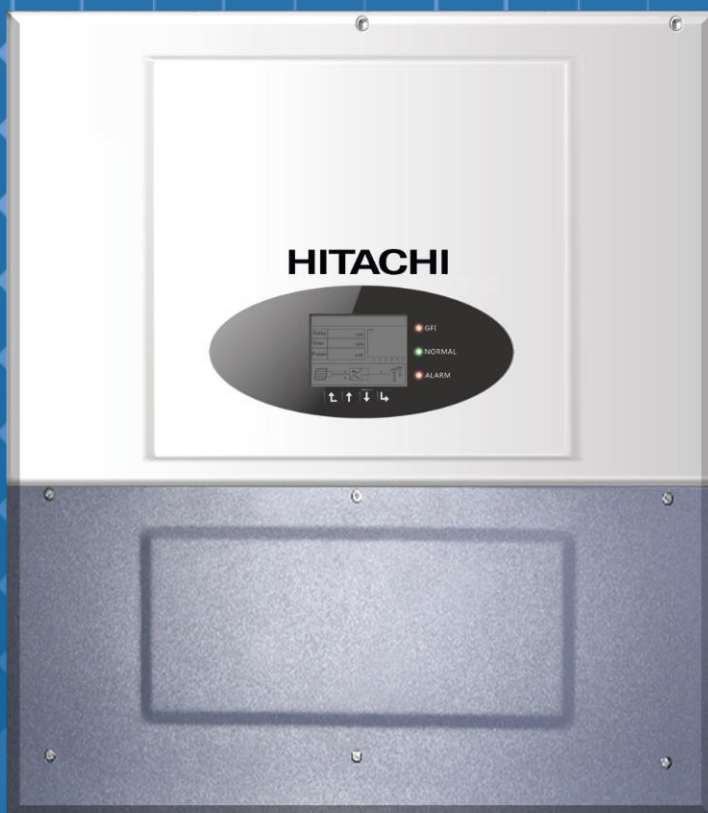


## PV String Inverter

Highly Efficient Conversion Technology  
HIVERTER Si-60k



## Next Generation Product from Hitachi in Renewable Sector

Hitachi, with more than 100 years of legacy worldwide, brings to you the PV String Inverter with latest, efficient & flexible design to maximize the energy yield for large commercial & utility solar projects.

A robust, elegantly designed IP65 rated enclosure ensures the inverter is weatherproof, allowing outdoor installations, while contributing to the low maintenance needs and enhanced lifespan.

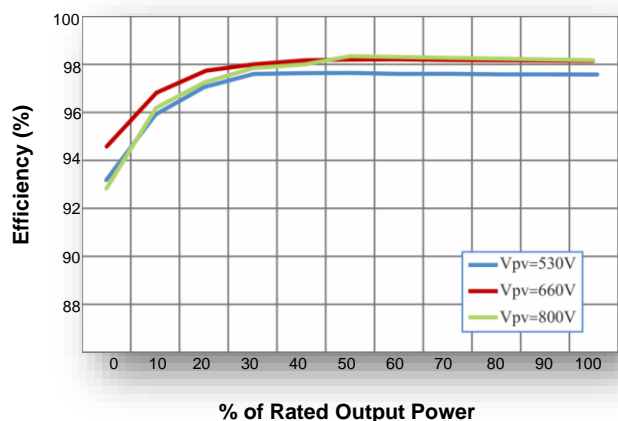
Hitachi offers life time service support through country wide service network and prompt availability of spares locally in India.

## Highlights

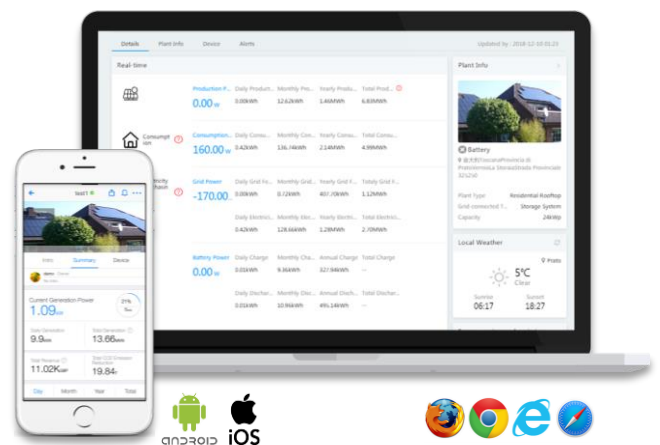
- Wide DC input range from 250 V to 960 V
- True three phase bridge, transformer-less topology
- Low sensitivity to the grid disturbance to avoid unnecessary disconnection from the grid
- Up to 3 independent MPPT to ensure optimal energy harvest
- MPPT accuracy is more than 99.9%
- Wide operating temp range - 20°C to 60°C
- IP 65 protection for Indoor & outdoor application
- Easy to install & maintain
- Smart I-V curve diagnosis system
- User friendly interface like SD Card, Wi-Fi and RS 485
- Large 4" Graphic Display with all operation status & necessary data as per requirement
- Reactive power controller
- Type-2 Surge Protection Device (SPD) on DC & AC Sides
- Residual Current Monitoring Unit (RCMU)
- String Current Monitoring \*1
- Remote monitoring using a mobile based application and a web browser through Wi-Fi

\*1 : Available as Optional

## Efficiency Curve



## Monitoring System



## Key Features

### Intelligent Power Management

- Low Voltage Ride Through (LVRT)
- Self-power reducer in case of over-frequency
- Fully adjustable reactive power & power factor for different grids
- Real time MPPT algorithm

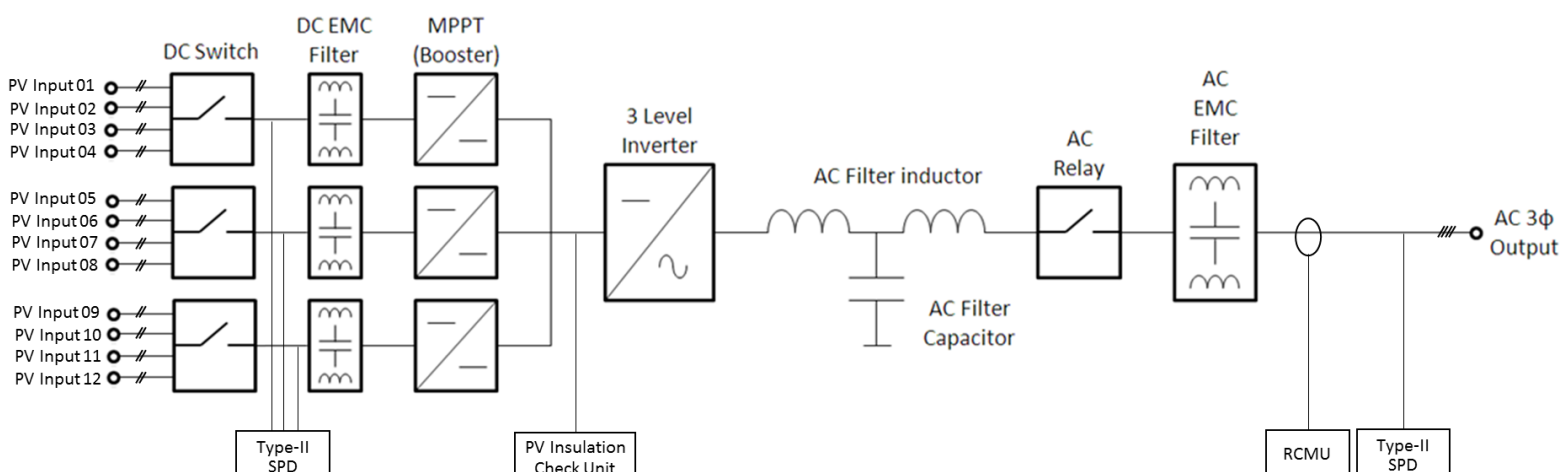
### Built-In Protection Functions

- Over current, Over load
- O/V & U/V protection
- Anti-islanding, Current leakage
- Over temperature protection
- Over frequency, Under-frequency
- DC Safety Switch

### Humanized Functions

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

## Single Line Diagram



# Technical Specifications

| MODEL         |  | HIVERTER Si-60K   |
|---------------|--|---|
| INPUT (DC)    | Max. Input Power                                       | 78 KW   |
|               | Number of Independent MPPT                             | 3   |
|               | Number of DC Inputs per MPPT                           | 4 / 4 / 4   |
|               | Max. Input Voltage                                     | 1000 V  |
|               | Rated Input Voltage                                    | 600 V   |
|               | Start-up Input Voltage                                 | 250 V   |
|               | MPPT Voltage Range                                     | 250 – 960 V   |
|               | Full Load DC Voltage Range                             | 530 – 800 V   |
|               | Max. Input Current per MPPT                            | 40A / 40A / 40A   |
|               | Max. MPPT Current per String                           | 10A   |
|               | DC Overloading in Percentage*                          | 30%   |
|               | Rated Power  | 60 kW   |
|               | Max. AC Power  | 60 kVA  |
| OUTPUT (AC)   | Nominal Grid voltage                                   | 220/380V, 230/400V , 3PH+N+PE , 50Hz  |
|               | Maximum Output Current                                 | 90 A  |
|               | Active Power Adjustable Range                          | 0 – 100%  |
|               | THDi   | < 3%  |
|               | Power Factor   | 1 (Adjustable ±0.8)   |
|               | Max. Efficiency  | 98.6%   |
|               | EU Efficiency (@600V)                                  | 98.4%   |
| PERFORMANCE   | Self-Consumption At Night                              | < 1 W   |
|               | Feed-in Start Power                                    | 45 W  |
|               | MPPT Efficiency  | 99.9%   |
|               | Integrated DC Safety Switch                            | Yes   |
|               | DC Reverse-Polarity Protection                         | Yes   |
| PROTECTION    | Surge Protection Device (SPD)                          | Type II for DC & AC sides   |
|               | Short Circuit / Over current Protection                | Yes   |
|               | Ground Fault / Residual Current Monitoring Unit (RCMU) | Yes   |
|               | PV Array Insulation Protection , PV Insulation Check   | Yes   |
|               | Anti-Islanding Protection                              | Yes   |
|               | Display Panel Interface                                | 4-inch LCD, 3 indicator LEDs, 4 key Buttons.  |
|               | Control & Monitoring Interface                         | RS485 , WIFI, SD Cards, Multi-Function Relay  |
| COMMUNICATION | Operation Data Storage                                 | 25 Years  |
|               | Ambient Temperature Range                              | -25 to +60°C  |
| GENERAL DATA  | Topology   | Transformer-less  |
|               | Degree of Protection                                   | IP65  |
|               | Allowable Relative Humidity Range                      | 0 – 100% (Non-Condensing)   |
|               | Max. Operating Altitude                                | 4,000m (De-Rating at >3,000m)   |
|               | Noise  | < 60 dB   |
|               | Weight   | 70 kg   |
|               | Dimension  | 737 x 713 x 297 mm  |
|               | Cooling Method   | Fan   |
|               | Environmental Testing                                  | IEC 60068-2 (1,2,14,30)   |
|               | Efficiency Measurement                                 | IEC 61683   |
| STANDARDS     | Product Safety Standard                                | IEC 62109-1, IEC 62109-2  |
|               | Gird Connectivity Standard                             | IEC 61727 , PEA, MEA  |
|               | Test Procedure for Islanding Prevention                | IEC 62116   |
|               | EMC & EMI  | IEC 61000-6-2, IEC 61000-6-4, IEC 61000-3-11, IEC 61000-3-12, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4 , IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11 |

\* Both Voltage and Current of each string shall be less than their Max. values.



## About Hitachi Hi-Rel Power Electronics

With over 2.5 GW installation base in India, Hitachi Solar Inverter is among the best available Grid Tied Solar Inverters. Hitachi Solar Inverter is a high performance inverter, which is highly advanced & reliable, highly efficient, easy to install, safe, helping you achieve better ROI with higher yields and lower maintenance cost.

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. Being pioneer in power electronics, Hitachi Hi-Rel Power Electronics has been committed to partner India in its endeavor to create greener power and provide quality and affordable power to all through Hitachi Solar Inverters, which is a manifestation of the company's commitment to India's greener future.

## Hitachi's Presence in Indian Solar Domain

- State of the art manufacturing facility in India at Sanand and Gandhinagar in Gujarat
- Life cycle service support through Hitachi's Pan India Service Centers
- Prompt availability of spares and components locally in India

## Generating 2.5 GW Renewable Power in Indian Solar Sector

Take your project performance to new highs in terms of quality standard and generation with the help of Hitachi's Next Generation Product – PV String Inverter.

### Hitachi Asia (Thailand) Co.,Ltd.

#### Registered Office

12th Floor, Ramaland Bldg., No.952 Rama IV Road, Suriyawongse, Bangrak, Bangkok 10500  
Phone: +66 (2) 632 9292, Fax: +66 (2) 632 9299

**Email:** [hasht.pip.xr@hitachi.com](mailto:hasht.pip.xr@hitachi.com), **Web:** [www.hitachi.co.th/](http://www.hitachi.co.th/)

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



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