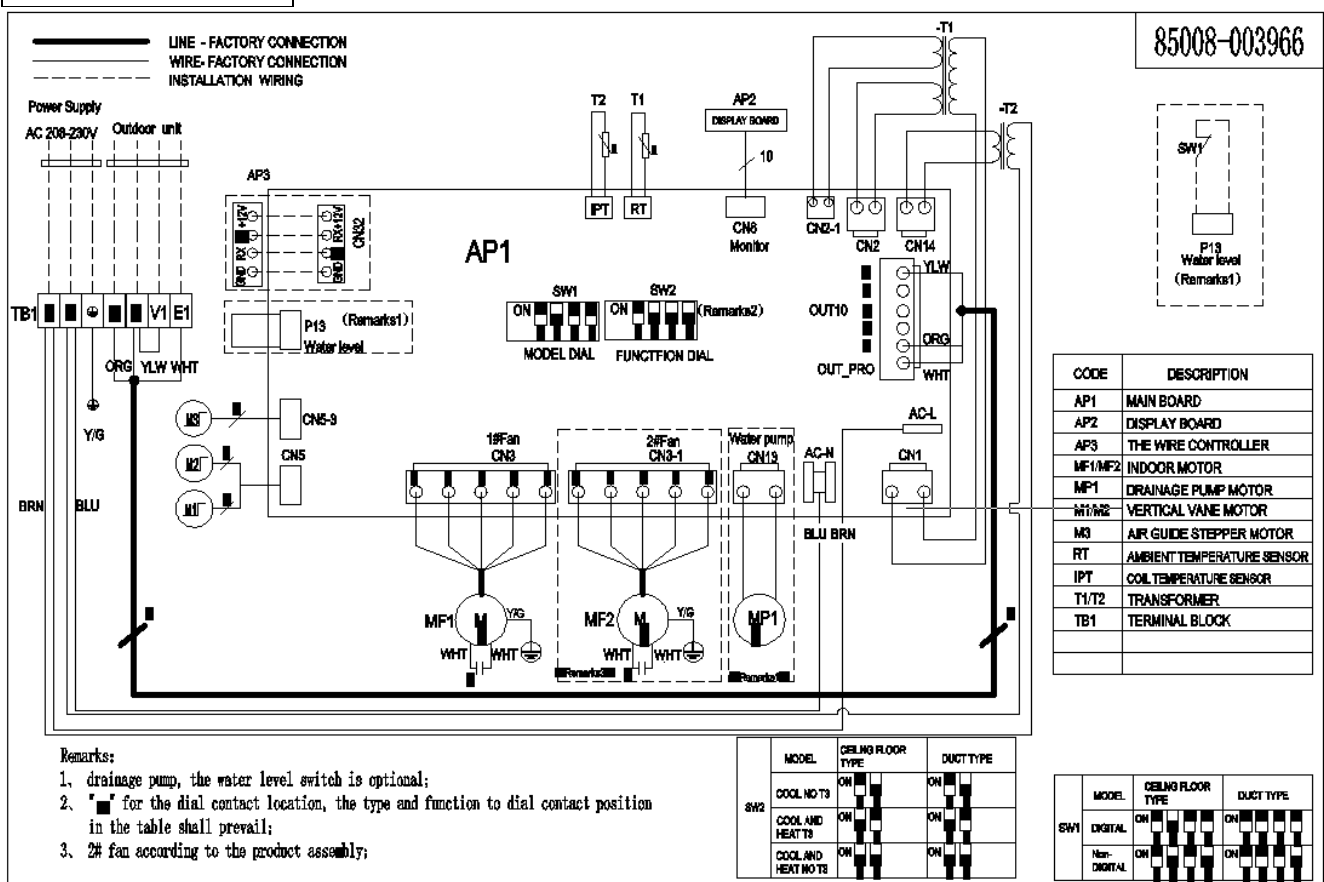
TCE-24ZCRA/U2I-C(01)	TCE-48ZCRA/U6I-C	TCE-60ZCRA/U6I-C	TCE-48ZCRA/U5I-C
TCE-60ZCRA/U5I-C	TCE-24ZCRA/U2I-C	TCE-60ZCRA/U6I-C(01)	TCE-60ZCRA/U6I-C(02)
TCB-60ZCRA/U5I-C	TCE-60ZCRA/U5I-C(02)	TCE-36ZCRA/U2I-C(03)	TCE-36ZCRA/U2I-C(01)
TCE-48ZCRA/U2I-C	TCE-60ZCRA/U2I-C		



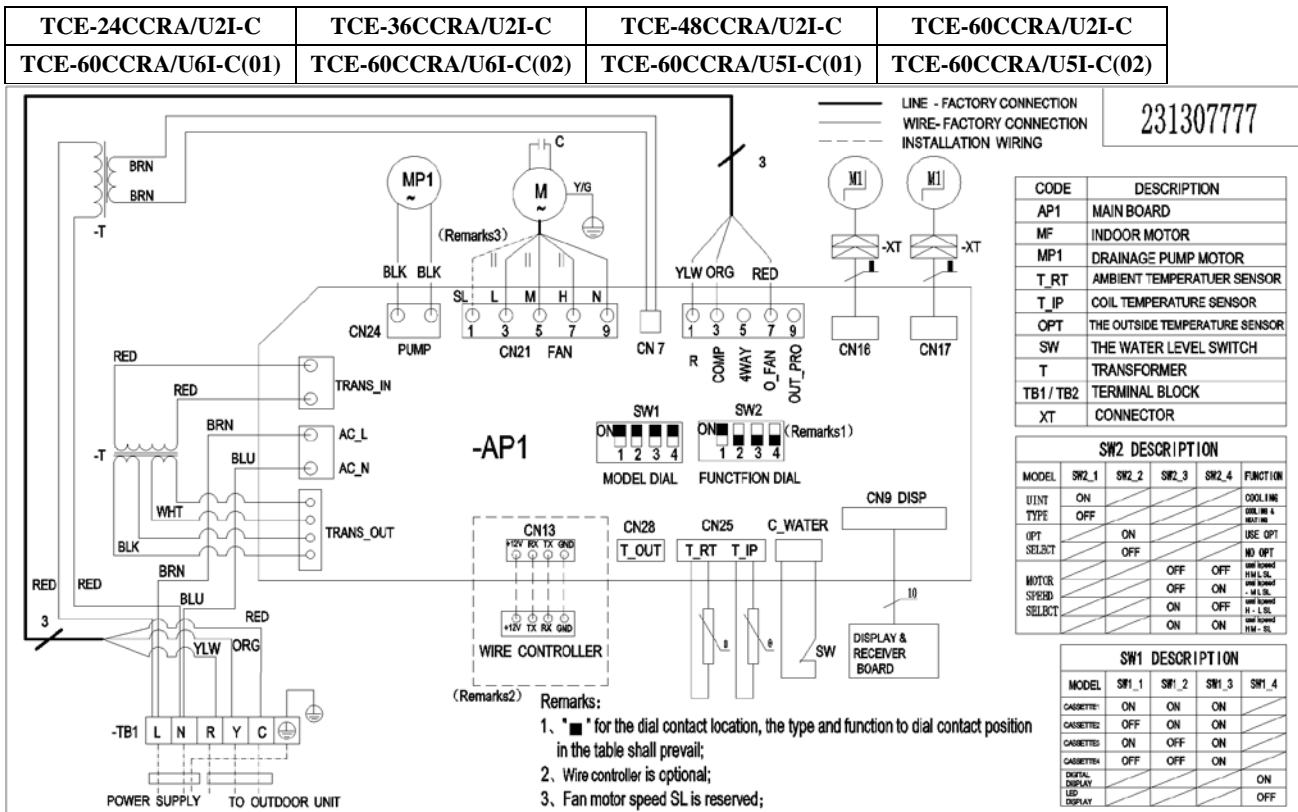
TCE-24ZHRA/U2-C(01) TCE-36ZHRA/U2I-C(01) TCE-60ZHRA/U6I-C(01) TCE-60ZHRA/U5I-C(01)



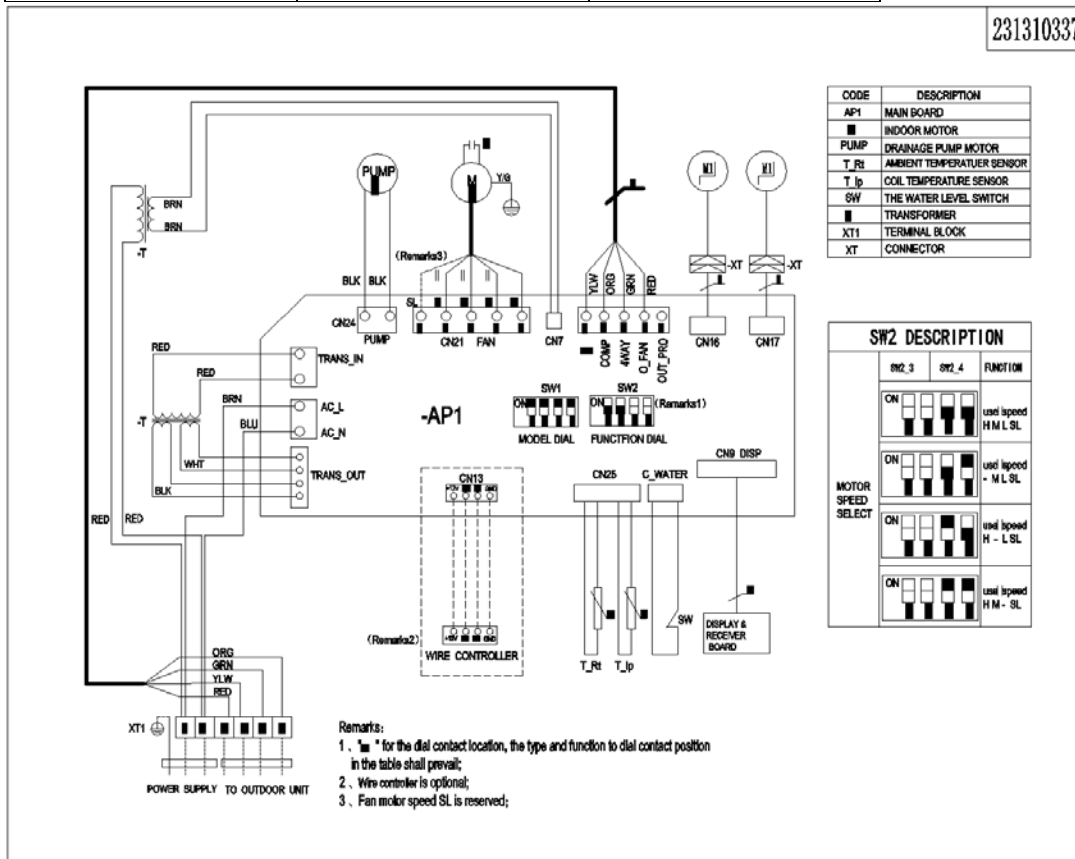
TCE-36ZCRA/U2I-C(01)



## 5.2 Cassette

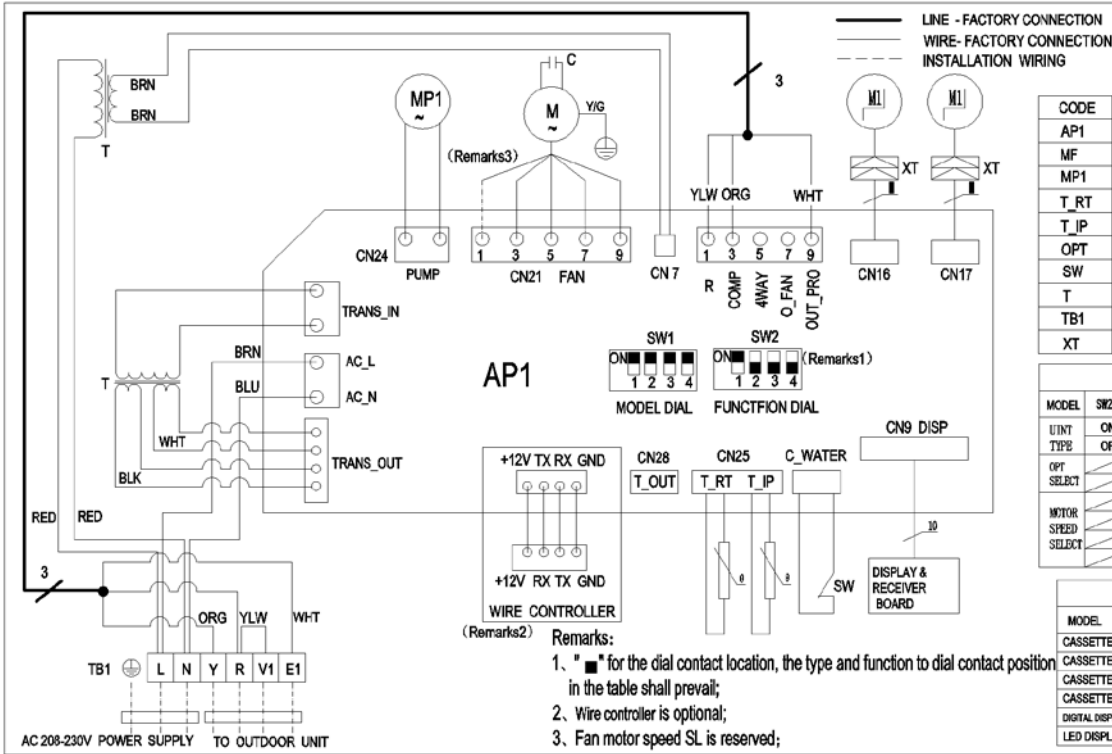


TCE-36CHRA/U2I-C(01)	TCE-60CHRA/U6I-C(01)	TCE-60CHRA/U5I-C(01)
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TCE-36CCRA/U2I-C(01)

85008-004012



— LINE - FACTORY CONNECTION  
 - - - WIRE - FACTORY CONNECTION  
 - - - INSTALLATION WIRING

CODE	DESCRIPTION
AP1	MAIN BOARD
MF	INDOOR MOTOR
MP1	DRAINAGE PUMP MOTOR
T_RT	AMBIENT TEMPERATURE SENSOR
T_IP	COIL TEMPERATURE SENSOR
OPT	THE OUTSIDE TEMPERATURE SENSOR
SW	THE WATER LEVEL SWITCH
T	TRANSFORMER
TB1	TERMINAL BLOCK
XT	CONNECTOR

SW2 DESCRIPTION					
MODEL	SW2_1	SW2_2	SW2_3	SW2_4	FUNCTION
U/INT	ON				COOLING
TYPE	OFF				HEATING
OPT SELECT		ON			USE OPT
		OFF			NO OPT
MOTOR SPEED SELECT			OFF	OFF	H - M - L - SL
			OFF	ON	- M - L - SL
			ON	OFF	H - L - SL
			ON	ON	H - M - SL

SW1 DESCRIPTION					
MODEL	SW1_1	SW1_2	SW1_3	SW1_4	FUNCTION
CASSETTE1	ON	ON	ON		
CASSETTE2	OFF	ON	ON		
CASSETTE3	ON	OFF	ON		
CASSETTE4	OFF	OFF	ON		
DIGITAL DISPLAY				ON	
LED DISPLAY					OFF

Remarks:  
 1. "■" for the dial contact location, the type and function to dial contact position in the table shall prevail;  
 2. Wire controller is optional;  
 3. Fan motor speed SL is reserved;



## 6. Electric Characteristics

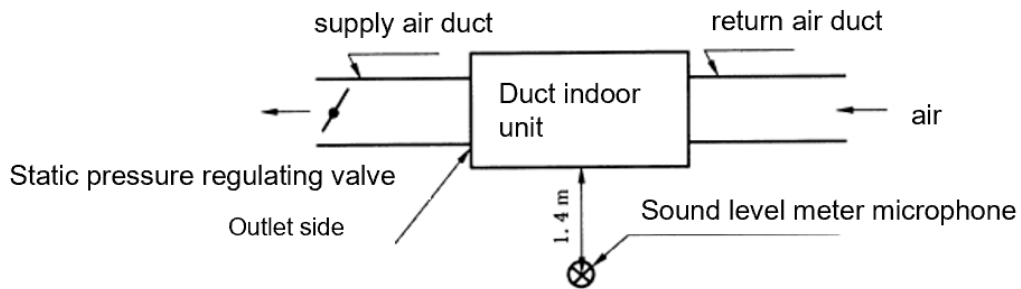
Ceiling & floor	Indoor Units				Indoor Fan Motor
Model	Hz	Voltage	Min.	Max.	KW
TCE-24ZCRA/U2I-C(01)	60	220-230V	198V	242V	0.149
TCE-24ZCRA/U2I-C	60	220-230V	198V	242V	0.14
TCE-36ZCRA/U2I-C(03)	60	220-230V	198V	242V	0.242
TCE-36ZCRA/U2I-C(01)	60	220-230V	198V	242V	0.242
TCE-48ZCRA/U2I-C	60	220-230V	198V	242V	0.18*2
TCE-60ZCRA/U2I-C	60	220-230V	198V	242V	0.18*2
TCE-48ZCRA/U6I-C	60	220-230V	198V	242V	0.196*2
TCE-60ZCRA/U6I-C	60	220-230V	198V	242V	0.196*2
TCE-60ZCRA/U6I-C(01)	60	220-230V	198V	242V	0.18*2
TCE-60ZCRA/U6I-C(02)	60	220-230V	198V	242V	0.18*2
TCE-48ZCRA/U5I-C	60	380V-420V	342V	440V	0.196*2
TCE-60ZCRA/U5I-C	60	380V-420V	342V	440V	0.196*2
TCE-60ZCRA/U5I-C	60	380V-420V	342V	440V	0.18*2
TCE-60ZCRA/U5I-C(02)	60	380V-420V	342V	440V	0.18*2
TCE-24ZHRA/U2-C(01)	60	220-230V	198V	242V	0.17
TCE-36ZHRA/U2I-C (01)	60	220-230V	198V	242V	0.279
TCE-60ZHRA/U6I-C(01)	60	220-230V	198V	242V	0.222*2
TCE-60ZHRA/U5I-C(01)	60	380V-420V	342V	440V	0.222*2

Cassette	Indoor Units				Indoor Fan Motor
Model	Hz	KW	KW	Max.	kW
TCE-24CCRA/U2I-C	60	220-230V	198V	242V	0.122
TCE-36CCRA/U2I-C	60	220-230V	198V	242V	0.202
TCE-36CCRA/U2I-C(01)	60	220-230V	198V	242V	0.202
TCE-48CCRA/U2I-C	60	220-230V	198V	242V	0.202
TCE-48CCRA/U5I-C	60	220-230V	198V	242V	0.177
TCE-48CCRA/U6I-C	60	220-230V	198V	242V	0.177
TCE-60CCRA/U2I-C	60	220-230V	198V	242V	0.202
TCE-60CCRA/U6I-C(01)	60	220-230V	198V	242V	0.202
TCE-60CCRA/U6I-C(02)	60	220-230V	198V	242V	0.202
TCE-60CCRA/U5I-C(01)	60	380V-420V	342V	440V	0.202
TCE-60CCRA/U5I-C(02)	60	380V-420V	342V	440V	0.202
TCE-36CHRA/U2I-C(01)	60	220-230V	198V	242V	0.202
TCE-60CHRA/U6I-C(01)	60	220-230V	198V	242V	0.202
TCE-60CHRA/U5I-C(01)	60	380V-420V	342V	440V	0.202

Cassette	Indoor Units				Indoor Fan Motor
Model	Hz	Voltage	Min.	Max.	kW
TCE-24D2CRA/U2-C(01)	60	220-230V	198V	242V	0.17
TCE-24D2CRA/U2-C	60	220-230V	198V	242V	0.17
TCE-36D2CRA/U2I-C	60	220-230V	198V	242V	0.14
TCE-48D2CRA/U2I-C	60	220-230V	198V	242V	0.17
TCE-60D2CRA/U2I-C	60	220-230V	198V	242V	0.18

## 7.Sound Levels

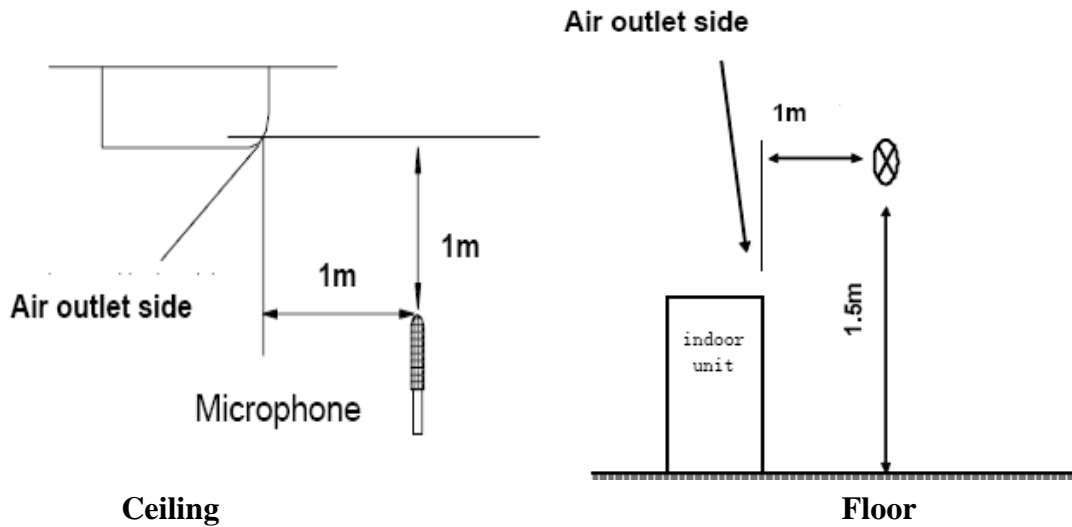
### a) Medium pressure duct



The test position is in the center below the vertical body

Duct Model	Noise level dB(A)		
	H	M	L
TCE-36D2CRA/U2I-C	51	49	47
TCE-48D2CRA/U2I-C	52	50	48
TCE-60D2CRA/U2I-C	52	50	48
TCE-24D2CRA/U2I-C	52	50	48

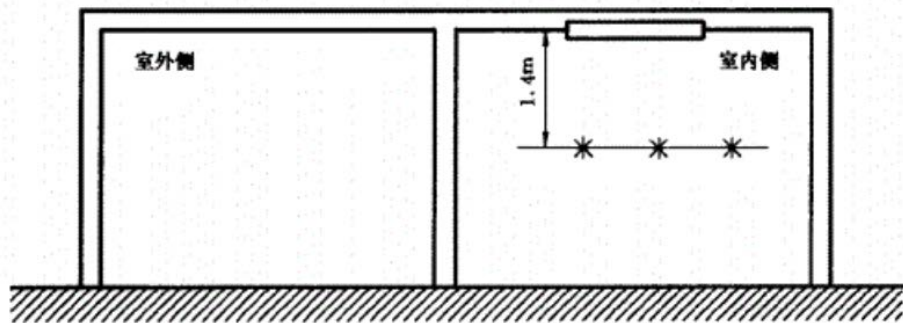
### b) Ceiling & floor



Ceiling&floor Model	Noise level dB(A)		
	H	M	L
TCE-24ZCRA/U2I-C	45	43	40
TCE-36ZCRA/U2I-C	51	50	49
TCE-36ZCRA/U2I-C (01)	53	49	47
TCE-48ZCRA/U2I	53	51	48
TCB-60ZCRA/U2I-C	53	51	48
TCE-60ZCRA/U6-C(01)	54	52	50
TCB-60ZCRA/U5I-C	54	52	50
TCE-60ZCRA/U5I-C(02)	55	53	51
TCE-60ZCRA/U6I-C(02)	55	53	51

TCE-24ZCRA/U2I-C(01)	53	49	46
TCE-48ZCRA/U6I-C	53	51	48
TCE-60ZCRA/U6I-C	53	51	48
TCE-48ZCRA/U5I-C	53	51	48
TCE-60ZCRA/U5I-C	53	51	48
TCE-36ZHRA/U2I-C (01)	53	50	48
TCE-60ZHRA/U5I-C(01)	58	56	55
TCE-60ZHRA/U6I-C(01)	58	56	55
TCE-24ZHRA/U2I-C	53	49	46

## c) cassette



Cassette Model	Noise level dB(A)		
	H	M	L
TCE-24CCRA/U2I-C	44	39	36
TCE-36CCRA/U2I-C	47	44	42
TCE-36CCRA/U2I-C(01)	47	45	43
TCE-48CCRA/U2I-C	47	44	42
TCE-48CCRA/U6I-C	48	45	39
TCE-60CCRA/U2I-C	47	44	42
TCE-60CCRA/U6I-C(01)	46	43	41
TCE-60CCRA/U5I-C(01)	46	43	41
TCE-60CCRA/U5I-C(02)	47	44	42
TCE-60CCRA/U6I-C(02)	47	44	42
TCE-36CHRA/U2I-C(01)	46	43	41
TCE-60CHRA/U5I-C(01)	46	43	41
TCE-60CHRA/U6I-C(01)	46	43	41

# 8. The Specification of Wiring

## 8.1 Ceiling & Floor

Model		TCE-24ZCRA/U2-C(01)	TCE-24ZCRA/U2-C	TCE-36ZCRA/U2-C(03)	TCE-36ZCRA/U2-C(01)	
Indoor power supply	V/Ph/Hz	220~240/1/50				
Outdoor power supply	V/Ph/Hz	220~240/1/50				
Connection wiring	Outdoor Power Supply	Power supply individually for indoor and outdoor				
	Power wiring for indoor unit	mm <sup>2</sup>	3×0.75	3×0.75	3×0.75	3×0.75
	Power wiring for outdoor unit	mm <sup>2</sup>	3×4.0	3×4.0	3×4.0	3×4.0
	signal wire	mm <sup>2</sup>	3×0.75	3×0.75	3×0.75	4×0.75

Model		TCE-24ZHRA/U2-C	TCE-36ZHRA/U2-C(01)	TCE-60ZHRA/U6-C(01)	TCE-60ZHRA/U5-C(01)	
Indoor power supply	V/Ph/Hz	220~240/1/50				
Outdoor power supply	V/Ph/Hz	220~240/1/50				
Connection wiring	Outdoor Power Supply	Power supply individually for indoor and outdoor				
	Power wiring for indoor unit	mm <sup>2</sup>	3×0.75	3×0.75	3×0.75	3×0.75
	Power wiring for outdoor unit	mm <sup>2</sup>	3×4.0	3×4.0	4×2.5	5×4
	signal wire	mm <sup>2</sup>	4×0.75	4×0.75	4×0.75	4×0.75

Model		TCE-48ZCRA/U6-C	TCE-48ZCRA/U5-C	TCE-48ZCRA/U2-C(04)	
Indoor power supply	V/Ph/Hz	220~240/1/50			
Outdoor power supply	V/Ph/Hz	220~240/3/50	380~415/3/50	220~240/1/50	
Connection wiring	Outdoor Power Supply	Power supply individually for indoor and outdoor			
	Power wiring for indoor unit	mm <sup>2</sup>	3×0.75	3×0.75	3×0.75
	Power wiring for outdoor unit	mm <sup>2</sup>	4×4.0	5×2.5	3×6.0
	signal wire	mm <sup>2</sup>	3×0.75	3×0.75	3×0.75

Model		TCE-60ZCRA/U5-C	TCE-60ZCRA/U5-C	TCE-60ZCRA/U5-C(02)
Indoor power supply	V/Ph/Hz	220~240/1/50		
Outdoor power supply	V/Ph/Hz	380~415/3/50		
Connection wiring	Outdoor Power Supply	Power supply individually for indoor and outdoor		
	Power wiring for indoor unit	mm <sup>2</sup>	3×0.75	
	Power wiring for outdoor unit	mm <sup>2</sup>	5×2.5	
	signal wire	mm <sup>2</sup>	3×0.75	

Model		TCE-60ZCRA/U6-C(01)	TCE-60ZCRA/U6-C(02)	TCE-60CA/U60-C(02)	TCE-60ZCRA/U2-C(04)
Indoor power supply	V/Ph/Hz	220~240/1/50			
Outdoor power supply	V/Ph/Hz	380~415/3/50			220~240/1/50
Connection wiring	Outdoor Power Supply	Power supply individually for indoor and outdoor			
	Power wiring for indoor unit	mm <sup>2</sup>	3×0.75		3×0.75
	Power wiring for outdoor unit	mm <sup>2</sup>	4×4.0		3×6.0

	signal wire	mm <sup>2</sup>	3×0.75	3×0.75
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## 8.2 Cassette

Model		TCE-24CCRA/U2-C	TCE-36CCRA/U2-C	TCE-36CCRA/U2-C(01)
Indoor power supply		V/Ph/Hz	220~240/1/50	
Outdoor power supply		V/Ph/Hz	220~240/1/50	
Connection wiring	Outdoor Power Supply		Power supply individually for indoor and outdoor	
	Power wiring for indoor unit	mm <sup>2</sup>	3×0.75	
	Power wiring for outdoor unit	mm <sup>2</sup>	3×4.0	
	signal wire	mm <sup>2</sup>	3×0.75	

Model		TCE-48CCRA/U2-C(01)	TCE-48CCRA/U6-C	TCE-48CCRA/U5-C
Indoor power supply		V/Ph/Hz	220~240/1/50	
Outdoor power supply		V/Ph/Hz	220~240/1/50	220~240/3/50 380~415/3/50
Connection wiring	Outdoor Power Supply		Power supply individually for indoor and outdoor	
	Power wiring for indoor unit	mm <sup>2</sup>	3×0.75	3×0.75 3×0.75
	Power wiring for outdoor unit	mm <sup>2</sup>	3×6.0	4×4.0 5×2.5
	signal wire	mm <sup>2</sup>	3×0.75	3×0.75 3×0.75

Model		TCE-60CCRA/U2-C(01)	TCE-60CCRA/U6-C(01)	TCE-60CCRA/U6-C(02)
Indoor power supply		V/Ph/Hz	220~240/1/50	
Outdoor power supply		V/Ph/Hz	220~240/1/50	220~240/3/50
Connection wiring	Outdoor Power Supply		Power supply individually for indoor and outdoor	
	Power wiring for indoor unit	mm <sup>2</sup>	3×0.75	3×0.75 3×0.75
	Power wiring for outdoor unit	mm <sup>2</sup>	3×6.0	4×4.0 4×4.0
	signal wire	mm <sup>2</sup>	3×0.75	3×0.75 3×0.75

Model		TCE-60CCRA/U5-C(01)	TCE-60CCRA/U5-C
Indoor power supply		V/Ph/Hz	220~240/1/50
Outdoor power supply		V/Ph/Hz	380~415/3/50
Connection wiring	Outdoor Power Supply		Power supply individually for indoor and outdoor
	Power wiring for indoor unit	mm <sup>2</sup>	3×0.75 3×0.75
	Power wiring for outdoor unit	mm <sup>2</sup>	5×2.5 5×2.5
	signal wire	mm <sup>2</sup>	3×0.75 3×0.75

Model		TCE-36CHRA/U2-C(01)	TCE-60CHRA/U6-C(01)	TCE-60CHRA/U5-C(01)
Indoor power supply		V/Ph/Hz	220~240/1/50	
Outdoor power supply		V/Ph/Hz	220~240/1/50	220~240/3/50 380~415/3/50
Connection wiring	Outdoor Power Supply		Power supply individually for indoor and outdoor	
	Power wiring for indoor unit	mm <sup>2</sup>	3×0.75	3×0.75 3×0.75
	Power wiring for outdoor unit	mm <sup>2</sup>	3×4.0	4×2.5 5×4.0
	signal wire	mm <sup>2</sup>	4×0.75	4×0.75 4×0.75

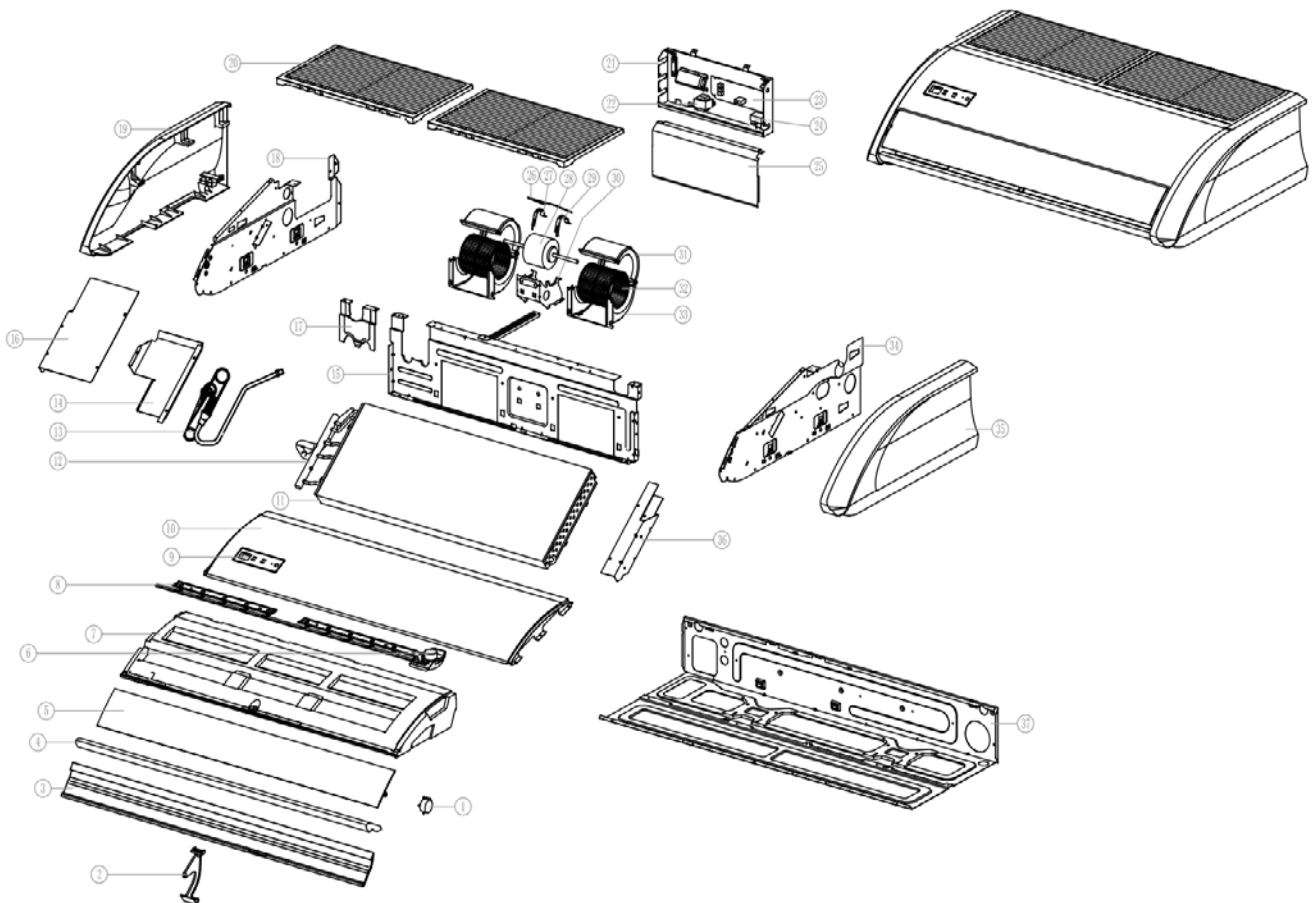
### 8.3 Duct

Model		TCE-24D2CRA/U2-C (01)	TCE-36D2CRA/U2-C	TCE-48D2CRA/U2-C (01)	TCE-60D2CRA/U 2-C(01)	
Indoor power supply	V/Ph/Hz	220~240/1/50				
Outdoor power supply	V/Ph/Hz	220~240/1/50				
Connecti on wiring	Outdoor Power Supply		Power supply individually for indoor and outdoor			
	Power wiring for indoor unit	mm <sup>2</sup>	3×0.75	3×0.75	3×0.75	3×0.75
	Power wiring for outdoor unit	mm <sup>2</sup>	3×4.0	3×4.0	3×6.0	3×6.0
	signal wire	mm <sup>2</sup>	3×0.75	3×0.75	3×0.75	3×0.75

## 9. Explosive view

### a. Ceiling&floor

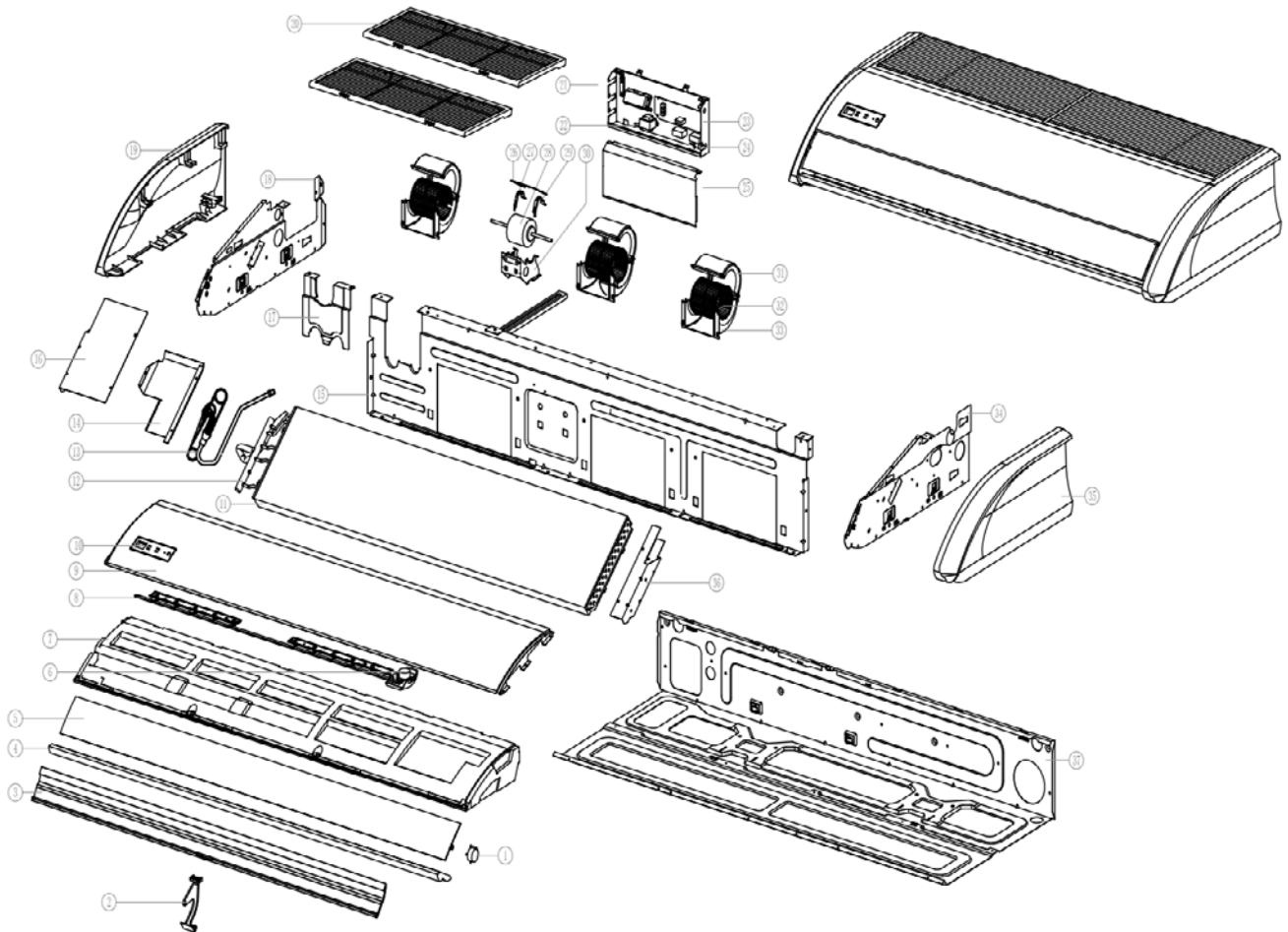
TCE-24ZCRA/U2I-C(01)	TCE-24ZCRA/U2I-C	TCE-24ZHRA/U2-C(01)
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No	Part Name	Q'ty	Remark
1	Step motor	1	
2	Air guide bar support	1	
3	Supplementary plate	1	
4	Outlet foam	1	

5	wind deflector	1	
6	Step motor	1	
7	Draining tray assembly	1	
8	vane assembly	1	
9	Display PCB	1	
10	Front panel	1	
11	Evaporator assembly	1	
12	Output tube assembly	1	
13	Input tube assembly	1	
14	Support of the bedside of the evaporator 3	1	
15	Middle plate assembly	1	
16	Support of the bedside of the evaporator 2	1	
17	Valve board	1	
18	Right board assembly	1	
19	Right panel	1	
20	Air inlet grill assembly	2	
21	Electric box assembly	1	
22	Transformer	1	
23	Main PCB	1	
24	Indoor fan capacitor	1	
25	Electric box cover	1	
26	Complement of the motor base	1	
27	Motor clip (Right)	1	
28	Indoor fan motor	1	
29	Motor Clip (Left)	1	
30	Motor base	1	
31	Fan housing upper	2	
32	Fan blower	2	
33	Fan housing lower	2	
34	Left board assembly	1	
35	Left panel	1	
36	Support of the bedside of the evaporator 1	1	
37	Base board	1	
38	Remote	1	Not shown in Explosion view
39	Room sensor	1	
40	Pipe sensor	1	
41	Terminal	1	

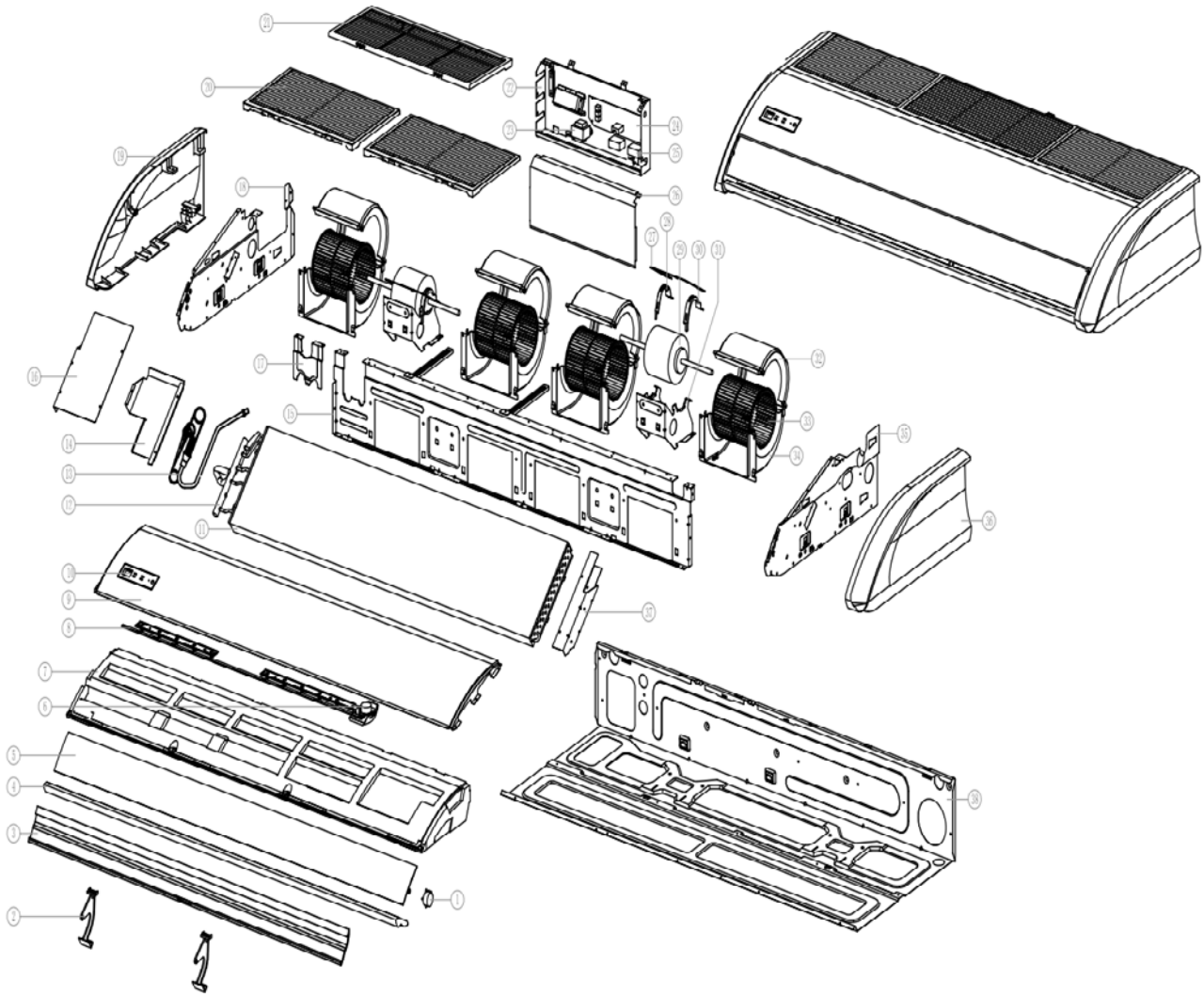
TCE-36ZCRA/U2I-C(03)	TCE-36ZCRA/U2I-C(01)	TCE-36ZHRA/U2I-C (01)
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No	Part Name	Q'ty	Remark
1	Step motor	1	
2	Air guide bar support	1	
3	Supplementary plate	1	
4	Outlet foam	1	
5	wind deflector	1	
6	Step motor	1	
7	Draining tray assembly	1	
8	vane assembly	1	
9	Front panel	1	
10	Display PCB	1	
11	Evaporator assembly	1	
12	Output tube assembly	1	
13	Input tube assembly	1	
14	Support of the bedside of the evaporator 3	1	
15	Middle plate assembly	1	
16	Support of the bedside of the evaporator 2	1	
17	Valve board	1	
18	Right board assembly	1	

19	Right panel	1	
20	Air inlet grill assembly	2	
21	Electric box assembly	1	
22	Transformer	1	
23	Main PCB	1	
24	Indoor fan capacitor	1	
25	Electric box cover	1	
26	Complement of the motor base	1	
27	Motor clip (Right)	1	
28	Indoor fan motor	1	
29	Motor Clip (Left)	1	
30	Motor base	1	
31	Fan housing upper	3	
32	Fan blower	3	
33	Fan housing lower	3	
34	Left board assembly	1	
35	Left panel	1	
36	Support of the bedside of the evaporator 1	1	
37	Base board	1	
38	Remote	1	Not shown in Explosion view
39	Room sensor	1	
40	Pipe sensor	1	
41	Terminal	1	

TCE-48ZCRA/U2I-C	TCE-48ZCRA/U6I-C	TCE-60ZCRA/U6I-C(01)	TCE-48ZCRA/U5I-C
TCE-60ZCRA/U2I-C	TCE-60ZCRA/U6I-C	TCE-60ZCRA/U6I-C(02)	TCE-60ZCRA/U5I-C
TCB-60ZCRA/U5I-C	TCE-60ZCRA/U5I-C(02)	TCE-60ZHRA/U6I-C(01)	TCE-60ZHRA/U5I-C(01)

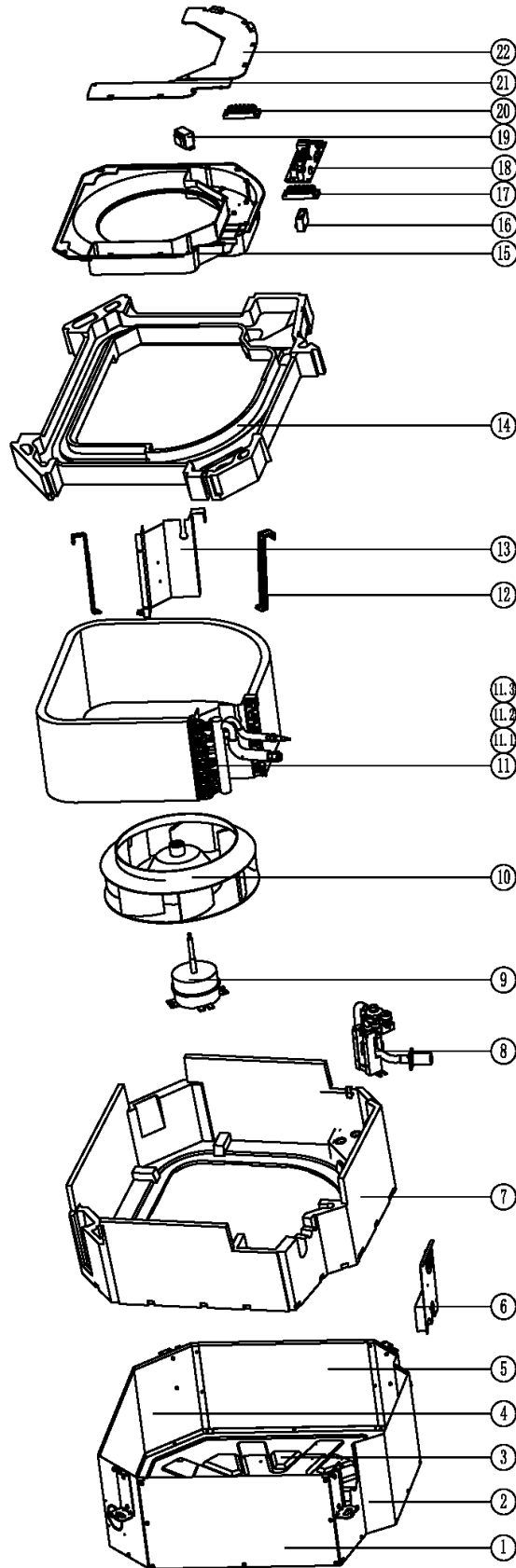


No	Part Name	Q'ty	Remark
1	Step motor	1	
2	Air guide bar support	2	
3	Supplementary plate	1	
4	Outlet foam	1	
5	wind deflector	1	
6	Step motor	1	
7	Draining tray assembly	1	
8	vane assembly	1	
9	Front panel	1	
10	Display PCB	1	
11	Evaporator assembly	1	
12	Output tube assembly	1	
13	Input tube assembly	1	

14	Support of the bedside of the evaporator 3	1	
15	Middle plate assembly	1	
16	Support of the bedside of the evaporator 2	1	
17	Valve board	1	
18	Right board assembly	1	
19	Right panel	1	
20	Air inlet grill assembly	2	
21	Air inlet grill assembly	1	
22	Electric box assembly	1	
23	Transformer	1	
24	Main PCB	1	
25	Indoor fan capacitor	2	
26	Electric box cover	1	
27	Complement of the motor base	2	
28	Motor clip (Right)	2	
29	Indoor fan motor	2	
30	Motor Clip (Left)	2	
31	Motor base	2	
32	Fan housing upper	4	
33	Fan blower	4	
34	Fan housing lower	4	
35	Left board assembly	1	
36	Left panel	1	
37	Support of the bedside of the evaporator 1	1	
38	Base board	1	
39	Remote	1	Not shown in Explosion view
40	Room sensor	1	
41	Pipe sensor	1	
42	Terminal	1	

**b. Cassette**

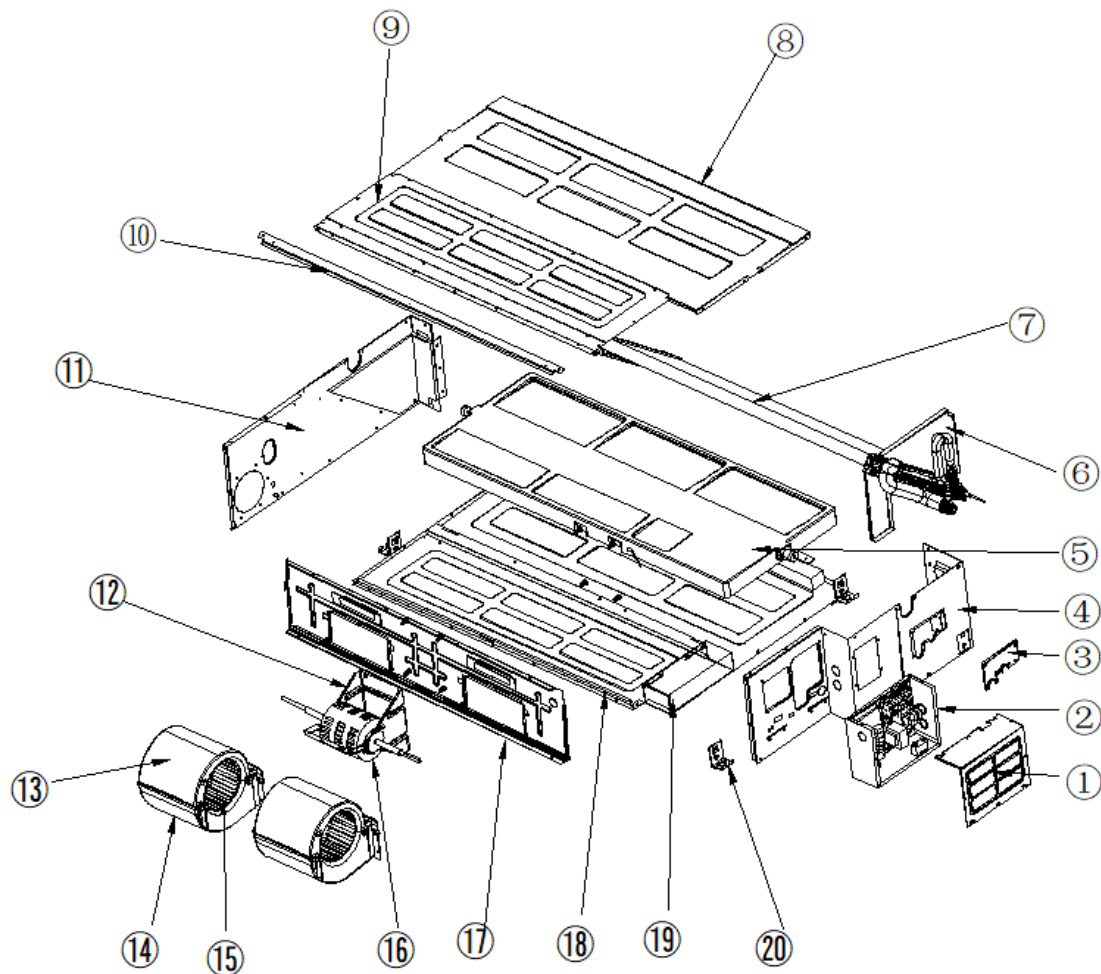
TCE-24CCRA/U2I-C	TCE-36CCRA/U2I-C	TCE-36CCRA/U2I-C(01)	TCE-48CCRA/U2I-C
TCE-60CCRA/U2I-C	TCE-60CCRA/U6I-C(01)	TCE-60CCRA/U6I-C(02)	TCE-60CCRA/U5I-C(01)
TCE-60CCRA/U5I-C(02)	TCE-36CHRA/U2I-C(01)	TCE-60CHRA/U6I-C(01)	TCE-60CHRA/U5I-C(01)



NO.	Part Name	Q'ty	Remark
1	Left plate assembly	1	
2	Front plate assembly	1	
3	Base board assembly	1	
4	Back plate assembly	1	
5	Right plate assembly	1	
6	Valve board	1	
7	base foam	1	
8	Water pump assembly	1	
8.1	Suport of the pump	1	
8.2	Water pump	1	
8.3	screws	8	
8.4	Water level switch	1	
8.5	Water pump rubber gasket	3	
8.6	Drainpipe and nozzle assembly	1	
9	Indoor motor	1	
10	Indoor fan	1	
11	Evaporator	1	
11.1	band	2	
11.2	temperture sleeve	1	
11.3	Temperature sensor fixed card	1	
11.4	Evaporator assembly	1	
11.5	Input pipe	1	
11.6	Outtake pipe	1	
11.7	sponge	1	
11.8	Antivibration rubber	1	
12	Hook fixture for evaporator	2	
13	Evaporator fixed plate assembly	1	
14	Drain pan	1	
15	Electrical box assembly	1	
16	Capacitor of indoor motor	1	
17	Terminal	1	
18	Indoormain PCB	1	
19	Indoor transformer	1	
20	Terminal	1	
21	Short Electric box cover	1	
22	Long Electric box cover	1	
23	Indoor temp sensor	1	Not shown in Explosion view

### c. Duct

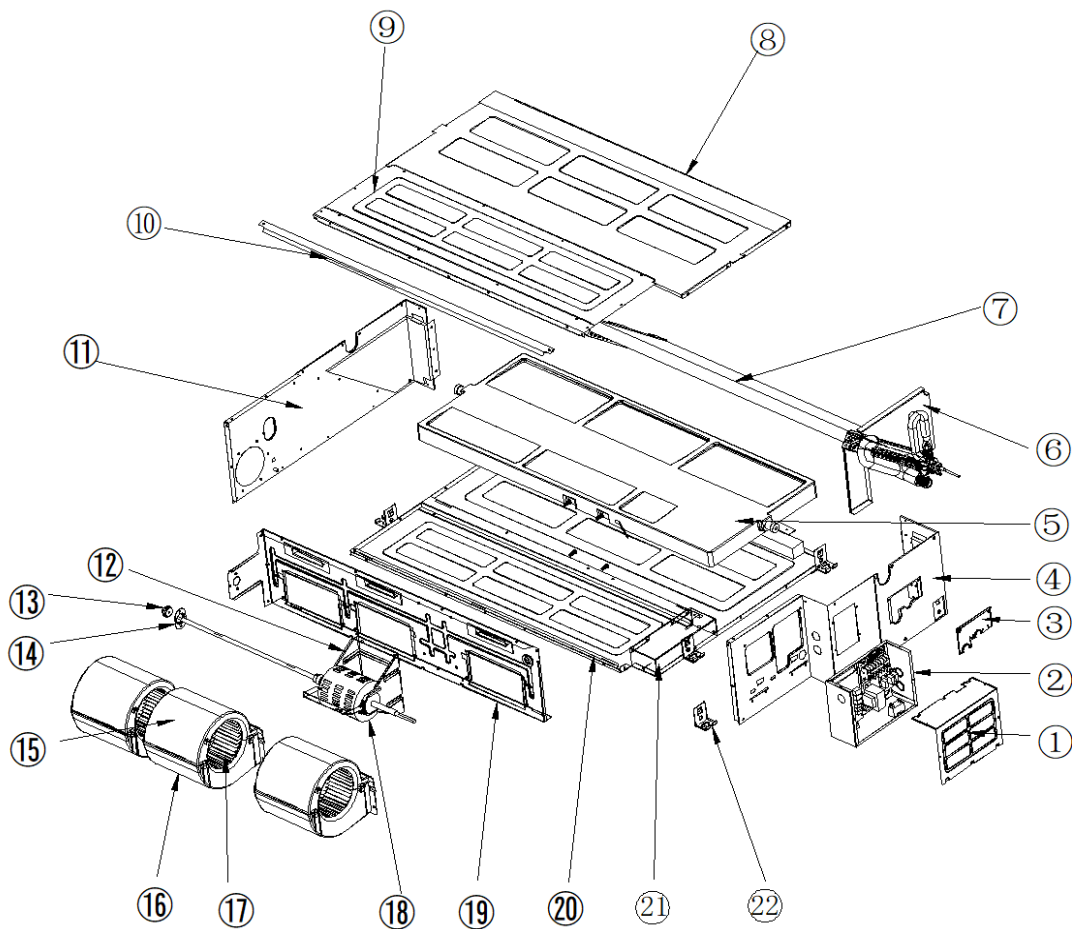
TCE-24D2CRA/U2-C(01)	TCE-36D2CRA/U2I-C(01)	TCE-36D2CRA/U2I-C
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No	Part Name	Q'ty	Remark
1	Electronic box cover	1	
2	Electronic box	1	
3	Input and output pipe sealing plate assembly	1	
4	Right plate assembly	1	
5	Drain tray assembly	1	
6	Evaporator sealing plate assembly	1	
7	Evaporator subassembly	1	
8	Base plate	1	
9	Air inlet plate	1	
10	Air inlet bar	1	
11	Left plate assembly	1	
12	Supporter for fan motor	1	
13	Up volute casing	2	
14	Down volute casing	2	
15	Indoor fan	2	

16	Indoor fan motor	1	
17	Median plate	1	
18	Top cover	1	
19	Hook base	1	
20	Hook	4	
21	Main PCB	1	Not shown in Explosion view
22	Transformer	1	
23	Indoor fan capacitor	1	
24	Terminal	1	
25	Room sensor	1	
26	Pipe sensor	1	

TCE-48D2CRA/U2I-C	TCE-60D2CRA/U2I-C
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No	Part Name	Q'ty	Remark
1	Electronic box cover	1	
2	Electronic box	1	
3	Input and output pipe sealing plate assembly	1	
4	Right plate assembly	1	
5	Drain tray assembly	1	

6	Evaporator sealing plate assembly	1	
7	Evaporator subassembly	1	
8	Base plate	1	
9	Air inlet plate	1	
10	Air inlet bar	1	
11	Left plate assembly	1	
12	Supporter for fan motor	1	
13	Bearing	1	
14	Bearing cover	1	
15	Up volute casing	3	
16	Down volute casing	3	
17	Indoor fan	3	
18	Indoor fan motor	1	
19	Median plate	1	
20	Top cover	1	
21	Hook base	1	
22	Hook	4	
23	Main PCB	1	Not shown in Explosion view
24	Transformer	1	
25	Indoor fan capacitor	1	
26	Terminal	1	
27	Room sensor	1	
28	Pipe sensor	1	

# Part 3 Outdoor Unit

## 1. Specifications

<b>Model</b>		<b>TCE-24CA/U2O-C</b>	
<b>Code</b>		<b>Z2U30307000451</b>	
Power supply		V/Ph/Hz	208-230V~/60Hz
Max. input consumption		W	3350
Max. current		A	18.2
Compressor	Brand	HIGHLY	
	Model	ASH232DG-C8DU	
	Type	Rotary	
	Capacity	W	6850
	Input	W	2225
	Rated current(RLA)	A	9.9
	Locked rotor Amp(LRA)	A	50
	Thermal protector	internal	
	Capacitor	mF	55
	Refrigerant oil	ml	570
Outdoor coil	Number of row	1	
	Fin spacing	mm	1.5
	Fin material	Louver or Corrugated Fin	
	Tube outside diameter	mm	φ7
	Tube material	Innergroover tube type	
	Coil length x height x width	mm	1502×588×12.7
	Number of circuit	3	
Outdoor fan motor	Model	Y7S623A803/SJ86A	
	Input	W	142
	Output	W	86
	Capacitor	mF	6.0
	Speed	rpm	1080
Outdoor air flow		m <sup>3</sup> /h	4000
Outdoor noise level		dB(A)	60
Outdoor dimension	Unit (WxHxD)	mm	554×633×554
	Packing (WxHxD)	mm	584×655×584
Outdoor weight	Net	kg	44.5
	Gross	kg	48.5
Refrigerant	Type	R410A	
	Charge	g	1600
Refrigerant pipe	Liquid side	mm	9.52
	Gas side	mm	15.88
	Max. refrigerant pipe length	m	30
	Max. difference in level	m	15
Ambient temperature range	Cooling	°C	21 ~ 43
	Heating	°C	/

<b>Model</b>		<b>TCE-36CRA/U2O-C(03)</b>	<b>TCE-36CA/U2O-C(01)</b>
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Code			Z2U30307000192	Z1U30307000157
Power supply		V/Ph/Hz	208-230V/1Ph/60Hz	220V~/60Hz/1P
Max. input consumption		W	5000	5200
Max. current		A	22.0	28.0
Compressor	Brand		HITACHI	HIGHLY
	Model		ATH356UN-C9EU	ATH356UN-C9EU
	Type		Rotary	Rotary
	Capacity	W	10550	10550
	Input	W	3480	3480
	Rated current(RLA)	A	16.8	16.8
	Locked rotor Amp(LRA)	A	90	/
	Thermal protector		internal	internal
	Capacitor	mF	80	80
	Refrigerant oil	ml	1850	800
Outdoor coil	Number of row		1	1
	Fin spacing	mm	1.5	1.5
	Fin material		Louver or Corrugated Fin	Louver or Corrugated Fin
	Tube outside diameter	mm	φ7	φ7
	Tube material		Innergroover tube type	Innergroover tube type
	Coil length x height x width	mm	1395×714×12.7	1441×714×12.7
	Number of circuit		3	3
Outdoor fan motor	Model		Y7S623A803/SJ86A	Y7S623A803/SJ86A
	Input	W	142	142
	Output	W	86	86
	Capacitor	mF	6.0	6.0
	Speed	rpm	1080	1080
Outdoor air flow		m <sup>3</sup> /h	4000	3300
Outdoor noise level		dB(A)	60	64
Outdoor dimension	Unit (WxHxD)	mm	554×759×554	554×554×759
	Packing (WxHxD)	mm	584×782×584	584×584×782
Outdoor weight	Net	kg	50.0	50
	Gross	kg	54.0	53
Refrigerant	Type		R410A	R410A
	Charge	g	1630	1630
Refrigerant pipe	Liquid side	mm	9.52	9.52
	Gas side	mm	19.05	19.05
	Max. refrigerant pipe length	m	30	25
	Max. difference in level	m	20	15
Ambient temperature range	Cooling	°C	21 ~ 43	21 ~ 43
	Heating	°C	/	/

Model			TCE-48CRA/U2O-C(04)	TCE-48CA/U6O-C
Code			Z2U30307000347	Z2U30307000478
Power supply		V/Ph/Hz	208-230V/1Ph/60Hz	220V~/60Hz/3P
Max. input consumption		W	7500	6180

Max. current		A	36.0	19.4
Compressor	Brand		SANYO	HIGHLY
	Model		C-SBP140H16A	ATE470UN3Q9PP
	Type		Scroll	Rotary
	Capacity	W	14200	14760
	Input	W	4950	4830
	Rated current(RLA)	A	24.5	14.4
	Locked rotor Amp(LRA)	A	124	118
	Thermal protector		internal	internal
	Capacitor	mF	60	/
	Refrigerant oil	ml	1400	1600
Outdoor coil	Number of row		1	1
	Fin spacing	mm	1.5	1.5
	Fin material		Louver or Corrugated Fin	Louver or Corrugated Fin
	Tube outside diameter	mm	φ7	φ7
	Tube material		Innergroover tube type	Innergroover tube type
	Coil length x height x width	mm	2141×798×12.7	2187×798×12.7
	Number of circuit		4	5
Outdoor fan motor	Model		Y7S623C5130/SJ217A	Y7S623C5130/SJ217A
	Input	W	368	368
	Output	W	217	217
	Capacitor	mF	12	12.0
	Speed	rpm	1100	1100
Outdoor air flow		m <sup>3</sup> /h	6900	6900
Outdoor noise level		dB(A)	62	64
Outdoor dimension	Unit (WxHxD)	mm	740×843×740	740×843×740
	Packing (WxHxD)	mm	769×865×769	769×865×769
Outdoor weight	Net	kg	77	74
	Gross	kg	82	78
Refrigerant	Type		R410A	R410A
	Charge	g	2600	2250
Refrigerant pipe	Liquid side	mm	9.52	9.52
	Gas side	mm	19.05	19.05
	Max. refrigerant pipe length	m	50	30
	Max. difference in level	m	30	20
Ambient temperature range	Cooling	°C	21 ~ 43	21 ~ 43
	Heating	°C	/	/

<b>Model</b>		<b>TCE-60CA/U2O-C(01)</b>	<b>TCE-60CA/U6O-C(01)</b>
<b>Code</b>		<b>Z2U30307000412</b>	<b>Z2U30307000413</b>
Power supply	V/Ph/Hz	208-230V/1Ph/60Hz	220V/3Ph/60Hz/3P
Max. input consumption	W	8000	7350
Max. current	A	40.0	24.0

Compressor	Brand		SANYO	Copeland
	Model		C-SBP160H16A	ZP54KUE-TF5-52E
	Type		Scroll	Scroll
	Capacity	W	13608	15900
	Input	W	5143	4950
	Rated current(RLA)	A	29.1	15.1
	Locked rotor Amp(LRA)	A	124	137
	Thermal protector		internal	internal
	Capacitor	mF	60	/
	Refrigerant oil	ml	1400	1500
Outdoor coil	Number of row		1	1
	Fin spacing	mm	1.5	1.5
	Fin material		Louver or Corrugated Fin	Louver or Corrugated Fin
	Tube outside diameter	mm	φ7	φ7
	Tube material		Innergroover tube type	Innergroover tube type
	Coil length x height x width	mm	2141×798×12.7	2141×798×12.7
	Number of circuit		4	4
Outdoor fan motor	Model		Y7S623C5130/SJ217A	Y7S623C5130/SJ217A
	Input	W	368	368
	Output	W	217	217
	Capacitor	mF	12.0	12.0
	Speed	rpm	1100	1100
Outdoor air flow		m <sup>3</sup> /h	6900	6900
Outdoor noise level		dB(A)	62	62
Outdoor dimension	Unit (WxHxD)	mm	740×843×740	740×843×740
	Packing (WxHxD)	mm	769×865×769	769×865×769
Outdoor weight	Net	kg	77	72
	Gross	kg	82	77.5
Refrigerant	Type		R410A	R410A
	Charge	g	2250	2250
Refrigerant pipe	Liquid side	mm	9.52	9.52
	Gas side	mm	19.05	19.05
	Max. refrigerant pipe length	m	50	50
	Max. difference in level	m	30	30
Ambient temperature range	Cooling	°C	21 ~ 43	21 ~ 43
	Heating	°C	/	/

<b>Model</b>		<b>TCE-60CA/U50-C(01)</b>	<b>TCE-60CA/U50-C(02)</b>
<b>Code</b>		<b>Z2U30307000270</b>	<b>Z1U30307000158</b>
Power supply	V/Ph/Hz	380-415V~/60Hz/3P	380V~/60Hz/3P
Max. input consumption	W	7500	6600
Max. current	A	13.0	12.0

Compressor	Brand		LG	HIGHLY
	Model		ABT054UMA	ATE498UM3Q9PK
	Type		Scroll	Rotary
	Capacity	W	15678	15400
	Input	W	4953	5120
	Rated current(RLA)	A	8.5	8.6
	Locked rotor Amp(LRA)	A	67	54
	Thermal protector		/	internal
	Capacitor	mF	/	/
	Refrigerant oil	ml	1360	1600
Outdoor coil	Number of row		1	1
	Fin spacing	mm	1.5	1.5
	Fin material		Louver or Corrugated Fin	Louver or Corrugated Fin
	Tube outside diameter	mm	φ7	φ7
	Tube material		Innergroover tube type	Innergroover tube type
	Coil length x height x width	mm	2141×798×12.7	2187×798×12.7
	Number of circuit		5	4
Outdoor fan motor	Model		Y7S623C5130/SJ217A	Y7S623C5130/SJ217A
	Input	W	368	368
	Output	W	217	217
	Capacitor	mF	12.0	12.0
	Speed	rpm	1100	1100
Outdoor air flow		m <sup>3</sup> /h	6900	7400
Outdoor noise level		dB(A)	63	66
Outdoor dimension	Unit (WxHxD)	mm	740×843×740	740×843×740
	Packing (WxHxD)	mm	769×865×769	769×865×769
Outdoor weight	Net	kg	77	74
	Gross	kg	82.5	78
Refrigerant	Type		R410A	R410A
	Charge	g	2250	2200
Refrigerant pipe	Liquid side	mm	9.52	9.52
	Gas side	mm	19.05	19.05
	Max. refrigerant pipe length	m	50	30
	Max. difference in level	m	30	20
Ambient temperature range	Cooling	°C	21 ~ 43	21 ~ 43
	Heating	°C	/	/

<b>Model</b>		<b>TCE-60CA/U6O-C(02)</b>	<b>TCE-24ZCRA/U2O(01)</b>
<b>Code</b>		<b>Z1U30307000159</b>	<b>Z2U30307000331</b>
Power supply	V/Ph/Hz	220V~/60Hz/3P	220-230V~/60Hz
Max. input consumption	W	6750	3500
Max. current	A	22.0	19.0

Compressor	Brand		HIGHLY	GMCC
	Model		ATE498UN3Q9PK	PA240M2C-3MTU2
	Type		Rotary	Rotary
	Capacity	W	15600	7115
	Input	W	5130	2395
	Rated current(RLA)	A	15.4	11.6
	Locked rotor Amp(LRA)	A	118	60
	Thermal protector		internal	internal
	Capacitor	mF	/	55
	Refrigerant oil	ml	1600	480
Outdoor coil	Number of row		1	2
	Fin spacing	mm	1.5	1.5
	Fin material		Louver or Corrugated Fin	Louver or Corrugated Fin
	Tube outside diameter	mm	φ7	φ7
	Tube material		Innergroover tube type	Innergroover tube type
	Coil length x height x width	mm	2187×798×12.7	1380×588×12.7
	Number of circuit		4	3
Outdoor fan motor	Model		Y7S623C5130/SJ217A	Y7S623A803/SJ86A
	Input	W	368	142.4
	Output	W	217	86
	Capacitor	mF	12.0	6
	Speed	rpm	1100	1050
Outdoor air flow		m <sup>3</sup> /h	7400	2760
Outdoor noise level		dB(A)	66	61
Outdoor dimension	Unit (WxHxD)	mm	740×843×740	554×633×554
	Packing (WxHxD)	mm	769×865×769	584×655×584
Outdoor weight	Net	kg	74.0	47.0
	Gross	kg	78.0	51.0
Refrigerant	Type		R410A	R410A
	Charge	g	2200	2220
Refrigerant pipe	Liquid side	mm	9.52	9.52
	Gas side	mm	19.05	15.88
	Max. refrigerant pipe length	m	30	25
	Max. difference in level	m	20	15
Ambient temperature range	Cooling	°C	21 ~ 43	21 ~ 43
	Heating	°C	/	/

<b>Model</b>		<b>Z2U30307000370</b>	<b>Z2U30307000334</b>
<b>Code</b>		<b>TCE-48CA/U60-C</b>	<b>TCE-60CA/U60-C</b>
Power supply	V/Ph/Hz	200-230V/3Ph~/60Hz	200-230V/3Ph~/60Hz
Max. input consumption	W	6000	7500
Max. current	A	18.0	23.0

Compressor	Brand		COPELAND	COPELAND
	Model		ZP44KUE-TF5-52E	ZP54KUE-TF5-52E
	Type		Scroll	Scroll
	Capacity	W	13010	15900
	Input	W	4070	5140
	Rated current(RLA)	A	12.9	15.3
	Locked rotor Amp(LRA)	A	131	119
	Thermal protector		/	/
	Capacitor	mF	/	/
	Refrigerant oil	ml	1242	1242
Outdoor coil	Number of row		2	2
	Fin spacing	mm	1.5	1.5
	Fin material		Louver or Corrugated Fin	Louver or Corrugated Fin
	Tube outside diameter	mm	φ7	φ7
	Tube material		Innergroover tube type	Innergroover tube type
	Coil length x height x width	mm	2095×714×25.4	2095×798×25.4
	Number of circuit		8	10
Outdoor fan motor	Model		Y7S623C5130/SJ217A	Y7S623C5130/SJ217A
	Input	W	400	400
	Output	W	265	265
	Capacitor	mF	12	12
	Speed	rpm	1100	1100
Outdoor air flow		m <sup>3</sup> /h	6900	6900
Outdoor noise level		dB(A)	63	63
Outdoor dimension	Unit (WxHxD)	mm	740×759×740	740×843×740
	Packing (WxHxD)	mm	769×782×769	769×865×769
Outdoor weight	Net	kg	81.5	83.5
	Gross	kg	86.5	89.0
Refrigerant	Type		R410A	R410A
	Charge	g	4000	4200
Refrigerant pipe	Liquid side	mm	9.52	9.52
	Gas side	mm	19.05	19.05
	Max. refrigerant pipe length	m	50	50
	Max. difference in level	m	30	30
Ambient temperature range	Cooling	°C	21 ~ 43	21 ~ 43
	Heating	°C	/	/

<b>Model</b>		<b>Z2U30307000335</b>	<b>Z2U30307000275</b>
<b>Code</b>		<b>TCE-48CA/U50-C</b>	<b>TCE-60CA/U50-C</b>
Power supply	V/Ph/Hz	380V/3Ph~/60Hz	380V/3Ph~/60Hz
Max. input consumption	W	6000	7300
Max. current	A	10.5	12.0

Compressor	Brand		COPELAND	COPELAND
	Model		ZP44KUE-TF7-52E	ZP54KUE-TF7-52E
	Type		Scroll	Scroll
	Capacity	W	13200	15900
	Input	W	4160	4950
	Rated current(RLA)	A	7.0	8.8
	Locked rotor Amp(LRA)	A	76	78
	Thermal protector		/	/
	Capacitor	mF	/	/
	Refrigerant oil	ml	1242	1242
Outdoor coil	Number of row		2	2
	Fin spacing	mm	1.5	1.5
	Fin material		Louver or Corrugated Fin	Louver or Corrugated Fin
	Tube outside diameter	mm	φ7	φ7
	Tube material		Innergroover tube type	Innergroover tube type
	Coil length x height x width	mm	2095×714×25.4	2095×798×25.4
	Number of circuit		8	10
Outdoor fan motor	Model		Y7S623C5130/SJ217A	Y7S623C5130/SJ217A
	Input	W	400	400
	Output	W	265	265
	Capacitor	mF	12	12
	Speed	rpm	1100	1100
Outdoor air flow		m <sup>3</sup> /h	6900	6900
Outdoor noise level		dB(A)	63	63
Outdoor dimension	Unit (WxHxD)	mm	740×759×740	740×843×740
	Packing (WxHxD)	mm	769×782×769	769×865×769
Outdoor weight	Net	kg	81.5	83.5
	Gross	kg	86.5	89.0
Refrigerant	Type		R410A	R410A
	Charge	g	4000	4200
Refrigerant pipe	Liquid side	mm	9.52	9.52
	Gas side	mm	19.05	19.05
	Max. refrigerant pipe length	m	50	50
	Max. difference in level	m	30	30
Ambient temperature range	Cooling	°C	21 ~ 43	21 ~ 43
	Heating	°C	/	/

<b>Model</b>		<b>Z2U30307000332</b>	<b>Z2U30307000333</b>
<b>Code</b>		<b>TCE-36HA/U20-C (01)</b>	<b>TCE-60HA/U50-C(01)</b>
Power supply	V//Hz/Ph	220V~/60Hz/1P	380V~/60Hz/3P
Max. input consumption	W	4900	6900

Max. current		A	23.0	10.2
Compressor	Brand		HIGHLY	LG
	Model		ATH356UN-C9EU	ABT054UMA
	Type		Rotary	scroll
	Capacity	W	10550	15678
	Input	W	3480	4953
	Rated current(RLA)	A	16.8	8.5
	Locked rotor Amp(LRA)	A	/	67
	Thermal protector		internal	internal
	Capacitor	mF	80	/
	Refrigerant oil	ml	800	1360
Outdoor coil	Number of row		1	1
	Fin spacing	mm	1.5	1.5
	Fin material		Louver or Corrugated Fin	Louver or Corrugated Fin
	Tube outside diameter	mm	φ7	φ7
	Tube material		Innergroover tube type	Innergroover tube type
	Coil length x height x width	mm	1441×714×12.7	2187×798×12.7
	Number of circuit		4	4
Outdoor fan motor	Model		Y7S623A803/SJ86A	Y7S623C5130/SJ217A
	Input	W	142	368
	Output	W	86	217
	Capacitor	mF	6.0	12.0
	Speed	rpm	1080	1100
Outdoor air flow		m <sup>3</sup> /h	3300	7400
Outdoor noise level		dB(A)	60	65
Outdoor dimension	Unit (WxHxD)	mm	554×759×554	740×843×740
	Packing (WxHxD)	mm	554×782×554	769×865×769
Outdoor weight	Net	kg	75	79
	Gross	kg	80	84
Refrigerant	Type		R410A	R410A
	Charge	g	1900	2250
Refrigerant pipe	Liquid side	mm	9.52	9.52
	Gas side	mm	19.05	19.05
	Max. refrigerant pipe length	m	25	30
	Max. difference in level	m	15	20
Ambient temperature range	Cooling	°C	21 ~ 43	21 ~ 43
	Heating	°C	-7 ~ 24	-7 ~ 24

<b>Model</b>		<b>Z2U30307000113</b>	<b>Z2U30307000112</b>
<b>Code</b>		<b>TCE-60HA/U6O-C(01)</b>	<b>TCE-24ZHRA/U2O-C</b>
Power supply	V//Hz/Ph	220V~/60Hz/3P	220-230V~/60Hz
Max. input consumption	W	6900	3500
Max. current	A	22.5	19.0

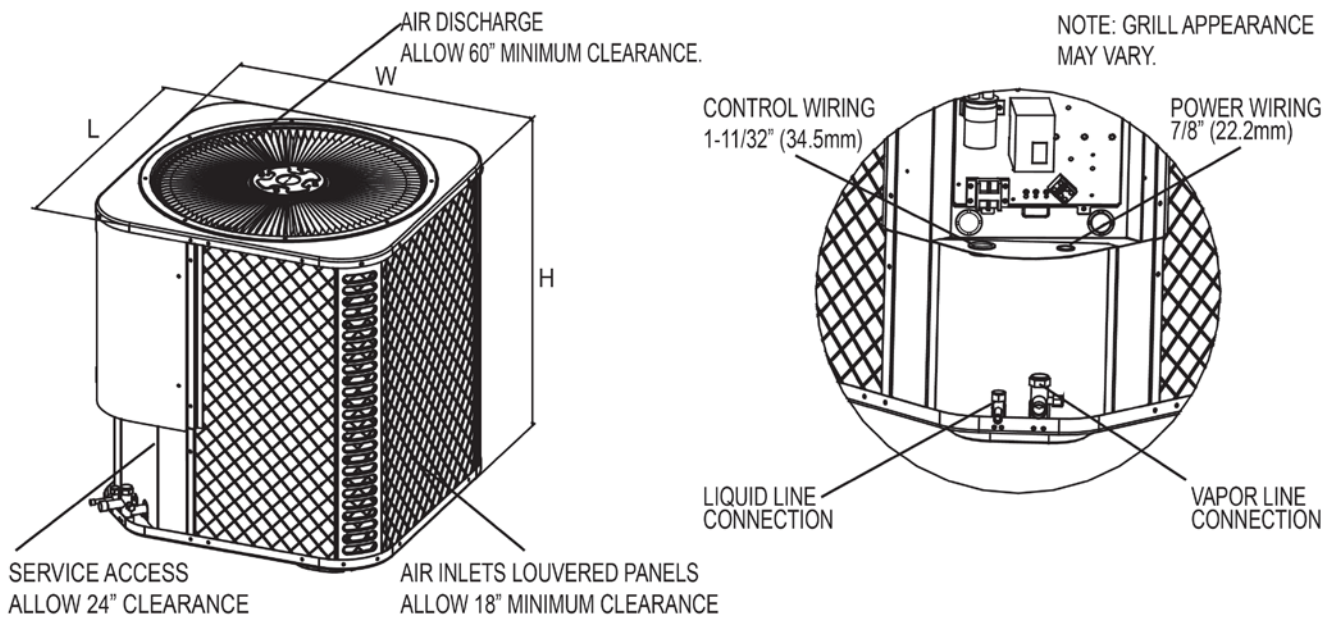
Compressor	Brand		COPELAND	GMCC
	Model		ZP54KUE-TF5-52E	PA240M2C-3MTU2
	Type		scroll	Rotary
	Capacity	W	15900	7115
	Input	W	4950	2395
	Rated current(RLA)	A	15.1	11.6
	Locked rotor Amp(LRA)	A	118	60
	Thermal protector		internal	internal
	Capacitor	mF	/	55
	Refrigerant oil	ml	1242	480
Outdoor coil	Number of row		1	2
	Fin spacing	mm	1.5	1.5
	Fin material		Louver or Corrugated Fin	Louver or Corrugated Fin
	Tube outside diameter	mm	φ7	φ7
	Tube material		Innergroover tube type	Innergroover tube type
	Coil length x height x width	mm	2187×798×12.7	1380×588×12.7
	Number of circuit		4	3
Outdoor fan motor	Model		Y7S623C5130/SJ217A	Y7S623A803/SJ86A
	Input	W	368	142
	Output	W	217	86
	Capacitor	mF	12.0	6
	Speed	rpm	1100	1080
Outdoor air flow		m <sup>3</sup> /h	7400	2760
Outdoor noise level		dB(A)	65	61
Outdoor dimension	Unit (WxHxD)	mm	740×843×740	554×633×554
	Packing (WxHxD)	mm	769×865×769	584×655×584
Outdoor weight	Net	kg	77	52
	Gross	kg	82	55
Refrigerant	Type		R410A	R410A
	Charge	g	2250	2220
Refrigerant pipe	Liquid side	mm	9.52	9.52
	Gas side	mm	19.05	15.88
	Max. refrigerant pipe length	m	30	25
	Max. difference in level	m	20	15
Ambient temperature range	Cooling	°C	21 ~ 43	21 ~ 43
	Heating	°C	-7 ~ 24	-7 ~ 24

**Notes:**

1 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.

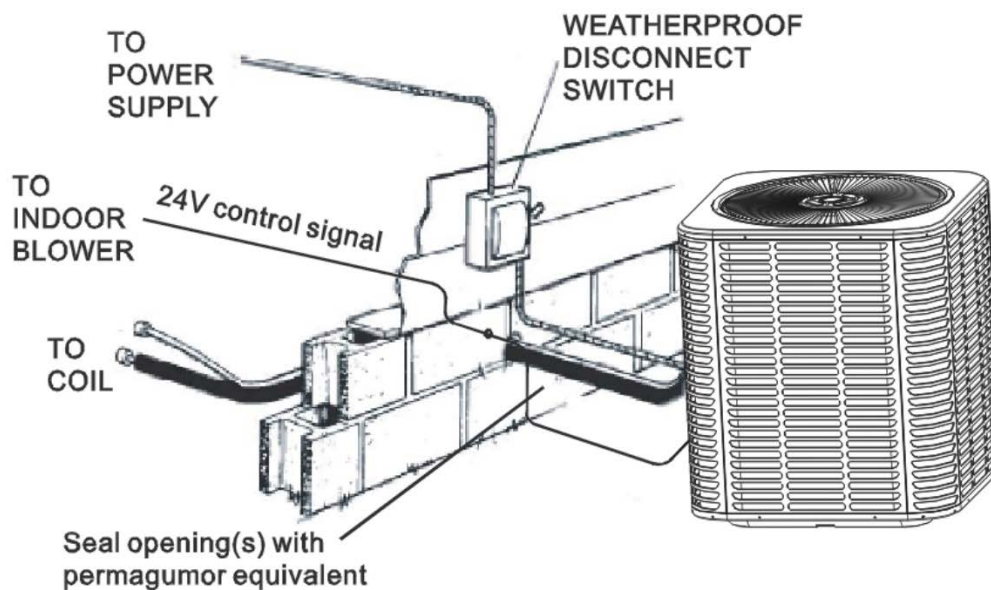
2 Indoor temp. : 20°CDB / outdoor temp. : 7°CDB, 6°CWB / Equivalent piping length: 7.5m, level difference: 0m

## 2. Dimensions



Unit Model (Btu/h)	Dimensions (Inches)			Refrigerant Connection Service Valve Size	
	"H" in [mm]	"W" in [mm]	"L" in [mm]	Liquid in	Vapor in
24000	21-7/8(554)	21-7/8(554)	24-15/16(633)	3/8	5/8
36000	21-7/8(554)	21-7/8(554)	29-7/8(759)	3/8	3/4
48000	29-1/8(740)	29-1/8(740)	33-3/16(843)	3/8	3/4
55000	29-1/8(740)	29-1/8(740)	33-3/16(843)	3/8	3/4

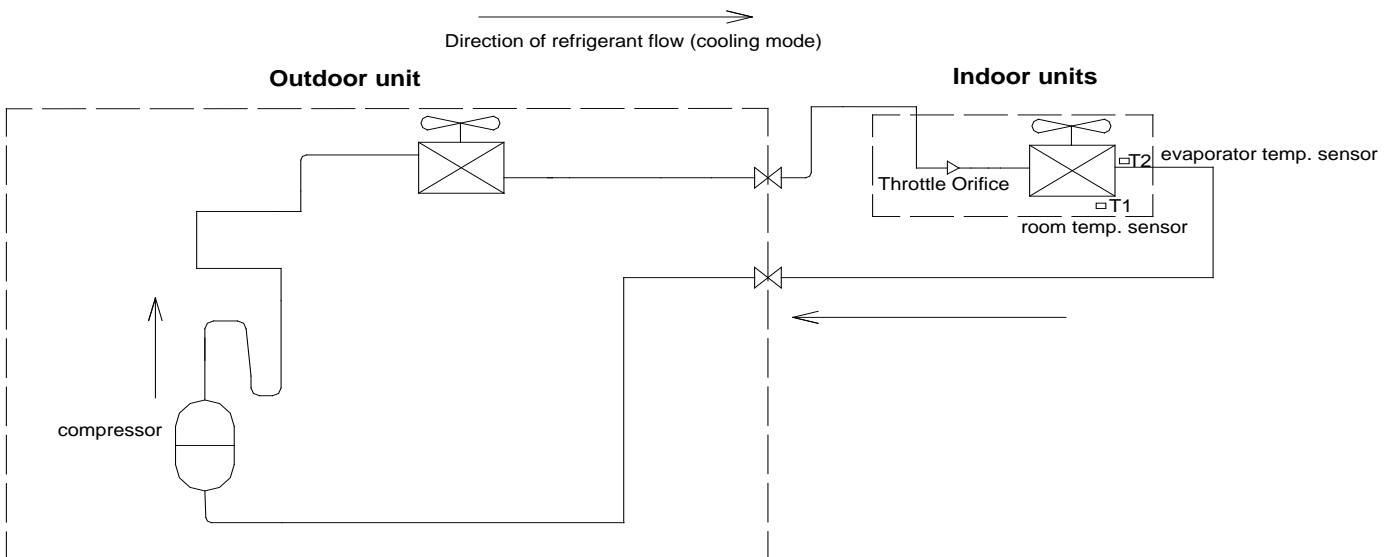
## 3. Service Space



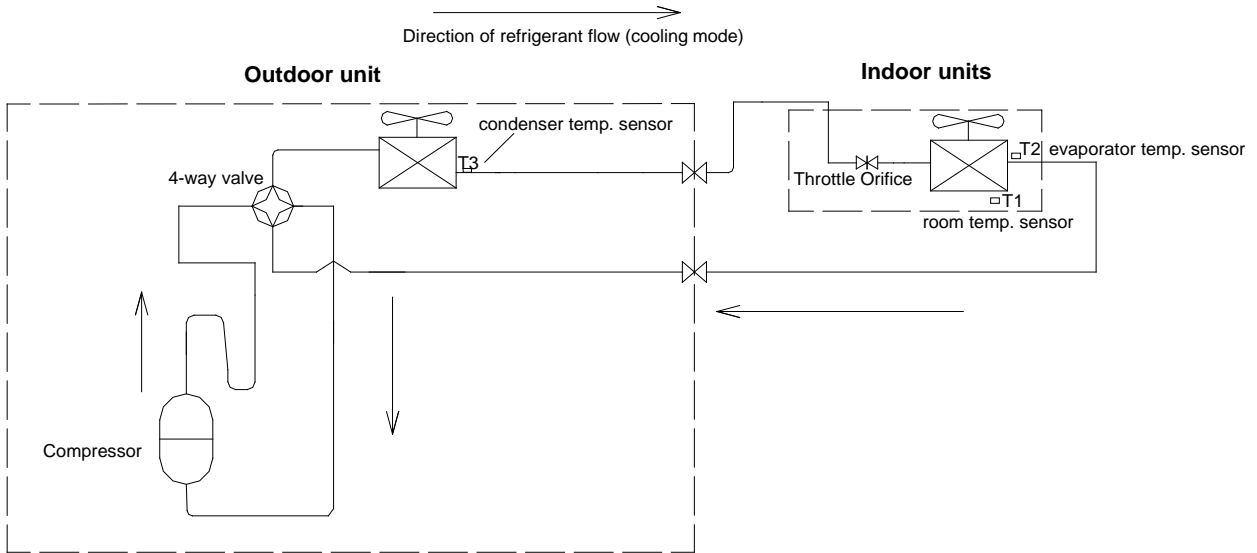
**NOTE: All outdoor wiring must be weather proof**

# 4. Piping Diagrams

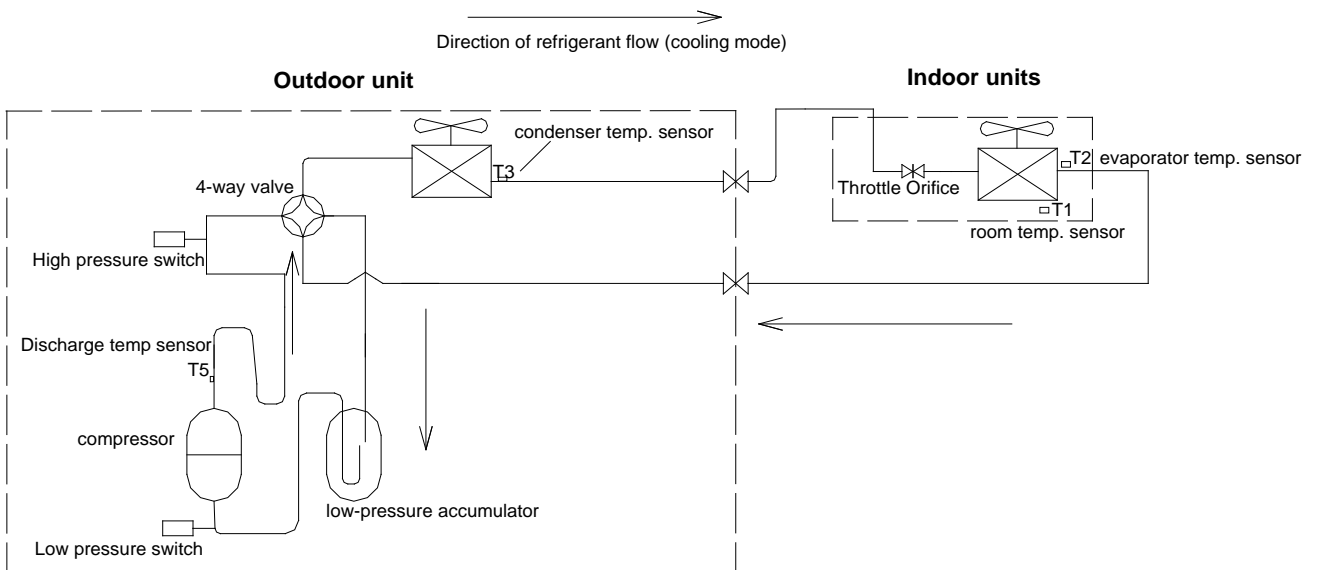
TCE-24ZCRA/U2-C(01)	TCE-24D2CRA/U2-C(01)	TCE-48ZCRA/U6-C	TCE-60CA/U60-C(02)
TCE-60ZCRA/U5-C	TCE-24ZCRA/U2-C	TCE-60ZCRA/U6-C(01)	TCE-60ZCRA/U6-C(02)
TCE-60ZCRA/U5-C(02)	TCE-36ZCRA/U2-C(03)	TCE-36ZCRA/U2-C(01)	TCE-48ZCRA/U2-C(04)
TCE-24CCRA/U2-C	TCE-36CCRA/U2-C	TCE-36CCRA/U2-C(01)	TCE-48CCRA/U2-C(01)
TCE-60CCRA/U6-C (01)	TCE-60CCRA/U6-C(02)	TCE-60CCRA/U5-C(01)	TCE-60CCRA/U5-C
TCE-48D2CRA/U2-C(01)	TCE-60D2CRA/U2-C(01)	TCE-36D2CRA/U2-C	TCE-48ZCRA/U5-C
TCB-60ZCRA/U5-C	TCE-60ZCRA/U2-C(04)	TCE-60CCRA/U2-C(01)	



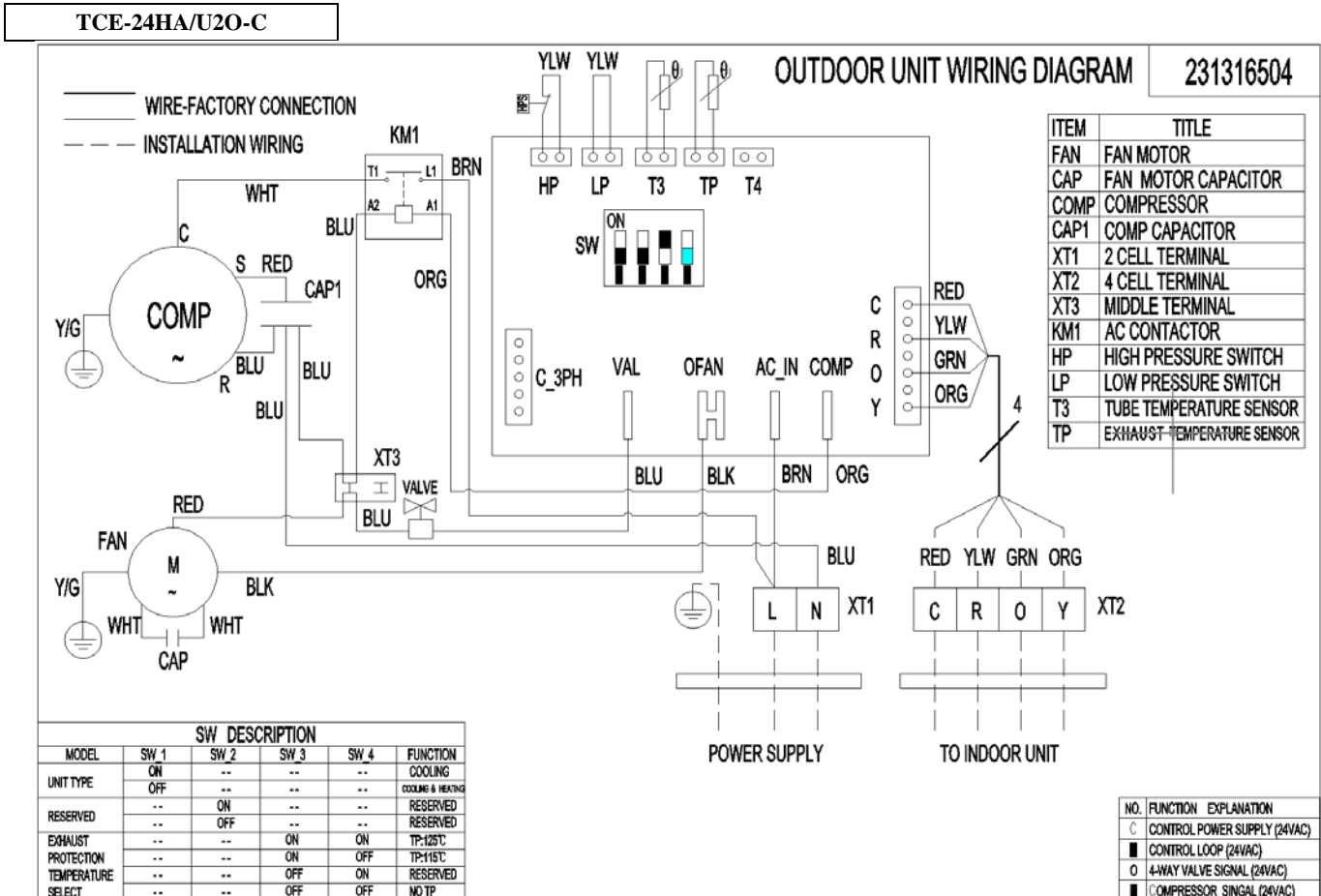
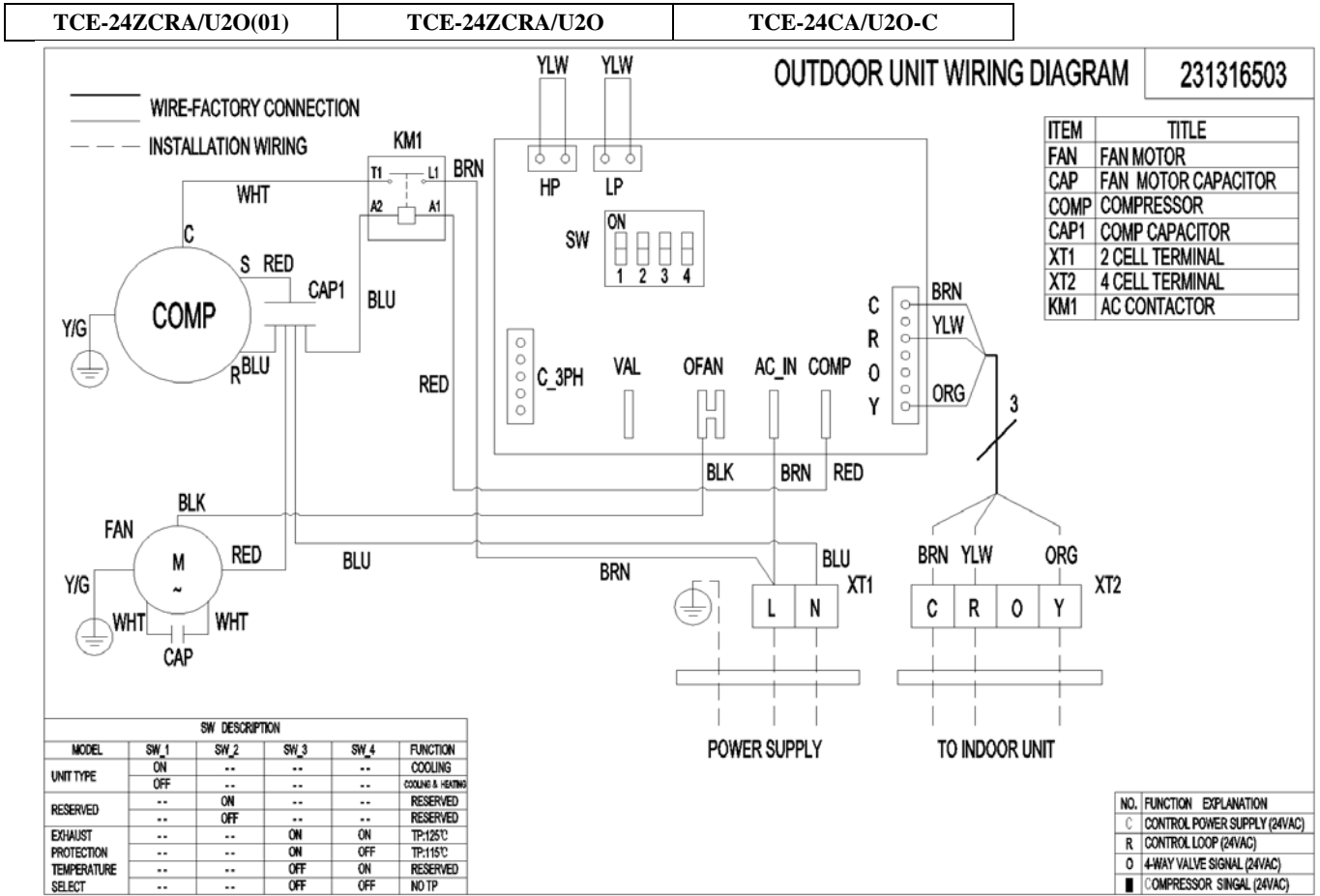
TCE-24ZHRA/U2-C

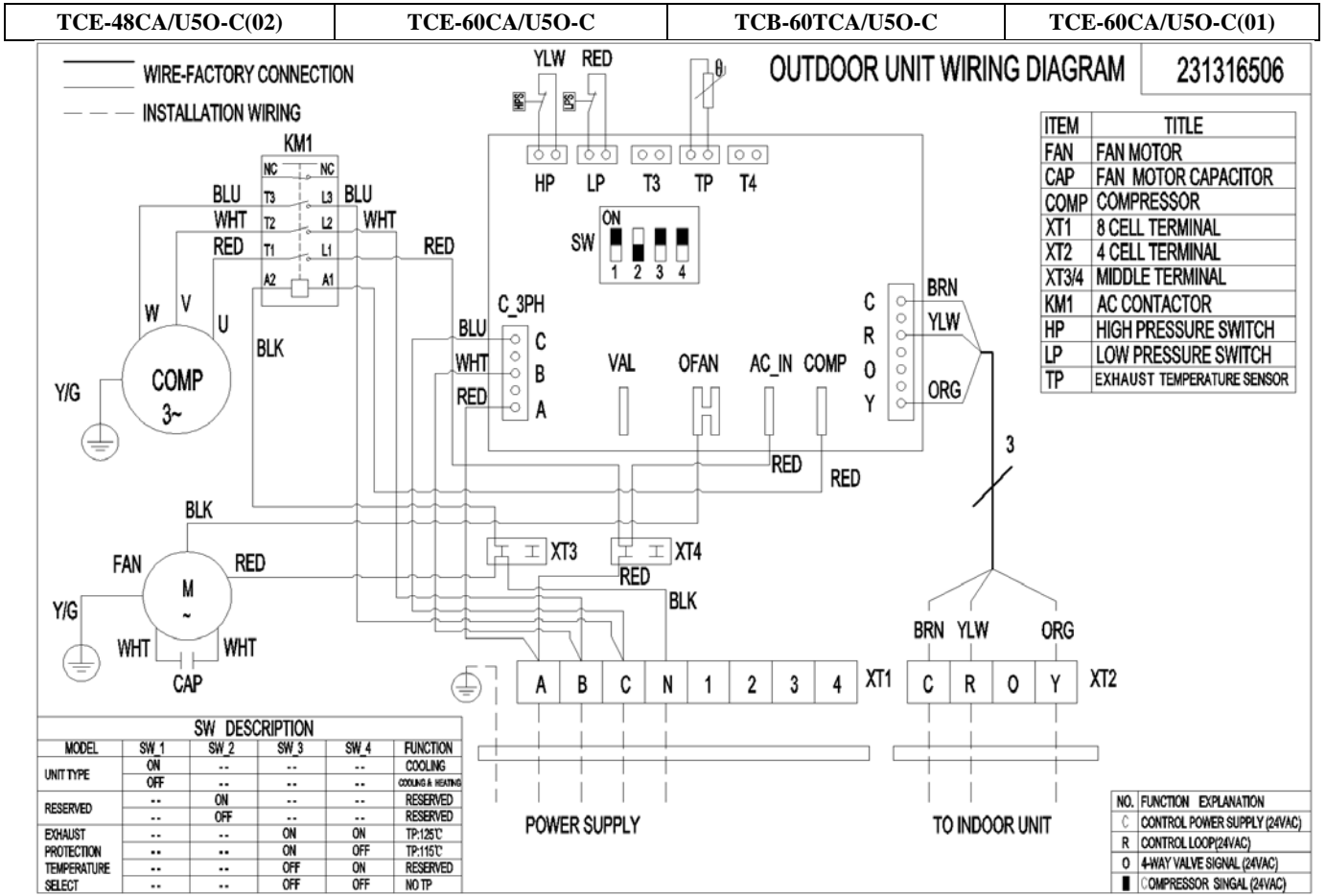
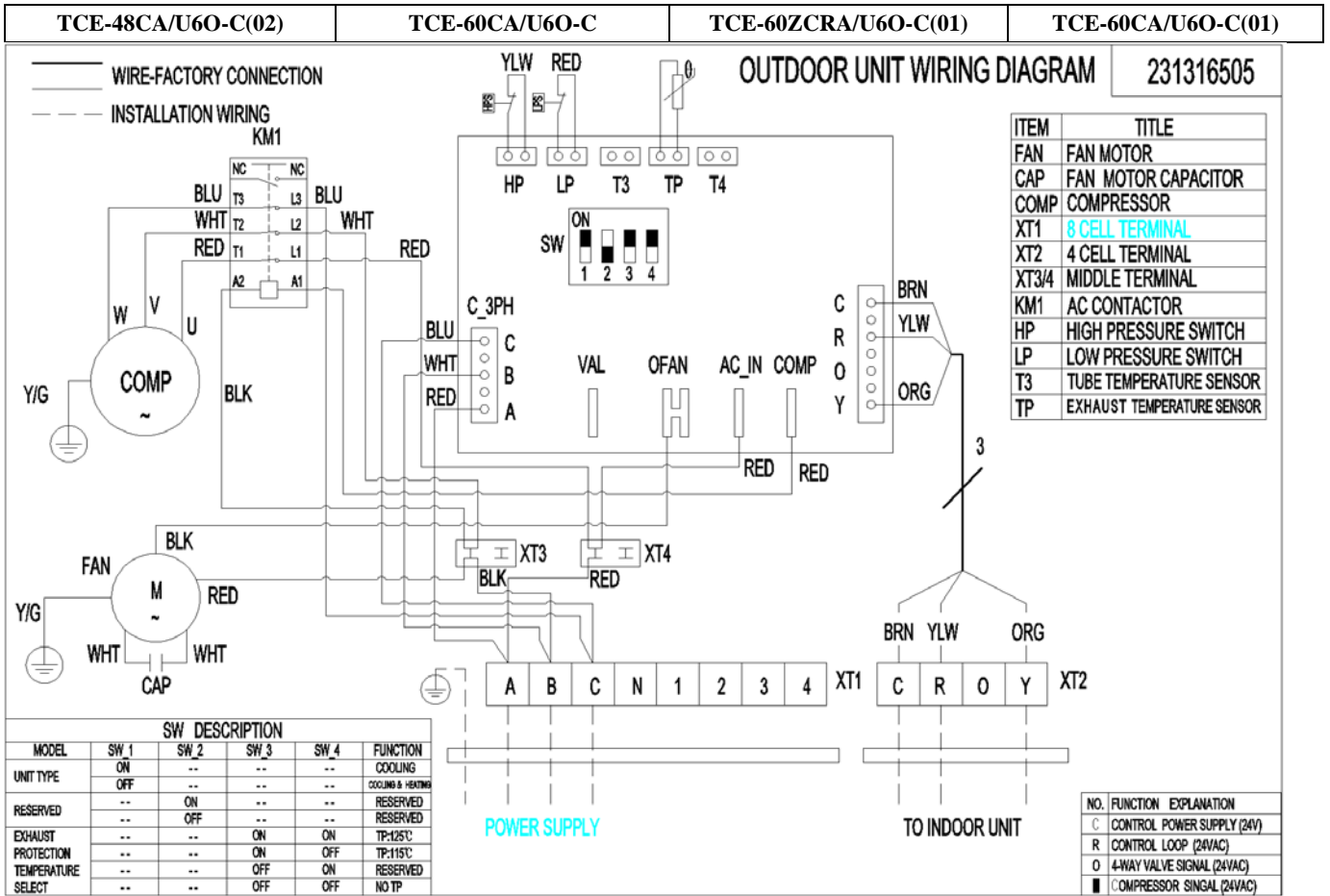


TCE-36ZHRA/U2-C(01)	TCE-60ZHRA/U6-C(01)	TCE-60ZHRA/U5-C(01)	TCE-36CHRA/U2-C(01)
TCE-60CHRA/U6-C(01)	TCE-60CHRA/U5-C(01)		

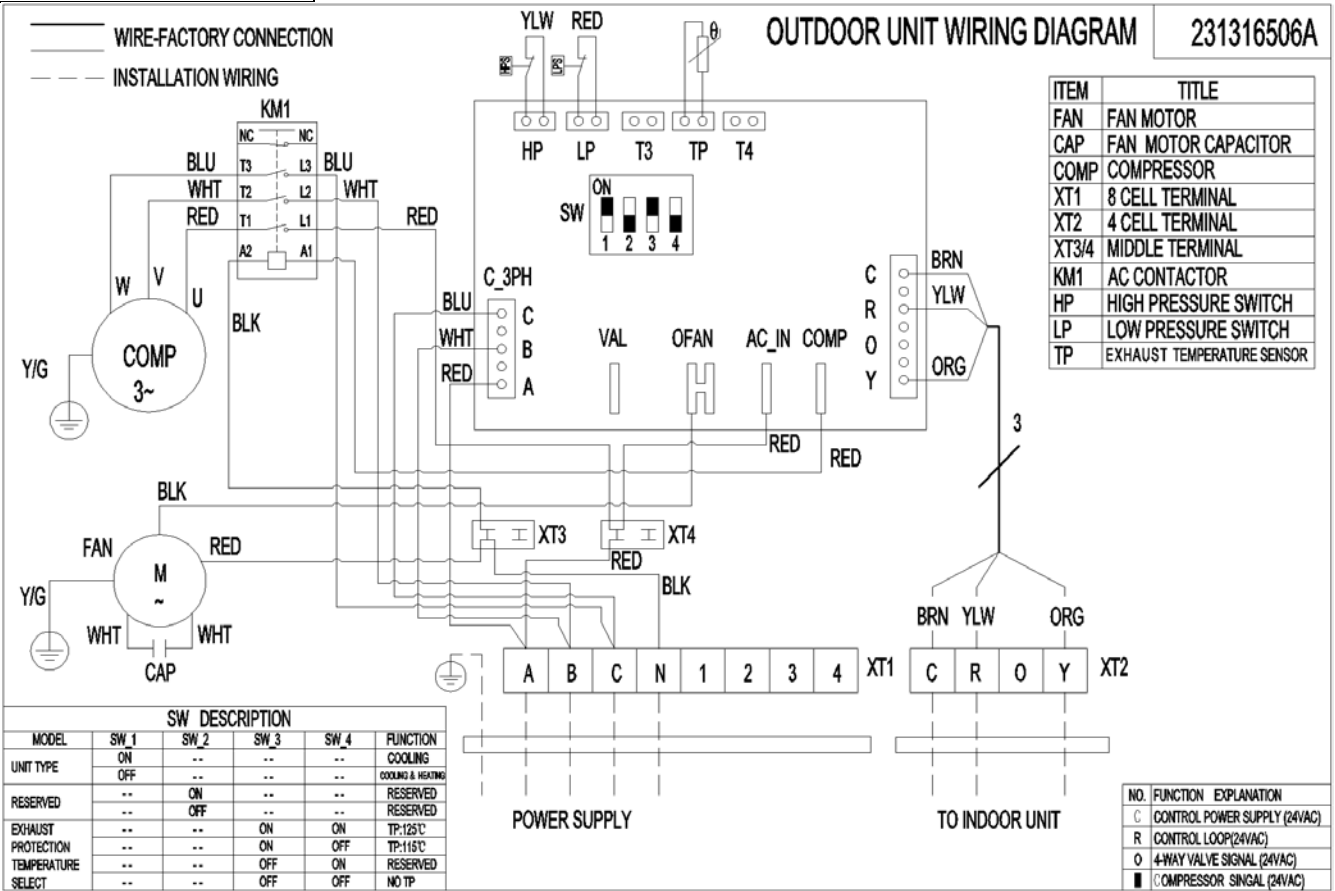


# 5. Wiring Diagrams

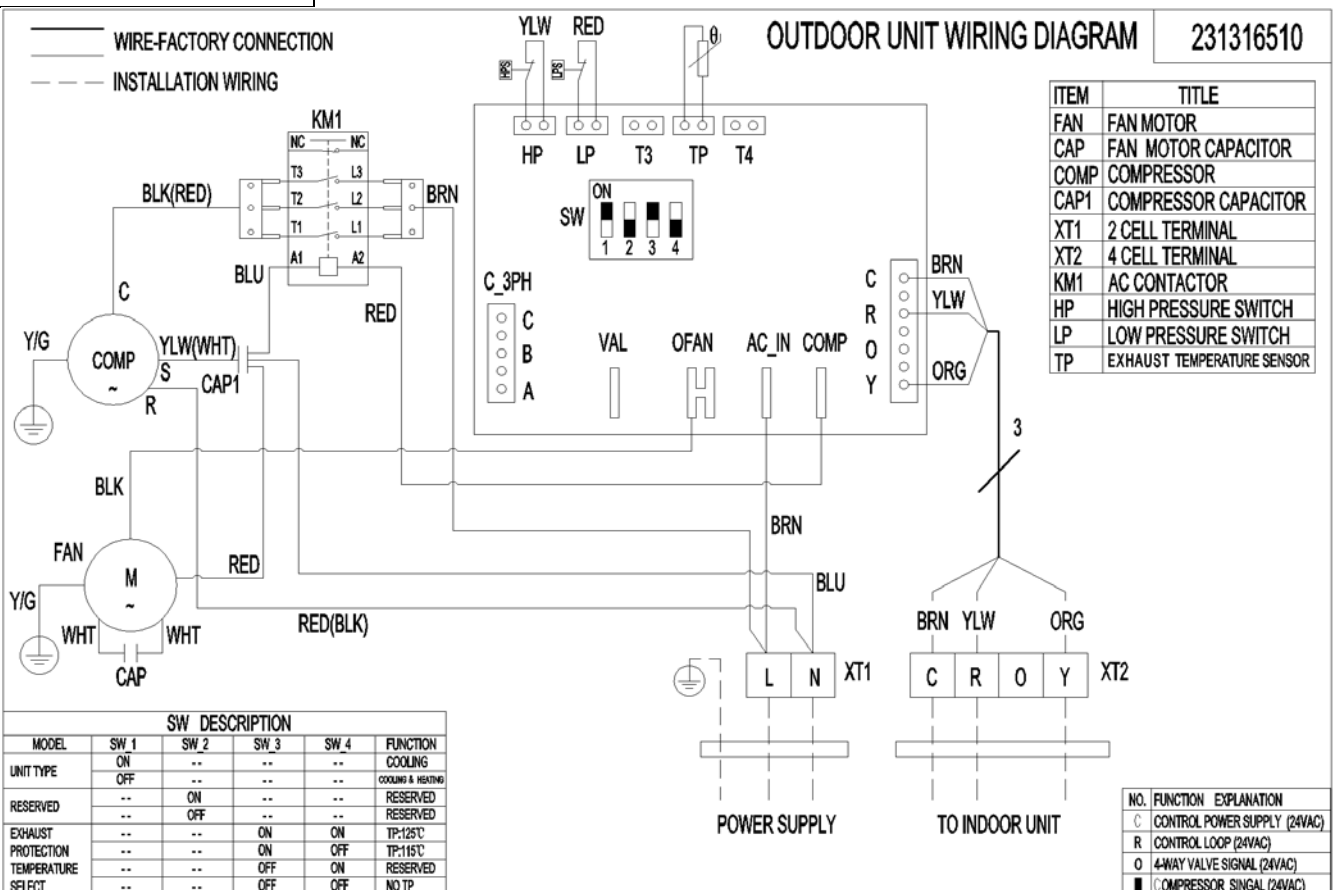




**TCE-60CA/U50-C(02)**



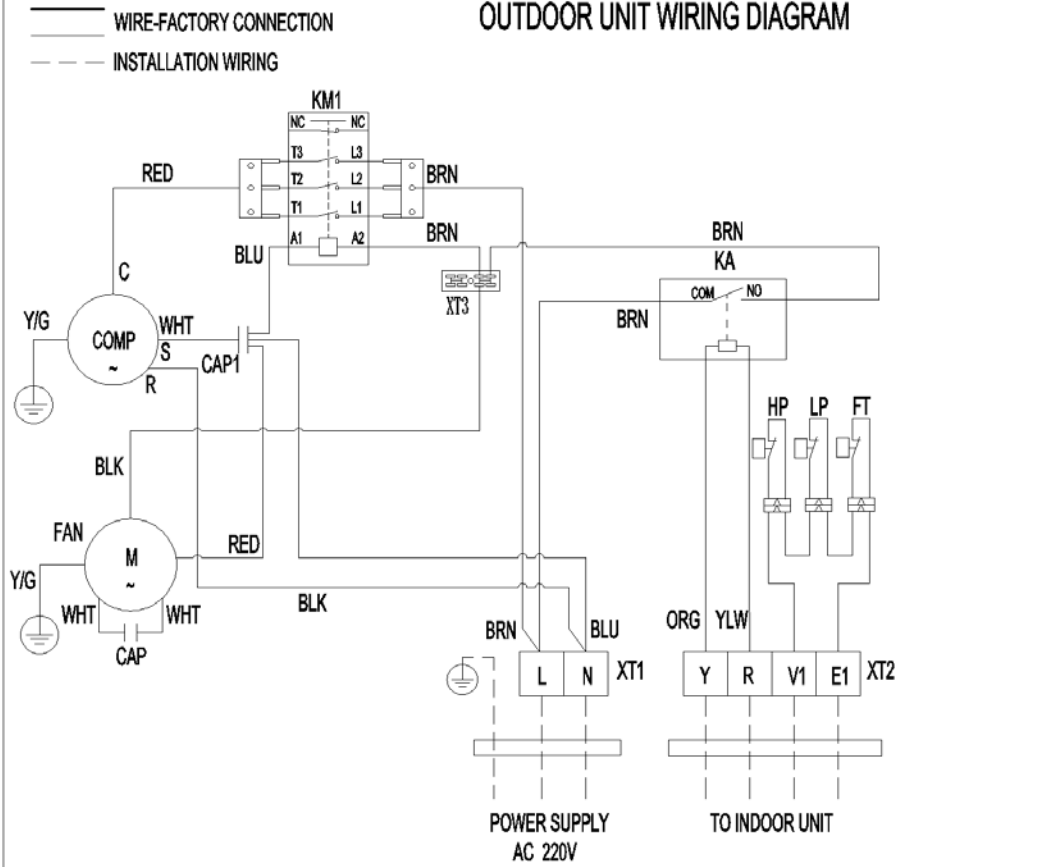
**TCE-36CRA/U20-C(03)**



TCE-36CA/U2O-C(01)

OUTDOOR UNIT WIRING DIAGRAM

85008-002141



ITEM	TITLE
FAN	FAN MOTOR
CAP	FAN MOTOR CAPACITOR
COMP	COMPRESSOR
CAP1	COMPRESSOR CAPACITOR
XT1	2 CELL TERMINAL
XT2	4 CELL TERMINAL
XT3	1 CELL TERMINAL
HP	HIGH PRESSURE SWITCH
LP	LOW PRESSURE SWITCH
FT	EXHAUST THERMOSTAT
KA	RELAY
KM1	AC CONTACTOR

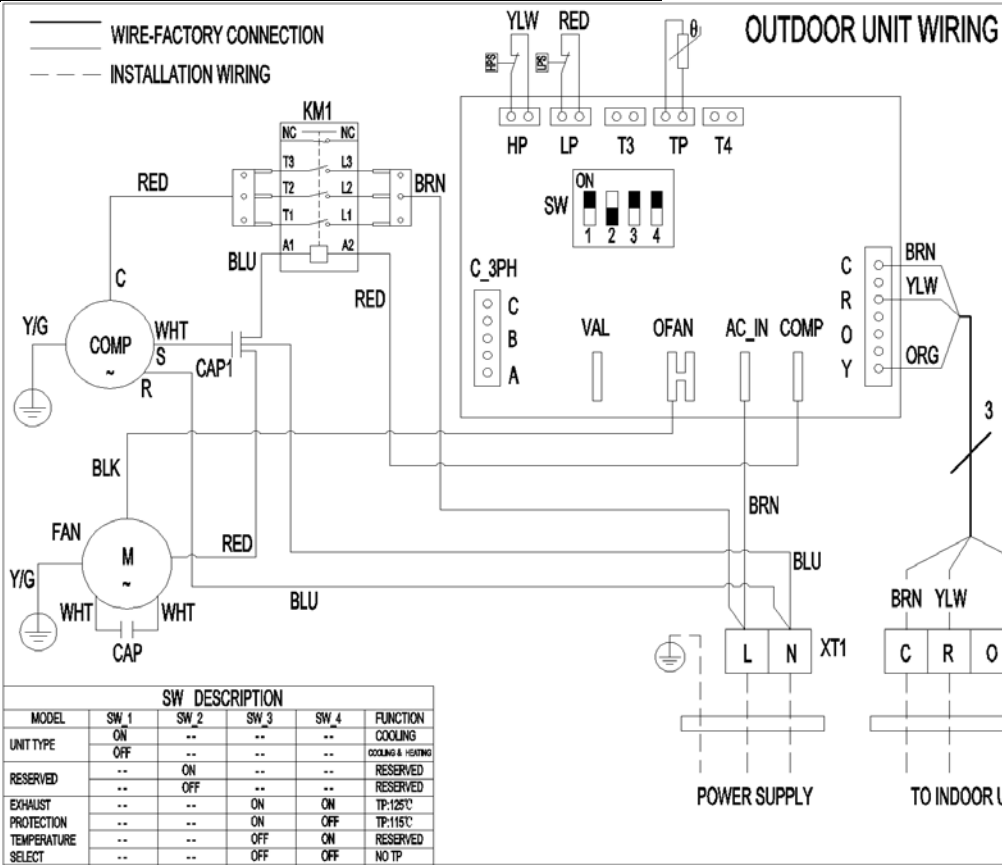
NO.	FUNCTION	EXPLANATION
E1	PROTECT (24VAC)	
V1	PROTECT LOOP (24VAC)	
R	CONTROL LOOP (24VAC)	
Y	COMPRESSOR SIGNAL (24VAC)	

TCE-48CRA/U2O-C(04)

TCE-60CA/U2O-C(01)

OUTDOOR UNIT WIRING DIAGRAM

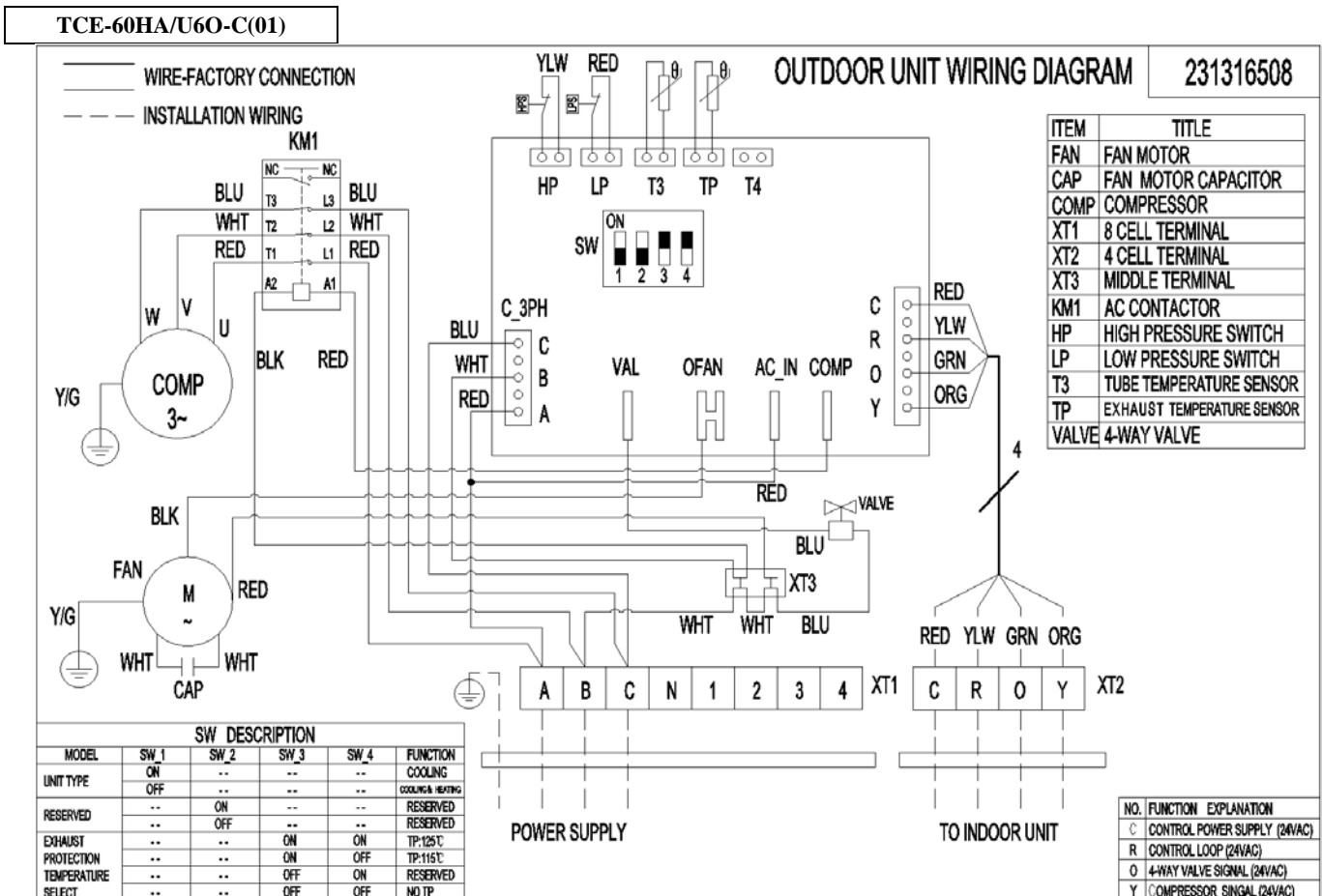
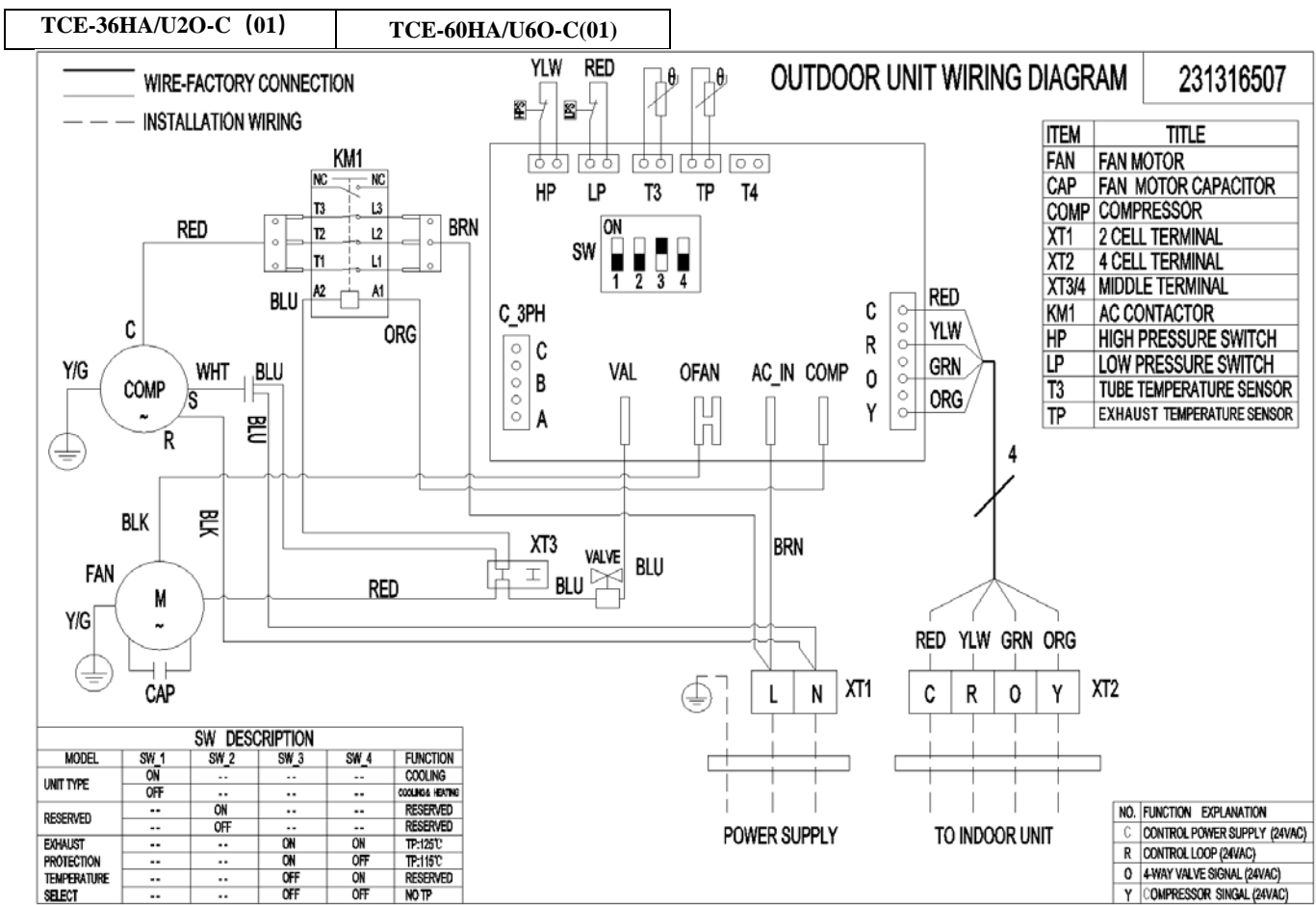
231316511



ITEM	TITLE
FAN	FAN MOTOR
CAP	FAN MOTOR CAPACITOR
COMP	COMPRESSOR
CAP1	COMPRESSOR CAPACITOR
XT1	2 CELL TERMINAL
XT2	4 CELL TERMINAL
KM1	AC CONTACTOR
HP	HIGH PRESSURE SWITCH
LP	LOW PRESSURE SWITCH
TP	EXHAUST TEMPERATURE SENSOR

SW DESCRIPTION					
MODEL	SW_1	SW_2	SW_3	SW_4	FUNCTION
UNIT TYPE	ON	--	--	--	COOLING
	OFF	--	--	--	COOLING & HEATING
RESERVED	--	ON	--	--	RESERVED
	--	OFF	--	--	RESERVED
EXHAUST PROTECTION	--	--	ON	ON	TP:125°C
TEMPERATURE	--	--	ON	OFF	TP:115°C
SELECT	--	--	OFF	ON	RESERVED
	--	--	OFF	OFF	NO TP

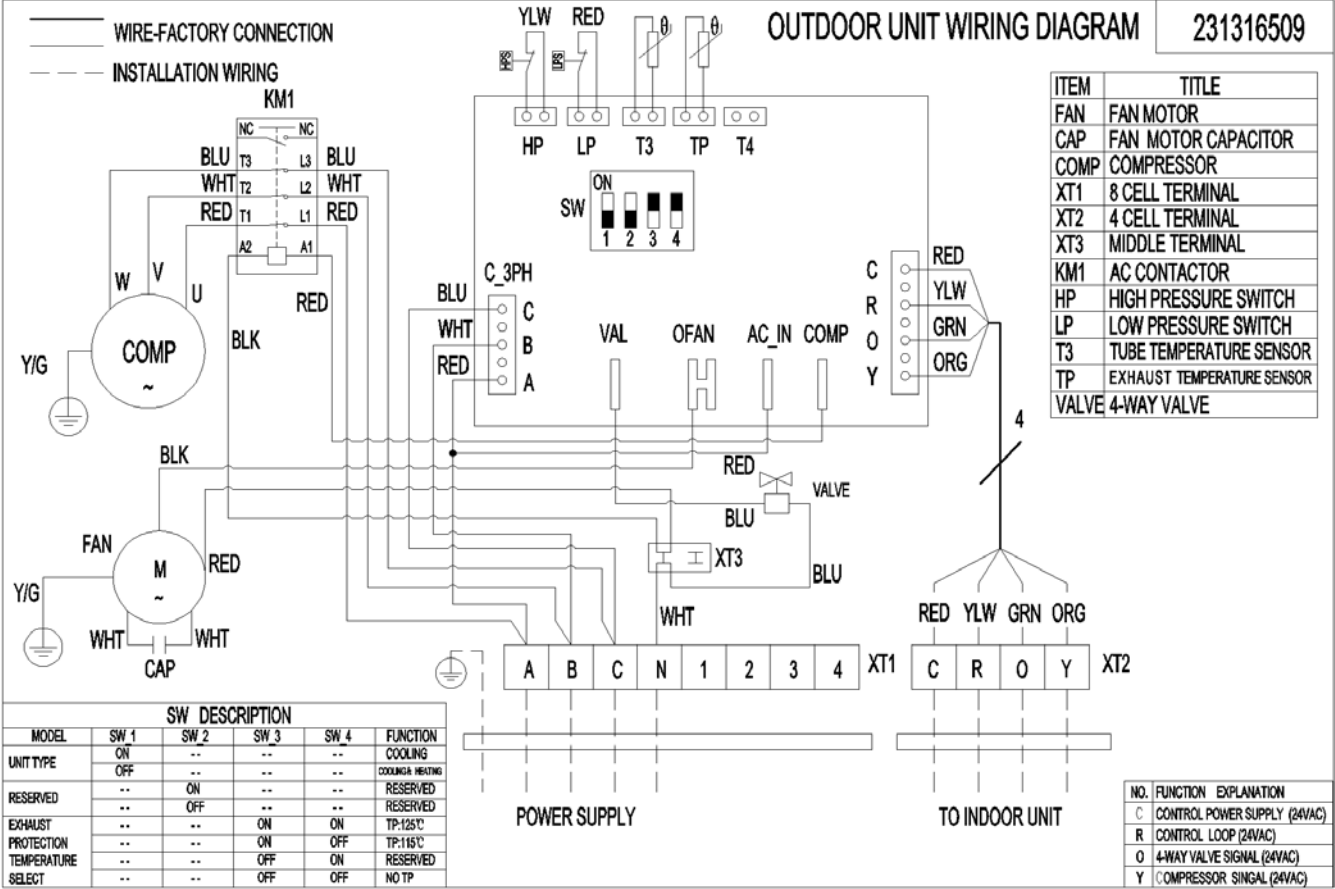
NO.	FUNCTION	EXPLANATION
C	CONTROL POWER SUPPLY (24VAC)	
R	CONTROL LOOP (24VAC)	
O	4-WAY VALVE SIGNAL (24VAC)	
Y	COMPRESSOR SIGNAL (24VAC)	



**TCE-60HA/U50-C(01)**

**OUTDOOR UNIT WIRING DIAGRAM**

231316509



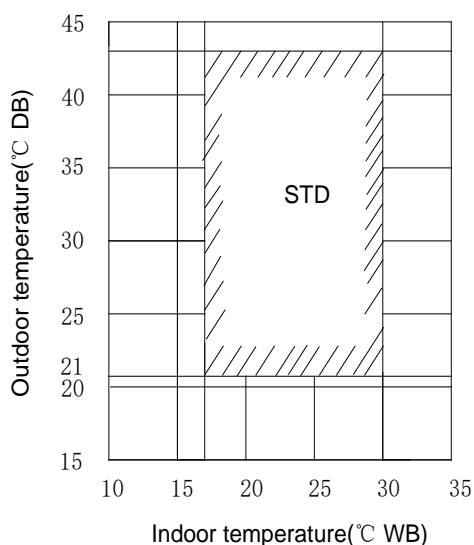
## 6. Electric Characteristics

Model	Outdoor Units				Outdoor Fan Motor
	Hz	Voltage	Min.	Max.	kW
TCE-24ZCRA/U2O(01)	60	220-230V	198V	242V	0.086
TCE-24CA/U2O-C	60	220-230V	198V	242V	0.086
TCE-36CRA/U2O-C(03)	60	220-230V	198V	242V	0.086
TCE-36CA/U2O-C(01)	60	220-230V	198V	242V	0.086
TCE-48CRA/U2O-C(04)	60	220-230V	198V	242V	0.217
TCE-60CA/U2O-C(01)	60	220-230V	198V	242V	0.217
TCE-24HA/U2O-C	60	220-230V	198V	242V	0.086
TCE-36HA/U2O-C (01)	60	220-230V	198V	242V	0.086
TCE-48CA/U6O-C(02)	60	220-230V	198V	242V	0.217
TCE-60CA/U6O-C	60	220-230V	198V	242V	0.217
TCE-60ZCRA/U6O-C(01)	60	220-231V	198V	242V	0.217
TCE-60CA/U6O-C(02)	60	220-232V	198V	242V	0.217
TCE-60CA/U6O-C(01)	60	220-233V	198V	242V	0.217
TCE-60HA/U6O-C(01)	60	220-234V	198V	242V	0.217
TCE-48CA/U5O-C(02)	60	380V-420V	342V	440V	0.217
TCE-60CA/U5O-C	60	380V-421V	342V	440V	0.217
TCE-60CA/U5O-C(02)	60	380V-422V	342V	440V	0.217
TCE-60CA/U5O-C(01)	60	380V-423V	342V	440V	0.217
TCB-60TCA/U5O-C	60	380V-424V	342V	440V	0.217
TCE-60HA/U5O-C(01)	60	380V-425V	342V	440V	0.217

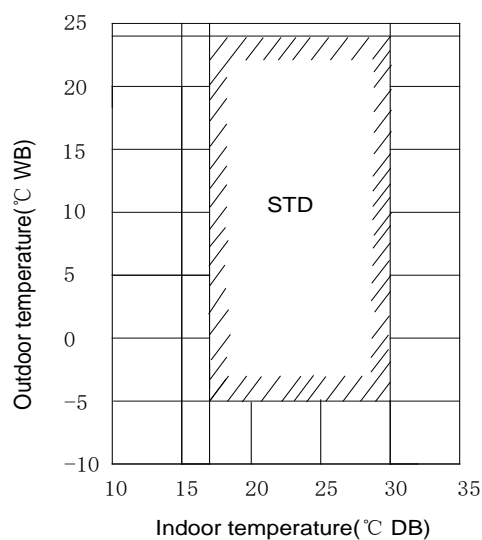
## 7. Operation Limits

Operation mode	Outdoor temperature(°C)	Room temperature(°C)
Cooling operation	21~43	17~30
Heating operation	-5~24	17~30

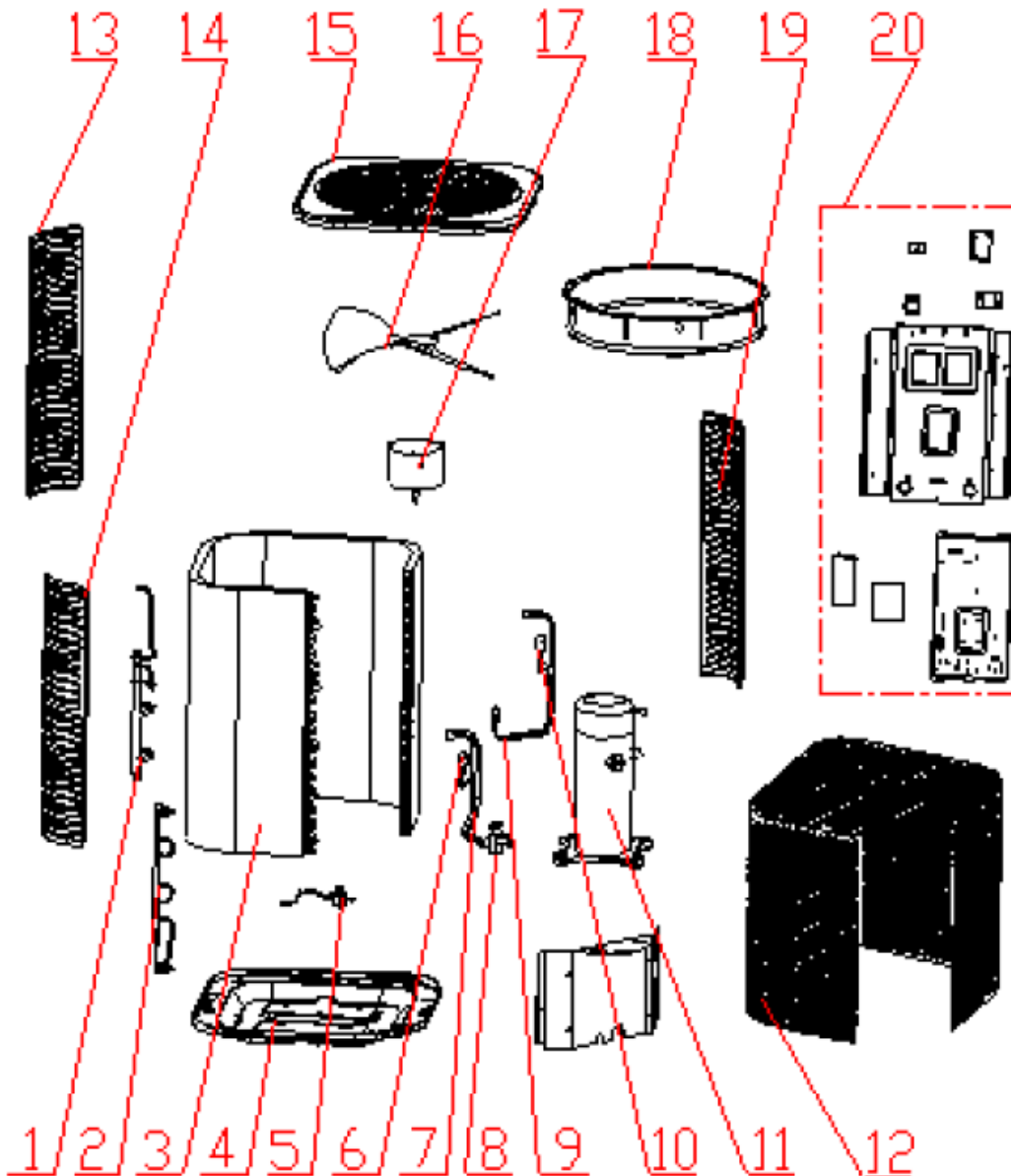
Cooling



Heating



## 8. Explosive view



No.	Part Name	Q'ty	Remark
1	Input pipe of condenser	1	
2	Output pipe of condenser	1	
3	Condenser	1	
4	Base	1	
5	Two-way Valve	1	
6	Low pressure switch	1	
7	Suction pipe	1	
8	Low pressure stop valve	1	
9.1	Discharge pipe module	1	
9.2	Sensor sleeve	1	
10	High pressure switch	1	

11	Compressor	1	
12	Filter	1	
13	Support plate	1	
14	Support plate	1	
15	Top Cover	1	
16	Propeller Fan	1	
17	Outdoor Motor	1	
18	Wind circle	1	
19	Support plate	1	
20-1	Discharge temp sensor	1	
20-2	Compressor capacitor	1	
20-3	Fan capacitor	1	
20-4	Outdoor PCB	1	
20-5	Outdoor terminal	1	
20-6	A.C contactor	1	

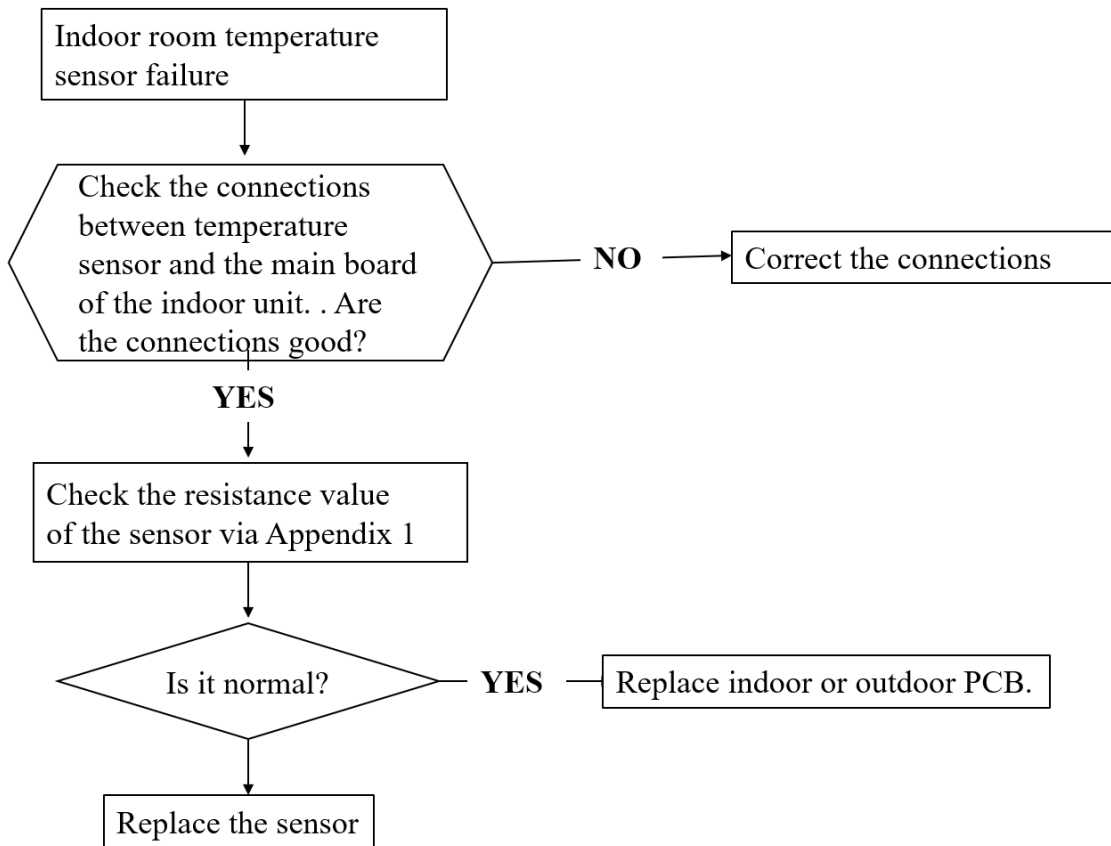
# Part 4 Troubleshooting

## 1. Self-diagnosis

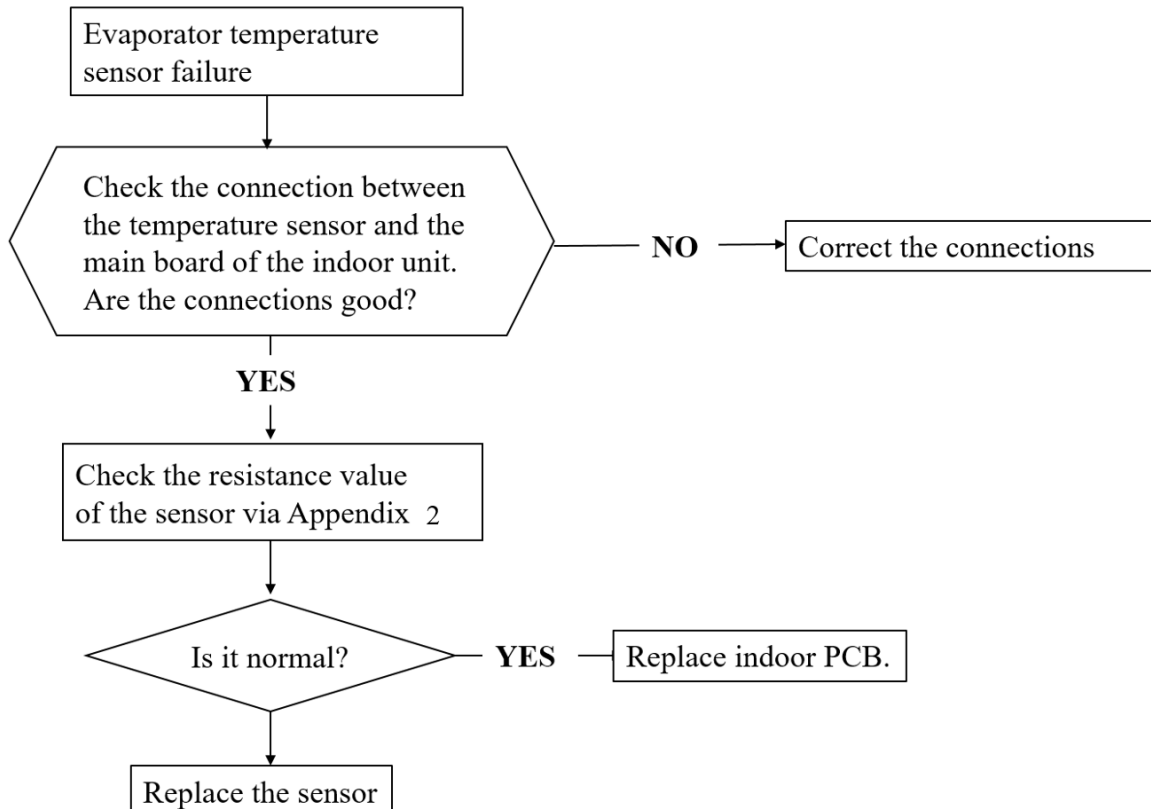
No.	Explanation	Display	Outdoor trouble lamp
1	Indoor temperature sensor failure	E1	/
2	Evaporator temperature sensor failure	E2	/
3	Power supply faults	E4	Flash 1 times
4	Compressor discharge temperature protection	E4	Flash 3 times
5	Condenser temperature sensor failure	E4	Flash 4 times
6	Compressor discharge temperature sensor failure	E4	Flash 5 times
7	High pressure protection	E4	Flash 6 times
8	Low pressure protection	E4	Flash 7 times
9	EEPROM malfunction of indoor main control board	Ed	/
10	Full-loading water alarm	d3/EL	/
11	Bad communication between indoor PCB & wire controller	C5 (Wire controller display)	/

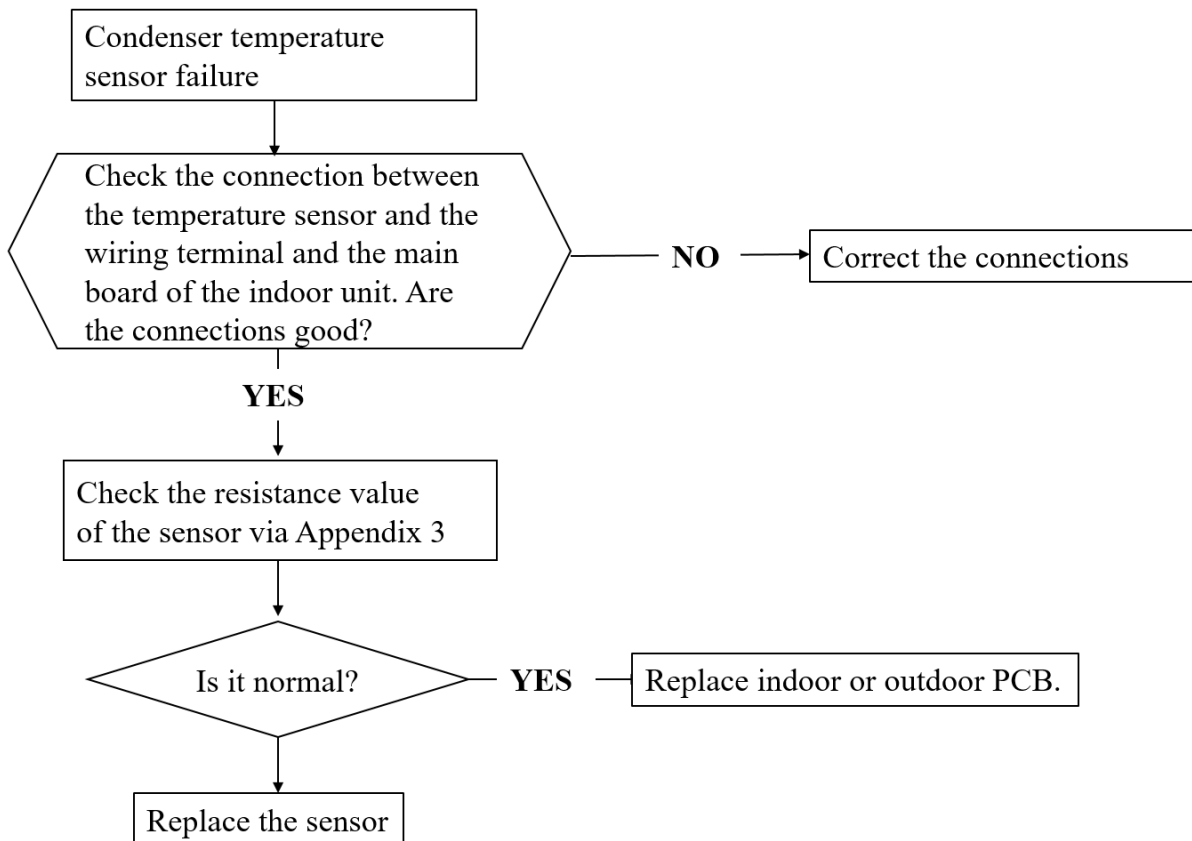
## 2. Solving steps for typical malfunction

### E1. Indoor room temperature sensor is abnormal

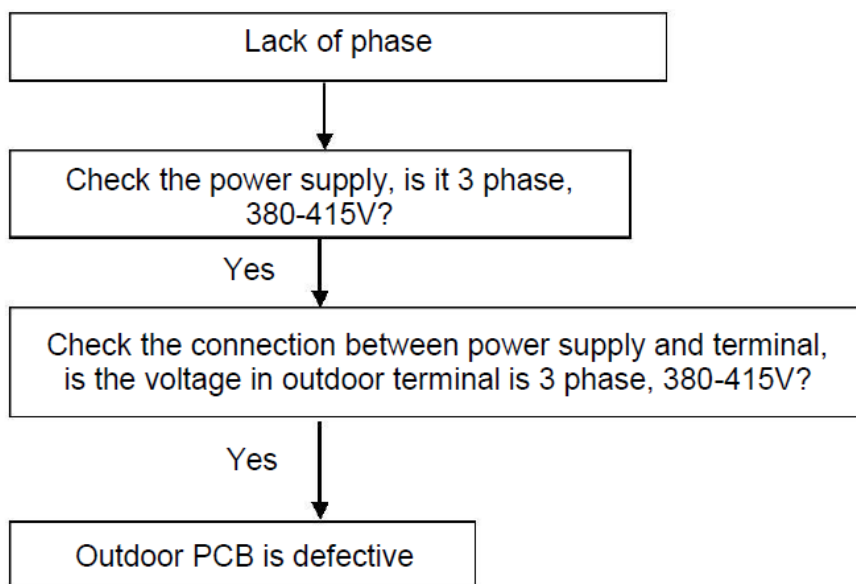


### E2. Evaporator temperature sensor is abnormal

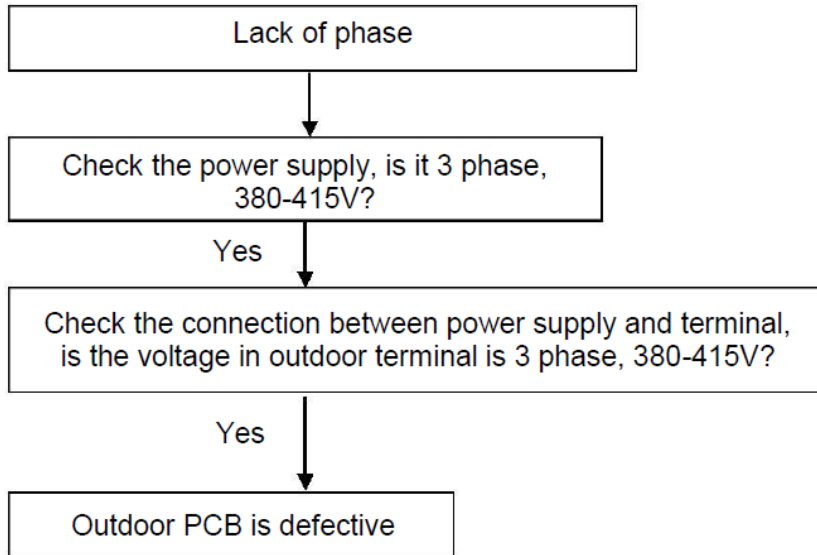


**E3. Condenser temperature sensor is abnormal****E4. Power supply faults**

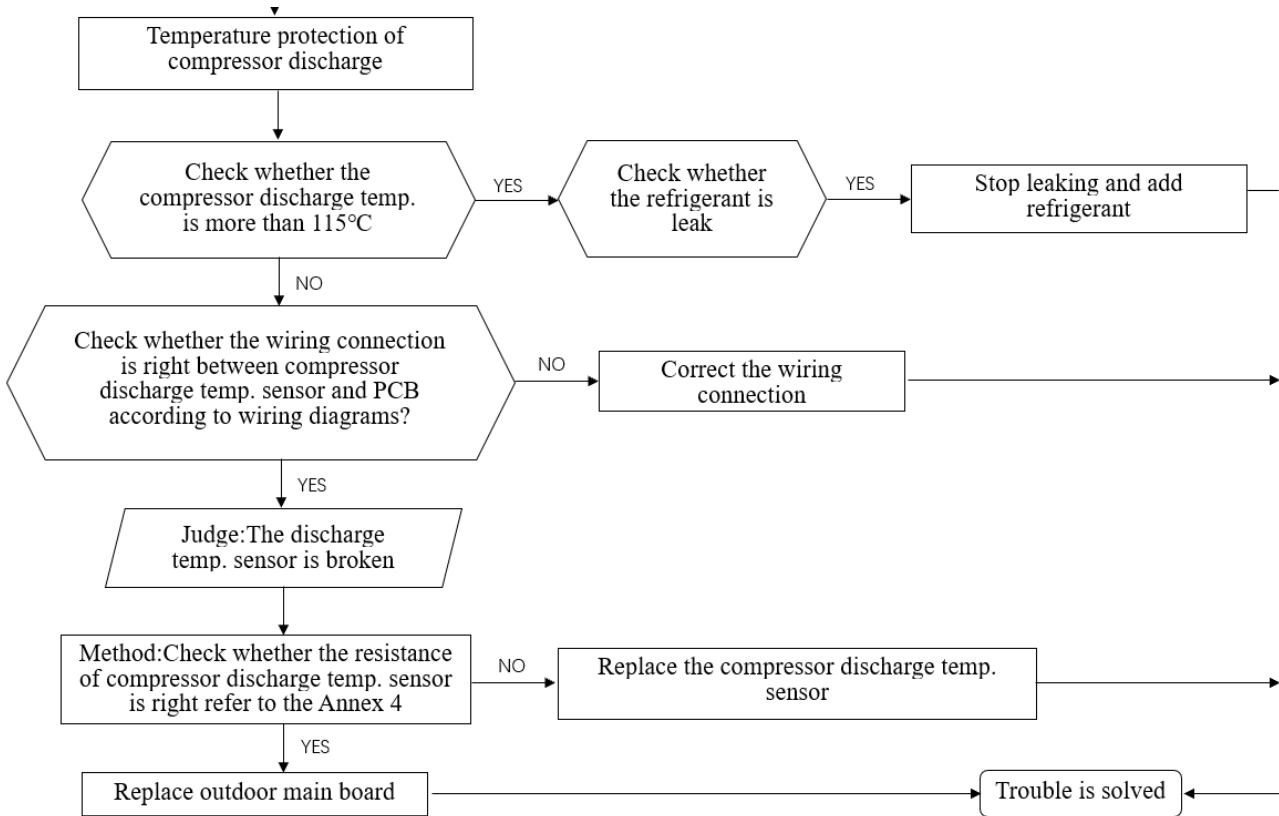
Phase sequence error:



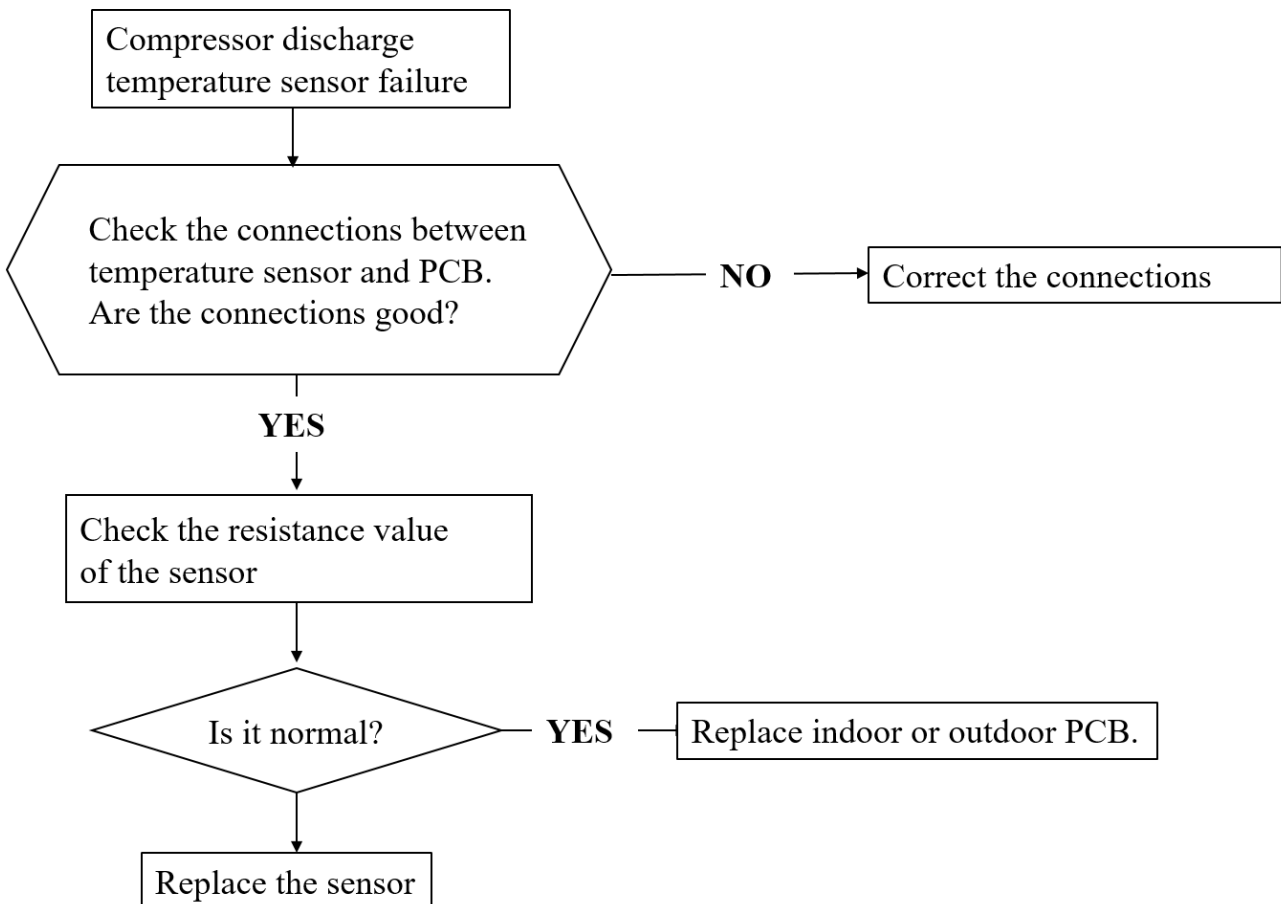
Lack of phase:



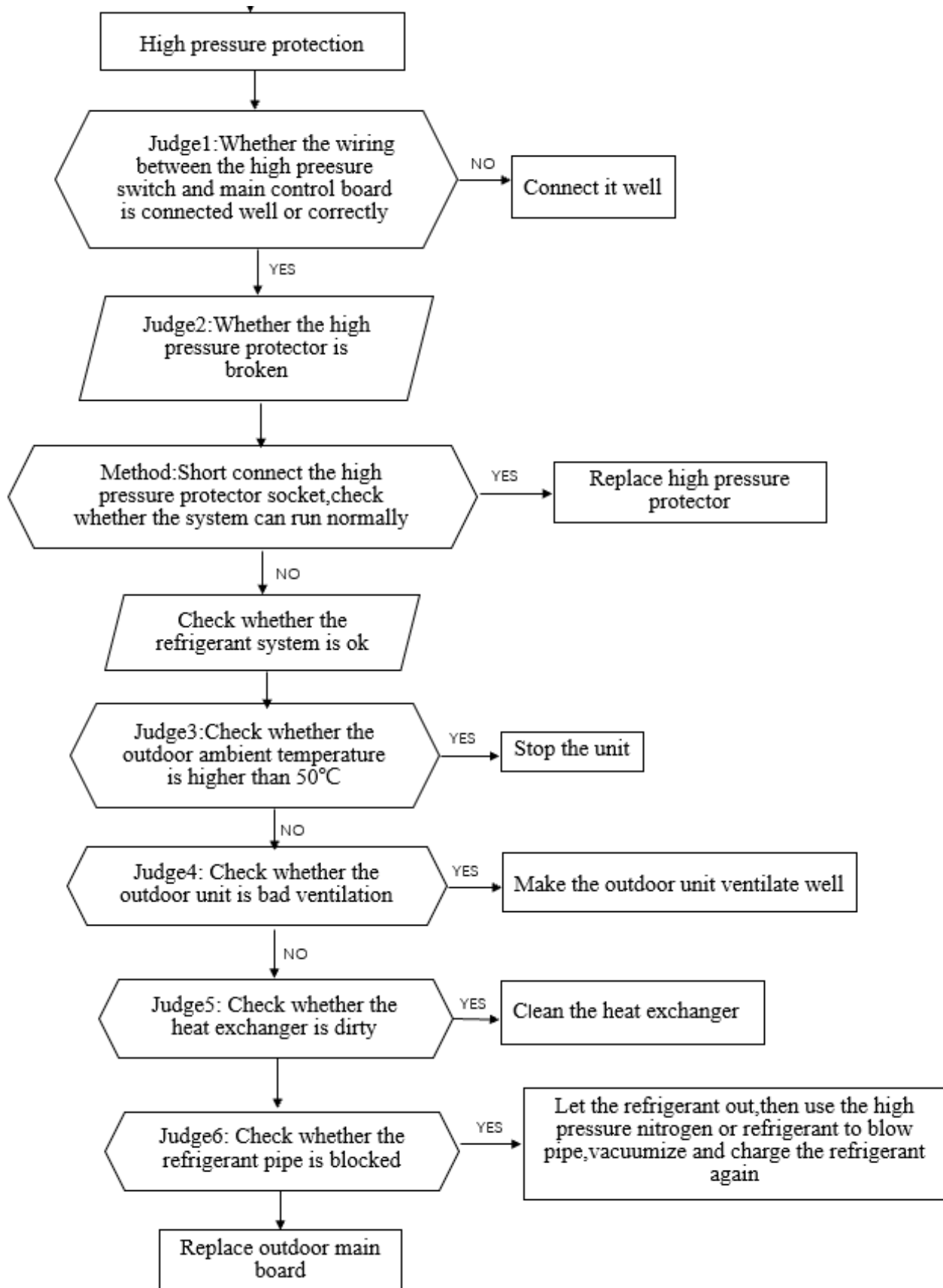
### E4. Compressor discharge temperature protection

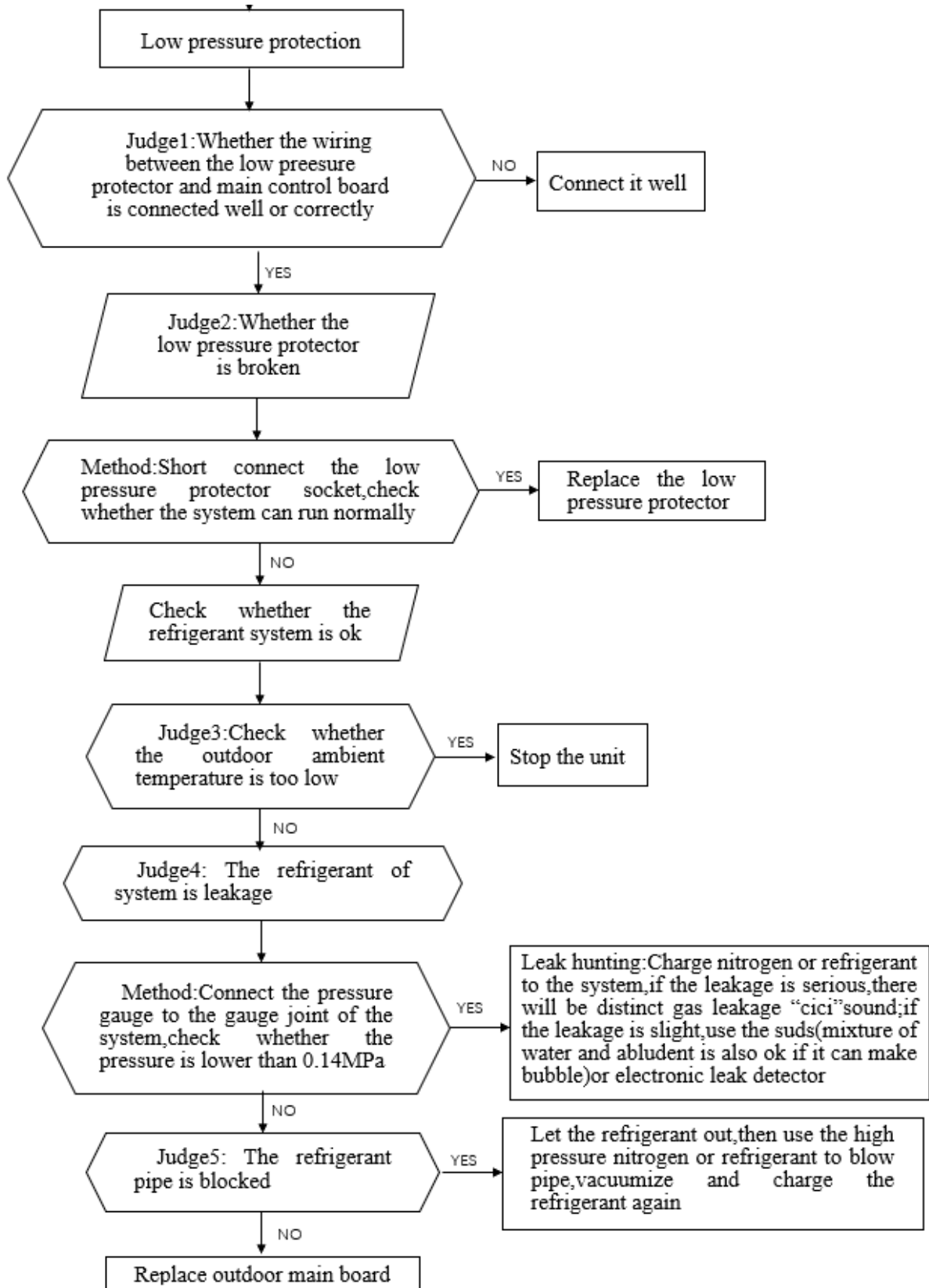


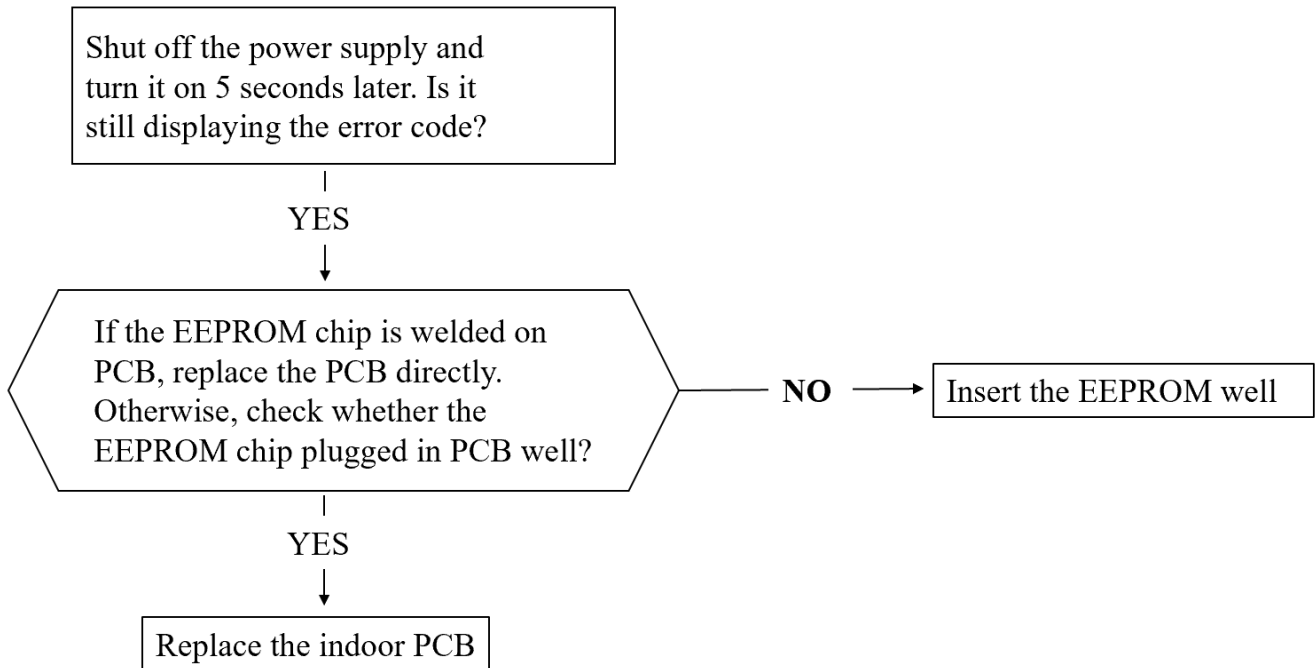
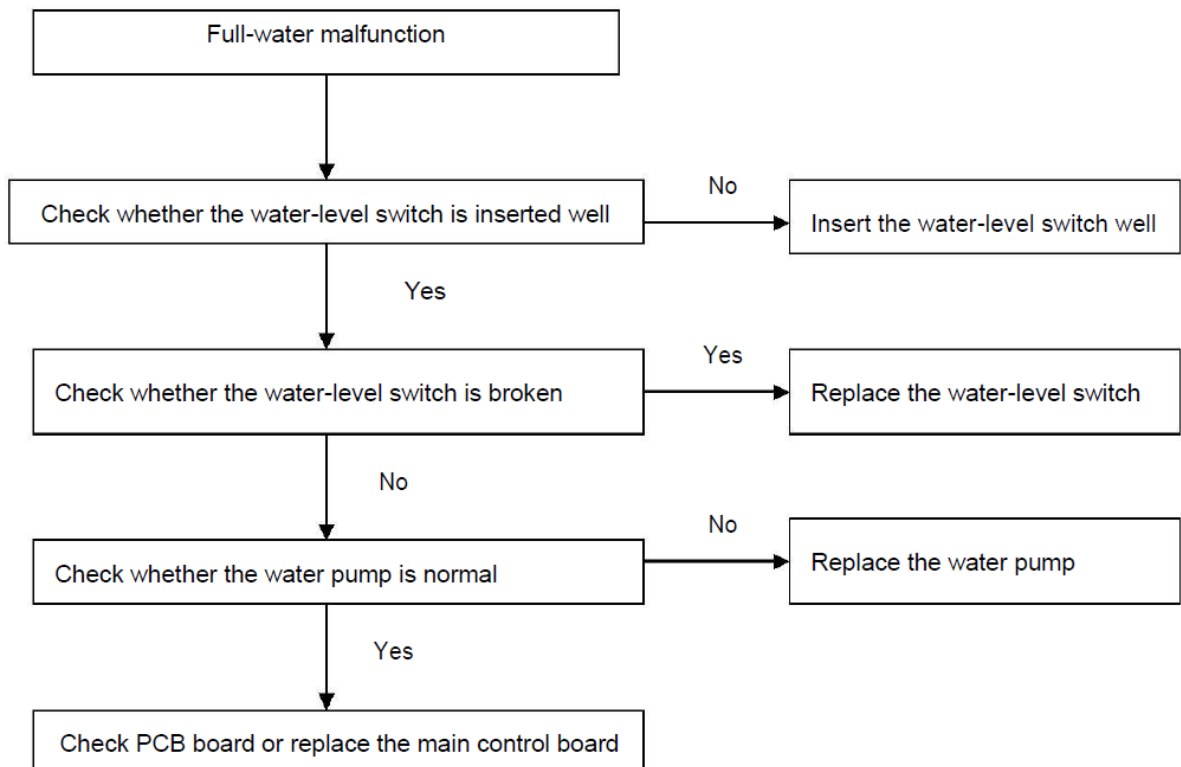
### E4. Compressor discharge temperature sensor failure

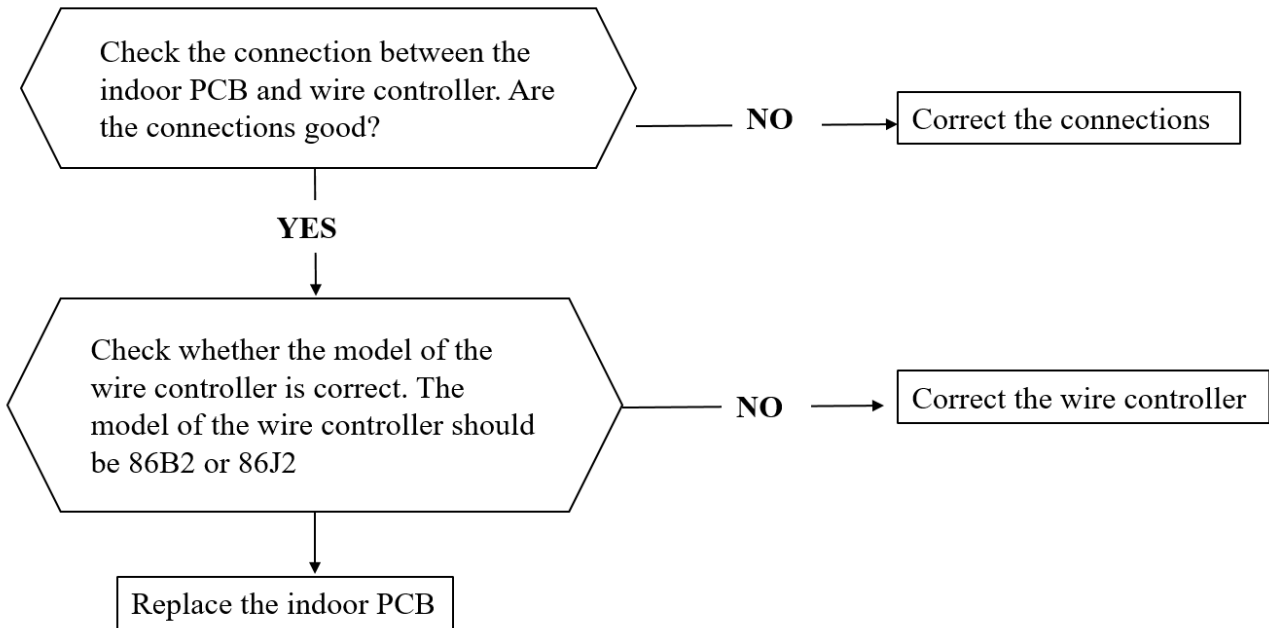


#### E4.High pressure protection



**E4: Low pressure protection**

**Ed:EEPROM malfunction of indoor main control board****EL/d3: Full-loading water alarm**

**C5: Bad communication between indoor PCB & wire controller  
(Wire controller display)**

# Part 5 Installation

## 1. Precaution on Installation

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

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

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

*Specially Notice the pipe length/height/dimension of each capacity.*

### Maximum pipe length

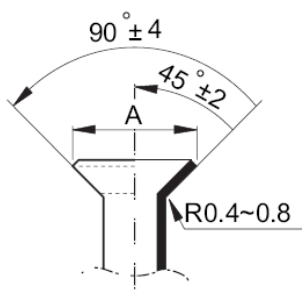
Model	Max. Length	Max. Elevation
24,000Btu/h	25m	15m
36,000Btu/h	30m	20m
48000~60,000Btu/h	50	30

### Piping sizes

Model	Liquid(mm)	Gas(mm)
24,000Btu/h	9.52	15.88
36,000(48,000) (60,000) Btu/h	9.52	19.05

### 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.

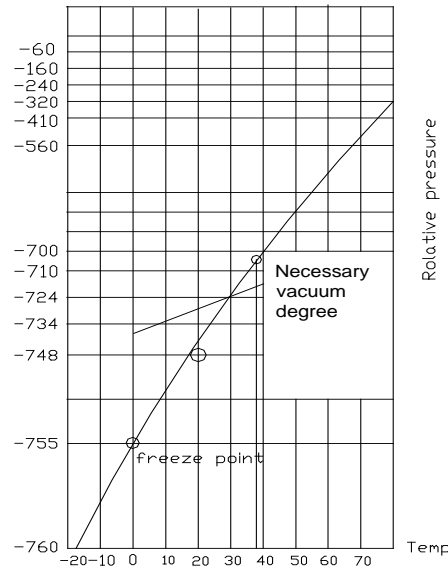
Pipe gauge	Tightening torque	Flare dimension A		Flare shape
		Min (mm)	Max	
Φ6.4	15~16N.m (153~163 kgf.cm)	8.3	8.7	
Φ9.5	25~26N.m (255~265kgf.cm)	12.0	12.4	
Φ12.7	35~36N.m (357~367kgf.cm)	15.4	15.8	
Φ15.9	45~47N.m (459~480 kgf.cm)	18.6	19.1	
Φ19.1	65~67N.m (663~684kgf.cm)	22.9	23.3	

b. The stop value 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.

- 
- c. Expel the air after connecting the refrigerant pipe with the indoor unit and the outdoor unit. Then fasten the nuts at the repair-points.
- 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.
  - 3) Connect the pipes.
  - 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.
  - 5) Be sure of no leakage by checking it with leak detector or soap water.
  - 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

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.

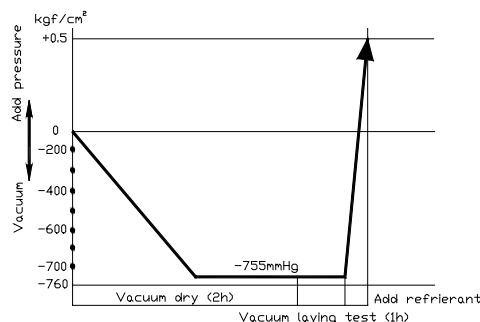


### 2) Vacuum dry procedure

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>

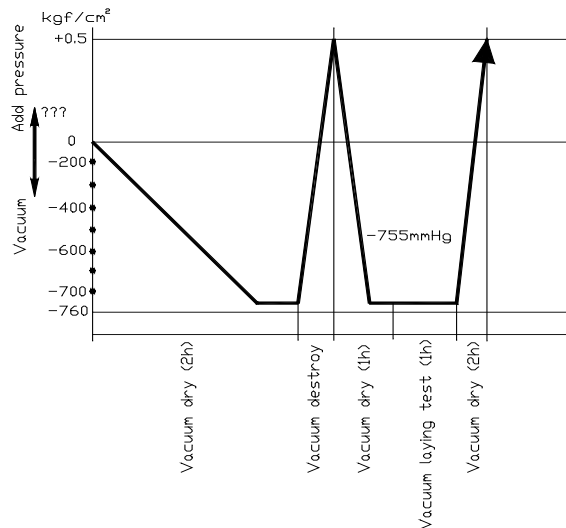
Because nitrogen is for drying gas, it has vacuum drying effect during vacuum destroy. But if the moisture is too much, this method can't dry thoroughly. So, please pay more attention to prevent water entering and forming condensation water.

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

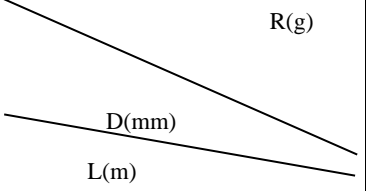
- a) Refrigerant cannot be charged until field wiring has been completed.
- b) Refrigerant may only be charged after performing the leak test and the vacuum pumping.
- c) When charging a system, care shall be taken that its maximum permissible charge is never exceeded, in view of the danger of liquid hammer.
- d) Charging with an unsuitable substance may cause explosions and accidents, so always ensure that

the appropriate refrigerant is charged.

- e) Refrigerant containers shall be opened slowly.
- f) 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.

#### For 24, 36, 48, 60kBtu/h (indoor unit throttle)

			
	φ6.4	Φ9.52	Φ12.7
Less than 5m (One-way)	—	—	—
Added Refrigerant When Over 5m(One-way)	22g/m×(L-5)	54g/m×(L-5)	110g/m×(L-5)

#### Remark:

R (g): Additional refrigerant to be charged

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

D (mm): Liquid side piping diameter

## 4. Water Drainage

### 4.1 Gradient and Supporting

- 1). Keep the drainpipe sloping downwards at a gradient of at least 1/50. Keep the drainpipe as short as possible and eliminate the air bubble.
- 2). The horizontal drainpipe should be short. When the pipe is too long, a prop stand must be installed to keep the gradient of 1/50 and prevent bending. Refer to the following table for the specification of the prop stand.

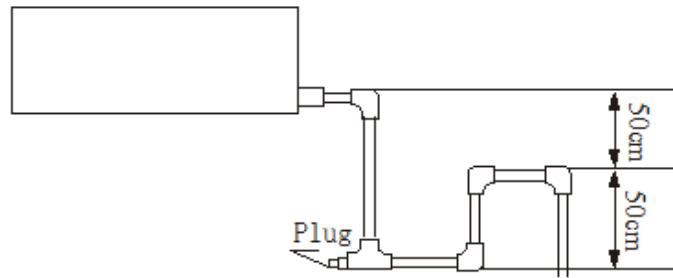
	Diameter	Distance between the prop stands
Hard PVC pipe	25~40mm	1~1.5m

### 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.

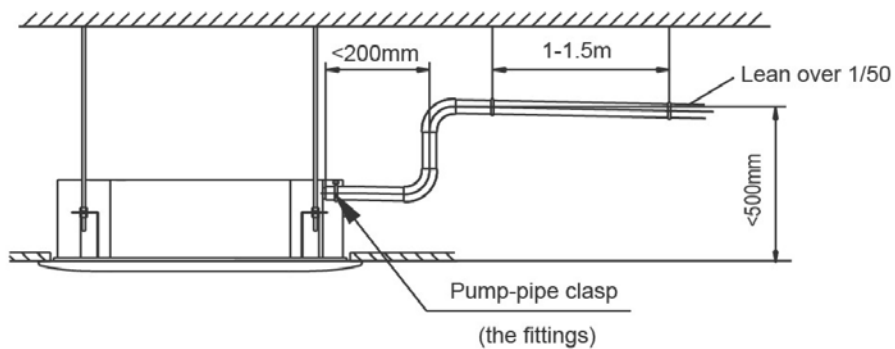
### 4.2 Drainpipe Trap

- 1). If the pressure at the connection of the drainpipe is negative, it needs to design drainpipe trap.
- 2). Every indoor unit needs one drainpipe trap.
- 3). A plug should be designed to do cleaning.

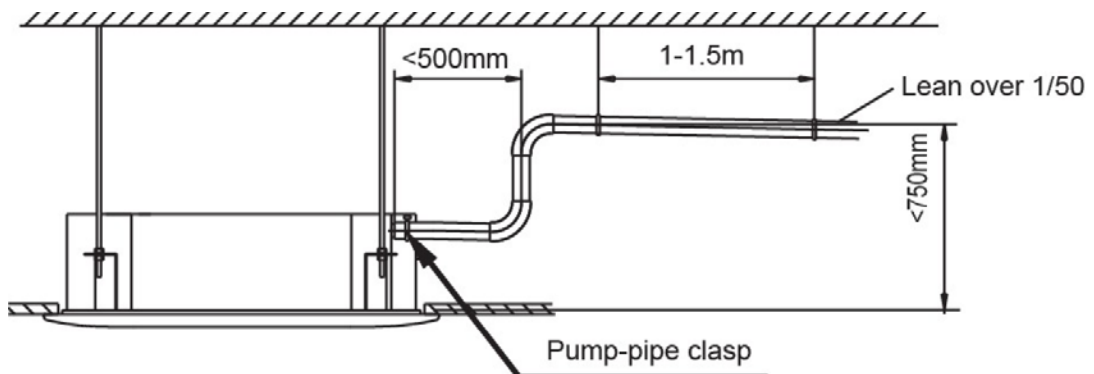


### 4.3 Upwards drainage (drain pump)

For Four-way cassette(compact)

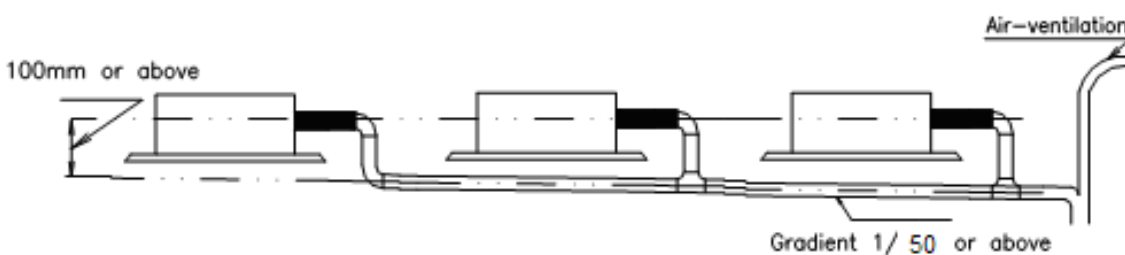


For Four-way cassette



### 4.4 Convergent drainage

- 1). The number of indoor units should be as small as possible to prevent the traverse main pipe overlong.
- 2). Indoor unit with drain pump and indoor unit without drain pump should be in different drainage system.



### 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	$\leq 14$	Φ 25	3.0
Hard PVC	$14 < \leq 88$	Φ 30	3.5
Hard PVC	$88 < \leq 334$	Φ 40	4.0
Hard PVC	$175 < \leq 334$	Φ 50	4.5
Hard PVC	$334 < \leq$	Φ 80	6.0

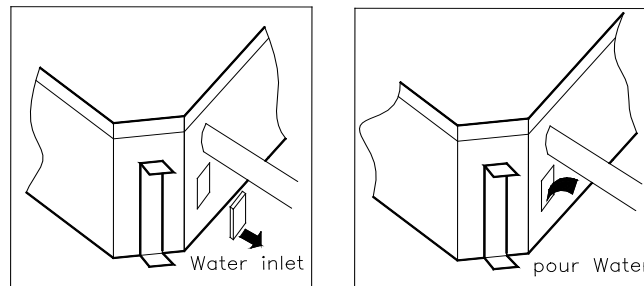
## 4.5 Drainage test

### 1). Drainage without drain pump

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

### 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

### 1). Insulation material

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

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

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

### 2). Thickness choice for insulation material

Insulation material thickness is as follows:

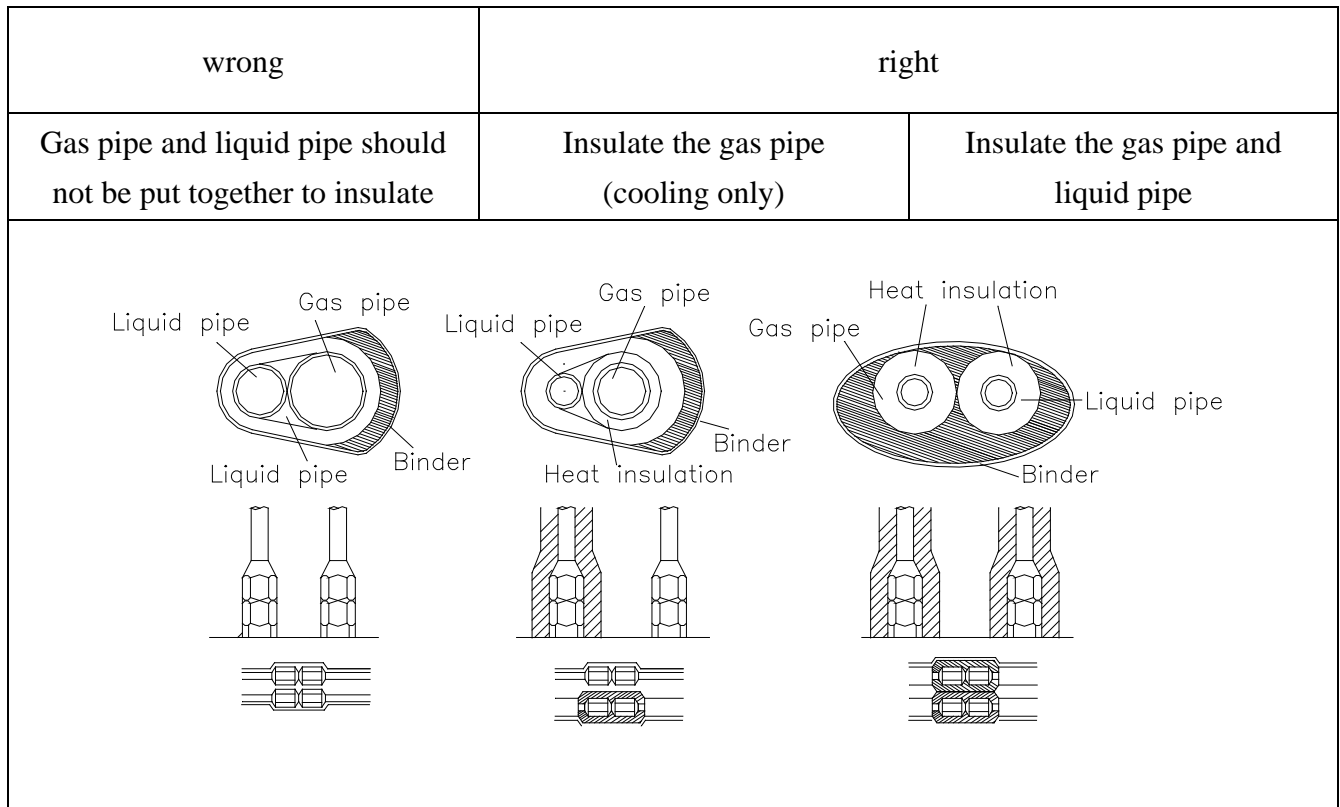
	Pipe diameter (mm)	Adiabatic material thickness
Refrigerant pipe	Φ6.4—Φ25.4	10mm
	Φ28.6—Φ38.1	15mm
Drainage pipe	Inner diameterΦ20—Φ32	6mm

## 5.2 Refrigerant pipe insulation

### 1). Work Procedure

- ① Before laying the pipes, the non-jointing parts and non-connection parts should be heat insulated.
- ② When the gas proof test is eligible, the jointing area, expanding area and the flange area should be heat insulated

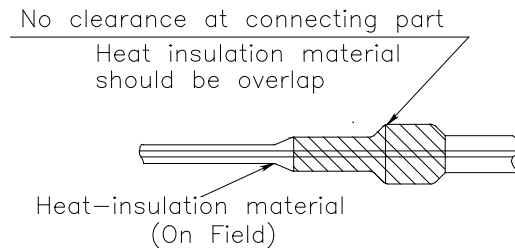
### 2). Insulation for non-jointing parts and non-connection parts



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

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

- ① Insulate for the jointing area, expanding area and the flange area should be done after checking leakage of the pipes
- ② Make sure there's no clearance in the joining part of the accessorial insulation material and local preparative insulation material.



### 5.3 Drainage pipe insulation

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

### 5.4 Note

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

## 6. Wiring

Please refer to the Wiring Diagram.

## 7. 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**

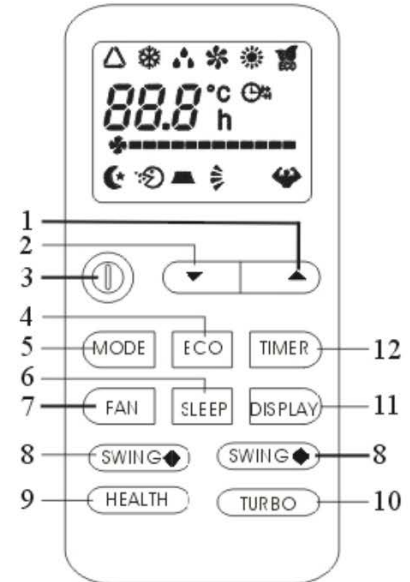
- Whether there is vibration or abnormal noise during operation.
- Whether the generated wind, noise, or condensed of by the air conditioner have influenced your neighborhood.
- Whether any of the refrigerant is leaked.

# Part 6 Controller

## 1. Wireless Remote Controller

### 1.1 GYKG-52e

No.	Button	Function
1	▲ (TEMP UP)	Increase the temperature or time by 1 unit
2	▼ (TEMP DN)	Decrease the temperature or time by 1 unit
3	ON/OFF	To switch the conditioner on and off.
4	ECO	In cooling mode, press this button, the temperature will increase 2 °C on the base of setting temperature In heating mode, press this button, the temperature will decrease 2 °C on the base of setting temperature
5	MODE	To select the mode of operation
6	SLEEP	To activate the function "SLEEP"
7	FAN	To select the fan speed of auto/low/mid/high
8	SWING	To activate or deactivate of the movement of the "DEFLECTORS" .
9	HEALTHY	To switch - on /off HEALTHY function. It is a button which controls the ionizer or plasma generator only for inverter type.
10	TURBO	In cooling mode, press this button, the unit will give the maximum cooling temperature with 16 °C In heating mode, press this button, the unit will give the maximum heating temperature with 31 °C
11	DISPLAY	To switch on/off the LED display (if present)
12	TIMER	To set automatic switching-on/off



- ⚠ The outlook and some function of remote control may vary according to the model.
- ⚠ The shape and position of buttons and indicators may vary according to the model, but their function is the same.
- ⚠ The unit confirms the correct reception of each press button with a beep.

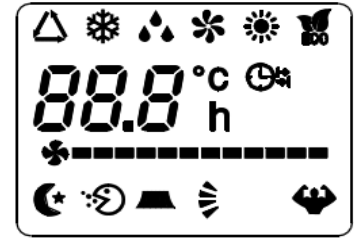
### 1.2 General Function for wireless remote controller:

#### Model and Specification

Model	R05/BGE
Rated voltage	3.0V(2pieces of LR03 7# batteries)
Min voltage for sending signal of CPU	2.4V
Effective receiving distance	8m~11m
Operation condition	-5~60°C

### 1.3 Remote control display

No.	Symbols	Meaning
1	△	FEEL mode indicator
2	❄️	COOLING indicator
3	💧	DEHUMIDIFYING indicator
4	🌀	FAN ONLY OPERATION indicator
5	☀️	HEATING indicator
6	🕒	TIMER OFF indicator
7	🕒	TIMER ON indicator
8	🌀-	AUTO FAN indicator
9	🌀---	LOW FAN SPEED indicator
10	🌀-----	MIDDLE FAN SPEED indicator
11	🌀-----	HIGH FAN SPEED indicator
12	🌙	SLEEP indicator
13	👑	SUPER indicator
14	🌿	HEALTHY indicator
15	🌿 ECO	ECO indicator
16	🔋	BATTERY indicator
17	🔋	BATTERY indicator
18	88:8	CLOCK indicator



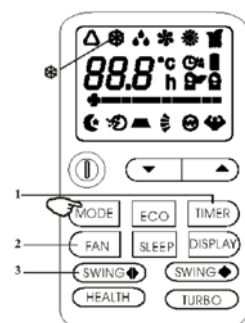
#### COOLING MODE

The cooling function allows the air conditioner to cool the room and at the same time reduces the humidity in the air.

To activate the cooling function (COOL), press the MODE button until the symbol appears on the display.

The cooling cycle is activated by setting the keys ▲ or ▼ at a temperature lower than that of the room.

To optimize the functioning of the conditioner, adjust the temperature (1), the speed (2) and the direction of the air flow (3) by pressing the keys indicated.



## HEATING MODE

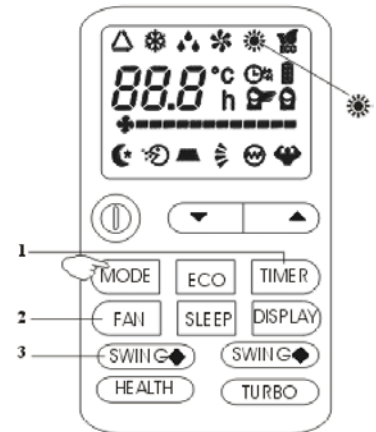
The heating function allows the air conditioner to produce hot air.

To activate the heating function (HEAT), press the MODE button until the symbol appears on the display.

With the keys ▲ or ▼ set a temperature higher than that of the room. To optimize the functioning of the conditioner, adjust the temperature (1), the speed (2) and the direction of the air flow (3) by pressing the keys indicated

⚠ The appliance is fitted with a Hot Start function, which delays appliance to startup in a few seconds to ensure an immediate output of hot air.

⚠ In HEATING operation, the appliance can automatically activate a defrost cycle, which is essential to free the condenser from an excessive deposit of frost. This procedure usually lasts for 2-10 minutes during defrosting, fans stop operation. After defrosting, it returns to HEATING mode automatically.



## FAN MODE

The conditioner works in only ventilation.

To set the FAN mode, Press MODE until appears in the display.

With pressing FAN button, the speed changes in the following sequence: LOW/ MEDIUM/HIGH /AUTO in FAN mode.

The remote control also stores the speed that was set in the previous mode of operation.

In FEEL mode (automatic) the air conditioner automatically chooses the fan speed and the mode of operation (COOLING or HEATING).



## TIMER MODE----TIMER ON

To set the automatic switching on of the air conditioner.

To program the time start, the appliance should be off.

Press TIMER, Set the temperature with pressing the key ▲ or ▼, Press TIMER Again, set the time with pressing the key ▲ or ▼, Press the key more times till on the display you can read the time which passes between the programming and the timed start.

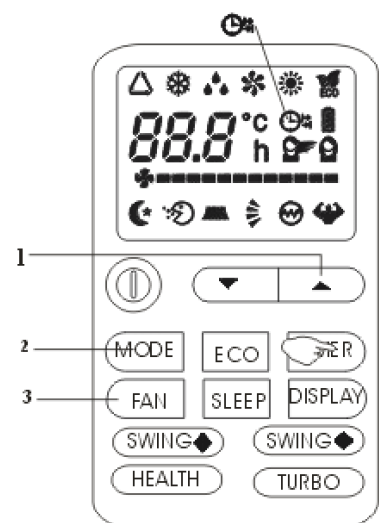
### IMPORTANT!

Before proceeding with the timed start: program the working mode with the key MODE (2) and the fan speed with the key FAN (3).

Switch the conditioner off (with the key ON/OFF).

Note: To cancel the steted function, press the TIMER button again.

Note: IN case of power off, it is necessary to set TIMER ON again.



## TIMER MODE----TIMER OFF

To set the automatic switching-off of the air conditioner.

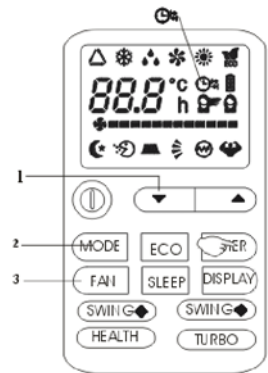
The timed stop is programmed with the appliance on.

Press TIMER, Set the time pressing the key ▲ or ▼, Press the key more times till on the display you can read the time which passes between the programming and the timed stop.

Note: To cancel the stetted function, press the TIMER button again.

Note: IN case of power off, it is necessary to set TIMER OFF again.

Note: While the time was right settled, the TIMER function of this remote (clock function) can set by half hours.



## DRY MODE

This function reduces the humidity of the air to make the room more comfortable.

To set the DRY mode, Press MODE until appears in the display. An automatic function of alternating cooling cycles and air fan is activated.

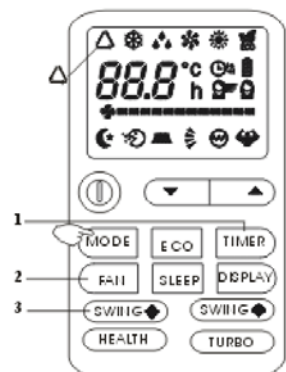


## FEEL MODE

To activate the FEEL (automatic) mode of operation, press the MODE button on the remote control until the symbol appears in the display.

In the FEEL mode the fan speed and the temperature are set automatically according to the room temperature (tested by the probe which is incorporated in the indoor unit) to ensure user comfort.

Ambient temp	Operation mode	Auto temp.
< 20°C	HEATING ( FOR HEAT PUMP TYPE) FAN (FOR COOL ONLY TYPE)	23°C
20°C~26°C	DRY	18°C
> 26°C	COOL	23°C



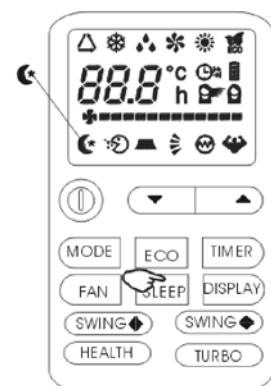
To optimize the working of the conditioner, adjust the temperature(only±2°C)(1), the speed (2) and the direction of the air flow (3) by pressing the buttons indicated .

## SLEEP MODE

To activate the SLEEP mode of operation, press the SLEEP button on the remote control until the symbol (AUTOQUIET) appears in the display.

The function “SLEEP” automatically adjusts the temperature to make the room more comfortable during the night sleep. In cooling or dry mode, the set temperature will automatically raise by 1 °C every 60 minutes, to achieve a total rise of 2 °C during the first 2 hours of work.

In heating mode the set temperature is gradually decreased by 2 °C during the first 2 hours of work.



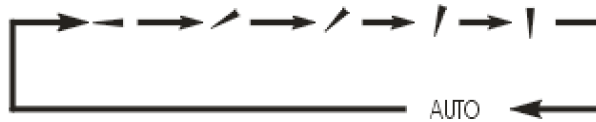
After 10 hours running in sleep mode the air conditioner is switched off automatically.

## ■ Air flow direction adjustment procedure

### Adjust air flow direction

■ Up/down direction can be adjusted by using the AIRFLOW button on the remote controller.

This button, each time pressed, changes the mode in the following sequence:



■ Push the LOUVER button, changes the mode to swing louver.

Push the button, to stop swing.

Note:

■ When the room temperature controller(thermostat)trips in the heating mode or when the defrosting operation is conducted, the blow flap changes automatically to the horizontal position.

- When the heating operation has just started and the room temperature is still low it

## ■ About TIMER operation

### About Amenity reservation

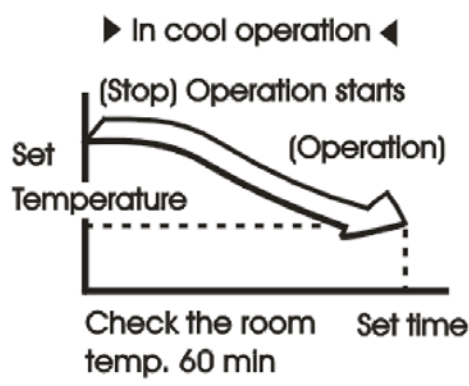
Amenity reservation function is provided to start the operation a little earlier so that the room temperature is near the optimum temperature at the timer ON time in case of starting the operation by TIMER ON/OFF.

■ Mechanism

Checking of the room temperature starts 60 minutes ahead of the timer ON time.

Depending on the temperature at that time, operation starts 5 to 60 minutes ahead of the timer ON time.

■ Amenity reservation is the function only for COOL and HEAT operation mode (including AUTO).It does not actuate in DRY mode.



### About SLEEP Operation

When the SLEEP operation is selected, the room temperature is automatically controlled with elapsed time so that the room isn't too cool during cooling or too warm during heating.

- During cooling and dry: Present temperature is raised 1 set), and 2 °C in the temperature. The temperature doesn't change ever.
- During heating: Present temperature is lowered 1 2 °C in the temperature. The temperature doesn't change ever.

### About FAN SPEED

Capacity of the air conditioner can be selected by your choice. During heating or cooling.

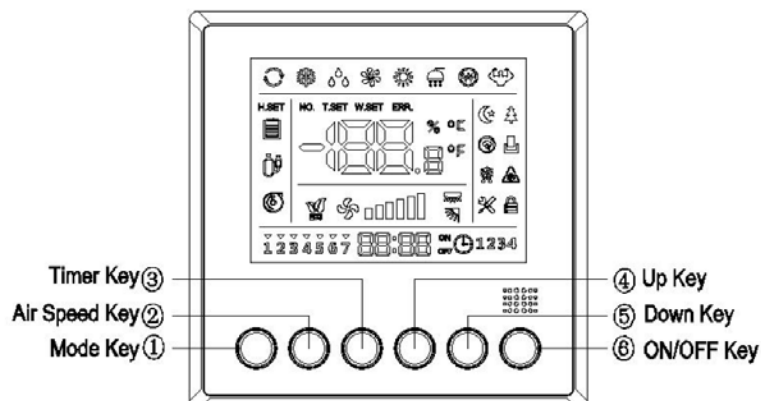
Operation capacity by your choice	FAN SPEED
Set automatically by microcomputer	AUTO
Powerful operation with high capacity	HI
Standard operation	MED
Energy-saving operation	LO

### About power-off memory function

- When the air conditioner disconnects the power suddenly, restart it, the air conditioner operates at the mode it did before power suddenly failed.

## 2. Wired remote controller

### 2.1 An Introduction to Wire Controller



### Description of Icons or Symbols

	Sleep		Fresh		Door Card		Defrost
	Anti-freeze		Set		Child Lock		Economic
	Up/Down Swing		Left/Right Swing		Degree centigrade		Fahrenheit
	Electric	<i>ERR.</i>	Error		Water Level		Water Pump Sign
<i>W.</i>	Current Water Temperature	<i>T.</i>	Ambient Temperature	<i>SET</i>	Set Temperature		Compressor Sign
<i>ON</i>	Timer ON	<i>OFF</i>	Timer OFF				

Remark: If an icon goes on, it means “ON”; if such icon goes off, it means “OFF”.

### Dial Setting

Definition	SW1-1	SW1-2	Description
Reserve	ON	-	/
	OFF	-	/
Reserve	-	ON	/
	-	OFF	/

## 2.2 Initial Power-on

2.2.1. It is necessary to initially power the wire controller on for self-check wherein all the icons or symbols go on for 3 seconds. During such period, all the key and remote controller operations are invalid.

2.2.2. The wire controller is without the power-down memory function by default. If a user needs to use the power-down memory function, such user can see the detailed parameters corresponding to “P1” in Section 2.7.2 --- Parameter Setting.

## 2.3 Key Description

### 2.3.1 [ON/OFF] Key

2.3.1.1. Press the [ON/OFF] key once to start the controller; press the [ON/OFF] key once again to stop the controller.

### 2.3.1.2. Liquid Crystal Self-check:

Press the [ON/OFF] key to power the controller on for 5 seconds and then release such key; the controller enters self-check at the moment. The controller executes the liquid crystal self-check in the following sequence:

After the buzzer short sounds once, the following outputs successively motion (wherein the liquid crystal successively goes on from left to right and then go off.) After that, the controller exits from the self-check.

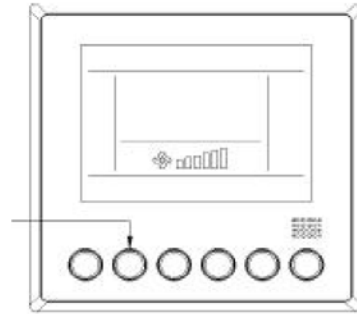
Notes: 1. The controller exits from the self-check status after it is powered off in the self-check status.

2. All the keys are invalid during the self-check.

### 2.3.2. [Mode] Key

### 2.3.2.1. Mode Switch

On the startup interface, press the [Mode] key once when the selected mode icon normally goes on and other icons go off. The switch sequence is as shown in the right picture.

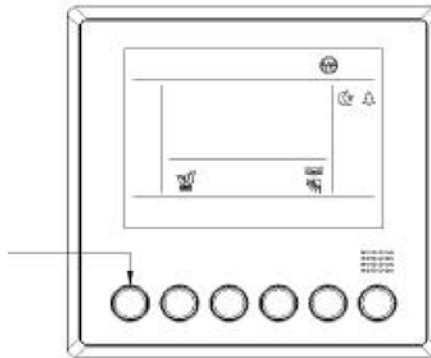


The refrigeration machine is without the “Heat” icon.

Automatic Mode: The controller with the power-down memory function can be powered on again after being powered down, re-judge the temperature and then re-execute the automatic mode; if the power-down memory function is not started, the controller will enter the standby mode.

### 2.3.2.2. Function Setting

On the startup interface, long press the [Mode] key for over 5 seconds to enter the function setting interface; short press the [Mode] key when the selected function icon twinkles with the frequency of 1Hz and other icons act as per the actual status (if the status is ON, the icons normally go on; otherwise, the icons go off.)



### 2.3.3. [▲]/[▼] Key

2.3.3.1 On the startup interface, press the [▲]/[▼] key once to set the temperature increase or decrease by 0.5°C ;

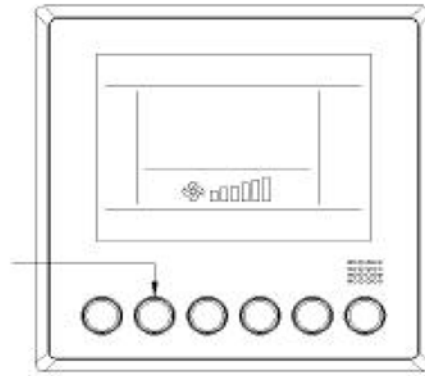
### 2.3.3.2 Forced Defrosting

On the startup interface, set the wire controller to be in the heating mode and at the temperature of 16°C, and then finish the following 6 keys of operations within 5 seconds:

“[▲]→[▼]→[▲]→[▼]→[▲]→[▼]”. At the moment, the system successfully enters the forced defrosting and then the buzzer long beeps once.

### 2.3.4 [Air Speed] Key

On the startup interface, press the [Air Speed] key once, the selected air speed icon normally goes on and other icons go off wherein the air speed switches in the cyclic sequence of low air speed → intermediate air speed → high air speed



- When the wire controller is initially powered on, its default air speed is low and the icon of low air speed is displayed.
- When being in the dehumidifying mode, the wire controller does not respond to any operation of the [Air Speed] key wherein the air speed cannot be adjusted, the default air speed is low and the icon of low air speed normally goes on.
- When the wire controller is at the time of automatic air, the air speed icon is successively displayed in the dynamic and cyclic sequence of low air speed → intermediate air speed → high air speed → low air speed.
- If the air speed is of individual backup, the wire controller will display the last set air speed of the corresponding mode when it enters the same mode next time.

### 2.3.5 [Timer] Key

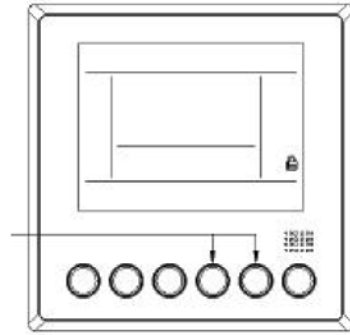
2.3.5.1 Continuously press the [Timer] key for over 5 seconds to enter the clock setting interface (See Chapter 2.5--- Clock Setting for details).

2.3.5.2 Press the [Timer] key once to enter the timer setting interface (See Chapter 2.6---Timer Setting for details).

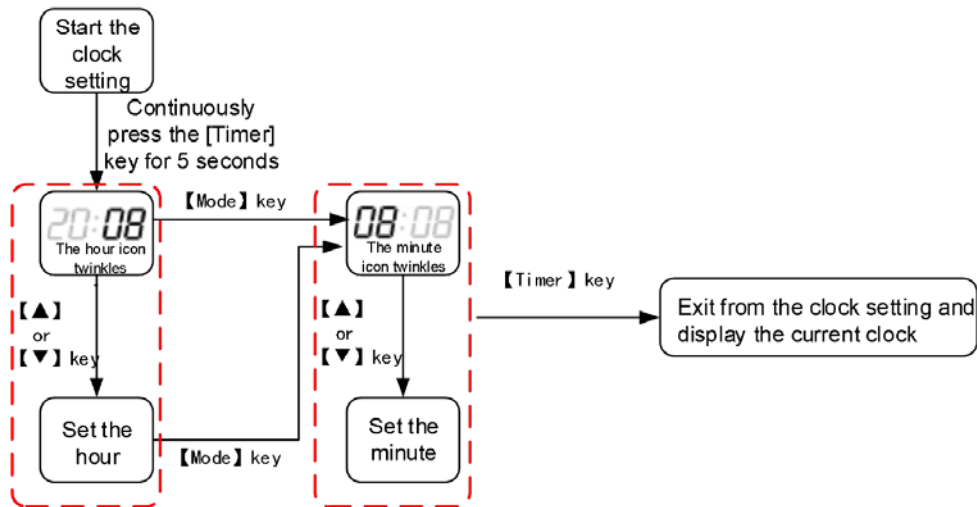
## 2.4. Auxiliary Functions

### 2.4.1. Child Lock

1. On the startup or shutdown interface, simultaneously press the [▲] and [▼] keys for over 5 seconds to enable the child lock when the child lock icon normally goes on.
2. When the child lock is valid, the operations of other keys are invalid but the icons twinkle with the frequency of 1Hz.



## 2.5. Clock Setting

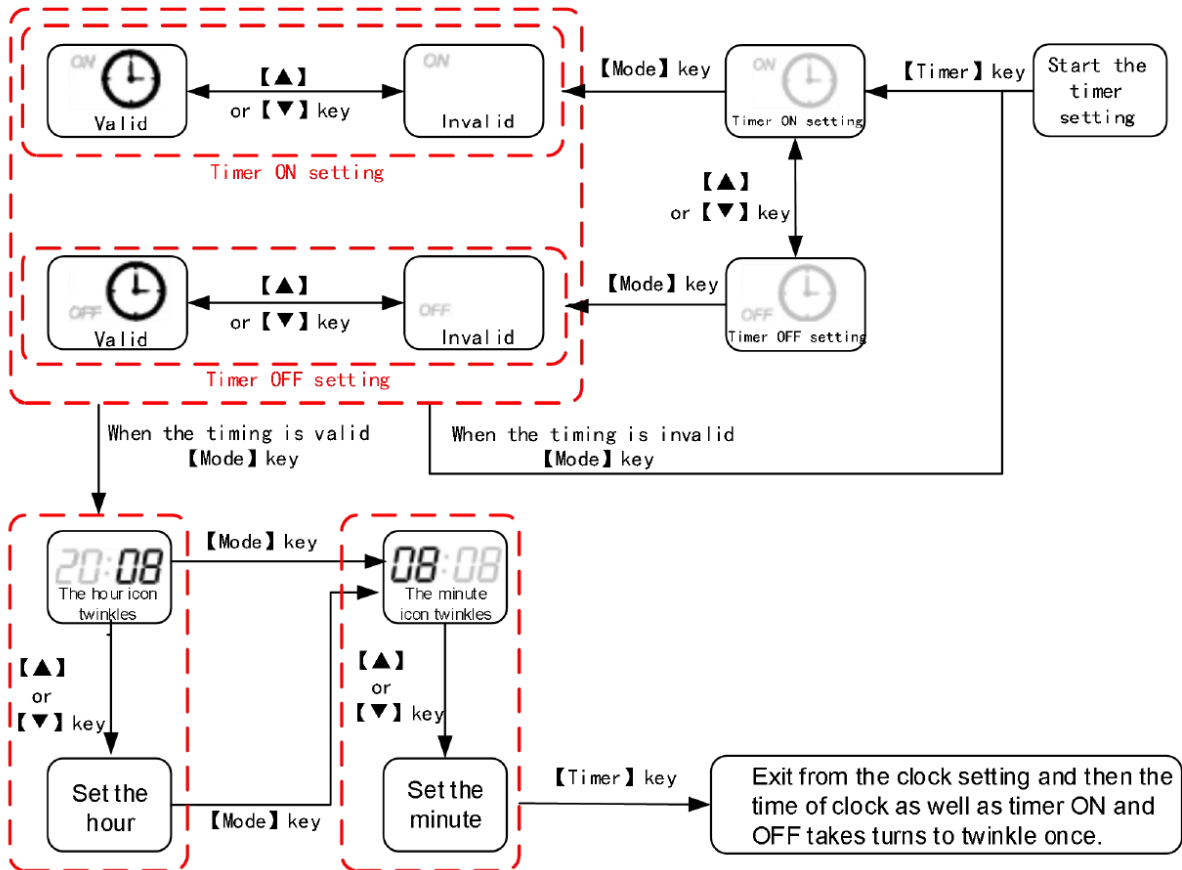


Set the period by pressing the [Timer] key and then exit from the clock setting with such setting saved;

Set the period by pressing the [ON/OFF] or [Mode] key and then exit from the clock setting with such setting not saved;

Set the status and if there are no key operations for 15 consecutive seconds, exit from the clock setting with such setting not saved.

## 2.6. Timer Setting



Set the period by pressing the [Timer] key and then exit from the clock setting with such setting saved;

Set the period by pressing the [ON/OFF] or [Mode] key and then exit from the clock setting with such setting not saved;

Set the status and if there are no key operations for 15 consecutive seconds, exit from the clock setting with such setting not saved.

## 2.7 Parameter Query/Setting

### 2.7.1 Parameter Query

- Continuously press the “[Mode]+[▲]” combination keys for 5 seconds to automatically enter the parameter query interface when the “Time Area-Hour” icon twinkles and displays the “Parameter Code” and “Temperature Area” displays the current “Parameter Value” corresponding to such “Parameter Code”.
- When the parameter code twinkles, press the [▲] or [▼] key to switch the parameter code.

Parameter Code	Area Display	Parameter Name	Value to Query	Area Display	Display Range
01	Time Area-Hour	Indoor ambient temperature (°C)	Current value	Temperature Display Area	-30~150
02	Time Area-Hour	Temperature in the middle of evaporator of the indoor unit (°C)	Current value	Temperature Display Area	-30~150
03	Time Area-Hour	Temperature at the outlet of evaporator of the indoor unit (°C)	Current value	Temperature Display Area	-30~150
E1	Time Area-Hour	Historical Error 1	Err+**	Temperature Display Area	
E2	Time Area-Hour	Historical Error 2	Err+**	Temperature Display Area	
E3	Time Area-Hour	Historical Error 3	Err+**	Temperature Display Area	
E4	Time Area-Hour	Historical Error 4	Err+**	Temperature Display Area	
E5	Time Area-Hour	Historical Error 5	Err+**	Temperature Display Area	

### 2.7.2 Parameter Setting

- Continuously press the “[Mode]+[ ▼]” combination keys for 5 seconds to automatically enter the parameter setting interface when the “Time Area-Hour” icon twinkles and displays the “Parameter Code” and “Temperature Area” displays the current “Parameter Value” corresponding to such “Parameter Code”.
- When the parameter code twinkles, press the [▲] or [▼] key to switch the “Parameter Code”; press the [Mode] key to stop the “Parameter Code” from twinkling and enters the “Parameter Value” changing interface when the “Parameter Value” twinkles.
- When the parameter value twinkles, press the [▲] or [▼] key to change the “Parameter Value”; press the [Mode] key to save the “Parameter Value” and return to the “Parameter Code” twinkling interface.

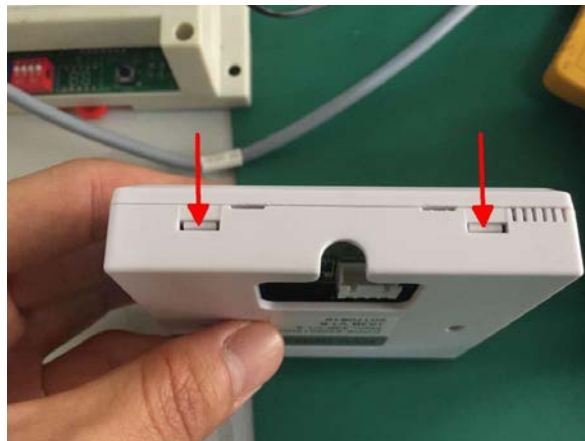
Parameter Code			Query the Current Parameter		Query Range
Parameter Code	Area Display	Parameter Name	Value to Query	Area Display	
P1	Time Area-Hour	Power-down Memory Mode	Off	Temperature Display Area	On: Resume the pre-outage status after being powered on in case of outage
			On		
P2	Time Area-Hour	Temperature Unit Conversion	°C	Temperature Display Area	
			°F		

## 2.8. 86B1\86B2 wire controller installation guideline

2.8.1 Open the wire controller packaging, check the model and the code at back surface.



2.8.2 Flip the wire controller, press the button at the bottom to separate the back plate from the front panel.



2.8.3 Pass the cable through the back panel and use 2 screws to fix it on the wall.



2.8.4 Connect the cable and the PCB board.



2.8.5 Align the front and back panel and press firmly.

