Sentry Multistandard

SUITABLE FOR EMERGENCY LIGHTING APPLICATIONS

10/30 kVA

SENTRY MULTISTANDARD provides maximum protection for critical data processing networks and security applications, thanks to its advanced design, selectable operating modes and communications capabilities. Operating modes include: On-line, Economy, Smart-Active, Standby/Off and Voltage Stabilisation. Standard communications features include a front panel LCD with 128 potential messages, RS232 interfaces, EPO input, communications interface slot and Watch&Save management software.

The SENTRY MULTISTANDARD series includes 10-15-20kVA single/single-phase, three/single-phase and 10-15-20-30-40-60-80 kVA three-phase models, and uses on-line double conversion technology (VFI). The load is powered continuously by the inverter with a filtered, stabilised and regulated sinewave supply. The input and output filters considerably increase the immunity of the load to mains disturbances and surges, even on bypass.

LOW POWER CONSUMPTION

- On-line Mode: up to 92% efficiency can be achieved due to the use of IGBT technology, increasing to 98% in one of the other operating modes
- Economy Mode: uses Line Interactive (VI) technology to power less critical loads from the mains supply for certain periods
- Smart Active: if the mains supply is out of range, the UPS will power the load from the inverter as an On-line UPS. When the mains supply returns to within range again, the UPS will monitor this for a certain period before selecting Line Interactive operation.

10/30 kVA *Battery cabinet*

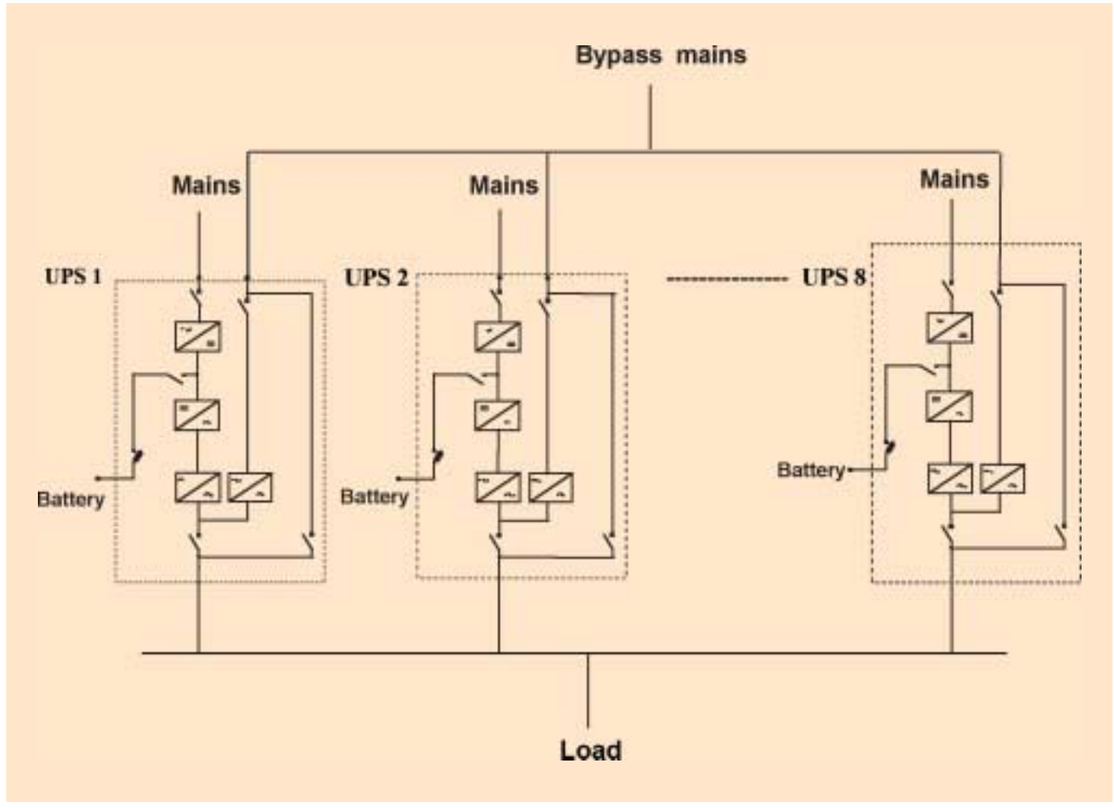


Fig. 1 – Block diagram UPS in parallel up to 8 units

SIMPLE TO INSTALL

- Option to connect the UPS to single-phase or three phase mains supplies (SM series)
- Panel adjustment to offset voltage drop down long cable runs

MAXIMUM RELIABILITY AND AVAILABILITY

- Connect up to 8 units in parallel for power capacity or redundancy

HIGH LEVEL BATTERY RELIABILITY

- Automatic battery test
- Recharge compensated for temperature
- Automatic or manual rapid charge (boost) – duration progammable

MAINTENANCE SIMPLICITY = LOW MTTR

For the 40 to 80 kVA models, open the door and remove the protective panel (standards requirement) and the power components - mounted on a sliding tray - can be pulled out to provide easy access to all the electrical and electronic components for maintenance and repair work. This particular feature means that the MTTR (Mean Time To Repair) is much lower than traditional UPS designs with less easily reached assemblies, which has longer times due to the compact size of the products and difficult access to the parts.
A large amount of maintenance information is available from the front mimic panel and LCD. In addition system operating parameters are software configurable via a local PC to allow new functions to be added or adjustments made to operating specifications.

SENSITIVE SUPPLY COMPATIBLE

For power supply sources that are particularly sensitive to harmonics (generator sets or transformers of low power with respect to that of the UPS) it is often a good idea to take action to limit the harmonics injected back into the supply by the UPS.

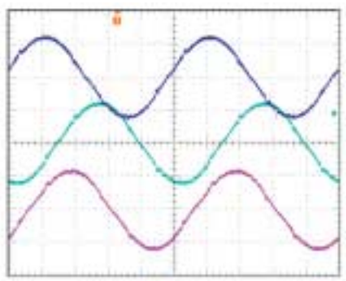
SENTRY MULTISTANDARD series is also available with built-in active filter using high frequency Isolated Gate Bipolar (IGBT) Technology with Digital Signal Processor (DSP) control. The Active Filter helps to reduce harmonics generated by the UPS into the supply which could disrupt the operation of downstream generators and transformers whose rating is closely matched to that of UPS.

- *advanced technology*
  The active filter reduces harmonic distortion of the phase and neutral currents. The Digital Signal Processor (DSP) and the "current mode" instantly control and monitor the input current to maintain a perfect sinewave with less than 4% harmonic distortion
- *maximum efficiency*
  Thanks to the active filter Sentry Multistandard systems have low input distortion even at low loads and their overall efficiency is not affected by generator frequency variations or line impedance
- *reduction of neutral current*
  The active filter reduces the input neutrals current by up to 3.5 times their nominal rating to help avoid oversizing input protections and conductors
- *maximum reliability*
  Sentry Multistandard systems are extremely reliable. Overall UPS performance is unaffected should the harmonic filter fail
- *excellent capabilities*
  Input distortion: (THDi) less than 4%
  Input power factor: >0.99
  Performance: up to 93%

Sentry Multistandard can also be supplied without the Active Filter for installations less sensitive to current harmonics.

OTHER CHARACTERISTICS

- Sentry Multistandard is able to supply loads with power factor from 0,8 inductive to 0,9 capacitive without derating the active power (KW)
- High level diagnostics: event log with 128 messages, states, measurements and alarms - available from the built-in LCD in several languages
- Reduced noise levels: high frequency inverter bridge
- Back feed protection standard: to avoid energy feeding back into the mains supply (in compliance with CEI 11-20; DK5600)
- Power factor correction (input power factor, close to 1)
- By pass may be deactivated to allow operation as a frequency converter (at 50 or 60 Hz)
- Emergency operation: the UPS can be set to operate only when the mains fails (for emergency lighting)



UPS input current with optional Active Filter

Sentry Multistandard with Active Filter (internal view)

ADVANCED COMMUNICATION

- Compatible with TeleGuard for remote maintenance
- Advanced, multi-platform communication, for all operating systems and network environments: Watch&Save supervision and shut-down software included, with SNMP agent, for Windows 95, 98, NT 4.0, Me, 2000, 2003, XP, Mac OS 9.x, X, Linux, Novell operating systems. The UPS is supplied with a cable for direct connection to the PC (Plug and Play)
- Double RS232 serial ports
- Network adapter slot for SNMP agent
- Emergency Power Off (EPO) shutdown input contact
- Remote control mimic panel

APPLICATIONS

- Local Area Networks (LAN)
- Data Centers
- Servers
- Industrial PLCs
- Cash registers
- Electromedical devices
- Emergency devices (lights/alarms)
- Telecommunication devices
- e-Business (Servers, Farms, ISP/ASP/POP)

OPTIONS

Input isolation transformer
Active filter
LED remote status panel
LCD based remote control panel
Empty battery cabinet for prolonged runtime
Additional battery charger
Dual input mains

Operating status, alarms, applied load, battery charging.

Controls and settings menu.

Language selection menu.

Battery voltages, internal operating temperatures.

40/80kVA

40/80kVA

Sentry Multistandard

Three- / Single-phase input
Single-phase output

Technical data

Input	SM10	SM15	SM20
Rated voltage	230 Vac single-phase or 400 Vac three-phase + N		
Voltage range	± 20%		
Frequency range	45 ÷ 65 Hz		
Power factor	> 0.99		
Current harmonic distortion	Sinewave absorbtion THDi <3% (3Ph input)		

By pass	SM10	SM15	SM20
Rated voltage	230 Vac		
Number of phases	1		
Permitted voltage range	± 15% (selectable from ± 5% to ± 25%)		
Rated frequency	50/60 Hz		
Permitted frequency range	± 2% (selectable from ± 1% to ± 5%)		

Batteries	SM10	SM15	SM20
Type	Lead, open vase acid and VRLA, AGM / GEL; NiCd		
Recharge time	6 h		

Output	SM10	SM15	SM20
Rated power (kVA)	10	15	20
Active power with load PF from 0,8 ind. to 0,9 cap. (kW)	8	12/10,5*	16/12*
Number of phases	1		
Rated voltage	230 Vac		
Voltage regulation range	200 ÷ 243 Vac		
Crest factor (Ipeak/Irms)	3 : 1		
Distortion with linear load	2%		
Static stability	± 1%		
Dynamic stability	± 5% in 10 ms		
Frequency	50 / 60 Hz selectable		
Overload	110% 125% 150% of the rated current for 5 h/10'/1'		

System	SM10	SM15	SM20
Weight (kg)	From 105 to 243	From 110 to 330	From 125 to 345
Dimensions (wdh) (mm)	450x750x1200		
Remote signaling	Volt free contacts		
Remote controls	EPO and bypass		
Communication	Double RS232/C + remote contacts + communication interface slot		
Operating temperature	0 °C / +40 °C		
Relative humidity	< 95% non condensing		
Colour	Dark grey (RAL 7024)		
Noise	<56 dBA at 1 m		
Protection degree	IP20		
Efficiency	> 92% in On-Line Mode, > 98% in Economy Mode/Smart Active Mode/Standby-Off Mode/AVS Mode		
Compliance	EN 62040-1 EMC EN 62040-2 Directives 73/23-93/68-89/336 EEC EN 62040-3		

*Version with single-phase input

Sentry Multistandard

Three-phase input
Three-phase output

Technical data

Input	ST10	ST15	ST20	ST30	ST40	ST60	ST80
Rated voltage	400 Vac three-phase + N						
Voltage range	± 20%						
Frequency range	45 ÷ 65 Hz						
Power factor	> 0.99						
Current harmonic distortion	Sinewave absorbtion THDi <3%						

By pass	ST10	ST15	ST20	ST30	ST40	ST60	ST80
Rated voltage	400 Vac						
Number of phases	3 + N						
Permitted voltage range	± 15% (selectable from ± 5% to ± 25%)						
Rated frequency	50/60 Hz						
Permitted frequency range	± 2% (selectable from ± 1% to ± 5%)						

Batteries	ST10	ST15	ST20	ST30	ST40	ST60	ST80
Type	Lead, open vase acid and VRLA, AGM / GEL; NiCd						
Recharge time	6 h				4-8 h		

Output	ST10	ST15	ST20	ST30	ST40	ST60	ST80
Rated power (kVA)	10	15	20	30	40	60	80
Active power with load PF from 0,8 ind. to 0,9 cap. (kW)	8	12	16	24	32	48	64
Number of phases	3 + N						
Rated voltage	380 - 400 - 415 Vac selectable						
Voltage regulation range	346 ÷ 422 Vac						
Crest factor (Ipeak/Irms)	3 : 1						
Distortion with linear load	2%						
Static stability	± 1%						
Dynamic stability	± 5% in 10 ms						
Frequency	50 / 60 Hz selectable						
Overload	110%125% 150% of the rated current for 5h/10'/1'						

System	ST10	ST15	ST20	ST30	ST40	ST60	ST80
Weight (kg)	From 110 to 258	From 115 to 335	From 130 to 350	From 144 to 370	160	180	192
Dimensions (wdh) (mm)	450x750x1200				500x740x1400		
Remote signaling	Volt free contacts						
Remote controls	EPO and bypass						
Communication	Double RS232/C + remote contacts + communication interface slot						
Operating temperature	0 °C / +40 °C						
Relative humidity	<95% non condensing						
Colour	Dark grey (RAL 7024)						
Noise	<56 dBA at 1 m						<60 dBA at 1 m
Protection degree	IP20						
Efficiency	> 92% in On-Line Mode, > 98% in Economy Mode/Smart Active Mode/Standby-Off Mode/AVS Mode						
Compliance	EN 62040-1 EMC EN 62040-2 Directives 73/23-93/68-89/336 EEC EN 62040-3						