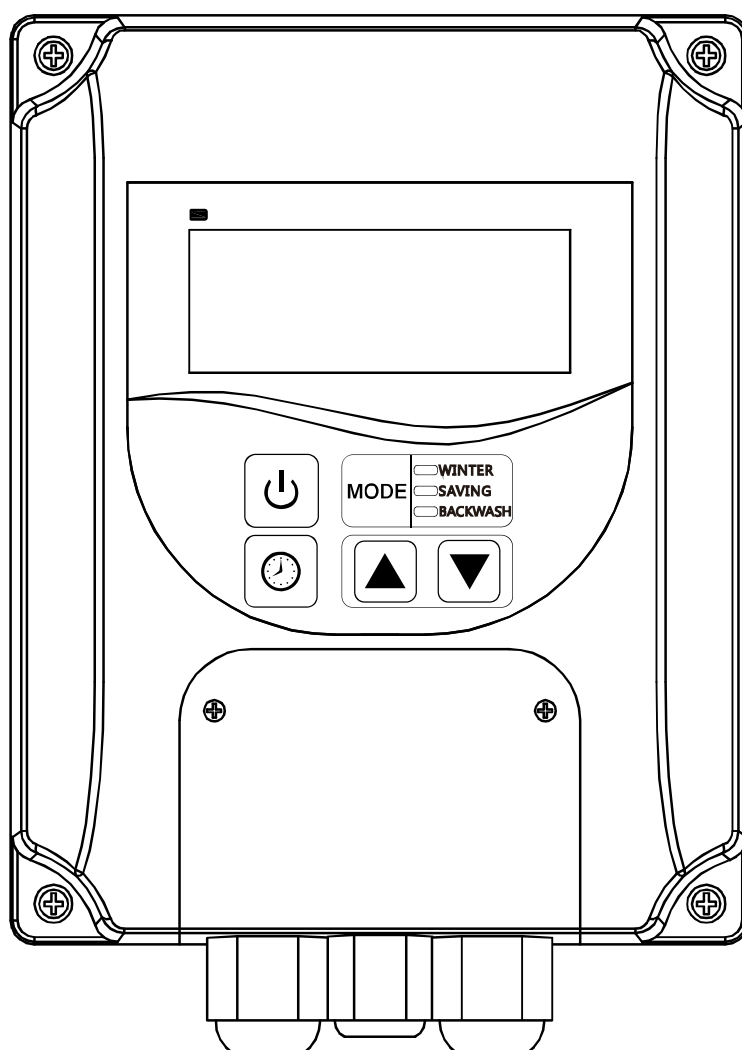


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# FREQUENCY INVERTER INSTALLATION & USER GUIDE



Thank you for purchasing our frequency inverter.

Please read the manual carefully before installing or using it and keep it for future reference after installation .



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## **IMPORTANT**

**Please read this manual carefully before installation and keep it for future reference after installation.**

## 1. INTRODUCTION

Thank you for purchasing our frequency inverter. To make best use of this energy saving device, please take time to read this user guide thoroughly before installation and keep it for future reference.

## 2. IMPORTANT SAFETY INSTRUCTIONS

- 2.1. The frequency inverter is an energy saving product provided that it is installed and used in accordance with our instructions.
- 2.2. It's very important to follow instructions in this guide for installation. Failure to follow the instructions may result in **SERIOUS** injury or property damage.
- 2.3. This device can **ONLY** be used with domestic single speed swimming pool pumps with permanent split capacitor motor. See below please a typical single speed swimming pool pump motor.

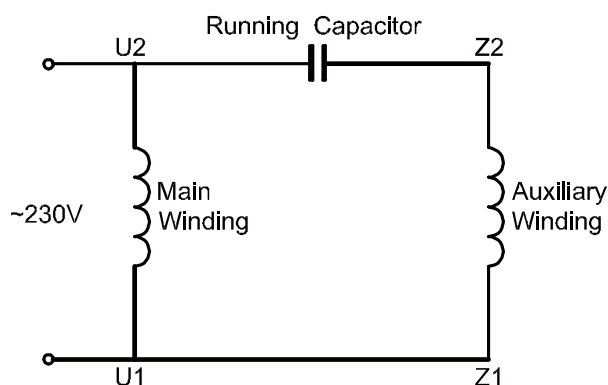


Fig 1

- 2.4. **It is NOT compatible with:**
  - a. Capacitor start asynchronous motors with centrifugal switch gear
  - b. Pool pump motors with start relays or switch
  - c. Series or DC motors
  - d. Pool pump motors with faults in their rotors or capacitors
  - e. Shaded-pole asynchronous motors
- 2.5. An RCD device with a fixed rated residual current not exceeding 30mA must be used with this product.
- 2.6. Please keep the device out of reach of children



**If you are not sure of the compatibility of your pool pump with this device, please contact your supplier or manufacturer before proceeding with installation.**

### 3. INSTALLATION REQUIREMENT

- 3.1. The warranty may be compromised if the frequency inverter is not installed in accordance with the installation guidelines.
- 3.2. The frequency inverter weighs about 3.6kg, please make sure it is mounted on a firm flat surface, with a minimum clearance surrounding it (see Fig 2) .The amount of air flows around the heat sink is a key factor contributing to efficient cooling of frequency inverter. To ensure an efficient heat dissipation & ventilation, it is important to install the unit in an upright direction. if you have install it on a horizontal level, make sure the request of a minimum sourrounding is strictly followed .

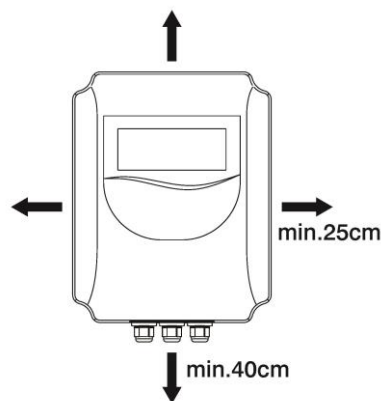


Fig 2

- 3.3. This device is for indoor upright installation. Do not expose it to direct sunlight or mount it above/or near another source of hot air. Do not install it anywhere that may block ventilation of the device like an enclosed space where air flow is limited, as this may cause overheat or potentially cause damage

### 4. BEFORE INSTALLATION

- 4.1. Check for damage in transit upon receipt of the frequency inverter. If it is found to be damaged, Do **NOT PROCEED** with installation and contact your supplier.
- 4.2. If the power cord is damaged, DO NOT PROCEED with installation. Contact your supplier for further instruction or replacement.
- 4.3. Do not use extension leads with the frequency inverter. This can pose a danger particularly in the vicinity of a swimming pool.
- 4.4. **This device should ONLY be used with PSC (Permanent Split Capacitor) single speed swimming pool pumps. See Figure 1 to see a typical single speed swimming pool pump motor.**
- 4.5. If you are not sure whether your pump is compatible with the frequency inverter, please contact your supplier or manufacturer providing details of your pump.
- 4.6. The installation environment has a direct impact on normal function and life span of frequency inverter, make sure the place you choose for installation meets the following conditions:
  - Ambient temperature from -10~40°C
  - No direct sunlight

- Good ventilation



**To avoid potential risk of fire, electric shock, or injuries to people, the frequency inverter must be connected to an electrical circuit that has earth leakage protection (RCD) of a maximum of 30mA. The circuit MUST also comply with local and national electrical standards and safety codes.**

**If you are in ANY doubt please contact a qualified electrician to check your house wiring and confirm.**

## 5. TECHNICAL DATA

Model	iSAVER 1100	iSAVER 2200	Dimension
Operation temperature	-10°C~40°C	-10°C~40°C	
Input power	1 phase AC	1 phase AC	
Input voltage	220~240V	220~240V	
Input Frequency	50Hz	50Hz	
Output power	1100 W (1.5 horsepower )	2200 W (3 horsepower )	
Pump type	SINGLE SPEED 1 phase	SINGLE SPEED 1 phase	
Max. current	6A	12A	
Speed range	1200~2900 rpm	1200~2900 rpm	
Cooling	By air	By air	
Net Dimension (L*H*W)	155*195*130 mm	155*195*130 mm	
Gross/Net Weight	3.6 / 3.1 Kg	3.6 / 3.1 Kg	

The manufacturer has the right to modify technical data without previous notice due to technical upgrade.

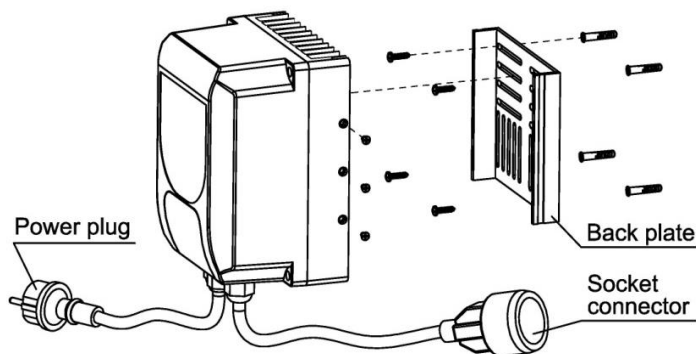
## 6. INSTALLING THE FREQUENCY INVERTER



**Do not expose the display to direct sunlight. Too much direct sunlight may shorten the life span of it.**

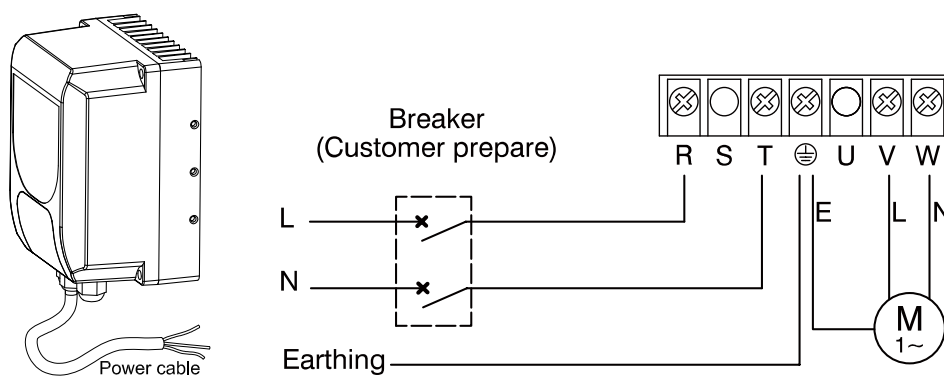
6.1. Turn off all electrical power to the pool pump at the main switch or at the chlorinator which provides electrical power to the pump.

- 6.2. The back plate has at least 4 mounting holes to choose from. Mark the hole locations on the wall and then use the 4 fasteners supplied to secure the back plate to the wall, make sure the frequency inverter is held securely in place.
- 6.3. Using 6 screws supplied, mount the frequency inverter onto the back plate.
- 6.4. Plug in the power cord to connect power supply socket, connect pump plug to socket connect as shown in Fig.3



**Fig 3**

- 6.5. If you do not require a power plug for installation, connect wires as shown in Fig 4, please



**Fig 4**



**Warning**

**This device weighs 3.6 kg, it is very important that it is held securely to a firm flat surface such as a concrete wall.**

## 7. CONNECTING FREQUENCY INVERTER TO POOL PUMP



**Warning**

- \* **Only 1 pump can be connected to the frequency inverter. Please do not connect any other appliance to the output.**
- \* **Failure to comply with this may result in damage to the device and/or appliance and may cause severe injury, death or property damage.**
- \* **Improper installation and/or operation may also void the warranty of the frequency inverter.**

Please follow these steps when connecting the frequency inverter to a single speed (PSC) swimming pool pump.

- 7.1. Switch off all power to your pool pump.
- 7.2. Unplug the pump from the main switch or the bottom of the chlorinator or timer.
- 7.3. Plug the pool pump into the frequency inverter power outlet marked (PUMP CONNECTION ONLY)

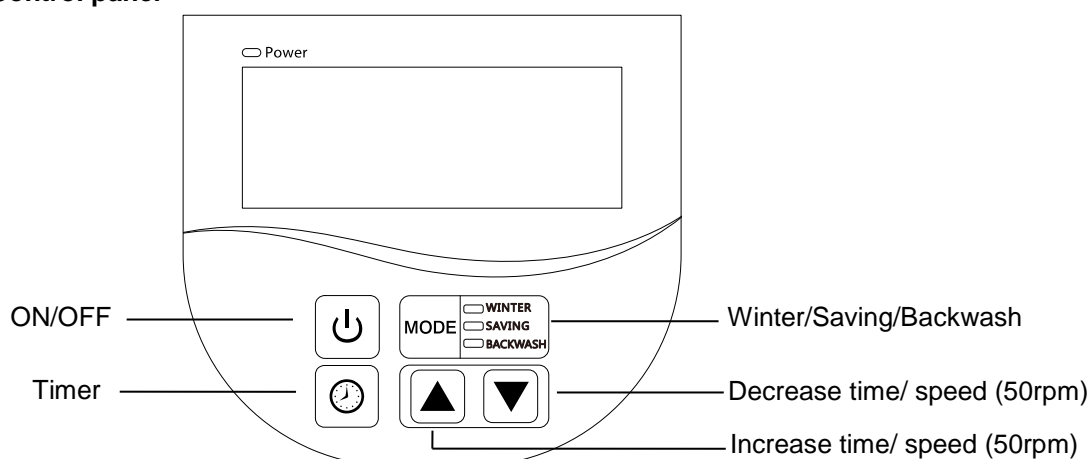
**Warning** To see the power consumption, you can install a power meter, but it can only be used on the input side of the frequency inverter.

- 7.4. Plug the frequency inverter into the main switch/chlorinator/timer connection where the pump was originally plugged into
- 7.5. Switch all power back on
- 7.6. Ensure chlorinator/timer is active
- 7.7. Now the frequency inverter is ready to run just follow the operation guide.

**Warning** Do not touch the heat sink while the frequency inverter is in operation or until at least 30 mins after it has been switched off. Keep it out of reach

## 8. SETTING AND OPERATION INSTRUCTION

### 8.1 Control panel





### 8.2 Mode setting

8.2.1. The frequency inverter has 3 modes, each with a speed range and its default speed as follows:

Mode	Speed range	Default speed
Winter	1200~1650 rpm	1400 rpm
Saving	1700~2400 rpm	2000 rpm
Backwash	2450~2900 rpm	2900 rpm

8.2.2. You can either set your pump running at a constant speed choosing from “Mode” or set up to 4 timers at a day, each with an individual speed.

8.2.3. Using  or  to adjust by 50 RPM increment or decrement to an exact speed you



want based on its default value.

When plug in, power indication lights up (green) , the device still on OFF mode.

Press to start frequency inverter. Up on start, pump will run at maximum speed (2900 rpm) for a one-minute self priming, press to choose a speed range, use or to decide on a running speed.

Upon completion of self priming, pump will switch automatically to the speed preset, a flowing wave indicates the pump is running.

### 8.3 Timer setting

If you want your pump to run at different period of time or speed to take advantage of different electricity tariffs, you can set up to 4 timers in 24hours. Follow this sequence to complete timer setting by pressing : Current time → Timer ON → Timer OFF → Speed. Press to return to last setting.

**Step1:** Press to enter timer setting interface.

**Step2:** Use or to set current time/Timer



ON/Timer OFF. Press to move cursor

to next setting. Press to choose a speed

range for timer 1, use or to decide on a specific speed if needed.


**Step3:** Repeat the steps to complete the other 3 timers' setting.

**Step4:** Upon completion of timer setting, hold  for 5 seconds or wait 15 seconds to save

setting, device will operate accordingly based on setting. A flashing  indicates waiting for time to start, a flowing wave  indicates a running status.

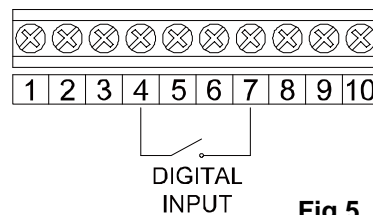
**Step5:** press  or , to check 4 timers., make sure there is no invalid setting.

Please note:

- a) Overlap setting of time will be considered as invalid, in case of invalid setting, the device will only run based on previous valid setting.
- b) During the process of timer setting, if you want to abandon timer setting, hold  for 3 seconds.
- c) In case of no further operation or setting after 1 minute, backlight will be off , to activate backlight, press any button (including on/off button )


#### 8.4 External on/off control

The on/off of frequency inverter can be controlled from third party pool controls using potential free contacts. See Fig.5 for connection.





**Fig 5**

Under OFF mode, connect terminal 4 and 7 to enable external control, disconnect these two to terminate external control.

Note: Even if it's working via external control, Press  on the frequency inverter can stop the frequency inverter.

 **Warning** Do not apply voltage to these inputs.

#### 8.5 Factory setting

Under OFF mode, hold   for 5 seconds to retrieve factory setting .

Please note: The frequency inverter has power-off memory, it will resume operation /setting state upon power restoration .

Note: When over heat occurs on 'backwash' mode, a protection mechanism kicks in for auto self protection, product will automatically switch from "backwash' mode to 'saving' mode, when over heat relieved, product will resume backwash mode.

## 9. PROTECION / ERROR CODE

When one of the following codes appears, frequency inverter will stop working, to resume

operation, unplug the device and plug in again. For E002, when the reason causing this error relieved, the frequency inverter will resume operation automatically.

Item	Code	Description	Analysis
1	E001	Input voltage exceeds upper limit of operation range	Not faulty
2	E002	Input voltage exceeds lower limit of operation range	Not faulty
3	E003	Output over current	Not faulty
4	E004	Overload or short circuit	Not faulty

5	E101	Inverter module overheat	Could be faulty
6	E102	Master board error	Could be faulty
7	AL01	Auto speed reduction against over heat	Could be faulty

8	E201	Circuit error	Faulty
9	E202	Master board EEPROM reading failure	Faulty
10	E203	RTC time reading error	Faulty
11	E204	RTC backup battery low capacity error	Faulty
12	E205	EEPROM reading error	Faulty
13	E206	Communication data failure	Faulty
14	E207	Communication connection failure	Faulty

## 10. EXEMPTION

Manufacturer will be held no liability for any consequences resulting from inappropriate, incorrect installation, or mismatching of the product to pool pumps that does not compatible.

Manufacturer reserves the right to change the specification of the product or its performance or the contents of the User Guide without notice in case of technical upgrade.

## 11. WEEE LEGISLATION

When disposing the product, please hand it over to a designated collection point for the recycling of waste electrical and electronic equipment.



The separate collection and recycling of waste equipment at the time of disposal will help ensure that it is recycled in a manner that protects human health and the environment.

For more information about where you can drop off your waste for

recycling, please contact your local authority.

