



VERTIV™

Liebert®

HIPULSE
AC UPS SYSTEM,
25 kVA - 800 kVA



Applications

- **Industrial Process Automation in areas like**

- Petrochemicals & Refineries
- Oil & Gas
- Power Generation & Transmission
- Chemical And Pharmaceutical Industries
- Primary Metal And Steel Industries
- Pulp & Paper Industry
- Other Process Industries Like Textile, Mining, Cement
- Bio-Chemical Industries
- Fertilizer Industry

- **Transport Automation**

- Airport Automation
- Others Including Railways & Road Transport Automation

- **Other Applications**

- Access Control
- Security System
- Other Critical Application

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 address them efficiently and effectively. HIPULSE is carefully designed to maximize the “availability” of your critical loads to ensure that 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. Beside this, HIPULSE is designed to address many other “customer values”. More than ever before, this New Millennium would require your critical applications to these applications to be UP all the time. Any downtime of these applications will directly impact your business goals of revenue growth and your customer satisfaction.



HIPULSE Out performs Conventional UPS Systems in Three Clear Ways

1. Proven Track Record
2. Uptime Availability
3. State-of-art Technology

HIPULSE has been designed to suit the Indian conditions after doing a “Power Mapping” Survey across India. It is timeproven system working across India for Various Critical applications. We do not experiment at your cost. Hipulse UPS System is aesthetically designed to match the décor of Industrial Control, Data Processing, Medical Diagnostics Equipment, Laboratory rooms with Elegantly powder-coated cabinet.

Salient Features

- Rated at 0.8 output power factor
- On-Line double conversion with IGBT based PWM Inverter
- Wide input voltage tolerance (+/-15%)
- Wide input frequency tolerance (+/-6%)
- Automatic battery testing
- High overload capability of static bypass (14 times for 10 milliseconds and 10 times for 100 milliseconds)
- Ingress protection IP 31/ IP32/ IP 41 /IP 42
- Capability to handle:
 - High crest factor loads at 100% non-linear loads
- Built-in maintenance bypass (Single and 1+N Models)
- Front access for spares replacement and preventive Maintenance
- Provision to use any type of battery: Wet cells (Tubular Plante), Valve Regulated Lead Acid (VRLA) / Maintenance Free and Nickel Cadmium.
- Adjustable Frequency Synchronization with Static Bypass
- Provision of automatic battery circuit breaker instead of using conventional isolator in the DC path
- Advance Battery Management
- Selectable Timer for boost charging
- Overload capability of the UPS:
 - 110% full-load for 60 minutes
 - 125% full-load for 10 minutes
 - 135%-150% full-load for 60 Sec
- Field Protocols ModBus
- Compact footprint
- Fan Redundancy
- Parallelbility: Up to 6 module can be parallel for capacity enhancement / redundancy.

Meeting Protection Needs

- Temperature-compensated battery charging (Optional)
- Common Battery Sharing / Battery Circuit Breaker
- Short-circuit proof inverter
- Input Harmonic Filter (Optional)
- Protection against deep discharge of battery
- Auto online battery testing
- Battery Earth Fault Kit
- Back-feed Protection

Selectable Options

- Field settability of end-cell voltage of the battery
- Choice between Various Harmonic Filters
- 6 / 12 Pulse Rectifier
- Potential Free Contacts
- Bypass Options:
 - Servo Controlled Voltage Stabilizer (SCVS)
 - Static Voltage Regulator (SVR)
- Load Bus Synchronization
- Input Isolation Transformer
 - Compatible with Liebert AF, the Active Harmonic Filter
 - Available for rectifier and / or bypass supply
- SPD (Surge Protection Device)
 - This offers protection from damaging transients and electrical line noises
- V-Connected Transformers.
- Fault Diagnostic Unit (PPVIS)
- AC Distribution Board
- Liebert Static Transfer Switch
 - This allows critical load to be transferred between two independent, synchronised AC power sources without any risk of load disturbances
 - This allows automatic transfer of load between the two sources



Advanced Monitoring and Communications Capabilities Keep you in Control

Power Communication Options

When choosing the best system to protect your mission critical applications, an important consideration would be the software and communication options. As part of our commitment to provide the best solution for you, we offer a wide range of sophisticated software and communication options for Hipulse.

Communication Options

- **Fault Diagnostics Unit (PPVIS)**
- to meet the needs of Continuous Supervision of UPS Operation, Data Logging on a work station.
- **MODBUS over RTU**
- **Programmable Potential Free Relays**
- **Liebert Power Monitoring Capabilities:**
- Fault Diagnostics Unit. (PPVIS)

HIPULSE CONTROLLER (M822E) DETAILS

- **Touch Screen LCD:** Colored Graphical Touchscreen display with Event log, Status, Measures, Warnings, Alarms & Settings. It stored up to 2000 events
- **Controls:** Touchscreen provides the rectifier & inverter ON/OFF buttons. In addition, Input, output & battery parameters are provided as well.
- **Display:** 9 x 16 cm² LCD Display shows UPS single line diagram, operating parameters and all alarm conditions. Also gives the flexibility of User Configurable Mimic.
- **USB Port:** It enables Maintenance Personnel to export event logs via USB for further analysis.



General Features Hipulse 1 ph (110 Vac)



Hipulse 1 ph (110 Vac) UPS System													
Nominal Rating [kVA] (0.8)	25	40	50	60	70	80	90	105	130	150	160	200	250
kW at 0.8 P.F to unity P.F.	20	32	40	48	56	64	72	84	104	120	128	160	200
O/P Voltage	110 Vac (+/-5% Window settable)												
Rectifier Type	6p / 12p												
Physical Characteristics													
Depth [mm]	900	900	900	900	900	900	900	900	1025	1025	1025	1100	*
Width [mm]	900	900	1250	1250	1250	1250	1640	1640	1640	1640	1640	2830	*
Height [mm]	2100	2100	2100	2100	2100	2100	2100	2100	2300	2300	2300	2300	*
Weight [kg]	525	650	700	750	1150	1250	1650	1750	1850	2450	2550	3000	*
Construction													
Degree of Protection for Enclosure	IP 31 Standard (Optional : IP 32 / IP 41 / IP 42)												
Ventilation	Air Forced Cooling with Integral Fans												
Cable Entry	Bottom												
Cabinet Finish	RAL 7035 Light Grey (Other color shades available on demand)												
Input													
Voltage	380 / 400 / 415 / (+15% / -15%) 3 ph - 3 wire												
Frequency	50 or 60 Hz +/-5%												
THDi	Up To 10% with Input Filter (Optional)												
Power Factor	0.8-0.95 @ with Input Filter (Optional)												
Bypass													
Voltage	110 Vac												
Input Voltage Variation	+/-10%												
Frequency	50Hz												
DC Intermediate Circuit													
DC Ripple	< = 2% without battery / 1% with battery												
DC Nominal Voltage	384 V / 396 V / 408 V (For 380/400/415 Vac input)												
Battery Availability	Ni-Cd / Wet-Acid / VRLA 2V / SMF 12 V												
Output													
Voltage	110Vac- 1 ph												
Voltage Stability Steady State	+/- 1%												
100% Load Step	+/- 5%												
Recovery Time (to within 1% nominal)	<20ms												
Voltage Distortion	<=2%												
Voltage Distortion Non-Linear Load (3:1 Crest Factor)	<=5%												
Frequency	50 or 60 Hz												
Frequency Stability Synchronized with the Bypass Supply	+/- 1Hz												
Auto-Synchronised	+/- 0.1%												
Overload Capacity from Inverter at Nominal Voltage	110% for 60 mins., 125% for 10 mins., 135-150% for 1 min.												
Short circuit current from inverter	1.5 X In for 5 Sec (In accordance with EN50091-1-1)												
Environment													
Operating Temperature	0 to 40°C**												
Storage Temperature	-25°C to 70°C												
Relative Humidity	90% non-condensing type at 31°C												
Maximum Operating Altitude without Derating	1000 meters from MSL												
Acoustic Noise at 1 Meter from Panel Front	57 to 75 dBA (Depending on the kVA rating)												

* Dimensions will be available on Demand

** Standard Ratings also available for Ambient Temperature up to 50°C

All specification are subject to change without notification in view of continuous improvement in product specification, design and engineering.

@ Nominal Operating Condition

General Features Hipulse 1 ph (230 Vac)



Hipulse 1 ph (230 Vac) UPS System													
Nominal Rating [kVA] (0.8)	25	40	50	60	70	80	90	105	130	150	160	200	250
kW at 0.8 P.F to unity P.F.	20	32	40	48	56	64	72	84	104	120	128	160	200
O/P Voltage	230 Vac (+/-5% Window settable)												
Rectifier Type	6p / 12p												
Physical Characteristics													
Depth [mm]	900	900	900	900	900	900	900	900	1025	1025	1025	1100	*
Width [mm]	900	900	900	900	1250	1250	1250	1250	1640	1640	1640	2830	*
Height [mm]	2100	2100	2100	2100	2100	2100	2100	2100	2300	2300	2300	2300	*
Weight [kg]	525	650	700	750	1150	1250	1650	1750	1850	1800	2550	3000	*
Construction													
Degree of Protection for Enclosure	IP 31 Standard (Optional : IP 32 / IP 41 / IP 42)												
Ventilation	Air Forced Cooling with Integral Fans												
Cable Entry	Bottom												
Cabinet Finish	RAL 7035 Light Grey (Other color shades available on demand)												
Input													
Voltage	380 / 400 / 415 / (+15% / -15%) 3 ph - 3 wire												
Frequency	50 or 60 Hz +/-5%												
THDi	Up to 10% with Input Filter (Optional)												
Power Factor	0.8-0.95 @ with Input Filter (Optional)												
Bypass													
Voltage	230 Vac												
Input Voltage Variation	+/-10%												
Frequency	50Hz												
DC Intermediate Circuit													
DC Ripple	< = 2% without battery / 1% with battery												
DC Nominal Voltage	384 V / 396 V / 408 V (For 380/400/415 Vac input)												
Battery Availability	Ni-Cd / Wet-Acid / VRLA 2V / SMF 12 V												
Output													
Voltage	230 Vac- 1 ph												
Voltage Stability Steady State	+/- 2 %												
100% Load Step	+/- 5%												
Recovery Time (to within 1% nominal)	<20ms												
Voltage Distortion	<=2%												
Voltage Distortion Non-Linear Load (3:1 Crest Factor)	<=5%												
Frequency	50 or 60 Hz												
Frequency Stability Synchronized with the Bypass Supply	+/- 1Hz												
Auto-Synchronised	+/- 0.1%												
Overload Capacity from Inverter at Nominal Voltage	110% for 60 mins., 125% for 10 mins., 135-150% for 1 min.												
Short circuit current from inverter	1.5 X In for 5 Sec (In accordance with EN50091-1-1)												
Environment													
Operating Temperature	0 to 40°C**												
Storage Temperature	-25°C to 70°C												
Relative Humidity	90% non-condensing type at 31°C												
Maximum Operating Altitude without Derating	1000 meters from MSL												
Acoustic Noise at 1 Meter from Panel Front	57 to 75 dBA (Depending on the kVA rating)												

* Dimensions will be available on Demand

** Standard Ratings also available for Ambient Temperature up to 50 °C

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@ Nominal Operating Condition

General Features Hipulse 3 Ph



Hipulse 3 ph (415 Vac) UPS System													
Nominal Rating [kVA] (0.8)	80	90	105	130	150	160	200	250	300	400	500	600	800
kW at 0.8 P.F to unity P.F.	64	72	84	104	120	128	160	200	240	320	400	480	640
O/P Voltage	380/400/415* (400V: Nominal) 3-phase +N, 4-wire												
Rectifier Type	6P			6P/12P						12P			
Physical Characteristics													
Depth (mm)	855									1000	1060	1000	
Width (mm)	900		1250(6P) / 1890(12P)			1400(6P)/ 2040(12P)		1640(6P)/ 2280(12P)		2460	2640	3200	4410
Height (mm)	1900												
Construction													
Degree of Protection for Enclosure	IP 20 Standard (Optional: IP 31 / IP 42)												
Ventilation	Air Forced Cooling with Integral Fans												
Cable Entry	Bottom												
Cabinet Finish	RAL 7035 (Other color shades available on demand)												
Input													
Voltage	380/400/415* (400V: Nominal) 3-phase +N, 4-wire												
Frequency	50 or 60 Hz (+5%)												
THDi	Upto 10% with Input Filter (Optional)												
Power Factor	0.88-0.9 @ with input Filter (Optional)												
Bypass													
Voltage	380/400/415* (400V: Nominal) 3-phase +N, 4-wire												
Input Voltage Variation	± 10%												
Frequency	50 Hz												
DC Intermediate Circuit													
DC Ripple	≤2% without battery / 1% with battery												
DC Nominal Voltage	384V/396V/408V (For 380/400/415Vac input)												
Battery Availability	Ni-Cd/Wet Acid/VRLA 2V/SMF 12V												
Output													
Voltage	380/400/415* (400V: Nominal) 3-phase +N, 4-wire												
Voltage Stability Steady State	±1%												
100% Load Step	±5%												
Recovery Time (to within 1% nominal)	20ms												
Voltage Distortion Linear Load	≤2%												
Voltage Distortion Non-Linear Load (3:1 Crest Factor)	≤5%						≤3.5%						
Frequency	50 or 60 Hz												
Frequency Stability Synchronized with the Bypass Supply	±3 Hz												
Auto-Synchronized	±0.1%												
Overload Capacity from Inverter at Nominal Voltage	110% for 60 mins, 125% for 10 mins, 150% for 1 min												
Short circuit current from Inverter	1.5 X In for 5 Sec (in accordance with EN 50091 -1 -1)												
Environment													
Operating Temperature	0 to 40°C												
Storage Temperature	-25°C to 70°C												
Relative Humidity	90% non-condensing type at 31°C												
Maximum Operating Altitude without Derating	1000 m from MSL												
Acoustic Noise at 1 Meter from Panel Front	57 to 75 dBA (Depending on the kVA rating)												

@ Nominal Operating Conditions



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