HSIB300

HIGH EFFICIENCY 300 KW CENTRAL INVERTER

The photovoltaic central inverter HSIB300 is a special transformerless development for IT-grids and for the operation with the String Booster Box SBB16-10. The inverter was designed using the newest efficiency-optimized technology in order to get higher returns from the solar installation. Right from the start, all devices to be installed were chosen with respect to loss reduction:

- The power part was realized using Trench-IGBTs of the newest generation and intentionally oversized to increase efficiency.
- The filter inductor was optimized to reduce power losses under partial as well as full load condition.
- Large heat sinks allow the use of small fans with low power consumption.
- Motor driven DC-breakers are used.

The sum of these measures leads to a maximum efficiency of 98,7 %. Even under partial load of only 10 % an efficiency of 98,8 % is achieved. The EU efficiency reaches outstanding 98,6 %. This high efficiency is unique for inverters of this technology and offers multiple advantages to the user:

- More energy from the photovoltaic array is fed to the grid, therefore a higher rate of return is obtained.
- Less waste heat has to be dissipated out of the already warm operating room.
- The reduction of losses increases the lifetime of the internal components.

The system is designed for low maintenance and long lifetime. Within the development process of the HSIB300, a major design criterion was the simpleness and safety of the operating system for the inverter. This was achieved by a touch screen with a menu-based graphic user interface. Up to one year, the inverter stores all relevant measured values. These values as well as current operating data can be monitored online or downloaded via the Ethernet interface. In the unlikely case of an inverter fault, the control software automatically sends a message with a failure report. The inverter operates completely stand-alone and the first start-up requires no adjustments of the system. Each string box can be connected and disconnected by a Scada system.

HSIB300

Helios Systems® Wind&Sun Technologies Company
Inverters made by **FeCon GmbH**
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Technical Data HSIB300

Electrical Data	
Rated AC-power at ±10 % of rated grid voltage	300 kW
Maximum AC-power at rated grid voltage	330 kW
AC-voltage and frequency range, other frequencies on request	480 V ±10 %, 3~, 50 Hz ±2 Hz, IT-grid
Maximum AC-current	396 A
Line power factor (cos Φ) at 20% rated power	> 0,98
AC-current distortion (THD) at rated power	< 3 %
Rated PV-power within ±10 % of rated grid voltage	304 kW
Maximum PV-power at rated grid voltage	335 kW
Maximum PV-current	409 A
Maximum PV no-load-voltage	900 V=
PV-rated voltage	820 V=
Control strategy	Constant voltage
Efficiency at (10|30|50|75|100) % power	(98,8|98,8|98,7|98,7|98,6) %
EU efficiency incl. auxiliary power without cooling circuit	98,6 %
Feed-in starting at	450 W
Standby losses	< 30 W
Maximum auxiliary power	< 2000 W
General Data	
Ambient temperature (Others on request)	0 °C to 50 °C
Relative humidity non-condensing	< 95 %
Cooling type	1500 m above sea level
Minimum air quality acc. to EN60721-3-3	Forced air cooling 3000 m^3/h
Maximum altitude without derating in power	Class 3S2
Protection class	IP20
Dimensions (H × W × D) Inverter + control cabinet	1900 mm x 1400 mm x 850 mm
Weight Inverter + control cabinet	1080 kg
Colour of cabinet (different colours on request)	RAL7035
EMI	Complies EN 6100-6-2, EN 61000-6-4
GMedium-voltage directive	BDEW
Grid monitoring	Acc. to VDEW / BDEW standards
CE-conformity	Complies
Features	
DC-disconnector	Up to 5 motor driven DC circuit breakers
AC-contactor	Grid contactor
AC circuit breaker	Available
Earth leakage detection	Earth leakage monitor
Surge arresters	With monitoring on AC- and DC-side
Options	
Earthing of solar array	Only negative pole
Separately secured DC-inputs	Heating incl. thermostat
Measuring and monitoring of single input currents	
Sensor (interface for radiation sensor => features)	
Cabinet heating incl. thermostat	
Display in control cabinet for status display	Touch screen with numerical and graphical display
Communication Cabinet Standard	PC and monitor

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