

i4eti Series UPS System

Single Phase Industrial UPS System

Range: 5 kVA to 250 kVA



HITACHI

About Hitachi Hi-Rel Power Electronics

Hitachi Hi-Rel Power Electronics Private Limited, which is being recognized as one of the pioneers in power electronics domain, is a leading manufacturer of Industrial UPS. With a vision of "To be recognized as the most trusted Power Electronics Company by supplying superior products and services", Hitachi Hi-Rel has garnered a significant level of trust in Indian UPS market segment and continue to offer world class power electronics products, value added services & customized solutions. It has state-of-the art manufacturing facility at Sanand near Ahmedabad in Gujarat-India.

About i4eti Single Phase Industrial UPS System

i4eti UPS systems are specifically designed to provide secure power to mission critical loads in Refineries, Petrochemicals, Power Generation, Pipeline, Steel and Process Industries as well as for critical data processing applications.

This Hitachi UPS with IGBT based rectifier system is true online industrial grade UPS for critical load. Use of DSP and latest technology offers maximum reliability and flexibility at the lowest operating cost. It is available in rating from 5 kVA - 250 kVA and is custom built to your exact specifications.

Highlights

IGBT based Rectifier Technology

Low input current harmonic distortion of less than 5%, input PF $\geq$ 0.98 due to IGBT based Rectifier Technology.

Wide Range of Connectivity

POT Free Contacts / Modbus / Profibus / SNMP / RS-485 / RS-232 to monitor the UPS parameters on remote PC / station for identification of faults / alarms / indication of UPS system.

Higher Grade Enclosure Protection

IP42 enclosure protection with best thermal & mechanical design, suitable for 50°C ambient temperature.

Suitable for Separate or Common Battery Bank

Depending on requirement of smaller or higher battery backup time, dual battery bank options available to meet the requirement.

Latest DSP Based Technology

Full Digital Signal Processing using the Latest DSP Technology improves the high control feedback loop for faster response and improves required corrective action and reduce error drift.

Easy Maintenance Design

All electrical and electronic components are arranged in such a way that there is sufficient internal space for easy maintenance and fast repairing / replacement of major components, ensure for guaranteed MTTR.



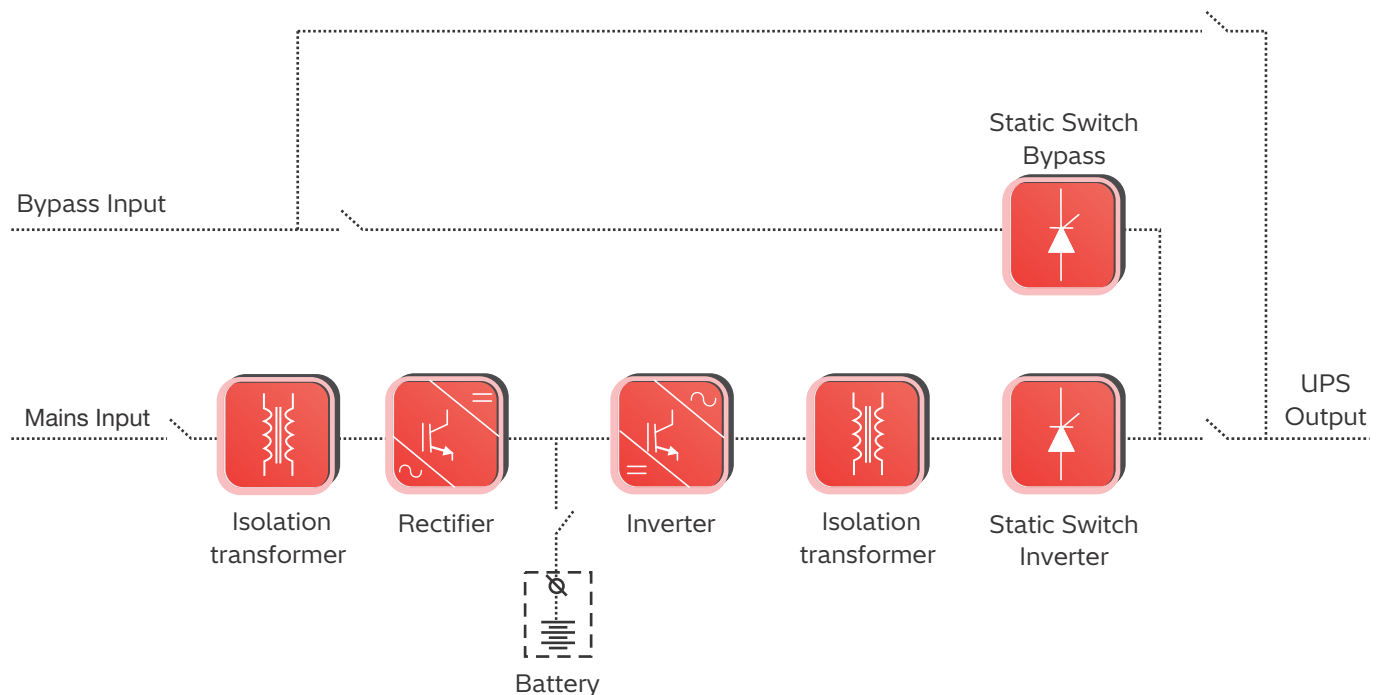
Key Features

- DSP based technology
- Wide input voltage and frequency range
- Wide DC Link range
- Near to unity power factor
- Enclosure protection - IP 42
- Protection against short circuit and overload
- Intelligent BMS (Battery Management System)
- Suitable for 3:1 crest factor load
- Built-in I/P galvanic isolation transformer (Specially design for Ni-Cd and Plante battery)
- Built-in O/P galvanic isolation transformer
- Suitable for separate or common battery bank
- Suitable for Parallel Redundancy up to 1+1
- Auto transfer re-transfer facility with bi directional static switch
- 999 alarms can be stored with memory
- LCD display and mimic panel for on line information
- Immune to input phase reversal
- Temperature: 0-50°C

Optional Features

- Bypass CVCF / SSVS / SCVS
- Modbus-RTU, Modbus-TCP-IP, Profibus, Profinet
- Facility for FDU – MCR
- Potential free contacts
- Fan redundancy
- Fuse Fail Indication
- Fan Fail Indication
- Emergency Stop
- DC ground fault
- Padlock facility for Input & Bypass MCCB

Single Line Diagram



Technical Specifications

Power Rating in kVA		5	10	20	30	40	50	60	70	80	100	120	160	200	250
Power Rating in kW(PF specified)		0.8													
Main Input															
Rectifier Type		IGBT Based Active Front End Rectifier													
Rated Voltage		415 VAC, 3 Phase, 3 Wire													
Voltage Range		+10%, -15%													
Rated Frequency		50 Hz													
Frequency Range		±6%													
Input Power Factor		≥0.98													
Input Current Harmonics		<5% THDi @VTHD <1%													
Power Walk-in		Progressive over 15 sec													
Operation with Reverse Phase Sequence		Possible													
Maximum Inrush Current		7 to 8 times of rated current for one cycle													
Static Bypass Input															
Rated Bypass Voltage		230 VAC / 110 VAC													
Bypass Voltage Range		±10%													
Rated Frequency		50 Hz													
Synchronized Range		±1% to ±6%													
Output (Inverter)															
Inverter Operating Range		273 to 410 VDC					326 to 500 VDC								
Rated AC Voltage		230 VAC / 110 VAC													
Voltage Regulation		±1%													
Power Factor		0.8													
Rated Frequency		50 Hz													
Frequency Regulation (Unsynchronized)		±0.1%													
Synchronized Range		±3 Hz													
Max. Rate of Change of Frequency		1 Hz/sec													
Transient Response @ Rated Load Change @ Nominal Condition		IEC62040-3, Class-1													
Output Voltage Distortion	Non-linear Load	<5% (Complies IEC62040-3)													
	Linear Load	<2% (Complies IEC62040-3)													
Transfer time from Inverter to Bypass	Synchronized Mode	<4 millisecond													
	Unsynchronized Mode	<20 millisecond													
Crest Factor		3:1													
Overload Capability		110% for 60 minutes 125% for 10 minutes 150% for 1 minute													
Branch Fuse Clearing Ability		30% of UPS rated current (fast acting semiconductor protection fuse) 10% of UPS rated current (slow acting fuse)													
Battery / Charger															
Charger Voltage Regulation		±1%													
Battery Configuration		Standalone / Common battery					Standalone / Common battery								
Minimum Battery Float Voltage		351 VDC					418 VDC								
Maximum Boost Voltage		410 VDC					500 VDC								
DC Under Voltage Trip		273 VDC					326 VDC								
Nominal Nos. of Battery		26 blocks of 12V					31 blocks of 12V								
Type of Battery Supported		SMF - VRLA / NICD													
Ripple Voltage (W/O Battery)		<2 % rms													
Battery Reverse Polarity		Protected against reverse battery connection													
System															
Communication		Modbus RS485													
Operating Temperature		50°C ⁽¹⁾													
Storage		0-70°C													
Relative Humidity		< 95% Non Condensing													
Noise		<65 dBA	<67 dBA	<70 dBA	<72 dBA		<75 dBA					<78 dBA			
Operating Altitude		< 1000 meters ASL													
Mechanical															
Dimensions (HxWxD) mm		1620 x 830 x 850			1720x1030x950			2x(1720x1030x 950)			2x(2120x1230x1050)			3x(2120x1430x1050)	
Color / Panel Finish		RAL 7035 (powder coated)													
Paint Thickness		>60 micron													
Cable Entry		Front - Bottom													
Cooling		Forced - Air-cooled													
Base		100 mm plinth													
Ingress Protection Class		IP 42													

Above all mentioned data complies with IEC 62040-3

(1) --> Surrounding environment must be dust free.

Serving Entire Gamut of Industries

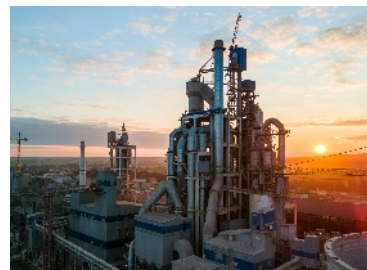
Hitachi Hi-Rel has rich experience in supplying power electronics products & complete customized solutions for mission critical applications in refineries, petro-chemicals, power generation, steel & metal and process industries as well as critical data processing applications.



Steel & Metal Industries



Petrochemicals & Refineries



Cement Industry



Power Generation & Utility Industries



Oil & Gas Production



Pulp & Paper Industry



Coal & Mining Industries



Chemical Industry



Fertilizer Industry



Pharmaceutical



Textile



Plastic

Customer Support

“Have peace of mind with flexible and nimble footed, 24 X 7 service”

Our Service program includes:

On Site Installation supervision and commissioning

- Provides Comprehensive check at user site to ensure trouble free installation of product
- Our technical experts give recommendations to the site engineer or electrical contractor and supervise the UPS installation before load power-up
- Offers commissioning services along with site acceptance test report



Training

- On Site Training for safe & efficient operation of equipment
- Training at Factory (Optional)
 - **Course-1** : Operation, system principle, hands on training, predictive and preventive maintenance - 3 days training
 - **Course-2** : Predictive and preventive Maintenance, Hardware, Settings, UPS System Panel & Batteries Troubleshooting & Repair services – 5 days training



Preventive Maintenance Services (AMC, CMAC & Extended warranty)

- Ensures safe and reliable operation
- Contracts includes cleaning, measurements of various parameters, calibrations, functional tests, event log and parameter validation, hardware and software upgrades supported by Field Service Report.
- Maintenance Plan is one of the most cost-effective actions that can preserve initial investment and ensures business continuity.
- Ensure optimal performance and to protect critical application from potential downtime.



Break Down Maintenance & EMERGENCY CALL

- In the event of an emergency call, our service expert, located as close to your site as possible, guarantees a quick intervention time with the help of 24x7-365 days.
- With the help of powerful diagnostics software, quick troubleshooting is possible by a service expert, which guarantees a short MTTR (Mean Time to Repair).
- Corrective actions are performed (Part replacement, adjustments and upgrades of software's etc.)
- Helpline Number for Service Support - (080) 6112 0800

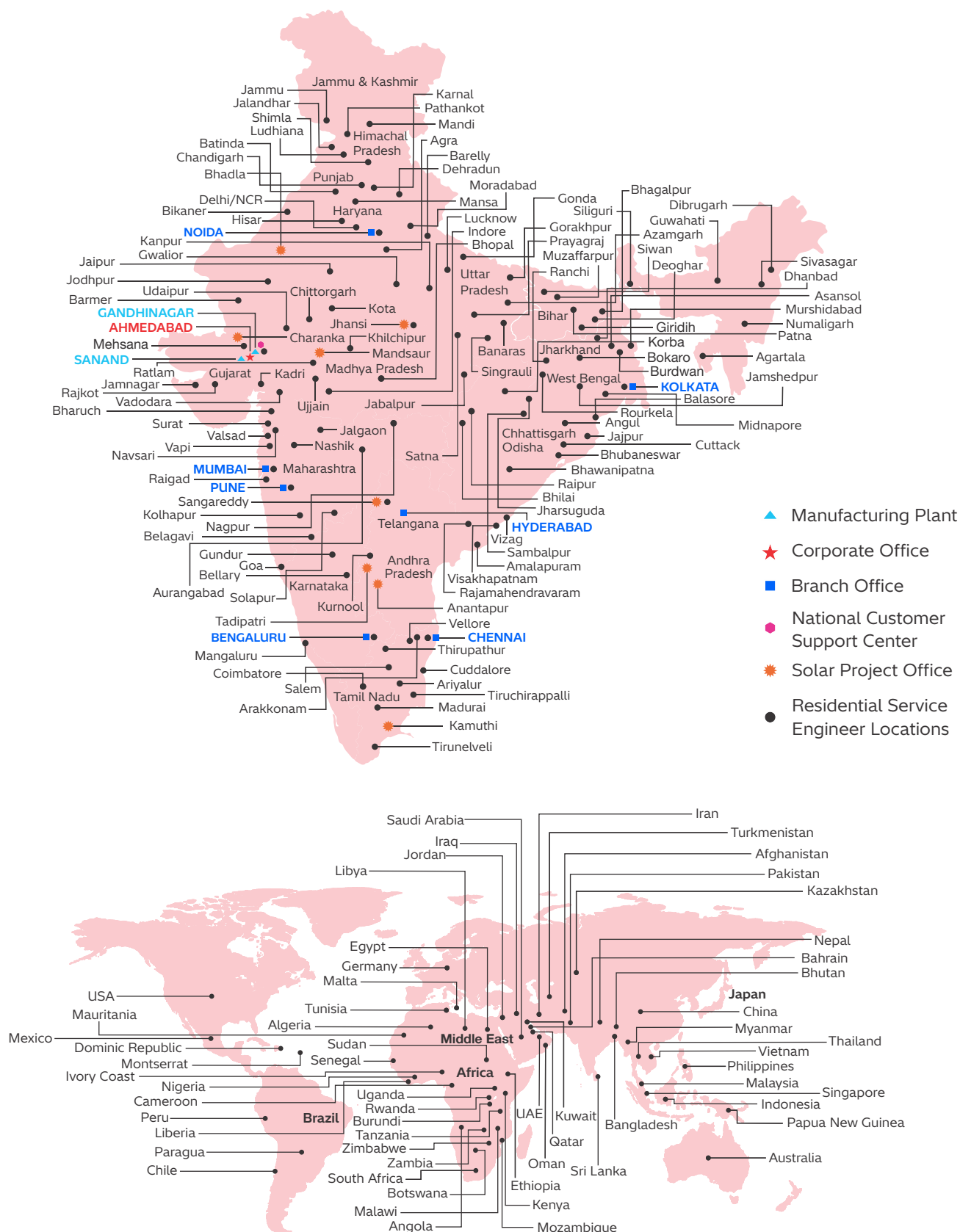


*Service program is separate from equipment supply and subject to applicable terms and conditions.

Global Footprint and Reach

Delivering Critical Power Solutions Worldwide

We are a key manufacturing hub for global power electronics solutions, capable of meeting diverse international requirements. Our ability to supply specialized, high-reliability products to various industries across international territories reinforces our commitment to serve critical loads globally.



Hitachi Hi-Rel Power Electronics Pvt. Ltd.

Delivering Advanced Power Electronics Solutions that empower Industries and sustain Progress.

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