HIVERTER NP215L Series

Grid Tied Solar Central Outdoor Inverters

3300 kVA, 3125 kVA & 2500 kVA

HITACHI

About Grid Tied Solar Central Outdoor Inverters

Highly Advanced I Reliable I Highly Efficient I High Performance

Hitachi, with more than 100 years of legacy worldwide and with installation base of Grid Tied Solar Central Inverters in India, brings to you the 3.3 MW, 3.125 MW & 2.5 MW 1500 VDC Solar Central Outdoor Inverters to maximize the energy yield for multi megawatt & utility scale power plants, available with highly efficient conversion technology. It is a critical BOS (Balance of System) component in a solar photovoltaic system, which converts DC power generated by photovoltaic array to AC power that is fed to the utility power grid system.

Highlights

- Outdoor IP54 unit: Savings on outdoor civil construction or containerized solution
- 3 level PWM technology to achieve Euro Efficiency @98.3% at Min. DC Input Voltage considering similar outdoor category
- Night time reactive power compensation function
- MPPT controllers having voltage range 950/1000 VDC to 1300 VDC
- Latest FRT
- Easy to install & maintain
- Low auxiliary power consumption due to variable fan speed control according to power feeding
- DC over power loading up to 200%

Applicable IEC Standards

Safety Testing	IEC 62109-1 : 2010	Safety of power converters to use in photovoltaic power systems
	IEC 62109-2 : 2011	Safety of power converters to use in photovoltaic power systems
	IEC 62116 : 2014	Utility-interconnected photovoltaic inverters - Test procedure of islanding prevention
Enclosure Protection	IEC 60529 : 2015	IP protection
Performance	IEC 61683 : 1999	Power conditioners: Procedure for efficiency measurements.
EMC	IEC 61000-6-2 : 2016	Emission requirements
	IEC 61000-6-4 : 2018	Immunity requirements
Environmental Testing	60068-2-1 : 2025	Cold test
	60068-2-2 : 2025	Dry heat test
	60068-2-14 : 2023	Change of temperature
	60068-2-30 : 2025	Damp heat cyclic test
Indian Grid Connectivity	CEA	Technical standard for the connectivity to the grid - for India only (Hitachi PCS can follow the updated CEA guidelines with the available flexible features to meet future grid protection demand)

Technical Specifications

Model	HIVERTER NP215L		
Solar PCS Rating (AC)	3300 kVA	3125 kVA	2500 kVA
DC-AC Conversion System	3 Level High Frequency PWM Inverter		
Control System	MPPT and AC Current Control		
Grid Data			
Power Rating	3300 kVA @50 °C ambient 3762 kVA @25 °C ambient	3125 kVA @50 °C ambient 3563 kVA @25 °C ambient	2500 kVA @50 °C ambient 2850 kVA @25 °C ambient
AC Grid Connection	Three Phase		
Maximum AC Current	2762 A @50 °C ambient 3151 A @25 °C ambient	2775 A @50 °C ambient 2997 A @25 °C ambient	2092 A @50 °C ambient 2388 A @25 °C ambient
Output Waveform THDi	<3% at rated current		
Nominal Output Voltage (Rated voltage)	690 VAC	650 VAC	690 VAC
Output Voltage Range	690 V ± 10%	650 V ± 10%	690 V ± 10%
Output Frequency Range	50/60 Hz ± 2 %		
Transformer	Transformer-less Design		
Peak Efficiency	98.7% at Min DC Input Voltage		
Euro Efficiency	98.3 % at Min DC Input Voltage		
Power Factor (Adjustable)	0.80 Lead to 0.80 Lag (with in Max. kVA limited at maximum Ampere rating)		
PV Side			
Nominal DC Power Overloading	4.62 MW	4.062 MW	3.25 MW
Start Up Voltage(4)	1000 V		
MPPT Voltage Range (2)	DC 1000 to 1300V		
Maximum DC Input Voltage (OC)	1500 V		
Minimum DC Input Voltage	1000 V		
Maximum DC Input Current	3367 A @50 °C ambient 3838 A @25 °C ambient	3325 A @50 °C ambient 3625 A @25 °C ambient	2551 A @50 °C ambient 2908 A @25 °C ambient
No of String Inputs	20	20	16
No of MPPT functions	1		
Auxiliary Power Supply			
Control Power in Operation	AC 230V 1Φ (Internal 200 W during operation)		
Cooling Fan Power	AC 230V 1Φ (Internal 5000 W (max) during full load operation at 50 °C ambient. Consumption will reduce according to load and ambient temperature)		
Cooling control			
Cooling Type	Heavy Duty fans with variable speed & high service life (Each Inverter)		
Protections			
Islanding Protection	Yes		
Temperature Protection	Yes		
Ground Fault detector	Yes		
Grid Monitoring	Yes		
AC Short Circuit and Over Current	Yes		
AC & DC Over Voltage and Temperature	Yes		
Reactive Power Control	Yes		
Automatic Wake-up and Shut-down	Yes		
Breaker on AC Side	Air Circuit Breaker (ACB) at output		
LVRT	Yes		
Switch on DC Side	DC Disconnector Switch		
Negative grounding	Yes (Optional)		
Communication			
Visual Display	Colour LCD Display with Touch Screen (5.7 inch)		
SCADA Interface	Rs485 Modbus / Modbus TCP-IP / TC P-IP over Ethernet		
Data Logging	Yes		
Access Interface / Field Bus Connectivity	RS 485 or TCP-IP (Ethernet)		
Mechanical			
Dimensions (H x W x D) mm	2214 x 3482 x 1406 (Including Air duct)		
Weight (kg)	4000 (approximate)	4000 (approximate)	3500 (approximate)
Environmental Limits			
Installation	Outdoor		
Enclosure Protection	IP 54 with Electronics IP65		
Operating Temperature range (3)	(-)0° C to (+) 60° C		
Relative Humidity	15% to 95% (Non Condensing)		
Maximum Noise Level	<= 90 dBA at a distance of 1 meter		
Altitude	0 to 5000 meters	0 to 5000 meters	0 to 5000 meters

Notes: (1) Maximum DC power can be loaded up to 200%.Same can be discussed during detail engineering. (2) EPC/Plant designer should select MPPT voltage range within mentioned DC voltage range. (3) 10 % de-rating per degree rise in temperature from 50° C to 60° C. (4) Start up voltage can be adjusted at site based on site condition.

Hitachi Hi-Rel Power Electronics Pvt. Ltd.

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