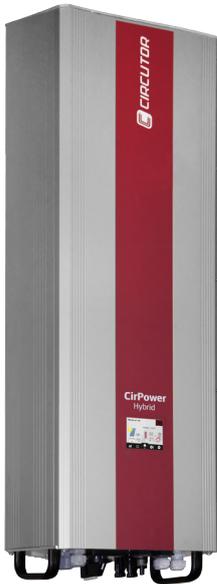


CirPower Hybrid



Multi-management hybrid solar inverter

Description

The **CirPower Hybrid** are hybrid solar inverters for self-consumption photovoltaic energy installations. They are able to manage the charging and discharging process in batteries, in order to provide necessary power to the loads combining power from batteries and from PV modules. This hybrid inverter includes a charge controller with a MPPT (Maximum Power Point Tracker), and the inverter-charger function with grid connection capacity (certified).

The **CirPower Hybrid** has 2 AC outputs. The first, for connecting secure loads (UPS function) which will maintain their power supply even when the grid fails. The second, for connecting loads in both on-grid or off-grid systems. **CirPower Hybrid** is specially designed to offer the user easy and intuitive interaction through a 3.5 inch colour touch screen. The solar inverter has a web server with graphics to monitor the installation at any time and an internal database which records the behaviour of all energy flows. Some of its main features are:

- Battery charging from photovoltaic modules or the electrical grid.
- Optimised algorithm for lead batteries or with a lithium ion batteries BMS.
- Datalogger with downloadable data log file (without additional software).
- RS-485 communications for power analyzers.
- 5 working modes easily configurable.
- MPPT Tracker optimisation patent and energy storage.
- Electrical grid disconnection and reclosing patent and energy storage.

Applications

- On-grid photovoltaic energy systems with energy storage in batteries.
- Of-grid systems with energy storage in batteries.
- Micro-grids.
- Self-consumption systems without grid injection or with controlled injection.

Technical features

DC input	Maximum DC power ($\cos \phi = 1$)	4250 W	
	Maximum voltage V_{dc}	550 V_{dc}	
	Minimum voltage	170 V_{dc}	
	Stand-by voltage	125 V_{dc}	
	MPPT voltage range	170...500 V_{dc}	
	MPPT efficiency	99,9%	
	Maximum current	20 A	
	Battery input	Rated voltage	48 V
Voltage range		36...60 V	
Maximum current (Charge/Discharge)		80/50 A	
Charge controller		CC/CV	
AC output (grid)	Safety	Reinforced insulation	
	AC power (230 V, 50 Hz, $\cos \phi = 1$)	4000 W	
	Rated voltage - Frequency	230 V - 50/60 Hz	
	AC Voltage Range *	180...270 V	
	Frequency Range *	55...65 Hz	
	Nominal current (230 V)	17,4 A	
	Short-circuit current	25 A	
	THD(I) with THD(I) = 3%	< 3,5%	
	PF	0,5 (capacitive)...1...0,5 (inductive)	
	Stand-by Power	< 2 W	
	Night consumption	< 0,5 W	
	Maximum efficiency	96,5%	
	Topology	Transformer less	
	AC output (UPS output)	AC power (230 V, 50 Hz, $\cos \phi = 1$)	4000 W
		Rated voltage - Frequency	230 V - 50/60 Hz
AC Voltage Range *		180...270 V	
Frequency Range *		55...65 Hz	
Nominal current (230 V)		17,4 A	
Short-circuit current		25 A	
THD(I) with THD(I) = 3%		< 3,5%	

* Maximum power (AC grid + AC UPS) is 4000 W

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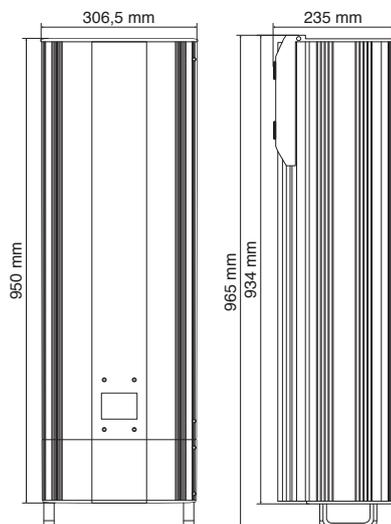
Technical features

User interface	Type	3.5" TFT colour touch screen	
	Datalogger	Stores the energy produced for up to 5 years and the daily performance. Graph of daily energy generated	
Communications	Ethernet	Web server, Modbus/TCP for Control and monitoring	
	RS-485	Modbus protocol	
	CAN Bus	Control BMS - CAN Protocol	
Environmental features	Environmental category (EN 62109-1)	Exterior	
	Working temperature (without power reduction)	-20...50 °C	
	Storage temperature	-35...70 °C	
	Noise	< 30 dBA	
	Relative humidity	4...100%	
	Maximum altitude	2,000 m	
	Mechanical features	Dimensions	300 x 950 x 200 mm
Weight	50 kg		
Protection degree	IP 55		
Cooling	Natural convection		
DC connections	MC4 type connector		
AC connections	Wiedland Gesis 2P+E 25A		
Safety	Earth leakage protection	Type B, RCCB, according to EN 62109-2	
	Earth fault monitor	Programmable insulation monitor	
	Anti-island device	Grid monitor, anti-island system (resonant loads), redundant safety relays	
	DC disconnection device	Manual switch included	
	Overvoltage category	Category III	
	Degree of contamination (Exterior / Interior)	3 / 2	
	Standards	EN 62109-1, EN 62109-2, IEC 62116, IEC 61000-6-2, IEC 61000-6-3, VDE 0126-1-1, VDE AR-N4105, CEI 0-21, RD 1699:2011, G59/1-2	

References

Type	Code	System	Power	Battery Voltage	Charge/discharge current
CirPower Hybrid	E15311	Single-phase	4 kW	48 V	80/50 A

Dimensions



Connections

