

# Inverter RS Smart Solar 48/6000

With 450 V/4000 W PV input

[www.victronenergy.com](http://www.victronenergy.com)



**Inverter RS Smart Solar 48/6000**

### Off-Grid solar inverter

The Inverter RS Smart Solar 48/6000 is a 48 V 6 kVA Inverter with 450 VDC 4 kWp PV input. It is used in off-grid solar applications where AC power is required.

### Combination of an inverter, bi-directional DC-DC converter and MPPT

The inverter produces a perfect sine wave, able to supply high powered appliances. It is supplied by a bi-directional DC-DC converter, that can either charge the battery when excess solar power is available or convert from the battery when it is needed.

### Wide MPPT voltage range

80 – 450 VDC, with a 120 VDC PV startup voltage.

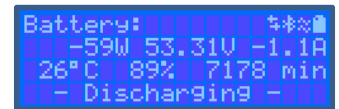
### Light weight, efficient and quiet

Thanks to high frequency technology and a new design this powerful inverter weighs only 11kg. In addition to this it has an excellent efficiency, low standby power, and a very quiet operation.

### Display and Bluetooth

The display reads battery, inverter and solar charge controller parameters.

The same 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.



### VE.Can and VE.Direct port

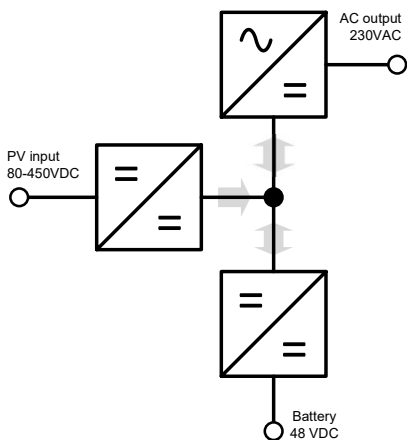
For connection to a GX device for system monitoring, data logging, and remote firmware updates.

### Built in PV isolator

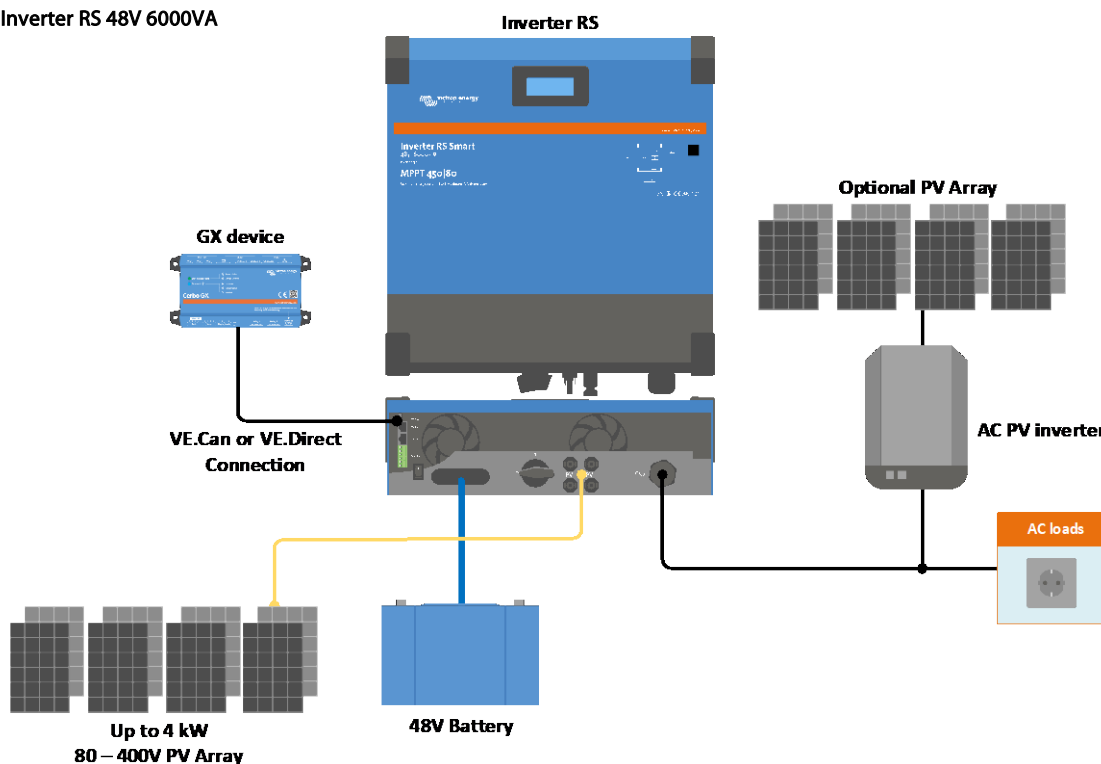
Both parallel PV strings connected to the MC4 plugs can be safely isolated with the large built-in switch on the bottom of the unit.

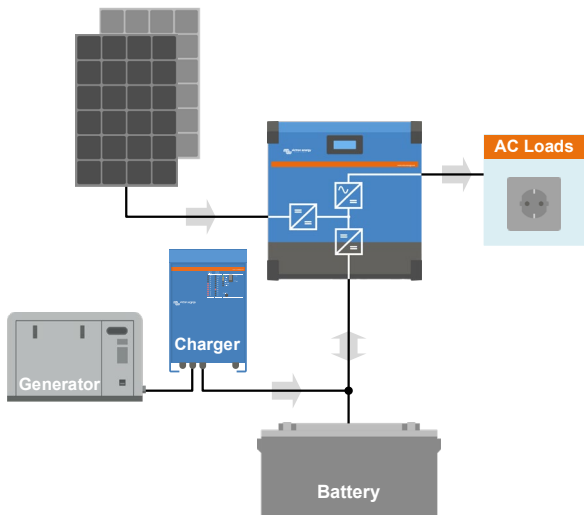
### I/O Connections

Programmable Relay, temperature sensor and voltage sensor connections. The remote input can also be configured to accept the Victron smallBMS.



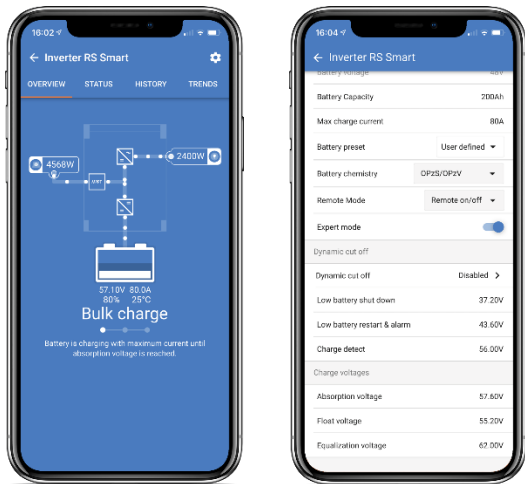
### Inside the Inverter RS 48V 6000VA





### System example with generator

Add a generator and battery charging if additional power is needed.



### Configure and monitor with VictronConnect

A built-in Smart Bluetooth connection allows for quick monitoring or settings adjustment of the Inverter RS.



### VRM Portal

When the Inverter RS is connected to a GX device with internet connection, you can access our free remote monitoring website (VRM). This will display all your system data in a comprehensive graphical format. System settings can be changed remotely via the portal. Alarms can be received by email.

Inverter RS Smart Solar	48/6000
<b>INVERTER</b>	
DC Input voltage range	38 – 62 V (6)
Output	Output voltage: 230 VAC ± 2 % Frequency: 50 Hz ± 0.1 % (1)
Continuous output power at 25°C	Increases linearly from 4800 W at 46 VDC to 5300 W at 52 VDC
Continuous output power at 40°C	4500 W
Continuous output power at 65°C	3000 W
Peak power	9 kW for 3 seconds
Short-circuit output current	50 A
Maximum efficiency	96.5 % at 1 kW load 94 % at 5 kW load
Zero load power	20 W
<b>SOLAR</b>	
Maximum DC voltage	450 V
Nominal DC voltage	300 V
Start-up voltage	120 V
MPPT operating voltage range	80 – 450 V (5)
DC input current limit	18 A (4)
Maximum DC input current	20 A
Maximum PV input power	4000 W
Maximum DC charging power	4000 W
Earth leakage trip level	30 mA
<b>CHARGER</b>	
Programmable Charger voltage range (VDC)	36 – 60 V (7)
Charge voltage 'absorption' (VDC)	Default setting: 57,6 V (adjustable)
Charge voltage 'float' (VDC)	Default setting: 55,2 V (adjustable)
Maximum charge current	100 A
Battery temperature sensor	Yes
Battery voltage sense	Yes
<b>GENERAL</b>	
Parallel and 3-phase operation	No
Programmable relay (3)	Yes
Protection (2)	a - g
Data Communications Ports	VE.Direct port and VE.Can port (**)
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 +65°C (fan assisted cooling)
Humidity (non-condensing)	max 95 %
<b>ENCLOSURE</b>	
Material & Colour	steel, blue RAL 5012
Protection category	IP21
Battery-connection	M8 bolts
230 VAC-connection	Screw terminals 13 mm <sup>2</sup> (6 AWG)
Weight	11 kg
Dimensions (hwxwd)	425 x 440 x 125 mm
<b>STANDARDS</b>	
Safety	EN-IEC 60335-1, EN-IEC 60335-2-29, EN-IEC 62109-1, EN-IEC 62109-2
Emission, Immunity	EN 55014-1, EN 55014-2 EN-IEC 61000-3-2, EN-IEC 61000-3-3 IEC 61000-6-1, IEC 61000-6-2, IEC 61000-6-3

- 1) Can be adjusted to 60 Hz.
  - 2) Protection key: a) output short circuit b) overload c) battery voltage too high d) battery voltage too low e) temperature too high f) 230 VAC on inverter output g) Solar earth leakage.
  - 3) Programmable relay which can be set for general alarm, DC under voltage or genset start/stop function. DC rating: 4 A up to 35VDC and 1 A up to 70VDC.
  - 4) Normal operation is regulated to 18 A, with maximum reverse polarity protection 20 A.
  - 5) MPPT operating range is also constrained by battery voltage - PV VOC should not exceed 8x battery float voltage, e.g. a 50V battery voltage maximum should have 400V maximum PV array.  
– see product manual for further information.
  - 6) Minimum start-up voltage is 41V. Inverter shutdown can be set as low as 32VDC, but may shut down on low AC output voltage (due to load). Over-voltage disconnect is 65.5V.
  - 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 60V to 5 A at 62V. The equalization voltage can be set to max 62V, the equalization current percentage can be set to max 6%.
- \*\* Note only the VE.Can port can be used for connection to a GX device. The VE.Direct port supports the GlobalLink S20.