StecaGrid 1800, 2300, 3010, 3000, 3600 and StecaGrid 4200

98.6 % peak efficiency

coolcept – inverter topology – cold efficient long-living

Photon The Solar Power Magazine International
Stecagrid 3600
A
97.7 % at medium irradiation 12/2011
www.photon.info

StecaGrid 1800
StecaGrid 2300
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StecaGrid 3600
StecaGrid 4200

Inverter topology

The new „coolcept" inverter topology, with an innovative circuit design that achieves highest efficiency, has now been integrated into these StecaGrid inverters.

The „coolcept" inverter topology is based on a single-stage transformerless switching concept that uses proven standard components to implement symmetric step-down converters with downstream pole-reversing circuits.

Highest efficiency with longer service life

The high efficiency results in a peak efficiency of 98.6 % and a European efficiency of up to 98.2 %, which results in less lost power that must be dissipated into the environment. This improves your yields.

The efficiencies of these inverters are only very slightly dependent on the module input voltage. This allows the number and type of modules to be freely selected without resulting in a yield loss.

In addition to this, a new and unique cooling concept inside the inverter ensures an even distribution of the dissipated heat and a long service life for the device.

Product design and visualisation

For the first time, the very high efficiency allows the use of a design housing made of plastic. This offers many advantages, for example in the installation. The overall surface temperature of the StecaGrid remains very low. The inverters have protection class II.

The StecaGrid has a graphical LCD display for visualising the energy yield values, current performance and operating parameters of the system. Its innovative menu allows individual selection of the various measurements.

The guided, pre-programmed menu allows easy final commissioning of the device.

Installation

The lightweights weigh only 9 kg and can be easily and safely mounted on a wall. The supplied wall bracket and practical recessed grips for right and left handed installers make mounting of the device simple and convenient. The device does not need to be opened for installation. All connections and the DC circuit breaker are externally accessible.

Product features

- Highest efficiency
- Simple installation
- Integrated data logger
- Firmware update possible
- Low housing temperature at full load
- Functionally perfect, environmentally-friendly plastic housing
- Lowest possible own consumption
- Integrated DC circuit breaker
- Protective insulation according to protection class II
- Very long service life
- Droop Mode for integration in hybrid systems (further information: Catalogue Steca PV Off Grid / Single-phase and three-phase AC hybrid systems)
- Fixed voltage mode for other energy sources
- Service menu for parameter adjustment
- 7-year warranty after registration

Displays

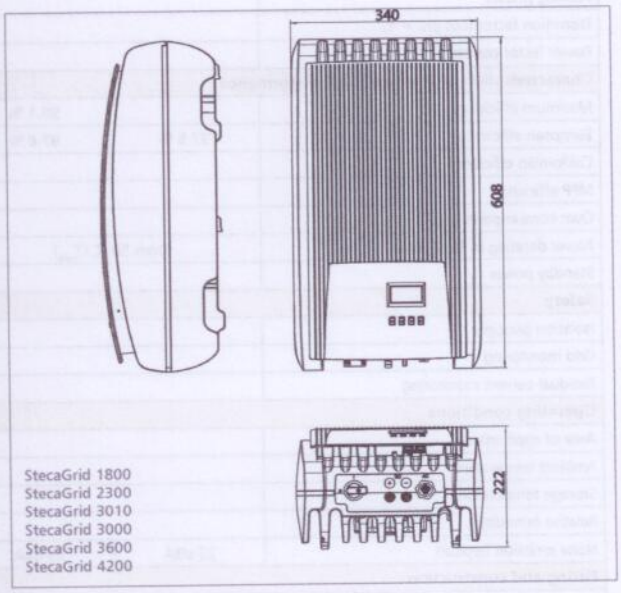
- Multifunction graphical LCD display with backlighting
- Animated representation of yield

Operation

- Simple menu-driven operation
- Multilingual menu navigation

Options

- System monitoring with Solar-Log™ and WEB'log
- Can be connected to the StecaGrid Vision display unit or a large-format display



StecaGrid 1800
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www.dbcom.nl

System monitoring and accessories

StecaGrid User
Visualisation software

StecaGrid Vision
Display unit

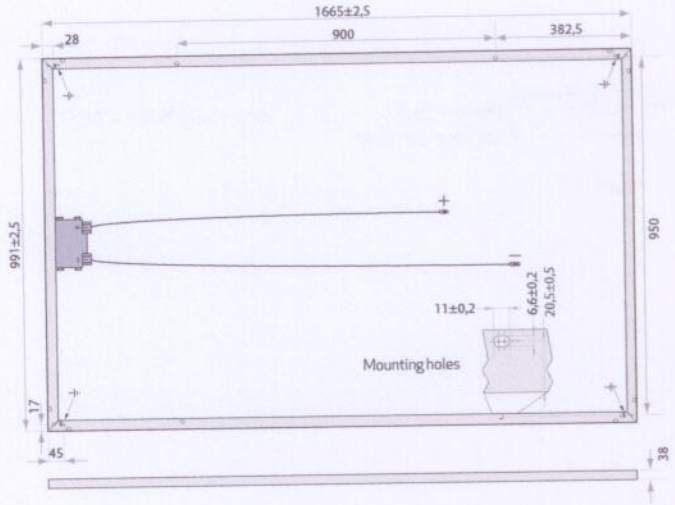
Meteocontrol WEB'log and Meteocontrol WEB'log Comfort
Data logger

Solar-Log 500/1000™
Data logger

	StecaGrid 1800	StecaGrid 2300	StecaGrid 3010	StecaGrid 3000	StecaGrid 3600	StecaGrid 4200
DC input side (PV-generator)						
Maximum start voltage	600 V			845 V		
Maximum input voltage	600 V			845 V		
Minimum input voltage	125 V	200 V	240 V	350 V		
Minimum input voltage for rated output	185 V	235 V	310 V	350 V	365 V	430 V
MPP voltage	125 V ... 500 V	200 V ... 500 V	240 V ... 500 V	350 V ... 700 V		
Maximum input current	11.5 A			10 A		
Maximum input power at maximum active output power	1,840 W	2,350 W	3,070 W	3,060 W	3,690 W	4,310 W
Maximum recommended PV power	2,200 Wp	2,900 Wp	3,800 Wp	3,800 Wp	4,500 Wp	5,200 Wp
AC output side (Grid connection)						
Grid voltage	185 V ... 276 V (depending on regional settings)					
Rated grid voltage	230 V					
Maximum output current	12 A	14 A		16 A		18,5 A
Maximum active power (cos phi = 1)	1,800 W	2,300 W	3,000 W	3,000 W	3,600 W [1]	4,200 W [1]
Maximum active power (cos phi = 0.95)	1,800 W	2,300 W	3,000 W	3,000 W	3,530 W	3,990 W
Maximum apparent power (cos phi = 0.95)				3,130 VA	3,680 VA	4,200 VA
Rated power	1,800 W	2,300 W	3,000 W	3,000 W	3,600 W [2]	4,200 W [3]
Rated frequency	50 Hz and 60 Hz					
Frequency	45 Hz ... 65 Hz (depending on regional settings)					
Night-time power loss	< 1.2 W			< 0.9 W		
Feeding phases	single-phase					
Distortion factor (cos phi = 1)	< 2 %					
Power factor cos phi	0.95 capacitive ... 0.95 inductive					
Characterisation of the operating performance						
Maximum efficiency	98.1 %			98.6 %		
European efficiency	97.5 %	97.6 %	97.7 %	98.2 %	98.1 %	98.2 %
Californian efficiency				98.3 %	98.2 %	98.3 %
MPP efficiency	> 99.7 % (static), > 99 % (dynamic)					
Own consumption	< 8 W					
Power derating at full power	from 50 °C (T_{amb})		from 45 °C (T_{amb})	from 50 °C (T_{amb})	from 45 °C (T_{amb})	
Standby power	6 W					
Safety						
Isolation principle	no galvanic isolation, transformerless					
Grid monitoring	yes, integrated					
Residual current monitoring	yes, integrated [4]					
Operating conditions						
Area of application	indoor rooms with or without air conditioning					
Ambient temperature	-15 °C ... +60 °C					
Storage temperature	-30 °C ... +80 °C					
Relative humidity	0 % ... 95 %, non condensating					
Noise emission (typical)	23 dBA	25 dBA	29 dBA	26 dBA	29 dBA	31 dBA
Fitting and construction						
Degree of protection	IP 21 (casing: IP 51; display: IP 21)					
Overvoltage category	III (AC), II (DC)					
DC Input side connection	MultiContact MC 4 (1 pair)					
AC output side connection	Wieland RST25i3 plug, mating connector included					
Dimensions (X x Y x Z)	340 x 608 x 222 mm					
Weight	11 kg			9 kg		
Communication interface	RS485; 2 x RJ45 sockets; connectable to StecaGrid Vision, Meteocontrol WEB'log or Solar-Log™					
Integrated DC circuit breaker	yes, compliant with VDE 0100-712					
Cooling principle	temperature-controlled fan, variable speed					
Test certificate	CE mark, VDE AR N 4105, G83, CEI 0-21 under preparation			certificate of compliance as per DIN VDE 0126-1-1, CE mark, VDE AR N 4105, DK 5940, G83, UTE C 15-712-1, AS4777, CEI 0-21		

[1] Belgium: 3,330 W [2] Portugal: 3,450 W [3] Portugal: 3,680 W [4] The design of the inverter prevents it from causing DC leakage current.

REC PEAK ENERGY BLK SERIES



15.8% EFFICIENCY

10 YEAR PRODUCT WARRANTY

25 YEAR LINEAR POWER OUTPUT WARRANTY

ELECTRICAL DATA @ STC	REC235PE BLK	REC240PE BLK	REC245PE BLK	REC250PE BLK	REC255PE BLK	REC260PE BLK
Nominal Power - P_{MPP} (Wp)	235	240	245	250	255	260
Watt Class Sorting - (W)	0/+5	0/+5	0/+5	0/+5	0/+5	0/+5
Nominal Power Voltage - V_{MPP} (V)	29.5	29.7	30.1	30.2	30.5	30.7
Nominal Power Current - I_{MPP} (A)	8.06	8.17	8.23	8.30	8.42	8.50
Open Circuit Voltage - V_{OC} (V)	36.6	36.8	37.1	37.4	37.6	37.8
Short Circuit Current - I_{SC} (A)	8.66	8.75	8.80	8.86	8.95	9.01
Module Efficiency (%)	14.2	14.5	14.8	15.1	15.5	15.8

Analysed data demonstrates that 99.7% of modules produced have current and voltage tolerance of ±3% from nominal values.
Values at standard test conditions STC (airmass AM 1.5, irradiance 1000 W/m², cell temperature 25°C).
At low irradiance of 200 W/m² (AM 1.5 and cell temperature 25°C) at least 97% of the STC module efficiency will be achieved.

ELECTRICAL DATA @ NOCT	REC235PE BLK	REC240PE BLK	REC245PE BLK	REC250PE BLK	REC255PE BLK	REC260PE BLK
Nominal Power - P_{MPP} (Wp)	179	183	187	189	193	197
Nominal Power Voltage - V_{MPP} (V)	27.5	27.7	28.1	28.3	28.5	29.0
Nominal Power Current - I_{MPP} (A)	6.51	6.58	6.64	6.68	6.77	6.81
Open Circuit Voltage - V_{OC} (V)	34.2	34.4	34.7	35.0	35.3	35.7
Short Circuit Current - I_{SC} (A)	6.96	7.03	7.08	7.12	7.21	7.24

Nominal cell operating temperature NOCT (800 W/m², AM 1.5, windspeed 1 m/s, ambient temperature 20°C).

CERTIFICATION

IEC 61215 & IEC 61730, IEC 62716 (ammonia resistance) & IEC 61701 (salt mist - severity level 6).

Member of PV Cycle

WARRANTY

10 year product warranty
25 year linear power output warranty
(max. degression in performance of 0.7% p.a.)

TEMPERATURE RATINGS

Nominal Operating Cell Temperature (NOCT)	45.7°C (±2°C)
Temperature Coefficient of P_{MPP}	-0.40 %/°C
Temperature Coefficient of V_{OC}	-0.27 %/°C
Temperature Coefficient of I_{SC}	0.024 %/°C

GENERAL DATA

Cell Type:	60 REC PE multi-crystalline 3 strings of 20 cells
Glass:	3.2 mm solar glass with anti-reflection surface treatment
Back Sheet:	Double layer highly resistant polyester
Frame:	Anodized aluminium (black)
Junction Box:	IP67 rated 4 bypass diodes
	4 mm² solar cable, 0.9 m + 1.2 m
	Hosiden 4 mm² connectors, MC4 connectable

MAXIMUM RATINGS

Operational Temperature:	-40 ... +80°C
Maximum System Voltage:	1000 V
Maximum Snow Load:	550 kg/m² (5400 Pa)
Maximum Wind Load:	244 kg/m² (2400 Pa)
Max Series Fuse Rating:	25 A
Max Reverse Current:	25 A

MECHANICAL DATA

Dimensions:	1665 x 991 x 38 mm
Area:	1.65 m²
Weight:	18 kg

Note! Specifications subject to change without notice.

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REC is a leading global provider of solar electricity solutions. With nearly two decades of expertise, we offer sustainable, high-performing products, services and investment opportunities for the solar and electronics industries. Together with our partners, we create value by providing solutions that better meet the world's growing electricity needs. Our 2,400 employees worldwide generated revenues of more than NOK 13 billion in 2011, approximately EUR 1.7 billion. To see more of what REC can offer, visit www.recgroup.com.

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