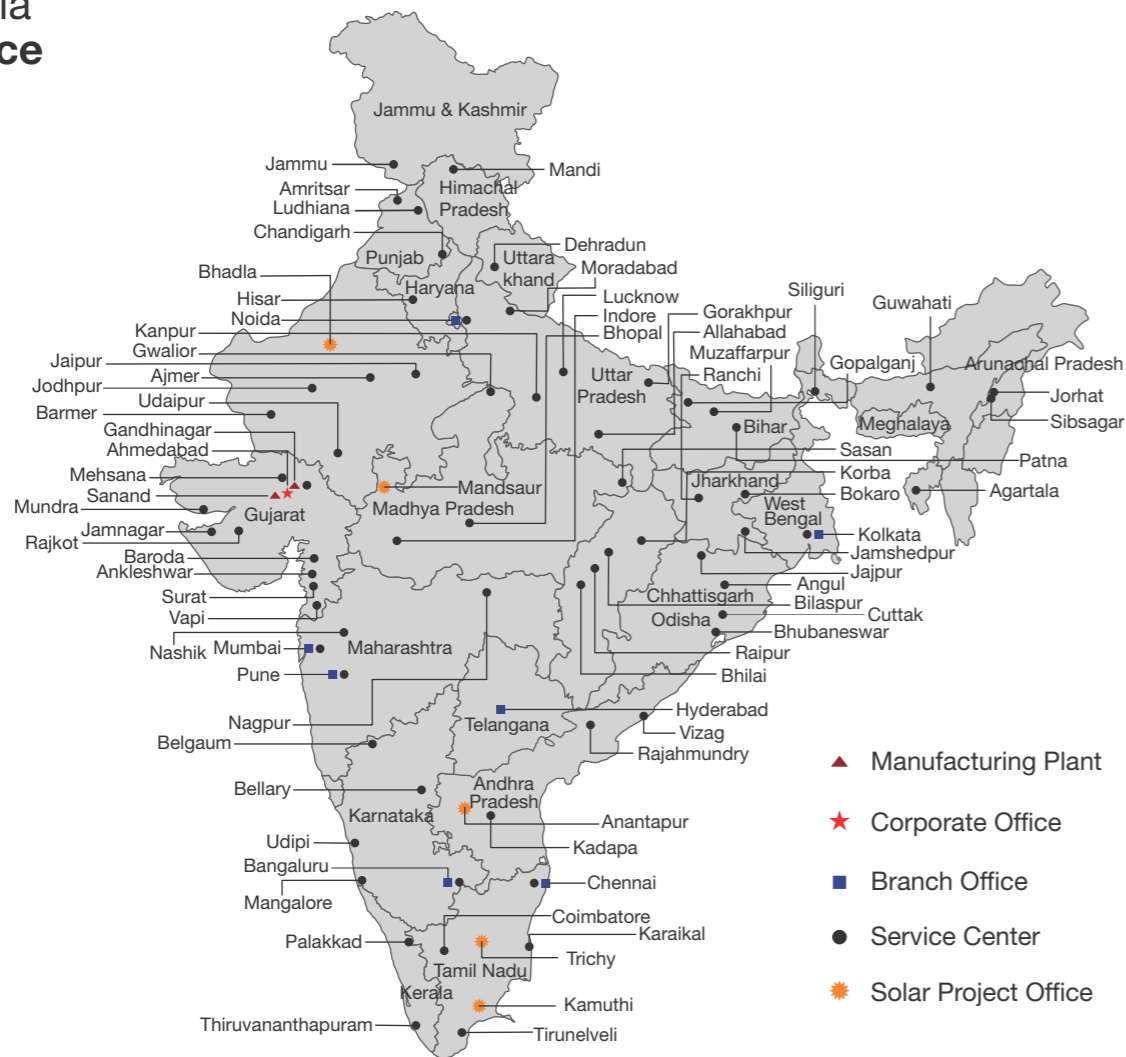




Grid Tied Solar Inverters
Highly Efficient Conversion Technology
Central Inverters (250 kW to 2500 kW)
String Inverters (20 kW to 70 kW) (3 Ph.)

Generating
3 GW+
Renewable Power
in Indian
Solar Sector

Pan India Presence



Hitachi Hi-Rel Power Electronics Pvt. Ltd.

Registered Office
B - 52, Corporate House, Judges Bungalow Road, Bodakdev, Ahmedabad - 380 054. Gujarat. India.
Phone: +91-79-6604 6200, Fax: +91-79-6604 6201

Sanand Works
SM 3 & 4, Sanand - II GIDC, Industrial Estate, Bol Village, Sanand - 382 110 Gujarat, India.
Phone: +91-2717-678777, Fax: +91-2717-678700

Email: contact@hitachi-hirel.com, **Web:** www.hitachi-hirel.com

In the spirit of continuous improvement, specifications are subject to change without notice.



f /hitachihirel
in /company/hitachihirel
y /hitachihirelindia



Ver.1.0(2018)PV String I Spotlight

About Hitachi Hi-Rel Power Electronics

HITACHI
Inspire the Next

Hitachi, with more than 100 years of legacy worldwide, offers the advanced, efficient & world class power electronics products in India through its 100% owned subsidiary company - Hitachi Hi-Rel Power Electronics Pvt. Ltd., which is recognized as a pioneer in power electronics and belongs to Industrial products business unit of Hitachi Ltd., Japan.

With a vision to be recognized as the most trusted Power Electronics Company by supplying superior products and services, Hitachi has garnered a significant level of trust in market segment and continues to offer world class power electronics products, value added services & customized solutions.

Hitachi deals with a varied range of products, such as industrial UPS, IT UPS, medium & low voltage drives, grid tied solar inverters and railway products. Hitachi serves entire gamut of Industries, particularly in mission critical applications for Refineries, Petro-Chemicals, Power Generation, Steel & Metals, and Process Industries as well as Critical Data Processing Applications. It has a pan India dominance. It's sales network & service infrastructure expands out to the world with the ability to reach out to clients across South East Asia, Middle East and Africa.

- Pioneer in power electronics
- Leading manufacturer of UPS, Drives, Solar Inverters and Air Compressors
- Manufacturing facility at Sanand and Gandhinagar near Ahmedabad in Gujarat, India
- In-house R&D facility recognized by DSIR, Government of India
- State-of-the-art product portfolio
- ISO 9001:2015, ISO 14001:2015 & BS OHSAS 18001:2007 certified company with export house status
- Approved by leading consultants and EPC vendors
- Global and pan India presence
- Serving entire gamut of industries
- Rich experience in "mission critical" applications
- Dedicated & decentralized 24x7 after-sales-service

Core Values like customer delight, quality orientation, harmony, sincerity, pioneering spirit and growth differentiate Hitachi from others.

Product Portfolio



Industrial UPS

3:1 Phase - 10 kVA to 225 kVA
3:3 Phase - 10 kVA to 500 kVA
Battery Charger - 24 to 360 VDC



IT UPS

1:1 Phase - 1 kVA to 10 kVA
3:1 Phase - 10 kVA to 20 kVA
3:3 Phase - 10 kVA to 500 kVA



Medium Voltage Drives

Up to 14700 kVA (3.3 kV to 11 kV)



Low Voltage Drives

0.2 kW to 450 kW



Grid Tied Solar Inverters

Central Inverters – 250 kW to 2500 kW
String Inverters (3 Ph) – 20 kW to 70 kW



Engineered Drive System

For steel & process automation and other industrial applications

Hitachi's Presence in Indian Solar Domain

HITACHI
Inspire the Next

The government of India recognizes the need of sustainable, eco-friendly and innovative recyclable resource based energy solution and with nearly 300 sunny days in India, the government through National Solar Mission is mobilizing infrastructure to create 100 Giga Watts of solar electricity generation capacity by 2022.

Hitachi Solar Inverter is a potent example, which being at the heart of Solar power generating system is bringing Social Innovation in the Indian power sector by providing the critical technological link which enabled conversion of DC to AC to help solar power distribute through the national grid. Thus, promoting clean, renewable energy and reducing the dependency on polluting fossil fuel based power generation.

With over 3 GW installation base in India, Hitachi Grid Tied Solar Inverters are among the best available Grid Tied Solar Inverters which are high performance inverters, highly advanced & reliable, highly efficient, easy to install, safe, helping you achieve better ROI with higher yields and lower maintenance cost.

- State of the art manufacturing facility in India at Sanand and Gandhinagar in Gujarat,
- Successful track record of more than 25 years in designing and manufacturing of highly efficient power electronics products
- Commissioned >3 GW grid tied solar inverters in India and >5GW Globally
- Generating unmatched energy yield through 3 level advance PWM technology
- Prompt availability of spares and components locally in India
- Most acclaimed service support through 20+ branch offices across the country

Hitachi envisions a very green future, a future where by 2020, solar power can indeed form the backbone of India's energy security and independence and we help light up millions of lives by progressively contributing to the renewable energy vision of 'power for all' vision of the Indian government.

Let's Solarize...for a better brighter world



Grid Tied String Inverters

HIVERTER Si Series (3 Ph)

String Inverter Technology

Intelligent Power Management

- LVRT / ZVRT protections
- Self-power reducer in case of over-frequency
- Fully adjustable reactive power & power factor for different grids
- Real time MPPT algorithm

Built-In Protection Functions

- Over current, Over load
- O/ V & U/V protection
- Anti-islanding, Current leakage
- Over temperature protection
- Over frequency, Under-frequency
- SPD Type III, Type II (Optional for 20-33 kW models)

Humanized Functions

- Audible & visible alarming function
- Remote system connection or disconnection
- Remote firmware upgrade
- Remote monitoring
- Separate section for power & termination

Highlights

Wide DC input range from 250 V to 950 V	DC power overloading up to 150 %
Highest AC output range +/- 25%	Low sensitivity to the grid disturbance to avoid unnecessary breakdown
Up to 3 Independent MPPT to ensure optimal energy harvest	User friendly interface like RS 232 / RS 485 / Wi-Fi
MPPT accuracy is up to 99.9 %, max euro efficiency 98.4 %	Easy to read LCD display with all operational status & necessary data
Wide ambient temp range -25°C to 60°C	Reactive power controller
IP 65 protection for Indoor & outdoor application	Type II SPD String current monitoring

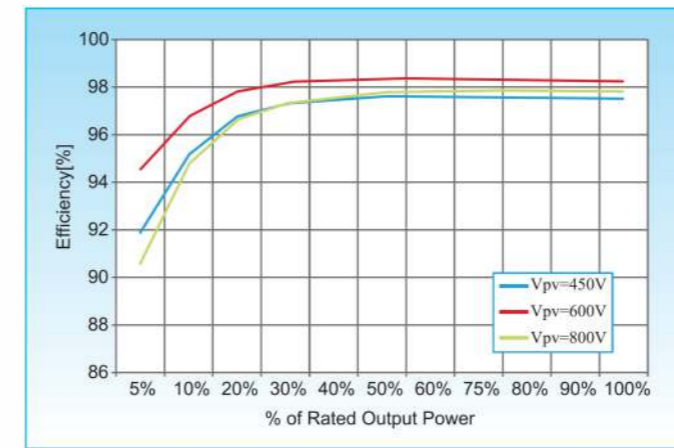
Globally Renowned Component Partners

MOSIGBT 	IC 	Fuse 	Current Transducer
Capacitor 	Diode 	Relay 	MCU

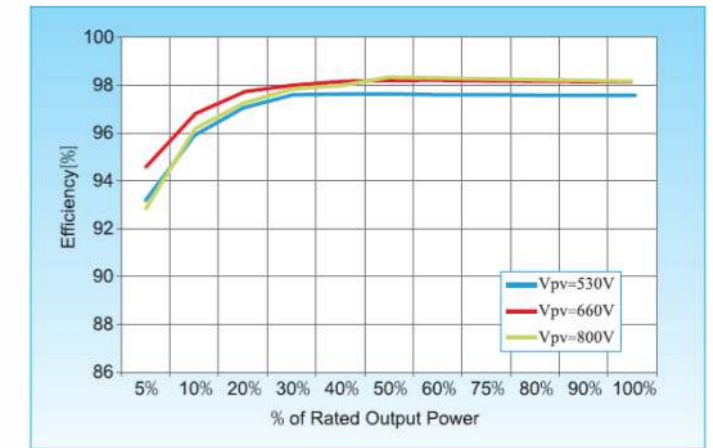
Grid Tied String Inverters

HIVERTER Si Series (3 Ph)

Efficiency Curve



(Hiverter Si - 20 kW to 33 kW models)



(Hiverter Si - 50 kW to 70 kW models)

High-yield

- Max 98.6% efficiency
- Real time precise MPPT algorithm for max harvest
- Wide input voltage operation range from 250 V to 950 V

All in one, Flexible and economical system solutions

- DC switch
- Built-in PV combiner
- Power management unit
- Optimum selection for big PV plants, commercial buildings.
- Inbuilt type II DC surge protection device*
- Inbuilt type II AC surge protection device*

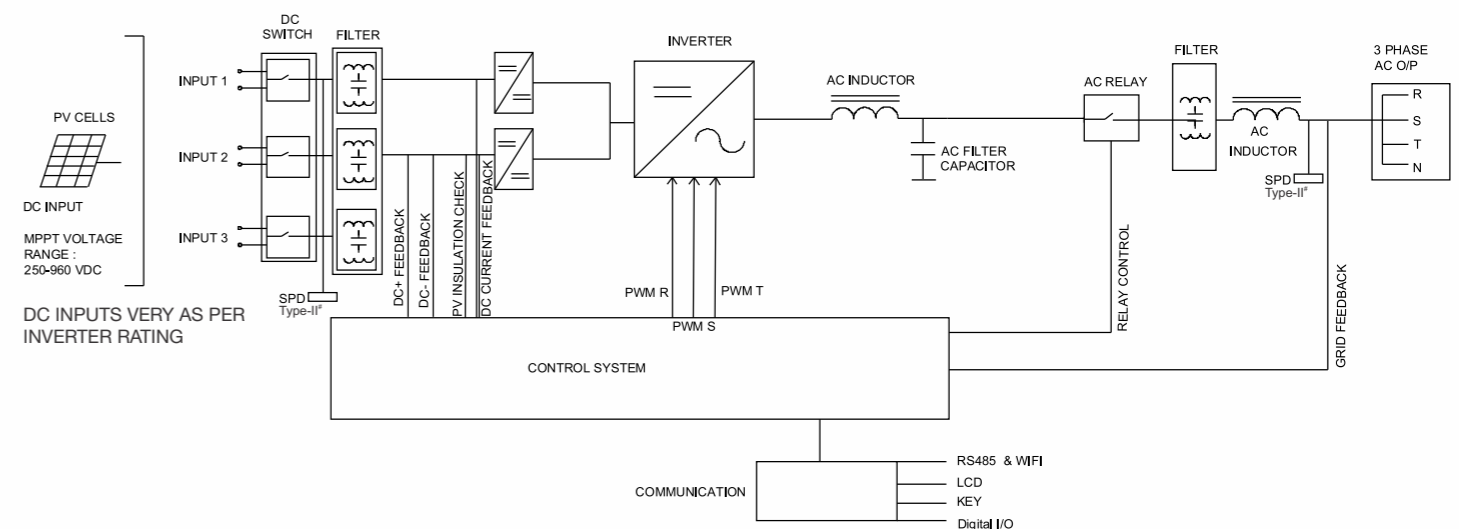
Low maintenance cost

- Rust-free aluminum covers
- Flexible monitoring solution
- Multi-function relay can be configured to show various inverter information

Intelligent grid management

- ZVRT support
- Reactive power adjustable
- Self-power reducer when over frequency
- Remote active / reactive power limit control

Single Line Diagram



*Optional for 20-33 kW Models

Grid Tied String Inverters

HIVERTER Si Series (3 Ph)

20 kW / 25 kW / 30 kW / 33 kW

HITACHI
Inspire the Next



- Best suitable for heavy industries and large commercial establishments in India
- Wide range of 20 kW to 33 kW Inverters offers more flexibility as per project design
- Real time precise MPPT algorithm to ensure highest efficiency up to 98.6%
- Intelligent grid management features
- First of its kind IV curve diagnostics feature
- A robust IP65 enclosure allowing hassle free outdoor installations
- Low maintenance cost
- Safety assured through its anti islanding, RCMU, ground fault monitoring

Advantages

More Reliability

- Usage of only higher voltage level capacitor
- Support four uni-polar output relays (effective heat dissipation, longer life)

Safer

- Equipped with leakage current detection components
- Use professional solar AC connectors as output

More Convenience

- All information is available on a 4" large screen
- Availability of four separate buttons give easy operation
- Equipped with compact ACDB & DCDB (optional)

Higher Efficiency

- "T" type 3 level topology provides higher efficiency

Better Monitoring

- RS485 / Wi Fi / GPRS / Ethernet
- Local data is recorded in SD card for 25 years
- IV curve scanning technology, catch MPPT easily and quickly

Better Appearance

- Die-casting housings
- Go through anti-corrosion and anti-rust protection processes

Grid Tied String Inverters

HIVERTER Si Series (3 Ph)

Technical Specifications - 20 kW to 33 kW

HITACHI
Inspire the Next

Model	HIVERTER-Si 20K	HIVERTER-Si 25K	HIVERTER-Si 30K	HIVERTER-Si 33K	
Input (DC)	Max. Input Power	26000W	32500W	39000W	42900W
	Max. DC power for single MPPT	13000W	16000W	18000W	20000W
	No. of independent MPPT	2			
	No. of DC inputs	2 for each MPPT	3 for each MPPT		
	Max. Input voltage	1100V			
	Start-up Input Voltage	250V(+/-1V)			
	Rated Input voltage	620V			
	MPPT Voltage Range	230V-950V			
	Full load DC voltage range	480V-850V	460V-850V	520V-850V	580V-850V
	Max. Input MPPT current	24A/24A	28A/28A	30A/30A	30A/30A
Output (AC)	Rated Power(@230V,50Hz)	20000W	25000W	30000W	33000W
	Max. AC Power	22000VA	27500VA	33000VA	36300VA
	Max. Output Current	32A	40A	48A	53A
	Nominal Grid Voltage	400V, 3Ph			
	Grid Voltage Range	410V-480V			
	Nominal Frequency	50/60Hz (± 5Hz)			
	Active Power Adjustable Range	0~100% kW			
	THDi	<3%			
	Power Factor	1(Adjustable+/-0.8)			
	Performance	Max Efficiency	98.2%	98.4%	98.4%
European Weighted Efficiency		98.0%	98.2%	98.2%	98.2%
Self-consumption at Night		<1 W			
Feed-in Start Power		45W			
MPPT Efficiency		99.9%			
Protection	DC Reverse Polarity Protection	Yes			
	DC Switch	Yes			
	Protection class/Overvoltage Category	I/II			
	Safety Protection	Anti islanding, RCMU, Ground fault monitoring			
	Certification	IEC 62116, IEC 61727, IEC 61683, IEC 60068(1,2,14,30), IEC 62109-1/2 EN 50530, IEC 60529, IEC 61000-6-2 & 61000-6-4			
	SPD	Type 3 (standard) & Type 2 (optional)			
Communication	ARPC	Anti Reverse Power Controller (optional)			
	Standard Communication Mode	Rs485, Wifi (optional), GPRS (optional), SD card, Multi-function relay			
	Operation Data Storage	25 Years			
General Data	Ambient Temperature Range	-25°C +60°C			
	Topology	Transformer-less			
	Degree of Protection	IP65			
	Allowable Relative Humidity Range	0-100% (non-condensing)			
	Max. Operating Altitude	< 2000 m			
	Noise	< 30 dB	< 45 dB		
	Weight	37 kg			
	Cooling	Natural	Fan		
	Dimensions	666*512*254mm			
Display	LCD display				

Grid Tied String Inverters

HIVERTER Si Series (3 Ph)

50 kW / 60 kW / 70 kW

HITACHI
Inspire the Next



- Best suitable for heavy industries and large commercial establishments in India
- Wide range of 50 kW to 70 kW Inverters offers more flexibility as per project design
- Real time precise MPPT algorithm to ensure highest efficiency up to 98.6%
- Intelligent grid management features
- First of its kind IV curve diagnostics feature
- A robust IP65 enclosure allowing hassle free outdoor installations
- Low maintenance cost
- Safety assured through its anti islanding, RCMU, ground fault monitoring

Advantages

More Reliability

- Usage of only higher voltage level capacitor
- Support four uni-polar output relays (effective heat dissipation, longer life)

Safer

- Equipped with leakage current detection components
- Use professional solar AC connectors as output

More Convenience

- All information is available on a 4" large screen
- Availability of four separate buttons give easy operation
- Equipped with compact ACDB & DCDB

Higher Efficiency

- "T" type 3 level topology provides higher efficiency

Better Monitoring

- RS485 / Wi Fi / GPRS / Ethernet
- Local data is recorded in SD card for 25 years
- IV curve scanning technology, catch MPPT easily and quickly

Better Appearance

- Die-casting housings
- Go through anti-corrosion and anti-rust protection processes

Grid Tied String Inverters

HIVERTER Si Series (3 Ph)

Technical Specifications - 50 kW to 70 kW

HITACHI
Inspire the Next

Model	HIVERTER-Si 50K	HIVERTER-Si 60K	HIVERTER-Si 70K	
Input (DC)	Max. Input Power	55000W	66000W	77000W
	Max. DC power for single MPPT	22000W	22000W	26000W
	No. of independent MPPT	3		
	No. of DC inputs	4/3/3	4/4/4	
	Max. Input voltage	1100V		
	Start-up Input Voltage	350V		
	Rated Input voltage	600V	600V	600V
	MPPT Voltage Range	250V-950V		
	Full load DC voltage range	500V-800V	530V-800V	660V-800V
	Max. Input MPPT current	40A/30A/30A	40A/40A/40A	40A/40A/40A
	Max. Input MPPT current per string	12A		
Output (AC)	Rated Power(@230V,50Hz)	50000W	60000W	70000W
	Max. AC Power	55000W	60000W	70000W
	Max. Output Current	80A	90A	90A
	Nominal Grid Voltage	400V, 3Ph	400V, 3Ph	480V, 3Ph
	Grid Voltage Range	310V-500V		422V-528V
	Nominal Frequency	50/60Hz (± 5Hz)		
	Active Power Adjustable Range	0~100% kW		
	THDi	<3%		
	Power Factor	1(Adjustable+/-0.8)		
	Max Efficiency	98.5%	98.6%	98.6%
Performance	European Weighted Efficiency	98.3%	98.4%	98.4%
	Self-consumption at Night	<1 W		
	Feed-in Start Power	45W		
Protection	MPPT Efficiency	99.9%		
	DC Reverse Polarity Protection	Yes		
	DC Switch	Yes		
	Protection class/Oversvoltage Category	I/III		
	Safety Protection	Anti islanding, RCMU, Ground fault monitoring		
	Certification	IEC 62116, IEC 61727, IEC 61683, IEC 60068 (1,2,14,30), IEC 62109-1/2 EN 50530, IEC 60529, IEC 61000-6-2 & 61000-6-4		
	SPD	Type II SPD at DC & AC side		
Communication	ARPC	Anti Reverse Power Controller (optional)		
	Power Management Unit	According to certification and request		
	Standard Communication Mode	Rs485, Wifi, GPRS (optional), SD card, Multi-function relay		
	Operation Data Storage	25 Years		
General Data	Ambient Temperature Range	-25~ +60°C		
	Topology	Transformer-less		
	Degree of Protection	IP65		
	Allowable Relative Humidity Range	0-100% (non-condensing)		
	Max. Operating Altitude	4000m (De-rating > 3000m)		
	Noise	< 60 dB		
	Weight	68 kg	70 kg	
	Cooling	Fan		
	Dimensions	737*713*297mm		
Display	LCD display			

S-WE01S

Solar MAN WiFi Kit is suitable for homes and office buildings where WiFi network is available. A WiFi module is integrated in the data logger, enabling data transmission via WiFi network. No additional wiring or software is required, far simplifying installation and reducing costs for users.

Furthermore, an independent web server is integrated in the data logger, which enables users to directly connect to the WiFi access point of the data logger and to check the performance and yield of the inverter even without any other network.



S-G01

Solar MAN GPRS Kit is suitable for standalone plants or buildings where no network connection is available. A GPRS module is integrated in the data logger, and with a valid SIM card, the data logger can transmit data via mobile network.

As the strategic partner of China Mobile, Solar MAN can provide users of GPRS data logger with the most cost-effective global roaming SIM cards which support GPRS data roaming in almost all countries around the world. We will provide the most favorable tariff and the best package for users to ensure the long terms and stable data acquisition from data loggers, therefore ensuring continuous monitoring of PV systems.



- Compatible with most inverters on the market
- Can be connected to up to 64 inverters
- Devices such as combiner box, electric meter and weather station, etc. can be connected
- A variety of communication methods available, including Ethernet, WiFi, GPRS and Zigbee
- Dual mode of local monitoring and remote monitoring
- Quick installation and easy operation with plug & data storage of over 25 years
- Check real-time data of data logger and inverter via embedded web server
- Dual mode of local monitoring and remote monitoring

Technical Specifications

Model		S-WE01S	S-G01
General	Max. number of inverters	1-64	1-64
	Inverter communication	RS485/422/232	RS485/422/232
	Remote communication	Wi-Fi(802.11 b/g/n)/Ethernet	GPRS
	Max. communication range	<1km	<1km
	Communication rate	1200-19200bps (adjustable)	1200-19200bps (adjustable)
	WiFi frequency	2.4GHz	88/900/1800/1900MHz
	WiFi communication range	400m in outdoor open area without obstruction	-
	WiFi transmitting power	802.11 b/g/n:+20dBm/+18dBm/15dBm (max)	Class 4(2W)/Class 1(1W)
	Data collection intervals	5 minutes (default)/1-15minutes (optional)	5 minutes (default)/1-15minutes (optional)
	Memory	SD Card/EEPROM (optional)	SD Card/EEPROM (optional)
	Preferences setting	Web Server/Serial AT Instruction	Serial at Instruction
	Firmware updates	Serial/Wireless	Serial/Wireless
	Data access	Serial/WiFi point-to-point/Remote server	Serial/Remote Server
Status display	4LEDs	4LEDs	
Electrical	Input voltage	DC 5V	DC 5V
	Static power consumption	<1.6W	<2W
	Max. instantaneous power consumption	< 2.5W	< 3W
Environmental	Operating temperature	-10~+65°C	-10~+65°C
	Operating humidity	10%-90% Relative humidity, no condensation	10%-90% Relative humidity, no condensation
	Storage temperature	-40~+85°C	-40~+85°C
	Storage humidity	<40%	<40%
	Protection class	IP21	IP21
Physical	Dimension(L*W*H)	110mm*80mm*26mm	110mm*80mm*26mm
	Weight	108g	102g
Other	Installation method	Wall mounted or flatwise	Wall mounted or flatwise
	Certificates	FCC,CE,RoHS	FCC,CE,RoHS

Grid Tied Central Inverters

HIVERTER NP201i Series

250 kW to 2500 kW

HITACHI
Inspire the Next



Generating
3 GW+
Renewable Power
in Indian
Solar Sector



kW Scale Central Inverter

MW Scale Central Inverter

With over 3 GW installations in India, Hitachi Grid Tied Central Inverters are among the best available Grid Tied Solar Inverters which is suitable for multi megawatt and utility-scale PV power plants. It is a critical balance of system (BOS) component in a solar photovoltaic system. It converts DC Power generated by the Photovoltaic (Solar) array to AC Power that is fed to the Utility Power Grid System.

This highly acclaimed Hitachi Solar Inverters are being developed at Sanand based manufacturing facility near Ahmedabad in India based on the contemporary technology of Hitachi Ltd, Japan, ably supporting Government of India's 'Make in India' initiative. It has been thoughtfully designed keeping all the critical parameters and challenges faced by project developers in terms of better grid compliance & most importantly CAPEX Vs. YIELD factor.

With reactive power control, 3 Level IGBT technology and wider MPPT range, Hitachi solar inverters deliver considerably maximum power generation. Its compact design and lower weight offers ease of installation, repair & maintenance. Its large touch screen display collects the real-time data and provides fault detection diagnostics; ensure faster retrieval of Information for corrective action. It is also suitable for high ambient temperature.

Product Range

- kW Scale: 250 kW, 500 kW, 630 kW, 670 kW, 715 kW
- MW Scale: 1 MW, 1.25 MW, 1.34 MW, 1.43 MW, 2.5 MW

Highlights

3 Level PWM Inverter technology resulting in reduction of losses, low harmonic output current (< 3%) & improved efficiency	Low current harmonic distortion
Reactive power control (night time)	Lowest auxiliary consumption
Suitable for handling DC overloading capacity up to 140%	Rated power @ 0.95 pt at 50°C
Widest MPPT range	Provision of air circuit breaker at o/p at each MW scale inverter
Variable output AC voltage suitable for retrofitting jobs.	2.5 MW containerized solution

Hitachi Milestone Projects in India

Grid Tied Central Inverters (1.25 MW Model)

HITACHI
Inspire the Next

	Location	Adani Kamuthi
	Project Volume	360 MW
	Commissioned	April 2016

	Location	NTPC Mandsaur
	Project Volume	230 MW
	Commissioned	July 2017

	Location	NTPC Bhadla
	Project Volume	195 MW
	Commissioned	November 2017

	Location	GIPCL
	Project Volume	155 MW
	Commissioned	April 2017

	Location	NTPC Anantapur
	Project Volume	150 MW
	Commissioned	April 2015

	Location	Adani Punjab
	Project Volume	90 MW
	Commissioned	September 2017

	Location	NLC
	Project Volume	65 MW
	Commissioned	August 2017

	Location	Renew Power
	Project Volume	50 MW
	Commissioned	March 2016

	Location	Rays Infra
	Project Volume	50 MW
	Commissioned	April 2018

	Location	ACME
	Project Volume	25 MW
	Commissioned	March 2014

Technical Specifications - 250 kW to 715 kW

Solar Inverter Rating		250 kW	500 kW	630 kW	670 kW	715 kW
	AC-DC Conversion System	3 level high frequency PWM Solar Inverter				
	Control System	MPPT and AC current control				
Grid Data	Power Rating	250 kW	500 kW	630 kW	670 kW	715 kW
	AC Grid Connection	Three phase				
	Maximum AC Current	554 A	1049 A	1107 A	1107 A	1107 A
	Output Waveform THDi	< 3% at rated current				
	Nominal Output Voltage	300 V ±10 %	300 V ±10 %	350 V ±10 %	370 V ±10 %	400 V ±10 %
	Output Frequency Range	50 Hz or 60 Hz ± 5%				
	Transformer	Transformer-less design				
	Peak Efficiency	98.7%				
	EURO Efficiency	98.4%				
	Power Factor (adjustable)	0.80 Lead to 0.80 Lag within max. kVA limit				
PV Side	Maximum DC Power	300 kW	600 kW	756 kW	806 kW	858 kW
	MPPT Voltage Range	DC 460 to 900 V	DC 460 to 900 V	DC 525 to 900 V	DC 550 to 900 V	DC 600 to 900 V
	Maximum DC Input Voltage (OC)	1000 V (heavy failure protection level)				
	Minimum DC Input Voltage	460 V	460 V	525 V	550 V	600 V
	Maximum Input Current DC	600 A	1200 A			
External Auxiliary Power Supply	Control Power in Operation	AC 230V, 1Φ, 300W, Max. 6.9A				
	Control Power in Stand-by Mode	< 100 W				
	Cooling Fan Power	AC 415V 3Φ, 400W				
Protections	Islanding Protection	Yes				
	Temperature Protection	Yes				
	Ground Fault Monitoring	Yes				
	Grid Monitoring	Yes				
	AC & DC Short Circuit and Over Current	Yes				
	AC & DC Over Voltage and Temperature	Yes				
	Cooling (controlled)	Forced cooling				
	Fault Ride Through (FRT)	Available operation will be continued in case of momentary voltage dip of residual positive phase.				
	Reducing Grid Voltage Fluctuation Control	Voltage fluctuation due to power change at inter-connecting point will be reduced to within 2%				
	Automatic Wake-up and Shut-down	Yes				
Communication	Breaker on AC Side	MCCB at output				
	Switch on DC Side	Motorized DC Switch at Input				
	Visual Display	LCD display with touch screen				
	Wired Local Monitoring	1 x RS 485 or TCP/IP				
	Unit-wise Integrated Data Logging	Yes				
	Access Interface / Field Bus Connectivity	RS 485 or TCP-IP (ethernet)				
Mechanical	Analogue Input / Output	3 (optional)				
	Digital Input / Relay Output	4				
Environmental Limits	Dimensions (H x W x D) mm (approximate)	1900 x 1400 x 1000				
	Weight (kgs) (approximate)	800	1200	1200	1200	1200
Environmental Limits	Enclosure Protection	IP 20 (IP 21 optional)				
	Temperature Range	(-) 20° C to (+) 50° C				
	Relative Humidity	15% to 95% (non condensing)				
	Maximum Noise Level	75 dBA at a distance of 1 mtr (JIS C 1509 class 2-A characteristic)				
	Altitude	0 to 1000 Mtrs. (option: 2000 mtrs.)				
	Cooling Air Flow	3760 M ³ /Hr.				

Technical Specifications - 1000 kW to 2500 kW

Solar Inverter Rating	1000 kW	1250 kW	1340 kW	1430 kW	2500 kW
DC - AC Conversion System	3 Level High Frequency PWM Inverter				
Control System	MPPT and AC Current Control				
Grid Data					
Power Rating	1000 kW	1250 kW	1340 kW	1430 kW	2500 kW (2 x 1.25 MW)
AC Grid Connection	Three Phase				
Maximum AC Current	2214 A			4428 A - Dual Output Each @ 2214 A	
Output Waveform THDi	< 3% at Rated Current				
Nominal Output Voltage (rated voltage)					
Output Voltage Range	300 V ± 10%	350 V ± 10%	370 V ± 10%	400 V ± 10%	350 V ± 10%
Output Frequency Range	50 Hz or 60 Hz ± 5%				
Transformer	Transformer-less Design				
Peak Efficiency	98.6% at Min DC Input Voltage			98.4% at Min DC Input Voltage	
Euro Efficiency	98.4% at Min DC Input Voltage			98.1% at Min DC Input Voltage	
Power Factor (adjustable)	0.95 Lead to 0.95 Lag 0.80 Lead to 0.80 Lag (within max. kVA limited at maximum ampere rating)				
PV Side					
Maximum DC Power Loading ⁽¹⁾	1200 kW	1500 kW	1610 kW	1716 kW	3000 kW
MPPT Voltage Range ⁽²⁾	DC 460 to 900 V	DC 525 to 900 V	DC 550 to 900 V	DC 600 to 900 V	DC 525 to 900 V
Maximum DC Input Voltage (OC)	1000 V (Heavy Failure Protection Level)				
Minimum DC Input Voltage	460 V	525 V	550 V	600 V	525 V
Maximum Input Current DC	2400 A			2 x 2400 A	
No of MPPT Functions	Single			Dual / 2 MPPT	
External Auxiliary Power Supply					
Control Power in Operation	AC 230 V, 1Φ, 160 W, Inrush Current up to 20 Amp for 2 Cycle			AC 230 V, 1Φ, 320 W, Inrush Current up to 40 Amp for 2 Cycle	
Control Power in Stand-by Mode	< 100 W			< 200 W	
Cooling Fan Power	AC 415 V 3Φ, 800 W			AC 415 V 3Φ, 1600 W	
Cooling Control					
Forced Cooling	Two Heavy Duty Fans with High Service Life			Two Heavy Duty Fans (each PCS) with High Service Life	
Protections					
Islanding Protection				Yes	
DC Reverse Polarity 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	
Fault Ride Through (FRT) (also known as Low Voltage Ride Through (LVRT) as per CEA guide line 2007 - Amendment of 2013)				Yes	
Reactive Power Control				Yes	
Automatic Wake-up and Shut-down				Yes	
Breaker on AC Side				Air Circuit Breaker (ACB) at Output	
Switch on DC Side				Motorized DC Switch at Input	
Negative Grounding				Yes (optional)	
Night Time Reactive Power Compensation				Yes (optional)	
Communication					
Visual Display	Colour LCD Display with Touch Screen (5.7 inch)				
SCADA Interface	RS 485 Modbus / Modbus TCP-IP / TCP-IP Over Ethernet				
Data Logging	Yes				
Access Interface / Field Bus Connectivity	RS 485 or TCP-IP (ethernet)				
Analogue Input / Output	3 (optional)				
Digital Input / Relay Output	4				
Mechanical					
Dimensions (H x W x D) mm ⁽⁶⁾	2082 x 3202 x 1000 (including DC input terminal and AC termination Panel)			2 x (2082 x 3202 x 1000) (including DC termination and AC termination panel)	
Weight (kgs)	2200 (approximate)			4400 (approximate)	
Environmental Limits					
Enclosure Protection ⁽⁶⁾	IP 20			IP 20 (PCS) / IP 54	
Operating Temperature Range ⁽⁶⁾	(-) 0°C to (+) 50°C				
Relative Humidity	15% to 95% (non condensing)				
Maximum Noise Level	75 DBA at a distance of 1 Meter (JIS C 1509 class 2 - a characteristic)				
Altitude ⁽⁶⁾	0 to 1000 Meters				
Cooling Air Flow	7520 m ³ /hr			15040 m ³ /hr for 2.5 MW Power	

Notes:

- (1) Maximum DC power can be loaded up to 140%. Same can be discussed during detail engineering.
- (2) Variable output AC voltage suitable for retrofitting jobs.
- (3) EPC /Plant designer should select MPPT voltage range within mentioned DC voltage range.
- (4) Dimensions will be depended on final engineering and design. DC IP box with 12 Input at positive side only (350Amp PV fuse).
- (5) IP 21 optional.
- (6) No de-rating up to 50° C, 1.5% de-rating per degree rise in temperature from 50° C to 60° C.
- (7) Optional: 2000 meters.