

FREQCON GRID & STORAGE

FREQCON UGS Ultracapacitor Grid Stabiliser

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FREQCON UGS Ultracapacitor Grid Stabiliser

The UGS Ultracapacitor Grid Stabiliser is our latest product combining the STATCOM capabilities of an IGBT-Power Converter with active power support based on high-power Ultracapacitors.

- Dynamic Reactive Response
- Synthetic Inertia Provision
- Fast Frequency Response
- Primary Operating Reserve
- Harmonic Filtering
- UPS Capability



UGS
 1.0 MW
 ULTRACAPACITOR GRID STABILISER

DYNAMIC REACTIVE RESPONSE
 SYNTHETIC INERTIA PROVISION
 FAST FREQUENCY RESPONSE



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The FREQCON NGC Power Converter

The FREQCON NGC Power Converter is a MW-scale IGBT-based power converter that was originally developed for renewable energy applications, with more than 15 GW installed in the field. Based on this experience new models for new applications such as STATCOM converters or battery-to-grid converters have been developed, with the UGS Ultracapacitor Grid Stabiliser being the latest application for our NGC power converter.



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The MAXWELL Ultracapacitor

The Maxwell Ultracapacitor is a device commonly known as supercapacitor which combines electrostatic and electrochemical charging-/discharging capabilities. Compared to lithium-ion batteries the Ultracapacitor has a very high power density, but a relatively low energy density, making it ideal to deliver short bursts of energy, up to 60 seconds. The Ultracapacitor can tolerate up to 1,000,000 charge/discharge cycles.



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Capabilities

Dynamic Reactive Response (DDR)

The ability to deliver a reactive current response to compensate voltage dips within 40ms

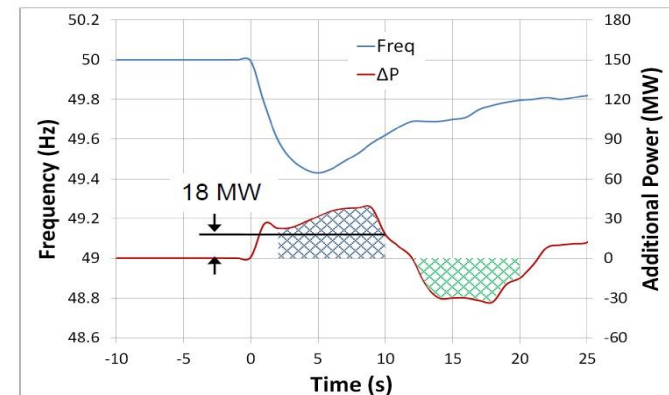
Synthetic Inertia Provision (SIP)

The ability to deliver active power to compensate frequency dips within 20ms

Fast Frequency Response (FFR)

FFR supplements any inherent inertial response and delivers active power in the time frame 2 to 10 seconds to stabilise frequency.

Fast Frequency Response



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Capabilities

Primary Operating Reserve

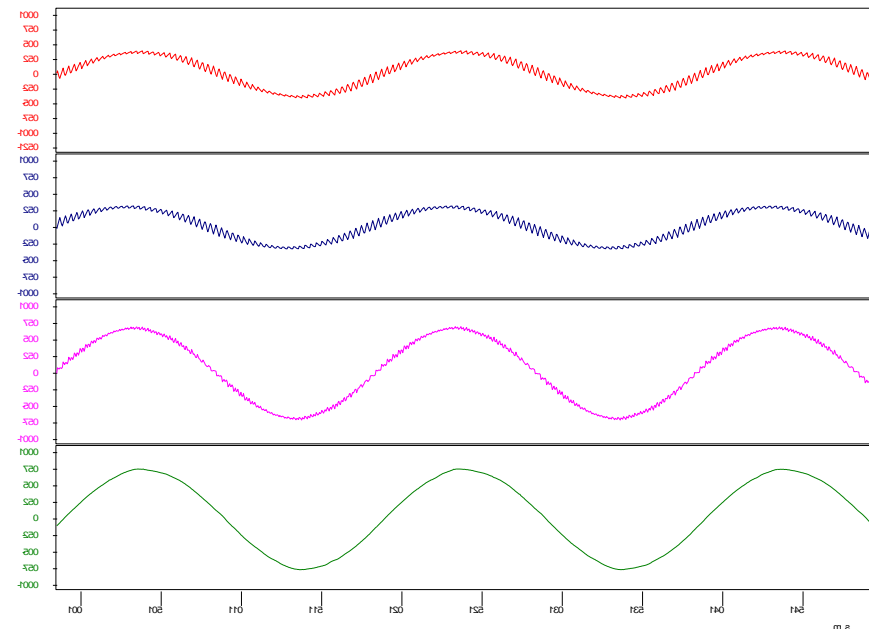
Active power provision up to 15 seconds to stabilise frequency

Harmonic Filtering

Active filtering of harmonics based on ultra-fast IGBT-switching

UPS Capability

Providing transition power until a longer-term back-up source like diesel genset is up and running



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Technical Data

Dimensions	20 ft container (6090mm x 2440mm x 2590mm)
Weight	9300 kg
Protection class	IP 54
Max active power	1000 kW for 15 seconds
Number of phases	3
Nominal Voltage	690 V
Nominal Frequency	50 Hz
Control System	Siemens Simotion P320
Field Bus	Profinet
Communication Interface	100 Mbit interface supporting Modbus/TCP, DNP3, OPC, ETHERCAT, CAN-Bus etc.

Thank you for
your attention!