LOCAL AREA NETWORKS (LAN) | SERVERS | DATA CENTRES | CASH REGISTERS | TELECOM-MUNICATIONS DEVICES | E-BUSINESS (Servers Farms, ISP/ASP/POP) | INDUSTRIAL PLCS | ELECTRO-MEDICAL DEVICES | EMERGENCY DEVICES (Lights/Alarms)

Multi Sentry

RIELLO ELETTRONICA

riello AROS ups

10-20 kVA
Single-phase

10-120 kVA
Three-phase

Highlights

- Complete power range from 10 up to 120 kVA
- Small footprint
- High efficiency up to 96,5%
- Zero Impact Source
- Advanced communication

ECO 6 ENERGY LEVELS

The MULTI SENTRY series is ideal for protecting data centre and telecommunications systems, IT networks and critical systems where poor power quality can lead to a loss of operations and service.
The MULTI SENTRY series is available in 10-12 15-20 kVA models with three-phase and single-phase input and single-phase output, and 10-12-15- 20-30-40-60-80-100-120 kVA models with three-phase input and output with On-line double conversion technology, according to the VFI-SS-111 classification, as defined in IEC EN 62040-3.
MULTI SENTRY: designed and built using state of the art technology and components, and controlled by the DSP (Digital Signal Processor) microprocessor, to provide maximum protection to the powered loads with no impact on downsteam systems and optimise energy savings.
Its highly flexible design allows full compatibility both with three-phase and single-phase power supplies.

Zero impact source

Thanks to the technology used, MULTI SENTRY solves installation problems in systems where the power supply has limited installed power, where the UPS is also powered by a generator or where there are compatibility problems with loads that generate harmonic currents; MULTI SENTRY has zero impact on its power source, being either the mains power supply or a generator:

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

In addition, MULTI SENTRY plays a filter and power factor correction role in the power network upstream of the UPS, as it eliminates harmonic components and the reactive power, generated by the powered utilities.

High output

Using state-of-the-art technologies three-level NPC inverters have been designed which ensure a high output of up to 96.5%.

These technology solutions allow for a saving of more than 50% of the energy dissipated in a year, compared to a similar product on the market with 92% output.

The exceptional performance makes it possible to recover the initial investment cost in less than three years of operation.

Battery care system

Proper battery care is critical to ensuring the correct operation of a UPS in emergency conditions.

The Riello UPS Battery Care System consists of a series of features and capabilities that allow for battery management in order to obtain the best performance possible and extend their operating life.

Battery charging: MULTI SENTRY is suitable for use with hermetically sealed lead-acid (VRLA), AGM and GEL batteries and Open Cup and Nickel Cadmium batteries.

Depending on the battery type, different charging methods are available.

- One-level voltage recharge, typically used for more common VRLA AGM batteries
- Two-level voltage recharge according to IU characteristic
- Charge block system to reduce electrolyte consumption and further extend the life of VRLA batteries.

Compensation of recharge voltage as a function of the temperature in order to prevent excessive charges or battery overheating.

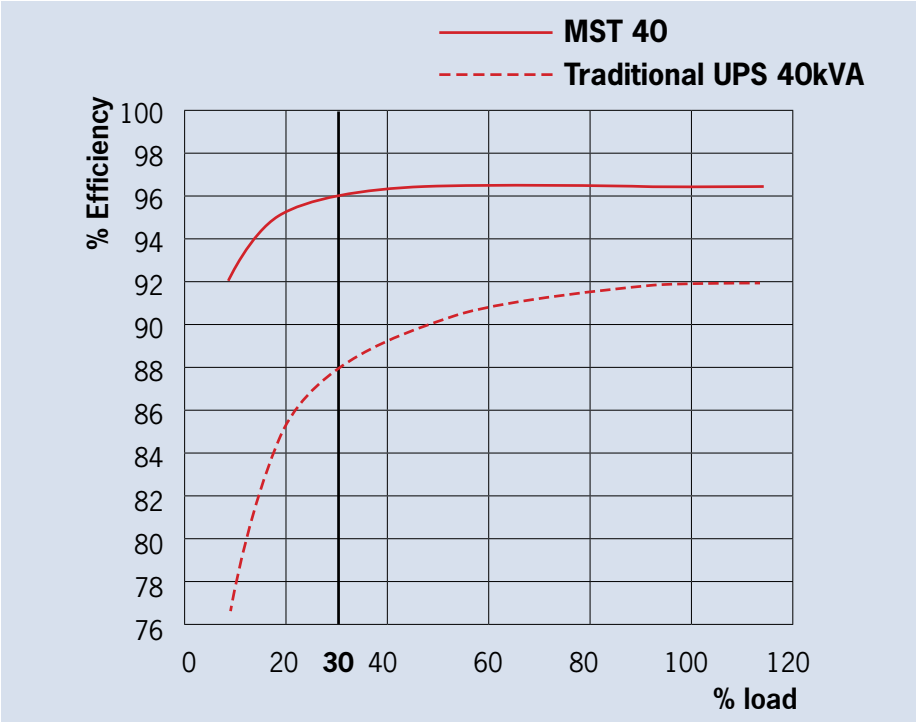
Battery tests to quickly diagnose any reduction in performance or problems with the batteries.

Protection against deep discharges: during extended low-load discharges, the end-of-discharge voltage is increased as recommended by the battery manufacturers, to prevent damage to or decreased performance of the batteries.

Ripple current: the recharge ripple (residual AC component) current is one of the most important causes of a reduction in reliability and battery life.

Thanks to a high frequency battery charger, MULTI SENTRY reduces this value to negligible levels, prolonging battery life and maintaining high performance over a long period of time.

Wide voltage range: the rectifier is designed for operation with a wide range of input voltage values (up to - 40% at half load), reducing the need for battery discharge and thus helping to battery extend life.



Maximum reliability and availability

Connect up to 6 units in redundant (N+1) or parallel configuration. The UPS continues to operate in parallel even in

the event of an interruption in the connection cable (closed loop).

Low management cost

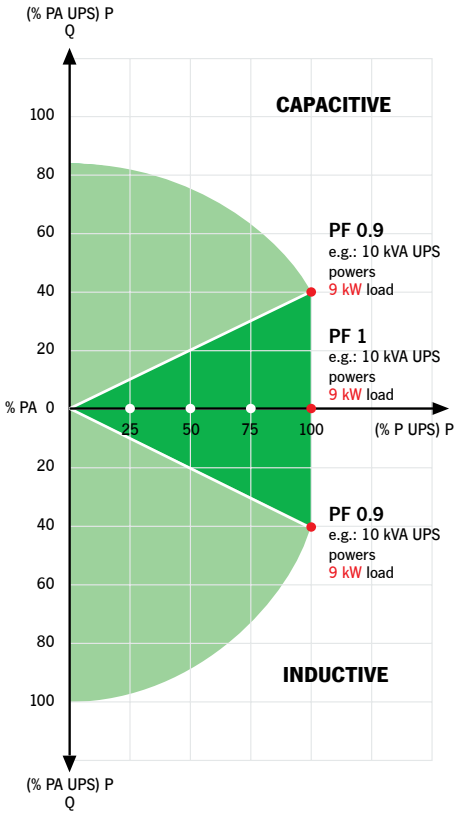
The technology and the choice of high performance components, allows MULTI SENTRY to achieve exceptional performance and output, with an extremely compact overall size

- smallest overall footprint is only 0.26sqm for MULTI SENTRY 20kVA with batteries
- the type of input stage ensures a power factor close to 1 and low current distortion without adding bulky and expensive filters
- output power at 0.9 power factor that provides up to 15% more active power than a standard UPS on the market, guaranteeing a greater margin in UPS sizing for potential load increases.

Flexibility

MULTI SENTRY is suitable for use in a wide range of applications, thanks to its configuration flexibility, accessories and options, and performance:

- suitable for powering capacitive loads, such as Blade servers, without any reduction in active power from 0.9 lead to 0.9 lag

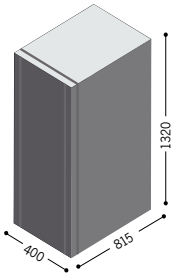
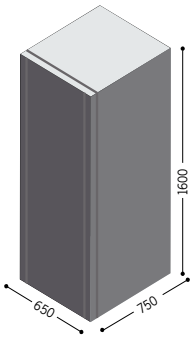
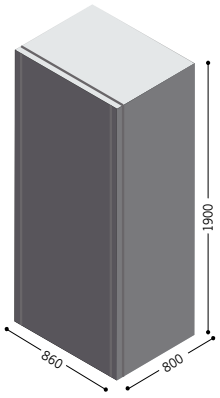


- On-line, Eco, Smart Active and Stand By Off operating modes that are compatible with compatible with applications for centralised power systems (CSS).
- frequency converter mode
- configurable EnergyShare sockets to ensure backup for the most critical loads or those programmed to operate only when mains power fails
- Cold Start to switch on the UPS even when there is no mains power
- MST/MSM version: cabinet (1320x440x850mm HLW) for optimised solutions when medium to long-term runtime is required.
- optional temperature sensor for external battery cabinets, to assist the recharge voltage compensation
- additional battery chargers to optimise charge time
- optional dual input to mains power supply
- isolation transformers to vary neutral connectivity in the event of separate power sources or for galvanic isolation between input and output
- battery cabinets of different sizes and capacities, for providing extended runtimes.

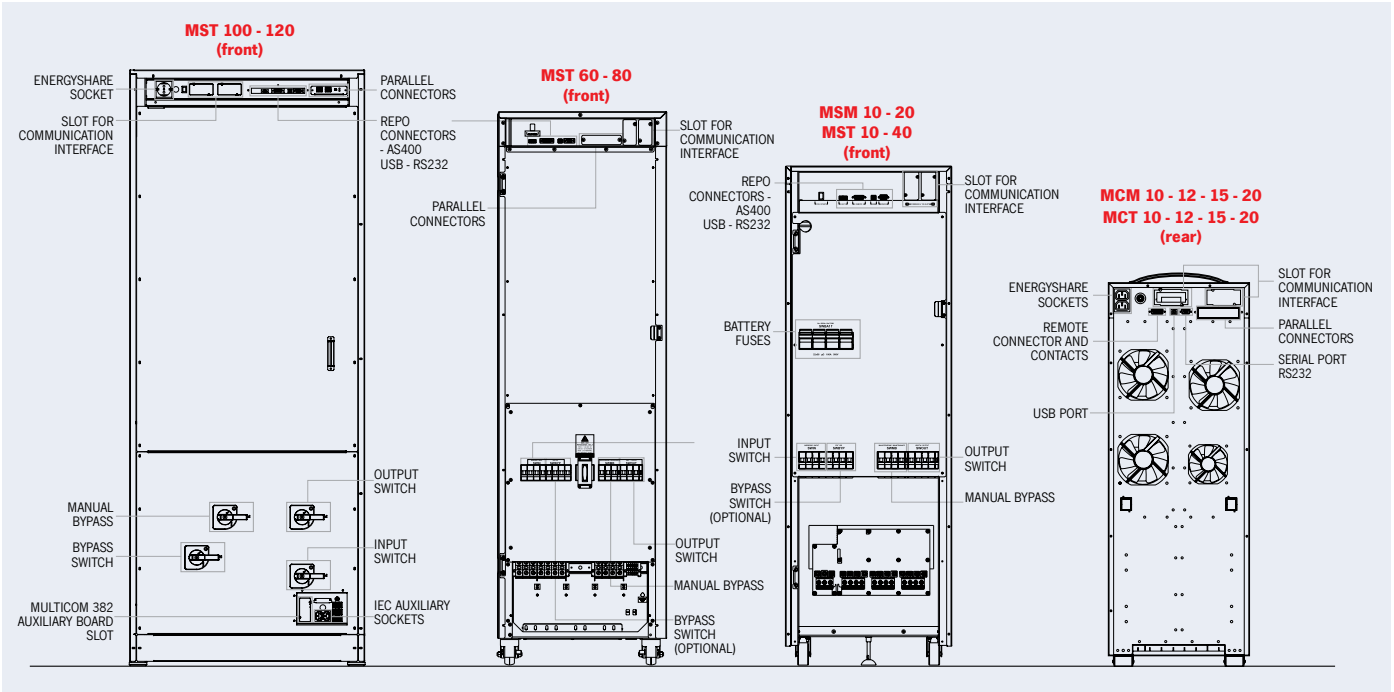
Advanced communication

MULTI SENTRY is equipped with a graphic display (240x128 pixel backlit) that provides UPS information, measurements, status, and alarms in different languages and displays wave forms and voltage/current. The default screen shows the status of the UPS graphically indicating the status of the various blocks (rectifier, batteries, inverter, bypass).

- Advanced multi-platform, communication for all operating systems and network environments: PowerShield[3] supervision and shutdown software for Windows operating systems 7, 2008, Vista, 2003, XP, Linux Mac OS X, Sun Solaris, Linux, Novell and other Unix operating systems.
- Compatible with the Riello TeleNetGuard service
- RS232 serial port or USB
- 3 slots for the installation of optional communications accessories like network adapters, voltage-free contacts etc.
- REPO Remote Emergency Power Off for switching off the UPS with the remote emergency button
- Input for the connection of the auxiliary contact of an external manual bypass
- Input for synchronisation from an external source
- Graphic mimic panel display for remote connection.

MODELS	BB 1320 480-T4 / BB 1320 480-T5 BB 1320 480-T2 / AB 1320 480-T5	BB 1600 480-S5 / AB 1600 480-S5	BB 1900 480-V6 / BB 1900 480-V7 / BB 1900 480-V8 BB 1900 480-V9 / AB 1900 480-V9
MODELS UPS	up to 60 kVA	up to 80 kVA	up to 120 kVA
Dimensions (mm)			

details



MODELS	MCM/MSM 10	MCM/MSM 12	MCM/MSM 15	MCM/MSM 20
INPUT				
Nominal voltage	380-400-415 Vac three-phase with neutral / 220-230-240 single-phase			
Nominal frequency	50 or 60 Hz			
Frequency tolerance	40 ÷ 72 Hz			
Power factor at full load	0.99			
Current distortion	THDI ≤ 3%			
BY PASS				
Nominal voltage	220-230-240 Vac			
Number of phases	1			
Voltage tolerance	180 ÷ 264 V (selectable)			
Nominal frequency	50 or 60 Hz (selectable)			
Frequency tolerance	±5 (selectable)			
OUTPUT				
Nominal power (kVA)	10	12	15	20
Active power (kW)	8	9.6	12	16
Power factor	0.8			
Number of phases	1			
Nominal voltage (V)	220-230-240 Vac (selectable)			
Static variation	± 1%			
Dynamic variation	± 3%			
Crest factor (Ipeak/Irms)	3 : 1			
Voltage distortion	< 1% with linear load / < 3% with non-linear load			
Frequency	50 or 60 Hz			
Frequency stability during battery operation	0.01%			
Overload at Pf 0.8	110% for 10 minutes, 133% for 1 minute, 150% for 5 seconds			
BATTERIES				
Type	VRLA AGM/GEL			
Charging time	6 hours			
INFO FOR INSTALLATION				
Weight without internal batteries (kg) (MCM/MSM)	80/105	82/110	90/115	95/120
Dimensions (hwd) (mm)	930 x 320 x 840 (MCM version) 1320 x 440 x 850 (MSM version)			
Communication	3 slot for communications interface /RS232/USB			
Ambient temperature	0°C / +40°C			
Relative humidity	90% non-condensing			
Colour	Dark grey RAL 7016			
Noise level	< 52 dBA a 1 m			
Protection level	IP20			
Smart Active Output	up to 98%			
Regulations	Directive EMC 2004/108/CE Electromagnetic Compatibility Directive Standards: Safety IEC EN 62040-1; EMC IEC EN 62040-2 C2 Classification according to IEC 62040-3 (Voltage Frequency Independent) VFI - SS – 111			

MODELS	MCT/MST 10	MCT/MST 12	MCT/MST 15	MCT/MST 20	MST 30	MST 40	MST 60	MST 80	MST 100	MST 120
INPUT										
Nominal voltage	380-400-415 Vac three-phase with neutral									
Nominal frequency	50 or 60 Hz									
Frequency tolerance	40 ÷ 72 Hz									
Power factor at full load	0.99									
Current distortion	THDI ≤ 3%									
BY PASS										
Nominal voltage	380-400-415 Vac three-phase with neutral									
Number of phases	3 + N									
Voltage tolerance	180 ÷ 264 V (selectable)									
Nominal frequency	50 or 60 Hz (selectable)									
Frequency tolerance	±5 (selectable)									
OUTPUT										
Nominal power (kVA)	10	12	15	20	30	40	60	80	100	120
Active power (kW)	9	10.8	13.5	18	27	36	54	72	90	108
Power factor	0.9									
Number of phases	3 + N									
Nominal voltage (V)	380-400-415 Vac (selectable)									
Static variation	± 1%									
Dynamic variation	± 3%									
Crest factor (Ipeak/Irms)	3 : 1									
Voltage distortion	≤ 1% with linear load / ≤ 3% with non-linear load									
Frequency	50 or 60 Hz									
Frequency stability during battery operation	0.01%									
Overload at Pf 0.8	115% unlimited, 125% for 10 minutes, 150% for 1 minute, 168% for 5 seconds									
BATTERIES										
Type	VRLA AGM/GEL									
Charging time	6 hours									
INFO FOR INSTALLATION										
Weight without internal batteries (kg) (MCT/MST)	80/105	82/110	90/115	90/115	135	145	190	200	370	380
Dimensions (hwd) (mm)	930 x 320 x 840 (versione MCT) 1320 x 440 x 850 (versione MST)				1320 x 440 x 850		1600 x 500 x 850		1900 x 750 x 855	
Communication	3 slot for communications interface /RS232/USB									
Ambient temperature	0°C / +40°C									
Relative humidity	90% non-condensing									
Colour	Dark grey RAL 7016									
Noise level	< 52 dBA a 1 m				< 48 dBA a 1 m		< 52 dBA a 1 m		< 65 dBA a 1 m	
Protection level	IP20									
Smart Active Output	up to 99%									
Regulations	European directives L V 2006/95/CE Low Voltage Directive EMC 2004/108/CE Electromagnetic Compatibility Directive Standards: Safety IEC EN 62040-1; EMC IEC EN 62040-2 C2 Classification according to IEC 62040-3 (Voltage Frequency Independent) VFI - SS – 111									

FLVMSTGB101RU

LEGNAGO, Headquarters
Production and Sales Manag.
Viale Europa, 7
37045 Legnago (VR)
Tel.: +39 0442 635811
Fax: +39 0442 629098

www.riello-ups.com
riello@riello-ups.com