

## Sentry HPS



SENTRY HPS HM/HT provides maximum protection for vital 'mission-critical' networks, security applications (electro-medical) and industrial applications thanks to its outstanding mechanical and electrical design. The load is powered continuously by the inverter with a filtered, stabilised and regulated sinewave supply. The input and output EMI filters considerably increase the immunity of the load to mains disturbances and surges. The SENTRY HPS HM/HT series uses on-line double conversion technology (VFI) with an isolation transformer on the inverter output. SENTRY HPS HM/HT is supplied with Watch&Save software as standard and can be remotely monitored using the Teleguard system from anywhere in the world. Additional battery extension packs allow the standard battery runtime to be extended up to several hours.

### MINIMUM IMPACT ON SUPPLIES - EASY SOURCE

Input current distortion <4% for the Sentry HPS with filter with sinusoidal absorption to remove the risk of resonance with other input supply users or phase shift capacitor sets. The absorbed current distortion is independent of input supply parameters such as impedance. This enables Sentry HPS to deliver maximum performance levels regardless of the installation environment. With these input features Sentry HPS can achieve significant savings in terms of sizing and power supply sources - isolation transformers and generators over less sophisticated power systems.

### MAXIMUM BATTERY CARE

- Battery deep discharge protection
- Temperature compensating charger
- Built-in automatic and manual battery test feature

### SIMPLE TO INSTALL

- Capability to install the UPS into any distribution system (neutral not required on rectifier input)
- Capability to separate the rectifier/bypass power networks and to power these from two separate sources, without Galvanic isolation (necessary on UPS without an output transformer)

### HIGH RELIABILITY

- Extremely high short-circuit current to ensure compatibility with the most difficult transformer applications (lighting, drives and industrial processes) and an isolation transformer on the inverter output
- Full microprocessor control with no-break static and manual bypasses
- IGBT technology



### OTHER CHARACTERISTICS

- Reliable, filtered, stabilised and regulated sinewave output (double conversion on-line technology VFI according to IEC62040-3 specifications) with filters for atmospheric disturbance suppression
- 0.8 power factor makes Sentry HPS suitable for powering ICT and industrial loads
- High level diagnostics: event log with 128 messages, states, measurements and alarms - available from the built-in LCD in several languages
- BACK FEED protection: to avoid energy feeding back into the mains supply should a fault occur

### OPTIONS

- UGS - Ups Group Synchroniser Allows 2 or more UPS not in parallel to remain synchronised even during a power failure. The UGS also enables an AROS UPS to be synchronised with an independent power source, even of a different power rating.
- PSJ - Parallel Systems Joiner Connects two UPS groups operating in parallel configurations through a power coupling switch
- Isolation transformers
- Various lead acid battery types including 5 year, 10 year and 20 year design life, VRLA, NiCad options and runtimes up to several hours
- Communications software
- Automatic battery circuit breaker (for remote control)
- Solutions for low input current distortion

### SPECIFIC SOLUTIONS

The UPS can be adapted to your requirements. Please contact AROS S.r.l. to discuss specific applications and options.

### MAXIMUM RELIABILITY AND AVAILABILITY

- Connect up to 8 units in parallel or N+1 redundancy, even of different power ratings. The UPS continue to work in parallel even if one of the interconnecting communication cables is disconnected (CLOSED LOOP).

### LOW CONSUMPTION LEVELS

- Sentry HPS can achieve efficiencies >98% thanks to a selectable Economy Mode which can be used in stable electrical environments to provide power supply continuity should the mains fail.

### 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)
- RS232 serial port
- Volt-free signal contacts
- EPO (Emergency Power Off) shutdown input contact
- Input for switching to bypass by remote signal
- LCD or LED-based remote control panel
- Generator interface: enables desynchronisation of the UPS output from a generator supply which may be subject to phase and frequency variations. The interface also enables more economic use of the battery charger.

### NO-BREAK POWER ARCHITECTURES

The Sentry HPS range features a wide range of modules and configurations that can be manufactured into one complete system to solve your power problems. Each system is therefore unique and we ask that you consult our engineers for your specific application.

### APPLICATIONS

- Servers
- Local Area Network (LAN)
- Data centers
- Telecommunications
- Industrial equipment
- Electro-medical equipment



# Sentry HPS

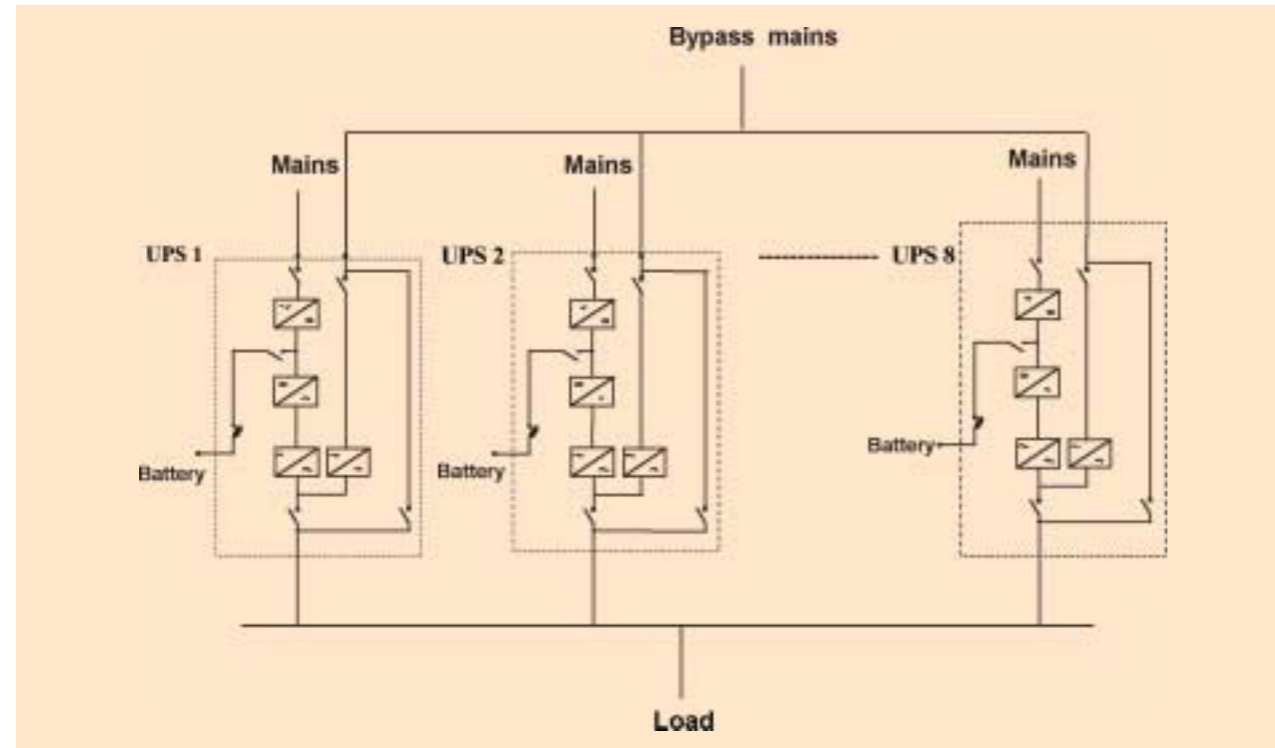


Fig 1 - Block diagram UPS in parallel up to 8 units

## 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 any time to suit power requirements without influencing 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 be set up automatically.



300 kVA

## DUAL BUS SYSTEM

The Dual Bus System powers the priority loads from two independent sources.

This configuration increases the redundancy and availability level of a multi-module configuration. Each bus may consist of a single module or up to

8 modules in parallel, kept in synchrony by the UGS (UPS Group Synchroniser).

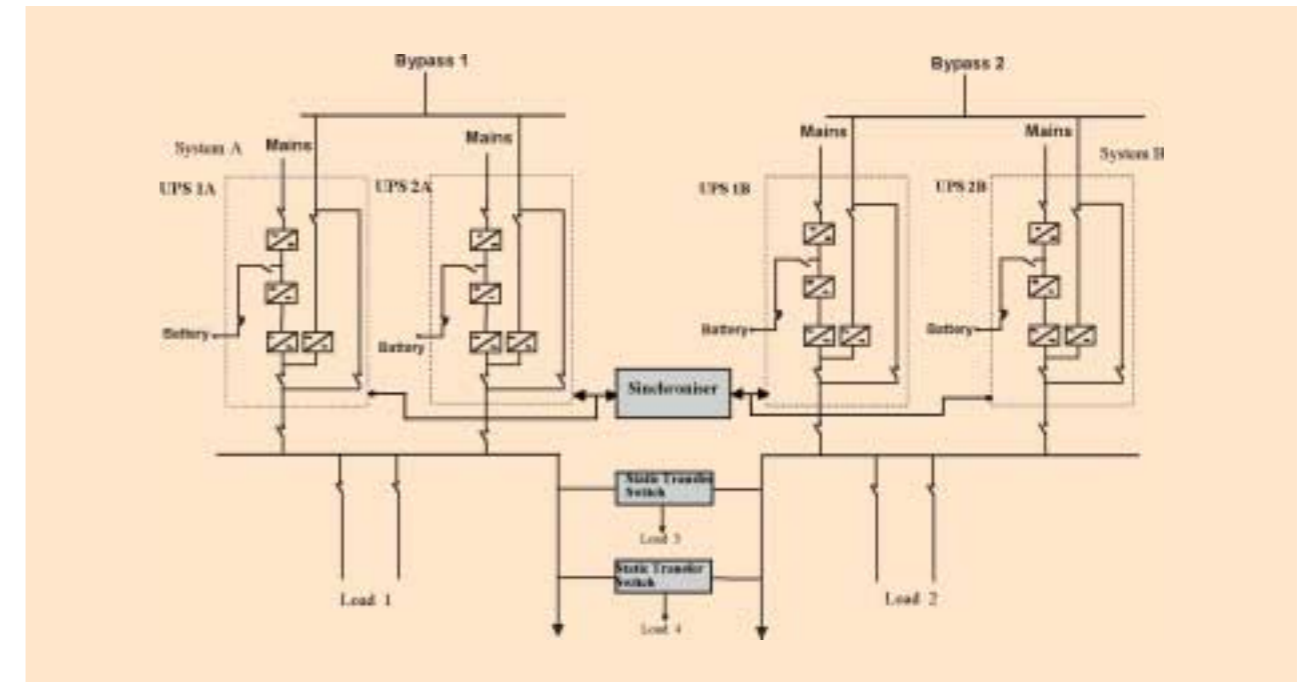


Fig. 2 - Dual bus System

## DYNAMIC DUAL BUS SYSTEM

Two independent systems set in Dual Bus Configuration can be merged

together at any time for system expansion or maintenance. This provides a lot of flexibility in your

installation in case of maintenance or when it is necessary to change the redundancy level of both systems.

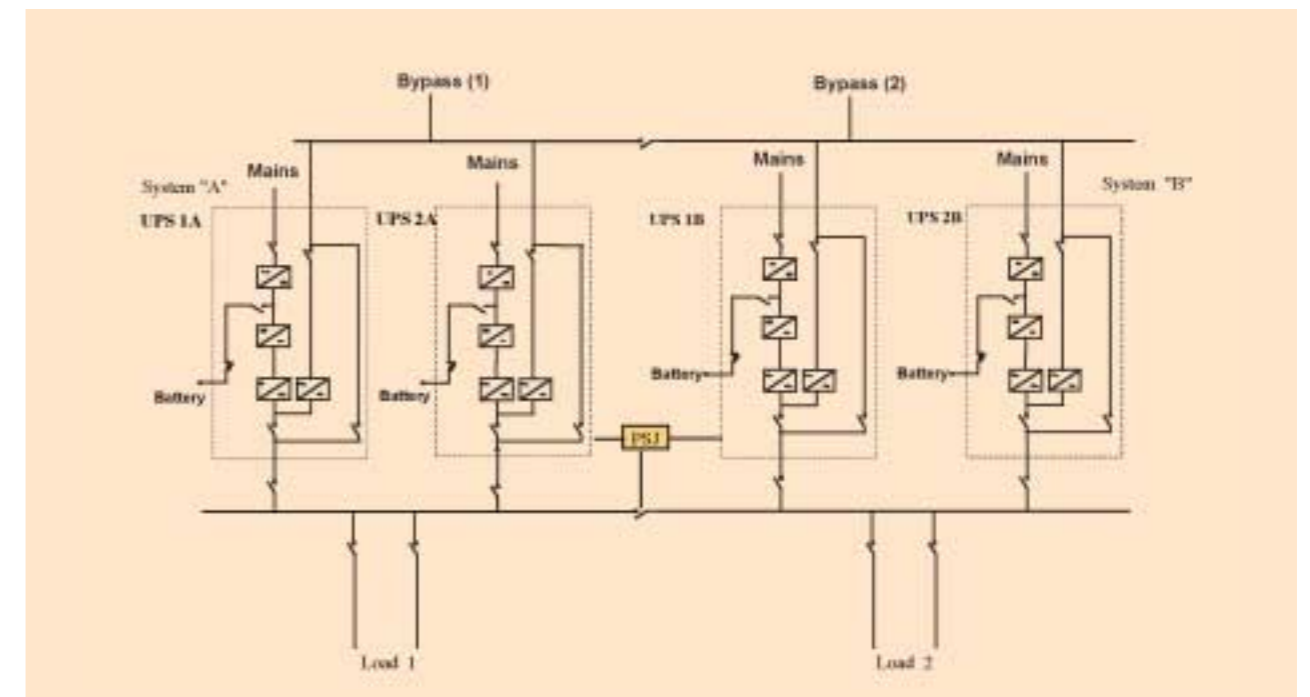


Fig. 3 - Dynamic Dual Bus System

# Sentry HPS

Three-phase input  
Single-phase output

## Technical data

Models	HM8	HM10	HM15	HM20	HM30	HM40	HM60	HM80	HM100	
Power (kVA)	8	10	15	20	30	40	60	80	100	
<b>Input</b>										
Rated voltage	400 Vac three-phase									
Voltage range	± 20%									
Frequency range	45 ÷ 65 Hz									
Power factor	> 0.92 with harmonic filter									
Current harmonic distortion	< 5% with harmonic filter									
Soft start	0-100% in 10"									
<b>By pass</b>										
Rated voltage	230 Vac single-phase									
Permitted voltage range	± 15% (selectable from ± 10% to ± 25% from front panel)									
Rated frequency	50/60 Hz									
Permitted frequency range	± 2% (selectable from ± 1% to ± 5% from front panel)									
Standard features	BackFeed protection; split bypass line									
<b>Batteries</b>										
Type	Maintenance-free lead-acid VRLA AGM / GEL; NiCd									
Maximum recharge current (A)	0,2xC10									
AC ripple voltage	<1%									
<b>Inverter output</b>										
Rated power (kVA)	8	10	15	20	30	40	60	80	100	
Active power (kW)	6.4	8	12	16	24	32	48	64	80	
Number of phases	1									
Rated voltage (V)	230 Vac single-phase									
Regulation of the output voltage	220 ÷ 244 Vac phase/neutral (from control panel)									
Crest factor (Ipeak/Irms)	3 : 1									
Static stability	± 1%									
Dynamic stability	± 5%									
Frequency	50/60 Hz configurable									
Overload	110% 125% 150% of the rated current for 5h/10'/1'									
Frequency stability	± 0.05% on mains failure ± 2% (selectable from ± 1% to ± 5%) with mains supply present									
<b>System</b>										
Weight (kg)	From 190 to 460	From 200 to 470	From 220 to 490	From 230 to 500	290	340	440	520	650	
Dimensions (wdh) (mm)	555x720x1200						800x740x1400		1070x740x1400	
Remote signaling	Volt free contacts									
Remote controls	EPO and Bypass									
Communication	RS232 + remote contacts									
Operating temperature	0 °C / +40 °C									
Relative humidity	< 95% non condensing									
Colour	Light grey (RAL 7035)									
Noise	54 dBA at 1 m		60 dBA at 1 m			65 dBA at 1 m				
Protection degree	IP20									
Efficiency	>91%				>92%					
Compliance	Safety EN 62040-1 EMC EN 62040-2 Directives 73/23-93/68-89/336 EEC EN 62040-3									
Internal batteries	Yes	Yes	Yes	Yes	No	No	No	No	No	

# Sentry HPS

Three-phase input  
Three-phase output

Models	HT10	HT15	HT20	HT30	HT40	HT60	HT80	
Power (kVA)	10	15	20	30	40	60	80	
<b>Input</b>								
Rated voltage	400 Vac three-phase							
Voltage range	± 20%							
Frequency range	45 ÷ 65 Hz							
Power factor	> 0.9 with harmonic filter							
Current harmonic distortion	< 5% with harmonic filter							
Soft start	0-100% in 10"							
<b>By pass</b>								
Rated voltage	400 Vac three-phase							
Permitted voltage range	± 15% (selectable from ± 10% to ± 25% from front panel)							
Rated frequency	50/60 Hz							
Permitted frequency range	± 2% (selectable from ± 1% to ± 5% from front panel)							
Standard features	BackFeed protection; split bypass line							
<b>Batteries</b>								
Type	Maintenance-free lead-acid VRLA AGM/GEL; NiCd							
Maximum recharge current (A)	0,2xC10							
AC ripple voltage	<1%							
<b>Inverter output</b>								
Rated power (kVA)	10	15	20	30	40	60	80	
Active power (kW)	8	12	16	24	32	48	64	
Number of phases	3 + N							
Rated voltage	400 Vac							
Regulation of the output voltage	348 ÷ 424 Vac phase/neutral (from control panel)							
Crest factor (Ipeak/Irms)	3 : 1							
Static stability	± 1%							
Dynamic stability	± 5%							
Frequency	50/60 Hz configurable							
Overload	110% 125% 150% of the rated current for 5h/10'/1'							
Frequency stability	± 0.05% on mains failure; ± 2% (selectable from ± 1% to ± 5%) with mains supply present							
<b>System</b>								
Weight (kg)	From 210 to 480	From 220 to 490	From 230 to 500	From 282 to 552	330	450	555	
Dimensions (wdh) (mm)	555x720x1200					800x740x1400		
Remote signaling	Volt free contacts							
Remote controls	EPO and Bypass							
Communication	RS232 + remote contacts							
Operating temperature	0 °C / +40 °C							
Relative humidity	< 95% non condensing							
Colour	Light grey (RAL 7035)							
Noise	54 dBA at 1 m		60 dBA at 1 m			62 dBA at 1 m		
Protection degree	IP20							
Efficiency	> 90%			> 91%		> 92%		
Compliance	Safety EN 62040-1 EMC EN 62040-2 Directives 73/23-93/68-89/336 EEC EN 62040-3							
Internal batteries	Yes	Yes	Yes	No	No	No	No	

# Sentry HPS

Three-phase input  
Three-phase output

## Technical data

Models	HT250	HT300	HT400	HT500	HT600	HT800
Power (kVA)	250	300	400	500	600	800
<b>Input</b>						
Rated voltage	380-400-415 Vac three-phase					
Voltage range	± 20%					
Frequency range	50 ÷ 60 Hz ± 5%					
Current harmonic distortion	< 4% with harmonic filter					
<b>By pass</b>						
Rated voltage	380-400-415 Vac three-phase					
Permitted voltage range	± 15% (selectable from ± 10% to ± 25% from front panel)					
Rated frequency	50/60 Hz					
Permitted frequency range	± 2% (selectable from ± 1% to ± 5% from front panel)					
Standard features	Back Feed protection; split bypass line					
<b>Batteries</b>						
Type	Lead, open vase acid and VRLA AGM / GEL; NiCd					
Maximum recharge current (A)	0,2xC10					
AC ripple voltage	<1%					
<b>Inverter output</b>						
Rated power (kVA)	250	300	400	500	600	800
Active power (kW)	200	240	320	400	480	640
Number of phases	3 + N					
Rated voltage	380-400-415 Vac three-phase + N					
Crest factor (I <sub>peak</sub> /I <sub>rms</sub> )	3 : 1					
Static stability	± 1%					
Dynamic stability	± 5%					
Frequency	50/60 Hz configurable					
Overload	110% 125% 150% of the rated current for 60'/10'/1'					
Frequency stability	± 0,05% on mains failure ± 2% with mains supply present					
<b>System</b>						
Weight (kg)	2200	2600	2600	3600	4000	5300
Dimensions (wdh) (mm)	1630x850x1900	1630x1000x1900	1630x1000x1900	3200x980x1900	3200x980x1900	4400x1000x1900
Remote signalling	Volt free contacts					
Remote controls	EPO and bypass					
Communication	RS232 + remote contacts					
Operating temperature	0 °C / +40 °C					
Relative humidity	< 95% non condensing					
Colour	Light grey (RAL 7035)					
Noise	<70 dBA at 1 m			<78 dBA at 1 m		
Protection degree	IP20					
Efficiency	> 93 %			> 94 %		
Compliance	Safety EN 62040-1 EMC EN 62040-2 Directives 73/23-93/68-89/336 EEC EN 62040-3					

