

BLUESOLAR 100

BLUE SOLAR CHARGE CONTROLLER

FEATURES

- Max PV Solar Power from 440W to 1400W
- Rated charge current from 30A to 50A
- Automatically adjusts to 12V or 24V battery
- Intelligent battery management
- Flexible charge algorithm
- Ultra fast Maximum Power Point Tracking, MPPT
- In case of partial shading
- Over temperature protection



BlueSolar MPPT 100/30 & 100/50

Solar charge controller: A solar charger gathers energy from your solar panels, and stores it in your batteries. Using the latest, fastest technology, BlueSolar maximises this energy-harvest, driving it intelligently to achieve full charge in the shortest possible time. BlueSolar maintains battery health, extending its life. Models: 12/24 Volt

Ultra-fast Maximum Power Point Tracking (MPPT): By constantly monitoring the voltage and current output of your solar (PV) panels, MPPT technology ensures that every drop of available power is rinsed out of your panels, and harvested for storage. The advantage of this is most noticeable when the sky is partially clouded, and light intensity is constantly changing.

Remote Monitoring and Control Remotely control and monitor the extensive features of your BlueSolar MPPT charger by attaching a bluetooth dongle and pairing it with your smartphone or other device via VictronConnect. If your installation is connected to the internet Victron Remote Management Portal (VRM) provides access to the full power of your MPPT, anytime, anywhere; both services are free to use. For remote installations - even when there is no internet connection or phone signal nearby - you may be able to monitor your MPPT by bluetooth-pairing with a LoRaWAN (long-range wide area network) device, available optionally.

Advanced Maximum Power Point Detection in case of partial shading conditions: If partial shading occurs, two or more maximum powerpoints may be present on the power-voltage curve. Conventional MPPTs tend to lock to a local MPP, which may not be optimum MPP. The innovative BlueSolar algorithm will always maximize energy harvest by locking to the optimum MPP.

Outstanding conversion efficiency: No cooling fan. Maximum efficiency exceeds 98%

Flexible charge algorithm: Fully programmable charge algorithm, and eight pre-programmed algorithms, selectable with a rotary switch.

Extensive electronic protection: Over-temperature protection and power derating when temperature is high, PV short circuit and PV reverse polarity protection, PV reverse current protection.

Internal temperature sensor: Compensates absorption and float voltage temperature.

Real-time data display options: Apple and Android smartphones, tablets and other devices. See the VE.Direct to Bluetooth Smart dongle. Colour Control Panel

SPECIFICATIONS

INPUT	
Maximum PV Open circuit voltage	150V absolute max coldest conditions 145V start up and operating max
Maximum PV Solar Power	12V: 500W - 1450W 24V: 1000W - 2900W See selection table
OUTPUT	
Battery Voltage	12V, 24V Auto Select See selection table
Rated Charge Current	MPPT 100/30: 30A MPPT 100/50: 50A See selection table
Battery Charge Power	Dependent on PV Input Solar Power 12V: 440W - 700W 24V: 880W - 1400W See selection table
Charge Voltage 'Absorption'	Default setting: 14.4V, 28.8V (adjustable) See selection table
Charge Voltage 'Float'	Default setting: 13.8V, 27.6V (adjustable) See selection table
Temperature Compensation	-16mV, -32mV / °C
Rated Charge Current	See selection table
Charge Algorithm	Multi-stage adaptive
Maximum Efficiency	98%
Self Consumption	10mA
Data Communications	VE Direct, Contact sales office
Parallel Operation	Yes, not synchronised

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PROTECTION

Battery Reverse Polarity	Yes. (fuse is not user accessible)
PV Reverse Polarity	Yes.
Output Short Circuit	Yes
Over Temperature Protection	Yes.
Protection Category	IP43 (electronic components) IP22 (connection area)

STANDARDS

Safety	EN/IEC 62109
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ENVIRONMENTAL

Operating Temperature	-30°C to +60°C. Full rated output to 40°C.
Derating	See derating curve
Humidity	95% max (non condensing).

MECHANICAL

Colour	Blue (RAL 5012)
Power terminals	13mm ² / AWG 6
Dimensions	30 x 186 x 70mm
Weight	1.3kg

MODEL NUMBER	MPPT 100/30	MPPT 100/50
Battery Voltage	12 / 24V Auto Select	12 / 24V Auto Select
Rated charge current	30A	50A
Max PV power, 12V 1a, b)	440W	700W
Max PV power, 24V 1a, b)	880W	1400W
Max PV short circuit current 2)	30A	50A

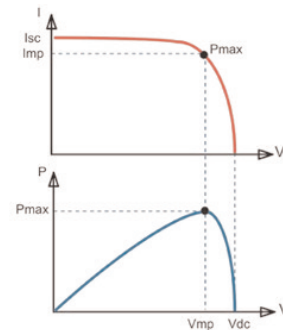
Safety

1 a) if more PV power is connected, the controller will limit input power to the started maximum

1b) PV voltage must exceed Vbat +5V for the controller to start, Thereafter minimum PV voltage is Vbat +1V

2) A PV array with a higher short circuit current may damage the controller

TECHNICAL ILLUSTRATIONS



Maximum Power Point Tracking

Upper curve:

Output current (I) of a solar panel as function of output voltage (V).

The Maximum Power Point (MPP) is the point Pmax along the curve where the product I x V reaches its peak.

Lower curve:

Output power $P = I \times V$ as function of output voltage.

When using a PWM (not MPPT) controller the output voltage of the solar panel will be nearly equal to the voltage of the battery, and will be lower than Vmp.

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