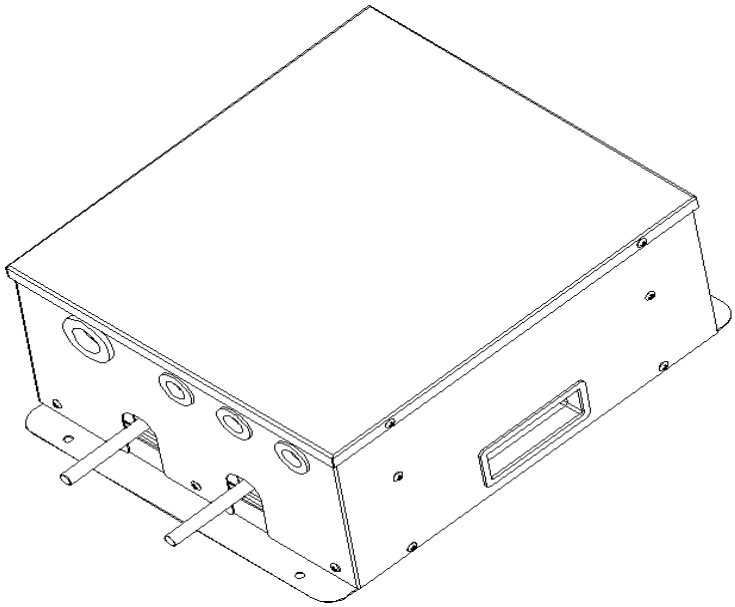
Installation and Operation Manual of AHU KIT unit AK Series & AKF Series

Model: NV6-AK1, NV6-AK2, NV6-AK3
NV6-AKF1, NV6-AKF2, NV6-AKF3



IMPORTANT NOTE:
Thank you very much for purchasing our product.
Before using your unit, please read this manual carefully and keep it for future reference

Instructions

1. The outside drawings of product are all shown schematically in this Manual.
2. Thank you for purchasing the central air conditioner. Be sure to read the section of “Precautions” before use to prevent other accidents from happening to the air conditioner due to your mis-operation.
3. Please select the parameters and instructions in this Installation and Operation Manual of AHU Independent Control Box of Variable-speed Multi-connected Air Conditioner Unit according to the model you purchase.

CONTENTS

1. Precautions

A. Be sure to comply with local, national and international laws and regulations.

B. Please carefully read the precautions before installation.

C. Please pay attention to the important safety supplies included in the following preventive measures.

D. Please keep this Manual in a convenient place for future reference.

E. The product must be installed only by the authorized personnel according to the requirements of the Installation Manual.

The safety precautions listed here are divided into two categories: Attention and Warning. The important information that must be read carefully is listed in both cases.

⚠ Attention

1. Failure to follow warnings may result in damage to the device.
2. After installation, make sure that the control box device works normally during the start-up operation.
3. Please guide customers to operate and maintain the device. Tell customers that they should store the Installation Manual and Owner's Manual for future reference.
4. Ground the air conditioner. Do not connect wires to gas or water pipes, lightning rods or telephone ground wires. Improper grounding operations may result in an electric shock.
5. Be sure to install a ground leakage circuit breaker. Otherwise, an electric shock may be resulted in.
6. Connect the outdoor unit, and then connect the wires of indoor unit; do not connect the air conditioner to the power supply until the installation of the unit (including the ventilation and pipeline of air conditioner) is completed.
7. Install drainage pipelines based on the guidelines in this Manual to ensure proper drainage and insulation and to prevent condensation of condensed water and electrical leakage. Improper installation of drainage pipelines will cause water leakage and property losses.
8. Install the device connecting indoor and outdoor units, power circuits and communication wires on the indoor side. The device and wires should be at least 1 meter away from the TV or radio to prevent image interference or noise. The distance of 1 meter may not be enough to abate noise under different radio waves.
9. Young children or the weak must use this product under supervision. Young children should be supervised to ensure that they will not play with this product.
10. Do not install the air conditioner in the following locations:

- Outdoor areas.
- A place with gasoline.
- A place with salt air around (near the coast).
- A place with corrosive gas (e.g. sulfur gas) in air (near a hot spring).
- A place with violent vibration (in a factory).
- A bus or a cupboard.
- A place full of petroleum gas.
- A place with strong electromagnetic waves.
- A place with flammable materials or gases.
- A place where acidic alkaline liquid is evaporated.
- A laundry room.
- Other special conditions.

⚠ Warning

Failure to follow warnings may result in death.

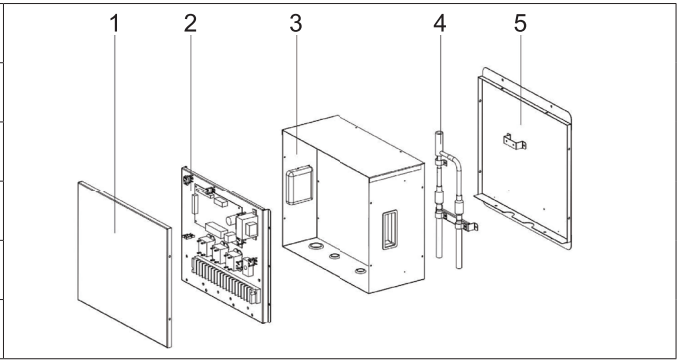
1. Make sure that only the qualified repair personnel who have been trained can install, debug or repair the device. Improper installation, repair and maintenance may result in electric shock, short circuit, leakage, fire or damage to the device.
2. Install the device in strict accordance with this Installation Manual. Any defect in installation may result in water leakage, electric shock and fire.
3. When the device is installed in a small room, take measures to prevent the concentration of refrigerant in indoor space from exceeding the allowable safety limit due to leakage of refrigerant. For details, please contact the place of purchase. Too much refrigerant in a closed environment may lead to a lack of oxygen.
4. Choose the attached accessories and parts and designated parts for installation. Otherwise, fall, water leakage, electric shock and fire may be caused.
5. Install the product in a place that is secure enough to bear the weight of the product. In case of insufficient strength or improper installation, the device will fall, causing injury.
6. The product must be installed at a distance of 2.5 meters from the floor; it is not allowed to install the product in the laundry room.
7. Disconnect all power circuits before the terminals are connected. Install the product in a location in which the plug is easy to operate. The product housing should be marked with words or symbols and direction of fluid flow.
8. The electrical work must be done by using an independent circuit and a single socket in accordance with the local and national wiring standards and regulations and this Installation Manual. If the circuit capacity is insufficient or there is a defect in the electrical work, electric shock and fire may be caused.
9. Use the designated cable, connect the cable to the terminal tightly, and clamp and fix the cable so that no external force is applied to the terminal. Unreliable connection or fixing will cause overheating connection or fire.
10. Wires must be arranged vertically so as to fix the control panel cover properly. If the control panel cover is fixed improperly, the connecting terminals may be hot or a fire or electric shock may be caused.
11. When necessary, the power wire must be replaced by the manufacturer or its agent or similar qualified personnel to avoid danger.
12. Do not allow air to enter the refrigeration cycle when installing pipelines. Otherwise, reduction in capacity, abnormal high pressure in the refrigeration cycle, explosion and damage will be resulted in.
13. Do not change the length of power wire or use an extension wire or share a single socket with other electrical appliances. Otherwise, a fire or electric shock will be caused.
14. Connect to the designated network with consideration of impacts of strong winds, typhoons or earthquakes. Improper installation may make the device fall and cause accidents.
15. If the refrigerant leaks during installation, ventilate the area immediately; if the refrigerant enters the area in contact with fire, toxic gases may be produced.
16. Check whether the refrigerant leaks after the pipelines are installed. If the refrigerant leaks into a room and comes into contact with fire sources such as fan heater, stove or cooker, toxic gases will be produced.

2. AHU KIT design selection and dimension

Series	Model	Capacity range	Feature	Control method
NV6-AK	NV6-AK1 NV6-AK2 NV6-AK3	2.8~56kw	Not compatible with fresh air	Adjustable target outlet air temperature
NV6-AKF	NV6-AKF1 NV6-AKF2 NV6-AKF3	2.8~56kw	Compatible with fresh air	Unadjustable target outlet air temperature, always high fan speed

2-1 AHU kit explored view

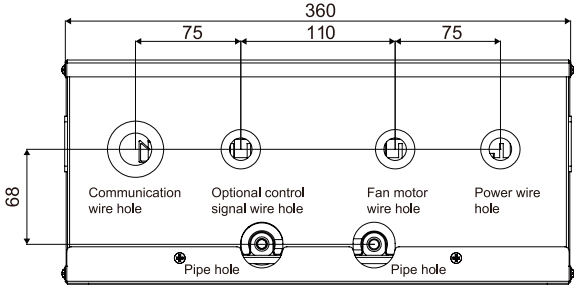
No.	Part name
1	Front panel
2	Control board
3	Side panel
4	Expansion valve
5	Back panel



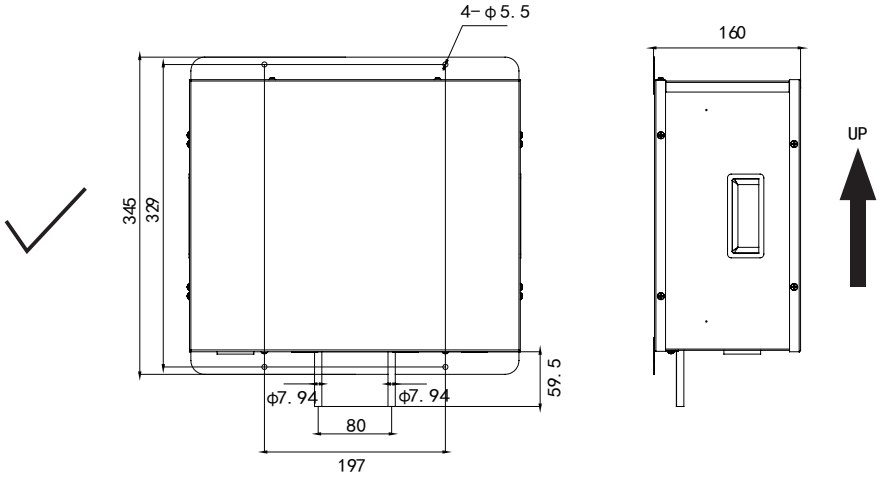
2-2 Installation diagram

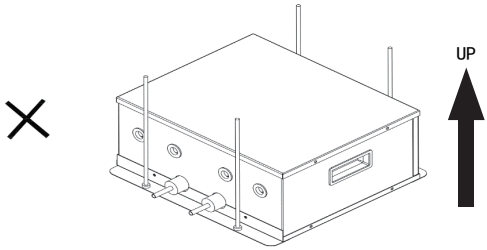
Model: NV6-AKF1,NV6-AKF2,NV6-AKF3,NV6-AK1,NV6-AK2,NV6-AK3.

Installation dimension:

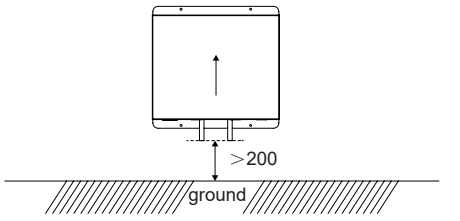


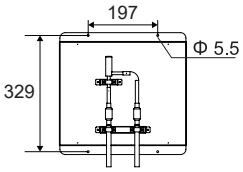
Installation method

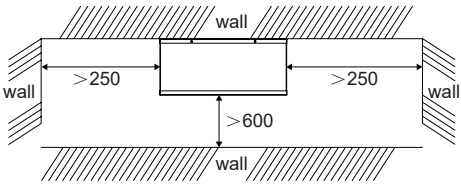




Installation space requirement







⚠ Attention

• The controller box cannot be installed outdoors. If it is unavoidable, precautionary measures must be added. For specific methods, please contact the local transaction or technical support engineer.

• For hanging installation, please use screws ST3.9x25 for installation.

• For hanging installation, the packaging box should be vertical, and horizontal installation is prohibited.

• Please refer to the above requirements to ensure that the laying direction of the refrigerant pipe is related to the connection position of the connecting wire.

• All pictures in this manual are for explanatory purposes only, they may be slightly different from the control box you purchased (depending on the model), the actual shape prevails.

2-3 Select capacity by setting KNOB1 dip switch

AHU kit model	Matched AHU capacity	Dip switch setting	AHU kit model	Matched AHU capacity	Dip switch setting
NV6-AK1	2.8kw	0 	NV6-AK2	16kw	6 
	3.6kw	1 		22kw	7 
	5.0kw	2 		28kw	8 
	7.1kw	3 	NV6-AK3	30kw	9 
	11.2kw	4 		45kw	A 
	14.0kw	5 		56kw	B 

3. AHU KIT pipeline installation

3-1 Installation precautions

• In order to install the product properly, please read this “Installation Manual”.

• The air conditioner must be installed by professionals.

• Please strictly follow this Manual while installing indoor wire sets, pipes and air ducts.

• If the air conditioner is placed on the metal part of a building, the electrical appliances must be electrically insulated according to the relevant standards.

• Please turn on the power supply for a thorough inspection after the installation work is completed.

• Any change to this Manual due to product improvement will not be further released.

3-2 Installation Sequence

1. Choose a place;
2. Install the control box;
3. Install the outdoor devices;
4. Install the connecting pipes;
5. Arrange wires;
6. Carry out a test.

3-3 Connection requirements between AHU KIT and indoor/outdoor units

1. For the allowable length of piping, please refer to the manual of the outdoor unit;
2. For the allowable drop of piping, please refer to the manual of the outdoor unit;
3. The connection distance between AHU KIT and indoor unit should not exceed 8 meters

⚠ Attention

• The control box can only be connected to the R410A refrigerant system, and can only be connected to VRF system of our company.

• The connecting pipe can only be installed after the indoor and outdoor installations are fixed. When installing the connection, do not let air, dust or other enter the pipe system.

• When installing the pipe, it must be kept dry so that no water spots can enter the pipe system.

• Wrap the connecting copper pipes with thermal insulation materials (the wrapping thickness should be greater than 10 mm; it should be appropriately increased in some wet areas).

3-4 Connection specifications of AHU KIT

Model and connection tube size:

Name		Model and connection tube size		
Model		NV6-AK1 NV6-AKF1	NV6-AK2 NV6-AKF2	NV6-AK3 NV6-AKF3
Capacity(kW)		2.8-14	16-28	30-56
Spec	Inlet diameter	Φ7.94	Φ12.7	Φ15.88
	Outlet diameter	Φ7.94	Φ12.7	Φ15.88

⚠ Attention

• The connection distance between the control box and the indoor unit should not exceed 8 meters.

• This control box can only be connected to the R410A refrigerant system.

• This control box can only be connected to a multi-connected external system.

• The control box cannot be connected to the heat recovery system.

• When installing and connecting, do not allow air, dust or other to enter the piping system.

• The connecting pipe can be installed only after the indoor and outdoor units are fixed.

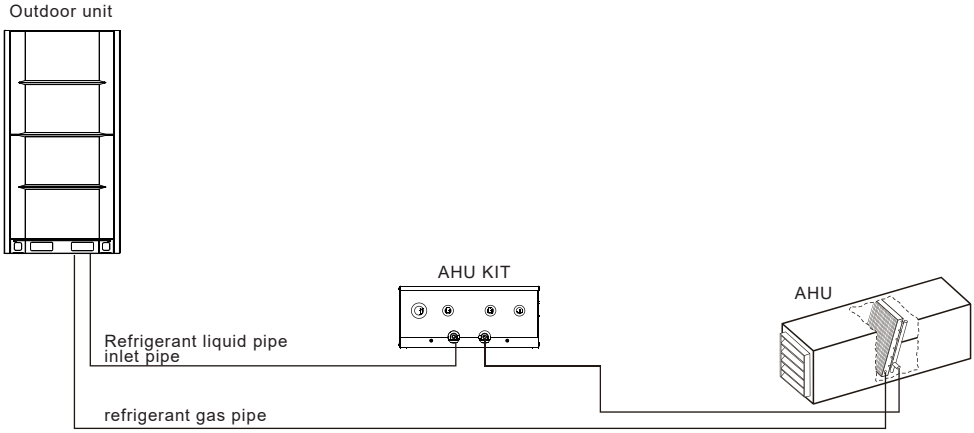
• When installing the pipeline, it must be kept dry and do not allow water stains to enter the pipeline system.

• The connecting copper pipe must be wrapped with thermal insulation material (usually the thickness should be greater than 10 mm; in some wet areas, it should be properly thickened).

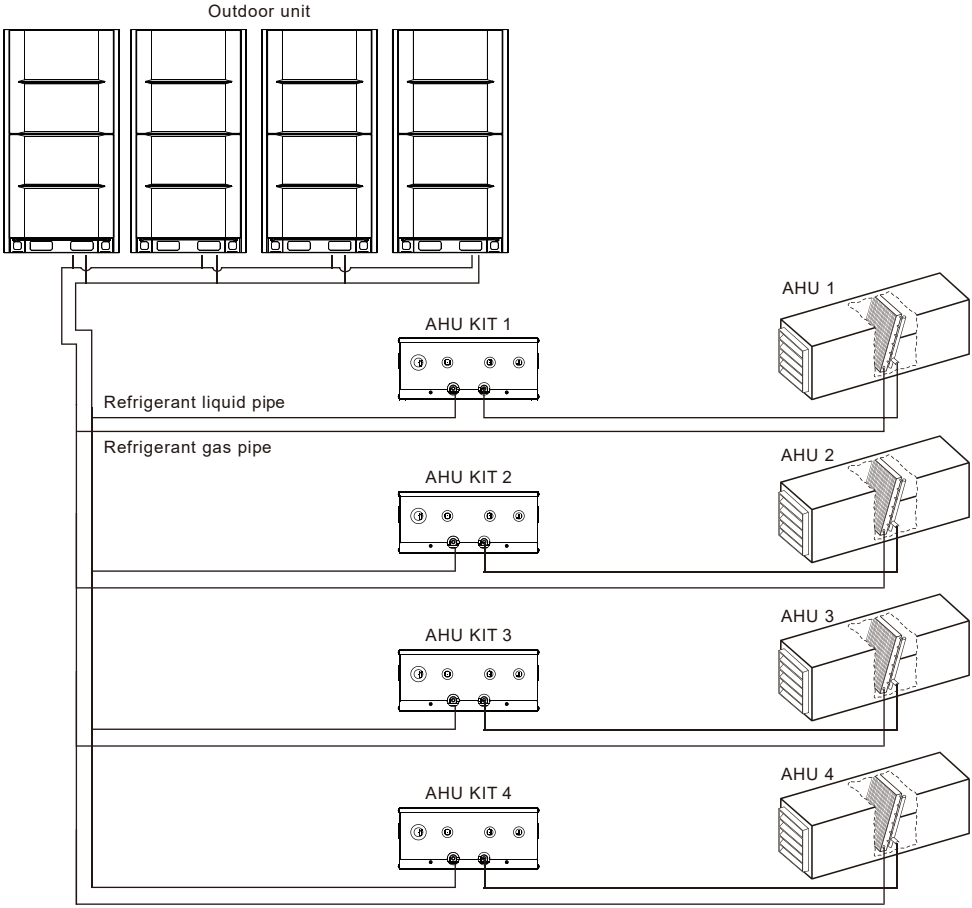
3-5 Indoor and outdoor unit installation and wiring diagram

Indoor and outdoor installation diagram:

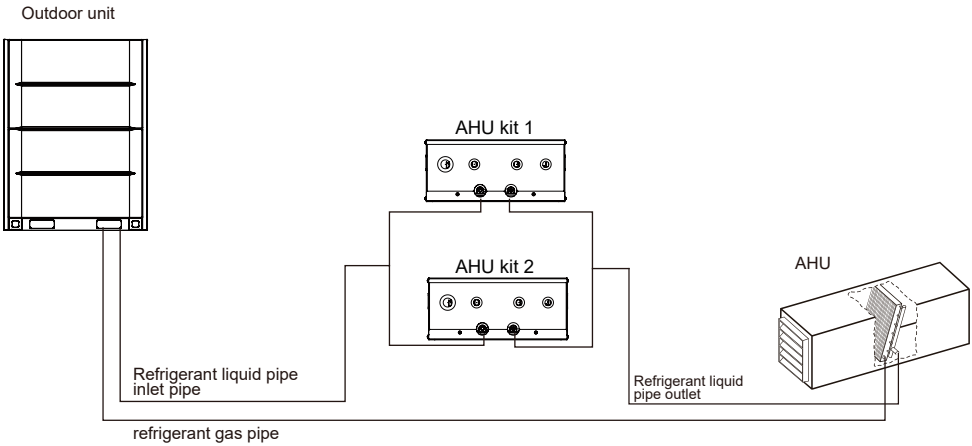
Installation method 1: One AHU kit to one AHU



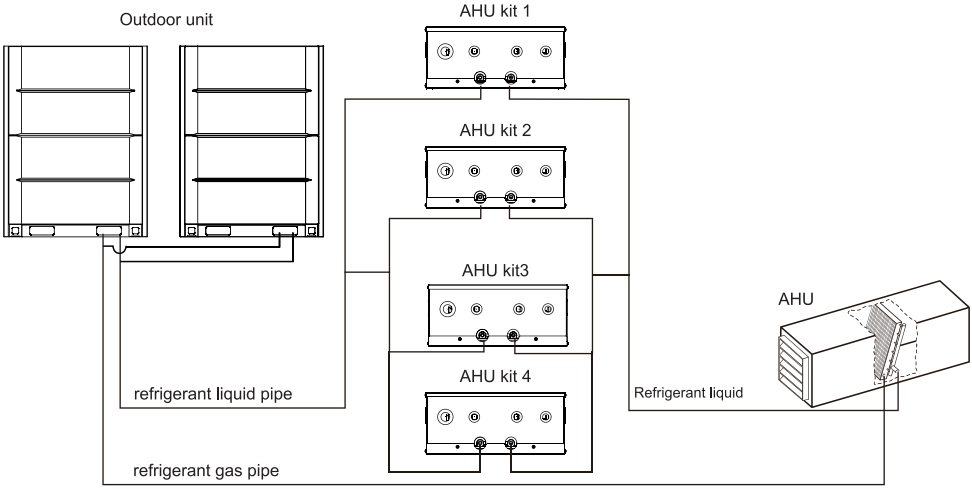
Installation method 2: Multiple AHU kit to multiple AHU



Installation method 3: Multiple AHU kit to one AHU



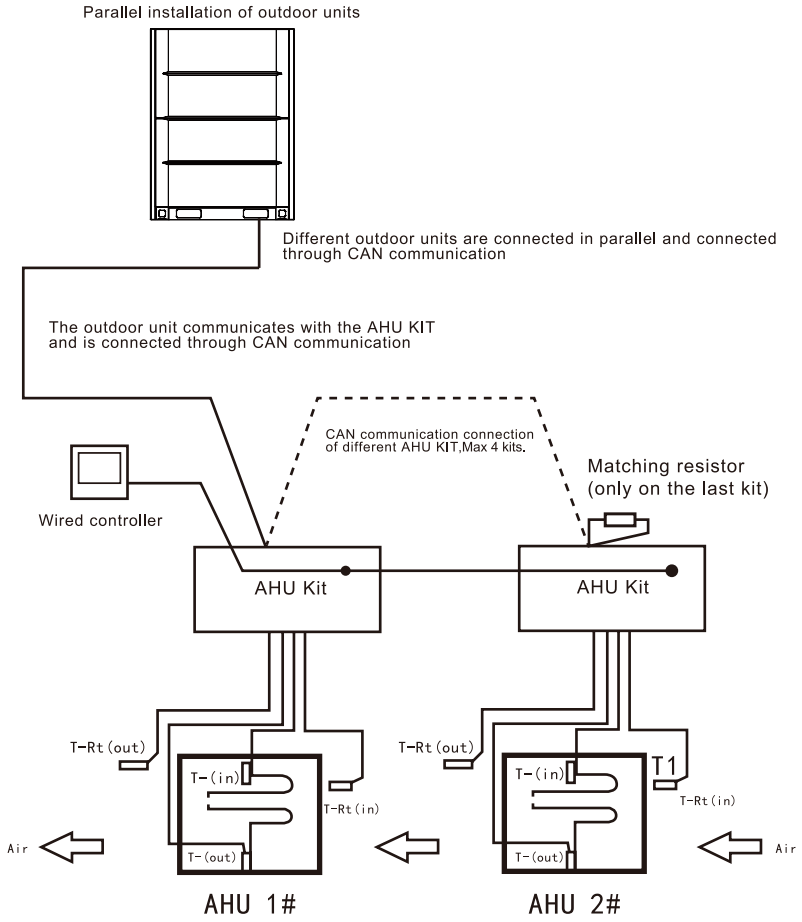
Installation method 4: Multiple AHU kit to one AHU



Note:

1. One system can have maximum 4 AHU kits.
2. One system maximum capacity is 224 kW.
3. One system indoor/outdoor unit capacity ratio range should be withini 50% to 100%;
4. The total piping length between indoor and outdoor units should be ≤120m;
   the height difference between indoor and outdoor units should be ≤ 60m;
   the distance from the branch pipe to the AHU kit should be ≤ 20m;
   the height difference between different KITs should be ≤8m.

Wiring installation method 1:

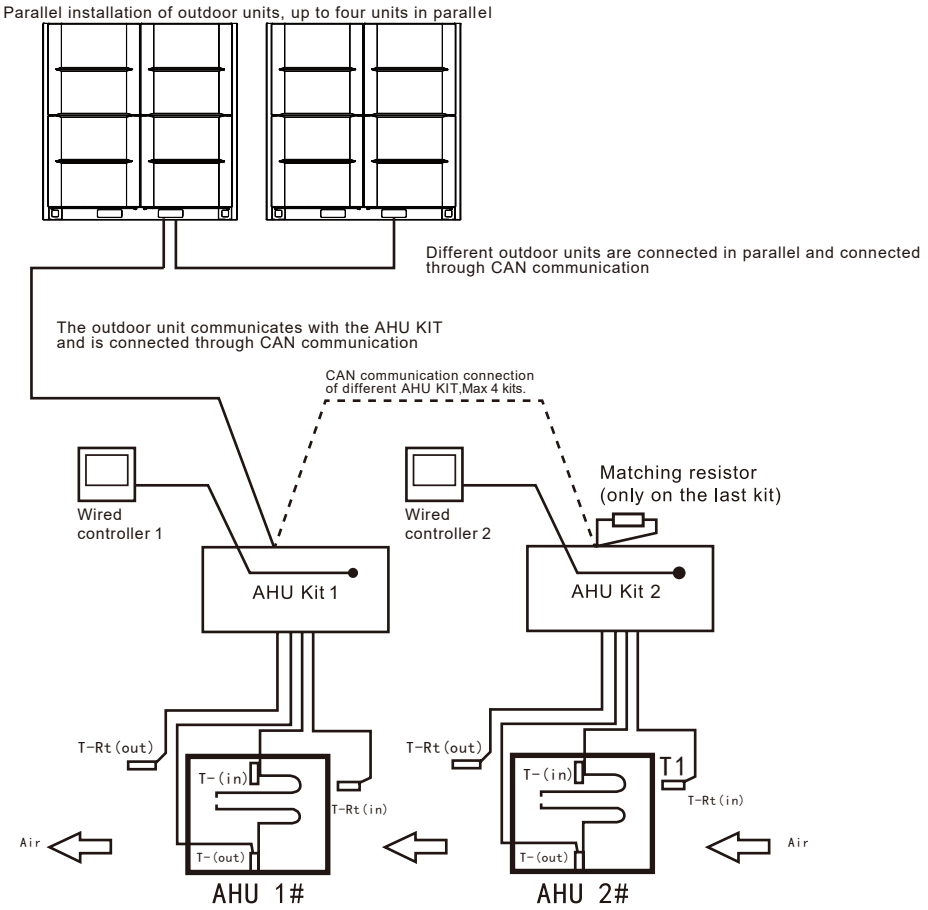


Each AHU KIT has a set of sensor lines. The control box and other functions of the indoor unit (fan/water pump/alarm, etc.) are connected to the indoor unit by referring to the manual.When the water level switch and remote control switch are not applicable, a short press is required.

⚠ [Attention]
NV6-AK1, NV6-AK2, and NV6-AK3 do not have the T-Rt(out) sensor.

NV6-AKF1, NV6-AKF2,and TMC-AKF3 have T-Rt-(out) sensor, which is necessary for fresh air.

Wiring method 2:



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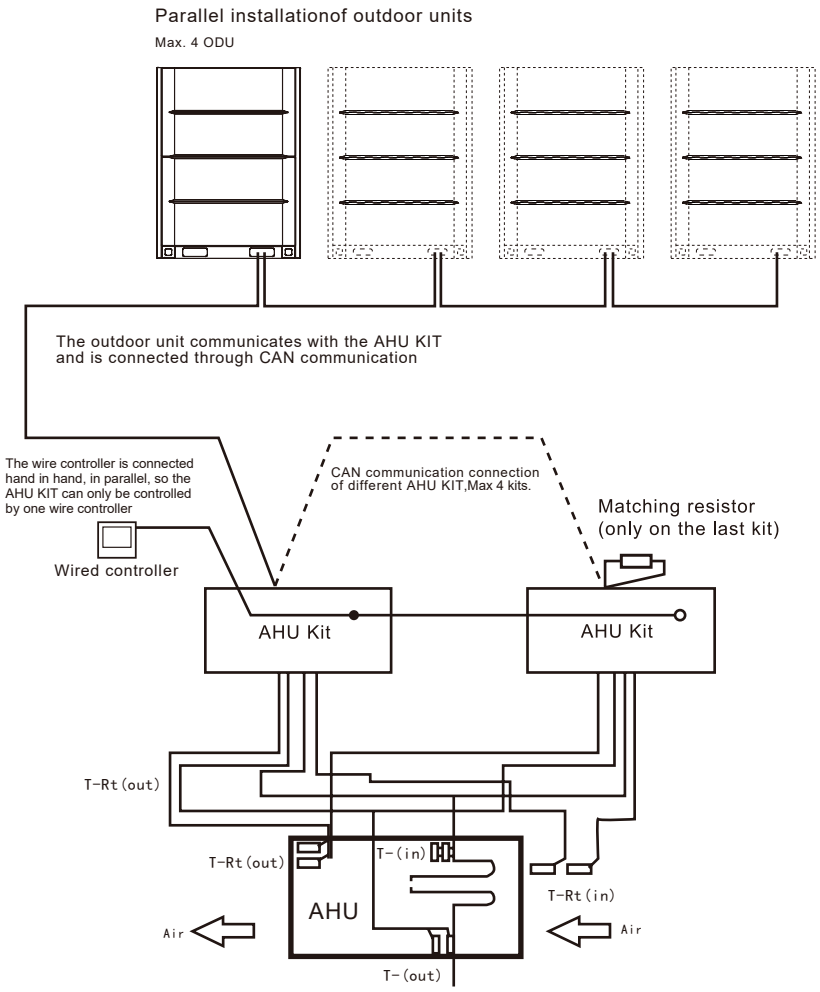
Wiring installation method 3:



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⚠ [Attention]

NV6-AK1, NV6-AK2, and NV6-AK3 do not have the T-Rt(out) sensor.

NV6-AKF1, NV6-AKF2,and TMC-AKF3 T-Rt-(out) sensor, which is necessary for fresh air.

3-6 Additional accessories

Please check whether the following accessories are complete, if some spare parts are missing, please choose carefully.

No.	Name	Icon	Quantity	Remark
1	Installation and Instruction Manual		1	
2	Wired Controller Instruction Manual		1	
3	Wired controller		1	
4	Display light board		1	
5	Display light board wiring set		1	
6	Gasket		4	Fix control box
7	Screw		4	Fix control box
8	Temperature Sensor		4(AKF)/3(AK)	Detect the temperature of inlet/outlet pipes and the outlet air temperature.
9	Temperature sensor wire set		4(AKF)/3(AK)	Temperature sensor extension cable.
10	Wired controller connection cable set		1	
11	Remote controller		1	

⚠ Attention

Precautions for wiring controller installation:

• Do not throw or hit the controller.

• Before installation, operate the remote control to determine its position within the receiving range.

• Keep the remote control at least 1 meter away from the nearest TV or stereo equipment (must prevent image interference or noise interference).

• Do not install the cord controller in direct sunlight or near a heating source, such as a stove.

• Please note that the positive and negative poles are in the correct position when loading the battery.

3-7 AHU KIT sensor installation

• Installation location of pipeline thermistor:

• The thermistor should be properly installed to ensure good operation:

1. T-in-: It is the sensor installed behind the distributor and in the bottom inlet pipe of evaporator in the refrigeration cycle.

2. T-out: It is the sensor installed on the main outlet pipe of evaporator in the refrigeration cycle.

The installation location should be as close to the heat exchanger as possible.

3. T-Rt(in): It is the sensor that at the air inlet position of the indoor fresh air from the outside in the air cycle. The temperature of this position detects the temperature of the outdoor air supply.

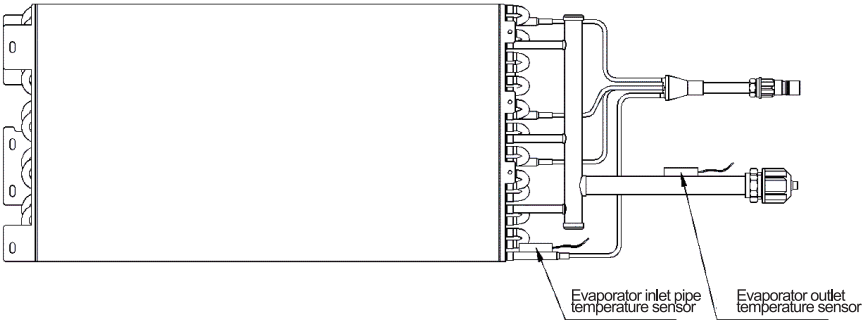
4. T-Rt(out): It is the sensor that at the outlet position of the indoor fresh air sent from the outside in the air cycle. The temperature of this position detects the temperature of the indoor outlet air.

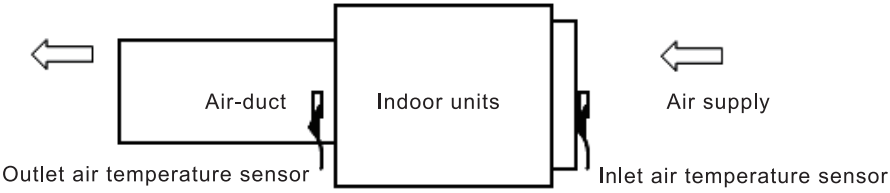
• Attention:

The sensor must be evaluated after installation to check whether the evaporator can be protected against continued freezing of the bias current.

Perform a test operation and check for freezing.

1. T-in (inlet pipe of evaporator)
2. T-out (outlet pipe of evaporator)
3. T-Rt(in) (Supply air temperature)
4. T-Rt(out) (Outlet air temperature)

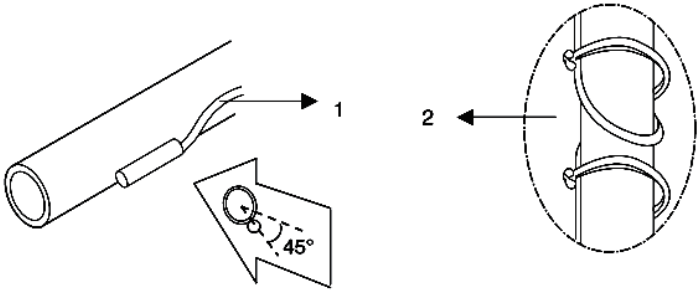




Attention: when the AHU Kit model is NV6-AK1, NV6-AK2 or NV6-AK3, no need to install the air outlet temperature sensor.

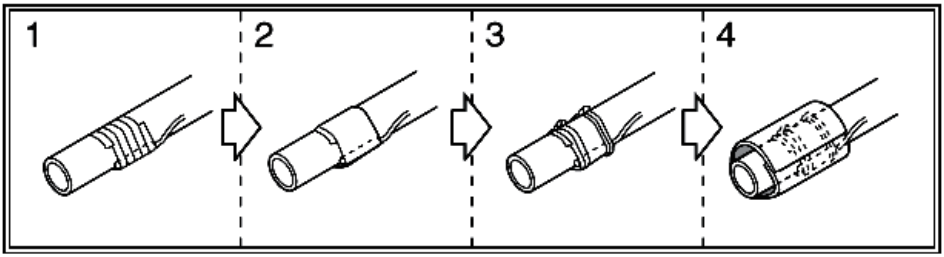
• Installation of indoor thermistor

1. Put the sensor probe into a separate copper pipe wall.
2. Tighten the sensor probe by using more tension ties to prevent it from being loosened on the copper pipe. The strain or looseness of sensor probe on the copper pipe can cause poor contact and errors of temperature measurement.



• Installation and fixing of pipeline sensor (on-site work)

1. Fix the sensor probe with aluminum tape to ensure good heat transfer performance.
2. Place the attached rubber sheet around the sensor probe to prevent the thermistor from being loosened in a few years.
3. Fix the sensor probe with 2 ties, isolate the sensor probe with an insulation device (more than 5t)

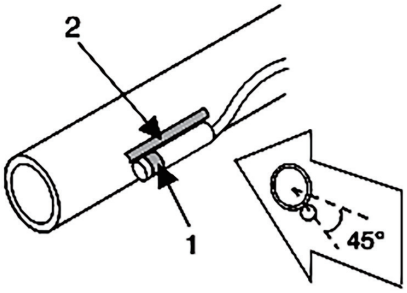


⚠ Attention

Slightly place the wire of sensor probe on the top to prevent water from gathering on the sensor probe.

• In order to sense the temperature of inlet and outlet pipeline of evaporator in the sensor, place the top of thermistor on the inlet and outlet copper pipe of evaporator which is the most sensitive point of thermistor.

1. Most sensitive point of thermistor
2. Maximized contact



4. AHU KIT electrical connection

4-1 Electrical wiring

⚠ Attention

• The air conditioner should be connected to a separate power supply with rated voltage.

• The external power supply of air conditioner should be equipped with a ground wire connected with the ground wires of indoor and outdoor devices.

• Wires should be connected by professionals according to the circuit diagrams.

• A 3mm electric shock distance must be equipped for fixed connecting wires during installation.

• The leakage protector should be in dead state according to local electrical standards.

• Make sure that the power and signal wires are well twisted to avoid cross interference and contact with connecting pipes or units. Do not twist two connecting wires together unless the joint is welded and covered with insulating tape.

• Do not turn on the power supply until the electrical wiring has been properly completed.

4-2 Wiring specification

The power specification is shown in the table below. If the wiring capacity is too small, the circuit will overheat, thus burning out the machine.

Model		NV6-AK1 NV6-AKF1	NV6-AK2 NV6-AKF2	NV6-AK3 NV6-AKF3
Specification of power supply	Number of phases	Single phase		
	Voltage and frequency	220-240V~50Hz		
Specification of power wire of control box $(mm)^2$		4.0 ($<$ 50m)		
Indoor and outdoor signal wires $(mm)^2$		0.75		

⚠ Attention

The air gap slot on the circuit breaker is used to insulate the flexible conductors, so it must be connected to fixed circuits in accordance with the national wire requirements.

4-3 Wiring between outdoor unit and AHU KIT

⚠ Electrical wiring precautions

1. Please design the special power supply for the control box and the outdoor unit separately. The power supply adopts a special branch circuit, and a leakage protector and a manual switch should be installed.

2. The power supply, leakage protector and manual switch of the AHU control box connected to the same outdoor unit are required to be universal. (Please use the same circuit for the indoor unit power supply of the same system; and must be turned on and off at the same time, otherwise the service life of the system will be affected, and unforeseen situations may occur.)

3. Please make the outdoor unit and control box connection wiring system and refrigerant piping system into the same system.

4. In order to reduce interference, it is recommended to use two-core shielded cables for the signal cables of the outdoor unit and the control box. Please do not use multi-core cables without shielding. In addition, the communication cables have no polarity, so there is no need to distinguish them when wiring.

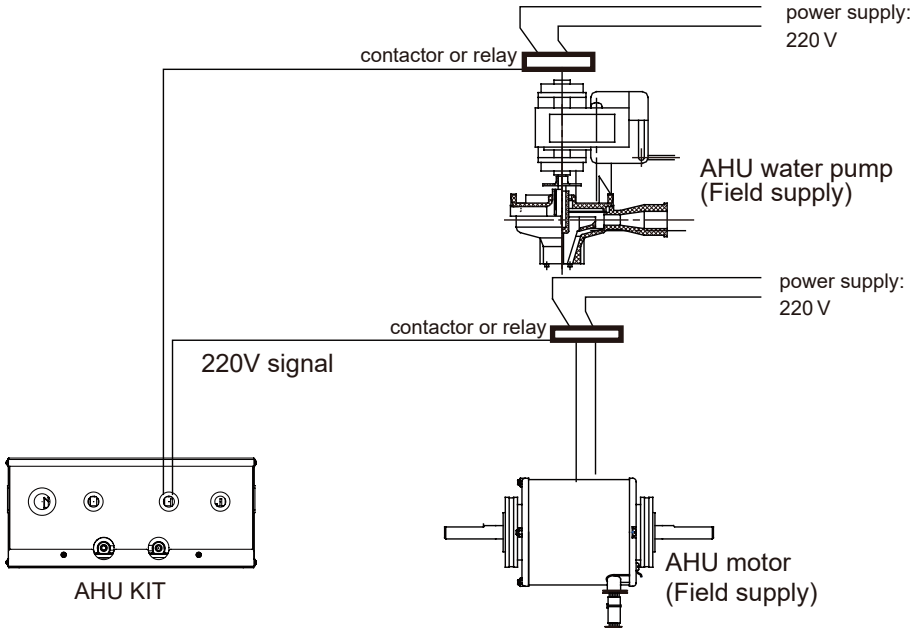
5. During installation, the communication wire and the power wire should not be

intertwined, and must be routed separately, and the minimum distance should be greater than 20CM, otherwise the communication of the unit may be abnormal.

6. According to the relevant national electrical standards, the power wiring must be entrusted to electrician professionals.

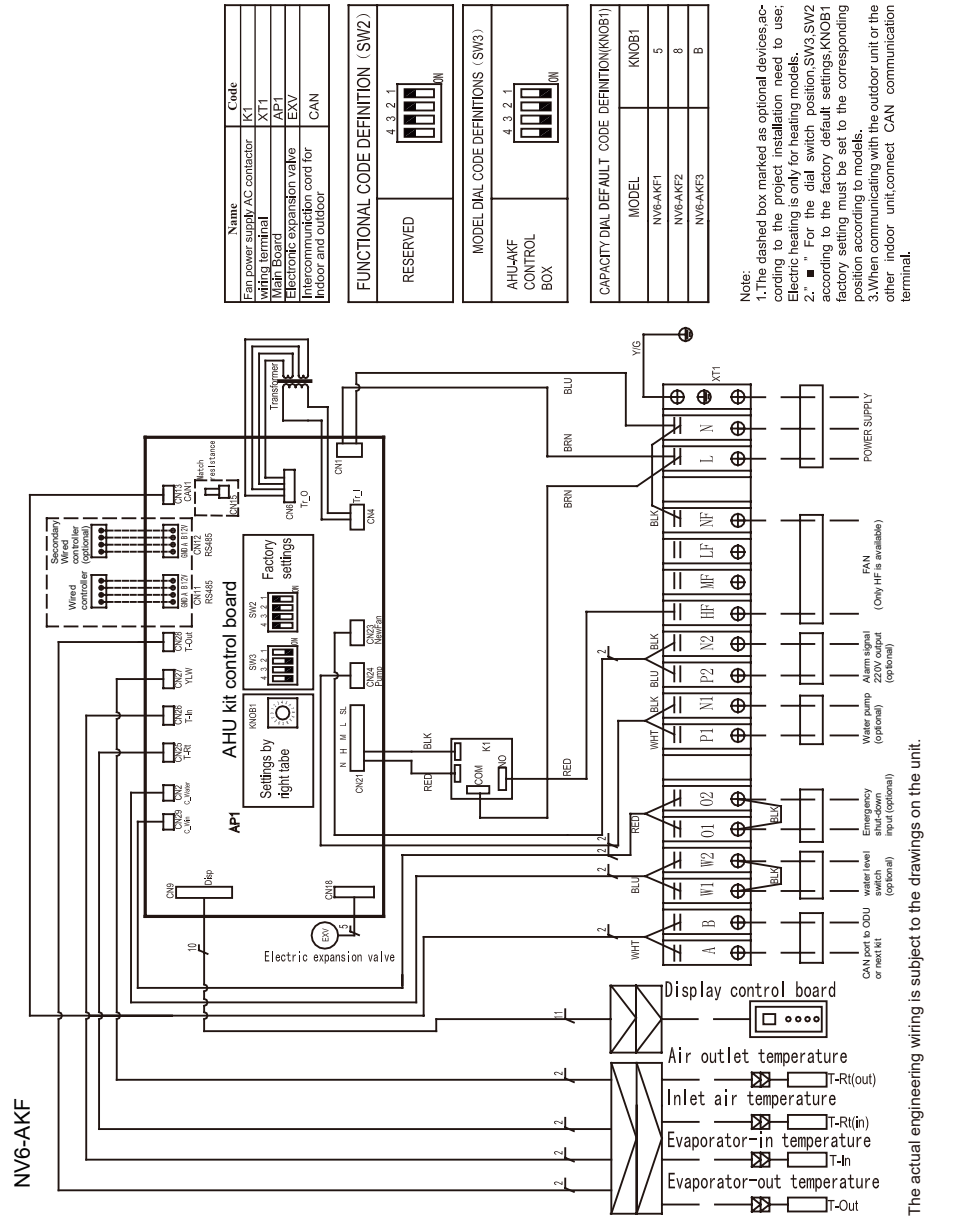
⚠ Attention

The connection between AHU KIT and and the indoor unit motor/water pump must be transferred through a contactor or relay.



5. AHU KIT application control

5-1 Wiring diagram



Name	Code
Fan power supply AC contactor	K1
wiring terminal	XT1
Main Board	AP1
Electronic expansion valve	EXV
Intercommunication cord for Indoor and outdoor	CAN

FUNCTIONAL CODE DEFINITION（SW2）

RESERVED	4 3 2 1 ON

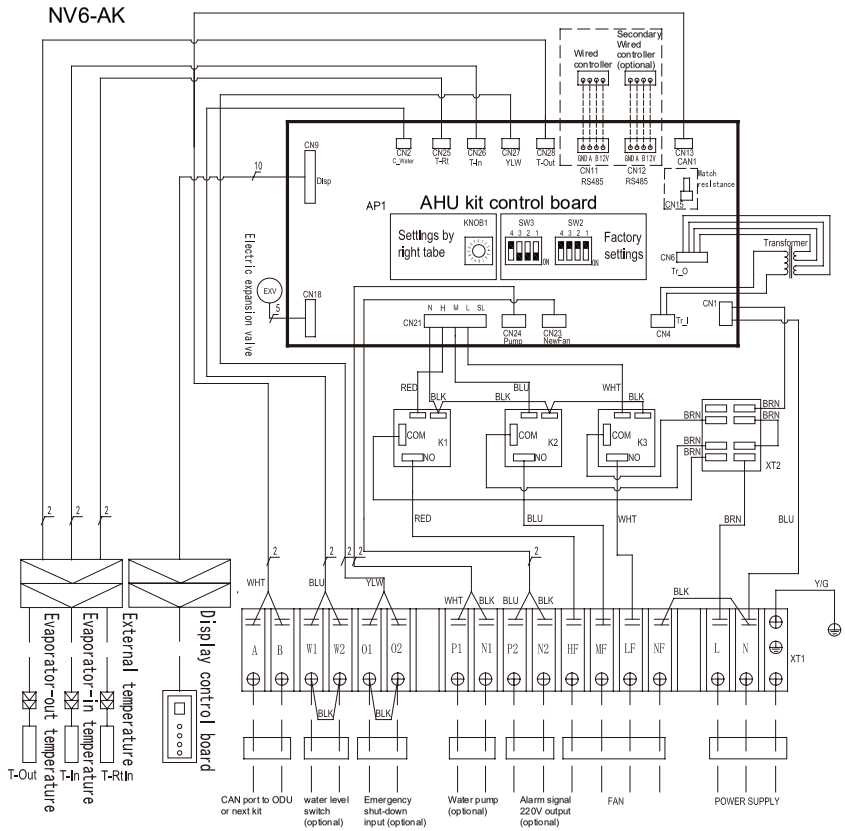
MODEL DIAL CODE DEFINITIONS（SW3）

AHU-AKF CONTROL BOX	4 3 2 1 ON

CAPACITY DIAL DEFAULT CODE DEFINITION(KNOB1)

MODEL	KNOB1
NV6-AKF1	5
NV6-AKF2	8
NV6-AKF3	B

Note:
1.The dashed box marked as optional devices,according to the project installation need to use; Electric heating is only for heating models.
2." ■ " For the dial switch position,SW3,SW2 according to the factory default settings,KNOB1 factory setting must be set to the corresponding position according to models.
3.When communicating with the outdoor unit or the other indoor unit,connect CAN communication terminal.



Name	Code
Fan power supply AC contactor	K1/K2/K3
wiring terminal	XT1/XT2
Main Board	AP1
Electronic expansion valve	EXV
Intercommuniction cord for indoor and outdoor	CAN

FUNCTIONAL CODE DEFINITION（SW2）	
RESERVED	4 3 2 1 ON

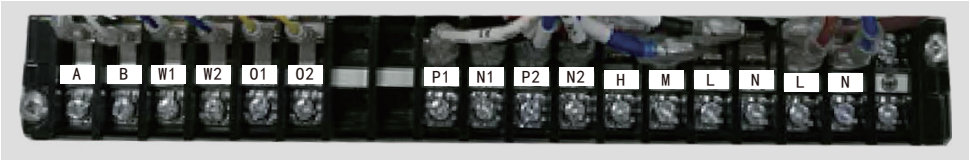
MODEL DIAL CODE DEFINITIONS（SW3）	
TMV-AK CONTROL BOX	4 3 2 1 ON

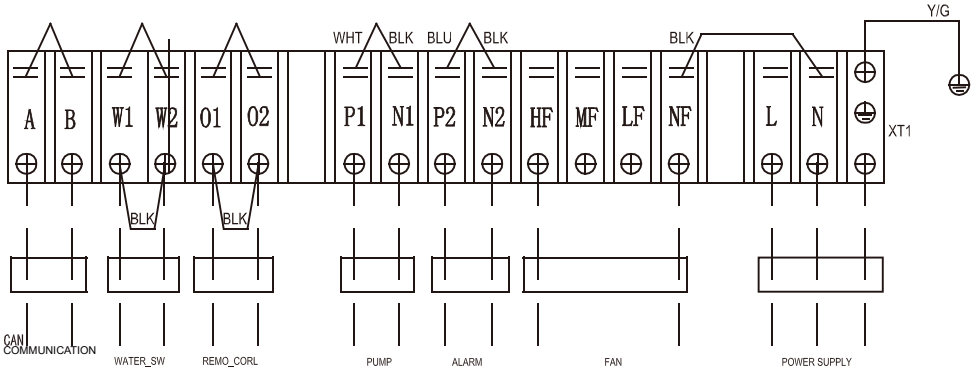
CAPACITY DIAL DEFAULT CODE DEFINITION(KNOB1)	
MODEL	KNOB1
TMV-AK1(14kw)	5
TMV-AK2(28kw)	8
TMV-AK3(56kw)	B

Note:
1.The dashed box marked as optional devices,according to the project installation need to use; Electric heating is only for heating models.
2." ■ " For the dial switch position,SW3,SW2 according to the factory default settings,KNOB1 factory setting must be set to the corresponding position according to models.
3.When communicating with the outdoor unit or the other indoor unit,connect CAN communication terminal.

5-2 Input/Output wiring installation

Refer to the indoor unit wiring diagram for connecting wires.





Wiring instructions:

Electroncis power: Output 5V

A/B: CAN communication wiring port

Communication connection port between outdoor and AHU KIT/different AHU KIT in the same system.

W1/W2: Water level switch wiring port

The water level detection port of the indoor unit water pan, If there is no requirement for this function, W1/W2 is short-circuited.

O1/O2: Remote control switch wiring port

The remote switch control of system shut down. In the case of disconnection, the indoor controller control is invalid. If there is no requirement for this function, O1/O2 is short-circuited.

Electrical port: Output 220V

P1/N1: Water Pump Wiring Port

The connection port of the water pump, needs to add a contactor or relay to connect the indoor unit water pump. If there is no requirement for this function, no need to connect it.

P2/N2: Alarm

Alarm signal wiring port, can be connected to warning light or alarm light.

HF/NF: Fan wiring port

Fan wiring port, need to add a contactor or relay to connect the indoor unit fan.

L/N: AHU KIT power port

The power port of AHU KIT, supplies power to the main board of AHU KIT.

⚠ Attention

• NV6-AKF1, NV6-AKF2, NV6-AKF3 is a main control panel, temperat ure sensors T-Rt(in), T-Rt(out), T-in and T-out must be connected to the main control panel before powering on for the first time.

• NV6-AK1, NV6-AK2, NV6-AK3 is a main control panel, temperature sensors T-Rt(in), T-in and T-out must be connected to the main control panel before powering on for the first time.

• T-Rt(in) is the air inlet temperature sensor, which is instal led at the air inlet of the indoor unit.

• T-Rt(out) is the sensor of the air temperature of the indoor unit, which is installed at the air outlet of the indoor unit.

• T-in is the temperature sensor of the indoor evaporator inlet pipe, which is installed at the inlet position of the evaporator liquid pipe.

• T-out is the outlet sensor of the indoor evaporator, which is installed at the outlet of the gas pipe of the evaporator.

5-3 Dial switch definition

Set the PCB dial codes in the control box of indoor unit depending on different purposes. Please be sure to turn off the main power switch before setting, and turn on the power switch after setting. If the power switch is not turned on after setting, the setting function cannot be executed.

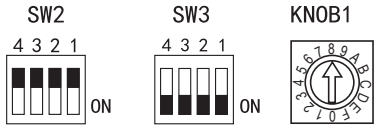
" ■ "refers to the dial switch and it has been set before leaving the factory. Non-professionals are not allowed to move the dial switch.

Function dial switch (SW2) defintion:

Capacity dial switch (KNOB1) defintion:

No.	Nominal Capacity	Corresponding Capacity Dial
1	2800W (1.0HP)	0
2	3600W (1.0HP)	1
3	5000W (1.0HP)	2
4	7100W (1.0HP)	3
5	11200W (1.0HP)	4
6	14000W (1.0HP)	5
7	16000W (1.0HP)	6
8	22000W (1.0HP)	7
9	28000W (1.0HP)	8
10	30000W (1.0HP)	9
11	45000W (1.0HP)	A
12	56000W (1.0HP)	B
13	reserved	C
14	reserved	D
15	reserved	E
16	reserved	F

When AHU KIT is for fresh air unit, the dial switch is as follows:

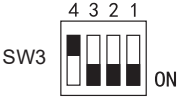


DIP switch of models with fresh air function:

AHU-AKF KIT

When the indoor unit has fresh air, the model DIP switch is adjusted to have fresh air function.At this time, the remote control and wire controller are invalid to adjust the temperature. The default cooling mode is 18 degrees and the heating mode is 22 degrees.

DIP switch of models without fresh air function:



AHU-AK KIT

When the indoor unit does not have fresh air, the model DIP switch will be adjusted to no fresh air function and can only be set to operate in high speed, other speed settings are invalid.

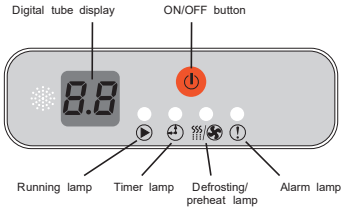
Note: The capabilities set before the factory cannot be modified by anyone except maintenance personnel and installation and debugging personnel.

5-4 Controller description

5-4-1 Indoor unit display light board

• Display of LED lamp:

1. When the unit is powered on and reset, the running lamp will flash slowly;
2. When the unit is standby, all indicator lamps will go out;
3. When the device is turned on, the running lamp will be on;
4. During cold air prevention or defrosting, the defrosting/preheat lamp will be on;
5. When the timer function is enabled, the timer lamp will be on;
6. When the unit is faulty, the fault lamp will be on and the running lamp will go out.



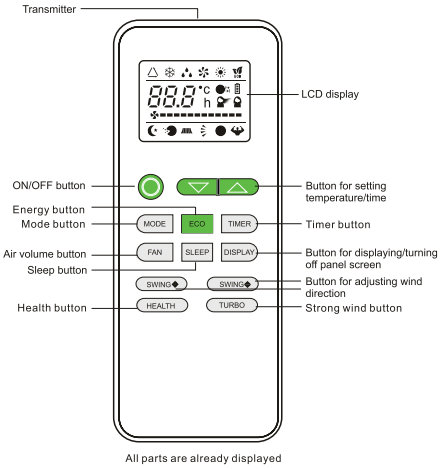
• Fault display of digital tube:

When the digital tube displays a fault, the letter d or b is displayed as the first digit, and a number among 1-9 or the letter A is displayed as the second digit. (For example: d8 means d8; b8 means b8; bA means bA.

Second digit of Digital / First digit	1	2	3	4	5	6	7	8	9	A
d (Indoor unit protection)	Indoor fan protection (PG motor shaft lock protection, indoor fan overload protection, DC brushless motor protection)	EA heating protection	Water full protection	Antifreezing protection	Mode conflict	Abnormal IP address of indoor unit (not assigned to the IP and conflicting with IP address)	Capacity dial code error	Engineering number conflict		
b (Indoor hardware fault)	Ambient temperature sensor fault	Inlet temperature sensor fault	Central temperature sensor fault	Outlet temperature sensor fault	Humidity sensor fault	Water temperature sensor fault	Indoor EEPROM fault	Swing motor fault	Abnormal MAC address of indoor unit	Dial error and fault of model

5-4-2 Remote controller usage

1. Name and function (for the convenience of explanation, the following figure shows all the displayed contents, only the corresponding contents are displayed in actual use)



	Sign of self-running state
	Displayed when "Refrigeration" is selected
	Displayed when "Dehumidification" is selected
	Displayed when "Air Supply" is selected
	Displayed when "Heat" is selected
ECO	Displayed when "Energy Saving" is selected
	Displayed when "Strong" is selected
	Displayed when battery power is low
	Displayed when "Timer" is selected
	Displayed when "Air Volume Switching" is selected
	Displayed when "Health" is selected
	Displayed when "Swing Left and Right" is selected
	Displayed when "Swing Up and Down" is selected
	Displayed when "EA Heating" is selected
	Displayed when "Sleep" is selected
88.8 h	Set time
88.8 °C	Set temperature

• Even if the air conditioner is stopped some icons on remote control will be displayed .

• The above remote control is only a schematic diagram and the actual appearance of remote control shall prevail .

• The remote control with refrigeration function only has no heating function .

• If the indoor unit is the fresh air model the remote control setting display is invalid .

2. Operating mode selection

When the air conditioner is turned on, through the operation mode switch button " MODE ", the following operation modes can be selected:

1) Self-sensing mode

The self-sensing mode is invalid, and the operating mode before setting the self-sensing mode is maintained.

2) Cooling operation

When changing the operation mode, set the temperature through the temperature setting buttons " ▼ ▲ "; the air volume adjustment button " FAN " adjusts the air volume of the air conditioner.

3) Dehumidification operation

In the operation mode, the fan of the indoor unit is controlled by a microcomputer, the temperature adjustment button does not work, and the air conditioner microcomputer will automatically adjust according to the room temperature.

4) Air supply operation

In the operation mode, the outdoor unit does not run, only the indoor fan runs. At this time, the air conditioner only plays the role of fan and air filter, and the air supply angle and wind speed can be adjusted.

5) Heating operation - heating and cooling

In the modified operation mode, the operation method is the same as the cooling operation, and the temperature and air volume can be adjusted, and the temperature

adjustment range is 16-31 °C.

The electric auxiliary heat of the electric auxiliary heating type air conditioner will automatically exit or start according to the temperature of the outlet air during heating.

• Strong mode:

6) In the air supply, cooling and heating modes, after receiving the 'strong' command from the remote control, the indoor fan will automatically run at high wind speed, and the air deflector will swing.

• Under strong function:

(1) Press the power button to exit the power mode. When the air conditioner receives the remote control to cancel the power command, it exits the power function, and the current state remains unchanged.

(2) Press the mode key to exit the strong mode and switch to the next cycle mode.

(3) Press the temperature up and down keys to exit the strong mode, the current mode remains unchanged, and the set temperature increases or decreases by one degree.

(4) Press the air volume key to exit the strong mode, the current state remains unchanged, and the air volume switches to the next circulating air volume.

(5) In the strong mode, the sleep key is invalid, and the swing, timing, and digital display are valid.

• Timer operation:

1) "Timer off"operation:

When the remote control is turned on, press the" TIMER " button to set the timing off time, press the " ▼ | ▲ " adjustment buttons to set the required time, and then press the " TIMER " button to determine the set time.

2) "Timer on" operation:

When the remote control is turned off, press the " TIMER " button to set the timing boot time, press " ▼ | ▲ " adjustment buttons to set the required time, and then press the " TIMER " button to determine the set time.

Note: When using the timing function, please ensure that the remote control is placed in a position where the signal can be received by the indoor unit.

After power failure or line interruption, the timer needs to be reset, otherwise deviation or mis-operation will occur.

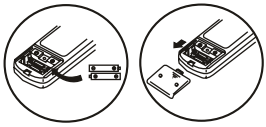
• Installation of battery:

When the signal reception is slow or the display is blurred, the battery may be insufficient, and the battery should be replaced in time.

1) Pull down the back cover in the direction of the arrow;

2) Install the battery according to the positive and negative poles;

3) Slide up and close the back cover of the remote control;



• Installation of battery:

A.Please do not mix new and old batteries, different types of batteries.

B.When the remote control is not used for a long time, the battery should be taken out to prevent leakage and damage to the remote control.

C.Do not place the remote control near hot objects such as electric blankets or heaters.

D.The remote control should be at least one meter away from the TV or audio equipment.

E.Do not let liquids such as water splash on the remote control.

F.Do not place the remote in direct sunlight or strong lighting.

Attention:

If the operation of the remote control fails, please replace the battery with a new one and repeat the operation. If the fault still exists, please contact the dealer or the special maintenance point .

Wired controller operation please refer to the relevent manual.

6. Maintenance

Fault type and handling method:

If any of the following situations occurs, please stop the air conditioner from operating immediately, turn off the power supply and contact the customer service center of Trane Company	
Fault type	The lights on the display panel are flashing
	The fuse is frequently blown or the circuit breaker frequently makes errors
	Foreign material or water enters the air conditioner
	The remote control fails to receive commands or the switch operates abnormally
	Other abnormal situations occur

If any of the following situations occurs, please conduct inspection according to the following requirements. If the problem still exists, please contact the dealer or the customer service center of Trane Company and inform them of product model, barcode and fault details.		
Fault	Cause	Handling method
The air conditioner fails to start	Power failure	Wait for power recovery
	The power switch is not turned on	Turn on the power switch
	The fuse of power switch is blown	Replace the fuse
	The batteries in the remote control have run out	Replace the batteries
	Scheduled start time has not come	Wait or cancel the original timer setting
The air conditioner blows air with poor cooling(heating) effect	PThe temperature is set inappropriately	Set the temperature appropriately and turn up or turn down the temperature
	The air filter is blocked by dust or dirt	Clean the air filter
	The air inlet or outlet of indoor or outdoor unit is blocked	Remove the blockages
	Doors and windows are open	Close doors and windows
The air conditioner blows air, but it cannot refrigerate (heat)	The air inlet and outlet of indoor or outdoor unit are blocked by some objects	Remove the blockages and then restart the operation
	The compressor is in a three-minute protection mode	Wait
	The temperature is set inappropriately	Set the temperature appropriately

⚠ Attention: Do not replace the power wire by yourself or repair the controller by yourself to avoid danger.

Non-fault phenomena of air conditioner (Refer to VRF Indoor Unit Manual)

The following phenomena do not mean that the air conditioner is abnormal.

Common protection functions of air conditioner.

• Compressor protection function.

The compressor cannot be started within 3 minutes after shutdown.

• Anti-cold wind function (cooling and heating)

In the Heating mode, if the indoor heat exchanger does not reach a certain temperature in the following three states, the indoor fan will not supply air to prevent cold air from blowing out.

① At the beginning of heating operation. ② Defrosting is operating.

• Defrosting (refrigeration and heating)

When the outdoor temperature is low and the humidity is high, the outdoor unit heat exchanger may be frosted, which will reduce the heating capacity of the air conditioner. In this case, the air conditioner will stop the heating operation and enter the automatic defrosting. After the defrosting is over, resume heating operation.

4) During defrosting, the fans of both the indoor unit and the outdoor unit stop running.

5) According to the outdoor temperature and degree of frosting, the defrosting operation time is different, generally 4~10 minutes.

6) During the defrosting process, the outdoor unit may emit steam, which is caused by rapid defrosting and is a normal phenomenon.

• “Cooling”, “Heating” mode is switched to only air supply mode during operation:

When all the running indoor units reach the set temperature, the air conditioner controller will automatically stop the compressor operation, and switch to the air supply mode only. When the room temperature rises (in "cooling" mode) or drops (in "heating" mode) to a certain extent, the compressor will restart and resume cooling or heating operation. ● The oil return control program is added to the system. After starting the operation, the indoor unit that is not turned on will be turned on for 3 minutes every few hours to enter the oil return control program.

• The oil return control program is added to the system. After starting the operation, the indoor unit that is not turned on will be turned on for 3 minutes every few hours to enter the oil return control program.

Cleaning

Warning: For safety purposes, please be sure to shut down the air conditioner and turn off the power supply while cleaning the air conditioner.

Maintenance

1. Before the air conditioner is idle for a long term, please complete the following work.

• Turn on the fan and let it operate for 3-4 hours in the air supply mode to completely dry the inside of air conditioner.

• Even if the air conditioner is idle for a long term, the power supply of indoor unit should not be turned off, unless all the indoor units in the same outdoor unit system are powered off simultaneously.

2. Before the air conditioner is started after long-term shutdown.

• Clean the dust filter and indoor unit body while the machine is stopped and the power supply is turned off. Please wipe the indoor unit body with a soft cloth, and do not clean the machine with gasoline, benzene, dilute lye, grinding powder, detergent, insecticide and other substances that may damage the machine.

• Confirm that no debris blocks any inlet and outlet of indoor and outdoor units.

• Check whether the ground wires are loose and turn on the power supply.

After-sales service

When your air conditioner fails to operate normally, shut down the machine immediately, turn off the power supply, and then contact local customer service center o f special technical service department.