

SPH



DATACENTRE



E-MEDICAL



INDUSTRY



TRANSPORT



EMERGENCY



ONLINE



Tower



1:1 6 kVA

1:1 3:1 10-20 kVA



BIS Registered



USB
plug



Energy
share



Service
1st start



HIGHLIGHTS

- Small footprint
- Power factor 0.9
- High efficiency 97%
- Parallelable 2+1
- Simplified installation
- High quality output voltage

SPH series is the ideal solution for protecting IT systems, Telecommunications equipment and mission critical systems such as safety devices, ensuring maximum power reliability. SPH Series is designed and built using state-of-the-art technology and Components to provide maximum protection to the powered loads with no impact on downstream systems and optimized energy savings. The series includes 6 kVA single/single-phase and 10-20 kVA single/single-phase and three/single-phase models with on-line double conversion technology (VFI):

the load is powered continuously by the inverter which supplies a sinusoidal voltage, filtered and stabilized in terms of form and frequency.

Input and output filters provide significant further immunity from mains disturbances and lightning strikes.

In terms of technology and performance, SPH series is one of the best UPS available on the market today: selectable Eco Mode and Smart Active Mode functions; custom diagnostics LCD display, RS232 and USB interfaces with Power shield³ software, ESD input, interface slot with optional boards.

High UPS reliability

- Total microprocessor control.
- Interruption-free static and manual bypass.
- Specifications guaranteed up to 40°C (the components are designed to work at high temperatures and thus are subject to less stress at normal temperatures).

Parallelable

Parallel configuration of 3 units for (2+1) redundant or power parallel system. The UPS continue to operate in parallel even if the connection cable is interrupted (Closed Loop).

Operating mode selection

The operating mode can be programmed via software or manually via the front display panel.

- **On line:** double conversion Mode: for critical applications.
- **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

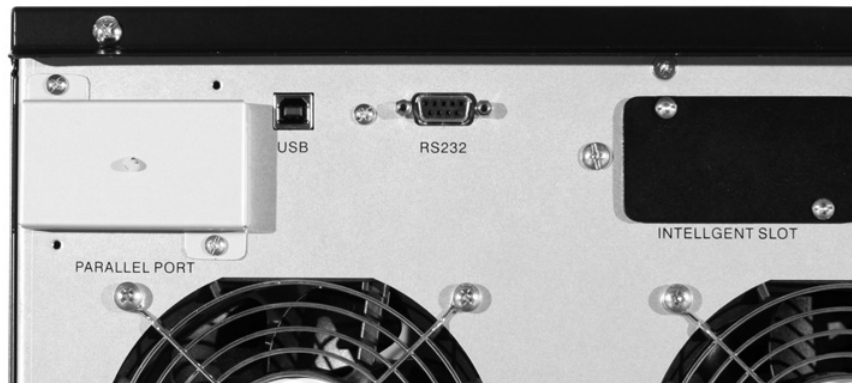
- Even with non-linear loads (IT loads with a crest factor of up to 3:1).
- High short circuit current on bypass.
- High overload capacity: 150% by inverter (even with mains failure).
- Filtered, stabilised and reliable voltage (double conversion on-line technology - VFI compliant with EN62040-3), with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

Simplified installation

- UPS can be installed on a single-phase or three-phase distribution network.
- Output terminal board + 2 IEC sockets for powering local consumers (computers, modems, etc.).
- Simplified positioning (built-in castors).

High battery reliability

- Automatic and manual battery test.
- Proper battery care is critical to ensuring



correct UPS operation in emergency conditions. The Riello UPS battery care system consists of a series of features and capabilities to optimise battery management and obtain the best performance and operating life possible.

- 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.

Low impact on the mains

Sinusoidal uptake of input current on single-phase/single-phase series.

Other features

- Advanced diagnostics: status, measurements and alarms available on custom LCD display.
- Low noise (<40 dBA): can be installed in any environment thanks to its high frequency switching inverter and PWM load-dependent digitally controlled fan (>20 kHz, value above audible range).

- Auto restart (automatic when mains supply is restored, programmable via software or display panel).
- Emergency function: the UPS can be selected to function only when the mains power supply fails (emergency lights).
- Back-feed protection standard: to prevent energy from being fed back to the network.
- UPS digital updating (flash upgradeable).

Advanced communications

- Compatible with Riello UPS TeleNetGuard remote monitoring.
- 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.
- RS232 serial and USB ports.
- Plug and play function.
- Slot for installation of communications boards.



Model	SPM 6 ER	SPH 10 ER	SPH 20 ER
Power	6400VA / 5400W	10000VA / 9000W	20000VA / 18000W
Input			
Nominal Voltage	220-230-240 Vac 1 ph	220-230-240 Vac 1 ph / 380-400-415 Vac 3 ph + N	
Voltage Tolerance	230 Vac ± 20%	230 Vac ± 20% / 400 Vac ± 20%	
Minimum voltage without battery intervention	176 Vac @ 100% load / 110 Vac @ 50% load		
Maximum operating voltage	276 Vac		
Nominal frequency	50/60 Hz ±10 Hz		
Bypass			
Voltage Tolerance	160 - 276 Vac (selectable in Eco Mode or Smart Active Mode)		
Frequency Tolerance	Selected frequency ±10%		
Overload	125% for 1 minute, 150% for 10 seconds		
Output			
Nominal Voltage	220-230-240 Vac selectable		
Voltage Distortion	< 2% with linear load / < 5% with non-linear load		
Current Distortion	3%		
Frequency	50/60 Hz selectable or with automatic selection		
Static Variation	± 1.5 %		
Dynamic Variation	≤ 5% in 20 ms		
Waveform	Sinusoidal		
Crest Factor	3:1		
Battery			
Type	VRLA AGM maintenance-free lead based		
Battery Voltage	180V	240V	480V
Other Features			
Weight (Kg)	25.5	28.4	48
Dimensions (WxDxH) mm	262 x 654 x 709		350 x 731 x 818
IP	20		
Smart Active efficiency	up to 98%		
Protections	Overcurrent - short-circuit - overvoltage – under voltage - temperature - excessive low battery		
Communications	USB / RS232 + slot for communications interface		
Parallel	max 2 units in parallel with optional kit		
Input Plug	Terminal block + 2 IEC 320 C13		
Standards	EN 62040-1 EMC EN 62040-2 Directives 2006/95/EC - 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 (ECO Mode)	< 40 dBA		



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