



illustrative photo



**1:1 1-3:1 4 – 10 kVA**

## HIGHLIGHTS

- Power factor 1, kW = kVA (from SDU 5000)
- Parallelable up to 3 unit
- Simplified installation
- 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 4,5,6,8,10 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<sup>3</sup> software downloadable, communications slot for connectivity accessories.

## SIMPLIFIED INSTALLATION

- Can be installed on the floor (tower version) or in 19" 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%
- **Eco Mode:** to increase efficiency (up 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 startup (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.

## VERSATILE DESIGN

1. Remove the display panel



2. Rotate the display panel and insert it back



3. Rotate the UPS by 90°



4. Attach the rack supports



## 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.

## HIGH POWER FACTOR

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

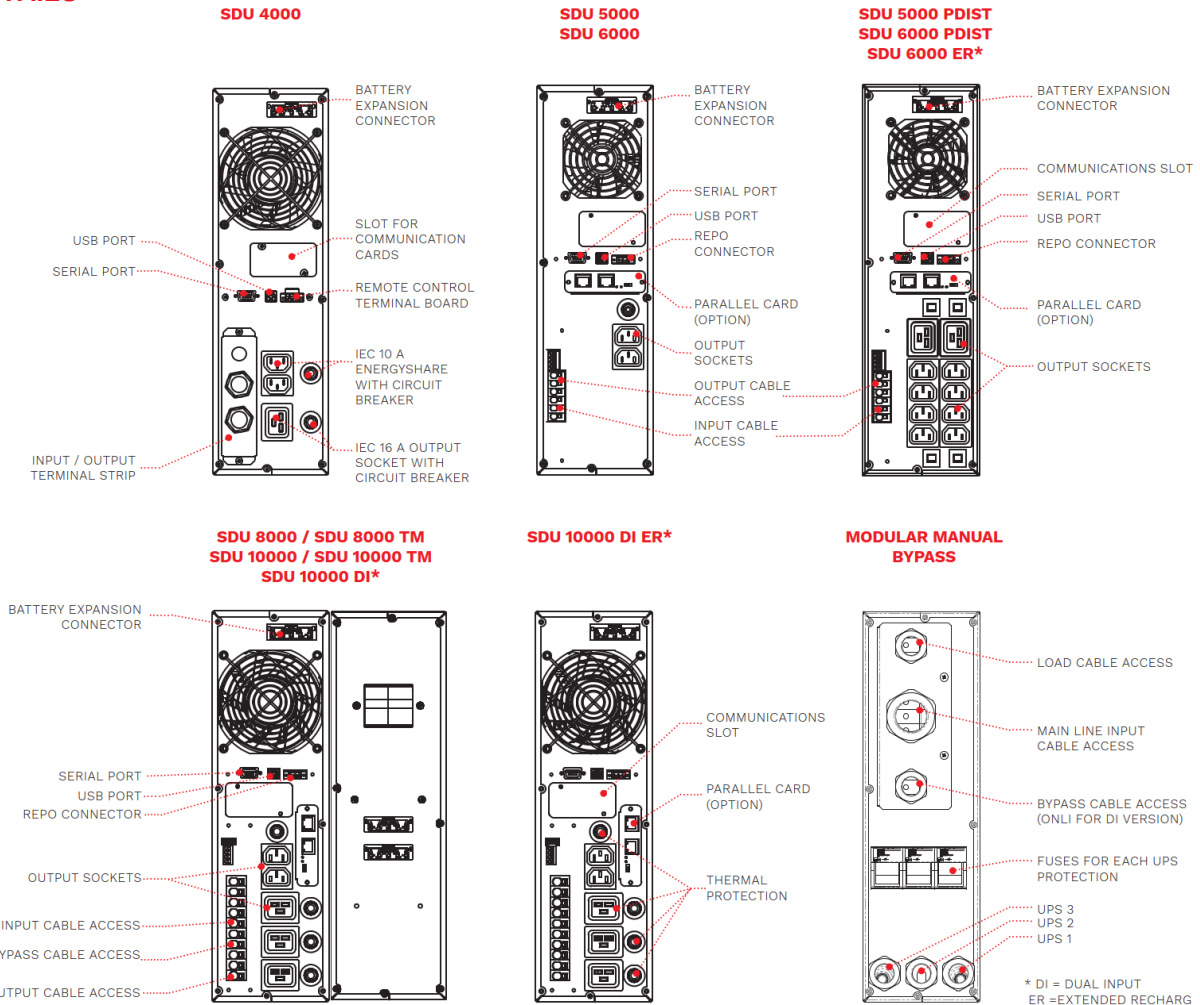
## OPTIONS

SOFTWARE	ACCESSORIES	PRODUCT ACCESSORIES
<ul style="list-style-type: none"> <li>PowerShield<sup>3</sup></li> <li>PowerNetGuard</li> </ul>	<ul style="list-style-type: none"> <li>NETMAN 204</li> <li>MULTICOM 302</li> <li>MULTICOM 352</li> <li>MULTICOM 372</li> <li>MULTICOM 384</li> <li>MULTICOM 411</li> <li>MULTI I/O</li> <li>MULTIPANEL</li> </ul>	<ul style="list-style-type: none"> <li>Universal rails for installation in rack cabinets</li> <li>Parallel card *</li> <li>Manual bypass single-phase</li> <li>Manual bypass three-phase</li> <li>Modular Manual bypass single-phase *</li> <li>Modular Manual bypass three-phase *</li> </ul> <p>* not suitable for SDU 4000</p>

## BATTERY CABINET

MODELS	BB SDU 096V A5 / SDU 096V M4 BB SDU 180V A3 / BB SDU 240V A3	BB SDU 180V B1 BB SDU 240V B1	BB SDU 240V HS A3 BB SDU 240V HS A5
Dimensions (mm)	<p>448, 131, 640, 3 U, 19", 640</p>	<p>1320, 1400, 815</p>	

## DETAILS





# UPS Sentinel Dual SDU



## TECHNICAL SPECIFICATIONS

Model	SDU 4000	SDU 5000 SDU 5000 PDIST	SDU 6000 SDU 6000 PDIST	SDU 6000 ER
<b>Input</b>				
Dual Input	no			
Nominal voltage	220-230-240 Vac			
Voltage tolerance	230 Vac $\pm$ 20 %			
Minimum voltage	184 Vac			
Nominal frequency	50/60 Hz $\pm$ 5 Hz			
Power factor	> 0,98			
Current distortion	$\leq$ 5%			
<b>Bypass</b>				
Voltage tolerance	180 $\div$ 264 Vac (selectable in Eco Mode or Smart Active Mode)			
Frequency tolerance	Selected frequency $\pm$ 5% (selectable by user)			
Overload times	< 110% continuous, 130% for 1 hour, 150% for 10 minutes, over 150% for 3 seconds			
<b>Output</b>				
Nominal power (VA)	4000	5000	6000	6000
Active power (W)	3600	5000	6000	6000
Nominal voltage	220 / 230 / 240 Vac selectable			
Voltage distortion	< 1% with linear load / < 3% with non-linear load			
Frequency	50 / 60 Hz selectable			
Static variation	1.5 %			
Dynamic variation	$\leq$ 5% in 20 msec.			
Waveform	Sinusoidal			
Crest factor	3 : 1			
<b>Batteries</b>				
Type	VRLA AGM maintenance-free lead based			
Charging time	4 $\div$ 6 h			
<b>Other parameters</b>				
Net weight (kg)	38	45	46	20
Gross weight (kg)	43	53	54	28
Dimensions (W x D x H) (mm)	131 x 640 x 448 tower 19" x 640 x 3U rack			
Packaged dimensions (W x D x H) (mm)	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	no	Optional Parallel Card		
Communications	USB / RS232 / slot for communications interface / REPO + Input contact			
Input connection	Terminal block			
Output sockets	Terminal block + 2 IEC 320 C13 + 1 IEC 320 C19	Terminal block + 2 IEC 320 C19 PDIST: Terminal block + 8 IEC 320 C13 + 2 IEC 320 C19		
Standards	European directives: L V 2014/35/EU low voltage Directive EMC 2014/30/EU electromagnetic compatibility Directive Standards: Safety IEC EN 62040-1; EMC IEC EN 62040-2; RoHS compliant Classification in accordance with IEC 62040-3 (Voltage frequency Independent) VFI - SS - 111			
Recommended temperature	0 °C $\div$ +40 °C for UPS, +20 °C $\div$ +25 °C for batteries			
Relative humidity	5 $\div$ 95% non-condensing			
Colour	Black RAL 9005			
Noise level at 1 m (ECO Mode)	< 48 dBA			
Standard equipment	USB cable; handles kit			



# UPS Sentinel Dual SDU



Model	SDU 8000	SDU 8000 TM	SDU 10000	SDU 10000 TM	SDU 10000 DI	SDU 10000 DI ER
<b>Input</b>						
Dual Input	no				yes	
Nominal voltage	220-230-240	380-400-415 / 220-230-240	220-230-240	380-400-415 / 220-230-240	220-230-240 Vac	
Voltage tolerance	230 V ±20 %	400 V ±20 % 230 V ±20 %	230 V ±20 %	400 V ±20 % 230 V ±20 %	230 V ±20 %	
Minimum voltage	184 V	318 V / 184 V	184 V	318 V / 184 V	184 V	
Nominal frequency	50 / 60 Hz ± 5 Hz					
Power factor	> 0.98					
Current distortion	≤ 5%					
<b>Bypass</b>						
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					
<b>Output</b>						
Nominal power (VA)	8000	8000	10000	10000	10000	10000
Active power (W)	8000	8000	10000	10000	10000	10000
Nominal voltage	220 / 230 / 240 Vac selectable					
Voltage distortion	< 1% with linear load / < 3% with non-linear load					
Frequency	50 / 60 Hz selectable					
Static variation	1.5 %					
Dynamic variation	≤ 5% in 20 msec.					
Waveform	Sinusoidal					
Crest factor	3 : 1					
<b>Batteries</b>						
Type	VRLA AGM maintenance-free lead based					
Charging time	4 ÷ 6 h					
<b>Other parameters</b>						
Net weight (kg)	19 + 53		20 + 62			21
Gross weight (kg)	83		93			25
Dimensions (W x D x H) (mm)	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 (W x D x H) (mm)	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 connection	Terminal block					
Output sockets	Terminal block + 2 IEC 320 C13 + 3 IEC 320 C19					
Standards	European directives: L V 2014/35/EU low voltage Directive EMC 2014/30/EU electromagnetic compatibility Directive Standards: Safety IEC EN 62040-1; EMC IEC EN 62040-2; RoHS compliant Classification in accordance with IEC 62040-3 (Voltage frequency Independent) VFI - SS - 111					
Recommended temperature	0 °C ÷ +40 °C for UPS, +20 °C ÷ +25 °C for batteries					
Relative humidity	5 ÷ 95% non-condensing					
Colour	Black RAL 9005					
Noise level at 1 m (ECO Mode)	< 48 dBA					
Standard equipment	USB cable; handles kit					

A2B reserves the right to change any information without prior notice. (76-000322-03)