EN

POOL HEAT PUMP

INSTALLATION AND USER MANUAL

GSR-11-PL
GSR-13-PL
GSR-18-PL
GSR-26-PL

CE

Gassero
technology for your comfort

CONTENT

ATTENTION !

Before installing/mounting the heat pump please read this user manual carefully!

Otherwise heat pump may be damaged, which may result in serious injury or even death for service personel and user.

Heat pump shall be installed and start up by qualified personel approved by GASSERO.

1. Introduction of Pool Heat Pump

Thank you for purchasing our reversible heat pump water heater for your Swimming Pool/Pond. Our heat pump was produced in accordance with the current European Standard and it is now ready to be used. Please read this manual carefully before install the heat pump, otherwise it may lead to damage to the heat pump or may injure operators as well as cause financial loss.
The heat pump should be installed by professionals or qualified technicians.

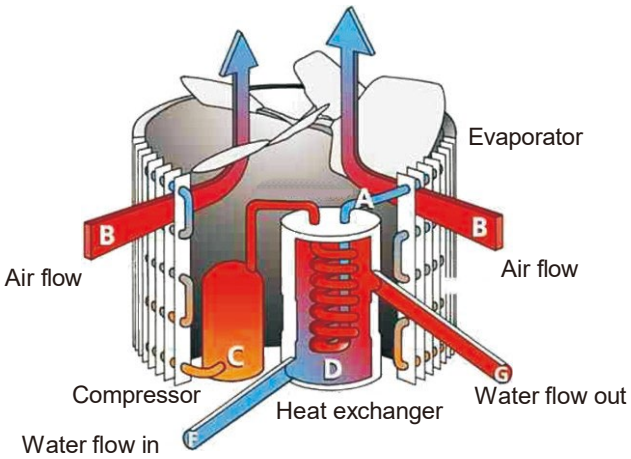
Heat Pump Technology

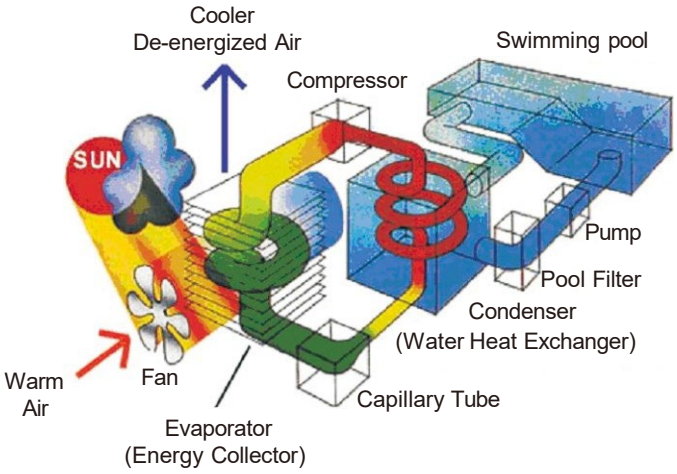
Heat pumps utilize the sun's free heat by collecting and absorbing energy from the outside air. This energy is then compressed and transferred to the pool/pond water. Your existing water pump circulates the water through the heater, usually next to the pool equipment, and the water warms up.

The unit contains a fan that draws in outside air and directs it over the surface of the EVAPORATOR (energy collector).The liquid refrigerant within the EVAPORATOR coil absorbs the heat from the outside air becomes a gas.

The warm gas in the coil passes through the COMPRESSOR concentrating and increasing the heat to form a very hot gas which then passes to the CONDENSER (water heat exchanger).It is here that the heat exchange occurs as the hot gas gives off heat to the cool swimming pool water circulating through the coil. The pool water becomes warmer, and the hot gas cooling as it flows through the CONDENSER coil returns to its liquid form and, after passing on through the CAPILLARY TUBE the whole process begins again.

The state of the heat pump technology can efficiently collect heat from the outside air down to the 7°C to 10°C range. For tropic and subtropical climates, this means that the pool
can be maintained at 26°C to 32°C.





►High Efficiency
With a COP value up to 5.5, our heat pumps are very efficient when transferring heat from the air to the swimming pool water. With the heat pump technology, as much as 80% of cost compared to an electrical heater can be saved.

►Long Life-Span
The heat exchanger is made of PVC & Titanium tube, which can withstand and prolong exposure to swimming pool/pond water.

►Easy Control and Operation
The unit is very easy to operate: simply switch it on and set the desired pool water temperature. The system includes a micro-computer controller, allowing all operation parameters to be set. Operation status can be displayed on the controller with LCD display.

►Excellent components
High quality Japanese brand compressor: Mitsubishi, Toshiba, Sanyo compressor with green gas R410A, achieving higher performance of heat exchanging.
Durable and reliable Titanium heat exchanger, which can resist chloride ion corrosion in the water; hydrophilic fin-tube evaporator, inbuilt threaded pipe, which provides good performance in water skiing and anti-defrost.

2. Safety Precautions

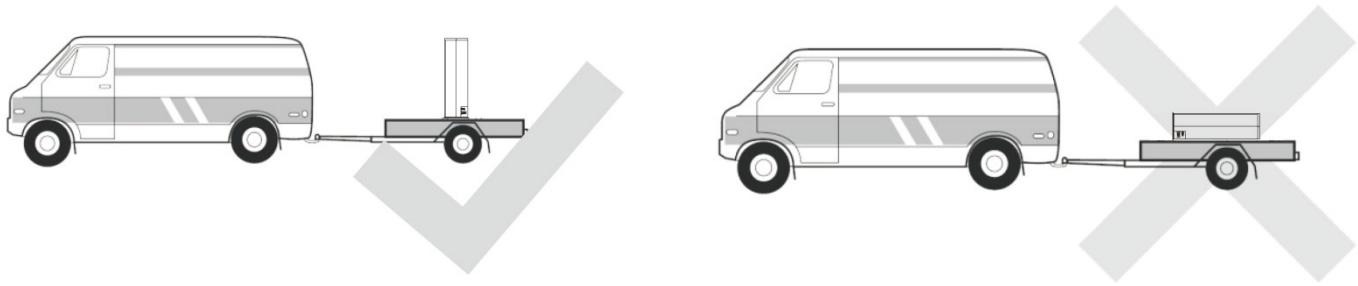
Attention!
It is required to read the Safety precautions in detail before operation. The precautions listed below are all-important for safety, please obey without fail.

2.1 General

1) Before install the heat pump, please confirm the local power supply is in accordance with the requirement of the heat pump, refer to the Technical data and the Wiring diagram provided in this manual.
2) Connecting the heat pump to a ground wire is necessary, in order to prevent electrical shock caused by an unexpected short circuit inside the unit.
3) Please install the electrical protection devices, according to the local regulations.
4) The heat pump must be installed on reliable base or supporting framework.
5) If the heat pump is installed on the floor, its base or supporting framework should be heightened, to avoid ingression of accumulated water in rainy season. In snowy areas, it is important to prevent accumulated snow from blocking up the air-out. The recommended height is 20cm to 30cm.
6) Install the drainage pipe before fix the heat pump to the ground. There are two drainage hole on the heat pump base, which could be connected to the drainage pipe with a pipe arches which contains in spare parts.
7) Drain ditch or other facilities should be arranged under the heat pump, to avoid the environment influence because of water discharge.
8) Ensure the unit is well ventilated, direction of air exhaust is kept away from windows of neighboring buildings, and the exhaust air cannot flow back. Moreover, adequate service clearance should be kept around the unit.
9) DO NOT put fingers or sticks into the ventilative fan.
10) The unit should not be installed at places accompanied with oil, inflammable gas, corrosive components e.g. sulfur compound, or high-frequency equipment.
11) The heat pump is usually placed next to a house, which gives a directed sound distribution that should be considered, so it should take proper action to reduce the noise impact.

2.2 Transportation and Storage

1) The heat pump MUST be transported and stored VERTICALLY!
2) The heat pump MUST be transported and stored uprightly on a pallet with good package.
3) Should the heat pump be laid down, please wait at least 12 hours before switching it on



3. Technical data

3.1 Technical Table

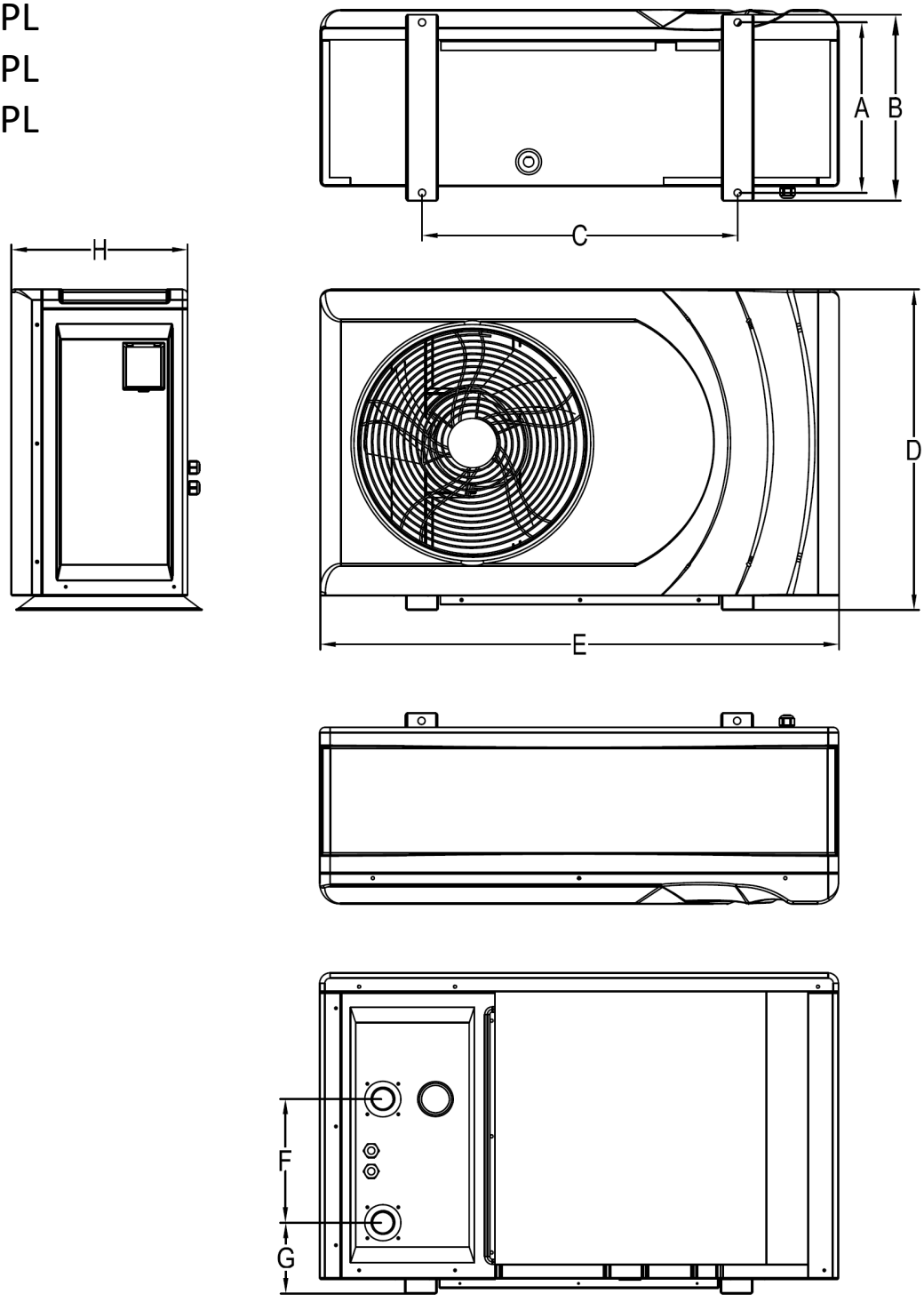
			GSR11-PL	GSR13-PL	GSR18-PL	GSR26-PL
Air 24°C /Water 27 °C [1]	Heating Capacity	W	11000	13500	18000	26000
		BTU	37510	46035	61380	88660
	Heating Input Power	W	1925	2180	2610	4750
	Heating Running Current	A	9.78	10.43	12.5	8.39
	COP		.10	5.7	5.3	5.47
Max. Current		A	16	18	24	14
Power Supply		V/Ph/Hz	220V/1Ph/50Hz	220V/1Ph/50Hz	220V/1Ph/50Hz	380V/3/50Hz
Setting temp. Range			15°C~40°C	15°C~40°C	15°C~40°C	15°C~40°C
Running Temp. Range			-5°C~43°C	-5°C~43°C	-5°C~43°C	-5°C~43°C
Refrigerent Type			R410a	R410a	R410a	R410a
Condenser			Titanium in PVC	Titanium in PVC	Titanium in PVC	Titanium in PVC
Evaporator			Hydrophilic aluminium/φ9.52 innergroove tube	Hydrophilic aluminium/φ9.52 innergroove tube	Hydrophilic aluminium/φ9.52 innergroove tube	Hydrophilic aluminium/φ9.52 innergroove tube
Fan motor	Power Input	W	80	80	140	320
	Fan Speed	RPM	900	900	800	800
Capillary or Expansion Valve			Capillary	Capillary	Capillary	Capillary
Controller			LCD	LCD	LCD	LCD
Water Inlet/Outlst Dimension		"	1.5"	1.5"	1.5"	1.5"
Hydraulic Connection		mm	PVC 50	PVC 50	PVC 50	PVC 50
Water Flow Volume		m³/h	5	5.5	6	8
Sound Pressure Level at 1M/4M/10M [2]		kpa	52/40/32	52/40/32	52/40/32	55/44/34
Dimension	L*W*H	mm	1012*306*613	1012*306*613	1116*425*686	752*691*959
Packing Size	L*W*H	mm	1135*390*750	1135*390*750	1250*505*825	840*750*1100
Weight	Net Weight	kg	68	105	115	124
	Gross Weight		78	120	130	146

1 **Ambient air temperature 24°C(DB)/19°C(WB), inlet water temperature°C27**

2 **Noise from 1meter,4 meters or 10 meters (in DBA) (As in the directives EN ISO 3741 & EN ISO 354...)**

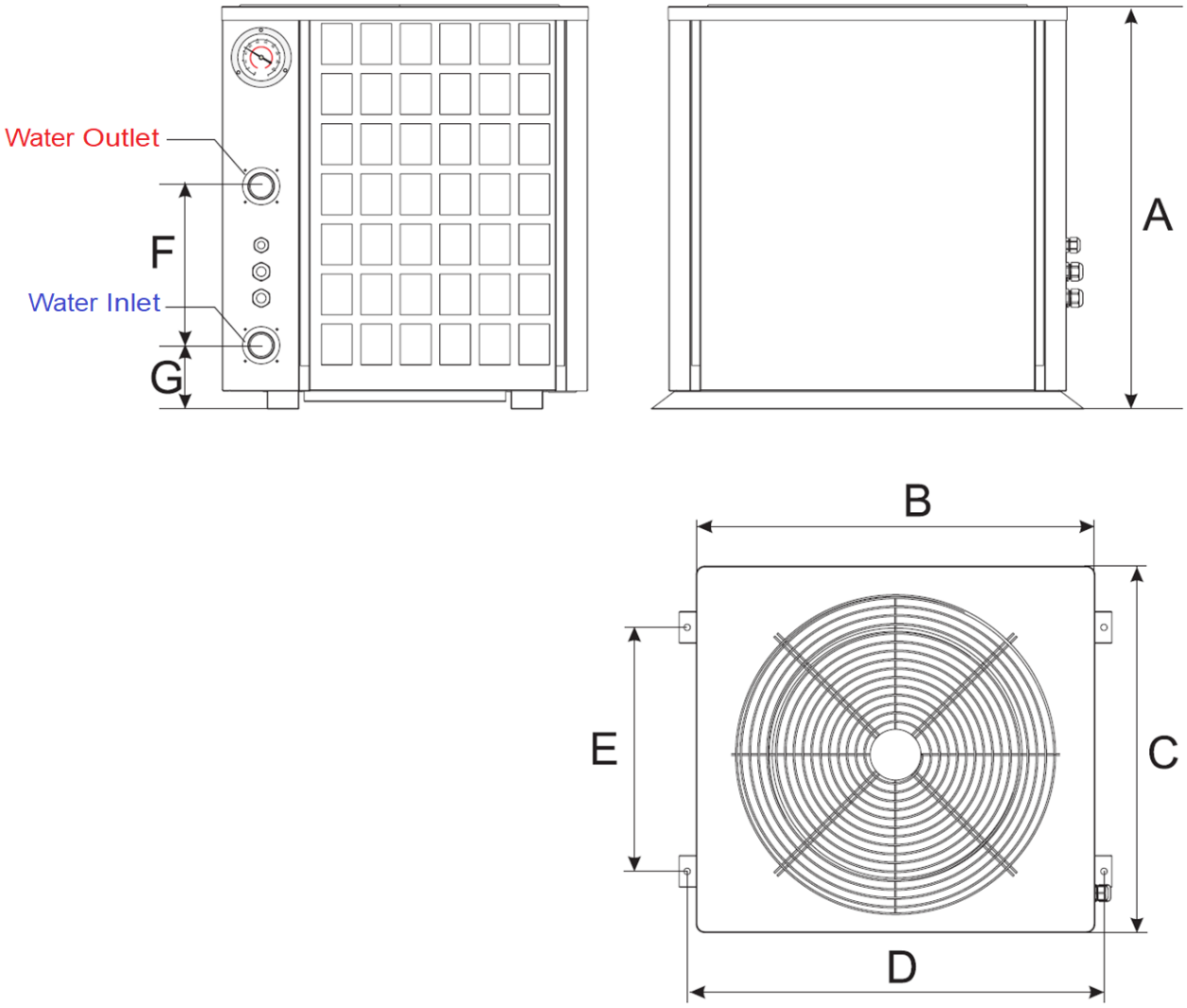
4. Dimensions

GSR11-PL
GSR13-PL
GSR18-PL



	GSR-11-PL	GSR-13-PL	GSR-18-PL
A	372	422	422
B	392	452	452
C	650	640	640
D	628	754	754
E	1006	1026	1026
F	260	300	355
G	145	135	122
H	344	415	415

GSR26-PL



	GSR-26-PL
A	960
B	752
C	691
D	765
E	460
F	122
G	450

5. Installation

5.1 Installation Location

1. Installation must be simple and allow easy access for later work.

2. If the unit is to be installed on the floor, its undercarriage should be heightened, to avoid ingression of accumulate water in rainy season. In snowy areas, it is important to prevent accumulated snow from blocking up the air-out.The recommended height is 20cm to 30cm.

3. Drain ditch or other facilities should be arranged under the outdoor unit, to avoid the environment influence because of water discharge.

4. To install the unit at balcon or top of building, the installation site must meet the allowable bearing capacity of building structure, without affecting the structural safety.

5. Ensure the unit is well ventilated, direction of air exhaust is kept away from windows of neighboring buildings, and the exhaust air cannot flow back. Moreover, adequate service clearance should be kept around the unit.

6. The unit should not be installed at places accompanied with oil, Inflammable gas, corrosive components. e.g. Sulfur compound, or high-frequency equipment.

7. The unit must be installed on reliable base or framework. Weight capacity of framework should be 3 times of the body weight, and safeguard measures should be taken to avoid malfunction of fastenings.

8. The unit should not be installed at sites with typhoon/earthquake hazards. Midair installation should be avoided as much as possible as machine falling down may result in severe accident.

9. Do not install the heat pump close to a road or path to avoid mud splashing on the unit.

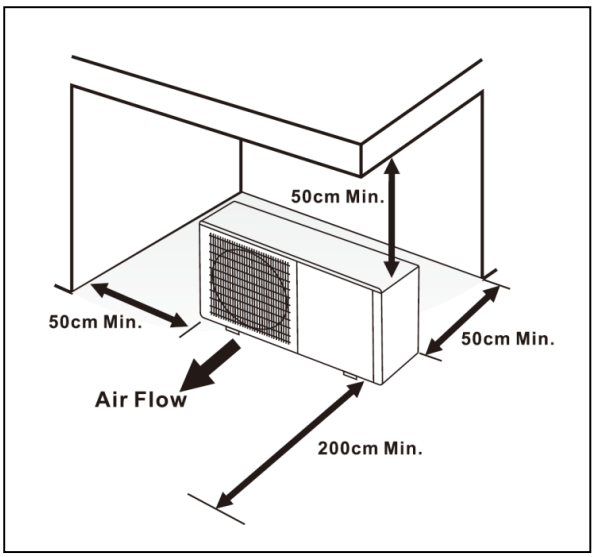
10.Keep, wherever possible, the unit out of reach of children.

NOTE:
The pool heat pump will perform well on any location provided three factors are present:

The heatpump may be installed virtually anywhere outdoors providing minimum distance requirements are met with respect to other objects (see diagram below).

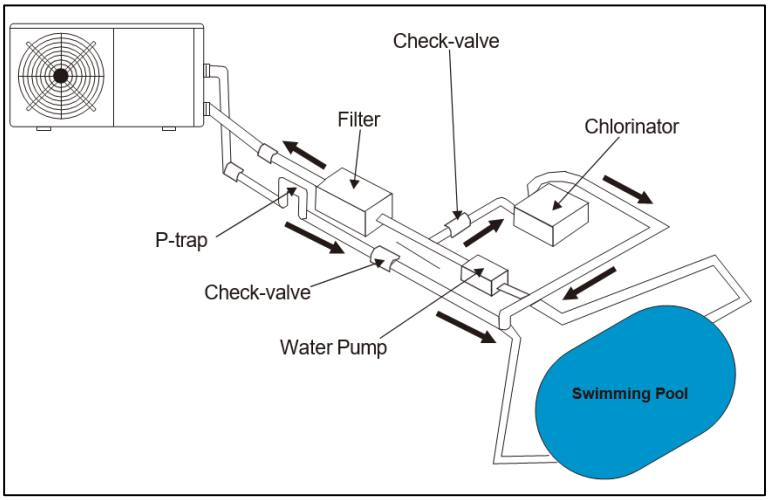
For indoor pools please consult your installer.
If the heat pump is placed in a windy area, no problems occur with e.g. the pilot light, as opposed to what is often the case with gas heaters.

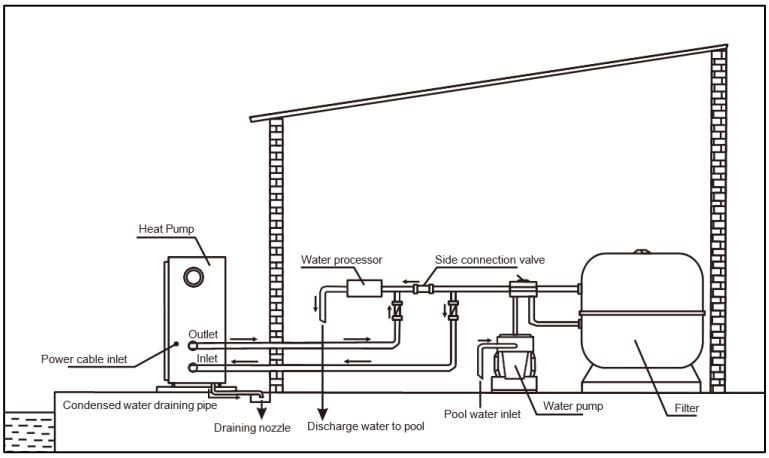
1- Fresh Air
2- Electricity
3- Pool Filtre Piping



5.2 Pool Connection Diagram

►Each addition of chemicals has to be performed through the conduits located downstream of the heat pump.
►Install a by-pass when the flow of the pool pump exceeds the authorized flow through the heat exchanger of the heat pump with 20%.

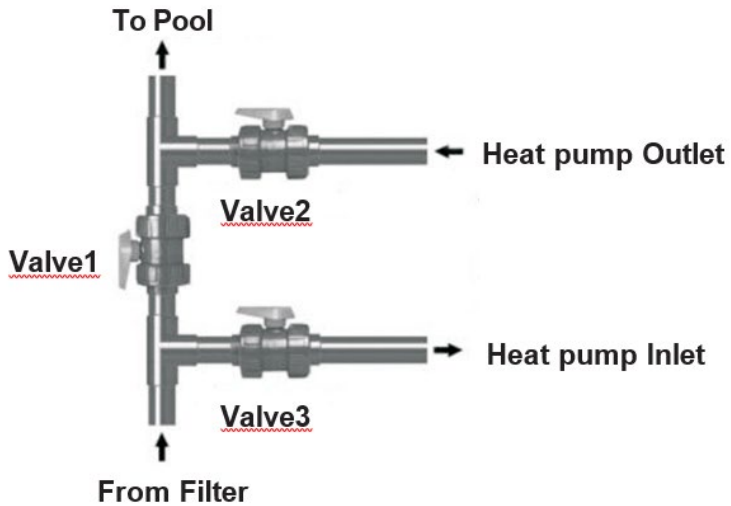


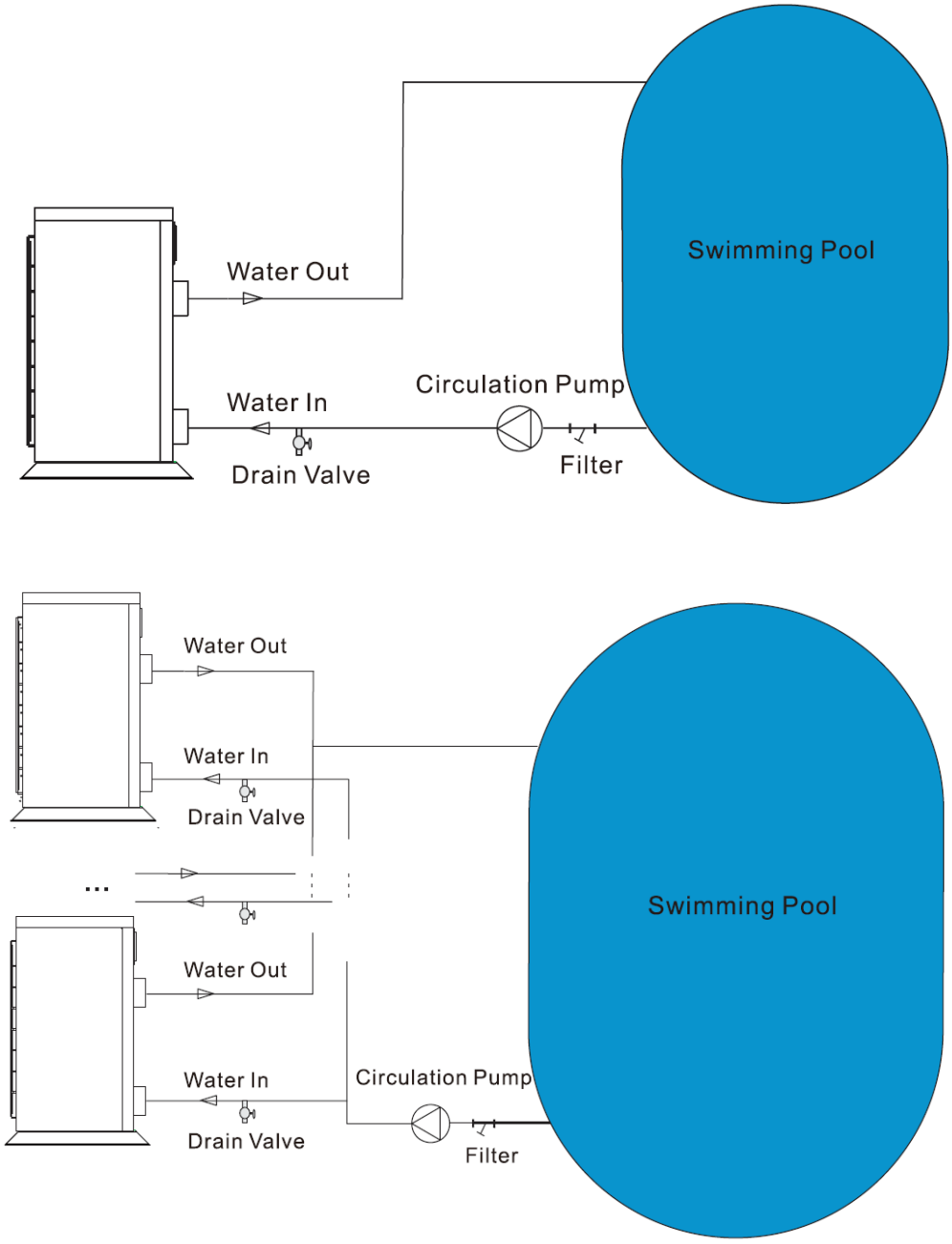


5.3 By-pass Setting

With the by-pass set correctly, best performance of the pool heat pump will be made.
Please see the right diagram for the connection.

SETTING:
Valve 1: close slightly
Valve 2: open half way
Valve 3: open completely





The filter connected with pipes should be cleaned regularly to make sure the water inside systems clean,

5.4 NOTS for Anti-Freezing in Winter

1. The heat pump unit has auto antifreeze program. When the unit is working normally, there will not be freezing.
2. When the ambient temperature is minus, and the unit stops for over 3 hour, or the unit stops long term when power off, the user is advised to drain all the water inside popes through the valve which connected to water outlet to avoid frost crack.
3. If the unit is under off season, should cut off power and take the protection cover outside of unit when necessary.
4. Before restart the unit which has drained out all the water inside, the user is advised to reinstall the unit and adjust program, further more need complete check of the system.

5.5 Electrical Connection

This section is an indication only and must be checked and set when necessary according to installation conditions.

Electrical installation and service must be carried out under the supervision of a qualified electrician or engineer.

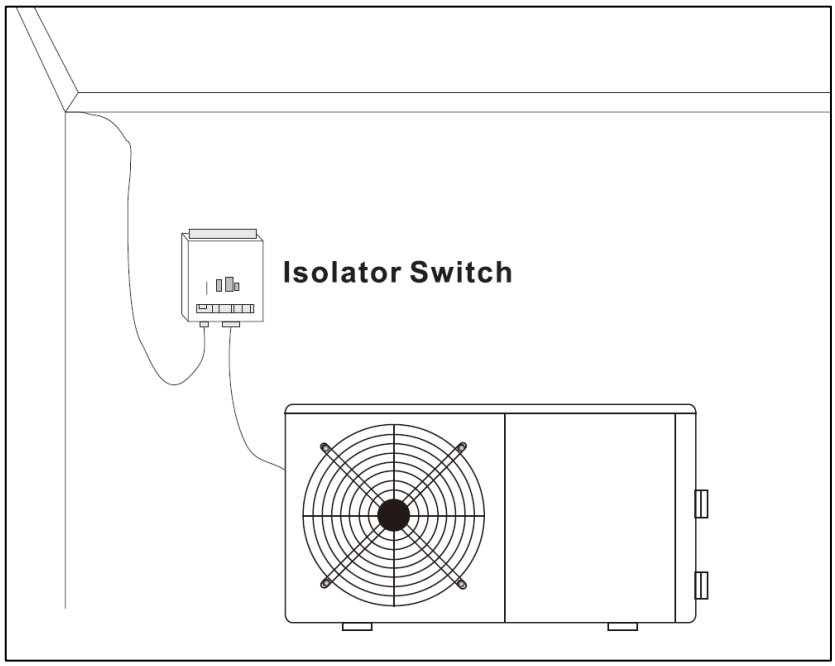
1. The electrical power supply to the heat pump must be protected with a fuse and isolator switch (not provided) in compliance with standards and regulations valid in the country in which the system is to be installed.

2. The unit is designed for connection to a general power supply with full earth and neutral or neutral earth systems.

3. The power supply cable must be connected to a circuit-breaker with at least a 3mm breaking gap. Incoming supply must be 220-240V/1/50Hz, via a distribution board with fuses.

4. If an insulation test is to be carried out in the building, please make sure to disconnect the heat pump.

5. The communication wire must be STP(Shielded Twisted Pair), the size should not less than 0.5 mm.

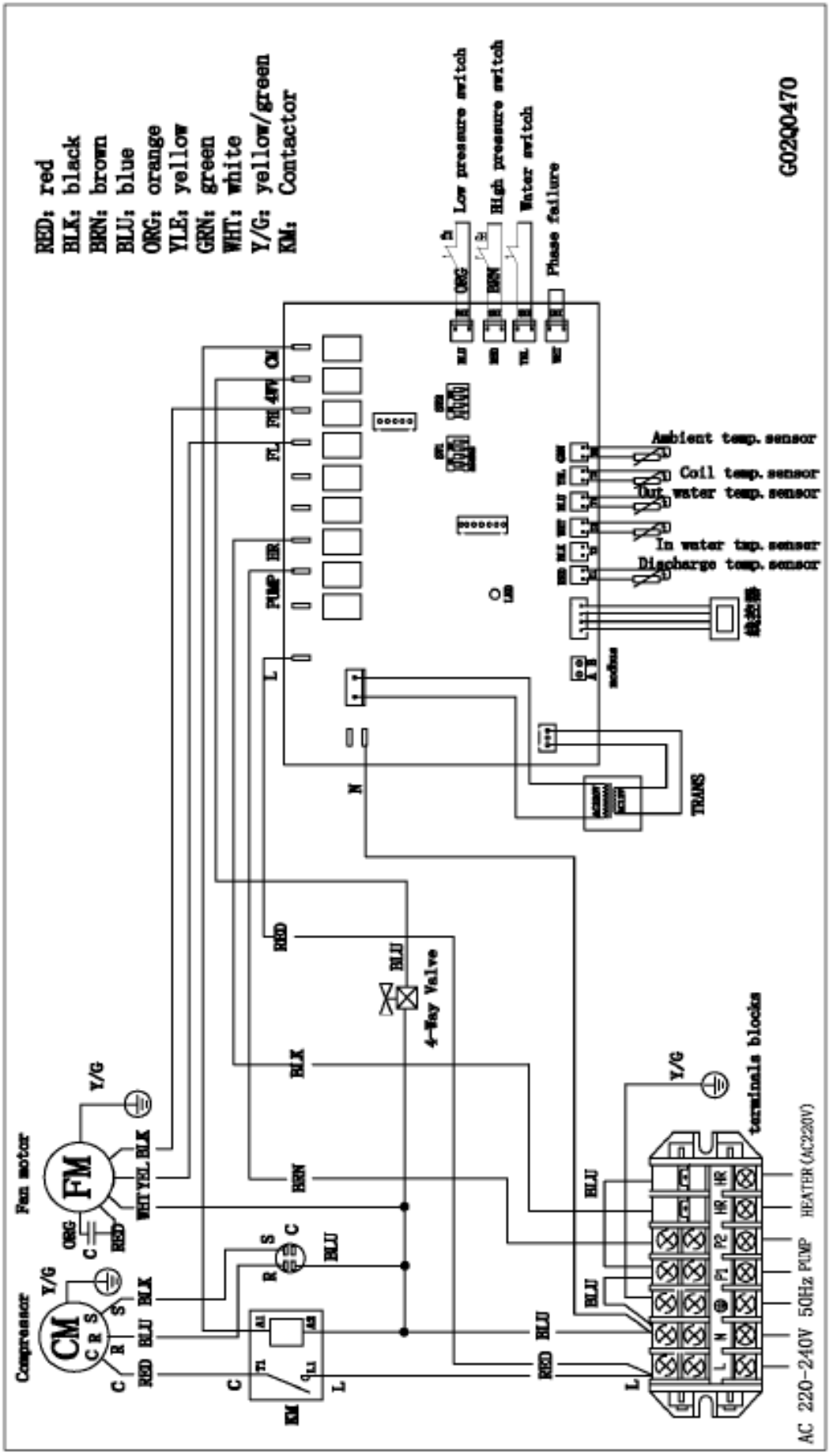


IMPORTANT REMARK

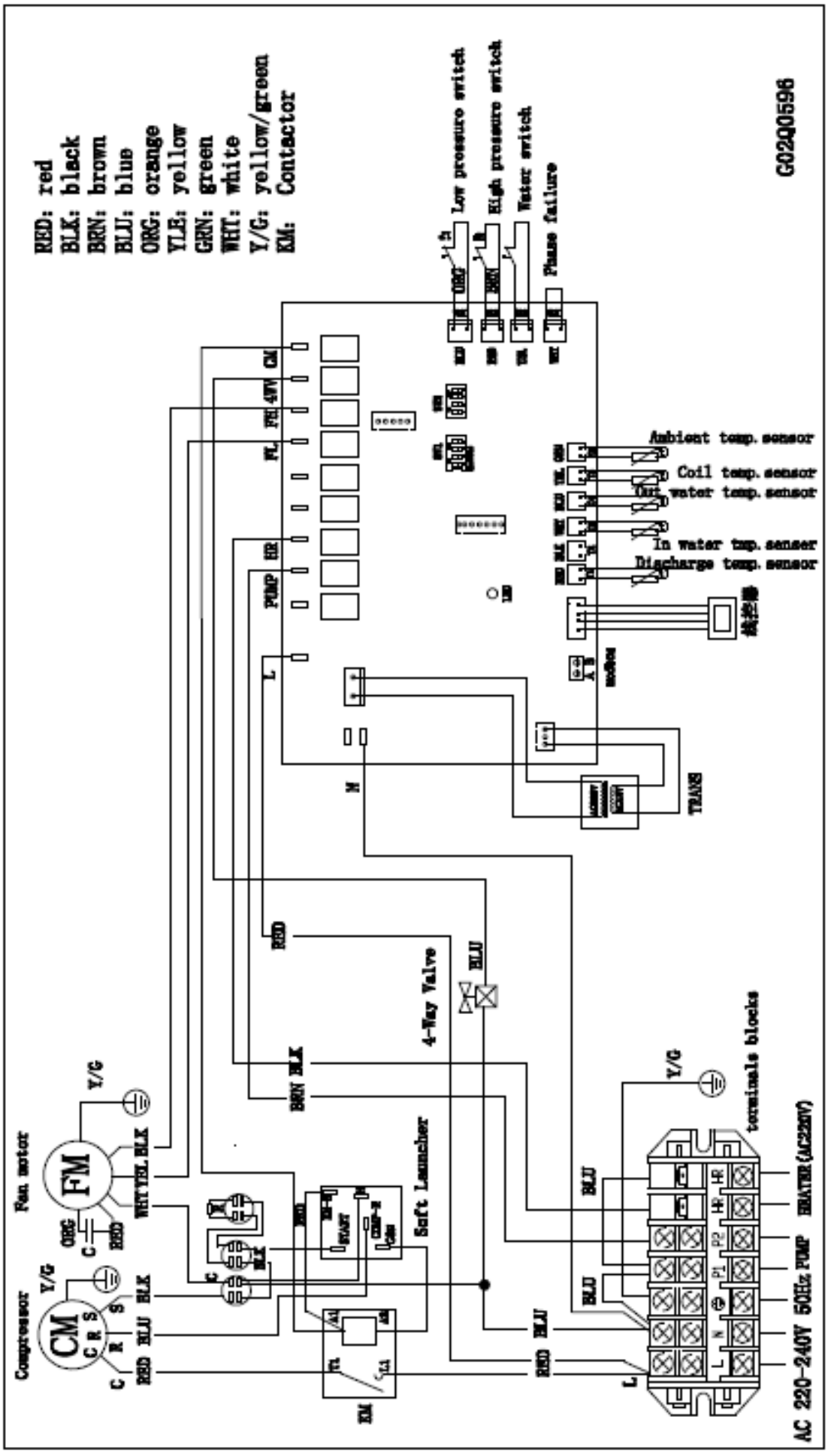
1. A voltage variation of ±10% during operation is acceptable.
2. The electrical supply conduits must be securely fastened.
3. The cable must be suitable for outdoor use.
4. Use a cable gland to pass the power supply cable into the heat pump.

5.6 Electric Circuit Drawing

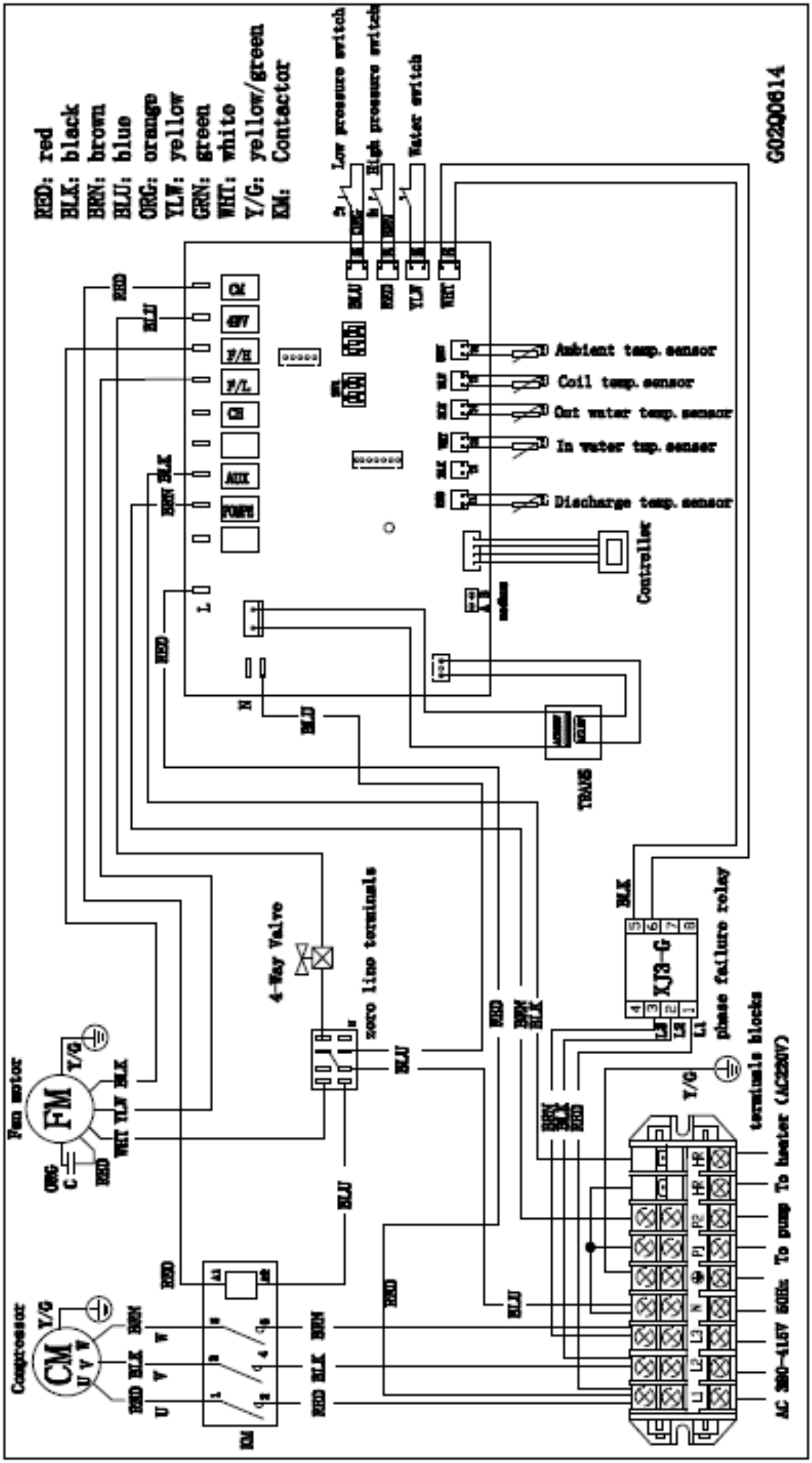
GSR11-PL , GSR13-PL



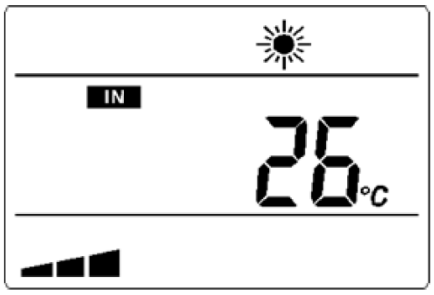
GSR18-PL


RED: red
BLK: black
BRN: brown
BLU: blue
ORG: orange
YLE: yellow
GRN: green
WHT: white
Y/G: yellow/green
KM: Contactor
G0200596
Low pressure switch
High pressure switch
Water switch
Phase failure
Ambient temp. sensor
Coil temp. sensor
Out water temp. sensor
In water temp. sensor
Discharge temp. sensor
4-Way Valve
Soft Launcher
terminals blocks
Fan motor
Compressor
TRANS
AC 220-240V 50Hz PUMP HEATER(AC230V)

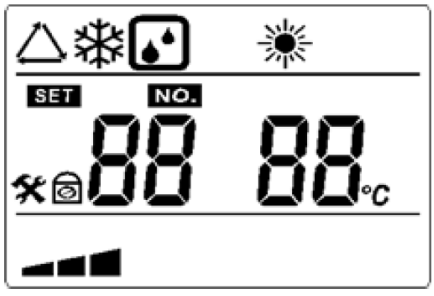
GSR26-PL


RED: red
BLK: black
BRN: brown
BLU: blue
ORG: orange
YLW: yellow
GRN: green
WHT: white
Y/G: yellow/green
EM: Contactor
Low pressure switch
High pressure switch
Water switch
G02Q0614
Ambient temp. sensor
Coil temp. sensor
Out water temp. sensor
In water temp. sensor
Discharge temp. sensor
Controller
TRANS
4-Way Valve
zero line terminals
XJ3-G
phase failure relay
terminals blocks
Fan motor
FM
Compressor
CM
To heater (AC220V)
To pump
AC 380-415V 50Hz

6. Control Panel



Normal display in heating mode



All icons available

Buttons below the display

6.1 ON-OFF

When you switch OFF the machine on the controller, the display will indicate « Stand-by »

Button  serves to start/stop the heat pump.
After stopping the machine with this button, it can take a few minutes till the machine comes to a complete hold.

6.2 Working modes

Button serves to change the working mode.
By pressing this button, the icon corresponding to the selected mode will appear:.

Automatic: heating and cooling.
The heat pump will maintain the water temperature at the desired value (+/– 1°C)*.

Heating: only heating.
Heats the water up to the desired value (+/– 1°C)*.

Cooling mode: only cooling.
Cools the water down to the desired value (+/– 1°C)*.

6.3 Time Setting

Press one time button [SET] (hour will blink)

Set hours with [▲] or [▼]

Press one time button [SET] (minutes will blink)

Set hours with [▲] or [▼]

Press one time button [SET] to confirm

6.4 Water Temperature Setting

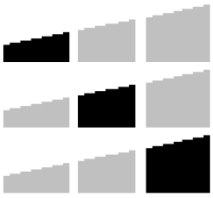
Start the machine and choose the desired mode (see precedent instructions).

When pressing this button [▲] the display will indicate "SET" and the desired water temperature.

Adjust the desired value with [▲] or [▼] and wait a few seconds till it is stored automatically.

6.5 Working Information

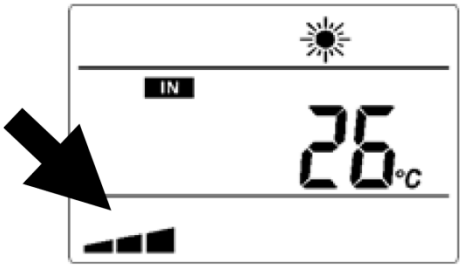
3 symbols at the left bottom corner indicate the working information:



First symbol indicate the water flow:

Second indicate the fan:

Third indicate the compressor:During the start-time delay the corresponding symbol will blink



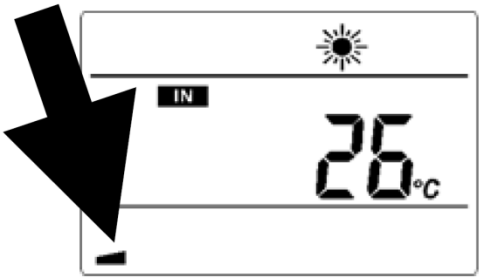
Symbol  indicates that the machine is defrosting.

Symbol  indicates that the keyboard is locked.

To lock or unlock the keyboard press [▲] and [▼] simultaneously during several seconds.

6.6 Water Flow Detection

The heat pump only operates whenever there is water flow circulating inside. All models are equipped with a water flow switch that detects if the water pump is working or not.



"flow" LED lighting = water pump working.

"flow" LED not lighting = water pump stopped.

7. Internal Parameters

Button **SET** serves to check the internal parameters. These parameters may only be modified by professionals.

When the machine is displaying internal parameters, the icon  will be shown.

7.1 Controller State Table

Screen	Explanation	Check	Solution (if no reset)
OFF	Stand-by	-	-
FLO EE3	No water flow or the flow switch doesn't detect the water flow	-Verify if water in and outlet are connected correctly - Check if filtration pump is working. - Check by-pass setting. -Verify if flow switch is working correctly	(Contact your seller)
EE4	Phase error (400V machine)	Invert 2 phases from the power supply.	
EE6	Comp. Out temp. Too high	- Check if filtration pump is working. - Check by-pass setting.	
EE7	Memory problem	Change PCB	
EE8	Communication error.	Check electrical connection between controller and electronic card inside the machine.	
PP1	Probe error (Water in)	Check probe connection.	
PP3 (PP10)	Probe error (evap.)		
PP4 (PP11)	Probe error (comp. in)		
PP5	Probe error (ambiance)		
PP6 (PP8)	Too much difference between water in and water out.	Check by-pass setting.	
PP7	Defrost protection.	Ambient temperature was lower than the minimum working range temperature.	-Turn the machine OFF few minutes. -Turn the machine ON. (Contact your seller)
HP / HP2 PP9 / PP12	High pressure protection	- Check by-pass setting. - Check water flow	
LP / LP2 PP9 / PP10	Low pressure protection	-Check if there is gas inside the machine (manometer between 0,5 and 1,5 when machine is stopped). -Ambient temperature was lower than the minimum working range temperature.	

8. Maintenance and Trouble Shooting

Maintenance
The heat pump water heater is an advanced equipment with high automization. The reliability and operation life of the heat pump can be expectedly gurranteed and even increased by regular inspection and effective maintenance.

The external water filter should be cleaned regularly to ensure the cleanness of the water in the system and avoid damage caused by blockage in the filter.

All protective settings in the unit have been set before ex-factory. Users must not adjust it when the heat pump unit is in use.

Regular inspection is required for the power source and the wiring connection of the electric system. Loose wiring connection and electric components should be repaired in time.

The water supply system, relief valve of the water tank, water level control device and air discharge device need to be checked regularly in case of low circulation water volume caused by air entering the system, to ensure enough capacity and reliability of the heat pump.

Check the water pump and the valves on the pipes if they work well, and make sure there is no leakage from connectors.
Keep the surrounding of the heat pump dry, clean and ventilated. Regularly clean the evaporator to keep high heat exchanging efficiency.

Check the inside pipe connectors and refrigerant service port is dirty with oil. Make sure there is no refrigerant leakage.

Before stopping the heat pump for long time, drain out all water in the pipes, and shut off the power supply, and put it into a shield. Full inspection of the system is required before next operation.

Users should call the installer or the seller every time when there is an error on the heat pump controller.

Clean the condenser with phosphoric acid of 15% consistence under temperature of 50C-60C. Run the circulation pump for 3 hours, and then flush with fresh water for 3 times. When installing the pipes, add a 3 way valve on the pipes and closed on outlet of it, for cleaning use. Corrosive washing liquid is forbidden to clean the condenser.

Clean the inside of the water tank after being used for a period(usually two months, and according to local water quality.)

9. Manometer Instruction

The manometer is a kind of high pressure equipment, when the heat pump is on, the manometer pointer would point to the pressure value of refrigerant, the max. value of protection is 42kg/Cm2. When the heat pump is off, the pointer would point to the same value as actual ambient temperature (e.g. 28°C) and related air pressure (e.g.18kg/ Cm2).
Please check the manometer when you restart the heat pump after not using for a long time, if it shows ambient temperature valve is smaller than 2C° (When the ambient temp. is higher than 2C°), it means that refrigerant has leaked a lot, and you need to confirm with professional engineer as soon as possible.

Gassero
technology for your comfort

Gassero Isı Teknolojileri Sanayi Limited Şirketi
İstanbul Endüstri ve Ticaret Serbest Bölgesi
4.Sokak,No:8, 34957
Tuzla / Istanbul / TÜRKİYE

Telefon : +90 216 394 09 85 -86 -87
Faks : +90 216 394 24 91

www.gassero.com

15.06.2022