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Note: In the spirit of innovation specifications are likely to change without notice.

HI-REL

HITACHI

Inspire the Next

it POWER[®] Online UPS Product Basket



it Power Online UPS 1 kVA to 10 kVA
IP11 Series (1:1 Phase)



it Power Online UPS 10 kVA to 20 kVA
IP31 Series (HF) (3:1 Phase)



it Power Online UPS 10 kVA to 20 kVA
IP33 Series (HF) (3:3 Phase)



it Power Online UPS 10 kVA to 120 kVA
IP33G Series (3:3 Phase)

it Power / 07 / 14 / Ver.0 / corp. mktg / India | Spotlight - 079 3002 2324



About Us

Incorporated in 1983 as Hi-Rel Electronics Pvt. Ltd., we are now a Hitachi Group company - Hitachi Hi-Rel Power Electronics Pvt. Ltd., recognized as a PIONEER IN POWER ELECTRONICS. With 3 Decades of Experience, we have garnered a significant level of Trust in our Market Segment and continue to offer World Class Power Electronics Products, Value Added Services & Customized Solutions.

Our Product Portfolio includes UPS (Uninterruptible Power Supply) for Industrial, Commercial & Enterprise Applications, Medium Voltage & Low Voltage Variable Frequency Drives, Steel Automation & Engineered Drives for Customized Applications, Industrial Automation & Control Products like PLC, SCADA & DCS, Grid Tied Solar PCS, Railway Products and other Customized Products like UMPS, iDip (Dip Ride Through Solutions), etc. We have rich experience in supplying Power Back-Up Products & Complete Customized Solutions for Mission Critical Applications in Refineries, Petrochemicals, Power Generation, Steel & Metal, and Process Industries as well as Critical Data Processing Applications

- World Class Technology & Innovation from Hitachi, Ltd., Japan
- State-of-the-Art Manufacturing Facilities at Gandhinagar & Sanand in Gujarat, India
- Up to 80 MW Installations within India and more than 1 GW Worldwide.
- In-house R&D (Research & Development) Facility, recognized by DSIR (Department of Scientific & Industrial Research), Government of India
- An ISO 9001:2008, ISO 14001:2004 & BS OHSAS 18001:2007 Certified Company, adhering to World Class Quality Standards
- Approved by Major Consultants and EPC Contractors
- Serving Entire Gamut of Industries
- PAN India & Global Presence
- Offer Products with Greater Energy Efficiency & Lower Carbon Footprint

We believe that our Core Values, Customer Delight, Quality Orientation, Harmony, Sincerity, Pioneering Spirit & Growth, differentiate us from others. With Expertise, Experience and an Efficient Product Line, we will always be your Power Electronics Partner.

When you choose to do business with us, you are partnering with a Company who cares.

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1 kVA to 10 kVA
(1:1 Phase)



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it Power Online UPS
IP33 Series (HF)
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(3:3 Phase)



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it Power Online UPS
IP33G Series
10 kVA to 120 kVA
(3:3 Phase)



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IP 11 Series Online UPS

1 kVA to 10 kVA Power System



Features

- High frequency and double conversion on-line technology
- Advanced PFC & IGBT technology
- Advanced battery management
- Lighting and surge protection
- Fan speed auto control when loads varies
- Optional extension battery pack
- Short circuit and overload protection
- Smart RS 232 communication with monitoring software
- EMI/RFI noise filter
- Optional SNMP card
- MTBF 300000 hrs
- Cold start facility
- Hot standby configuration
- High input power factor



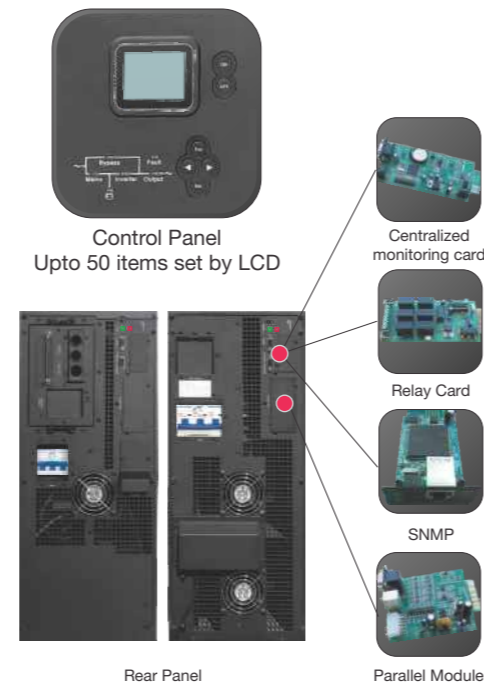
- 1 Communication Interface
- 2 Fan
- 3 Net Surge Protection
- 4 Input Socket
- 5 Battery Socket
- 6 Output Socket
- 7 Output Wiring Socket
- 8 Breaker/Fuse

Technical Specifications

Model	IP11 - 1	IP11 - 2	IP11 - 3	IP11 - 6	IP11 - 10		
Capacity	1kVA/800W	2kVA/1600W	3kVA/2400W	6kVA/4800W	10kVA/8000W		
Input	Voltage Range		When load <70% range = 110 Vac to 280 Vac When load ≥70% range = 155 Vac to 280 Vac		170~280Vac		
	Frequency		45~55Hz		45.5~54.5±0.5Hz		
	Phase		Single phase				
	Input Power Factor		≥0.95	≥0.97	≥0.95		
Output	Voltage Range		220Vac ±1%				
	Frequency Range		Synchronised range: ±1Hz, ±2Hz, ±3Hz selectable; Free running: 50Hz ±0.2%				
	Power Factor		0.7				
	THD (Linear load)		<3%				
	THD (Non-Linear load)		<4%	<5%			
	Overload Capability		Auto resume when load reverts to normal				
	Crest Factor		3:1				
	Waveform		Pure sine wave				
	Transfer between AC mode and battery mode		0mm				
	Transfer between inverter mode and bypass mode		Transfer time: 4ms (typical 2.5ms)		<1ms		
	Transient variation		<±5V for 100% step load change				
	Transient recovery		<20ms				
	Bypass transfer time		<2.5ms				
Efficiency		>90%					
Battery	Model		VRLA				
	DC Voltage		36Vdc	72 Vdc / 96 Vdc	192 Vdc / 240 Vdc		
	Charge Current		6A				
	Recharge Time		>90% capacity after 8 hrs charging				
Electrical protection	Electrical protection		Input/output/under voltage, over temperature, overload, Short circuit, battery low trip				
	Alarms		Line failure, battery low, transfer to bypass and system fault				
	Communication Interface		RS232; SNMP (Optional)				
	LED Indication		Load or battery capacity				
	Noise Level		<45dB				
	Standards		EN50091 - 1 - 1; IEC62040 - 2; IEC61000 - 3 - 2; IEC61000 - 3 - 3				
Environment	Temperature		25°C to 40°C				
	Humidity		10% to 55% RH				
	Altitude		<1500m				
	Storage Temperature		25~55°C				
Other	Net weight (w/o batter)		10kg	26kg	28kg	81kg	83kg
	Gross weight (w/o batter)		9kg	20kg	21kg	46kg	50kg
	Dimension (WxDxH)mm		145x397x220	190x419x318	190x419x318	250x592x576	250x592x576
Optional	Isolation Transformer						

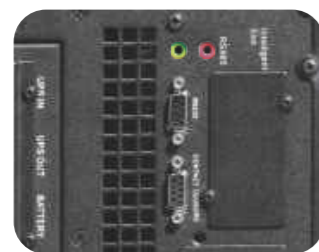
IP 31 Series Online UPS

10 kVA to 20 kVA Power System



Features

- Online-Doubleconversion
- Non Transfer time of output
- PFC technology
- Full digital control (DSP)
- Output power factor : 0.8
- Input current harmonic : 5%
- ECO function
- Charging/Rectifier/Inverter fully digital control technology
- Optimization battery group, the quantity of battery : 16/18/20 pieces (Optional)
- Wide input voltage:304~478 VAC
- Wide input frequency range: 40~70Hz±0.5Hz
- Self-testing when UPS startup
- Input over/under-voltage protection
- Automatic bypass
- DC start
- Fault isolation
- Communication port : RS 232, dry contact, RS 485x2
- Options : SNMP card/centerlized monitoring card/parallerl port module



Communication port
RS232 port, dry contact,
RS485x2



Layout
Dismountable MBM
Module



The series has matching
battery cabinets (Optional)

Technical Specifications

MODEL	iP 31-10	iP 31-15	iP 31-20	
Capacity (VA)	10 kVA / 8 kW	15 kVA / 12 kW	20 kVA / 16 kW	
Input	Phase	3 phase & 4 wires & Ground		
	Rated Voltage	380/400VAC		
	Voltage Range	304~478VAC		
	Frequency Range	40~70Hz		
	Power Factor	≥ 0.99		
	Bypass Voltage Range	Max. voltage: ±15% (optional +5%, +10%, +25%) Min. voltage: -45% (optional -20%, -30%)		
	Eco Range	Same as bypass		
	Current harmonic	≥ 5% (100% non linear load)		
Output	Phase	Single phase & Ground		
	Rated Voltage	220/230VAC		
	Power Factor	0.8		
	Voltage Precision	±2%		
	Output Frequency	±1%, ±2%, ±4%, ±5%, ±10% of the rated frequency (optional) (50 ± 0.2) Hz		
	Crest Factor	3:01		
	Transfer Time	Utility to battery : 0ms Utility to bypass : 0ms (following)		
	Overload Capacity	Load ≥110%, 60 min, ≥125%, last 10min, ≥150% last 1 min, ≥150% Shut down UPS immediately		
	THD	≥ 2%		
	Efficiency	EEO mode ≥98%; Normal mode ≥90%		
Battery	Voltage	± 96V \ ±108V \ ±120V DC ; battery quantity (optional)		
	Backup time	Full load ≥2min (10kVA Standard unit), long time unit depends on the capacity of external batteries		
	Charge Current (A)	1A (10kVA Standard unit) ; long time unit Maximum current 6A		
Communication Interface	RS232, dry contact, Centralized monitoring card Optional (RS485, SNMP, Parallel Card)			
Noise Level	<55dB			
Operating Environment	Temperature	0°C ~ 40°C		
	Humidity	0 ~ 95% non condensing		
	Storage temperature	25°C ~ 55°C		
	Altitude	<1500 m		
Other	Unit Dimensions (W x D x H mm)	250 x 292 x 576	250 x 815 x 826	300 x 815 x 1000
	Weight (Kg)	83kg (Standard (Long time unit)	164	234
Industry Standard	CE,EN / IEC 62040-2, EN / IEC 62040-1-1			
Optional	Isolation Transformer			

IP 33 Series Online UPS

10 kVA to 20 kVA Power System



Features

- True Double Conversion
- DSP technology guarantees high performance
- Output power factor 0.8
- Active power factor correction in all phases
- 50Hz/60Hz frequency converter mode
- ECO mode operation for energy saving
- Accepts dual mains inputs
- Energy power off function (EPO)
- Generator compatible
- SNMP+USB+RS+232 multiple communications
- 3-stage extendable charging design for optimized battery performance
- Adjustable battery numbers
- Maintenance bypass available
- Optional N+X parallel redundancy
- Optional isolation transformer offers full isolation and complete common mode noise rejection

Technical Specifications

MODEL		IP33-10	IP33-20
Phase		3 Phase in / 3 Phase out	
Capacity		10000 VA/8000 W	20000 VA/16000 W
INPUT			
Nominal Voltage		3 x 400 VAC (3Ph+N)	
Input Voltage Range		190-520VAC (3-Phase) at 50% load ; 305-478VAC (3-Phase) at 100% load	
Frequency Range		46-54Hz or 56-64 Hz	
Power Factor		≥0.99 @ 100% Load	
OUTPUT			
output Voltage		3 x 400VAC (3 Ph + N)	
AC Voltage Regulation (Batt. Mode)		±1%	
Frequency Range (Synchronized Range)		46-54Hz or 56-64 Hz	
Frequency Range (batt. Mode)		50 Hz 0.1 Hz or 60 Hz to ±0.1 Hz	
Current Crest Ratio		3:1 (Max.)	
Harmonic Distortion		≤2% THD (Linear Load) ; ≤5% THD (Non-linear Load)	
Transfer Time	AC Mode to Batt. Mode	Zero	
	Inverter to Bypass	Zero	
Waveform (Batt. Mode)		Puresinewave	
EFFICIENCY			
AC Mode		89%	89%
Battery Mode		86%	87%
BATTERY			
Standard Mode	Batter Type	SMFB	
	Nominal VDC	240 VDC	
	Typical Range Time	9 hours recover to 90% capacity	
	Charging current (max.)	6A	
Charging Voltage		273VDC ±1%	
INDICATORS			
LCD Display		UPS Status, Load level, Battery level, Input/Output Voltage, Discharge timer, and Fault	
ALARM			
Battery Mode		Sounding every 4 seconds	
Low battery		sounding every second	
Overload		sounding twice every second	
Fault		Continuously sounding	
PHYSICAL			
Standard Mode	Dimension, D x W x H (mm)	815 x 250 x 826	815 x 250 x 826
	Net Weight (Kgs)	109	164
ENVIRONMENT			
Humidity		0-95% RH @ 0-40° C (Non- condensing)	
Noise level		Less than 60 dB @1 Meter	Less than 65 dB @1 Meter
MANAGEMENT			
Smart RS- 232 / US		Supports windows ® 2000/2003/XP/Vista/2008, Windows ® 7/8, Linux, Unix, and MAC	
Optional SNMP		Power management from SNMP managerand web browser	

IP 33G Series Online UPS

10 kVA to 120 kVA Power System



iP33G series three phase UPS incorporate advanced technology that increases performance and reliability: three high speed DSPs with completed digital control fully ensure high quality of power supply, high input power factor makes UPS energy saving power. It also offers humanization design: full front access of serviceability, user-friendly interface.

Applications: ISP (Internet Service Provider) , IDC (internet Data Center) computing center, bank , server center , precision equipment and etc..

Features

- Three phase in and out system, compatible with utility of 380/ 400 / 415 V, 50/60 Hz
- Parallel up to 6 units
- Online double conversion, offering load with best power quality
- Support all kinds of load, high overload capabilities
- Fully digital control with three DSPs including IGBT rectifier, inverter, charger
- Digital circulating current control technology, increasing the parallel reliability
- Wide input voltage window, compatible with different utilities
- Green power technology, high input power factor, low current THD, high efficiency
- Intelligent battery management, extending battery lifetime
- Intelligent self-diagnose function, all kinds of fault protection, large capability of history record storage
- Full front maintenance, saving space
- Redundant design of power model fans, increasing the system reliability
- Modularized design of subsystem, convenient field maintenance
- High MTBF (mean time between failure) (>200, 000h) low MTTR (mean time to repair) (<0.5h)
- Large LCD display, friendly human machine interface
- Configured with top and bottom . cable connection
- All kinds of option include main back feed protection, bypass back feed protection, battery leakage protection, battery start kit and output isolation transformer lighting protection kit.

Technical Specifications

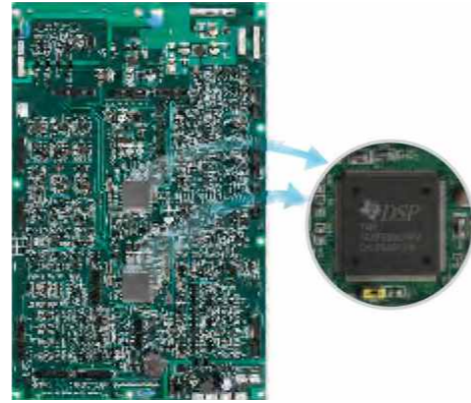
Model	iP33G10	iP33G15	iP33G20	iP33G30	iP33G40	iP33G60	iP33G80	iP33G100	iP33G120
Capacity	10kVA	15kVA	20kVA	30kVA	40kVA	60kVA	80kVA	100kVA	120kVA
Main Input									
Input voltage	380V/400V/415V (line to line), 50/60Hz								
Input connection	3Ph+N+PE								
Power factor	>0.99								
Input voltage window	+25%~-20, full load -20%~-40%, power derating between 100% to 70%								
Frequency window	40~70 Hz								
Bypass input									
Bypass voltage	380V/400V/415V								
Bypass voltage window	+15%~-20%, full load								
Frequency window	±5Hz, settable								
Battery									
Battery voltage	±240VDC								
Charger power	20%* Power								
Charger voltage precision	1%								
Output									
Voltage precision	1% (balance load), 1.5% (unbalance load)								
output voltage transient	5% (0~100% load step)								
Voltage THD (Total Harmonic Distortion)	THD<1.5% (linear load) ,THD <5% (nonlinear load)								
Power Factor	0.8								
Frequency tracking range	50/60Hz ± 3Hz, adjustable								
Frequency precesion (free running)	±0.02 %								
Phase tolerance	120°±0.5° (balance and unbalance load)								
Voltage unbalance degree (100% unbalanced load)	± 1%								
Frequency tracking speed	0.5 Hz/s to 5 Hz/s adjustable								
Crest factor	3:1								
Overload capabilities	102% long time operation								
	110%, transfer to bypass after 1 hour								
	125%, transfer to bypass after 10 minutes								
	150%, transfer to bypass after 1 minutes >150%, transfer to bypass after 200ms								
Bypass Overload capabilities	125%, long time operation								
	125% <load <130%, last for more than 1 hour								
	130% <load <150%, last for more than 6 minutes >1000%, last for more than 100ms								
System									
System efficiency	Normal mode: 95%								
	ECO mode: 98%								
Battery mode efficiency	95%								
Battery configuration	12V, 40PCS (36~44pcs acceptable)								
Display	LCD+LED, Keyboard				LCD + LED, Touch screen & keyboard				
EMI	IEC62040-2								
EMS	IEC61000-4-2(ESD)								
	IEC61000-4-3(RS)								
	IEC61000-4-4(EFT)								
	IEC61000-4-5(Surge)								
Insulation resistance	>2M (500VDC)								
Dielectric strength	(Input, output to PE), 2820Vdc, leakage current lower than 3.5 mA, no flashover in 1 minute								
Surge protection	Comply with IEC60664-1 class IV, endure surge of 1.2/50us + 8/20 us higher than 6kV/3 kA								
IP class	IP20								
Interface (Communication Ports)	RS232, RS485, Dry contacts, SNMP card, EPO, Generator interface								
Installation / Connection	Top or bottom cable connection								
Operation temperature	0~40° C								
Relative humidity	0-90% (non-comdensing)								
Noise (dB)	<55dB								
Weight (KG)	97/44	97.5/46	97.5/46	99.5/58	164	186	208	256	278
Dimension (W*D*H)(mm)	540*690*1100				600*855*1350			600*855*1600	
	280*720*668			320*787*788					
Optional	Isolation Transformer, SNBP for Communication								

IP 33G Series Online UPS

10 kVA to 120 kVA Power System

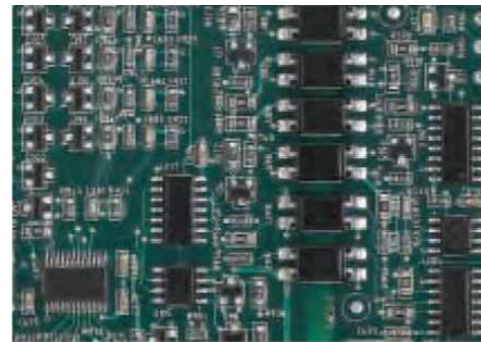
Totally Digital Control System

The double DSP based control system realized the digital control for all the power conversions of the UPS. Excellent performance is realized together with high reliability of system.



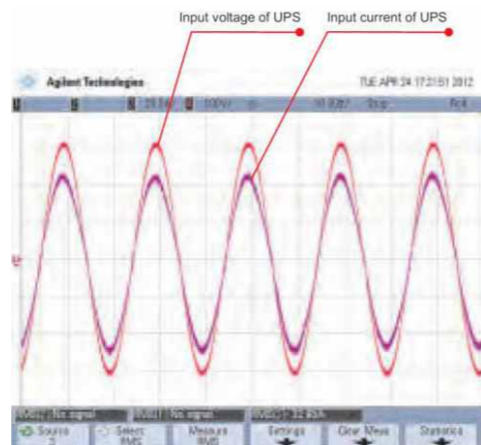
State-of-the-Art PCB Design

Most of the components are SMT type; combine with the conformal coating technology, the reliability is much higher than the traditional DIP components design.



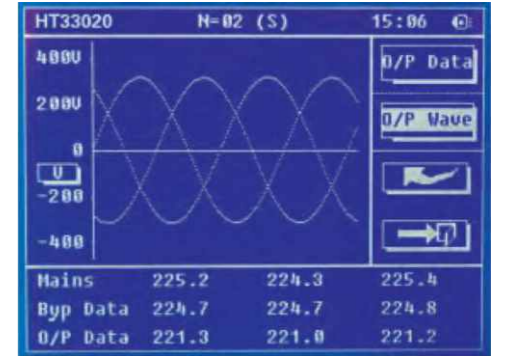
Excellent Input Performance

High input power factor, low input total harmonic distortion of current, HT33 is green power system and energy saving products.



Waveform Display from the Panel

The instantaneous output waveform of the UPS can be displayed on the panel.



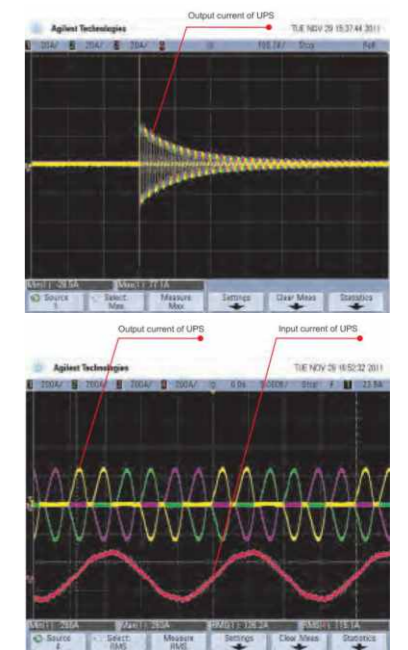
State-of-the-Art Efficiency Curve

Due to the three level technologies, the efficiency curve of iP33G reaches the maximum stage when the load is between 50% to 75%. Comparing to the efficiency curve of traditional products, iP33G ensures the highest operation efficiency on most of the applications.



Powerful Load Capabilities

iP33G achieves powerful load capabilities for all kinds of applications. 80 kVA UPS is enough to handle 55kW motor through motor drive inverter. The waveform of putting 55kW motor and driver combined system to iP33G UPS:



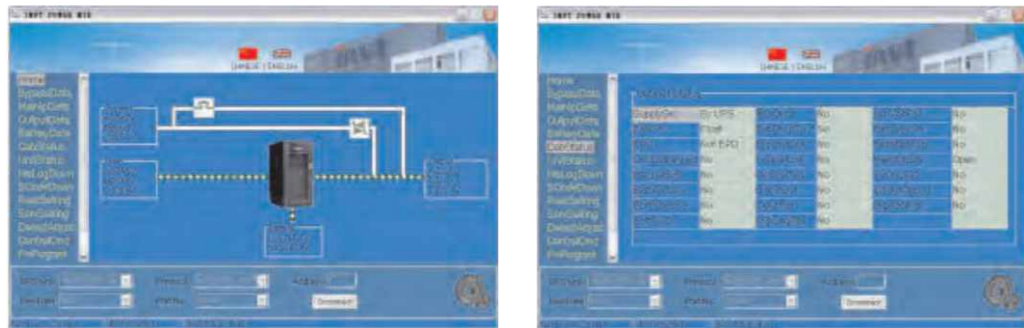
IP 33G Series Online UPS

10 kVA to 120 kVA Power System

Friendly Control and Monitoring System

Local RS232 or RS485 based control and monitoring software, realizes not only monitoring of the UPS status, but also calibration of all kinds of UPS parameters. SNMP based software offers remote monitoring to the system.

The Interface of Local Control and Monitoring Software



The Interface of SNMP Software



A series of horizontal dotted lines for taking notes.