
Withair®
The Withair System
www.withair.cn
Mobile Web
Offical WeChat

Withair offers a wide range of quality products and solutions to meet the needs of your projects

- Ongoing innovation with cutting-edge products
- Over 30 years of production experience
- Key parts are come from international first-class brands
- Guaranteed support and spare parts
- Support in design
- Documentation for incentives
- Five-year guarantee
- Free training course

The Withair System

Withair is the premium manufacturer in sustainable energy solutions supplying HVACR products & services for heating, cooling, hot water, indoor air quality, industrial refrigeration, and heat recovery that reflect today's demand for sustainable construction, comfortable indoor climate and industrial cooling & heating process application.

Withair specialises in innovative custom highly-configurable products designed to meet the your needs. We insure products are designed for long life by using highest quality materials, for all controls, safety, and components we only use top world-wide recognized brands. All products are rigorously tested before leaving us, going through many stages of quality control before being shipped.

Withair® has highly effective professional team to service customers

Known for their professionalism and personal integrity, Withair’s highly skilled engineers, technicians, electricians, stable manufacturing workers, strict quality controller, and quick-reaction & professional after-service staff utilize their multi-disciplinary expertise in the creation and production of every solution.

Close cooperation among Withair’s design, production and service teams - who are located under one roof and linked by advanced computerized systems - enables the Company to supply the widest possible range of products - from single units to very large quantities - while assuring rapid delivery and competitive pricing.

Low energy consumption systems
Use of clean energy
Use of environmentally-friendly cooling gases
ZERO direct CO2 emissions in the environment

Withair®

SIMIPLY THE BEST SOLUTION AND QUALITY PRODUCT

—— HVACR SYSTEMS

Withair®

Withair®

Withair®

Withair®


The Withair System
Cooling
Heating
Fresh air
Purification
Humidification
We've a lot of solutions
for "Air Quality"

Withair®

Some Production lines

HEAT PUMPS - CREATING A MORE COMFORTABLE & SUSTAINALE BUILDING ENVIRONMENT

By installing a Withair heat pump, you can reduce your energy consumption costs by up to 86% compared to direct electricity. Here we are using the nature's free and renewable energy sources, such as: outdoor air, geothermal energy, solar energy, that minimises your CO2 emissions and pollution free. You can also enjoy an environmentally friendly, renewable and free energy source. The high level of efficiency means that an investment in a heat pump pays for itself quickly and gives you a secure supply of heat, cool and hot water, suitable for different climate all over the world.

Withair the W01R series heat pumps involve a range of 282 models, with heating and cooling capacity among 2.6kW and 3,200kW, which allow to create "customized" solution, matching the different installations requests.

CHILLERS - MINIMIZE YOUR OPERATING COSTS

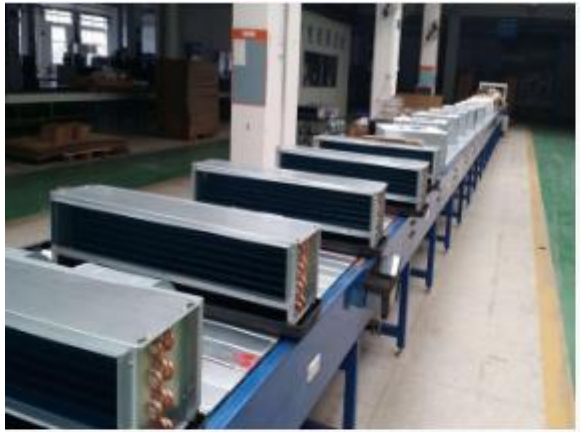
Withair chillers were developed based on decades of knowledge and rich experience, includes air-cooled chillers and water-cooled chillers, ranging in capacities from 2 to 3,000+ tons. Withair chillers are relied upon for both comfort and special process cooling applications in every corner of the world.

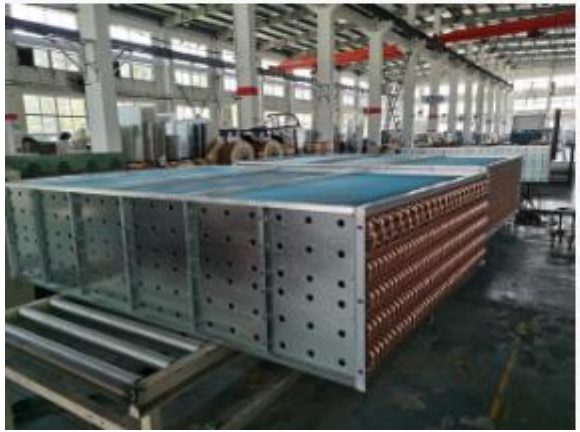
Withair chiller plays a critical role in creating the right environment to ensure the health, comfort and industrial production. Withair chillers not only serve HVACR systems and industry-type process cooling at factories that deliver the right temperature for the space, but they also help minimize operating costs with superior energy efficiency levels, low sound levels and with minimal environmental impact.

AIR SIDE PRODUCTS - MAXIMIZING HVACR SYSTEM PERFORMANCE

The Withair portfolio of fan coil unit, ventilation unit and air handling unit, air cooler solutions is designed to make installations faster and easier, offers temperature and humidity control, heat recovery, deodorization, air purification, and heat treatment, and to maximize HVACR system performance. Using advanced technology, such as: EC motor, single-zone,four-pipes, these systems quietly, temperature stability, reliably and efficiently deliver the comfort your building occupants need.

Withair offers a full range of air side products and systems to meet your performance requirements. From 200CFM to the highly flexible 60,000CFM with numerous custom options, to a compeletely custom, energy efficient, environmentally responsible system, Withair has the optimal solution for commercial, industrial and process applications.





INNOVATIVE PRODUCTS - THE MOST EFFICIENCY SOLUTION

Withair has developed different innovative products, e.g. Fresh Air Heat Pumps, Rooftop HVAC Unit(RTU), Make Up Air Unit(MUA), 100% Outdoor Air Unit(OAU), Clean Air Conditioning, Ultra-high Temperature Heat Pump, Hybrid Heat Pump, ..., these products meet the needs of different applications for heating & cooling and indoor air quality.

Whether you want to replace an existing air conditioning or heat pump – or reduce your energy costs with a Hybrid Heating and Cooling Solution – our products could be the creative solution you're looking for. By combining multiple types of energy into a single unit that sits outside your home, the only thing left inside is improved comfort.

Withair® devote to a variety of energy comprehensive utilization, optimize configuration of all kinds energy, complementary advantages, offer hybrid energy system integration solutions, and maximizes efficiency and energy savings.

DC Inverter High Temperature (90℃) Heat Pump Water Heater

Overview of High Temperature Heat Pump Water Heater

Withair flexible high temperature DC inverter heat pump water heater unit with double compressors to producing hot water by two stage cascading operation. Best combination between the R410A excellent low-temperature characteristics and R134a high temperature properties.

The first stage equip MITSUBISHI R410A DC inverter compressor variable speed operation, following the different running conditions and the ambient temperature, let the first stage provides a stable condition for the second stage compression, then the second R134a compressor to achieve 90℃ hot water. Outlet hot water temperature can set from 55℃~90℃ as user requirement, so it is widely using home radiator heating by 65℃, 75℃,85℃ or 90℃ hot water for industry heating use --like a factory, textile, printing, and dying, military industry, steam line, ironing, explosive, medicine high-temperature sterilization line, oil drilling and so on. Suitable for high temperature hot water project and cold area heating project.

Withair high temp heat pump mainly uses electricity, but electricity is only used to drive heat pump system to absorb heat from outside environment. And then the heat is released to heat. Unlike conventional electric heaters, which directly use one-degree electricity to form 860 large calories, the experiment proves that the heat from the same one-degree electricity absorbed from outside for the heat pump system is four bits of 860 calories, so the electricity used is only 1/4 of the electric heater.

A simple analogy: a heat pump can use an electric energy to absorb 2-3 free heat from the environment, then use this heat energy for heating, and the electrical energy is also used for heating. The experiment will eventually make the heat efficiency up to 300-500%

The general heating methods are directly heated by energy, the energy efficiency of the electric heater is 95%, and the natural gas is about 80%. The heat pump water heater uses electricity to drive the compressor, instead of being used directly for heating. The heat comes from the environment.

Saving energy means saving money, it saves the operating cost of 3/4 compared with electric heating and oil furnace; saves 2/3 running cost compared with the gas heater; saves a large labor cost and environmental protection compared with coal. Even if compared with the solar energy, it can save the running cost of 1/3, and use the heat of valley electricity to shift the electricity from the peak periods to off-peak periods, so the run cost is saved again and again.

The scope of application: high temperature heat pump water heater can meet the heating demand of agricultural and sideline products processing industry, beverage processing industry, electroplating dyeing industry, textile printing and dyeing industry, drying industry, disinfection, oil drilling and so on.

Features of High Temperature Heat Pump Water Heater

1. The flexible scroll type high-temperature compressor;

2. Intelligent digital smart throttle technology;

3. High-temperature superconducting heat system;

4. High-efficiency brazing heat exchanger;

5. PLC precise connection electronic expansion valve;

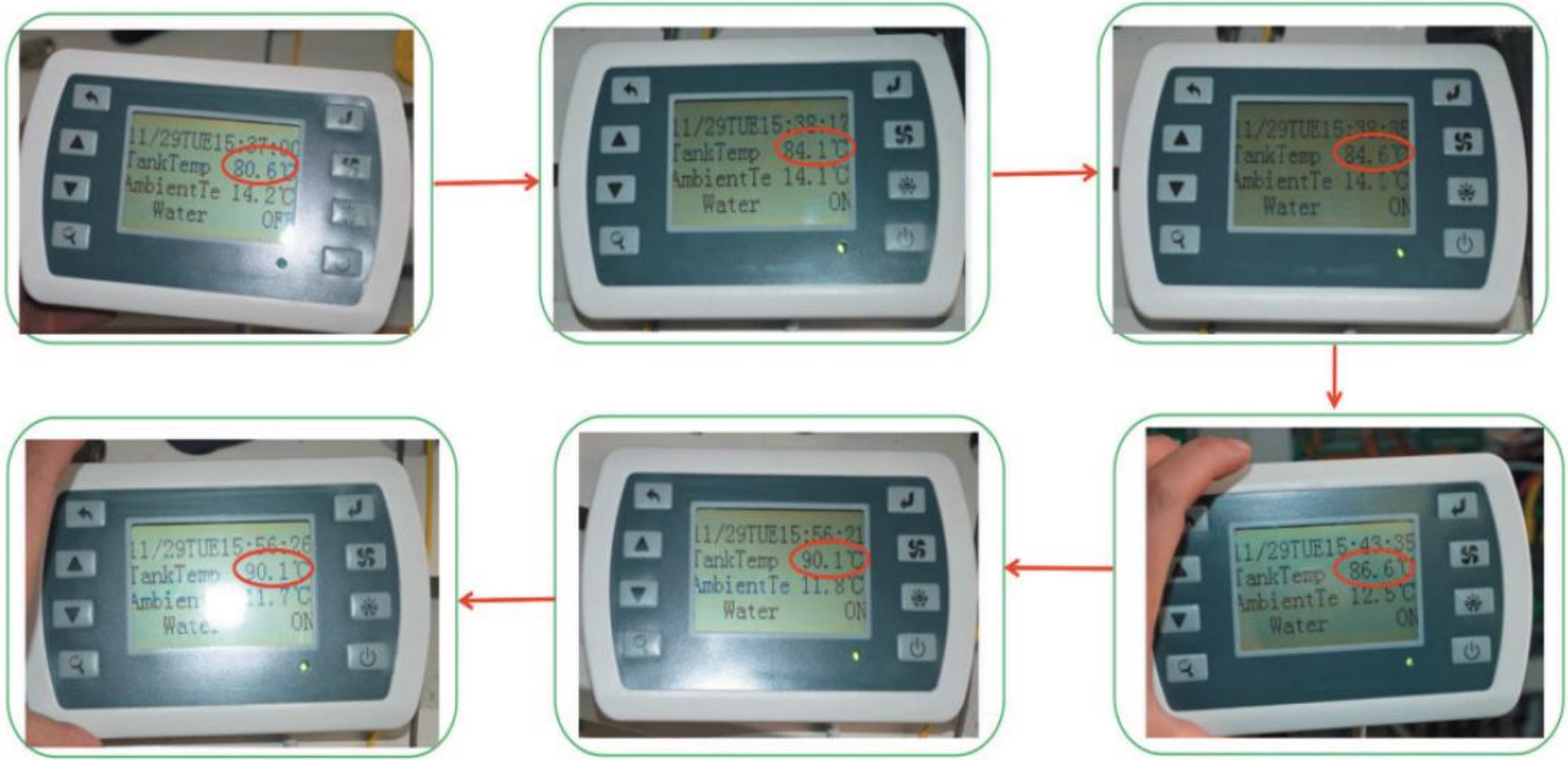
6. Condensing pressure balance valve;

7. Environmental protection type high-temperature heat carrier;

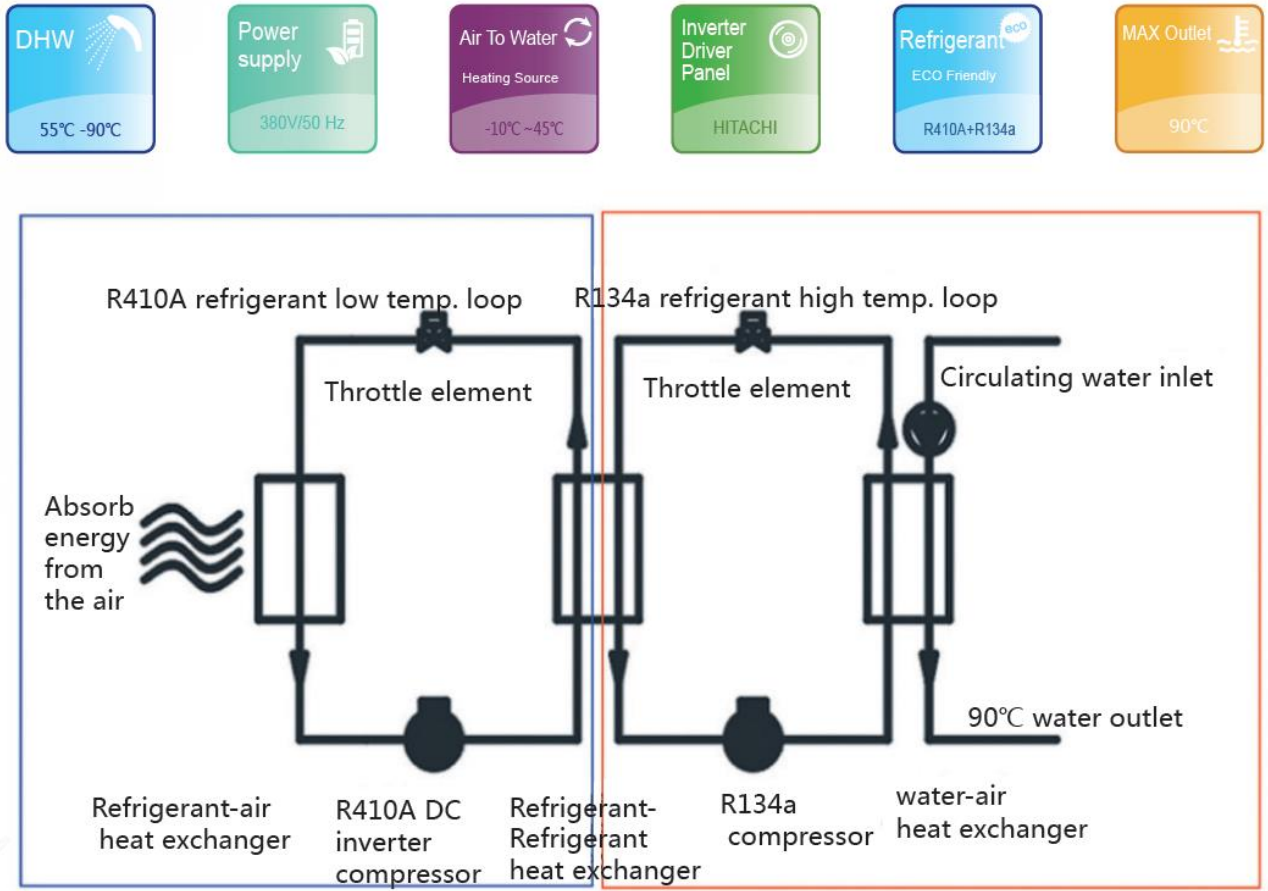
8. The design is compact and reasonable, with perfect safety protection and low noise.

9. The maximum effluent temperature can reach 90℃, which can meet the needs of different applications.

Controller Display of High Temperature Heat Pump Water Heater



Schematic Diagram



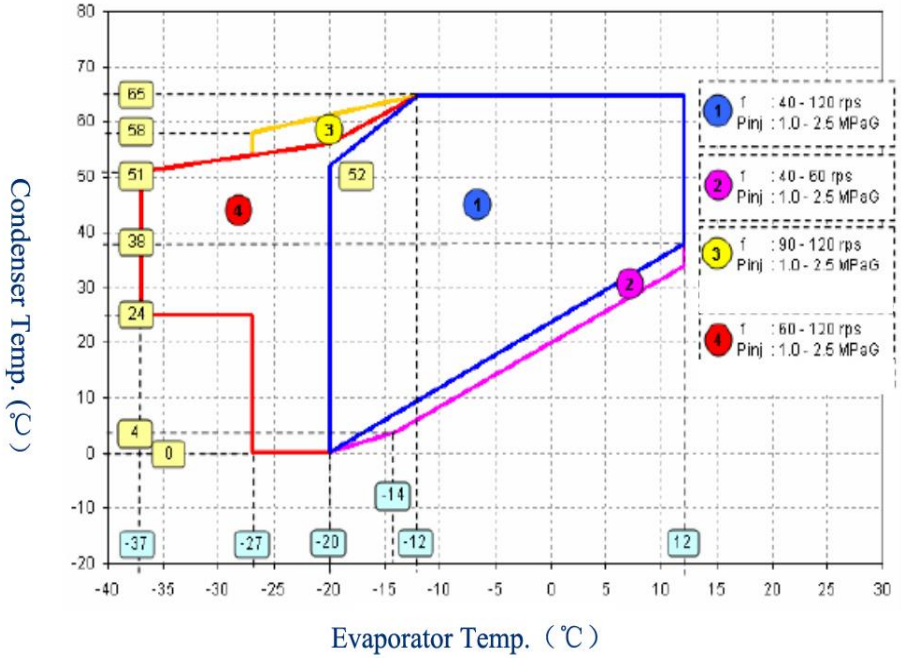
Technical Parameter

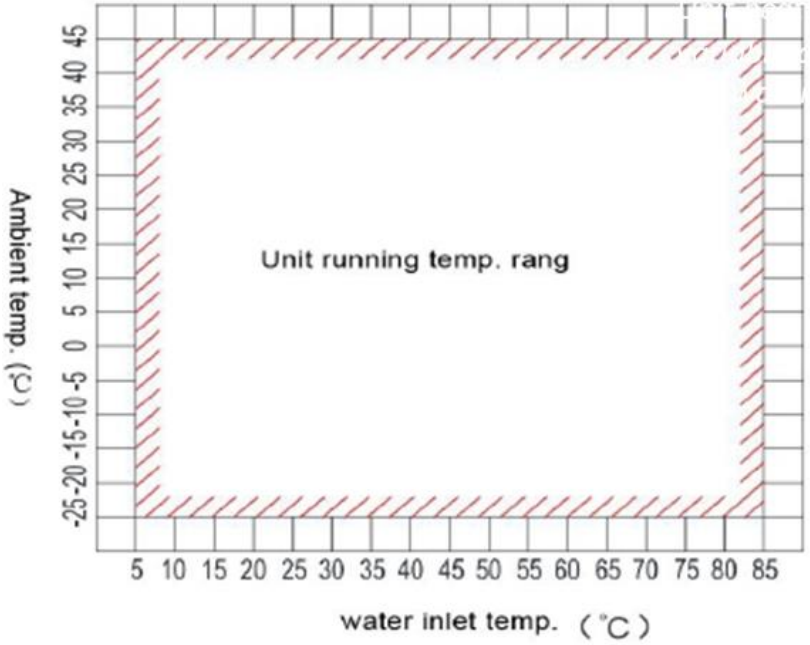
Model			W01R1-20IHT	W01R1-40IHT	W01R1-80IHT
Power supply		V/Ph/Hz	380/3/50 (60)		
Rated heating capacity		kW	20.6	40.9	81.2
Rated heating input power		kW	6.3	12.6	25.2
COP		w/w	3.27	3.25	3.23
Maximum input power		kW	12.6	25.2	50.4
Maximum input current		A	20.5	41.0	82.0
Hot-water yield		L/h	230	460	920
Refrigerant			First stage: R410A, second stage: R134a		
Hot water temperature range		℃	30℃~90℃		
Working ambient temperature		℃	-20℃~45℃		
Compressor	First stage		MITSHUBISHI R410A DC inverter compressor		
	second stage		R134a high temperature compressor		
Controller system			Smart full LCD display controller		
Refrigerant side heat exchanger			High efficiency 316L coupled plate heat exchanger		
Water side heat exchanger			High efficiency tank shell and tube heat exchanger		
Throttling method			Electronic expansion valve		
Pressure device			Built-in high and low pressure sensor		
Electronic components			Schneider AC contactor		
System switching valve			High temperature solenoid valve		
Noise level		dB(A)	57	65	67
Net weight		Kg	150/180	420/450	850/890
Water connection pipe		inch	Rc1"	Rc1-1/2"	Rc2-1/2"
Product dimension (L*W*H)		mm	1110*560*1580	1034*904*1913	1804*1034*1913

The data in the following table are tested under rated conditions as follows:

1. Heating test conditions: ambient air dry bulb temperature 20°C, wet bulb temperature 15°C;
2. Entering water temperature 15°C, leaving water temperature 90°C;
3. All specifications are subject to change without prior notice, please refer to the nameplate.

Ambient Temperature

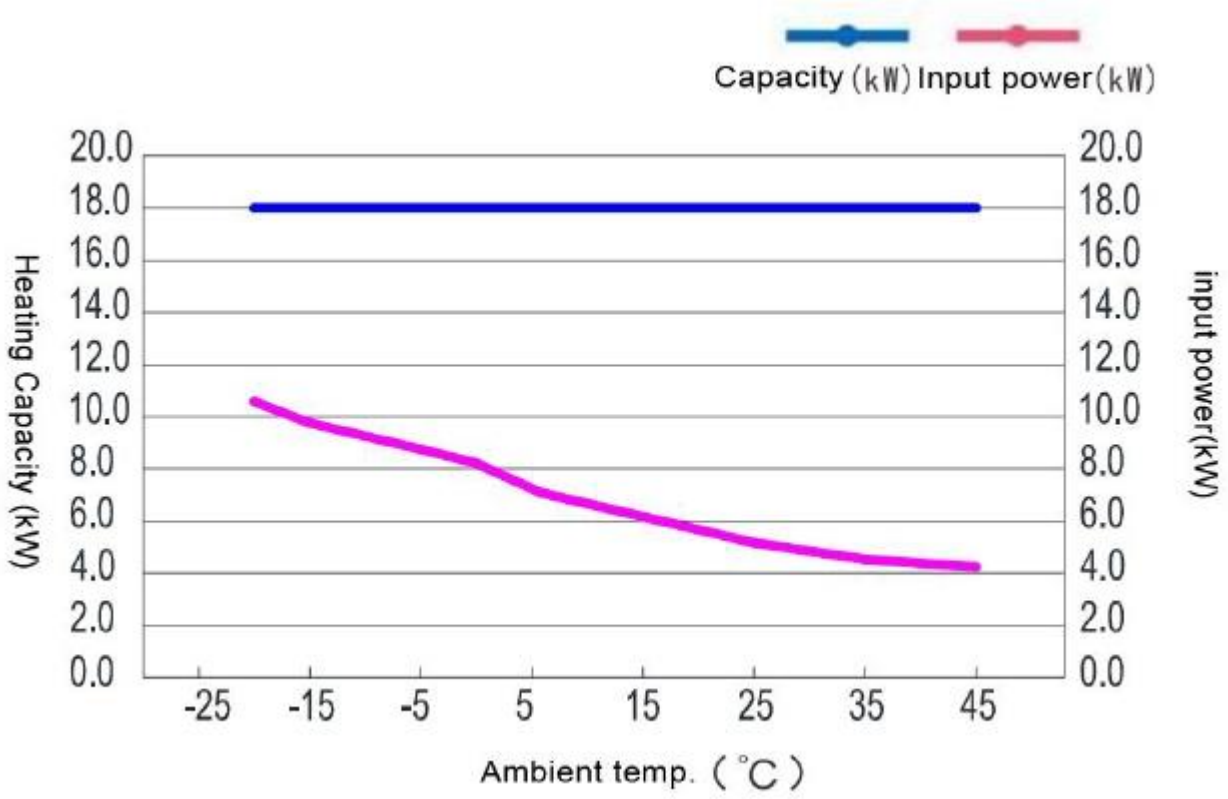




The first stage adopts full DC inveter technology, make wide range working environment temperature:-20℃~45℃

Unit heat capacity and input power under variable conditions

(taking 20kW produce 90℃ hot water as an example)



Performance Correction Coefficient Table for W01R1-20IHT

Entering water temperature 15℃ / leaving water temperature 90℃			
Ambient temperature	Heating capacity	Electric power consumption	COP
20℃	20.60kW	6.30kW	3.27
7℃	19.89kW	7.10kW	2.80
0℃	19.55kW	7.40kW	2.64
-7℃	19.06kW	8.11kW	2.35
-12℃	18.47kW	8.51kW	2.17
-20℃	18.03kW	8.82kW	2.10

Performance Correction Coefficient Table for W01R1-40IHT

Entering water temperature 15℃ / leaving water temperature 90℃			
Ambient temperature	Heating capacity	Electric power consumption	COP
20℃	40.90kW	12.60kW	3.25
7℃	39.52kW	14.05kW	2.81
0℃	38.82kW	14.59kW	2.66
-7℃	37.84kW	15.97kW	2.37
-12℃	36.67kW	16.82kW	2.18
-20℃	35.79kW	16.96kW	2.11

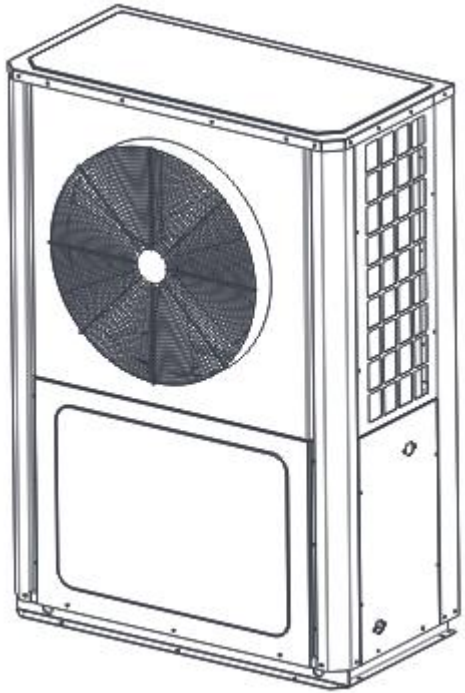
Performance Correction Coefficient Table for W01R1-80IHT

Entering water temperature 15℃ / leaving water temperature 90℃			
Ambient temperature	Heating capacity	Electric power consumption	COP
20℃	81.20kW	25.20kW	3.23
7℃	78.44kW	27.91kW	2.81
0℃	77.11kW	29.10kW	2.65
-7℃	75.18kW	31.85kW	2.36
-12℃	72.84kW	33.41kW	2.18
-20℃	71.06kW	33.52kW	2.12

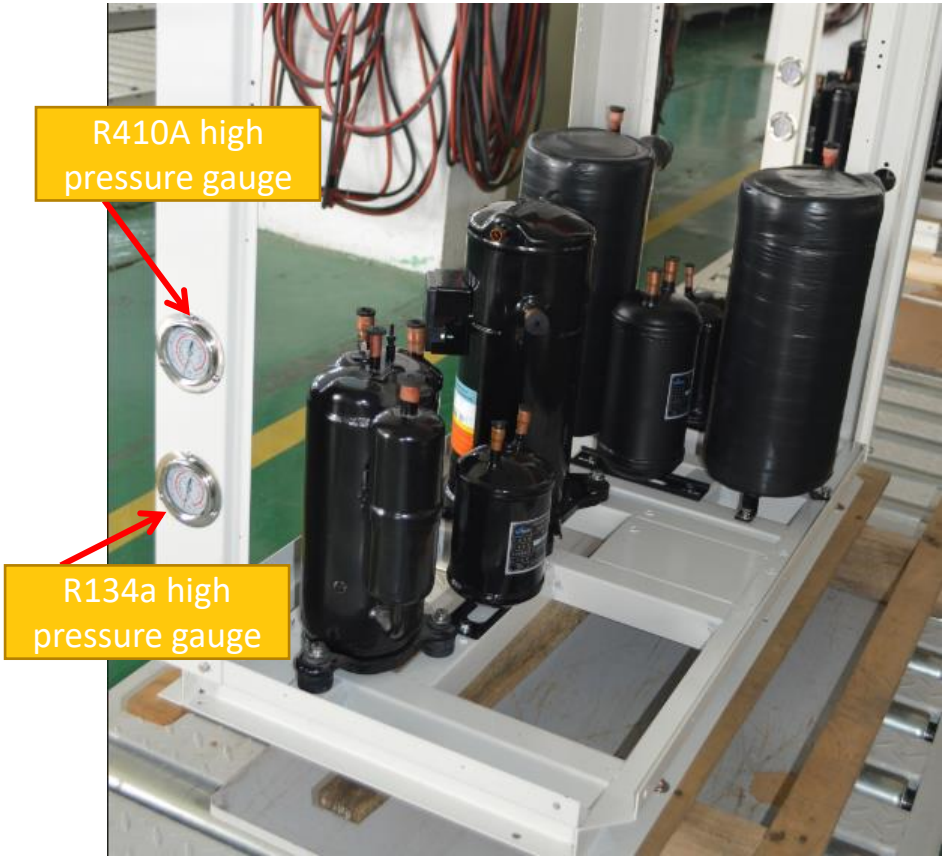
Protection Devices

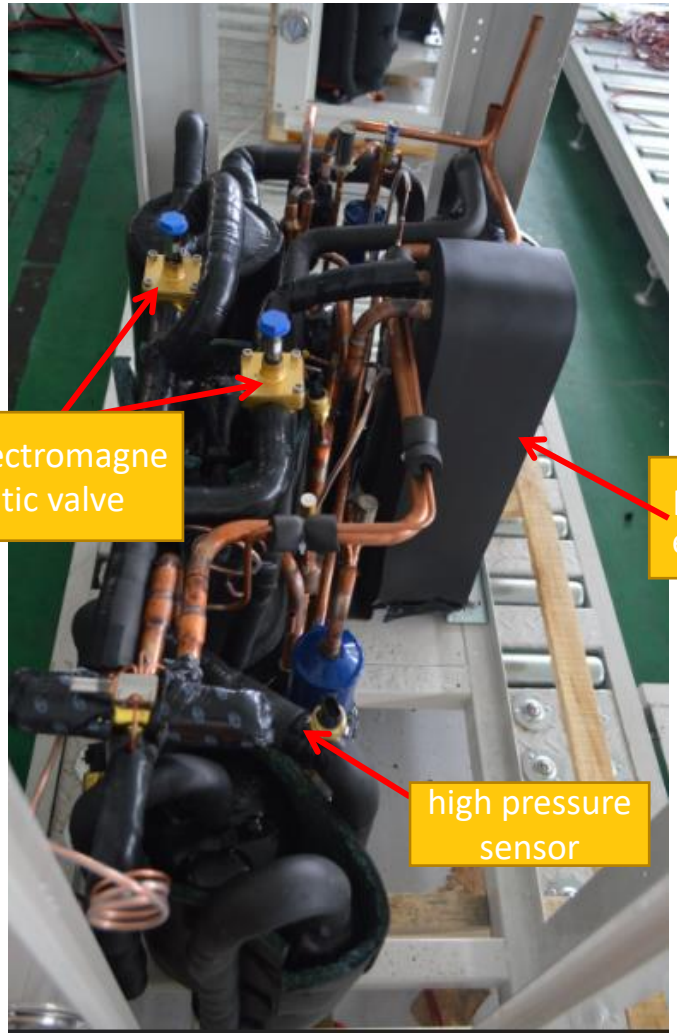
Water flow cutout	Power fault protection
Anti-freeze protection	Contactor fault protection
High-pressure alarm	Discharge temperature too high
Low-pressure alarm	Fin temperature too high
Compressor inside protection	Water Inlet/outlet temperature sensor
Oil level protection	Ambient temperature sensor open/short circuit
Oil pressure differential protection	Coil temperature sensor open/short circuit
Compressor overload protection	Discharge temperature sensor open/short circuit
Fan overload protection	

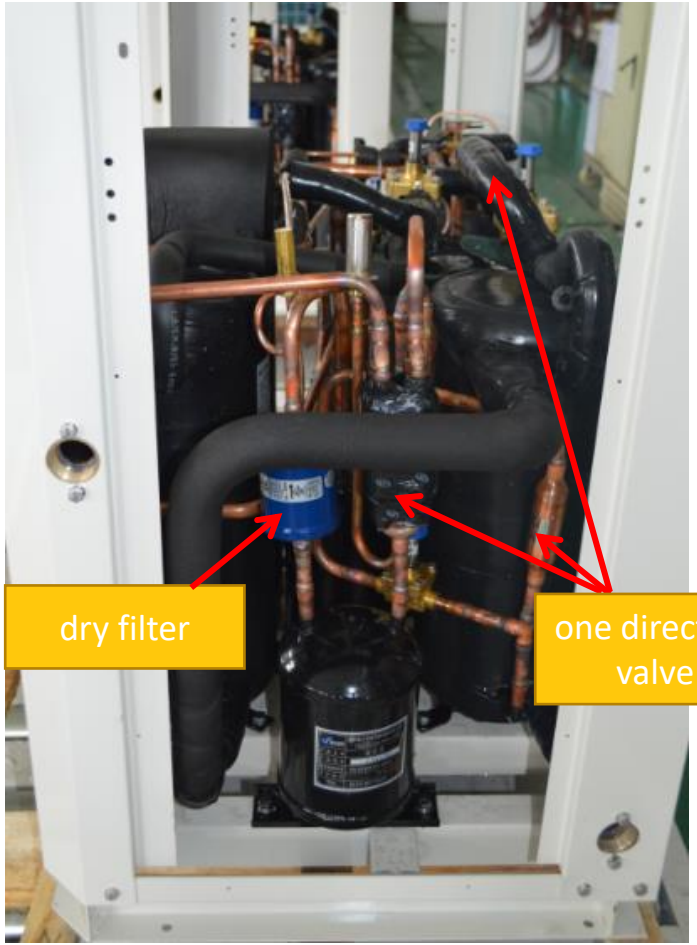
Unit Interior Showing _ Take W01R1-20IHT model as sample

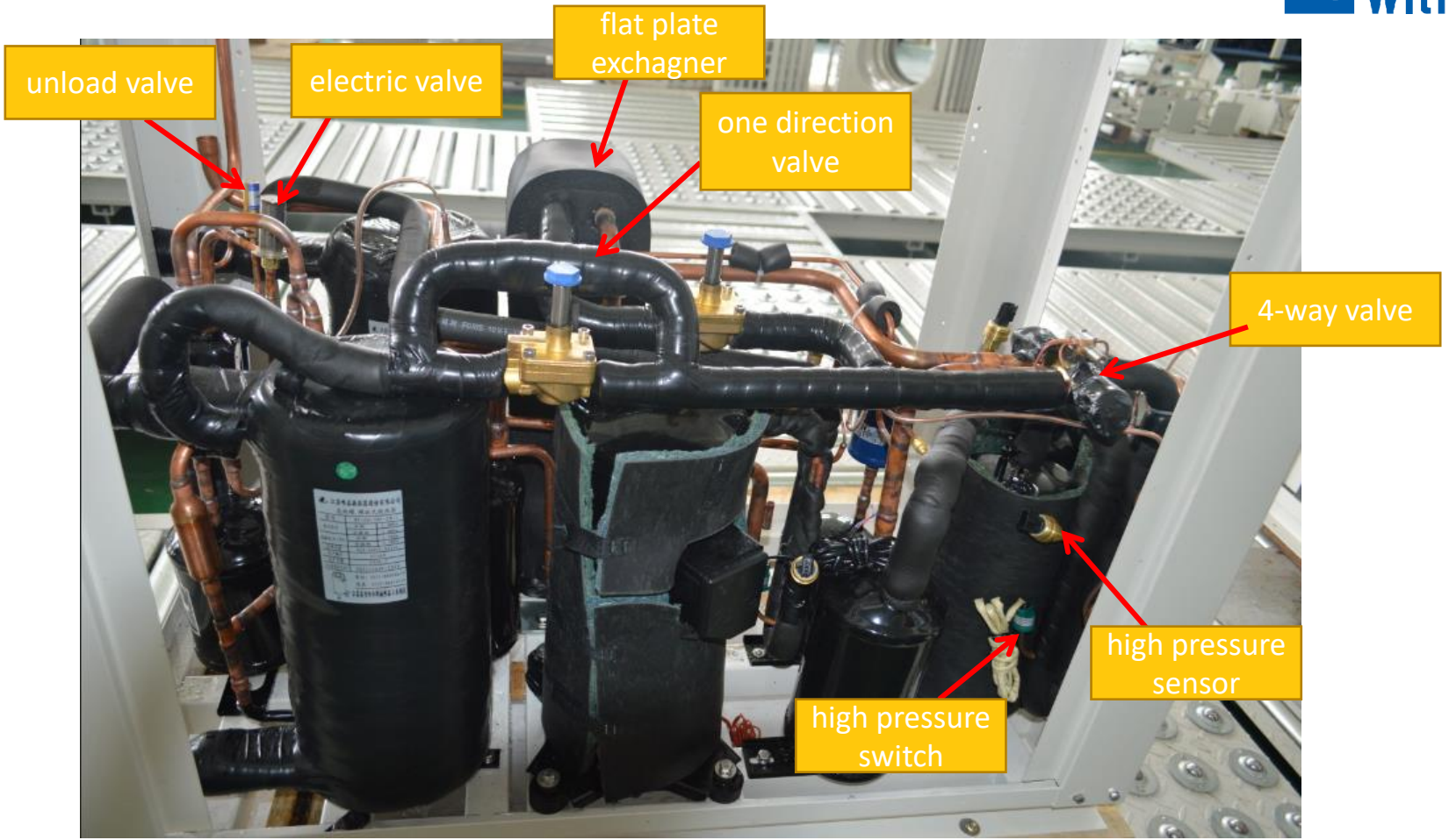


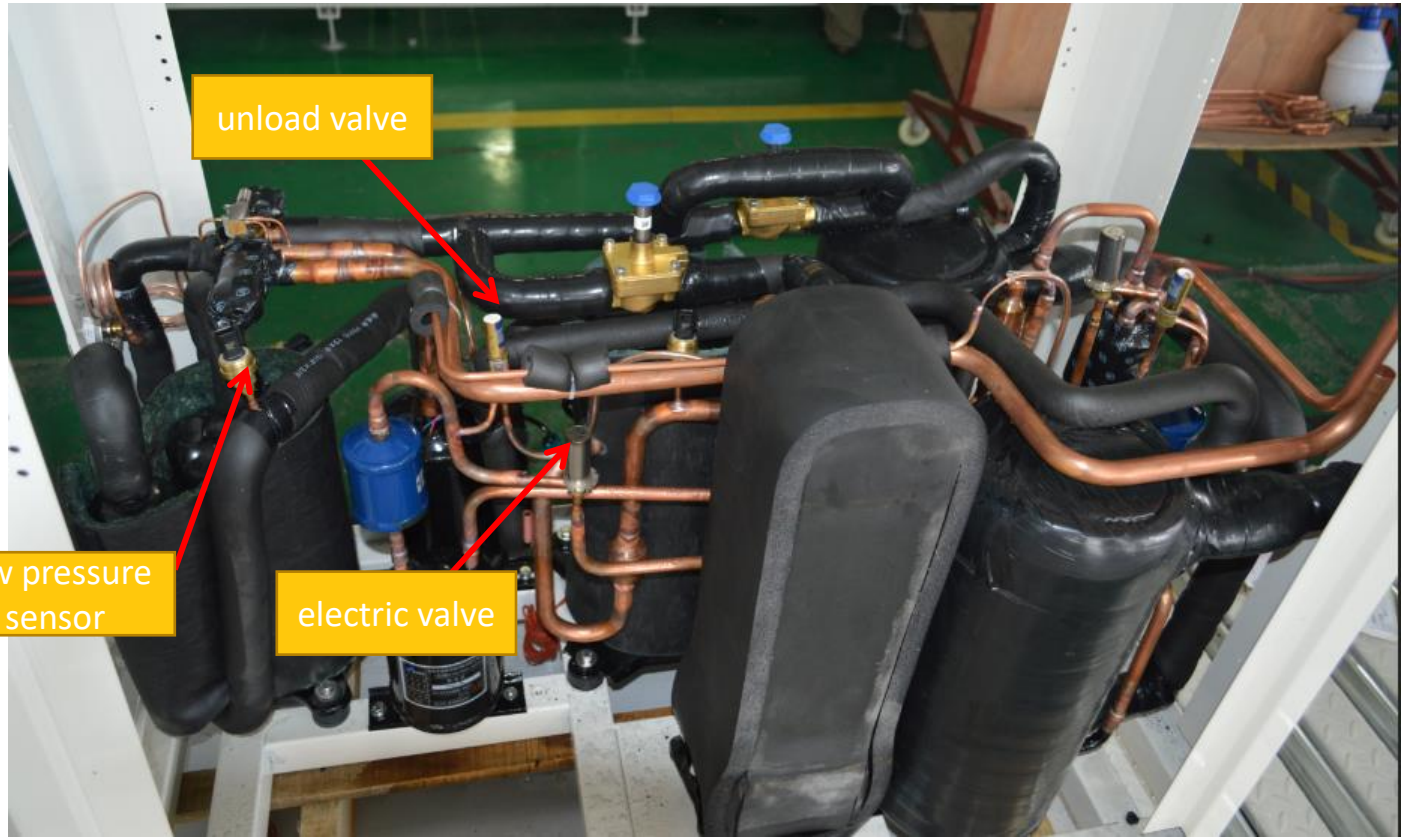

R134a water heat exchanger
accumulator for 134a
storage liquid tank --to flat exchanger --to 134a water exchanger
R410A compressor
storage liquid tank to flat exchanger
accumulator for R410A
R410A water heat exchanger
R134a compressor

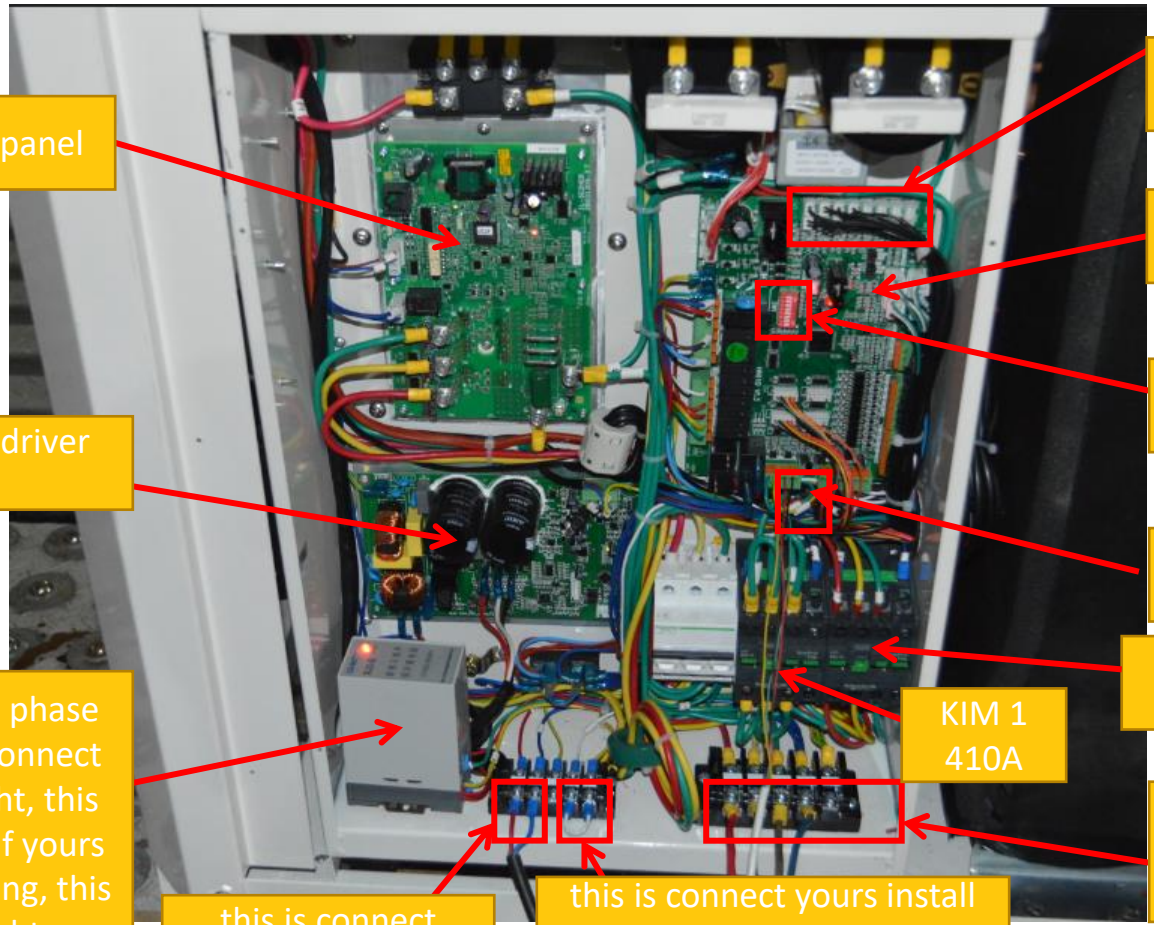

R410A high pressure gauge
R134a high pressure gauge

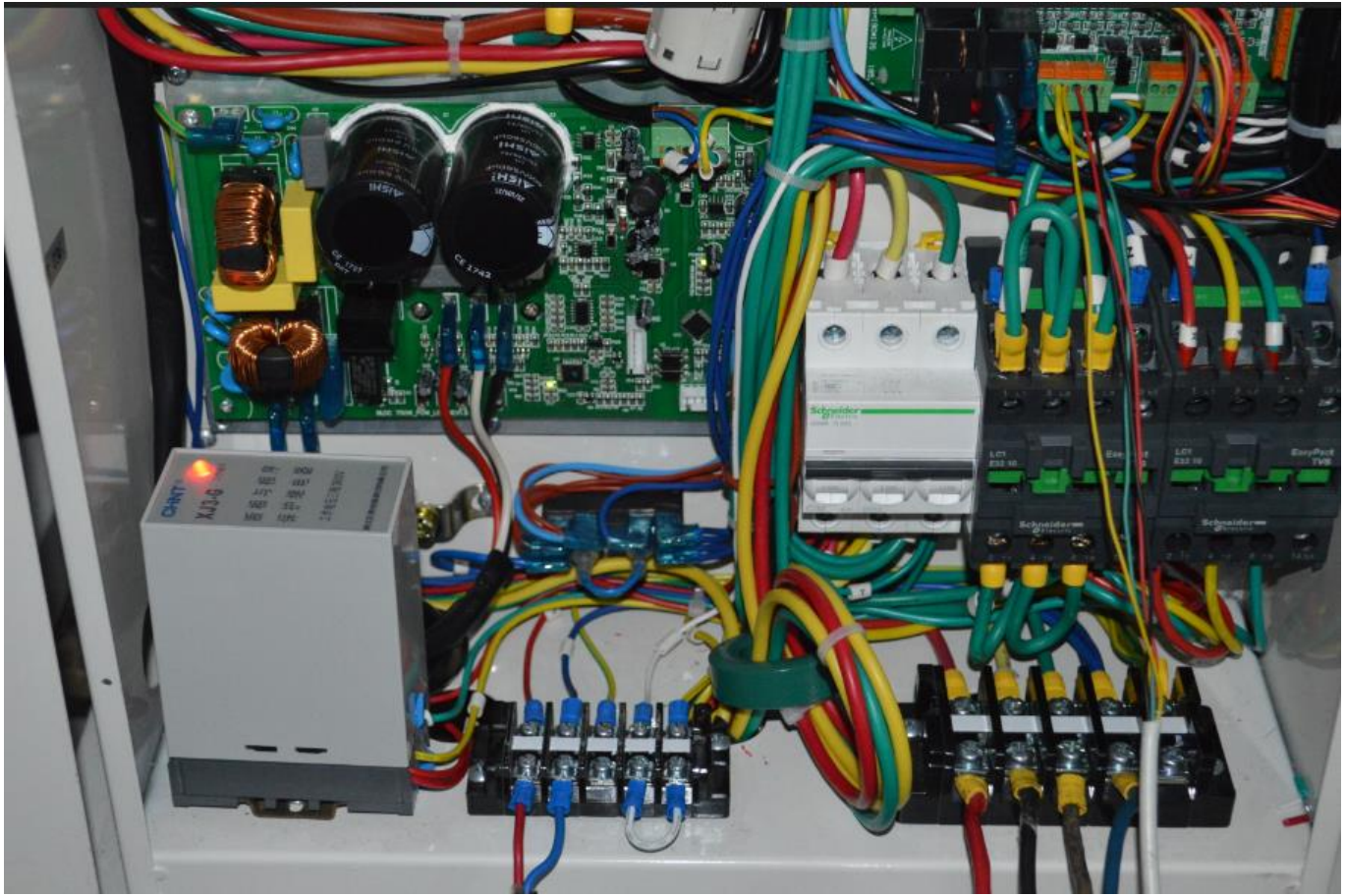

electromagnetic valve
plate heat exchanger
high pressure sensor

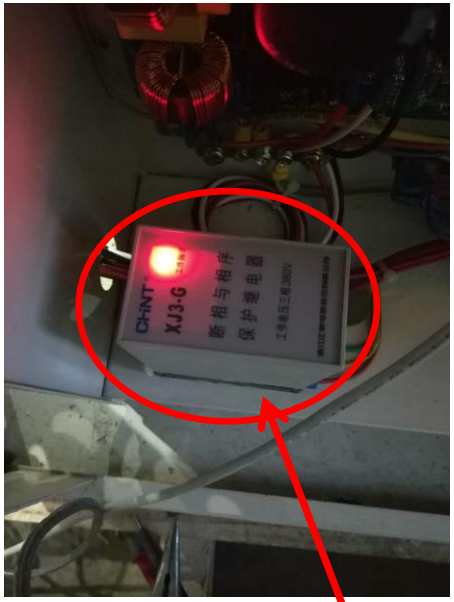

dry filter
one direction valve

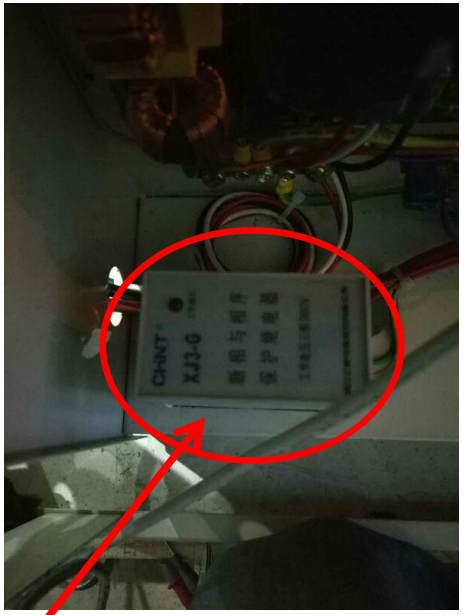

unload valve
electric valve
flat plate exchagner
one direction valve
4-way valve
high pressure sensor
high pressure switch


unload valve
low pressure sensor
electric valve


compressor driver panel
this is fan motor driver panel
this is electric wire phase protect , if yours connect power phase is right, this red light will red, if yours connect wire is wrong, this read will not light
this is connect water cycle pump
this is connect yours install pipe water flow switch, pls do not short connect it
temp. sensor insert place
main PCB panel
this red is : DIP switch, pls do not changed it
this is Connect controller port, --A , B ,GND, 12V
KIM 2 134a
KIM 1 410A
this is connect yours electric power, L1, L2, L3, N, Ground wire


CHNT
Schneider

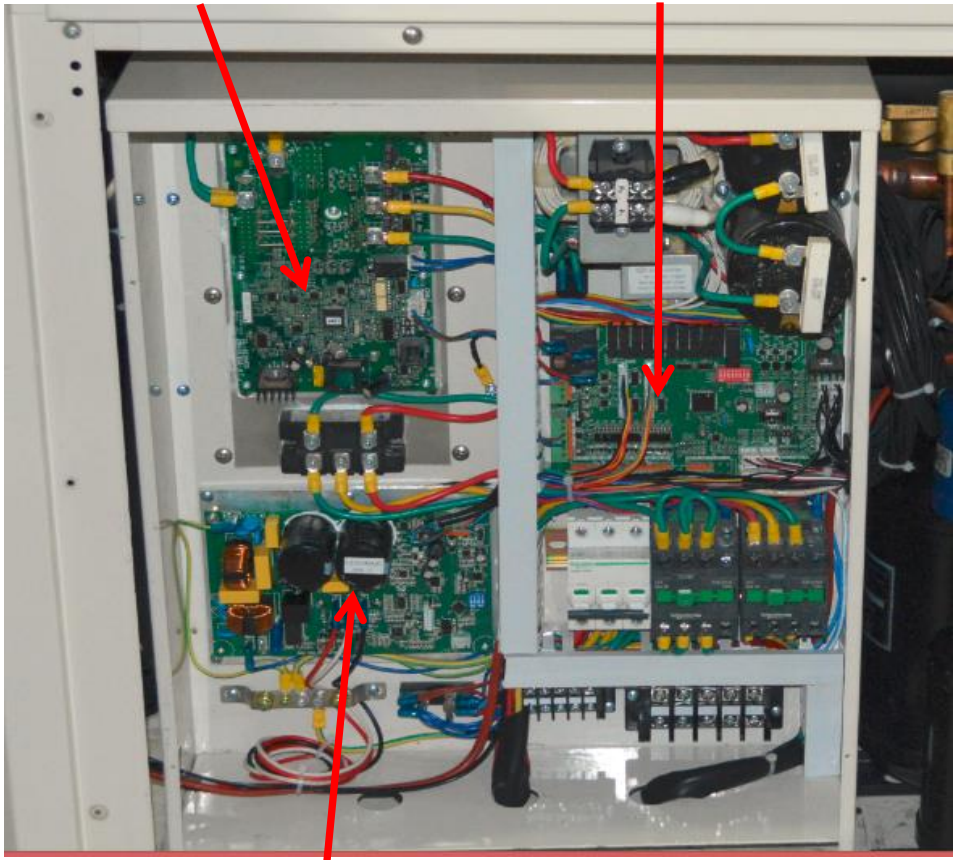




this is power phase protector, if the light is red flesh, it meaning the connect power phase is right place, if the light do not red flesh , it meaning you connect the power phase is wrong, so pls connect right phase , than the machine can working right .

compressor driver panel

controller main PCB panel

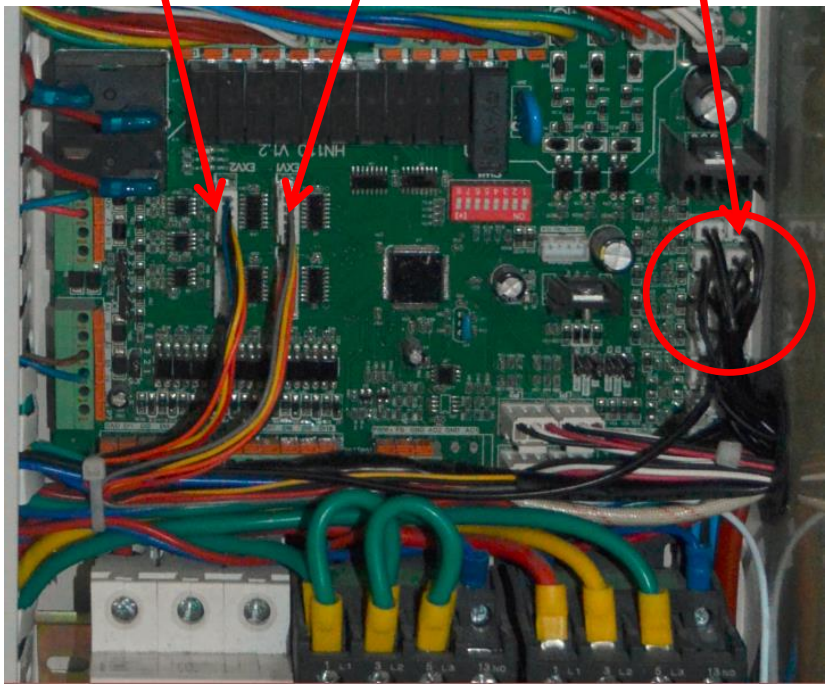


fan motor driver panel

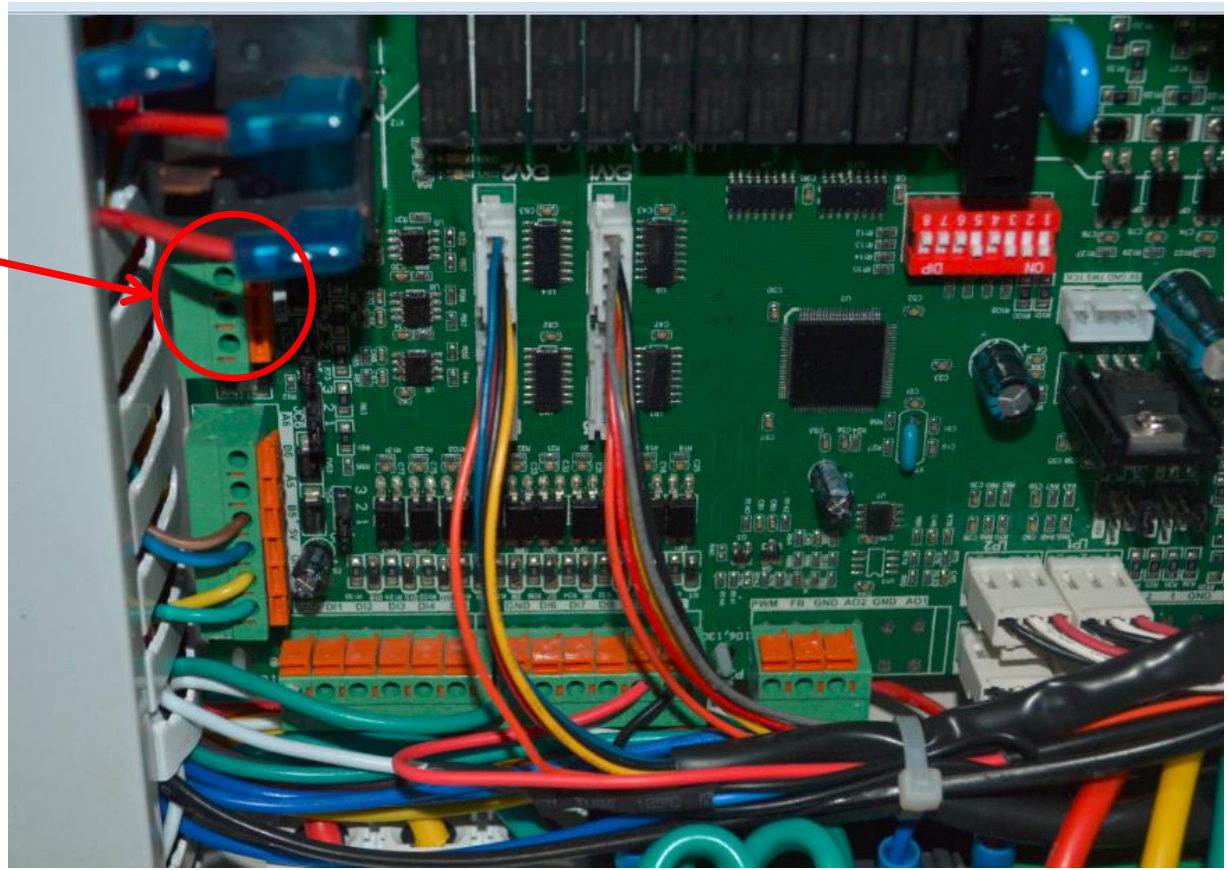
electric valve 2

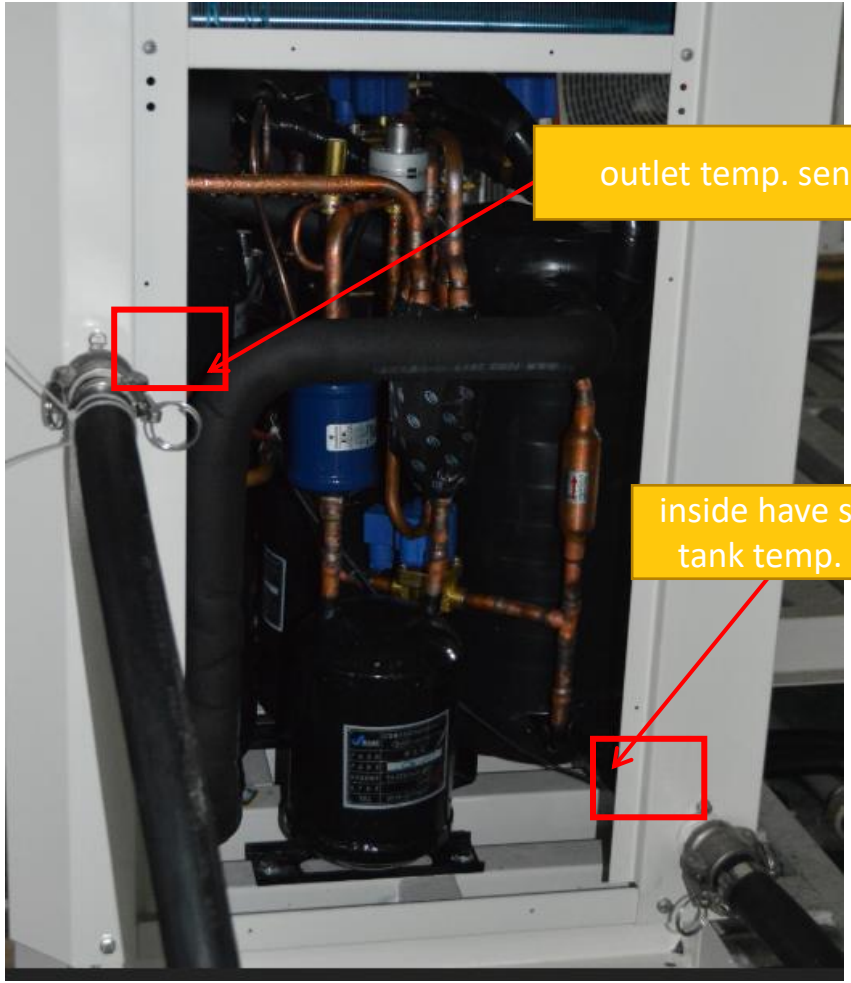
electric valve 1

different temp.

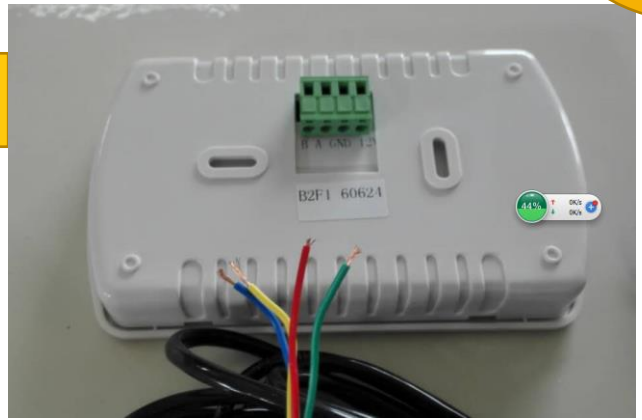


connect the wire controller to the PCB panel place by signal wire

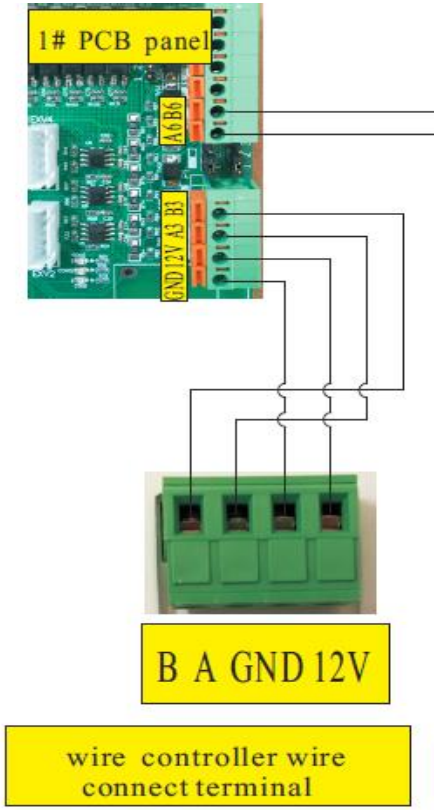




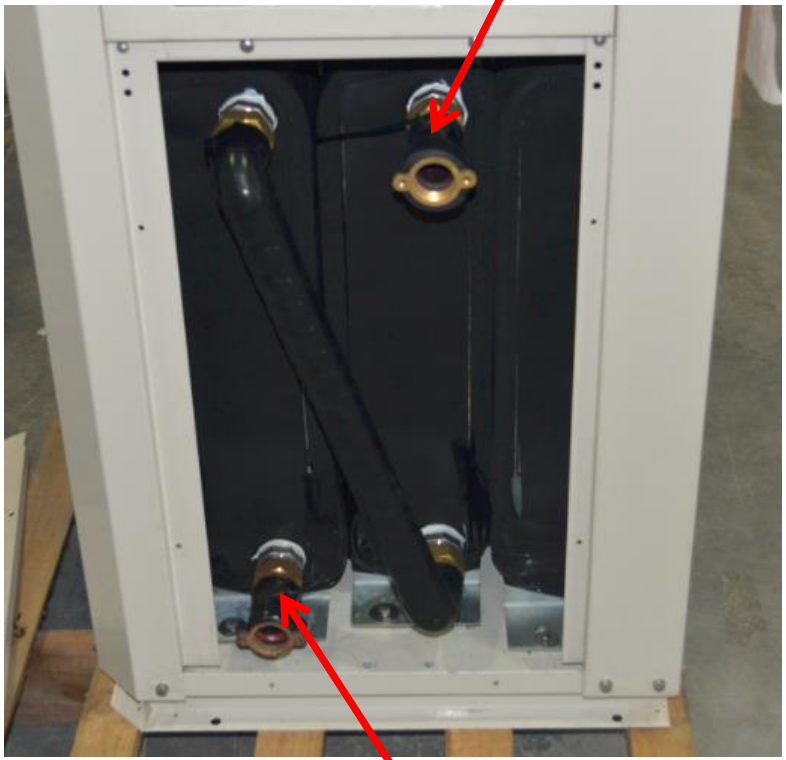
digital controller



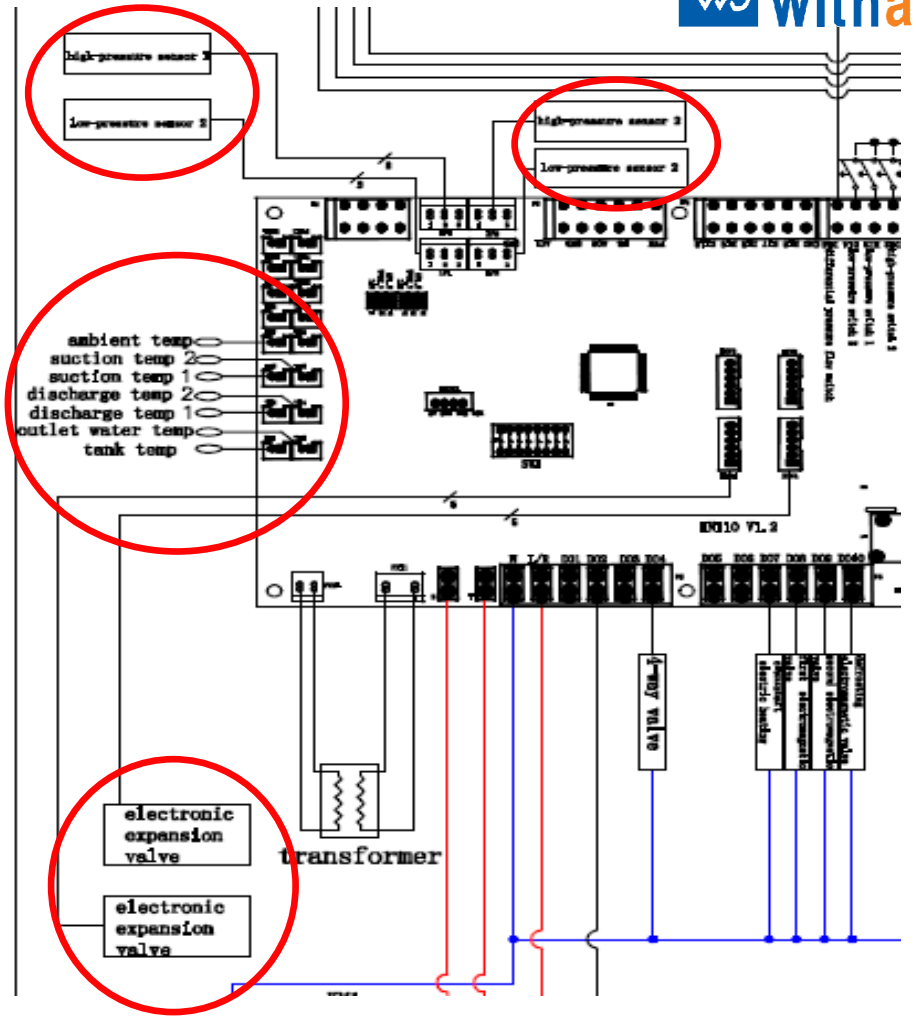
For wire do not care which color connect which place, wire color do not care, using the for wire from controller B to EL panel B, A to EL panel A, GND to EL panel GND, 12V to EL panel 12V .



outlet water temp.



water tank temp.



Quality Supply Chain

1. Compressors

Strong cooperation and creating good quality

HITACHI
Inspire the Next

MITSUBISHI ELECTRIC
Changes for the Better

2. Refrigerant accessories

ALCO CONTROLS

castel

SPORLAN

Danfoss

3. Electric parts

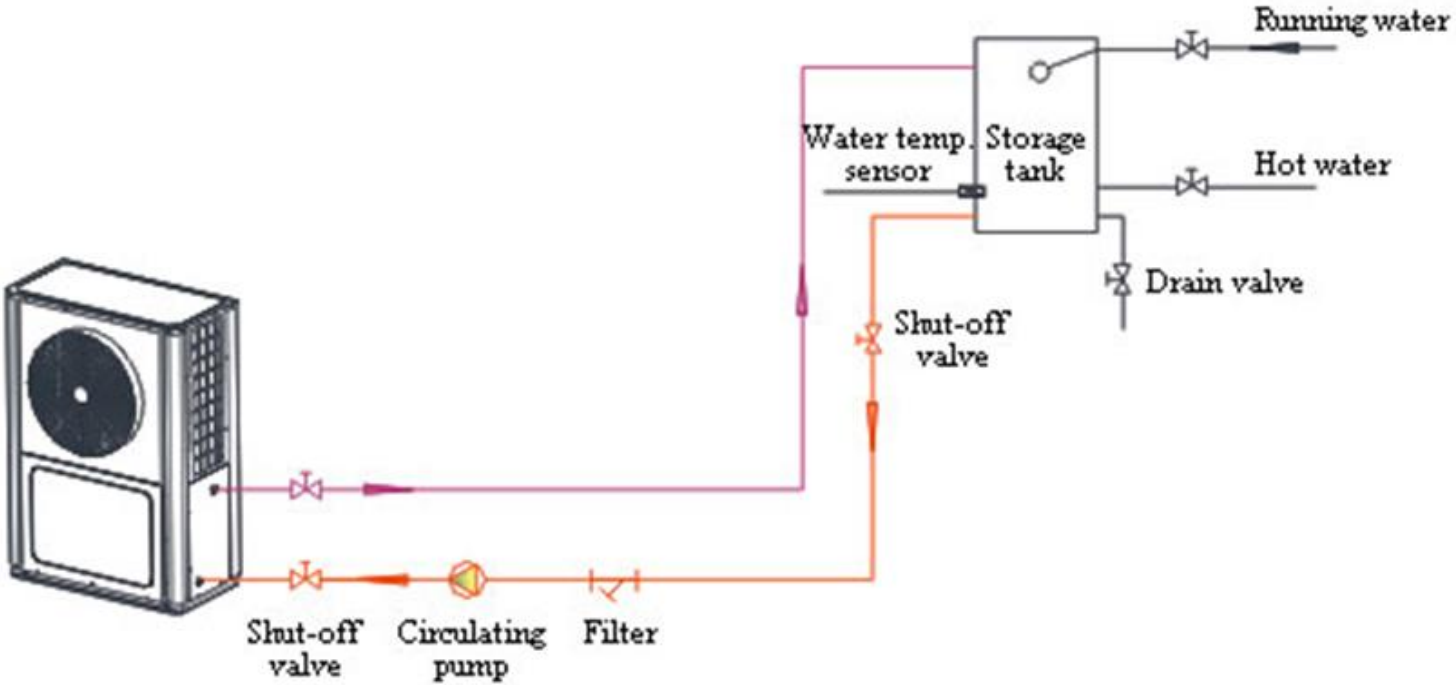
ABB

Schneider Electric

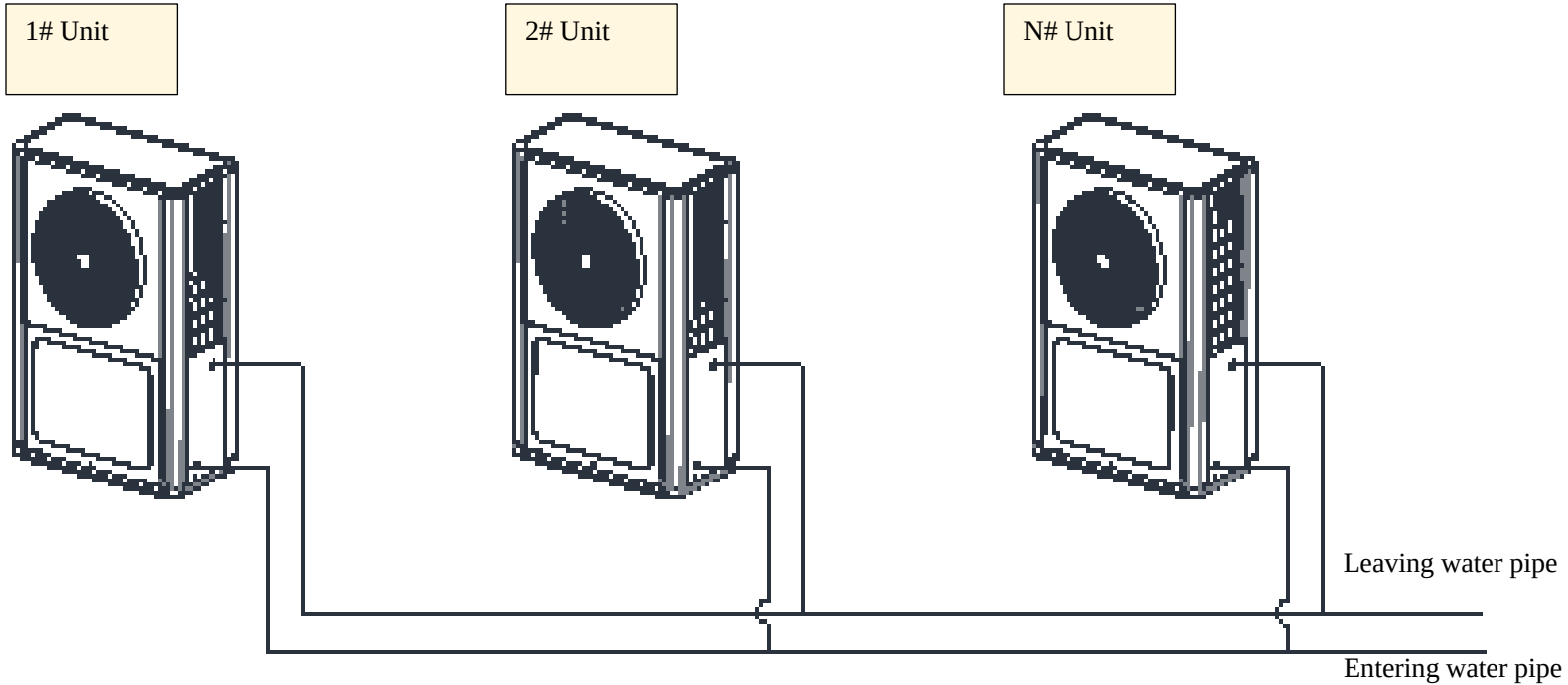
SIEMENS

CAREL

Single Unit Installation Diagram



Modular Parallel Connecting Diagram



Feel free to contact us to receive further information about our products and energy solutions.

Notes:

Withair®, Your Reliable Partner For Successful Business !

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