SAMICK
COOLING SYSTEM

ISO 9001 / ISO 14001 Certified Company



User manual

AIRCON CABINET

SAMICK 삼익기전주식회사
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COOLING SYSTEM

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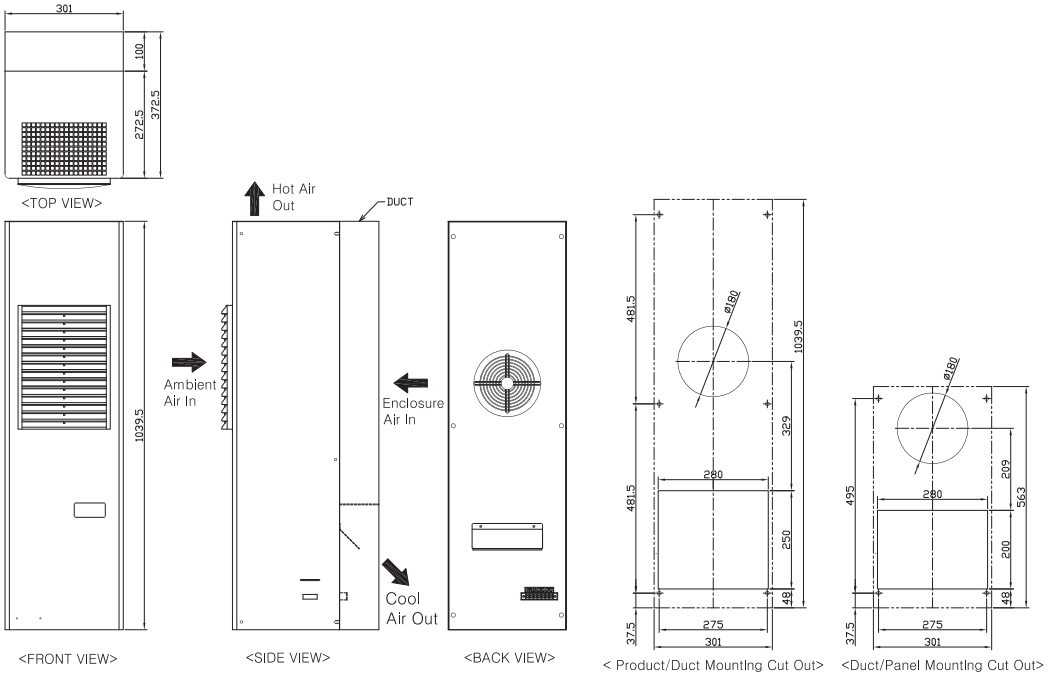
1 Product specifications

MODEL	SCA - 800BR
Dimensions(W×H×D) mm	301 × 1039.5 × 272.5
Cooling capacity	800Kcal/h
Rated Voltage	1Ph 220V
Rated Current	8A
Power consumption	1355W
Refrigerant	R134a
Applird Ambient Temperature	20℃ ~ 70℃
Weight	52.5 kg

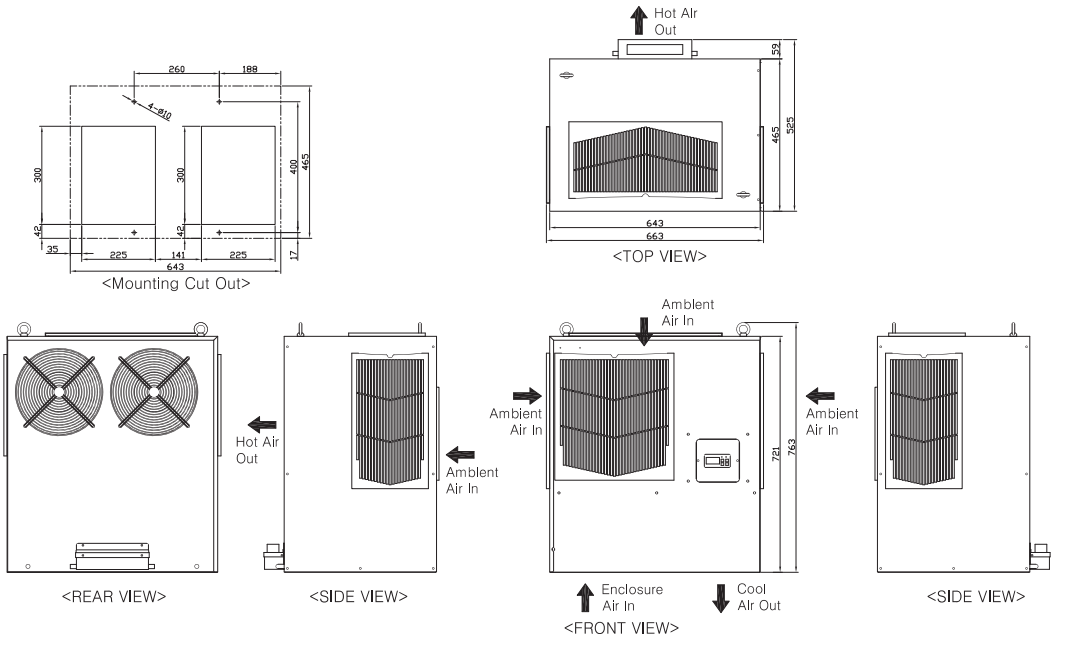
MODEL	SCA - 3400AR
Dimensions(W×H×D) mm	643 x 721 x 465
Cooling capacity	3400Kcal/h
Rated Voltage	1Ph 220V
Rated Current	13.2A
Power consumption	2031W
Refrigerant	R134a
Applird Ambient Temperature	20℃ ~ 70℃
Weight	90 kg

2 Product shape

SCA-800BR



SCA-3400AR



3 Safety instructions

The SAMICK air conditioner was developed for the control panel.

Never use it for anything else other than its intended purpose.

The indications given in the instruction manual are important for safety

and make sure to observe them.

The meaning of each indications is as follows.

⚠ **WARNING**	Improper handling can be harmful to the human body
⚠ **CAUTION**	Improper handling can damage the equipment

⚠ WARNING

⚠ Never remove the cover during operation.

⚠ Never attempt to repair or modify the unit. Please contact us for repair.

⚠ CAUTION

⚠ Do not remove the filter protection while the device is running.
Contact us for repairs.

When the air conditioner is set in place, the packaging must be intact.
Do not use a damaged air conditioner, as damage to the packaging may cause the air conditioner to fail.

Do not store the air conditioner in an environment where the ambient temperature exceeds + 60 °C.

During the transportation of the air conditioner, carry it out in a manner that it does not shake horizontally and start the equipment at least 30 minutes after installation.

Refrigerant oil sealed in the refrigerant circuit requires specialized treatment to protect the environment.
It must be managed in a professional manner.

Install the air conditioner in a place with good air circulation.
Poor air circulation can reduce the cooling capacity.

Do not use the device in places where the installation environment is corrosive. This can cause damage to the device.

Use the product at + 20 °C ~ + 50 °C and humidity within 20% RH ~ 85% RH.

Do not use the product outside the building.

⚠ Do not use the product where vibration or shock may occur.

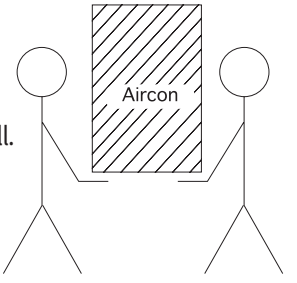
This instruction manual contains general precautions on safety, operation, maintenance and other aspects that can be found in the air conditioner packaging, but they are generally limited to safety.

4 How to attach to the control panel

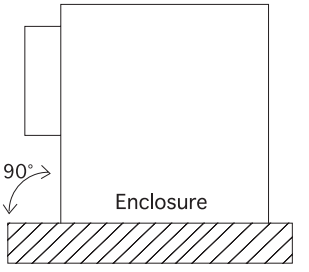
Notes on installation

⚠ CAUTION

⚠ Never lift the filter cover while installing the air conditioner. The filter cover may be moved or the unit may be damaged causing the air conditioner to fall. Lift the lower part of the body as shown in the picture.

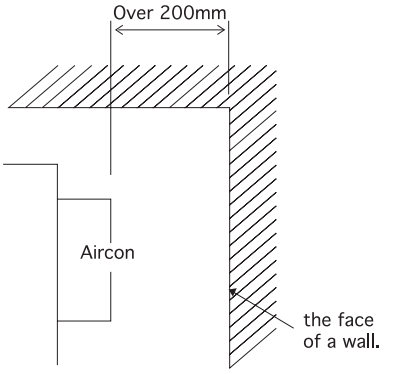


⚠ Install the air conditioner horizontally and vertically (± 2 °) as shown in the picture. This allows the condensate to drain from the air conditioner smoothly.



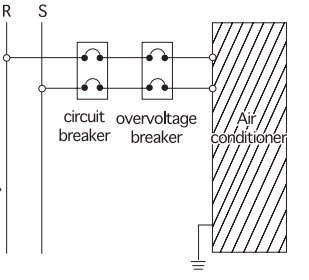
⚠ Do not use any accessory other than the genuine spare parts.
Otherwise it may cause damage to the air conditioner.

⚠ The installation environment should be a place with good air circulation. Make sure to install the air conditioner at least 200mm from the wall. poor air circulation can reduce cooling capacity and cause condensation.



⚠ Ensure sufficient airtightness of the control panel during installation.
Insufficient sealing will reduce condensation or the cooling effect.

⚠ Use the rated voltage on the nameplate as the power source for the air conditioner. While installing the power supply, connect through through the appropriate circuit breaker. Connect the ground wire to earth.



⚠ Connect at least 150% of the current listed on the nameplate to the circuit.
To avoid overload, do not use with other equipment while connecting to a circuit.

⚠ Consult an electrician for electrical work while installing air conditioners.
Incorrect wiring can cause electric shock or fire.

2. Fitting the drain hose

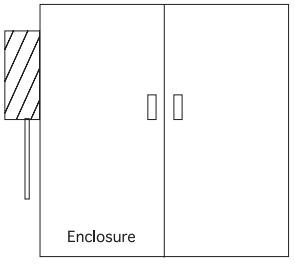
Condensate from the air conditioner is drained through the drain pipe.

Consider installing the drain hose carefully.

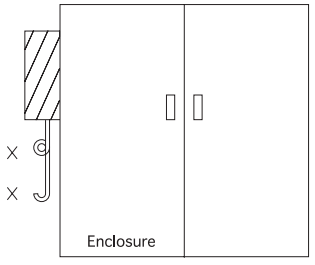
⚠ CAUTION

If the drain hose is not installed correctly, condensate from the air conditioner may enter the control panel.

⚠ Do not bend, bend, or roll the drain hose but lay it out in a straight line.



⚠ Never bend the end of the drain hose but let it fall straight down.



⚠ Keep the end of the drain hose away from the surface of the water.
When humidity is high, empty the water bottle frequently.

3. Assembly procedure

1) Make sure to ground it before use.
2) Treat the mounting surface referring to the panel working drawing.
3) Install the air conditioner on the treated panel.
4) Maintain tightness. If there are any cracks, cover them with silicone.
5) This equipment is a 220V single phase, please check the prescribed voltage and connect it to the power supply with the pre-included wire.

Remarks and checklist before operation

➜ Checklist

1) The power supply must be 220V single phase and earthed

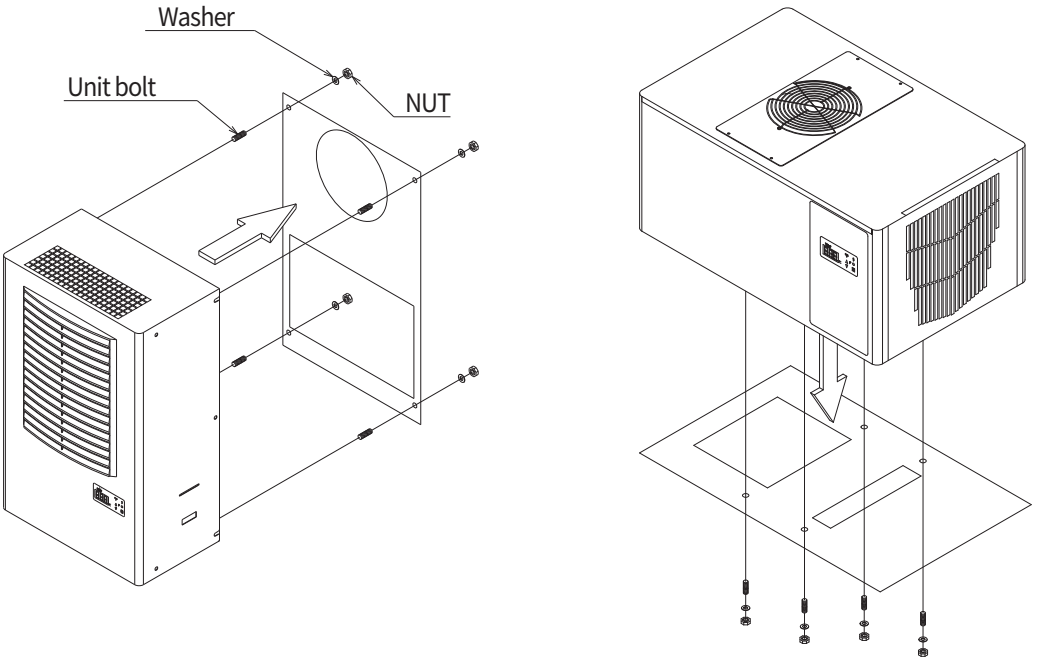
2) The specified voltage must be within ± 10%

3) Do not tilt the product more than 10°

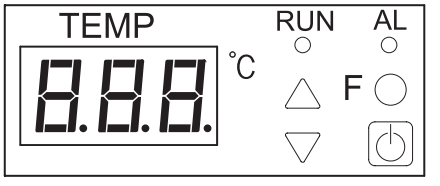
⚠ CAUTION

Never attempt to operate the air conditioner by placing it on its side, back or front from a horizontal surface. Since the refrigeration compressors are filled with lubricating oil, if the compressor works without oil, the air conditioner can be damaged. Please note that damages in such case cannot be compensated.

4. Panel treatment drawings



5 Temperature operation and adjustment method



1. When the power cord is energized, the current temperature is displayed on the temperature controller.
2. The indoor fan is operated while the power switch is on.
3. If the internal temperature is higher than the set temperature, the outdoor fan and COMP operate operate and in turn, the COMP activates the temperature controller.

⚠ Note that if the temperature exceed the set temperature specified on the nameplate by operating the thermometer arbitrarily, the air conditioner may fail due to prolonged period of time of operation; in such case, the damage cannot be compensated.

1. Temperature adjustment method

Sequence	Operation display	Remarks
Press SET KEY once. The temperature set as shown in the figure to the right flashes.		The digital LED flashes.
Adjust the temperature by pushing the UP / DOWN key		The digital LED flashes.
Press and release the SET KEY button once.		The digital LED stops flashing and returns to the current temperature. (It is set only by pressing the SET KEY.)

◎ System Specification

- Lamp: Operating lamp
  - Lights during cooling operation
  - Compressor, condenser fan operation

  : Alarm indicator
  - "UP" lights up when the temperature inside the panel is abnormal
  - “DO” lighting on door

- Display window: initial power on - half board temperature display for 5 seconds and half board temperature display.

  : During recording - panel temperature and “LP” are displayed alternately.
  : If the temperature inside the card is abnormal - The temperature of the card and the signal “UP” are displayed alternately.
  : In the event of a door reading error - Display of the panel temperature and the signal "DO" alternately.

◎Operation

-Power saving operation (LP display)

: When the temperature inside the panel is lower than 20 °C, the evaporator fan (heater) relay is turned off and the energy saving operation starts. Then, when the temperature inside the panel reaches + 3 °C below the temperature setting inside the panel, the power saving operation turns off and the radiator fan operates.

-Temperature alarm inside the panel (UP display)

: The alarm is activated after displaying the alarm sign if the temperature inside the panel is greater than 50 °C (relay on the temperature inside the panel)

-Control panel door reading alarm (DO display)

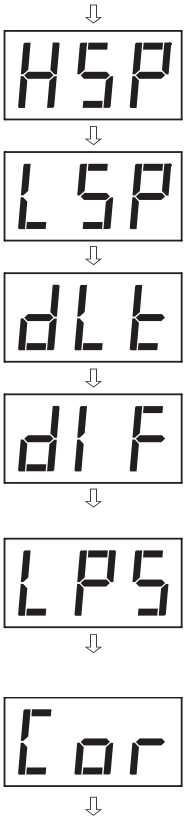
: If the control panel door is opened while the air conditioner is on, the door alarm is activated and the air conditioner is turned off.
: Normal operation resumes after 90 seconds when the control panel door is closed.

2. Method to unlock and lock the set point

➜ Note that the parameters are already set before changing the factory settings.
Make sure you understand the changes and how to implement them

➜ If the factory settings are incorrect, Please contact the after-sales service,
the head office or the factory.

Continue to hold the "F" key until HSP appears.
When it appears, release the "F" key.



Setting the temperature range limit - upper limit

Setting the temperature range limit - lower limit

Delay time (factory set value 90 to 190 seconds)

Temperature variation (factory setting 3 °C)

Backup mode is executed when the backup mode is less than 20 °C

Temperature compensation

By pressing the "F" key, you will return to the display of the current temperature.

3. Pay attention to the operation

• When changing the conditions set at the factory, be sure to check the conditions already set in advance.

•If the factory settings are incorrect, please contact our company / factory to receive after-sales service.

⚠ CAUTION

⚠ After installing the air conditioner, be sure to turn it on and run it for at least 30 minutes to protect the compressor.

⚠ Frequent ON / OFF operation of the compressor will cause failure and shorten the service life.
When the power is off and the operation is stopped, be sure to start it after 5 minutes or more.
Never repeat the ON / OFF operation more than 6 times in 1 hour.

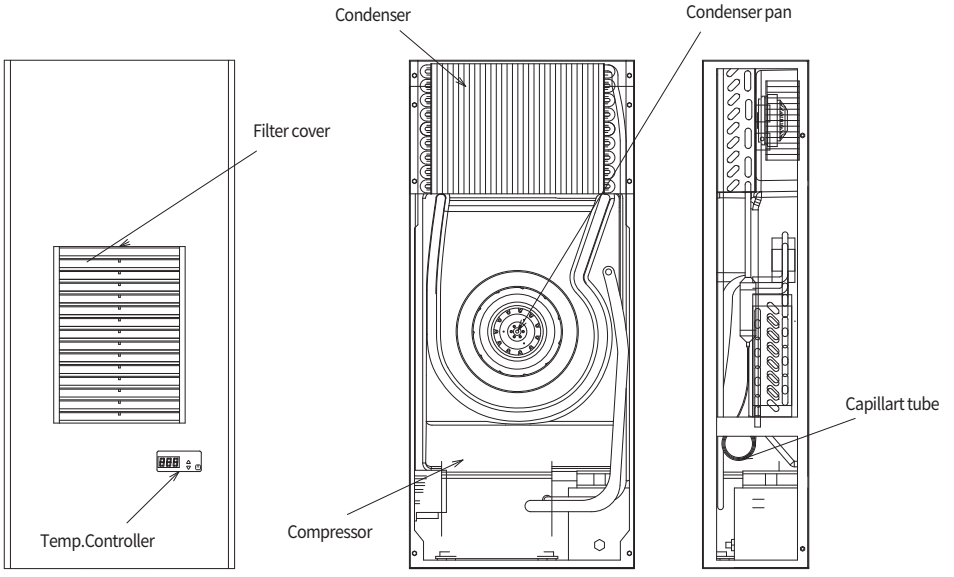
⚠ Do not put your hand inside the air conditioner or operate with the cover open.

◎Operation

The air conditioner starts automatically by turning on the power and circulates the air inside the control panel by the evaporator fan. The temperature inside the control panel becomes uniform, and the temperature inside the control panel is managed within the setting range of the thermistor built into the body of the air conditioner. In the air conditioner thermistor setting, the factory operating temperature is set to + 30 ° C. Therefore, the compressor starts and cools down when the temperature in the control panel reaches + 30 ° C and stops below + 30 ° C.

6 Name of each part and structure

1. Name of each part



2. Structure

The air conditioner consists of four main parts, each connected by a pipe.

1) Compressor: Its main function is to compress the refrigerant in the air conditioner.
2) Condenser heat exchanger: condenses the high temperature and high pressure gas generated by the compressor into liquid.
3) Evaporator: Heat exchanger inside the panel. When the compressor is in operation, it absorbs and cools internal heat and recovers moisture from the air.

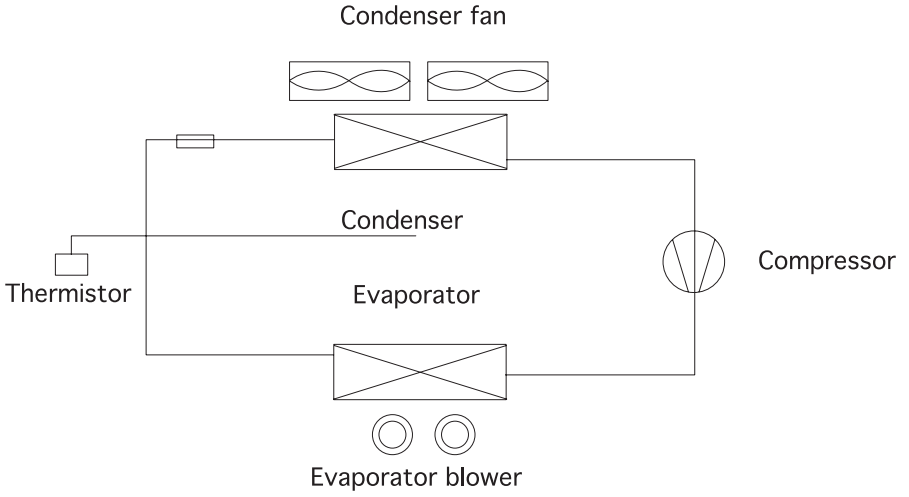
This circuit is filled with refrigerant which is a low boiling liquid.

Refrigerant R-134a (CH_2FCF_3) does not contain chlorine.

And the ozone layer depletion index is zero.

The sealed circuit has a built-in dry filter to protect circuit devices from moisture, acid, and foreign matter.

● Structure plan



Compressor transmit/ discharges high pressure gaseous refrigerant into the evaporator and send it to the condenser. And since the refrigerant temperature is high, the heat is removed/ dissipated by the forced air cooling condenser. By this process, the refrigerant is liquefied, injected into the evaporator which in turn, evaporated at a small pressure. The heat required for complete evaporation is absorbed into the control panel, so the temperature inside the control panel is protected. This cooling cycle is repeated.

7 Function test

⚠ CAUTION

⚠ At least 5 minutes after the installation is finished, perform a functional test to prevent damage to the air conditioner.

⚠ Connect to a circuit with at least 150% of the current written on the nameplate.
To avoid overload, do not use the air conditioner with other equipment when connecting to a circuit.

➜ During normal operation, there should be no excessive noise or vibration coming from the condenser fan, evaporator fan and compressor while using the air conditioner.
Check if there is cold wind coming out of the evaporator fan. The cold air temperature is discharged at about 20 ~ 30 when the internal temperature of the panel is 30 ~ 40 , and the temperature inside the control panel is managed within the setting range.

➜ The compressor is equipped with temperature overload protection.
This protection device is located on the side of the compressor and is only intended to operate at set temperature.
This unit operates when the intake air filter is blocked or clogged and the internal temperature rises, even if the outside temperature exceeds the temperature indicated on the nameplate.

➜ If the capacity of the air conditioner is not rated correctly, the compressor will stop due to excessive heat load.
At this time, the evaporator fan will operate, but the compressor will not restart as it will not be lower than the specified overload temperature.

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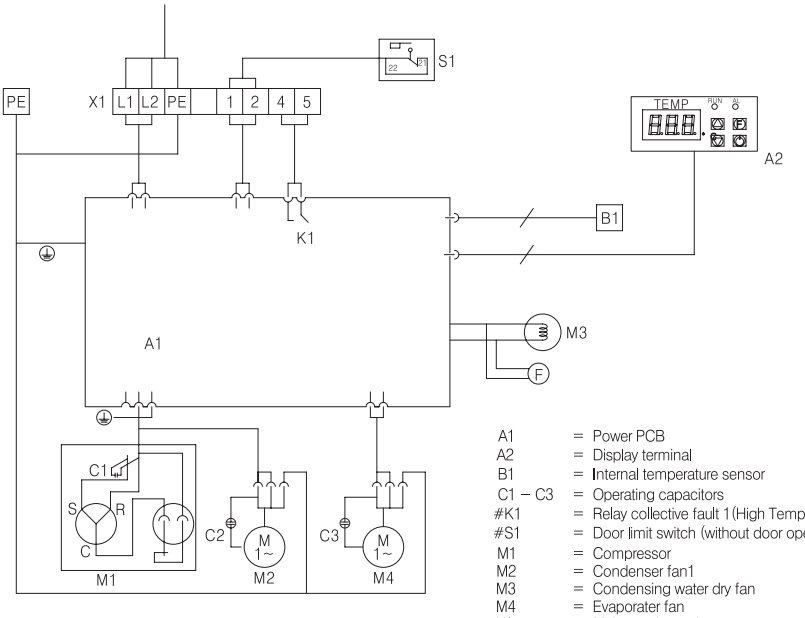
Please check the following items regularly to ensure the performance of the air conditioner.

Statuts	Causes	Repair
The temperature inside the control panel rises. Cold air does not come out.	a. The circuit breaker is deactivated	a. Lift up the circuit breaker.
	b. The temperature of the interior panel is lower than the set temperature.	b. Check the set temperature of the thermistor and the temperature of the panel.
	c. The thermistor inner panel temperature cooling capacity is low.	c. Increase the set temperature.
	d. The ambient temperature is high.	d. Replace with air conditioning cooling
	e. The filter is dirty.	Exchange
	f. The condenser fan is not rotating.	
	g. The evaporator fan is not rotating.	
Much water has been dehumidified.	The airtightness of the control panel is bad.	Increase the air tightness by closing the control panel.

• If you notice any abnormality during use, turn off the air conditioner and contact us.
Please inform us of the type of air conditioner and the date of purchase.

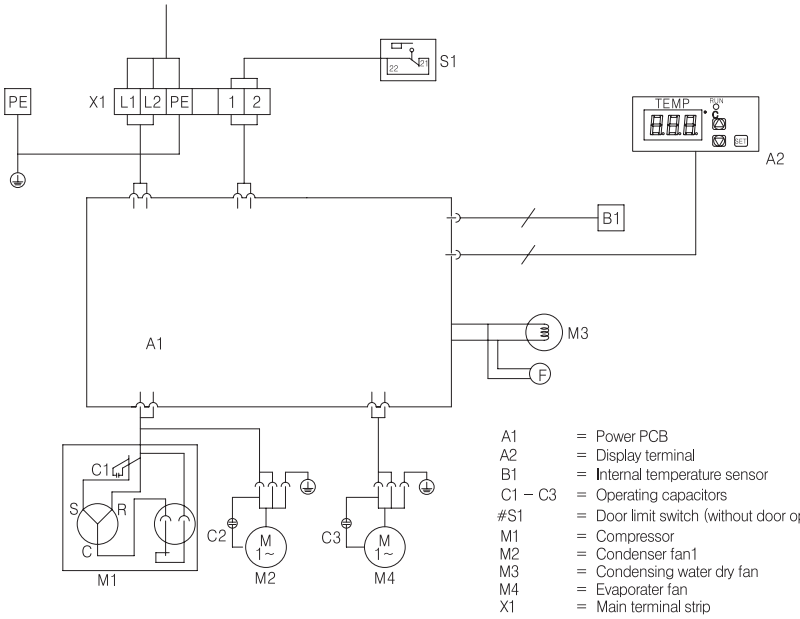
● Circuit plan

1. Micro-computer Type



A1	=	Power PCB
A2	=	Display terminal
B1	=	Internal temperature sensor
C1 – C3	=	Operating capacitors
#K1	=	Relay collective fault 1 (High Temperature Alarm)
#S1	=	Door limit switch (without door operated switch terminal 1,2 open)
M1	=	Compressor
M2	=	Condenser fan1
M3	=	Condensing water dry fan
M4	=	Evaporater fan
X1	=	Main terminal strip

2. SCA-450E Type



A1	=	Power PCB
A2	=	Display terminal
B1	=	Internal temperature sensor
C1 – C3	=	Operating capacitors
#S1	=	Door limit switch (without door operated switch terminal 1,2 open)
M1	=	Compressor
M2	=	Condenser fan1
M3	=	Condensing water dry fan
M4	=	Evaporater fan
X1	=	Main terminal strip

9 Warranty period

You can receive after-sales service for 1 year after shipment.

(Repair costs will be charged for any failure caused by careless use or unauthorized maintenance.)

MEMO

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