Using Instructions solar pumps system Rimini plus



These instructions relate ONLY to this product and contain important information for using the product for the first time. Please keep these instructions for later reference and should always accompany the product in the event of transference to a new user.

Customer support:

If you have problems or questions regarding this product, simply contact us! Monday to Friday 9 am to 12 noon and 1 pm to 4 pm.

- By phone: 09605-92206-0
- By e-mail for ordering spare parts: ersatzteil@esotec.de
- By e-mail for questions about the product: technik@esotec.de Product: Manufacturer Item No.: 101709

1. Introduction

Dear Costumer.

Thank you for purchasing the solar light. With this solar light you purchased a product manufactured according to the current state of technology.

This product fulfils all requirements of the valid European and national regulations. The conformity was proved. The relevant declarations and documentation are deposited with the manufacturer.

To maintain this state and guarantee a safe operation, you as the user will have to follow this operating manual!

2. Safety Instructions



 In case of damages caused by not following this operating manual, the warranty rights will expire! We exclude liability for any consequential damages! We exclude liability for property or

personal damages caused by inappropriate handling or not following the safety instructions.

- In these cases any guarantee rights will expire.

Due to safety and admission reasons (CE) it is not allowed to arbitrarily reconstruct and/or change the solar light.

Therefore, please keep to the operating manual.

The accident prevention rules of the association of the industrial trade cooperative association for electric plants and working material are to be considered in industrial environments.

3. Intended use

- The pump system for the outdoor use in garden ponds or bowls. The integrated battery box is charged depending on the solar radiation to the solar module and the pump will produce water correspondingly. In the shadow or in case of beginning darkness, the pump is supplied via the battery in the battery box. For up to several hours, depending on the charge rate.
- A direct solar radiation is required for the function of the pump.
- The pump system is particularly characterized by its ease of installation and assembly. No tools are required for the assembly. For the start-up, the system requires a shadow-free solar radiation onto the solar module.
- The pump must not be used for the production/lifting of drinking water.
- The power of the pump may be adjusted by means of a controller on the pump.
- The pump must never run drv!
- In order to avoid any disturbing gurgling, simply shorten the standpipe.
- On average, the battery pack should be exchanged by a new, identical in construction battery pack every 2 years.
- In order to safely interrupt the production (of water), you will have to switch-off the pump system or disconnect the cable connection between solar module and pump.

4. Assembly and commissioning

The pump system consists of the following components:

1 piece 3.5 W solar module with ground spike, battery box with a 6V/ 1200 mAh battery pack, 1 piece submerged pump in a plastic housing with a 5 m connection cable, 4 standpipes and 4 water nozzles.

- 1. Completely unroll the connection cable at the pump.
- 2. Attach the standpipes onto the pump and then attach one of the desired sprinklers onto the standpipe.
- 3. Put the pump onto a couple of stones in the pond. Please avoid placing the pump directly at the ground of the pond because here, a particularly high amount of dirt is sucked in by the pump and the nozzles will be clogged quickly.
- Connect the internal battery with the PCB. Find this information in first time using 4 manual from the battery box
- Now, connect the plug on the pump with 5. the socket on the battery box and screw the cap nut tight.
- 6. Unroll the cable on the battery box and insert the plug into the socket of the solar module. Screw the cap nut tight.



- 7. Now, screw the ground spike tight at the back side of the solar module and insert
- the solar module at a shadow-free place within reach of the cable. The solar module may be aligned towards the sun by means of the ball joint.
- 8. Put the switch in position , $\ensuremath{\mathbbm U}$ " (On) and the pump starts producing/lifting water and LED lights green. When LED lights red, battery is discharged and solar module needs a few hours sunlight.



9. The solar pump system is now ready for operation.

- LED display

red =	battery discharged and the pump is switched off
red/green flashing =	charging phase (duration approx. 120 min)
green =	battery ready for operation and the pump is running

Note: If the switch on the battery box is in position " - ", then the pump is switched off and battery won't be charged.

Note: Do not apply force when inserting the solar module. The front side of the solar module is fragile.

Attention: Risk of injury! A broken may not be repaired anymore and has to be disposed of it in an environmentally sound manner.

Note: For further assembly instructions, please see the manual of the water pump.

5. Function and Charging of the Battery Box

The battery box is an integral element of the pump system. The following information has to be taken into account:

Charging:

The storage battery in the battery box is charged via the solar module. A NiMh battery pack with 6 V/ 1200 mAh is used as battery. In order to enable the longest possible service life for the battery pack it is protected against deep discharge and overcharging. The LED will shine red in order to indicate any deep discharge.

A timer is automatically started if the end-of-charging voltage is reached during the next charging process. That means that the battery pack is charged for another 120 minutes and that the output is only activated after this period of time. The timer function is indicated by the red/ green flashing LED. Thus, it is ensured that the battery pack has an as long as possible lifetime and that an as long as possible runtime is achieved in case of a cloudy sky or in the evening.

Lifetime:

NiMh batteries usually have a lifetime of 600 to 700 cycles. That means an average lifetime of approx. 2 years. In order to achieve or even exceed this time, please note that the battery box including battery is stored inside during the winter and that the batteries are fully charged and stored unplugged.

Function:

In the morning, the battery in the battery box is first charged with the energy generated by the solar module. Depending on the insolation, this may take up to several hours. The LED on the battery box will continue to shine red. The output is switched off during this process because the charging of the batteries has priority now.

The timer for the full charging will be activated as soon the end-of-charging voltage is reached. That means that the battery is fully charged for another 120 minutes to the highest possible state of charge.

The output is activated after those 120 minutes and the connected consumer is switched on. The LED shines green. In case of shadow or in darkness, the connected consumer is supplied with energy via the battery box. If the battery voltage should drop to a value of 5.6 V, then the output is switched off in order to protect the battery. The LED shines red.

6. Exchange of the battery pack

After one to two years, the capacity of the battery pack will decrease and has to be exchanged. The battery pack is available from the manufacturer or in shops

- 1. Switch off the battery box via the switch and disconnect the box from the solar module and the water pump.
- Unscrew the 4 screws from the bottom side of the bat-2. terv box and remove the cover.
- 3 Unplug the battery pack and exchange it by an identical in construction battery pack. The battery pack is available from the manufacturer or in shops (www.esotec. de - Art.-No.: 901006).
- Plug in the socket on the cable of the battery into the 4. plug in the battery box with correct polarity.
- 5 Close the housing in reverse order.
- Re-connect the battery box with the solar module and 6. the water pump.
- Switch on the switch on the battery box into position 7 .. �� " (On).

Note: Exhausted batteries have to be disposed of it in an environmentally sound manner and shall not be disposed of with the household waste. Your dealer is required by law to take back old accumulators.

7. Care and Maintenance

In order to maintain the performance of the pump it is, depending on the contamination of the water, required to wash out the pump and its components with warm water.

For instructions for the care and maintenance of the pump, please see the manual of the pump.

Please occasionally wipe the solar module clean with a soft and slightly damp cloth.

Note: Before working on the pump please switch off the system and disconnect the plug connection between the pump and the battery box.

8. Troubleshooting

- The solar pump does not work:
 - Not enough solar radiation? Align module towards the south!
 - Pump clogged? Cleaning according to the pump manual!
 - Check the plug connection at the cable!
 - Is the battery pack older than 2 years? Exchange the battery pack!
 - Is the battery box switched on?

9. Overwintering

Clean the pump with lukewarm water according to the manual of the pump.

The battery box should be stored during the winter fully charged. For this purpose, switch off the battery box by means of the switch. Place the solar module in the sun and charge the battery pack for several hours. Then, open the housing and unplug the battery pack.

Store the entire system over the winter at a frost-free place.

10. Technical data

Solar pump system Rimini plus

6 VDC - System voltage:

Solar module

- Nominal output/power:	3.5 Wp
- Nominal voltage:	7.8 V
- Nominal current:	450 mA
- No-load voltage:	9.6 V
- Short-circuit current:	490 mA

- Short-circuit current:
- Protection class:
- Temperature range:

Water pump:

- Operating voltage:
- Current draw:
- Power input:

- Dry running:

- Max. delivery height:
- Delivery volume/output: - Protection class:
- max. approx. 0,6 m max. approx. 175 l/h IP 68 - Operating temperature range: +4 to +40°C
 - no

IP 44 -30°C to +75°C

6 to 9 V DC

approx. 1.1 W

max. approx. 180 mA

Battery box:

- Input:
- Output:
- Operating voltage: - Deep discharge protection:
- Protection type:
- Protection class:

Note: Protect pump against frost!

11. Safety Note:

DANGER for children! Keep your children away from the swallowable small parts (standpipe and sprinklers) and the packaging material. Danger of suffocation! WARNING: tripping hazard! Lay the connecting cable so that it won't constitute any tripping hazard!

CAUTION material damages! If you set up the solar module without module retainer, please pay attention to adequate stability! The solar module may be damaged by toppling over or impacts of foreign bodies.

Rechargeable battery notes

- Rechargeable batteries should not be played with by children. Never leave rechargeable batteries lying around; they could be swallowed by children or pets.
- Rechargeable batteries must never be short-circuited, disassembled or thrown into fire. This leads to a danger of explosion!
- Leaking or damaged rechargeable batteries can cause chemical burns when they come into contact with skin. For this reason, please make use of suitable protective aloves.
- Rechargeable batteries should only be replaced by structurally identical rechargeable batteries from the same manufacturer. Normal batteries must not be used since these are not rechargeable.
- Make sure the rechargeable batteries are inserted with the correct polarity.
- For long periods of time of non-use (for example, storage), remove the inserted rechargeable batteries to avoid damages via the leaking rechargeable batteries.

12. Disposal

a) Product



Electronic devices are recyclable waste and must not be disposed of in the household waste

At the end of its service life, dispose of the product according to the relevant statutory regulations.

Remove any inserted rechargeable batteries and dispose of them separately from the product.

b) Rechargeable batteries



You as the end user are required by law (Battery Ordinance) to return all used rechargeable batteries. Disposing of them in the household waste is prohibited.Contaminated rechargeable batteries are labelled with this

symbol to indicate that disposal in the domestic waste is forbidden. The designations for the heavy metals involved are: Cd = Cadmium, Hg = Mercury, Pb = Lead (name on rechargeable batteries, e.g. below the trash icon on

the left).

Used rechargeable batteries can be returned to collection points in your municipality, our stores or wherever rechargeable batteries are sold.

You thus fulfil your statutory obligations and contribute to the protection of the environment.

Manufacturer / Importer

esotec GmbH - Gewerbegebiet Weberschlag 9 - D-92729 Weiherhammer Tel.-Nr: +49 9605-92206-0 - Fax.-Nr: +49 9605-92206-10 - Internet: www.esotec.de

These operating instructions represent the technical status at the time of printing. Changes in technology and equipment reserved. © Copyright2013by esotec GmbH

max. 3.5 Wp solar module with 16 cell (nominal voltage approx. 8 VDC) 6 VDC max. 500 mA (3W) 6 V DC < 5.6 V battery voltage IP 44

-5°C to +40°C

NiMh 6 V/ 1200 mAh

