English

Installation, Operation and Maintenance Instructions

Mono PowerPak Generator Interface for Mono Solar Water Pumping Systems

MPA591/5

Mono®

One Company, Unlimited Solutions

Contents

Warranty

Warranty

1. The Mono PowerPak supplied by Mono Pumps is covered by warranty for a period not exceeding twelve months from the date of purchase.

2. Mono Pumps will make good by repair, or at their option, the replacement of faulty parts under warranty, providing always that:

   (a) The equipment was correctly installed and properly used in accordance with Mono Installations and Operating instruction and accepted codes of good engineering practice.

   (b) The claim for goods under warranty arises solely from faulty design, material or workmanship.

   (c) The repair is carried out in the Mono factory or by an authorised agent or distributor appointed by Mono Pumps.

   (d) All freight costs to and from the factory or repair agent are to be paid by the purchaser.

3. In the case of equipment or components which are not of Mono manufacture, but supplied by them, the warranty is limited to that extended by the suppliers or manufacturers of such equipment.

4. Mono Pumps warranty does not cover any of the following:

   (a) Claims for third party liability of damage caused by failure of any of the company's products.

   (b) Damage caused by abnormal operating conditions, war, violence, storm cataclysm or any other force.

   (c) Damage caused by the equipment being used for an application for which it is not recommended.

   (d) Damage caused by lightning, flooding, improper supply voltage, use with Solar Systems other than those listed in this Installations and Operating instruction, inadequate cooling or disconnection of a motor from the controller when the system is running from the Mono PowerPak.

5. The decision of Mono Pumps in relation to any claims or disputes over warranty is final.

6. The warranty is in lieu of all other warranties and conditions expressed or implied, written or oral, statutory or otherwise, which are hereby negated and excluded.

7. This express warranty does not exclude any conditions or warranty implied by the Trade Practices Act 1974 or separate State laws and in addition to any other right, that the original purchasers or any subsequent purchaser may have at law.

In case of claim please contact your Authorised Mono Dealer or contact Mono Pumps (Australia) Pty. Ltd.

Introduction

Introduction

The Mono PowerPak Gererator Interface has been designed to allow Mono Solar Water Pumping Systems to be operated from a 240 Volt 50 Hz AC Generators. This is useful during periods of peak water demand, long periods of cloudy weather, or when the system needs to be operated at night.

Your Mono Solar system consists of four key parts:

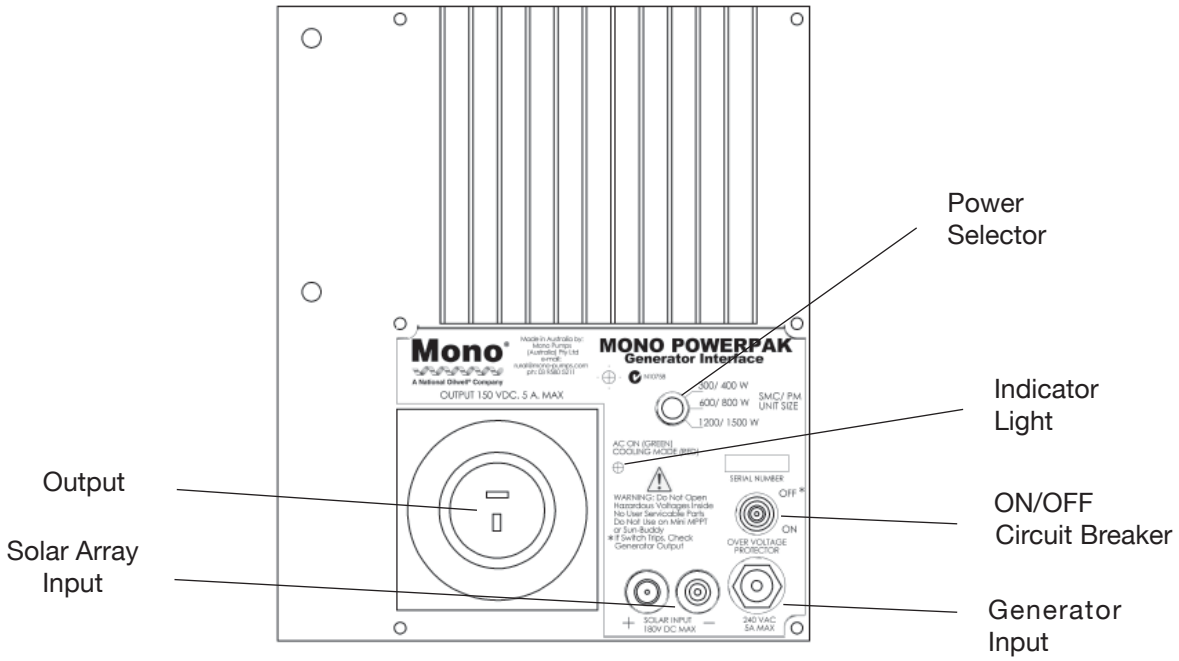
1. Solar array; either ground mount stationary, single post stationary or tracking.
2. Mono Pump and DC Motor assembly.
3. Electronic Control Box or Maximum Power Point Tracker (MPPT)
4. Optional additional accessory items such as pressure switches, float switches, etc.

The Mono PowerPak is fitted between the MPPT and the Solar Array.

The power supply converts the 240 V AC power from a generator into DC power that can be fed into the MPPT. When AC power is not available the power supply will allow Solar Power to pass through to the MPPT.

Features

1. Plug and socket connections to suit existing Mono Solar Water Pumping Systems.
2. Weather proof enclosure.
3. One power supply model that suits all Mono Solar systems (except the CP25 Sun-Ray and Sun Buddy Systems).
4. Automatic change over from AC to Solar when the generator is turned off.
5. Automatic compensation for different solar array configurations.
6. Internal temperature monitoring that reduces the power output if the operating temperature is too high.
7. Circuit Breaker over voltage protection.



Specifications

Product Coding

The part number for the Mono PowerPak is:
SUN AC POWERPAK

Specifications

AC Input:	240 ± 10% VAC 50 ± 10% Hz from a portable generator. Supplied with Australian standard 3 pin plug and lead.
Solar Input:	30 to 150 Volts DC 15 amps
Output Voltage:	30 to 150 Volts DC depending on the solar panel setting in the MPPT.
Suitable MPPT's:	300 or 400 Watt SMC's 600 or 800 Watt SMC's 1200 or 1500 Watt SMC's 400 Watt Power Masters 640 Watt Power Masters 800 Watt Power Masters 1500 Watt Power Masters
Weight:	6 kg
Dimensions:	220 mm x 300 mm x 252 mm
IP Rating:	IP65

Recommended Generator Sizes

All settings - 1 kVA minimum

Mono recommend that a dedicated generator be used with this Power Supply. The generator must produce a stable output voltage. If the output voltage from the generator is too high it will result in unreliable operation of the power supply.

The HONDA EU10i petrol generator is recommended for use with the Mono PowerPak.

Generator Precautions

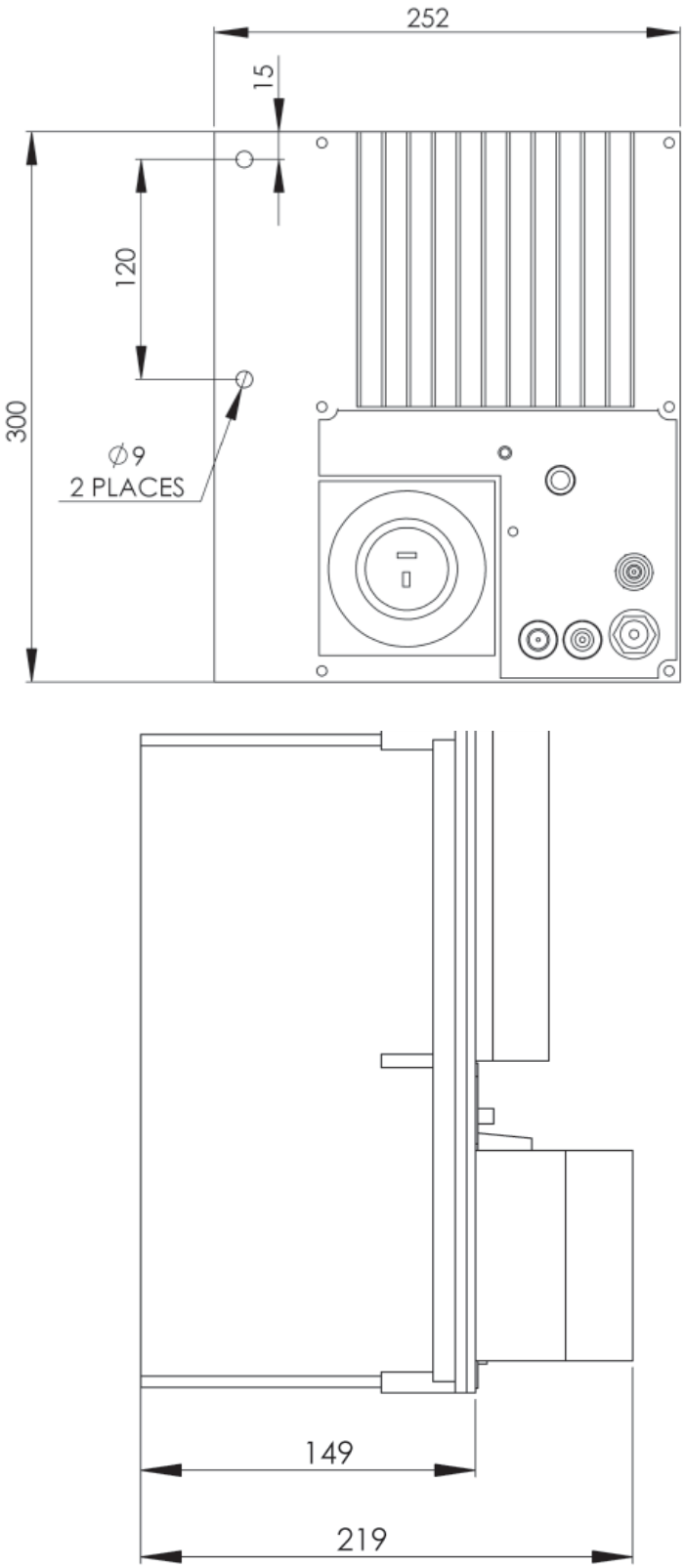
Do not start the generator while the Mono PowerPak is switched on. First start the Generator, then switch the Mono PowerPak on once the generator has stablised.

If the generator does not run down smoothly when it runs out of fuel, do not leave the Mono PowerPak switched on under this condition.

Do not connect the Mono PowerPak if your generator hunts during normal operation.

Specifications

Dimensions



Installation

Installation

1. The unit should be installed off the ground to prevent surface runoff water from damaging the unit and to allow adequate air flow. In operation the surface of the power supply can be quite hot. If the unit becomes too hot it will reduce its power output or turn off. To minimise this it is advisable to install the power supply under the shade of the array.

   For ground mounted array's, the AC Power Supply Controller should be positioned under the array and elevated slightly to keep above ground run off water.

2. Turn off the solar system at the controller and array.

3. Unplug the lead connecting the controller to the solar array. Connect this 2 pin plug into the socket on the AC Power Supply. Ensure that the screwed collar is tightened to prevent water entering the socket.

4. Plug the 2 pin plug on the lead from the Power Supply into the 2 pin socket on the array. Ensure that the screwed collar is tightened to prevent water entering the socket.

5. Plug the 3 pin plug on the other lead from the Power Supply into the generator outlet.

The system is now ready for operation.

It is recommended that the Power Supply be stored under cover if it is not going to be used for some time. This will reduce the amount of dust build up on the unit and protect the leads from attack from birds etc, and protect the 240 volt plug from corrosion.

Warnings

There are high voltages used inside the AC Power Supply . No user serviceable parts are inside in Power Supply. Do not open the enclosure.

Never unplug the motor from the SMC or Power Master while the system is operating. Doing so could result in damage to either the SMC, Power Master or AC Power Supply.

Never operate the system with the AC Power Supply set at the incorrect power level. Operating the system with the output of the Power Supply set too high will damage the MPPT.

<u>Do not</u> use AC Power Supply Controller with CP25 Sun-Ray or Sun Buddy systems. These systems use Low Voltage controllers which will be damaged if connected to the power supply.

Installation

Operation

To operate the system follow these steps.

1. Set the Power Level of the Controller via the power selector switch, to suit the appropriate solar system.

PowerPak Setting	MPPT Size	Range
300W	300 or 400 Watt SMC's	Sun-Sub
600W	600 or 800 Watt SMC's	Sun-Sub
1200W	1200 or 1500 Watt SMC's	Sun-Sub
300W	400 Watt PowerMasters	Sun-Ray / Sun-Downer
600W	640 Watt PowerMasters	Sun-Ray
600W	800 Watt PowerMasters	Sun-Ray / Sun-Downer
1200W	1500 Watt PowerMasters	Sun-Ray / Sun-Downer

2. Turn on the solar array at the isolator switch (if fitted).
3. Turn on the SMC or Power Master controller.
4. Start the external generator.
5. Turn on the AC power supply

Whenever AC power is available to the Power Supply, the solar array will be electrically disconnected from the MPPT. When the generator is turned off, the Power Supply will connect the MPPT back to the solar array.

Indicator Light

There is one indicator light fitted to the Mono PowerPak unit.

The power light should be on Green whenever the unit is turned on and connected to 240 Volt AC power.

The AC power light will turn RED if internal temperature of the unit exceeds an acceptable temperature. The unit will shut down and then restart when the temperature has reduced to a safe level.

Maintenance

There are no user serviceable parts inside the AC Power Supply. If the system stops working, check the ON/OFF switch on the front panel.

This switch is designed to protect the power supply from high voltages from the generator. If the switch trips, the generator needs to be checked to ensure that output voltage is correct.

There are no fuses inside the enclosure.

Warning: Do not continually reset the switch to ON if the switch is tripping. This may damage the overvoltage protection circuitry. The gererator output voltage must be checked and adjusted back to 240VAC.

Maintenance Schedule

Every 6 months the unit should be cleaned to remove excess dust. Dust build up on the box and heat sink will increase the operating temperature of the unit.

Regularly check the condition of the leads and plugs. Return the unit to Mono Pumps or your dealer if any of the leads are damaged.

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