



Charge controller for use with the POWERplus Alligator

This solar charge controller can be used for charging lead acid (flood, AGM, GEL) and Lithium-Ion batteries using the POWERplus Alligator solar charging cells.

The charge controller is not suitable for Ni-MH or other types of batteries.

Before charging:

- Make sure your battery has enough voltage for the controller to recognize the battery type before connecting the solar charger to the battery.
- Keep cables to and from the solar charger as short as possible, to minimize energy loss.
- Never connect other charging devices to the charge controller.
- The controller will be hot during operation. Please place the controller on a smooth, clean and well ventilated surface.

Product features:

- Build-in micro controller
- Big LCD display
- Fully 3-stage PWM charge management
- Build-in short-circuit, open-circuit, reverse and overload protection

Connection

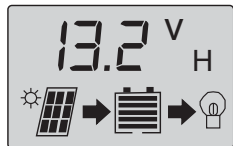
- 1) Connect the battery plus and minus with the charge controller plus and minus (2 in fig. 1)
- 2) Connect the solar cell (f.e. POWERplus Alligator) plus and minus to the charge controller plus and minus (1 in fig. 1)
- 3) Connect the plus and minus of the 12V DC device which you want to power with the charge controller (3 in fig. 1)

When you want to deinstall the configuration, use the reverse order to disconnect.

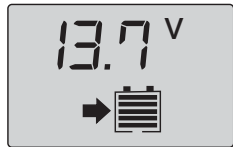
WARNING: an improper sequence of installing or deinstalling can damage the charge controller !

LCD display

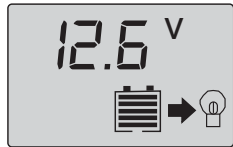
Press menu button (4 in fig. 1) to switch between the different screens



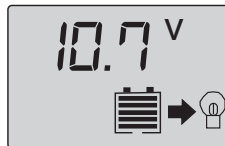
- 1**
Main display
The arrows are flashing when energy flows from solar cell to battery and/or from battery to energy consuming device.



- 2**
Shows the float voltage (default, adjustable)
This is the voltage at which a battery is maintained after being fully charged



- 3**
Discharge reconnect (default, adjustable).
Shows at which battery voltage the charge controller will charge the battery again.



- 4**
Discharge stop (default, adjustable)
Shows the battery voltage which is set to stop the charge controller providing power to the connected device.



- 5**
Work mode / Timer function
24H: load output 24 hours
1-23H: hours of load output after sunset
0H: load output from dusk to dawn



- 6**
Battery type
Lead acid: b01 sealed | b02 gel | b03 flood
Lithium-Iron: b04 4 strands | b05 5 strands
Lithium-Ion: b06 3 strands | b07 4 strands

Button functions:

The charge controller has 3 buttons:

- Menu button (4 in fig. 1)
- Up button (6 in fig. 1)
- Down button (5 in fig. 1)

To change (default) settings, go to the screen which you want to change by pressing the menu button (4 in fig. 1). Long press the menu button to enter the setting and use the up-button (6 in fig. 1) or down-button (5 in fig. 1) to select the requested number. Long press the menu button (4 in fig. 1) again to save the setting and exit.

Manually turn on / off the load

Press the down-button (5 in fig. 1) at the main display to turn off and on the load.

Technical parameters

System voltage	12V/24V auto		
Charge current	20A		
Discharge current	20A		
Max. solar input	<50V		
Operating temperature	-35~+60° C		
<i>Lead acid batteries</i>			
Equalization voltage	Sealed (b01): 14.4V Gel (b02) 14.2V Flood (b03) 14.6V		
Float charge	13.7V (default, adjustable)		
Discharge stop	10.7V (default, adjustable)		
Discharge reconnect	12.6V (default, adjustable)		
Lithium batteries	Lithium-Iron	Lithium-Ion	
Constant charging V	3.4V*4/*5	4.2V*3/*4	
Recovery charge V	3.4V*4/*5	4.0V*3/*4	
Low voltage protection	2.6V*4/*5	3.1V*3/*4	
Low voltage recovery	2.9V*4/*5	3.7V*3/*4	

USB outputs

The charge controller has a built-in double USB output (7 in fig. 1).

Connect your USB device directly to one of the 2 USB output ports (5V/2A). Please note the USB-ports are only active when the charge controller is connected to the battery.

Trouble shooting

- Load icon (arrow) off
Wrong battery setting
Battery low
- Load icon (arrow) slow flashing
Overload
- Load icon (arrow) fast flashing
Short circuit protection
- Power off
Battery too low
Reverse polarity

Set right battery type
Replace or recharge battery

Reduce load wattage

Auto reconnect

Check battery
Check polarity



Fig. 1

