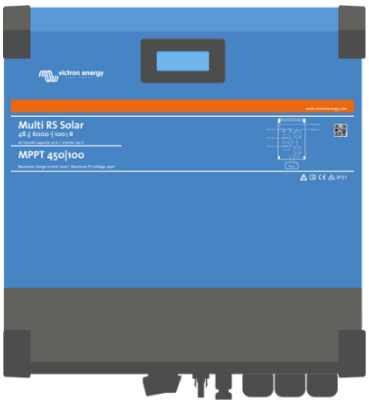
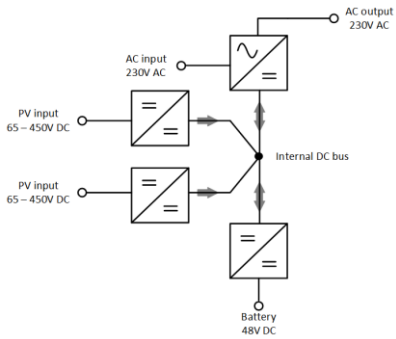
Multi RS Solar 48/6000/100 Hybrid Inverter

With 450 V dual tracker PV input

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.

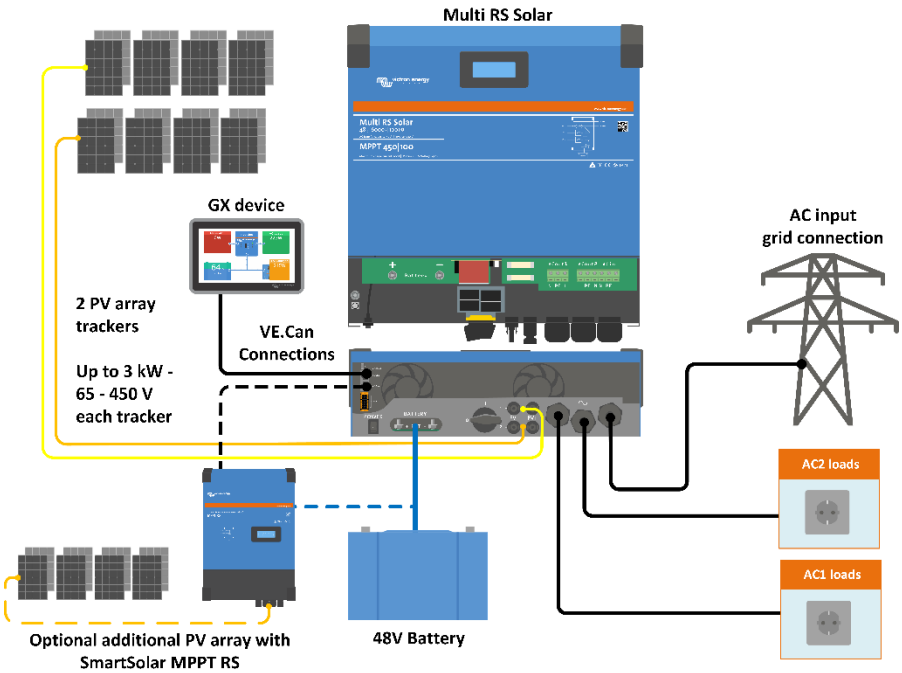
Communication ports

VE.Can connection to a GX device for system monitoring, 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.



Victron Energy B.V. | De Paal 35 | 1351 JG Almere | The Netherlands
E-mail: sales@victronenergy.com
www.victronenergy.com

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 [1]	38 – 62 V
AC Output [2]	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 [3]	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 [4]	450 V
Start-up voltage	120 V
MPPT operating voltage range	65 – 450 V
Maximum operational PV input current limit	13 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 [5]	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 [6]	88 A @ 57,6 VDC
Total maximum charge current (AC + PV)	100 A DC
Battery temperature sensor	Included
Battery voltage sense	Yes
GENERAL	
Auxiliary output (AC-out-2) [7]	Yes
3-phase and parallel operation	3-phase support with one unit per phase. Parallel not supported.
Programmable relay [8]	Yes
Protections [9]	a - g
Data communications ports [10]	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 %
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 mm² (6 AWG)
Weight	12,3 kg
Dimensions (hxwxd)	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
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 1, PV port: OVC II, AC in / AC out: OVC III

1) Minimum start-up voltage is 41 VDC. Over-voltage disconnect: 65,5 V.
2) Can be adjusted to 240 VAC 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.
   If for example the float voltage of the battery is 50 V,
   the maximum PV voltage should not exceed 8 x 50 = 400 V.
5) The Charger set points (float & absorption) can be set to max 60 V.
   The output voltage at the charger terminals can be higher due to compensation
   for temperature & 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 & 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.