



LOW FREQUENCY UPS
HIGH FREQUENCY UPS
OUTDOOR UPS
RACKMOUNT UPS
POWER RANGE : 1-2400KVA
HIGHEST TECHNOLOGY ON UPS



HEAVY DUTY UPS SYSTEMS
YOUR POWER CONTINUITY IS OUR BREATH

ヘビー ジューティー パワー スプライ



MP98A Series 120-2400kVA

Low Frequency On-line UPS (3 Ph in/3Ph out)



Power Protection for Business-Critical Continuity

MP98A 120-2400kVA



■ Addressing A Variety Of Needs

The Low frequency UPS MP98A Series reliable, scalable and user-friendly solution to ensure availability of networks. The Low frequency UPS MP98A Series offers protection to your investment and lower cost of ownership through its digital architecture and range of options which you can customize specifically for your needs.

■ Information Technology

- Data Centers
- Servers (LAN, WAN, MAN, ERP, e-mail, web and others)
- Networking

■ Telecommunication

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

■ Industrial Automation

- Process (including instrumentation)
- Motion (digital drives and robotics)

■ Transport Automation

- Airport automation and flight booking
- Others including railways and road transport automation and 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

■ Medical Diagnostics

- Magneto Resonant Imaging
- CT Scanning
- CathLab

■ Satellite

- Uplinking
- Earth Stations

■ Loaded With Features

We have studied the emerging needs of our customers and have engineered what we have learned into the new, upgraded Low frequency UPS MP98A Series. Now it offers you more value and power per square meter. You will find that The Low frequency UPS MP98A Series offers unique features that address the needs of your business today and is designed to handle the needs that are expected in future.

Features To Protect Your Network

- Fully Digital, twin DSP controlled.
- Handle Leading power factor loads without KW de-rating under specified conditions
- On-Line Double Conversion
- IGBT-based PWM Inverter
- Wide input voltage tolerance (+15 / -15%)
- Wide input frequency tolerance (45Hz-65Hz)
- 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 Models)
- Wrap-around maintenance bypass (optional)
- Front access for spares replacement and preventive maintenance
- Easy Dual bus configuration architecture
- Provision to use any type of battery: Wet cells (Tubular Plant), Valve Regulated Lead Acid (VRLA) /Maintenance Free and Nickel Cadmium
- Adjustable frequency synchronisation window up to 9% in the static bypass
- Provision of automatic battery circuit breaker instead of using conventional isolator in the DC path
- Field protocols ModBus / Jbus

- Network protocols SNMP.
- Overload capability of the UPS:
 - 110% full-load for 60 minutes
 - 125% full-load for 10 minutes
 - 150% full-load for 1 minute
- Easy Scalability (Parallel 1+N configuration up to 6 modules paralleling) without centralised Main Static Switch (MSS)
- Bypass Switch
- Compact footprint

Built In Investment Protection

- Temperature-compensated battery charging (optional)
- Automatic battery testing
- Field settability of end-cell voltage of the battery
- Selectable timer for boost charging duration of the battery (15 steps with each step of 1 hour)
- Protection against deep discharge of battery
- Battery circuit breaker instead of using AC isolator
- Short-circuit proof inverter
- Back-feed protection
- D-level lightning protection
- With 3 auxiliary power supply to ensure redundancy under any condition
- Standard dry contacts
- Choice between 6 or 12-pulse rectifier
- Choice of array of input harmonic filter options.
- Compatible with ARAKAWA AF, the active harmonic filter.

HEAVY DUTY UPS SYSTEMS



TECHNICAL SPECIFICATIONS

Model	MP98A 120-800KVA												
	6P	12P	6P	12P	6P	12P	6P	12P	6P	12P	12P	12P	12P
Rated Nominal	120KVA/108KW		160KVA/144KVA		200KVA/180KVA		300KVA/270KVA		400KVA/360KVA		500KVA/450KVA	600KVA/540KVA	800KVA/720KVA
Rated input voltage	380/400/415VAC 3-phase 4-wire												
Rated frequency	50/60HZ												
Input parameters													
Input voltage range	±25%												
Input frequency range	45Hz~65Hz												
Input soft start function	0-100% 5-300S settable												
Input power factor	>0.98 (If harmonic filter is added)												
Input harmonic current (THDi)	<4.5% (If harmonic filter is added)												
Bypass													
Bypass voltage range	-20%~+15%												
Bypass frequency range	50/60HZ±10%												
Output parameters													
Inverter output voltage	380/400/415VAC 3-phase 4-wire												
Voltage stability	±1%(Steady status),±3%(Transient status)												
Frequency	50/60Hz												
Mains power synchronization window	±5%												
Actually measured frequency accuracy (internal clock)	50/60Hz±0.05Hz												
Output power factor	0.9 (Output 90kW per 100kVA)												
Transient response time	<5ms												
Inverter overload capability	At 0.9 power factor, 110% for 1 hour, 125% for 10 minutes and 150% for 60s												
Short circuit current from inverter	3ph 1.5In for 5seconds, 1ph 2.9In for 5seconds												
Maximum Bypass capability	1000% for 100ms												
Phase shift characteristic	With 100% balanced load		<1°										
	With 100% imbalance load		<1°										
otal harmonic Distortion(THDv)	100% linear load		<1%										
	100% non-linear load		<3%										
System efficiency (full load)	Up to 94% (inverter efficiency is up to 98%)												
Rectifier output parameters													
Charger output voltage stability	1%												
DC ripple voltage	≤1%												
Operating environmen													
Operating temperature range	0~40℃												
Storage temperature	-25~70℃(inverter efficiency is up to 98%)												
Relative humidity	0~95% No condensation												
Maximum operating height	≤Elevation 1000m, for elevation above 1000m, derate by 1% for every increase of 100m												
Noise (1m)	58-68dB												
Protection level	IP20												
Standard	Safety: IEC60950-1 IEC62040-1-1 UL1778 EMC IEC62040-2 CLASS C2 EN50091-2 CLASS A Design and Test IEC62040-3												
Physical parameters													
Weight (kg)	980	1420	1200	1750	1350	2000	1600	2200	2100	2750	3690	6390	7390
Width X Depth X Height (mm)	900X855X1900	1250X855X1900		1640X855X1900	1250X855X1900	1640X855X1900		2280X855X1900		2835X1000X1950		3955X1090X1950	

*conditions apply

If you need any further information, please give us your message(s) by the following information given, we can reply you as quickly as possible.

* Maximum power of MP98A is 2400kVA with parallel format.



MP98A Series 120-2400kVA



Easy installation

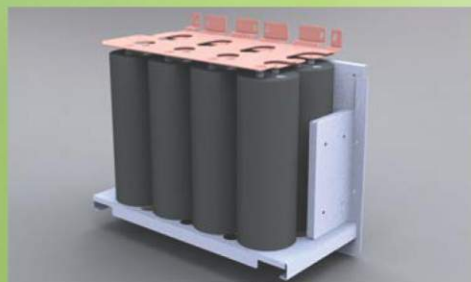
- ▶ layered freestanding obturator-ventilation
- ▶ Installed against the wall
- ▶ the favourable ventilation design
- ▶ can pass in and out the cables from the top



MP98A Series 120-2400kVA



- A** LCD Display
- B** Air Filter
- C** Electronic control PCB
- D** N+X assistant power supply PCB
- E** Battery monitor connect terminal
- F** 220V Socket
- G** Input power switch
- H** Bypass power switch
- I** Maintain bypass switch
- J** Output switch



DC BUS module



Input/output power distribution

MP98A Series 120-2400kVA



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 MP98A Series.

The most extensive list of optional communication solution for MP98A UPS Systems:

- Control through Building Management Systems via Modbus and Jbus protocols
- Web-enabled Monitoring and Management through SNMP protocols
- Network Management Systems ready (HP OpenView, CA Unicenter, Novell Managewise, etc.)
- Software Solutions
 - Site Monitor Software
 - Facility wide monitoring (SiteScan)
 - Shutdown software for your computer equipment
- Simultaneous monitoring via different protocols
- Power Quality Monitoring solutions

Selected Power Options

Input Current Harmonic (THDi) Reduction

- 12-pulse rectifier version
- Wide range of additional solution to reduce the THDi to less than 5%. Most of them are without any additional system footprint

Output Isolation Transformer

- Compatible with Liebert AF, the Active Harmonic Filter
- 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 MP98A 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 the MP98A

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 ARAKAWA or inside the Static Transfer Switch as an optional item

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 MP98A ratings

Power Walk-in for 1+N 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

LBS

- This ensures the synchronisation of outputs of two independent UPS systems to form Dual Bus Architecture for High availability of Critical Bus

STS, 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

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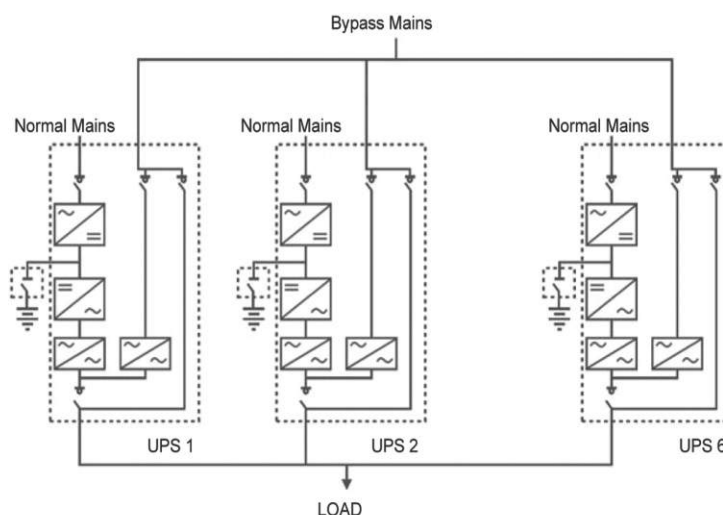
■ Selected Configurations

MP98A can be scaled up to as high as 6 modules using any of the following configurations to achieve either scalability or redundancy of desired percentage.

- 1+N configuration without any kind of centralised static switch
- Some more configurations are explained further in this brochure
- For other configurations, please contact our nearest sales office / representative

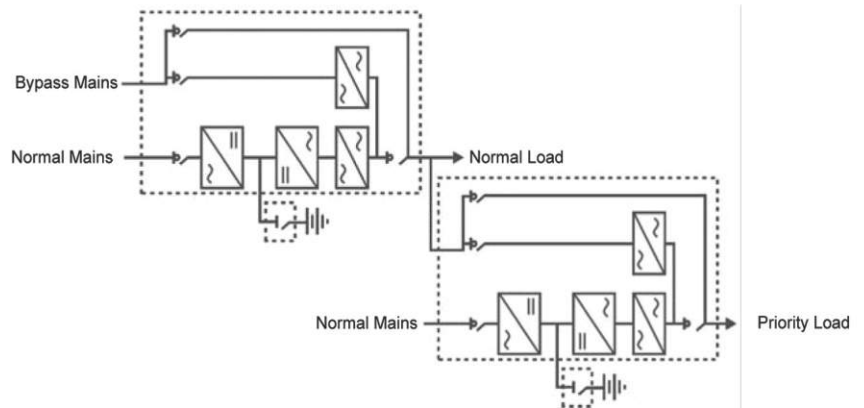
1+N Configuration with Distributed bypass System

- 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 than or equal to the rating of the single UPS (depending on the desired redundancy level) and is shared between all modules



Hot Stand-by Configuration

- Feed one (Priority) or two (Priority and 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



Dual Bus System with STS STS2 or Hiswitch2,

- 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 STS
- Increase dramatically the maintainability and reliability

