



**SOLAR PRIORITY CONTROLLER
(AUTOMATIC POWER MANAGEMENT SYSTEM)**

USER MANUAL / WARRANTY CARD

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Dear Customer,

Thank you for buying our new product. In doing so you have purchased an innovative and a quality product with unique features according to the latest available technical standards. It comes with a number of outstanding features. Please read the manual before using this product, This manual gives important recommendations for installing Priority with and without an external Charge controller.

Automatic Power management System:

The solar Priority Controller is a fully automatic solar charge controller with Automatic Power management system which is ideal for controlling normal inverter or UPS to solar inverter. Equipped with LCD which displays the system recognition, Battery Voltage, Panel Voltage, PV availability & Grid usage.

When the available battery voltage is normal, the AC output to the UPS is cutoff and the UPS goes to the backup mode thereby not drawing any power from the AC grid. The UPS will turn on and start charging the battery for a short period of time between the desired voltage levels.

This System can be used in two typical applications for residential purpose and for Street light applications.

Key Features:

- It can be integrated with both MPPT/PWM Charge controller upto 48V / 40A.
- Pre defined & User defined Low and High cut off using DIP switch.
- Equipped with LCD Display.
- Available with both Internal and External Charge Controller.
- The status LCD display keeps the customer updated with the running product.
- Mechanical Dimensions are more compact, making it easier to install in equipment enclosures.

Functions:

- Automatic Recognition 12V/ 24V / 36V / 48V.
- High Sensing Accuracy.
- Battery Over voltage and High Voltage Protection.
- Reverse polarity Protection
- Surge & Transient protection.

General Safety Precautions

Safety Precautions to be followed while Installation, Operation & Maintenance, Incorrect installation or use may result in risk of electric shock or fire.

This manual contains important installation, set up and safe operating instructions.

- Please Do not disassemble or attempt to repair Phocos products. Phocos controllers does not contain any user serviceable parts.
- Do not operate with damaged or substandard wiring. Make sure all the wiring is in good condition and is not undersized.
- Working in the vicinity of lead-acid batteries is dangerous. Batteries produce explosive gasses during normal operation, to reduce risk of battery explosion, follow these instructions and those published by battery manufacturer and manufacturer of any equipment you intend to use in vicinity of battery.
- If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters eye, immediately flood eye with running cold water for at least 10 minutes and get medical attention immediately.
- NEVER SMOKE or allow a spark or flame in vicinity of battery.
- Be extra cautious to reduce risk of dropping metal tool onto battery. It might spark or short circuit battery or other electrical part that may cause explosion.
- Remove personal metal items such as rings, bracelets and watches when working with a lead-acid battery. A lead-acid battery can produce a short circuit current high enough to weld a ring or the like to metal, causing a severe burn.
- Explosive battery gasses may be present during charging. Be certain there is sufficient ventilation to release the gasses.
- Select the system cables according to 3A/mm² current density.
- Please make sure the battery inter connections (Series Parallel in case of need) were done properly as per system voltage requirement.
- Please keep the APMS away from kids
- Remove all sources of photovoltaic, battery, Inverter before servicing or installing.

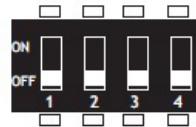
Technical Specifications:

Available Model	:	Internal Charge controller	External Charge controller
Charge controller type	:	10/20/40A	Upto 40A
Nominal Battery Voltage	:	12/24/36/48V	
Low Voltage Battery Cut off *	:	11/23.6/35.2/47V	
High Voltage Battery Cut off*	:	13.4/27.4/39/52.1V	
Maximum Battery Voltage	:	60V	
Grid Input Voltage	:	230V / AC	
Inverter Rating to be connected	:	Upto 3.5 KVA	
Operating Condition	:	0°C to +50° C	
Storage Temperature	:	- 20°C to +60° C	
Battery type	:	Lead Acid / VRLA /Sealed Lead Acid (Gel)	
IP rating	:	IP 21	
Dimensions (L x W x H)	:	220 X 190 X 60	220 x 105 x 60

* User Defined HVD & LVD using DIP Switch for various system configuration.

User-Defined options using DIP switch for variable configuration.

The Solar Priority Controller comes with 4 pin DIP switches for User defined HVD & LVD of the Battery used with the system. The first two pin indicates the Low Voltage Disconnect and the next two pin indicates the High Voltage Disconnect for different System voltage.



For 12V System

LVD	Switch - 1	Switch - 2	HVD	Switch - 3	Switch - 4
11.0	ON	ON	13.4	ON	ON
11.4	ON	OFF	13.6	ON	OFF
11.8	OFF	ON	13.8	OFF	ON
12.2	OFF	OFF	14	OFF	OFF

For 24V System

LVD	Switch - 1	Switch - 2	HVD	Switch - 3	Switch - 4
22.0	ON	ON	27.4	ON	ON
22.8	ON	OFF	27.5	ON	OFF
23.6	OFF	ON	27.6	OFF	ON
24.4	OFF	OFF	27.8	OFF	OFF

For 36V System

LVD	Switch - 1	Switch - 2	HVD	Switch - 3	Switch - 4
33.0	ON	ON	39	ON	ON
34.2	ON	OFF	39.2	ON	OFF
35.4	OFF	ON	39.5	OFF	ON
36.6	OFF	OFF	39.6	OFF	OFF

For 48V System

LVD	Switch - 1	Switch - 2	HVD	Switch - 3	Switch - 4
44	ON	ON	52.1	ON	ON
45.6	ON	OFF	52.3	ON	OFF
47.2	OFF	ON	52.5	OFF	ON
48.8	OFF	OFF	52.7	OFF	OFF

Please Ensure that you are using the corresponding switch for the corresponding System voltage, irregular usage of the DIP switch will result in malfunction.

LCD indications of the system for various configurations

Battery Status	System Recognition	Grid availability	Charging priority	Panel availability
Full	12/24/36/48V	OFF	PV	ON
Low Batt	12/24/36/48V	ON	PV + GRID	ON
Full	12/24/36/48V	OFF	PV	ON

LCD indications while start up:

Picture:1

SYS: 12 V	GRID: ON
BAT: 11.5V	PV: ON

Picture: 2

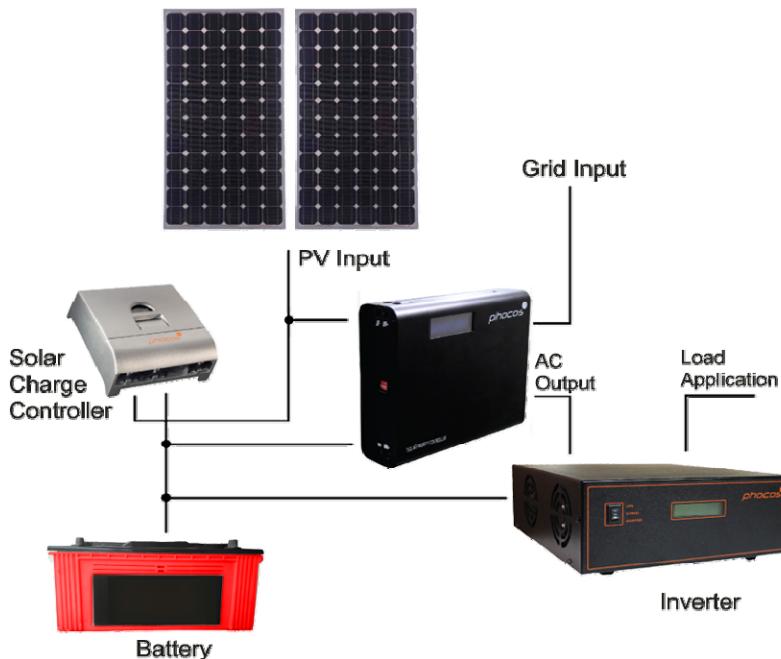
Charging Priority
Solar/Grid/Solar+Grid/None

Connection Procedure for Residential Purpose:

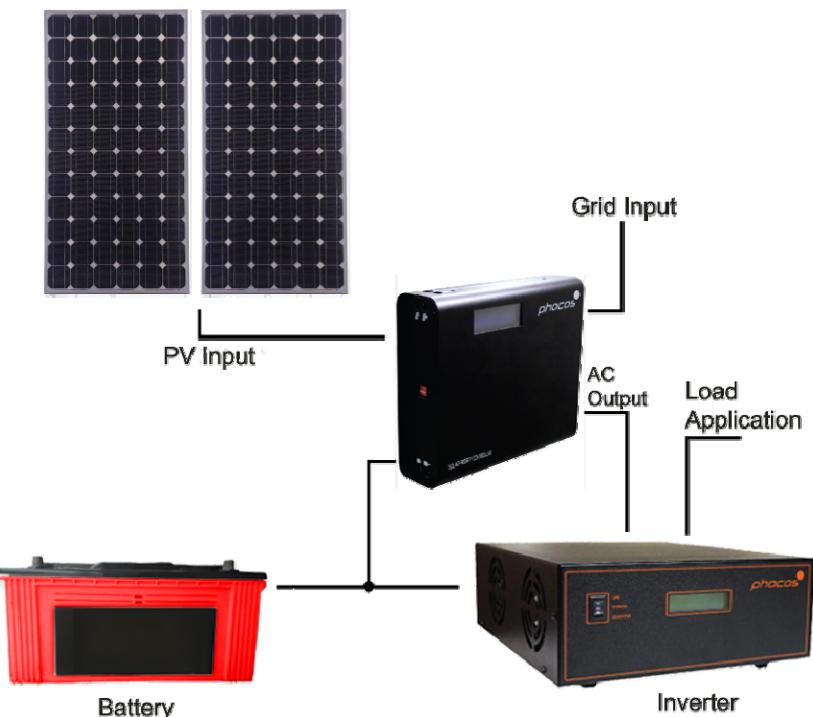
- ❖ Connect the Panel and Battery through a Charge controller for APMS with External CC, (Note: In case of APMS with Internal CC, It will be directly connected internally.)
- ❖ Connect the phocos APMS with panel and battery.
- ❖ The Grid input of APMS is connected with the grid and AC output is connected with the inverter input and then to load applications through inverter.
- ❖ As far as solar is available and the battery is fully charged the priority will block the grid . The load and battery will be taking power from the Solar.
- ❖ Only when the battery goes below the lower cut off , the priority controller will allow the AC grid to charge the battery, Once the battery is fully charged the controller cuts the grid and the load draws power from the Battery.
- ❖ Through this we can efficiently use solar power and reduce the electricity bills.

* Charge Controller is no need in case of APMS with internal charge controller system.

APMS with External Charge Controller:



APMS with Internal Charge Controller:



For APMS with External Charge Controller the panel wire and battery wire thickness should be 1.5sq.mm

For APMS with Internal Charge Controller the panel wire and battery wire thickness refer controller user manual.

WARRANTY:

Warranty is provided by phocos, and covers defects in workmanship and materials in your product. This warranty period lasts for 1 year from the date of purchase at the point of sale to you and, require proof of purchase to make warranty claims. This Limited Warranty is transferable to subsequent owners but only for the unexpired portion of the Warranty Period. Subsequent owners also require proof of purchase.

In any warranty claim, dated proof of purchase must accompany the product and the product must not have been disassembled or modified without prior written authorization by phocos.

Proof of purchase may be in any one of the following forms:

- ✓ The dated purchase receipt from the original purchase of the product at point of sales.
- ✓ The dated invoice or purchase receipt showing the product exchanged under warranty.

This Limited Warranty does not cover normal wear and tear of the product or costs related to the removal, installation, or troubleshooting of the customer's electrical systems. This warranty does not apply to and phocos will not be responsible for any defect in or damage to:

- ✓ The product if it has been misused, neglected, improperly installed, physically damaged or altered, either internally or externally, or damaged from improper use or use in an unsuitable environment;
- ✓ The product if it has been subjected to fire, water, generalized corrosion, biological infestations, or input voltage that creates operating conditions beyond the maximum or minimum limits listed in the product specifications including high input voltage from generators and lightning strikes.

- ✓ The product if its original identification (trade-mark, serial number) markings have been defaced, altered, or removed.

Return Material Authorization Policy:

Before returning a product directly to phocos, you must obtain a Return Material Authorization (RMA) number and the correct factory "Ship To" address. Products must also be shipped prepaid. Product shipments will be refused and returned at your expense if they are unauthorized returned without an RMA number clearly marked on the outside of the shipping box, if they are shipped collect, or if they are shipped to the wrong location. When you contact phocos to obtain service, please have your instruction manual ready for reference and be prepared to supply:

- The serial number of your product.
- Information about the installation and use of the unit.
- Information about the failure and/or reason for the return.
- A copy of your dated proof of purchase.
- Package the unit safely, preferably using the original box and packing materials.
- Please ensure that your product is shipped fully insured in the original packaging or equivalent. This warranty will not apply where the product is damaged due to improper packaging.
- A return address where the unit can be shipped. Post office boxes are not acceptable.
- A contact telephone number where you can be reached during work hours.
- A brief description of the problem.

Out of Warranty Service:

If the warranty period for your product has expired, if the unit was damaged by misuse or incorrect installation, if other conditions of the warranty have not been met, or if no dated proof of purchase is available, your product may be serviced at actual repair case only.

Note : Because of a policy of continuous product improvement, the specifications are subject to change without notice.

WARRANTY CARD:
OWNERS COPY:

MODEL NUMBER:

SERIAL NUMBER:

PURCHASE DETAIL (DATE / INVOICE NUMBER):

DEALER / DISTRIBUTOR SEAL / SIGNATURE:



WARRANTY CARD:
MANUFACTURER COPY (PLEASE SEND THE SIGNED COPY BACK TO US):

MODEL NUMBER:

SERIAL NUMBER:

PURCHASE DETAIL (DATE / INVOICE NUMBER):

DEALER / DISTRIBUTOR SEAL / SIGNATURE:



Note: The manufacturer hold the right to change the data sheet without any prior notice
