



# SOLAR

## Pump On Demand 1600

### Instruction Manual

**IMPORTANT:** Please read this instruction manual carefully before using this product. Keep the manual safe for future reference.

Bermuda Solar Pump On Demand is a 1600 litres per hour fountain pump that is ideal for water features and small ponds. The solar panel powers the pump and charges the battery, so the pump can run during daylight hours and also solely from the battery for up to 2 hours, once fully charged. The pump comes with fountain head accessories and LED lights.

## Attention

- Keep out of reach of children
- For safety reasons and in order to maintain good quality you are prohibited from altering or changing any component in the solar pump.
- Do not connect the pump to any AC voltage power; it is for DC voltage power only.
- Do not pump flammable liquids.
- Do not use pump with water above 50°C
- Do not strike the solar panel
- Do not let the pump run dry for a prolonged period
- Do not lift the pump by the power cord
- Operate in freshwater only

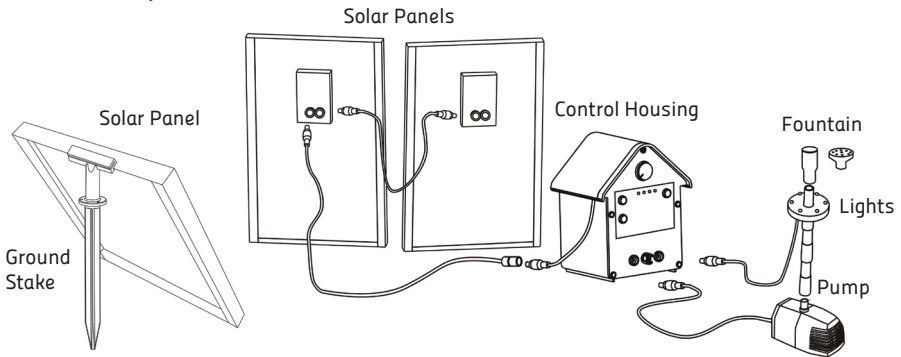
## Specifications

Solar Panel:	2 x 10W Solar Panels
Operation Voltage:	12-18V DC
Max. Flow	1600 LPH
Max. Water Lift	2.7 Metre
Water Projection Height	Max. 1.8 Metre
LED Lights	6 x White LED Lights
Cable Length	5M
Battery	Rechargeable 12V-4AH (Replaceable)
Battery Power	Pump can run for 2 hours when fully charged

## Warning

- Do not open control housing without permission.
- Always keep rubber plug in the "Charge" and "Light" socket. Especially after using charger or light, remember to plug rubber back into the socket, to avoid water leaking

## Assembly



- Unpack all components carefully.
- Connect the ground stake to the rear side of frame of the solar panel.
- Connect two solar panels and then connect to the control housing.
- Place the pump underwater and make sure that it is **fully immersed** in water. Use the four flexible suction cups to stick the pump to the base of the water feature / fountain. In case the pump tube is too far from the surface of water, you can raise the pump off the bottom using stones.
- Assemble the fountain, fit the LED lights and fountain head as shown.
- Connect the pump power cable and lights power cable to the socket of the control housing.
- The solar pump is now ready to use.

## Operating instructions

Once installed, allow the solar pump to charge for at least **eight hours** in direct sunlight to fully charge the battery. The pump can run solely from solar power, providing the conditions are good, or for a shorter period from just the battery, once charged.

### **Test the control housing system:**

Press the "ON/OFF" button, the "SOLAR POWERED" indicator light will be on. Push the "MODE" button repeatedly, and the indicator light will cycle through the various modes - "SOLAR POWERED" / "BATTERY POWERED" / "CHARGING". Push the "ON/OFF" button again, the indicator light will be turn off.

### **CHARGING mode:**

Turn the control housing on by pressing the "ON/OFF" button.

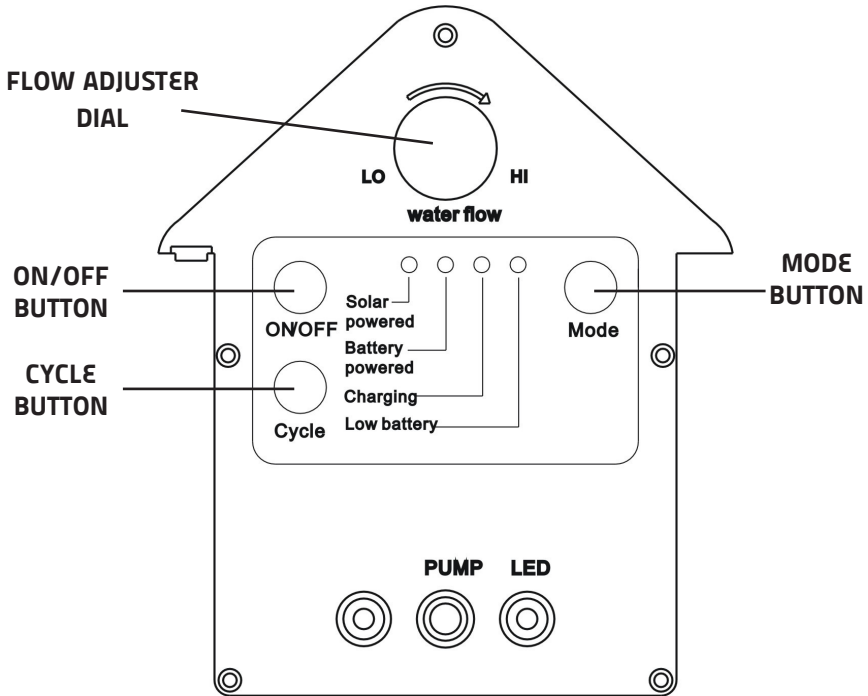
To charge the battery quickly, press the "MODE" button until the "CHARGING" indicator light is illuminated. In this mode, the system will battery will be charged from sunlight, without running the pump. When you first set up the pump, we recommend you select this "CHARGING" mode for at least 8 hours when the solar panel is in direct sunlight. You cannot over charge the battery as there is an "overcharge protection" built into the system to help prolong the life span of the battery.

### **SOLAR POWERED mode:**

Turn the control housing on by pressing the "ON/OFF" button. The first indicator light of "SOLAR POWERED" will illuminate. In this mode, the pump operates in direct sunlight only, any surplus power is used to charge the battery. The performance of the pump will very according to sunlight condition.

### **BATTERY POWERED mode:**

With the control housing turned on, and as long as the battery has been charged, press the "MODE" button until the second indicator light "BATTERY POWERED" is illuminated and is blinking. In this mode, the pump will run for 2 hours using battery power. The default "BATTERY POWERED" mode is a 24 hour cycle, so the pump will turn on automatically, the same time the next day, providing there is enough charge in the battery. If the pump runs in this mode during darkness the LED fountain light will illuminate automatically.



**CYCLE button:**

If you do not want the pump to turn on automatically, the same time the next day, press the “CYCLE” button when in the “BATTERY POWERED” mode. The second indicator light “BATTERY POWERED” will illuminate and the pump will only work for 2 hours using battery power (providing it is fully charged).

**Adjustable water flow:**

Water flow is controlled by the FLOW ADJUSTER DIAL. You can only adjust the water flow when in the “BATTERY POWERED” mode. (NOTE: the higher the water flow, the more energy is consumed, therefore the pump will not run as long).

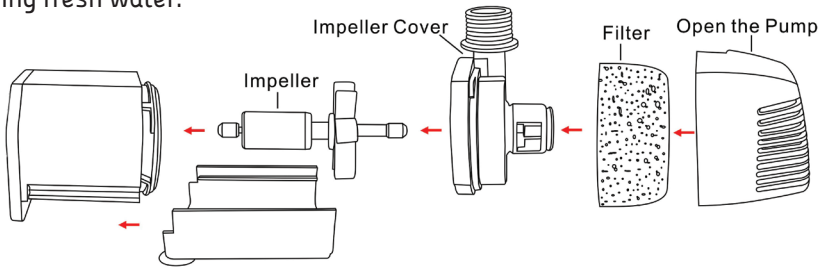
**Low battery:**

When the battery is low and needs to be recharged, the fourth indicator light “LOW BATTERY” will blink. Allow the system to recharge the battery for at least 4 hours, with the solar panels in direct sunlight.

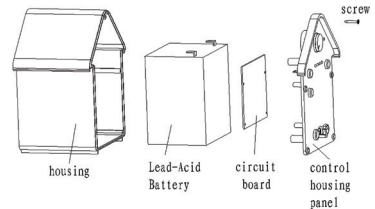
## Maintenance

**SOLAR PANEL:** The panel should be cleaned periodically with a soft tissue. Regular cleaning of the panel is advised to maintain the optimum conversion of solar energy into direct current.

**PUMP:** If, after a period of time, the pump starts to lose power or stops working, check for the build up of sediment, scale or dirt in the filter. Remove the pump cover and the impeller cover. Clean them and the filter using fresh water.



**BATTERY** If the pump stops working after it has been used for over 12-18 months, the battery may be beyond its life span. You may open the control housing to change a new battery. You will need to purchase a rechargeable Lead-Acid 12V-4AH battery.



## Troubleshooting

- **Pump does not operate even though the solar panel is in full sunlight.**
  - No connection to the solar panel – check connection to the solar panel, check the connection to the DC pump, check the LED indicator light.
  - Impeller is blocked – To clean the pump, remove the cover, and use a small brush or steam of water to remove any debris.
  
- **Pump does not operate but water is flowing through the fountain head.**
  - Check for the build up of sediment or scale in the tubes or the filter
  - Clean the tubes and the filter.

- In **"BATTERY POWERED" mode, the pump runs less than 2 hours.**
- The pump is designed with a battery over discharge protection. Please allow the solar pump to charge at least eight hours in direct sunlight and don't frequently operate the solar pump during as the battery is charging.

## Guarantee

This product is guaranteed against defects in material and workmanship for 12 months from the date of purchase, under normal usage.

The guarantee DOES NOT APPLY in case of improper use, negligence, lack of maintenance or accidental damage to the product. If the product fails due to a manufacturing fault within this period it will be either repaired or replaced free of charge. Moving parts or wearable parts including the impeller and any washers or O rings are not covered by the guarantee.

Should your Bermuda product stop working, refer first to trouble shooting and if this does not help, return the product to the place of purchase.

Liability is limited to replacement of the faulty product only. No other costs will be reimbursed. This guarantee is not transferable and does not affect your statutory rights.

Do not attempt to tamper with the pump or solar panel. Do not access components inside the pump body, unless otherwise instructed in the instruction manual. Any damage occurred by doing so may invalidate the warranty.

The manufacturer or supplier shall not be responsible, or held liable for any damages caused by defective components or materials of this product, or for loss incurred by interruption of service, or any consequential/incidental damages and expenses arising from the production, sale use or misuse of this product or any other consequential loss.

Any warranty claim must be accompanied by a valid, dated proof of purchase. Evolution Aqua, Bermuda, its distributors and dealers shall not be held liable for any loss of fish, plants or any other livestock as a result of any failure or defect of this product. The installation and use of your product outside of our recommendations as printed in this manual may also void the warranty.



**[www.bermudawatergardens.com](http://www.bermudawatergardens.com)**

**BERMUDA** an Evolution Aqua brand.  
Evolution House, Kellet Close, Wigan, Lancashire, WN5 0LP

DISTRIBUTED BY: Certikin, Witan Park, Avenue 2,  
Station Lane Industrial Estate, Witney, Oxfordshire, UK, OX28 4FJ