

 **GREE**
[CENTRAL AIR CONDITIONERS]

R410A



MINI CHILLER SERVICE MANUAL

**T1/R410A/50Hz
(GC201104)**

GREE ELECTRIC APPLIANCES INC.OF ZHUHAI

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PRODUCT

PRODUCT

1 MODELS LIST

1.1 Split Type

Model		Product Code	Nominal Capacity	Power Supply	Appearance					
Refrigerant	Model Name		kW	(V,Ph,Hz)	Outdoor Unit	Indoor Unit				
R410A	HLR8WZNa-M	HLR8WZNa-M (I)	8.0	380 ~ 415V 3Ph 50Hz						
		HLR8WZNa-M (O)					EM113N0030	EM113W0030 EM113W0031		
	HLR10WZNa-M	HLR10WZNa-M (I)	10.0							
		HLR10WZNa-M (O)							EM113N0020	EM113W0020 EM113W0021
	HLR12.5WZNa-M	HLR12.5WZNa-M(I)	12.5							
		HLR12.5WZNa-M(O)								
	HLR15WZNa-M	HLR15WZNa-M (I)	15.0							
		HLR15WZNa-M (O)								

Note: 1Ton = 12000Btu/h = 3.517kW

1.2 Integral Type

Model		Product Code	Nominal Capacity	Power Supply	Appearance
Refrigerant	Model Name		kW	(V,Ph,Hz)	
R410A	HLR22SNa-M	EM15000030	22	380 ~ 415V 3Ph 50Hz	
	HLR25SNa-M	EM116N0270	25		
	HLR35SNa-M	EM116N0260 EM116N0261	35		
	HLR45SNa-M	EM15000040 EM15000041	45		

Note: 1 Ton = 12000Btu/h = 3.517kW

2 NOMENCLATURE

1.1 Split Type

HL	R	15	W	Z	Na	-	M
1	2	3	4	5	6		7

NO.	Description	Options
1	Mini chiller	-
2	Product type	R=Heat pump
3	Nominal Cooling Capacity	8=8kW 10=10 kW 12.5= 12.5kW 15= 15kW
4	Struct type	Default=Vertical type W=Horizontal type
5	Product configuration	Z=Combination
6	Refrigerant	Na=R410A, Default=R22
7	Voltage	M=380 ~ 415V 3Ph 50Hz

1.2 Integral Type

HL	R	35	S	Na	-	M
1	2	3	4	5		6

NO.	Description	Options
1	Mini chiller	-
2	Product type	R=Heat pump
3	Nominal Cooling Capacity	22=22kW 25=25kW 35=35kW 45=45kW
4	Refrigeration Circuits	Default=One circuit S=Twin circuit
5	Refrigerant	Na=R410A, Default=R22
6	Voltage	M=380 ~ 415V 3Ph 50Hz

3 FUNCTION

Indoor Unit Type	Function	Description
Split Type	Heating/Cooling	Interface kit for up to 16 indoor units Memory restart Two circuits optimized design Low noise design Safety and reliability thanks to advance compressor balance control
Integral Type		

4 PRODUCT DATA

4.1 Product Data at Rated Condition

4.1.1 Split Type

Models				HLR_WZNa-M			
				8	10	12.5	15
Product Code	Indoor unit		EM113N0030	EM113N0020	EM113N0040	EM113N0010	
	Outdoor unit		EM113W0030 EM113W0031	EM113W0020 EM113W0021	EM113W0040	EM113W0010 EM113W0011	
Nominal Capacity	Cooling	kW	7.5	10	12.5	14.2	
		Btu/h	25590	34120	42650	48451	
		RT	2.1	2.9	3.6	4.0	
	Heating	kW	9	12	13	16.5	
		Btu/h	30708	40944	44357	56298	
		RT	2.6	3.4	3.7	4.7	
Power Consumption	Cooling	kW	3.5	4.4	5.7	5.7	
	Heating	kW	3.3	4.4	4.8	5.3	
Power Supply			380~415V,3Ph,50Hz				
Safeties			High/Low pressure switch, compressor thermal protection, over current protection, lose of phase/anti-phase protection, antifreezing protection, water flow switch				
Refrigerant	Type		R410A				
	Charge	kg	3.1	3.55	4.5	5.5	
Compressor	Type		scroll				
	NO.		1	1	1	1	
Evaporator	Heat Exchanger		Tube-in-Tube				
	Water In/Out Pipe Diameter	Inch	1"	1"	1"	1"	
Condenser	Heat Exchanger		Aluminum fin-copper tube				
	Fan Motor Power Input	kW	0.092	0.068	0.092	0.092	
	Fan	quantity	1	2	2	2	
Pump	Water Flow	L/s	0.38	0.48	0.59	0.72	
		GPM	5.0	6.3	7.79	9.5	
	Delivery Lift	m	18	18	18	18	
	Power Input	kW	0.55	0.55	0.55	0.55	
Expansion Vessel Volume		L	5	5	5	5	
Indoor Unit	Unit / Packing Dimension	Height	mm	288/385	288/385	288/385	288/385
		Width	mm	1100/1285	1100/1285	1100/1285	1100/1285
		Depth	mm	450/682	450/682	450/682	450/682
	Net/Gross Weights			84/96	84/96	84/96	84/96
Outdoor Unit	Unit / Packing Dimension	Height	mm	840/985	1250/1385	1250/1385	1250/1385
		Width	mm	950/1110	950/1110	950/1110	950/1110
		Depth	mm	412/450	412/450	412/450	412/450
	Net / Gross Weights			90/100	112/123	115/126	123/134

4.1.2 Integral Type

Models			HLR_SNa-M			
			22	25	35	45
Product Code			EM15000030	EM116N0270	EM116N0260 EM116N0261	EM15000040 EM15000041
Nominal Capacity	Cooling	kW	21.5	22.8	31	42
		Btu/h	73358	77794	105773	143304
		RT	6.1	6.5	8.8	11.9
	Heating	kW	25	25	37.5	49
		Btu/h	85301	85301	127950	167189
		RT	7.1	7.1	10.7	13.9
Power Consumption	Cooling	kW	8.6	8.8	11.9	18.3
	Heating	kW	8.6	8.9	12.5	17.5
Power Supply			380~415V 3Ph 50Hz			
Safeties			High/Low pressure switch, compressor thermal protection, over current protection, lose of phase/anti-phase protection, antifreezing protection, water flow switch			
Refrigerant	Type		R410A			
	Charge	kg	3.6×2	4.8×2	6.5×2	7.3×2
Compressor	Type		scroll			
	NO.		2	2	2	2
Evaporator	Heat Exchanger		Tube-in-Tube	Tube-in-Tube	Shell in tube	Shell heat exchanger
	Water In/Out Pipe Diameter	Inch	1"	1"	1-1/2"	1-1/2"
Condenser	Heat Exchanger		Aluminum fin-copper tube			Fin sleeve Heat exchanger
	Fan Motor Power Input	kW	0.4	0.4	0.6	0.8
Pump	Water Flow	L/s	1.05	1.2	1.4	2.2
		GPM	13.9	15.8	22	29
	Delivery Lift	m	22	24	25	27
	Power Input	kW	0.75	0.75	1.5	1.5
Expansion Vessel Volume		L	8	8	8	8
Unit / Packing Dimension	Height	mm	1850/2100	1850/2100	1760/1970	1760/1970
	Width	mm	1460/1540	1460/1540	1750/1910	1750/1910
	Depth	mm	530/610	530/610	800/960	800/960
Net/Gross Weights		kg	370/380	390/400	680/690	755/765

Notes:

- Cooling capacity is based on the following conditions: leaving chilled water temp.7°C ,outdoor air temp.35°C .
- Heating capacity is based on the following conditions: leaving warmed water temp.45°C , outdoor air temp.7°C .
- Water flow range for operation must be from 70% to 120% of the rated water flow.
- The maximum allowable pressure for water pipe is 0.9MPa.

4.2 Operation Range

Mode	Range of Outdoor Temperature °C (°F)
Cooling	16~48
Heating	-15~28

4.3 Electrical Data

4.3.1 Split Type

Model	Rated Power Supply	Compressor			Fan Motor		Pump	Total	
		NO.	LRA each (A)	MRC each (A)	Outdoor			MRC (A)	MRC (A)
HLR8WZNa-M	380~415V 3Ph 50Hz	1	67	9.1	1	1.5	0.7	9.4	7.0
HLR10WZNa-M		1	66	11.6	2	2.0	0.7	13.0	8.5
HLR12.5WZNa-M		1	67	13.7	2	2.0	0.7	14.5	10.5
HLR15WZNa-M		1	67	13.7	2	2.0	0.7	14.5	10.5

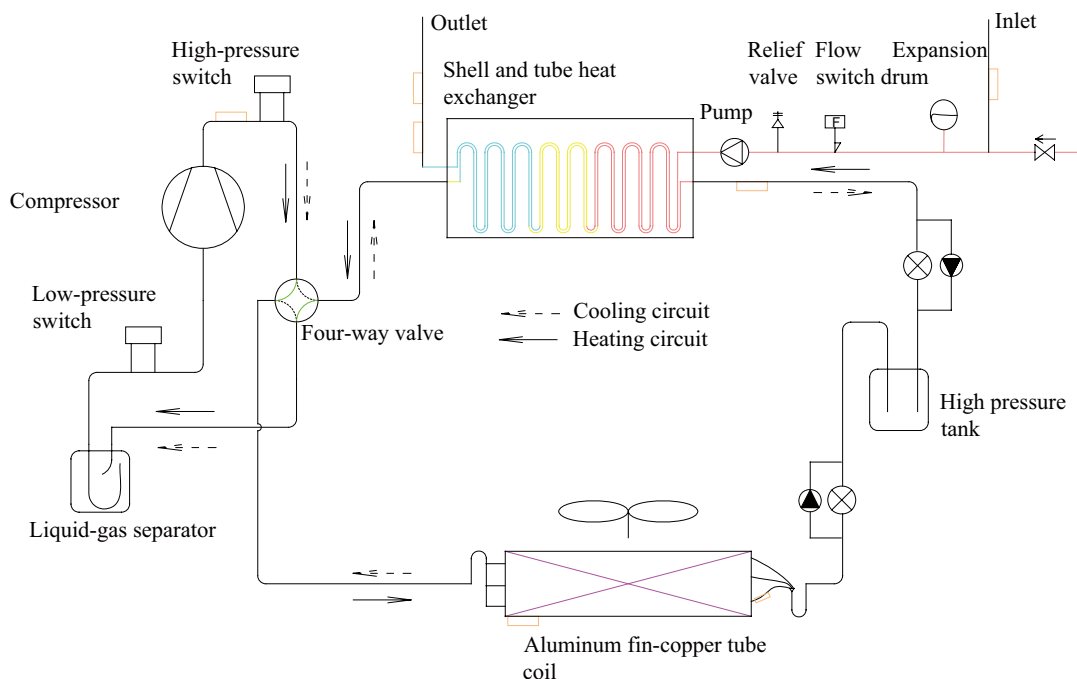
4.3.2 Integral Type

Model	Rated Power Supply	Compressor			Fan Motor		Pump	Total	
		NO.	LRA each (A)	MRC each (A)	NO.	MRC (A)		MRC (A)	MRC (A)
HLR22SNa-M	380~415V 3Ph 50Hz	2	73	11.6	2	5.0	1.5	19.5	14.5
HLR25SNa-M		2	66	13.5	2	5.0	1.5	23.5	18.5
HLR35SNa-M		2	101	16.4	2	7.5	3.0	28.5	24.5
HLR45SNa-M		2	118	22.5	2	7.5	3.0	45.0	31.0

Notes:

- a. LRA: Locked rotor amps (A).
- b. MRC: Maximum running current (A).
- c. NRC: Nominal running current (A).

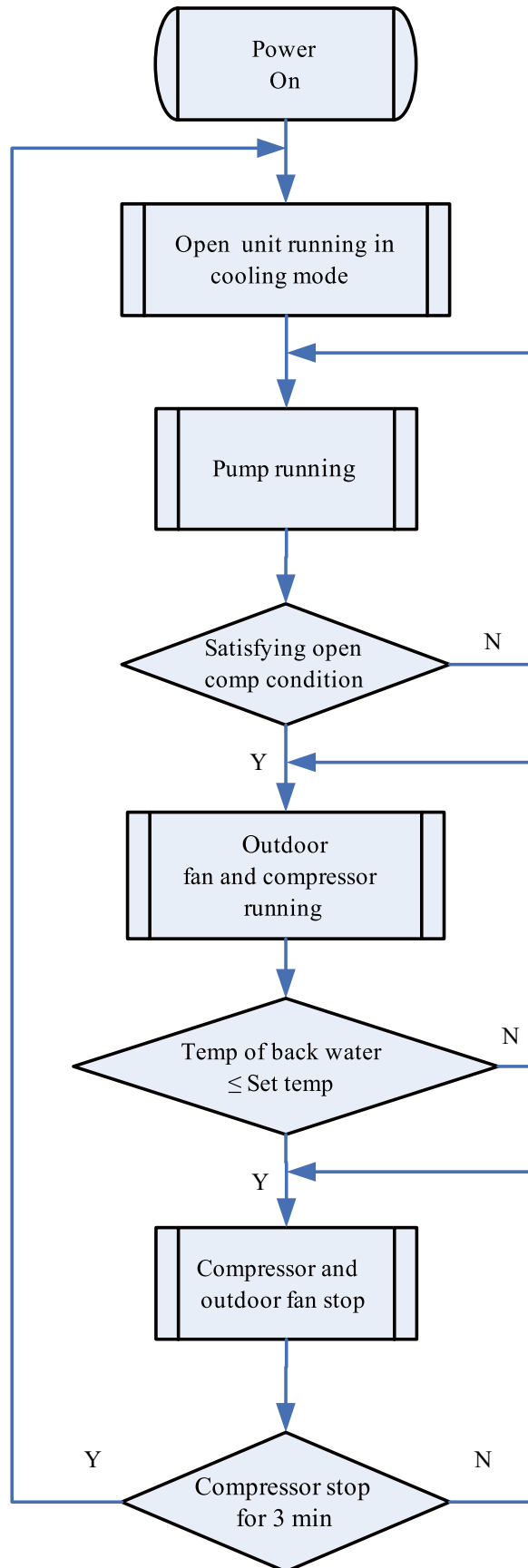
5 PIPING DIAGRAM



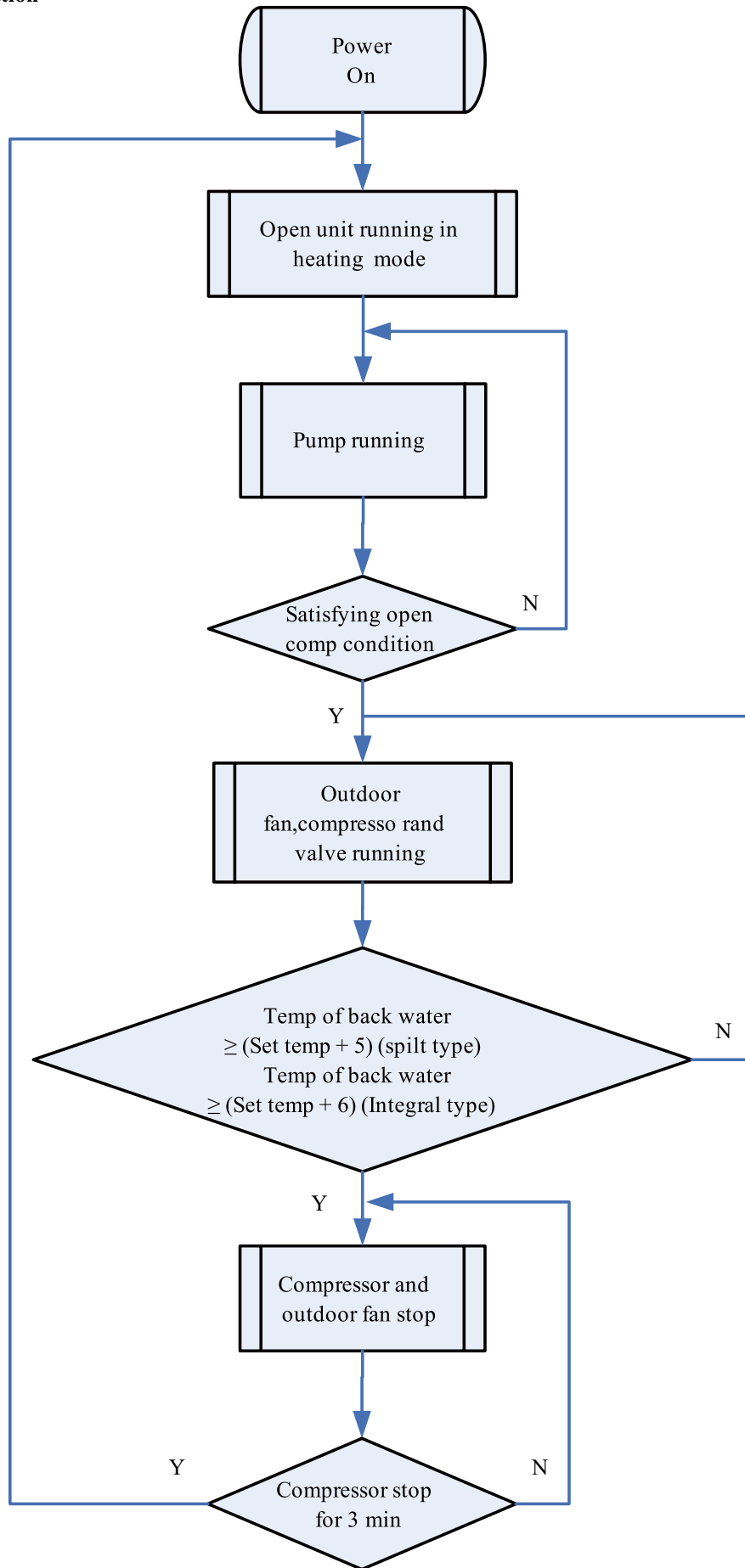


CONTROL

UNITS CONTROL
1 OPERATION FLOWCHART
1.1 Cooling Operation



1.2 Heating Operation

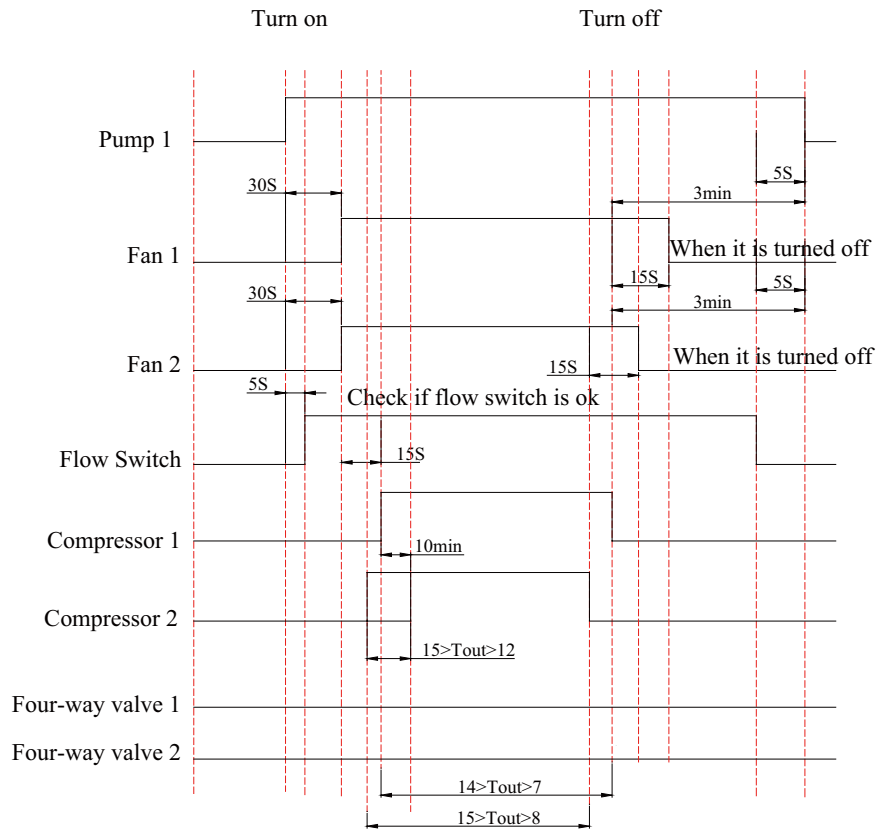


2 MAIN LOGIC

2.1 Cooling Mode

When pressing ON button, if the outdoor temperature is above 16 °C , water pump will start first. After 30s, if the outlet water temperature meets the cooling running requirements, the fans of outdoor unit will start. Then the compressor will run in 15s. During the period of cooling, the unit will be turned off if the outlet water temperature meets the stopping requirements and the running time of compressor is over the shortest running time required. The fans of outdoor unit will stop in 15s.

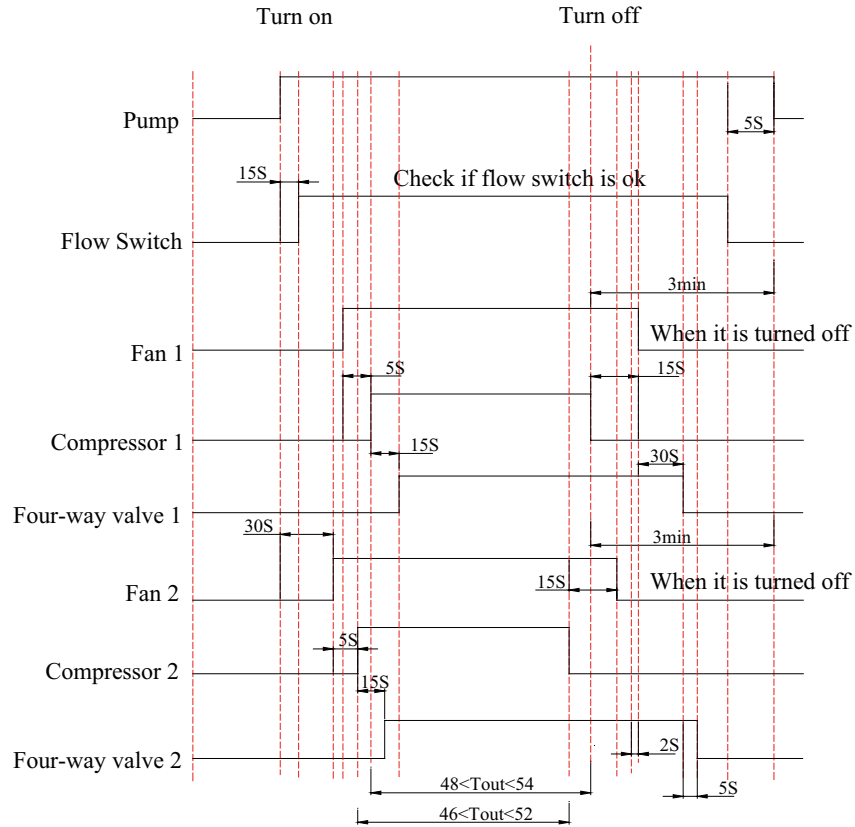
If the outdoor temperature is below 16°C , the unit will stop, and all loads except the water pump will be turned off.



2.2 Heating Mode

When pressing ON button, if the outdoor temperature is below 28 °C , the water pump will start first .After 30s, if the outlet water temperature meets the heating running requirements, the fans of outdoor unit will start. Then the compressor will run in 15s. During the period of cooling, the unit will be turned off if the outlet water temperature meets the stopping requirements and the running time of compressor is over the shortest running time required. The fans of outdoor unit will stop in 15s.

If the outdoor temperature is over 28°C , the unit will stop, and all loads except the water pump will be turned off.



2.3 Defrosting Mode

The condition of start defrosting mode:

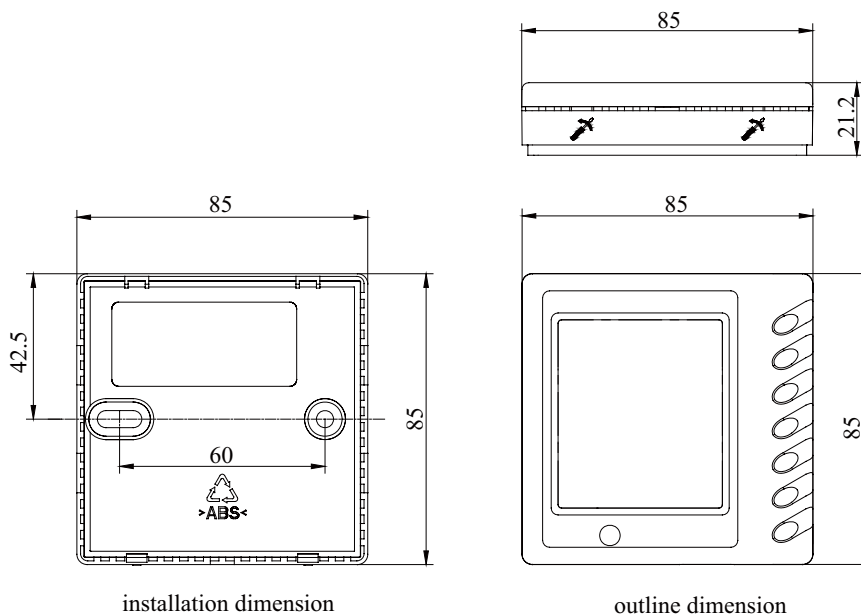
Under heating mode, if the accumulative running time of compressor is over the set interval time of defrosting (default 45min) , and the defrosting temperature is lower than the set starting temperature(default -4°C) ,the unit will start running defrosting mode, and the 4-way valve will shut off and the outdoor fan will stop after 2s.

The condition of quit defrosting mode:

Under defrosting mode, if the continual defrosting time is over the set continual time of defrosting (default 8min) , and the defrosting temperature is over the set stopping temperature(default 20°C) ,the unit will restart running heating mode, and the 4-way valve will turn on and the outdoor fan will run.

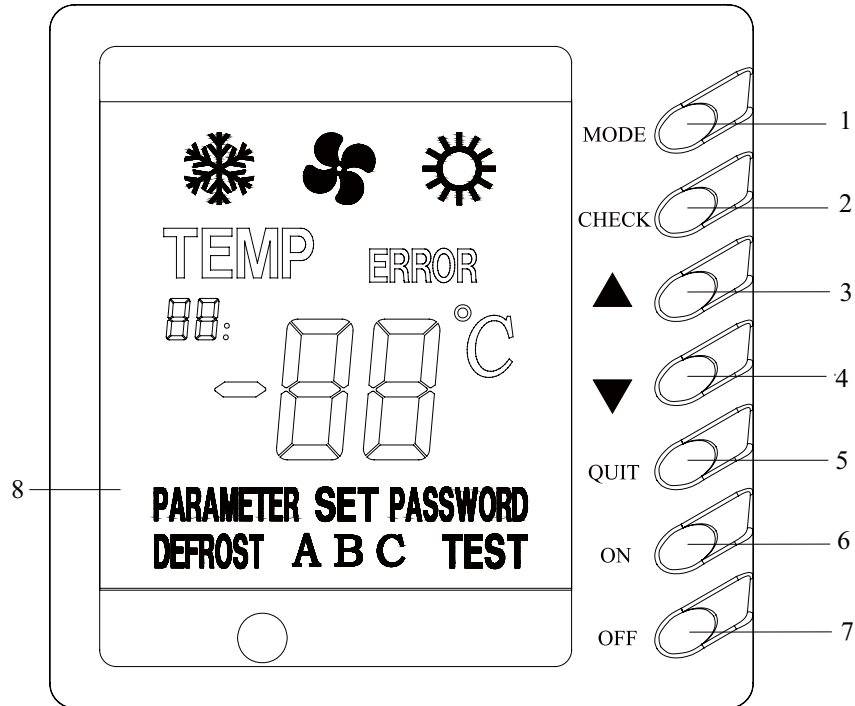
3 WIRED CONTROLLER

3.1 Dimension



3.2 Function

3.2.1 Operation View



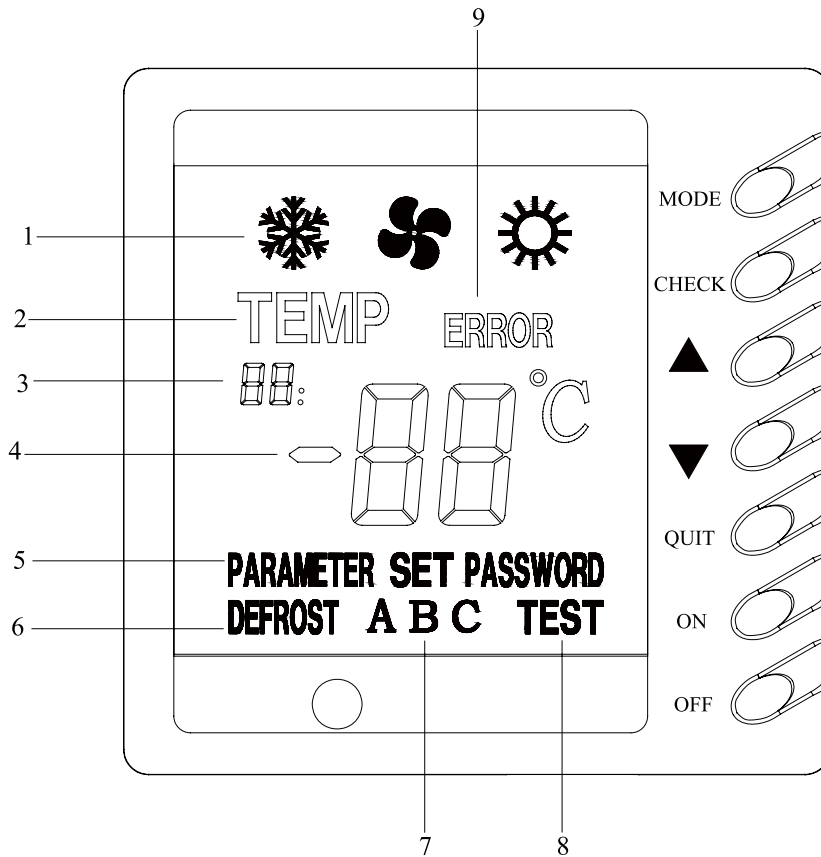
NO.	Name	Function description
1	MODE button	It can switch between cooling and heating. This button is available only on heat pump unit.
2	CHECK button	Press it once under normal state to enter check mode. Under check mode, pressing this button when "17" is displayed can change the value of "17". Under parameter setting mode, pressing this once can switch the adjusting objection between parameter and value, and pressing this button for long (about 5s) can save and quit this parameter setting.
3	Increasing button	To increase present set value or change set/check object.
4	Decreasing button	To decrease present set value or change set/check object.
5	QUIT button	Under Set and Check mode, press it once to quit this mode. Under parameter set mode, this set value would not be saved. Press this button for long (about 5s) to set sound, and make sound switch between always on and always off.
6	ON button	To turn on the unit; when under compel operation, press it once to quit compel operation.
7	OFF button	To turn off the unit; press it once to quit compel operation when the unit is under compel operation.
8	LCD display	Display information of the unit.

Notes:

a. Turn On, Off Auxiliary Heater: It is only available for heat pump unit. Press CHECK once to enter Check mode. Press ▲ and ▼ to change check object, and press CHECK again till the present check object becomes "17". Value "17" switches between 01/03 (auxiliary heater on) and 00/02 (auxiliary heater off). That is 00 Off → 01 On → 00 Off, or 02 Off → 03 On → 02 Off.

b. Check Parameter: After energization for 20s, press QUIT then ▲ to enter parameter checking mode. Under this mode, Auxiliary display area shows the checking object, and Main display area displays the value for the checking object. Press ▲ and ▼ to change the checking object. Press QUIT to quit from the check mode.

3.2.2 Display View



NO.	Name	Function description
1	Running mode display	: cooling mode, : heating mode, : reserved
2	Temp display	It shows temperature value at main display area.
3	Auxiliary display area	It contains 2 numbers and a comma, for showing temperature and number of parameter at main display area. It only displays when under Check mode and Parameter checking mode.
4	Main display area	It contains a minus, 2 numbers and 1 temperature unit, for displaying value of temperature and parameter (temperature or time value) and error code. When temperature value is displayed, it shows value in algorithm and temperature unit; when time is displayed, it shows algorithm value but without temperature unit (default unit is min); when it is code, it displays specific error (refer to Malfunction Error List) but without temperature unit. Individual temperature or parameter may exceed 99, then adopt AX for 100 ~ 109, bX for 110 ~ 119, CX for 120 ~ 129, dX for 130 ~ 139, EX for 140 ~ 149, FX for 150 ~ 159, and X stands for a number between 0 ~ 9. Under normal state, it shows temperature for back water.
5	Parameter display	It means the value shown at present main display area is parameter. It shows only under Parameter Check mode.
6	Defrost display	It displays when defrosting; otherwise it doesn't displays.
7	System ID	It displays when system or compressor orders, for showing which system is defrosting.
8	Testing display	For testing, it displays under compel operation.
9	Error code display	It shows the error code displayed on Main Display Area. It displays when there is error at system or communication.

Caution:

1) When unit is off, it displays only temperature of back water. When unit is on, under normal state, if there is no error, it displays temperature of back water, if there is error, it displays error code; when there is no operation after 60s of pressing the button, it quit back to normal state display automatically.

2) Auto antifreeze operation display (only for heat pump unit)

When auto antifreeze function is started and relevant conditions are satisfied, unit begins auto antifreeze operation. At

this time, LCD main display area displays code d2 (if there is error it displays error code).

3.3 Installation

1) First select an installation position. According to the size of the communication line of the wire controller, leave a recess or an embedded wire hole to bury the communication line.

2) If the communication line between the wire controller (85×85×20) and the indoor unit is surface-mounted, use 1# PVC pipe and make matching recess in the wall (refer to Figure 6); If concealed installation is adopted, 1# PVC pipe can be used (Refer to Figure 7).

3) No matter if surface mounting or concealed mounting is selected, it is required to drill 2 holes (in the same level) which distance shall be the same as the distance (60mm) of installation holes in the bottom plate of the wire controller. Then insert a wood plug into each hole. Fix the bottom plate of the wire controller to the wall by using the two holes. Plug the communication line onto the control panel. Lastly install the panel of the wire controller.

Caution:

During the installation of the bottom plate of the wire controller, pay attention to the direction of the bottom plate. The plate's side with two notches must be at the lower position, and otherwise the panel of the wire controller cannot be correctly installed.

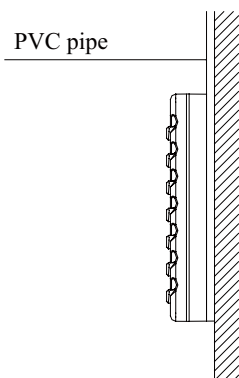


Fig6: Surface Mounting of Cable

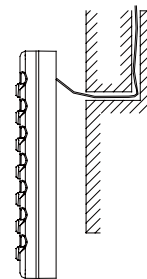


Fig7: Concealed mounting of Cable

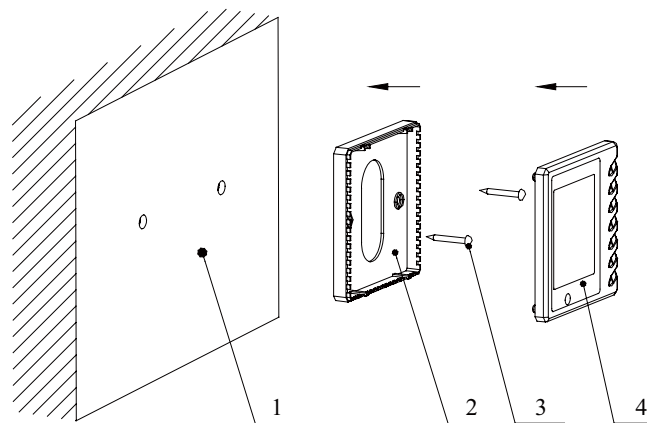


Fig 8 Schematic Diagram of Installation

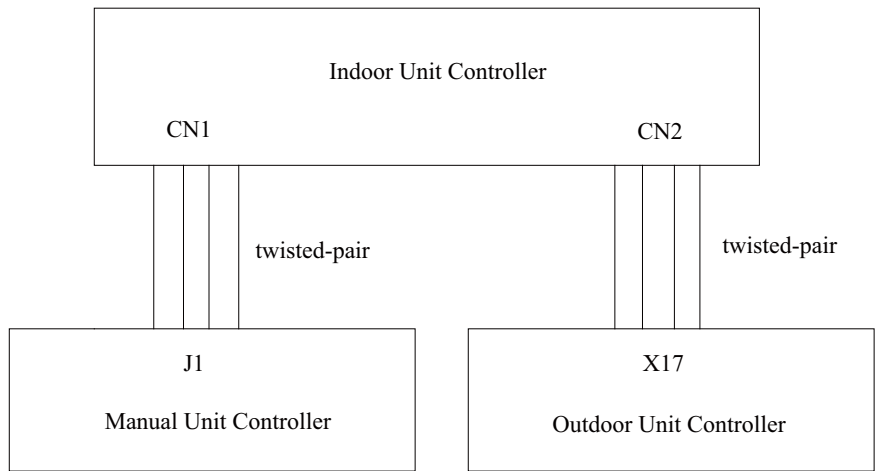
No.	Name
1	Wall Surface
2	Bottom Plate of Wire Controller
3	Screw M4X10
4	Panel of Wire Controller

⚠ Caution:

1) The communication distance between the main board and the wire controller can be as far as 20m (The standard distance is 8m).

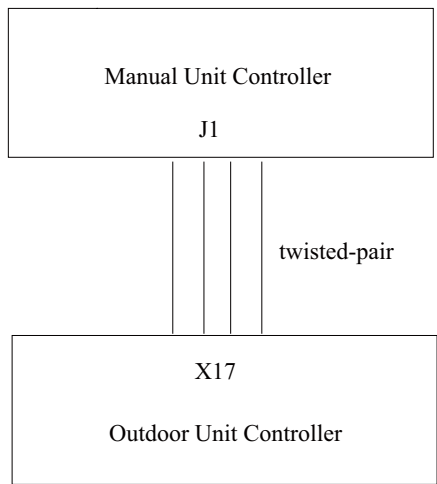
2) The wire controller shall not be installed in a place where there is water drop or large amount of water vapor.

4 CONTROL WIRING DESIGN



The controllers of the split type unit include manual controller, indoor unit controller and outdoor unit controller. The indoor unit controller communications with manual controller and outdoor unit controller in RS485. The indoor unit controller connects manual controller with 4-line twisted-pair. Similarly, the indoor unit controller connects outdoor unit controller with 4-line twisted-pair.

Indoor Unit Controller



The controllers of the Integral type unit include manual controller and outdoor unit controller. The manual controller communications with outdoor unit controller in RS485. The manual controller connects outdoor unit controller with 4-line twisted-pair.

INSTALLATION

UNITS INSTALLATION

1 UNITS INSTALLATION

1.1 Installation Positions

For indoor unit:

- 1) Fix the indoor unit bracket to the wall using appropriate plugs and screws.
- 2) Hang the indoor unit on the top wall mounting bracket.
- 3) Fix the indoor unit at the bottom side using appropriate plugs and screws.

For outdoor unit:

- 1) The installation is frost-free.
- 2) The space around the unit is adequate for servicing.
- 3) The space around the unit allows for sufficient air circulation.
- 4) There is no danger of fire due to leakage of flammable gas.
- 5) All piping lengths and distances have been taken into consideration.

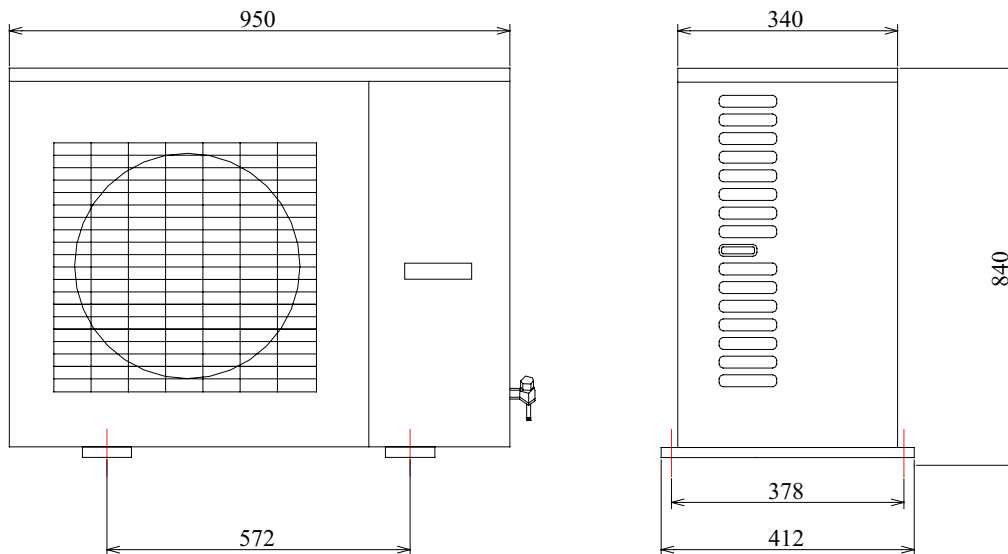
1.2 Matters need Attention

- 1) The indoor unit is packed in a cardboard box, fixed by straps.
- 2) At delivery, the unit should be checked and any damage should be reported immediately to the carrier claims agent.
- 3) Check if all indoor unit accessories are enclosed.
- 4) The indoor unit is heavy and should be lifted by two persons.

1.3 DIMENSION DATA

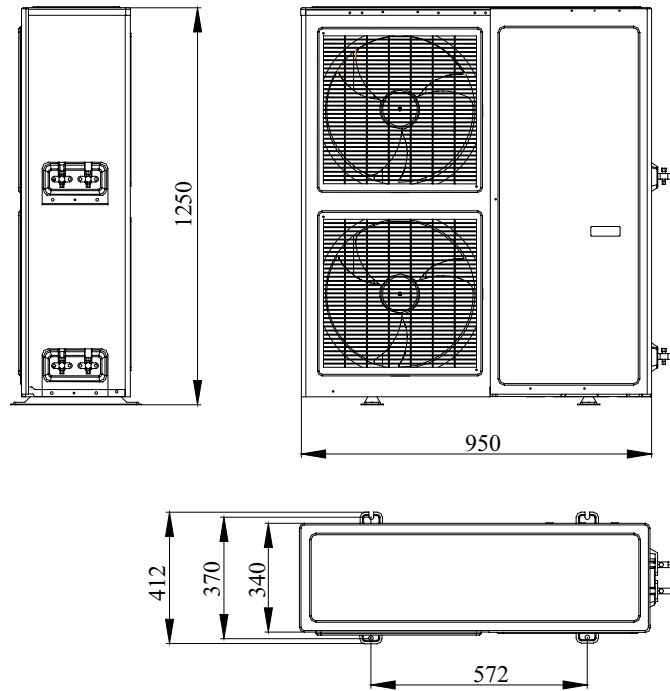
- 1) Split type
HLR8WZNa-M(O)

Unit: mm



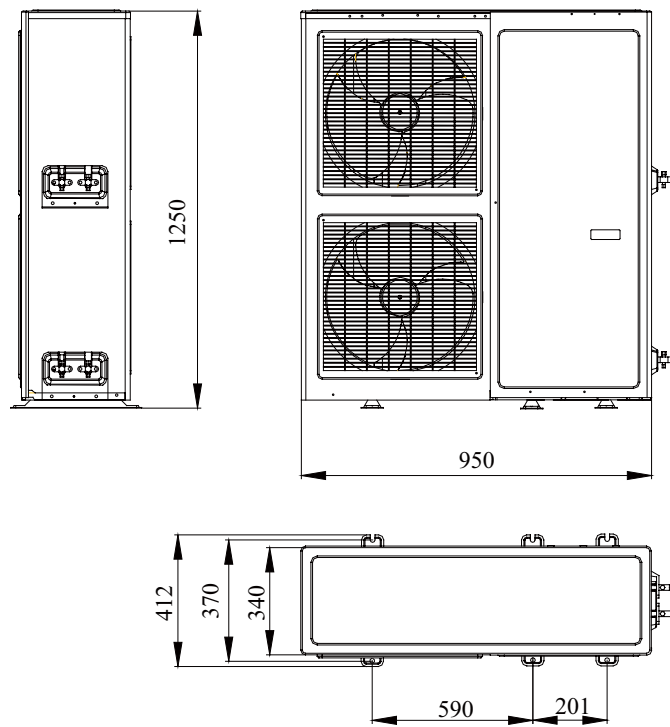
HLR10WZNa-M(O), HLR12.5WZNa-M(O)

Unit: mm



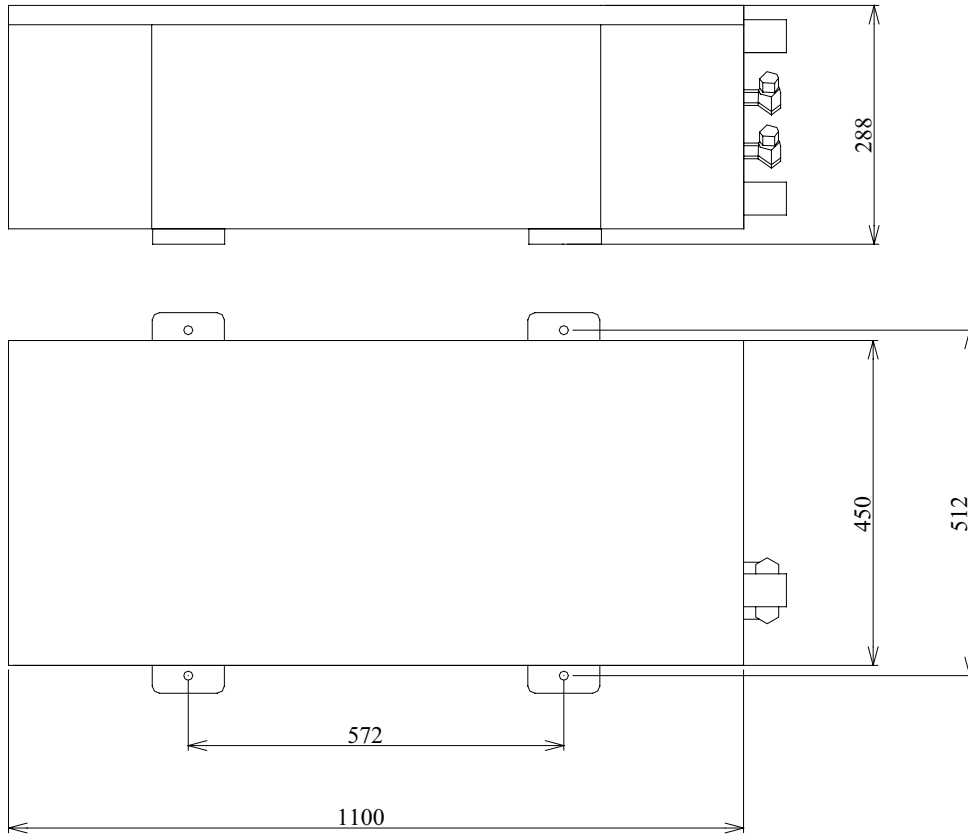
HLR15WZNa-M(O)

Unit: mm



HL(R)8WZNa-M(I)、HL(R)10WZNa-M(I)、HL(R)12.5WZNa-M(I)、HL(R)15WZNa-M(I)

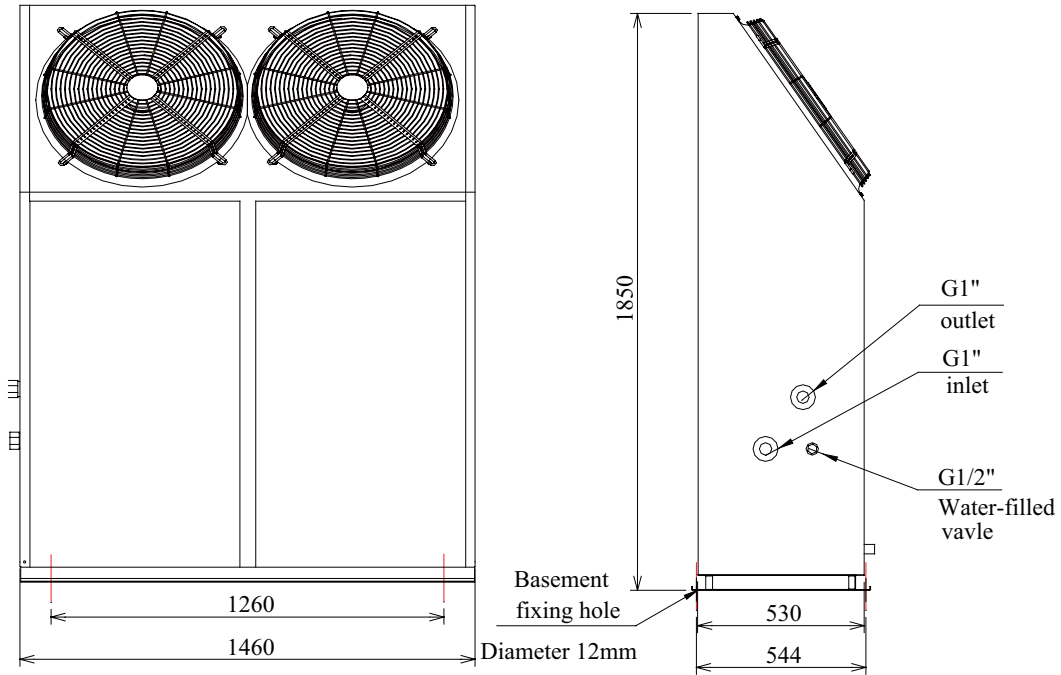
Unit: mm



2) Integral Type

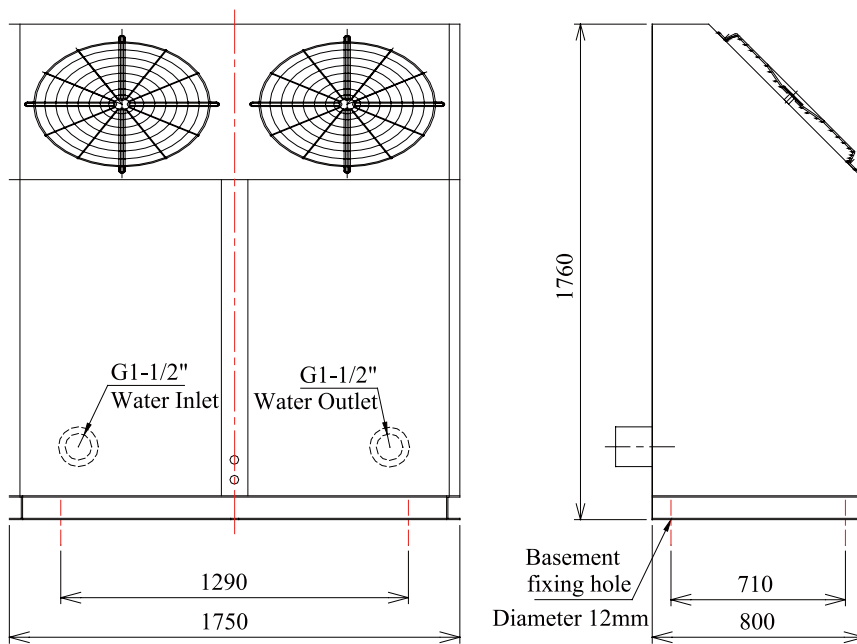
HLR22SNa-M、HLR25Na-M

Unit: mm



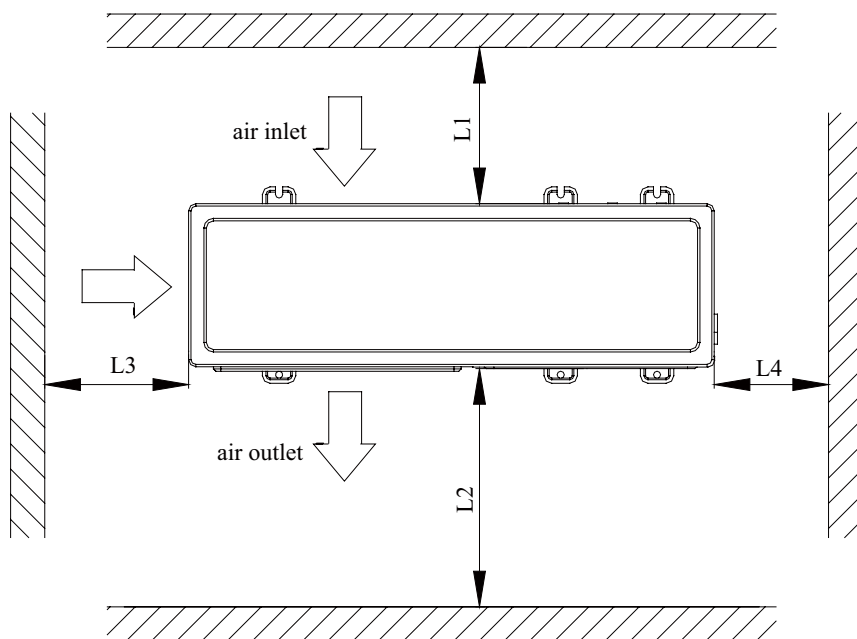
HLR35Na-M.HLR45Na-M

Unit: mm



1.2 INSTALLATION CLEARANCE DATA

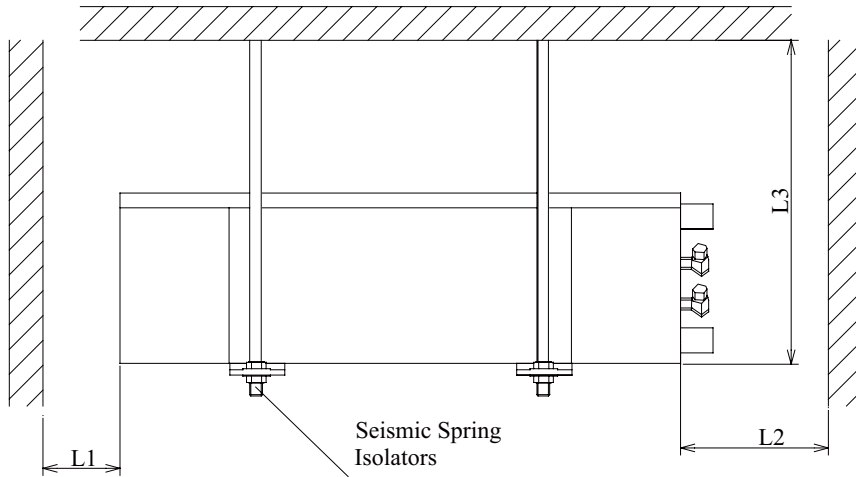
1) Split type (Outdoor unit)



unit: mm

demonstration	L1	L2	L3	L4
distance	>500	>1000	>500	>500

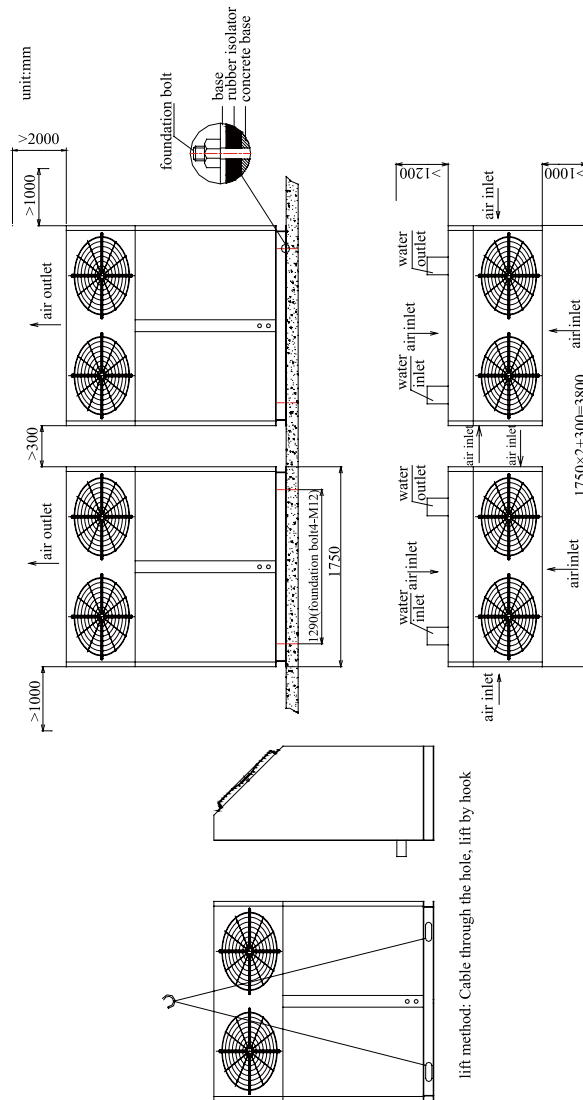
2) Split type (Indoor unit)



unit: mm

demonstration	L1	L2	L3
distance	>250	>800	>1200

Integral Type



lift method: Cable through the hole, lift by hook

2 WATER PIPING WORK

2.1 Installation Procedure

For all guidelines, instructions and specifications regarding refrigerant pipework between the indoor unit and the outdoor unit please refer to the outdoor unit installation manual.

The units are equipped with a water inlet and water outlet for connection to a water circuit, which must be provided by a licensed technician and must comply with all relevant national regulations.

2.2 Matters of Attention

Air vents must be provided at all high points of the system. The vents should be located at points which are easily accessible for servicing. An automatic air purge should be used. Check the valve is not tightened too much so that automatic release of air in the water circuit remains possible.

2.3 Antifreeze

% by Weight	0	12	22	30	36	41
Freezing Point °C (°F)	0(32)	-5(23)	-10(14)	-15(5)	-20(-4)	-30(-22)
Ambient Temperature °C (°F)	8.3(47)	3.3(38)	-1.7(29)	-6.7(20)	-11.7(11)	-16.7(2)
Cooling Capacity Correction Factor	1.0	0.985	0.980	0.974	0.970	0.965
Water Flow Correction Factor	1.0	1.02	1.04	1.075	1.11	1.14
Pressure Drop Correction Factor	1.0	1.07	1.11	1.18	1.22	1.24

3 ELECTRIC WIRING WORK

3.1 Wiring Principle

POWER SUPPLY — The electrical characteristics of the available power supply must agree with the unit nameplate rating. Supply voltage must be within the limits shown. See 3.3 for electrical and configuration data. **FIELD POWER CONNECTIONS** — All power wiring must comply with applicable local and national codes. Install field-supplied, branch circuit fused disconnect(s) of a type that can be locked off or open. Disconnect(s) must be located within sight and readily accessible.

3.2 SPECIFICATION OF POWER CORD & AIR SWITCH

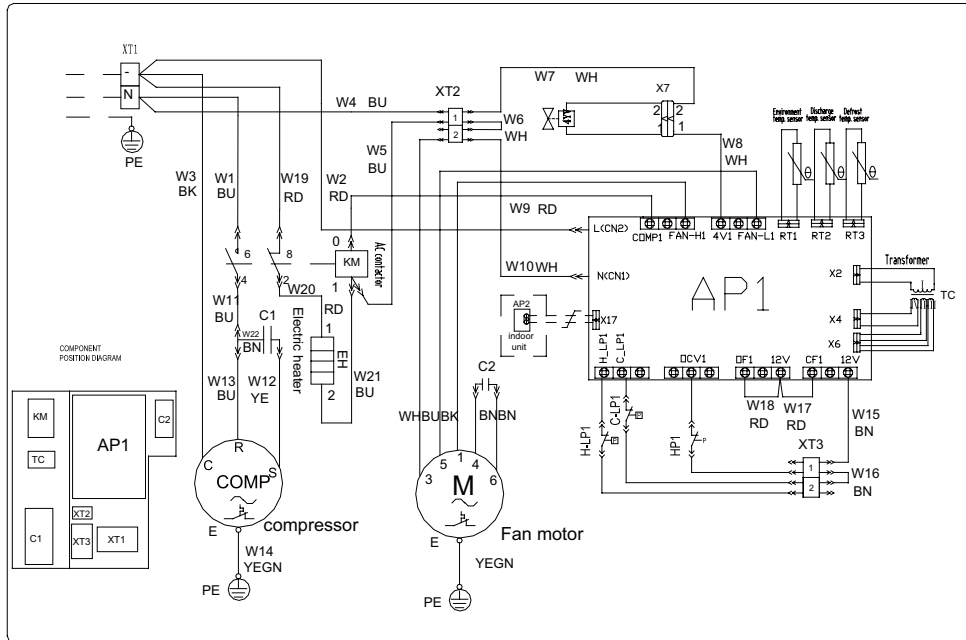
Model	Power Supply	Capability of Air Switch(A)	Minimum Sectional Area of Earth Wire(mm ²)	Minimum Sectional Area of Power Cord(mm ²)
HLR8WZNa-M	380 ~ 415V,3,50	10	2.5	2.5
HLR10WZNa-M	380 ~ 415V,3,50	13	2.5	2.5
HLR12.5WZNa-M	380 ~ 415V,3,50	16	2.5	2.5
HLR15WZNa-M	380 ~ 415V,3,50	16	2.5	2.5
HLR22SNa-M	380 ~ 415V,3,50	25	4	4
HLR25SNa-M	380 ~ 415V,3,50	32	6	6
HLR35SNa-M	380 ~ 415V,3,50	63	10	10
HLR45SNa-M	380 ~ 415V,3,50	63	10	10

3.3 WIRING DIAGRAM

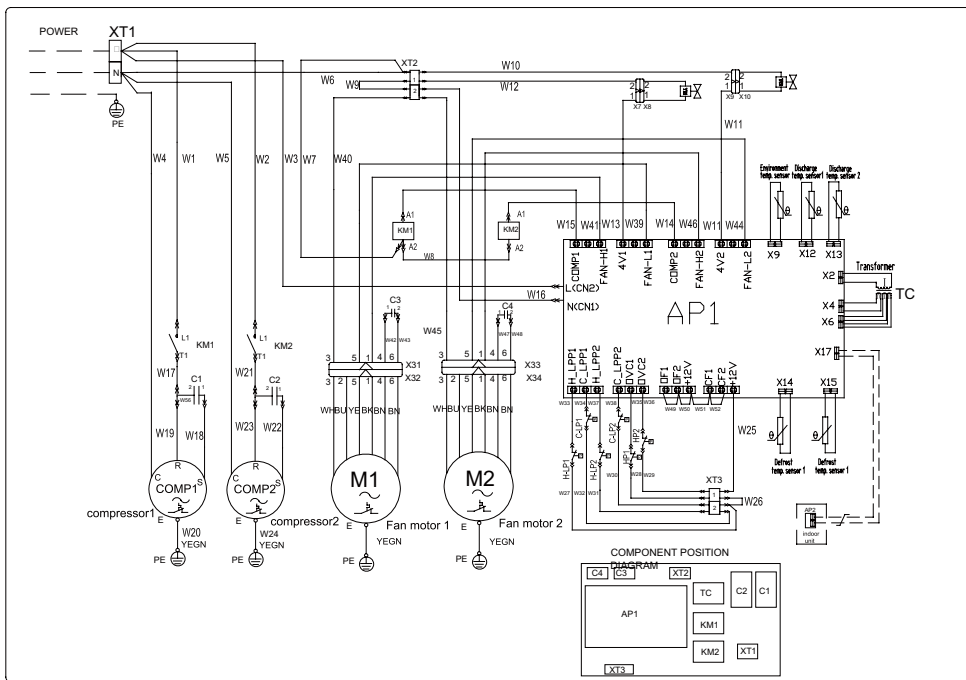
3.3.1 Wiring Diagram-Split Type

3.3.1.1 Outdoor Units

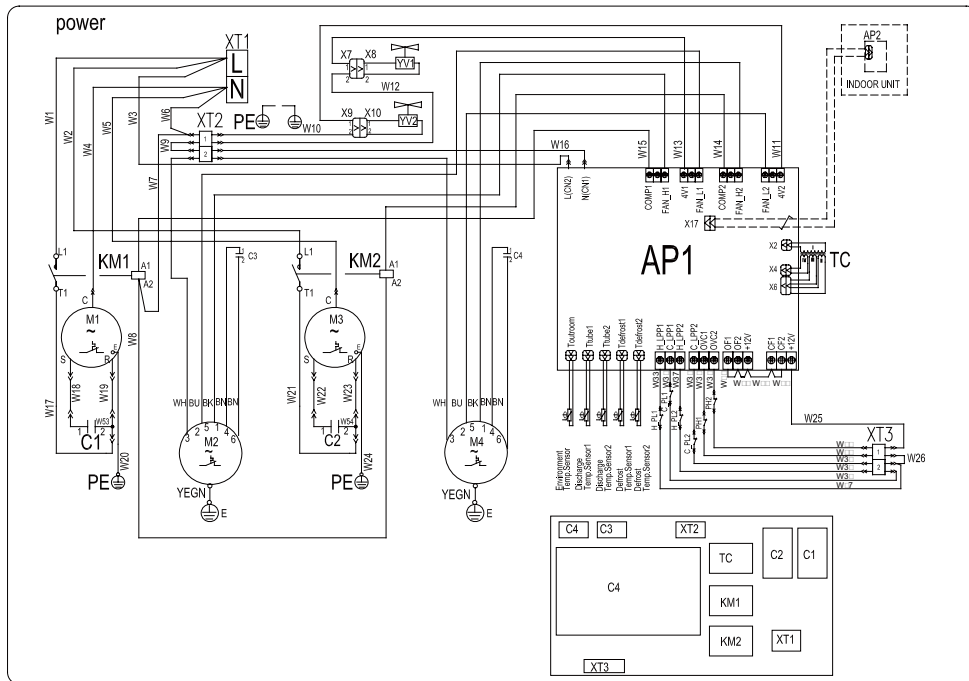
Model: HLR8WZNa-M(O)



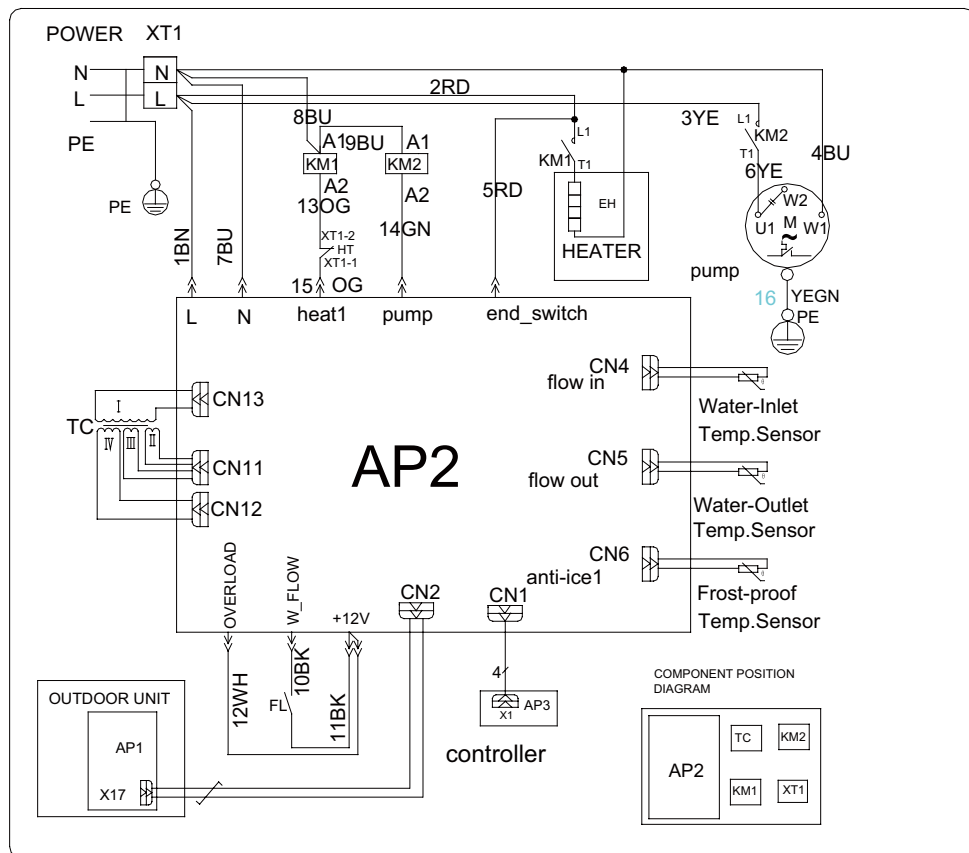
Model: HLR10WZNa-M(O), HLR12.5WZNa-M(O)



Model: HLR15WZNa-M(O)

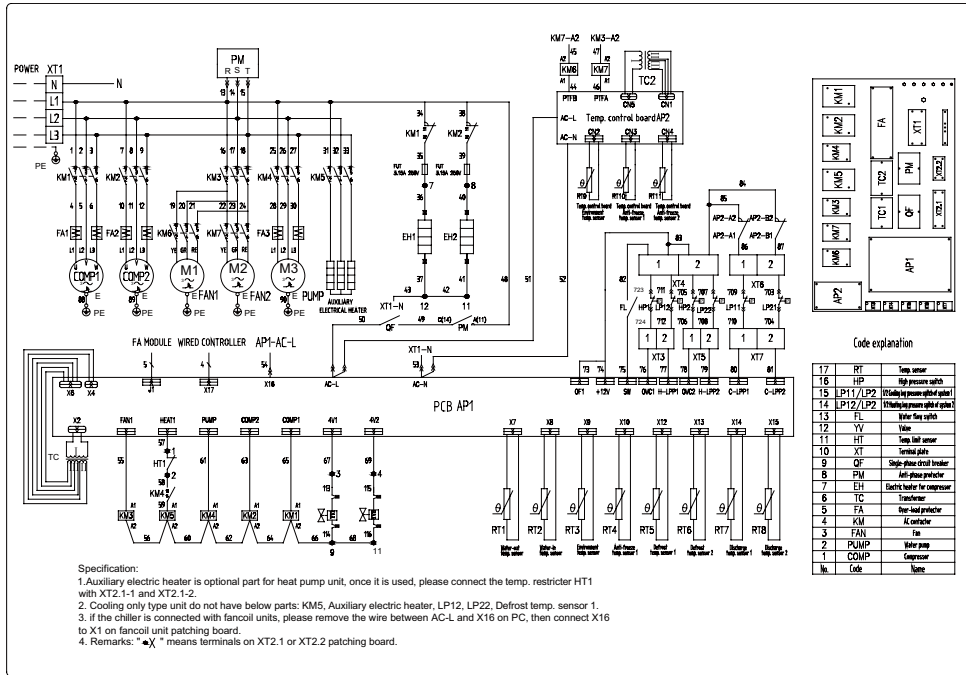


3.3.1.2 Indoor Units

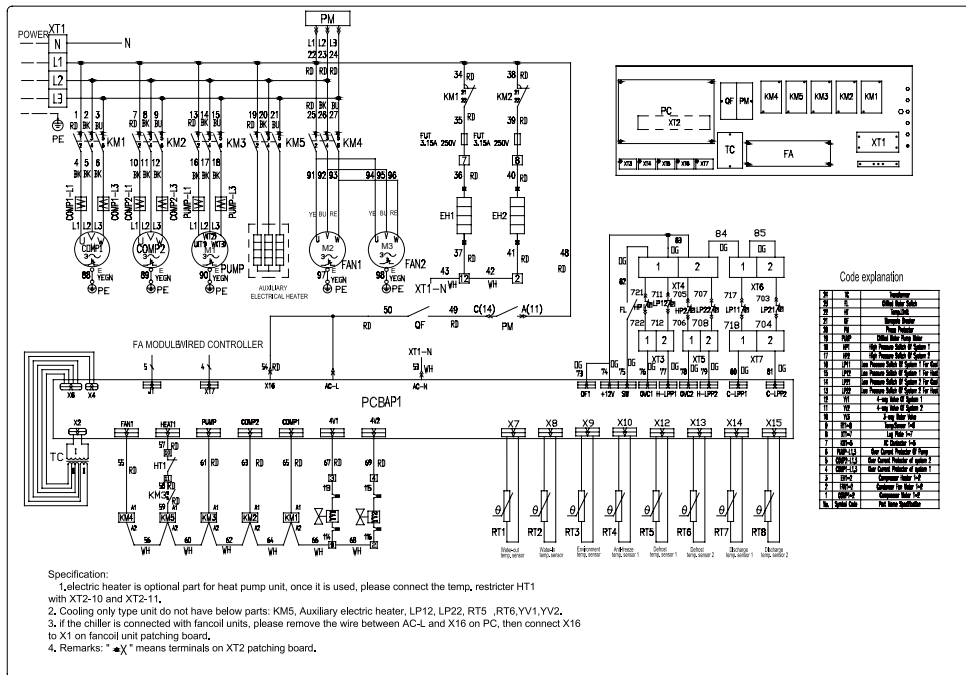


3.3.2 Wiring Diagram- Integral Type

Model: HLR22SSNa-M, HLR25SSNa-M



Model: HLR35SSNa-M, HLR45SSNa-M



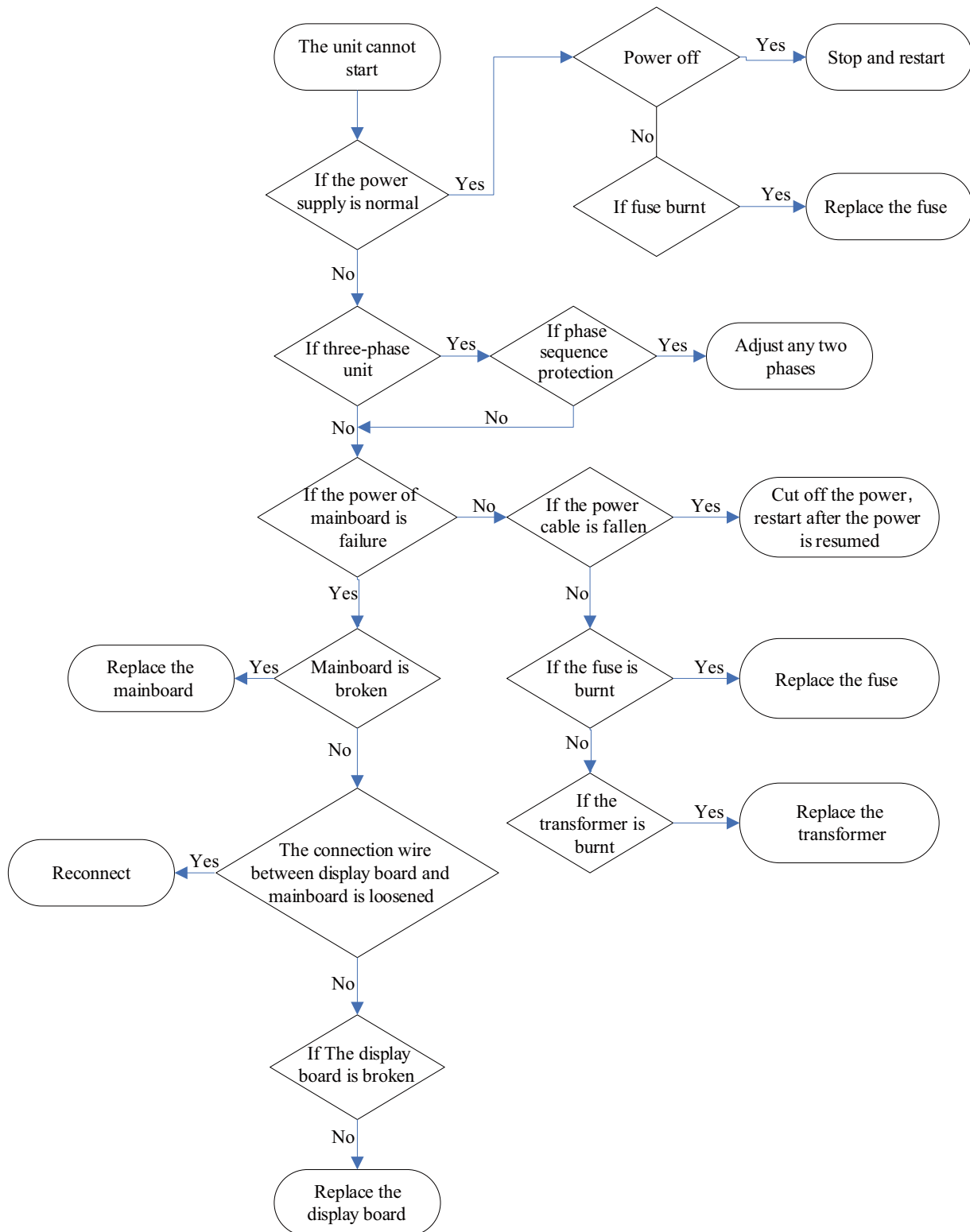
MAINTENANCE

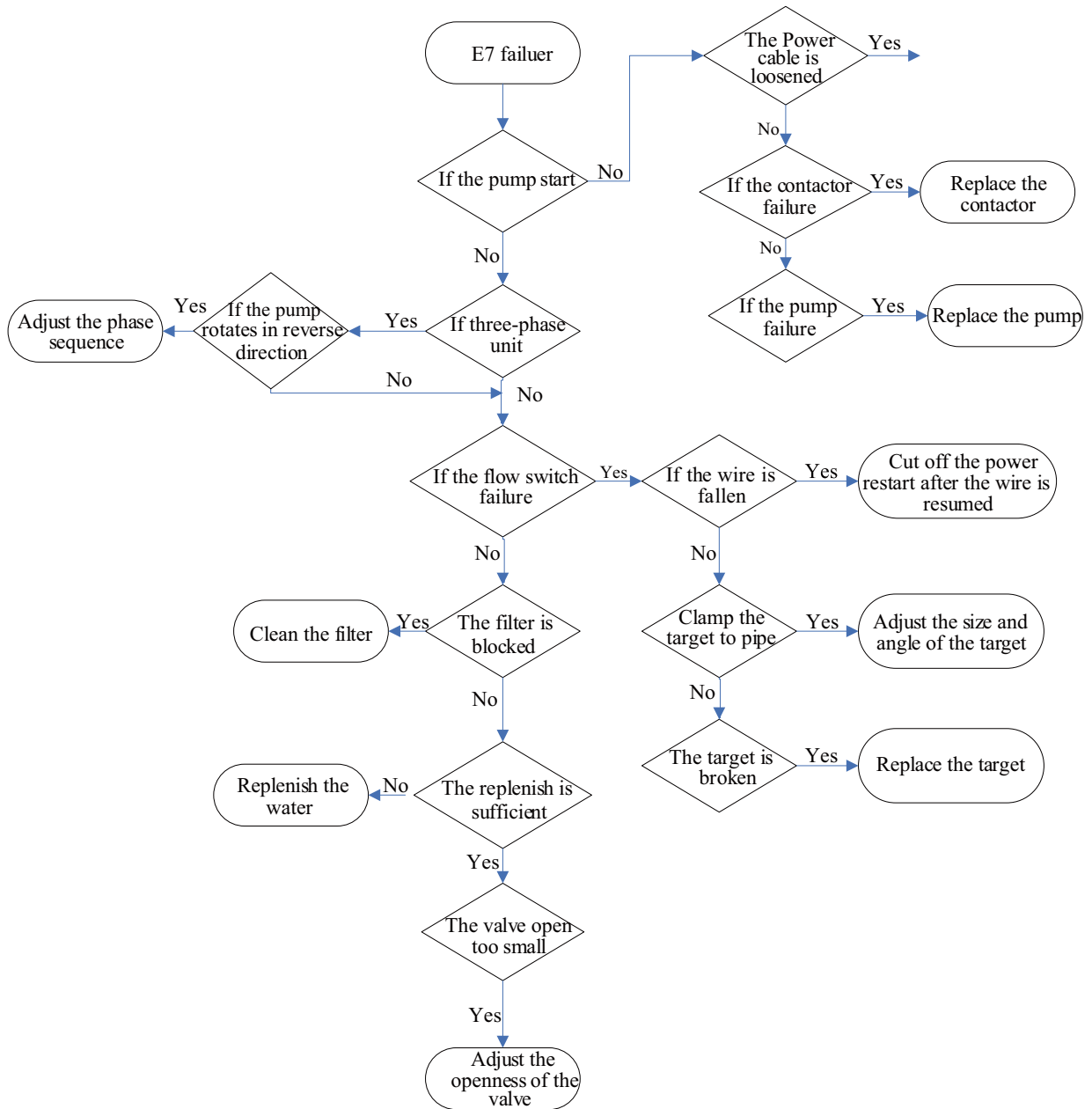
UNITS MAINTENANCE

1 ERROR CODE LIST

Code Indication	Error Name	Control Description
E1	Comp. 1 High-pressure protection	Press ON/OFF key to clear
E2	System 1 antifreeze protection	Auto resume
E3	Comp. 1 Low pressure protection	Press ON/OFF key to clear
E4	Comp. 1 Discharge temp. protection	Press ON/OFF key to clear
E5	Comp. 1 overload protection	Press ON/OFF key to clear
E6	Pump overload protection	Press ON/OFF key to clear
E7	Flow switch failure	Press ON/OFF key to clear
E8	Fan 1 overload protection	Press ON/OFF key to clear
E9	System 1 outlet water temp. too high	Auto resume
b1	Comp. 2 High-pressure protection	Press ON/OFF key to clear
b2	System 2 antifreeze protection	Auto resume
b3	Comp. 2 Low pressure protection	Press ON/OFF key to clear
b4	Comp. 2 Discharge temp. protection	Press ON/OFF key to clear
b5	Comp. 2 overload protection	Press ON/OFF key to clear
b8	Fan 2 overload protection	Press ON/OFF key to clear
b9	System 2 outlet water temp. too high	Auto resume
F1	Antifreeze temp. sensor 1 failure	Auto resume
F2	Antifreeze temp. sensor 2 failure	Auto resume
F3	Defrost temp. sensor 1 failure	Auto resume
F4	Defrost temp. sensor 2 failure	Auto resume
F5	Discharge temp. sensor 1 error	Auto resume
F6	Discharge temp. sensor 2 error	Auto resume
F7	Outdoor ambient temp. sensor failure	Auto resume
F8	Inlet water temp. sensor failure	Auto resume
F9	Outlet water temp. sensor failure	Auto resume
EC	Communication malfunction	Auto resume

2 FLOW CHART OF TROUBLESHOOTING





3 DISASSEMBLY AND ASSEMBLY PROCEDURE OF MAIN PARTS

3.1 Split Type

3.1.1 Outdoor Unit

Operation Procedure	Illustration
<p>1) Remove the front case a) Remove the panel Loosen the two tapping screws fixing the front grill. Pull down and remove the front grill. (See Fig. 2)</p> <p>b) Remove the cover. Loosen the two tapping screws fixing the cover. Remove the cover (See Fig. 3)</p>	<div style="text-align: center;">  <p>Fig. 1</p>  <p>Fig. 2</p>  <p>Fig. 3</p> </div>

c) Remove the front plate.
Loosen the two tapping screws fixing the front plate. Remove the front plate. (See Fig. 5)



grill
Fig. 4

d) Remove the grill
Loosen the two tapping screws fixing the grill. Remove the grill. (See Fig. 6)



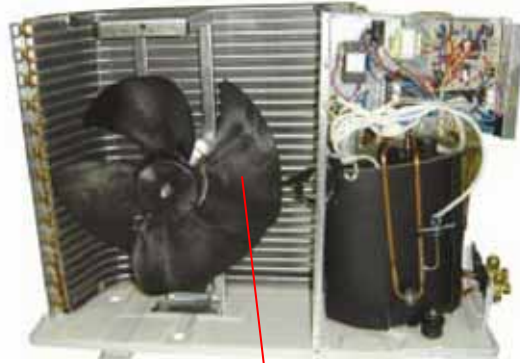
Fig. 5



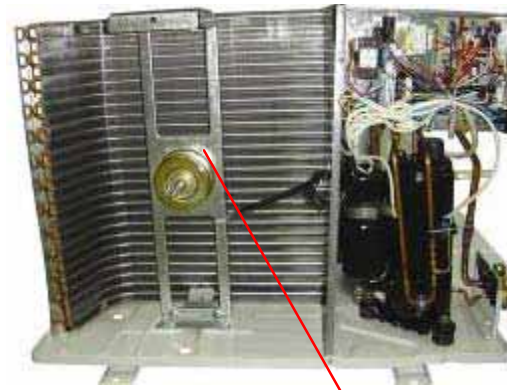
Fig. 6

2) Remove the axial fan

Loosen the ball nuts fixing the axial fan and remove the washer. (See Fig. 7)
 Pull outward to remove the impeller. (See Fig. 7)



Ball Nut
 Fig. 7



Motor support
 Fig. 8

3) Remove the motor

Loosen the screws fixing the motor support.
 Remove the motor support. (See Fig. 8 & Fig.9)



Fig. 9

Loosen the two screws fixing the motor. Pull backward and remove the motor. (See Fig .10)
Loosen the wire of motor, and pull it through the hole.

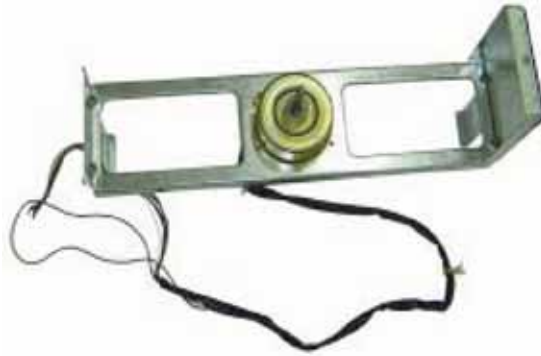


Fig. 10

4) Remove the 4-way valve and capillary tube

a) Remove the 4-way valve

Loosen the screws fixing the coil of 4-way valve. Remove the coil of 4-way valve.

Welding out the tubes connected to the 4-way valve.

Remove the 4-way valve. (See Fig.11)

Note: When welding, the valve should be covered by wet cloth in order to avoid the high temp. hurt.



Fig. 11

b) Remove the capillary tube

Welding out the tubes connected to the capillary tube.

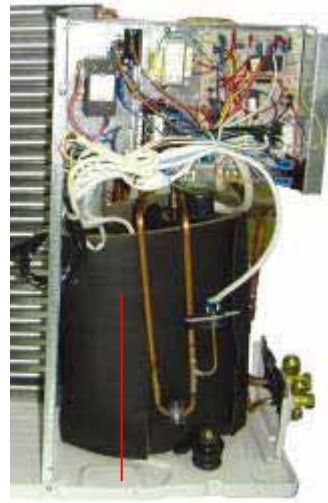
Remove the capillary (See Fig.12)



Fig. 12

5) Remove electric box

Loosen the screws fixing the box cover. Remove all pressure switches and temp. sensor. (See Fig.13)



Noise-absorbing cover

Fig.13

6) Remove compressor and gas-liquid separator

Remove the connection wire of compressor. (See Fig.14)

welding out the suction pipe and discharge pipe. (See Fig.14)

Loosen the bolts fixing the compressor and Remove the compressor and gas-liquid separator.



Gas-liquid separator

Compressor

Fig.14

7) Remove gas and liquid valve

a) Remove gas valve

Loosen the bolts fixing the gas valve.
welding out the pipe connected to the gas valve
(See Fig.15) .

Note: When welding, the valve should be covered
by wet cloth in order to avoid the high temp. hurt.

b) Remove liquid valve

Loosen the bolts fixing the liquid valve.
welding out the pipe connected to the liquid valve
(See Fig.16) .

Note: When welding, the valve should be covered
by wet cloth in order to avoid the high temp. hurt.

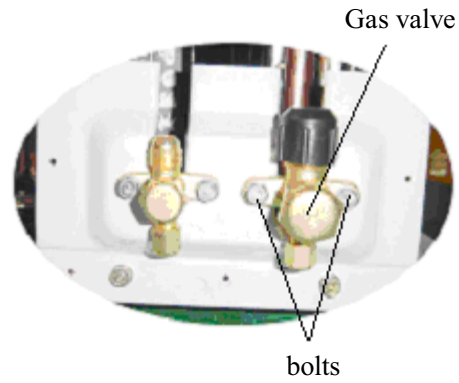


Fig.15

liquid valve

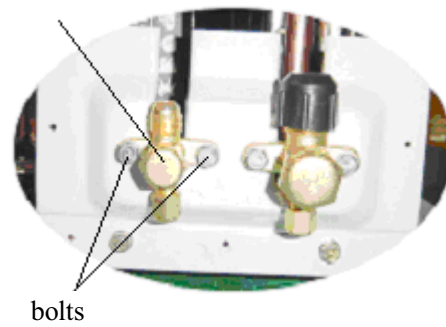


Fig.16

3.1.2 Indoor Unit

Operation Procedure	Illustration
<p>1) Remove the Cover Loosen the tapping screws fixing the cover. (See Fig. 1) Remove the cover (See Fig. 2)</p>	 <p>Fig. 1</p>  <p>Fig. 2</p>
<p>2) Remove electric box Loosen the screws fixing the box cover. Remove all pressure switches and temp. sensor. (See Fig.3)</p>	 <p>Electric box</p> <p>Fig. 3</p>
<p>3) Remove the water pump Loosen the joints fixing the water pump. Remove the water pump. (See Fig. 4)</p>	 <p>Water pump</p> <p>Fig. 4</p>

4) Remove the tube in tube heat-exchanger
welding out the pipes connected to the tube in tube heat-exchanger. Remove the tube in tube heat-exchanger. (See Fig. 5)

5) Remove the flow switch
Loosen the joints fixing the flow switch.
Remove the flow switch. (See Fig. 6)

6) Remove the expansion gas tank
Loosen the joints fixing the expansion gas tank.
Remove the expansion gas tank. (See Fig. 7)



Tube in tube heat-exchanger
Fig. 5



Flow switch
Fig. 6



Expansion gas tank
Fig. 7

3.2 Integral Type

1) Remove the front case

Loosen the tapping screws fixing the front case. (See Fig. 1)

Pull down and remove the front case. (See Fig. 2)



Fig. 1



Fig. 2

2) Remove electric box

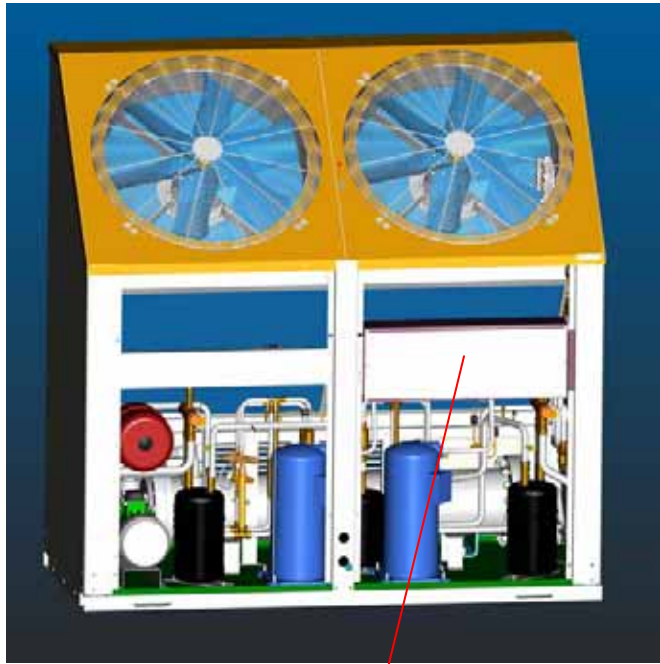
Loosen the screws fixing the box cover. Remove all pressure switches and temp. sensor. (See Fig.3)

3) Remove compressor and gas-liquid separator

Remove the connection wire of compressor (See Fig.4)

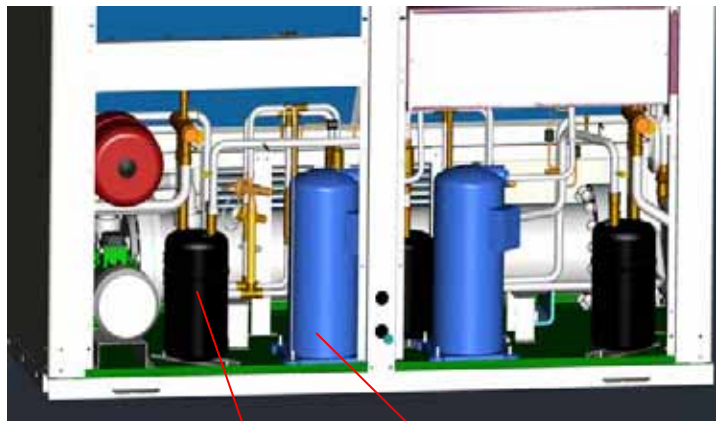
welding out the suction pipe and discharge pipe. (See Fig.4)

Loosen the bolts fixing the compressor and Remove the compressor and gas-liquid separator.



Electric box

Fig. 3



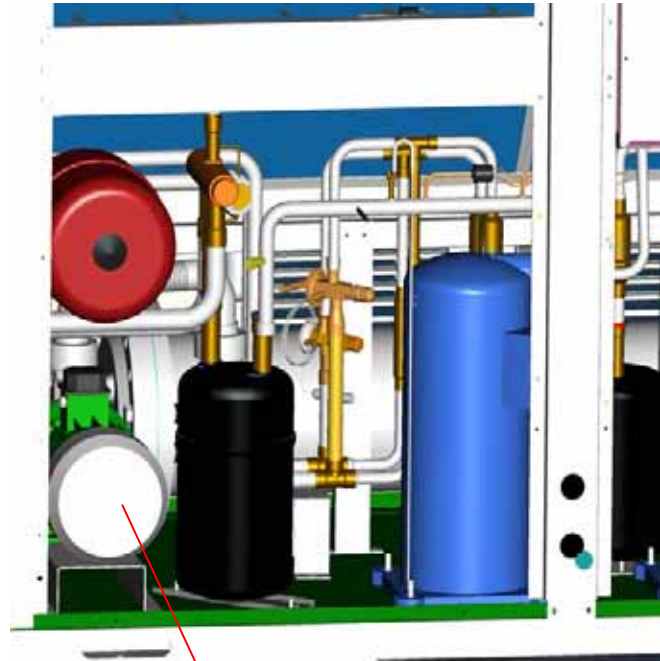
Gas-liquid separator

Compressor

Fig. 4

4) Remove the water pump

Loosen the joints fixing the water pump. Remove the water pump. (See Fig. 5)



Water pump

Fig. 5

5) Remove the expansion gas tank

Loosen the joints fixing the expansion gas tank. Remove the expansion gas tank. (See Fig. 6)

Expansion gas tank

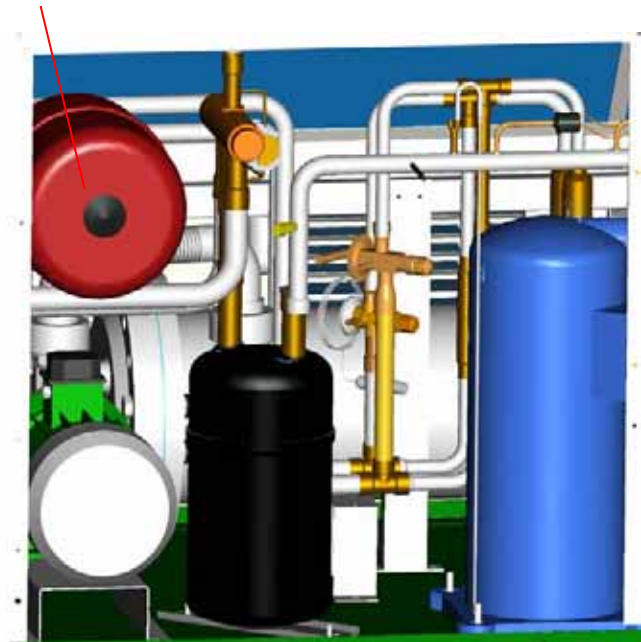
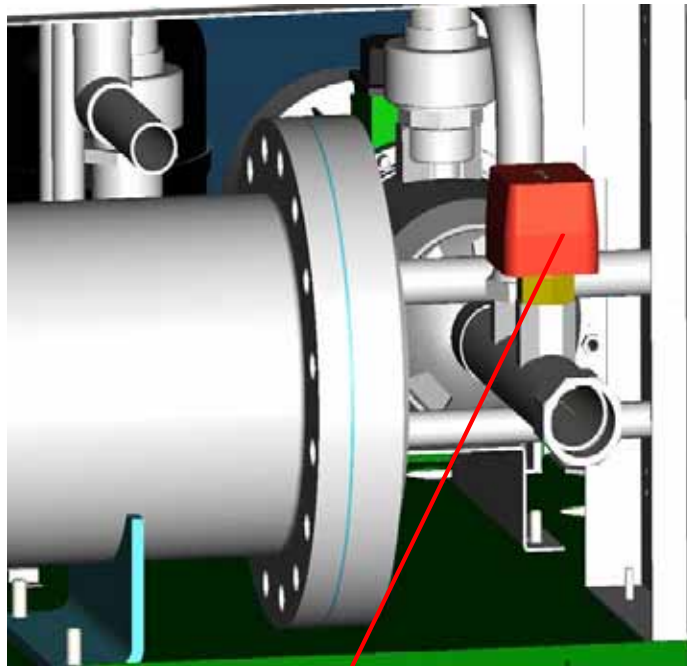


Fig. 6

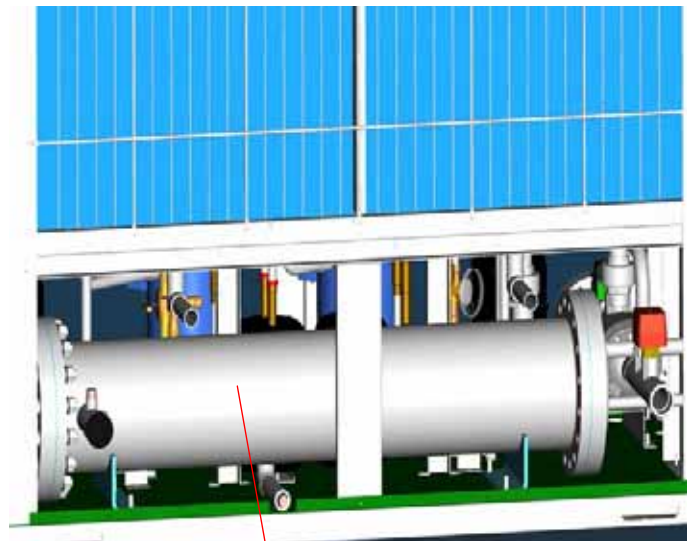
6) Remove the flow switch

Loosen the joints fixing the flow switch.
Remove the flow switch. (See Fig. 7)

7) Remove the shell and tube heat-exchanger
welding out the pipes connected to the shell and tube heat-exchanger. Remove the shell and tube heat-exchanger. (See Fig. 8)



Flow switch
Fig. 7



Shell and tube heat-exchanger
Fig. 8

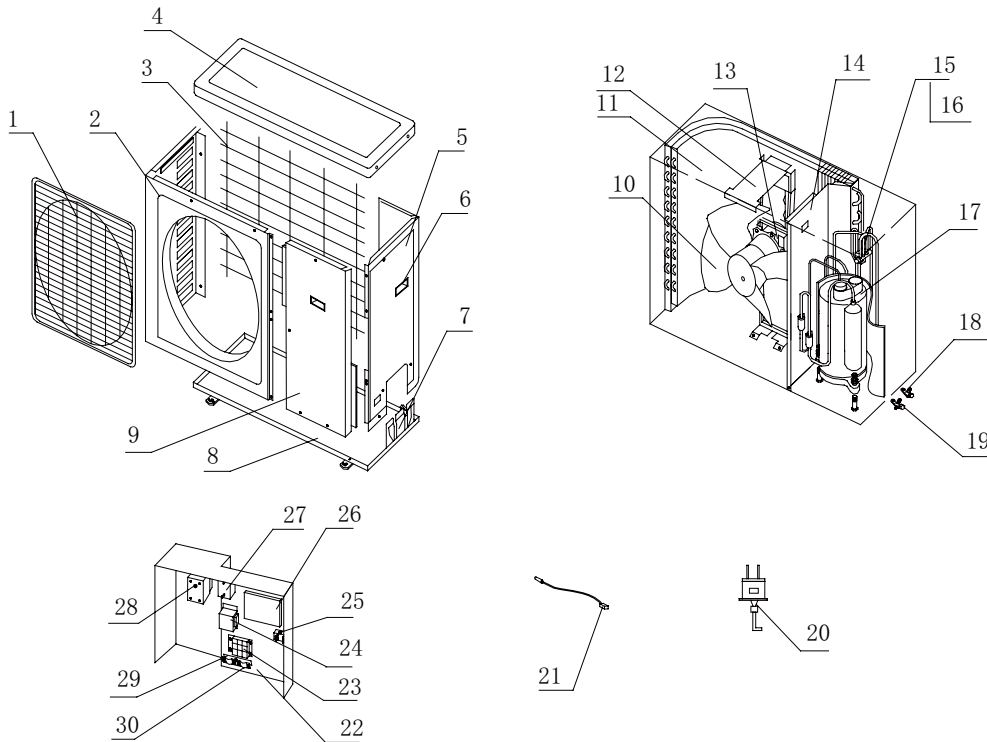
4 EXPLODED VIEWS AND PART LIST

4.1 Exploded Views and Parts List- Split Type

4.1.1 Outdoor Units

Model: HLR8WZNa-M(O)

Exploded Views:



Model: HLR8WZNa-M(O) for EM113W0030、EM113W0031

No.	Name of Part	Part Code	Quantity
1	Front Grill	22265401	1
2	Cabinet	01435103P	1
3	Protection Grill	01475401	1
4	Top Cover	01255012P	1
5	Rear Side Plate Sub-Assy	01305402	1
6	Handle	26235253	2
7	Valve Support	01715402	1
8	Metal Base	01205402 ① 01192106P ②	1
9	Front Side Plate	01305403	1
10	Axial Flow Fan	10335401	1
11	Condenser Assy	01125703	1
12	Motor Support	01705402	1
13	Motor LW92D	150154011	1
14	Isolation Plate	01235403 ① 01242102 ②	1
15	4-way Valve (SHF-20H)	43000338	1
16	Magnet Coil	430004002	1
17	Compressor C-SBN303H8D	00129050	1
18	Cut off Valve	07130212	1

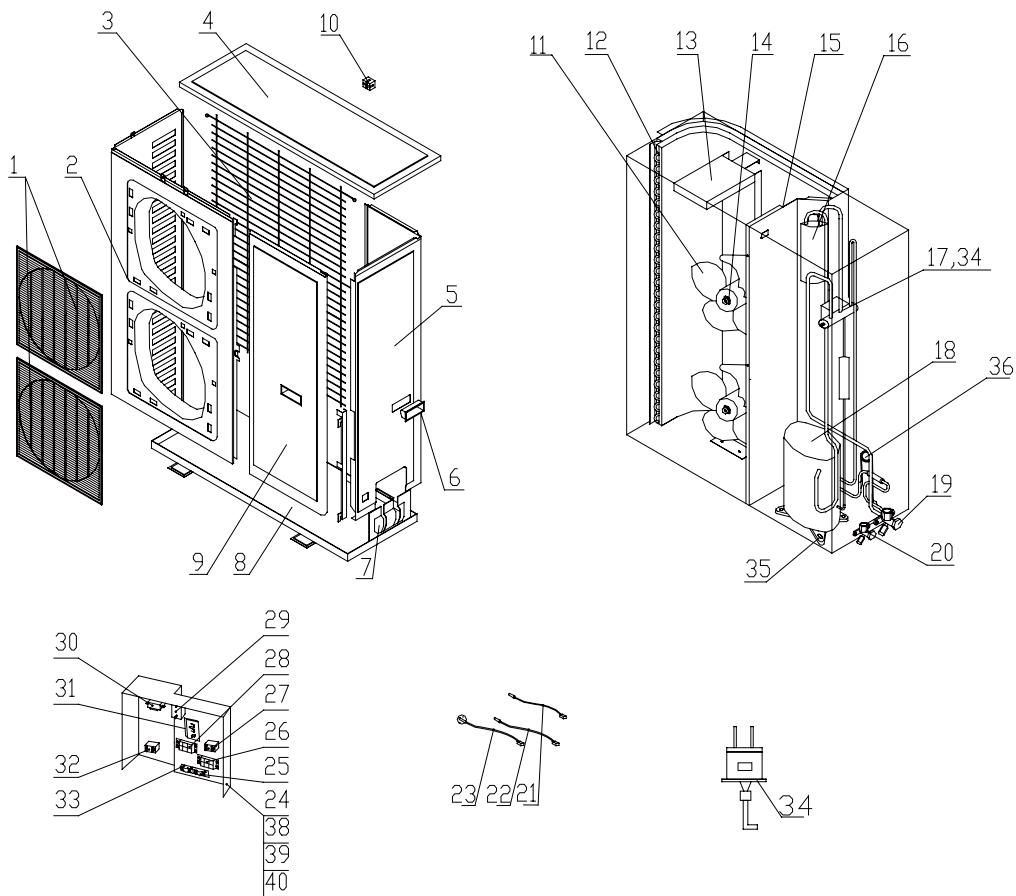
19	Cut off Valve	07130210	1
20	Pressure Switch	460200061	1
21	Temp Sensor	3900012126	1
22	Electric Box Sub-Assy	01392129	1
23	Terminal Board	42011043	1
24	Transformer 57X25D	43110240	1
25	Terminal Board	42011103	1
26	MainPCB WZ163	30221602	1
27	Capacitor CBB61 4uF/500V	33010013	1
28	AC Contactor GC3-18/01KK/3TF4211	44010226	1
29	Insulation Gasket	70410503 ① 70410523 ②	2
30	Wire Clamp	71010102	2

Note:

- a. ① is only used in EM113W0030
- b. ② is only used in EM113W0031

Model: HLR10WZNa-M(O), HLR12.5WZNa-M(O), HLR15WZNa-M(O)

Exploded views:



Model: HLR10WZNa-M(O) for EM113W0020、EM113W0021

NO	Name of Part	Part Code	Quantity
1	Front Grill	22265251	2
2	Front Plate	01435433	1
3	Protection Grill	01475432	1
4	Top Cover	01255013P	1
5	Back Side Plate	01305434	1
6	Handle	26235253	2
7	Valve Support	01715001	1
8	Metal Base	01205433 ① 01192107P ②	1
9	Front Side Plate	01305431	1
10	Protection Grill Gasket		0
11	Axial Flow Fan	10335253	2
12	Condenser Assy	01125702	1
13	Motor Support Sub-Assy	01705471	1
14	Motor FW68G	15013110	2
15	Isolation Plate	01235440 ① 01242201 ②	1
16	Gas-liquid Separator Sub-Assy	07225011	1
17	4-way Valve	43000338	1
18	Compressor C-SBN373H8D	00129051	1
19	Cut-off Valve	07130212	1
20	Cut-off Valve	071302392	1
21	Ambient Sensor(15K)	3900012126G	1
22	Temperature Sensor (20K)	3900012125 G	1
23	Temp. Limiter		0
24	Electric Box Sub-Assy	01392122	1
25	Wire Clamp	71010102	2
26	Terminal Board	42011043	1
27	Terminal Board	42011103	1
28	Terminal Board		0
29	Capacitor CBB61 3.5μF/450V	33010010	2
30	AC Contactor GC3-18/01KK/3TF4211	44010226	1
31	Over current Protector	46020112	1
32	Phase Reverse Protector		0
33	Insulation Gasket	70410503	2
34	Magnet Coil	430004002	1
35	Compressor Gasket		0
36	Capillary Sub-Assy	04102108	1
37	pressure switch	460200061	1
38	Capacitor Clamp		0
39	Transformer 57X25D	43110240	1
40	Main PCB WZ163	30221602	1

Note:

- a. ① is only used in EM113W0020
- b. ② is only used in EM113W0021

Model: HLR12.5WZNa-M(O) for EM113W0040

NO	Name of Part	Part Code	Quantity
1	Front Grill	22265251	2
2	Front Plate	01435433	1
3	Protection Grill	01475432	1
4	Top Cover	01255262	1
5	Back Side Plate	01305434	1
6	Handle	26235252	3
7	Valve Support	01715001	1
8	Metal Base	01205433	1
9	Front Side Plate	01305431	1
10	Protection Grill Gasket		0
11	Axial Flow Fan	10335253	2
12	Condenser Assy	01125702	1
13	Motor Support	01705431	1
14	Motor FW68G	15013110	2
15	Isolation Plate	01235440	1
16	Liquid-gas Separator	07225433	1
17	4-way Valve	43000338	1
18	Compressor C-SBN373H8D	00102702	1
19	Gas Valve	07130212	1
20	Liquid Valve	071302115	1
21	Ambient Sensor(15K)	3900012126	1
22	Temperature Sensor (20K)	3900012125	1
23	Temp. Limiter		0
24	Electric Box	01409067	1
25	Wire Clamp	71010102	2
26	Terminal Board	42011044	1
27	Terminal Board	42011103	1
28	Terminal Board		0
29	Capacitor CBB61 3.5μF/450V	33010010	2
30	AC Contactor GC3-18/01KK/3TF4211	44010226	1
31	Over current Protector	46020112	1
32	Phase Reverse Protector		0
33	Isolation Washer D	70410525	2
34	4-way Valve Coil	430004002	1
35	Compressor Gasket		0
36	Capillary Assy	04105702	1
37	Pressure Switch	460200061	1
38	Capacitor Clamp		0
39	Transformer 57X25D	43110240	1
40	Main PCB WZ163	30221602	1

Model: HLR15WZNa-M(O) for EM113W0010、EM113W0011

NO	Name of Part	Part Code	Quantity
1	Front Grill	22265251	2
2	Front Plate	01435433	1
3	Protection Grill	01475432	1
4	Top Cover	01255472	1
5	Back Side Plate	01305434	1
6	Handle	26235253	2
7	Valve Support	01715001	1
8	Metal Base	01205472 ① 01192109P ②	1
9	Front Side Plate	01305431	1
10	Protection Grill tub	42035201	1
11	Axial Flow Fan	10335253	2
12	Condenser Assy	01122102	1
13	Motor Support	01705471	1
14	Motor LW92C	150154511	2
15	Isolation Plate	01235473 ① 01242202 ②	1
16	Liquid-gas Separator Sub-Assy	07225479	1
17	4-way Valve	43000338	1
18	Compressor C-SBN453H8D	00129052	1
19	Cut-off Valve	07130210	1
20	Cut-off Valve	071302335	1
21	Ambient Sensor(15K)	3900012126G	1
22	Temperature Sensor (20K)	3900012125G	1
23	Temp. Sensor	3900012117G	1
24	Electric Box	01392108	1
25	Wire Clamp	71010102	2
26	Terminal Board	42011044	1
27	Terminal Board	42011103	2
28	Terminal Board		0
29	Capacitor 4uF/500V	33010013	2
30	AC Contactor LC1D2501M7C	44010213	1
31	Over current Protector	46020103	1
32	Phase Reverse Protector 380V	46020052	1
33	Isolation Washer C	70410523	1
34	Magnet Coil	430004005	1
35	Compressor Gasket	76710209	4
36	Capillary Assy	04102102	1
37	pressure switch	460200061	1
38	Capacitor Clamp		0
39	Transformer 57X25D	43110240	1
40	Main PCB WZ163	30221602	1

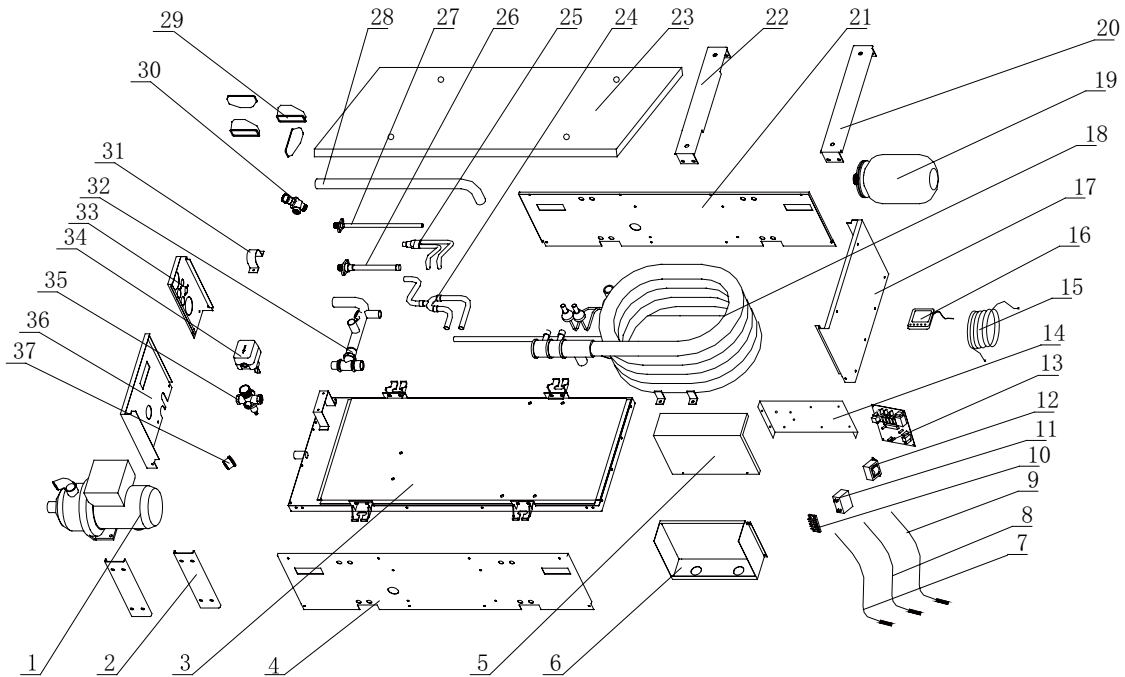
Note:

- a. ① is only used in EM113W0020
- b. ② is only used in EM113W0021

4.1.2 Indoor Units

Model: HLR8WZNa-M(I), HLR10WZNa-M(I), HLR12.5WZNa-M(I), HLR15WZNa-M(I)

Exploded views:



Model: HLR8WZNa-M(I) for EM113N0030

NO	Name of Part	Part Code	Quantity
1	Water Pump	43138218	1
2	Vertical Pillar Assy	01758216	4
3	Pedestal Parts	012021191	1
4	Front Panel Assy	015382471	1
5	Electric Box cover	014182371	1
6	Electric Box	01418235	1
7	Temperature Sensor	390001219	1
8	Temperature Sensor	390001217	1
9	Temperature Sensor	3900019819	1
10	Terminal Board	42010254	1
11	AC Contactor CJX9B-25S/D	44010245	1
12	Transformer 57X25D	43110240	1
13	Main Board	30221501	1
14	Electric Component Mounting Plate	01338243	1
15	Wiring	40110111	1
16	Display Board	30291603	1
17	Left Side Plate	01302116	1
18	Double Pipe Heat Exchanger	00908231	1
19	Expansion Drum	07228219	1
20	Cross Beam Sub-Assy	01778240	1
21	Rear Panel Assy	015382501	1

22	Cross Beam Sub-Assy 1	01778240	1
23	Top Cover	012521111	1
24	Collecting Gas Pipe Sub-Assy	04672101	1
25	Liquid Divider Sub-Assy	04322108	1
26	Gas Pipe Sub-Assy	03812159	1
27	Liquid Sub-Assy	03232157	1
28	Outlet Water Pipe Sub-Assyv	03248247	1
29	Big Handle	26233431	1
30	Relief Valve	07188204	1
31	Tube Clip	02148224	1
32	Enter Water Pipe Sub-Assy	03248248	1
33	Right Side Plate 1	01302118	1
34	Water switch FSF50P-2G1/2	45028207	1
35	Auto Water Replenishing Valve	07108207	1
36	Right Side Plate 2	01302114	1
37	Water tube jam	76718201	1

Model: HLR10WZNa-M(I) for EM113N0020

NO	Name of Part	Part Code	Quantity
1	Water Pump MHI202	43138218	1
2	Vertical Pillar Assy	01758216	4
3	Pedestal Parts	012021171	1
4	Front Panel Assy	015382471	1
5	Electric Box cover	014182371	1
6	Electric Box	01418235	1
7	Temperature Sensor	390001219	1
8	Temperature Sensor	390001217	1
9	Temperature Sensor	390001216	1
10	Terminal Board	42010254	1
11	AC Contactor CJX9B-25S/D	44010245	1
12	Transformer 57X25D	43110240	1
13	Main Board Z153	30221501	1
14	Electric Component Mounting Plate	01338243	1
15	Wiring	40110111	1
16	Display Board Z16301	30291603	1
17	Left Side Plate	01302116	1
18	Double Pipe Heat Exchanger	009082291	1
19	Expansion Drum	07228219	1
20	Cross Beam Sub-Assy	01778240	1
21	Rear Panel Assy	015382501	1
22	Cross Beam Sub-Assy 1	01778236	1
23	Top Cover	012521091	1
24	Collecting Gas Pipe Sub-Assy	04672101	1
25	Liquid Divider Sub-Assy	04322108	1

26	Gas Pipe Sub-Assy	04632102	1
27	Liquid Sub-Assy	04322106	1
28	Outlet Water Pipe Sub-Assyv	03248246	1
29	Big Handle	26233431	1
30	Relief Valve	07188204	1
31	Tube Clip	02148224	1
32	Enter Water Pipe Sub-Assy	03248248	1
33	Right Side Plate 1	01312107	1
34	Water switch FSF50P-2G1/2	45028207	1
35	Auto Water Replenishing Valve	07108207	1
36	Right Side Plate 2	01302114	1
37	Water Tube Jam	76718201	1

Model: HLR12.5WZNa-M(I) for EM113N0040

NO	Name of Part	Part Code	Quantity
1	Water Pump MHL202	43138218	1
2	Vertical Pillar Assy	01758216	4
3	Pedestal Parts	012021171	1
4	Left Side Plate	01302116	1
5	Electric Box cover	014182371	1
6	Electric Box	01418235	1
7	Temperature Sensor	390001219	1
8	Temperature Sensor	390001217	1
9	Temperature Sensor	3900012116	1
10	Terminal Board	42010254	1
11	AC Contactor CJX9B-25S/D	44010245	1
12	Transformer 57X25D	43110240	1
13	Main Board Z153	30221501	1
14	Electric Component Mounting Plate	01338243	1
15	Wiring	40110111	1
16	Display Board Z16301	30291603	1
17	Left Side Plate	01302116	1
18	Double Pipe Heat Exchanger	00908229	1
19	Expansion Drum	07228219	1
20	Cross Beam Sub-Assy	01778240	1
21	Rear Panel	015382501	1
22	Cross Beam Sub-Assy 1	01778236	1
23	Top Cover	012521091	1
24	Collecting Gas Pipe Sub-Assy	04672101	1
25	Liquid Divider Sub-Assy	04322108	1
26	Gas Pipe Sub-Assy	04632102	1
27	Liquid Sub-Assy	04322106	1
28	Outlet Water Pipe Sub-Assyv	03248247	1
29	Big Handle	26233431	1
30	Relief Valve	07188204	1
31	Tube Clip	02148224	1

32	Enter Water Pipe Sub-Assy	03248248	1
33	Right Side Plate 1	01312107	1
34	Water switch FSF50P-2G1/2	45028207	1
35	Auto Water Replenishing Valve	07108207	1
36	Right Side Plate 2	01302114	1
37	Water Tube Jam	76718201	1

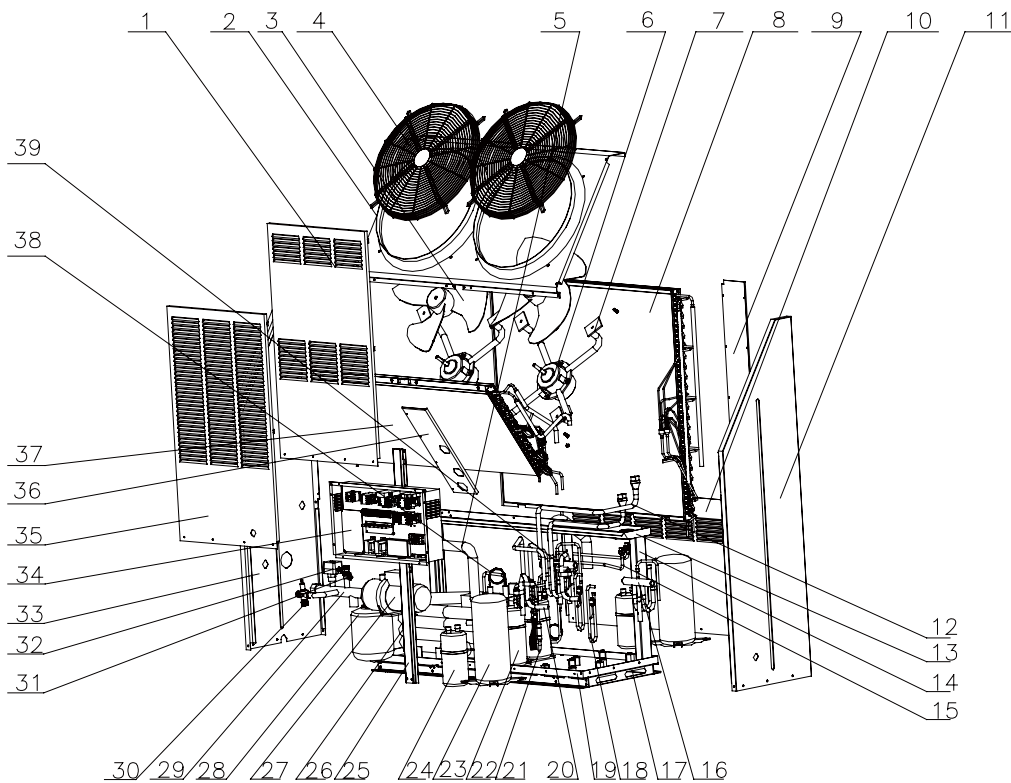
Model: HLR15WZNa-M(I) for EM113N0010

NO	Name of Part	Part Code	Quantity
1	Water Pump MHI202	43138218	1
2	Vertical Pillar Assy	01758216	4
3	Pedestal Parts	012021171	1
4	Left Side Plate	01302116	1
5	Electric Box cover	014182371	1
6	Electric Box	01418235	1
7	Temperature Sensor	390001219	1
8	Temperature Sensor	390001217	1
9	Temperature Sensor	3900012116	1
10	Terminal Board	42010254	1
11	AC Contactor CJX9B-25S/D	44010245	1
12	Transformer 57X25D	43110240	1
13	Main Board Z153	30221501	1
14	Electric Component Mounting Plate	01338243	1
15	Wiring	40110111	1
16	Display Board Z16301	30291603	1
17	Left Side Plate	01302116	1
18	Double Pipe Heat Exchanger	00908229	1
19	Expansion Drum	07228219	1
20	Cross Beam Sub-Assy	01778240	1
21	Rear Panel	015382501	1
22	Cross Beam Sub-Assy 1	01778236	1
23	Top Cover	012521091	1
24	Collecting Gas Pipe Sub-Assy	04672101	1
25	Liquid Divider Sub-Assy	04322108	1
26	Gas Pipe Sub-Assy	04632102	1
27	Liquid Sub-Assy	04322106	1
28	Outlet Water Pipe Sub-Assyv	03248246	1
29	Big Handle	26233431	1
30	Relief Valve	07188204	1
31	Tube Clip	02148224	1
32	Enter Water Pipe Sub-Assy	03248248	1
33	Right Side Plate 1	01312107	1
34	Water Switch FSF50P-2G1/2	45028207	1
35	Auto Water Replenishing Valve	07108207	1
36	Right Side Plate 2	01302114	1
37	Water Tube Jam	76718201	1

4.2 Exploded Views and Parts List- Integral Type

Model: HLR22SNa-M, HLR25SNa-M

Exploded views:



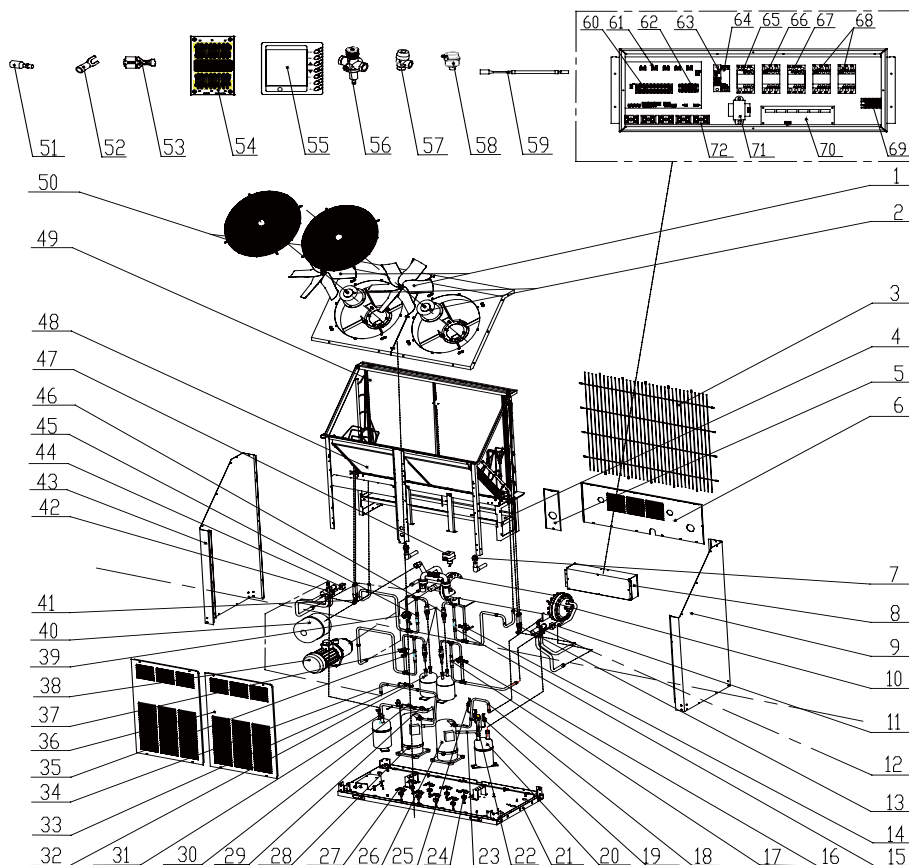
Model: HLR22SNa-M, HLR25SNa-M for EM15000030, EM116N0270

No	Name of Part	Part Code	Quantity
1	Front Panel 2	01542102	1
2	Encloser Sub-assy	01512101	1
3	Fan	10358202	2
4	Grill	01572101	2
5	Outlet Pipe Sub-assy	04362102	1
6	Fan Motor SW200B	15018501	2
7	Motor Support Sub-assy	01708222	2
8	Condenser Components 1	011221042	1
9	Windshield 2	01352102	1
10	Rear Side Plate	01312111	1
11	Right Side Plate Sub-assy	01312233	1
12	Transition Pipe Sub-assy 1 (Four-way Valve-condenser)	04312244	1
13	Water Tray Sub-assy	01282102	1
14	Vertical Shaft 2	01852102	2
15	Transition Pipe Sub-assy 3 (Condenser-Capillary for heating)	04312110	1
16	Four-way Valve Sub-assy 1	04142226	1
17	Base Frame Sub-assy	01282253	1
18	Discharge Pipe Sub-assy	04632241	2
19	Base Plate Sub-assy	0119210102	1

20	Suction Pipe Sub-assy	04672110	1
21	Capillary Sub-assy (Heating)	04102220	2
22	Two-direction Liquid Vessel	07228214	2
23	Compressor and Fittings C-SBN373H8D	00129051	2
24	Gas-liquid Separator	07228212	2
25	Vertical Shaft Sub-assy 1	01852101	1
26	Tube-in-tube Heat Exchanger	009021011	1
27	Water Pump MHI404 3 ~ 400V	43138206	1
28	Expansion Vessel	072282191	1
29	Inlet Pipe Sub-assy	04362103	1
30	Auto Water Replenishing Valve	07108207	1
31	Emergency Valve	07188204	1
32	Water Flow Switch FSF50P-1R1	45028209	1
33	Left Side Board Sub-assy	01312109	1
34	Electric Box Sub-assy	01392114	1
35	Front Panel 1	01542101	1
36	Wind Shield 1	01352101	1
37	Condenser Components 2	011221052	1
38	Capillary Sub-assy (Cooling)	04102221	2
39	Four-way Valve Sub-assy 2	04142227	1

Model: HLR35SNa-M

Exploded views:



Model: HLR35SNa-M for EM116N0260、EM116N0261

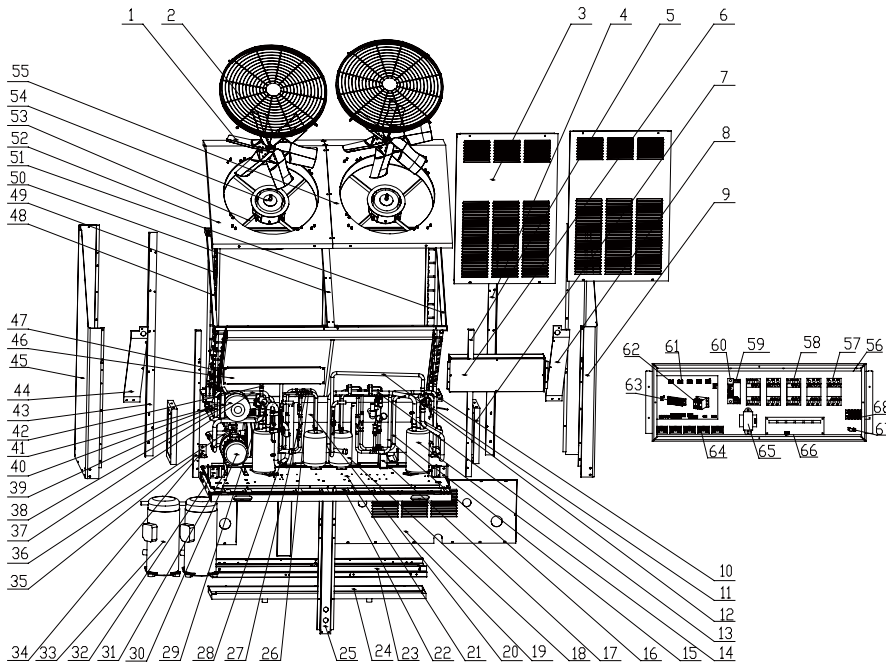
No	Name of Part	Part Code	Quantity
1	Centrifugal Fan	10518601	2
2	Fan Motor	15018606	2
3	Front Grill	01238202	1
4	Water Collecting Tray Sub-Assy	01272103	1
5	Back Side Plate 1	01302106	1
6	Back Side Plate 4	01312124P	1
7	Pipe Connector	06128301	2
8	Electric Box Assy	01392291 ① 01392411 ②	1
9	Right Side Plate	01308276	1
10	Dry Evaporator	01050816	1
11	Magnet Coil	430004008	1
12	4-way Valve	43000339	1
13	Current Divider	03410101	1
14	Thermal Expansion Valve	07332226	1
15	One way Valve	07135801	1
16	Thermal Expansion Valve	07332226	1
17	One way Valve	07135801	1
18	Discharge Tube Sub-Assy 2	04632240	1
19	Pressure Protect Switch	4602001510	1
20	Gas-liquid Separator	07424144	2
21	Base Frame Assy	01202113	1
22	Pressure Protect Switch	4602001513	1
23	Inhalation Tube Sub-Assy 2	04672264	1
24	Compressor Gasket	76813703	8
25	Pressure Protect Switch	4602001546	1
26	Compressor and fittings	00202231	2
27	Compressor Gasket	02118049	8
28	Electric heater(compressor)	76515404	2
29	Pressure Protect Switch	4602001515	1
30	Pressure Protect Switch	4602001512	1
31	Inhalation Tube Sub-Assy 1	04672263	1
32	Accumulator	07422206	2
33	Pressure Protect Switch	4602001547	1
34	Discharge Tube Sub-Assy 1	04632239	1
35	One way Valve	07135801	1
36	Front Side Plate	01302103	1
37	Thermal Expansion Valve	07332226	1
38	Water Pump	431382041	1
39	Thermal Expansion Valve	07332226	1
40	Expansion Drum	072282191	1
41	Current Divider	03410101	1
42	4-way Valve	43000339	1
43	Left Side Plate	01308274	1

44	Magnet Coil	430004009	1
45	One way Valve	07135801	1
46	Strainer	07210037	4
47	Water flow switch	45028209	1
48	Condenser Assy 2	01108240	1
49	Condenser Assy 1	01108239	1
50	Front Grill	01238214	2
51	In-line Sheet Jacket	42030023	12
52	Connector (fork shape)	4202001801	4
53	In-line Lock Sheet	42020017	12
54	Pinboard	30271001	1
55	Display Board	30291005 ① 30291204 ②	1
56	Auto Water Replenishing Valve	07108207	1
57	Relief Valve	07188204	1
58	Auto Air Outlet Valve	07108208	1
59	Sensor sub-assy	39002201	1
60	Terminal Board	42011204	1
61	Main Board	30221001 ① 30221205 ②	1
62	Terminal Board	42011051	1
63	Single-phase Air Switch	45020203	1
64	Phase Reverse Protector	46020054	1
65	AC Contactor	44010232	1
66	AC Contactor	44010214	1
67	AC Contactor	44010232	1
68	AC Contactor	44010213	2
69	Terminal Board	42010254	1
70	Receiver Board	30261003	1
71	Transformer	4311024001	1
72	Terminal Board	42011103	5

Note:

- a. ① is only used in EM116N0260
- b. ② is only used in EM116N0261

Model: HLR45SNa-M
Exploded views:



Model: HLR45SNa-M for EM1500040、EM1500041

No	Name of Part	Part Code	Quantity
1	Axial Flow Fan	10518601	2
2	Mesh Enclosure	01238214	2
3	Front Side Plate	01302103	2
4	Column	01722103	1
5	Column	01722107	1
6	Electric Cabinet Sub-assy	01392391P	1
7	Side casing	0176821201	2
8	Clapboard Sub-Assy 1	01238218	1
9	Right Side Plate	01308276	1
10	Clapboard 3	01238210	1
11	4-way Valve Sub-Assy 2	04142252 ① 04142258 ②	1
12	Discharge Tube Sub-Assy 2	04632281 ① 04632292 ②	1
13	Inhalation Tube Sub-Assy 2	04672310 ① 04672323 ②	1
14	Gas-liquid Separator	07424144	2
15	Capillary Sub-Assy	0410223101	1
16	Capillary Sub-Assy	04102236	1
17	Supporting Strip	01892235P	1
18	Accumulator	07422206	2
19	Back Side Plate	01312261P	1
20	Shell pipe Sub-Assy	04322406	1
21	Base Plate Sub-Assy	01192224P	1
22	Base Frame Assy	01282286P	1
23	Condenser bottom border	01862206P	1
24	Water Collecting Tray Assy	01282287P	1

25	Front Brace 2	01758211	1
26	Capillary Sub-Assy	04102235	1
27	Capillary Sub-Assy	0410222901	1
28	Inhalation Tube Sub-Assy 1	04672309	1
29	4-way Valve Sub-Assy 1	04142253 ① 04142259 ②	1
30	Water pump	431382041	1
31	Support Sub-Assy for Water Pump	0171823201	1
32	Small Spider	01798208	2
33	Compressor and Fittings	00205213 ① 00202233 ②	2
34	Big Spider Sub-Assy	01798286	2
35	Front Brace 1	01758214	1
36	Water Pipe Sub-Assy	04362101	1
37	Condenser Outlet Pipe	04322404	1
38	Expansion vessel	072282191	1
39	Connection Pipe	05022432	1
40	Water flow switch	45028209	1
41	Expansion Drum Fixed Mount Sub-Assy	0174821201	1
42	Discharge Tube Sub-Assy 1	04632280 ① 04632291 ②	1
43	Brace	01722101	1
44	Clapboard Sub-Assy 2	01238220	1
45	Left Side Plate	01308274	1
46	Cross Beam Sub-Assy	01872201P	1
47	Condenser Assy 2	01122246	1
48	Motor Retaining Plate Sub-Assy	01778204	1
49	Condenser Assy 1	01122247	1
50	Cross Beam	01778213	1
51	Motor Retaining Plate Sub-Assy	01778206	1
52	Top Cover Plate	01252102P	1
53	Motor Support Sub-Assy	01708211	4
54	Fan Motor	15018606	2
55	Top Cover Plate	01252101P	1
56	Electric Box Cover	01422241P	1
57	AC Contactor	44010213	2
58	AC Contactor	44010232	2
59	Anti-phase Protector	46020054	1
60	Single-phase Air Switch	45020203	1
61	Main Board	30221001	1
62	Terminal Board	42011051	1
63	Terminal Board	42011204	1
64	Terminal Board	42010254	1
65	Transformer	4311024001	1
66	Receiver Board	30261006	1
67	Fixed Clamp	71010102	1
68	Terminal Board	42011103	5

Note:

- a. ① is only used in EM15000040
- b. ② is only used in EM15000041



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JF00300239