Indoor Unit Operation & Installation Manual

ORIGINAL MANUAL

English

AE072MLERA

AE092MLERA

AE122MLERA

AE162MLERA

AE182MLERA

AE242MLERA

No. 0150512761 B

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

Original instructions

User Manual

Your air conditioner may be subject to any change owing to the improvement of Haier products.

MRV series multiple air conditioning systems adopt the consistent running mode, by which, all indoor units can only be heating or refrigerating operation at the same time.

To protect the compressor, the air conditioning unit should be powered on for over 12 hours before using it.
All indoor units of the same refrigerating system should use the unified power switch to ensure that all indoor units are in the state of being powered on at the same time during the operation of air conditioner.

Contents

Warning

- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Children should be supervised to ensure that they do not play with the appliance.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.
- The appliances are not intended to be operated by means of an external timer or separate remote-control system.
- Keep the appliance and its cord out of reach of children less than 8 years.

Product Features:

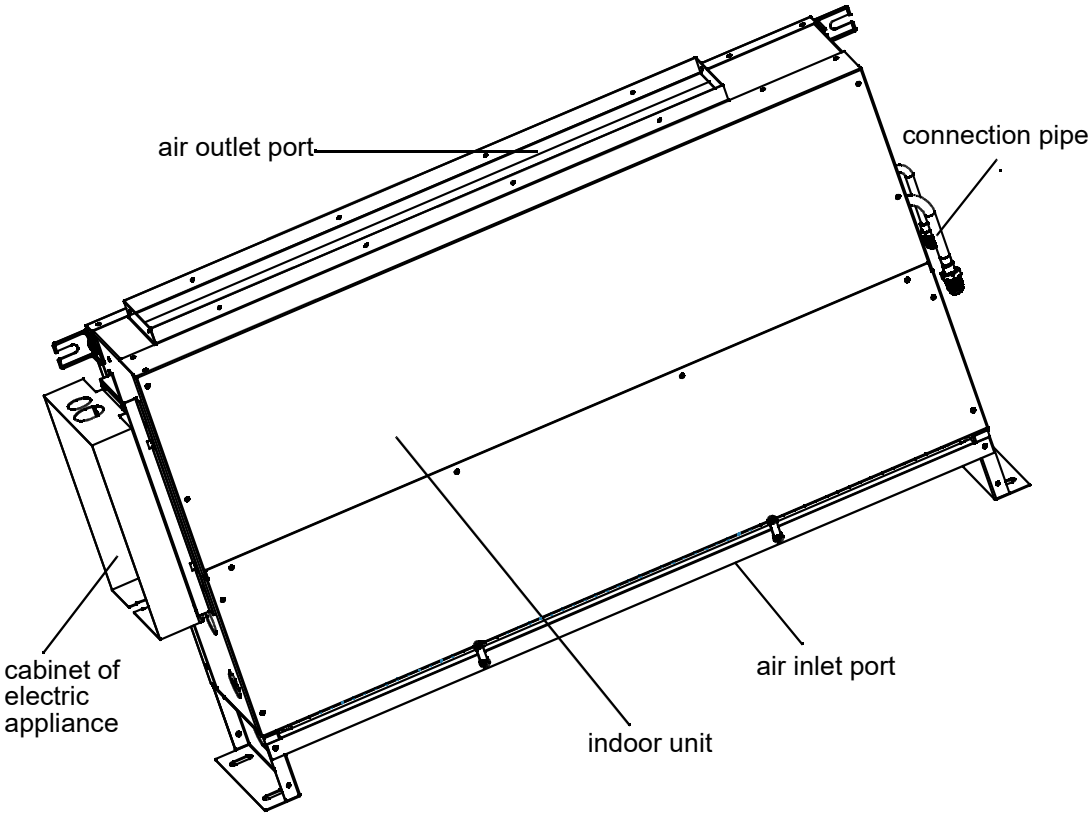
1. Low static pressure air conditioners for the indoor units of this series;
2. The built-in installation to save space;
3. Automatic display of fault detection;
4. Central control function (optional from our company);
5. The air conditioner is provided with the function of compensation for power supply. During operation, when the power supply fails emergently and resumes again, the air conditioner returns to the working condition before power failure, if provided with compensation function.
6. Now this indoor unit only has wired controller function, the indoor unit that has remote controller function need to set in factory especially.

Operating Range of Air Conditioner

cooling dry	indoor	max.	DB: 32℃ WB: 23℃
		min.	DB: 18℃ WB: 14℃
	outdoor	max.	DB: 43℃ WB: 26℃
		min.	DB: -5℃
heating	indoor	max.	DB: 27℃
		min.	DB: 15℃
	outdoor	max.	DB: 21℃ WB: 15℃
		min.	DB: -15℃

Parts and Functions

AE072MLERA AE092MLERA AE122MLERA
AE162MLERA AE182MLERA AE242MLERA



Safety

- If the air conditioner is transferred to a new user, this manual shall be transferred to the user, together with the conditioner.
- Before installation, be sure to read Safety Considerations in this manual for proper installation.
- The safety considerations stated below is divided into "⚠ Warning" and "⚠ Attention". The matters on severe accidents caused from wrong installation, which is likely to lead to death or serious injury, are listed in " ⚠ Warning". However, the matters listed in " ⚠ Attention" are also likely cause the severe accidents. In general, both of them are the important items related to the security, which should be strictly abided by.
- After the installation, perform test run to make sure everything is in normal conditions, and then operate and maintain the air conditioner in accordance with the User Manual. The User Manual should be delivered to the user for proper keeping.

⚠ Warning

- Please ask the special maintenance station for installation and repair. Water leakage, electric shocks or fire accidents might be caused from improper installation if you conduct the installation by your own.
- The installation should be conducted properly according to this manual. Water leakage, electric shocks or fire accidents might be caused from improper installation.
- Please make sure to install the air conditioner on the place where can bear the weight of the air conditioner. The air conditioner can't be installed on the grids such as the non-special metal burglar-proof net. The place with insufficient support strength might cause the dropdown of the machine, which may lead to personal injuries.
- The installation should be ensured against typhoons and earthquakes, etc. The installation unconformable to the requirements will lead to accidents due to the turnover of the machine.
- Specific cables should be used for reliable connections of the wirings. Please fix the terminal connections reliably to avoid the outside force applied on the cables from being impressed on the cables. Improper connections and fixings might lead to such accidents as heating or fire accidents.
- Correct shapes of wirings should be kept while the embossed shape is not allowed. The wirings should be reliably connected to avoid the cover and the plate of the electrical cabinet lipping the wiring. Improper installation might cause such accidents as heating or fire accidents.
- While placing or reinstalling the air conditioner, except the specific refrigerant (R410A), don't let the air go into the refrigeration cycle system. The air in the refrigeration cycle system might lead to the cracking or personal injuries due to abnormal high pressure of the refrigeration cycle system.
- During installation, please use the accompanied spare parts or specific parts. If not, water leakage, electric shocks, fire accidents or refrigerant leakage might be caused.
- Don't drain the water from the drainpipe to the waterspout where may exist harmful gases such as sulfureted gas to avoid the harmful gases entering into the room.
- During installation, if refrigerant leakage occurs, ventilation measures should be taken, for the refrigerant gas might generate harmful gases upon contacting the flame.
- After installation, check if any refrigerant leakage exists. If the refrigerant gas leaks in the room, such things as air blowing heaters and stoves, etc. may generate harmful gases.

Safety

- Don’t install the air conditioner at the places where the flammable gases may leak. In case the gas leakage occurs around the machine, such accidents as fire disasters may be caused.
- The drainpipe should be properly mounted according to this manual as to ensure the smooth drainage. In addition, heat preservation should be taken to avoid condensation. Improper drainpipe mounting might cause water leakage, which will get the articles at home wet.
- The refrigerant gas pipe and liquid pipe should be heat insulated to preserve heat. For inappropriate heat insulation, the water caused from the condensation will drop to get the article at home wet.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Children should be supervised to ensure that they do not play with the appliance.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.
- The appliances are not intended to be operated by means of an external timer or separate remote-control system.
- Keep the appliance and its cord out of reach of children less than 8 years.

⚠ Attention

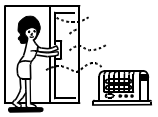
- The air conditioner should be effectively grounded. Electric shocks may occur if the air conditioner is ungrounded or inappropriately grounded. The wire for earthing shouldn’t be connected to the connections on the gas pipe, water pipe, lightning rod or telephone.
- The breaker for electricity leakage should be mounted. If not, accidents such as electric shocks may happen.
- The installed air conditioner should be checked for electricity leakage by being powered.
- After installation, all cassette concealed indoor units should be trial-tested. After the proper operation of the machine, other fitments can be made.
- If the ambient humidity bigger than 80%, when the water discharge hole be blocked or the filter becomes dirty, or airflow speed change, there maybe leads to condensing water drop down, and at the same time there maybe some drops of water spit out.

Safety

Attention

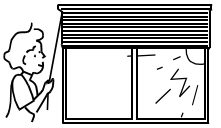
Notices during Operation

- It is not allowed to put any heating apparatus under the indoor units, for the heat may cause distortion of the units.
- Pay attention to the aeration condition to avoid anoxic symptom.



- Flammable apparatus should not be placed in the place where the air conditioner wind could reach directly, or incomplete burning of the apparatus may be caused.

- Check the mount table of the air conditioner for damage for a long period of operation. If placed on the damaged table, the unit may drop down causing damage.
- Plants and animals should not be put to the place where wind of the air conditioner blows directly, otherwise damage to them may be caused.
- It cannot be used for the preservation of food, living creature, precise instrument and artworks, etc, otherwise damage may occur.
- Use the fuse with proper capacity. Metal wires and copper wires, etc., may cause fire or other faults.
- Do not use water heater or like next to the indoor unit and the wired controller. Water/power leakage or short circuit may happen if the steam generating apparatus is working next to machine.
- Defrosting during heating
  To improve the heating effect, the outdoor unit will perform defrosting automatically when frost appears on the outdoor unit during heating (approximately 2-10 min). During defrosting, the fan of the indoor unit runs at a low speed or stops while that of the outdoor unit stops running.
- Power should be cut off when the air conditioner is left unused for a long period. Power will be consumed if the air conditioner is not powered off. The power switch of the outdoor unit switch should be powered on 12 hours in advance before operation to protect the unit after a long period of storage.
- 3-minute protection
  To protect the unit, compressor can be actuated with at least 3-minute delay after stopping.
- Close the window to avoid outdoor air getting in.
  Curtains or window shutters can be put down to avoid the sunshine.



- Do not touch the switch with the wet hand to avoid power shock.
- Stop running and switch off the manual power switch when cleaning the unit.
- During the operation of the control unit, don't switch off the manual power switch and the controller can be used. Please do not press the liquid crystal zone of controller to prevent damage
- Cleaning the unit with water may cause electric shock.

- Do not put flammable spray close to the air conditioner.
  Don't inject flammable spray towards the air conditioner, which may cause fire.
- Stopping fan rotation
  The unit which stops operating will actuate the fan for a 2-8 min swing every 30-60 minutes for protecting the unit while other indoor unit are in the operating state.
- This appliance is not intended for use by persons (including children) with reducedphysical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Maintenance

*Only when the air-condition is switched off and disconnected to the power supply can it be cleaned, or electric shock and injury may appear.

Cleaning the air outlet port and the shell:

⚠ Attention

- Don't use gasoline, benzene, diluents, polishing powder or liquid insecticide to clean them.
- Do not clean them with hot water of above 50℃ to avoid fading or distorting.

- Wipe them with soft dry cloth.
- Water or neutral dry cleanser is recommended if the dust cannot be removed.
- The Wind Deflector can be dismantled to clean (as below).

Cleaning Wind Deflector:

- Do not wipe the wind deflector with water forcibly to avoid falling off.

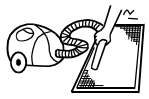
Cleaning air-condition:

⚠ Attention

- Don't rinse the air-condition with hot water of above 50℃ to avoid fading and distorting.
- Don't put the air-condition on the fire to dry to avoid catching fire.

- Wipe dust with water or dust collector.

(A) Wipe dust with dust collector.



(B) Clean it with soft bush in mild detergent if there is too much dust on it

Throw off the water and airing it in the cool dry condition.

Maintenance before and after Operating Season

Before Operating Season:

1. Please make the following checkup. If abnormal condition occurs, consult the after-service personnel.
   - There is no blockage in inlet port and outlet port of outdoor and indoor units.
   - The ground line and the wiring are in the proper state
2. After cleaning, the air-condition must be mounted.
3. Switch on to the power.

After Operating Season:

1. In sunny days, blowing operation can be performed for half a day to make the inside of machine dry.
2. Electrical power should be cut down to economize electricity, or the machine will still consume power.Air-condition and shell must be mounted after cleaning.

Fault Checkup

Please check the following when consigning repair service:

	Symptoms	Reasons
All these are not problems	• Water flow sound	Water flow sound can be heard when starting operation, during operation or immediately after stopping operation. When it starts to work for 2-3 minutes, the sound may become louder, which is the flowing sound of refrigerant or the draining sound of condensed water.
	• Cracking sound	During operation, the air conditioner may make the cracking sound, which is caused from the temperature changes or the slight dilation of heat exchanger.
	• Terrible smell in outlet air	The terrible smell, caused from walls, carpet, furniture, clothing, cigarette and cosmetics, attaches on the conditioner.
	• Flashing operating indicator	When switching it on again after power failure, turn on the manual power switch and the operating indicator flashes.
	• Awaiting indication	It displays the awaiting indication as it fails to perform refrigerating operation while other indoor units are in heating operation. When the operator set it to the refrigerating or heating mode and the operation is opposite to the setting, it displays the awaiting indication.
	• Sound in shutdown indoor unit or white steam or cold air	To prevent oil and refrigerant from blocking the shutdown indoor units, refrigerant flows in the short time and make the sounds of refrigerant flowing. Otherwise, when other indoor units performs heating operation, white steam may occur; during refrigerating operation, cold air may appear.
	• Clicking sound when switching the air condition on	When the conditioner is powered on, the sound is made due to the resetting of the expansion valve.
Please make another check.	• Start or stop working automatically	Check if it is in the state of Timer-ON and Timer-OFF.
	• Failure to work 	Check if there is a power failure. Check if the manual power switch is turned off. Check if the supply fuse and breaker are disconnected. Check if the protective unit is working. Check if refrigerating and heating functions are selected simultaneously with the awaiting indication on line control.
	• Bad cooling & heating effects	Check if air intake port and air outlet port of outdoor units are blocked. Check if the door and windows are open. Check if the filtering screen of air cleaner is blocked with sludge or dust. Check if the setting of wind quantity is at low wind. Check if the setting of operation is at the Fan Operation state. Check if the temperature setting is proper.

Under the following circumstances, immediately stop the operation, disconnect the manual supply switch and contact the after-service personnel.

- When buttons are inflexible actuated;
- When fuse and breaker have been burnt over and over;
- When there are foreign objects and water in the refrigerator;
- When it cannot still be operated after removing the operation of protective unit;
- When other abnormal conditions occur.

Installation Procedures

This manual cannot completely illustrate all the properties of the products you bought. Please contact the local Haier distribution center if you have any question or request.

Please use the standard tools according to the installation requirements.
Except the standard attached accessories of the these series' units ,pls. prepare other accessories according to this manual request.

1.Choose the suitable installation location. Indoor units should be installed in places with the environment of even circulation of cool and warm blows. The following places should be avoided.

※ Places with high salinity (beach), high sulfureted gas(such as the thermal spring regions where copper tubes and soft soldering are easy to be eroded), much oil(including mechanical oil) and steam; places where organic substance solvent is frequently used; places where machines generate the high frequency electromagnetic wave (abnormal condition will appear in the control system); places where there is high humidity exists near the door or windows (dew is easily formed); and places where the special sprayer is frequently used.

Indoor Units

1. The distance between wind outlet port and the ground should not be more than 2.2m.
2. Select appropriate places for installation where the outlet air can be spread to places all over the house and arrange proper locations for connecting pipes and lines as well as the drainpipe to the outdoor.
3. Ceiling construction must be hard enough to hold the weight of the unit.
4. Make sure that the connecting pipe, the drainpipe and connecting guide line can be put into walls to connect the outdoor units.
5. It is recommended to make the connecting pipe between the outdoor and indoor units and the drainpipe are as short as possible.
6. Please read the attached installation instruction of outdoor units for regulation of filling amount of refrigerant if necessary.
7. The connecting flange should be checked by users.
8. Those electrical appliances such as television, instruments, devices, artwork, piano, wireless equipment and other valuables should not be placed under the indoor unit as to prevent condensate from dropping into them and causing damage.

2.The following steps can be taken after selecting the installation place:

(1) Cut a hole on the wall and put the connecting pipe and connecting thread into the PVC, which is purchased at the local shop. With a slight downwards tilt towards the exterior, the gradient should be kept at least 1/100, as shown in Fig. 1.
(2) Before cutting the hole, check if there are pipes or reinforcing steel bars at the rear of the hole. Making the hole in the place where wires or pipes should be avoided.
(3) Fix the unit support and change the connection pipes,connecting the shapes of wires and drainpipes so as to let them go through the wall hole.
(4)When unit can be installed beside the wall , and be fixed with screw through the wall , the position as the Fig.2. When not, unit can be fixed with screw under the ground , the position as the Fig.3.

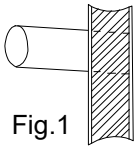


Fig.1

position of screw through the wall

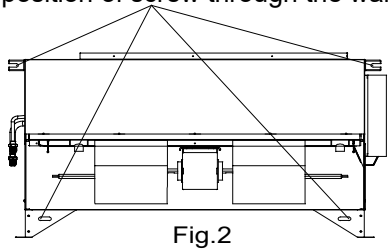


Fig.2

position of screw under the ground

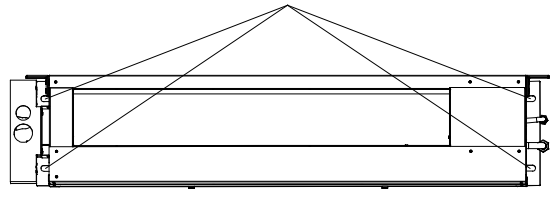
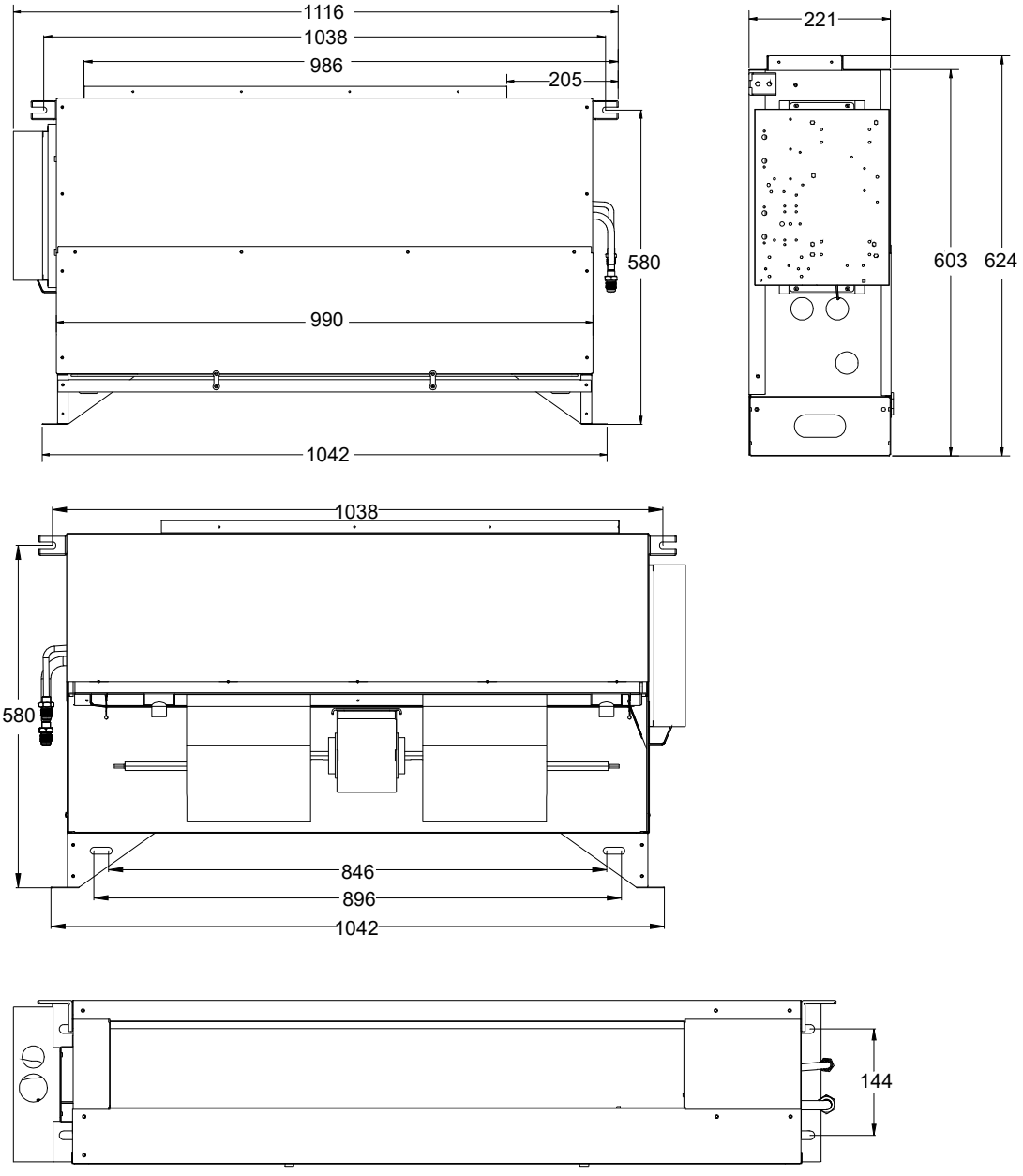


Fig.3

Installation Procedures

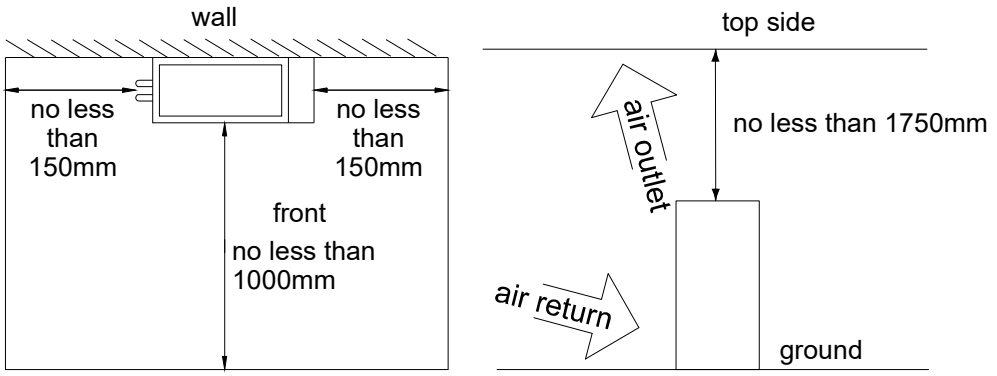
3.Relationship between locations of the unit and the hoisting studs (unit: mm).

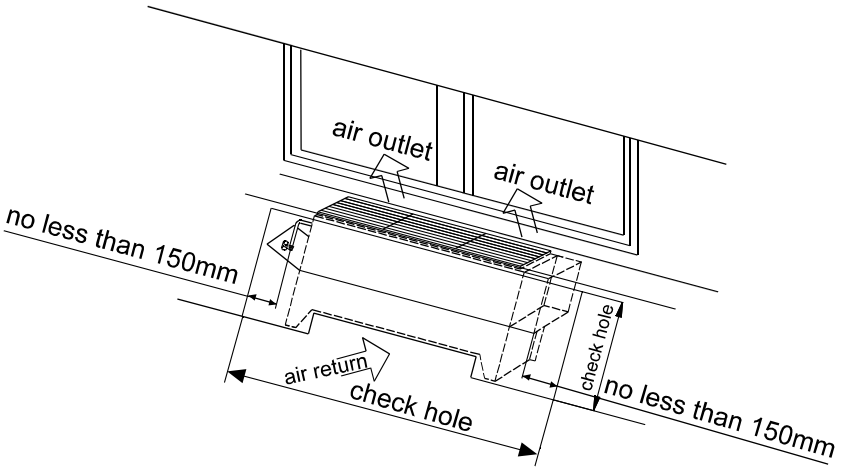


Cautions for Installation

1.The indoor units of this series are low static pressure air conditioners.
2.The indoor units should be installed with an inspection hole for maintenance.
3.When being installed as vertical type, the drainage pan with cushion must face to the outside and be with enough room for maintenance in case of removing the filter for cleaning.

Installation Procedures

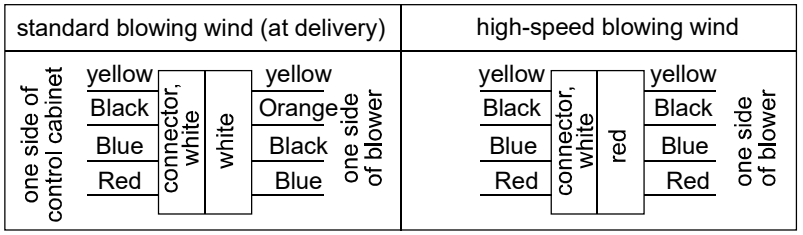




- The condensate drainage pipe should be over 1% gradient. And it should be wrapped with heat insulation pipe.

Choice of Blowing Wind from Blower (when using the high performance filter)

The blower is provided with a red terminal and a white terminal. The standard wind choice has been set before delivery. When the use of optional components, such as the high performance filter, causes the static pressure rising, change the connection of the connector mounted on the side of the control cabinet, as shown as follows.



Static Pressure Range
unit: Pa

Standard Static Pressure	Max. Static Pressure
0	30

Cautions:The indoor units of this series are low pressure duct type . Please contact the professional design and after-sales service people for the following items: calculate the heat load and the external static pressure, choose the correct return outlet ,air return pipe , air discharging outlet and air discharging pipe .

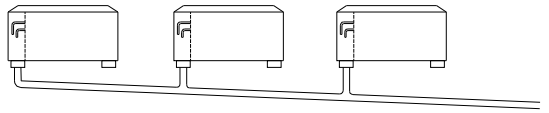
Installation Procedures

⚠ Attention

- For normal drainage, the water drainage piping should be connected according to the installation manual. Heat insulation should be performed to avoid condensation. Improper pipe connection may cause water going into the machine.

Requirements:

- Heat insulating treatment should be made for the water drainpipes of the indoor units.
- Heat preservation should be made for the connection with the indoor units. Improper heat preservation may cause condensing.
- The drainpipe should be designed with a down gradient of 1/100. The midway of the elbow shouldn't be made in S shape. Or abnormal noise may be caused.
- The lateral length of the drainpipe should be kept within 20m.
- The central piping can be connected according the following figure.
- Don't apply external force to the connection of drainpipes.



down gradient of over 1/100

Piping Materials & Heat Insulating Materials

As to prevent condensation, heat insulating treatment should be performed. The heat insulating treatment for piping should be done respectively.

Piping Material	Hard PVC tube VP31.5mm (inner bore)
Heat Insulating Material	Vesicant polythene thickness: over 7mm

Hose

The drainage hose is made of Ø 19.05mm (3/4") PVC tube, which can adjust the eccentricity and the angle of the hard PVC tube.

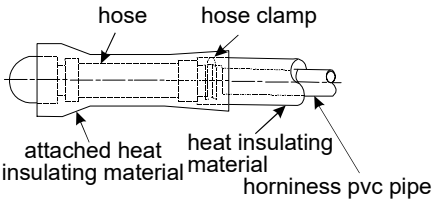
- Stretch the hose directly to make connections as to avoid distortion. The soft end of the hose should be positioned with a clamp.
- The hose should be used in the horizon direction.

Heat Insulating Treatment:

- Wrap the connection between the clamp and the root segment of the indoor unit without any gap with heat insulating materials as shown in the drawing

Confirming water drainage

During the test run, check the condition of water drainage and make sure that there is no leakage on the connection of piping, which should also be performed during the winter.



Tubing Permissible Length & Height Difference

Please refer to the attached manual of outdoor units.

Installation Procedures

Tubing Materials & Specifications

Model		AE072/092MLERA	AE122/162/182MLERA	AE242MLERA
Tubing Size (mm)	Gas pipe	Ø9.52	Ø12.7	Ø15.88
	Liquid pipe	Ø6.35	Ø6.35	Ø9.52

Refrigerant Filling Amount

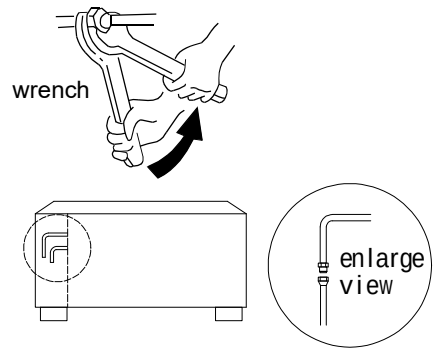
Add the refrigerant according to the installation instruction of outdoor unit. The addition of R410A refrigerant must be performed with a measure gage to ensure the specified amount while compressor failure can be caused by filling too much or little refrigerant.

Connecting Procedures of Refrigerant Tubing

Proceed the flare tube connecting operation to connect all the refrigerant tubes.

- Dual wrenches must be used in the connection of indoor unit tubing.
- Mounting torque refers to the following table

Outer Diameter of Tubing (mm)	Mounting Torque (N-m)	Increase mounting Torque (N-m)
Ø6.35	11.8(1.2kgf-m)	13.7(1.4kgf-m)
Ø9.52	24.5(2.5kgf-m)	29.4(3.0kgf-m)
Ø12.70	49.0(5.0kgf-m)	53.9(5.5kgf-m)
Ø15.88	78.4(8.0kgf-m)	98.0(10.0kgf-m)



Cutting and Enlarging

Cutting or enlarging pipes should be proceeded by installation personnel according to the operating criterion if the tube is too long or flare opening is broken.

Vacuumizing

Vacuumize from the stop valve of outdoor units with vacuum pump. Refrigerant sealed in indoor machine is not allowed to use for vacuumization.

Open All Valves

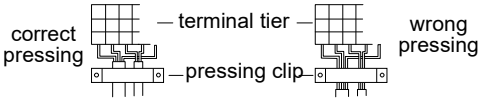
Open all the valves of outdoor units. [NB: oil balancing stop valve must be shut up completely when connected one main unit.]

Checkup for Air Leakage

Check if there is any leakage at the connecting part and bonnet with hydrophone or soapsuds.

Connecting

1. Connecting circular terminals:
   The connecting method of circular terminal is shown in the Fig. Take off the screw, connect it to the terminal tier after heading it through the ring at the end of the lead and then tighten it.
2. Connecting straight terminals:
   The connection methods for the circular terminals are shown as follows: loosen the screw before putting the line terminal into the terminal tier, tighten the screw and confirm it has been clamped by pulling the line gently.
3. Pressing connecting line
   After connecting line is completed, press the connecting line with clips which should press on the protective sleeve of the connecting line.



Electrical Wiring

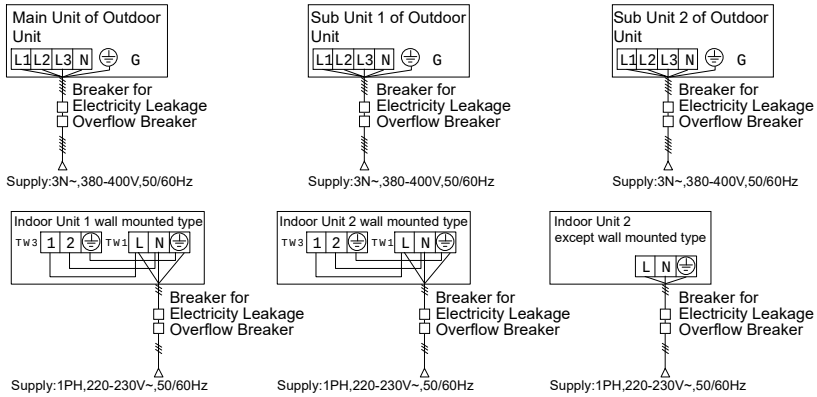
⚠ Warning

- Electrical construction should be made with specific mains circuit by the qualified personnel according to the installation instruction. Electric shock and fire may be caused if the capacity of power supply is not sufficient.
- During arranging the wiring layout, specified cables should be used as the mains line, which accords with the local regulations on wiring. Connecting and fastening should be performed reliably to avoid the external force of cables from transmitting to the terminals. Improper connection or fastness may lead to burning or fire accidents.
- There must be the ground connection according to the criterion. Unreliable grounding may cause electrical shocks. Do not connect the grounding line to the gas pipe, water pipe, lightening rod and telephone line.

⚠ Attention

- Only copper wire can be used. Breaker for electric leakage should be provided, or electric shock may occur.
- The wiring of the mains line is of Y type. The power plug L should be connected to the live wire and plug N connected to null wire while ⏚ should be connected to the ground wire. For the type with auxiliary electrically heating function, the live wire and the null wire should not be misconnected, or the surface of electrical heating body will be electrified. If the power line is damaged, replace it by the professional personnel of the manufacturer or service center.
- The power line of indoor units should be arranged according to the installation instruction of indoor units.
- The electrical wiring should be out of contact with the high-temperature sections of tubing as to avoid melting the insulating layer of cables, which may cause accidents.
- After connected to the terminal tier, the tubing should be curved into be a U-type elbow and fastened with the pressing clip.
- Controller wiring and refrigerant tubing can be arranged and fixed together.
- The machine can't be powered on before electrical operation. Maintenance should be done while the power is shut down.
- Seal the thread hole with heat insulating materials to avoid condensation.
- Signal line and power line are separately independent, which can't share one line. [Note: the power line, signal line are provided by users. Parameters for power lines are shown as below: 3×(1.0-1.5) mm^2; parameters for signal line: 2×(0.75-1.25)mm^2(shielded line)]
- 5 butt lines (1.5mm) are equipped in the machine before delivery, which are used in connection between the valve box and the electrical system of the machine. The detailed connection is displayed in the circuit diagram.

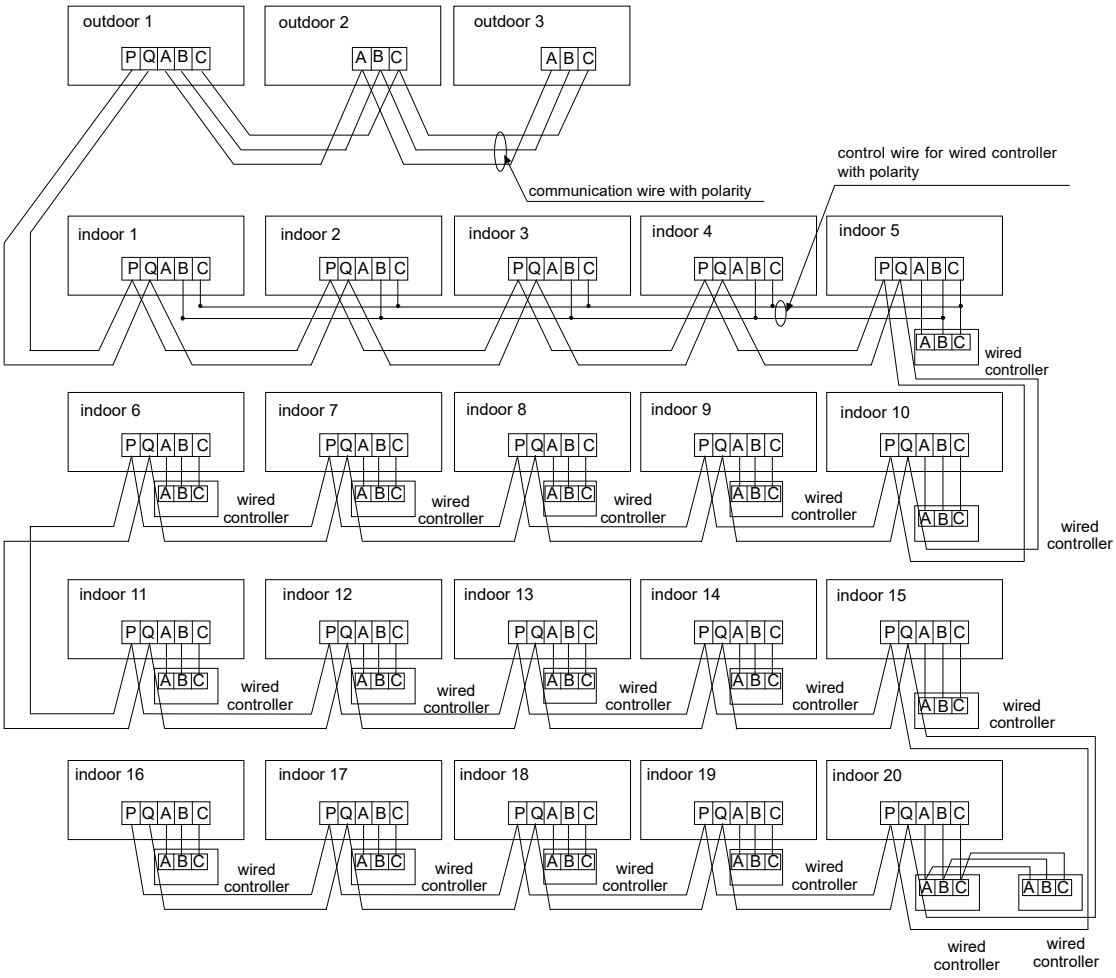
Supply Wiring Drawing



- Indoor units and outdoor units should be connected to the power source separately. Indoor units must share one single electrical source, but its capacity and specifications should be calculated. Indoor & outdoor units should be equipped with the power leakage breaker and the overflow breaker.

Electrical Wiring

Signal Wiring Drawing



Outdoor units are of parallel connection via three lines with polarity. The main unit, central control and all indoor units are of parallel connection via two lines without polarity.

There are three connecting ways between line control and indoor units:

A. One line control controls multiple units, i.e. 2-16 indoor units, as shown in the above figure, (1-5 indoor units). The indoor unit 5 is the line-controlled main unit and others are the ine-controlled sub units. The remoter control and the main unit (directly connected to the indoor unit of line control) are connected via three lines with polarity. Other indoor units and the main unit are connected via two lines with polarity.SW01 on the main unit of line control is set to 0 while SW01 on other sub units of line control are set to 1, 2, 3 and so on in turn. (Please refer to the code setting at page 15)

B. One line control controls one indoor unit, as shown in the above figure(indoor unit 6-19). The indoor unit and the line control are connected via three lines with polarity.

C. Two line controls control one indoor unit, as shown in the figure (indoor unit 20). Either of the line controls can be set to be the master line control while the other is set to be the auxiliary line control. The master line control and indoor units, and the master and auxiliary line controls are connected via three lines with polarity.

When the indoor units are controlled by the remote control, switch over the modes by Switching Mode of Line-Controlled Main Unit/ Line-Controlled Sub Units/ Remote-Controlled Types. The signal terminals needn't to be equipped with wires and connected to the line control.

Electrical Wiring

The combination of multiple indoor units can be controlled by wired controller or remote controller.

※ Switching Mode of Line-Controlled Main Unit/ Line-Controlled Sub Units/ Remote-Controlled Types can be used for switching over ※

Setting Mode / Socket/Dip switch	Master Remote Wired Controller	1# Remote Wired Controller	Wireless Remote Controller
SW01-[1][2][3][4]	All OFF	[0][0][0][1]	All OFF
CN21 Socket	Null	Null	Connect to remote receiver
Terminal Block (Control)	A,B,C connect with Wireless Remote Controller	B,C connect with Wireless Remote Controller	A,B,C Null

Note:AE*MLERA models are set to wired controlled type before delivery

The wiring for the power line of indoor unit, the wiring between indoor and outdoor units as well as the wiring between indoor units:

Items / Total Current of Indoor Units(A)	Cross Section (mm^2)	Length (m)	Rated Current of Overflow Breaker(A)	Rated Current of Power Leakage Breaker (A) Leaking Current(mA) Operating Period (S)	Cross Sectional Area of Signal Line	
					Outdoor -indoor (mm^2)	Indoor -indoor (mm^2)
〈10	2	20	20	20 A,30 mA,0.1S or below	2 cores×0.75-2.0 mm^2 shielded line	
⩾10 and <15	3.5	25	30	30 A,30 mA,0.1S or below		
⩾15 and <22	5.5	30	40	40 A,30 mA,0.1S or below		
⩾22 and <27	10	40	50	50 A,30 mA,0.1S or below		

※ The electrical power line and signal lines must be fastened tightly.
※ Every indoor unit must have the ground connection.
※ The power line should be enlarged if it exceeds the permissible length.
※ Shielded lays of all the indoor and outdoor units should be connected together, with the shielded lay at the side of signal lines of outdoor units grounded at one point.
※ It is not permissible if the whole length of signal line exceeds 1000m.

Signal Wiring of Wired controller

Length of Signal Line (m)	Wiring Dimensions
⩽250	0.75mm^2 × 3 core shielding line

※ The shielding lay of the signal line must be grounded at one end.
※ The total length of the signal line shall not be more than 250m.

Code Setting

In the following table, 1 is ON, 0 is OFF.

SW01 is used for indoor unit group control address setting and capacity selection. CN44,CN42,CN43 are used for indoor unit type selection. CN41 is used for addressing by wired controller. SW03 is used for indoor unit address setting (including physical address and central address). SW07 is used for running mode setting. J1-J8 are used for fan motor setting.

Electrical Wiring

(1) Description of SW01

SW01_1 SW01_2 SW01_3 SW01_4	wired control address	[1]	[2]	[3]	[4]	wired control address
		0	0	0	0	master unit in group control
		0	0	0	1	slave unit 1 in group control
		0	0	1	0	slave unit 2 in group control
		0	0	1	1	slave unit 3 in group control
		…	…	…	…	……
		1	1	1	1	slave unit 15 in group control
SW01_5 SW01_6 SW01_7 SW01_8	indoor unit capacity	[5]	[6]	[7]	[8]	indoor unit capacity
		0	0	0	0	0.6HP
		0	0	0	1	0.8HP
		0	0	1	0	1.0HP
		0	0	1	1	1.2HP
		0	1	0	0	1.5HP
		0	1	0	1	1.7HP
		0	1	1	0	2.0HP
		0	1	1	1	2.5HP
		1	0	0	0	3.0HP
		1	0	0	1	3.2HP
		1	0	1	0	4.0HP
		1	0	1	1	5.0HP
		1	1	0	0	6.0HP
		1	1	0	1	8.0HP
		1	1	1	0	10.0HP
		1	1	1	1	15.0HP

(2) CN41,CN42,CN43,CN44 plug explanation

CN41	Set address by wired controller	0	set the address with wired controller is unavailble(default)			
		1	set the address with wired controller is availble(When SW03_1 is off)			
CN42 CN43 CN44	indoor type	CN 44	CN 42	CN 43	indoor type	
		0	0	0	normal indoor (default)	
		0	0	1	wall mounted	
		0	1	0	Fresh air unit	
		0	1	1	OEM(HRV)	
		1	0	0	Ceiling floor	
		1	0	1	reserve (general indoor unit)	
		1	1	0	reserve (general indoor unit)	
		1	1	1	reserve (general indoor unit)	

Note1

1.0 stands for open circuit,1 stands for socket short circuit connection

2.CN41 must be in short circuit, and SW03_1 at OFF when addressing by wired controller

3.Using wired controller modifying physical address or central control address, the other corresponding address can change automatically, meeting as follows:
Central control address equals to physical address plus 0 or 64

Electrical Wiring

(3) Description of SW03

SW03_1	Manner of set address	0	Set the address with wired controller or automatism(default)							
		1	Set the address with dip switch							
SW03_2 ~ SW03_8	Set the Communication and Central control address with dip switch (*Note 2)	[2]	[3]	[4]	[5]	[6]	[7]	[8]	Communication address	Central control address
		0	0	0	0	0	0	0	0# (default)	0# (default)
		0	0	0	0	0	0	1	1#	1#
		0	0	0	0	0	1	0	2#	2#
		…	…	…	…	…	…	…	…	…
		0	1	1	1	1	1	1	63#	63#
		1	0	0	0	0	0	0	0#	64#
		1	0	0	0	0	0	1	1#	65#
		1	0	0	0	0	1	0	2#	66#
		…	…	…	…	…	…	…	…	…
		1	1	1	1	1	1	1	63#	127#

*Note 2
1. The address must be set by dip switch if central control is used.
2. SW03-2=OFF, central control address = physical address +0
   SW03-2=ON, central control address= physical address +64
3. The address must be set by dip switch if 0010451181A and 0151800113 are used together.

(4) Description of SW07

SW07_1 SW07_2	Tdiff correction valve in AUTO mode	[1]	[2]	Tdiff correction valve in AUTO mode
		0	0	Tdiff:0
		0	1	Tdiff:1
		1	0	Tdiff:2
		1	1	Tdiff:3(default)
SW07_3	26℃lock	1		normally, without 26 degree lock function(defaulted)
		0		26 degree lock function is availble(In cooling mode, though set temp. is below 26 degree,count as 26 degree. In heating mode, though set temp. exceeds 20 degree, count as 20 degree)
SW07_4 SW07_5	In heating, inlet air temp. Tai correction valve Tcomp2	[4]	[5]	Inlet air temp. Tai correction valve Tcomp2(eeprom)
		0	0	Tai correction valve=12℃
		0	1	Tai correction valve=4℃
		1	0	Tai correction valve=8℃
		1	1	Tai correction valve=0℃(default)
SW07_6	room card. OEM HRV linkage	1		room card function is unavailble, HRV linkage function is unavailble(default)
		0		room card function and HRV linkage function is availble
SW07_7 SW07_8	operation mode changeover of wired controller	[7]	[8]	Function
		0	0	[FAN] [COOL] [DRY] [HEAT]
		0	1	[FAN] [COOL] [DRY]
		1	0	[FAN] [COOL] [DRY] [HEAT] [ELECTRIC-HEAT]
		1	1	[AUTO] [FAN] [COOL] [DRY] [HEAT](default)

Electrical Wiring

(5) Description of jump wire:SW08(1:ON, 2:OFF)

J1	fix air volume	1	normal mode(default)
		0	Air volume is fixed at high speed(for duct type)
J2	Run at Mid speed when Hi Speed is selected	1	normal mode(default)
		0	Run at Mid speed when Hi Speed is selected
J3	Quiet running mode	1	normal mode(default)
		0	Quiet running mode
J4	This Indoor has highest priority	1	normal mode(default)
		0	This Indoor has highest priority (the target degree of superheat reduce 1 degree when Tao is between 10 and 43 degree)
J5	Indoor and outdoor 90 meters drop selection	1	normal mode(default)
		0	high drop
J6	reserved	--	--
J7	indoor installation height selection	1	normal mode(default)
		0	Above 2.7m, uses next higher fan speed(indoor fan speed improve 1 grade)
J8	twin energy source	1	normal mode-TES is unavailable (default)
		0	TES is available

Note: 0 indicates disconnection, 1 indicates short circuit.
Default position:
SW01: depend on unit capacity
CN41, CN42, CN43: open circuit.
CN44: open circuit except of floor ceiling unit
SW07: all ON
J1-J8: all ON

(6) Jumper explanation

a) EEV operation manually (CN27, CN29)
CN27: short circuit CN27 2 seconds continuously, EEV is openned fully..
CN29: short circuit CN29 2 seconds continuously, EEV is closed fully

b) time-short and self-check (CN28)
Short circuit CN28 2 seconds after power ON, process into time-short
Short circuit CN28 before power ON, process into self-check.

Code setting of wired controller

Function switches

Code	Switch status	Function description	Default setting	Remarks
SW1	ON	Auxiliary wired controller	OFF	
	OFF	Master wired controller		
SW2	ON	Common wired controller	ON	
	OFF	New fan-only has refrigerating, heating, and air supplying modes		
SW3	ON	Display ambient temperature	OFF	
	OFF	Do not display ambient temperature		
SW4	ON	26℃ lock disabled	ON	
	OFF	26℃ lock enabled		
SW5	ON	Collect ambient temperature of wired controler	ON	
	OFF	Collect ambient temperature of PCB		
SW6	ON	Power failure memory disabled	OFF	
	OFF	Power failure memor enabled		
SW7	ON	Temperature sensor 4k7 enabled	ON	Betewwn SW7 and SW8,one and only one must be ON for any given period
	OFF	Temperature sensor 4k7 disabled		
SW8	ON	Temperature sensor 5k1 enabled	OFF	
	OFF	Temperature sensor 5k1 disabled		

Note: ON indicates short circuit; OFF indicates disconnection.

The difference between master and slave wired controller

Topic	Master controller	Slave controller
Function	all function	ON/OFF, Mode, Fan speed, Temp, Swing function only.

Test Run & Fault Code

Before Test Run

- Before switching it on, test the supply terminal tier (L, N terminals) and grounding points with 500V megaohm meter and check if the resistance is above 1ＭΩ. It can't be operated if it is below 1ＭΩ.
- Connect it to the power supply of outdoor units to energize the heating belt of the compressor. To protect the compressor at startup, power it on 12 hours prior to the operation.
  Check if the arrangements of the drainpipe and connection line are correct.
  The drainpipe shall be placed at the lower part while the connection line placed at the upper part.
  Heat preservation measures should be taken such as winding the drainpipe esp. in the indoor units with heating insulating materials.
  The drain pipe should be made a slope type to avoid protruding at the upper part and concaving at the lower part on the way.

Checkup of Installation

- □ check if the mains voltage is matching
- □ check if there is air leakage at the piping joints
- □ check if the connections of mains power and indoor & outdoor units are correct
- □ check if the serial numbers of terminals are matching
- □ check if the installation place meets the requirement
- □ check if there is too much noise
- □ check if the connecting line is fastened
- □ check if the connectors for tubing are heat insulated
- □ check if the water is drained to the outside
- □ check if the indoor units are positioned

Ways of Test Run

Do ask the installation personnel to make a test run. Take the testing procedures according to the manual and check if the temperature regulator works properly.
When the machine fails to start due to the room temperature, the following procedures can be taken to do the compulsive running. The function is not provided for the type with remote control.

- Set the wired controller to refrigerating/heating mode, press "ON/OFF" button for 5 seconds to enter into the compulsive refrigerating/heating mode. Repress "ON/OFF" button to quit the compulsive running and stop the operation of the air conditioner.

Fault Remedies

When any fault appears, consult the fault code of line control or the flashing times for LED5 of computer panel of indoor units/health lamp of receiving window of remote control and find out the faults as shown in the following table to remove all faults.
Indoor Unit Faults

Wired Controller Fault Code	PCB LED5(Indoor Units)/ Receiving Window Health Lamp (Remote Controller)	Fault Descriptions
01	1	Fault of indoor unit ambient temp. transducer TA
02	2	Fault of indoor unit pipe temp. transducer TC1
03	3	Fault of indoor unit pipe temp. transducer TC2
04	4	Fault of indoor unit dual heat source temp. transducer
05	5	Fault of indoor unit EEPROM
06	6	Fault of communication between indoor & outdoor units
07	7	Fault of communication between indoor unit and wired control
08	8	Fault of indoor unit water drainage
09	9	Fault of duplicate indoor unit address
0A	10	Fault of duplicate central control address
0C	12	Fault of above zero , 50Hz
Outdoor Unit Code	20	Corresponding faults of outdoor units

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