

# Sentinel Dual

High Power



SOHO



DATACENTER



E-MEDICAL



ONLINE



INDUSTRY



TRANSPORT



EMERGENCY

**1:1** **3:1** 3,3-10 kVA



USB plug



Hot swap battery



Energy share

## HIGHLIGHTS

- **Simplified installation**
- **Operating mode selection**
- **High quality output voltage**
- **High battery reliability**
- **Emergency function**

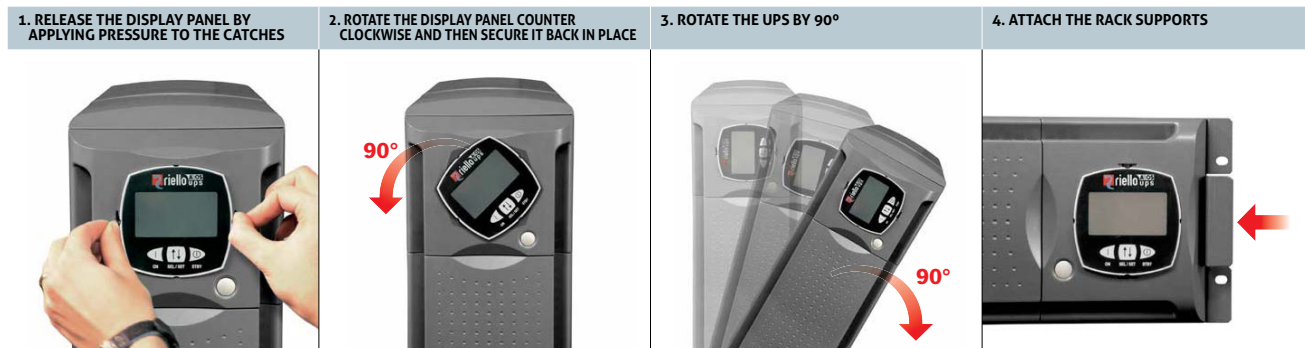
Sentinel Dual is the best solution for powering mission critical applications and electro-medical devices requiring maximum power reliability.

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

Sentinel Dual can be installed on the floor or in rack cabinets for networking applications. The Sentinel Dual range is available in 3.3-4-5-6-8-10 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 (<40 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 (5-6-8-10 kVA SDL)
- Operation guaranteed up to 40°C (the components are designed for high temperatures and are thus subject to less stress at normal temperatures)
- Two built-in IEC output sockets with thermal protection (5-6-8-10 kVA SDL)
- On the 5-6-8-10 kVA models, it is also possible to program two 10 A output sockets when the mains power supply fails (PowerShare function).

## Operating mode selection

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

- **On line**
- **Economy 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 <40 ms (high hold up time) or when the input supply is between 84 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 (5-10 kVA versions)

Two 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)
- 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 control
- Automatic bypass without interruption
- Use of IMS modules (Insulated Metallic Substrates)
- Status, measurements and alarms available on standard backlit display
- UPS digital updating (flash upgradeable)
- Input protection via resettable thermal switch
- Back-feed protection standard: to prevent energy from being fed back to the network
- Manual switching to bypass.

## Advanced communications

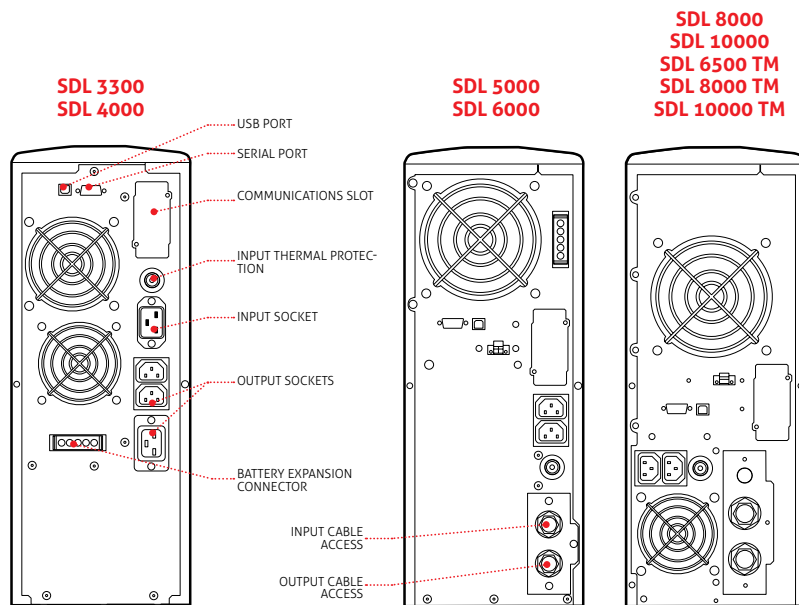
- Advanced multi-platform communications for all operating systems and network environments: PowerShield<sup>3</sup> monitoring and shutdown software for Windows operating systems 8, 7, 2008, Vista, 2003, XP, Linux, Mac OS X, Sun Solaris, Linux, VMWare ESX and other Unix operating systems
- Plug and play function
- USB port
- RS232 serial port
- Slot for installation of communications boards.

## 2-YEAR WARRANTY

## BATTERY BOX

MODELS	BB SDL 108-A4 / BB SDL 108-M1	BB SDL 192-A3/ BB SDL 192-A6	BC SDL 108-B1
Dimensions (mm)			

## DETAILS



## OPTIONS

### SOFTWARE

PowerShield<sup>3</sup>  
PowerNetGuard

### ACCESSORIES

NETMAN 101 PLUS  
NETMAN 102 PLUS  
NETMAN 202 PLUS  
MULTICOM 301  
MULTICOM 302  
MULTICOM 351  
MULTICOM 352  
MULTICOM 372  
MULTICOM 382  
MULTICOM 401

### MULTI I/O

Interface kit AS400

### MULTIPANEL

RTG 100

Manual Bypass 16 A

Manual bypass 16 A Rack

Automatic bypass 16 A

Automatic bypass 16 A Rack

### PRODUCT ACCESSORIES

Universal rails for installation in rack cabinets

Note: 3300-4000 VA

MODELS	SDL 3300	SDL 4000	SDL 5000	SDL 6000	SDL 8000	SDL 10000
<b>POWER</b>	<b>3300 VA/2300 W</b>	<b>4000 VA/2400 W</b>	<b>5000 VA/3500 W</b>	<b>6000 VA/4200 W</b>	<b>8000 VA/7200 W</b>	<b>10000 VA/9000 W</b>
<b>INPUT</b>						
Nominal voltage	220-230-240 Vac					
Minimum voltage	164 Vac @ 100% load / 84 Vac @ 50% load					
Nominal frequency	50/60 Hz ±5Hz					
Power factor	> 0.98					
Current distortion	≤7%					
<b>BYPASS</b>						
Voltage tolerance	180 - 264 Vac (selectable in Economy Mode or Smart Active Mode)					
Frequency tolerance	Selected frequency ±5% (selectable by user)					
<b>OUTPUT</b>						
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					
<b>BATTERIES</b>						
Type	VRLA AGM maintenance-free lead based					
Recharge time	4-6 hours					
<b>OVERLOAD TIMES</b>						
100% < Load < 110%	1 minute					
110% < Load < 150%	4 seconds					
Load > 150%	0.5 seconds					
<b>OTHER FEATURES</b>						
Net weight (kg)	38	40	62	64	94	95
Gross weight (kg)	42.5	44.5	70	72	102	103
Dimensions (WxDxH) (mm)	175 x 520 x 455 tower 19" x 520 x 4U rack		175 x 660 x 455 tower 19" x 660 x 4U rack		2 x (175 x 660 x 455) tower 2 x (19" x 660 x 4U) rack	
Packaged dimensions (WxDxH) (mm)	540 x 620 x 280		720 x 530 x (270+15)		780 x 555 x (270+15)	
Efficiency Line-interactive/Smart Active	98%					
Protections	Overcurrent - short-circuit - overvoltage - undervoltage - temperature - excessive low battery					
Communications	USB / RS232 + slot for communications interface					
Input plugs	1 IEC 320 C20			Terminal board		
Output sockets	2 IEC 320 C13 + 1 IEC 320 C20			Terminal board + 2 IEC 320 C13		
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	Dark grey RAL 7016					
Noise level at 1 m	< 40 dBA			< 45 dBA		
Standard equipment provided	2 10 A cables; 1 IEC-16 A plug; software; serial cable; keys for releasing display panel; handles kit			2 cable guides; cable tips; software; serial cable; keys for releasing display panel; handles kit		

MODELS	SDL 6500 TM	SDL 8000 TM	SDL 10000 TM
<b>POWER</b>	<b>6500 VA/5850 W</b>	<b>8000 VA/7200 W</b>	<b>10000 VA/9000 W</b>
<b>INPUT</b>			
Nominal voltage	400 Vac three-phase + N		
Minimum voltage (F + N)	164 Vac @ 100% load / 84 Vac @ 50% load		
Nominal frequency	50/60 Hz ±5 Hz		
Power factor	> 0.95		
<b>BYPASS</b>			
Voltage tolerance	180 - 264 Vac (selectable in Economy Mode or Smart Active Mode)		
Frequency tolerance	Selected frequency ±5% (selectable by user)		
<b>OUTPUT</b>			
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		
<b>BATTERIES</b>			
Type	VRLA AGM maintenance-free lead based		
Recharge time	4-6 hours		
<b>OVERLOAD TIMES</b>			
100% < Load < 110%	1 minute		
110% < Load < 150%	4 seconds		
Load > 150%	0.5 seconds		
<b>OTHER FEATURES</b>			
Net weight (kg)	91	94	95
Gross weight (kg)	99	102	103
Dimensions (WxDxH) (mm)	2 x (175 x 660 x 455) tower / 2 x (19" x 660 x 4U) rack		
Packaged dimensions (WxDxH) (mm)	780 x 555 x (270+15)		
Smart Active efficiency	up to 98%		
Protections	Overcurrent - short-circuit - overvoltage - undervoltage - temperature - excessive low battery		
Communications	USB / RS232 + slot for communications interface		
Input plugs	Terminal board		
Output sockets	Terminal board + 2 IEC 320 C13		
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	Dark grey RAL 7016		
Noise level at 1 m	< 45 dBA		
Standard equipment provided	2 cable guides; cable tips; software; serial cable; keys for releasing display panel; handles kit		

**RPS S.p.A.**

**LEGNAGO (VR)**  
**Registered office**  
Viale Europa, 7 ZA1  
37045 LEGNAGO (Verona)  
Tel +39 0442 635811  
Fax +39 0442 629098  
www.riello-ups.com  
riello@riello-ups.com

**CORMANO (MI)**  
**Sales Office**  
Via Somalia, 20  
20032 CORMANO (Milano)  
Tel +39 02 663271  
Fax +39 02 66327351

**ROME**  
**Sales Office**  
Via Fosso della Magliana, 34/G  
00148 ROME  
Tel +39 06 65192125  
Fax +39 06 65192247



**PRE-SALES SUPPORT**  
(TEC)  
tec@riello-ups.com



**AFTER-SALES SUPPORT**  
(UPService)  
service@riello-ups.com

**RIELLO UPS Ltd. (UK)**  
Unit 50 Clywedog Road North  
Wrexham Industrial Estate  
Wrexham LL13 9XN  
Tel +44 (0)800 269 394  
Fax +44 (0)1978 729 290

**CONSTANT POWER SERVICES Ltd. (UK)**  
Unit 3 - Trust Industrial Estate,  
Wilbury Way - Hitchin, Herts, SG4 0UZ  
Tel +44 (0)1462 422 955  
Fax +44 (0)1462 422 754

**RIELLO UPS GmbH (DEUTSCHLAND)**  
Siemensstraße 12  
21465 Reinbek bei Hamburg  
Tel +49 (0)40 727 57-06  
Fax +49 (0)40 727 57-189

**AROS GmbH (DEUTSCHLAND)**  
Neufahrner Str. 12b  
D-85375 Neufahrn/Grünbeck  
Tel +49 8165 / 9458-0  
Fax +49 8165 / 9458-26

**RIELLO ENERDATA s.l.u. (ESPAÑA)**  
C/ Labradores, 13 Parque Empresarial  
Prado del Espino  
28660 Boadilla del Monte - Madrid  
Tel +34 916 333 000  
Fax +34 916 321 793

**Delegación Andalucía**  
C/ Aviación 18, P. I. Calonge,  
Edificio Morera y Vallejo 1, 1ª Planta  
41007 Sevilla  
Tel +34 955 040 044  
Fax +34 955 040 041

**RIELLO TDL s.l. (ESPAÑA)**  
C/Berguedà, 6 bis  
Pol. Ind. Plà de la Bruguera  
08211 Castellar del Vallès, Barcelona  
Tel +34 (0)93 74 71 210  
Fax +34 (0)93 71 46 562

**RIELLO ONDULEURS S.a.r.l. (FRANCE)**  
2/4 Rue du Bois Chaland,  
ZAC du Bois Chaland - 91090 Lisses  
Tel +33 (0)1 60 875454  
Fax +33 (0)1 60 875450

**Agence Rhone Alpes - Sud**  
147 Avenue M. Mérieux,  
Parc de Sacuny, Park Avenir 1  
69530 Brignais  
Tel +33 (0)4 72 177108  
Fax +33 (0)4 78 351422

**RIELLO PCI India Pvt. Ltd. (INDIA)**  
Prime Group Building,  
11/5B, Pusa Road, New Delhi - 110 005  
Tel +91 11 41 888 999 (30 lines),  
Tel +91 11 41 888 888  
Fax +91 11 2575 5815

**Riello UPS (Asia) Co., Ltd.**  
**(PEOPLE'S REPUBLIC OF CHINA)**  
28F, 500, Fute Dong Er Road,  
Waigaoqiao Free Trade Zone,  
Pudong District - 200131 Shanghai  
Tel +86 21 50464748  
Fax +86 21 50464648

**Sales office Beijing**  
No.418, 4F, Block A, Gaode Plaza, 10  
Huayuan Dong Road,  
Haidian District - Beijing  
Tel +86 10 82038861 / 8862  
Fax +86 10 82038863

**Sales office Guangzhou**  
Address Unit 1507 East Building,  
Dongshan Square, No. 65,  
Xianlie Zhong Road, Yuexiu District  
510095, Guangzhou  
Tel +86 20 28848001  
Fax +86 20 28848002

**Singapore Rep. office (ASIA PACIFIC)**  
138, Robinson Road  
The corporate office #14-06  
068906 Singapore  
Tel +65 6323 4131  
Fax +65 6323 4212

**MARM-UPS Pty Ltd. (AUSTRALIA)**  
Unit 22/80 Box Road  
Taren Point NSW 2229  
Tel +61 2 9531 1999  
Fax +61 2 9531 1988

Unit 17/810-818 Princes Hwy  
Springvale VIC 3171  
Tel +61 3 9574 6922  
Fax +61 3 9574 6933

PO Box 2251  
Yokine South WA 6060  
Tel +61 1300 138,709

Follow us on Social Networks



www.ups-riello.com