ECO WEE 9,2

ENGELSK BRUKERMANUAL

Content Page

General

In order to get the greatest benefit from your swimming pool heat pump HE series you should read through the For Home Owners section in this Installation and Maintenance Instruction.

HE series is a basic heat pump for heating large houses, apartment blocks and medium-sized industrial premises. Outdoor air is used as a heat source.

HE series is a YUELLY-made quality product offering a long life span and reliable operation.

Installation date				
Type designation				
HE series-____				
Installation engineers				
Setting				
Channel			**Factory setting**	**Adjustable Range**
/ / /	Water-outlet temperature setup	----------		30°C—60°C
L1	The balance temperature setup by water-outlet and displa		—0℃	0°C—15°C
L2	Balance temperature	----------		2--18
L3	The ambient temperature to enter others heater	----------		0--30
L4	Option for other heaters to run		------- 0(0 non-other heaters)	0--3
L5	The ambient temperature to enter heater in bottom		-------- 01(0 non- electric heating)	0°C—30°C
L6	The balance temperature for AUX-heating restart	----------		5°C—20°C
L7	The run mode of water pump	----------		0—1
L8	Protection for compressor current	----------		0—33A
L9	The ambient temperature of fan motor high/low gears	----------		10°C --45°C
h1	Min. interval between defrosting	----------		22 min—99 min
h2	Start defrosting	----------		-15°C—0°C
h3	Longest defrosting	----------		5-20 min
h4	Stop defrosting	----------		1°C—40°C
h5	The time of stop compressor when defrost	----------		3-6 min
P1	The period of regulation for expansion valve	----------		20--180
P2	Overheat	----------		-8--15
P3	The exhaust temperature in expansion valve regulation	----------		70--135
P4	The value of EXV in defrost	----------		6--55
P5	The minimum valve of expansion valve	----------		6--30
P6	Overheat make up	----------		0--12
C1	The minimum s ambient temperature setup in heating	----------		0°C—12°C
C2	The maximum ambient temperature setup in heating	----------		12°C—22°C
C3	The maximum back-water temperature setup in heating	----------		25°C—60°C
C4	The minimum s back-water temperature setup in heating	----------		12°C—45°C
C5	The return difference temperature in cooling/heating	----------		1°C—5°C
C6	The minimum s ambient temperature setup in cooling	----------		20°C—30°C
C7	The maximum ambient temperature setup in cooling	----------		30°C—40°C
C8	The maximum back-water temperature setup in cooling	----------		12°C—28°C
C9	The minimum s back-water temperature setup in cooling	----------		12°C—25°C
F1	online		-- —— 00(0~non-online)	1,2,3,4,5,6~online
Any changes in the basic settings are noted here.				
Datum		Sign		

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance.

General

Principle of operation

HE series is an air/water heat pump, specially designed for the Nordic climate. HE series utilises the outside air so there is no need for bore holes or coils in the ground. HE series has an automatic 2-stage capacity control of the fan.

HE series is designed for water based heating systems and can be used together with most electric boilers, oil-fired boilers or equivalent. The heat pump includes an advanced control system for optimal control. HE series is started by a start signal from another controller or thermostat.

HE series can both heat hot water effectively at high outdoor temperatures and give a high output to the heating system at low outdoor temperatures.

If the outdoor temperature drops to a level below the stop temperature all heating must then occur with external additional heat.

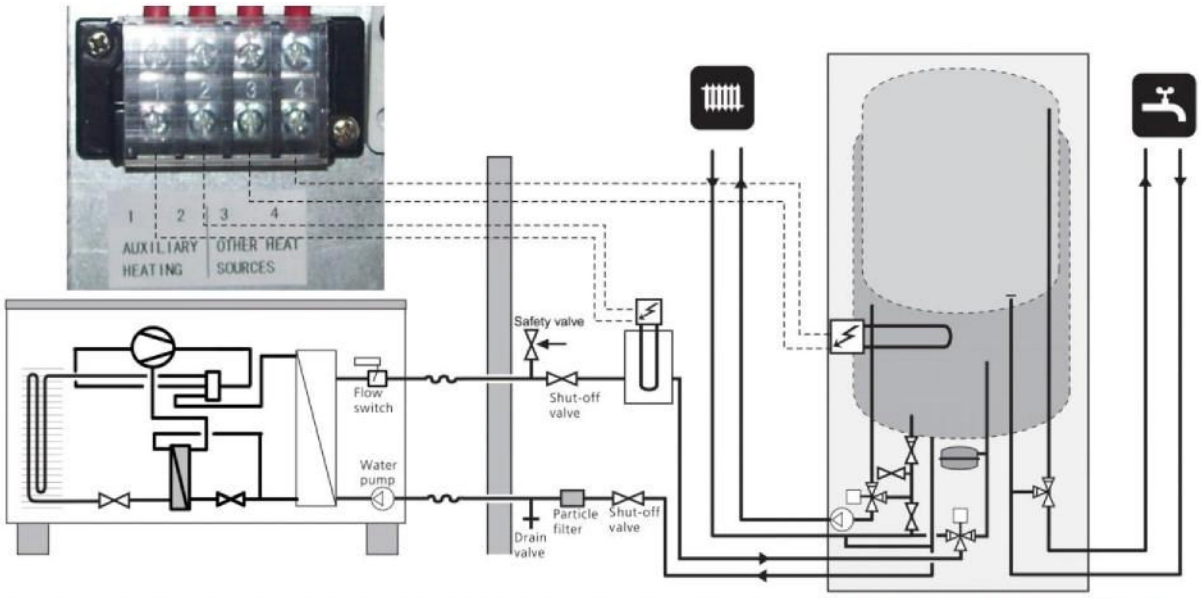
HE series is manufactured in three sizes: 11, 14 and 17 kW.

The material has been chosen for a long service life.

The water heat exchanger equips with Danfoss stainless steel Plate exchanger (316).which can withstand the Nordic outdoor conditions.

High efficiency HITACHI (EVI) scroll compressor with R410a refrigerant.

WILO with water pump built inside.



Note: 1.The electronic control box of the 1 \ 2 \ 3 \ 4 (AUXILIARY HEATING/OTHER HEAT SOURCES) terminal of the signal output 230V only, such as connected load, the need to increase exchanges and contacts
2.3 \ 4 (OTHER HEAT SOURCES) terminal can also be used for other heat sources (such as solar \ boiler \ electric) and so the start signal. in order to achieve the heat source heat pump to the second switch.
3.Such as the unit has to meet the requirements, 1/2/3/4 can be ignored then.

* When docking with HE series, a total water volume, incl. boiler, radiators, pipes, etc. of at least 20 litres boiler water per kW output on the heat pump is recommended.

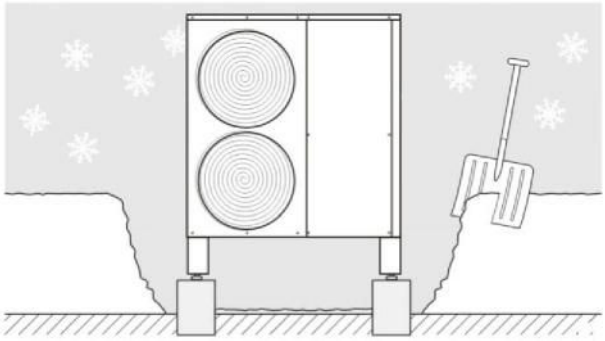
The heating medium side and the hot water side must be fitted with the necessary safety equipment in accordance with the applicable regulations.

Maintenance routines General

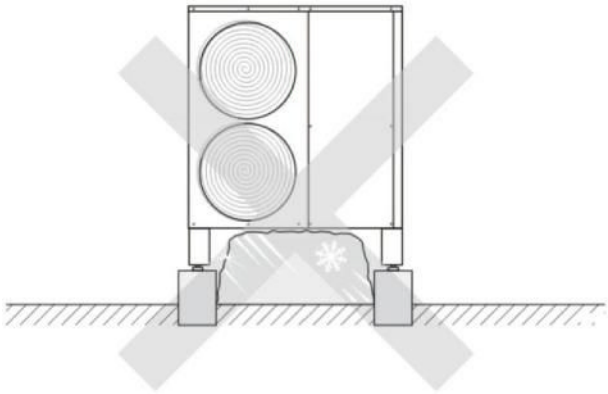
Maintenance routines

HE series is equipped with control and monitoring equipment, however some exterior maintenance is still necessary.

Make regular checks throughout the year that the inlet grille is not clogged by leaves, sand or anything else. Check, during the gale months of the year, to make sure that there isn't a build up of dust or ice or frost under HE series. The Condensation water trough accessory is available for management and removal of condensation. Strong wind combined with heavy sandy soil can block the intake and exhaust air grilles. Make sure that there is no sand on the grilles.



If necessary the outer casing can be cleaned using a damp cloth. Care must be exercised so that the heat pump is not scratched when cleaning. Avoid spraying water into the grilles or the sides so that water penetrates into HE series. Prevent HE series coming into contact with alkaline cleaning agents.



WARNING - To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.

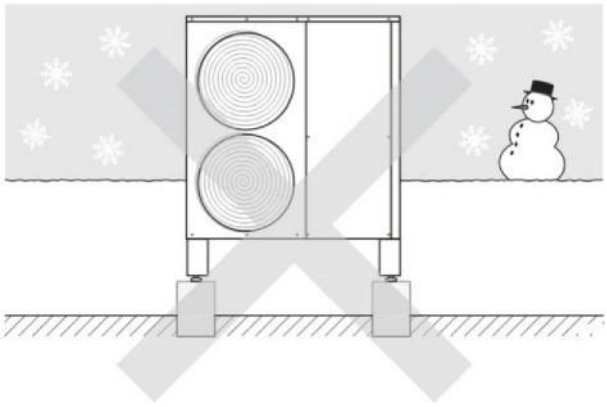
Heat Pump Energy Saving Tips

If you do not plan to use hot water for a prolonged period, then you might choose to turn the heat pump off or decrease the temperature setting of the control several degrees to minimize energy consumption.

YUELLY offers the following recommendations to help conserve energy and minimize the cost of operating your heat pump without sacrificing comfort.

1).A maximum water temperature of 60° C is recommended.

2).It is recommended to turn off the heat pump when ambient air temperature is less than -25° C or if on vacation for longer than a week.



3).To save energy, it is recommended that the heat pump is operated during daytime when the ambient temperature is higher.

4).Try to install the heat pump at the ventilated places indoor, If it must be installed outdoor, Where possible, shelter the heat pump from prevailing winds, rain and snow.

5).Always use a shelter when practical, which will reduce the possibility of frosting and icing.

General points for the installation engineer

Transport and storage

HE series should be transported and stored vertically.

Inspection of the installation

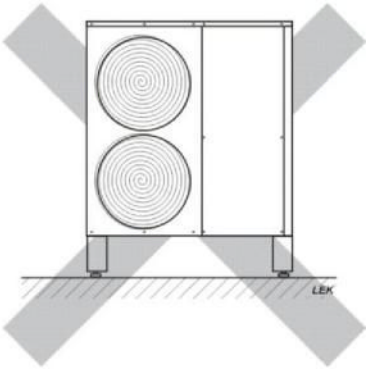
Current regulations require the heating installation to be inspected before it is commissioned. The inspection must be carried out by a suitably qualified person and should be documented. The above applies to closed heating systems.

If the heat pump is replaced, the installation must be inspected again.

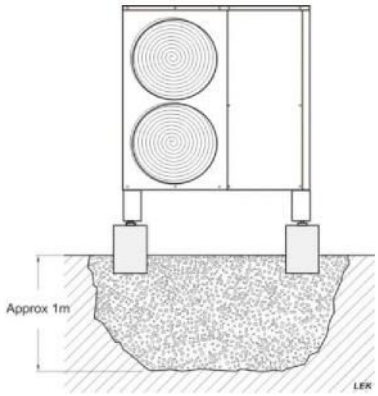
Installation location

HE series is placed outdoors on a firm base, preferably a concrete foundation. HE series should not be positioned next to sensitive walls, for example, next to a bedroom. Also ensure that the placement does not inconvenience the neighbours.

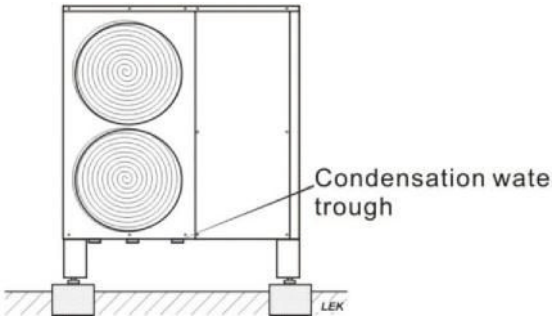
Care must be exercised so that the heat pump is not scratched during installation.



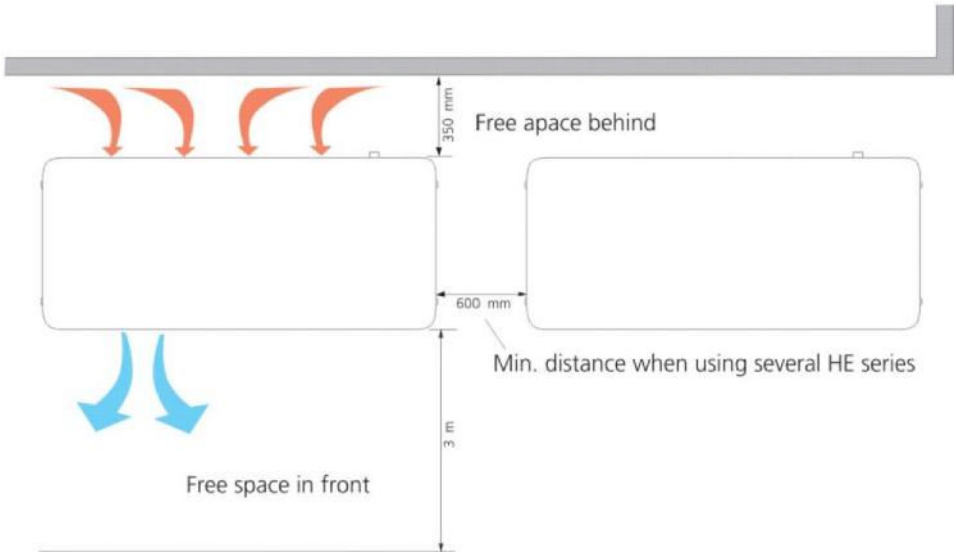
Large amounts of condensation water as well as melt water from defrosting can be produced. Provide good drainage at the installation area and make sure water cannot run out onto paths or the like during periods that ice can form. Ideally condensation water is led off to a drain or similar.



Place HE series on concrete pillars resting on macadam or shingle for good drainage. The concrete pillars must be positioned so that the lower edge of the heat pump is at the level of the average local snow depth, although a minimum of 600 mm.



The distance between HE series and the house wall must be at least 350 mm. Clearance above HE series should be at least one metre. HE series must not be placed so that recirculation of outdoor air can occur. This causes lower output and impaired efficiency.



Installation details

Pipe connections

The heat pump must be placed to provide clearances on all sides for maintenance and inspection.

1.The installation area must have good ventilation and the air inlet/outlet must not be hindered.

2.The installation area must have good drainage and be built on a solid foundation.

3.Do not install the unit in areas accumulated with pollutions like aggressive gas (chlorine or acidic), dust, sand and leaves etc.

4.For easier and better maintenance and troubleshooting.

5. The heat pump must be installed with shockproof bushes to prevent vibration and/or imbalance.

6.Even though the controller is waterproof, care should be taken to avoid direct sunlight and high temperature. In addition, the heat pump should be placed to ensure quality viewing of the controller.

7.The plumbing pipes must be installed with proper support to prevent possible damage due to vibration. Running water pressure should be kept over 196kpa. Otherwise, booster pump should be installed.

8. The acceptable operating voltage range should be within ±10% of the rated voltage. When heat pump units are installed in parallel, ensure that the voltage differences, between these units, are within ±2%.

9.The heat pump unit must be grounded /earthed for safety purposes.

Control

HE series is equipped with an internal electronic controller that handles all functions necessary for heat pump operations.

Accordingly, defrosting, stop at max/min temperature, connection of the compressor discharge temperature protection, monitoring of motor protection and pressure switches are controlled.

The number of starts and the operating time can also be to set up.

The integrated controller is set during installation and can be used during a service.

Under normal operation conditions the home owner does not need to have access to the controller.

HE series has an integrated electronic return line sensor that limits the return temperature.

Materials needed for Installation

The following items are needed and are to be supplied by the installer for all heat pump installations:

Plumbing fittings.

Level surface for proper drainage.

Ensure that a suitable electrical supply line is provided. See the rating plate on the heat pump for electrical specifications. Please take a note of the specified current rating. No junction box is needed at the heat pump; Connections are made inside of the heat pump electrical compartment. Conduit may be attached directly to the heat pump jacket.

It is advised to use PVC conduit for the electrical supply line.

Use a booster pump for pumping water in case of low water pressure.

A filter on the water inlet is needed.

The plumbing should be insulated to reduce its heat loss.

Note: We recommend installing shut-off valves on the inlet and outlet water connections for ease of serviceability.

Pipe connections

General

Pipe installation must be carried out in accordance with current norms and directives.

HE series operates up to a return temperature of about 50 °C and an outgoing temperature of about 58 °C from the heat pump. Because HE series is not equipped with shut off valves these must be installed outside the heat pump to facilitate any future servicing. The outgoing temperature is limited by the outgoing line sensor and is adjusted on channel L4.

NOTE : *The pipe work must be flushed before the heat pump is connected, so that any contaminants do not damage the components parts.*

Pipe coupling water circuit

HE series can be connected to the heating system, see the "Docking" section. The heat pump must be vented by the upper connection using the venting nipple on the enclosed flexible hose. The supplied particle filter must be installed before the inlet, i.e. the lower connection on HE series. All outdoor pipes must be thermally insulated with at least 19 mm thick pipe insulation. The charge pump must be operational, even if HE series is not running, to prevent damage due to freezing.

The charge pump can also be controlled directly from HE series, terminal block , which takes the outdoor temperature into consideration. Alternatively, the heat pump is connected to an intermediate circuit with a heat exchanger, pump and water with anti-freeze. Shutoff and drain valves are fitted so that HE series can be emptied in the event of prolonged power failures. The supplied flexible hoses act as vibration dampers. The flexible hoses are fitted so a slight bend is created, thus acting as vibration damping.

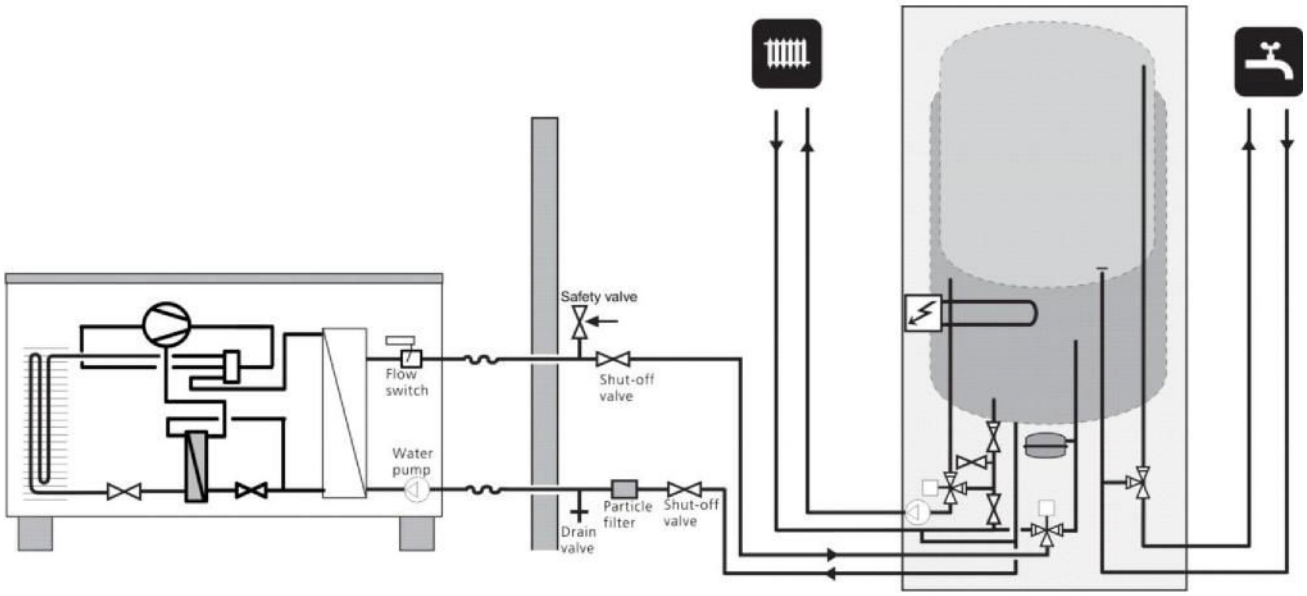
Water volumes

When docking with HE series, a total water volume, in the boiler and accumulator, of at least 20 litres boiler water per W output on the heat pump is recommended.

Docking

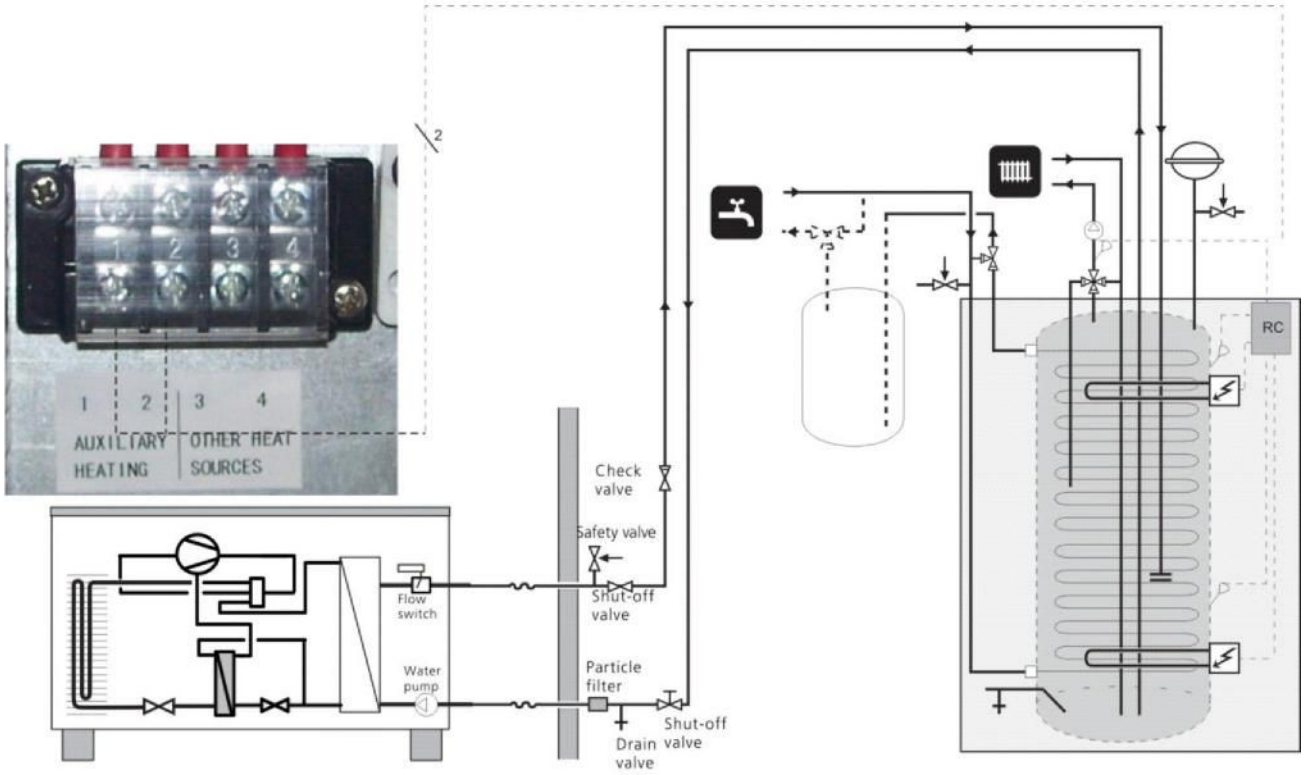
HE series can be installed in several different ways. The requisite safety equipment must be installed in accordance with current regulations for all docked options.
When docking with HE series, a total water volume, in the boiler and accumulator, of at least 20 litres boiler water per kW output on the heat pump is recommended.

Select the connection mode 1

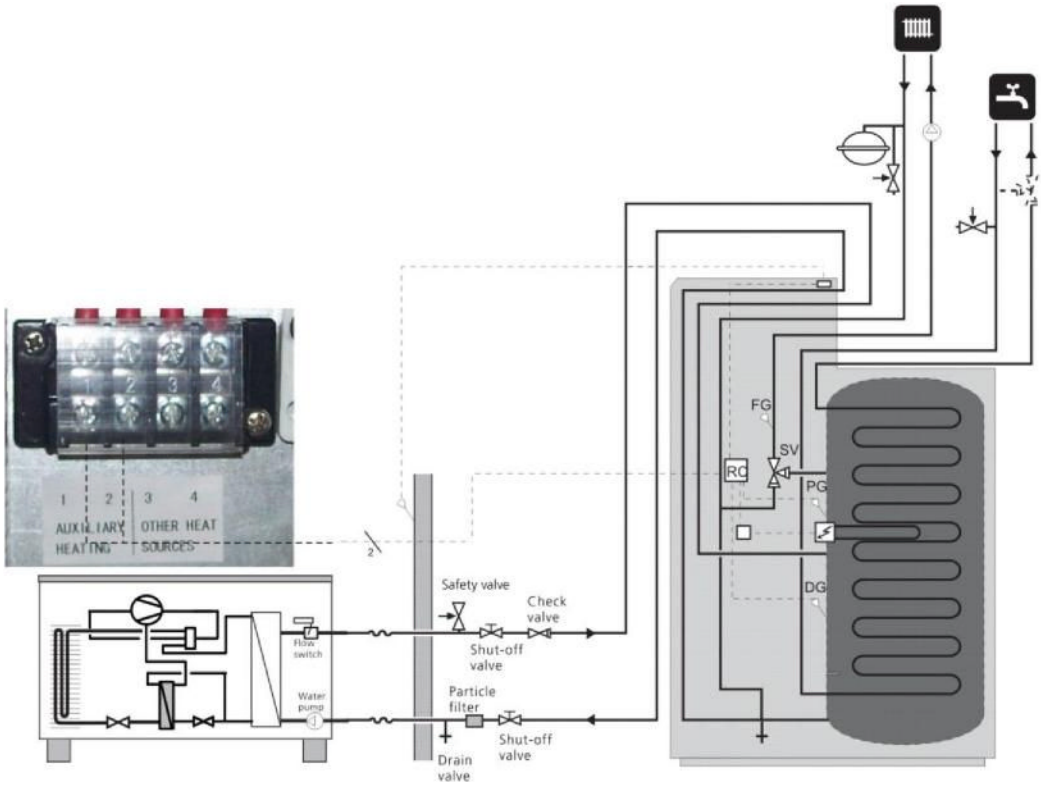


Technical specifications

Select the connection mode 2



Select the connection mode 3



Plumbing installation requirements

1).When water pressure exceeds 490Kpa, please use reducing valve to reduce the water pressure below 294Kpa.
2).Each part connected to unit needs to be connected with method of loose joint and installed with intermediate valve.
3).Ensure that all plumbing has been properly completed and then proceed to do a water leakage and pressure test.
4).All the pipelines and pipe fittings must be insulated to prevent heat loss.
5).Install a drain valve at the lowest point of the system to enable the system to be drained during freezing conditions (winterizing).
6).Install a check valve on the water outlet connection in order to prevent back siphoning when water pump stops.
7).In order to reduce the back pressure, the pipes should be installed horizontally And minimize the elbows (90 degrees connections).

Electrical connections

NOTE: *Electrical installation and service must be carried out under the supervision of a qualified electrician. Electrical installation and wiring must be carried out in accordance with the stipulations in force.*

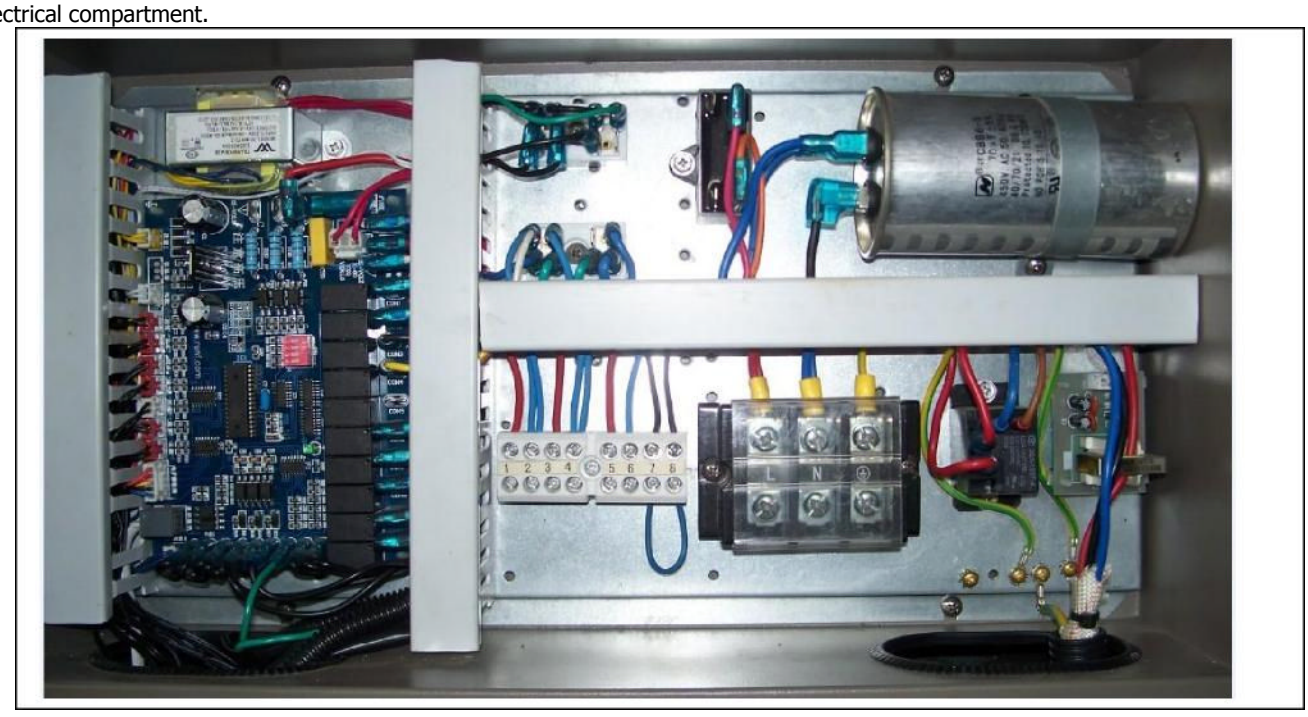
NOTE: *The live external control must be taken into consideration when connecting.*

Ensure that all high voltage circuits are disconnected before commencing heat pump installation. Contact with these circuits could result in death or serious injury to users, installers or others, due to electrical shock and may also cause damage to property.

CAUTION – Label all wires prior to disconnection when servicing the heat pump. Wiring errors can cause improper and dangerous operation. Check and ensure proper operation after servicing.

General Information

Wiring connections must be done according to the wiring diagram found on the inside of the heat pump access panel or see addendum A for reference. The heat pump must be grounded / earthed. A ground lug is provided on the inside of the heat pump electrical compartment.



Power supply

1).If the supply voltage is too low or too high, it can cause damage and/or result in unstable operation of the heat pump unit, due to high in rush currents on start up.

2).The minimum starting voltage should be above 90% of rated voltage. The acceptable operating voltage range should be within ±10% of the rated voltage. When heat pump units are installed in parallel, ensure that the voltage difference, between these units, is within ±2% of each other. The voltage difference between phases of a three phase power supply should be within ±2%.

3).Ensure the cable specifications meet the correct requirements for the specific installation. The distance between the installation site and mains power supply will affect the cable thickness. Follow the local electrical standards to select the cables, circuit breakers and isolator breakers.

Grounding and Over Current Protection

In order to prevent electrical shock in case of leakage from unit, install the heat pump according to local electrical standard.

1).Do not interrupt the voltage supply to the heat pump frequently as this may result a shorter life expectance of the heat pump.

2).When installing over current protection, ensure that the correct current rating is met for this specific installation.

3).The Compressor, fan coil unit and heat pump water pump all have AC- contactor and thermo relay protection. Therefore, in the process of installation and debugging, firstly measure each of the aforementioned components' current, and then adjust the current protection range of the thermo relays.

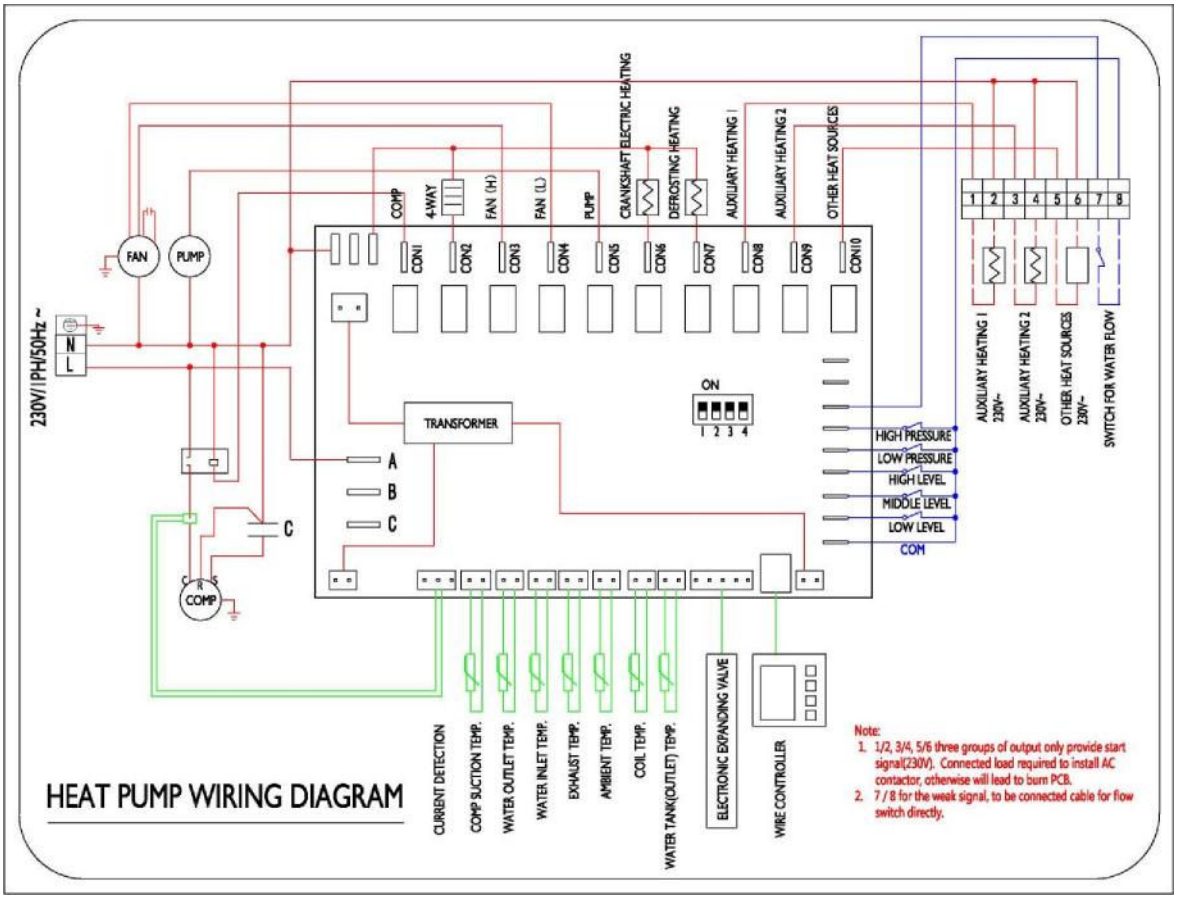
Controller PC board Settings

The Controller PCB has a pin selectable toggle switch which must be set according to the specific installation requirement.

NOTE:

Before any changes are made to the pin settings, ensure that the mains supply power is OFF at the circuit breaker or physically disconnected from the mains supply.

Electrical Wiring Diagram



Temperature sensor data

Interchangeable precision resistor:R25=50KΩ±1.0%

B25-50=3950K±1.0%

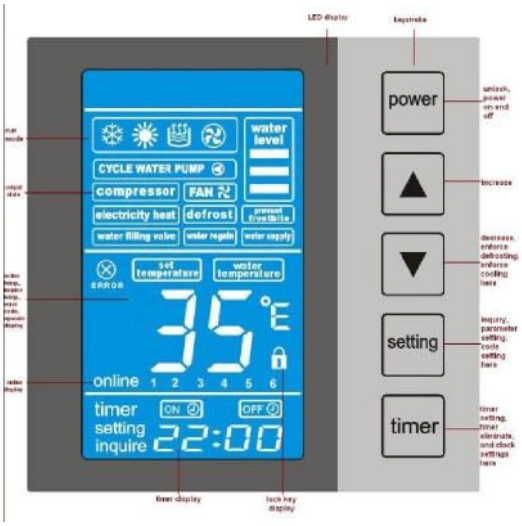
T(℃)	R(KΩ)	T(℃)	R(KΩ)	T(℃)	R(KΩ)	T(℃)	R(KΩ)	T(℃)	R(KΩ)
-30	866.96	28	43.877	86	5.0974	144	1.0128	202	0.2896
-29	815.70	29	42.027	87	4.9379	145	0.9886	203	0.2841
-28	767.71	30	40.265	88	4.7842	146	0.9649	204	0.2787
-27	722.87	31	38.585	89	4.6359	147	0.9420	205	0.2735
-26	680.87	32	36.987	90	4.4931	148	0.9197	206	0.2684
-25	641.59	33	35.462	91	4.3552	149	0.8980	207	0.2634
-24	604.82	34	34.007	92	4.2222	150	0.8769	208	0.2585
-23	570.34	35	32.619	93	4.0939	151	0.8564	209	0.2537
-22	538.03	36	31.297	94	3.9700	152	0.8364	210	0.2491
-21	507.74	37	30.034	95	3.8506	153	0.8170	211	0.2445
-20	479.34	38	28.827	96	3.7351	154	0.7982	212	0.2400
-19	452.68	39	27.677	97	3.6238	155	0.7798	213	0.2357
-18	427.67	40	26.578	98	3.5162	156	0.7620	214	0.2314
-17	404.17	41	25.528	99	3.4123	157	0.7446	215	0.2272
-16	382.11	42	24.524	100	3.3120	158	0.7277	216	0.2231
-15	361.35	43	23.566	101	3.2150	159	0.7112	217	0.2191
-14	341.86	44	22.648	102	3.1214	160	0.6952	218	0.2152
-13	323.53	45	21.773	103	3.0310	161	0.6796	219	0.2114
-12	306.29	46	20.935	104	2.9435	162	0.6645	220	0.2076
-11	290.06	47	20.134	105	2.8589	163	0.6497	221	0.2040
-10	274.78	48	19.368	106	2.7772	164	0.6353	222	0.2004
-9	260.40	49	18.635	107	2.6982	165	0.6213	223	0.1969
-8	246.85	50	17.932	108	2.6218	166	0.6077	224	0.1934
-7	234.08	51	17.260	109	2.5479	167	0.5944	225	0.1901
-6	222.02	52	16.616	110	2.4764	168	0.5814	226	0.1868
-5	210.69	53	16.001	111	2.4072	169	0.5688	227	0.1836
-4	199.98	54	15.410	112	2.3403	170	0.5566	228	0.1804
-3	189.86	55	14.844	113	2.2755	171	0.5446	229	0.1773
-2	180.34	56	14.302	114	2.2128	172	0.5329	230	0.1743

Technical specifications

−1	171.33	57	13.782	115	2.1522	173	0.5216	231	0.1713
0	162.81	58	13.284	116	2.0934	174	0.5105	232	0.1684
1	154.78	59	12.807	117	2.0365	175	0.4997	233	0.1656
2	147.19	60	12.348	118	1.9814	176	0.4892	234	0.1628
3	140.00	61	11.909	119	1.9280	177	0.4789	235	0.1601
4	133.21	62	11.487	120	1.8764	178	0.4689	236	0.1574
5	126.79	63	11.083	121	1.8263	179	0.4591	237	0.1548
6	120.72	64	10.694	122	1.7778	180	0.4496	238	0.1522
7	114.96	65	10.321	123	1.7308	181	0.4403	239	0.1497
8	109.51	66	9.9628	124	1.6852	182	0.4313	240	0.1472
9	104.34	67	9.6187	125	1.6411	183	0.4225	241	0.1448
10	99.456	68	9.2882	126	1.5983	184	0.4138	242	0.1425
11	94.826	69	8.9706	127	1.5567	185	0.4054	243	0.1401
12	90.426	70	8.6655	128	1.5165	186	0.3972	244	0.1379
13	86.262	71	8.3723	129	1.4774	187	0.3892	245	0.1356
14	82.312	72	8.0903	130	1.4396	188	0.3814	246	0.1335
15	78.561	73	7.8193	131	1.4028	189	0.3738	247	0.1313
16	75.001	74	7.5586	132	1.3672	190	0.3664	248	0.1292
17	71.625	75	7.3077	133	1.3327	191	0.3591	249	0.1272
18	68.416	76	7.0667	134	1.2991	192	0.3520	250	0.1252
19	65.368	77	6.8345	135	1.2665	193	0.3451		
20	62.474	78	6.6109	136	1.2349	194	0.3383		
21	59.719	79	6.3960	137	1.2042	195	0.3317		
22	57.104	80	6.1890	138	1.1744	196	0.3253		
23	54.620	81	5.9894	139	1.1455	197	0.3190		
24	52.253	82	5.7976	140	1.1174	198	0.3128		
25	50.000	83	5.6126	141	1.0901	199	0.3068		
26	47.857	84	5.4346	142	1.0636	200	0.3009		
27	45.817	85	5.2629	143	1.0379	201	0.2952		

Operating heat pump

LCD User-Friendly Interface Controller



General instruction

The control panel applies to a single system heat pump.

The operation panel features:

1. Capacitive touching keys for higher operating sensitivity and unlimited key operations.
2. Minimal electromagnetic susceptibility and interference.
3. Stylish appearance for easy viewing purposes.
4. Dust and Water Proof.
5. Installed on wall indoor for convenient operation.
6. Automatic Key Lock function (AKL).

Explanation

Model:

Shows the current mode.

Change modes using the ▲ Button, press ▲ for 4 seconds.

Circulation pump:

Shows the present circulation pump status.

Compressor:

Shows the present compressor status.

Fan:

The fan has two speeds, high and low. The fan is controlled by the outdoor temperature. The lower speed is used when the outdoor temperature is too high to limit the output.

The fan does not run during defrosting.

At an outdoor temperature lower than the temperature in the 15℃ below the fan speed is changed to high.

Electricity heat:

Shows the present electricity heat status.

Defrosting: Defrosting in progress. **Prevent frostbite:** Prevent frostbite in progress.

Technical specifications

Water supplement valve: Water supplement valve on.(note: Models with direct heating function only this project) **Water regain:** Water regain valve on.(note: Models with direct heating function only this project). **Water supply :** Water supply valve and water supply pump on. (note: Models with direct heating function only this project). **Set the temperature:** Set the temperature status light. **Water tank temperature:** Shows the current value of water tank temperature. **Current value:** The value of various parameters. **Unit:** Units of various parameters.

Lock key flag: On: All the button does not work.

Off: The button can be operated.

In the block button is lit, hold the power button for 3 seconds to unlock key state. **Online status:** When more than one heat pump operating in parallel display **Timing:** Time status display. **Set Status Display:** Displayed when setting various operating parameters. **Query Status Display:** Query is displayed when the main parameters.

Time values:

Time values or the parameter number.

Fault display:

When the unit fails, light, with the code to know what parts of the fault unit.

Power button:

The plus button is used to Unlock and start / stop heat pump. **Plus button:**

The plus button is used to browse through the channel system (forwards) or raise the value of the selected parameter.

In the heat turned off, press and hold this button 8 seconds, you can in the cooling / heating mode switch back and forth.

Minus button:

The minus button is used to Forced defrost or lower the value of the selected parameter.

Press and hold this button 8 seconds, The unit immediately to force the defrost

Setting button: 

The setting button is used to browse through A serial Parameters and Enter the parameters B

Press this button quickly, you can browse A1 ~ A9 (A serial)
Press and hold this button 3 seconds, With the arrow keys, you can set the unit value of the various detailed operational parameters.

Timing Key: timer

Operation guide

When the power supply to the heat pump is switched on for the first time, an audible tone is heard from the controller. The LCD will be displayed in a dimming mode (no back light). At this time the touch keys are locked (see "lock key display" symbol).

Unlocking Keys: Press the "power" key for 3 seconds until you hear an audible tone, then release the key. The back light of the LCD display will turn on and the key pad is unlocked with no "lock key display" symbol. The keypad will automatically lock after 60seconds, displaying the "lock key display" symbol. "power" key: By pressing the "power" key, the unit can be switched ON or OFF."▲" and "▼" keys: Press to Increase and Decrease values. "setting" key: Press for Inquiry, Parameter and Password setting "timer" key: Press for timer setting, timer eliminate and clock setting.

Temperature setting

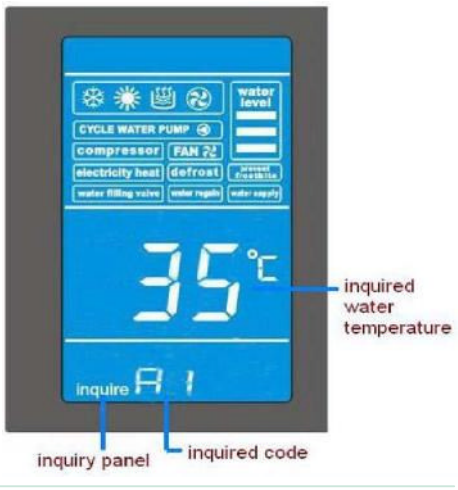
Make sure key-pad is unlocked. Press the "▲" key, "temperature setting" symbol is flashing and the set temperature is displayed. Press the "▲"key again, the displayed temperature will increase. Press the "▼"key, "temperature setting" symbol is flashing and the set temperature is displayed. Press the "▼"key again, the displayed temperature will decrease. The range of water temperature can be set from 25°C to 60°C (default = 55°C).

NOTE
It is recommended that the maximum setting temperature be 55°C.

System status display values

Make sure key-pad is unlocked. Press the "setting" key and enter into inquiry panel with "inquire" symbol on display.

Technical specifications



Touch function---inquiry---touch again---quit

Code	Meaning(single system)	Meaning(double system)	Code	Meaning(double syst)
A1	Fan coil temperature	Fan coil temperature 1	b1	Fan coil temperature 2
A2	Return gas temperature	Return gas temperatu1	b2	Return gas temperatu2
A3	Exhaust temperature	Exhaust temperature 1	b3	Exhaust temperature 2
A4	Ambient temperature	Ambient temperature	b4	Ambient temperature
A5	Outlet water temperature	Outlet water temperature	b5	Outlet water temperature
A6	Return water temperature	Return water temperature	b6	Return water temperature
A7	00	00	b7	00
A8	Compressor current	Compressor current 1	b8	Compressor current 2
A9	Expansion valve open angle	Expansion valve open angle 1	b9	Expansion valve open angle 2

Single system single phase heat pump

On the state of power on, press the “setting” key for more than 3 seconds, until an audible tone is heard and enter into the setting panel with “setting” symbol on display. After parameter set, press the “setting” key again for next parameter setting, after all parameters set, exit the setting panel. Details are on page 2 of this manual

Parameter setting

NOTE: THESE SETTINGS ARE PRE-SET ACCORDING TO THE MANUFACTURER'S SPECIFICATION FOR SAFE HEAT PUMP OPERATIONS.

DO NOT CHANGE THESE SETTINGS AS IT WILL INFLUENCE THE SAFE OPERATION OF THE HEAT PUMP.

Press the “setting” key for more than 3 seconds, until an audible tone is heard and enter into the setting panel with “setting” symbol on display.

By pressing the “setting” key sequentially, the desired setting code will be selected. The value of each setting can be adjusted by pressing “▲” and “▼” keys (Setting values see below). To exit the setting panel, press the “setting” key once after the last setting code (F1) is reached.

Details are shown as follows

L1- Setting is used to compensate/calibrate for the difference between displayed water temperature and the actual measured water tank water temperature (use a good quality thermometer). (0~15°C, default: 0°C)

For example: Set water tank water temp. = 25°C, L2 = 5°C, the compressor will stop at 25°C and re-start at 20°C.

Clock setting

Press the “timer” key for more than 8 seconds until an audible tone is heard and the “timer” symbol disappears. The hour value is flashing and can be adjusted by pressing “▲” and “▼” keys. Press the “timer” key for minute adjustment and repeat as previous. Press the “timer” key to exit.(please kindly note that the clock setting can be used only when timer setting function is closed)

Timer setting

The heat pump consists of two separate timing functions. Timer 01 and 02 are used to set the ON/OFF times of the heat pump within 24 hour period. Timer 03 and 04 are used to set the ON/OFF times of an external water pump within 24 hour period.

Heat pump ON/OFF timers:

01—ON/OFF timing 02-- ON/OFF timing **External water pump ON/OFF timers:**

03.ON/OFF timing

04.ON/OFF timing

Press the “timer” key and enter timer 01 ON time. Set the ON time as in **Clock Setting** section. Press “timer” key again to set timer 01 OFF time. Set the OFF time as in **Clock Setting** section. Repeat sequence until all timer settings are completed. If, however, a timer is not used, set ON and OFF times to 00:00. Timer setting can be randomly selected. For example, Timer 01 ON, Timer 02 OFF, Timer 03 OFF and Timer 04 OFF.

After completing all timer settings, the controller will display the following:

To cancel the timer feature, press the "timer" key for more than 3 seconds until an audible tone is heard, then release key, timer is now cancelled.

Installer Password Control

This feature enables the installer/agent to have control and use of the normal operation of the heat pump on a monthly basis by monthly password control. For example: If there is an agreement which involves monthly installment, the installer/agent can utilize this feature by applying password control.

Press the "setting" key for more than 3 seconds until an audible tone is heard and release key, enter into setting panel with "setting" symbol and "L settings on display. Press the "setting" key for more than 8 seconds until an audible tone is heard and release key, enter into Password Control with "C on display.

Set-up installer/agent Password
The installer/agent Password consists of 4 groups of double digit numbers (C1 to C4 V01 with range from 00 to 99). Choose your Password carefully to avoid any unauthorized access. For example: C1 = 79, C2 = 04, C3 = 33 and C4 = 07. The Password is 79043307.

Now enter C5. C5 (range from 01 to 09, 00 disables installer/agent Password) indicates the period in number of month(s), 30 days/month. For example: C5 = 08, the unit will be disabled after 8 months (240 days). To enable the unit, Password is needed.

How to enable the unit
Press the "setting" key for more than 3 seconds until an audible tone is heard and release key, enter into setting panel with "setting" symbol and "L settings on display. Then press the "setting" key for more than 8 seconds until an audible tone is heard and release key, enter into Password Control with "C on display. Input Password to enable the heat pump and reset C5 (range from "01" to "15", "00" disables installer/agent Password) to desired period. If an incorrect password is provided the heat pump the Error Code 11E will be displayed.

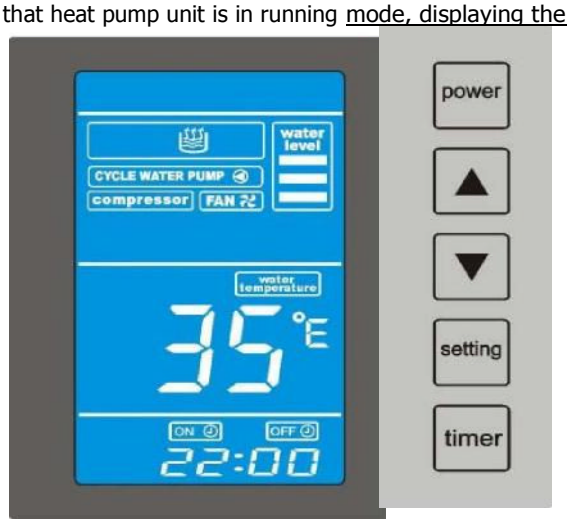
Forgotten/Reset Password
This function enables the installer/agent to enable the heat pump unit in the event of a forgotten password. All preset settings will be

reverted back to the original factory default settings once the heat pump is enabled. Make sure that the lock symbol " "is on display, press the "setting" key until an audible tone is heard and the display back light is lit, release key. The clock will now display, "00:" and the heat pump unit is enabled.

REMEMBER: All preset settings is reverted back to the original factory default settings. The password function will be disabled (C1=01, C2=01, C3=01, C4=01, C5=00). Please ensure that the heat pump unit is set up correctly. (Refer to controller set-up)

Manual / Forced Defrosting

Although this heat pump features an automatic defrosting function, a manual defrosting function enables the user to manually defrost the heat pump when unusual frosting appears.
Make sure key-pad is unlocked. Ensure that heat pump unit is in running mode, displaying the heat symbol.



Press the "▼"key for more than 8 seconds until an audible tone is heard, and release key. The heat pump will be in defrosting mode

and the "defrost" symbol will be on display-- .

Heating mode

This function will alternate the heat pump from "Heating" mode to "Chilling" mode.

Heating mode–:
In heating mode, the heat pump will function as a water heater, ensuring that the water in tank is kept to a set water temperature.

Chilling mode–:
In chilling mode, the heat pump will function as a water chiller, ensuring that the water in tank is kept to a set water temperature. In chilling mode, the temperature can be adjusted from 12 to 20°C (44.6°F to 86°F). Make sure key-pad is unlocked. The heat pump unit must display either the Heating.

symbol or Chilling symbol now press the "▲" key, until an audible tone is heard, and release key. The heat pump will be in either heating mode or chilling mode, and the corresponding symbol will be on display. – Not Applicable.

General Operating Guide

Initial Start-up Precautions

First boot-strap and Running state checks

1. To ensure the power same as the product nameplate required power

2. Unit electrical connections: Check if power supply wire track and connection is ok; if ground wire is properly connected; Check if water pump and other chain device is properly connected.

3. Water pipe and pipe: water pipe and pipe must be washed two and three times,ensure clean and no any pollution.

4. Check water system: If the water is enough and no any air, ensure no leakage

5. First boot-strap or starting up again after long time stop, ensure power onahead and heating at least 12 hours for crankcase(local loop temperature is zero). Water pump start up first, last a while, fan start up, compressor start up, unit regular work.

6. Running checks (according to the following data to check if the unit running is normal)

After unit normal running, check the following item:

a. Input and output water temperature

b. cycle water flow of the side

c .running electric current of compressor and fan

d. High and low pressure value when heating running.

CAUTION — Refrain from using this heat pump if any electrical components have been in contact with water. Immediately call a qualified service technician to inspect the heat pump.

CAUTION — Keep all objects clear above the heat pump. Blocking air flow could damage the unit and may void the warranty.

Users' Guide

1. Rights and Responsibility

1.1 To ensure you have the service in guarantee period, only New Times server and technology staff can install and repair the unit. If you infract this request and cause any loss and damage, our company will not be claimed any responsibility.

1.2After receiving the unit, check if have damage on shipment and all parts are complete; any damage and lack of parts please notice the dealer in written.

2.User Guide

2.1All safety protection device are set in unit before leaving factory, don't adjust by yourself.

2.2Unit have enough refrigerant and lubricating oil, don't fill or replace them; if need fill owing to leak, please refer to the quantity on nameplate (if refill V01 refrigerant, need re-vacuum).

2.3 External water pump must connect with the message of unit, or else easy show various water lack alarm.

2.4 Regular clean water system according to maintenance request.

2.5 Pay attention to antifreeze when the environment temperature is less than zero in winter.

2.6 Safety Precautions

a .User can't self-install the unit, ensure agent or specialized install company to do, or else maybe cause safety accident and affect the use effect.

b. When install or use the unit, please check if the power is corresponding with unit power.

c .The main power switch of unit should install leakage protector; the power cord must meet unit power request and national standard and local Fire & Safety Regulations.

d. Unit must have ground wire; don't use the unit if no ground wire; forbid connect the ground wire to ull line or water pump.

e. The main power switch of unit should set more higher 1.4 meter (child don't touch it), to prevent child play it and cause danger.

f .More than 52℃ hot water can cause damage, hot and cold water must be mixed then use it.

g .when unit is soaking, please contact the factory or maintain department, you can use it again after maintain.

h. Forbid insert any tools into fan fence of unit, fan is dangerous. (child special care)

i. Don't use the unit if turn off the fan fence.

j .To avoid electric shock or cause fire, don't store and use fixture, oil paint and petrol etc. combustible gas or liquid around the unit; don't throw the water or other liquid on the unit and don't touch the unit by wet hand.

k .Don't adjust the switch, valve, controller and internal data except company server or authorized staff.

L .If safety protection device often start up, please contact factory or local dealer

Product Protection

1.Compressor Time Delay Protection:

To ensure the compressor is protected, a time delay of 3 minutes is needed to restart the compressor.

2. **Compressor High Pressure Protection (error code: 05E):**

If a high pressure is detected on the compressor, the heating function will be suspended, the error code will be displayed and the alarm will sound. The heat pump unit will resume operation 3 minutes after the high pressure switch was reset. If the same error code appears for 3 consecutive times within an hour, the heating function will be permanently disabled, the error code will be displayed and the alarm will sound. Please consult an authorized service technician.

3.Compressor Low Pressure Protection (error code: 06E):

If a low pressure is detected on the compressor, the heating function will be suspended, the error code will be displayed and the alarm will sound. The heat pump unit will resume operation 3 minutes after the low pressure switch was reset. If the same error code appears for 3 consecutive times within an hour, the heating function will be permanently disabled, the error code will be displayed and the alarm will sound. Please consult an authorized service technician.

NOTE: Low pressure will not be detected under 2 circumstances, during the defrosting period and/or during the first 5 minutes after the compressor has started.

4.Sensor (Any) Faults (error codes: 15E, 16E, 18E, 21E):

When any sensor appears to be faulty, the heating function will be suspended and the corresponding error code will be displayed. The heat pump will resume operation when the fault has been corrected.

5.Controller communication Faults:

There is some problem between control panel and main PCB connection or control panel and PCB problem.

6.Frost (Winterizing) Protection:

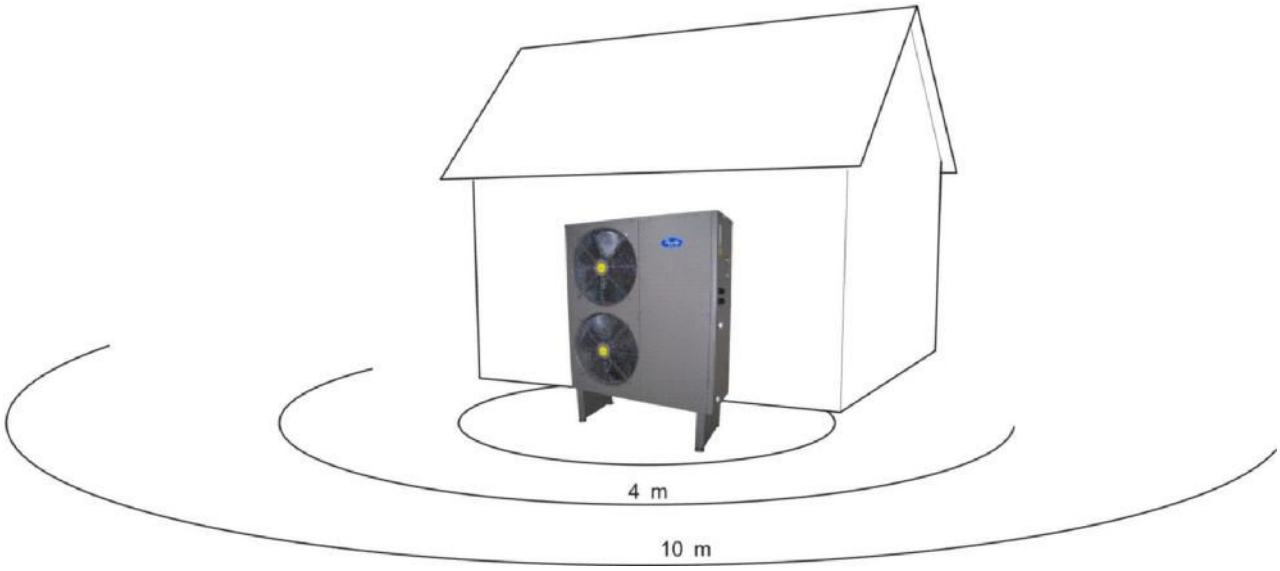
(1)In standby mode, when the ambient temperature ≤ 5 ℃, if the compressor stops more than 10 minutes, the circulating pump starts to run 30 seconds. (Circulating pump runs 30 seconds every 10 minutes);

(2)In off mode, when the ambient temperature ≤ 5 ℃, the water temperature> 2 ℃, the circulating pump runs 30 seconds every 10 minutes, when the water temperature ≤ 2 ℃, the starting system, until the water temperature ≥ 12 ℃ system stops.

Sound pressure levels

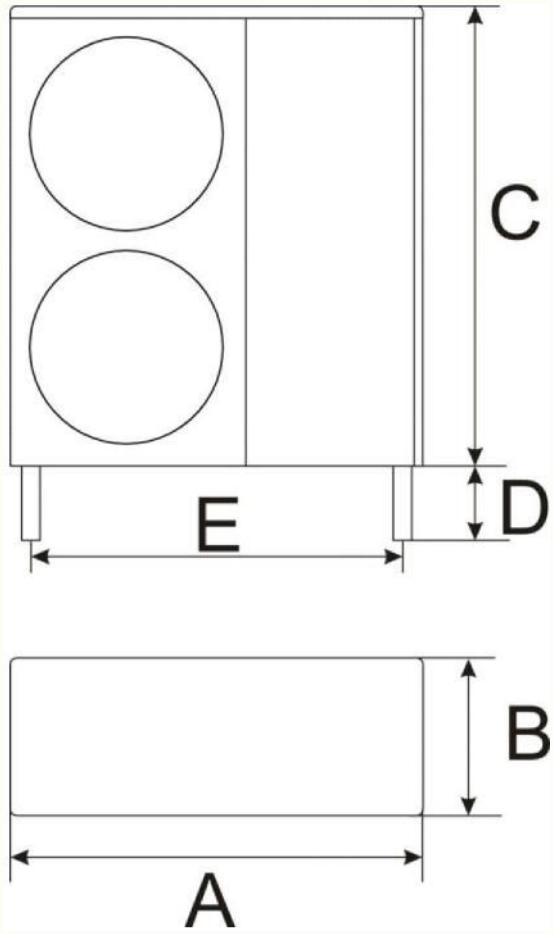
HE series is usually placed next to a house wall, which gives a directed sound distribution that should be considered. Accordingly, you should always attempt to find a placement on the side that faces the least sound sensitive neighbouring area.

The sound pressure levels are further affected by walls, bricks, differences in ground level, etc and should therefore only be seen as guide values. HE series works with low fan speed or high fan speed depending on the outdoor temperature.



		47/47	48/48	49/50
		42/42	43/43	44/44
		37/39	38/40	39/41
		31/36	32/39	33/40

Dimensions and setting-out coordinates



	A	B	C	D	E
YHE-9B	1115	425	695	200	1000
YHE-11BS	1115	425	1240	200	1000
YHE-17BS	1115	425	1240	200	1000

Technical specifications

Model		YHE-9B	YHE-11BS	YHE-17BS
	KW	9.2/2.3	11.4/2.7	17.6/3.7
	KW	8.9/2.5	11.0/3.1	17.1/ 4.2
	KW	8.8/3.5	11.0/4.0	17.1/6.8
	KW	8.1/2.1	10.4/2.7	16.1/4.5
	KW	7.9/2.7	10.3/3.1	15.8/5.3
	KW	6.9/2.9	8.6/2.8	13.4/4.6
	KW	6.7/2.8	8.5/3.3	13.0/5.1
	KW	5.1/3.0	6.2/3.8	9.5/5.8
	KW	5.7/2.3	7.3/3.0	11.1/4.4
	KW	5.4/2.4	7.6/3.4	11.5/4.8
	KW	3.3/2.2	4.4/2.9	6.5/4.3
	A	53	53	60
	V/PH/Hz	230/1/50	380～415/3/50	380～415/3/50
		Scroll*1	Scroll*1	Scroll*1
	dB(A)	52	57	60
		Plate heat exchanger	Plate heat exchanger	Plate heat exchanger
		hot gas defrosting	hot gas defrosting	hot gas defrosting
	kPa	13	15	25
	inch	1(DN32)	1(DN32)	1(DN32)
	m^3/h	1.6	1.96	3
	℃	5~60	5~60	5~60
		R417A	R410A	R410A
	L/W/H	1115/425/695	1115/425/1135	1115/425/1440
	kg	120/130	168/180	195/210

* Compressor, fan and control. Flows according to EN 14511.Defrosting reduces the relationship between input/output by about 10 %.
** outside temperature/Flow temperature.

Technical specifications

Controller Error Codes

The following Common Error Codes for the heat pump units (single and dual systems) will be displayed on the controller panel:

Error code and alarm

Code	Reason	Code	Reason (doubl system)
01E	Mistake on phase	01E	Mistake on phase
02E	Missing phase	02E	Missing phase
03E	Water flow switch	03E	Water flow switch
05E	Compressor high pressure switch	05E	Compressor high pressure switch 1
06E	Compressor low pressure switch	06E	Compressor low pressure switch 1
07E		07E	Compressor high pressure switch 2
08E		08E	Compressor low pressure switch 2
09E	Communicate	09E	Communicate
11E	Limite time	11E	Limite time
12E	High Exhaust temperature	12E	High Exhaust temperature 1
13E		13E	High Exhaust temperature 2
15E	Water tank sensor broken	15E	Water tank sensor broke
16E	Fan coil sensor broken	16E	Fan coil sensor broken 1
17E		17E	Fan coil sensor broken 2
18E	Exhaust sensor broken	18E	Exhaust sensor broken 1
19E		19E	Exhaust sensor broken 2
21E	Ambient sensor broken	21E	Ambient sensor broken
22E	Return water sensor bro0ken	22E	Return water sensor broken
23E		23E	
25E	Water level switch broken	25E	Water level switch broken
26E		26E	
27E	Outlet water sensor broken	27E	Outlet water sensor broken
28E	Return gas sensor broken	28E	Return gas sensor broken
29E	Water pressure sensor broken	29E	Water pressure sensor broken

Note:

If a fault occurs during normal heat pump operation, a common error code will be displayed on the controller display panel. Follow the instructions in Section 3,Controller Set-Up, “System status display values (2)” to “inquire” (check) the specific error codes for the corresponding heat pump systems.

Inspection and Service

YUELLY air to water heat pumps are designed and built to provide long life performance, when installed and operated properly under normal conditions. Periodic inspections are important to keep your heat pump running safely and efficiently.

Owner Inspection

YUELLY recommends that inspections on heat pumps are done frequently, especially after abnormal weather conditions. The following basic guidelines are suggested for your inspection:

1. Make sure the front of the unit is accessible for future service.
2. Keep the top and surrounding areas of the heat pump clear of all debris.
3. Keep all plants and shrubs trimmed and away from the heat pump especially the area above the fan.
4. Keep lawn sprinklers from spraying on the heat pump to prevent corrosion and damage.
5. Ensure that the ground wire is always properly connected.
6. The filter must be maintained on a regular basis in order to ensure clean and healthy water to protect the heat pump from damaging.
7. Keep inspecting power and electrical components' wiring to make sure their normal operation.
8. All the safety protection devices have been set up; please refrain from changing these settings. If any changes are needed, please contact the authorized installer/agent.
9. If the heat pump is installed under roof without a gutter, ensure that all measures are taken to prevent excessive water from flooding the unit.
10. Do not use this heat pump if any electrical part has been in contact with water.Contact an authorized installer/agent.
11. If the increase of power consumption is not due to colder weather, please consult with the local authorized installer/agent.
12. Please turn off the heat pump and disconnect it from the mains power supply, when not in use for a prolonged period of time.

Troubleshooting

Use the following troubleshooting information to resolve issues/problems with your high-temp heat pump.

WARNING — RISK OF ELECTRICAL SHOCK OR ELECTROCUTION.

Ensure that all high voltage circuits are disconnected before commencing heat pump installation. Contact with these circuits could result in death or serious injury to users, installers or others, due to electrical shock and may also cause damage to property.

DO NOT opens any part of the heat pump as this may result to electrocution.

1. Keep your hands and hair clear of the fan blades to avoid injury.
2. If you are not familiar with your heater:

a) DO NOT attempt to adjust or service the unit without consulting your authorized installer/agent.

b) PLEASE read the complete Installation and/or User's Guide before attempting to operate service or adjust the heater.

IMPORTANT: Turn off the mains power supply to the high-temp heat pump prior to attempting service or repair.

blems and Corrective Action

NO.	Problem Description	Possible Cause	Corrective Action	
1	Error code 05E	1 Measured water tank tank water Temp water Temp < Actual water	a) The water tank water temperature sensor and PC Board are not compatible.	Use the correct sensor.
			b) The water tank temperature sensor is not in the correct position.	Position the sensor correctly.
		2. The Y shaped filter is blocked or jammed resulting into lower water flow.	Clean the filter.	
		3. No water in water tank or is lower than the water inlet (Weir).	Fill the water tank with water.	
		4. The plumbing is blocked or the valves are damaged or closed.	Repair or replace the plumbing and/or valves.	
		5. Too much air in the plumbing result in reduction in flow rate.	1. Remove air lock from the system. 2. Make sure that the circulation pump is working correctly.	
		6. Circulation pump faulty.	a) Circulation pump damaged.	Repair or replace circulation pump.
			b) Circulation pump is too small or the distance from the heat pump is too far.	Install correct circulation pump for specific application or shorten the distance between circulation pump and/or the heat pump and/or other equipment.
		7. Excessive refrigerant charge volume.	Charge the correct volume of refrigerant specified on the label.	
		8. Control cable of the high pressure switch damaged or disconnected.	Replace the damaged cable or reconnect.	
		9. High pressure switch can not be reset.	Replace high pressure switch.	
		10. Input of the high pressure sensor is shorted with common, error code 05E is still displaying.	Replace the PC Board.	
		11. The refrigeration system is blocked (by ice or dirt).	Find the cause of blockage and replace the filter and/or re-vacuum the system.	
2	Error code 06E	1. Refrigerant leakage.	Detect leakage and repair. Vacuum, charge refrigerant and start heat pump.	
		2. Control cable of the high pressure switch damaged or disconnected.	Replace the damaged cable or reconnect.	

		3. Low pressure switch cannot be reset.	Replace low pressure switch.

		4. Input of the high pressure sensor is shorted with common, error code 05E is still displaying.	Replace the PC Board.
		5. The refrigeration system is blocked (by ice or dirt).	Find the cause of blockage and replace the filter and/or re-vacuum the system.
3	Error Code 09E	1. The controller cable damaged or disconnected.	Replace damaged controller cable or reconnect.
4	Error Code 11E	1. Incorrect installer/agent control password.	Input the correct control password.
5	Error Code 12E	1. Insufficient refrigerant charge volume.	Charge the correct volume of refrigerant specified on the label.
		2. Compressor discharge temperature sensor faulty or damaged.	Replace the compressor discharge temperature sensor.
		3. PC Board damaged.	Replace the PC Board.
6	Error Code 15E	1. water tank water temperature sensor damaged.	Replace water tank water temperature sensor.
		2. Water tank water temperature sensor connector (plug) disconnected and/or oxidized due to damp or water.	Reconnect or clean water tank water temperature sensor and wrap it with insulation tape.
		3. The controller and/or PC Board faulty or damaged.	Replace the controller or PC Board.
7	Error Code 16E	1. Defrost temperature sensor faulty or damaged.	Replace the defrost temperature sensor.
		2. Defrost temperature sensor connector (plug) disconnected and/or oxidized due to damp or water.	Reconnect or clean defrost temperature sensor and wrap it with insulation tape.
		3. The controller and/or PC Board faulty or damaged.	Replace the controller or PC Board.
8	Error code 18E	1. Compressor discharge temperature sensor faulty or damaged.	Replace the compressor discharge temperature sensor.
		2. Compressor discharge temperature sensor connector (plug) disconnected and/or oxidized due to damp or water.	Reconnect or clean compressor discharge temperature sensor and wrap it with insulation tape.
		3. The controller and/or PC Board faulty or damaged.	Replace the controller or PC Board.
9	Error code 21E	1. Ambient temperature sensor faulty or damaged.	Replace the Ambient temperature sensor.
		2. Ambient temperature sensor connector (plug) disconnected and/or oxidized due to damp or water.	Reconnect or clean Ambient temperature sensor and wrap it with insulation tape.
		3. The controller and/or PC Board faulty or damaged.	Replace the controller or PC Board.
		1. Compressor suction temperature sensor faulty or damaged.	Replace the Compressor suction temperature sensor.

10	Error code 29E	2. Compressor suction temperature sensor connector (plug) disconnected and/or oxidized due to damp or water.	Reconnect or clean Compressor suction temperature sensor and wrap it with insulation tape.	
3.		The controller and/or PC Board faulty or damaged.	Replace the controller or PC Board.	
11	The heat pump is not heating	1. User's incorrect operation and/or parameter settings.	a) The water tank water temperature setting is set too low and the desired temperature cannot be reached.	Re-set the water tank water temperature to the correct range.
			b) The difference between the required water tank water temperature and the heat pump restart temperature (L2) is too big.	Re-set by reducing the value of L2.
			c) Timer function has been set to a specific ON and OFF time, which does not allow sufficient time for the heat pump to operate.	Re-set the timer.
			d) No electrical power supply to the heat pump (no display on the controller).	1. Check and ensure that circuit breakers are ON. 2. Test voltage on the PC Board L/N/G Connectors. 3. If power is not restored, replace cable.
		2. Problem with controller or PC Board.	a) The temperature displayed is more than 45℃.	Check the water tank water temperature sensor, replace if faulty.
			b) PC Board is damaged due to burnt relays.	Check and find out the cause, find faulty relay(s) and replace.
			c) PC Board microcontroller chip faulty.	Replace the PC Board.

12	Slow increase of water tank water temperature	1. Insufficient refrigerant.	1. Check for leakages, if found, repair and r e-charge refrigerant as per volume specification on label.	
			2. If no leakage was found, re-charge refrigerant as per volume specification on label.	
		2. The heating capacity of the heat pump is insufficient.	Increase the size or number of heat pump units.	
		3. Serious residues/dirt occurred on the heat exchanger.	Clean the heat exchangers.	
		4. The evaporator coil is dirty or jammed and this will affect the heat exchange efficiency.	Clean the evaporator coil.	
		5. Poor design of insulation.	It is recommended to use an insulation cover.	
		6. The length of the pipes is too long and/or improperly insulated.	1. If the length of the pipes cannot be done, ensure well insulated piping.	
			2. Increase the size and number of heat pump units.	
13	The controller ' displays ''00'	1. The controller cable damaged or disconnected.	Reconnect or replace controller cable and wrap it with insulation tape.	
		2. PC board damaged.	Replace PC Board.	
		3. Pool temperature sensor and/or cable disconnected or damaged.	Reconnect or replace pool temperature sensor and wrap it with insulation tape.	
14	No display on the controller	1. Mains power supply is abnormal.	a) The main power supply cables is disconnected or damaged.	Reconnect or replace the mains power supply cable.
			b) The main power supply voltage is lower than 175V.	Check and ensure that the mains power supply cable', length and thickness, is within the specifications, if not replace with thicker cable to ensure less voltage drop.
		2. PC board power cable is disconnected or the fuse is burnt.	Reconnect PC Board cable or replace the fuse.	
		3. PC Board transformer is damaged.	Replace the PC Board transformer.	
		4. The controller cable damaged or disconnected.	Reconnect or replace controller cable and wrap it with insulation tape.	
		5. PC Board damaged.	Replace the PC board.	
		1. Fan motor capacitor damaged (under this circumstance the fan motor will overheat).	Replace fan motor capacitor.	

15	The fan does not operate	2. The motor windings has been burnt.	Repair or replace the fan motor.	
		3. The display is ON but heat pump unit is not in running mode/ON.	Press the power button and turn On the heat pump unit.	
		4. Fan motor relay damaged.	Check and replace if damaged.	
		5. No fan motor output from PC Board.	Replace PC board.	
		6. Fan motor cable disconnected or damaged.	Reconnect or replace fan motor cable.	
16	The compressor does not operate while the fan is working	1. Compressor damaged (under this circumstance the compressor motor will overheat).	Replace compressor capacitor.	
		3. Compressor connecting cable is burnt.	Replace compressor connecting cable.	
		5. The compressor windings have been burnt.	Repair or replace the compressor.	
		7. The compressor is jammed or blocked.	Repair or replace the compressor.	
		5. AC contactor does not work.	a) The AC contactor winding is damaged or the contactor is jammed and cannot close.	Replace the AC contactor.
			b) The main power supply voltage is lower than 175V.	Check and ensure that the mains power supply cable', length and thickness, is within the specifications, if not replace with thicker cable to ensure less voltage drop.
			d) No compressor relay output from the PC Board.	Check and/or replace compressor relay or PC Board.
		6. Thermal relay damaged.	Replace the thermal relay.	

17	Frost or ice	1. Fan is not working.	Refer to "problem description #22".
		2. Insufficient refrigerant or the refrigeration system is blocked.	1. Find the cause of blockage and replace the filter and/or re-vacuum the system.
			2. Check for leakages, if found, repair and re-charge refrigerant as per volume specification on label.
			3. If no leakage was found, re-charge refrigerant as per volume specification on label.
		3. The defrost parameter is not set correctly.	Re-set the defrost parameter to the correct value.
		4. The defrost sensor is not placed correctly.	Replace the defrost sensor to the correct position.
		5. The 4-way valve cannot be reversed (The winding is damaged or the valve cannot be correctly reversed).	Check the 4-way valve to find the cause replace the winding or the 4-way valve.
		6. Controller is damaged.	Replace the controller.
		7. The refrigeration system has a problem.	Check and repair refrigeration system.