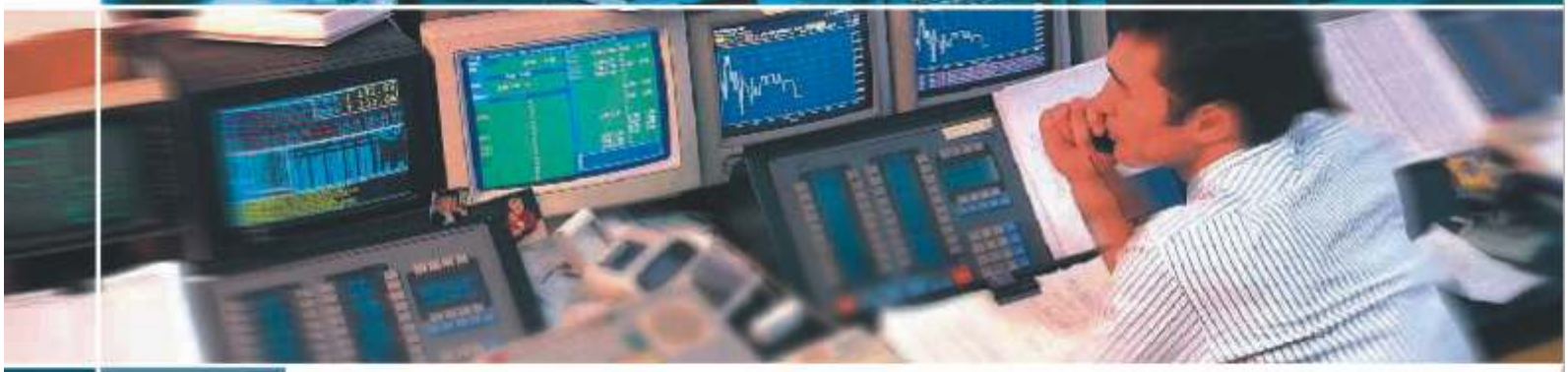
Liebert

Hipulse UPS (30 - 150 kVA 1- Phase)

Power Availability

DIGITAL UPS FOR THE DIGITAL WORLD



HIPULSE

Reliability, Availability, Scalability, Redundancy,

User-friendliness and Maintainability,

whichever value you need,

Hipulse addresses them all efficiently and effectively

EMERSON.
Network Power

HIPULSE

UPS FOR THE DIGITAL WORLD, YOUR POWER QUALITY PARTNER

From reliability to availability, from scalability to redundancy, from user-friendliness to maintainability, from parallelibility to connectivity, from investment protection to lower cost of ownership, whichever value you need, Hipulse addresses them efficiently and effectively.

Hipluse is carefully designed to maximise the "availability" of your critical loads to ensure that your business is protected to the extent possible against power failure and/or power quality problems. This is the prime objective for which the Hipulse is built. Besides this, Hipulse is designed to address many other "customer values".

Major Applications

- Industrial Process Automation In Areas like:
  - Petrochemicals & Refineries
  - Oil & Gas Production
  - Power Generation & Utility Industries
  - Chemical and Pharmaceutical Industries
  - Primary metal and Steel Industries
  - Pulp & Paper Industry
  - Other Process Industries like Textile, Mining, Cement
  - Bio-Chemical Industries

- Information Technology
  - Data Centers, IDC, ITES, BPO
  - Servers (LAN, WAN, MAN, ERP, e-mail, web and others)
  - Networking

- Telecommunication
  - Mobile (2G, 2.5G, 3G)
  - Paging
  - Fixed (including WLL)

- Transport Automation
  - Airport automation and flight booking
  - Others including railways & road transport automation & ticket booking

- Banking, Insurance and Financial Services

- Software Development Houses / Software Technology Parks (STP)

- Building Automation
  - Access Control
  - Security System
  - Fire Alarm System
  - Emergency Lighting
  - Other Critical Applications

Customer needs have been captured and understood for various application areas in different geographical territories. Thereafter, customer needs has been done before providing inputs to our design team. Our studies explain to you high investment value brought by Hipulse UPS.

Application And Business Needs

- On-Line Double Conversion
- IGBT - based PWM Inverter
- Wide input voltage tolerance(+ 10/ -15%)
- Wide input frequency tolerance(± 5%)
- Temperature-compensated battery charging (optional)
- Automatic battery testing
- High overload capability of static bypass(14 times for 10 milliseconds and 10 times for 100 milliseconds)
- Capability to handle:
  - High crest factor loads
  - 100% non-linear loads
  - 100% unbalanced loads
- Built-in maintenance bypass (Single and 1+N Modes)
- Front access for spares replacement and preventive maintenance
- UPS modules in Dual Bus Configuration using optional
- LBS on the Upstream (with UPS), load-end SuperSwitches
- Provision to use any type of battery : Wet cells (Tubular or Plant), Valve Regulated Lead Acid (VRLA) /Maintenance free and Nickel Cadmium
- Field settability of end -cell voltage of the battery
- Advanced Battery Management
- Common Battery sharing (optional)
- Adjustable frequency synchronisation window up to ±9% in the static bypass
- Selectable timer for boost charging duration of the battery (15 steps with each step of 1 hour)
- Provision of automatic battery circuit breaker instead of using conventional isolator in the DC path
- Field protocols ModBus / Jbus
- Network protocols SNMP/HTTP NIC Card
  - Wall-mounted RAM (Remote Alarm Monitor)Box
- Over-load capability of the UPS:
  -110% full-load for 60 minutes
  -125% full-load for 10 minutes
  -135-150% full-load for 60 seconds
- Achieving parallel redundancy with 1+N configuration (upto as high as 6 modules) without using any kind of centralised Main Static Switch (MMS)
- Compact footprint

Investment Protection Needs

- Input Circuit Breaker
- Temperature-compensated battery charging (optional)
- Protection against deep discharge of battery
- Battery circuit breaker instead of using Ac isolator
- Short-circuit proof inverter
- Back-feed protection
- Choice of any type of battery like wet or VRLA or Ni-Cd
- Choice between 6 or 12 -pulse rectifier (upto 400kVA)
- Choice between input turned filter or no filter
- Auto online battery testing

Selected Configurations

Hipulse can be scaled upto as high as 6 modules using any of the following configurations to achive either scalability or redundancy of desired percentage

-1+N configuration without any kind of centralised static switch

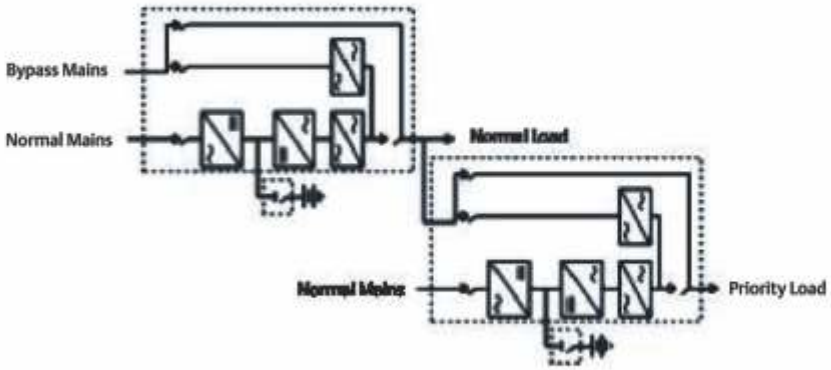
-Centralised configuration by using centralised static switch called MSS (Main Static Switch)

-Some more configurations are explained further in this brochure

-For other configurations please contact our nearest sales office/representative

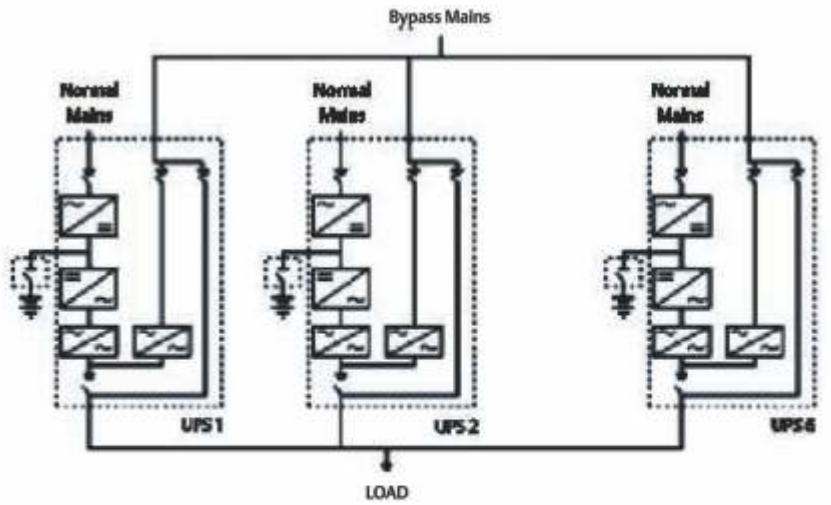
Hot stand-by Configuration

- Feed one (priority)or two (priority& Normal) load banks depending on the application need.
- Increase the reliability of the priority load
- Increase the maintainability Easy connection
- Can be implemented in the existing installation regardless of the UPS size, the generation of (device or technology or philosophy of control) and the manufacturer



1+N Configuration WITHOUT Centralised Bypass called Main Static Switch (MSS)

- Up to six modules in parallel
- Increase the system reliability
- Increase the availability of quality power following the load demand even if it was not forecasted or planned at the beginning of the project: ease of techno-economic expandability
- Increase the maintainability
- The total load is less then or equal to the rating of the single UPS (depending on the desired redundancy level) The load is shared between all modules.



OPTIONAL FEATURES / ACCESSORIES

Hipulse 1- Phase

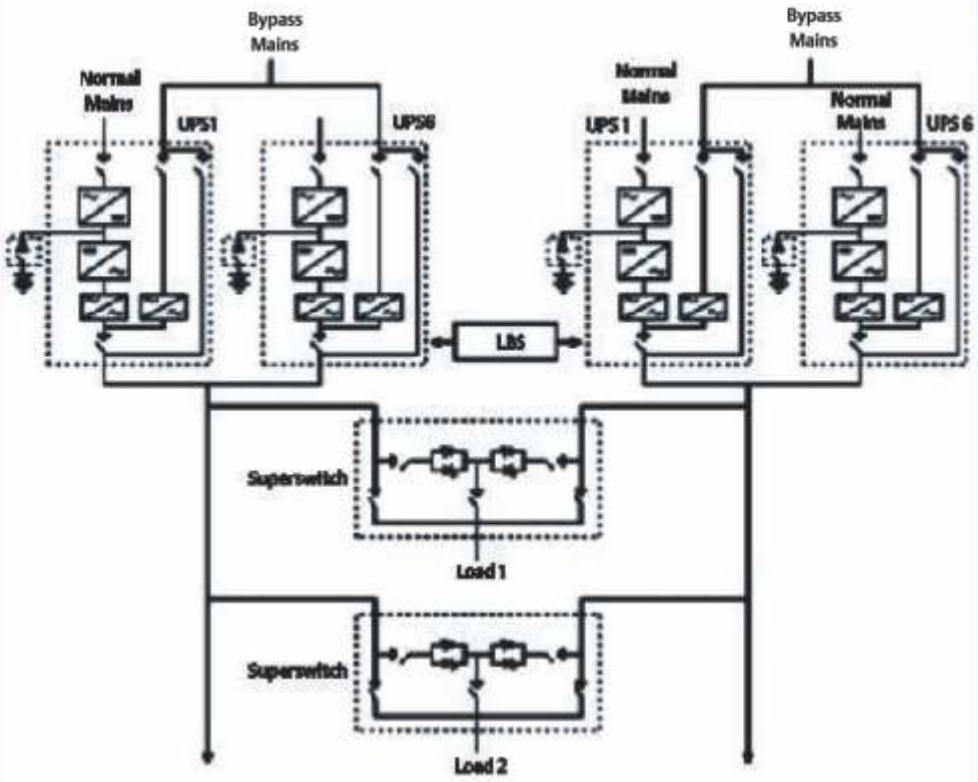
UPS comes with several optional Accessories

- Input isolation transformer
- Bypass stabilizer
- Bypass isolation transformer

NEVER LET - DOWN SOLUTION

Dual Bus System with LBS and SuperSwitch / STS

- Provide supply to the loads from two independent power sources
- The two may be different in terms of power rating and redundancy
- The two BUS outputs are in synchronism between them
- Automatic transfer of the load between the two sources in case of fault using SuperSwitch
- Increase dramatically the maintainability and reliability



Power Communication Options

When you choose the best system to protect your mission critical applications, part of your decision will be driven by the software and communication options. Hipulse has been designed with the customer in mind. This is why we have built a wide range of sophisticated optional software and communication solutions for Hipulse.

The most extensive list of optional communication solutions for Hipulse UPS Systems!

- Control through Building Management Systems via Modbus and Jbus protocols
- Web-enabled Monitoring and Management through SNMP protocols with OpenComms NIC card
- Network Management Systems ready (HP OpenView, CA Unicenter, Novell Managewise, etc.)
- Software Solutions
  - Liebert UPS Monitoring Software
  - HPAC and UPS supervision
  - Facility wide monitoring (SiteScan)
  - Shutdown software for your computer equipment
- Simultaneous monitoring via different protocols
- Emerson Power Quality Monitoring solutions
- Wall-mounted RAM (Remote Alarm Monitor) Box

Selected Power Options

Input Current Harmonic (THDi) Reduction

- 12-pulse rectifier version.
- Wide range of additional solution to reduce the THDi around 4%. Most of them without any additional system footprint.

Input Isolation Transformer

- Wide range of solutions specially designed for handling current harmonic on bypass at different stages.
- Available for rectifier and/or bypass supply.

Protection Degree (IP) For Hipulse Enclosure

- To address stressed environmental conditions, UPS with higher than IP20 degree of protection can be made available for most of the kVA ratings of Hipulse.

DC Ground Fault Indication

- This provides indication of occurrence of battery ground fault problems.

Top Cable Entry

- This is available for a wide range of our Hipulse ratings.

Power Walk-in for Multimodule System

- The module power walk-in is standard. This option can be for the module restart delay after the mains return. This is very useful for applications with motor generator at the input.

LOAD BUS SYNC

- This ensures the synchronisation of outputs of two independent UPS systems.
- This allows automatic transfer of load between the two sources.

Super Switch/Static Switch

- This allows critical load to be transferred between two independent, synchronised AC power sources without any risk of load disturbances.

TVSS

- This is a Transient Voltage Surge Suppressor.
- This offers protection from damaging transients and electrical line noises.
- This is normally connected at the bypass path of Hipulse or inside the HiSwitch as an optional item.

WE HELP YOU GET IT RIGHT - RIGHT FROM THE START.

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Power Availability

General Features

Hipulse UPS System										
Nominal Rating [kVA] (0.8pf)	30	40	50	60	70	80	90	105	130	150
Physical Characteristics										
Depth [mm]	710	710	710	875			875			875
Width [mm]	830	830	830	1250			1400			1640
Height [mm]	1625	1800	1825	1900			1900			1900
Input										
Voltage	380 / 400 / 415V (+10 / - 15 %) - 3Ph - 4w									
Frequency	50 or 60 Hz +/-5%									
ITHD	4 - 10 % with optional input filter									
Power Factor	0.90 - 0.94 with optional input filter									
Output										
Voltage Stability	230 / 110 / 1 Phase									
Voltage Stability - Steady State	± 1%									
100% Load Step	± 5%									
Frequency	**50 or 60 Hz**									
Frequency Stability - Synchronised with the bypass supply	± 1%									
- Auto - Synchronised	± 0.1%									
Overload capacity from inverter at nominal voltage	110% for 60 minutes, 125% for 10 minutes, 135-150% for 1 minute									
Short circuit current from inverter	1.5 In for 5 seconds (in accordance with EN 50091 - 1 - 1)									
Voltage Distortion With Linear Load	<1%									
Voltage Distortion With 100% Non - Linear Load	< 3% Ph / Ph, <5% Ph / N (distorted load as per EN50091 - 3)									
Max. Deliverable Power With Non-Linear Load (CF = 3:1)	100%									
Output Voltage Dissymmetry With 100% Unbalanced Load	2%									

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Voice of Customers UPS Awards 2004-05 for Product Line & Customer Service Awards in IT, Telecom, Large Enterprise & Hospitals and Customer Service Leadership Award in BFSI

Best IT Hardware Company
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