constant power services

DATACENTRE E-MEDICAL INDUSTRY

TRANSPORT EMERGENCY

Master HP UL

VFI TYPE ONLINE

Tower

ECO LEVEL 6

3:3 65-500 kVA

Service 1st start

UL certified

SmartGrid ready

HIGHLIGHTS

- High efficiency
- IGBT-based rectifier technology
- Compact, reliable and robust
- Galvanic isolation
- High overload capacity

The high levels of quality, reliability and energy savings offered by the Master HP range of UPS, has been extended to include a UL/CSA Listed, 480 Vac 60 Hz version with ratings from 65 kVA to 500 kVA.
IT managers, facility managers, and CTOs are under increasing pressure to reduce downtime and assure that their critical loads are supplied with uninterrupted and high quality power. With this increasingly stringent requirement, Riello UPS has invested in power solutions that meet strict demands; a commitment resulting in the launch of the Master HP UL range.
More than just an innovative and technologically-advanced UPS, it is a leap into the future of three-phase technology. With its double conversion on-line technology based entirely on IGBT and digital signal processors (DSP), the Master HP UL range ensures maximum critical load protection, with VFI SS 111 classification (Voltage and Frequency Independent) in accordance with IEC EN 62040-3.
This range is designed using a new configuration that includes an IGBT sinusoidal input rectifier. Unique in its design, double conversion technology with galvanic isolated output guarantees a quality power supply that is completely protected from all electrical anomalies at the input.

Complete galvanic separation

The Master HP UL UPS features an output isolation transformer on the inverter as part of the inverter circuit inside the UPS cabinet,

providing galvanic isolation between the load and the battery with improved versatility in system configuration, allowing:

- Complete UPS output galvanic isolation for critical infrastructures from the battery DC power source;
- Two truly separated supply inputs (utility and bypass), which can be taken from two different power sources (with different neutrals); this is particularly well suited for parallel systems in order to ensure selectivity between the two sources, improving the reliability of the entire installation;
- No neutral input connection is required at the UPS rectifier input stage; this method is particularly favorable in order to prevent the transmission of common neutral disturbances via the neutral conductor;
- No effects to the UPS output performance or reduced impact of the inverter power components while supplying specific loads; in addition the inverter transformer minimizes the impact of third harmonic disturbances, prevents the effects of energy back-feed into the inverter when supplying industrial load applications and can supply unbalanced loads.
- High inverter short circuit current to clear faults which occur between phase and neutral on load side (up to three times nominal current).

Output transformer housed within a cabinet which allows for a significant reduction in the footprint and provides space savings.

Zero impact source

The Master HP UL series features the added advantages of the Zero Impact Source formula offered by an IGBT-based rectifier assembly. This eliminates problems connected with installation in networks with limited power capacity, where the UPS is supplied by a generator set or anywhere there are compatibility problems with loads that generate current harmonics. Master MHT UL series UPS have zero impact on the power supply source, whether it is a utility grid or generator set:

- Input current distortion < 3%
- Input power factor 0.99
- Power walk-in function that ensures progressive rectifier start up
- Start-up delay function, to restart the rectifiers when mains power is restored if there are several UPS in the system.

This provides savings in installation costs via:

- A smaller electrical infrastructure.
- Smaller circuit protection devices
- Less wiring.

Flexibility

Master HP UL is suitable for a wide range of applications including IT and the most demanding industrial environments and processes. With several operational configurations including On-Line, Eco, Smart Active, Stand By, Frequency Converter and Voltage Regulation. A broad range of accessories and options, complex configurations and system architectures can be achieved to guarantee maximum power availability and the option to add new UPS without interruption to site operations.

Battery care system: maximum battery care

Master HP UL series UPS include a range of features designed to prolong battery life and reduce usage by using different recharging methods; deep discharge protection, current limitation, and voltage compensation based on ambient temperature.

Main features

- Compact size: e.g.: only 2.330 square inches for the Master HP UL 500 kVA
- Reduced weight for transformer based UPS
- Double load protection, both electronic and galvanic, towards the battery.

The entire Master HP UL range is suitable for use in a wide range of applications. The Master HP can supply any type of load, e.g. servers, controls, lighting, capacitive, switch mode. Power supply reliability and availability are ensured for critical applications by distributed parallel configurations of up to 8 units, for redundant (N+1) or power parallel configurations.

Advanced supervision

The Master HP UPS has a front panel mounted graphic display providing UPS information, measurements, status updates and alarms in multiple languages, with waveform displays including voltage/current and providing a kWh reading that can be used to measure IT loads and calculate a Data Centre PUE (Power Usage Effectiveness) ratio.

OPTIONS

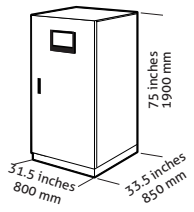
SOFTWARE
PowerShield[3]
PowerNetGuard

ACCESSORIES
NETMAN 204
Multi I/O (Relay Alarm card and generator Interface)

PRODUCT ACCESSORIES
Parallel configuration kit (Closed Loop)
Fully configured battery systems with appropriate autonomy
Maintenance Bypass Switchgear for all models

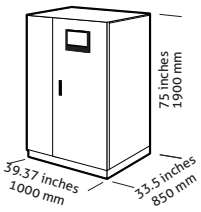
DIMENSIONS

MHT 65 UL
MHT 80 UL
MHT 100 UL
MHT 125 UL



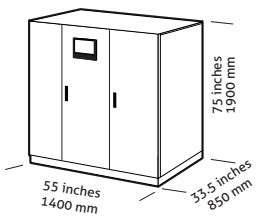
including manual bypass

MHT 160 UL
MHT 200 UL
MHT 250 UL



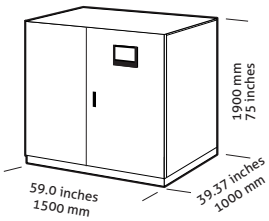
excluding manual bypass

MHT 160 UL
MHT 200 UL
MHT 250 UL

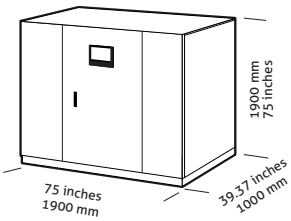


including manual bypass
Top Cable Entry cabinets

MHT 300 UL
MHT 400 UL
MHT 500 UL



MHT 300 UL TCE
MHT 400 UL TCE
MHT 500 UL TCE



MODELS	MHT 65 UL	MHT 80 UL	MHT 100 UL	MHT 125 UL	MHT 160 UL
INPUT					
Nominal voltage	480 Vac three-phase + N				
Frequency	45 - 65 Hz				
Power factor	> 0.99				
Harmonic current distortion	<3% THDi				
Soft start	0 - 100% in 125" (selectable)				
Frequency tolerance	± 2% (selectable from ± 1% to ± 5% from front panel)				
Standard equipment provided	Back Feed protection; separable bypass line				
BATTERIES					
Type	VRLA, Wet Cell, NiCd				
Ripple current	Zero				
Recharge voltage compensation	-0.5 Vx°C				
OUTPUT					
Nominal power (kVA)	65	80	100	125	160
Active power (kW)	58.5	72	90	112.5	144
Number of phases	3 + N				
Nominal voltage	480 Vac three-phase + N				
Static stability	± 1%				
Dynamic stability	from ± 5% to ± 1% in 20 ms				
Voltage distortion	< 1% with linear load / < 3% with non-linear load				
Crest factor	3:1 lpeack/lrms				
Frequency stability on battery	0.05%				
Frequency	60 Hz				
Overload	110% for 60 minutes; 125% for 10 minutes; 150% for 1 minute				
INFO FOR INSTALLATION					
Weight (lbs [kg])	1500 [680]		1610 [730]	1742 [790]	1851 [840]
Weight with TCE and Maintenance bypass (lbs [kg])	-	-	-	-	2204 [1000]
Dimensions (WxDxH) (inches [mm])	31.5 x 33.5 x 75 [800 x 850 x 1900]				39 x 33.5 x 75 [1000x850x1900]
Dimensions with TCE and Maintenance bypass (WxDxH) (inches [mm])	-	-	-	-	55 x 33.5 x 75 [1400x850x1900]
Remote signals	dry contacts (configurable)				
Remote controls	ESD and bypass (configurable)				
Communications	Double RS232 + dry contacts + 2 slots for communications interface with SNMP, Modbus, and Bacnet Protocols				
Operating temperature	0 °C / +40 °C (32 to 104 °F)				
Relative humidity	<95% non-condensing				
Color	Black				
Noise level at 1 m (ECO Mode)	65 dBA			68 dBA	
IP rating	IP20				
Smart Active efficiency	up to 98.5%				
Standards	UL Standard 1778: 2nd edition from 65 to 125 kVA, 5th edition from 160 to 250 kVA; From 160 to 250 kVA: UL 60950-1 1: Information Technology Equipment - Safety - Part 1: General Requirements National Electrical Code (NFPA-70); FCC Part 15 Subpart J class A - Radio Frequency; IEC 62040-3; UL 924 and OUST category - Emergency Lighting and power equipment				
Classification in accordance with IEC 62040-3	(Voltage Frequency Independent) VFI - SS - 111				
Transport	Pallet Jack				

MODELS	MHT 200 UL	MHT 250 UL	MHT 300 UL	MHT 400 UL	MHT 500 UL
INPUT					
Nominal voltage	480 Vac three-phase + N				
Frequency	45 - 65 Hz				
Power factor	> 0.99				
Harmonic current distortion	<3% THDi				
Soft start	0 - 100% in 125'' (selectable)				
Frequency tolerance	± 2% (selectable from ± 1% to ± 5% from front panel)				
Standard equipment provided	Back Feed protection; separable bypass line				
BATTERIES					
Type	VRLA, Wet Cell, NiCd on Racks or Cabinet				
Ripple current	Zero				
Recharge voltage compensation	-0.5 Vx°C				
OUTPUT					
Nominal power (kVA)	200	250	300	400	500
Active power (kW)	180	225	300	400	450
Number of phases	3 + N				
Nominal voltage	480 Vac three-phase + N				
Static stability	± 1%				
Dynamic stability	from ± 5% to ± 1% in 20 ms				
Voltage distortion	< 1% with linear load / < 3% with non-linear load				
Crest factor	3:1 lpeack/lrms				
Frequency stability on battery	0.05%				
Frequency	60 Hz				
Overload	110% for 60 minutes; 125% for 10 minutes; 150% for 1 minute				
INFO FOR INSTALLATION					
Weight (lbs [kg])	2138 [970]	2247 [1110]	4190 [1900]	4741 [2150]	4741 [2150]
Weight with TCE and Maintenance bypass (lbs [kg])	2524 [1145]	2799 [1270]	4410 [2000] *	4961 [2250] *	4961 [2250] *
Dimensions (WxDxH) (inches [mm])	39 x 33.5 x 75 [1000 x 850 x 1900]		59 x 39.5 x 75 [1500 x 1000 x 1900]		
Dimensions with TCE and manual bypass (WxDxH) (inches [mm])	55 x 33.5 x 75 [1400 x 850 x 1900]		75 x 39.5 x 75 [1900 x 1000 x 1900] *		
Remote signals	dry contacts (configurable)				
Remote controls	ESD and bypass (configurable)				
Communications	Double RS232 + dry contacts + 2 slots for communications interface				
Operating temperature	0 °C / +40 °C (32 to 104 °F)				
Relative humidity	<95% non-condensing				
Color	Black				
Noise level at 1 m (ECO Mode)	68 dBA		72 dBA		
IP rating	IP20				
Smart Active efficiency	up to 98.5%				
Standards	UL Standard 1778: 5th edition; UL 60950-1 1: Information Technology Equipment - Safety - Part 1: General Requirements; National Electrical Code (NFPA-70); FCC Part 15 Subpart J class A – Radio Frequency; IEC 62040-3; UL 924 and OUST category – Emergency Lighting and power equipment		UL Standard 1778: 5th edition; National Electrical Code (NFPA-70); NEMA; CSA C22.2; ASME; FCC section 15 subsection J class A; IEC 62040-3;		
Classification in accordance with IEC 62040-3	(Voltage Frequency Independent) VFI - SS - 111				
Transport	Pallet Jack				

** Maintenance Bypass Switch – on option.*

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