



VERTIVTM

Liebert[®]

Hipulse-S

25 – 200kVA

1ph

Digital UPS for the Digital World and
Industrial Automation



Applications

■ Industrial Process Automation

- 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
- Fertilizer industry

■ 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
- Ticketing

■ Building Automation

- Access control
- Security system
- Other critical application

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

Liebert® Hipulse-S 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 J or power quality problems. This is the Prime Objective for which the Liebert® Hipulse-S is built. Beside this, Liebert® Hipulse-S 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.



FEATURES

- Rated at 0.8 output power factor to deliver more real power
- On-Line double conversion
- IGBT based PWM inverter
- Wide input voltage tolerance (+15/-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 31IIP32IIP 41 IP/ 42
- Capability to handle:
- High crest factor loads /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 window up to +/- 9% in the 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 duration of the battery. (15 steps with each step of 1 hour)
- Overload capability of the UPS:
- 110% full-load for 60 minutes
- 125% full-load for 10 minutes
- 135%-150% full-load for 60 seconds
- Field protocols ModBus
- Compact footprint
- Fan redundancy
- Parallelability: Up to 6 module can be parallel for capacity enhancement/ redundancy.

Liebert® Hipulse-S Outperforms Conventional UPS Systems in Three Clear Ways:

1. **Proven Track Record**
2. **Availability and**
3. **State of art Technology**

Liebert® Hipulse-S has been designed to suit conditions harsh environment in industrial and manufacturing facilities. We do not experiment at your cost. Liebert® Hipulse-S UPS System is aesthetically designed to match the decor of Industrial Control, Data Processing, Medical Diagnostics Equipment, Laboratory rooms with Elegantly powder coated cabinet.

Selectable Options

- Field settability of end-cell voltage of the battery
- Choice between Various Harmonic Filters
- 6/12 Pulse Rectifier
- Standard dry contacts
- Servo Controlled Voltage Stabilize (SCVS) in bypass line
- Static Voltage Regulator (SVR)
- V-Connected Transformers.
- Fault Diagnostics Unit
- AC Distribution Board
- Load Bus Synchronization
- Input Isolation Transformer
 - Compatible with Liebert® AF, the Active Harmonic Filter
 - Available for rectifier and I or bypass supply
- TVSS (Transient Voltage Surge Suppressor)
 - This offers protection from damaging transients and electrical line noises
- Liebert® Static Transfer Switch
 - This allows critical load to be transferred between two independent, synchronized AC power sources without any risk of load disturbances
 - This allows automatic transfer of load between the two sources

Meeting Protection Needs

- Temperature-compensated battery charging (Optional)
- Common battery sharing / battery circuit breaker
- Short-circuit proof inverter
- Input Harmonic Filter (HF)
- Protection against deep discharge of battery
- Auto online battery testing
- Battery earth fault kit
- Back-feed protection

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 Liebert® Hipulse-S.

Communications Options

▪ Fault diagnostics unit

- to meet the needs of continuous supervision of UPS operation, data logging on a work station.

▪ Relay contact card

- addresses the basic monitoring and communications needs of users /maintenance personnel.

▪ Other remote communications

- The Liebert® Hipulse-S provides other communications alternatives through RS-232 & RS-485 ports.
- In addition to FDU, service personnel can also use the RS-232 port for local downloading of data, building management systems Via ModBus protocols while the RS-485 port can be utilized for a variety remote communications application.

▪ Open Comms™ WebCard*

- to meet the needs of network managers by providing interface to network management systems through SNMP/HTTP protocols and control through building management systems via Modbus and bus Protocols.

▪ Local communications

- Liebert® Hipulse-S provides excellent local communications through its LED-based mimic diagram and LCD panel. While the mimic shows the live power path, the back-lit contrast adjusting LCD provides you with detailed data on the unit and the system in twelve different languages through a user-friendly menu.

▪ Liebert® Power Monitoring Capabilities:

- Multilink™ automated system shutdown software
- Fault diagnostics unit. Site Scan™ web comprehensive
- Remote alarm monitoring box



Comprehensive Display panel has three distinct functional sections to your Advantage

- **Mimic:** this section incorporates LEDs. Which indicate current operational status of the UPS System (i.e.the path of powerflow) very clearly.
- **Controls:** Touch membrane switches on the front panel enable the inverter to be switched ON and OFF audible alarm RESET and allow all Output & Battery parameters to be selected for indication. In addition emergency STOP Button is provided as well.
- **Display:** 4 x 20 Line f 80 characters LCD Display indicates operating parameters and all alarm conditions automatically.

**Condition Apply*

Hipulse-S 1ph (110 Vac) UPS system												
Nominal rating [kVA] (0.8)	25	40	50	60	70	80	90	105	130	150	160	200
kW at 0.8 P.F. to unity P.F.	20	32	40	48	56	64	72	84	104	120	128	160
O/P Voltage	110 Vac (+/-5% Window settable)											
Rectifier type	6p/12p											
Physical Characteristics												
Depth (mm)	895	895	895	895	895	895	895	895	895	1000	1025	1055
Width (mm)	900	900	1250	1250	1250	1250	1640	1640	1640	2000	1640	2830
Height (mm)	2110	2110	2110	2110	2110	2110	2100	2100	2100	2300	2312	2212
Weight (kg)	525	650	700	750	1150	1250	1650	1750	1850	2450	2550	3000
Construction												
Degree of Protection for Enclosure	IP 31standard (optional:IP 32/IP41/IP42)											
Ventilation	Air forced cooling with integral fans											
Cable Entry	Bottom											
Cabinet Finish	RAL 7021 structured black (other color shades available on demand)											
Input												
Voltage	380 / 400 / 415 / (+15% /-15%) 3 ph-3wire											
Frequency	50 or 60Hz +/-5%											
THDI	10% with optional input filter @											
Power Factor	0.8-0.95 with optional input filter@											
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-Add / VRLA 2V / SMF 12V											
Output												
Voltage	110Vac - 1ph											
Voltage Stability Steady State	+/-1.5%											
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 in 5 seconds (in accordance with EN 50091-1-1)											
Environment												
Operating Temperature	0 to 45°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 73 dBA (depending on the kVA rating)											

Hipulse-S 1ph (230 Vac) UPS system												
Nominal Rating [kVA] (0.8)	25	40	50	60	70	80	90	105	130	150	160	200
kW at 0.8 P.F. to unity P.F.	20	32	40	48	56	64	72	84	104	120	128	160
O/P Voltage	230 Vac (+/-5% Window settable)											
Rectifier Type	6p/12p											
Physical Characteristics												
Depth (mm)	895	895	895	895	895	895	895	895	895	895	1025	1055
Width (mm)	900	900	1250	1250	1250	1250	1640	1640	1640	1640	1640	2830
Height (mm)	2110	2110	2110	2110	2110	2110	2110	2110	2110	2110	2312	2212
Weight (kg)	475	600	650	700	1200	1200	1700	1700	1800	1900	2550	3000
Construction												
Degree of Protection for Enclosure	IP31 Standard (optional: IP32 / IP41 / IP42)											
Ventilation	Air forced cooling with integral fans											
Cable Entry	Bottom											
Cabinet Finish	RAL 7021 structured black (other color shades available on demand)											
Input												
Voltage	380 / 400 / 415 / (+15% / -15%) 3 ph- 3wire											
Frequency	50 or 60Hz +/-5%											
THDI	10% with optional input filter@											
Power Factor	0.8-0.95 with optional input filter®											
Bypass												
Voltage	230Vac											
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	230Vac - 1ph											
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 60Hz											
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 in 5 seconds (in accordance with EN 50091- 1 -1)											
Environment												
Operating Temperature	0 to 45°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 73 dBA (depending on the kVA rating)											





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