riello UPS

SOHO

INDUSTRY

E-MEDICAL

EMERGENCY

Sentinel Rack

VFI TYPE

ONLINE

Rack

ECO LEVEL 6

1:1 1500-3000 VA

USB plug

Plug & Play installation

HIGHLIGHTS

- **Power factor 0.9**
- **Operating flexibility**
- **Emergency function**
- **Battery optimisation**
- **Runtime expandability**
- **Compact dimension**
- **Low deep: 380 mm**

Sentinel Rack has compact design and improved performance developed by the Riello UPS research and development team. Sentinel Rack uses on-line double conversion technology, resulting in the highest levels of reliability and maximum protection for critical loads such as servers, and IT and voice/data applications.
For business continuity applications requiring long battery runtimes, battery autonomy can be extended up to several hours using the 3000 VA model fitted with more powerful battery charger.
The front display panel has been entirely redesigned, adding an LCD display that shows the input and output voltages,

battery readings and UPS operating status information. The inverter and the microprocessor control stage provide increased efficiency and greater configuration options.
Maximum expandability: the Sentinel Rack is supplied as standard with a USB port and an expansion slot for protocol conversion or relay contacts boards.
With energy savings in mind, Sentinel Rack is also fitted with a shut-off switch to reduce energy consumption to zero during prolonged periods of inactivity (ECO LINE). Sentinel Rack is available in 1500 VA and 3000 VA models.

Operating flexibility

Different operating modes that can be programmed according to user requirements and the load to be powered have been introduced in order to reduce energy consumption.

- **On line**: maximum load protection and output voltage waveform quality
- **Eco Mode**: the UPS uses line interactive technology, with the load powered by the mains, reducing consumption and thus improving efficiency (up to 98%).
- **Smart Active Mode**: the UPS automatically selects on-line or line interactive operation, depending on the quality of the mains supply, checking the number, frequency and type of disturbances present.
- **Stand by Off** (emergency): the UPS supplies the load only when the mains fails. The inverter begins working with a progressive start-up sequence to prevent inrush currents.
- **Frequency converter** operation (50 or 60 Hz).

Emergency function

This configuration ensures the operation of emergency systems that must be supplied in the event of a mains power failure, such as emergency lighting, fire detection/extinguishing systems and alarms. When the mains power supply fails, the inverter begins powering the loads with a progressive start-up (Soft Start) in order to prevent overload. Sentinel Rack is compliant for installation in medium-voltage transformer rooms in accordance with applicable legislation, for the power supply with reserve charge of medium-voltage coils.

Battery optimisation

The Sentinel Rack range has a deep discharge protection device to optimise battery life.
Periodically the UPS carries out a battery efficiency test (which can also be manually activated); its wide input voltage tolerance range helps to reduce battery usage and maintain performance over time.

Runtime expandability (SER 3000)

Optional battery extension packs can be connected to increase UPS runtime.
SER 3000 ER version is designed without internal batteries and a more powerful battery chargers to achieve longer runtimes.

Low noise level

Thanks to the use of high frequency components and load-based fan speed control, the noise produced by the UPS is less than 40 dBA.

Features

- Filtered, stabilised and reliable voltage: double conversion on-line technology (VFI compliant with IEC 62040-3) with filters for the suppression of atmospheric disturbances.
- High overload capability (up to 150%)
- Programmable Auto-restart when mains is restored
- Battery start-up (Cold Start)

DETAILS

SER 1500

- COMMUNICATION SLOT
- INPUT SOCKET
- USB PORT
- REMOTE CONTROL TERMINAL BOARD
- ON/OFF SWITCH
- OUTPUT SOCKETS
- RS232 SERIAL INTERFACE

SER 3000

- COMMUNICATION SLOT
- OUTPUT SOCKETS
- USB PORT
- REMOTE CONTROL TERMINAL BOARD
- BATTERY CONNECTOR
- INPUT SOCKET
- RS232 SERIAL INTERFACE

BBX

- BATTERY CONNECTOR
- BATTERY EXPANSION CONNECTOR
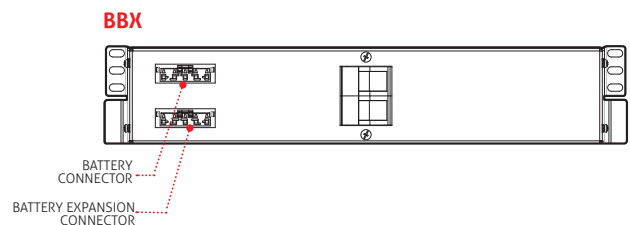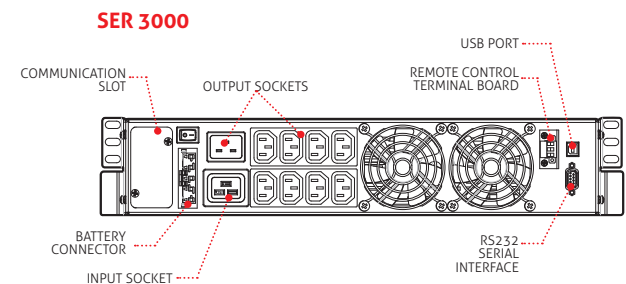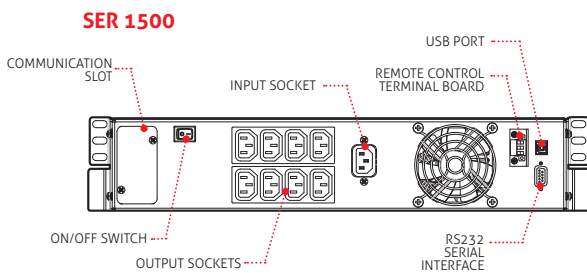
- Power factor correction (UPS input power factor, close to 1)
- Wide input voltage tolerance range (from 140 V to 276 V) without battery intervention.
- Runtime extendable up to several hours
- Fully configurable using UPS Tools configuration software
- Highly reliable batteries (automatic and manually-activated battery test)
- High level of UPS reliability (total microprocessor control)
- Low impact on the mains (sinusoidal take up).

Advanced communications
- Multi-platform communication for all operating systems and network environments: PowerShield[3] supervision and shutdown software for Windows operating systems 10, 8, 7, Hyper-V, 2016, 2012, and previous versions, Mac OS X, Linux, VMWare ESXi, Citrix XenServer and other Unix operating systems
- UPS Tools configuration and customisation software supplied as standard
- RS232 serial port and opto-isolated contacts
- USB port
- Slot for communications boards.

2-YEAR WARRANTY

OPTIONS

SOFTWARE
PowerShield[3]
PowerNetGuard

ACCESSORIES
NETMAN 204
MULTICOM 302
MULTICOM 352

MULTICOM 372
MULTICOM 384
MULTI I/O
MULTIPANEL
Manual Bypass 16 A R

BATTERY BOX

MODELS	BB SER 72-A3

Dimensions (mm)

87
450
380

MODELS	SER 1500	SER 3000 ER
POWER	**1500 VA/1350 W**	**3000 VA/2700 W**
INPUT		
Nominal voltage	220-230-240 Vac	
Voltage range without battery intervention	140 Vac < Vin < 276 Vac @50% load / 184 Vac < Vin < 276 Vac @ 100% load	
Voltage tolerance	230 Vac ± 20%	
Maximum permitted voltage	300 Vac	
Nominal frequency	50/60 Hz	
Frequency range	50 Hz ± 5% / 60 Hz ± 5%	
Power factor	> 0.99	
Current distortion	≤7%	
BYPASS		
Voltage tolerance	180 - 264 Vac	
Frequency tolerance	Frequency selected (from ±1.5Hz to ±5Hz configurable)	
Overload Times	125% for 5 seconds, 150% for 1 second	
OUTPUT		
Voltage distortion with linear load / with non-linear load	< 2% / < 4%	
Frequency	Selectable: 50 Hz or 60 Hz or self-learning	
Static variation	± 1%	
Dynamic variation	≤ 5% in 20 msec.	
Waveform	Sinusoidal	
Current crest factor	3 : 1	
Efficiency ECO and Smart Active Modes	98%	
BATTERIES		
Type	VRLA AGM maintenance-free lead based	
Recharge time	2-4 hours	
OTHER FEATURES		
Net weight (kg)	18	14 (without batteries)
Gross weight (kg)	19	15
Dimensions (WxDxH) (mm)	450 x 380 x 87 (2U)	
Packaging dimensions (WxDxH) (mm)	540 x 490 x 190	
Protection against overvoltage	300 joules	
Protections	Overcurrent - short-circuit - overvoltage - undervoltage - temperature - excessive low battery	
Communications	USB / DB9 with RS232 and contacts / Slot for communications interface	
Input plugs	1 IEC 320 C14	1 IEC 320 C20
Output sockets	8 IEC 320 C13	8 IEC 320 C13 + 1 IEC 320 C19
Standards	Safety: EN 62040-1 and Directive 2014/35/EU; EMC: EN 620040-2 and Directives 2014/30/EU	
Operating temperature	0 °C / +40 °C	
Relative humidity	< 95% non-condensing	
Colour	Black	
Noise level at 1 m (ECO Mode)	< 40 dBA	
Standard equipment provided	Power cable, IEC-IEC cable, USB cable, safety manual, quick start guide	