Operation & Installation Manual
AIR-To-WATER HEAT PUMP INDOOR UNIT

HU062WAMNA

HU102WAMNA

No. 0150554179

- Please read this manual carefully before using.
- Keep this operation manual for future reference.

Original instructions

Contents

Safety

Safety Precautions

- Read the following "SAFETY PRECAUTIONS" carefully before installation.
- Electrical works and water installation works must be completed by a qualified electrician and qualified water system installer respectively in accordance with local and national building codes.
- The caution items stated here must be followed to minimize the risk of fire, electric shock or personal injury. Incorrect installation due to ignoring of the instruction will cause harm or damage.
- After completion of installation, confirm there is no leakage of water and refrigerant gas. It will cause water damage, electrical shock, fire, explosion or death and may generate toxic gas.
- The installing technician should carry out a trial running to confirm there is no abnormality about the system after completing the installation. Please remind the customer to keep the installation manual for future reference.
- If the unit is transferred to a new user, this manual shall also be transferred along with the machine.
- If there is any doubt about the installation procedure or operation, always contact the authorized dealer for advice and information.
- Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer. Any unfit or incompatible material may cause product damage, burst and serious injury.
- Do not use unspecified cord, modified cord, joint cord or extension cord for power supply cord. Do not share the single outlet with other electrical appliances. Poor contact, poor insulation or over current will cause electrical shock or fire.
- Do not tie up the power supply cord into a bundle by band. Abnormal temperature rise on power supply cord may happen.
- Children should be prevented access to the equipment. Keep the package material away from children.
- Do not expose the appliance to heat, flame, sparks. or other sources of ignition. Else, it may explode and cause injury or death.
- Use only Haier accessories and components with this equipment. Failure to use unapproved or 3rd party accessories could result in damage, electrical shock or fire.
- Do not add or replace refrigerant other than the specified, it may cause product damage, burst and Injury etc.
- Make sure installation is completed by authorized dealer or technician, installation done by the user it will cause water leakage, shock or fire.
- Take measures to protect the equipment against severe weather and earthquakes during installation.
- This is a R32 model, use piping, flare nut and tools which is specified for R32 refrigerant. Using of existing (R22) piping, flare nut and tools may cause abnormally high pressure in the system, and possibly result in explosion and injury.
- Install at a strong and firm location which is able to withstand weight of the set. If the strength is not enough or installation is not property done, the set will drop and cause injury.
- Tighten the flare nut with torque wrench according to specified method. If the flare nut is over tightened, the flare may break and cause refrigerant gas leakage.
- Make sure there is adequate ventilation in the room if refrigerant gas leakage occurs during operation. It may cause explosion or toxic gas generation.
- The unit is only for use in closed water system. An open water circuit may lead to excessive corrosion of water piping and risk of incubating bacteria colonies, especially Legionella in water.
- The piping installation work must be flushed before indoor unit is connected to remove contaminants. Contaminants may damage the Indoor Unit components.
- Both the liquid and gas refrigeration lines should be insulated or condensate water damage could occur.
- Consideration should be given for locating the outdoor equipment. Air discharging from equipment can damage plants and vegetation.
- Follow equipment clearance requirements when installing this equipment. Adequate clearance should be given for service access and maintenance.
- This system is multi supply appliance. All circuits must be disconnected before accessing the unit terminals.
- This equipment must be properly earthed. Earth line must not be connected to gas pipe, water pipe, earth of lightning rod and telephone. Otherwise, may cause electrical shock in case of equipment breakdown or insulation breakdown.
- Do not install this appliance in a laundry room or other high humidity location. This condition will cause rust and damage to the unit.
- Make sure the insulation of power supply cord does not contact with hot part to prevent from insulation failure (melt).
- Do not apply excessive force to water pipes that may damage the pipes, it may cause water leakage and damage to other properties.
- Select an installation location which is easy for maintenance. Any incorrect installation, service or repair of this indoor unit may result in damage or injury to the unit and other properties.

Safety

- Make sure that drainage piping is installed properly according to this instruction, preventing the water entering the room and cause damage to properties.
- Take use of the attached accessories parts and specified parts for installation. Otherwise, it will cause the drop of unit, water leakage, fire or electrical shock.
- This installation must be subjected to building regulation approval applicable to respective country that may require to notify the local authority before installation.
- For refrigeration system work, install according to this installation instructions strictly. If installation is defective, it will cause water leakage, electrical shock or fire.
- Do not install the Indoor unit at place where leakage of flammable gas may occur. In case gas leakage and accumulates at surrounding of the unit, it may cause fire.
- Please use tap water and confirm that the water quality is not hard. If hard water quality is used, the lifespan of backup heater, heat exchanger, various valves, electric heating etc. will usually be shorten.
- Do not disconnect the power supply of the unit when it is not in operation. The water pump will run regularly for a period of time to avoid water freezing. Otherwise, freezing may occur and causes system damage.
- Be sure to drain the circulating water in the system out when the unit will be not in use for a long time. If the power supply is turned off directly without pumping out the circulating water in the system, the system will be damaged due to freezing. If the interval between the installation and putting into use exceeds 1 month, please pump out the circulating water in the system.
- Be sure to install earth leakage circuit breaker. If the earth leakage circuit breaker is not installed, it may cause electric shock or fire.
- Please set the water pump piping according to the installation instructions to ensure smooth drainage, and heat insulation of the piping to prevent condensate accumulation. Poor piping will lead to water leakage or poor function.
- Make sure that the unit must be at least 1m away from the TV or radio to avoid image interference or noise.

PRECAUTION FOR USING R32 REFRIGERANT

⚠ CAUTION

Do not use means to accelerate the defrosting process or to clean. Other than those recommended by the manufacturer. Any unfit or using incompatible material may cause product damage, burst and serious injury.

R32 REFRIGERANT

This AIR-TO-WATER HEAT PUMP INDOOR UNIT contains and operates with refrigerant R32. This product must only be installed or serviced by qualified personnel.
Refer to National, State, Territory and local legislation, regulations, codes, installation & operation manuals, before the Installation, maintenance and/or service of this product.

- When connecting flare at indoor side, make sure that the flare connection is used only once, if torqued up and released, the flare must be remade. Once the flare connection was torqued up correctly and teak test was made, thoroughly clean and dry the surface to remove oil, dirt and grease by following instructions of silicone sealant. Apply neutral cure (Alkoxy type) & ammonia-free silicone sealant that is non-corrosive to copper & brass to the external of the flared connection to prevent the ingress of moisture on both the gas & liquid sides. (Moisture may cause freezing and premature failure of the connection)
- The appliance shall be stored, installed and operated in a well ventilated room with comply to Indoor Floor Area Requirement and without any continuously operating ignition source. Keep away from open flames, any operating gas appliances or any operating electric heater. Else, it may explode and cause injury or death.

Indoor Floor Area Requirements

Indoor floor area requirement

- If the total refrigerant charge in the system is <1.84 kg, there is no additional minimum floor area is required.
- If the total refrigerant charge in the system is ≥1.84 kg, additional minimum floor area complies requirements described as below:

Symbol	Description	Unit
m_c	Total refrigerant charge in system	kg
m_{max}	Maximum refrigerant charge allowed	kg
m_{excess}	m_c - m_{max}	kg
H	Installation height	m
VA_{min}	Minimum ventilation opening area	cm^2

- Total refrigerant charge in system, mc (kg)=Pre-charged refrigerant amount in unit (kg) + Additional refrigerant amount after installation (kg)

1) Determine Maximum refrigerant charge allowed, mmax
   a. Calculate Installation Room Area, Aroom.
   b. Based on Table I, select mmax which corresponds to the calculated Aroom value.
   c. If mmax≥mc, the unit can be installed in the installation room with the specified installation height in Table I and without additional room area or any additional ventilation.
   d. Else, proceed to 2) and 3).
2) Determine Total Floor Area of Aroom and Broom compliance to Amin total
   a. Calculate the Broom area adjacent to the Aroom.
   b. Determine the Amin total based on the Total Refrigerant Charge, mc from Table II.
   c. The total floor area of both Aroom and Broom must exceed Amin total.
3) Determine Minimum Venting Opening Area, VAmin for natural ventilation
   a. From Table III, calculate mexcess.
   b. Then determine VAmin, corresponding to the calculated mexcess for natural ventilation between Aroom and Broom.
   c. The unit can be installed at specific room only when the following conditions are fulfilled:
      • Two permanent openings, one at bottom, another at top, for ventilation purposes are made between Aroom and Broom.
      • Bottom opening:
        - Must comply to the minimum area requirement of VAmin.
        - Opening must be located 300mm from the floor.
        - At least 50% of required opening area must be 200mm from the floor.
        - The bottom of the opening shall not be higher than the point of release when the unit is installed and must be situated 100mm above the floor.
        - Must be as close as possible to the floor and lower than H.
      • Top opening:
        - The total size of the Top opening must be more than 50% of VAmin.
        - Opening must be located 1500mm above the floor.
      • The height of the openings must be more than 20mm.
      • A direct ventilation opening to outside is not encouraged for ventilation (the user can block the opening when it is cold).

Indoor Floor Area Requirements

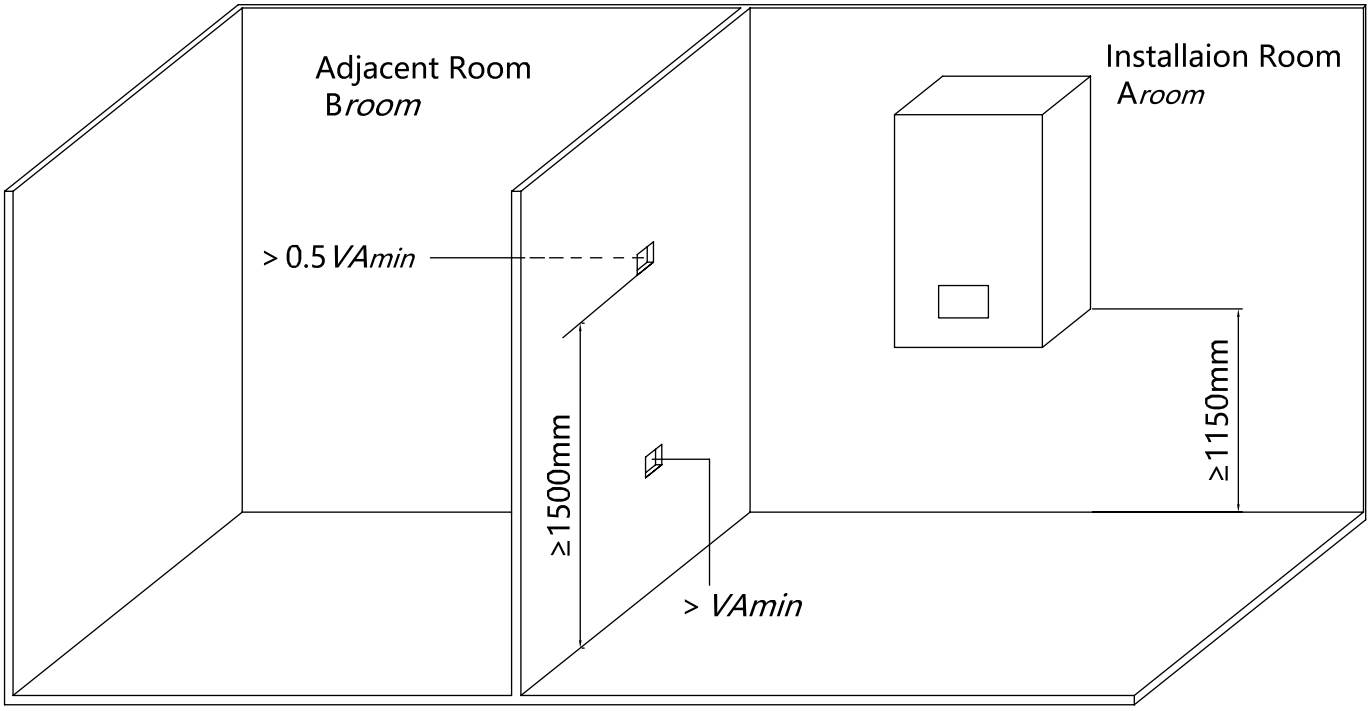


Table I – Maximum refrigerant charge allowed in a room

Aroom (m2)	Maximum refrigerant charge in a room / mmax (kg)							
	H=1.15m	H=1.20m	H=1.30m	H=1.40m	H=1.50m	H=1.60m	H=1.70m	H=1.80m
1	0.265	0.276	0.299	0.322	0.345	0.368	0.391	0.414
2	0.530	0.553	0.599	0.645	0.691	0.737	0.783	0.829
3	0.794	0.829	0.898	0.967	1.036	1.105	1.174	1.243
4	1.059	1.105	1.197	1.289	1.382	1.474	1.566	1.658
5	1.324	1.382	1.497	1.612	1.727	1.842	1.957	2.072
6	1.589	1.658	1.796	1.934	2.072	2.210	2.349	2.487
7	1.738	1.814	1.965	2.116	2.267	2.418	2.570	2.721
8	1.858	1.939	2.101	2.262	2.424	2.585	2.747	2.909
9	1.971	2.057	2.228	2.399	2.571	2.742	2.914	3.085
10	2.078	2.168	2.349	2.529	2.710	2.891	3.071	3.252
11	2.179	2.274	2.463	2.653	2.842	3.032	3.221	3.411
12	2.276	2.375	2.573	2.771	2.969	3.166	3.364	3.562

- For intermediate H values, the value that corresponds to the lower H value from the table considered.
  Example:
  For H=1.25 m, the value that corresponds to H=1.20 m is considered.
- For intermediate Aroom values, the value that corresponds to the lower Aroom value from the table is considered.
  Example:
  For Aroom =10.5 m2, the value that corresponds to Aroom =10 m2 is considered.

Indoor Floor Area Requirements

Table II – Minimum floor area

mc (kg)	Minimum floor area/ Amin total (m^2)							
	H=1.15m	H=1.20m	H=1.30m	H=1.40m	H=1.50m	H=1.60m	H=1.70m	H=1.80m
1.84	7.84	7.20	6.15	5.71	5.33	4.99	4.70	4.44
1.86	8.02	7.36	6.27	5.77	5.39	5.05	4.75	4.49
1.88	8.19	7.52	6.41	5.83	5.44	5.10	4.80	4.54
1.90	8.36	7.68	6.54	5.89	5.50	5.16	4.85	4.58
1.92	8.54	7.84	6.68	5.96	5.56	5.21	4.91	4.63
1.94	8.72	8.01	6.82	6.02	5.62	5.27	4.96	4.68
1.96	8.90	8.17	6.96	6.08	5.68	5.32	5.01	4.73
1.98	9.08	8.34	7.11	6.14	5.73	5.37	5.06	4.78
2.00	9.27	8.51	7.25	6.25	5.79	5.43	5.11	4.83
2.02	9.45	8.68	7.40	6.38	5.85	5.48	5.16	4.87
2.04	9.64	8.85	7.54	6.51	5.91	5.54	5.21	4.92
2.06	9.83	9.03	7.69	6.63	5.96	5.59	5.26	4.97
2.08	10.02	9.21	7.84	6.76	6.02	5.65	5.31	5.02
2.10	10.22	9.38	8.00	6.89	6.08	5.70	5.37	5.07
2.12	10.41	9.56	8.15	7.03	6.14	5.75	5.42	5.12
2.14	10.61	9.74	8.30	7.16	6.24	5.81	5.47	5.16
2.16	10.81	9.93	8.46	7.29	6.35	5.86	5.52	5.21
2.18	11.01	10.11	8.62	7.43	6.47	5.92	5.57	5.26
2.20	11.21	10.30	8.77	7.57	6.59	5.97	5.62	5.31
2.22	11.42	10.49	8.94	7.70	6.71	6.03	5.67	5.36
2.24	11.62	10.68	9.10	7.84	6.83	6.08	5.72	5.40
2.26	11.83	10.87	9.26	7.98	6.96	6.13	5.77	5.45
2.27	11.94	10.96	9.34	8.06	7.02	6.17	5.80	5.48

- For intermediate H values, the value that corresponds to the lower H value from the table considered.
  Example:
  For H=1.25 m, the value that corresponds to H=1.20 m is considered.
- For intermediate mc values, the value that corresponds to the higher mc value from the table is considered.
  Example:
  If mc =1.85 kg, the value that corresponds to mc =1.86 kg is considered.
- Systems with total refrigerant charge lower than 1.84 kg are not subjected to any room area requirements.
- Charges above 2.27 kg are not allowed in the unit.

Indoor Floor Area Requirements

Table III Minimum venting opening area for natural ventilation

mc (kg)	mmax (kg)	mexcess (kg) = mc - mmax	Minimum venting opening area (VAmin) (cm^2)							
			H= 1.15m	H= 1.20m	H= 1.30m	H= 1.40m	H= 1.50m	H= 1.60m	H= 1.70m	H= 1.80m
2.27	0.1	2.17	634	621	596	575	555	538	522	507
2.27	0.3	1.97	576	564	541	522	504	488	473	460
2.27	0.5	1.77	517	506	486	469	453	438	425	413
2.27	0.7	1.57	459	449	431	416	402	389	377	367
2.27	0.9	1.37	400	392	377	363	351	339	329	320
2.27	1.1	1.17	342	335	322	310	299	290	281	273
2.27	1.3	0.97	283	277	267	257	248	240	233	227
2.27	1.5	0.77	225	220	212	204	197	191	185	180
2.27	1.7	0.57	170	163	157	151	146	141	137	133
2.27	1.9	0.37	117	112	103	98	95	92	89	86

- For intermediate H values, the value that corresponds to the lower H value from the table considered.
  Example:
  For H=1.25 m, the value that corresponds to H=1.20 m is considered.
- For intermediate mexcess values, the value that corresponds to the higher mexcess value from the table is considered.
  Example:
  If mexcess =1.45 kg, the value that corresponds to mc =1.6 kg is considered.

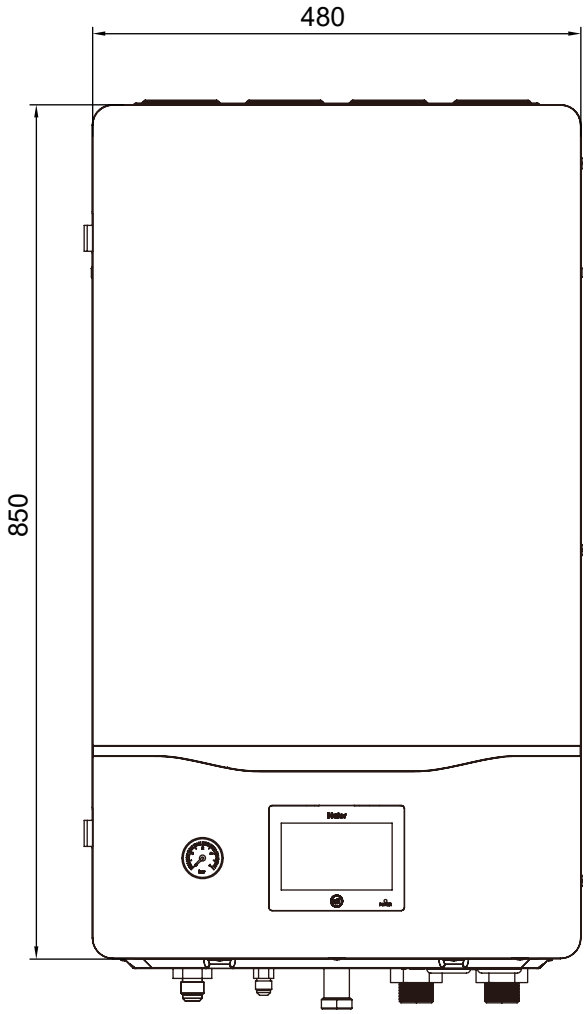
Accessories

Attached Accessories

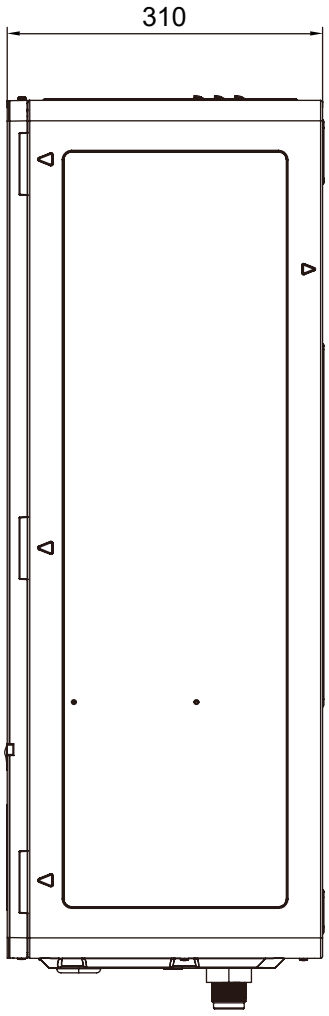
No.	Accessories part	Qty.	Remarks	Place position
1	Installation plate I	1	/	Fixed on wooden base
2	Installation plate II	1	/	Fixed on wooden base
3	Installation manual	1	/	Accesory bag
4	Reducing pipe	1	Only for HU062WAMNA	Accesory bag

Installation Instructions

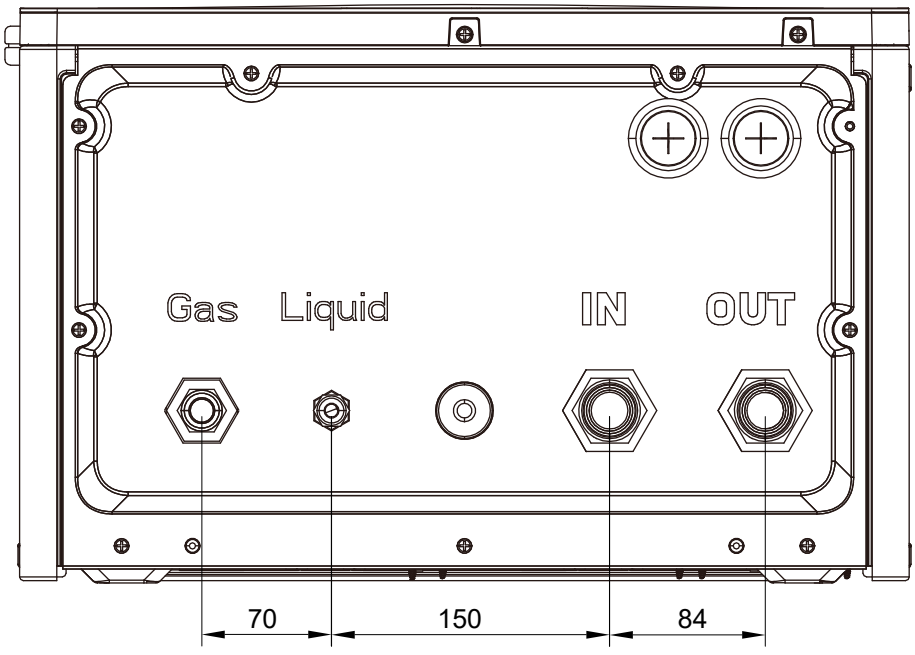
Dimension Diagram



Front View



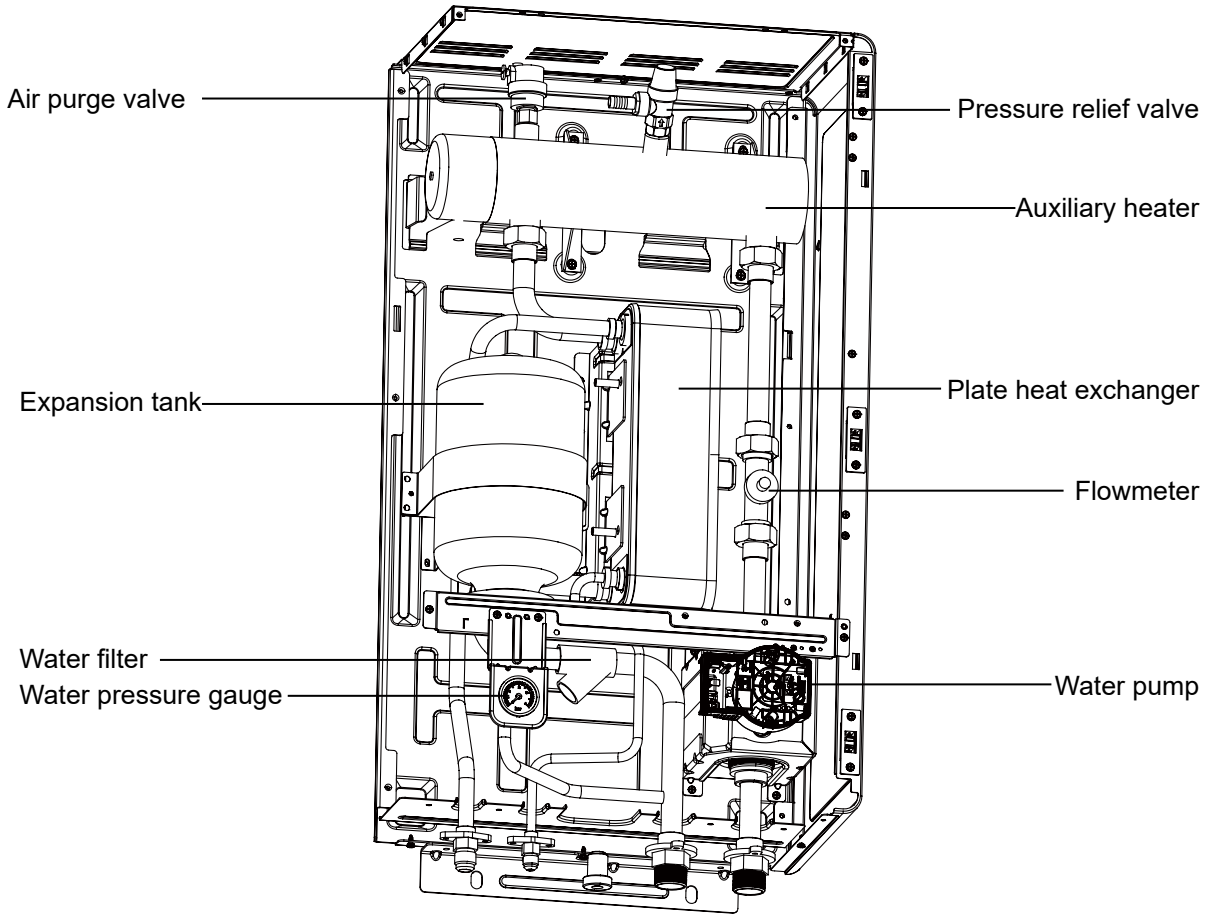
Side View



Bottom View

Installation Instructions

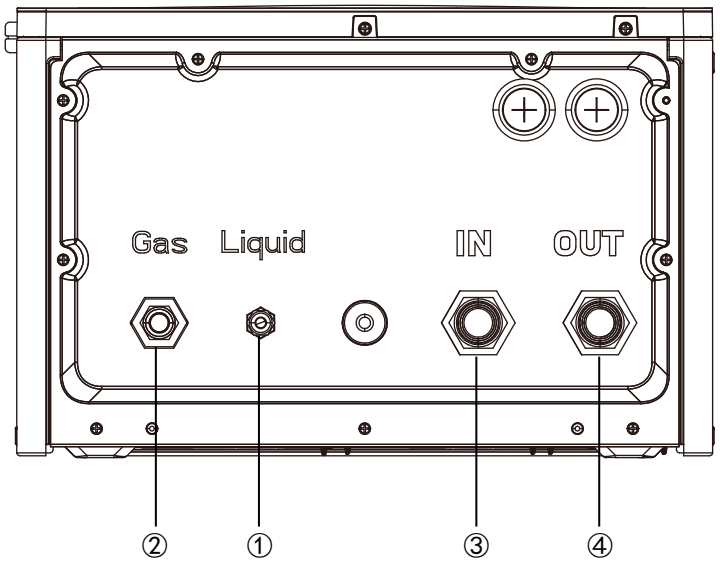
Main Components diagram



⚠ CAUTION

- Expansion tank should be overhauled once a year, Please replace and update in time if necessary.
- When the water capacity of the water system is more than 180L, an additional expansion tank is required.

Pipe Position Diagram



No.	Pipe Description	Connection Size (in./mm)	
		HU062WAMNA	HU102WAMNA
①	Refrigerant liquid pipe	1/4(6.35)	3/8(9.52)
②	Refrigerant gas pipe	5/8(15.88)	5/8(15.88)
③	Water inlet pipe	1(25.4)	1(25.4)
④	Water outlet pipe	1(25.4)	1(25.4)

Installation Instructions

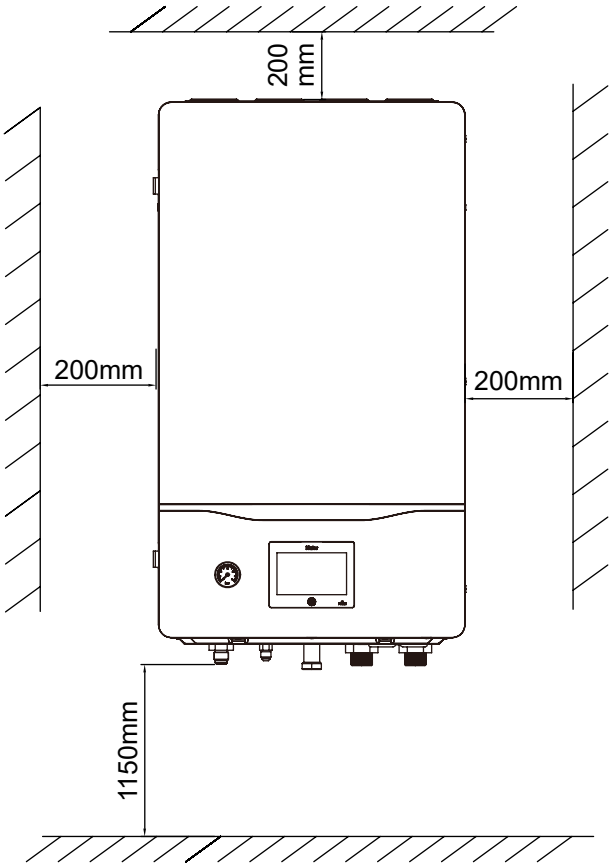
A. Select the Best Installation Location

The unit must be installed indoors, and the requirements are as follows.

- The indoor unit must be installed on a vertical wall.
- The mounting wall must be even and nonflammable, it must be strong and solid enough to hold the unit and prevent it from vibration.
- There should not be any heat source or steam near the indoor unit.
- A place where freezing, leakage of corrosive gas and flammable gas or dust, carbon fibre or flammable particals suspension will never occur around the unit.
- A place where the ventilation is enough.
- A place where drainage can be easily done (e.g. Utility room).
- A place where the operation noise will not cause discomfort to the user.
- Ensure there is enough clearance around the unit from wall, ceiling, or other equipment for service and air circulation.
- The recommended minimum installation height for indoor unit is 1150mm.

Note:

- If there's any possibility of small animals entering the unit from pipe outlet, then block it.
- Do not install the unit outdoors. The unit is designed for indoor installation only.
- When install electrical equipment at wooden building of metal lath or wire lath, according to electrical facility technical standard, no electrical contact between equipment and building is allowed.



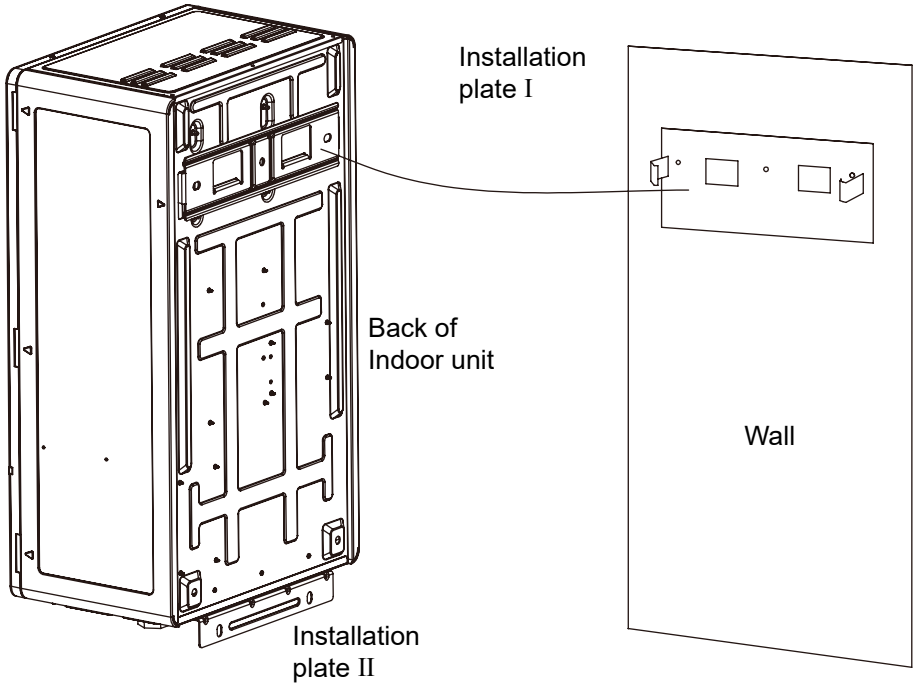
B. Fix the Installation Plate

- The distance between the center of installation plate and left or right wall shall be more than 375 mm.
- The distance from ground to the lower edge installation plate I should be more than 1956mm.
- Mount the installation plate I horizontally by aligning the marking thread and check with a level gauge.
- The installation plate I shall be fixed to the wall with 3 bolts of size M8.

Installation Instructions

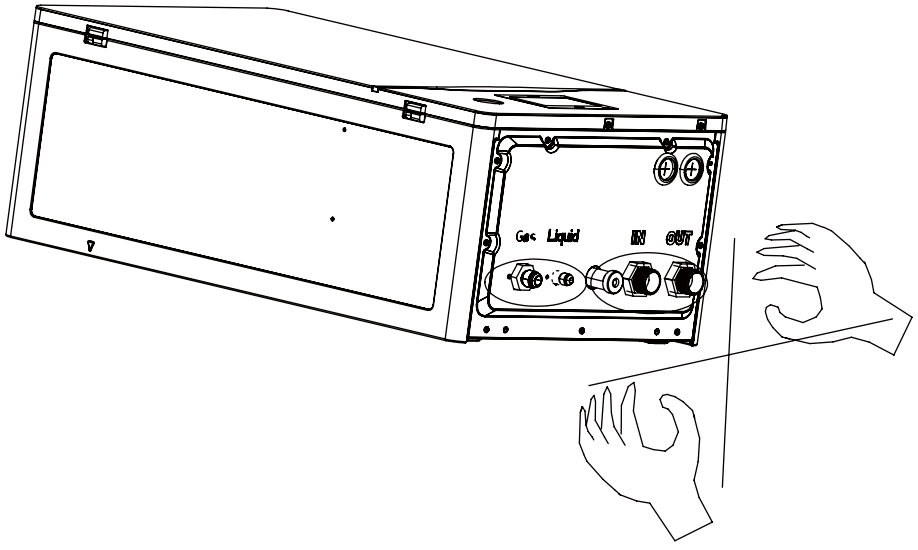
C. Indoor Unit Installation

- Secure the installation plate II to the bottom of the unit with 3 screws.
- Lift up the unit and hang the slots behind of the unit on the hook of the installation plate I.
- Fix the installation plate II on the wall with 3 bolts of size M8.



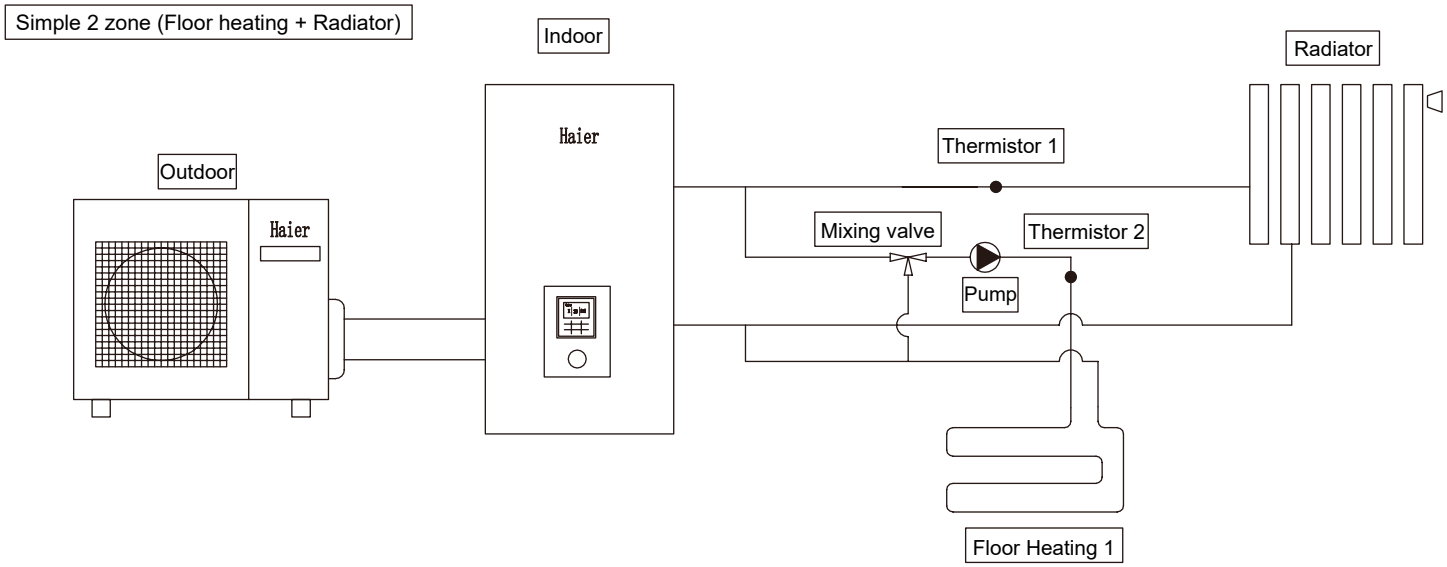
⚠ CAUTION

Do not lift the indoor unit by holding the refrigerant and water pipes to prevent damage of the pipes during the installation.



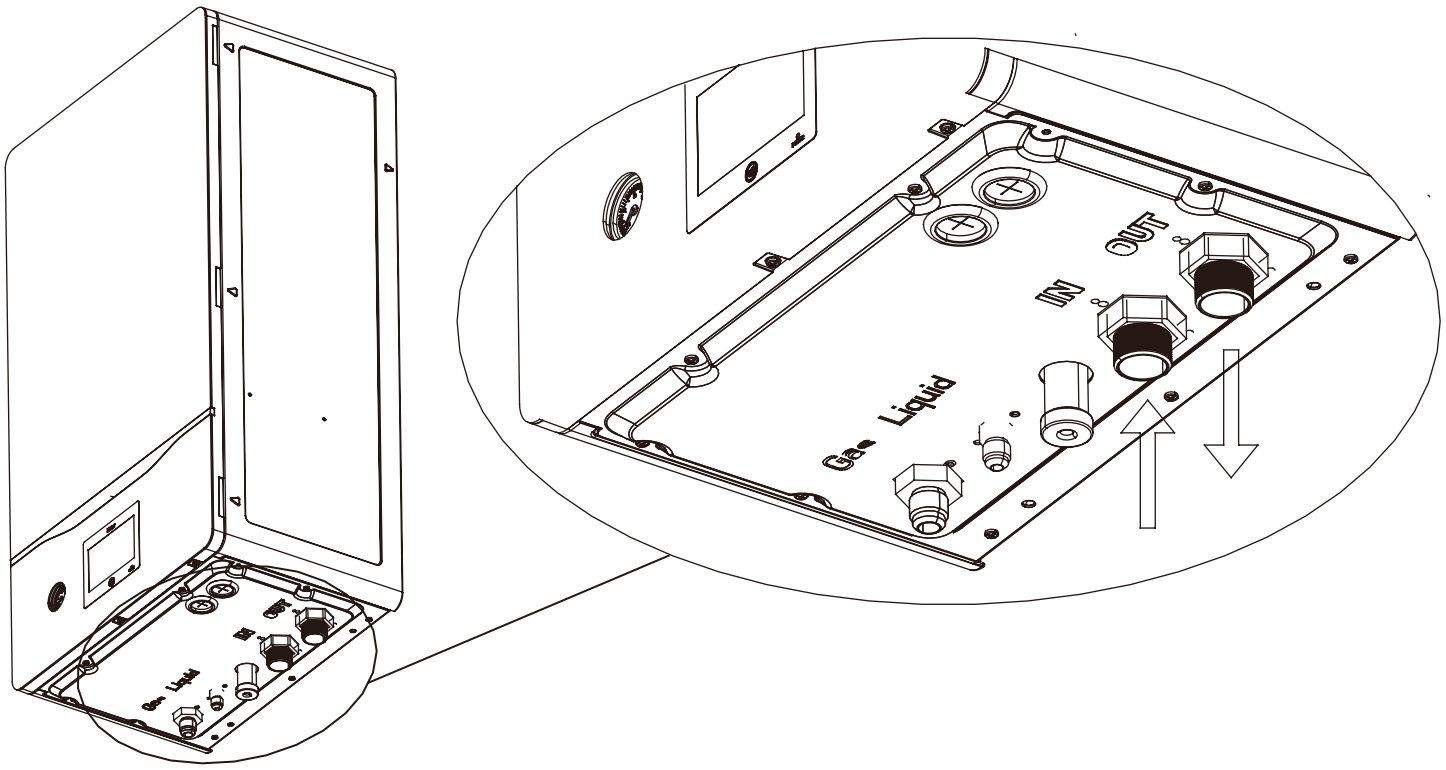
Installation Instructions

D. Water Piping Installation



- Make sure the water piping is connected complying the European regulations.
- Cover the pipe end to prevent dust entering the water piping when inserting it through a hole in the wall.
- Flush tap water through the water piping before connecting to indoor unit to ensure there is no impurities in the water system.
- Use two spanners to connect the water piping with the unit.
- The water piping should be covered insulation materials to reduce heat loss.
- Check the water leakage condition along the piping especially in connecting joint during trial running.

Note:
- Do not charge water to the system before completing the installation and insulating the piping in winter.
- Drain the water out of the system if the unit does not operate for a long time.
- Choose proper buffer tank and auxiliary electrical water heater to connect to the system.
- Do not over tighten, over tightening may cause water leakage.



E. Refrigerant Piping Installation

- Please make flare after inserting flare nut (located at joint portion of tube assembly) onto the copper pipe. (in case of using long piping)
- Do not use pipe wrench to open refrigerant piping. Flare nut may be broken and cause leakage. Use proper spanner or ring wrench.
- Connect the piping:
  - Align the center of piping and sufficiently tighten the flare nut with hands.
  - Be sure to use two spanners to tighten the connection. Further tighten the flare nut with torque wrench in specified torque as stated in table.

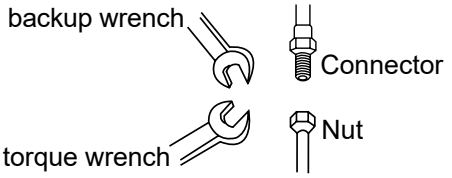
Note:

- Do not over tighten, over tightening may cause gas leakage.
- Do not pull and push refrigerant piping excessively, pipe deformation may cause refrigerant leakage.

Cutting and flaring the piping

- Please cut the pipe with pipe cutter and make sure there is no burrs remained, or gas leakage may be caused.
- Remove the burrs with reamer, and hold the pipe with end in a downward direction to avoid the metal powder entering the piping inside.
- Please make flare after inserting the flare nut onto the copper pipes.

Always use a backup wrench when tightening and loosening flare nuts. Tubing will twist if not properly supported.



The flare nut or the flare fitting will be damaged if the tubing is not properly aligned with the flare fitting when starting the flare nut. Do not use tools to start the flare nut, but use hands only to begin threading the nut.

F. Leakage test, Evacuation, Check valve operation, Additional refrigerant charging

- See it in the outdoor installation manual.

G. Charging the Water

Water quality requirement

It is necessary to analyse the quality of water by checking pH, electrical conductivity, ammonia ion content, sulphur content, and others. The following is the recommended standard water quality.

Contents	Unit	Value
Standard Quality pH(25°C)	/	7.5-9
Electrical conductivity {2}	μS/cm	10-500
Alcalinity HCO_3^-	mg/l	70-200
Sulphate SO_4^{2-}	mg/l	<70
Alcalinity /Sulphate HCO_3^-/ SO_4^{2-}	mg/l	>1.5
Ammonium NH_4^+	mg/l	<2
Free chlorine Cl_2	mg/l	<1
Hydrogen sulfide H_2S	mg/l	<0.05
Free carbon dioxide(aggressive) CO_2	mg/l	<5
Nitrate NO_3^-	mg/l	<100
Iron Fe	mg/l	<0.2
Aluminium Al	mg/l	<0.2
Manganese Mn	mg/l	<0.1
Chloride content Cl-	mg/l	≤50
Total Hardness $CaCO_3$	(°dH)	4.5-8.5
Ammonia NH_3	mg/l	<0.5

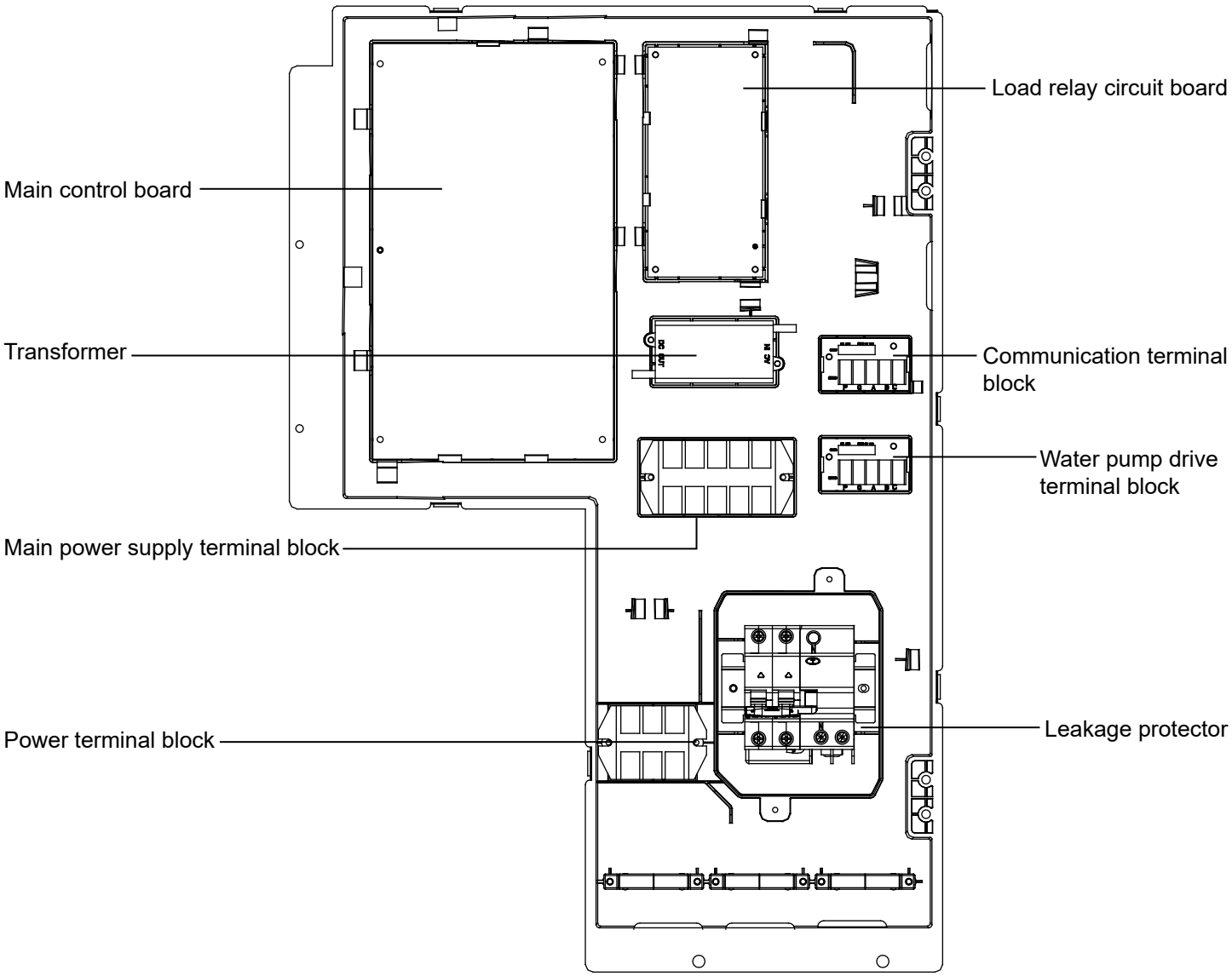
⚠ CAUTION

If the Chloride content (Cl-) in the circulating water of the system exceeds the required limits, please add zinc rod to the system to remove the excessive chloride.

Electric wiring and the application

Before opening the front plate and electrical cabinet, always switch off all power supply (i.e. indoor unit power supply, electrical water heater power supply and tank unit power supply). Only authorized and licensed electrician can open the front plate and electrical cabinet to install and maintain the unit.

Main components of electrical cabinet



Power supply cord installation instruction

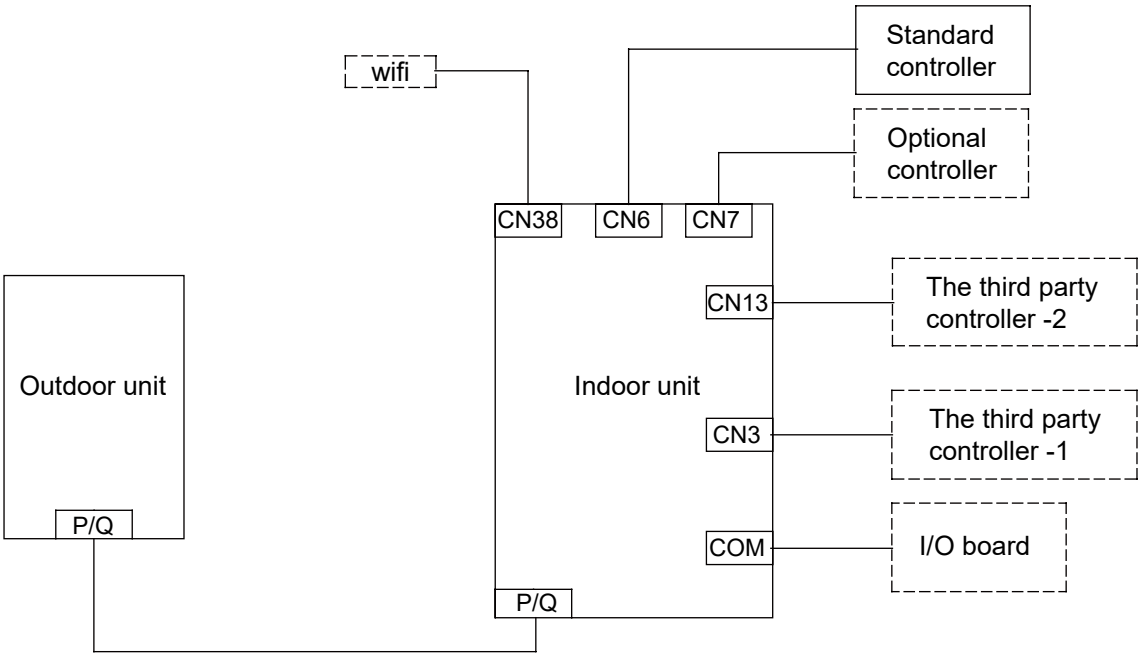
- The fluctuation range of power supply voltage must be within 10% of the working voltage of the unit.
- The wiring is allowed to pass 1.25 times of the rated current.
- The communication line must be twisted-pair wiring or shielded wire which diameter must be greater than 0.75mm2.
- The insulation resistance between all electrical terminals of the unit and the machine body shall not be less than 3MΩ.
- The power cord and control wiring shall not be bundled with the refrigerant pipeline and water piping, and they must be arranged separately through conduit.

Model	Power source	Sectional area of power line (mm²)	Rated current of circuit breaker (A)	Leakage current / action current of leakage protector (mA)
HU062WAMNA	1PH, 220-240V~, 50HZ	6	32	32A 30MA less than 0.1S
HU102WAMNA	1PH, 220-240V~, 50HZ	6	32	32A 30MA less than 0.1S

Electric wiring and the application

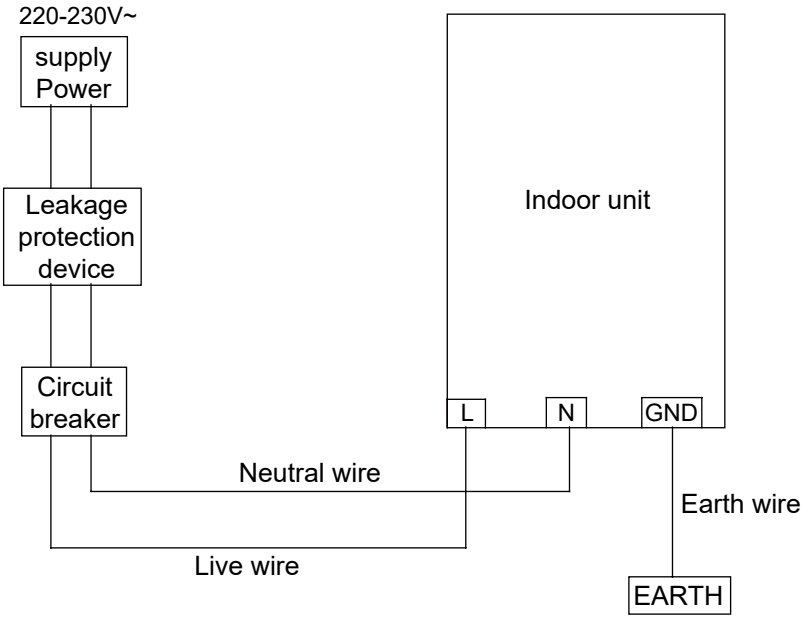
- Earth resistance should meet the national standard requirement.
- The yellow and green double color line of air conditioning unit is ground wire, do not move, splice or use it for any other purpose. Unit ground terminal cannot be connected with a self-tapping screw or risk electric shock.
- This equipment must be properly grounded per local codes. Please take reliable measures to ensure that the ground connecting is secure and all equipments is grounded.
- The user's power supply must provide reliable grounding. Please don't connect the ground wire to the following places. (1) water pipe (2) gas pipe; (3) drainage pipe; (4) The other places where are unreliable.

Communication wiring figure



- The communication terminal block for indoor unit and outdoor unit AW042SSCHA&AW062SSCHA is marked as P/Q, and it is C1/C2 for outdoor unit AW082SNCHA&AW102SNCHA.
- The device within the dotted box is optional and needs to be configured separately, which is not the standard configuration of the unit.

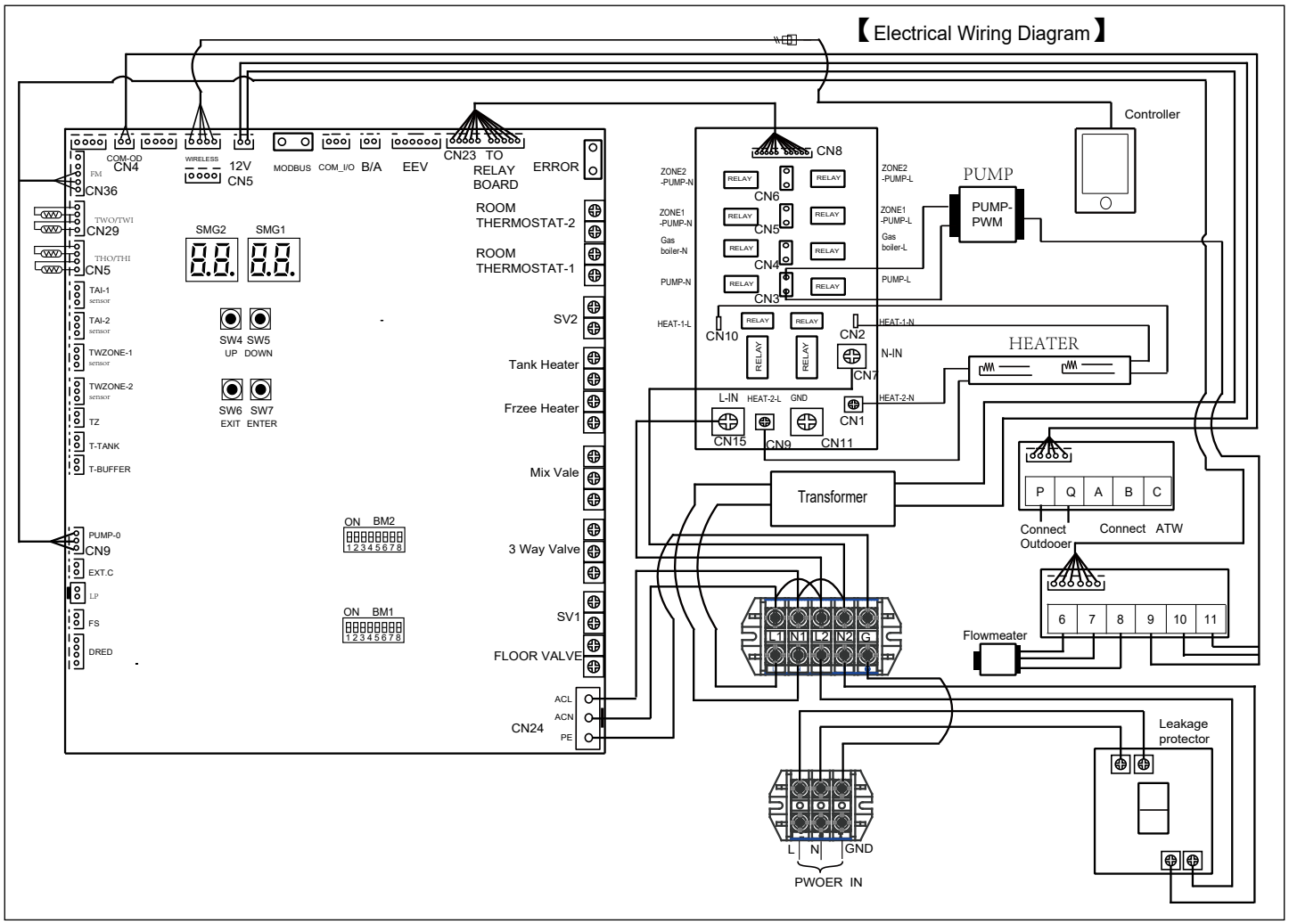
Electrical wiring diagram



Electric wiring and the application

- The outdoor unit and indoor unit require independent power distribution.
- The power supply terminal block for outdoor unit AW042SSCHA & AW062SSCHA is marked as 1, 2 and 3, which correspond to live line, neutral line and earth line respectively. For indoor unit and outdoor unit AW082SNCHA & AW102SNCHA, the live line, neutral line and earth line is marked as L, N and G.

Wiring connection



Electric wiring and the application

Failure code

Indoor unit failure code

Code	Error code definition	Notes
1	in water temp.sensor(Twi)failure	Restorable
2	out water temp.sensor(Two)failure	Restorable
3	in refrigerant temp.sensor(Thi)failure	Restorable
4	out refrigerant temp.sensor(Tho)failure	Restorable
5	EEPROM failure	Unrecoverable
6	Communication failure with outdoor unit	Restorable
7	communication failure with wired controller	Restorable
8	WS abnormal	Restorable If it occurs 3 times in an hour, lock the failure
10	Tank water temp.sensor(Ttank)failure	Restorable
11	IO PCB communication failure	Restorable
12	HU zone2 behind water mixing valve temp.sensor failure	Restorable
14	low pressure abnormal	Restorable
15	antifreeze failure	Restorable If it occurs 3 times in an hour, lock the failure
16	HU in/out water temp. too high	Restorable
17	HU zone1 room temp.sensor failure	Restorable
18	HU zone2 room temp.sensor failure	Restorable
20	outdoor failure	

Electric wiring and the application

Definition of indoor unit dial switch

- Please turn off the power supply before opening the cover of the electric cabinet and changing the dial code.
- The capacity setting of indoor and outdoor unit must be matched, for example, the outdoor unit model is AW042SSCHA, then the indoor unit capacity must be set according to 042 in the list.
- In the following table, 1 is ON, 0 is OFF.

① BM1 introduction

BM1_1	Reserved	0	Reserved (default)			
		1	Reserved			
BM1_2 BM1_3 BM1_4	Reserved	[2]	[3]	[4]	Reserved	
		0	0	0	Reserved (default)	
		0	0	1	Reserved	
		0	1	0	Reserved	
BM1_5 BM1_6 BM1_7 BM1_8	Indoor unit Model selection	[5]	[6]	[7]	[8]	Indoor unit Model selection
		0	0	0	0	042
		0	0	0	1	062
		0	0	1	0	082
		0	0	1	1	102

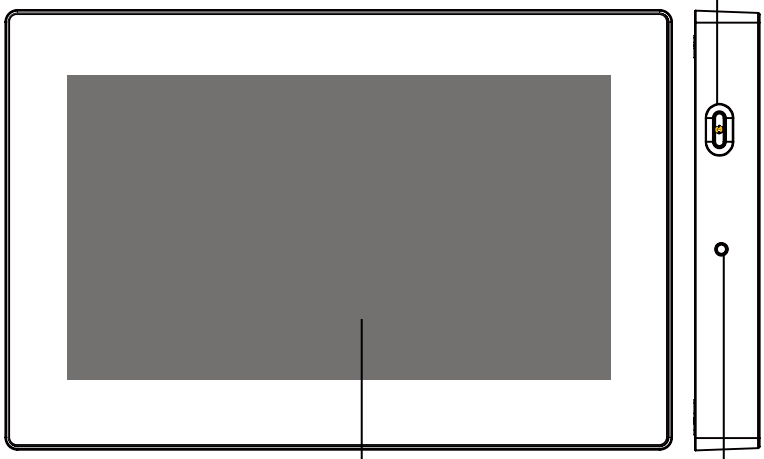
② BM2 introduction

BM 2_1	Indoor communication address setting mode	0	Automatic setting (default)					
		1	Dial set address					
BM 2_2	Reserved	0	Reserved (default)					
		1	Reserved					
BM 2_3 BM 2_4 BM 2_5 BM 2_6 BM 2_7 BM 2_8	Indoor communication address	[3]	[4]	[5]	[6]	[7]	[8]	Address
		0	0	0	0	0	0	0# (default)
		0	0	0	0	0	1	1#
		0	0	0	0	1	0	2#
		…	…	…	…	…	…	……

Operation instructions for controller

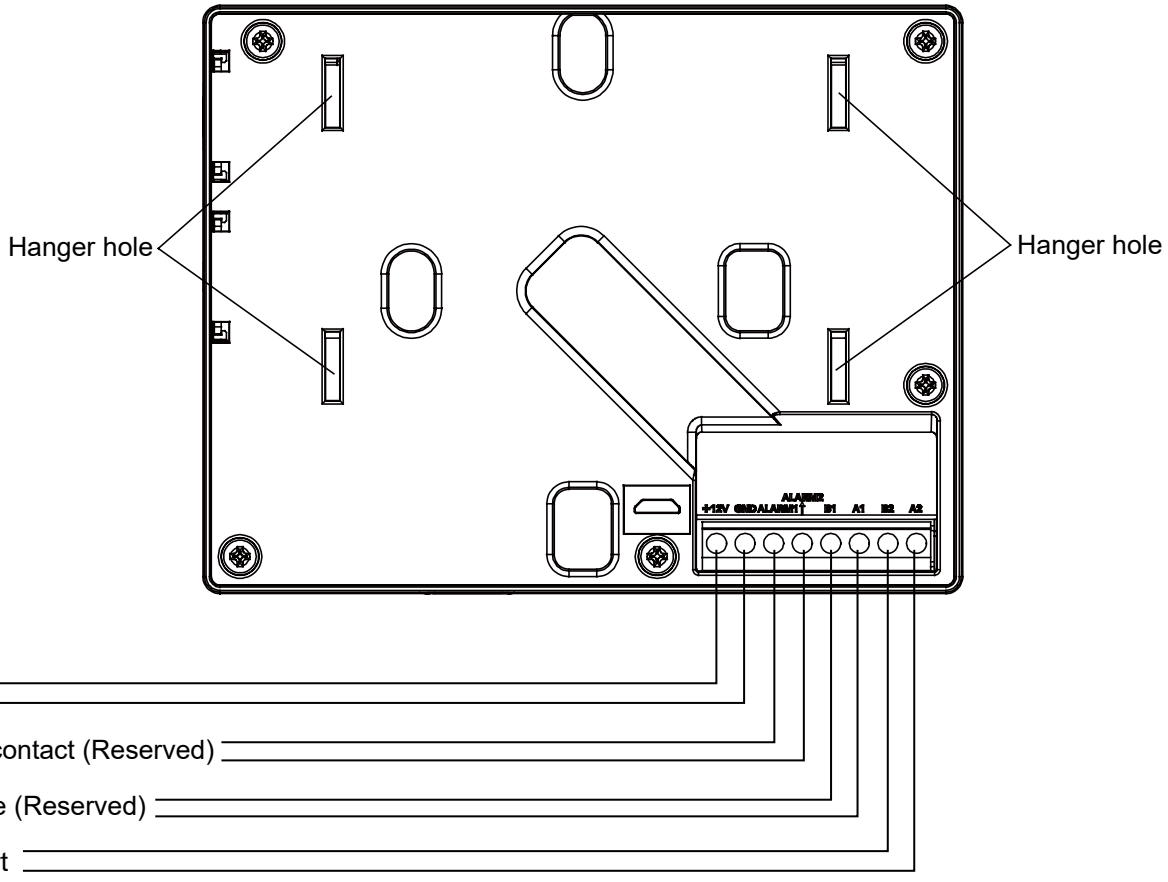
Part information for controller

Restart button ① :
Hold Restart button for 10s to restart controller. Check whether the controller software is normal.

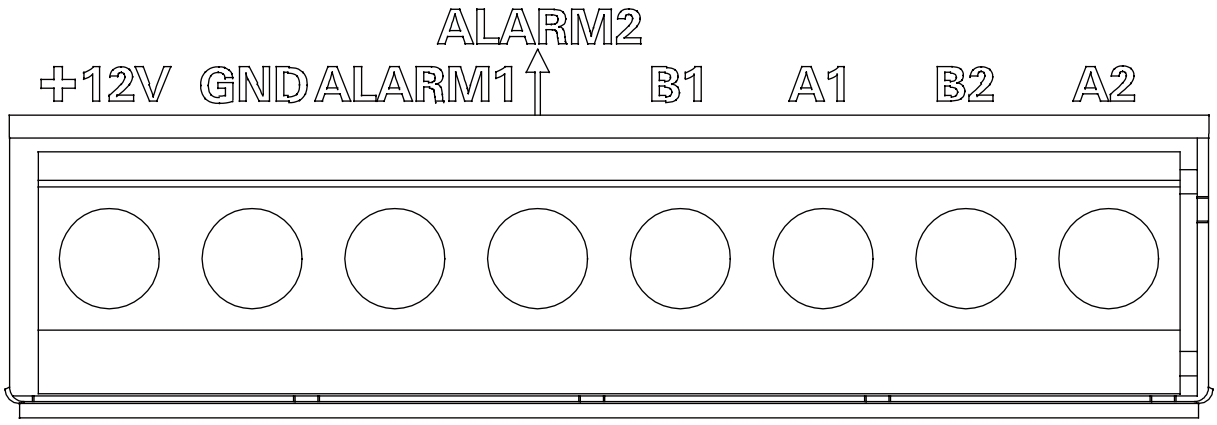


Display / Touch area

Restart button ② :
Press to restart controller. Check whether the controller chip is normal.



Operation instructions for controller



Power supply (12V, GND): 12V DC, please pay attention to “+, -” of power supply.
Fire alarm linkage contact (ALARM1, ALARM2): Short circuit the ALARM1 and ALARM2 (Reserved port).
Third party interface (B1, A1): A1 — 485+, B1—485-(Reserved port).
Communication port (B2, A2): It is used for connecting converter, please pay attention to “+, -”, A2—485+, B2—485-.
Note: B1, A1 are unavailable to the Split Controller; B2, A2 are available.

Controller Installation

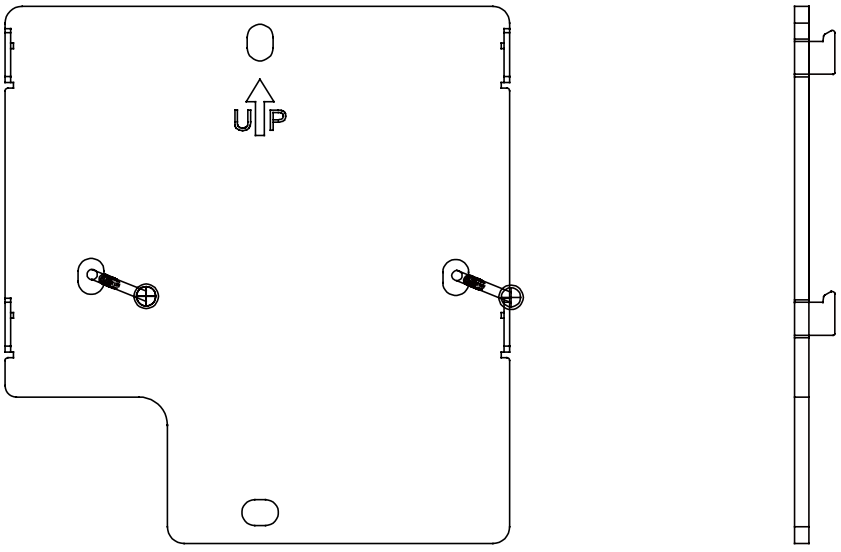
The unit can be connected to the sub controller. Only one main controller is allowed in the whole split system, and the rest controllers are sub. If the controller is set as a sub controller, the controller can only view the unit parameters and cannot change the unit operation status.

Installation condition

Don’t install near devices that produce electrical interference such as AC motor, radio transmitters like network routers and consumer electronics.
Other electrical noise producers could include computers, auto-door openers, elevators, or other equipment what can produce noise.
Don’t install in wet locations.
It will cause failure if you install in a place that shakes violently.
Don’t install in the place where it is exposed to direct sunlight or near to the heat. This will cause failure.

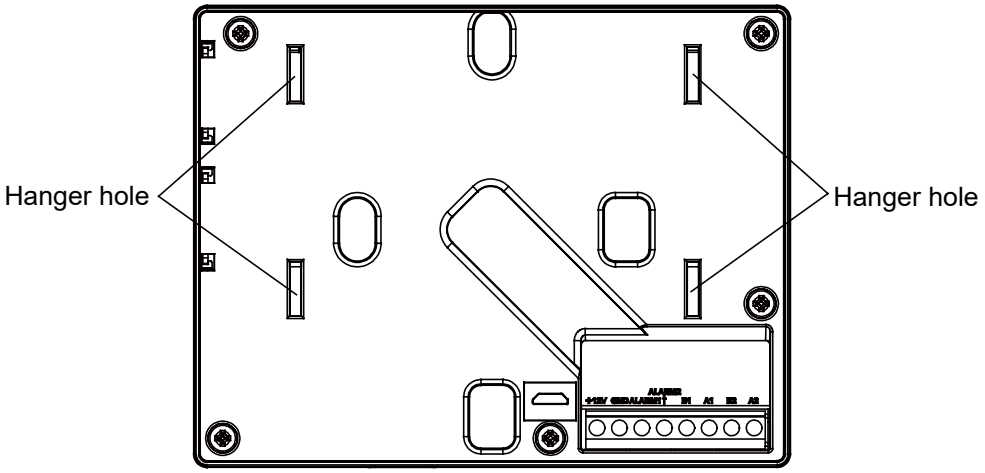
Mounting control

First, attach the mounting plate to the wall. Using a job box is preferred. Use A and B holes for an 86mm box, use C and D holes for a 120mm box. Please take note of the UP indicator.



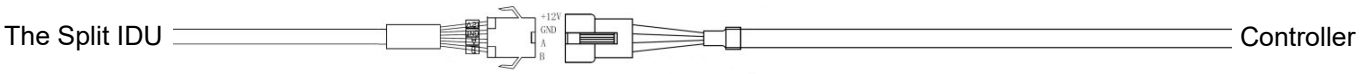
Operation instructions for controller

The hanging plate is placed in the direction of the illustration, where A/B is the location of the 86 cassette screws, and the C/D is the position of the 120 cassette screws. The pendant is fixed to the hole of the pendant, please pay attention to the UP direction.

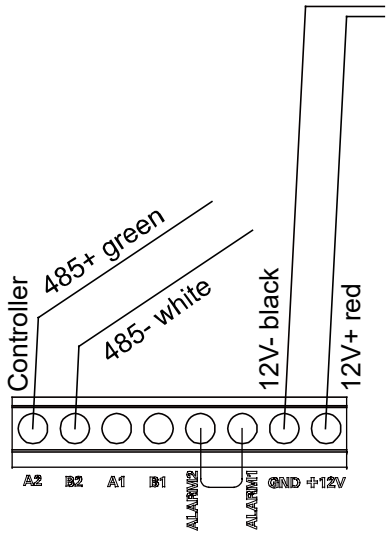


The black terminal of the controller communication line is connected with the black harness terminal at the lower outgoing line port of the unit. The other end of the controller communication line is pressed on the wiring base of the controller, and the corresponding relationship is red~+12V, black~GND, green~A2 and white~B2.

Connection terminal between controller communication line and IDU:



All of the power supply and communication 485 cables between each module and terminal module to the controller are double core shielded twisted-pair cable. Specific wiring as the table below:



The communication line is connected with the controller

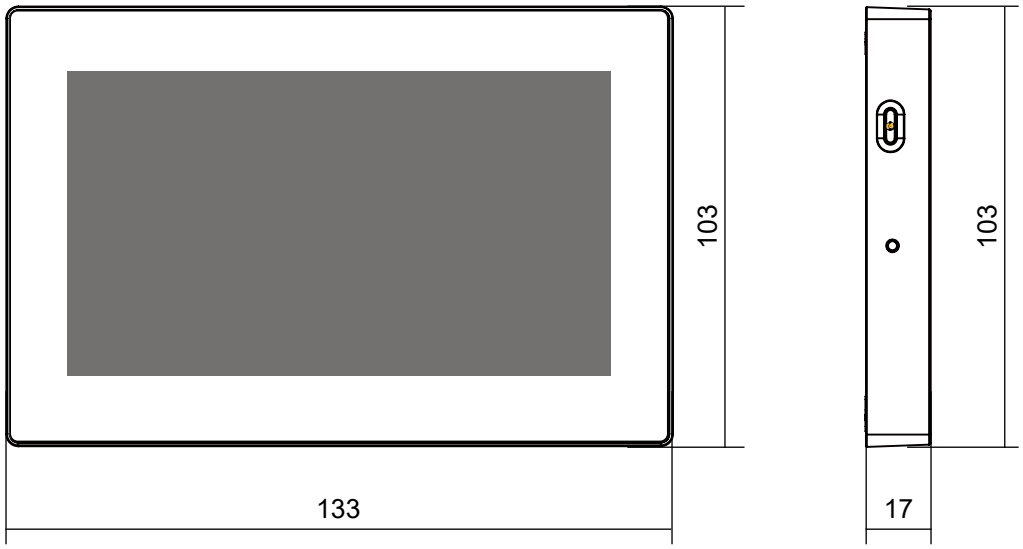
The length of signal line	Wiring dimension
≤100m	0.3 mm^2×4
100m<x≤200m	0.5 mm^2×4
200m<x≤300m	0.75 mm^2×4
300m<x≤400m	1.25 mm^2×4
400m<x≤500m	2mm^2×4

Fix the screw through the bracket on the 86 cassettes and connect the connection. The red connects to the +12V and black to GND, the green connects to A2, and the white connects to B2. Please pay attention to the line order. Then the controller is fixed down.

Operation instructions for controller

Notes:
1. B1 and A1 are unavailable.
2. B2 and A2 for 485 interface, access to split unit's 485 B and A, paying attention to line order.
3. ARALM1 and ALARM2 factory default is connected, if not be connected, then the main interface of the controller will display alarm information, and all indoor units will be turned off.

Controller Dimension:

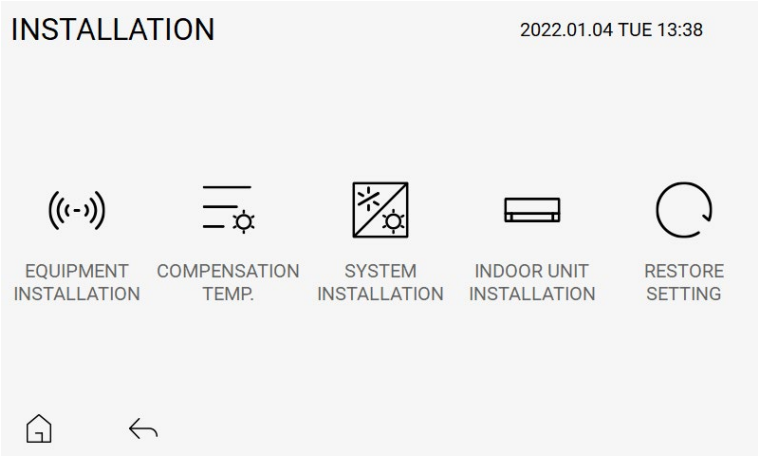


Set controller as sub

① Tap on menu icon in main interface→SETTING→GENERAL
② Setting “Main/Sub Set” function.
③ MAIN: This controller is main, and you can use this controller to set and view unit parameters.
SUB: This controller is sub, and you can only use this controller to view the unit parameters, not to control the unit operation status.

Installation settings

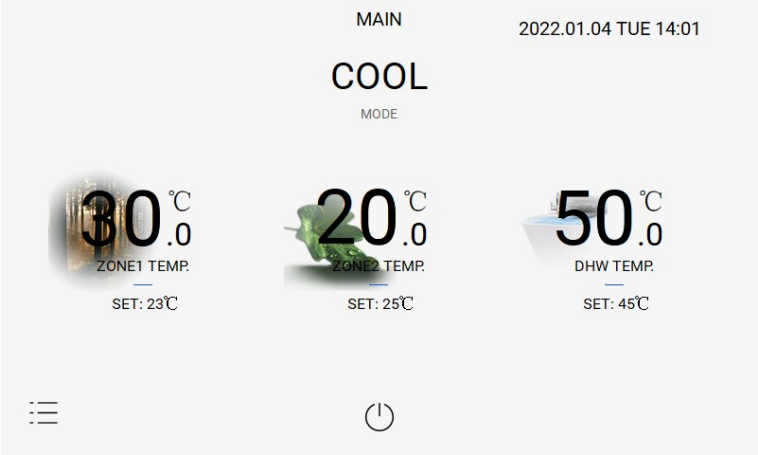
① Tap on menu icon in main interface→SETTING→INSTALLATION
② Enter the correct password (841226), go into the installation interface. See function operation description for details.



Operation instructions for controller

Function operation

Main interface display

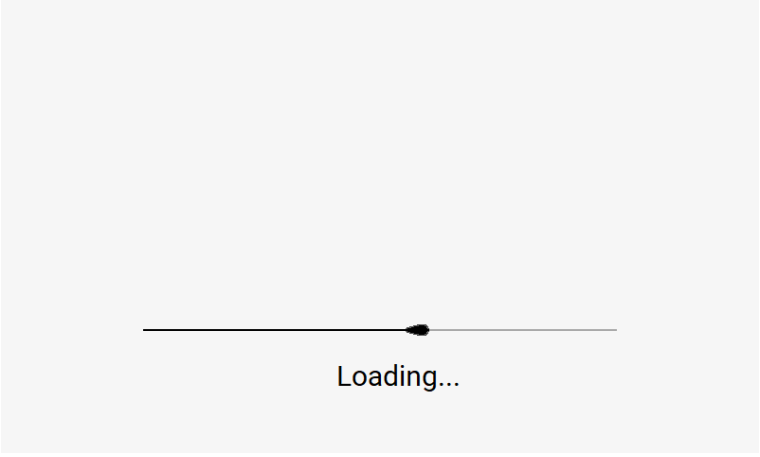


Picture 1

This controller can control all parts temperature of the split system, including Zone1, Zone2, DHW (Domestic Hot Water), and Pool.
During installation, Zone1, Zone2, DHW, and Pool can be set to ON or OFF.
Note: If one Zone in the system, set Zone 1 on; If two zones in the system, set Zone1 on and Zone 2 on.

Initialization

After powering on, controller starts to search IDU (Indoor Unit) shown as picture 2 below:

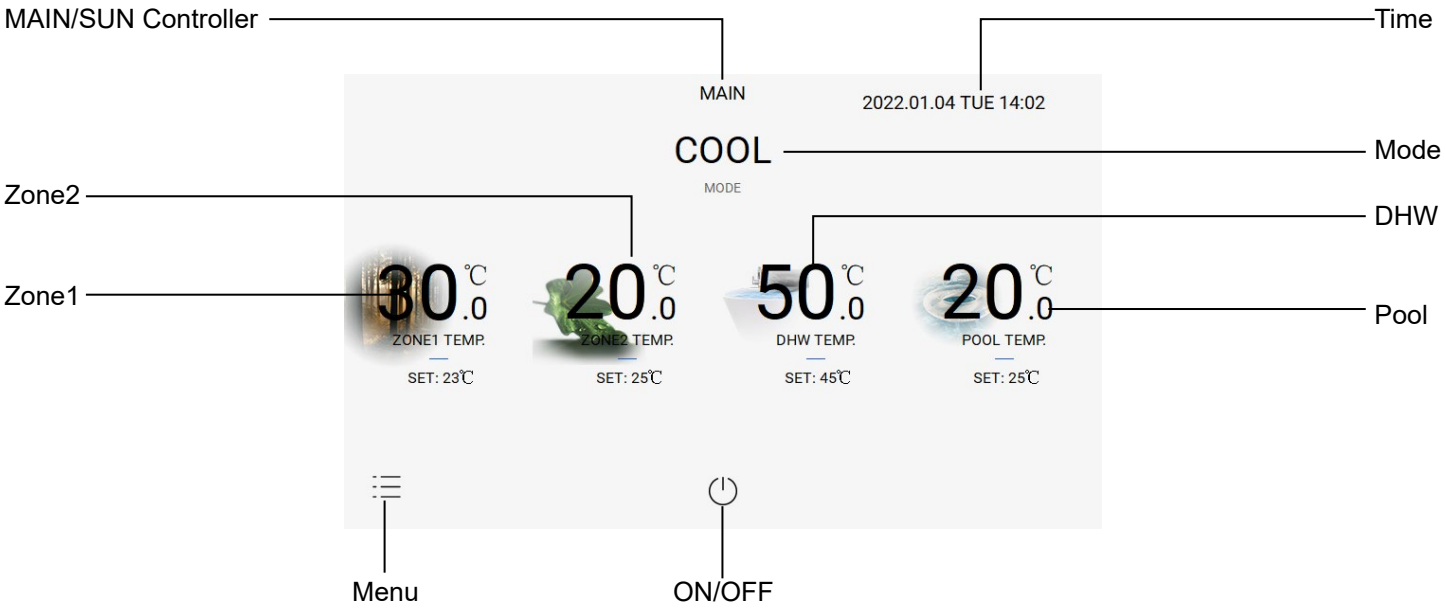


Picture 2

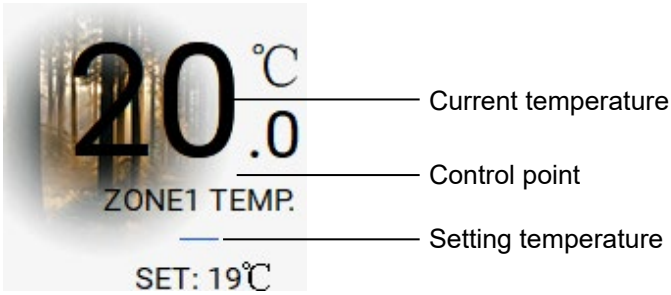
Operation instructions for controller

Main interface

When search is completed, the main interface will show as below. Picture 3 is the example. The interface display is subject to the "Equipment Installation" function in installation settings.

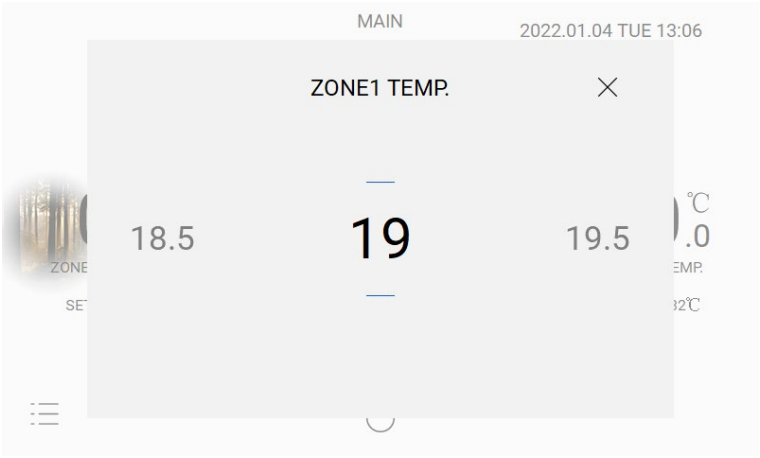


Picture 3



Picture 4

In the main interface, you can control ON/OFF, mode, and setting temperature. Click the mode area and slide left and right to change the unit operation mode. Click each current temperature area and slide left and right to adjust the set temperature.



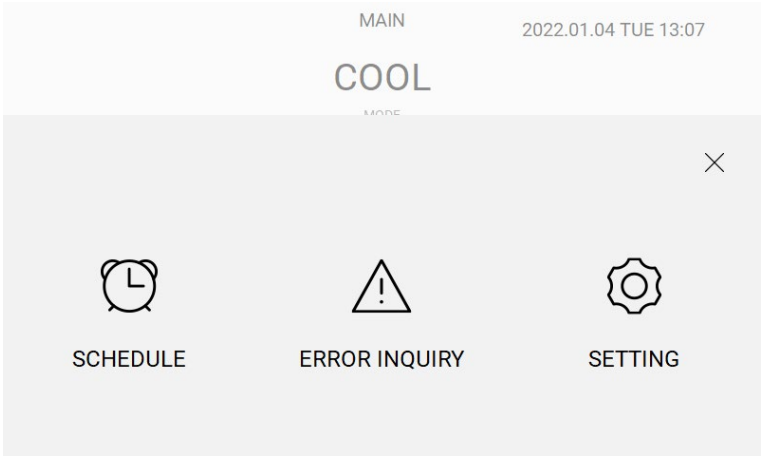
Picture 5

Operation instructions for controller

Note:
During heating operation of the unit, the setting temperature of zone 1 is higher than zone 2; during cooling operation of the unit, the set temperature of zone 1 is lower than zone 2. If the temperature of the later adjustment exceeds the limit, the temperature in another area will change accordingly.
For example, in the heating mode, the set temperature of zone 1 is 45 °C, and the set temperature of zone 2 must be less than or equal to 45 °C. If the set temperature of adjustment zone 2 is 48 °C, the set temperature of zone 1 will automatically change to 48 °C.
If a third-party controller is selected, the setting temperature of the point displays "Link", and the controller cannot change the set temperature, the temperature is determined by the third-party controller.

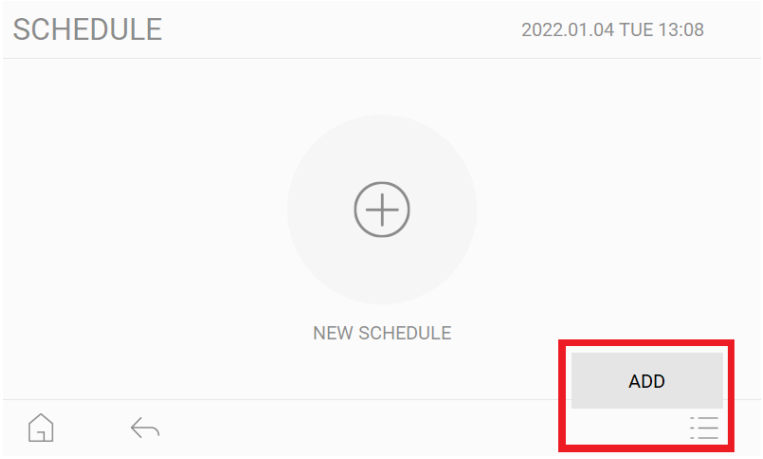
Menu

Tap the lower left menu icon , It will show the following interface:



Picture 6

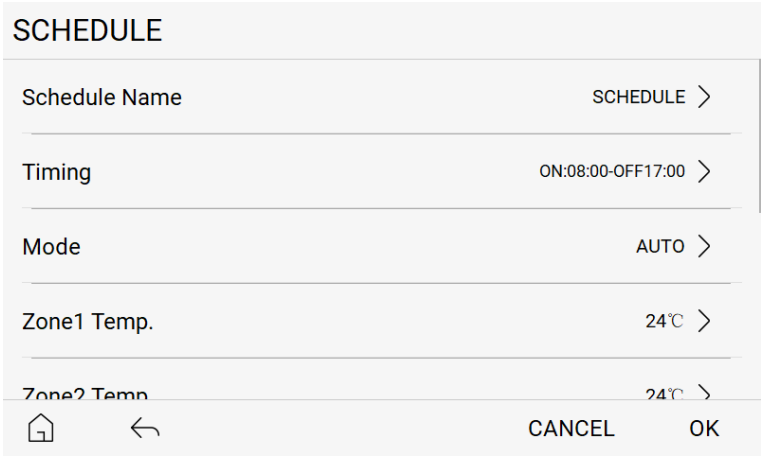
1. Schedule
① Add
Tap on “SCHEDULE” in picture 6. If schedule has been set, the set of schedule information is displayed. If you enter schedule for the first time, it will be blank like below.



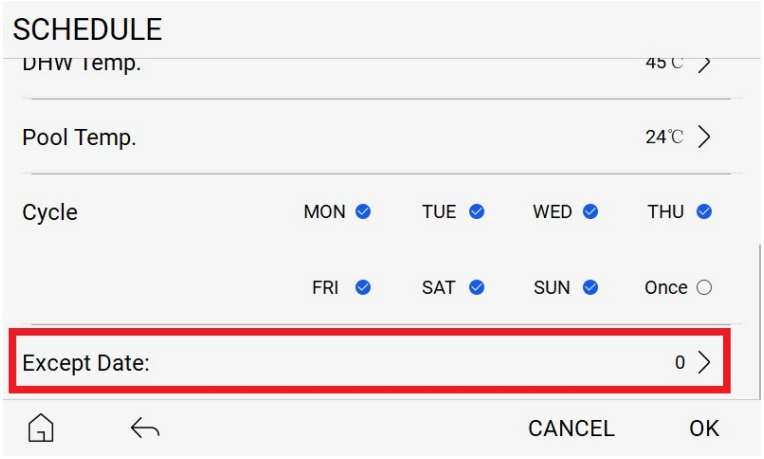
Picture 7

Tap the “+” icon in the center of the screen or the icon at the lower right corner, and tap “ADD” to add a new schedule. You can set schedule on (start) and off (end) time, mode, temperature, and cycle days, etc.

Operation instructions for controller

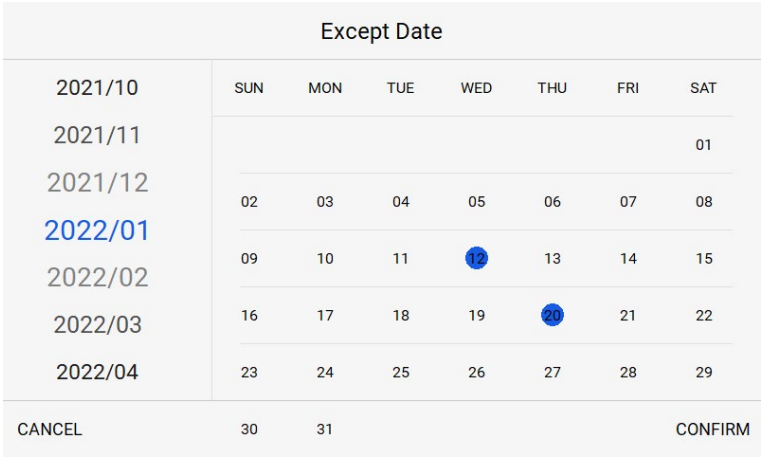


Picture 8



Picture 9

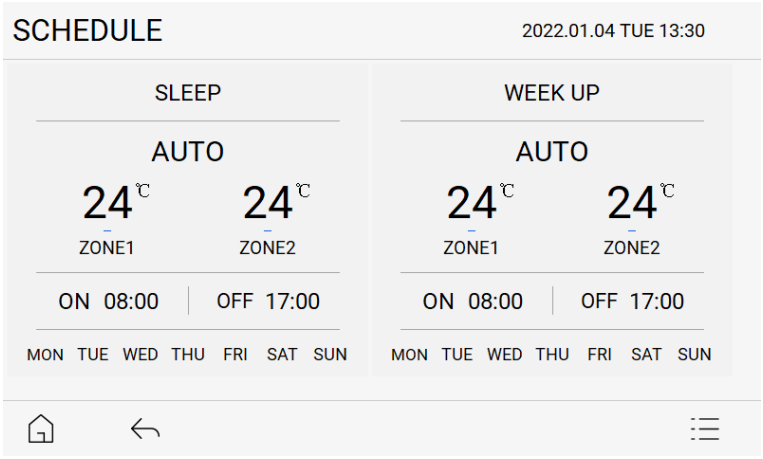
You can set except dates for the schedule in Picture 9. Schedule information is not executed on exceptional days.



Picture 10

Tap “OK” in Picture 8, the display interface is as follows. Repeat steps to add another schedule.

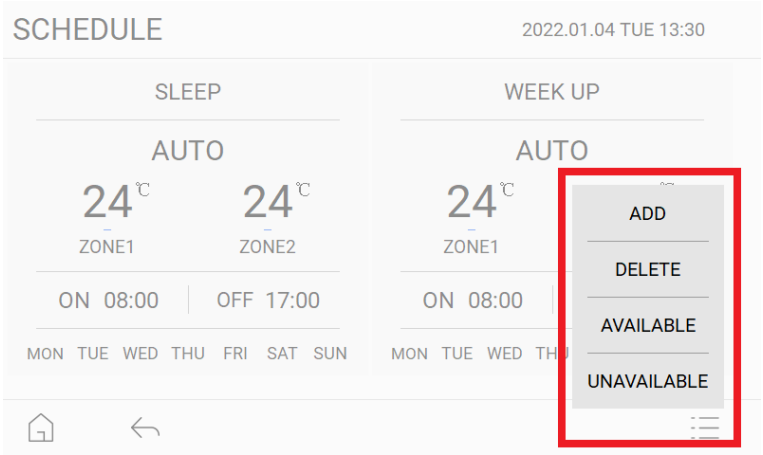
Operation instructions for controller



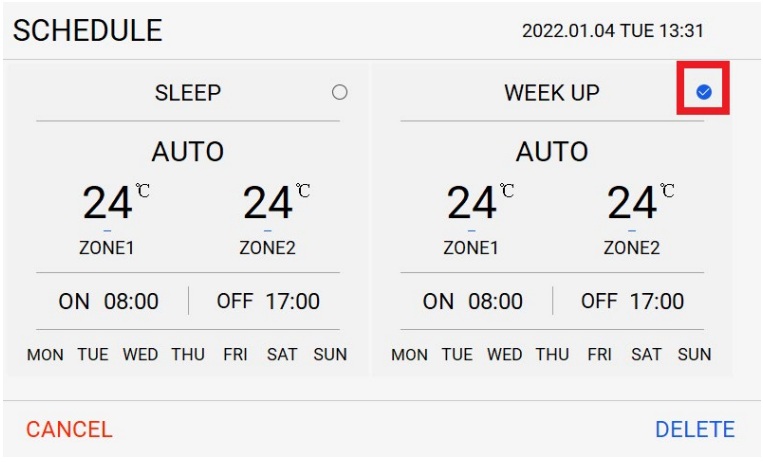
Picture 11

② Delete

First, tap the “DELETE” icon in the Picture 12, then small circle will appear like Picture 13; Second, select the schedules to be deleted. Last, press the “DELETE” icon in the lower right corner.

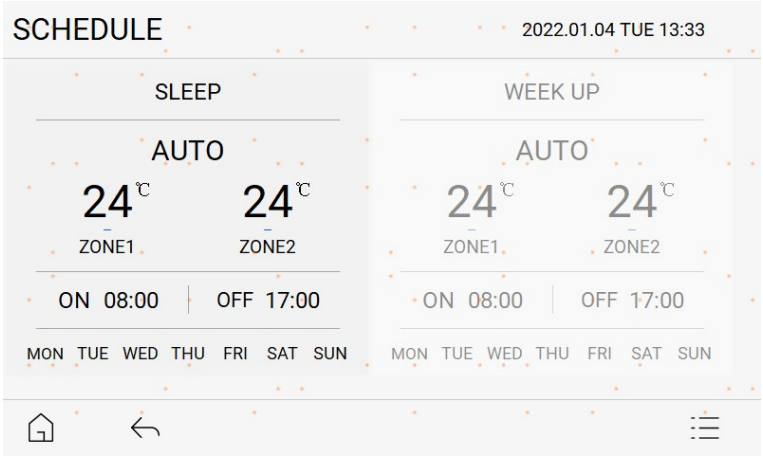


Picture 12



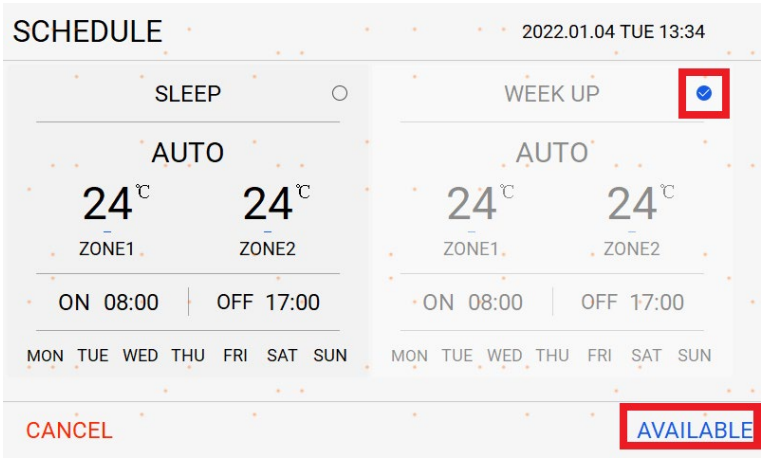
Picture 13

③ Unavailable
To make a schedule unavailable, tap on the “UNAVAILABLE” icon, see Picture 12. Tap the icon of the desired schedule(s) to unavailable. After tapping “UNAVAILABLE”, unavailable schedules are grayed out as seen in Picture 14.



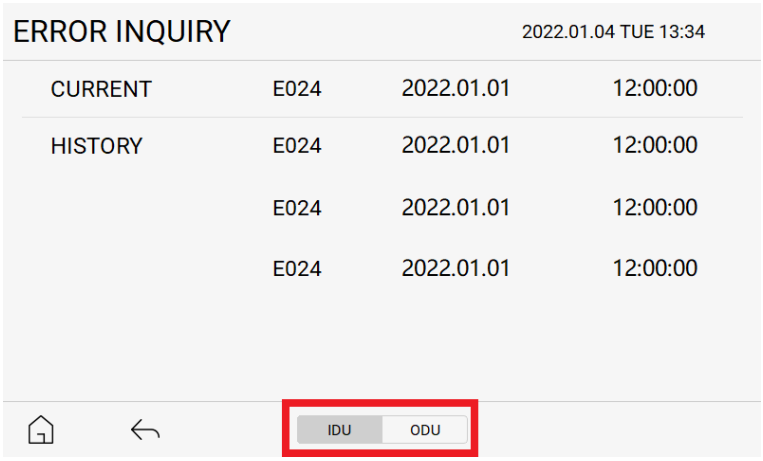
Picture 14

④ Available
To reactivate a schedule that is unavailable, then tap “AVAILABLE” as seen at the lower right of Picture 12. Tap the icon of the desired schedule(s) to reactivate. Then tap “AVAILABLE” at the lower right of the screen to reactivate the schedule information.



Picture 15

2. Error inquiry
Tap “ERROR INQUIRY” in menu to check errors. Click the middle position of the lower sidebar of the screen to view the outdoor unit’s error parameters.

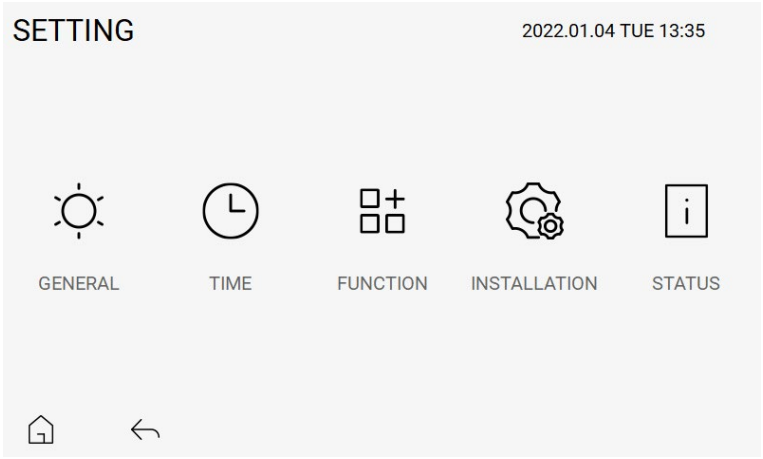


Picture 16

Operation instructions for controller

3. Setting

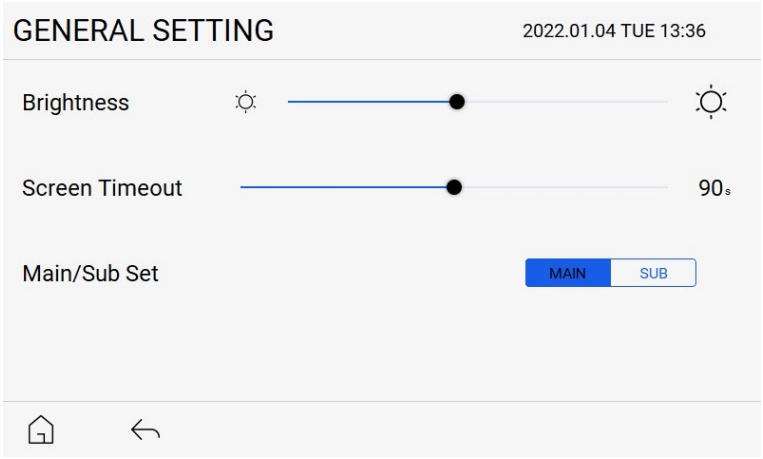
Tap “SETTING” on the interface of Picture 6 to enter the setting interface, shown in Picture 17.



Picture 17

1) General setting

You can change the Backlight brightness, Screensaver time, and Main/Sub controller switch by taping and dragging the slider.



Picture 18

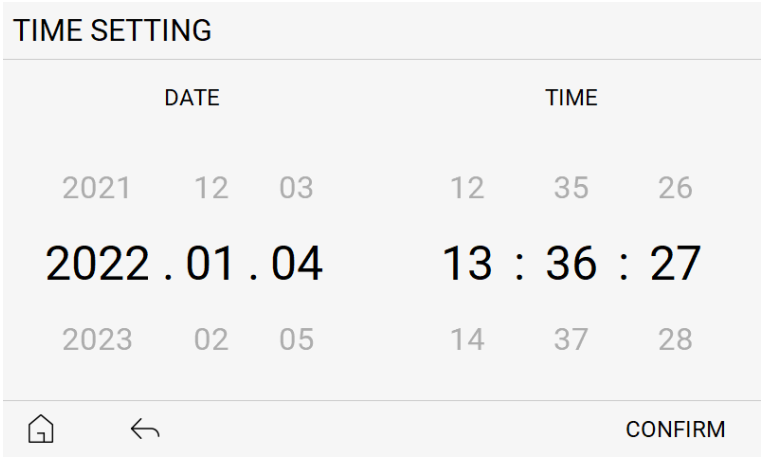
Note:

If the controller is set as a sub controller, the controller can only view the unit parameters and cannot change the unit operation status.

You can set any one of the controllers in the system as Main controller but be sure there is only one main controller in the system at any time. If you want to operate, please do this with the main controller.

2) Time setting

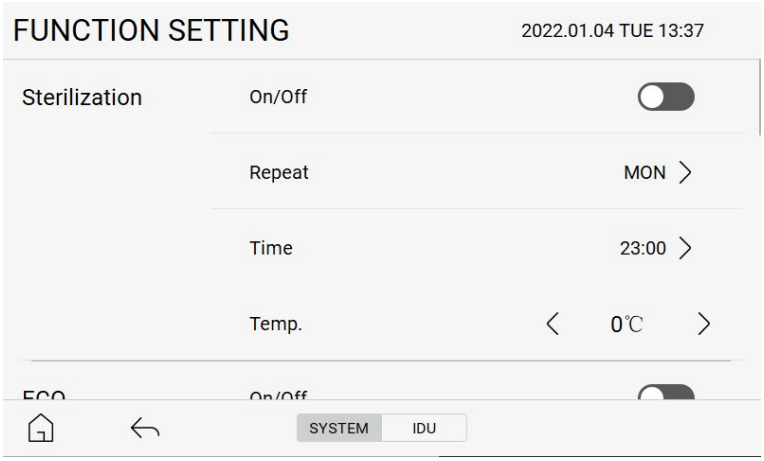
You can adjust the date & clock time by slide numbers up and down. After adjusting the clock parameters, click the “CONFIRM” to confirm.



Picture 19

Operation instructions for controller

3) Function setting



Picture 20

Press “FUNCTION” icon to enter the function setting interface, shown in Picture 20. In this interface, you can turn on or off some common functions, and adjusting its working hours. In this interface, you can set following functions.

System functions of user setting

Function		Parameter Range	Default	Remarks
Sterilization	Operation	On/Off	Off	When the unit is sterilizing, the sterilization icon is flashing displayed in the main interface
	Week	Monday ~ Sunday	Monday	
	Time	00:00~24:00	23:00	
	Temp.	50°C~75°C	75°C	
ECO (economy) Mode	Operation	On/Off	Off	It’s only valid at heating mode. During the energy-saving operation of the unit, the outlet water temperature is △ T lower than the set temperature.
	Time	24 hours	22:00~07:00	
	△ T (Difference between energy saving temperature and actual temperature.)	-15°C~0°C	-5°C	
Holiday Mode	Operation	On/Off	Off	To save energy, a holiday period may be set to lower the temperature during the period.
	Date	Start date ~ End date	Current date~ Current date	
	Setting Temp. of Zone1	0°C~30°C	15°C	
	Setting Temp. of Zone2	0°C~30°C	15°C	
Quiet	Operation	On/Off	Off	To operate quietly during the preset period.
	Time1	Start time ~ End time	Current time~ Current time	
	Time2	Start time ~ End time	Current time~ Current time	
Turbo	Operation	On/Off	Off	Turbo mode is use to increase the capacity of heat pump to achieve higher target temperature.
	Timer	30min/60min/90min/ Continuous	60min	
Fast DHW		On/Off	Off	/
DHW Priority		On/Off	On	No matter what mode the unit is in, the domestic hot water shall be heated first.
Dry Concrete of Zone1		On/Off	Off	/
Dry Concrete of Zone2		On/Off	Off	/
IDU Antifreeze Protection		On/Off	On	/
IDU Antifreeze Temp.		0~15°C	5°C	/

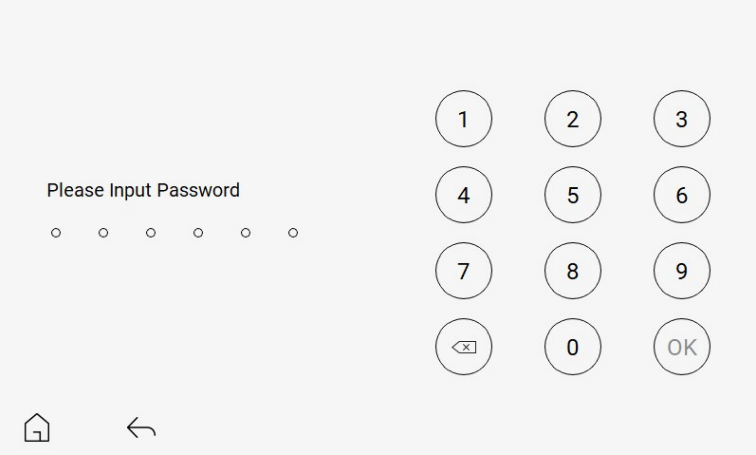
Operation instructions for controller

Click the middle position of the lower sidebar of the screen to set the functions of IDU (Indoor Units).
IDU functions of user setting

Function	Parameter Range	Default	Remarks
Force Defrost	On/Off	Off	Each IDU is controlled separately
Heater1 Electric Heating	Auto/Forced ON/Forced OFF	Auto	Each IDU is controlled separately
Heater2 Electric Heating	Auto/Forced ON/Forced OFF	Auto	Each IDU is controlled separately

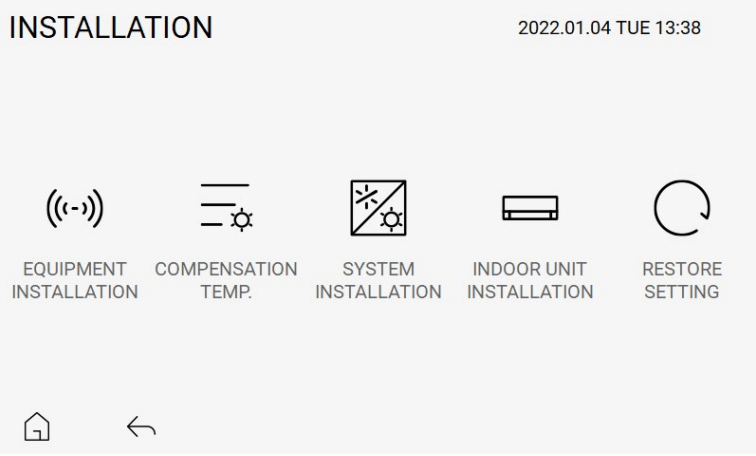
Note:
① Do not use the system during sterilization in order to prevent scalding with hot water, or overheating of shower.
② Quiet function and Turbo function cannot be turned on at the same time.

4) Installation
Tap “INSTALLATION” icon in Picture 17, then prompts to enter password interface.



Picture 21

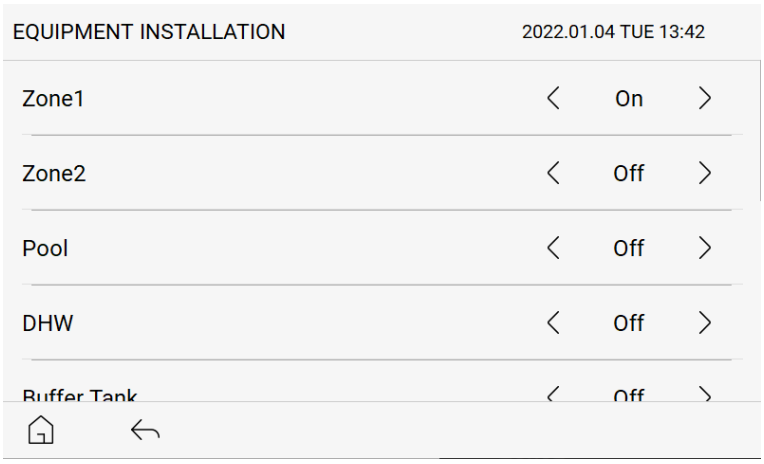
Enter the correct password (841226), go into Picture 22.



Picture 22

Operation instructions for controller

① Equipment installation



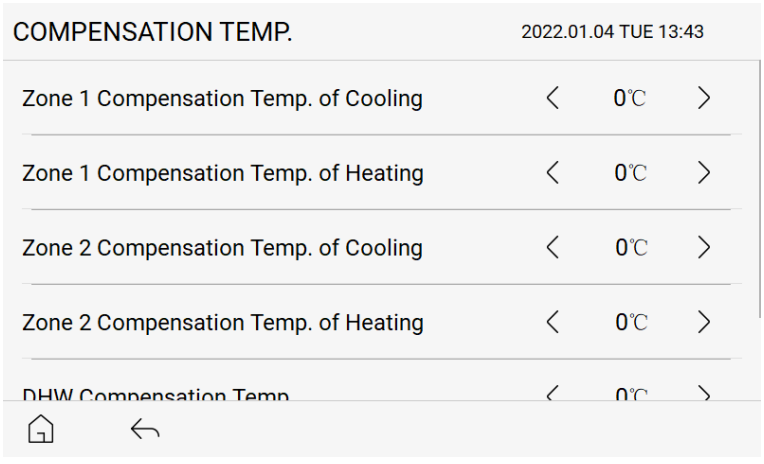
Picture 23

Tap “EQUIPMENT INSTALLATION” icon to enter the unit configuration interface. You can turn on or off the corresponding functions in this interface.

Function	Parameter Range	Default
Zone 1	On/Off	On
Zone 2	On/Off	Off
Pool	On/Off	Off
DHW	On/Off	Off
Buffer Tank	On/Off	Off
Solar Thermistor	On/Off	Off
Allow Cool Mode	On/Off	On
Allow Cool Mode of Zone2	On/Off	Off
SG Ready Control.	On/Off	Off
Bivalent Connection	On/Off	Off
Bivalent Temp.	-20°C~20°C	-10°C

Note: If one Zone in the system, set Zone 1 on; If two zones in the system, set Zone1 on and Zone 2 on.

② Compensation Temp.
Tap “COMPENSATION TEMP.” icon in Picture 22 to enter the compensation temperature setting interface. You can set the compensation temperature for each control object.



Picture 24

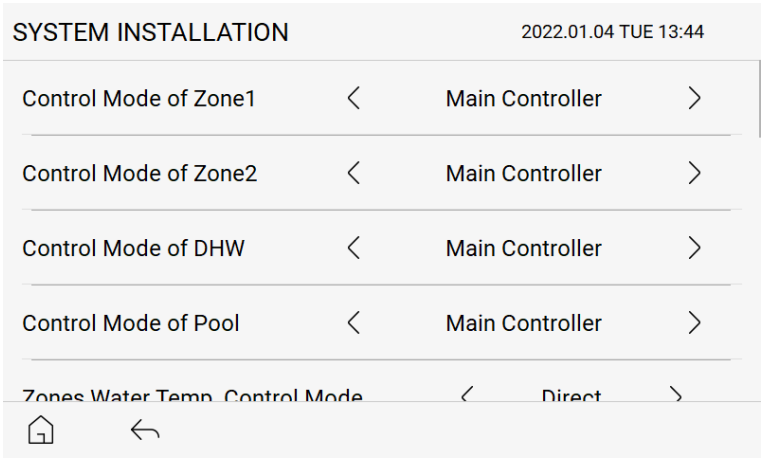
Operation instructions for controller

Function	Parameter Range	Default
Zone 1 Compensation Temp. of Cooling	-15~15°C	0°C
Zone 1 Compensation Temp. of Heating	-15~15°C	0°C
Zone 2 Compensation Temp. of Cooling	-15~15°C	0°C
Zone 2 Compensation Temp. of Heating	-15~15°C	0°C
DHW Compensation Temp.	-15~15°C	0°C
Swimming Pool Compensation Temp.	-15~15°C	0°C

Note: Actual target temperature of system=Set target temperature of controller + Compensation temperature

③ System installation

Tap “SYSTEM INSTALLATION” icon in Picture 22 to enter the system control parameters setting interface. You can set the operating parameters for the system.



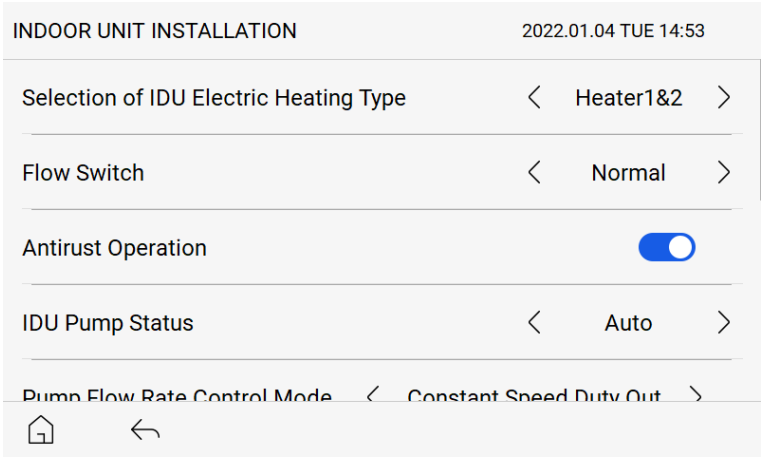
Picture 25

Function	Parameter Range	Default
Control Mode of Zone1	Main controller, Third party controller, IDU ambient Temp. sensor	Main controller
Control Mode of Zone2	Main controller, Third party controller, IDU ambient Temp. sensor	Main controller
Control Mode of DHW	Main Controller, Third Party Controller	Main Controller
Control Mode of Pool	Main Controller, Third Party Controller	Main Controller
Zones Water Temp. Control Mode	Direct, Auto curve, Set curve	Direct
Auxiliary Heat Source	IDU Electric Heater, Boiler, IDU Electric Heater + Boiler	IDU electric Heating
Outdoor Temp. for (Heat to Cool)	0~30°C	15°C
Outdoor Temp. for (Cool to Heat)	0~30°C	10°C
DHW On Temp.	30~55°C	45°C
Ambient Temp. of Heating Off	5~35°C	27°C
△ T for Heating On	0~15°C	6°C
Outdoor Temp. for Heater On	-20~15°C	0°C
Heater On Delay Time	0~120min	60min
Heater On △ T of Target Temp.	-10~2°C	-3°C
Heater Off △ T of Target Temp.	-8~0°C	-1°C
Tank Re-heat Temp.	-12~2°C	-3°C
△ T for Cooling On	1~15°C	5°C
Target Temp. of DHW IO Board	25~75°C	45°C
Target Temp. of Pool IO Board	20~30°C	24°C
Travel Time of Mixing Valve	30s~90s	60s

Operation instructions for controller

Note:
Zones water temperature control mode is valid at zone1 and zone2.
a. Direct: set direct water temperature (fixed value).
b. Auto curve: set water temperature depends on outdoor ambient temperature. The unit automatically adjusts the set temperature according to the curve, which cannot be changed by users.
c. Set curve: set water temperature depends on outdoor ambient temperature. The unit automatically adjusts the set temperature according to the curve, and the curve can be changed by users.

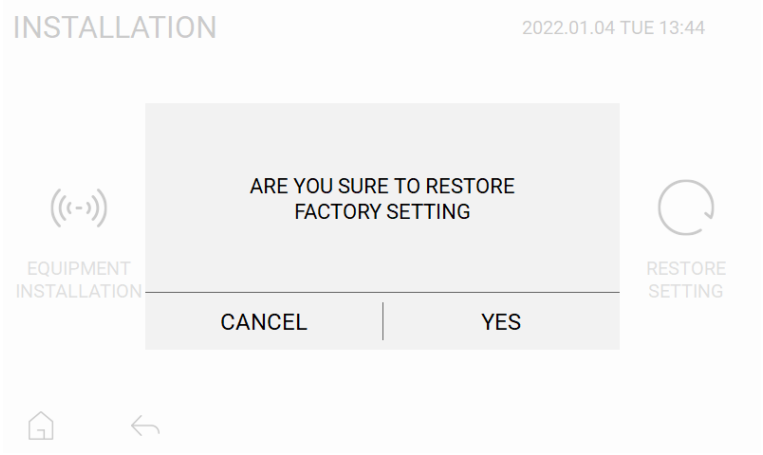
④ Indoor unit installation
Tap “INDOOR UNIT INSTALLATION” icon in Picture 22 to enter the IDU parameters setting interface. You can set the operating parameters for the IDU.



Picture 26

Function	Parameter Range	Default
Selection of IDU Electric Heating Type	None, Heater 1, Heater2, Heater 1 +Heater2	Heater 1+ Heater2
Flow Switch	Normal, shielded	Normal
Antirust Operation	On/Off	On
IDU Pump Status	Auto/Open/Close	Auto
Pump Flow Rate Control Mode	△ T Between Out and In Water, Max. Duty Out	Max. Duty Out
IDU Pump Duty Out	0%~100%	0%
Indoor Unit Reset	On/Off	Off
Floor Sensor Type	Flow Meter/Flow Switch	Flow Meter
Test Operation	None, Cooling Test, Heating Test	None
△ T of Cool Pump	0~15°C	5°C
△ T of Heat Pump	0~15°C	6°C

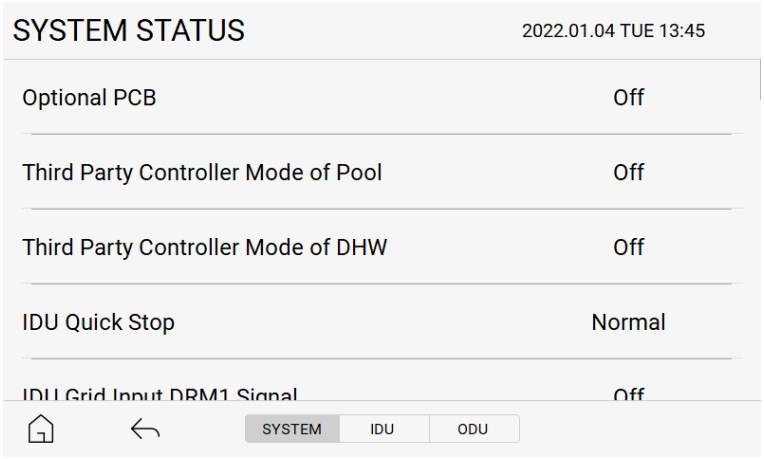
⑤ Restore setting
Tapping “RESTORE SETTING”, the system will be resettled to factory defaults and clear all settings.



Picture 27

If you click “YES” to reinitialize, the controller will restart. If you click “Cancel”, then exit POP.

5) Status
Tapping “STATUS” to enter status viewing interface. Click the tab at the bottom of the screen, and you can select the parameter category to view.



Picture 28

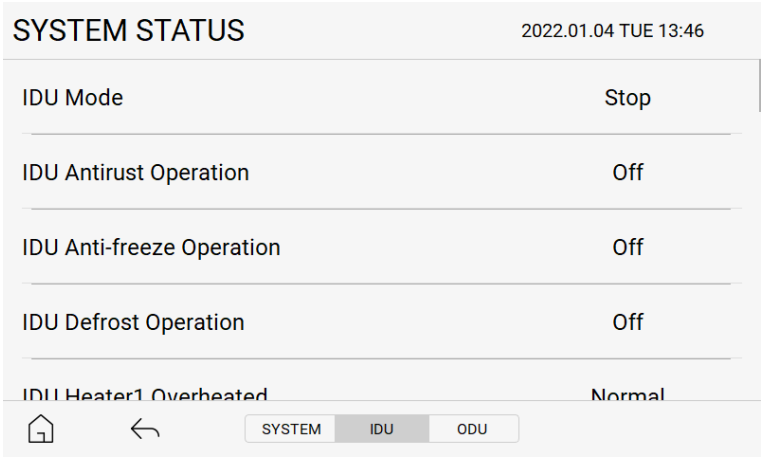
Operation instructions for controller

① System

Function	Remarks
Optional PCB	On indicates that there is an optional PCB (IO board), and Off indicates that there is no optional PCB.
Third Party Controller Mode of Pool	On/Off
Third Party Controller Mode of DHW	On/Off
IDU Quick Stop	Normal, Stop
IDU Grid Input DRM1 Signal	On/Off
IDU Grid Input DRM2 Signal	On/Off
IDU Grid Input DRM3 Signal	On/Off
Third Party Controller Mode of Zone1	None/Cool/Heat
Pump1 Output of Zone1	On/Off
Zone1 Floor Valve State	On/Off
Zone1 Indoor Temp.	Display accuracy: 0.1°C
Zone1 3Way Valve Temp.	Display accuracy: 0.1°C
Third Party Controller Mode of Zone2	None/Cool/Heat
Pump2 Output of Zone2	On/Off
Opening Status of Zone2 Water Mixing Valve	On/Off
Closed Status of Zone2 Water Mixing Valve	On/Off
Zone2 Indoor Temp.	Display accuracy: 0.1°C
Zone2 Mixing Valves Temp.	Display accuracy: 0.1°C
Pump3 Output of Pool	On/Off
Pump4 Output of Pool	On/Off
Opening Status of Pool Water Mixing Valve	On/Off
Closed Status of Pool Water Mixing Valve	On/Off
Mixing Valve Temp. of Pool	Display accuracy: 0.1°C
Pool Temp.	Display accuracy: 0.1°C
Parameter Control of DHW	Wired Controller, Optional PCB
DHW 3Way Valve	On/Off
Sterilization	On/Off
Tank Heater Output	On/Off
Buffer Tank Temp.	Display accuracy: 0.1°C
DHW Tank Temp.	Display accuracy: 0.1°C
Input Status of Water Make-up Micro Switch	On/Off
Status of Leakage Proof Electric Valve	On/Off
Solar Pump Output	On/Off
Solar Sensor Temp.	Display accuracy: 0.1°C
Gas Boiler Output	On/Off
Humidity	Display accuracy: 1%
0~10V Sampling Voltage	Display accuracy: 0.1V
0~10V Voltage	Display accuracy: 0.1V

Operation instructions for controller

② IDU Status

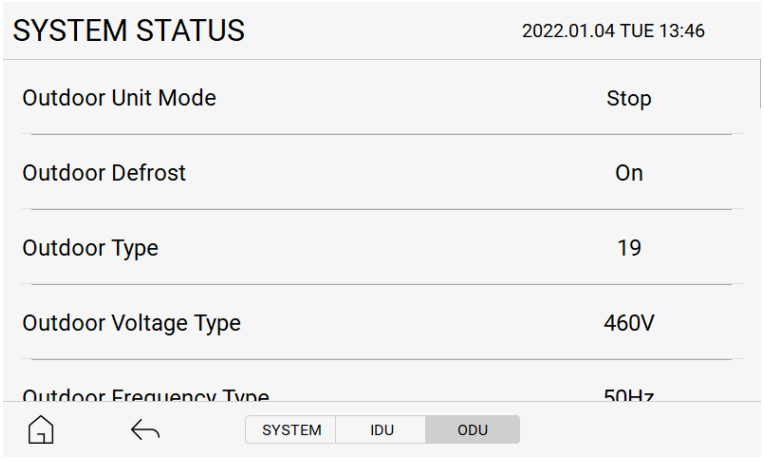


Picture 29

Function	Remarks
IDU Mode	Stop, Cool, Heat, DHW, Pool
IDU Antirust Operation	On/Off
IDU Anti-freeze Operation	On/Off
IDU Defrost Operation	On/Off
IDU Heater1 Overheated	Normal, Overheated
IDU Heater2 Overheated	Normal, Overheated
IDU Heater1(1kW) Output	On/Off
IDU Heater2(3kW) Output	On/Off
IDU Antifreeze Heater Output	On/Off
IDU Pump	On/Off
IDU Solenoid Valve1	On/Off
IDU Solenoid Valve2	On/Off
IDU Flow Switch	On/Off
IDU Low Pressure Switch	On/Off
IDU Pump Duty	Display accuracy: 1%
IDU Pump Actual Speed	Display accuracy: 1r/min
IDU PMV Open	Display accuracy: 1pls
IDU Antifreeze Temp.	Display accuracy: 0.1°C
IDU Inlet Water Temp.	Display accuracy: 0.1°C
IDU Outlet Water Temp.	Display accuracy: 0.1°C
IDU Liquid Pipe Temp.	Display accuracy: 0.1°C
IDU Gas Pipe Temp.	Display accuracy: 0.1°C
IDU Flow Meter	Display accuracy: 0.1L/min
IDU Capacity	Range: 0~16
Target Temp. of Indoor Valve	Display accuracy: -64~63°C
IDU Cumulative Running Time	Display accuracy: 1h
IDU Continuous Running Time	Display accuracy: 1h
IDU Program Version	/
IDU EE Version	/

Operation instructions for controller

③ ODU Status



Picture 30

Function	Remarks
Outdoor Unit Mode	Stop, Cool, Heat
Outdoor Defrost	On/Off
Outdoor Type	/
Outdoor Voltage Type	Power supply voltage of outdoor unit.
Outdoor Frequency Type	50Hz/60Hz
Outdoor Refrigerating Capacity	Display accuracy: 0.5HP
Outdoor Compressor Target Frequency	Display accuracy: 1rps
Outdoor Compressor Actual Frequency	Display accuracy: 1rps
Outdoor Fan1 Speed	Display accuracy: 5rps
Outdoor Fan2 Speed	Display accuracy: 5rps
Outdoor Electronic Expansion Valve	Display accuracy: 1rps
Outdoor Target Discharge Pressure	Range: 0~5kg
Outdoor Actual Discharge Pressure	Range: 0~5kg
Target Discharge Saturation Temp.	Display accuracy: 0.1°C
Actual Discharge Saturation Temp.	Display accuracy: 0.1°C
Outdoor Target Suction Pressure	Range: 0~5kg
Outdoor Actual Suction Pressure	Range: 0~5kg
Target Suction Saturation Temp.	Display accuracy: 0.1°C
Actual Suction Saturation Temp.	Display accuracy: 0.1°C
Outdoor Discharge Temp.	Display accuracy: 0.1°C
Outdoor Suction Temp.	Display accuracy: 0.1°C
Outdoor Ambient Temp.	Display accuracy: 0.1°C
Outdoor Defrost Temp.	Display accuracy: 0.1°C
Outdoor Oil Temp.	Display accuracy: 0.1°C
Outdoor Compressor Module Temp.	Display accuracy: 0.1°C
Outdoor Compressor Current	Display accuracy: 0.2A
Outdoor Compressor Voltage	Display accuracy: 4V
Outdoor Cumulative Running Time	Display accuracy: 1h
Outdoor Continuous Running Time	Display accuracy: 1h
Outdoor Program Version	/
Outdoor EE Version	/

Move and scrap the air conditioning

- When moving, to disassemble and re-install the air conditioning, please contact your dealer for technical support.
- In the composition material of air conditioning, the content of lead, mercury, hexavalent chromium, polybrominated biphenyls and polybrominated diphenyl ethers are not more than 0.1% (mass fraction) and cadmium is not more than 0.01% (mass fraction).
- Please recycle the refrigerant before scrapping, moving, setting and repairing the air conditioning; for the air conditioning scrapping, should be dealt with by the qualified enterprises.

Qingdao Haier Air Conditioner Electric Co.,Ltd.

Haier Industrial Park,Qianwangang Road,Eco-Tech Development Zone,Qingdao 266555, Shandong,China