SCVC Series

12 SEER Units

Service Manual

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Part 1 General information

1. Model Names of Indoor/Outdoor Units

1.1 Indoor units

Model name	Dimension (W×H×D) (mm)	Net/Gross weight (kg)	Power supply
Round-flow Cassette			
standard			
SECR224S2A-GWC070	840×230×840	28/32	208~230V/1Ph/60Hz
SECR236S2A-GWC105	840×230×840	28/32	208~230V/1Ph/60Hz
SECR248S2A-GWC140	840×285×840	31/35	208~230V/1Ph/60Hz
SECR260S2A-GWC160	840×285×840	31/35	208~230V/1Ph/60Hz
Medium ESP Ducted Type			
SEMP224S2A-GCC070	1190×260×643	32/36	208~230V/1Ph/60Hz
SEMP236S2A-GCC105	1190×260×643	32/36	208~230V/1Ph/60Hz
SEMP248S2A-GCC140	1425×260×643	46/50	208~230V/1Ph/60Hz
SEMP260S2A-GCC160	1425×260×643	46/50	208~230V/1Ph/60Hz
Ceiling & Floor			
SEFC224S2A-GWC070	1050×235×675	26.5/31	208~230V/1Ph/60Hz
SEFC236S2A-GWC105	1250×235×675	32/37	208~230V/1Ph/60Hz
SEFC248S2A-GWC140	1670×235×675	40/46	208~230V/1Ph/60Hz
SEFC260S2A-GWC160	1670×235×675	40/46	208~230V/1Ph/60Hz
Air Handler units			
SEUA236S2A-GCC105	460x774x520	37/39	208~230V/1Ph/60Hz
SEUA260S2A-GCC160	500x1160x550	45/48	208~230V/1Ph/60Hz

1.2 Outdoor Units

Model name	Dimension (W×D×H) (mm)	Net/Gross weight (kg)	Power supply
SCVC224S2A-GTC070	554×554×633	46/49	208~230V/1Ph/60Hz
SCVC236S2A-GLC105	554×554×633	46.5/49.5	208~230V/1Ph/60Hz
SCVC248S2A-GLC140	740×740×835	92/96	208~230V/1Ph/60Hz
SCVC260S2A-GLC160	740×740×835	89/94	208~230V/1Ph/60Hz
SCVC248S4A-GHC105	740×740×835	81/88	208~230V/3Ph/60Hz
SCVC260S4A-GCC160	740×740×835	81/88	208~230V/3Ph/60Hz

2. External Appearance

2.1 Indoor Units

Round-way Cassette

24k~60k Btu/h

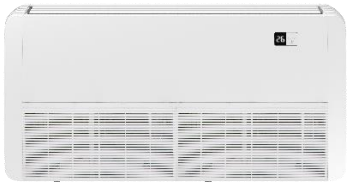
Duct Type

Medium static pressure duct
24k/36kBtu/h

Medium static pressure duct
48k/60kBtu/h

Ceiling& Floor

24kBtu/h



36kBtu/h

48k/60kBtu/h

Air Handler units

36kBtu/h

60kBtu/h

2.2 Outdoor units

 24~36kBtu/h	 48~60kBtu/h

3. Features

3.1 High quality coils

The coil is constructed of advanced inner grooved copper tube and aluminum fins.

3.2 Low operation sound level: Well-known stable and quiet running fan motor.

3.3 Well-known compressor, Sanyo & Hitachi.

3.4 Compact design: Smaller dimension and larger stuffing capacity.

3.5 Universal outdoor unit design.

Part 2 Indoor Units

Round-Way Cassette Type.....8
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1.Round-Way Cassette Type (Standard)

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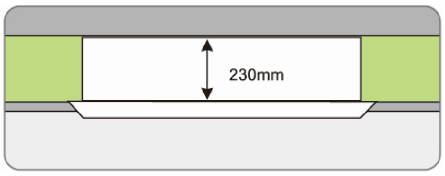
1.Features

1. Brand-new panel design. Indoor unit use uniform panel, simple and convenient.
Simple, featly and voguish appearance suit for different requirements, it's mostly used for office, shopping center, restaurant, meeting room and etc.



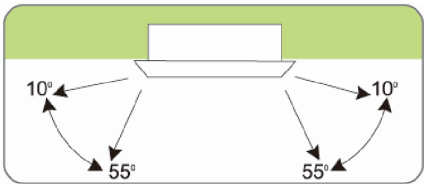
2. Ultra-thin body design, the min. height is only 230mm, save installation space.

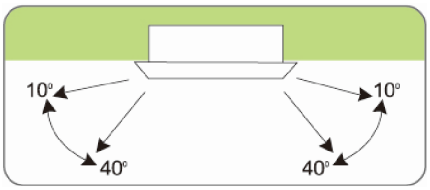


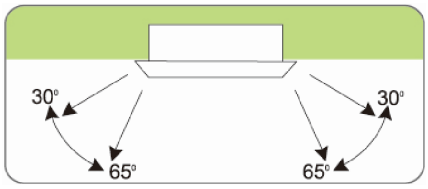
3. Round way air flow, cool air can reach each corner of the room, providing comfortable environment.

4.Intelligentauto-swing function, three modes for choice.

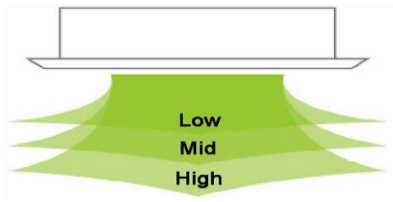
Standard mode | Anti-point blow mode | Ceiling against mode





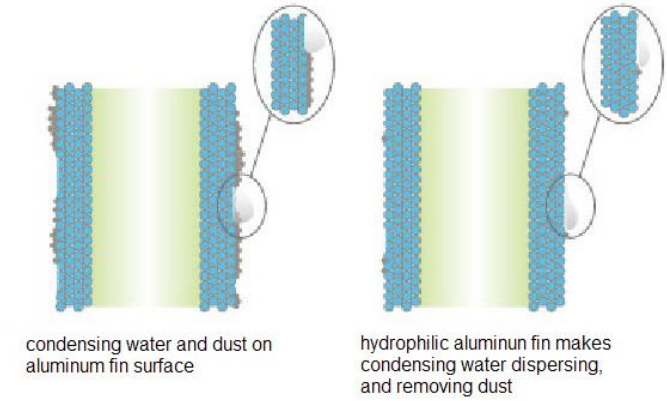


5. 3-speed fan motor，meet for different requirements.

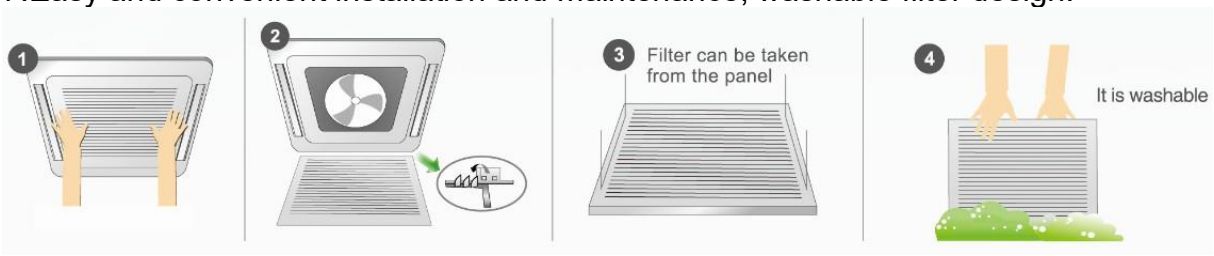


(6)New streamlined fan design.

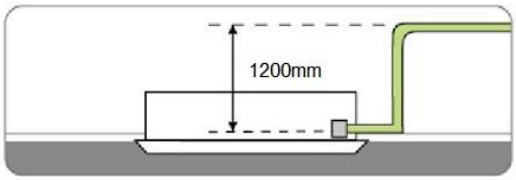
6. Energy saving and healthy, adopting hydrophilic aluminum fins increasing heat-exchange efficiency.



7.Easy and convenient installation and maintenance, washable filter design.



8.Built-in water pump, water head up to 1200mm (Compact type, 700mm).



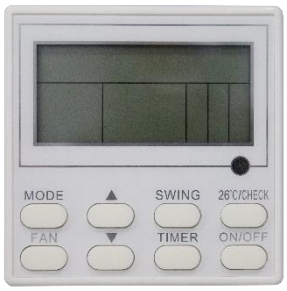
9. Fire resistance design, the E-box with galvanized steel built-in body easy for maintenance.

10.Add 4 interfaces in body, can be connected with duct to another room.Fresh air makes air quality more healthy and comfortable.

11. Multi protection and auto-restart function.

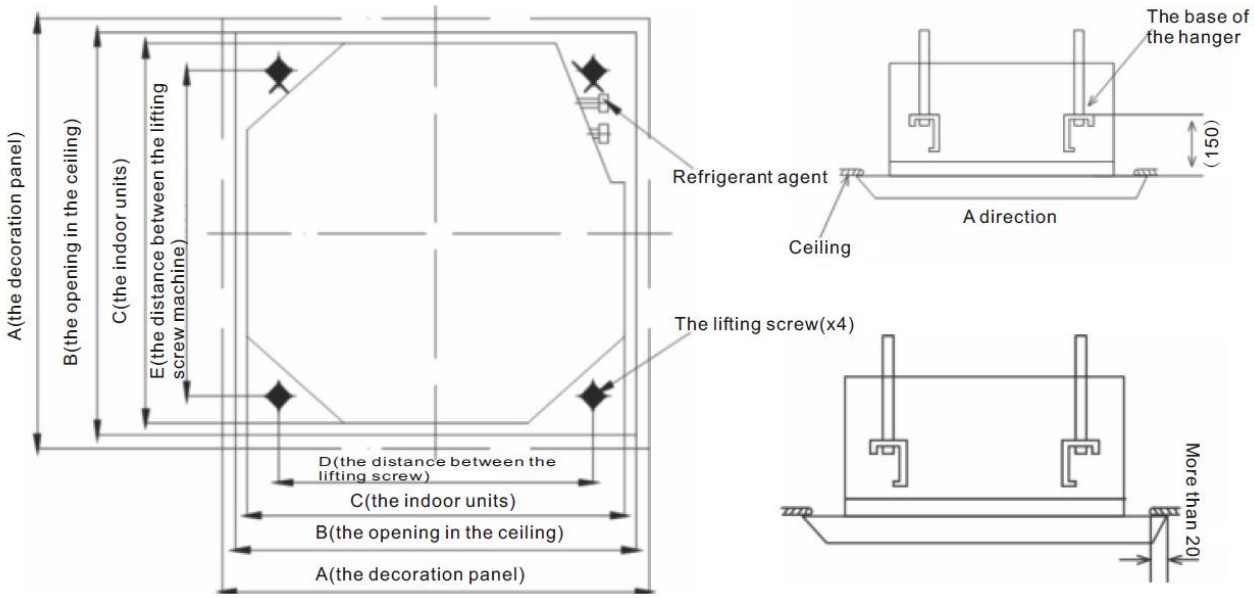
12.Standard for wireless controller; option for wired controller.

Standard



Optional

2.Dimensions



Installation dimension unit: mm

Model (kBtu/h)	Dimensions(H)
For 18, 24 series	230
For 36, 48, 60 series	285

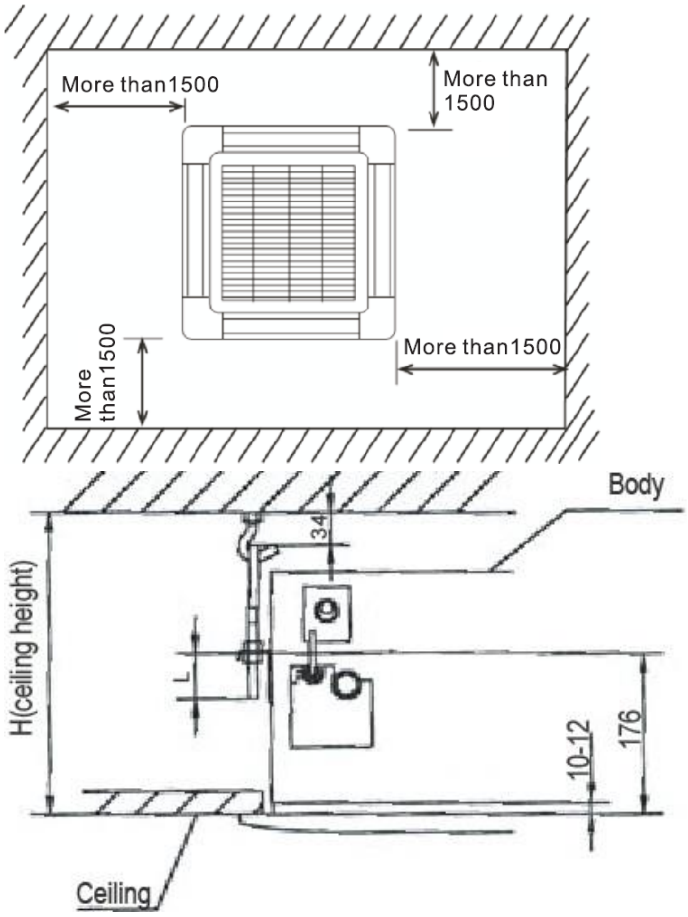
unit: mm

Model (kBtu/h)	Dimensions(H)				
	A	B	C	D	E
For 18, 24, 36, 48, 60 series	950	890*	840	680	780

3. Service Space

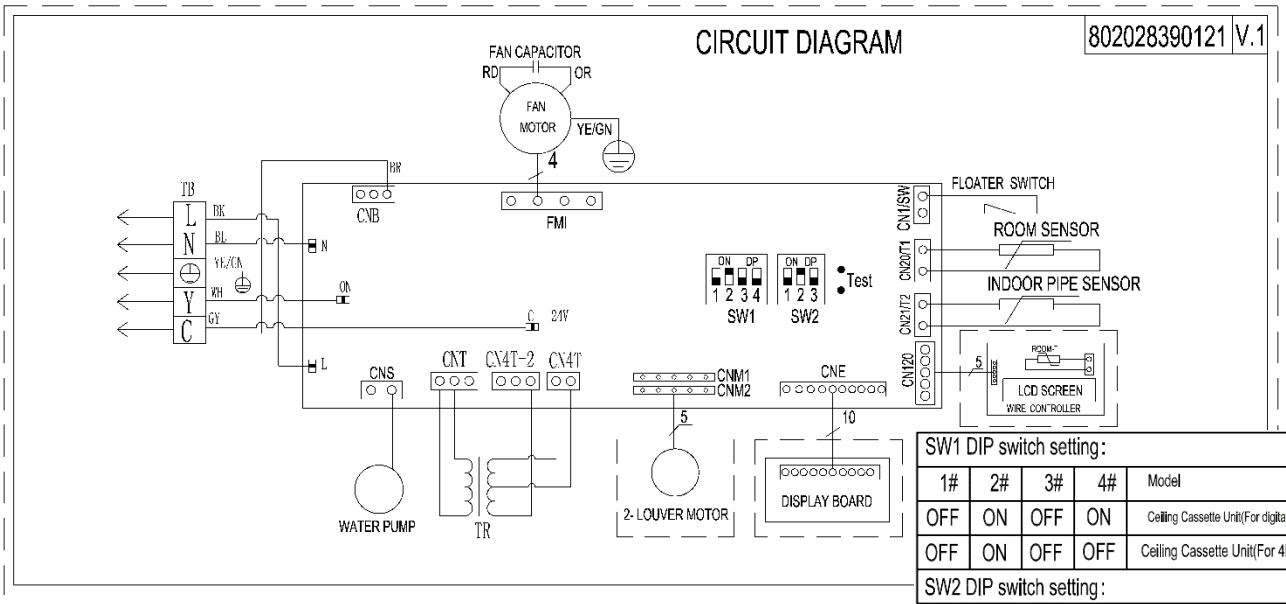
The indoor unit should be installed in a location that meets the following requirements:

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



4. Wiring Diagrams

24K/36K

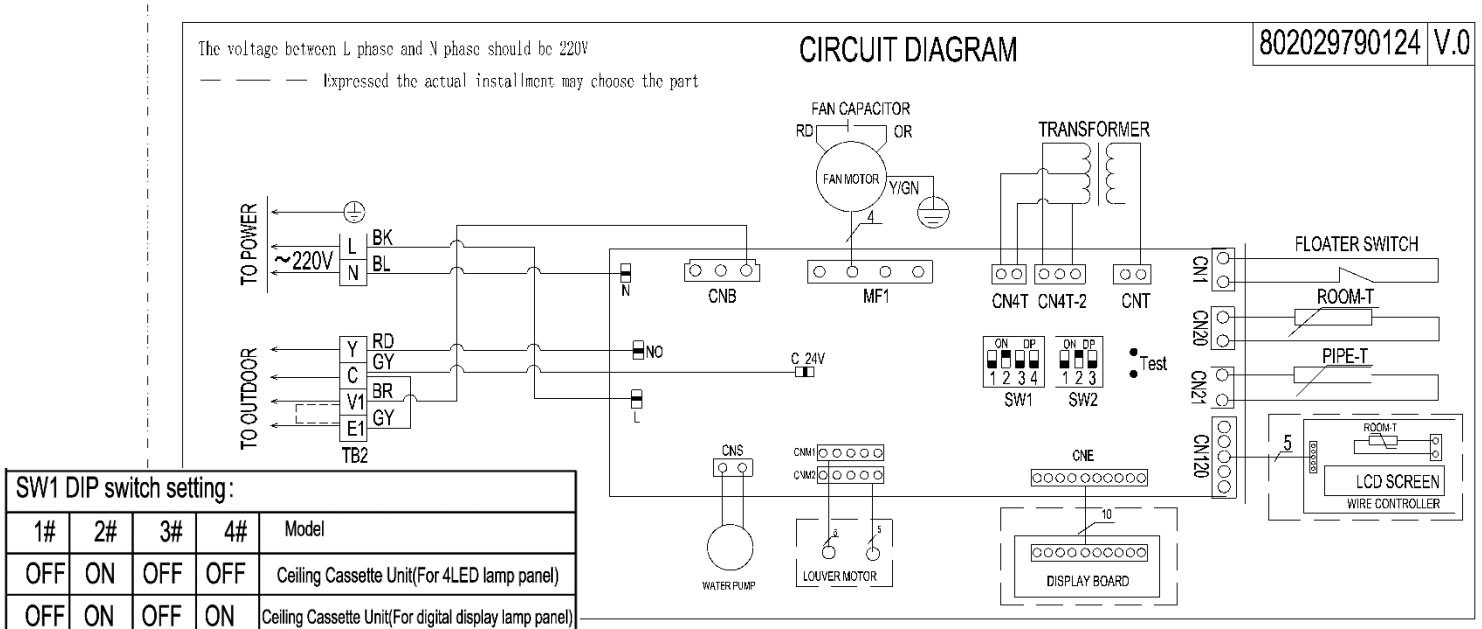


SW1 DIP switch setting:				
1#	2#	3#	4#	Model
OFF	ON	OFF	ON	Ceiling Cassette Unit(For digital display lamp panel)
OFF	ON	OFF	OFF	Ceiling Cassette Unit(For 4LED lamp panel)

SW2 DIP switch setting:		
1#	ON: Cooling &Heating type	OFF: Cooling only type
2#	ON: With Non-volatile Memory	OFF: Without Non-volatile Memory
3#	ON: Room temp. sensor T1 for Wire controller	OFF: Room temp. sensor T1 for Electric control panel

NOTE:Keep the test pitch in short circuit to enter rapid inspection mode.Normal mode is not in short circuit

48K/60K



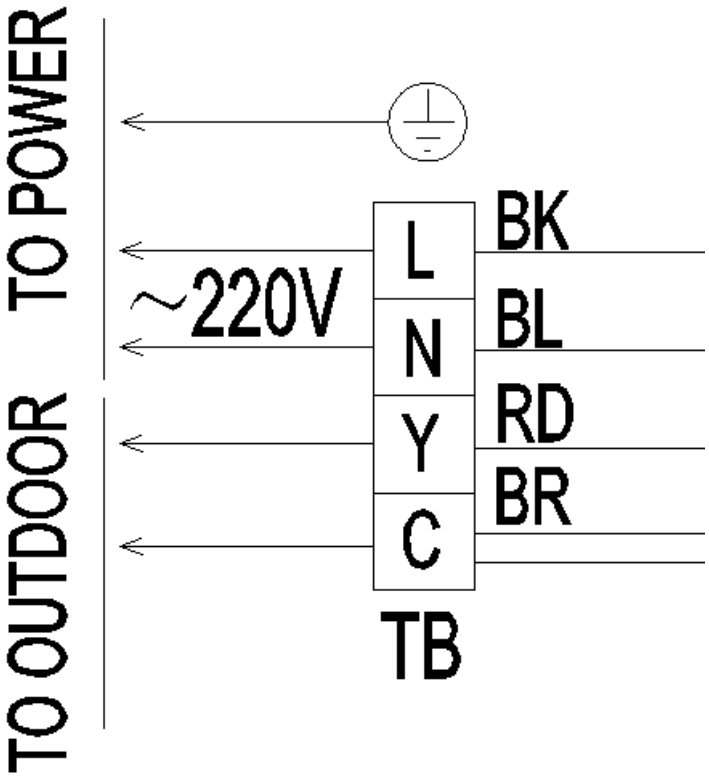
SW1 DIP switch setting:				
1#	2#	3#	4#	Model
OFF	ON	OFF	OFF	Ceiling Cassette Unit(For 4LED lamp panel)
OFF	ON	OFF	ON	Ceiling Cassette Unit(For digital display lamp panel)

SW2 DIP switch setting:		
1#	ON: Cooling &Heating type	OFF: Cooling only type
2#	ON: With Non-volatile Memory	OFF: Without Non-volatile Memory
3#	ON: Room temp. sensor T1 for Wire controller	OFF: Room temp. sensor T1 for Electric control panel

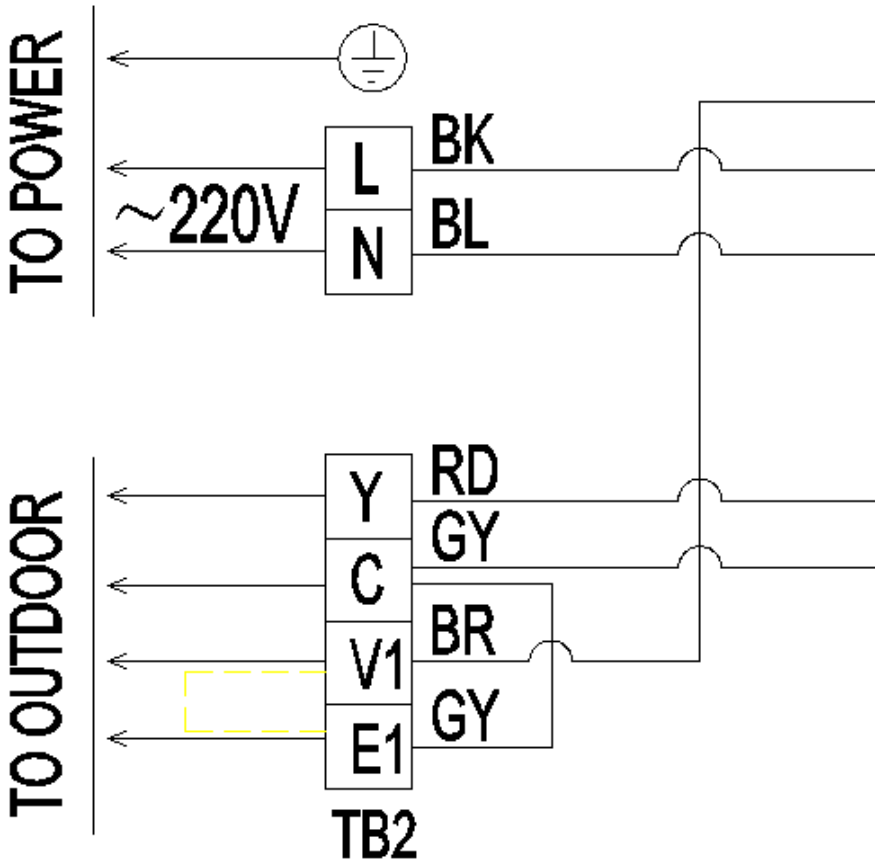
NOTE:Keep the test pitch in short circuit to enter rapid inspection mode.Normal mode is not in short circuit

5. Field Wiring

SECR224(36)S2A-GWC070(105)



SECR248(60)S2A-GWC140(160)



6. Troubleshooting

Fault Code Table

4LED Faults	Digital display	Failure descriptionction
Timer light flashing	E2	Ambient temperature sensor (T1) failure
Running light flashing	E3	Evaporator pipe temperature sensor (T2) failure
Defrost light flashing	E5	Condenser pipe temperature sensor (T3) failure
Warning light flashing	F5	Water fullfilled protection
Running light, defrost light flashing	E1	Indoor unit and wire controller communication failure
Running light, timer light flashing	P6	Indoor unit EEPROM failure
Defrost light, timer light flashing	F0	Indoor fan stall protection
Defrost light, warning light flashing	F2	Outdoor protection
	F7	outdoor unit over-current protection
Timer light, warning light flashing	E0	Indoor unit and outdoor unit communication failure
Running light, defrost light, timer light flashing	F3	High pressure protection
Defrost light , timer light, warning light flashing	F4	Low pressure protection
Running light, timer light, warning light flashing	F8	Outdoor unit exhaust temperature over-high protection
Running light, defrost light, timer light, warning light flashing	F9	Three-phase electricity phase sequence failure
Note: the flashing frequency for all above indication lights is 1HZ.		

E0: Indoor unit and outdoor unit communication failure

Solution:

(1)Check the communication cable between indoor unit and outdoor unit, if it is short connection or broken;

(2)Check the communication cable is connected corrected or not, if not, correct it;

(3)If the cable and connection are both correct, check the connected lines from communication terminal to main board are corrected or not, if not, correct it

(4)If all the above steps are done, still not solve change the indoor or outdoor main board

E1: Outdoor unit failure

Check the detail of failure at the outdoor unit.

E2: Indoor ambient temp. sensor fault (T1 sensor)

Solution:

(1)Check the T1 sensor connection loosen or not, inset it firmly, if not solve, go to next step;

(2)Take out the sensor, measure the resistance of the sensor, it is about 5KΩ at 25℃, if not, replace it; if resistance normally, change the indoor main board.

E3: Indoor evaporator pipe temperature sensor (T2) failure

Solution:

(1)Check the T2 sensor connection loosen or not, inset it firmly, if not solve, go to next step;

(2)Take out the sensor, measure the resistance of the sensor, it is about 5KΩ at 25℃, if not, replace it; if resistance normally, change the indoor main board

E5: Condenser pipe temperature sensor (T3) failure

Solution:

(1) Check the T3 sensor connection loosen or not, inset it firmly, if not solve, go to next step;

(2)Take out the sensor, measure the resistance of the sensor, it is about 5KΩ at 25℃, if not, replace it; if resistance normally, change the main board

F2: Outdoor unit protection

Solution:

Follow the F3/F4/F8/F9.

F3: High pressure protection

Solution:

(1)If the unit does not have high pressure switch, change the outdoor main board; if it has, go to next step

(2)Take out the high-pressure switch, measure its resistance, it is about 0Ω, if not, replace it; otherwise go to next step;

(3)Short connect the high-pressure switch port on the outdoor board, if it still shows P1, replace the outdoor main board; otherwise go to next step;

(4)Connect the pressure gauge to test the high pressure, if it is real too high, may be cause by too much refrigerant or other gas getting inside the system

F4: Low pressure protection

Solution:

(1)If the unit does not have low pressure switch, change the outdoor main board; if it has, go to next step

(2)Take out the low-pressure switch, measure its resistance, confirm whether it is about 0Ω, if not, replace it; otherwise go to next step;

(3)Short connect the low-pressure switch port on the outdoor board, if it still shows P2, replace the outdoor main board; otherwise go to next step;

(4)Connect the pressure gauge to test the low pressure, if it is real too low, may be cause by lack of refrigerant or leakage in the refrigerant system

F5: Water fulfilled protection (Alarm of condensing water overflow)

Solution:

(1)If the unit does not have water drainage pump:

a) Check the water level switch short connect or not, if not, short connect it, if it still not solves, change the main board

(2)If the unit has water drainage pump:

a) Check the water level switch if it is connected well, inset it firmly; then check the switch is blocked or not, if it is blocked, replace it, otherwise go to next step

b) Check the connection between pump and main board if it is 220-240V, if it is, change the water pump; if not, change the indoor main board

F7:Ourdoor overcurrent protection

Solution:

(1)Check the dial-switches is setting corrected or not according to the wiring diagram, if not, set it corrected; if corrected, go to next step

(2)Check the condenser whether it is in good ventilation, if not, remove the blockage; otherwise go to the next step.

(3)Measure the current with multimeter, and check the current via the unit check data also, compare these t wo data, if they are quite different, change the outdoor main board;

(4)If all above steps done normally, it may be caused damaged compressor or refrigerant system blocked or dirty or other gas get inside the system

F8: Outdoor unit exhaust temperature over-high protection

Solution:

(1)Check the T5 sensor connection loosen or not, inset it firmly, if not solve, go to next step;

(2)Take out the exhaust sensor (T5) from main board, measure its resistance, it is about 50KΩ at 25℃, if not, change the sensor; if it is, go to next step

(3)Remove the sensor from the compressor, if it still not solves, change the main board

(4)If all above steps done normally, it may be caused lack of refrigerant or damaged compressor or refrigerant system blocked or dirty or other gas get inside the system.

F9: Three-phase electricity power phase sequence failure

Solution:

(1)Check the 3-phase power connection lines are connected well or not

(2)Using the meter to measure the voltage (L1&N, L2&N, L3&N), all of them should be 220V, if not, correct the power supply, otherwise go to nest step;

(3)If the power supply is corrected, change the main board

P6: EEPROM failure

Change the indoor mainboard

2.Duct Type

Medium Static Ducted Fan Coil

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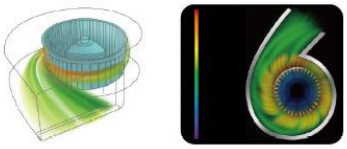
1. Features:

1.Ultra-thin body design.

Medium ESP Type

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

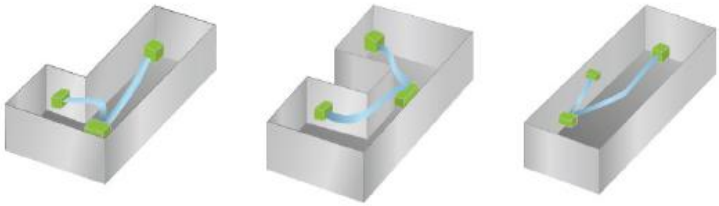


3. Filter can be taken out easily for clean maintenance.

4. Body-side is E-box,convenient for installation and maintenance.

5.Three fan speed,meeting different requirements.

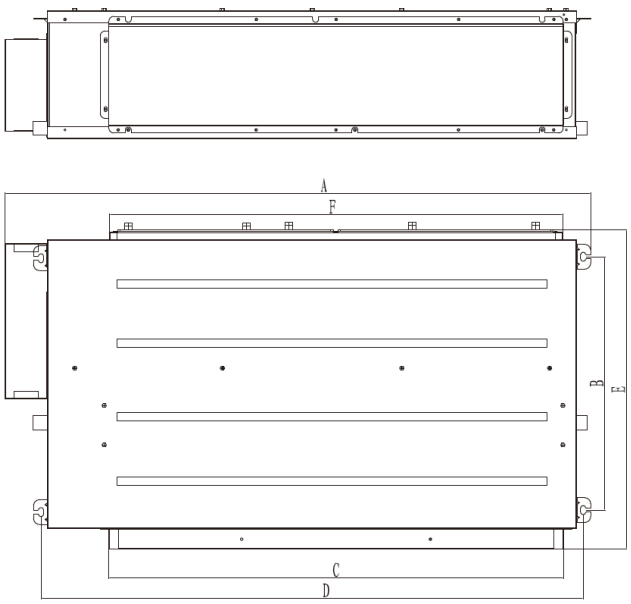
6.30Pa ESP design,duct connected installation meeting different room structure.

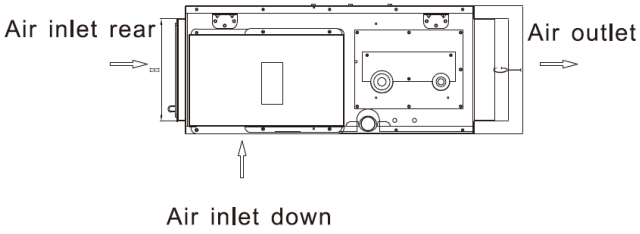


7. Multi protection and auto-restart function.

2. Dimensions

SEMP224(36,48,60)S2A-GCC070(105,140,160)

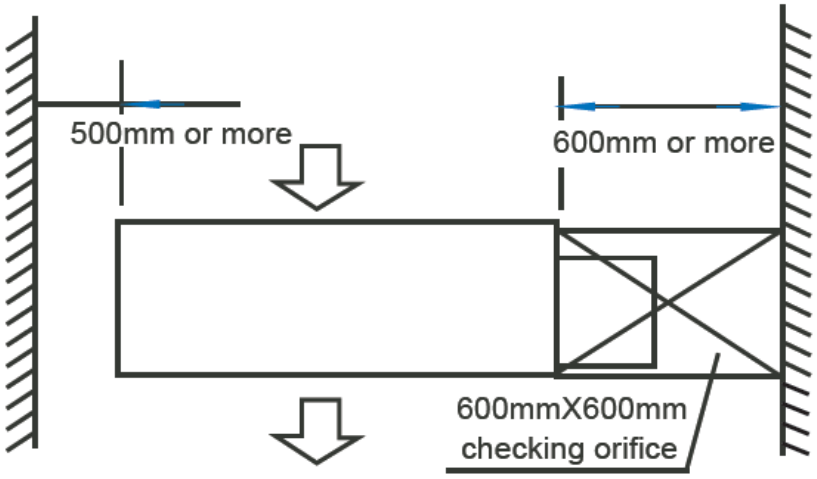




Model KBtu/h	A	B	C	D	E	F	G	H	I
24,36	1190	515	920	1100	643	920	207	207	260
48,60	1425	515	1155	1337	643	1155	207	207	260

3.Service Space

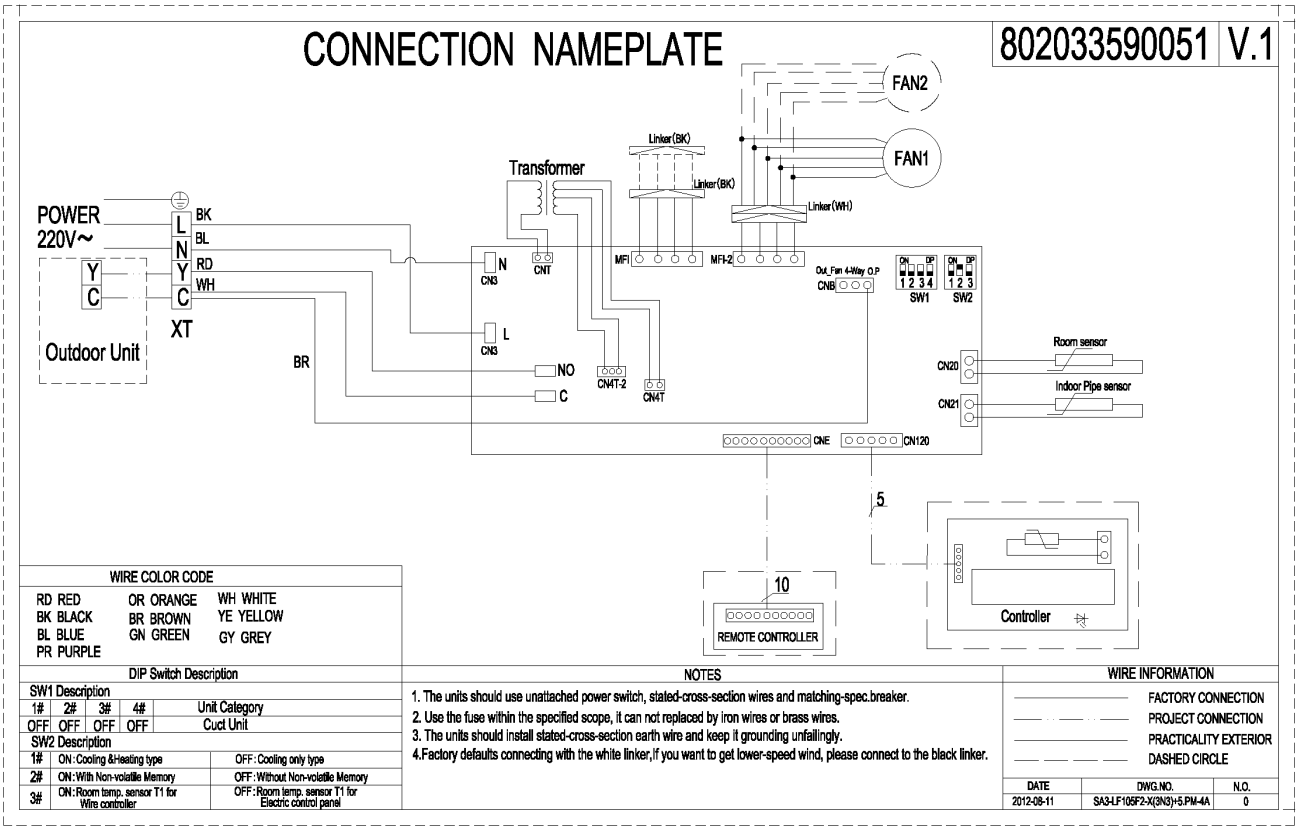
Ensure enough space required for installation and maintenance.



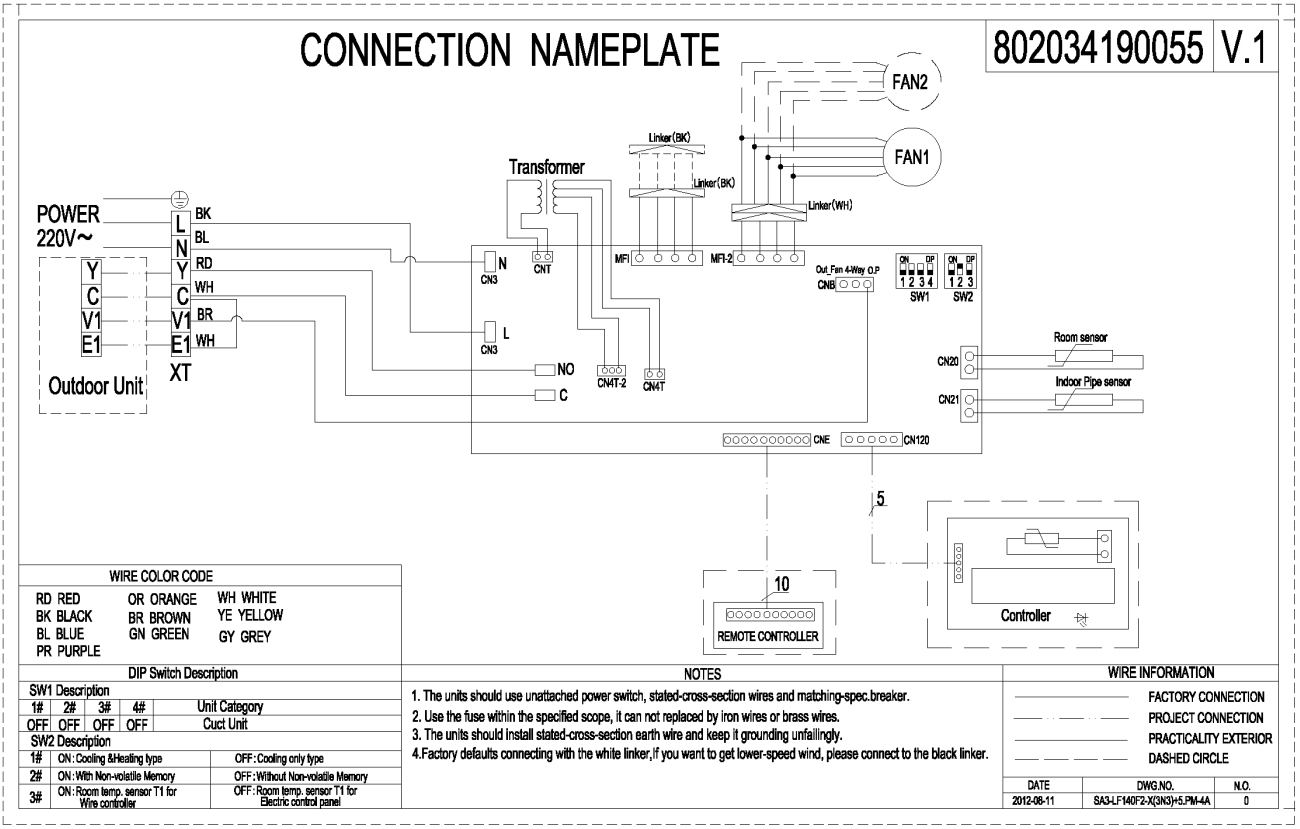
There is enough space for installation and maintenance. The ceiling is horizontal, and its structure can endure the weight of the indoor unit. The outlet and the inlet are not impeded, and the influence of external air is the least. The air flow can reach throughout the room. The connecting pipe and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

4. Wiring Diagrams

SEMP224(36)S2A-GCC070(105)



SEMP248(60)S2A-GCC140(160)

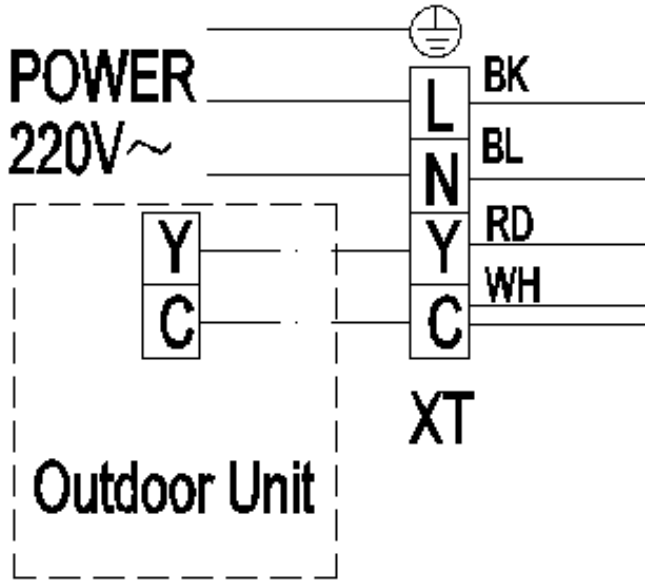


5. The Specification of Power

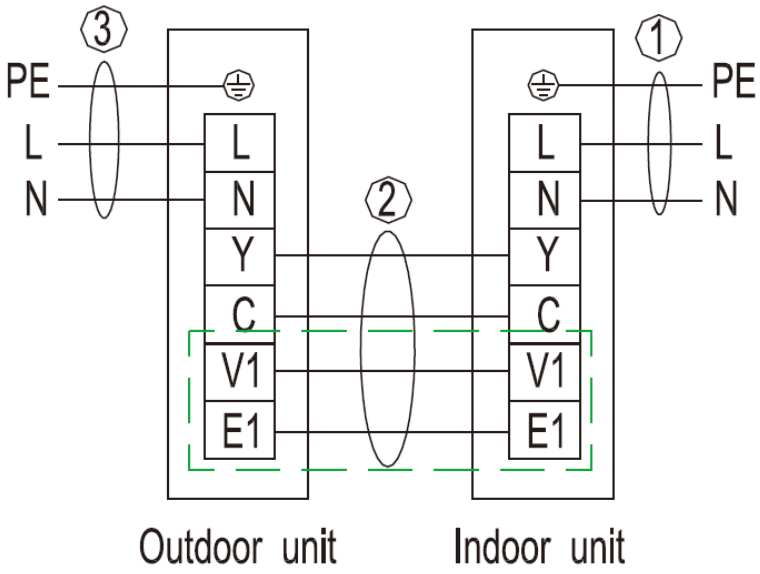
MODEL (Cooling only)		SEMP224S2A-GCC070	SEMP236S2A-GCC105	SEMP248S2A-GCC140	SEMP260S2A-GCC160
Power	Phase	1-phase	1-phase	1-phase	1-phase
	Frequency and Voltage	208-230V, 60Hz	208-230V, 60Hz	208-230V, 60Hz	208-230V, 60Hz
Indoor Unit Power Wiring (mm^2)		3x1.0	3x1.0	3x1.0	3x1.0
Indoor/Outdoor Connecting Wiring (mm^2)	Ground Wiring	0.75	0.75	0.75	0.75
	Outdoor Unit Power Wiring	3×2.5	3×4.0	3x6.0	3x6.0
	Strong Electric Signal	———	———	———	———
	Weak Electric Signal	3×0.75	3×0.75	4×0.75	4×0.75

6. Field Wiring

SEMP224(36)S2A-GCC070(105)



SEMP248(60)S2A-GCC140(160)



7. Troubleshooting

Fault code table

4LED Faults	Digital display	Failure descriptionction
Timer light flashing	E2	Ambient temperature sensor (T1) failure
Running light flashing	E3	Evaporator pipe temperature sensor (T2) failure
Defrost light flashing	E5	Condenser pipe temperature sensor (T3) failure
Warning light flashing	F5	Water fullfilled protection
Running light, defrost light flashing	E1	Indoor unit and wire controller communication failure
Running light, timer light flashing	P6	Indoor unit EEPROM failure
Defrost light, timer light flashing	F0	Indoor fan stall protection
Defrost light, warning light flashing	F2	Outdoor protection
	F7	outdoor unit over-current protection
Timer light, warning light flashing	E0	Indoor unit and outdoor unit communication failure
Running light, defrost light, timer light flashing	F3	High pressure protection
Defrost light , timer light, warning light flashing	F4	Low pressure protection
Running light, timer light, warning light flashing	F8	Outdoor unit exhaust temperature over-high protection
Running light, defrost light, timer light, warning light flashing	F9	Three-phase electricity phase sequence failure
Note: the flashing frequency for all above indication lights is 1HZ.		

(2)If the unit has water drainage pump:

b) Check the water level switch if it is connected well, inset it firmly; then check the switch is blocked or not, if it is blocked, replace it, otherwise go to next step

b) Check the connection between pump and main board if it is 220-240V, if it is, change the water pump; if not, change the indoor main board

F7:Ourdoor overcurrent protection

Solution:

(1)Check the dial-switches is setting corrected or not according to the wiring diagram, if not, set it corrected; if corrected, go to next step

(2)Check the condenser whether it is in good ventilation, if not, remove the blockage; otherwise go to the next step.

(3)Measure the current with multimeter, and check the current via the unit check data also, compare these t wo data, if they are quite different, change the outdoor main board;

(4)If all above steps done normally, it may be caused damaged compressor or refrigerant system blocked or dirty or other gas get inside the system

F8: Outdoor unit exhaust temperature over-high protection

Solution:

(1)Check the T5 sensor connection loosen or not, inset it firmly, if not solve, go to next step;

(2)Take out the exhaust sensor (T5) from main board, measure its resistance, it is about 50KΩ at 25℃, if not, change the sensor; if it is, go to next step

(3)Remove the sensor from the compressor, if it still not solves, change the main board

(4)If all above steps done normally, it may be caused lack of refrigerant or damaged compressor or refrigerant system blocked or dirty or other gas get inside the system.

F9: Three-phase electricity power phase sequence failure

Solution:

(1)Check the 3-phase power connection lines are connected well or not

(2)Using the meter to measure the voltage (L1&N, L2&N, L3&N), all of them should be 220V, if not, correct the power supply, otherwise go to nest step;

(3)If the power supply is corrected, change the main board

P6: EEPROM failure

Change the indoor mainboard

3.Ceiling & Floor Type

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2. Dimensions 29
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4. Wiring Diagrams 31
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1. Features

1. Flexible installation,ceiling suspended and floor standing.

2. Washable air filter.

3. Auto-swing function,built-in two louver motor,vertical and horizontal air-flow adjustment.

4. Built-in with water pump,pumping head is up to 1200mm(Option).

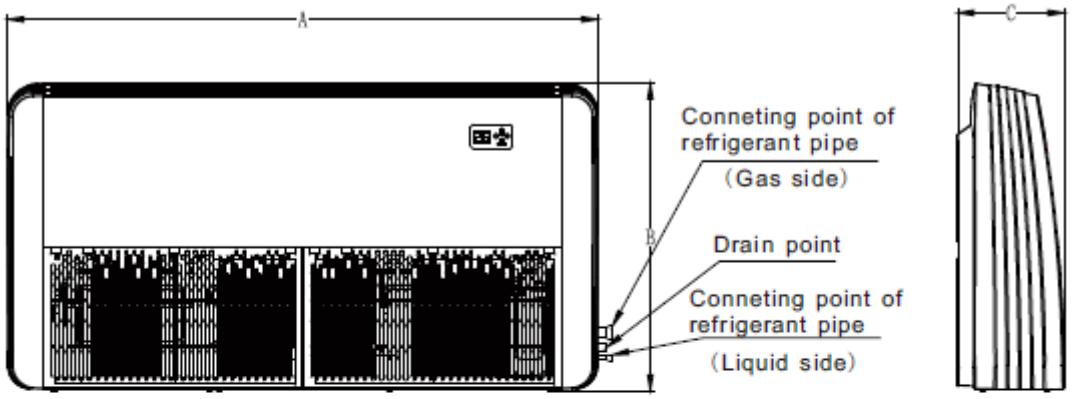
5.Adopting waterproof plastic film on water collector, avoiding water leakage

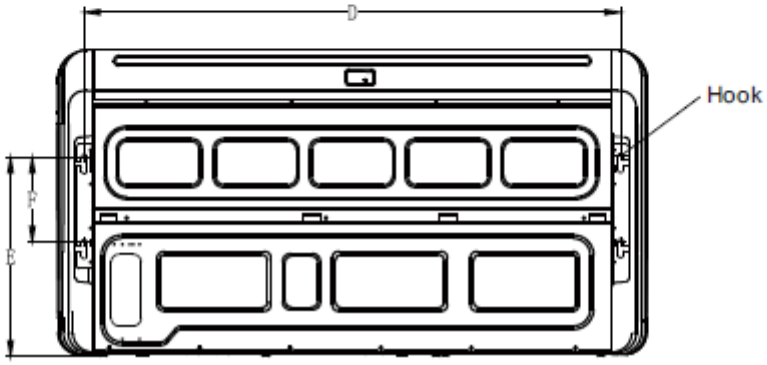
6. Self-diagnostic function and multi protection.

7.Auto-restart function.

2. Dimensions

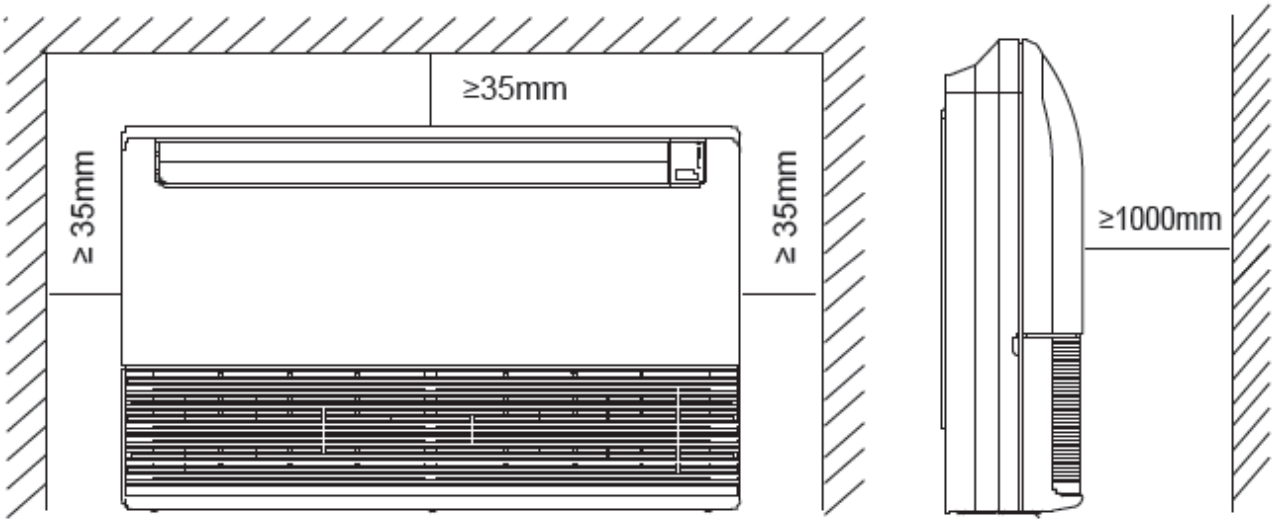
SEFC224(36,48,60)S2A-GWC070(105,140,160)

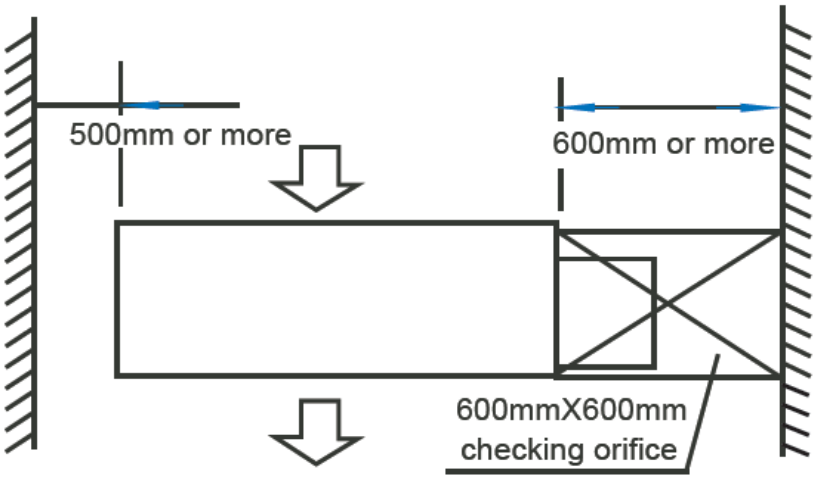




Model (kBtu/h)	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)	F(mm)
24	1050	675	235	933	440	188
36	1300	675	235	1185	440	188
48-60	1670	675	235	1553	440	188

3. Service Space

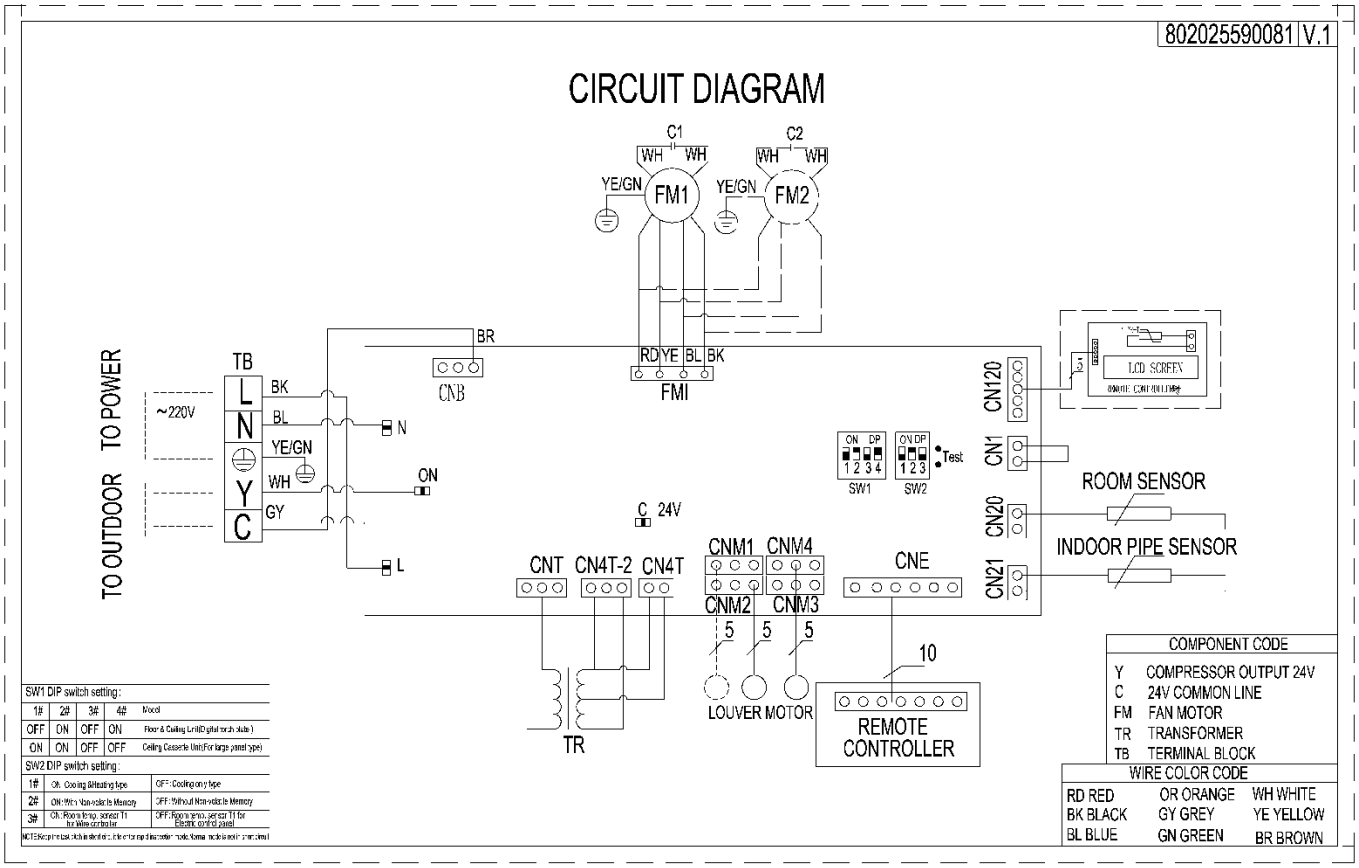




There is enough space for installation and maintenance. The ceiling is horizontal, and its structure can endure the weight of the indoor unit. The outlet and the inlet are not impeded, and the influence of external air is the least. The air flow can reach throughout the room. The connecting pipe and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

4. Wiring Diagrams

SEFC224(36)S2A-GWC070(105)

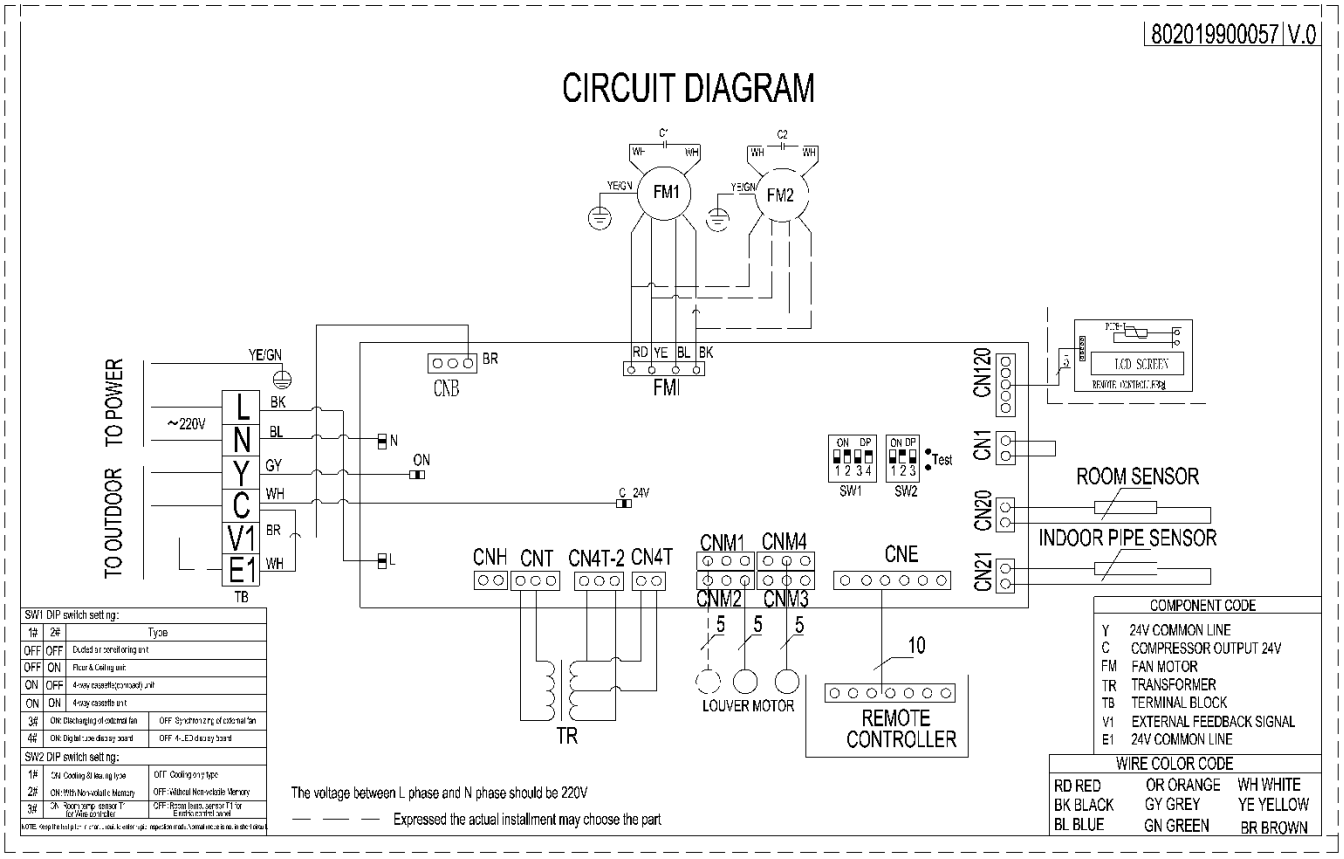


SW1 DIP switch setting:				
1#	2#	3#	4#	Model
OFF	ON	OFF	ON	Floor & Ceiling Unit(Digital torch plate)
ON	ON	OFF	OFF	Ceiling Cassette Unit(For large panel type)

SW2 DIP switch setting:		
1#	ON:Cooling &Heating type	OFF:Cooling only type
2#	ON:With Non-volatile Memory	OFF:Without Non-volatile Memory
3#	ON:Room temp. sensor T1 for Wire controller	OFF:Room temp. sensor T1 for Electric control panel

NOTE:Keep the test pitch in short circuit to enter rapid inspection mode.Normal mode is not in short circuit

SEFC248(60)S2A-GWC140(160)



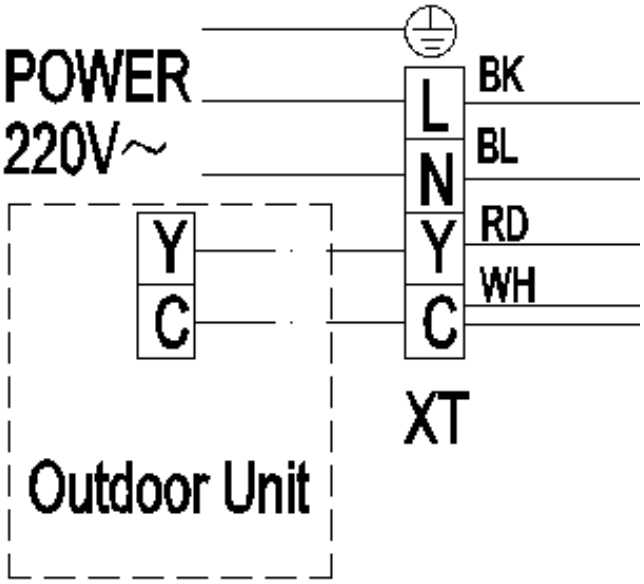
SW1 DIP switch setting:		
1#	2#	Type
OFF	OFF	Ducted air conditioning unit
OFF	ON	Floor & Ceiling unit
ON	OFF	4-way cassette(compact) unit
ON	ON	4-way cassette unit
3#	ON: Discharging of external fan	OFF: Synchronizing of external fan
4#	ON: Digital tube display board	OFF: 4-LED display board
SW2 DIP switch setting:		
1#	ON: Cooling &Heating type	OFF: Cooling only type
2#	ON: With Non-volatile Memory	OFF: Without Non-volatile Memory
3#	ON: Room temp. sensor T1 for Wire controller	OFF: Room temp. sensor T1 for Electric control panel
NOTE: Keep the test pitch in short circuit to enter rapid inspection mode.Normal mode is not in short circuit.		

5. The Specification of Power

Type（cooling only）		24K	36K	48K	60K
Power	Phase	1-phase	1-phase	1-phase	1-phase
	Frequency and Voltage	208-230V, 60Hz	208-230V, 60Hz	208-230V, 60Hz	208-230V, 60Hz
Indoor Unit Power Wiring (mm^2)		3×1.0	3×1.0	3×1.0	3×1.0
Indoor/Outdoor Connecting Wiring (mm^2)	Ground Wiring	0.75	0.75	0.75	0.75
	Outdoor Unit Power Wiring	3×2.5	3×4.0	3x5.0	3x6.0
	Strong Electric Signal	-	-	-	-
	Weak Electric Signal	2×0.75	2×0.75	4×0.75	4×0.75

6.Field Wiring

SEFC224(36)S2A-GWC070(105)



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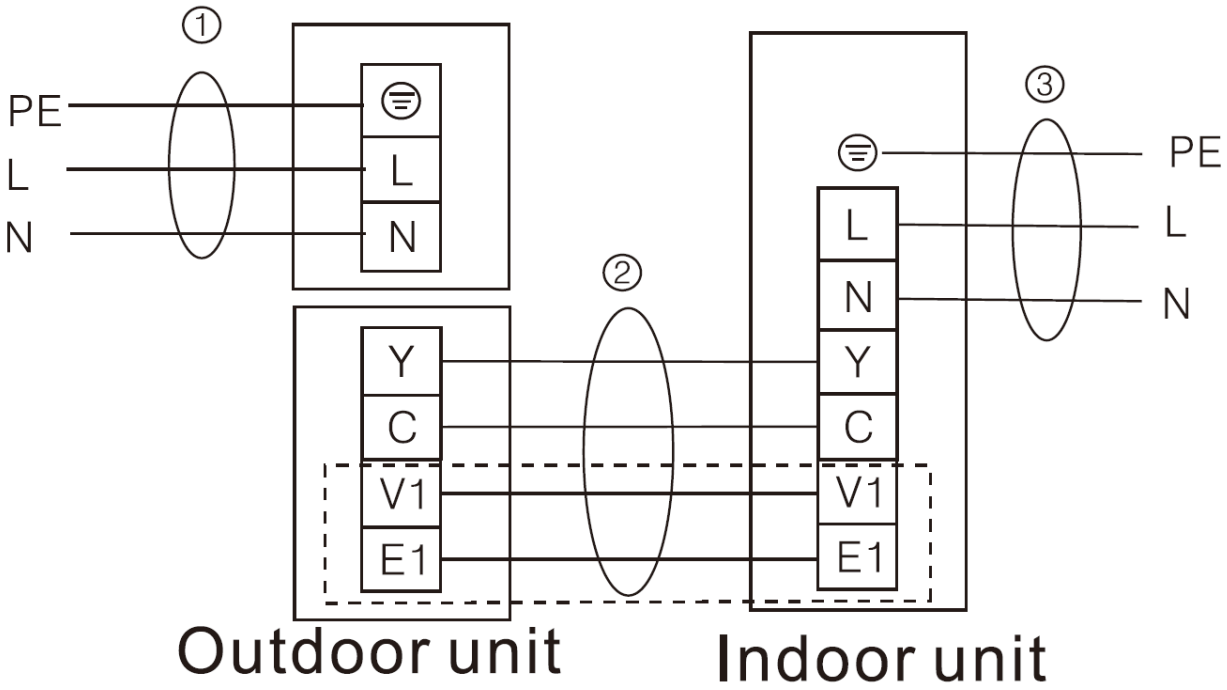

7. Troubleshooting

Fault code

4LED Faults	Digital display	Failure descriptionction
Timer light flashing	E2	Ambient temperature sensor (T1) failure
Running light flashing	E3	Evaporator pipe temperature sensor (T2) failure
Defrost light flashing	E5	Condenser pipe temperature sensor (T3) failure
Warning light flashing	F5	Water fullfilled protection
Running light, defrost light flashing	E1	Indoor unit and wire controller communication failure
Running light, timer light flashing	P6	Indoor unit EEPROM failure
Defrost light, timer light flashing	F0	Indoor fan stall protection (DC Motor)
Defrost light, warning light flashing	F2	Outdoor protection (220V Communication control)
	F7	outdoor unit over-current protection (Reserve)
Timer light, warning light flashing	E0	Indoor unit and outdoor unit communication failure (RS485 Communication control)
Running light, defrost light, timer light flashing	F3	High pressure protection (RS485 Communication control)
Defrost light , timer light, warning light flashing	F4	Low pressure protection (RS485 Communication control)
Running light, timer light, warning light flashing	F8	Outdoor unit exhaust temperature over-high protection (RS485 Communication control)
Running light, defrost light, timer light, warning light flashing	F9	Three-phase electricity phase sequence failure (RS485 Communication control)
Note: the flashing frequency for all above indication lights is 1HZ.		

E0: Indoor unit and outdoor unit communication failure

Solution:

(1)Check the communication cable between indoor unit and outdoor unit, if it is short connection or broken;

(2)Check the communication cable is connected corrected or not, if not, correct it;

(3)If the cable and connection are both correct, check the connected lines from communication terminal to main board are corrected or not, if not, correct it

(4)If all the above steps are done, still not solve change the indoor or outdoor main board

E1: Outdoor unit failure

Check the detail of failure at the outdoor unit.

E2: Indoor ambient temp. sensor fault (T1 sensor)

Solution:

(1)Check the T1 sensor connection loosen or not, inset it firmly, if not solve, go to next step;

(2)Take out the sensor, measure the resistance of the sensor, it is about 5KΩ at 25℃, if not, replace it; if resistance normally, change the indoor main board.

E3: Indoor evaporator pipe temperature sensor (T2) failure

Solution:

(1)Check the T2 sensor connection loosen or not, inset it firmly, if not solve, go to next step;

(2)Take out the sensor, measure the resistance of the sensor, it is about 5KΩ at 25℃, if not, replace it; if resistance normally, change the indoor main board

E5: Condenser pipe temperature sensor (T3) failure

Solution:

(1) Check the T3 sensor connection loosen or not, inset it firmly, if not solve, go to next step;

(2)Take out the sensor, measure the resistance of the sensor, it is about 5KΩ at 25℃, if not, replace it; if resistance normally, change the main board

F2: Outdoor unit protection

Solution:

Follow the F3/F4/F8/F9.

F3: High pressure protection

Solution:

(1)If the unit does not have high pressure switch, change the outdoor main board; if it has, go to next step

(2)Take out the high-pressure switch, measure its resistance, it is about 0Ω, if not, replace it; otherwise go to next step;

(3)Short connect the high-pressure switch port on the outdoor board, if it still shows P1, replace the outdoor main board; otherwise go to next step;

(4)Connect the pressure gauge to test the high pressure, if it is real too high, may be cause by too much refrigerant or other gas getting inside the system

F4: Low pressure protection

Solution:

(1)If the unit does not have low pressure switch, change the outdoor main board; if it has, go to next step

(2)Take out the low-pressure switch, measure its resistance, confirm whether it is about 0Ω, if not, replace it; otherwise go to next step;

(3)Short connect the low-pressure switch port on the outdoor board, if it still shows P2, replace the outdoor main board; otherwise go to next step;

(4)Connect the pressure gauge to test the low pressure, if it is real too low, may be cause by lack of refrigerant or leakage in the refrigerant system

F5: Water fulfilled protection (Alarm of condensing water overflow)

Solution:

(1)If the unit does not have water drainage pump:

a) Check the water level switch short connect or not, if not, short connect it, if it still not solves, change the main board

(2)If the unit has water drainage pump:

c) Check the water level switch if it is connected well, inset it firmly; then check the switch is blocked or not, if it is blocked, replace it, otherwise go to next step

b) Check the connection between pump and main board if it is 220-240V, if it is, change the water pump; if not, change the indoor main board

F7:Ourdoor overcurrent protection

Solution:

(1)Check the dial-switches is setting corrected or not according to the wiring diagram, if not, set it corrected; if corrected, go to next step

(2)Check the condenser whether it is in good ventilation, if not, remove the blockage; otherwise go to the next step.

(3)Measure the current with multimeter, and check the current via the unit check data also, compare these t wo data, if they are quite different, change the outdoor main board;

(4)If all above steps done normally, it may be caused damaged compressor or refrigerant system blocked or dirty or other gas get inside the system

F8: Outdoor unit exhaust temperature over-high protection

Solution:

(1)Check the T5 sensor connection loosen or not, inset it firmly, if not solve, go to next step;

(2)Take out the exhaust sensor (T5) from main board, measure its resistance, it is about 50KΩ at 25℃, if not, change the sensor; if it is, go to next step

(3)Remove the sensor from the compressor, if it still not solves, change the main board

(4)If all above steps done normally, it may be caused lack of refrigerant or damaged compressor or refrigerant system blocked or dirty or other gas get inside the system.

F9: Three-phase electricity power phase sequence failure

Solution:

(1)Check the 3-phase power connection lines are connected well or not

(2)Using the meter to measure the voltage (L1&N, L2&N, L3&N), all of them should be 220V, if not, correct the power supply, otherwise go to nest step;

(3)If the power supply is corrected, change the main board

P6: EEPROM failure

Change the indoor mainboard

4.Air Handler unit

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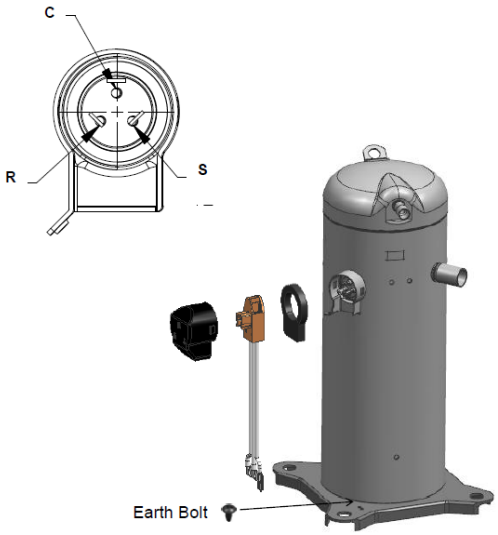
2. Dimensions 40
3. Service Space 41
4. Wiring Diagrams 42
5. The Specification of Wiring 43
6. Field Wiring 44
7. Troubleshooting 45

1. Features

1.1 Well-known compressor, LG & Copeland, Highly.

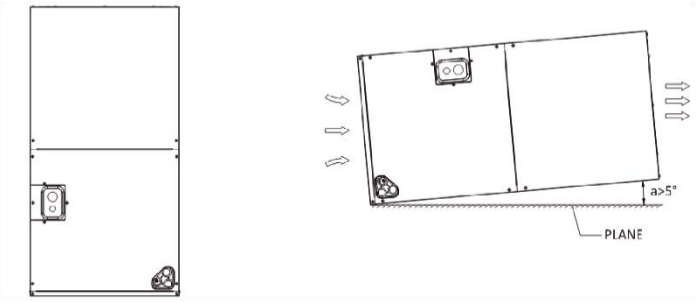
High efficiency rotary compressor for 36K model, and scroll compressor for 60K model.



1.2 Universal 24V communication connection for indoor and outdoor units control,

1.3 R410 environmental refrigerant, and it is matched with top-discharge unit and condensing unit.

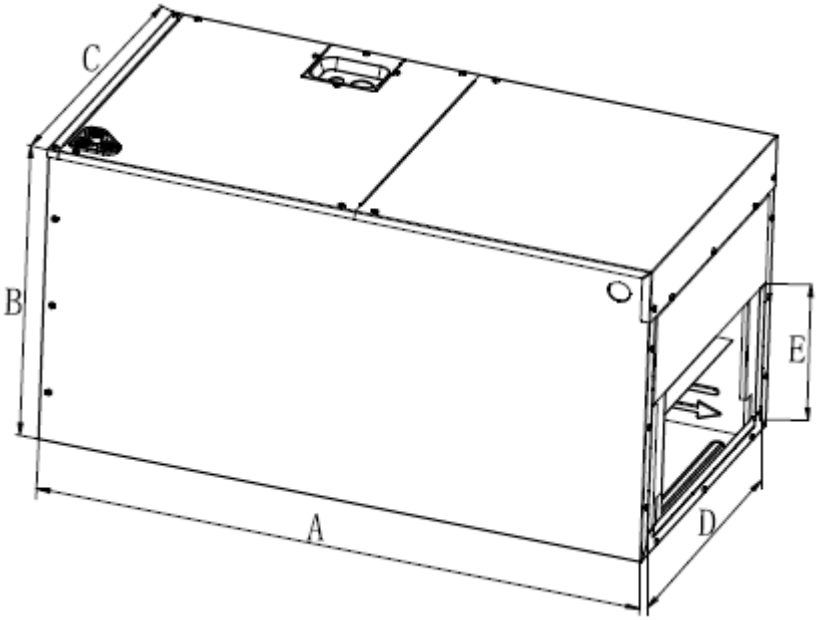
1.4 Flexible installation for AHU, vertical and horizontal right installation is avaliable.



1.5 Easy controlled by thermostat and compatible with other manufactor’s products.

2. Dimensions

SEUA236(60)S2A-GCC105(160)



MODEL	Dimensions(mm)				
	A(Height)	B(Depth)	C(Width)	D	E
36	774	520	460	414	245
60	970（1160）	550	500	454	266

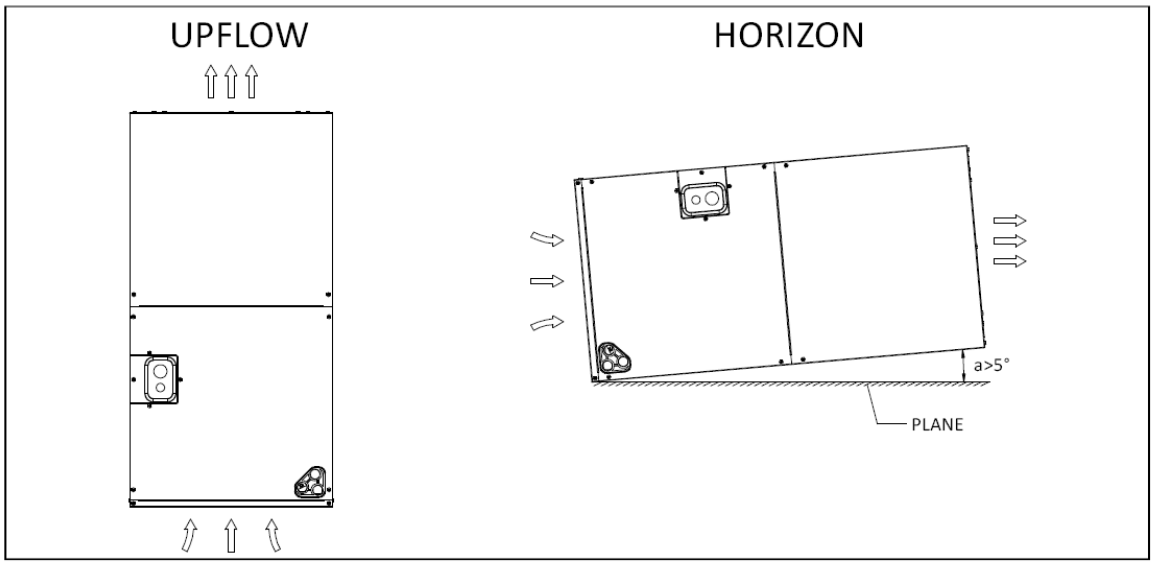
3. Service Space

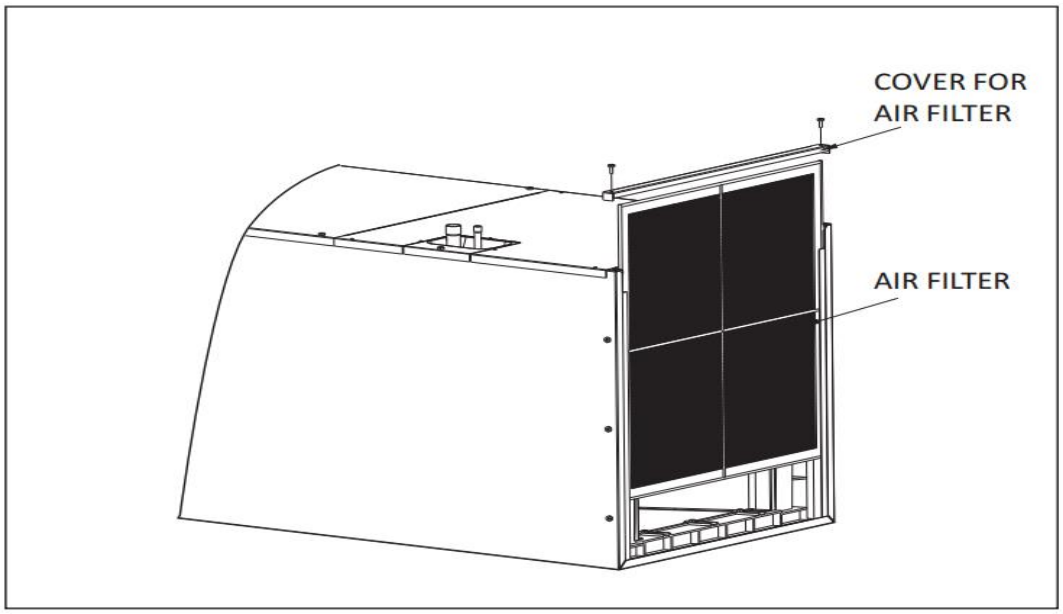
The air-handler unit should be installed in a location that meets the following requirements:
INSTALLATION NOTES: .

1. Up-flow discharge , the installation of plug and drain pipe is shown in the left figure.

2. Horizontal-right discharge , the installation of plug and drain pipe is shown in the right figure.

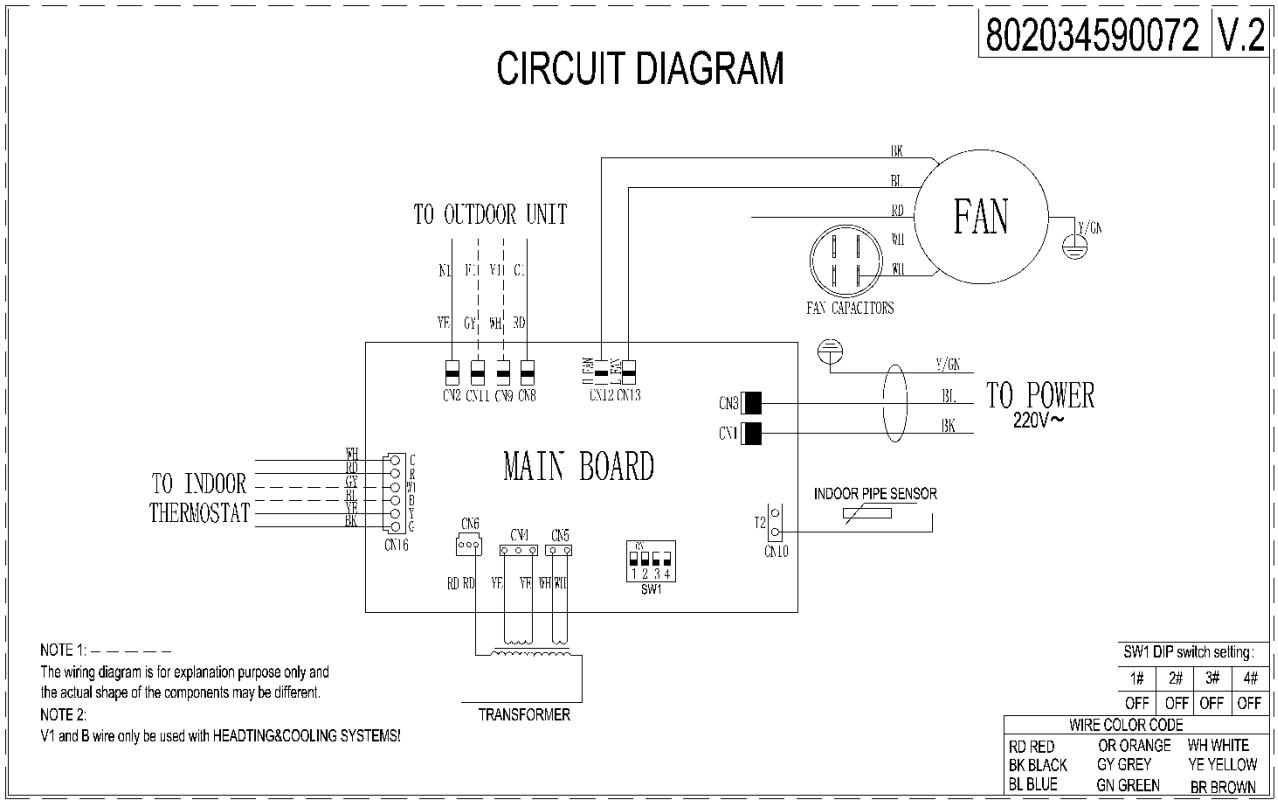
3. The seal-plugs are supplied as accessories , and be screwed tightly only with hand.





4. Wiring Diagrams

SEUA236(60)S2A-GCC105(160)



5. The Specification of Wiring

Single-phase for cooling only type, 220V

Capacity(Btu/h)			36000 Btu/h	60000 Btu/h
Power		Indoor	Single	
			220-230V,60Hz 1PH	
		Outdoor	Single	
			220-230V,60Hz 1PH	
Input Current Fuse		Indoor unit(A)	5A	5A
Lines Gauge	Indoor Unit Power Line	Line Quantity	3	3
		Line Diameter(AWG)	18/1.0mm^2	18/1.0mm^2
	Outdoor Unit Power Line	Line Quantity	3	3
		Line Diameter(AWG)	12/4.0mm^2	10/6.0mm^2
	Outdoor-Indoor Signal Line	Line Quantity	2	2
		Line Diameter(AWG)	18/1.0mm^2	18/1.0mm^2
	Thermostat Signal Line	Line Quantity	4	4
		Line Diameter(AWG)	18/1.0mm^2	18/1.0mm^2

3-phase for cooling only type, 220V

Capacity(Btu/h)			60000 Btu/h
Power		Indoor	Single
			220-230V,60Hz 1PH\220-240,50Hz 1PH
		Outdoor	Three
			220-230V,60Hz 3PH
Input Current Fuse		Indoor unit(A)	5A
Lines Gauge	Indoor Unit Power Line	Line Quantity	3
		Line Diameter(AWG)	18/1.0mm^2
	Outdoor Unit Power Line	Line Quantity	4
		Line Diameter(AWG)	12/4.0mm^2
	Outdoor-Indoor Signal Line	Line Quantity	2
		Line Diameter(AWG)	18/1.0mm^2
	Thermostat Signal Line	Line Quantity	4
		Line Diameter(AWG)	18/1.0mm^2

6.Field Wiring

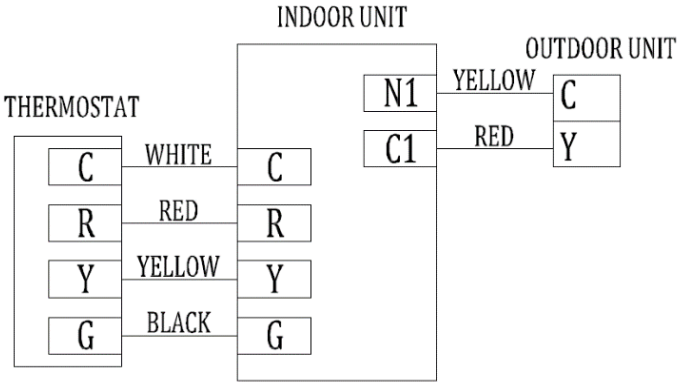
1.To avoid the electric shock, please link the air conditioner with the ground. The plug in the air conditioner has joined the ground wiring, please don't change it freely.
2.The power socket is used as the air conditioner specially.
3.Don’t pull the power wiring hard.
4.When linking the air conditioner with the ground;observe the local rules.
5.If necessary, use the power fuse or the circuit, breaker or the corre- sponding scale ampere.

When installing or repair the air condition, relate to system wiring, please operating as follows:

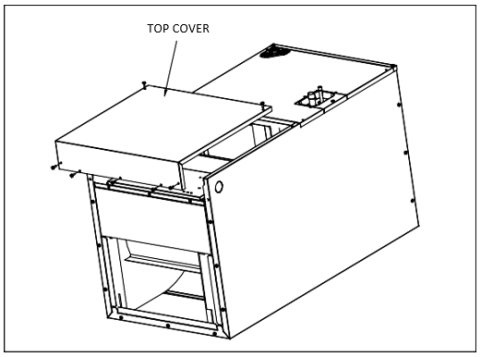
1.Tear down the seven bolts in the top cover, see in Figure below.

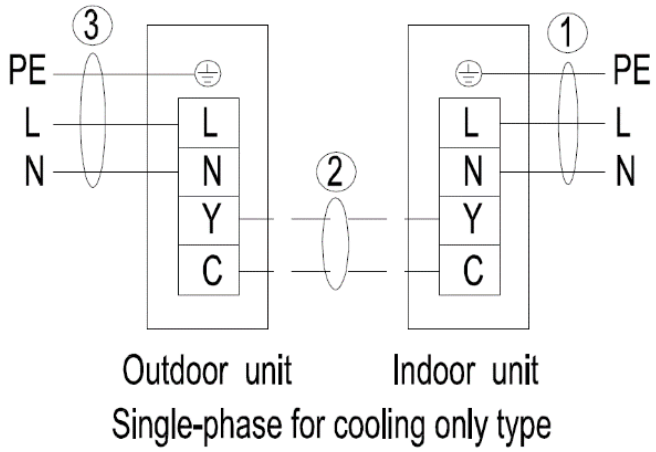
2.Hold the edge of the top condenser and extract out.

3.Install the top condenser in the reverse order of step 1 and 2.



INDOOR UNIT OUTPUT WITH 24VAC 1.5A





Single-phase for cooling only type

7. Troubleshooting

Indoor unit Fault code displayed

Fault Description	4LED fault indication	Digital display	Wired remote display
Three-phase power phase sequence fault		E0	E0
Indoor and outdoor unit communication failure	Timing lights flash	E1	E1
Temperature sensor (T1) fault	Running lights flash	E2	E2
Pipe temperature sensor in the evaporator (T2) fault	Running lights flash	E3	E3
Pipe temperature sensor in the evaporator (T2B) fault	Running lights flash	E4	E4
Outdoor unit failure	Warning lights flash slowly	E5	E5
The indoor unit EEPROM fault	Defrost lights flash slowly	E7	E7
Water over protection	Warning lights flash	EE	EE
Indoor unit with line controller communication failure		E9	E9
Note: The flash frequency for each of the above indicator is 2.5Hz, slow flashing frequency is 1Hz			

E0: Three-phase electricity power phase sequence failure
Solution:
(1)Check the 3-phase power connection lines are connected well or not
(2)Using the meter to measure the voltage (L1&N, L2&N, L3&N), all of them should be 220V, if not, correct the power supply, otherwise go to nest step;
(3)If the power supply is corrected, change the main board

E1: : Indoor unit and outdoor unit communication failure
Solution:
(1)Check the communication cable between indoor unit and outdoor unit, if it is short connection or broken;
(2)Check the communication cable is connected corrected or not, if not, correct it;
(3)If the cable and connection are both correct, check the connected lines from communication terminal to main board are corrected or not, if not, correct it
(4)If all the above steps are done, still not solve change the indoor or outdoor main board

E2: Indoor ambient temp. sensor fault (T1 sensor)
Solution:
(1)Check the T1 sensor connection loosen or not, inset it firmly, if not solve, go to next step;
(2)Take out the sensor, measure the resistance of the sensor, it is about 5KΩ at 25℃, if not, replace it; if resistance normally, change the indoor main board.

E3/E4: Indoor evaporator pipe temperature sensor (T2) failure
Solution:
(1)Check the T2 sensor connection loosen or not, inset it firmly, if not solve, go to next step;
(2)Take out the sensor, measure the resistance of the sensor, it is about 5KΩ at 25℃, if not, replace it; if resistance normally, change the indoor main board
E5: Outdoor unit failure
Check the detail of failure at the outdoor unit.

E7: EEPROM failure
Change the indoor mainboard

E9: Indoor unit and wire controller communication failure

Solution:

(1)Check the connection between wired controller and main board is loosen or not, inset it firmly

(2)Connect with a new wired controller, if not solve, change with a new communication cable

(3)If all above steps done, it still not solves, change the indoor main board or transformer.

EE: Water fulfilled protection (Alarm of condensing water overflow)

Solution:

(1)If the unit does not have water drainage pump:

a) Check the water level switch short connect or not, if not, short connect it, if it still not solves, change the main board

(2)If the unit has water drainage pump:

d) Check the water level switch if it is connected well, inset it firmly; then check the switch is blocked or not, if it is blocked, replace it, otherwise go to next step

b) Check the connection between pump and main board if it is 220-240V, if it is, change the water pump; if not, change the indoor main board

Part 3 Outdoor Units

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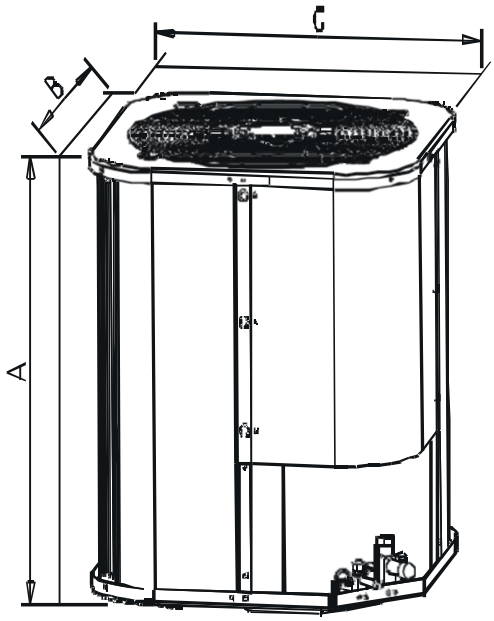
2. Wiring Diagrams 49
3. Operation Limits 51
4. Troubleshootings 52

1. Dimensions

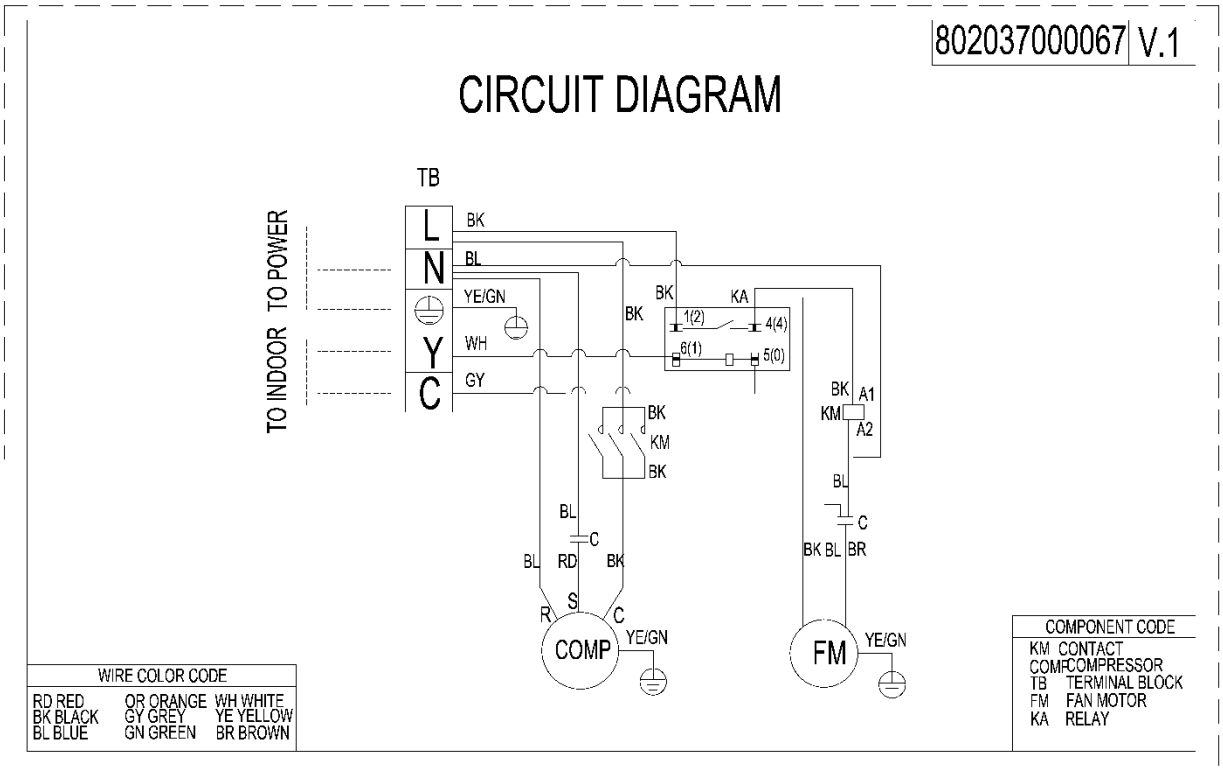
Applicable for 18-60 series

Unit Model	Dimensions(mm)			Refrigerant Connection Line Size(mm)		
	A	B	C	Liquid(φ)		Vapor(φ)
				LF	RF	
24	633	554	554	9.52		15.88
36	633	554	554	9.52	12.7	19.05
	633	740	740			
	835	554	554			
48	835	740	740	9.52	12.7	19.05
60	835	740	740	9.52	12.7	19.05

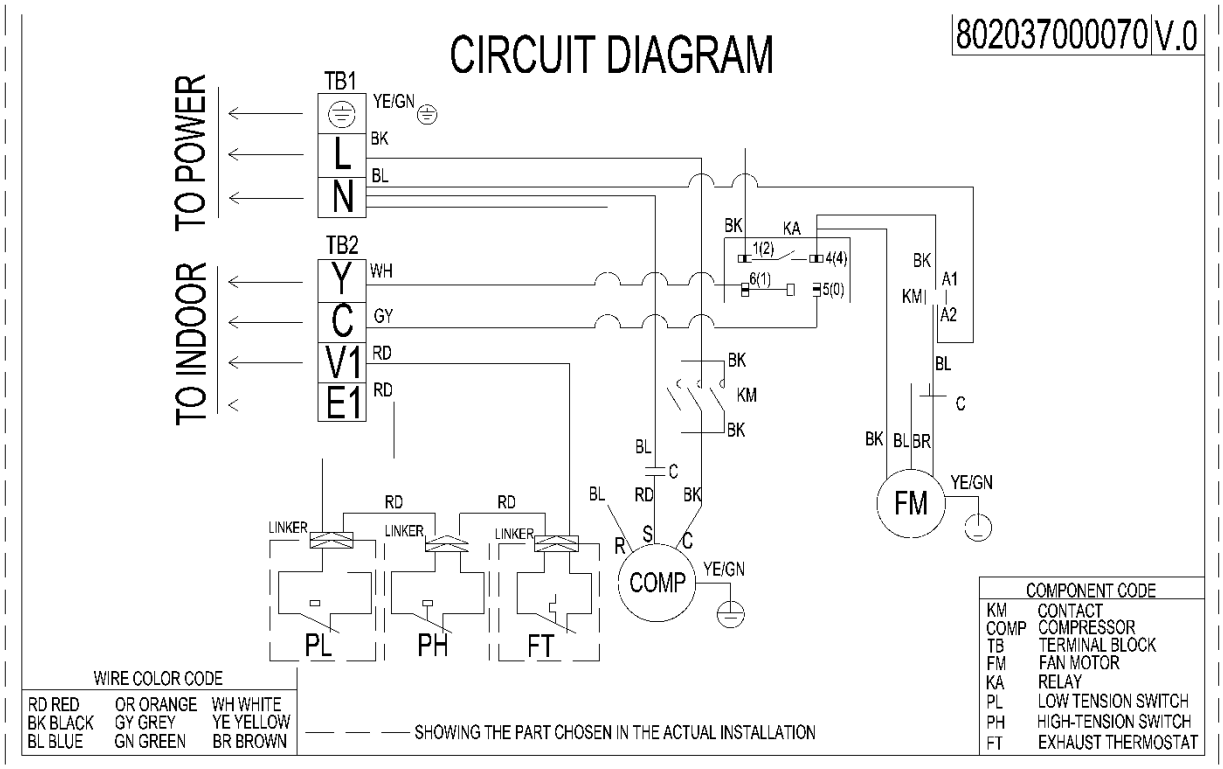


2.Wiring Diagrams

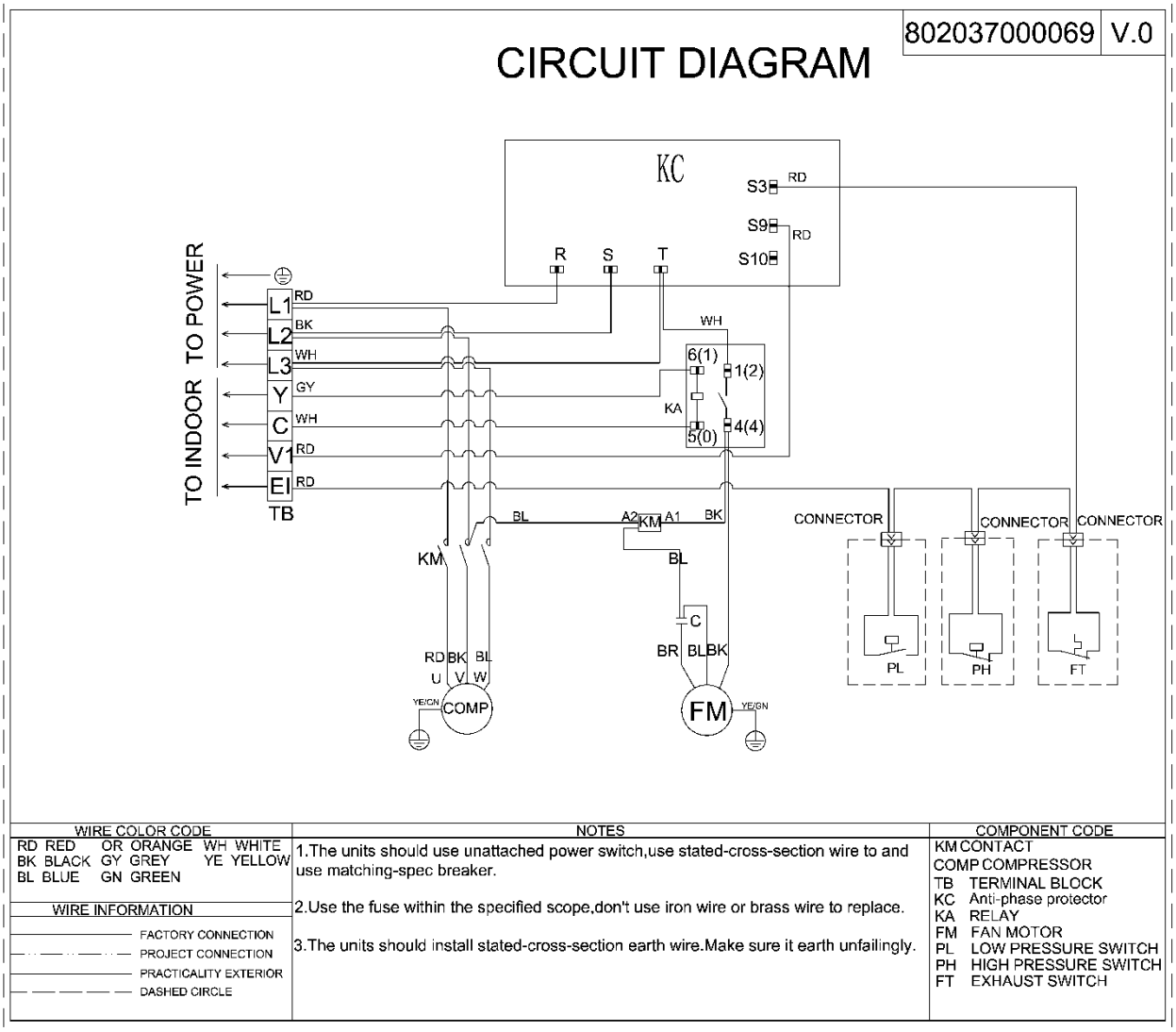
SCVC224(36)S2A-GTC(LC)070(105)



SCVC248(60)S2A-GLC140(160)



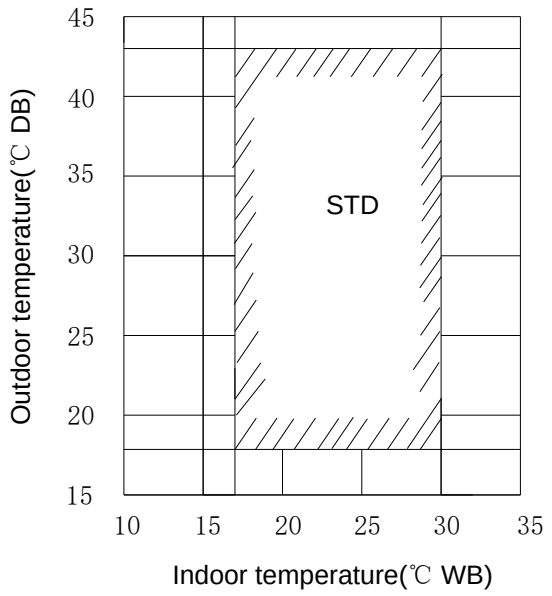
SCVC248(60)S4A-GHC(CC)140(160)



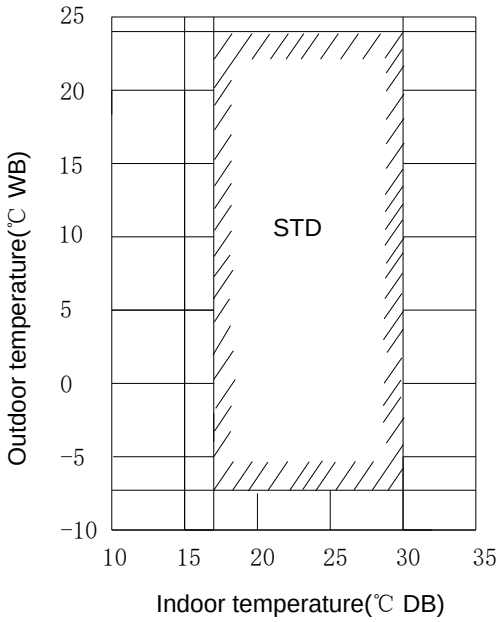
3.Operation Limits

Operation mode	Outdoor temperature(℃)	Room temperature(℃)
Cooling operation	18~43	17~30
Heating operation	-7~24	17~30

Cooling



Heating



4.Troubleshooting

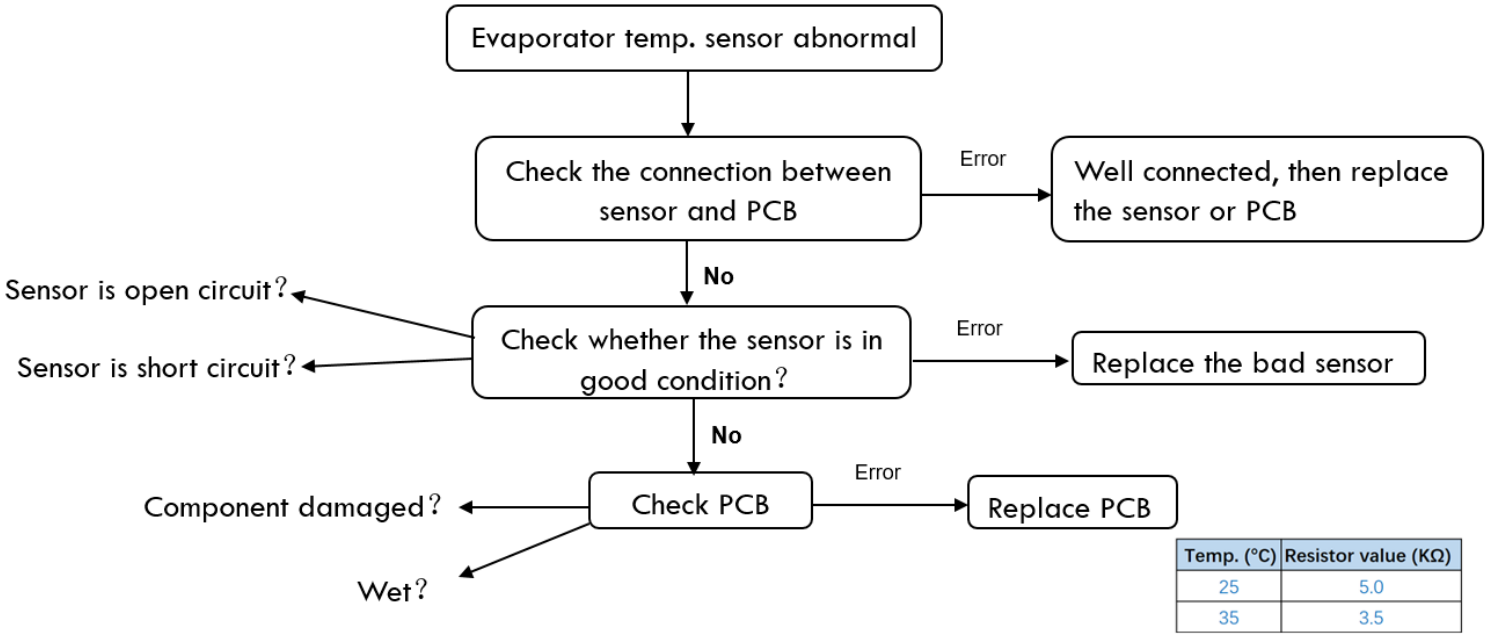
4.1 Fault indicator of outdoor unit

The meaning of the fault indicator:

Display content		State description
No alarm: Green light flashes Yellow lights	Green light slow flash	Normal standby
	Green light normally on	Normal operation
System Alarm: Green light slow flash Yellow light flashing	(T3)Temperature sensor fault	Yellow light flashes 2 times every 8s
	(T5)Temperature sensor fault	Yellow light flashes 8 times every 8s
	Low pressure alarm	Yellow light flashes 6 times every 8s
	High pressure alarm	Yellow light flashes 1 times every 8s
	(T3)High temperature protection	Yellow light flashes 9 times every 8s
	High exhaust temperature protection	Yellow light flashes 5 times every 8s
System lock: Green light go out Yellow light normally on	3 high/low voltage protection in 20 minutes	It needs to be reenergized and it needs to work
	Exhaust temperature is too high for 3 times within 20 minutes	
	T3 high temperature protection 3 times within 20 minutes	

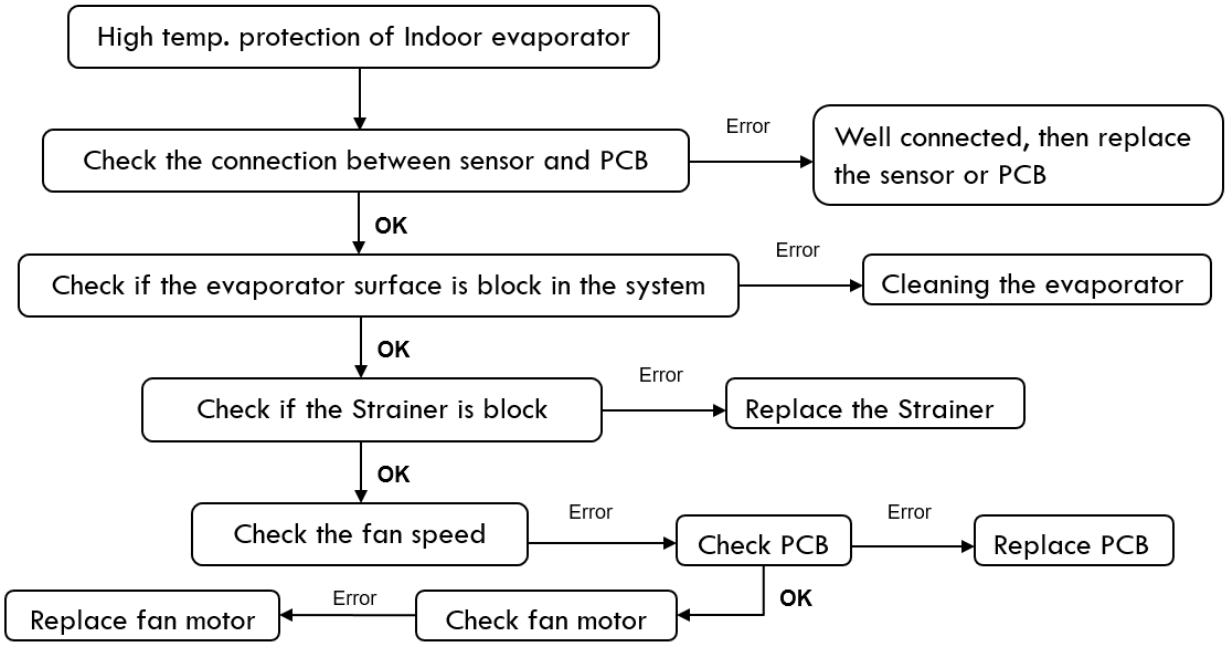
4.2 Flow chart of troubleshooting

1)Evaporator temperature sensor fault

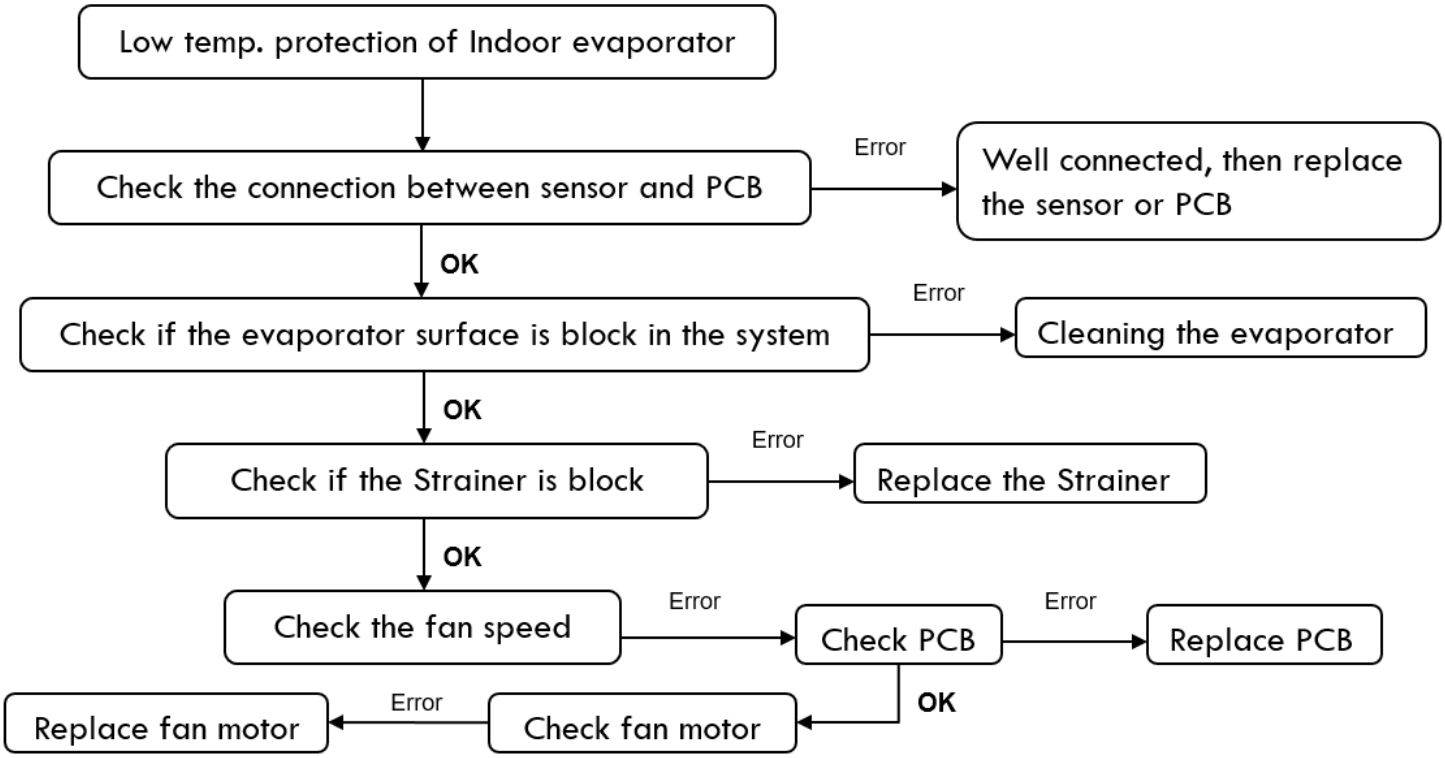


Temp. (°C)	Resistor value (KΩ)
25	5.0
35	3.5

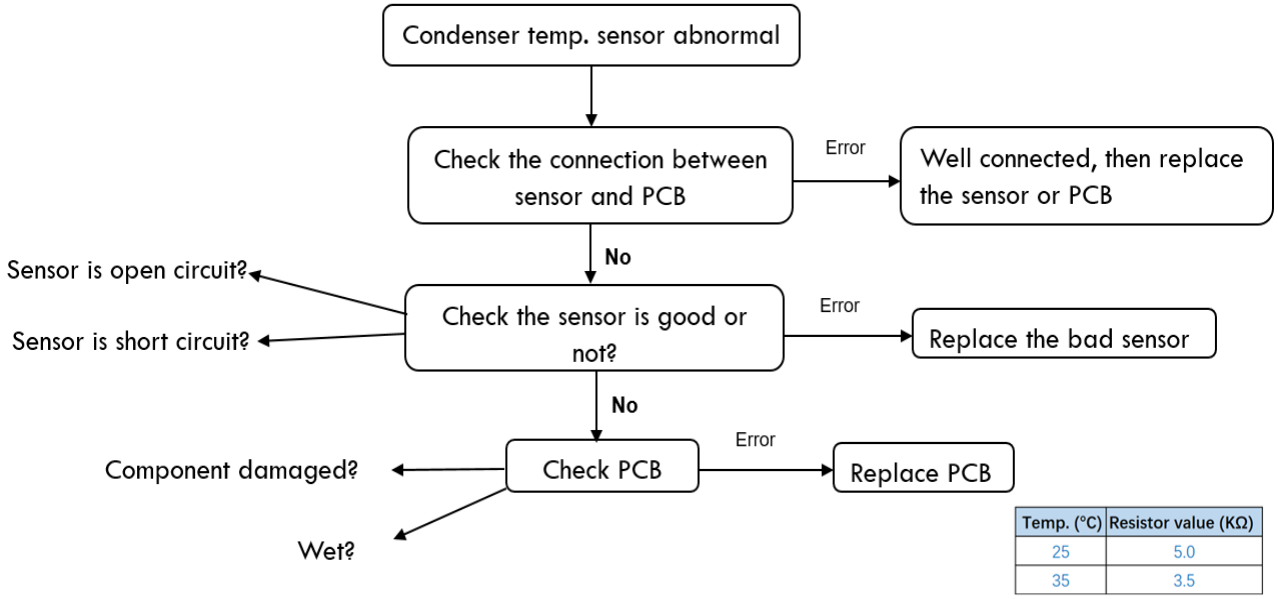
2)Evaporator high temperature protection(For heating mode)



3)Evaporator low temperature prptection(For cooling mode)

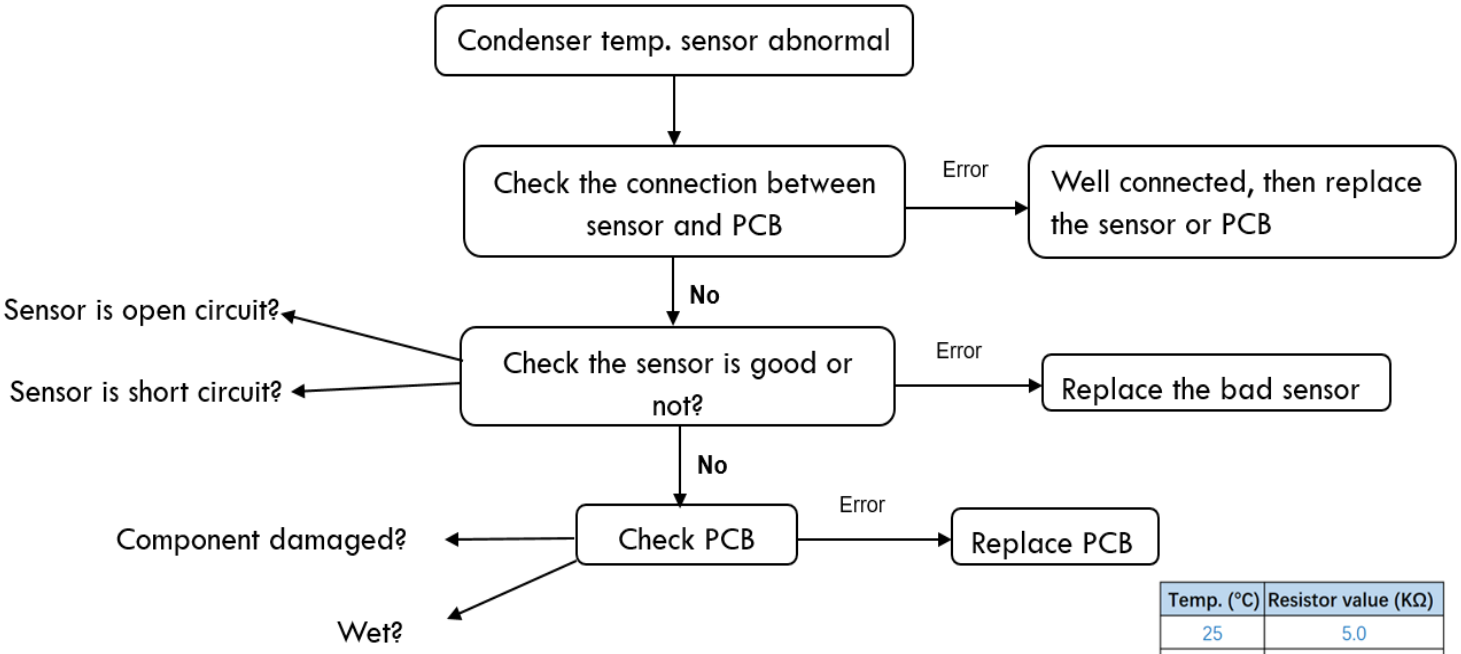


4)T3 Condenser Temperature sensor fault



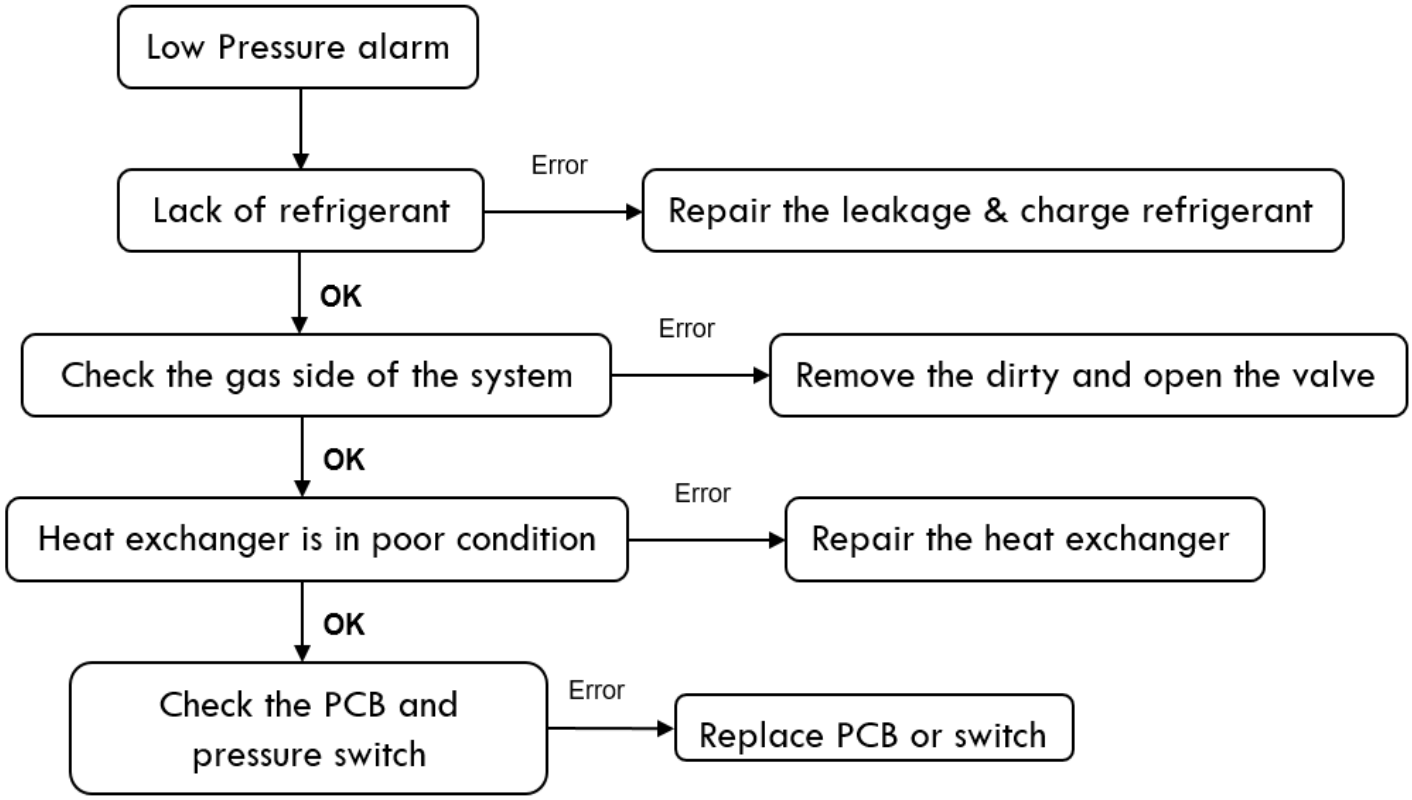
Temp. (°C)	Resistor value (KΩ)
25	5.0
35	3.5

5)T5 discharge temperature sensor fault

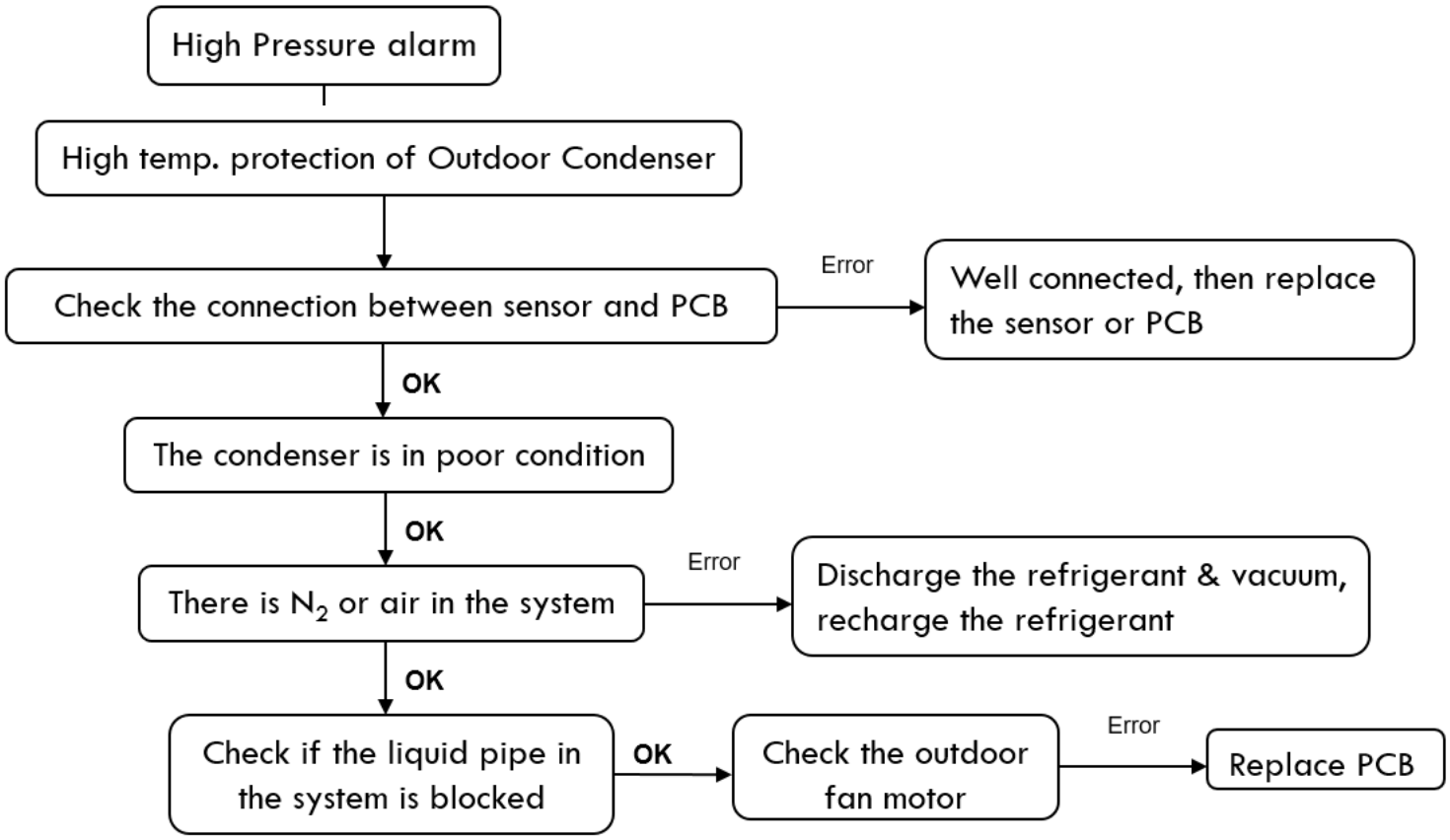


Temp. (°C)	Resistor value (KΩ)
25	5.0
35	3.5

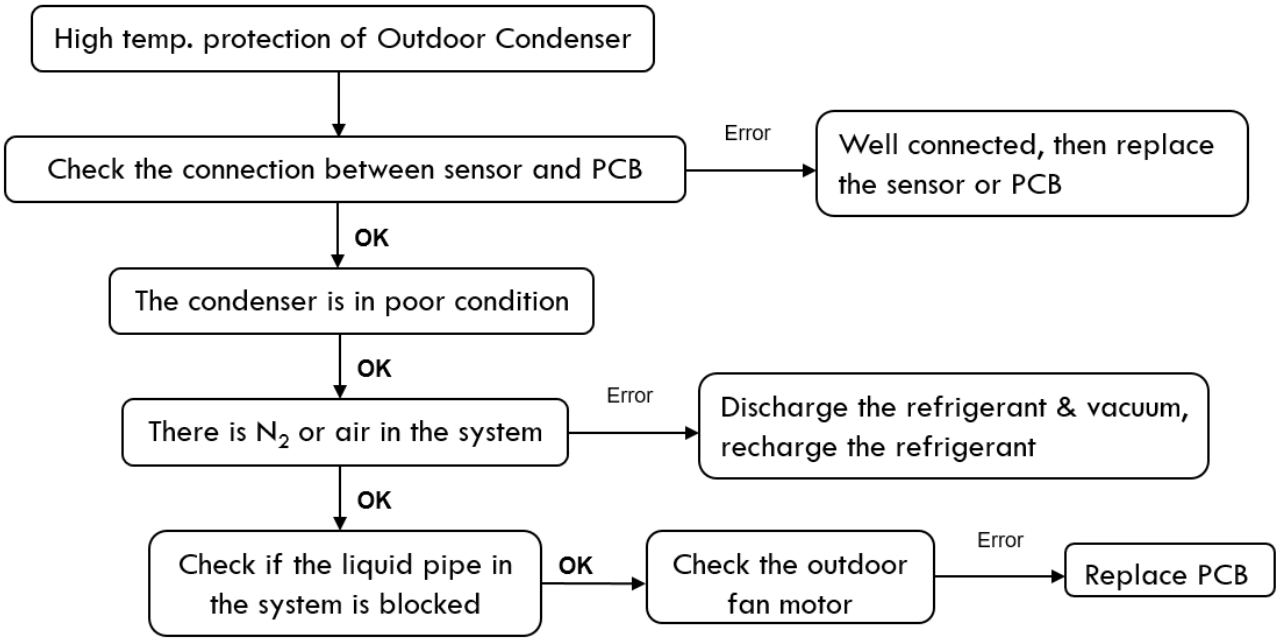
6)Low pressure alarm



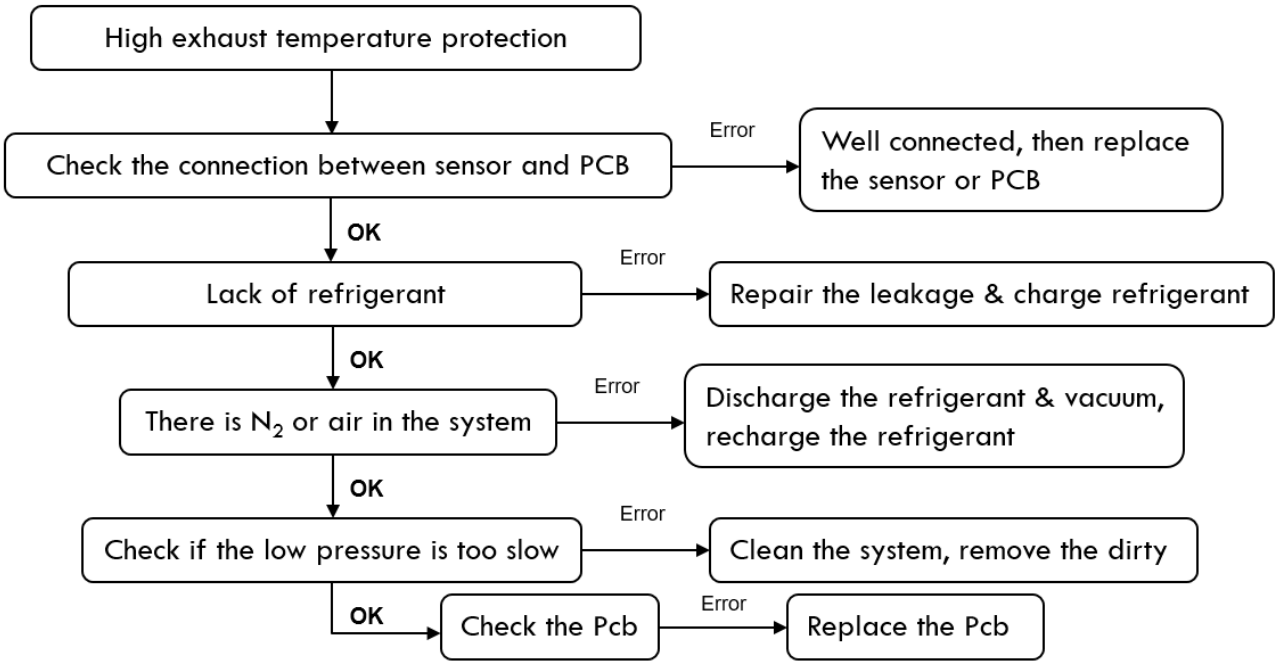
7)High pressure alarm



8) T3 High temperature protection



9) High exhaust temperature protection


High exhaust temperature protection
Check the connection between sensor and PCB
Error
Well connected, then replace the sensor or PCB
OK
Lack of refrigerant
Error
Repair the leakage & charge refrigerant
OK
There is N_2 or air in the system
Error
Discharge the refrigerant & vacuum, recharge the refrigerant
OK
Check if the low pressure is too slow
Error
Clean the system, remove the dirty
OK
Check the Pcb
Error
Replace the Pcb

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