



DATACENTRE



E-MEDICAL



INDUSTRY



TRANSPORT



EMERGENCY

Multi Sentry

10-20 kVA



ONLINE



Tower



1:1 **3:1** 10-20 kVA

3:3 10-20 kVA



USB plug



SmartGrid ready



Supercaps UPS



Energy share



Service 1st start



HIGHLIGHTS

- Large power size selection 10, 12, 15, 20 kVA
- Small footprint
- Zero impact source
- Flexibility of use
- Advanced communications

The Multi Sentry series is ideal for protecting data centres and telecommunications systems, IT networks and critical systems in general, where the risks connected with poor energy supply can compromise the continuity of activities and services. The Multi Sentry series is available in 10-12-15-20 kVA models with three-phase/single-phase input and single-phase output, and 10-12-15-20 kVA models with three-phase input and output and on-line double conversion technology in accordance with VFI-SS-111 classification (as set out in standard IEC EN 62040-3). Multi Sentry is designed and built using state-of-the-art technology and components. It is controlled

by a DSP (Digital Signal Processor) microprocessor, to provide maximum protection to the powered loads with no impact on downstream systems, and optimised energy savings.

Zero impact source

Multi Sentry solves installation problems in systems where the power supply has limited power available, where the UPS is supported by a generator or where there are compatibility problems with loads that generate harmonic currents; Multi Sentry has a zero impact on its power source, whether this is the mains power supply or a generator:

- 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.

In addition, Multi Sentry plays a filtering and power factor correction role in the power network upstream of the UPS, as it eliminates harmonic components and reactive power generated by the power utilities.

Installation flexibility

MSM /MST 10, 12, 15, 20 is available in two different cabinet frames:

- 1320 mm high housing: batteries to for back up time up to thirty minutes on 20 kVA or Isolation transformer;
- 930 mm high compact version which secure the UPS range features in an extremely reduced size;

The single phase output (MCM/MSM 10, 12, 15, 20 kVA) thanks to its highly flexible design allows full compatibility with both three-phase and single-phase power supplies, thus eliminating problems in connecting the UPS to the system.

Battery care system

Proper battery care is critical to ensuring correct UPS operation in emergency conditions. The Riello UPS battery care system consists of a series of features and capabilities to optimise battery management and obtain the best performance and operating life possible. Battery recharging: Multi Sentry is suitable for use with hermetically sealed lead-acid (VRLA), AGM and GEL batteries and Open Vent and Nickel Cadmium batteries. Depending on the battery type, different charging methods are available:

- One-level voltage recharge, typically used for widely available VRLA AGM batteries
- Two-level voltage recharge according to IU specification
- Charge blocking system to reduce electrolyte consumption and lengthen the life of VRLA batteries.

Recharge voltage compensation based on temperature in order to prevent excessive battery charges or overheating.

Battery tests to diagnose in advance any reduction in performance or problems with the batteries. Deep discharge protection: during extended low-load discharges, the end-of-discharge voltage is increased - as recommended by battery manufacturers - to prevent damage or reduced battery performance. Ripple current: recharge ripple current (residual AC component) is one of

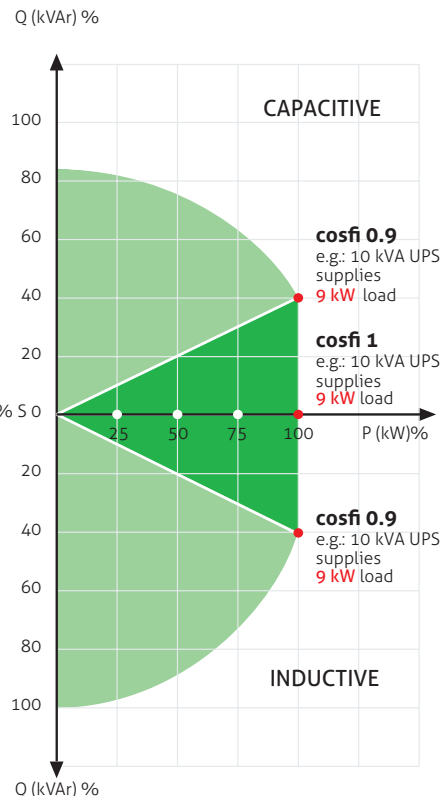
the main causes of reduced reliability and battery life. Using a high frequency battery charger, Multi Sentry reduces this value to negligible levels, prolonging battery life and maintaining high performance over a long period of time. Wide voltage range: the rectifier is designed to operate within a wide input voltage range (up to - 40% at half load), reducing the need for battery discharge and thus helping to extend battery life.

Maximum reliability and availability

Distributed parallel configuration of up to 8 units per redundant (N+1) or power parallel system. The UPS continue to operate in parallel even if the connection cable is interrupted (Closed Loop).

Operation flexibility

The compact version of the Multi Sentry (MCM/MCT 10, 12, 15, 20 kVA) features embedded auxiliary outlets for intelligent utilities supply. The "energy share" outlet is driven by relays which are customizable



Multi Sentry Compact (MCM/MCT)

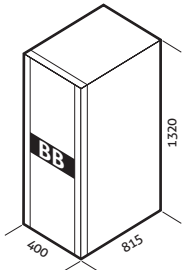
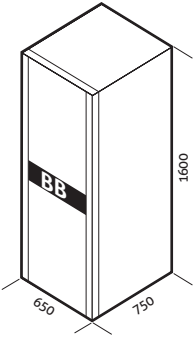
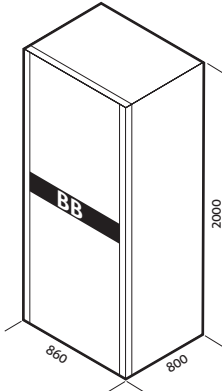
depending on the installation or customer needs, making it more suitable for protecting different critical load. On the MSM/MST Multi Sentry version the same functionality is available as optionally.

Advanced communications

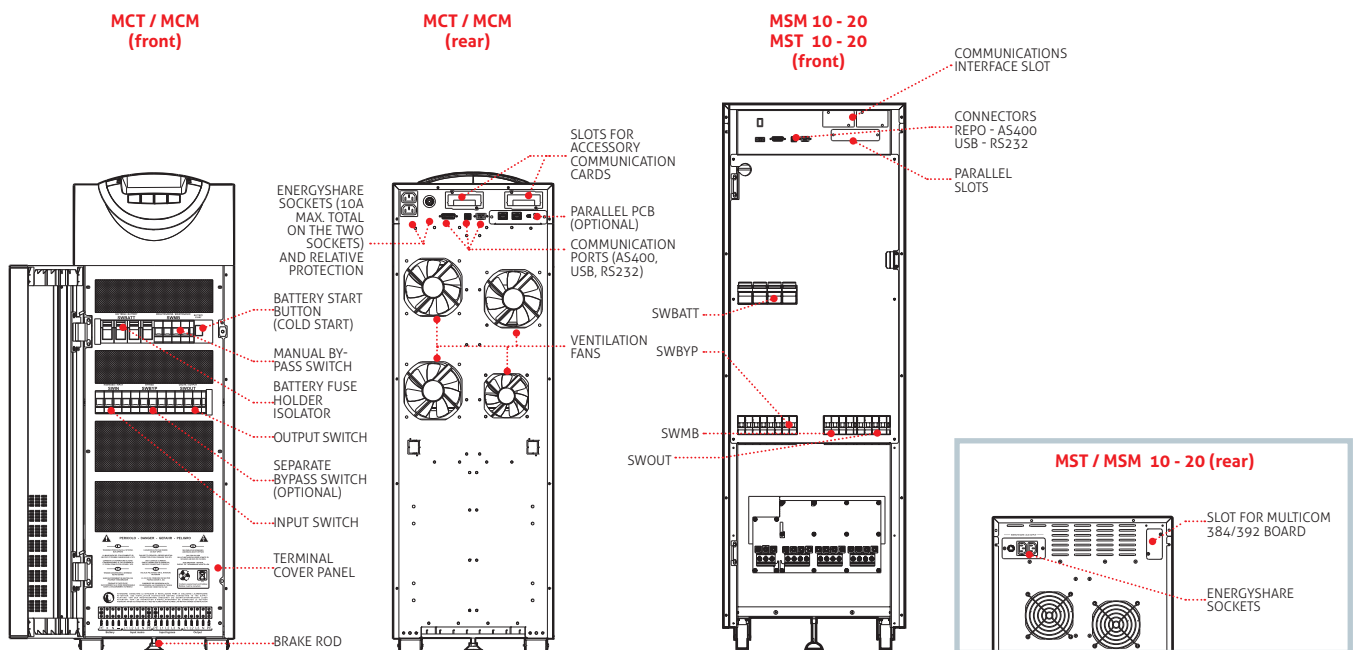
Multi Sentry is equipped with a back-lit graphic display (240x128 pixels) providing UPS information, measurements, operating states and alarms in different languages. It can also display wave forms and voltage/ current forms. A wide range of communications options are available to ensure global and comprehensive UPS monitoring. Please refer to option table for details.



BATTERY BOX

| 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 |
|-----------------|---|---|--|
| UPS MODELS | MCM/MSM and MCT/MST 10-20 kVA | | |
| Dimensions (mm) |  |  |  |

DETAILS



OPTIONS

SOFTWARE

PowerShield³
PowerNetGuard

ACCESSORIES

NETMAN 204
MULTICOM 302
MULTICOM 352
MULTICOM 372
MULTICOM 384

MULTI I/O

MULTIPANEL
MBB 100 A

PRODUCT ACCESSORIES

Battery temperature sensor
Powerful battery charger
Programmable relay board
MULTICOM 392

UPS with internal isolation transformers (MST/MSM 10-20)

UPS 220 V IN/OUT

IP rating IP31/IP42

EnergyShare sockets

| MODELS | MCM/MSM 10 ^{BAT} | | MCM/MSM 12 ^{BAT} | | MCM/MSM 15 ^{BAT} | | MCM/MSM 20 ^{BAT} | | MCT/MST 10 ^{BAT} | | MCT/MST 12 ^{BAT} | | MCT/MST 15 ^{BAT} | | MCT/MST 20 ^{BAT} | |
|--|--|--------|------------------------------|--------|------------------------------|--------|------------------------------|--------|--|--------|------------------------------|--------|------------------------------|--------|------------------------------|--------|
| INPUT | | | | | | | | | | | | | | | | |
| Nominal voltage | 380-400-415 Vac three-phase + N / 220-230-240 Vac single-phase + N | | | | | | | | 380-400-415 Vac three-phase + N | | | | | | | |
| Nominal frequency | 50/60 Hz | | | | | | | | | | | | | | | |
| Voltage tolerance | 400 V ±20% @ full load | | | | | | | | | | | | | | | |
| Frequency tolerance | 40 - 72 Hz | | | | | | | | | | | | | | | |
| Power factor at full load | 0.99 | | | | | | | | | | | | | | | |
| Current distortion | THDI ≤ 3% | | | | | | | | | | | | | | | |
| BYPASS | | | | | | | | | | | | | | | | |
| Nominal voltage | 220-230-240 Vac single-phase + N | | | | | | | | 380-400-415 Vac three phase + N | | | | | | | |
| Number of phases | 1 | | | | | | | | 3 + N | | | | | | | |
| Voltage tolerance (Ph-N) | 180 - 264 V (selectable) | | | | | | | | | | | | | | | |
| Nominal frequency | 50 or 60 Hz (selectable) | | | | | | | | | | | | | | | |
| Frequency tolerance | ±5 (selectable) | | | | | | | | | | | | | | | |
| Bypass overload | 125% for 60 minutes, 150% for 10 minutes | | | | | | | | | | | | | | | |
| OUTPUT | | | | | | | | | | | | | | | | |
| Nominal power (kVA) | 10 | 12 | 15 | 20 | 10 | 12 | 15 | 20 | 10 | 12 | 15 | 20 | 10 | 12 | 15 | 20 |
| Active power (kW) | 9 | 10.8 | 13.5 | 18 | 9 | 10.8 | 13.5 | 18 | 9 | 10.8 | 13.5 | 18 | 9 | 10.8 | 13.5 | 18 |
| Power factor | 0.9 | | | | | | | | | | | | | | | |
| Number of phases | 1 | | | | | | | | 3 + N | | | | | | | |
| Nominal voltage (V) | 220-230-240 Vac single-phase + N (selectable) | | | | | | | | 380-400-415 Vac three-phase + N (selectable) | | | | | | | |
| Static variation | ± 1% | | | | | | | | | | | | | | | |
| Dynamic variation | ± 3% | | | | | | | | | | | | | | | |
| Crest factor | 3 : 1 I _{peak} /I _{rms} | | | | | | | | | | | | | | | |
| Voltage distortion | ≤ 1% with linear load / ≤ 3% with non-linear load | | | | | | | | | | | | | | | |
| Frequency | 50/60 Hz | | | | | | | | | | | | | | | |
| Frequency stability during battery operation | 0.01% | | | | | | | | | | | | | | | |
| BATTERIES | | | | | | | | | | | | | | | | |
| Type | VRLA AGM/GEL/NiCd/Li-ion/Supercaps | | | | | | | | | | | | | | | |
| Recharge time | 6 hours | | | | | | | | | | | | | | | |
| INFO FOR INSTALLATION | | | | | | | | | | | | | | | | |
| Weight without batteries (kg) (MCM/MSM) | 80/105 | 82/110 | 90/115 | 95/120 | 80/105 | 82/110 | 90/115 | 95/120 | 80/105 | 82/110 | 90/115 | 95/120 | 80/105 | 82/110 | 90/115 | 95/120 |
| Dimensions (WxDxH) (mm) | 320 x 840 x 930 (MCM/MCT version) / 440 x 850 x 1320 (MSM/MST version) | | | | | | | | | | | | | | | |
| Communications | 3 slots for communications interface / USB / RS232 | | | | | | | | | | | | | | | |
| Operating temperature | 0 °C / +40 °C | | | | | | | | | | | | | | | |
| Relative humidity | 90% non-condensing | | | | | | | | | | | | | | | |
| Colour | Dark grey RAL 7016 | | | | | | | | | | | | | | | |
| Noise level at 1 m [dBA ±2] Smart Active | < 40 dBA | | | | | | | | | | | | | | | |
| IP rating | IP20 | | | | | | | | | | | | | | | |
| Smart Active efficiency | up to 98% | | | | | | | | up to 99% | | | | | | | |
| Standards | European Directives: LV 2014/35/EU low voltage Directive EMC 2014/30/EU electromagnetic compatibility Directive Standards: Safety IEC EN 62040-1; EMC IEC EN 62040-2 Classification in accordance with IEC 62040-3 (Voltage Frequency Independent) VFI - SS - 111 | | | | | | | | | | | | | | | |
| Moving the UPS | castors / Pallet Jack (10 - 20 kVA) | | | | | | | | | | | | | | | |

The information in this document is subject to change without notice. Riello UPS assumes no responsibility for any errors that may appear in this document. DAT1MSTB2T18CREEN

^{BAT} Also available with internal batteries



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