SmartSolar MPPT RS 450|100 & 450|200 - Isolated

5.76 kW & 11.52 kW Solar Charge Controller with 450 V PV input

www.victronenergy.com



SmartSolar MPPT RS 450|100



Inside the SmartSolar MPPT RS 450|100

Ultra-fast Maximum Power Point Tracking (MPPT) Solar Charge Controller

The MPPT RS SmartSolar is a 48 V Solar charge controller with up to 450 VDC PV input and either 100 A, or 200 A output. It is used in on-grid and off-grid solar applications where maximum battery charging power is required.

Multiple independent MPPT tracking inputs

With multiple MPPT trackers, you can optimize your solar panel design for maximum performance for your specific location.

Isolated PV connections for additional safety

Full galvanic isolation between PV and battery connections provide additional overall system safety.

Wide MPPT voltage range

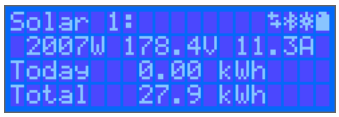
65 – 450 VDC PV operating range, with a 120 VDC PV startup voltage.

Light weight, efficient and quiet

Thanks to high frequency technology and a new design this powerful charger weighs only 7.9 kg for the 100 A model. In addition to this it has an excellent efficiency, low standby power, and a very quiet operation.

Display and Bluetooth

The display reads battery, and controller parameters. The parameters can be accessed with a smartphone or other Bluetooth enabled device. In addition, Bluetooth can be used to set up the system and to change settings with VictronConnect.



PV Isolation resistance monitoring for peace of mind at higher voltages

The MPPT RS continuously monitors the PV array and can detect if there are faults that reduce the isolation of the panels to unsafe levels.

VE.Can and VE.Direct port

For connection to a GX device for system monitoring, data logging, and remote firmware updates. VE.Can allows for up to 25 units to be connected together in parallel and synchronize their charging.

I/O Connections

Programmable Relay, temperature sensor, auxiliary, digital input and voltage sensor connections. The remote input can accept the Victron smallBMS, and other BMS with allow-to-charge signal.

Configure and monitor with VictronConnect →

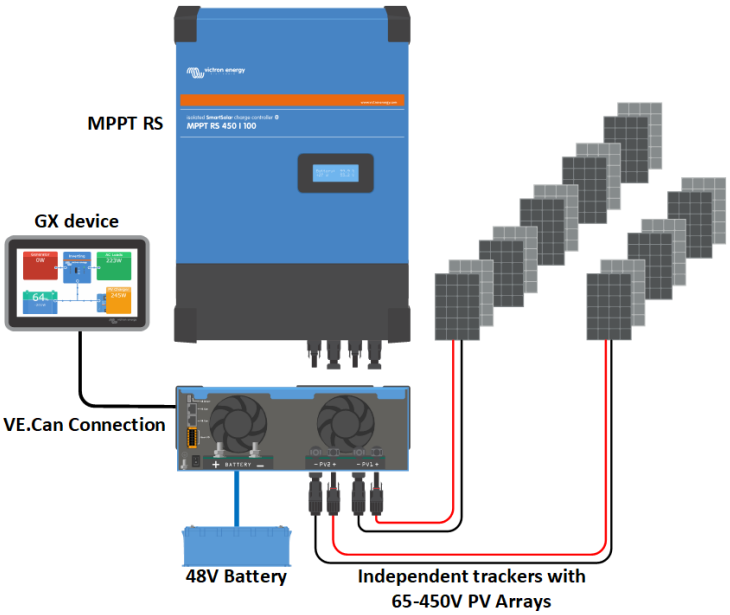
The built-in Bluetooth Smart connection allows for quick monitoring and settings adjustment.

The built-in 30-day history shows individual performance of the separate MPPT trackers.

Try the VictronConnect demo to see the full range of configuration and display options with sample data.

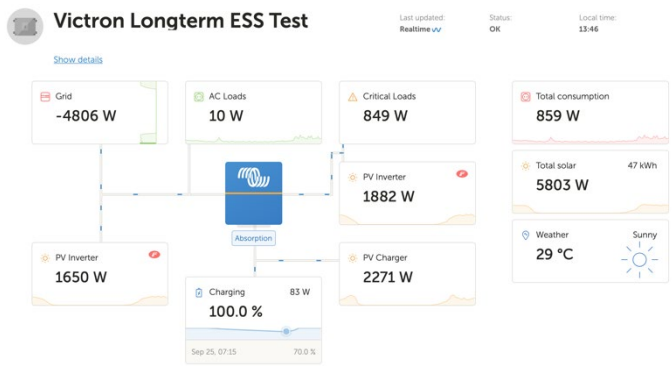


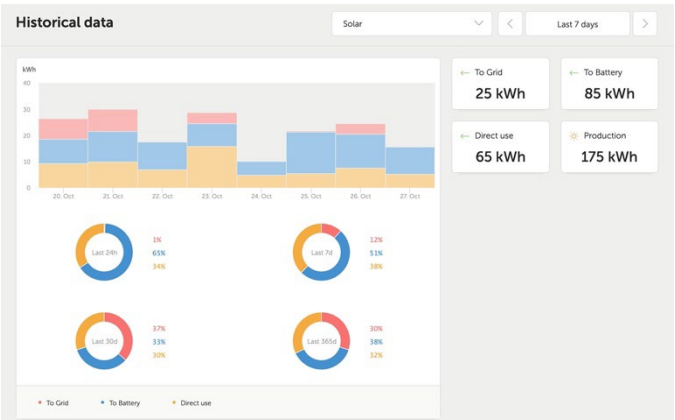
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Isolated SmartSolar MPPT RS	450|100	450|200
CHARGER		
Battery voltage	48 V	
Rated charge current	100 A	200 A
Maximum charge power	5.8 kW at 57.6 V	11.5 kW at 57.6 V
Charge voltage 'absorption'	Default setting: 57.6 V (adjustable)	
Charge voltage 'float'	Default setting: 55.2 V (adjustable)	
Programmable voltage range	Minimum: 36 V Maximum: 60 V [7]	
Charge algorithm	Multi-stage adaptive (adjustable)	
Battery temperature sensor	Included	
Maximum efficiency	96 %	
Self-consumption	15 mA	
SOLAR		
Maximum DC PV voltage	450 V	
Start-up voltage	120 V	
MPPT operating voltage range	65 – 450 V [1]	
Number of trackers	2	4
Max. PV operational input current	16 A per tracker	
Max. PV short circuit current [2]	20 A per tracker	
Max. DC output charging power	4000 W per tracker 5760 W total	4000 W per tracker 11520 W total
Maximum PV array size per tracker [3]	7200 Wp (450 V x 20 A) [3]	
PV Isolation fail level [4]	100 kΩ	
GENERAL		
Synchronised Parallel Operation	Yes, up to 25 units with VE.Can	
Programmable relay [5]	Yes	
Protection	PV reverse polarity Output short circuit Over temperature	
Data communication	VE.Direct port, VE.Can port & Bluetooth (6)	
Bluetooth frequency	2402 – 2480 MHz	
Bluetooth power	4dBm	
General purpose analogue/digital in port	Yes, 2x	
Remote on-off	Yes	
Operating temperature range	-40 to +60 °C (fan assisted cooling)	
Humidity (non-condensing)	max 95 %	
ENCLOSURE		
Material & Colour	steel, blue RAL 5012	
Protection category	IP21	
Battery-connection	2x M8 bolts, 1x positive and 1x negative	4x M8 bolts, 2x positive and 2x negative
Power terminals PV input	1 pair of male and female MC4 connectors per tracker	
Weight	7.9 kg	13.7 kg
Dimensions (h x w x d) in mm	440 x 313 x 126	487 x 434 x 146
STANDARDS		
Safety	EN-IEC 62109-1	
Country of Origin	Designed in The Netherlands made in India	

VRM Portal
When the MPPT RS is connected to a GX device with internet connection, or the GlobalLink 520 with built in 4G connectivity, you can access our free remote monitoring website (VRM). This will display all your system data in a comprehensive graphical format. Alarms can be received by e-mail.





1) MPPT operating voltage range is constrained by battery voltage - PV VOC should not exceed 8 x battery float voltage. For example, a 52.8 V float voltage results in a maximum PV VOC of 422.4 V. See product manual for further information.

2) A higher short circuit current may damage the controller if PV array is connected in reverse polarity.

3) Max. 450 VOC result in appr. 360 Vmpp, therefor the maximum PV array is appr. 360 V x 20 A = 7200 Wp.

4) The SmartSolar MPPT RS will test for sufficient resistive isolation between PV+ and GND, as well as PV- and GND. If the resistance falls below the threshold, the unit will report an error and send an error signal to the GX device (if connected) for audible and email notifications. Despite the error, the product will continue charging the battery.

5) Programmable relay which can be set for general alarm, DC under voltage or genset start/stop function. DC rating: 4 A up to 35 VDC and 1 A up to 70 VDC

6) The MPPT RS is currently not compatible with VE.Smart Networks.

7) The Charger set-point (float and absorption) can be set to max 60 V. The output voltage at the charger terminals can be higher, due to temperature compensation as well as compensation for voltage drop over the battery cables. The maximum output current is reduced on a linear basis from full current at 60 V to 5A at 62 V. The equalization voltage can be set to max 62 V, the equalization current percentage can be set to max 6%.

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