

SENTRY MULTISTANDARD SM 10-20kVA

Uninterruptible Power Supply

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



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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 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.

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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.**

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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
Current distortion	<7% single-phase input, <4% three-phase input with Active Filter		
Power factor	0.95		
Voltage	230 V single-phase or 400 V three-phase + N (selectable)		
Frequency	45÷65 Hz		
Voltage tolerance	±20%		
OUTPUT	SM 10	SM 15	SM 20
Short-circuit current	300% for 0,5"		
Crest factor (I _{peak} /I _{rms})	3 : 1		
Waveform	Sinewave		
Frequency	50 / 60 Hz selectable		
Phases number	1		
Rated power	10 KVA	15 KVA	20 KVA
Active power	8 kW	10,5 kW	12 kW
Overload	110% for 5h, 125% for 10', 150% for 1'		
Frequency stability	±0,05% in battery operation, ±1% in synchronism with mains (±5% selectable)		
Dynamic stability	±5%		
Rated voltage	220-230-240 V selectable		
BY PASS	SM 10	SM 15	SM 20
Rated frequency	50 / 60 Hz		
Phases number	1		
Rated voltage	230 V		
Frequency tolerance	±2% (selectable up to ±6%)		
Voltage tolerance	±15% selectable from ±5% to ±25%)		
By-pass	Static and manual for maintenance		
Transfer time	0 ms		
BATTERIES	SM 10	SM 15	SM 20
Type	Maintenance-free sealed lead acid		
Recharge time	6 h		
Batteries number	32	48	
Battery blocks	12V		
SYSTEM	SM 10	SM 15	SM 20
Operating altitude	1000 m a.s.l.		
Colour	Dark grey RAL 7024		
Remote controls	EPO and bypass		
Communication	Double RS232/C		
Protection degree	IP20		
Communication slot	2 RS232/C, slot for Netman 102 or MultiCom 302, 352, Profibus		
AC/AC efficiency	93%		

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Uninterruptible Power Supply

Noise	50÷56 dBA at 1 m.		
Remote signals	Volt free contacts		
Operating temperature	0°C ÷ +40°C		
Relative humidity	95% non condensing		
Standards	Safety: EN 62040-1-1, Directives 73/23EC and 93/68/EC; EMC: IEC 62040-2; EN 50091-2 lev. A, Directives 2004/108/EC and 89/336/EC; EN 62040-3		
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		
DATA	SM 10	SM 15	SM 20
Weight (kg)	From 112 to 218	From 122 to 330	From 123 to 345
Dimensions (WxDxH) mm	450x750x1200		
Back up time at full load (min)	From 0 to 50	From 0 to 20	From 0 to 15
Input phases	3/1		
Output phases	1		
Technology	On-line double conversion		
Installation	Tower		
Configuration	Parallel Unit		

OPZIONI SM 15

MultiCom 351
 MultiCom 352
 MultiCom 301
 MultiCom 302
 NetMan 101 Plus
 NetMan 102 Plus
 Multi I/O
 IRMS Multi-Switch
 AS/400 interface kit
 UPS remote contacts expander
 Profibus DP Gateway

OPZIONI SM 10

MultiCom 351
 MultiCom 352
 MultiCom 301

SENTRY MULTISTANDARD SM 10-20kVA

Uninterruptible Power Supply

MultiCom 302

NetMan 101 Plus

NetMan 102 Plus

Multi I/O

IRMS Multi-Switch

AS/400 interface kit

UPS remote contacts expander

Profibus DP Gateway

OPZIONI SM 20

MultiCom 351

MultiCom 352

MultiCom 301

MultiCom 302

NetMan 101 Plus

NetMan 102 Plus

Multi I/O

IRMS Multi-Switch

AS/400 interface kit

UPS remote contacts expander

Profibus DP Gateway

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Escape Lighting (CPSS - Central Power Supply System) as per standard EN 50171.

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Operating flexibility

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Advanced communication

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- Dry contacts
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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.
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Applications

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

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Uninterruptible Power Supply

INPUT	ST 10		ST 15	ST 20	ST 30
Current distortion	<4% with Active Filter				
Power factor	0.99 with Active Filter				
Voltage	400 V+ N three-phase				
Frequency	45÷65 Hz				
Voltage tolerance	±20%				
OUTPUT	ST 10		ST 15	ST 20	ST 30
Short-circuit current	300% for 0,5"				
Crest factor (Ipeak/Irms)	3 : 1				
Waveform	Sinewave				
Frequency	50 / 60 Hz selectable				
Phases number	3 + N				
Rated power	10 KVA	15 KVA	20 KVA	30 KVA	
Active power	8 kW	12 kW	16 kW	24 kW	
Overload	110% for 5h, 125% for 10', 150% for 1'				
Frequency stability	±0,05% in battery operation, ±1% in synchronism with mains (±5% selectable)				
Dynamic stability	±5%				
Rated voltage	380-400-415 V (selectable)				
BY PASS	ST 10		ST 15	ST 20	ST 30
Rated frequency	50 / 60 Hz				
Phases number	3 + N				
Rated voltage	400 V + N				
Frequency tolerance	±2% (selectable up to ±5%)				
Voltage tolerance	±15% (selectable from ±5% to ±25%)				
By-pass	Static and manual for maintenance				
Transfer time	0 ms				
BATTERIES	ST 10		ST 15	ST 20	ST 30
Type	Maintenance-free sealed lead acid				
Recharge time	6 h				
Batteries number	32	48			
Battery blocks	12V				
SYSTEM	ST 10		ST 15	ST 20	ST 30
Operating altitude	1000 m a.s.l.				
Colour	Dark grey RAL 7024				
Remote controls	EPO and bypass				
Communication	Double RS232/C				
Protection degree	IP20				
Communication slot	2 RS232/C, slot for Netman 102 or MultiCom 302, 352, Profibus				
AC/AC efficiency	92%				

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Uninterruptible Power Supply

Noise	50÷56 dBA at 1 m.			
Remote signals	Volt free contacts			
Operating temperature	0°C ÷ +40°C			
Relative humidity	95% non condensing			
Standards	Safety: EN 62040-1-1, Directives 73/23EC and 93/68/EC; EMC: IEC 62040-2; EN 50091-2 lev. A, Directives 2004/108/EC and 89/336/EC; EN 62040-3			
OPTIONS	ST 10	ST 15	ST 20	ST 30
Battery cabinets for longer runtimes	Yes			
Empty battery cabinets for longer runtimes	Yes			
Parallel kit	Yes			
Isolation transformer module (WxDxH)	555x720x1200mm/145 kg	555x720x1200mm/165 kg	555x720x1200mm/190 kg	555x720x1200mm/215 kg
LCD-based remote control panel	Yes			
LED-based remote control panel	Yes			
Communication software "professional" version	Yes			
DATA	ST 10	ST 15	ST 20	ST 30
Weight (kg)	From 114 to 406	From 122 to 335	From 124 to 350	From 144 to 370
Dimensions (WxDxH) mm	450x750x1200			
Back up time at full load (min)	From 0 to 50	From 0 to 20	From 0 to 15	From 0 to 8
Input phases	3			
Output phases	3			
Technology	On-line double conversion			
Installation	Tower			
Configuration	Parallel Unit			

OPZIONI ST 10

MultiCom 351
 MultiCom 352
 MultiCom 301
 MultiCom 302
 NetMan 101 Plus
 NetMan 102 Plus
 Multi I/O
 IRMS Multi-Switch
 AS/400 interface kit
 UPS remote contacts expander
 Profibus DP Gateway

OPZIONI ST 15

MultiCom 351
 MultiCom 352
 MultiCom 301

SENTRY MULTISTANDARD ST 10-30kVA

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MultiCom 302

NetMan 101 Plus

NetMan 102 Plus

Multi I/O

IRMS Multi-Switch

AS/400 interface kit

UPS remote contacts expander

Profibus DP Gateway

OPZIONI ST 20

MultiCom 351

MultiCom 352

MultiCom 301

MultiCom 302

NetMan 101 Plus

NetMan 102 Plus

Multi I/O

IRMS Multi-Switch

AS/400 interface kit

UPS remote contacts expander

Profibus DP Gateway

OPZIONI ST 30

MultiCom 351

MultiCom 352

MultiCom 301

MultiCom 302

NetMan 101 Plus

NetMan 102 Plus

Multi I/O

IRMS Multi-Switch

AS/400 interface kit

UPS remote contacts expander

Profibus DP Gateway

SENTRY MULTISTANDARD ST 40-80kVA

Uninterruptible Power Supply

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Uninterruptible Power Supply

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Operating flexibility

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The UPS also contains the following hardware interfaces:

- RS232 serial port
- Dry contacts

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- EPO (Emergency Power Off) contact for UPS shutdown using the remote emergency button.

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Uninterruptible Power Supply

INPUT	ST 40	ST 60	ST 80
Current distortion	<4% with Active Filter		
Power factor	0.99 with Active Filter		
Voltage	400 V three-phase + N		
Frequency	45÷65 Hz		
Voltage tolerance	±20%		
OUTPUT	ST 40	ST 60	ST 80
Crest factor (I _{peak} /I _{rms})	3 : 1		
Waveform	Sinewave		
Frequency	50 / 60 Hz selectable		
Phases number	3 + N		
Rated power	40 KVA	60 KVA	80 KVA
Active power	32 kW	48 kW	64 kW
Overload	110% for 5h, 125% for 10', 150% for 1'		
Dynamic stability	±5%		
Static stability	±1%		
Rated voltage	380-400-415 V (selectable)		
BY PASS	ST 40	ST 60	ST 80
Rated frequency	50 / 60 Hz		
Phases number	3 + N	3 + N	3 + N
Rated voltage	400 V + N		
Frequency tolerance	±2% (selectable up to ±5%)		
Voltage tolerance	±15% (selectable from ±5% to ±25%)		
By-pass	Static and manual for maintenance		
Transfer time	0 ms		
BATTERIES	ST 40	ST 60	ST 80
Type	Maintenance-free sealed lead-acid		
Recharge time	4 - 8 h		
Batteries number	48		
Battery blocks	12V		
SYSTEM	ST 40	ST 60	ST 80
Colour	Dark grey RAL 7024		
Remote controls	EPO and bypass		
Communication	Double RS232/C + slot for SNMP adapter		
Protection degree	IP20		
AC/AC efficiency	92% in On-Line mode 98% in Economy Mode/Smart Active Mode/Emergency mode		
Noise	50÷56 dBA a 1 m.		
Remote signals	Volt free contacts		

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Operating temperature	0°C / + 40°C		
Relative humidity	95% non condensing		
Standards	Safety: EN 62040-1-1, Directives 73/23EC and 93/68/EC; EMC: IEC 62040-2; EN 50091-2 lev. A, Directives 2004/108/EC and 89/336/EC; EN 62040-3		
OPTIONS	ST 40	ST 60	ST 80
Battery cabinets for longer runtimes	Yes		
Empty battery cabinets for longer runtimes	Yes		
Parallel kit	Yes		
Optional filters	Yes		
Isolation transformer module (WxDxH)	555x720x1200mm /260kg	640x740x1400mm / 380kg	640x740x1400mm / 430kg
LCD-based remote control panel	Yes		
LED-based remote control panel	Yes		
Communication software "professional" version	Yes		
DATA	ST 40	ST 60	ST 80
Weight (kg)	180	200	220
Dimensions (WxDxH) mm	500x740x1400		
Back up time at full load (min)	0		
Input phases	3		
Output phases	3		
Technology	On-line double conversion		
Installation	Tower		
Configuration	Parallel Unit		

OPZIONI ST 40

- Antiharmonic filter
- MultiCom 351
- MultiCom 352
- MultiCom 301
- MultiCom 302
- NetMan 101 Plus
- NetMan 102 Plus
- Multi I/O
- IRMS Multi-Switch
- AS/400 interface kit
- UPS remote contacts expander
- Profibus DP Gateway

OPZIONI ST 60

- Antiharmonic filter
- MultiCom 351
- MultiCom 352

SENTRY MULTISTANDARD ST 40-80kVA

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MultiCom 301

MultiCom 302

NetMan 101 Plus

NetMan 102 Plus

Multi I/O

IRMS Multi-Switch

AS/400 interface kit

UPS remote contacts expander

Profibus DP Gateway

OPZIONI ST 80

Antiharmonic filter

MultiCom 351

MultiCom 352

MultiCom 301

MultiCom 302

NetMan 101 Plus

NetMan 102 Plus

Multi I/O

IRMS Multi-Switch

AS/400 interface kit

UPS remote contacts expander

Profibus DP Gateway