SmartSolar Charge Controllers MPPT 100/30 & 100/50

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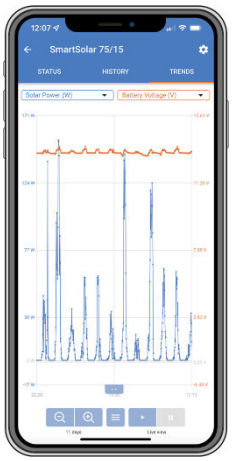
SmartSolar Charge Controller MPPT 100/50



Bluetooth sensing Smart Battery Sense



Bluetooth sensing BMV-712 Smart Battery Monitor



Bluetooth Smart built-in
The wireless solution to set-up, monitor, update and synchronise SmartSolar Charge Controllers.

VE.Direct
For a wired data connection to a Color Control GX, other GX products, PC or other devices

Ultrafast Maximum Power Point Tracking (MPPT)
Especially in case of a clouded sky, when light intensity is changing continuously, an ultra-fast MPPT controller will improve energy harvest by up to 30 % compared to PWM charge controllers and by up to 10 % compared to slower MPPT controllers.

Advanced Maximum Power Point Detection in case of partial shading conditions
If partial shading occurs, two or more maximum power points may be present on the power-voltage curve.
Conventional MPPTs tend to lock to a local MPP, which may not be the 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 %.
The full output current up to 40 °C (104 °F).

Flexible charge algorithm
Fully programmable charge algorithm (see the software page on our website), and eight pre-programmed algorithms, selectable with a rotary switch (see manual for details).

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 charge voltage for temperature.

Optional external battery voltage and temperature sensing via Bluetooth
A Smart Battery Sense or a BMV-712 Smart Battery Monitor can be used to communicate battery voltage and temperature to one or more SmartSolar Charge Controllers.

Fully discharged battery recovery function
Will initiate charging even if the battery has been discharged to zero volts.
Will reconnect to a fully discharged Li-ion battery with integrated disconnect function.

SmartSolar Charge Controller	MPPT 100/30	MPPT 100/50
Battery voltage	12/24 V Auto Select	
Rated charge current	30 A	50 A
Nominal PV power, 12 V 1a,b)	440 W	700 W
Nominal PV power, 24 V 1a,b)	880 W	1400 W
Maximum PV open circuit voltage	100 V	100 V
Max. PV short circuit current 2)	35 A	60 A
Maximum efficiency	98 %	98 %
Self-consumption	12 V: 30 mA 24 V: 20 mA	
Charge voltage 'absorption'	Default setting: 14,4 V / 28,8 V (adjustable)	
Charge voltage 'float'	Default setting: 13,8 V / 27,6 V (adjustable)	
Charge algorithm	multi-stage adaptive	
Temperature compensation	-16 mV / °C resp. -32 mV / °C	
Protection	PV reverse polarity Output short circuit Over temperature	
Operating temperature	-30 to +60 °C (full rated output up to 40 °C)	
Humidity	95 %, non-condensing	
Data communication port	VE.Direct See the data communication white paper on our website	
ENCLOSURE		
Colour	Blue (RAL 5012)	
Power terminals	16 mm² / AWG6	
Protection category	IP43 (electronic components), IP22 (connection area)	
Weight	1,3 kg	
Dimensions (h x w x d)	130 x 186 x 70 mm	
STANDARDS		
Safety	EN/IEC 62109-1, UL 1741, CSA C22.2	
STORED TRENDS		
Data stored	Battery voltage,current and temperature, as well as load output current, PV voltage and PV current.	
Number of days trends data is stored	46	

1a) If more PV power is connected, the controller will limit input power.
1b) The PV voltage must exceed Vbat + 5 V for the controller to start.
Thereafter the minimum PV voltage is Vbat + 1 V.
2) A PV array with a higher short circuit current may damage the controller.

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