

SENTRY HPS HM 8-100kVA

Uninterruptible Power Supply

Quality power supply

Sentry HPS is an On-Line double conversion (VFI) UPS with filtered and stabilized sinusoidal output voltage. Sentry HPS is immune to the interferences on the electric power supply line as it has special input and output filters.

Maximum reliability and power availability

The digital control of the appliance considerably improves reliability, since a reduction in electronic components lowers the likelihood of breakdowns. Digital control is provided by the microprocessor that, in the HPS series, controls all the internal parameters, thus increasing reliability and performance. In parallel connections, digital control ensures balance of the currents, which generally change over time due to phenomena such as vibrations and temperature, between the UPS units and the exchange of information with no need for manual tuning. Sentry HPS has been designed so that it can be connected in parallel even after the installation of the first unit. The power availability can be increased thanks to various configurations available such as the parallel configuration, the Dual Bus function and the Dynamic Dual Bus system.

High Efficiency

If required, the unit can work in ECO mode to increase efficiency

up to 98% and consequently reduce energy dissipation and costs. In this operating mode the mains is the priority source and the load is switched over to the Inverter only when the mains characteristics exceed the preset limits.

UPS for Industrial loads

Sentry HPS with its strong overload capability, output galvanic isolation and low harmonic current distortion, is the ideal solution for industrial applications. Thanks to the high battery current, HPS Series is suitable to work with large battery banks as it can guarantee recharging in 10 hours as recommended by the battery manufacturer.

Operating flexibility

Sentry HPS is an uninterruptible power supply with On-Line double conversion technology that can also operate in Line Interactive mode (Economy mode for units over 100 kVA). All power ratings of the HPS series can also be used as Frequency Converters 50 to 60 Hz and vice versa.

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 HPS diagnostics system



includes up to 128 alarms or messages allowing precise and detailed identification of any event.

Maximum battery care

Optimal battery management includes: - periodic battery test, - protection against deep discharge, - recharge temperature compensated.

Motor Generator friendly

Thanks to the range of different UPS versions and to the input filter solutions, Sentry HPS Series modules offer low harmonic distortion and high power factor at the input. This makes them ideal for use in conjunction with the Motor Generator at the input. On request, the HPS Series is provided with a 'Motor Generator kit' that will inhibit the battery recharging and/or synchronization with bypass.

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.

Front access

Sentry HPS has frontal access

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for all power and electronic components, even in those configurations with internal batteries. This reduces the floor space required and consequently reduces the installation costs.

Advanced communication

Aros Watch&Save 3000 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. The software is able to provide information even in the event of a failure, in support of the fault diagnostics. The Watch&Save 3000 software can be used to program the automatic shutdown of all open systems in the event of a prolonged black out. Sentry HPS can also operate with a network agent for applications on LAN or WAN networks. The UPS contains the following hardware interfaces: - RS232 serial port, - Dry contacts, - EPO (Emergency Power Off) contact for UPS shutdown using the remote emergency button.

Remote Service Support

TELEGUARD is a remote troubleshooting system that can signal any kind of unexpected event in real time. Any fault is immediately signalled, 24 hours a day, 365 days a year, to the service control centre, which can take immediate action either remotely or on site. Plus, a report is provided periodically, detailing all the most important

events that have taken place during the monitored period.

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.

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 synchro by the UGS (UPS Group Synchroniser).

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.

Applications

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

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| INPUT | HM 8 | HM 10 | HM 15 | HM 20 |
|---|---|----------------|----------|----------|
| Voltage | 400 V + N | | | |
| Voltage tolerance | ± 20% | | | |
| Frequency | 45-65 Hz | | | |
| Current distortion | <5% with harmonic filter | | | |
| Power factor | >0.92 with harmonic filter | | | |
| Input phases | 3 | | | |
| Soft start (Power Walk In) | 0 - 100% in 8 - 10" | | | |
| BY PASS | HM 8 | HM 10 | HM 15 | HM 20 |
| Rated voltage | 230 V | | | |
| Voltage tolerance | ± 15% (selectable from ± 10% to ± 25% from front panel) | | | |
| Rated frequency | 50 or 60 Hz | | | |
| Frequency tolerance | ± 2% (selectable from ± 1% to ± 5% from front panel) | | | |
| Transfer time | 0 ms | | | |
| Bypass | Static and manual for maintenance | | | |
| BATTERIES | HM 8 | HM 10 | HM 15 | HM 20 |
| Type | Maintenance-free sealed lead-acid | | | |
| Nominal battery voltage | 430 V V | | | |
| Number of Pb elements | 192 | | | |
| Recharging voltage | Variable according to the temperature (-0,5 V x °C) | | | |
| OUTPUT | HM 8 | HM 10 | HM 15 | HM 20 |
| Rated power | 8000 VA | 10000 VA | 15000 VA | 20000 VA |
| Active power at cosφ 0,8 | 6,4 kW | 8 kW | 12 kW | 16 kW |
| Phases number | 1 | | | |
| Waveform | Sinewave | | | |
| Rated voltage | 220-230-240 V (selectable) single-phase | | | |
| Frequency | 50 - 60 Hz | | | |
| Frequency stability | ± 0,05% on mains failure ± 2% (selectable from ± 1% to ± 5% from front panel) with mains supply present | | | |
| Dynamic stability | ± 5% | | | |
| Static stability | ± 1% | | | |
| Crest factor (I _{peak} /I _{rms}) | 3 : 1 | | | |
| Rated current | 35 A | 43 A | 65 A | 87 A |
| Output phases | 1 | | | |
| Overload | 110% for 300', 125% for 10', 150% for 1' | | | |
| SYSTEM | HM 8 | HM 10 | HM 15 | HM 20 |
| AC/AC efficiency | > 91% | > 92% | | |
| Operating altitude | 1000 m a.s.l. | | | |
| Noise | 54 dBA at 1 m. | 60 dBA at 1 m. | | |
| Operating temperature | 0°C / + 40°C | | | |
| Relative humidity | <95 % non condensing | | | |
| Back-feed protection | Standard | | | |
| Protection degree | IP20 | | | |

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|---|--|--------------------|--------------------------|--------------------------|
| Remote signals | Volt free contacts (mains power failure, UPS on bypass, end of discharge pre-alarm, output 12Vdc 80mA) | | | |
| Remote controls | EPO and bypass | | | |
| Colour | Light grey RAL 7035 | | | |
| 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 190 to 460 Kg | From 200 to 470 Kg | From 220 to 490 Kg | From 240 to 500 Kg |
| Dimensions (WxDxH) mm | 555x720x1200 mm | | | |
| DATA | HM 8 | HM 10 | HM 15 | HM 20 |
| Installation | Tower | | | |
| Configuration | Parallel Unit | | | |
| OPTIONS | HM 8 | HM 10 | HM 15 | HM 20 |
| Empty battery cabinets for longer runtimes | Yes | | | |
| Parallel kit | Yes | | | |
| Isolation transformer module (WxDxH) | 555x720x1200 mm / 140 kg | | 555x720x1200 mm / 160 kg | 555x720x1200 mm / 188 kg |
| LCD-based remote control panel | Yes | | | |
| LED-based remote control panel | Yes | | | |
| Communication software 'professional' version | Yes | | | |
| OPTIONS | HM 8 | HM 10 | HM 15 | HM 20 |
| Antiharmonic filter | X | X | X | X |
| MultiCom 351 | X | X | X | X |
| MultiCom 301 | X | X | X | X |
| NetMan 101 Plus | X | X | X | X |
| Multi I/O | X | X | X | X |
| IRMS Multi-Switch | X | X | X | X |
| AS/400 interface kit | X | X | X | X |
| UPS remote contacts expander | X | X | X | X |
| UGS - UPS Group Synchronizer | X | X | X | X |
| PSJ - Power System Joiner | X | X | X | X |
| MultiCom 401 | X | X | X | X |
| INPUT | HM 30 | HM 40 | HM 60 | HM 80 |
| Voltage | 400 V + N | | | |
| Voltage tolerance | ± 20% | | | |
| Frequency | 45÷65 Hz | | | |
| Current distortion | <5% with harmonic filter | | | |
| Power factor | >0.92 with harmonic filter | | | |
| Input phases | 3 | | | |
| Soft start (Power Walk In) | 0 - 100% in 8 - 10" | | | |
| BY PASS | HM 30 | HM 40 | HM 60 | HM 80 |
| Rated voltage | 230 V | | | |
| Voltage tolerance | ± 15% (selectable from ± 10% to ± 25% from front panel) | | | |
| Rated frequency | 50 or 60 Hz | | | |

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|--|--|--------------|-----------------|--------------|
| Frequency tolerance | ± 2% (selectable from ± 1% to ± 5% from front panel) | | | |
| Transfer time | 0 ms | | | |
| Bypass | Static and manual for maintenance | | | |
| BATTERIES | HM 30 | HM 40 | HM 60 | HM 80 |
| Type | Maintenance-free sealed lead-acid | | | |
| Nominal battery voltage | 430 V V | | | |
| Number of Pb elements | 192 | | | |
| Recharging voltage | Variable according to the temperature (-0,5 V x °C) | | | |
| OUTPUT | HM 30 | HM 40 | HM 60 | HM 80 |
| Rated power | 30000 VA | 40000 VA | 60000 VA | 80000 VA |
| Active power at cosfi 0,8 | 24 kW | 32 kW | 48 kW | 64 kW |
| Phases number | 1 | | | |
| Waveform | Sinewave | | | |
| Rated voltage | 220-230-240 V (selectable) single-phase | | | |
| Frequency | 50 - 60 Hz | | | |
| Frequency stability | ± 0,05% on mains failure ± 2% (selectable from ± 1% to ± 5% from front panel) with mains supply present | | | |
| Dynamic stability | ± 5% | | | |
| Static stability | ± 1% | | | |
| Crest factor (Ipeak/Irms) | 3 : 1 | | | |
| Rated current | 130 A | 174 A | 261 A | 348 A |
| Output phases | 1 | | | |
| Overload | 110% for 300', 125% for 10', 150% for 1' | | | |
| SYSTEM | HM 30 | HM 40 | HM 60 | HM 80 |
| AC/AC efficiency | > 92% | | | |
| Operating altitude | 1000 m a.s.l. | | | |
| Noise | 65 dBA at 1 m. | | | |
| Operating temperature | 0°C / + 40°C | | | |
| Relative humidity | <95 % non condensing | | | |
| Back-feed protection | Standard | | | |
| Protection degree | IP20 | | | |
| Remote signals | Volt free contacts (mains power failure, UPS on bypass, end of discharge pre-alarm, output 12Vdc 80mA) | | | |
| Remote controls | EPO and bypass | | | |
| Colour | Light grey RAL 7035 | | | |
| 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) | 290 Kg | 340 Kg | 440 Kg | 520 Kg |
| Dimensions (WxDxH) mm | 555x720x1200 mm | | 800x740x1400 mm | |
| DATA | HM 30 | HM 40 | HM 60 | HM 80 |
| Installation | Tower | | | |
| Configuration | Parallel Unit | | | |
| OPTIONS | HM 30 | HM 40 | HM 60 | HM 80 |
| Empty battery cabinets for longer runtimes | Yes | | | |

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| Parallel kit | Yes | | | |
|---|-------|-------|-------|-------|
| LCD-based remote control panel | Yes | | | |
| LED-based remote control panel | Yes | | | |
| Communication software 'professional' version | Yes | | | |
| OPTIONS | HM 30 | HM 40 | HM 60 | HM 80 |
| Antiharmonic filter | X | X | X | X |
| MultiCom 351 | X | X | X | X |
| MultiCom 301 | X | X | X | X |
| NetMan 101 Plus | X | X | X | X |
| Multi I/O | X | X | X | X |
| IRMS Multi-Switch | X | X | X | X |
| AS/400 interface kit | X | X | X | X |
| UPS remote contacts expander | X | X | X | X |
| UGS - UPS Group Synchronizer | X | X | X | X |
| PSJ - Power System Joiner | X | X | X | X |
| MultiCom 401 | X | X | X | X |

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| INPUT | | HM 100 |
|---|--|---|
| Voltage | | 400 V + N |
| Voltage tolerance | | ± 20% |
| Frequency | | 45÷65 Hz |
| Current distortion | | <5% with harmonic filter |
| Power factor | | >0.92 with harmonic filter |
| Input phases | | 3 |
| Soft start (Power Walk In) | | 0 - 100% in 8 - 10" |
| BY PASS | | HM 100 |
| Rated voltage | | 230 V |
| Voltage tolerance | | ± 15% (selectable from ± 10% to ± 25% from front panel) |
| Rated frequency | | 50 or 60 Hz |
| Frequency tolerance | | ± 2% (selectable from ± 1% to ± 5% from front panel) |
| Transfer time | | 0 ms |
| Bypass | | Static and manual for maintenance |
| BATTERIES | | HM 100 |
| Type | | Maintenance-free sealed lead-acid |
| Nominal battery voltage | | 530 V V |
| Number of Pb elements | | 240 |
| Recharging voltage | | Variable according to the temperature (-0,5 V x °C) |
| OUTPUT | | HM 100 |
| Rated power | | 100000 VA |
| Active power at cosφ 0,8 | | 80 kW |
| Phases number | | 1 |
| Waveform | | Sinewave |
| Rated voltage | | 220-230-240 V (selectable) single-phase |
| Frequency | | 50 - 60 Hz |
| Frequency stability | | ± 0,05% on mains failure ± 2% (selectable from ± 1% to ± 5% from front panel) with mains supply present |
| Dynamic stability | | ± 5% |
| Static stability | | ± 1% |
| Crest factor (I _{peak} /I _{rms}) | | 3 : 1 |
| Rated current | | 434 A |
| Output phases | | 1 |
| Overload | | 110% for 300', 125% for 10', 150% for 1' |
| SYSTEM | | HM 100 |
| AC/AC efficiency | | > 92% |
| Operating altitude | | 1000 m a.s.l. |
| Noise | | 65 dBA at 1 m. |
| Operating temperature | | 0°C / + 40°C |
| Relative humidity | | <95 % non condensing |
| Back-feed protection | | Standard |
| Protection degree | | IP20 |

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| | |
|-----------------------|--|
| Remote signals | Volt free contacts (mains power failure, UPS on bypass, end of discharge pre-alarm, output 12Vdc 80mA) |
| Remote controls | EPO and bypass |
| Colour | Light grey RAL 7035 |
| 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) | 650 Kg |
| Dimensions (WxDxH) mm | 1070x740x1400 mm |

| DATA | | HM 100 |
|---------------|--|---------------|
| Installation | | Tower |
| Configuration | | Parallel Unit |

| OPTIONS | | HM 100 |
|---|--|--------|
| Empty battery cabinets for longer runtimes | | Yes |
| Parallel kit | | Yes |
| LCD-based remote control panel | | Yes |
| LED-based remote control panel | | Yes |
| Communication software 'professional' version | | Yes |

| OPTIONS | | HM 100 |
|------------------------------|--|--------|
| Antiharmonic filter | | X |
| MultiCom 351 | | X |
| MultiCom 301 | | X |
| NetMan 101 Plus | | X |
| Multi I/O | | X |
| IRMS Multi-Switch | | X |
| AS/400 interface kit | | X |
| UPS remote contacts expander | | X |
| UGS - UPS Group Synchronizer | | X |
| PSJ - Power System Joiner | | X |
| MultiCom 401 | | X |