

riello ups

# Sentinel Dual



SOHO



DATACENTRE



E-MEDICAL



INDUSTRY



TRANSPORT



EMERGENCY



ONLINE



Tower Rack



1:1

5-10 kVA



USB plug



Hot swap battery



Energy share

## HIGHLIGHTS

- **Power factor 1 kW = kVA**
- **Parallelable up to 3 unit**
- **Simplified installation**
- **Operating mode selection**
- **High quality output voltage**
- **High battery reliability**

Sentinel Dual is the best solution for powering mission critical applications and electro-medical devices requiring maximum power reliability.

Flexibility of installation and use (digital display, user-replaceable battery set), as well as the many communication options available, makes the Sentinel Dual suitable for many different applications from IT to security.

Up to 3 Sentinel Duals can be operated in parallel in either capacity or N+1 redundant configuration offering increased reliability for critical system. The Sentinel Dual can be installed as Tower (floor standing) or Rack, ideal for network and server rack applications.

The Sentinel Dual range is available in 5-6-8-10 kVA models with on-line double

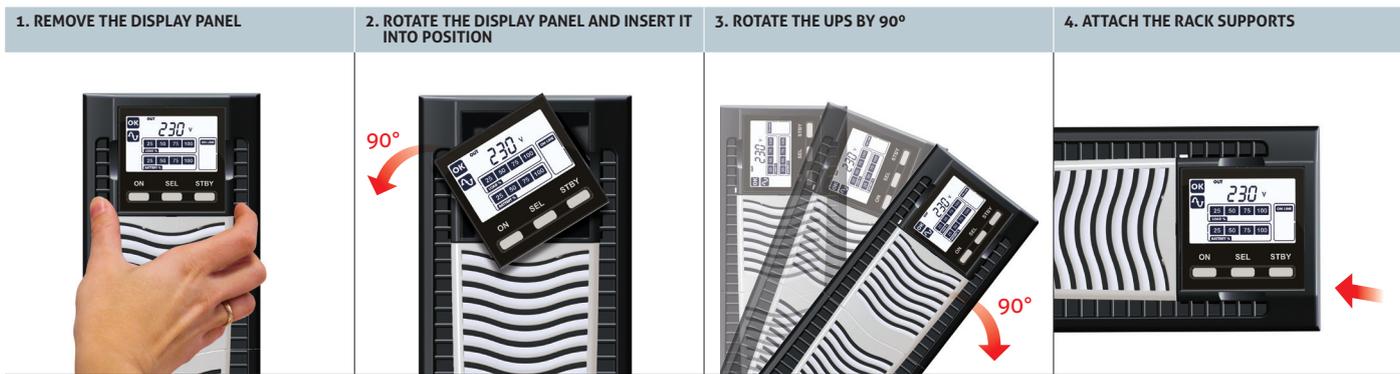
conversion technology (VFI): the load is powered continuously by the inverter which supplies a sinusoidal voltage, filtered and stabilised in terms of voltage, form and frequency. In addition, the input and output filters significantly increase the load's immunity to mains disturbances and lightning strikes.

Technology and performance: selectable Economy Mode and Smart Active Mode functions. Diagnostics: Standard digital display, RS232 and USB interfaces with PowerShield<sup>3</sup> software included, communications slot for connectivity accessories.

### Simplified installation

- Can be installed on the floor (tower version) or in rack mount cabinets (rack





- version). The display panel can be rotated (using the key supplied)
- Low noise (<45 dBA): can be installed in any environment thanks to its high frequency switching inverter and PWM load-dependent digitally controlled fan
  - External bypass option for maintenance with interruption-free switching
  - Operation guaranteed up to 40°C (the components are designed for high temperatures and are thus subject to less stress at normal temperatures)
  - Built-in IEC output sockets with thermal protection.

### Operating mode selection

Functions can be programmed via software or manually via the front display panel.

- **On line efficiency up to 95%**
- **Economy Mode:** to increase efficiency (up to to 98%), allows for the selection of Line Interactive technology (VI) to power low priority loads from the mains supply
- **Smart Active:** the UPS automatically decides upon the operating mode (VI or VFI) based on the quality of the mains power supply
- **Emergency:** the UPS can be selected to function only when the mains power supply fails (emergency only mode).
- **Frequency converter** operation (50 or 60 Hz).

### High quality output voltage

- Even with non-linear loads (IT loads with a crest factor of up to 3:1)
- High short circuit current on bypass
- High overload capacity: 150% by inverter (even with mains failure)
- Filtered, stabilised and reliable voltage (double conversion on-line technology (VFI compliant with EN62040-3), with filters for the suppression of atmospheric disturbances.
- Power factor correction: UPS input power factor close to 1 and sinusoidal current uptake.

### High battery reliability

- Automatic and manual battery test
- Reduced ripple component (detrimental to the batteries) using a low ripple current discharge (LCRD) system
- Batteries are user replaceable without switching off equipment and without interruption to the load (Hot Swap)
- Unlimited extendible runtime using matching Battery Boxes
- The batteries do not cut in during mains failures of <20 ms (high hold up time) or when the input supply is between 184 V to 276 V.

### Emergency function

This configuration ensures the operation of those emergency systems that require continuous, reliable and long-lasting power supply 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.

### Battery optimisation

The wide input voltage range and a high hold-up time minimise battery usage and increase efficiency and battery life; for smaller power breaks, energy is drawn from a group of appropriately-sized capacitors.

### EnergyShare

10 A configurable IEC output sockets allow for runtime optimisation by programming the switching off of low priority loads on mains failure; alternatively, emergency loads that are normally not powered when mains is present can be activated.

### Other features

- Selectable output voltage (220-230-240 V)
- Dual input supplies configuration (SDU 10000 DI and SDU 10000 DI ER)
- Auto-restart when mains power is restored (programmable via software)
- Bypass on: when the machine is switched off, it automatically goes into bypass and battery charge mode
- Minimum load switch-off
- Low battery warning
- Start-up delay
- Total microprocessor and DSP control
- Automatic bypass without interruption
- Use of custom power modules
- Status, measurements and alarms available on standard backlit display
- UPS digital updating (flash upgradeable)
- Output sockets protected with resettable thermal switch
- Back-feed protection standard: to prevent energy from being fed back to the network
- Manual switching to bypass.

### Advanced communications

- Advanced multi-platform communications for all operating systems and network environments: PowerShield<sup>3</sup> monitoring 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
- Plug and play function
- USB port
- RS232 serial port
- Slot for installation of communications boards.

### Unity Power Factor

- More power delivered
- More real output power (W)

### 2-YEAR WARRANTY

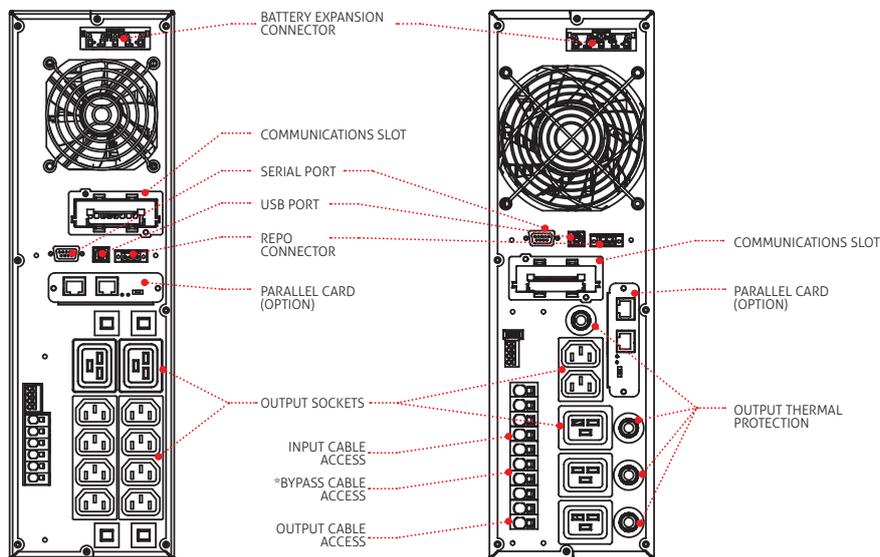
## BATTERY BOX

MODELS	MODELS BB SDU 180-A3	BB SDU 240-A3	BB SDU 180-B1/ BB SDU 240-B1
Dimensions (mm)			

## DETAILS

SDU 5000  
SDU 6000  
SDU 6000 ER

SDU 8000  
SDU 10000  
SDU 10000 ER  
SDU 10000 DI ER\*



## OPTIONS

### SOFTWARE

PowerShield<sup>3</sup>  
PowerNetGuard

### ACCESSORIES

NETMAN 204  
MULTICOM 302  
MULTICOM 352  
MULTICOM 372  
MULTICOM 382  
MULTICOM 401  
MULTI I/O  
Interface kit AS400  
MULTIPANEL

### PRODUCT ACCESSORIES

Universal rails for installation in rack cabinets  
Parallel card  
Distribution Box

MODELS	SDU 5000	SDU 6000	SDU 6000 ER	SDU 8000	SDU 10000	SDU 10000 ER	SDU 10000 DI ER	
<b>INPUT</b>								
Dual Input	no						yes	
Nominal voltage	220-230-240 Vac							
Voltage tolerance	230 Vac $\pm$ 20%							
Minimum voltage	184 Vac							
Nominal frequency	50/60 Hz $\pm$ 5Hz							
Power factor	> 0,98							
Current distortion	$\leq$ 5%							
<b>BYPASS</b>								
Voltage tolerance	180 - 264 Vac (selectable in Economy Mode or Smart Active Mode)							
Frequency tolerance	Selected frequency $\pm$ 5% (selectable by user)							
Overload Times	110% for 60 seconds, 130% for 30 seconds, 150% for 4 seconds, over 150% for 0,5 seconds							
<b>OUTPUT</b>								
Nominal power (VA)	5000	6000	6000	8000	10000	10000	10000	
Active power (W)	5000	6000	6000	8000	10000	10000	10000	
Nominal voltage	220-230-240 Vac selectable							
Voltage distortion	< 3% with linear load / < 6% with non-linear load							
Frequency	50/60 Hz selectable							
Static variation	1,5%							
Dynamic variation	$\leq$ 5% in 20 ms							
Waveform	Sinusoidal							
Crest factor	3 : 1							
<b>BATTERIES</b>								
Type	VRLA AGM maintenance-free lead based							
Recharge time	4-6 hours							
<b>OTHER FEATURES</b>								
Net weight (kg)	46	47	19	21+60	22+65	23		
Gross weight (kg)	52	53	25	27+66	28+71	29		
Dimensions (WxDxH) (mm)	131 x 640 x 448 tower 19" x 640 x 3U rack			2 x (131 x 640 x 448) tower - 2 x (19" x 640 x 3U) rack ER version (131 x 640 x 448) tower - (19" x 640 x 3U) rack				
Packaged dimensions (WxDxH) (mm)	780 x 555 x (270+15)			2 x (780 x 555 x 270) + H 15 ER version (780 x 555 x (270+15))				
Efficiency	up to 95% on line mode, 98% eco mode							
Protections	Overcurrent - short-circuit - overvoltage - undervoltage - temperature - excessive low battery							
Parallel Operation	Optional Parallel Card							
Communications	USB / RS232 / slot for communications interface / REPO + Input contact							
Input plugs	Terminal block							
Output sockets	Terminal block + 8 IEC 320 C13 + 2 IEC 320 C20			Terminal block + 2 IEC 320 C13 + 3 IEC 320 C20				
Standards	EN 62040-1 EMC EN 62040-2 Directives 73/23 - 93/68 - 2004/108 EC EN 62040-3							
Operating temperature	0 °C / +40 °C							
Relative humidity	< 95% non-condensing							
Colour	Black RAL 9005							
Noise level at 1 m (ECO Mode)	< 45 dBA							
Standard equipment provided	USB cable; handles kit							

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.

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