Grid Solutions

MaxSine™ COMPACT

Active harmonic filter for active compensation of harmonic currents and reactive power

There is an increasing amount of electrical equipment with non-linear voltage-current characteristics connected to the network. The harmonic currents they produce cause harmonic voltages in network impedances, which add to the fundamental system voltage and result in voltage distortion. This voltage distortion is experienced by all electrical equipment connected to the network, leading to higher thermal loading of motors, transformers, capacitors, switchgear and cabling. Some of the electrical equipment develops more audible noise when supplied with distorted voltage. Sensitive electronic protection, control and ripple control systems are not likely to operate properly when supplied with distorted voltage. The most effective way to eliminate harmonics is MaxSine active harmonic filter.

Functions

- Two compensation modes: fast mode for selectable harmonics (1^{st}–50^{th}) or ultra fast mode for global compensation
- Devices available for 3-wire as well as 3-wire + neutral (4-wire)
- Priority settings for harmonics and/or fundamental reactive compensation
- Total power factor can be forced to Cos 1,0
- Adjustable amplitude and phase of individual harmonic compensation current
- Excellent dynamics: response time <1 ms in ultra fast mode and adjustable from 1 network period to 50 network periods in fast mode
- Multiple CT-circuits (open loop, closed loop, CT-additions, etc.)
- Selectable dual parameter page setting e.g. for emergency generator supply

Why MaxSine™ Compact?

- Modular construction
- Power adaption by increasing the number of modules
- Improved compensation capacity
- Compact size
- Directly wall-mounted or floor mounted in cubicle
- Basic modules 50 A or 100 A line current and 150 A respectively 300 A neutral current
- 208-480 V mains voltage
- Web browser for device settings and displaying measurements

Key Features

- Small size enables customised modular cabinet construction
- Ethernet connection and web server for monitoring, setting and control
- User interface: any kind of PC
- Several languages
- Relay output for run indication
- Standby in case of small load current
- Electronic overload protection
- Auxiliary temperature probe (optional)
- Clock

Applications

- Office buildings
- Hospitals
- Companies with fast-changing loads (welding machines, lifts)
- Wind farms
- All users with fast variable loads

Key Benefits

- Real time filtering and power compensation
- Compact modular construction
- Improved power quality
- Money savings

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Technical Characteristics

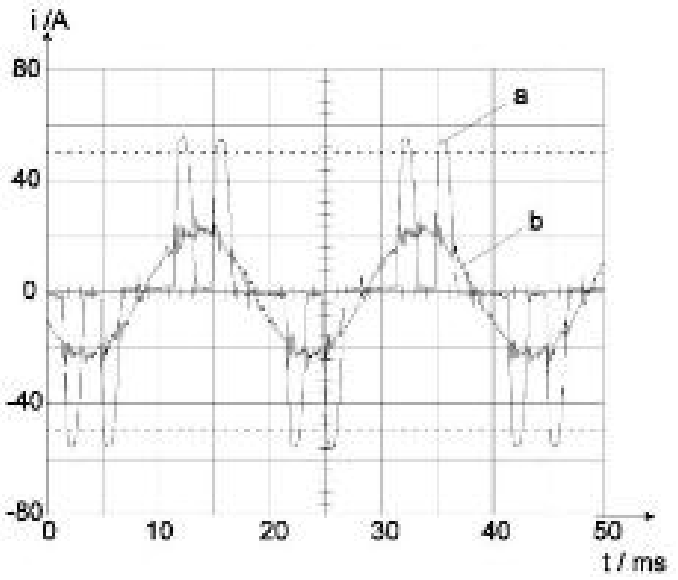
Rated output: Phases: Neutral:	**MaxSine™ 100AV6C** 100 Arms 60 Arms All integer multiples of the above values	**MaxSine™ 100AV6CE** 100 Arms 300 Arms	**MaxSine™ 50AV6C** 50 Arms 30 Arms	**MaxSine™ 50AV6CE** 50 Arms 150 Arms
Mains voltage:	3*208 VAC (-15% ... +10%) 3*400 VAC (-15% ... +10%) 3*480 VAC (-15% ... +10%) no neutral connection			
Frequency:	45-65 Hz			
Switching frequency:	10 kHz nominal			
Overload capability:	1.1 x I RMS {Imin/10 min) in ultra-fast mode			
Response time:	Ultra fast mode: <1 ms Fast mode: 1 - 50 periods, adjustable			
Current measurements:	6 × 100-10000 A/SA CT inputs, class 0.5 6 × 10 V inputs for Rogowski coils or Hall sensors			
Power dissipation:	< 3% of the rated power of the device			
Potential free output contact:	RUN, 24 VDC 1 A			
LED indications:	Errors, Run			
Digital input:	Dual parameter setting Remote ON/OFF			
Communication interface:	Ethernet web server for monitoring, setup and control			
Noise level:	< 80 dB - Value is related to rated power (fundamental reactive power only)			
Ambient temperature:	-10°C to +40°C			
Storage temperature:	-40°C to + 70°C			
Atmospheric humidity:	0-90 % (no dew)			
Elevation of installation:	< 1000 m above sea level (in case of deviation please contact your supplier)			
Degree of protection:	IP20			
Enclosure:	**MaxSine 100AV6C and MaxSine SOAV6C** 241×400×880 mm (WxDxH) 57 kg	**MaxSine 100AV6CE and MaxSine SOAV6CE** 241×400×1129 mm (WxDxH) 65 kg		
Enclosure material:	1 mm sheet iron, colour RAL 7035			
Cooling:	Forced air cooled			
EMC immunity:	EN 61000-6-2			
EMC emissions:	EN 61000-6-3, EN 550118			
Electrical safety:	IEC 61800-5-1			

Extended Power Meter Functions

- Network voltages
- Load, network and compensation currents of individual phases and neutral
- RMS, fundamental, harmonic currents and crest factors
- Active, fundamental reactive, apparent and harmonics reactive power, cosφ, THD(u), THD(i), current harmonics spectrum up to 50th harmonics
- Waveforms of currents
- Cabinet temperature
- Uploading of measurements for reporting

Quality

ISO 9001, ISO 14001 and OHSAS 18001-certified management programs govern the entire development and production process for power compensation products and ensure a high-quality product.



Load current of a drive before (a) and after (b) compensation with MaxSine™

For more information, visit
gevernova.com/grid-solutions

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