STATRON

Based on Statron's leading A.T.I.S.® (Advanced Technology Industrial System) platform, the S3000 range is a true-industrial UPS system using the latest Power Factor Corrected (PFC) IGBT rectifier technology.

With this technology, harmonic distortion at the input to the UPS is minimized, while UPS efficiency is greatly increased, saving energy and cost.
It is specifically designed and developed for the harshest environmental conditions – meeting the most stringent requirements in high-end industrial applications.

The S3000 design complies to the most stringent industrial classification (VFI-SS-111 in accordance with IEC/EN 62040-3).

Industrial PFC UPS System

S3100/S3300 5–200 kVA

Key benefits and features

• Reliability	fully monitored online double conversion UPS
• Design	rugged, reliable, compact industrial design
• A.T.I.S.® Technology	latest µP controlled IGBT technology
• Performance	market leading overall UPS performance
• Efficiency	greatly increased efficiency even at partial load
• Battery Management	intelligent system with mains back-feed discharge
• Communication	top class communication platform
• Environment	reduced energy and material impact

Industrial UPS

S3000 – Applications

Applications

The S3000 UPS range meets the most stringent requirements and specifications in high-end industrial applications:

- Oil and Gas (Petrochemicals, Offshore, FPSO, Onshore, Pipelines etc.).
- Energy and Electricity (Power Generation, Transmission, Distribution).
- Water (Desalination, Treatment, Pipeline).
- Instrumentation and Process Control (Chemical, Mining, Steel, Pulp and Paper).
- All high end industrial applications.

Configurations

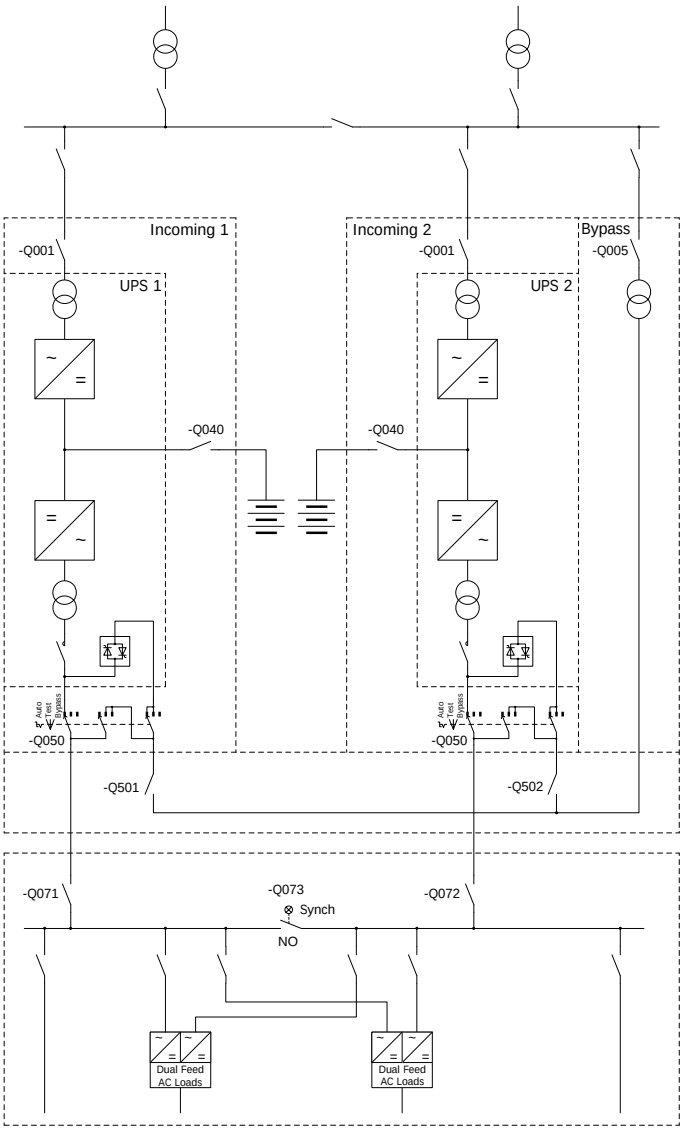
Depending on the load supply concept, different configurations are supported:

- Single configuration.
- Parallel redundant configuration (up to 8 units, progressive start-up).
- Parallel redundant configuration with monitored coupling switch.
- Dual configuration also with external synchronization source.
- Common or individual batteries.

Reliability

UPS solutions engineered by Statron have been protecting industrial installations for more than three decades:

- Well proven system platform.
- Higher MTBF and low MTTR.
- High quality rugged components.
- 30 year design life.
- Complying to all relevant ISO and IEC/EN standards.



Picture: Typical Oil and Gas configuration – Dual with individual batteries and monitored coupling switch.

Industrial UPS

S3000 – Features and Benefits

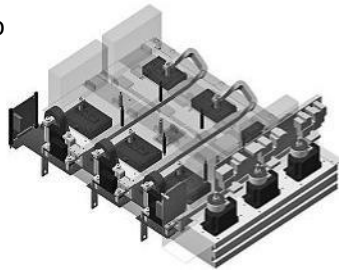
Design

High end industrial applications require high level protection and flexible customized design. The S3000 range offers:

- Market leading fault clearing and short circuit performance.
- Excellent dynamic behaviour.
- Unlimited load power factor (0.0 lag to 0.0 lead).
- Robust mechanical compact design and construction.
- Segregated Incomer/Bypass panel housing all switching devices and electrical connection points
- Electrically and physically integrated galvanic isolation.
- Designed to withstand harsh environmental conditions (up to IP54).
- Complying to the most stringent industrial classification (VFI-SS-111 in accordance with IEC/EN 62040-3).
- Redundant internal power supply.
- Intelligent cooling management by means of redundant and individually monitored speed controlled fans.
- External synchronization possibility / designed for (diesel-) generator operation.

A.T.I.S.® Technology

The exceptional characteristic of the S3000 UPS range is the result of state-of-the-art technology of the A.T.I.S.® platform:



- PFC rectifier dramatically reduces input harmonics (<5% THDi), minimizing distortion to upstream equipment (no oversizing of upstream generator required).
- Up to 95% efficiency using state-of-the-art semiconductor technology (IGBT, Trench technology).
- Fully digital control (two 16 bit micro controllers).
- CAN-bus internal communication.

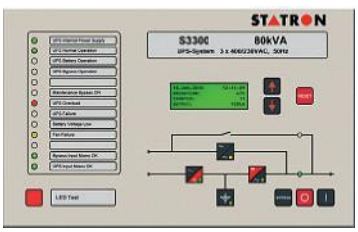
Environment

Statron is committed to environmental sustainability. Our dedication drives the development and success of our products. The outstanding features include:

- Energy recovery by battery discharge into the mains.
- Optimised efficiency even at partial load.
- Class leading battery management system to extend battery life.
- Minimal distortion to upstream equipment, no oversizing required.
- ISO 14001 certified.

Operation and Control

The front panel of the S3000 includes a comprehensive, customizable human-machine interface. It enables the complete control and monitoring of the UPS with multi-method visualization:



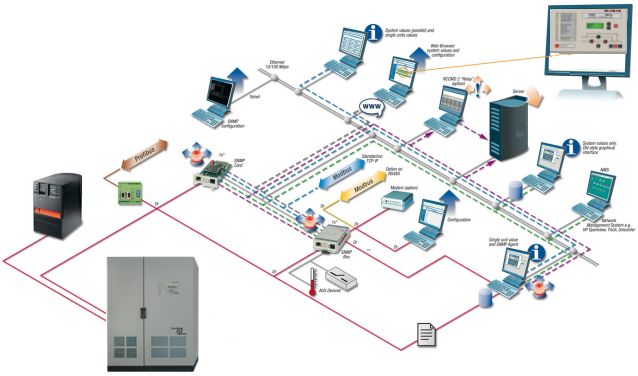
- Easy and intuitive operation and control.
- Programmable alarms and indications.
- 4-line, 80 digit LCD display.
- Programmable color-coded LED's.
- Event recorder for 1050 events.
- Optional TFT touch screen panel.

Industrial UPS

S3000 – Features and Benefits

Interface and Communication

State-of-the-art communication software and facilities support the monitoring and control of the S3000 UPS:



- RS232/RS485 serial interface with MODBUS protocol.
- PROFIBUS interface.
- IEC 61850 gateway.
- Network interface (TCP/IP).
- Remote display.
- Programmable relay cards.
- Digital inputs (for EPO, generator operation, etc.).
- Programmable analogue inputs (battery temperature, etc.).
- Programmable analogue outputs (0/4–20 mA).

Battery Management

Battery monitoring and management is a key factor for a reliable and durable power back-up of your system. The Statron S3000 UPS has class leading built-in features:

- Integrated constant current battery discharge test facility (by means of sinusoidal mains backfeed).
- Built-in battery monitoring facility / programmed discharge curve.
- Constantly updated battery capacity and battery back-up time.
- Compatible with all battery types / wide DC range.
- Three individual programmable battery charge voltages.
- Two individual battery charge current limitation levels.

Service, Maintenance and Trouble Shooting

Statron products are renowned for their serviceability:

- Built-in DSO function.
- Integrated fault diagnostic features with printer port.
- Front access to key components (fans, capacitors, etc.).
- Hot swappable fan.
- No load bank required for battery testing (the integrated constant current battery discharge test facility enables a battery test by means of sinusoidal mains backfeed).

The reliability of your installed power solution is supported by a Global Service Team renowned for its short response time and trouble shooting efficiency.

STATRON

Industrial UPS

S3000 - Technical Specification

S3100 single phase	S3100-xx	S3100-xx	S3100-xx	S3100-xx	S3100-80	S3100-100	S3100-120	S3100-160	S3100-200
Power Rating (p.f. = 0.8 ind.)	05/10 kVA	15/20 kVA	30/40 kVA	50/60 kVA	80 kVA	100 kVA	120 kVA	160 kVA	200 kVA
UPS Input									
Rectifier AC input voltage	3x400 V ±15% (3x380 V, 3x415 V, others on request)								
Rectifier input power factor	>0.99 (>0.97 at 25% load)								
Rectifier input frequency	50 Hz / 60 Hz ±5%								
Bypass AC input voltage	1x230 V ±10% (220 V, 240 V) / 3x400 V ±10% (3x380 V, 3x415 V, others on request)								
Bypass input frequency	50 Hz / 60 Hz ±5%								
DC / Battery Circuit									
Rectifier type	IGBT (PFC) Power Factor Corrected (Thyristor Rectifier optional)								
Nominal DC voltage	110 V / 125 V / 220 V / 400 V								
DC voltage range	110/125 V: 89-140 V, 220 V: 185-280 V, 400 V: 317-445 V								
Ripple voltage	<1%								
Charging characteristic to DIN 41773	I/U								
Float/Boost/Initial charge voltage	individually programmable								
Float/Boost battery charge current limitation	individually programmable (up to I5)								
UPS Output									
Nominal AC output voltage	230 V (220 V, 240 V, other on request)								
Voltage tolerance (static 0 – 100% load)	±1%								
Voltage tolerance (dynamic 0 - 100% - 0 load)	<5% (without battery)								
Regulation time (±1%)	<10 ms								
Inverter overload 1 min	150%								
Inverter overload 10 min	125%								
Inverter overload, continuous	105%								
Inverter short circuit current (max 3s)	300%								
Bypass overload 10 min	150%								
Bypass overload 100 ms	1000%								
Frequency	50 Hz / 60 Hz								
Frequency tolerance free running	±0.01%								
Frequency synchronization range	±5% adjustable								
Allowable load power factor	0.0 lag – 0.0 lead								
Voltage wave form	sinusoidal								
Distortion factor linear load	<1%								
Distortion factor non linear load (acc. IEC/EN 62040-3)	<5%								
Allowable crest factor	≤ 3								
General Data									
Efficiency (AC-AC)	90%–94% depending on model and DC voltage								
Noise level	63 dB(A) – 70 dB(A)								
Cooling	forced ventilation (redundant, speed controlled and monitored)								
Operating temperature	–10 to +40 °C (55 °C optional)								
Storage temperature	–30 to +80 °C								
Maximum altitude without derating	1000 m								
Allowable relative humidity	<95% (non condensing)								
Protection degree	IEC/EN 60529 IP20 (up to IP54)								
Color	RAL 7035 (other color optional)								
Safety	IEC/EN 62040-1								
EMC	IEC/EN 62040-2 (class C3, C2 optional)								
Performance	IEC/EN 62040-3 (VFI-SS-111)								
Conformity	CE								
Quality/Environment	ISO 9001:2008 / ISO 14001:2004								
Dimensions (IP20, basic configuration)									
Height (mm)	2000								
Width (mm) (with Bypass Transformer)	1200 (1200)	1200 (1200)	1200 (1400)	2200 (2400)	2400 (2600)	2400 (2600)	3200 (3400)	2800 (3000)	2800 (3000)
Depth (mm)	800 (1000)								

Further data available on request

Statron AG • Industrie Nord • CH-5506 Mägenwil • Switzerland
Phone +41 62 887 4 887 • Fax ... 888
E-mail: statron@statron.ch • www.statron.com

STATRON

Industrial UPS

S3000 - Technical Specification

S3300 three phase	S3300-xx	S3300-xx	S3300-xx	S3300-xx	S3300-80	S3300-100	S3300-120	S3300-160	S3300-200
Power Rating (p.f. = 0.8 ind.)	05/10 kVA	15/20 kVA	30/40 kVA	50/60 kVA	80 kVA	100 kVA	120 kVA	160 kVA	200 kVA
UPS Input									
Rectifier AC input voltage	3x400 V ±15% (3x380 V, 3x415 V, others on request)								
Rectifier input power factor	>0.99 (>0.97 at 25% load)								
Rectifier input frequency	50 Hz / 60 Hz ±5%								
Bypass AC input voltage	3x400 V ±10% (3x380 V, 3x415 V, others on request)								
Bypass input frequency	50 Hz / 60 Hz ±5%								
DC / Battery Circuit									
Rectifier type	IGBT (PFC) Power Factor Corrected (Thyristor Rectifier optional)								
Nominal DC voltage	110 V / 125 V / 220 V / 400 V								
DC voltage range	110/125 V: 89-140 V, 220 V: 185-280 V, 400 V: 317-445 V								
Ripple voltage	<1%								
Charging characteristic to DIN 41773	I/U								
Float/Boost/Initial charge voltage	individually programmable								
Float/Boost battery charge current limitation	individually programmable (up to I5)								
UPS Output									
Nominal AC output voltage	3x400 V (3x208 V, 3x380 V, 3x415 V, others on request)								
Voltage tolerance (static 0 – 100% load)	±1%								
Voltage tolerance (dynamic 0 - 100% - 0 load)	<5% (without battery)								
Regulation time (±1%)	<10 ms								
Inverter overload 1 min	150%								
Inverter overload 10 min	125%								
Inverter overload, continuous	105%								
Inverter short circuit current (max 3s)	300%								
Bypass overload 10 min	150%								
Bypass overload 100 ms	1000%								
Frequency	50 Hz / 60 Hz								
Frequency tolerance free running	±0.01%								
Frequency synchronization range	±5% adjustable								
Allowable load power factor	0.0 lag – 0.0 lead								
Voltage wave form	sinusoidal								
Distortion factor linear load	<1%								
Distortion factor non linear load (acc. IEC/EN 62040-3)	<5%								
Allowable crest factor	≤ 3								
General Data									
Efficiency (AC-AC)	90%–94% depending on model and DC voltage								
Noise level	63 dB(A) – 70 dB(A)								
Cooling	forced ventilation (redundant, speed controlled and monitored)								
Operating temperature	–10 to +40 °C (55 °C optional)								
Storage temperature	–30 to +80 °C								
Maximum altitude without derating	1000 m								
Allowable relative humidity	<95% (non condensing)								
Protection degree	IEC/EN 60529 IP20 (up to IP54)								
Color	RAL 7035 (other color optional)								
Safety	IEC/EN 62040-1								
EMC	IEC/EN 62040-2 (class C3, C2 optional)								
Performance	IEC/EN 62040-3 (VFI-SS-111)								
Conformity	CE								
Quality/Environment	ISO 9001:2008 / ISO 14001:2004								
Dimensions (IP20, basic configuration)									
Height (mm)	2000								
Width (mm) (with Bypass Transformer)	1200 (1200)	1200 (1200)	1200 (1400)	2200 (2400)	2400 (2600)	2400 (2600)	3200 (3400)	2800 (3000)	2800 (3000)
Depth (mm)	800 (1000)								

Further data available on request

Statron AG • Industrie Nord • CH-5506 Mägenwil • Switzerland
Phone +41 62 887 4 887 • Fax ... 888
E-mail: statron@statron.ch • www.statron.com

STATRON