



KL8-3A

INSTALLATION & USER MANUAL

I . Overview of the Panels

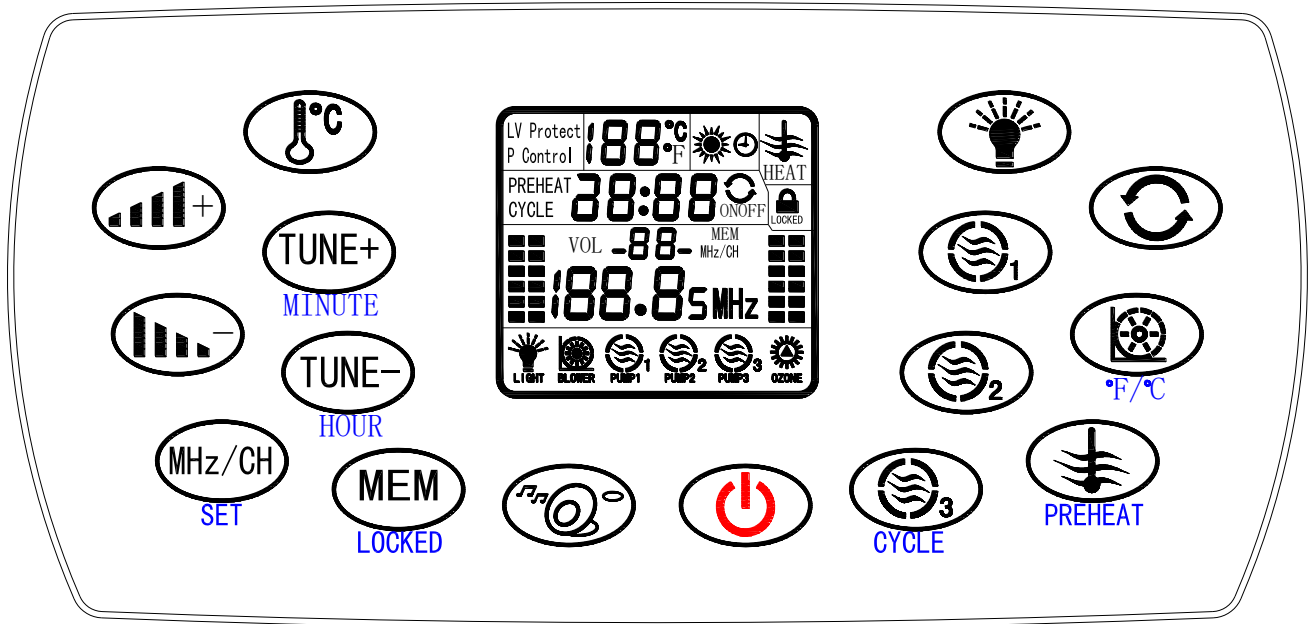


Fig . 1: The sketch map for the control panel with radio function(B2=OFF)

 “ TUNE+ ” Radio frequency up/minute adjustment <small>MINUTE</small>	 “ ” System power ON/OFF and confirmation keypad
 “ TUNE- ” Radio frequency up/hour adjustment <small>HOUR</small>	 “ ” Radio/CD input ON/OFF
 “ ” Radio volume up	 “ ”Blower ON/OFF and Fahrenheit/Celsius shift <small>F/°C</small>
 “ ” Radio volume down	 “ ” LED light ON/OFF
 “ MEM ” Radio channel memory/keypad lock <small>LOCKED</small>	 “ ” Jet pump 1 ON/OFF
 “ MHz/CH ” Radio channel searching/setting shift <small>SET</small>	 “ ” Jet pump 2 ON/OFF
 “ ” Long circulation filtration ON/OFF	 “ ” Jet pump 3 or circulation pump ON/OFF, circulation filtration time slot setting <small>CYCLE</small>
 “ ” Heater ON/OFF and Preheat setting <small>PREHEAT</small>	 “ ” Temperature setting <small>°C</small>

Note: The blue part of the keypad is only effective under standby status.

II .Function summary

1. Max 3.0kw heater, preheating, water temperature display and setting.
2. Max 3 jet pumps and 1 circulation pump plus blower.
3. Multiple lights synchronously change color or fix color, and with Ozone function.
4. Radio frequency display, 10 channels is available. Digital stations not supported.
5. 31 grades radio volume adjustment and display
6. Long circulation filtration and specified period circulation filtration.
7. 24 hours clock display and setting.
8. All parameters memorized when power is off.
9. Celsius and Fahrenheit temperature display.
10. Automatic water anti-freezing.
11. Keypad backlighting function.
12. Keypad lock function.
13. Single phase 220-240v AC / 3 phase 415v AC.
14. With CD / AUX 240v power socket.

III. The operation for standby and power on

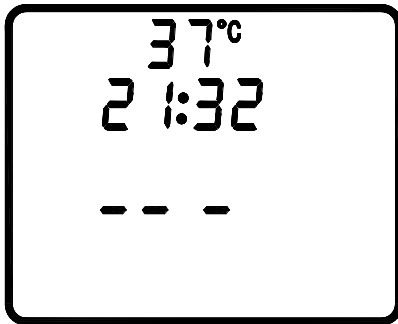


Fig . 3: Temperature display under standby status

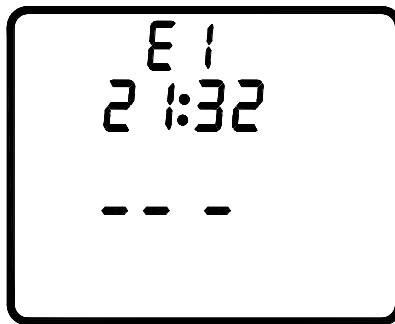


Fig . 4: Temperature sensor open/short

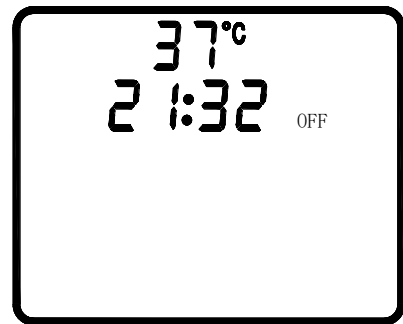


Fig . 5: Temperature display after power on

1. The operation for turning on/standby


1.1 When the system is initially powered on, the LCD will display current clock and water temperature. If the temperature sensor is faulty - open or short, it will display "E1" (Fig. 4). The "---" means that system is under standby status, the preheating and circulation cleaning is not working and closed.

1.2 Under standby status, press "  " key to go into ON status.


1.3 Under ON status, press "  " key to go into STAND BY status, LCD will show difference for the two status'.

2. The operation of "keypad lock function" (It is effective when B2=OFF)


2.1 Without any operation in 30 minutes or click "  " key, they key lock function will be validated.



2.2 If the keypad lock function is working(LCD display locked), click the "  " key two times to disable it and the "locked" symbol will disappear.

3. The operation of the light

3.1 When A3=ON: Click "  " key to turn on or turn off the light. The output voltage is 12VAC


two wires. Standard incandescent 12w max lamp or LED lighting.

3.2 When A3=OFF: Firstly click “” key to turn on the LED light, the colour will change slowly;


Secondly click “” key to fix colour; Thirdly click “” key to turn off the LED light. The output voltage is 12VDC 4 wires. Ethink LED string lighting.

4. The operation of preheating

4.1 When A1=ON, the clock and preheating setting time are same, when there is water in the spa, the preheating starts, the circulation pump and heater will automatically turn on. LCD will display the finish time of preheating.

4.2 When the preheating is working, if the displayed finish time is ended, the system will automatically finish preheating. The user can also press “” key to turn preheating off.


5. Long circulation and specified period circulation cleaning:

5.1 Press “” to start long circulation cleaning at any time.

5.2 When A2=ON, the clock and circulation cleaning setting time are same, if there is water in SPA, the specified period circulation cleaning will start.

5.3 When the circulation filtration starts, all the jet pumps and blower will automatically work for 15 seconds and then shut off, the circulation pump and ozone will start as well. The ozone will work 15 minutes and then cycle off/on.

5.4 When any jet pump or blower is working, the ozone disables; When the circulation pump is turned off, the ozone also disables.

5.5 During the circulation cleaning working period, press “” key to turn off the circulation filtration.



6. Anti-freezing function



6.1 When the water temperature $T < 6.7^{\circ}\text{C}$, the anti-freezing function will start. The heater and circulation pump will automatically start to heat the water. When $T > 7.8^{\circ}\text{C}$, the anti-freezing function will stop working and not heat the water.



6.2 This function will be effective when the system is powered on.

IV. The operation under standby status

1. Clock setting

1.1 When preheating and circulation filtration are not turned on, press “” or “” to enter the clocking setting mode, the “:” is not flashing at this time, but hour and minute are flashing.

1.2 Each press of “” key adds 1 hour, when the user presses “” key and holds it, the hour will continuously increase. The adjustment range is 0~23.

1.3 Each press of “” key adds 1 minute, when the user presses “” key and holds it, the minute will continuously increase. The adjustment range is 0~59.

1.4 The system will automatically delay 6s and then exit after all the settings are finished.

2. The operation of circulation filtration

The circulation filtration can be set up once a day. The details shown below:

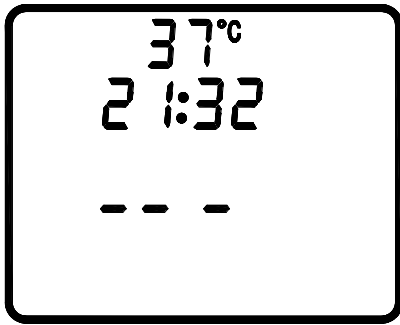


Fig 6: The circulation filtration can't be set up

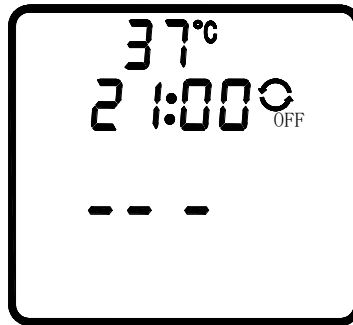


Fig 7: The circulation filtration can be set up

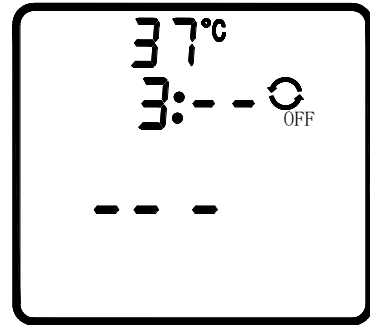










Fig 8: The circulation filtration will last for 3 hrs

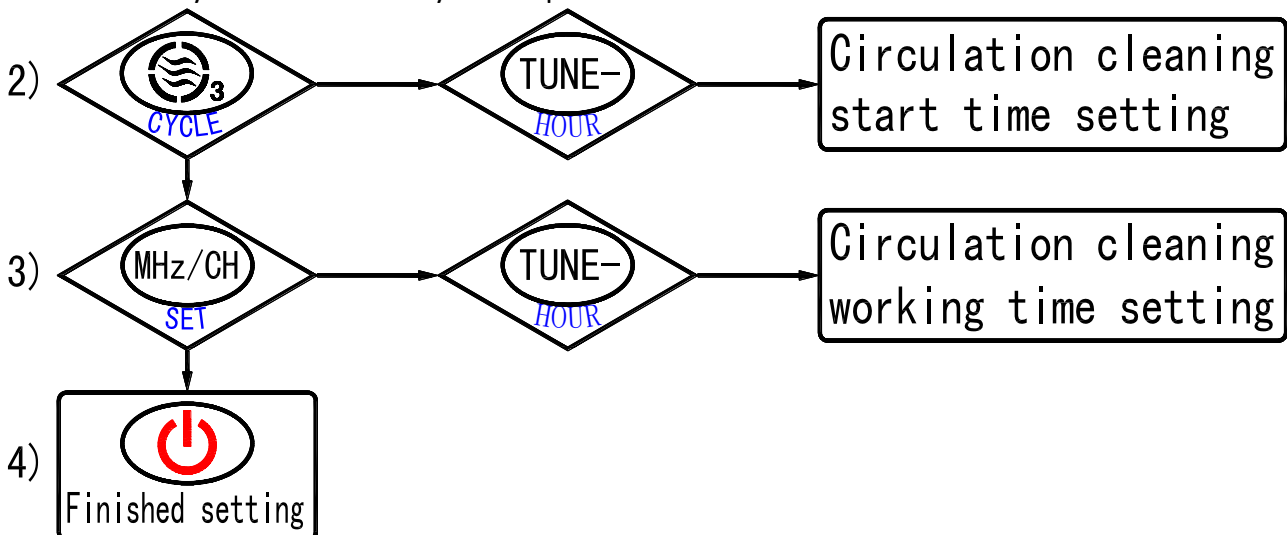
1) When A2=OFF, the circulation filtration can't be set up (Fig. 6); When A2=ON, the user can set the circulation filtration, LCD is showing "  " at this time (Fig. 7).

2) Press "  " key to enter circulation filtration, the "CYCLE" symbol is flashing at this time. Press "  " key to change the start time of the circulation filtration, the operation shown as below:

Each press of "  " key adds 1 hour, when the user presses "  " key and holds it, the hour will continuously increase. The adjustment range is 0~23.

3) Press the "  " key to set up the last time of circulation filtration (Fig. 8), the last time is not flashing. Each press of "  " key to adds 1 hour, the range is 1-11 hours.


4) Press "  " to confirm all the settings and exit circulation filtration set up, all the settings will save in memory even when the system is powered off.






3. Preheating setting

The preheating can be set up once a day. The details shown below:

1) When A1=OFF, the preheating can't be set up (Fig. 9), when A1=ON, the preheating can be set up, LCD is showing "ON" at this time (Fig. 10).

2) Press "  " key to enter preheating setting status, the "PREHEAT" symbol is flashing at this

time, press “” key to change the hours of preheating start time. Each press of “” key will add 1 hour, when the user presses “” key and holds it, the hour will continuously increase. The adjustment range is 0~23.

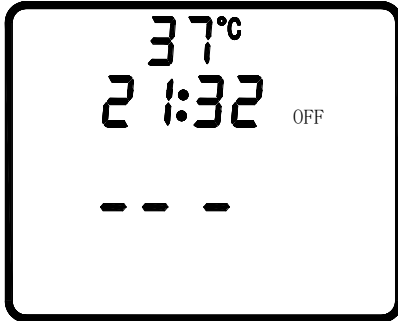


Fig. 9: Preheating can't be set up

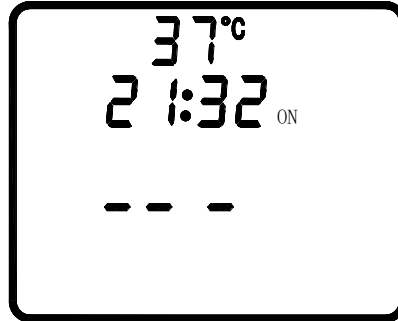


Fig. 10: Preheating can be set up

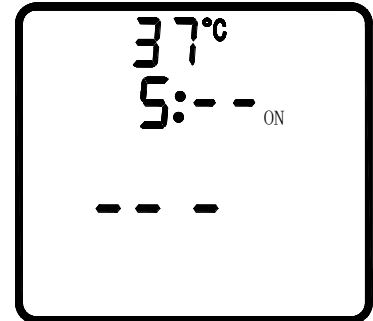



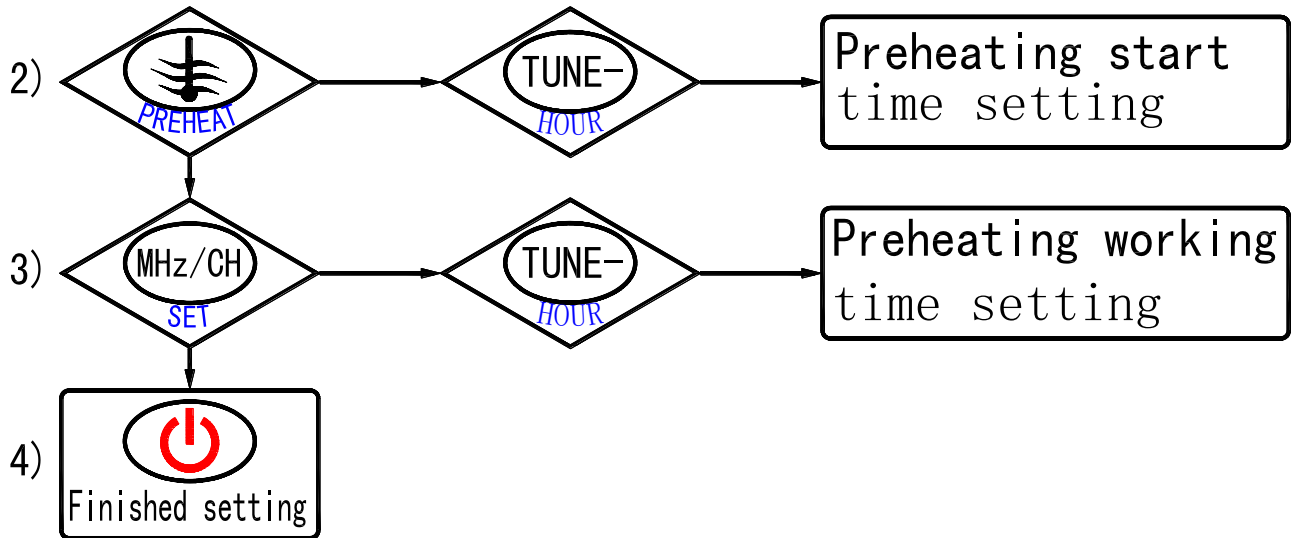



Fig. 11 The last time setting of preheating

- 3) Press “” key to set up the last time of circulation cleaning(Fig. 11), the last time is not flashing. Each press of “” key will add 1 hour, the longest last time range is 1-19hours.
- 4) Press “” to confirm all the settings and exit circulation filtration set up, all the settings will save in memory even the system is powered off.






4. The switch between Celsius and Fahrenheit

4.1 When A4=OFF, the system can only display temperature in Celsius

4.2 When A4=ON, the temperature display will be controlled by the key “”, the user can switch the temperature display between Celsius and Fahrenheit.

V. The operation under start up status

1. Temperature setting

When the system is on, the user can set the temperature. Each press of “” key will add the temperature 1°C, press “” key and hold it, the temperature will continuously increase and reach to 40°C. Press “” key again, the temperature will change to 25°C. The temperature setting range is 25~40°C (77~104°F).

2. Water pump operation

Press pump 1, pump 2 and pump 3 key to turn on/off the pump. When the circulation cleaning and heater(Preheating is included) are working, the circulation pump will automatically turn on.

The max working time of jet pumps is 25 minutes when B3=OFF, but the max working time is 1 hour when B3=ON.

3. Heater operation


3.1 When the preheating is ended, press “” key to turn on the thermostatic heater.

3.2 When the heater is turned on, the circulation will start first but turn off after the heater, the interval is about 5s.

3.3 If the water temperature setting is 35°C, when the water temperature reach or over 36°C, the heater will turn off, the circulation pump will turn off after 5s(When pump 3 is off); When the water temperature reach or lower than 34°C, the heater will automatically start again.





3.4 When the temperature sensor is open or short(LCD will display “E1” at this time), the heater will not work and temperature is not under control.

4. Blower Operation



Press “” key to turn on/off the blower. When B3=OFF, the max working time of blower is 25 minutes; When B3=ON, the max working time of blower is 20 minutes.



5. Radio and CD/AUX Operation



Digital FM stations are not supported

5.1 Press “” key to turn on or turn off the radio and CD/AUX. 1st time to press the “” key to turn on the radio; 2nd time to press the “” key to turn off the radio but turn on the CD/AUX; 3rd time press of the “” key to turn off the CD/AUX.

5.2 When the radio is working, the LCD will display the current frequency and volume.

5.3 When the radio is working, the user can press “” and “” to change the current frequency. Analogue channels supported only.

5.4 When the radio is working, press “” key to save channel. Continuously press “” to remove the channel which saved at different position. When the position is no channel available, the LCD will display “---” .

5.5 When the radio is working, press “” key to save current frequency. Continuously press “” key to save it at different position, max allow 10 channels, they are 0-9.

5.6 Press “” and “” to change the radio volume.

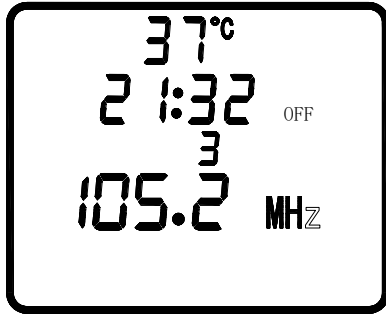


Fig 12: Radio channel saving/removing

FM radio functionality is built into the KL8-3A.

CD/AUX – when changed from radio to CD/AUX, 240v power is applied to the AUX socket on the power board for connection of a power supply for a CD player, Bluetooth etc. Control of the CD/AUX connected audio device is via that devices controls – not from the KL8-3A touchpad.

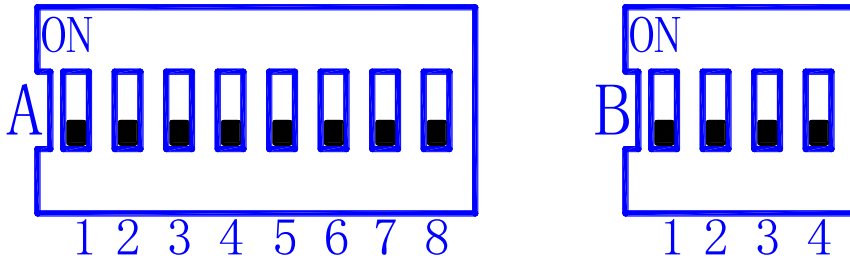


Fig 13: DIP Switch bank A and B

VI. The Master Board Specifications and DIP switch jumper settings (Fig. 13)

- A1: OFF: No preheating function.
ON: With preheating function.
- A2: OFF: No circulation cleaning function.
ON: With circulation cleaning function.
- A3: OFF: Ethink 4 wire 12v DC LED lights.
ON: 12v AC 2 wire incandescent or LED lights.
- A4: OFF: Display Celsius temperature.
ON: Temperature display can be selected by control panel. C or F.
- A5: OFF: Can be equipped with up to two jet pumps. H220 or H380 heater.
ON: Can be equipped with three jet pumps. H380 heater only.
- A6: OFF: When the temperature is abnormal or the sensor doesn't detect the water, the water pump and heater will stop working.
ON: Not used – leave off.
- A7: OFF: With water flow sensor, if it detects no water flow, the heater will not work.
ON: Not used – leave off.
- A8: OFF: With Ethink control panel.
ON: Not used – leave off.
- B1: OFF: Normal mode.
ON: Not used – leave off.
- B2: OFF: With radio function.
ON: Not used – leave off.
- B3: OFF: The maximum working time for jet pump and blower is 25 minutes.
ON: The maximum working time for jet pump is 60 minutes and the blower working time is 20 minutes.

VII. Warning and Error codes

1. When the system is showing any error code, please don't use spa and go into water.
 - 1.1 "E1": The temperature sensor is short or open.
 - 1.2 "FF": The system detected that the temperature inside heater reach or over 48 °C

VIII. Electrical Parameters

1. Performance index

Working Voltage: AC220-240V single phase or 415v 3 phase, 50Hz

Waterproof Level: IPX5

2. Maximum output load index

Heater: AC220V/3.0kw

Jet Pumps: AC220V/3HP

Circulation Pump: AC220V/1HP

Blower: AC220V/1HP

LED Light: AC12V/15W 2 wire or DC12V/15W 4 wire

Ozone: AC12V/8W

Radio: 1) Frequency range: FM87.0~108.0 MHz

2) Max output power: 15W

3) Dual channel loud speaker: 8Ω anti-moisture speaker

4) Digital channels not supported

IX. Installation Instruction

Please make sure that the control box is orientated correctly to prevent water penetration (Fig. 14).

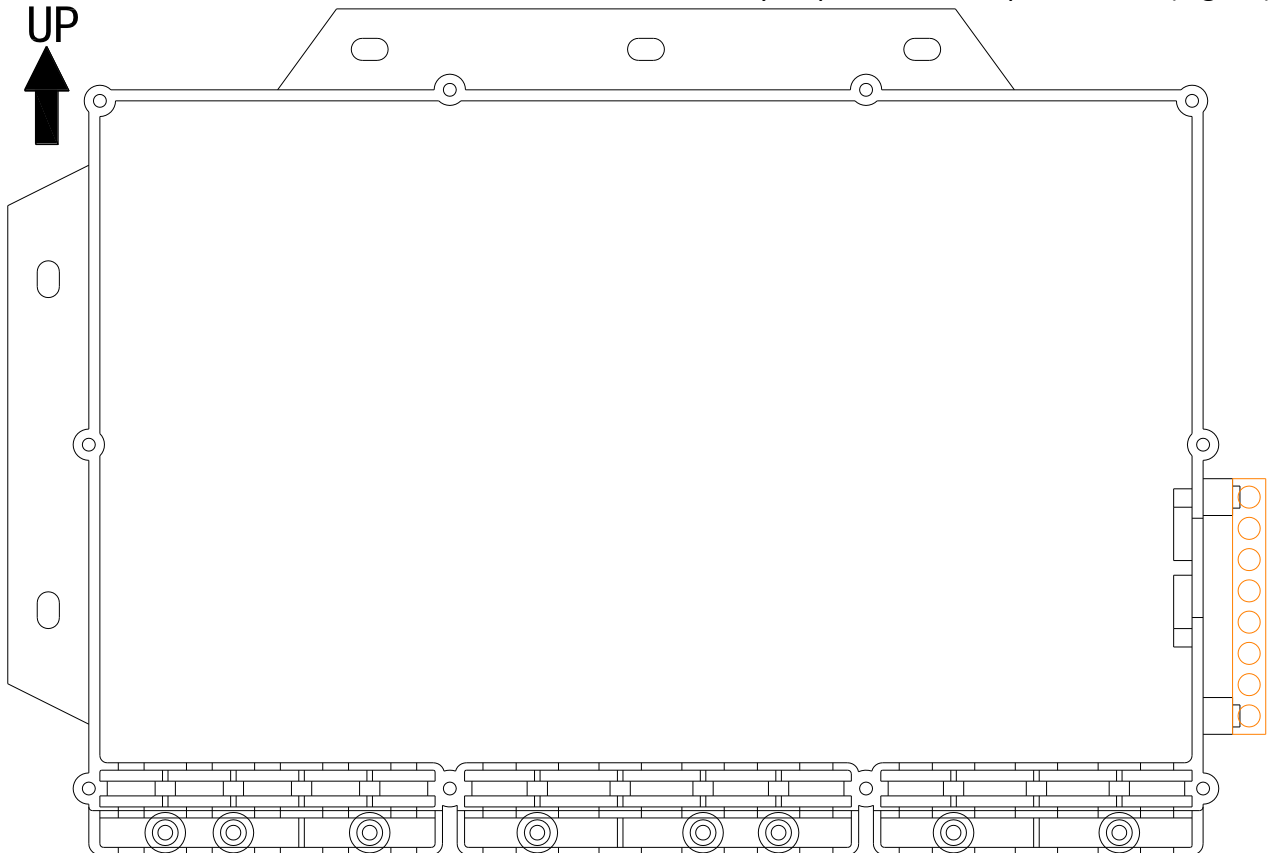


Fig. 14: The placement of control box

1.4 The wire connection for each load

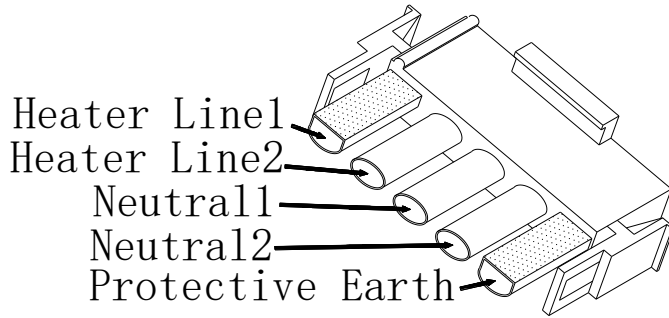


Fig. 15: Wire connection for H380 heater

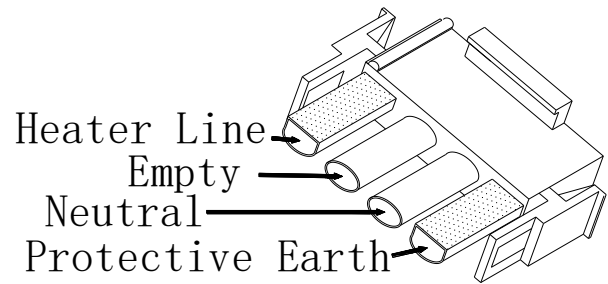


Fig. 16: Wire connection for H220 heater

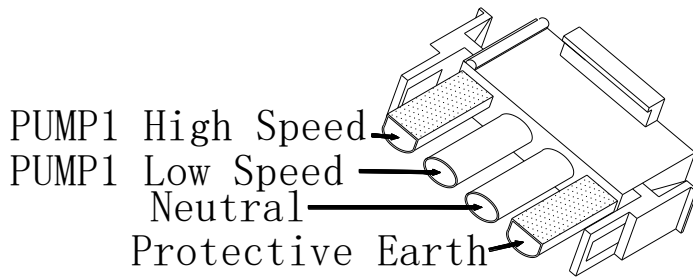


Fig. 17: Wire connection for 2-speed pump

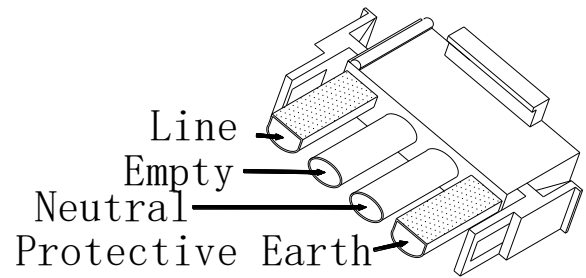


Fig. 18: Wire connection for others

Wire colours that may be used for cords fitted to outputs:

2 speed pumps:

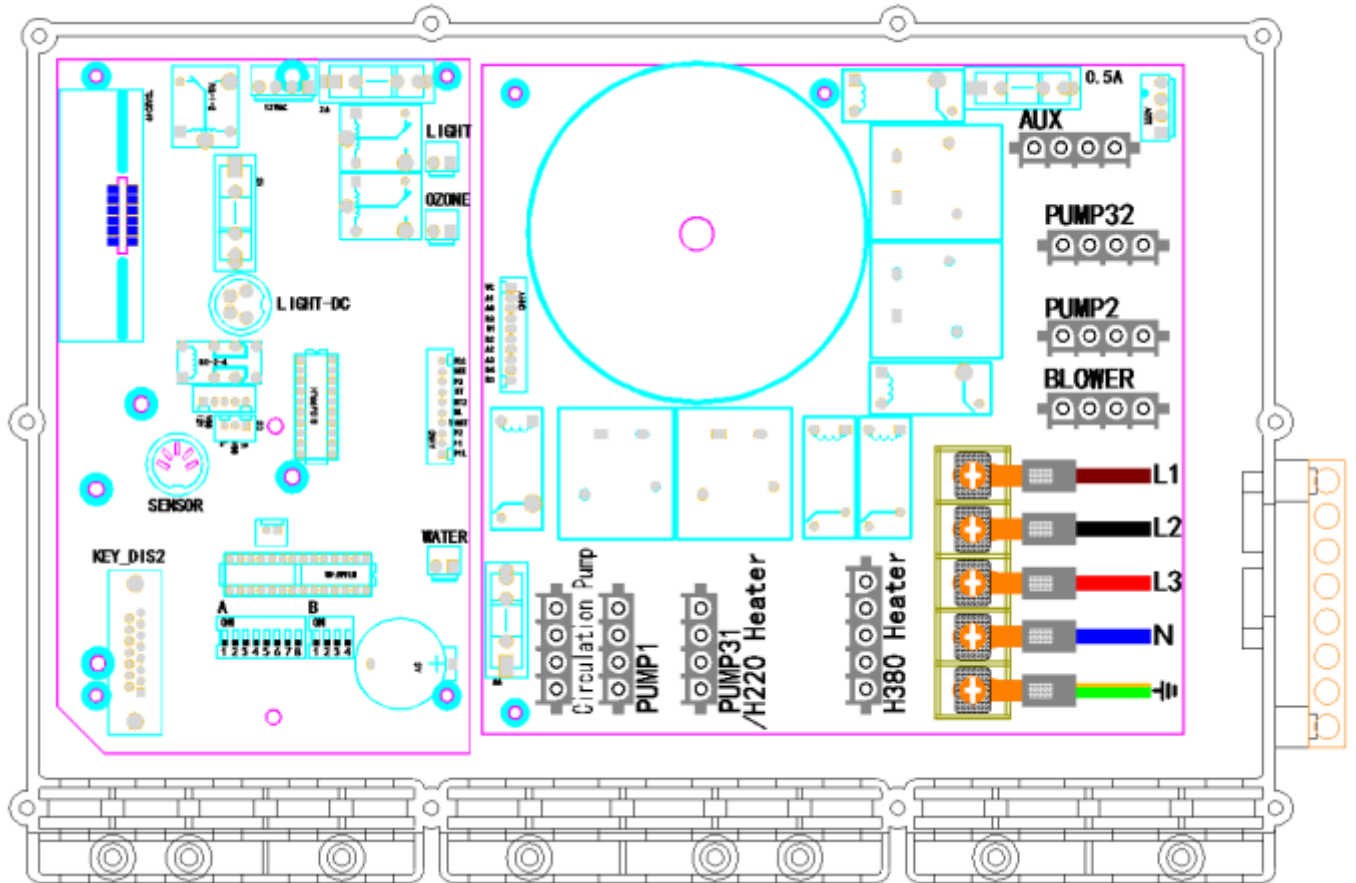
	Type 1	Type 2	Type 3 (LX, Davey)
Low speed -	Black	Black	Brown
High speed -	Brown	Red	Black
Neutral -	Blue	White	Blue
Earth -	Green/Yellow	Green	Neutral

It's important that a 2 speed pump low/high speeds are checked for the correct configuration – heating/filtration should automatically run on low speed.

If it runs on high speed, swap the low and high speed wires at the pump terminal box.

1 speed pumps, blower, ozone etc:

	Type 1	Type 2
Active -	Brown	Black
Neutral -	Blue	White
Earth -	Green/Yellow	Green



Heater Configurations and plumbing

The power supply available may determine which model heater and kilowatt ratings are available to be used.

ALL HEATERS MUST BE INSTALLED HORIZONTALLY ONLY to ensure proper operation of sensors.

The heater and flow/temp sensor union must also be installed upright – with the sensors / terminal boxes at the top.

H220



Direction of flow depicted: **RIGHT to LEFT**

H220-15 or H220-20 heater with flow/temp sensor union assembly shown fitted on right hand side.

Water flow **MUST** always flow through the sensor union prior to the heater or incorrect temperature data will be processed by the spa pack.

H220 heaters are available in two ratings: 1.5kw or 2.0kw. They are 1.5" / 40mm plumbed and suit mid / high flow circulation pumps.

H380



Direction of flow depicted: **LEFT to RIGHT**

H380-30 heater with flow/temp sensor union assembly shown fitted on left hand side.

Water flow **MUST** always flow through the sensor union prior to the heater or incorrect temperature data will be processed by the spa pack.

H380 heaters are available in one rating: 3.0kw. However they comprise 2 x 1.5kw elements individually wired to the 5 pin AMP plug.

It's possible to disable one element to run this heater as a 1.5kw heater.

They are 2" / 50mm plumbed and suit all pump applications. Reducing bushes and fittings can be used for use with 40mm plumbed smaller pumps.

Chemical care

In order to take care of your spa investment and your health, you must maintain correct chemical levels of sanitizer, oxidizer and pH balance.

Failure to do so may cause damage to equipment not covered by warranty, or risk your health.

Correct recommended ranges are listed below:

Sanitiser – lithium hypochlorite	1.0-3.0 ppm
pH	7.2-7.8
Total Alkalinity	80-100
Calcium Hardness	200-400

We recommend the use of test strips or digital test strip reader to monitor your chemical levels.

Testing must be carried out twice per week to ensure proper levels.

We do not recommend you rely on pool shop testing if carried out less frequently than twice per week.

All chemical level adjustments made after an initial test, require re-testing to ensure the level has been corrected.

Please note that we do not recommend the use of the following products / systems as damage to equipment is far more frequent due to the extremely high maintenance levels required and neglected.

Bromine tablets – these have a very low pH so are essentially an acid that sanitises requiring daily monitoring and adjustments.

Salt chlorination – salt remains in solution and is very abrasive to heaters. Chlorine gas is ineffective in water over 26 degrees and if there is no ORP control, levels easily exceed maximum levels advised.

We recommend the use of Lithium Hypochlorite as a sanitizer – its an all-round proven performer at moderate pricing, easy to use and low effect on pH.

Our recommended chemical range:

Sanitiser: Lithium Hypochlorite – granular spa chlorine (do NOT use pool chlorine)

Oxidiser: Potassium Mono-persulphate

pH decriaser: Dry acid

pH increaser: Soda Ash

pH buffer: Bi-Carbonate Soda

If you are using tank water you will also need to use a Hardness Increaser. Bore water use may require a softener.

If you are allergic to Chlorine an alternate chlorine free spa chemical system may need to be considered.

We recommend against the addition of any other spa chemical product than those listed above.

Warranty

Ethink KL8-3A series control systems are warranted against failure due to manufacturing defects for a period of 2 years from date of sale to the consumer.

Return to base warranty – The spa pack will be assessed for defect as a result of manufacturing failure and the faulty part repaired or replaced.

Failure of the unit due to any cause other than manufacturing defect is not covered by warranty. This includes but is not limited to: Mechanical/physical damage, water damage, rodent or insect damage, flooding, electrical surge, chemical corrosion damage.

Failure to employ a properly qualified electrical tradesperson to check and test the electrical circuit and all output devices prior to installing an Ethink KL8-3A control system may result in damage to the unit.

For example, all pumps, blower and other 240v output devices must be electrically tested for insulation resistance, motor capacitor condition and checked for any other damage such as water inside the blower or ozone housing, otherwise damage to the new control circuit board may result.

*****Note*****

- ❖ The appliance is not to be used 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.
- ❖ Children being supervised not to play with the appliance.
- ❖ The appliance should be supplied through a residual current device (RCD) with a rated tripping current not exceeding 30 mA.

Imported and distributed by:



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