

MGE™ Galaxy™ 7000 GFC

“Grid Frequency Converter (GFC) for Shore Connection solution”
500 kVA



Performance 3 Phase Power Protection with high adaptability to meet the unique requirements of Shore Connection and Mission Critical Environment

- > Flexible and Very Adaptable
- > Advance Electrical Features
- > Parallel Capable up to 10 units
- > High Efficiency
- > Output Synchronization to external Source
- > High Availability Architectures component



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An innovative solution to make life simple

Easy to choose

Compatible with all load types

- > Output power factor = 0.9, in line with the latest generation of IT applications
- > No derating for leading power factors
- > High short-circuit and overload capacities for motor loads

Compatible with all battery types

- > Lead-acid batteries (vented, sealed)

Compatible with all backup time

- > The high power charger rapidly charges batteries for backup times up to four hours

Harmonic free rectifier

- > No additional harmonic filtering is required



MGE Galaxy 7000 GFC can operate at different frequencies and voltages, i.e. 50 / 60 Hz and 380 to 440 V. It also displays all information in 19 languages.

Easy integration into electrical networks

Schneider Electric, a leader in harmonic management, has built a true IGBT rectifier into the MGE™ Galaxy™ 7000 GFC.

Upstream THDI is less than 5% and the input power factor is greater than 0.99.

- > Less reactive power
- > Fewer harmonics injected upstream
- > Savings in network component ratings such as circuit breakers, cables, etc.
- > Fully compatible with generator sets. In addition to its high input power factor, MGE Galaxy 7000 GFC features a soft start capability.

Easy to install

- > Small footprint
- > No need for rear or side access. All connections are made through the front
- > Integration of all switches requiring connection
- > Ready for all system earthing arrangements
- > Easy to maintain



Phase sequence detection prevents start-up if the phase order is incorrect.

Easy to operate

Locally

- > The MGE Galaxy 7000 GFC intuitive user interface provides clear, relevant information for easy operation. With its 5000 time-stamped events, statistical analysis and energy flow pictograms, system management could not be simpler.

Remotely

- > The MGE Galaxy 7000 GFC provides valuable information to supervision systems on:
 - The UPS and its environment,
 - Compatible with Remote Monitoring Service
- > A number of different communication protocols are available for remote operation:
 - Ethernet 10/100 Mbps with HTTPS encryption for browser and NMS supervision,
 - J-Bus/Mod-Bus for BMS systems,
 - Simple programmable current loop contacts.

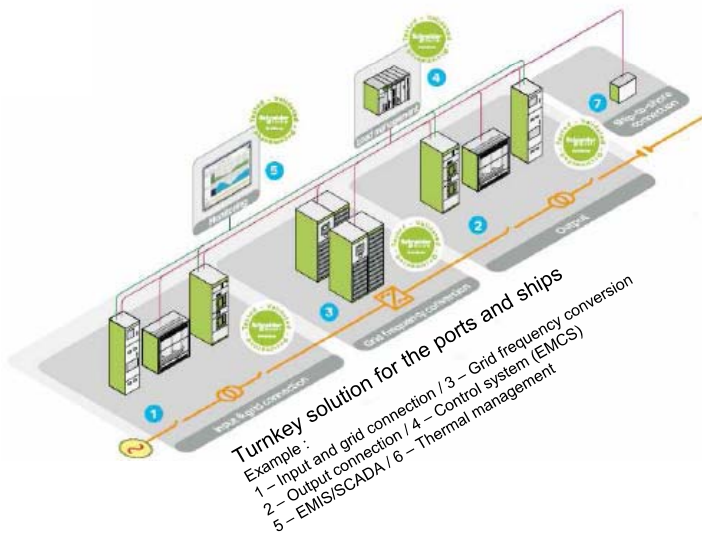


Any screen may be selected as the standard display. For example, if output measurements are a critical parameter, select the output measurement screen as the default display.

Easy to upgrade

Power and redundancy upgrades

- > Power requirements can change over time. MGE Galaxy 7000 GFC output can be multiplied by a factor of ten.



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Efficient product: power availability and energy savings

Up to 94.5% efficiency means significant savings

The innovative technology built into the MGE Galaxy 7000 GFC, including digital electronics for better and faster regulation, an IGBT rectifier and transformer less design, results in high efficiency.

Benefits

- > Energy savings to cut costs
- > Reduced air conditioning and ventilation in the GFC room

Sized for harsh environments

Robust electrical performance

The sizing and quality of power components result in unsurpassed output performance for MGE Galaxy 7000 GFC:

- High fault-clearing capabilities,
- High load crest factor > 3:1,
- Excellent voltage stability, even for stepped load switching or unbalanced loads,
- Designed for any type of load (from industrial to IT),
- No derating, even for loads with a leading power factor.

Benefits

- > High fault-clearing capacity for better discrimination in the electrical network
- > Compatibility with all types of loads and loads with high crest factors

Clean, stable output waveform

The digitally controlled IGBTs and high technology output filter provide a very clean, stable output voltage waveform with less than 2% total harmonic distortion (THDU), even for:

- Stepped load switching,
- Unbalanced loads.

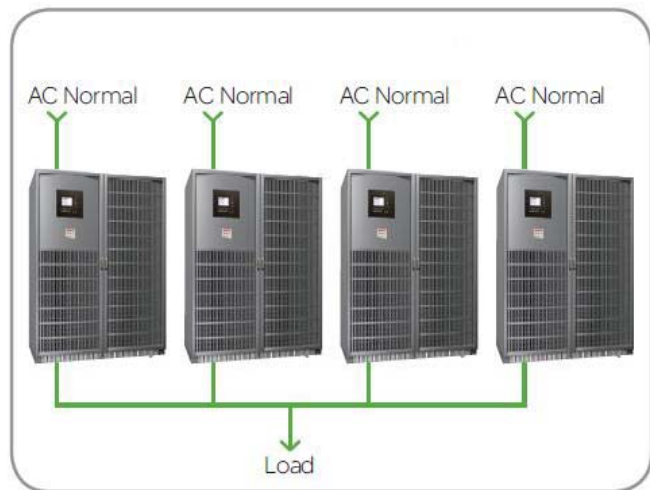
Benefits

- > Optimum supply for loads
- > Increased life expectancy for the protected equipment

Flexible architecture

High availability results not only from GFC reliability, but also from innovative and resilient architectures providing:

- Source redundancy,
- Power-distribution redundancy.



Parallel connection for increased power up to 10 GFC units



Digital electronics offer additional features. The available output power is automatically adapted to the temperature, e.g. a 500 kVA UPS delivers 538 kVA at 20°C ambient temperature.

The most comprehensive range of services

Commissioning

Schneider Electric Critical Power and Cooling Services can commission all new equipment and provides the necessary support services to meet your specific requirements.

Maintenance contracts

UPS's must be managed and monitored to keep them in optimum working order. Schneider Electric Critical Power and Cooling Services offers three levels of maintenance contract:

- ULTRA : For end to end service , all-inclusive for guaranteed peace of mind.
- PREMIER : For effective, basic preventive Maintenance.
- SELECT : Pick and mix.



Upgradeable

Installations must remain up-to-date, that is why Schneider Electric Critical Power and Cooling Services provides upgradeable solutions :

- Technical upgrades,
- Upgrading of battery functions,
- Site audits, studies and analysis of the GFC environment,
- Harmonic audits,
- Swap-Pac upgrading of the GFC function to anticipate and adapt to changes in your needs, and to provide end of life cycle environmental management.



The MGE™ Galaxy™ 7000 GFC Life Cycle Monitoring system has built-in sensors for components such as batteries and capacitors that require preventive maintenance. The diagnostics software warns of impending deadlines. Timely preventive replacement keeps critical loads up and running.

Reducing environmental impact for sustainable development

Beyond international environmental regulations

The Shore Connection application must commit to environmental issues. Schneider Electric systematically attempts to exceed current and future requirements imposed by standards. That includes:

- ISO 14001 certification of sites and R&D,
- Eco-design based on ISO 14040 & 14060 standards & eco-production, a true commitment to sustainable development.

MGE™ Galaxy™ 7000 GFC takes the environmental issue into account at each stage of the product's life.

Design

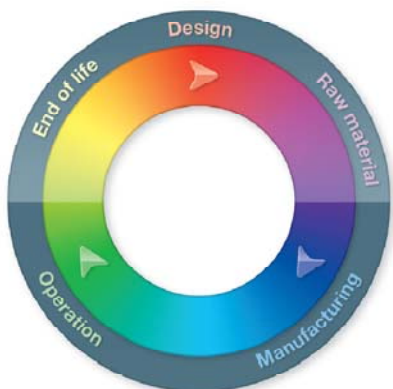
Reducing the number of parts improves reliability and reduces impact on the environment. The MGE™ Galaxy™ 7000 GFC design team used advanced digital electronics to achieve savings:

- fewer electronic boards,
- software updates via downloading instead of changing boards.

End of Life recycling

> End of product life:

- Safety instructions,
- list of parts containing regulated substances and their position in the GFC.



Raw materials

Thanks to its compact size and low weight, the MGE™ Galaxy™ 7000 GFC requires fewer raw materials and the types used are more environmentally friendly.

- > Power efficient components:
- specific choke coils,
 - smaller output filters.
- > New design for a transformerless GFC:
- more silicon, less copper,
 - more powerful IGBTs.



The weight of the MGE™ Galaxy™ 7000 GFC has been halved compared to the previous generation.

Manufacturing according to environmental standards

MGE™ Galaxy™ 7000 GFC is produced in factories that comply with the ISO 14001 standard to reduce:

- energy consumption,
- packaging waste for supplier parts,
- amounts of materials used in the process.

Energy efficiency thanks to quality power solutions

- > Reduced consumption thanks to the green IGBT rectifier (low harmonics), which in turn reduces sizing of the electrical distribution system (breakers, cables, generator).
- > High efficiency GFC solutions to reduce heat losses:
- up to 94,5% efficiency in on-line mode.
- > Reduce the humidity inside the GFC Room
- > Easy to customize in the GFC environment

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Technical characteristics

Rated power (kVA) @ 35°C	500
Rated power (kVA) @ 25°C ⁽¹⁾	525
Normal AC input	
Input voltage range	250 V ⁽²⁾ to 470 V, three phase
Frequency	45 Hz to 66 Hz
Input current distortion (THDI)	< 3 %
Input power factor	> 0.99
Phase sequence detection	Yes
Output	
Rated power (kW) @ 35°C	450
Rated power (kW) @ 25°C ⁽¹⁾	475
Power factor	0.9 , up to 0.95 @ 25°C
Phase-to-phase voltage setting	380/400/415/440 V, three-phase + neutral
Voltage regulation	+/- 1%
Frequency	50 or 60 Hz +/- 0.1%
Permissible overloads	150% for 30 s, 125% for 10 minutes
Voltage distortion (THDU)	< 2% Ph/Ph and Ph/N for non-linear loads
Battery	
Number of battery chains managed	Up to 2 circuit breakers
Type	Sealed lead-acid, vented
Overall efficiency	
Double conversion	Up to 94.5%
Environmental conditions	
Operating temperature	Up to 40°C ⁽³⁾
Humidity	Up to 88% (non-condensing)
Operating altitude	Up to 1000 m, without derating
Color	RAL 9023
IP degree of protection	IP20 Standard, IP32 Optional
Parallel configurations	
Integrated parallel units	Up to 10 units
Parallel modules with remote centralized static bypass switch	Up to 10 units
Standards	
Construction and safety	IEC/EN 62040-1, IEC/EN 60950
Performance and topology	IEC 62040-3
Design and manufacture	ISO 14001, ISO 9001, IEC 60146
EMC immunity	IEC61000-4
EMC emissions	IEC 62040-2 C3
Approvals	CE Mark

UPS dimensions (depth 855 mm, height 1900 mm)	
Rated power (kVA)	500
Width (in mm)	1812
Weight (in kg)	1700

(1). No other electrical characteristic is impacted

(2). Depending on load level.

(3). 8 hours max., 35°C continuous and without battery in the same room.