# Sentinel Dual

*5-10 kVA*

VFI TYPE
ONLINE

ToweRack

6 ECO LEVEL

1:1 5-10 kVA

USB
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/kW 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 Eco Mode and Smart Active Mode functions.
Diagnostics: Standard digital display, RS232 and USB interfaces with PowerShield[3] software downloadable, 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)

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| 1. REMOVE THE DISPLAY PANEL | 2. ROTATE THE DISPLAY PANEL AND INSERT IT INTO POSITION | 3. ROTATE THE UPS BY 90° | 4. ATTACH THE RACK SUPPORTS |
|---|---|---|---|
|  |   |   |  |

- 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%
- **Eco 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: PowerShield³ 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

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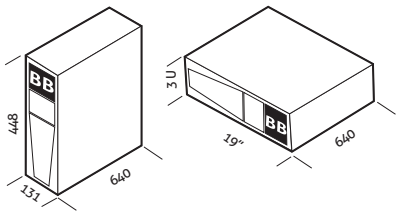
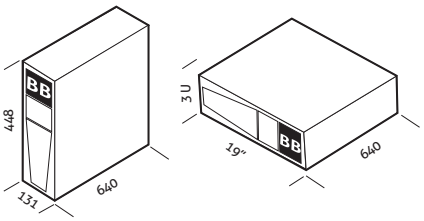
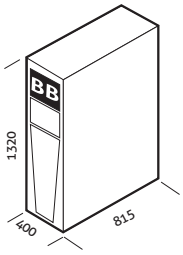
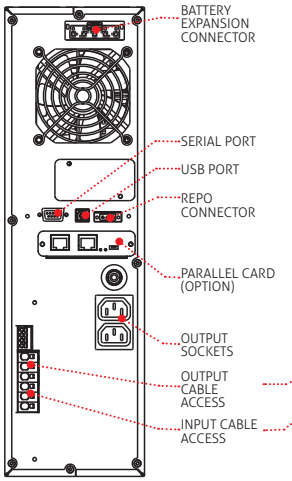
## BATTERY BOX

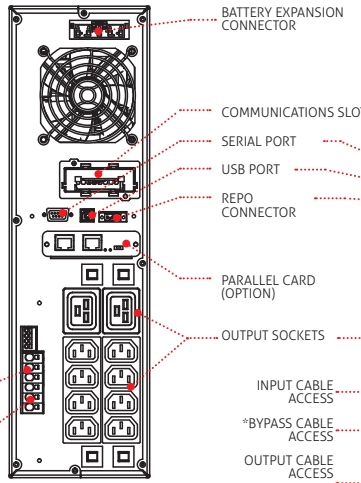
| MODELS | MODELS BB SDU 180-A3 | BB SDU 240-A3 | BB SDU 180-B1/ BB SDU 240-B1 |
|---|---|---|---|
| Dimensions (mm) |  |  |  |

## DETAILS

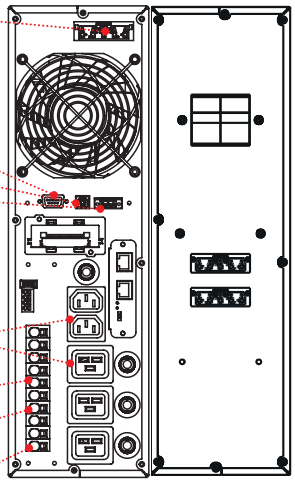
**SDU 5000**
**SDU 6000**



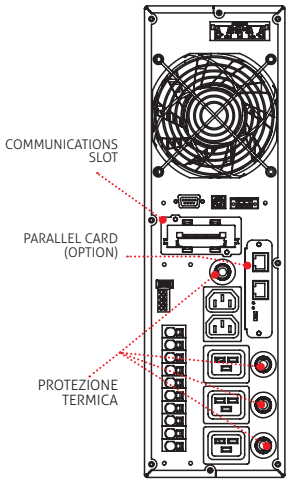

**SDU 5000 PDIST**
**SDU 6000 PDIST**
**SDU 6000 ER***




**SDU 8000**
**SDU 10000**
**SDU 10000 DI***



**SDU 10000 DI ER***




* DI = DUAL INPUT
ER =EXTENDED RECHARGE

## OPTIONS

| SOFTWARE |
|---|
| PowerShield³ |
| PowerNetGuard |

| ACCESSORIES |
|---|
| NETMAN 204 |
| MULTICOM 302 |
| MULTICOM 352 |
| MULTICOM 372 |
| MULTICOM 384 |
| MULTI I/O |
| MULTIPANEL |

| PRODUCT ACCESSORIES |
|---|
| Universal rails for installation in rack cabinets |
| Parallel card |
| Distribution Box |

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| MODELS | SDU 5000<br>SDU 5000 PDIST | SDU 6000<br>SDU 6000 PDIST | SDU 6000 ER | SDU 8000 | SDU 10000 | SDU 10000 DI | SDU 10000 DI ER |
|---|---|---|---|---|---|---|---|
| **INPUT** | | | | | | | |
| Dual Input | no | | | | | si | |
| Nominal voltage | 220-230-240 Vac | | | | | | |
| Voltage tolerance | 230 Vac ± 20% | | | | | | |
| Minimum voltage | 184 Vac | | | | | | |
| Nominal frequency | 50/60 Hz ±5Hz | | | | | | |
| Power factor | > 0.98 | | | | | | |
| Current distortion | ≤5% | | | | | | |
| **BYPASS** | | | | | | | |
| Voltage tolerance | 180 - 264 Vac (selectable in Eco Mode or Smart Active Mode) | | | | | | |
| Frequency tolerance | Selected frequency ±5% (selectable by user) | | | | | | |
| Overload Times | < 110% continuous, 130% for 1 hour, 150% for 10 minutes, over 150% for 3 seconds | | | | | | |
| **OUTPUT** | | | | | | | |
| 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 | ≤ 5% in 20 ms | | | | | | |
| Waveform | Sinusoidal | | | | | | |
| Crest factor | 3 : 1 | | | | | | |
| **BATTERIES** | | | | | | | |
| Type | VRLA AGM maintenance-free lead based | | | | | | |
| Recharge time | 4-6 hours | | | | | | |
| **OTHER FEATURES** | | | | | | | |
| Net weight (kg) | 46 | 47 | 19 | 21+60 | 22+65 | 22+65 | 23 |
| Gross weight (kg) | 52 | 53 | 25 | 27+66 | 28+71 | 28+71 | 29 |
| Dimensions (WxDxH) (mm) | 131 x 640 x 448 tower<br>19" x 640 x 3U rack | | | 2 x (131 x 640 x 448) tower - 2 x (19" x 640 x 3U) rack<br>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<br>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 Connection | Terminal block | | | | | | |
| Output sockets | 2 IEC 320 C13<br>PDIST version: 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 2014/35/EU - 2014/30/EU 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) | < 48 dBA | | | | | | |
| Standard equipment provided | USB cable; handles kit | | | | | | |



DATSDUA1Y18CREN

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