9. Convertible Type Indoor Unit

9.1 Features

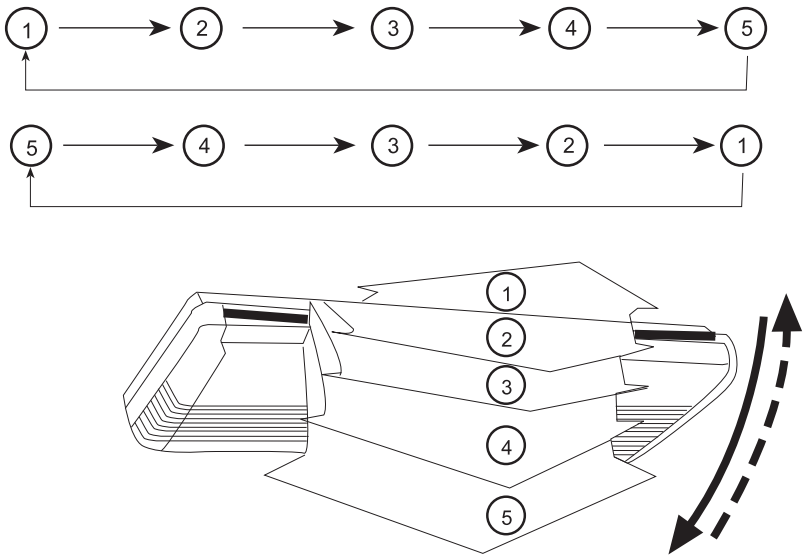
AC092MCERA
AC122MCERA
AC162MCERA
AC182MCERA
AC242MCERA

AC282MFERA
AC302MFERA
AC382MFERA
AC482MFERA

Ultra thin unit, only thick 199mm
The convertible unit adopts a double drain pan design. The unit body of AV09-24 is only thick 199mm. Slim, elegant and beautiful, supply more decoration to indoor.
The convertible indoor unit can be used in the commercial building, the hotel, the hospital, or the house.

Wide angle airflow
100° wide angle louvers and 70° wide angle blades design to make a precise control of the airflow. It averagely distributes the comfortable air to every corner of the room.

Multiple air distribution direction
Every time press the SWING button, the flap will be at the following different position:



Long life and high efficiency air filter
Behind the front grille, you can find the Standard air filter in the unit. It is long life and high efficiency, which will absorb the dust in the air and make the unit supply much purer air.

9.2 Specification

MODEL			AC092MCERA	AC122MCERA	AC162MCERA
Power supply		Ph-V-Hz	1,220~230,50/60	1,220~230,50/60	1,220~230,50/60
Cooling	Capacity	kBtu/h	9.6	12.3	15.4
	Capacity	kW	2.8	3.6	4.5
	Power input	W	100	100	100
	Current	A	0.3	0.3	0.3
Heating	Capacity	kBtu/h	10.9	13.6	17.1
	Capacity	kW	3.2	4	5
	Power input	W	100	100	100
	Current	A	0.3	0.3	0.3
	Heating capacity at low temp.	kW	2.5	3.2	4
Operating current		A	0.3	0.3	0.3
Power consumption		kW	0.1	0.1	0.1
Indoor motor	Brand		Broad ocean	Broad ocean	Broad ocean
	Model		Y6S420A84	Y6S420A84	Y6S420A84
	Type		AC	AC	AC
	Insulation class		B	B	B
	IP class		IP20	IP20	IP20
	Power input	W	94	94	94
	Power output	W	28	28	28
	Capacitor	μF	2μF /450v	2μF /450v	2μF /450v
	Speed (High/Middle/Low)	rpm	1110/1005/745	1110/1005/745	1110/1005/745
Indoor fan	Brand		Haier	Haier	Haier
	Type		Centrifugal	Centrifugal	Centrifugal
	Quantity		2	2	2
Indoor coil	a. Number of rows		2	3	3
	b. Tube pitch (a)×row pitch (b)	mm	21×13.3	25×21.65	25×21.65
	c. Fin spacing	mm	1.3	1.75	1.75
	d. Fin type (code)		Hydrophilic aluminum		
	e. Tube outside dia. and type	mm	Φ7 Inner groove tube	Φ9.52 Inner groove tube	
	f. Coil length×height×width	mm	797×252×6.6	747×250×66	747×250×66
	g. Number of circuits		3	3	3

MODEL			AC092MCERA	AC122MCERA	AC162MCERA
Cabinet	Cabinet coating type		Plastic	Plastic	Plastic
	Cabinet salt spray test duration	Hour	/	/	/
	Control box IP class		IP20	IP20	IP20
Construction	Sheet metal thickness		/	/	/
	Drain pan material		PS	PS	PS
	Drain pan insulation		20	20	20
	Drain pump option		No	No	No
	Branch outlet option		No	No	No
Indoor wall	Material		Plastic	Plastic	Plastic
	Thickness	mm	/	/	/
	Double or single skin		Single	Single	Single
Air filter	Material		PP	PP	PP
	Mesh		100	100	100
	Pressure drop	Pa	5	5	5
Piping dimension	Liquid pipe	mm	6.35	6.35	6.35
	Gas pipe	mm	9.52	12.7	12.7
	Drain hose	mm	20	20	20
Fresh air dimension		mm	/	/	/
Sound pressure level (H/M/L)		dB (A)	38/35/33	38/35/33	40/37/35
Sound power level (H/M/L)		dB (A)	51/48/46	51/48/46	53/50/48
Standard static pressure		Pa	/	/	/
Indoor air flow (H/M/L)		m^3/h	800/710/580	800/710/580	800/710/580
Dimension (W*H*D)		mm	990*199*655	990*199*655	990*199*655
Packing (W*H*D)		mm	1160*290*743	1160*290*743	1160*290*743
Net weight		kg	28.3	28.3	28.3
Gross weight		kg	34.4	36.4	36.4
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.					

MODEL			AC182MCERA	AC242MCERA	AC282MFERA
Power supply		Ph-V-Hz	1,220~230,50/60	1,220~230,50/60	1,220~230,50/60
Cooling	Capacity	kBtu/h	19.1	24.2	27.3
	Capacity	kW	5.6	7.1	8
	Power input	W	100	100	200
	Current	A	0.3	0.3	1.00
Heating	Capacity	kBtu/h	21.5	27.3	30.7
	Capacity	kW	6.3	8	9
	Power input	W	100	100	200
	Current	A	0.3	0.3	1.00
	Heating capacity at low temp.	kW	5	6.3	7.1
Operating current		A	0.3	0.3	1.8
Power consumption		kW	0.1	0.1	0.4
Indoor motor	Brand		Broad ocean	Broad ocean	Broad ocean
	Model		Y6S420A84	Y6S420A84	Y6S419C09L
	Type		AC	AC	AC
	Insulation class		B	B	B
	IP class		IP20	IP20	IP20
	Power input	W	94	94	188
	Power output	W	28	28	105
	Capacitor	μF	2μF /450v	2μF /450v	5μF /450v
	Speed (High/Middle/Low)	rpm	1110/1005/745	1110/1005/745	1120/1040/900/820
Indoor fan	Brand		Haier	Haier	Haier
	Type		Centrifugal	Centrifugal	Centrifugal
	Quantity		2	2	4
Indoor coil	a. Number of rows		3	3	3
	b. Tube pitch (a)×row pitch (b)	mm	25×21.65	25×21.65	21×13.3
	c. Fin spacing	mm	1.75	1.75	1.3
	d. Fin type (code)		Hydrophilic aluminum		
	e. Tube outside dia. and type	mm	Φ9.52 Inner groove tube		Φ7 Inner groove tube
	f. Coil length×height×width	mm	747×250×66	747×250×66	1070×252×40
	g. Number of circuits		3	3	3

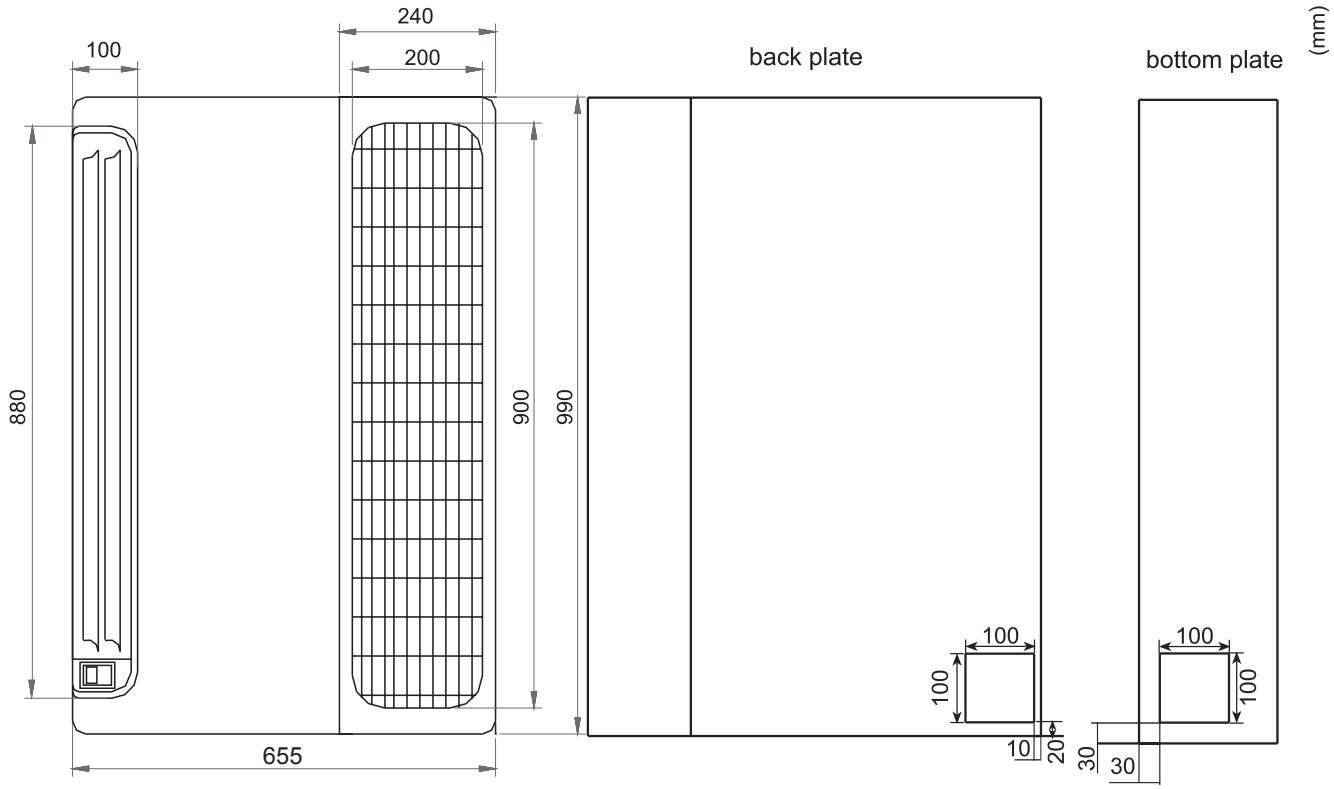
MODEL			AC182MCERA	AC242MCERA	AC282MFERA
Cabinet	Cabinet coating type		Plastic	Plastic	Plastic
	Cabinet salt spray test duration	Hour	/	/	/
	Control box IP class		IP20	IP20	IP20
Construction	Sheet metal thickness		/	/	/
	Drain pan material		PS	PS	PS
	Drain pan insulation		20	20	20
	Drain pump option		No	No	No
	Branch outlet option		No	No	No
Indoor wall	Material		Plastic	Plastic	Plastic
	Thickness	mm	/	/	/
	Double or single skin		Single	Single	Single
Air filter	Material		PP	PP	PP
	Mesh		100	100	100
	Pressure drop	Pa	5	5	5
Piping dimension	Liquid pipe	mm	6.35	9.52	9.52
	Gas pipe	mm	12.7	15.88	15.88
	Drain hose	mm	20	20	25
Fresh air dimension		mm	/	/	Φ200
Sound pressure level (H/M/L)		dB (A)	40/37/35	40/37/35	43/40/38
Sound power level (H/M/L)		dB (A)	53/50/48	53/50/48	56/53/51
Standard static pressure		Pa	/	/	/
Indoor air flow (H/M/L)		m^3/h	800/710/580	800/710/580	2040/1820/1610
Dimension (W*H*D)		mm	990*199*655	990*199*655	1580*240*700
Packing (W*H*D)		mm	1160*290*743	1160*290*743	1713*335*793
Net weight		kg	28.3	28.3	50
Gross weight		kg	36.4	36.4	57
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.					

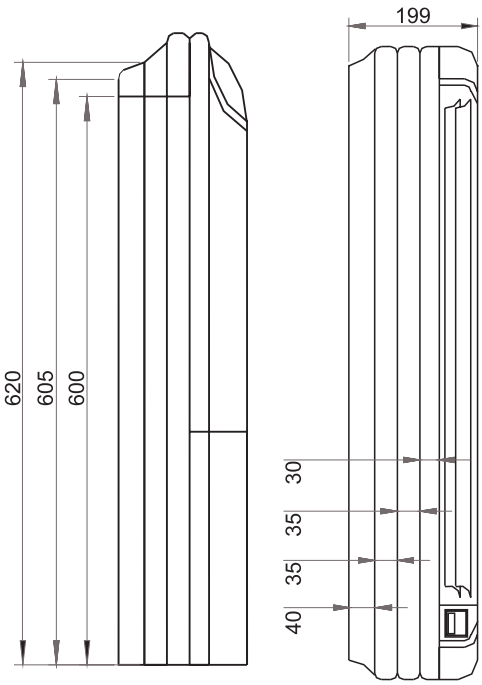
MODEL			AC302MFERA	AC382MFERA	AC482MFERA
Power supply		Ph-V-Hz	1,220~230,50/60	1,220~230,50/60	1,220~230,50/60
Cooling	Capacity	kBtu/h	30.7	38.2	47.8
	Capacity	kW	9	11.2	14
	Power input	W	200	400	400
	Current	A	1.00	1.8	1.8
Heating	Capacity	kBtu/h	34.1	42.7	54.6
	Capacity	kW	10	12.5	16
	Power input	W	200	400	400
	Current	A	1.00	1.8	1.8
	Heating capacity at low temp.	kW	8	10	12.5
Operating current		A	1.8	1.8	1.8
Power consumption		kW	0.4	0.4	0.4
Indoor motor	Brand		Broad ocean	Broad ocean	Broad ocean
	Model		Y6S419C09L	YDK-150S42023-01	YDK-150S42023-01
	Type		AC	AC	AC
	Insulation class		B	B	B
	IP class		IP20	IP20	IP20
	Power input	W	188	263	263
	Power output	W	105	105	105
	Capacitor	μF	5μF /450v	5μF /450v	5μF /450v
	Speed (High/Middle/Low)	rpm	1120/1040/900/820	1395/1245/1090/980	1395/1245/1090/980
Indoor fan	Brand		Haier	Haier	Haier
	Type		Centrifugal	Centrifugal	Centrifugal
	Quantity		4	4	4
Indoor coil	a. Number of rows		3	3	3
	b. Tube pitch (a)×row pitch (b)	mm	21×13.3	21×13.3	21×13.3
	c. Fin spacing	mm	1.3	1.3	1.3
	d. Fin type (code)		Hydrophilic aluminum		
	e. Tube outside dia. and type	mm	Φ7.0 Inner groove tube		
	f. Coil length×height×width	mm	1070×252×40	1350×250×40	1350×250×40
	g. Number of circuits		3	6	6

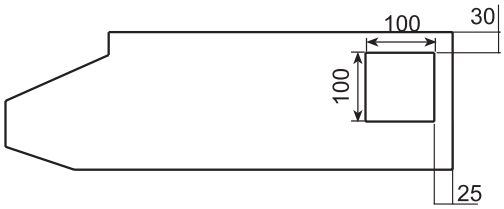
MODEL			AC302MFERA	AC382MFERA	AC482MFERA
Cabinet	Cabinet coating type		Plastic	Plastic	Plastic
	Cabinet salt spray test duration	Hour	/	/	/
	Control box IP class		IP20	IP20	IP20
Construction	Sheet metal thickness		/	/	/
	Drain pan material		PS	PS	PS
	Drain pan insulation		20	20	20
	Drain pump option		No	No	No
	Branch outlet option		No	No	No
Indoor wall	Material		Plastic	Plastic	Plastic
	Thickness	mm	/	/	/
	Double or single skin		Single	Single	Single
Air filter	Material		PP	PP	PP
	Mesh		100	100	100
	Pressure drop	Pa	5	5	5
Piping dimension	Liquid pipe	mm	9.52	9.52	9.52
	Gas pipe	mm	15.88	15.88	15.88
	Drain hose	mm	25	25	25
Fresh air dimension		mm	Φ200	Φ200	Φ200
Sound pressure level (H/M/L)		dB (A)	43/40/38	46/42/38	46/42/38
Sound power level (H/M/L)		dB (A)	56/53/51	59/55/51	59/55/51
Standard static pressure		Pa	/	/	/
Indoor air flow (H/M/L)		m^3/h	2040/1820/1610	2040/1820/1610	2040/1820/1610
Dimension (W*H*D)		mm	1580*240*700	1580*240*700	1580*240*700
Packing (W*H*D)		mm	1713*335*793	1713*335*793	1713*335*793
Net weight		kg	50	54	54
Gross weight		kg	57	61	61
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.					

9.3 Dimension

AC092-242MCERA

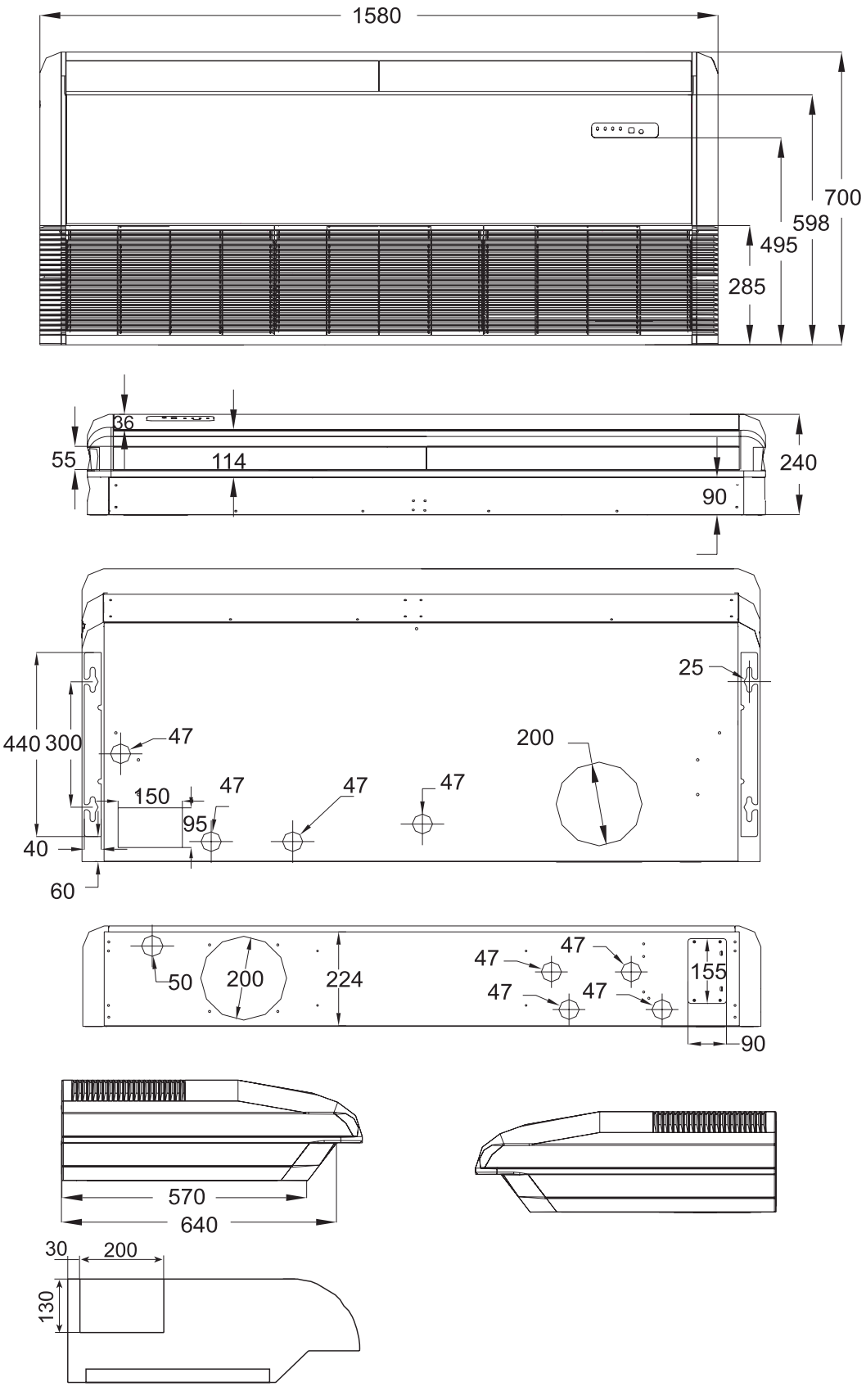




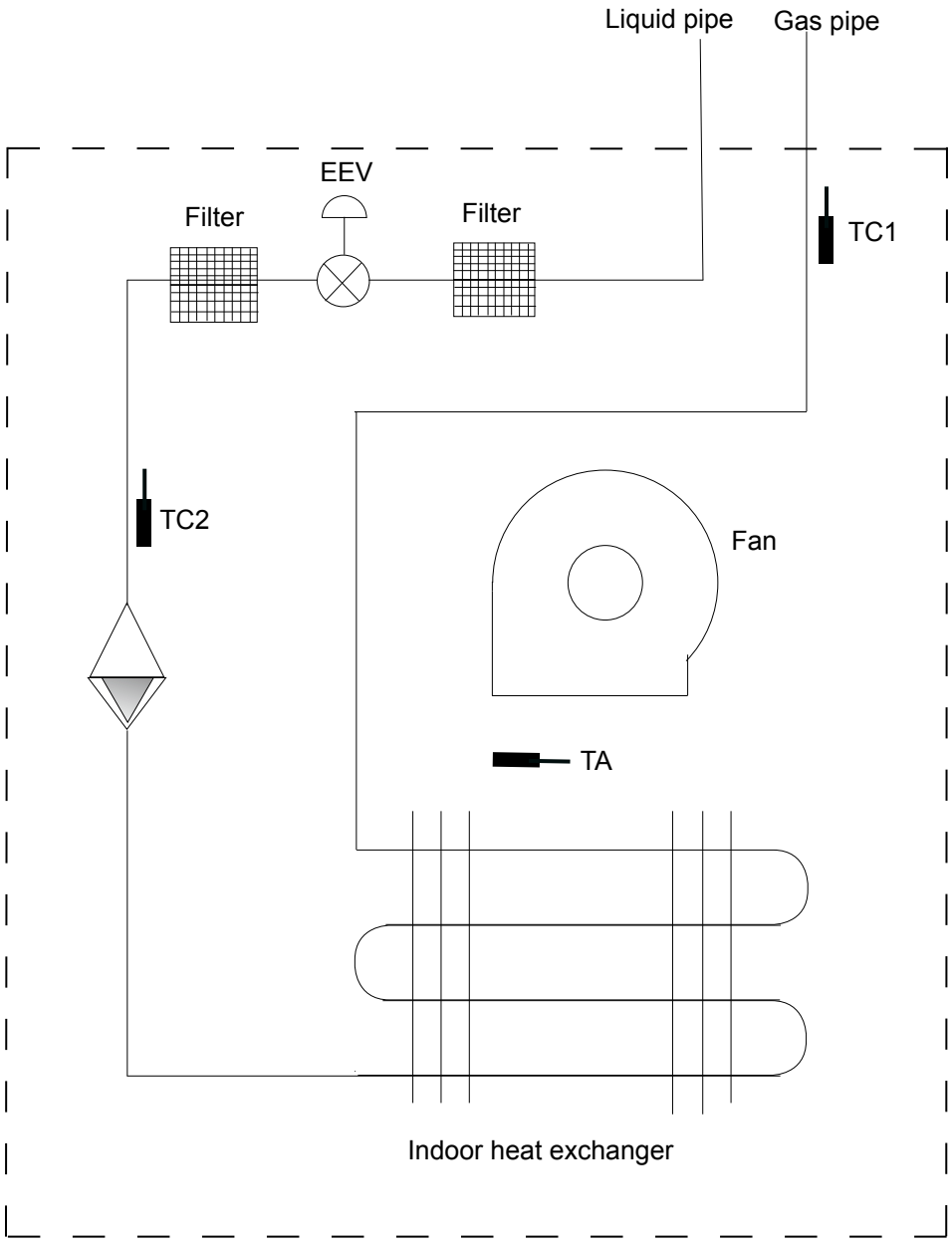


right side

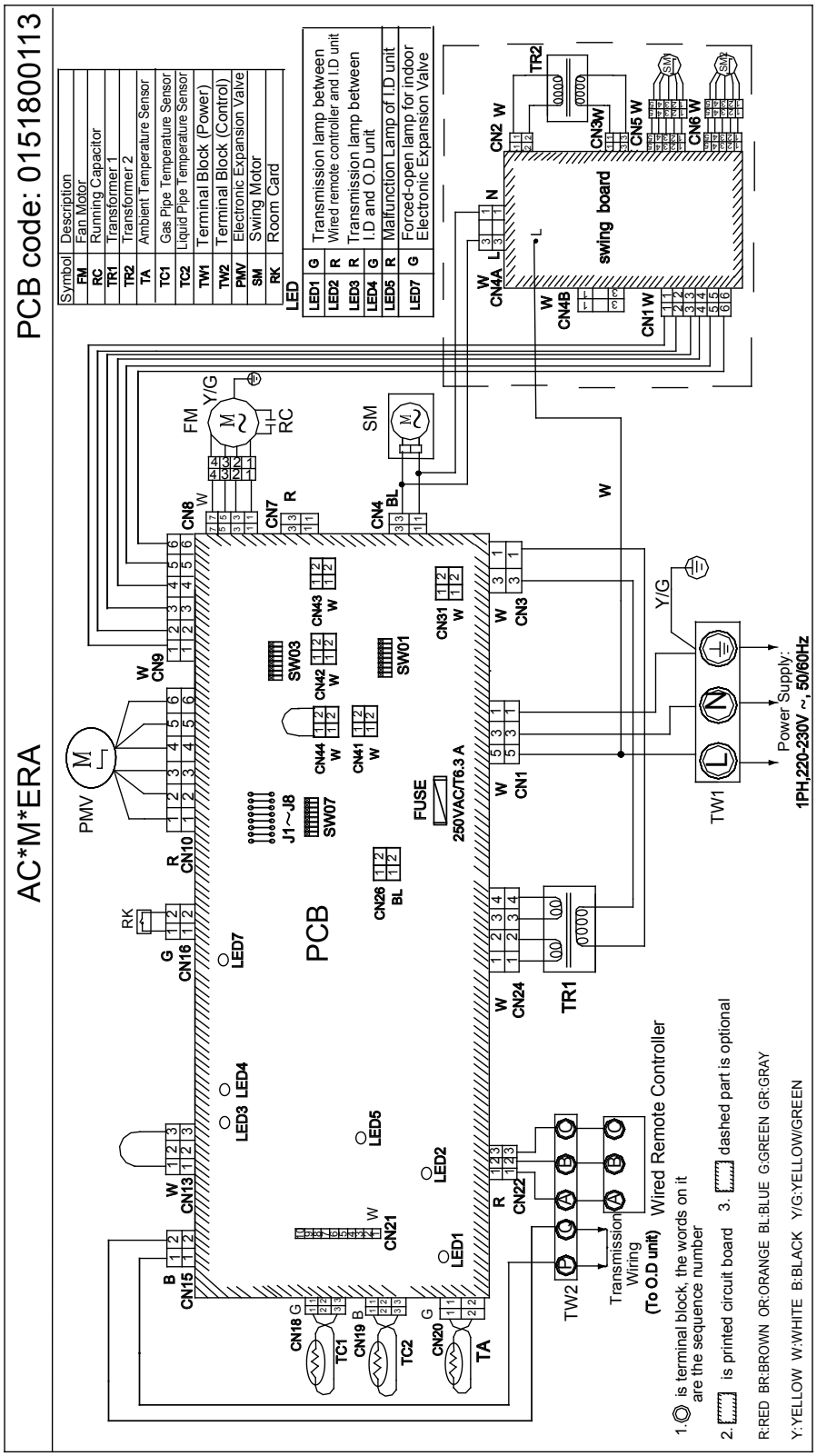
AC282-482MFERA



9.4 Piping diagram



9.5 Wiring diagram



9.6 Electric characteristics

Units					Power supply		Indoor fan motor		Power input (W)	
Model	Phase	FQY	Voltage	Volt. range	MCA	MFA	Output (W)	FLA	Cooling	Heating
AC092MCERA	1	50/60	220	198~242	0.64	2.04	28	0.51	100	100
AC122MCERA	1	50/60	220	198~242	0.64	2.04	28	0.51	100	100
AC162MCERA	1	50/60	220	198~242	0.64	2.04	28	0.51	100	100
AC182MCERA	1	50/60	220	198~242	0.64	2.04	28	0.51	100	100
AC242MCERA	1	50/60	220	198~242	0.64	2.04	28	0.51	100	100
AC282MFERA	1	50/60	220	198~242	2.51	8.04	105	2.01	200	200
AC302MFERA	1	50/60	220	198~242	2.51	8.04	105	2.01	200	200
AC382MFERA	1	50/60	220	198~242	2.51	8.04	105	2.01	400	400
AC482MFERA	1	50/60	220	198~242	2.51	8.04	105	2.01	400	400

Symbols:
MCA: Min. circuit amps (A)
MFA: Max. fuse amps of circuit breaker Output: Fan motor rated output (w) FLA: Full load amps (A)

Notes:

1. Voltage range
The units are applicable for the electrical systems where voltage supplied to unit is in the range.
2. Maximum allowable voltage unbalance between phases is 2%.
*3. MCA=1.25*FLA MFA≤4*FLA.*
4. Power supply uses the circuit breaker.

9.7 Air velocity and temperature distribution

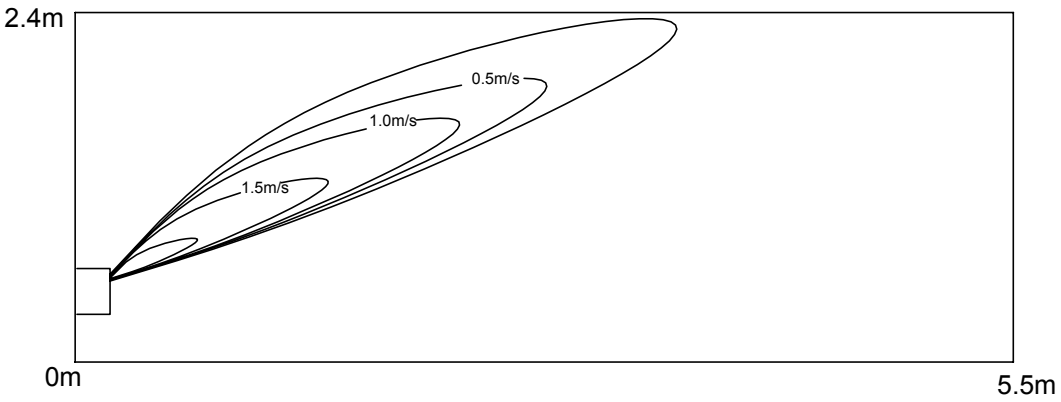
A) On the floor

a. Cooling / Air velocity distribution

Cooling

Blowy angle: 25

Air velocity distribution

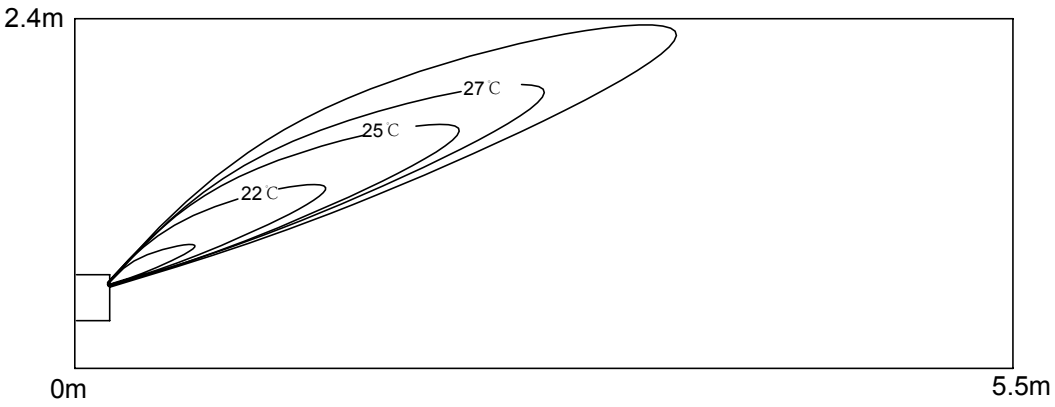


b. Cooling / Temperature distribution

Cooling

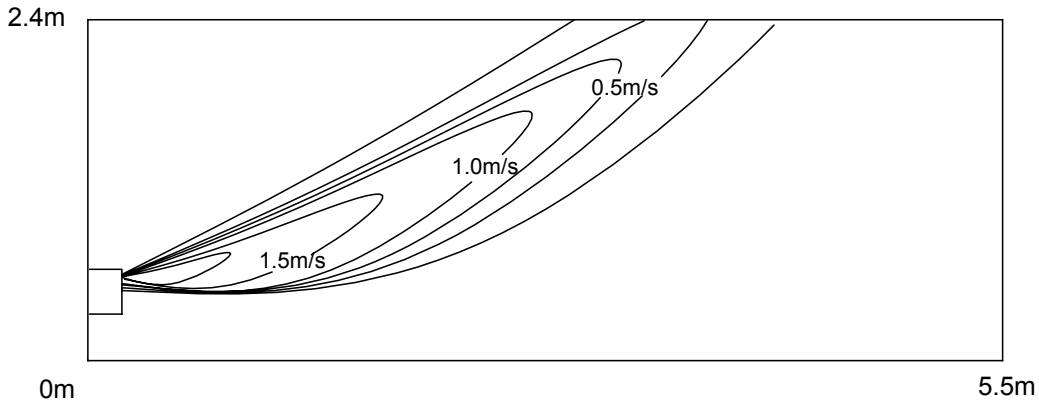
Blowy angle: 25

Temperature distribution



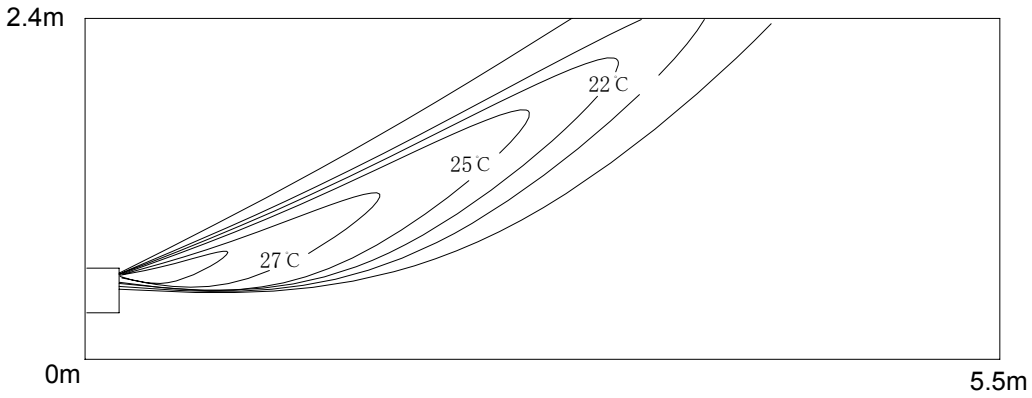
c. Heating / Air velocity distribution

Heating
Blowy angle: 5
Air velocity distribution



d. Heating / Temperature distribution

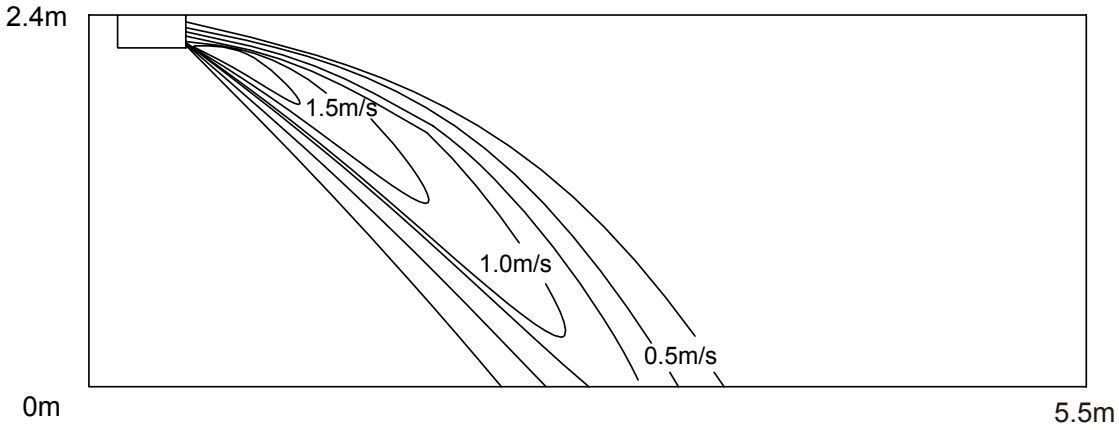
Heating
Blowy angle: 5
Temperature distribution



B) Ceiling

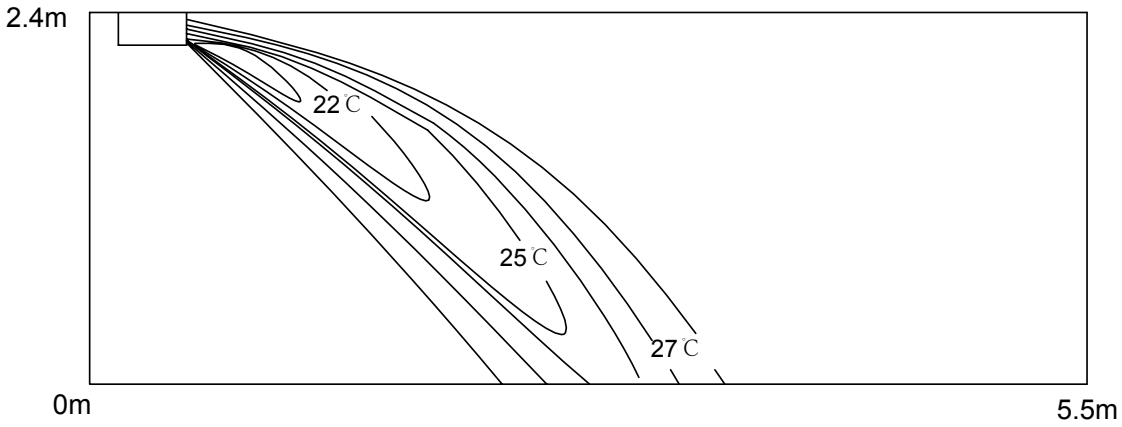
a. Cooling / Air velocity distribution

Cooling
Blowy angle: 25
Air velocity distribution



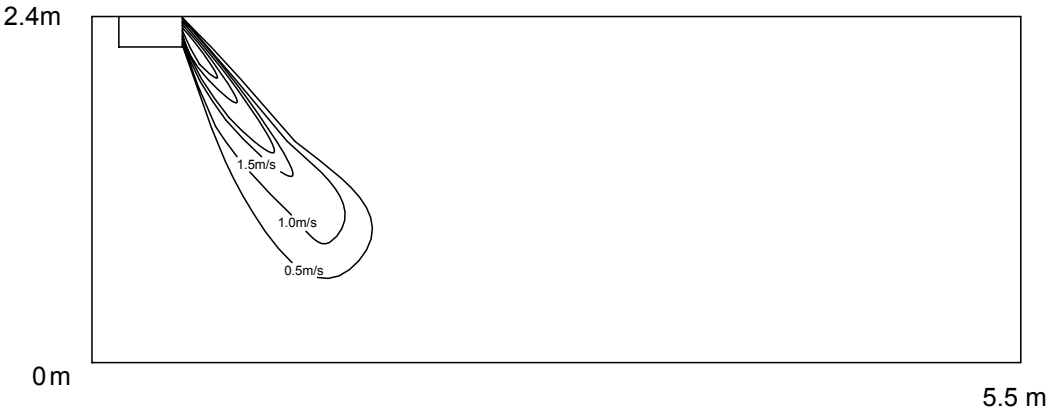
b. Cooling / Temperature distribution

Cooling
Blowy angle: 25
Temperature distribution



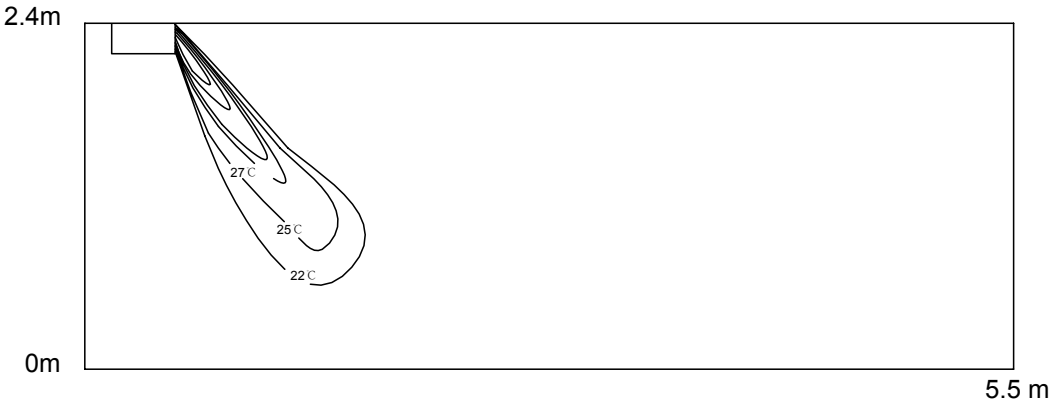
c. Heating / Air velocity distribution

Heating
Blowy angle: 65
Air velocity distribution



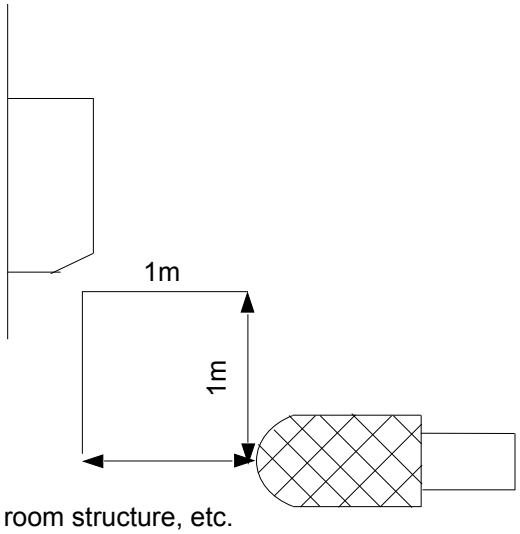
d. Heating / Temperature distribution

Heating
Blowy angle: 65
Temperature distribution



9.8 Sound pressure level

(1) Testing illustrate:

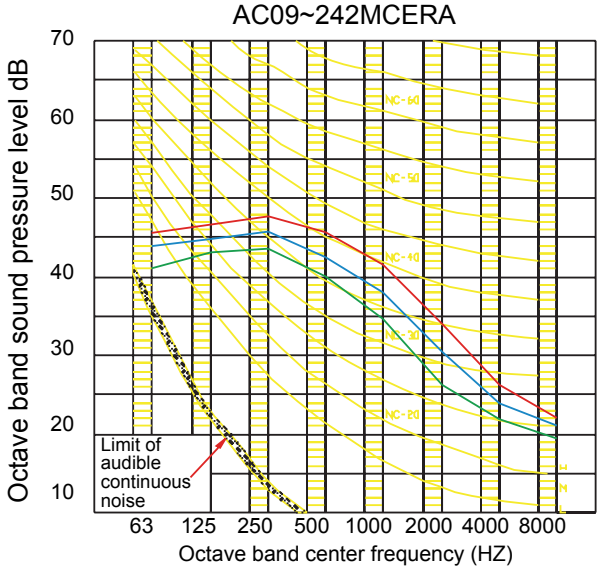


(2) Testing condition:

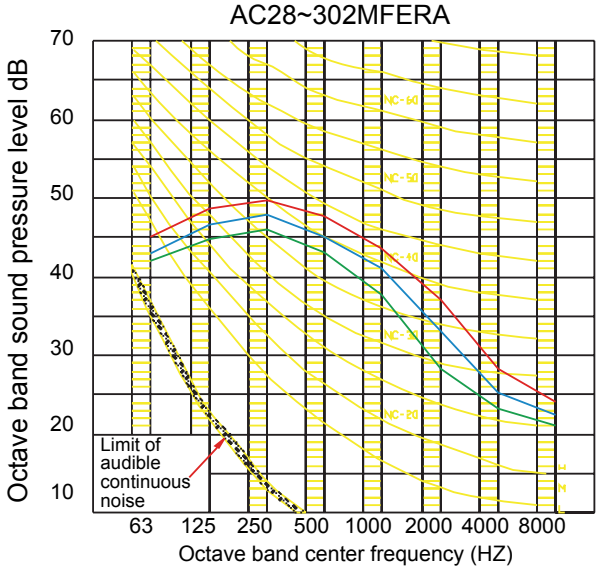
a. Unit running in the nominal condition
b. Test in the semi-anechoic chamber
c. Noise level varies from the actual factors such as room structure, etc.

(3) Octave band level:

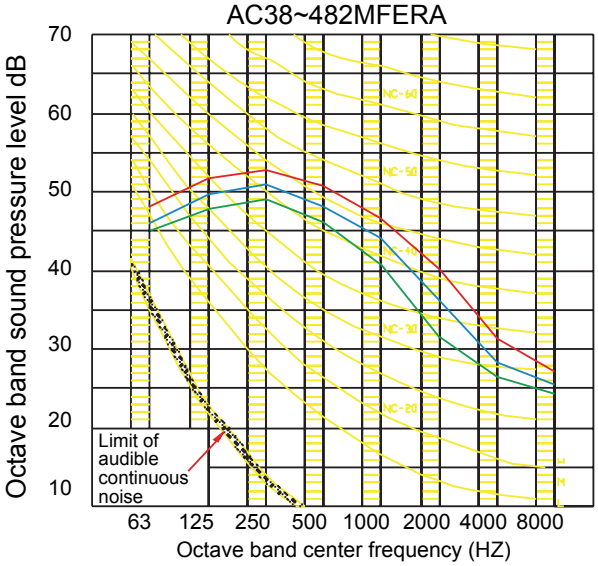
AC09~242MCERA



AC28~302MFERA



AC38~482MFERA



9.9 Installation

9.9.1 Installation procedures

Please contact Haier local center if any problem or request.

Standard installation tools are recommended according to installation requirements.
For information about standard model series accessories, see packing list; other necessary parts to be installed shall be prepared by users as required by installation service network stations.

Decide places to install the indoor unit; places where even circulation of cool and warm air can be delivered shall be selected; and places below shall be avoided:

※ Places (in coastal areas) where salinity is high; where sulfurized gases are usual (areas where springs flourish and copper tube and braze easily get corroded); where oils (machinery oils) and steam are usual; where organic solvents are put to use; where machines radiating high frequency electromagnetic waves exist (which cause control system malfunctions); where contact with humid air near windows and doors is pervasive (making for easy condensation) and; where special sprayers are put to frequent use.

Installing Indoor Unit

1. The distance from air outlet to floor surface shall not exceed 2.7m.
2. Make sure that outlet airflow covers the whole room area; and arrange connecting tubes, wires and drain pipes to proper outdoor positions.
3. Make sure that ceiling structures are capable of bearing unit weight.
4. Connecting tubes, drain pipes and connecting wires can be put across walls to connect indoor unit and outdoor unit.
5. Connecting tubes and drain pipes between indoor and outdoor units shall be shorter for better.
6. Please refer to outdoor installation manual when refrigerant charging volume adjusting is necessary.
7. Joint flanges shall be prepared by users.
8. Valuables (e.g., TV sets, instruments, equipments, artworks, pianos, wireless devices) shall not be placed below the indoor unit lest condensed water drips upon the same.

Installing and Fixing

1. Drilling Wall Holes

Drill a wall hole (dia.70mm, see figure 1), slightly tilted downwards on the outside; fix guard ring to finalize before sealing the wall hole with gesso or putty.

2. Preparation before Installing Indoor Unit

Open inlet grille according to figure 2 and figure 3.

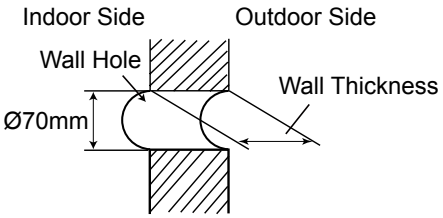


Figure 1 (Wall Hole in Section)

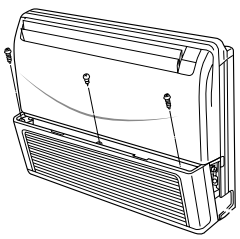


Figure 2 Model AC092-242MCERA

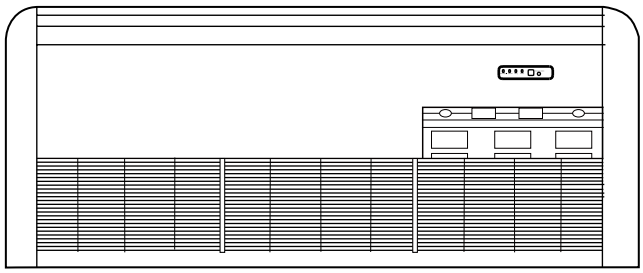
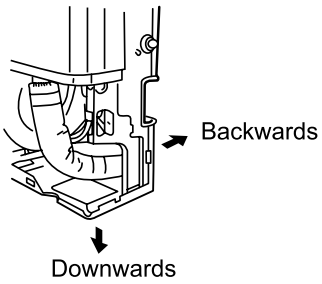


Figure 3 Model AC282-482MFERA

3. Floor Type Installation

① Fix four rubber feet to the bottom of the unit with *4×16 bolts and Φ12 spacers (applicable to floor type units only).

② According to figure on the right, choose a certain direction to lead out drain pipe; drain holes are available on both right and left sides; practical conditions shall be considered. After deciding upon the directions to lead out pipelines, wires and drain pipes, drill wall holes according to required drilling processes.



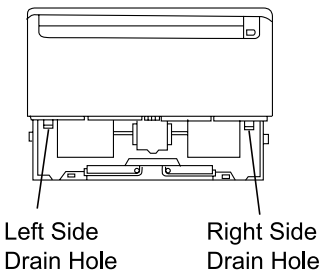


Figure 4 Model AC092-242MCERA

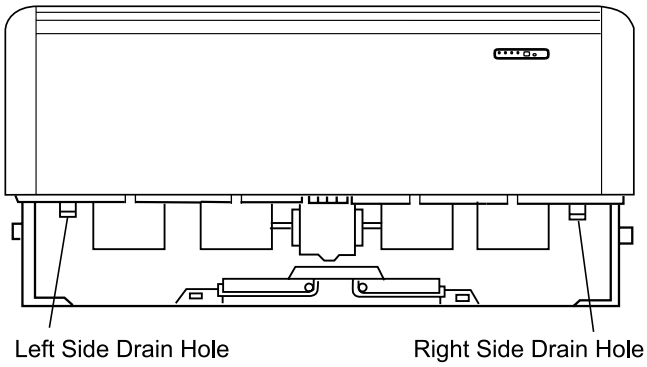
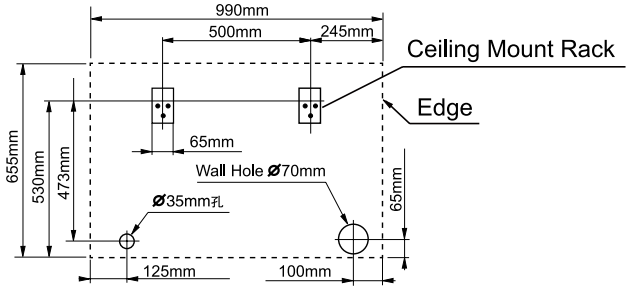
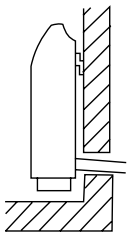


Figure 5 Model AC282-482MFERA

③ Install wall mount rack according to figure below.



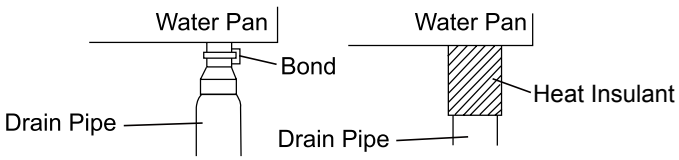


Model AC092-242MCERA

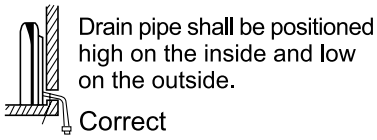
④ Installing Drain Pipe

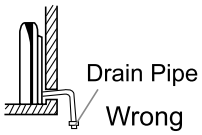
In case of model 22-140, fix drain pipes to drain holes on left and right sides (as shown in figure 4 and figure 5). Install as follows (see figure below):

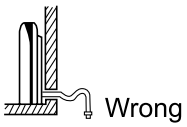
Plug drain pipe in water pan in the first place, as shown by figure, then, bind the two tight together and tie up junction area with heat insulant.



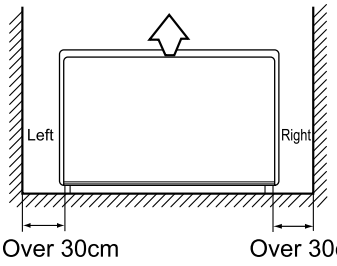
CAUTION: Drain pipe leading-out direction shown with figure below.



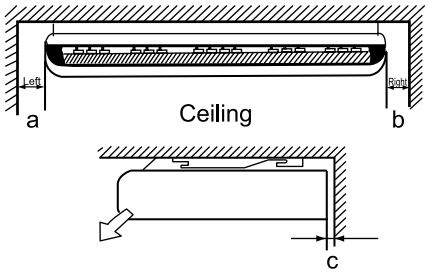




Attention to distance from the unit to the obstacles (as shown with figure).



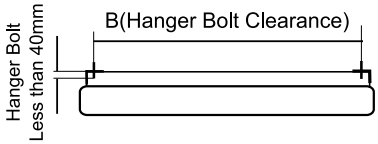
4. Ceiling Installation



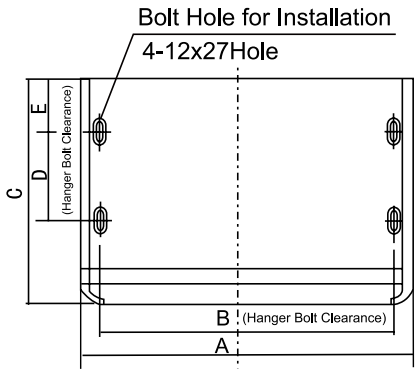
Model	a	b	c
AC092-242MCERA	Over 30cm	Over 30cm	Over 2cm
AC282-482MFERA	Over 80cm	Over 150cm	Over 10cm

Ceiling Installation

① Use Φ10 hanger bolts, prepared on the site.
Please refer to figure on the right when installing.

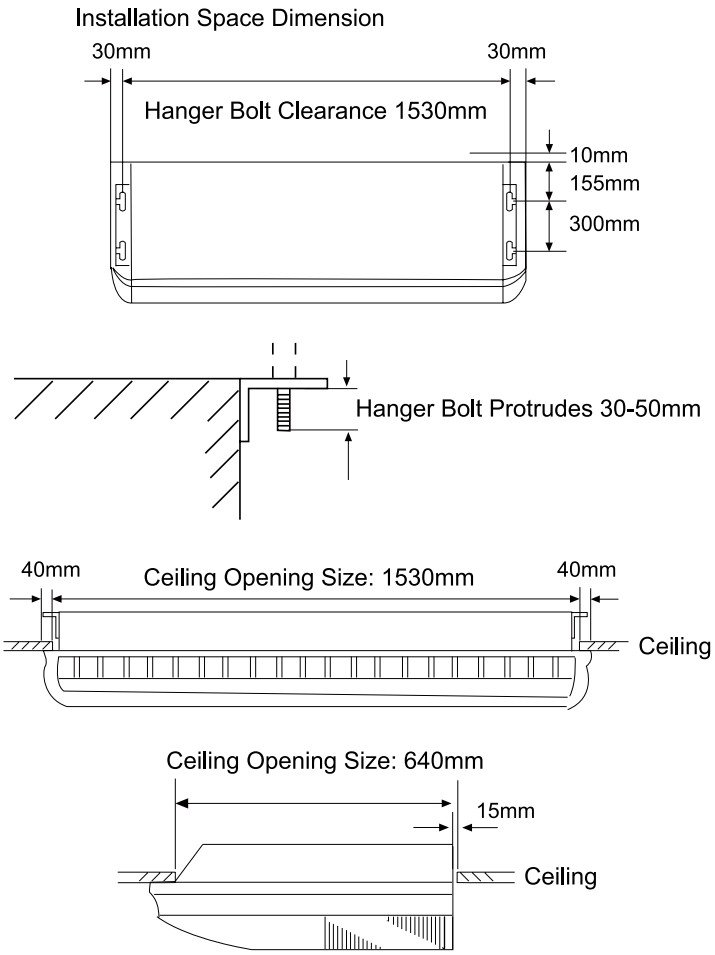


Hanger Bolt Mounting Position



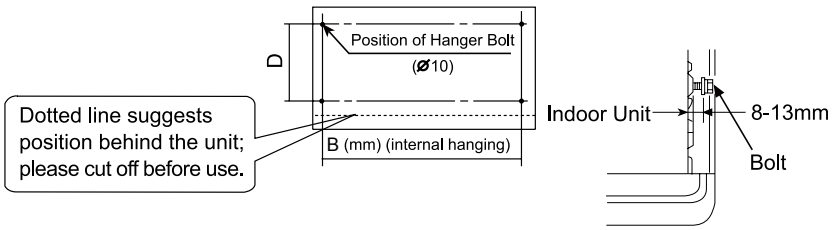
Model	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
AC092-242MCERA	990	900	655	200	175

Model AC282-482MFERA



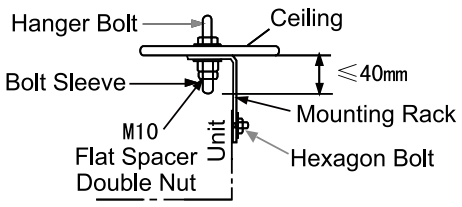
② Installing Hang Bolt

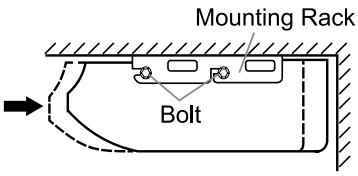
Use M10 hanger bolt (prepared on the site) featuring 60mm hole depth, clearance fixed according to size proposed in the air conditioner external view; install according to different building structure specifications to guard against safety faults; and leveling instruments shall be available to ensure balanced installation.

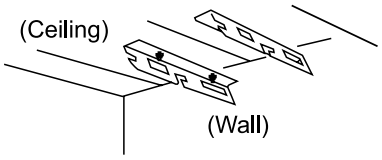


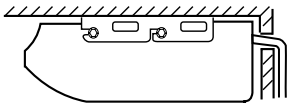
③ Please use hexagon bolts when installing

④ Air Conditioner Installation Diagram

<table>
<tr>
<td>① Hanger Chain Hook</td>
<td> 

Hanger bolt is 40mm below ceiling.</td>
<td>③ Installing Air Conditioner</td>
<td> 

Insert hexagon bolt into slot.
Screw tight hexagon bolt to fix air conditioner.</td>
</tr>
<tr>
<td>② Installing Status of Mounting Rack</td>
<td> 

Leveling is forbidden after air conditioner is installed; please make adjustment according to diagram indication.</td>
<td>④ Drain Pipe Leading-out Direction</td>
<td> 
CAUTION: Drain pipe shall be positioned high inside and low outside.
According to requirements on the site, drain pipes shall be prepared by users on their own resources and make sure that these are connected to drain pipes previously available with the unit (make sure that measures are taken to guard against water leakage in junction areas); heat preservation shall be available with certain indoor drain pipes through using heat insulant to prevent condensation.</td>
</tr>
</table>

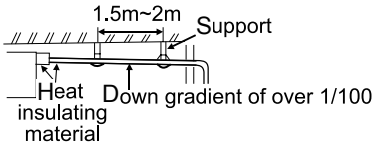
⑤ Installing Deco Plate and Inlet Grille (after pipeline laying and electric wiring are done).

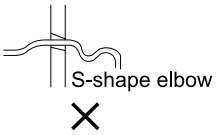
⚠ ATTENTION

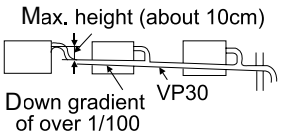
- For normal drainage, the water drainage piping should be connected according to the installation manual. Heat insulation should be performed to avoid condensation. Improper pipe connection may cause water going into the machine.

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. Under the condition of long pipe, a support should be provided every 1.52~2m to avoid unevenness.
- The central piping can be connected according the following figure.
- Don't apply external force to the connection of drainpipes.







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

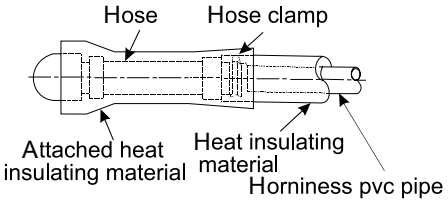
Hose

The drainage hose is made of Φ19.05mm (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 Insulation 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. Don't apply external force to the connection of drainpipes.

Confirm 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.



Pipe Length & Height Difference

Please refer to the attached manual of outdoor units.

Model		AC092MCERA	AC122-182MCERA	AC242MCERA AC28~482MFERA
Pipe Size (mm)	Gas pipe	Φ9.52	Φ12.7	Φ15.88
	Liquid pipe	Φ6.35	Φ6.35	Φ9.52
Pipe Material	Phosphor deoxy bronze seamless pipe (TP2) for air conditioner			

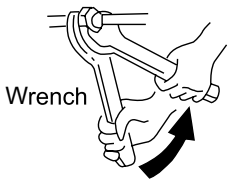
Refrigerant Recharge Amount

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 too much or less 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 right table



Outer diameter of tubing (mm)	Mounting torque (N.m)	Increase mounting torque (N.m)
Φ6.35	11.8 (1.2kgf.m)	13.7 (1.4kgf.m)
Φ9.52	24.5 (2.5kgf.m)	29.4 (3.0kgf.m)
Φ12.7	49.0 (5.0kgf.m)	53.9 (5.5kgf.m)
Φ15.88	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 master unit.]

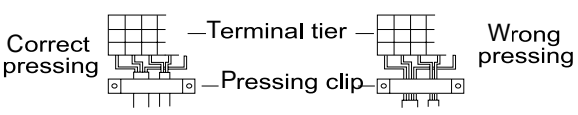
Checkup for Air Leakage

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

Connecting

Connecting circular terminals:

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.



9.9.2 Electrical wiring

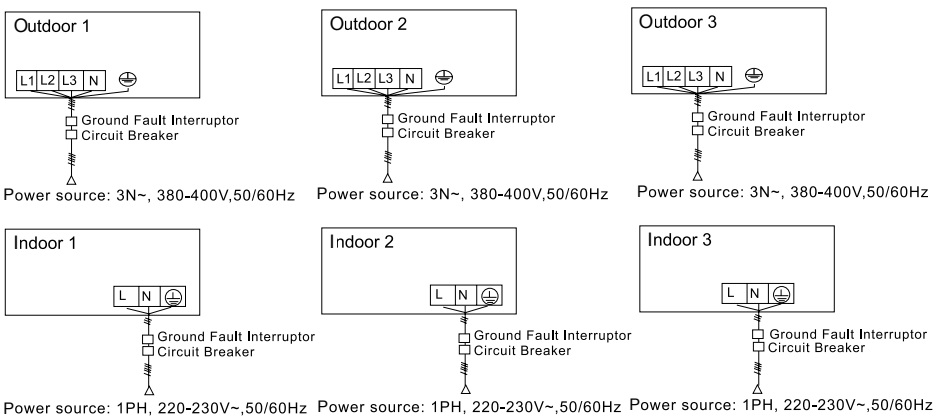
⚠ WARNING

- 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

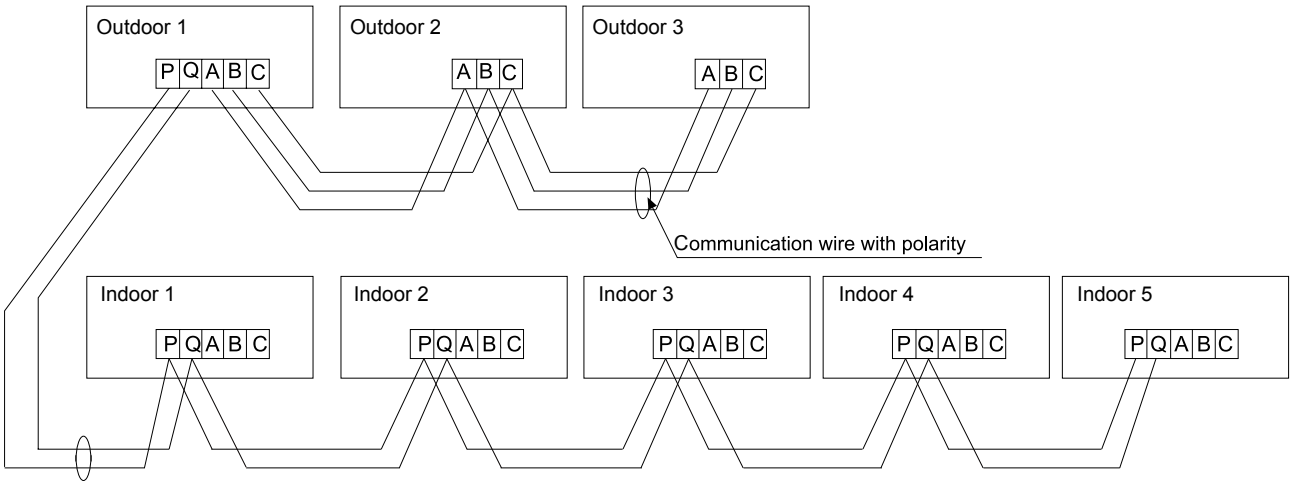
- Only copper wire can be used. Breaker for electric leakage should be provided, or electric shock may occur.
- The wiring of the mains line is of Y type. The power plug L should be connected to the live wire and plug N connected to null wire while ⏚ should be connected to the ground wire. For the type 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 and 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.

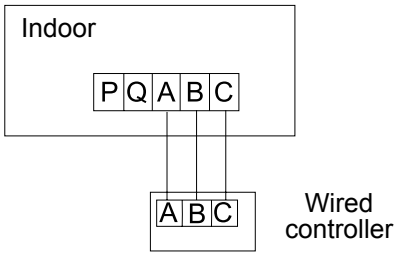
Signal Wiring Drawing



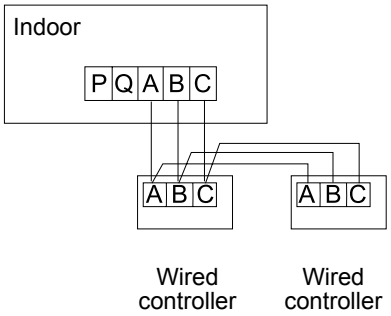
Outdoor units are of parallel connection via three lines with polarity. The master unit, central control and all indoor units are of parallel connection via two lines without polarity. The singal line between wired controller and indoor units are polarity

There are three connecting ways between wired controller and indoor units:

A. One wired controller controls one indoor unit, the wired controller connects with the ABC terminal of indoor unit.



B. Two wired controllers control one indoor unit. Either of the wired controls can be set to be the master wired controller while the other is set to be the slave wired controller.

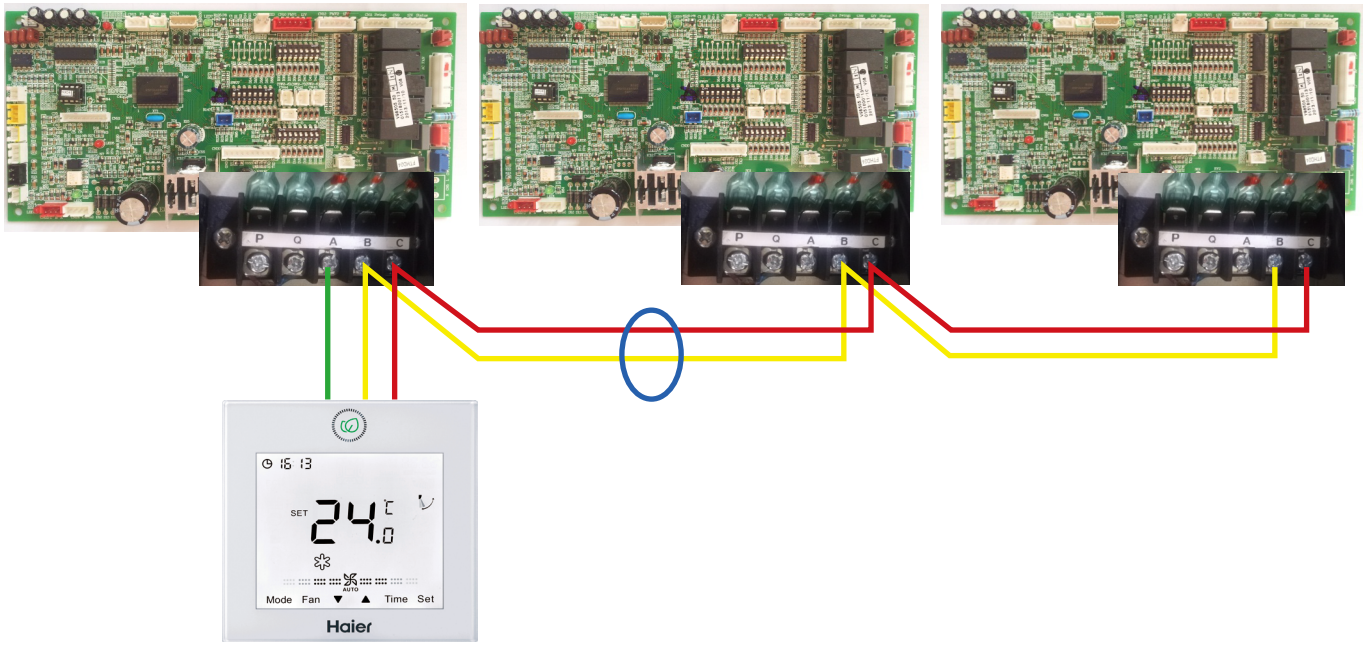


Master and slave controller setting method for YR-E17, other controllers' setting method please refer to the controller manual

No.	Type	State of switch	Function description
SW1-1	Select the master or the slave controller	ON	Slave controller
		OFF	Master controller

C. One wired controller controls multiple units

0151800113 PCB



Note:

1. The wired controller connects with the ABC terminal of master unit which wired address is 0, the slave unit only connects BC terminal.
2. Wired address setting

		[1]	[2]	[3]	[4]	Wired control address
SW01_1 SW01_2 SW01_3 SW01_4	Wired control address	**OFF**	**OFF**	**OFF**	**OFF**	Master unit in group control
		OFF	OFF	OFF	ON	Slave unit 1 in group control
		OFF	OFF	ON	OFF	Slave unit 2 in group control
		OFF	OFF	ON	ON	Slave unit 3 in group control
		…	…	…	…	……
		ON	ON	ON	ON	Slave unit 15 in group control

3. One controller can Max. control 16 indoor units.
4. Hand-in-hand connection method
5. The singal line is polarity

Indoor power supply wiring & signal wiring between indoor and outdoor & signal wiring between indoor.

Items / Total current of indoor units (A)	Cross section (mm^2)	Length (m)	Rated current of overflow breaker (A)	Rated current of residual circuit breaker (A) Ground fault Interrupter (mA) Response time (S)	Cross sectional area of signal Line	
					Outdoor -indoor (mm^2)	Indoor -indoor (mm^2)
<7	2.5	20	10	10 A, 30 mA, 0.1S or below	2 cores×(0.75-2.0) mm^2 shielded line	
≥7 and <11	4	20	16	16 A, 30 mA, 0.1S or below		
≥11 and <16	6	25	20	20 A, 30 mA, 0.1S or below		
≥16 and <22	8	30	32	32 A, 30 mA, 0.1S or below		
≥22 and <27	10	40	32	32 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 shielded 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.

9.9.3 Test run

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