

# How to set up a solar “battery maintenance” system for your Lithium Battery

Offered by Vince Cattolica, KA7JOI

**\*Important Note:** While this entry to the Kachina website is offered by Vince Cattolica, the information offered here was discovered in conversation with Battle Borne Batteries. **Do your own confirming research. Vince takes no responsibility for how this information is used**



If your Lithium battery **has its own BMS**, battery monitoring system, and the solar charge controller you have **does not** have a setting for Lithium batteries, but does have one for AGM batteries, **you can use the AGM setting when charging your battery using solar power**. The difference in charging profiles will be that the AGM profile will charge the battery to a **slightly lower capacity** than a controller using a profile for lithium batteries. The charging voltage will be 14.4 (AGM) vs. 14.6 (Lithium).



The following info relates to the battery charging system I have for off grid battery power and battery maintenance. I take no responsibility for how this information is used.

# Renogy charge Controller and the HQST Solar Panel 50 Watt 12 Volt Polycrystalline Portable, High Efficiency Module Off Grid PV Power for Battery Charging in Off Grid Applications

The solar panel:



**HQST**  
HIGH QUALITY SOLAR TECHNOLOGY

Email: [sales@myhqsolar.com](mailto:sales@myhqsolar.com)  
Web: [www.hqsolarpower.com](http://www.hqsolarpower.com)

Module Type:
HQST-50P

Max Power at STC ( $P_{max}$ )	50 W
Open-Circuit Voltage ( $V_{oc}$ )	21.1 V
Optimum Operating Voltage ( $V_{mp}$ )	17.6 V
Optimum Operating Current ( $I_{mp}$ )	4.32 A
Short-Circuit Current ( $I_{sc}$ )	3.04 A
Temp Coefficient of $P_{max}$	-0.40%/°C
Temp Coefficient of $V_{oc}$	-0.30%/°C
Temp Coefficient of $I_{sc}$	0.06%/°C
Max System Voltage	600VDC (UL)
Max Series Fuse Rating	15 A
Fire Rating	Class C
Weight	2.85kg / 6.27lbs
Dimensions	472x657x30mm/18.5x25.8x1.18in
STC	Irradiance 1000 W/m <sup>2</sup> , T = 25°C, AM=1.5

**WARNING:** This module produces electricity when exposed to light. Please follow all applicable electrical safety precautions. Only qualified personnel should install or perform maintenance work on these modules. Beware of dangerously high DC voltages when connecting modules. Do not damage or scratch the rear surface of the module. Follow your battery manufacturer's recommendation.









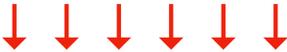


<b>Brand</b>	HQST
<b>Material</b>	Aluminum
<b>Item Dimensions</b>	25.87 x 1.18 x 18.58 inches
<b>Efficiency</b>	High Efficiency
<b>Maximum Voltage</b>	12 Volts

**About this item**

- **【High Efficiency】** Fully self powered off-grid system, maximizes system output by reducing mismatch loss. Portable back up power. Perfect for various off-grid applications that include 12 and 24 volts arrays, water pumping systems, signaling systems, charge batteries in RV, marine, trailer, cottage, cabin water pumping and other off-grid applications.
- **【Versatile】** HQST 50W 12V solar panel is perfect for 12 volt battery charging or multiple panels can be wired in series for 24/48 volt battery charging or for grid-tied applications. Includes connectors to plug into existing HQST solar system. Diodes are pre-installed in junction box and a pair of 1.2in 12AWG cables.
- **【Easy Installation】** Waterproof IP65 Rated Junction Box advanced water and dust proof level (complete protection against environmental particles and low pressure water jets). Easy Installation with pre-drilled hole.
- **【Durable】** Polycrystalline cells grade A solar cells; heavy duty anodized aluminum frame. Weatherproof Solar panels applies a more durable aluminum alloy frame. It's windproof and rainproof, but it can't be immersed in water.
- **【Reliability】** HQST provides complete after-sales service, easy-to-reach customer support.

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This link take you to the **50 watt solar panel** I am using:

[https://www.amazon.com/dp/B018BLW1R4?  
ref=ppx\\_yo2ov\\_dt\\_b\\_product\\_details&th=1](https://www.amazon.com/dp/B018BLW1R4?ref=ppx_yo2ov_dt_b_product_details&th=1)

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This link take you to the **10 amp Renogy charge controller**:

[https://www.amazon.com/gp/product/B07NPDWZJ7/  
ref=ppx\\_yo\\_dt\\_b\\_asin\\_title\\_o02\\_s00?ie=UTF8&th=1](https://www.amazon.com/gp/product/B07NPDWZJ7/ref=ppx_yo_dt_b_asin_title_o02_s00?ie=UTF8&th=1)

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This link take you to the **30 amp Renogy charge controller**:

[https://www.amazon.com/gp/product/B07G1PL1B9/  
ref=ppx\\_yo\\_dt\\_b\\_asin\\_title\\_o02\\_s00?ie=UTF8&psc=1](https://www.amazon.com/gp/product/B07G1PL1B9/ref=ppx_yo_dt_b_asin_title_o02_s00?ie=UTF8&psc=1)

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