

## SENTRY MULTISTANDARD SM 10-20kVA

### Uninterruptible Power Supply

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#### Quality power supply

ON-LINE double conversion VFI technology guarantees a filtered, stabilized and reliable voltage that is free from all mains interference (overvoltages, frequency variations, voltage drops).

#### Low consumption

As well as the on-line operating mode, Sentry Multistandard can operate in: - Economy Mode: the UPS uses Line Interactive technology: the load is powered from the mains; the energy consumption is reduced with a subsequent improvement in efficiency (98%). - Smart Active Mode: the UPS automatically selects On Line or Line Interactive operating mode according to the quality of the mains supply, by monitoring the number, frequency and type of disturbances at the mains power input. - Stand-by-Off (back-up unit): with the mains available the UPS is normally not powered and consequently the power consumption is almost zero. Only when the mains fails or falls outside a preset range, does the inverter take over in 200 ms using power from the batteries. This operating mode is suitable for Emergency Escape Lighting (CPSS - Central Power Supply System) as per standard EN 50171. These modes can be programmed to suit the requirements of the user and the load to be powered.

#### Expandability

The units can be connected in parallel up to 8 units to increase power availability or redundancy. The single module or the system can be expanded at any time following the power demand without any influence on the initial investment. Thanks to the peculiarity of the 'Hot System Expansion' feature, the additional unit can be connected in parallel while the other units are on-line and supplying regular power to the load. The new UPS is on-line and will receive the updated information automatically.

#### High reliability

The digital control of the appliance considerably improves its reliability, since a reduction in electronic components lowers the likelihood of breakdowns. The parallel connection of the UPS up to 8 units exponentially increases the reliability of the system. The parallel connection system has 2 levels of redundancy: in the event both redundant cables are lost only the relevant module will be disconnected from the output bus bar, while the other modules supply power to the load.

#### Operating flexibility

Sentry Multistandard is a UPS with On-Line double conversion technology that can also operate in Line Interactive mode (Economy Mode). It can handle the two architectures autonomously through the Smart Active function. The Stand-By-Off function can be used to transform



the UPS into a back-up unit to supply power for emergency lighting. Sentry Multistandard can also be used as a Frequency Converter, 50/60Hz or vice versa.

#### Maximum battery care

Temperature is the greatest threat to batteries; for this reason, Sentry Multistandard monitors the temperature of the battery and thereby controls the battery charging voltage. An automatic battery test periodically checks the efficiency of the batteries. The batteries are not used during micro-interruptions (40 ms), since the required energy is drawn from a group of capacitors (BATTERY SAVING). This system extends the

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life of the batteries. The Sentry Multistandard range also includes deep discharge protection feature.

#### Maximum safety for personnel

The back feed protection device prevents any voltage back feed in the upstream distribution board, thus ensuring the safety of the maintenance personnel.

#### Advanced communication

The unit comes with Aros Watch&Save 3000 software as a standard feature. The software displays the most important information such as the input and output voltage, the load applied, the remaining back-up time, etc., in the form of bar graphs. It is able to provide information even in the event of a failure, to support the fault diagnostics. Watch&Save 3000 software can be used to program the automatic shutdown of all open systems in the event of a prolonged black out. The UPS also contains the following hardware interfaces: - RS232 serial port - Dry contacts - EPO (Emergency Power Off) contact for UPS shutdown using the remote emergency button.

#### Mimic panel

The mimic panel allows easy and intuitive operation of the UPS. It gives access to the most important parameters: status and alarms, control commands, input, output, battery measurements (power, current, voltage, frequency and

temperature) and settings. The Sentry Multistandard diagnostics system includes up to 128 alarms or messages allowing precise and detailed identification of any event.

#### Low Input Harmonic Distortion

The Power Factor Correction (PFC), standard on all models, guarantees the input power factor level to 0,95 for any load percentages so that it is ideal in conjunction with Motor Generator or in installations with other sensitive loads. Sentry Multistandard is also available with built-in Active Filter designed to reduce the level of THDi to less than 4% and to increase the input power factor up to 0,99. Other benefits - Advanced technologies: Active Filter is based on the IGBT's Technologies controlled by the Digital Signal Processor (DSP). DSP instantly monitors and controls the input current absorbed by the UPS in order to eliminate the unlike harmonics and maintain the THDi less than 4 %. - Maximum efficiency: thanks to the Active Filter, Multistandard has low input harmonics even at low loads connected at the output. - Compact size: no addition footprint is required because the Active Filter is fitted inside the base Multistandard unit. - Reduction of the neutral current: less harmonics at the Multistandard input reduces the neutral cable size and consequently the installation costs. -

Maximum reliability: thanks to this design solution any failure of the optional Active Filter has no influence on the power supplied to the load; the only consequence is the increase of current harmonics level rejected to the mains. MAXIMUM RELIABILITY FOR THE LOAD.

#### Applications

Servers, Local Area Network (LAN), Data centers, telecommunications, industrial equipment, electro-medical equipment, emergency lighting applications.

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INPUT	SM 10	SM 15	SM 20
Voltage	230 V single-phase or 400 V three-phase + N (selectable)		
Voltage tolerance	±20%		
Frequency	45÷65 Hz		
Current distortion	<7% single-phase input, <4% three-phase input with Active Filter		
Power factor	>0.99	>0.99	>0,99
Input phases	3/1		
BY PASS	SM 10	SM 15	SM 20
Rated voltage	230 V		
Phases number	1		
Voltage tolerance	±15% selectable from ±5% to ±25%)		
Rated frequency	50 / 60 Hz		
Frequency tolerance	±2% (selectable up to ±5%)		
By-pass	Static and manual for maintenance		
Transfer time	0 ms		
BATTERIES	SM 10	SM 15	SM 20
Type	Maintenance-free sealed lead acid		
Battery blocks	12V		
Batteries number	32	48	
Recharge time	6 h		
OUTPUT	SM 10	SM 15	SM 20
Rated power	10000 VA	15000 VA	20000 VA
Active power	8 kW	10,5 kW	12 kW
Phases number	1		
Waveform	Sinewave		
Rated voltage	220-230-240 V selectable		
Frequency	50 / 60 Hz selectable		
Frequency stability	±0,05% in battery operation, ±1% in synchronism with mains (±5% selectable)		
Dynamic stability	±5% in 10 ms	±5%	
Crest factor (I <sub>peak</sub> /I <sub>rms</sub> )	3 : 1		
Short-circuit current	300% for 0,5'		
Output phases	1		
Overload	110% for 5h, 125% for 10', 150% for 1'		
SYSTEM	SM 10	SM 15	SM 20
AC/AC efficiency	>92% in On-Line Mode, >98% in Economy Mode/Smart Active Mode/Standby-Off Mode/AVS Mode		
Operating altitude	1000 m a.s.l.		
Noise	50÷56 dBA at 1 m.		
Operating temperature	0°C ÷ +40°C		
Relative humidity	95% non condensing		
Protection degree	IP20		
Communication	Double RS232/C		
Communication slot	2 RS232/C, slot for Netman 102 Plus or MultiCom 302, slot for Netman 102 or MultiCom 302, slot for Netman 102 Plus or MultiCom 302, 352, Pro		

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Remote signals	Volt free contacts		
Remote controls	EPO and bypass		
Colour	Dark grey RAL 7016		
Standards	Safety: EN 62040-1-1 and directive 2006/95/EC; EMC: EN 62040-2 and directive 2004/108/EC; classification according to IEC 62040-3 (Voltage Frequency Independent) VFI-SS-111		
Technology	On-line double conversion		
Weight (kg)	From 105 to 243 Kg	From 110 to 330 Kg	From 125 to 345 Kg
Dimensions (WxDxH) mm	450x750x1200 mm		

DATA	SM 10	SM 15	SM 20
Installation	Tower		
Configuration	Parallel Unit		

OPTIONS	SM 10	SM 15	SM 20
Battery cabinets for longer runtimes	Yes		
Empty battery cabinets for longer runtimes	Yes		
Parallel kit	Yes		
Isolation transformer module (WxDxH)	555x720x1200mm/140kg	555x720x1200mm/160kg	555x720x1200mm/188kg
LCD-based remote control panel	Yes		
LED-based remote control panel	Yes		
Communication software 'professional' version	Yes		

OPTIONS	SM 10	SM 15	SM 20
MultiCom 351	X	X	X
MultiCom 352	X	X	X
MultiCom 301	X	X	X
MultiCom 302	X	X	X
NetMan 101 Plus	X	X	X
NetMan 102 Plus	X	X	X
Multi I/O	X	X	X
IRMS Multi-Switch	X	X	X
AS/400 interface kit	X	X	X
UPS remote contacts expander	X	X	X
MultiCom 401	X	X	X