

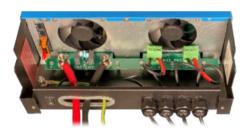
SmartSolar MPPT RS 450|100 & 450|200 - Isolated

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

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.

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

80 – 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.

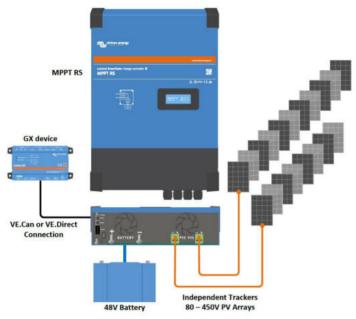
VE.Can and VE.Direct port

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.

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.





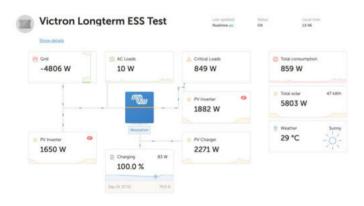


System example diagram

The 100 A MPPT RS combined with a GX device, charging a 48 V battery with 2 separate solar PV strings.

VRM Portal

When the MPPT RS is connected to a GX device with internet connection, $% \left(1\right) =\left(1\right) \left(1\right) \left($ 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.





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	80 – 450 V ⁽¹⁾	
Number of trackers	2	4
Max. PV operational input current	18 A pe	r 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		
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Synchronised Parallel Operation		nits with VE.Can
	Yes, up to 25 ur	
Synchronised Parallel Operation Programmable relay (5)	Yes, up to 25 ur Y PV revers	nits with VE.Can es e polarity
Synchronised Parallel Operation	Yes, up to 25 ui Y. PV revers Output sh	nits with VE.Can es e polarity oort circuit
Synchronised Parallel Operation Programmable relay (9) Protection	Yes, up to 25 ur Y. PV revers Output sh Over ten	nits with VE.Can es e polarity oort circuit operature
Synchronised Parallel Operation Programmable relay (9) Protection Data communication	Yes, up to 25 ur Y. PV revers Output sh Over tem VE.Direct port, VE.Cal	nits with VE.Can es e polarity oort circuit operature n port & Bluetooth (6)
Synchronised Parallel Operation Programmable relay (9) Protection Data communication Bluetooth frequency	Yes, up to 25 ur Y. PV revers Output sh Over tem VE.Direct port, VE.Cai 2402 – 2	nits with VE.Can es e polarity nort circuit perature n port & Bluetooth (6) 480 MHz
Synchronised Parallel Operation Programmable relay (9) Protection Data communication Bluetooth frequency Bluetooth power	Yes, up to 25 ur Y. PV revers Output sh Over tem VE.Direct port, VE.Cai 2402 – 2	nits with VE.Can es e polarity ort circuit operature n port & Bluetooth (6) 480 MHz Bm
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Synchronised Parallel Operation Programmable relay (9) Protection Data communication Bluetooth frequency Bluetooth power General purpose analogue/digital in port Remote on-off Operating temperature range Humidity (non-condensing)	Yes, up to 25 ur Y PV revers Output sh Over tem VE.Direct port, VE.Cai 2402 - 2 4d Yes Y -40 to +60 °C (fan	nits with VE.Can es e polarity nort circuit nerature n port & Bluetooth (6) 480 MHz Bm 1, 2x
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Synchronised Parallel Operation Programmable relay (9) Protection Data communication Bluetooth frequency Bluetooth power General purpose analogue/digital in port Remote on-off Operating temperature range Humidity (non-condensing) ENd Material & Colour Protection category Battery-connection Power terminals PV input Weight Dimensions (h x w x d) in mm	Yes, up to 25 ur Yes, up to 25 ur Yes PV revers Output sh Over tem VE.Direct port, VE.Cai 2402 – 2 4d Yes Yes -40 to +60 °C (fan max CLOSURE steel, blue IP2 M8 I 2 7.9 kg 440 x 313 x 126	nits with VE.Can es e polarity oort circuit operature n port & Bluetooth (6) 480 MHz Bm 6, 2x es a assisted cooling) 95 % e RAL 5012 1 poolts 16 mm²
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Synchronised Parallel Operation Programmable relay (9) Protection Data communication Bluetooth frequency Bluetooth power General purpose analogue/digital in port Remote on-off Operating temperature range Humidity (non-condensing) ENd Material & Colour Protection category Battery-connection Power terminals PV input Weight Dimensions (h x w x d) in mm	Yes, up to 25 ur Yes, up to 25 ur Yer vers Output sh Over tem VE.Direct port, VE.Cai 2402 – 2 4d Yes Yes 40 to +60 °C (fan max CLOSURE Steel, blue IP2 M8 I 2 7.9 kg 440 x 313 x 126 INDARDS EN-IEC 62109-1,	nits with VE.Can es e polarity oort circuit operature n port & Bluetooth (6) 480 MHz Bm 6, 2x es a assisted cooling) 95 % e RAL 5012 1 poolts 16 mm² 13.7 kg

- 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 \times 20 A = 7200
- 4) The MPPT RS will test for sufficient resistive isolation between PV+ and GND, and PV- and GND. In the $event\ of\ a\ resistance\ below\ the\ threshold,\ the\ unit\ will\ stop\ charging,\ display\ the\ error,\ and\ send\ the$ error signal to the GX device (if connected) for audible and email notification.
- 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 62V, the equalization current percentage can be set to max 6%.

