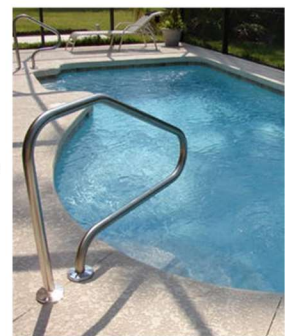


Alex *Solar*

the world's

LEADING SOLAR swimming pool
single phase system



GENERATION ONE SOLAR SWIMMING POOL SINGLE PHASE CONTROLLER - INSTALLATION MANUAL

Manufactured & supplied by	HH Electrical t/a Alex Pumps
Physical Address	Boknesstrand Eastern Cape South Africa
Postal Address	P.O. Box 146 Alexandria 6185
Tel/Fax	046 654 0109
Email	hhalexosolar@gmail.com
Web	www.alexosolar.co.za

Index

DESCRIPTION OF WORKS:	3
PRECAUTIONS.....	3
DANGER.....	3
BEFORE SERVICING THE UNIT.....	3
WARNING.....	3
HOW THE SOLAR SWIMMING POOL WORKS	4
STEPS FOR SETTING UP THE G1 SOLAR SWIMMING POOL CONTROLLER	4
EARTHING.....	4
SPECIFICATIONS – SOLAR CONTROLLER	5
FAULTS WHICH CANNOT BE RESET AUTOMATICALLY	6
FAULTS – CAUSES – SOLUTIONS	6
SOLAR CONTROLLER INSTALLATION DIAGRAM	7

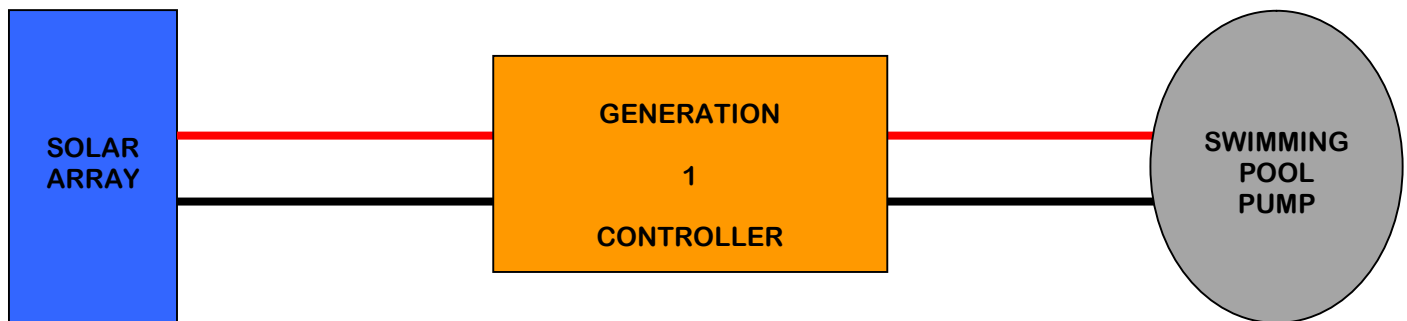
DESCRIPTION OF WORKS:

Solar panels supply power to your G1 Solar Swimming Pool Pump Controller. The Controller is fitted with power tracking and speed control. This complete system drive's the swimming pool pump without the use of any battery back-up or battery use in operation.

The above system works with:

- Solar power only;
- AC input only;
- or sharing both solar power and AC input but prioritising solar power.
- State of Art Design. No Earth fault tripping
- Safety DNA design.

Image 1: Basic setup



PRECAUTIONS

DANGER

- Hazard of electric shock explosion or arc flash.
- Read and understand this manual before installation.
- Installation adjustment repair and maintenance must be performed by qualified professional personnel.
- The user is responsible for compliance with all international and national electrical code requirements with respect to grounding of all equipment.
- Do not touch any parts inside the panel with voltage present because some parts contain high voltage

BEFORE WORKING ON THE CONTROLLER

- Before working on the unit parts of electrical panel, solar panels or swimming pool pump, switch off, the main circuit breaker and earth leakage unit inside the panel and wait 5 minutes for the DC capacitors to discharge.

WARNING

- Solar panel voltage open voltage can reach values up to 400v DC.
- Install and close all covers.
- Failure to follow these instructions will result in death or serious injury.
- Any changes made to the parameter settings must be performed by qualified personnel.
- Do not install or operate damaged equipment or equipment that appears to be damaged.
- Electrical equipment should be installed, operated, serviced and maintained only by qualified personnel.

- No responsibility is assumed by HH Electrical for any consequences arising out of the use of this product.
- **Do not run this controller without load**

HOW THE SOLAR SWIMMING POOL PUMP CONTROLLER WORKS

- In the morning and in the afternoon, the inverter will decide if there is enough power to drive the swimming pool pump.
- This will happen automatically in time periods between 6-10 minutes.
- During the day, if there are clouds, it will drop the power output to the swimming pool pump and increase again as the clouds disappear.
- Too many clouds will stop power to the swimming pool pump but on the auto time period check for enough power to let the controller start again.
- The controller will do all the decisions in auto mode.
- NB!! An AC input is available to do power sharing where the controller will first use all the solar power and then the rest out of the AC input.

STEPS FOR SETTING UP THE G1 SOLAR SWIMMING POOL PUMP CONTROLLER

1. Install solar panels as per your manual received. Do not plug panels into each other
2. Mount Solar Controller as close as possible to the swimming pool pump and connect the positive and negative wire to the circuit breaker inside the Solar Controller.
3. Connect your Swimming Pool Pump
4. Connect the AC supply to the Earth Leakage (Do not switch on)
5. Plug solar panels into each other
6. Switch circuit breaker and earth leakage unit on.
7. Your installation is now complete. Enjoy your solar Swimming Pool.

EARTHING

1. Make sure all metal parts are earthed to the common earth inside the controller.
2. All earthing's must be done according to electrical standards.
3. Check all mechanical and electrical connections before starting

SPECIFICATIONS – SOLAR CONTROLLER

Inverter output	Drive rating
Inverter efficiency	97.5%
Ac amps	Drive rating
Ac voltage	Drive rating
DC voltage	Min: 283v DC full load Max: 400v DC open circuit
24v DC controls	100ma
Frequency/ voltage control	Auto
Thermal protection	Yes
Current limit	Yes
Auto sleep	Yes
Auto wake up	Yes
Power tracking	Yes
AC fault tripping	Earth leakage unit Yes
Solar tripping	Low sensing fault trip
No earth present AC	Low mA fault trip

Soft start	Yes
Soft stop	Yes
Winter hours	+/- 5.5 hours
Average hours yearly	+/- 6.75 hours
Automatic restart	Yes
Inverter overheating protection	Yes
Overload protection	Yes
Under voltage	Auto stop
Lcd display	Yes
Carry in warranty	1 year
Low idle current	Yes
Emc filter	Yes
Splash Proof Enclosure	Yes

FAULTS WHICH CANNOT BE RESET AUTOMATICALLY

The cause of the fault must be removed before resetting by switching off and then on again.

FAULT	PROBABLE CAUSE	REMEDY
C r F	*Load relay control fault or charging resistor damaged	*Replace the drive
E E F EEPROM fault	*Internal memory fault	*Check the environment (electromagnetic compatibility) *Replace the drive
I n F Internal fault	*Short-circuit on the 10v power supply	*Check the circuits connected to the 10 V *Check the wiring of inputs AI1 and AI2 and the connection to the connection to the RJ45 connector. *Check the environment (electromagnetic compatibility) *Replace the drive
O C F Over current	*Incorrect parameters in the Set- and drC- menus *Inertia or load too high	*Check the Set- and drC- parameters *Check the size of the pump
S C F Short Circuit	*Short-Circuit or earthing at the drive output *Significant earth leakage current at the drive output	*Check the cables connection the drive to the pump and pump insulation *Reduce the switching frequency
t n F	*Pump not connected to the drive	*Use the L or the P ratio

FAULTS – CAUSES – SOLUTIONS

Faults which can be reset with the automatic restart function, after the cause has disappeared. These faults can also be reset by switching the drive off and on again or via a logic input (rSF parameter in the FLt-menu)

FAULT	PROBABLE CAUSE	REMEDY
C O F CANopen fault	*Interruption in communication on the CANopen bus	*Check the communication bus *Please refer to the product-specific documentation
E P F External fault	*Pump or wiring faulty	*Replace
L F F	* Phase loss	* Check connection at drive output * Check connection at pump
O H F Drive overheated	*Drive temperature too high	*Check the pump load, the drive ventilation and the environment. Wait for the drive to cool down before restarting.
O L F	*Pump faulty	Replace
O S F Overvoltage	*Line voltage too high *Disturbed line supply	*Check the line voltage
S L F Modbus fault	*Interruption in communication on the modbus bus *Remote terminal enabled (LCC=Yes)and terminal disconnected	*Check the communication bus *Please refer to the product-specific documentation *Check the link with the remote terminal

Faults which can be reset as soon as their cause disappears

Fault	Probable cause	Remedy
C F F Configuration fault	*The current configuration is inconsistent	*Return to factory settings or call up the backup configuration, if it is valid. See the FCS parameter in the I-O, drC-, CtL- or Fun-menu.
C F I Configuration fault via Serial link	*Invalid configuration The configuration loaded in the drive via the serial link is inconsistent	*Check the configuration loaded previously. *Load a consistent configuration
U S F Undervoltage	*Line supply too low *Transient voltage dip *Damaged load resistor	*Check the voltage and the voltage Parameter USF trip threshold. *Replace the drive

EXAMPLE OF G1 SWIMMING POOL INSTALLATION

