POWERTECH

Dual Battery Solar Controller

USER MANUAL

Ideal for RVs, Caravans, Boats, Buses and more

MP-3760

10A, 12/24VDC Auto

NOTES: For use with solar panels only

INTORDUCTION

We have many solar battery charge controllers - up to 50A - but they only work on one battery bank. This unit will charge TWO house battery banks or one house bank and your motor start battery as well. Too often the motor start battery is forgotten if you are camped in the one spot for a long time.

Features:

- Will charge 2 completely separate battery banks at the same time or even single battery.
- Works with 12V or 24V systems
- Highly efficient PWM (Pulse-width modulation) charging system
- Provides up to 10A charging current (Limited by size of your solar panels)
- Electronic protection from over charging short circuit or accidental reverse battery connection

Specifications:

- Max solar input voltage: 30V (12V system), 55V (24V system)
- Battery input voltage range: 8-15V (12V system), 8-30V (24V system)
- Max output current (both channels): 10A
- Overnight self-consumption: 4mA
- Dimensions: 153 x 76 x 37mm

TECHNICAL INFORMATION

Description	Sealed battery	Gel battery	Flooded battery
Equalize charging voltage	14.6V	—	14.8V
Boost charging voltage	14.4V	14.2V	14.6V
Float charging voltage	13.8V	13.8V	13.8V
Maximum solar voltage	30V（12V System）55V（24V System）		
Battery voltage range	8~15V		
Boost time	2 hours		
Self-Consumption	4mA at night, 10mA during charging		
Remote connection	8-pin RJ-45		
Temp. compensation	-30mV/12V/℃		
Terminals	4mm^2		
Temperature	-35℃ to +55℃		
Net weight	250g		

Note: all the data is for 12V, for 24V, please use 2x.

Major Features of Dual-Battery controller
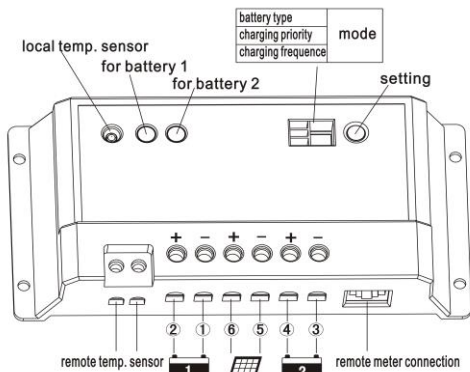
SET UP

(Note: Connect the components in sequence 1 to 6, refer Diagram: Major Features of Dual-Battery controller)

Connect with Battery #1 (Step 1 and 2)

Connect with Battery #2 (Step 3 and 4)

Connect with the Solar Panel (Step 5 and 6)

Warning

Incorrect connection of Battery can damage the regulator
If used for single battery systems skip steps 3 and 4

FEATURES

Remote Temp. sensor
A connection point for RTS (optional) to remotely monitor battery temperature

Local Temp. sensor
Measures ambient temperature. Battery regulation is adjusted accordingly

For Battery 1
Provides Charging, Battery status and Errors

For Battery 2
Provides Charging, Battery status and Errors

Remote meter connection

A communication port for the remote meter (Not Included)

Note: In absence of RTS, the controller calculates the data received from local temp. sensor. The controller will switch to RTS reading automatically when RTS is connected.

SETTING MODE

battery type	
charging priority	mode
charging frequence	

- The Regulator automatically detects Battery voltage
- 24V battery must have 24V solar panels and 12V battery must have 12V panels

1. Press Set button to begin mode selection process
2. Press Set to toggle through: Battery Type, Charge Priority, Charge Frequency
3. Once suitable mode is selected, press and hold Set button for 5 seconds, until LED and setting begins to flash, to change the setting for the selected mode.
4. Press the Set button to toggle through settings
5. Once the desired setting is selected, leave Set button for 5 seconds to save setting and return to mode select process
6. Once all modes have been set, leave the Set button for 5 seconds and the mode select process will end.

MODES

1. 1st LED is for Battery Type

Setting	Battery type
1	Sealed battery
2	Gel battery
3	Flooded battery

2. 2nd LED is for Charging priority, only set the percentage you want for Battery #1, the controller will automatically calculate for Battery #2.

Setting	Battery #1 charging	Battery #2 charging
0	0%	100%
1	10%	90%
2	20%	80%
3	30%	70%
4	40%	60%
5	50%	50%
6	60%	40%
7	70%	30%
8	80%	20%
9	90%(pre-set)	10%

Note: During normal charging, the controller will divide the charging as per the settings. Once Battery #1 is fully charged, more charge will go to Battery #2. Once Battery #1 is in low voltage and the setting will automatically revert to priority setting.

When the controller detects only Battery #1, all power will be sent to battery #1 automatically.

3.   3rd LED is for charging frequency.

Setting	PWM Charging frequency
0	25Hz (pre-set)
1	50Hz
2	100Hz

TROUBLESHOOTING

1. **LED flash (multiple flashes per second):**
   Short circuit; check the solar panel and battery to make sure they are corrected properly
2. **LED flash (1 flash per second):**
   Fully charged
3. **LED ON:**
   Charging
4. **LED flash (1 flash every 3 seconds):**
   Battery connected, no charge current
5. **LED OFF:**
   No connection or over voltage

MECHANICAL DRAWING

146(5.75)
153(6.02)
37(1.46)
50(1.97)
76(3.00)
4Mountingholes
D=4.0(0.16)
mm (inches)
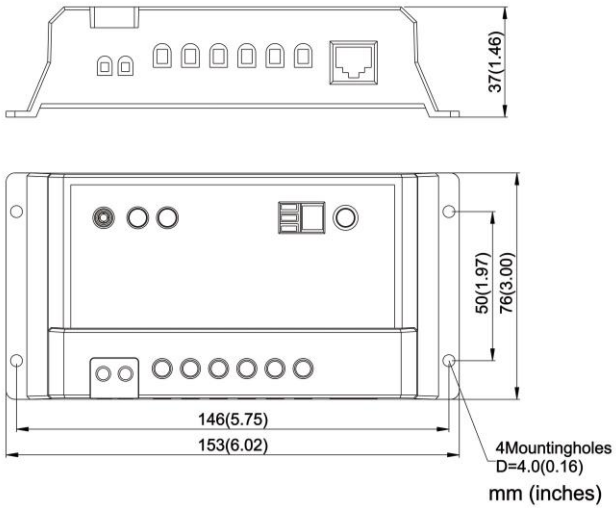
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320 Victoria Road
Rydalmere NSW 2116 Australia
Tel: 1300 738 555
Fax: 1300 738 500
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