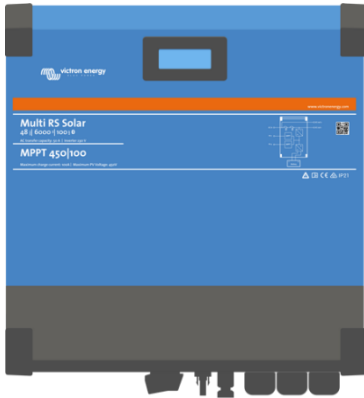


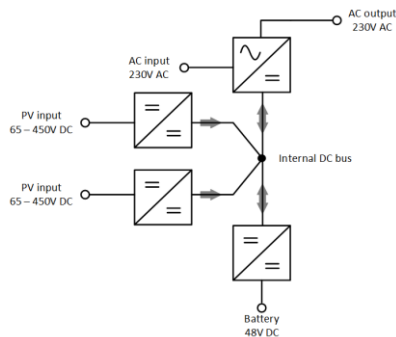
# Multi RS Solar 48/6000/100 Hybrid Inverter

With 450 V dual tracker PV input

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



Multi RS Solar 48/6000/100



Multi RS Solar block diagram

## Operating modes

**Hybrid mode** – Stores excess solar energy in a battery, to be used during the night or periods of high demand. Supplies additional power from the battery when demand exceeds grid capacity.

**Backup mode** – Switches to backup mode during a grid outage.

**Off-grid mode** – Operates without grid connection.

**Generator mode** – Controls the generator to minimize run-hours. Supplies additional power from the battery when demand exceeds the capacity of the generator.

**PV Inverter mode** – Works as a PV inverter without a battery.

## PowerControl and PowerAssist – Boosting the capacity of the grid or a generator

A maximum grid or generator current can be set. The Multi RS will then take account of other AC loads and use whatever is extra for battery charging, thus preventing the generator or grid from being overloaded (PowerControl function).

PowerAssist takes the principle of PowerControl to a further dimension. Where peak power is so often required only for a limited period, the Multi RS will compensate insufficient generator or grid power with power from the battery. When the load reduces, the spare power is used to recharge the battery.

## Display, Bluetooth and VictronConnect app

The display reads battery, inverter and solar parameters. The same parameters can be accessed with a smartphone or other Bluetooth enabled device, using the VictronConnect app.

## Extendable PV capacity, both AC-coupled and DC-coupled

The integrated 6 kWp PV capacity can be extended by adding solar chargers to the system.

Alternatively, the PV capacity can be extended by installing PV Inverters, of which the output power will be automatically controlled by the integrated frequency shift power control.

## Communication ports

VE.Can connection to a GX device for system monitoring, energy meter<sup>(11)</sup>, data logging, and remote firmware updates.

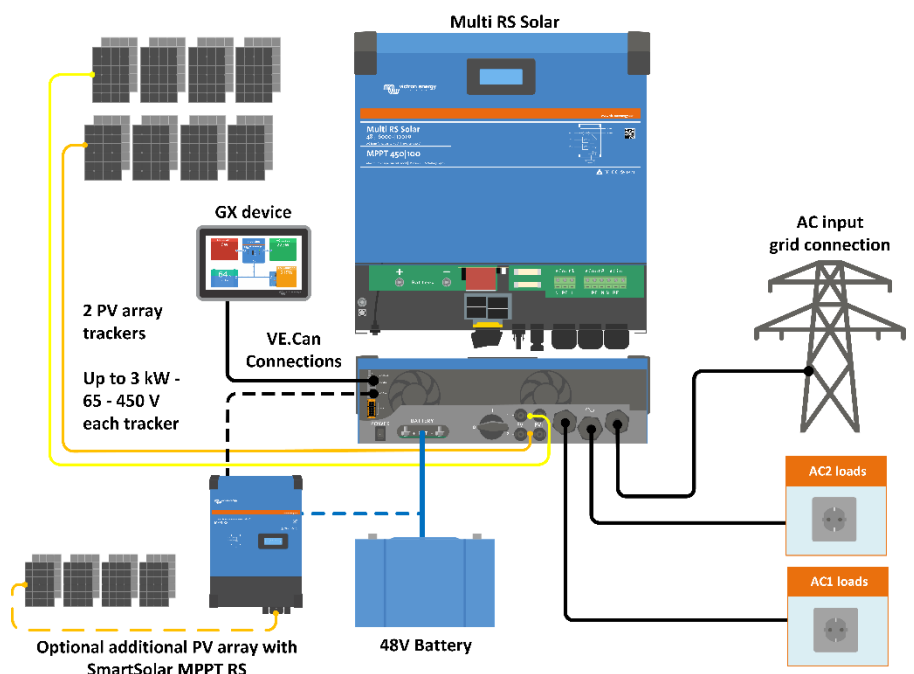
VE.Direct connection to a GlobalLink 520 for remote data monitoring.

## I/O Connections

Programmable relay, temperature sensor and voltage sensor connections.



**Configure and monitor with VictronConnect**  
 A built in Bluetooth Smart connection allows for quick monitoring or settings adjustment of the Multi RS.



Multi RS Solar 48/6000/100		
PowerControl & PowerAssist		Yes
Transfer switch		50 A
Maximum AC input and pass-through current		50 A
INVERTER		
DC Input voltage range <sup>(1)</sup>		38 – 62 V
AC Output <sup>(2)</sup>		Output voltage: 230 VAC ± 2 % Frequency: 50 Hz ± 0,1 % Maximum continuous inverter current: 25 Aac
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 <sup>(3)</sup>		9 kW for 3 seconds 7 kW for 4 minutes
Short-circuit output current		45 A
Max. AC output overcurrent protection		30 A
Efficiency		96,5 % at 1 kW load 94 % at 5 kW load
Zero load power consumption		20 W
Low Battery shutdown		37.2 V (adjustable)
Low battery restart		43.6 V (adjustable)
SOLAR		
Maximum open circuit PV array voltage <sup>(4)</sup>		450 V
Start-up voltage		120 V
MPPT operating voltage range		65 – 450 V
Maximum operational PV input current limit		12 A
Maximum PV conversion power		6 kW total – 3 kW per tracker
Maximum PV short circuit current		16 A
Earth leakage trip level		30 mA
Isolation fail level (detection before start-up)		100 kΩ
CHARGER		
AC Input		Nominal Voltage: 230 VAC, Input voltage range: 187-265 VAC Nominal frequency: 50 Hz, Input frequency: 45-65 Hz AC inrush current: NA
Programmable charge voltage range <sup>(5)</sup>		36 – 60 V
Charge voltage 'absorption'		Default setting: 57.6 V (adjustable)
Charge voltage 'float'		Default setting: 55.2 V (adjustable)
Maximum charge current from AC <sup>(6)</sup>		88 A @ 57.6 VDC
Total maximum charge current (AC + PV)		100 A DC
Battery temperature sensor		Included
Battery voltage sense		Yes
Icw and Ipk requirements		Icw: 500A @ 0.1s and Ipk: 2kA
GENERAL		
Auxiliary output (AC-out-2) <sup>(7)</sup>		Yes
3-phase and parallel operation		3-phase support with one unit per phase. Parallel not supported.
Programmable relay <sup>(8)</sup>		Yes
Protections <sup>(9)</sup>		a - g
Data communications ports <sup>(10)</sup>		VE.Direct, VE.Can & Bluetooth
Bluetooth frequency & power		2402 - 2480 MHz, 4 dBm
Programmable analog/digital input/output ports		Yes, 2x
Remote on-off		Yes
Operating temperature range		-40 to +65 °C (fan assisted cooling)
Maximum altitude		2000 m
Humidity (non-condensing)		max 95 %
Earthing system		TN and TT only
ENCLOSURE		
Material & Colour		steel, blue RAL 5012
Protection category		IP21 Protective Class: I
Battery-connection		M8 bolts
PV Connection		2 strings, each with positive and negative MC4
230 VAC-connection		Screw terminals 10 mm <sup>2</sup> (6 AWG)
Weight		123 kg
Dimensions (hxxwx d)		462 x 425 x 127 mm
STANDARDS		
Safety		EN-IEC 60335-1, EN-IEC 60335-2-29, EN-IEC 62109-1, EN-IEC 62109-2, IEC 62040, IEC 62477
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, Pollution Degree 2
Overvoltage Category		Battery: OVC I, PV port: OVC II, AC in / AC out: OVC III
UPS Specification		Input: 230 VAC, 46 A, 50 Hz Output: 230 VAC, 26 A, 50 Hz, 6 kVA / 5 kW Protective device (input and output): Max 50 A circuit breaker
<div>1) Minimum start-up voltage is 41 VDC. Over-voltage disconnect: 65,5 V. 2) Can be adjusted to 240VAC and 60 Hz 3) Peak power capacity and duration depends on start temperature of heatsink. Mentioned times are with cold unit. 4) The maximum PV voltage should not exceed 8x battery float voltage. E.g. if the battery voltage is 50 V, the maximum PV voltage should not exceed 8 x 50 = 400 V. 5) The Charger set points (float &amp; absorption) can be set to max 60 V. The output voltage at the charger terminals can be higher due to compensation for temperature &amp; voltage drop over the battery cables. The maximum output current is reduced on a linear basis from full current at 60 V to 5 A at 62 V. The equalization voltage can be set to max 62 V, the equalization current percentage can be set to max 6 %. 6) The maximum charge current from AC sources depends on input voltage and battery current. At 230V input and 57.6V battery voltage, and 25C ambient, the maximum charge current is 88 A. See manual, limitations section, for further details. 7) AC-out-2 is connected directly to the AC input and intended for non-critical loads. The AC-out-2 load is taken into account by PowerControl &amp; PowerAssist. 8) 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 9) 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. 10) Not currently compatible with VE.Smart Networks. Connection to a GX device (i.e. Cerbo GX) must be made via the VE.Can interface. The VE.Direct interface is for connection to the GlobalLink 520. 11) Connectivity to the Victron VM-3P75CT energy meter must be made via VE.Can or Ethernet. Avoid intermediate WiFi links between the energy meter and the GX device, as WiFi can introduce latency and reduce reliability.</div>		