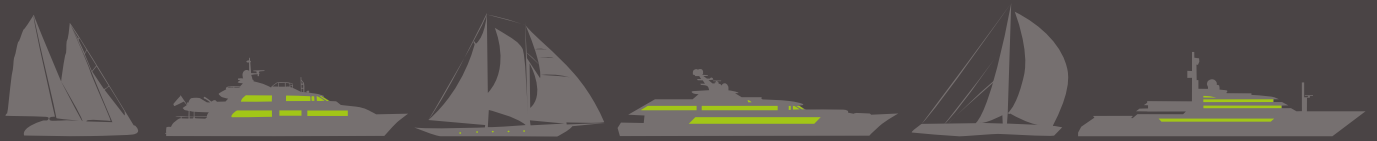


Dependable Marine Power



Shore Power
Converters

CleanNet™
Converters

Frequency
Converters

Energy
Storage

Shoreflex Cable
Management



Hethel, Norwich, UK



MAGNUS

2002

The story begins at
our purpose-built
engineering site

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World-class design and manufacturing – delivering dependable marine power to the world's finest yachts.

Top left: Mechanical Modelling

Right: SP200 200kVA for Westport

Bottom left: M/Y White Rabbit 400kVA SP200 Shore Power Converter





THE QUEEN'S AWARDS
FOR ENTERPRISE:
2015

Irina and Matthew Scales receiving
The Queens Award for Enterprise from
Her Majesty The Queen

About Magnus Marine

Magnus Marine systems are built to deliver dependable marine power – wherever you happen to be in the world. Chosen by many of the world's leading shipyards and luxury yachts, our systems guarantee comfort, convenience and safety.

Every Magnus system is engineered precisely for an individual yacht and it's power requirements. While we are confident our systems will never let you down, all our products are backed by an exemplary support package which offers you total peace of mind which lasts well beyond purchase and installation.

Our purpose-built engineering site in the UK boasts facilities which include 3D modelling design and manufacture, with the latest high-power test equipment for full factory testing.

Dedicated to serving our worldwide client base, we also provide engineering support 24/7.

In 2015 Magnus Marine was awarded The Queen's Award for Enterprise, the highest business award in the UK.

MJR Scales

MANAGING DIRECTOR



Our customers:

- Abeking & Rasmussen
- Amels
- BD Yachts
- Couach Yachts
- Devonport
- Feadship
- JFA
- KaiserWerft
- Lürssen
- Nautor's Swan
- Oceanco
- Oyster
- Palmer Johnson
- Pendennis
- Perini Navi
- RMK Marine
- Royal Denship
- Royal Huisman
- Vitters
- Wally
- Westport



Why use shore power?



Left: S/Y Mia Cara
Below: M/Y Jubilee

Why connect to shore power?

- Zero emissions and pollution in harbour
- Reduced on-board maintenance and energy costs
- No noise or vibration, greatly improving on-board comfort for guests and crew
- No interference with neighbouring berths
- No engineer supervision necessary
- Exterior and interior kept clean and stain-free
- Reduced demand for fuel bunkering, which saves cost and time
- Reduces generator run hours
- Minimal maintenance and servicing required
- Increase in yacht's resale value
- Complies with future harbour and government demands.

Why use a shore power converter rather than an isolation transformer?

- Connection to any worldwide shore supply: 50 or 60 Hz
- Protects on-board equipment from shore faults, such as sags and surges
- Regulated output with no crew intervention
- Clean output power for all on-board equipment, including sensitive audio devices
- No power disturbances when changing supplies, shore to generator and vice versa
- Can run in parallel with on-board generators when extra power is required
- Modular design reduces on-board space requirements.



Connect and **control your power** anywhere in the world.



1

**Performance
guaranteed**

2

**Customised design
offering huge
flexibility and
maximising space**

3

**We supply more
than a product;
from commissioning
to assistance
throughout the build
or refit, we are part
of the team**



SERIES 12-80kVA

SP100

Shore Power Converter

Maximum power availability with worldwide plug and play connectivity to single or three phase shore supplies.

1

Reliability and performance guaranteed

2

Single or three phase plug-and-play connectivity

3

Shore+ boosts power availability on low voltage supply pedestals

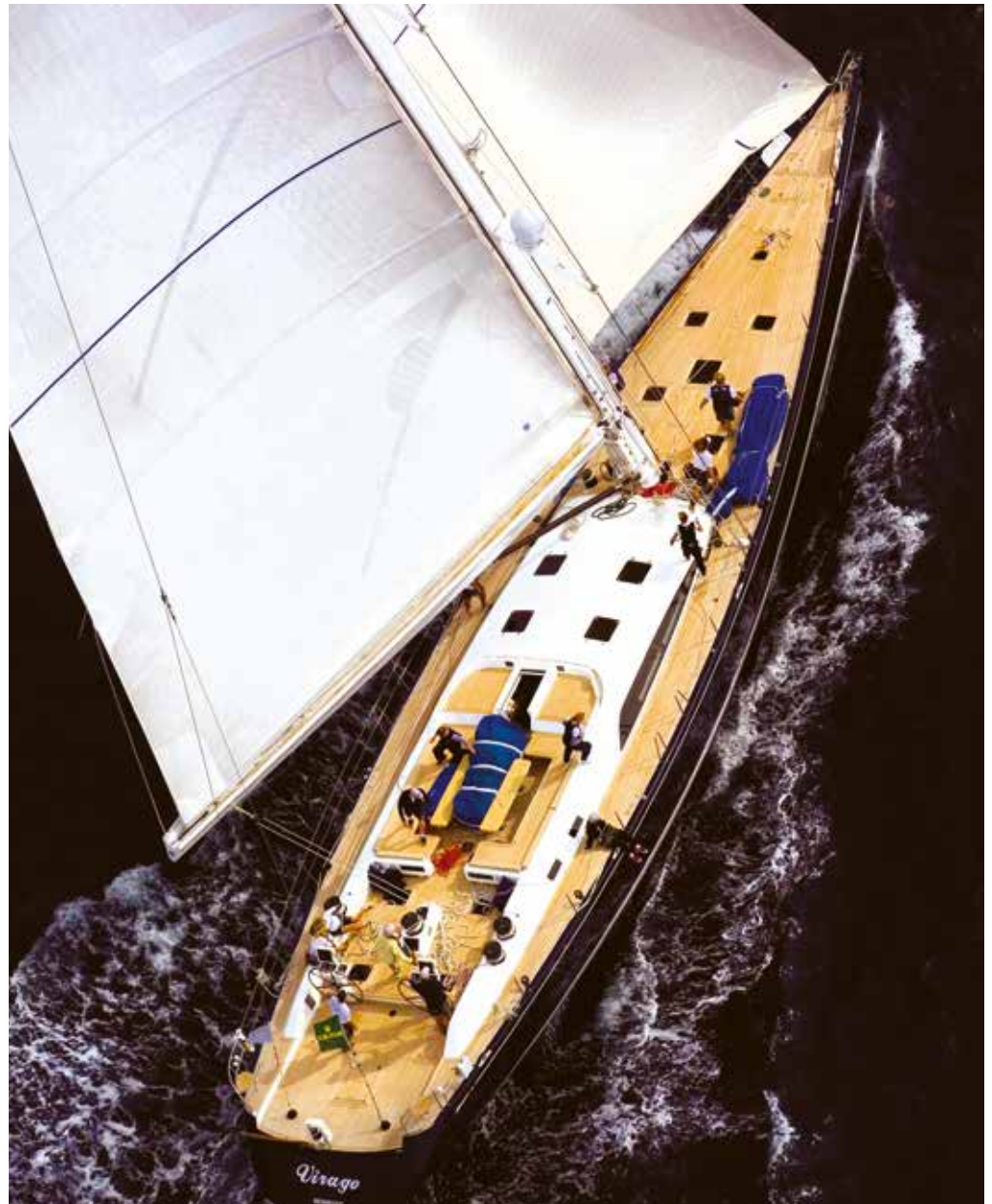


“The unit has been in operation for over a year and all looks good, significantly reducing the run hours on our generators.”

Richard Archer

Captain
S/Y Virago

*Left: SP100 60kVA Dual Cords,
G2 Shore Power Converter
Below: S/Y Virago*



SP100

Shore Power Converter

Benefits

- Full galvanic isolation from shore
- Quick and easy connection for crew
- Exceeds shore supply quality regulations
- Extra power availability on low voltage shore supplies
- Protection from shore supply faults
- No interference with sensitive equipment
- Ventilation design prevents heat recirculation
- Real-time data logging and event access through display
- Reliable with low maintenance
- Lower operating cost with better efficiency
- Quiet, trouble-free operation.

Features

- Worldwide operation – single or three phase supply connectivity
- Reliable connection to new generation RCD shore breakers
- No transient current demand on start-up
- Shore+ boost power availability on low voltage supplies
- Maximum power transfer from shore supply to yacht
- Designed for continuous and automatic operation
- Pure sinusoidal clean output supply
- Rugged overload capability
- Low noise operation
- Seamless transfer between shore and generator
- Split cabinet design improves install accessibility.

Options

- Synchroniser for seamless transfer
- Additional display for switchboard installation
- Single point extraction to improve ventilation
- Combined CleanNet™ operation when at sea
- Cabinet colour
- Water cooling.

INPUT	
Type	Single or three phase active rectification
Voltage	180 to 520 VAC
Frequency	47 to 64 Hz
Displacement power factor	Unity
OUTPUT	
Type	Single or three phase, neutral, isolated earth*
Voltage	208-480 VAC (specified on order)
Frequency	50 or 60 Hz
Voltage distortion	< 2.0% (linear load)
Overload	10 minutes 125% 30 seconds 150%
ENVIRONMENT	
Protection	Thermal, overload, short circuit
Operating temperature	0 to 45°C
Humidity	< 95% non-condensing
Efficiency of system	> 92% typical (at full power)
Cooling	Forced ventilation/water cooling optional
Noise	< 75dBA @ 2m
Enclosure	IP43
Mounting	Bulkhead or floor
Standard Colour†	Powder-coated RAL 9010
Interface	7" graphical touchscreen display with monitoring and event log Modbus RTU RS485

*Specified on order. All specifications are subject to change.
†Other colours available on request

OUTPUT	SHORE CORD	H (MM)	W (MM)	D (MM)	WT (KG)
SINGLE PHASE 230V 50Hz OR SPLIT PHASE 240V 60Hz					
12 kVA	30 Amp	850	1200	400	265
24 kVA	80 Amp	850	1260	400	383
50 kVA	125 Amp	1310	1536	538	680
THREE PHASE 280V/120V 60Hz					
30 kVA	80 Amp	850	1260	400	318
50 kVA	125 Amp	1310	1466	440	618
80 kVA	200 Amp	1310	1536	538	820
THREE PHASE 400V/230V 50Hz					
30 kVA	125 Amp	850	1260	400	318
50 kVA	125 Amp	850	1466	440	443
80 kVA	200 Amp	1310	1536	538	610



SP200 200kVA with CleanNet™ Functionality

SERIES 80-800kVA

SP200 Shore Power Converter

Reliability guaranteed. Customisation standard.



Above: SP200 400kVA Shore Power Converter
Bottom right: SP200 150kVA Shore Power Converter with CleanNet™

1

Reliability and performance guaranteed

2

Latest modular design provides cabinet flexibility and easy assembly on board

3

Advanced built-in module redundancy

Maximises power availability

Using the latest modular design, the SP200 provides a highly reliable, clean and efficient shore power conversion system. Active front-end technology on each shore cord input enables maximum power transfer to the yacht. Drawing clean sinusoidal current at Unity Power Factor from any power source not only ensures minimum supply disturbances but increases power availability to its maximum. Multiple input converters can be connected to any supply available.

Protection from shore supply

High-grade transformers, connected directly to the shore cord, guarantee galvanic isolation at the lowest possible weight. No common-mode RFI can reach the shore supply and there is no path for any currents which may be sensitive to the shore supply breaker.

Continuous clean output power

The system output delivers a stable and clean waveform for powering on-board equipment. Loads range from utility services (heating, lighting and air conditioning) and entertainment (television and audio) to marine (winch, pumps and navigational equipment).

Built-in synchronisation

Built-in synchronisation allows for seamless transfer from shore to generator and vice versa. In addition, automatic synchronisation allows the SP200 converters to start on a live bus, minimising on board control and automation.

Unique modular design

The modular design makes the system compact and highly serviceable. In the unlikely event of module damage, the system will continue to operate at a reduced capacity. Modules can be isolated and replaced with minimal downtime. On replacement, each module will automatically be configured ready for service.



SP200

Shore Power Converter

Benefits

- Reliability and performance guaranteed
- Lower operating cost with better efficiency
- No interference with sensitive equipment
- Protection from shore supply faults
- Quiet, trouble-free operation
- Full galvanic isolation
- Easy connection for crew
- Cabinet customisation as standard.

Features

- Worldwide operation, wide input voltage and frequency range
- Compatibility with shore supplies worldwide
- Reliable connection to new generation pedestals with built-in RCD protection; no nuisance tripping caused by earth leakage
- Maximum power transfer from shore supply to yacht
- Designed for continuous and automatic operation
- RFI protection to prevent on board and shore supply disturbances
- Pure sinusoidal clean output supply
- Rugged overload capability
- Built-in module redundancy without interruption of power
- Seamless transfer between shore and generator
- System can connect to a live bus, minimising control and automation
- Parallel load share with generators for extra power
- Power limiting through soft start and soft stop
- Low noise operation
- Graphical touchscreen user display
- IP43 and 45°C rating as standard.

Options

- Multiple independent shore cord inputs
- Single/dual shore cord selector
- Bow/stern thruster operation
- Combined CleanNet™ operation when at sea
- Reactive Power Conditioning (RPC model)
- Water cooling
- Shore cord kW/h display
- Cabinet colour.

INPUT	
Type	Three phase active rectification
Voltage	180 to 520 VAC
Frequency	47 to 64 Hz
Displacement power factor	Unity
OUTPUT	
Type	Three phase, neutral, isolated earth*
Voltage	208-480 VAC (specified on order)
Frequency	50 or 60 Hz
Voltage distortion	< 2.0% (linear load)
Overload	10 minutes 125% 30 seconds 150%
ENVIRONMENT	
Protection	Thermal, overload, short circuit
Operating temperature	0 to 45°C
Humidity	< 95% non-condensing
Efficiency of system	> 92% typical (at full power)
Cooling	Forced ventilation/water cooling optional
Noise	< 75dBA @ 2m
Enclosure	IP43
Mounting	Bulkhead or floor
Standard Colour†	Powder-coated RAL 9010
Interface	8.4" graphical touchscreen display with monitoring and event log Modbus RTU RS485

*Specified on order. All specifications are subject to change.

†Other colours available on request

OUTPUT	CONFIGURATION	H (MM)	W (MM)	D (MM)	WT (KG)
SPLIT PHASE 240V/120V 60Hz					
60 kVA	1 Module Pair	1900	800	850	948
120 kVA	2 Module Pair	1900	1100	850	1810
THREE PHASE 208V/120V 60Hz					
100 kVA	1 Module Pair	1900	1000	850	1028
200 kVA	2 Module Pair	1900	1400	850	2153
THREE PHASE 400V/230V 50Hz					
100 kVA	125 Amp	1160	1010	850	828
200 kVA	125 Amp	1400	1300	850	1332
300 kVA	125 Amp	1300	2500	850	2171
400 kVA	125 Amp	2263	1600	1010	2592
500 kVA	125 Amp	1800	2350	1010	3005
600 kVA	125 Amp	1800	2600	1010	3648
700 kVA	125 Amp	1800	2850	1010	4228
800 kVA	200 Amp	1800	3100	1010	4960

80-800
kVA OUTPUT

“Magnus Marine shore power converters are pretty much a fit and forget appliance.”

Steve Dufton

Chief Engineer

M/Y Kibo



Left: M/Y Kibo SP200 300kVA Shore Power Converter

Below: SP200 200kVA Intrepid Water Cooled Shore Power Converter



SP100/200 Accessories and Options

Single/dual shore cord selector

- Shore cord selection can be configured for single and supplementary shore cord operation
- In harbours with low power availability, a second cord can be connected to shore. Each cord input is independent so connection can be made to two completely separate shore supplies. Connection to shore is completely automatic and input phase sequence between cord inputs is non-essential.

Synchronisation for seamless transfer

- Before a supply is connected to the Main Ship Bus, i.e. generator or shore power, the incoming supply must be synchronised
- This can be controlled using the Shore Power Converter or generator synchroniser
- The SP100 and SP200 Shore Power Converter series has built-in synchronisation which can be used to enable seamless transfer of the ship's electrical load, to and from the converter supply
- For yachts with two generators without any synchronisation equipment, all SP100 and SP200 Shore Power Converters can seamlessly transfer power from shore power to generator and generator back to shore power.

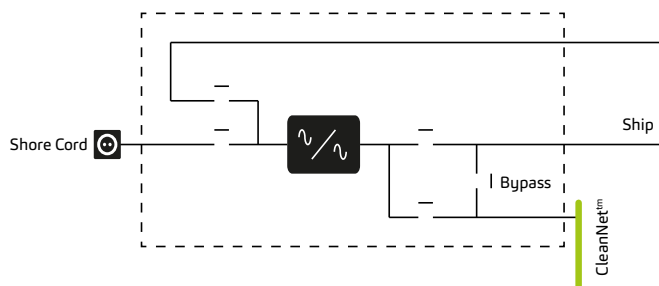
Parallel load sharing with multiple converters and generators

- The SP100 and SP200 platforms are extremely flexible with regards to paralleling with other voltage sources – either generator or multiple converter units. Parallel load sharing is achievable using profiles programmed into the converters. This allows the converters to share power with other systems without the need for any additional communication signals or supervisory controls
- Isochronous control available.

CleanNet™ Operation at Sea

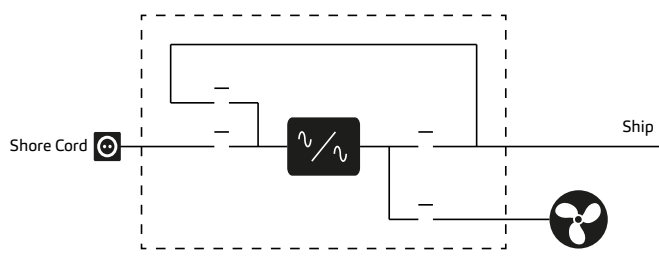
The Magnus option to power the yacht using CleanNet™ distribution from the Shore Power Converter at sea, offers many advantages:

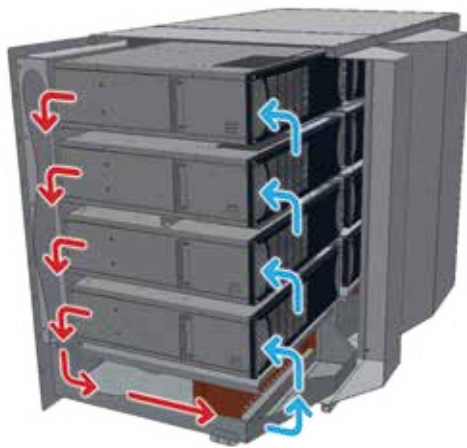
- The converter protects loads sensitive to supply disturbances such as harmonic distortion, voltage sags and frequency instability. The CleanNet™ supply is reserved for sensitive loads such as the lighting and entertainment network, while automation, pumps, winches and air conditioning remain powered by the Main Ship's Bus
- In harbour, the Main and CleanNet™ distribution is powered by a common bus through the converter. By utilising the same electronics, we can offer impressive space and weight savings. The converter operates as a black-box design: protection starts as soon as it is connected to power.



All-in-one shore power and bow/stern thruster operation

The Magnus option to run bow/stern thrusters from the Shore Power Converter, whilst not berthed, offers many advantages. As thrusters and shore power converters do not operate together utilising the same electronics, we can offer impressive space and weight savings. Also, with a pure sinusoidal input and output there are no cable length restrictions or supply disturbances when in operation.





Water cooling

Cooling with water significantly improves the performance of the entire system as well as its life expectancy. All heat generated by the system is forced through a heat extraction unit which is chilled by water. Chilled air leaving the heat extraction unit recirculates back into the system as a closed-loop design. Compartment temperature, when the system is online, is well regulated without any additional cooling required. Being sealed, noise is also kept to a minimum <70dBA. Fresh water typically 5-12°C.

Single point extraction

Units can be configured with a single point extraction so heat generated by the Shore Power Converter can be extracted. Controlling the heat improves ventilation in the compartment space efficiently and effectively.



Shoreflex 120mm² Cable Reel

Motorised Monospiral Shore Cable Reel

- **Lightweight aluminium construction**
Ultra-strong design
- **Dual monospiral**
Partial unwind of cable without derating the ship's load, perfect storing of cable, no twisting, crossing or tangling – maximising shore cable life
- **Motorised reeling drum**
For total ease of deploying and retrieving shore power cable with a high efficiency geared motor
- **Slip ring operation – always connected**
Slip rings uniquely designed to sit within the standard unit offer permanent connection.

SERIES	CABLE SIZE*	H (MM)	W (MM)	D (MM)	WT (KG)
CR100	4 core 25-35mm² O/D 25-30mm	880	530	1100	100
CR200	4 core 50-70mm² O/D 32-38mm	1040	620	1250	189
CR300	4 core 95-120mm² O/D 42-47mm	1250	740	1450	310
CR400	4 core 185-240mm² O/D 58-65mm	1335	800	1540	400

*35 metres of stored cable.
Sizes shown for vertical mounting unit, horizontal mounting dimensions on request.
All specifications are subject to change.

SERIES 54kWh-2MWh

ES200

Energy Storage with Virtual Generator

Store and retrieve energy to improve efficiency and comfort.



Forced, Air Cooled Battery Storage Frame



Delivering a true dynamic system with bi-directional connectivity.

Improved generator efficiency and emissions

Generators operating outside of their efficiency zones often cause increased fuel consumption, leading to higher emissions and unexpected maintenance issues. By introducing Energy Storage, Magnus can maintain the generator operation inside the efficiency regions, saving time, money and the environment.

Seamless storage of energy

As the ship's load fluctuates, excess generator power can be stored by the energy storage system. Stored energy can then be used when power demand exceeds that of the generator. Using the energy storage system during peak periods prevents additional generators from starting. Operating the ship in this configuration offers significant fuel savings which would otherwise have been lost. Additionally, maintaining the generator at its nominal load keeps generator run hours, maintenance and exhaust fumes to a minimum.

Value and performance

A proven and reliable power quality platform that provides seamless system integration and battery control. Autonomous control which includes online synchronisation and parallel load-sharing with generators, provides seamless bi-directional transmission of power during operation.

1

Generous fuel savings with reduced emissions

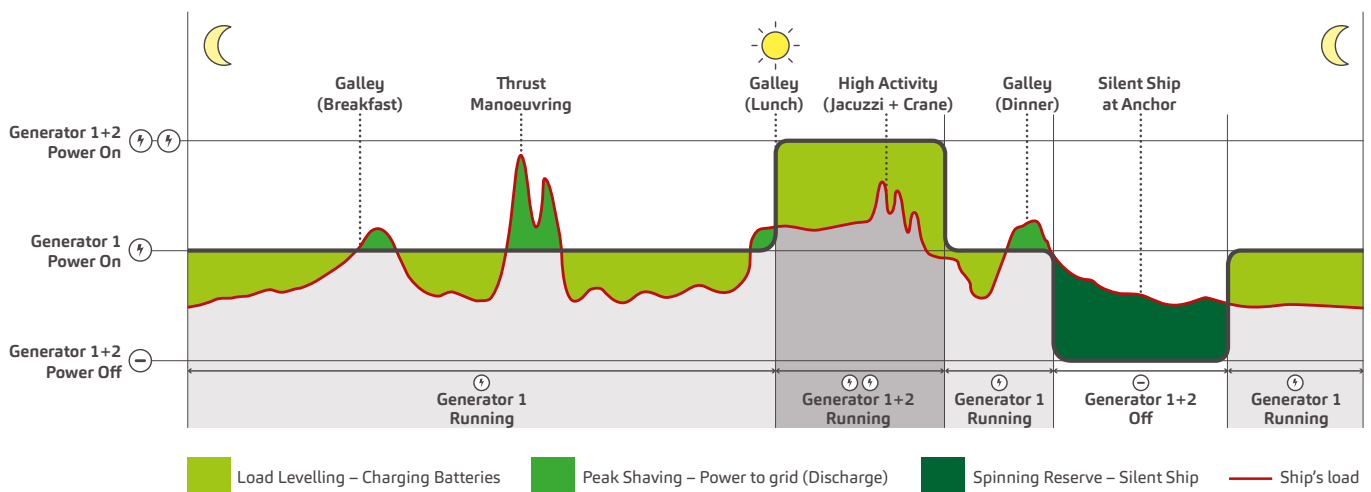
2

Permanently online with power outage protection

3

Safe, reliable and well proven platform

Energy storage system daily operation



Virtual generator mode

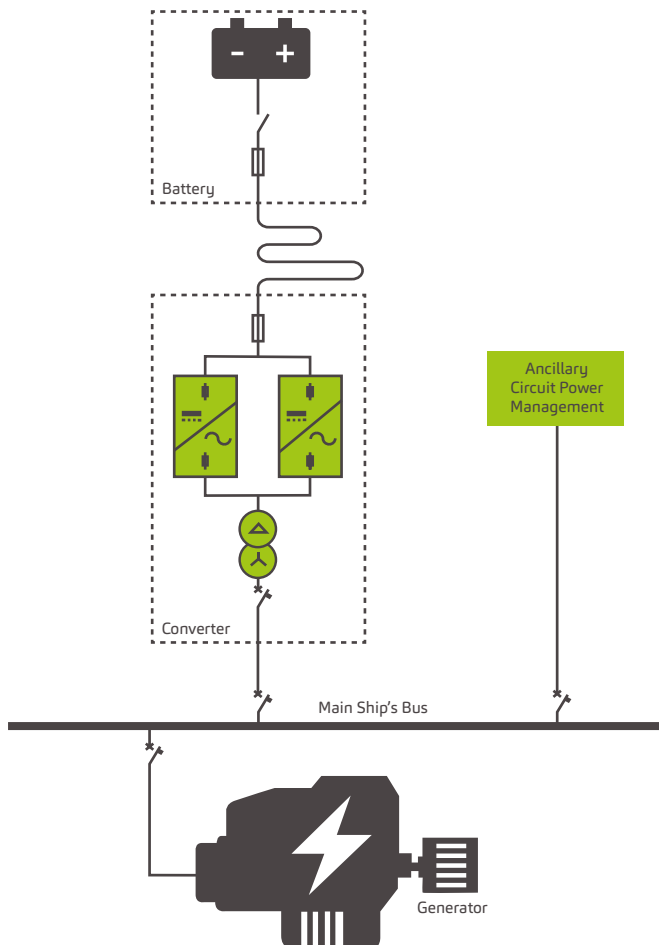
The Virtual Generator operating mode is unique to the ES200 power electronic platform and mimics the behaviour of a generator. Interfacing the ships generator(s) with a balanced, three phase voltage delivers a true dynamic system with bi-directional connectivity. The benefit of this is a natural connection between the generator(s) and the energy storage system.

In addition, physical inertia is modelled by the system, providing a stable response to the grid frequency. The ES200 Virtual Generator can control its own voltage and frequency, enabling it to create an island grid should a problem occur with the generators or shore supply. In such conditions the ES200 will support the load without disturbance.

The complete package

The Magnus ES200 is the entire package and includes the batteries, inverter and energy management system. Charge and discharge flow rates are determined through generator load inputs.

Typical setup on board



Graphical display

Key features

- Peak Shaving – delivers power to the grid when peak demand is high. Prevents additional generators coming online, thereby lowering fuel and maintenance costs
- Load Levelling – store energy when demand is low and deliver energy when demand is high
- Spinning Reserve – meets shortfalls, supplying backup power during a loss of generation or silent ship operation
- Design maximises battery life expectancy.

Battery specification

- Lithium-ion manganese oxide
- Cylindrical case provides high strength resistance against vibration and shock (stainless steel and wound electrolyte)
- Three times nominal power charge and discharge performance
- Battery management unit monitoring voltage, temperature and current
- Operating temperature -20 to 50°C
- Efficiency >96% (end of life)
- 1.7kW/h = H:151 x W:228 x D:475mm 23kg
- 102Watt hours/litre 76Watt hours/kg
- Minimum life expectancy 8000 cycles, depth of discharge 100%
- Batteries Lloyds AIP approval.

Package includes

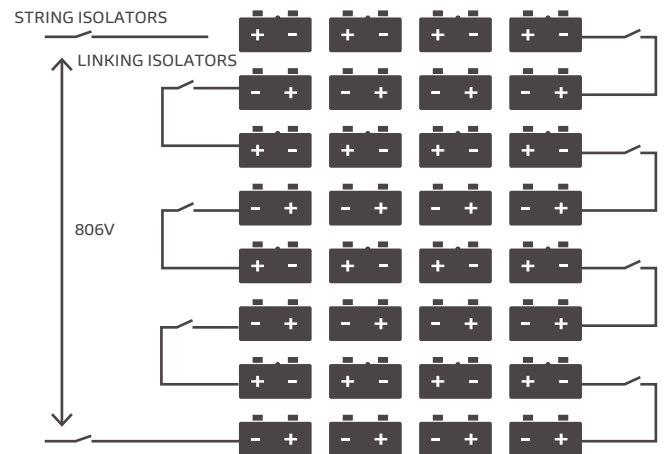
- Battery management unit to monitor batteries and includes safety shut off
- Energy management unit with graphical display for control and monitoring
- 110V battery string isolation for safety
- Current protection from converter and energy storage
- Standalone operation from ships PMS
- Customer interface via ethernet connection
- Gas detection CO and CO₂.

Battery isolation for 110V

Battery string and linking isolation is built into the system to ensure safety for crew and for future servicing. With the safety lamp in a green state, the maximum voltage is 110Vdc.

String isolation connects the batteries to the converter system and voltages are equalised to ensure no high currents.

For space optimisation batteries are usually installed remotely from the converter system.



ES200 160kVA/54kWh Virtual Generator 54kW Energy Storage



Remote customer interface

Traffic light system



Battery control units



SERIES 6-750kVA

FC100/200 Frequency Converter

On-board equipment with alternative supply requirements.

M/Y Hasna



Overview

Frequency Converters can be installed on board and used to power on-board equipment with supply requirements different to that found on the yacht's AC distribution. This might include a 120 VAC/60 Hz (US) supply to cabins on European yachts or 230 VAC/50 Hz (European) to US yachts. Items carried on board can then be readily used by guests with connection via European or US socket outlets.

Such converters can also be used to power special equipment, including tenders and specific machinery requiring an alternative supply.

Benefits

- Reliability and performance guaranteed
- Lower operating cost with better efficiency
- No interference with sensitive equipment
- Protects equipment from voltage distortion, voltage sags or frequency instability
- Quiet, trouble-free operation
- Fully galvanic isolated output supply
- Pure sinusoidal clean output supply
- Cabinet customisation as standard.

Features

- Minimal supply disturbances with Active Front End as standard
- Maximum power transfer from Main Ship's Bus
- Low earth leakage
- Isolated output supply
- Digital touchscreen user display
- RFI protection to prevent supply disturbances
- Pure sinusoidal clean output supply
- Rugged overload capability
- Designed for continuous and automatic operation
- Low noise operation
- IP43 and 45°C rating as standard.

Options

- Water cooling
- Cabinet colour.



FC100 18kVA Frequency Converter

INPUT	
Type	Single or three phases active rectification
Voltage	180 to 520 VAC
Frequency	47 to 64 Hz
Displacement power factor	Unity
OUTPUT	
Type	Single or three phases, neutral, isolated output*
Voltage	208-480 VAC (specified on order)
Frequency	50 or 60 Hz
Voltage distortion	< 2.0% (linear load)
Overload	10 minutes 125% 30 seconds 150%
ENVIRONMENT	
Protection	Thermal, overload, short circuit
Operating temperature	0 to 45°C
Humidity	< 95% non-condensing
Efficiency of system	> 92% typical (at full power)
Cooling	Forced ventilation/water cooling optional
Noise	< 75dBA @ 2m
Enclosure	IP43
Standard Colour†	Powder-coated RAL 9010
Interface	Graphic display Digital I/O for control and monitoring

*Specified on order. All specifications are subject to change.

†Other colours available on request

OUTPUT	H (MM)	W (MM)	D (MM)	WT (KG)
FC100				
6 kVA	730	860	365	94
18 kVA	1050	810	470	235
FC200				
36 kVA	1050	620	850	511
85 kVA	1050	1750	980	719

CN200 CleanNet™ Converter

The perfect solution for sensitive equipment.



“Sits quietly in the corner of the engine room, doing its thing.”

Richard Tatlow
Chief Engineer
S/Y Maltese Falcon

1

Protects halogen or LED lights flickering

2

Stabilises audio and entertainment equipment

3

High-power engine room equipment will not compromise guest comfort



Top: M/Y Vava II
Above: VIP cabin

Overview

With increasing on board automation and many different power requirements, it is essential to deliver a clean electrical supply for sensitive loads and guest comfort. Loads sensitive to supply disturbances (such as voltage distortion, sags and frequency instability) can be protected by the installation of a separate supply independent from the ship's AC bus.

The CleanNet™ supply is reserved for sensitive loads, such as the lighting and entertainment network, while automation, pumps, winches and air conditioning remain powered by the Main Ship's Bus.

With CleanNet™ built-in bypass and synchronisation, sensitive on-board equipment has the ultimate protection.

The transfer to CleanNet™ mode is completely automatic and seamless. In the event of alarm or fault condition, the converter will automatically bypass to the Main Ship's Bus.

The converter operates as a black-box design: protection starts as soon as it is connected to power.

Benefits

- Isolates and protects sensitive equipment from power disturbances
- Pure sinusoidal clean output supply
- No interference with sensitive equipment
- Protects equipment from voltage distortion, voltage sags or frequency instability
- Quiet, trouble-free operation
- Fully galvanic isolated output supply.

Features

- No crew intervention – black-box design
- Seamless transfer of power between CleanNet™ and bypass
- Monitors power demand for seamless bypass operation
- Automatic transfer to bypass in a converter fault or overload condition
- Automatic transfer to CleanNet™ when system returns to health
- IP43 and 45°C rating as standard.

Options

- Local bypass control and monitoring
- Cabinet colour.



CN200 85kVA CleanNet™ Converter

INPUT	
Type	Three phase active rectification
Voltage	208 to 480 VAC +/- 10%
Frequency	50 or 60 Hz +/- 10%
OUTPUT	
Type	Three phases, neutral, isolated earth*
Voltage	208-480 VAC (specified on order)
Frequency	50 or 60 Hz
Voltage distortion	< 1.5% (linear load)
ENVIRONMENT	
Protection	Thermal, overload, short circuit
Operating temperature	0 to 45°C
Humidity	< 95% non-condensing
Efficiency of system	92% typical (at full power)
Cooling	Forced ventilation/water cooling optional
Noise	< 75dBA @ 2m
Enclosure	IP43
Standard Colour [†]	Powder-coated RAL 9010
Interface	Graphical touchscreen display Control I/O analogue Modbus RTU RS485
Features	Auto bypass

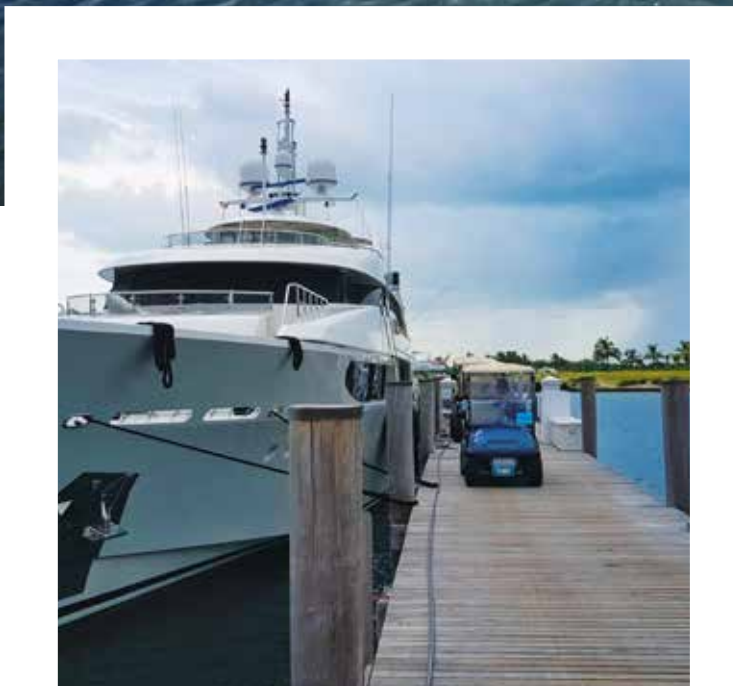
*Specified on order. All specifications are subject to change.

[†]Other colours available on request

OUTPUT	H (MM)	W (MM)	D (MM)	WT (KG)
36 kVA	1010	860	815	511
60 kVA	2000	500	800	623
85 kVA	2000	620	900	719
150 kVA	985	1750	980	1117

Service and Support

World-class service and support guaranteed.



Above: Falmouth, Antigua
Left: Bakers Bay, Bahamas

24/7

A complete support
package for total
peace of mind



Parts and documentation



On-site support 24/7

Reliable support services 24/7

We offer an exemplary support package so you can enjoy total peace of mind, which lasts well beyond purchase and installation.

Our international service agreements have been selected to suit the needs of owners, crew and shipyards. Engineering support is available 24 hours a day, 7 days a week. A choice of service level agreements include delivery of spare parts and engineer attendance anywhere in the world.

Commissioning overview

To guarantee years of dependable power, we recommend that one of our engineers attends commissioning. This is included at no extra cost with all Silver and Gold service level agreements. Commissioning is fully documented and includes:

- Internal and external inspection
- Check monitoring and control interfaces
- Electrical check and initial power-up
- Full functionality set-up and testing.

Health check

All our products are essentially maintenance-free, however an annual service and inspection is recommended. This allows a full health check of the system, which is fully documented and recorded. All this can be managed by Magnus to guarantee you years of dependable power and total peace of mind.

BRONZE SILVER GOLD

TRANSPORTATION

	BRONZE	SILVER	GOLD
Packaging suitable for international freight	•	•	•

DOCUMENTATION

English user manual (electronic and print copy)	•	•	•
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Electrical and mechanical drawings AutoCAD/PDF format	•	•	•
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Factory acceptance test report	•	•	•
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PROJECT MANAGEMENT

Commissioning Category 1 Initial power-up Expect to be on board one day		•	•
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Commissioning Category 2 Harbour acceptance Expect to be on board one day		•	•
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Commissioning Category 3 Sea acceptance Expect to be on board one day Applies to bow/stern thruster operation		•	•
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WARRANTY

12 months after commissioning or 24 months after dispatch, whichever is sooner	•	•	
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24 months after commissioning or 36 months after dispatch, whichever is sooner			•
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CONDITIONS

Free issue parts and engineer	•	•	•
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Engineer's travel at customer's cost	•	•	
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Engineer's travel to a major port at supplier's cost			•
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Delivery of spare parts at customer's cost	•		
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Delivery of spare parts to a major port at supplier's cost		•	•
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Report following on-site servicing or assessment	•	•	•
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Case Studies

Every Magnus system is engineered precisely for an individual yacht and its power requirements.

S/Y Black Pearl

- 640kWh Energy Storage System with a 640kVA grid tie connection to the Ship's AC Bus
- Lloyds approved batteries are installed in two locations
- System support spinning reserve includes four daily discharges so generators can be taken offline.





Westport 125 Series

- 80kVA Shore Power Converter with true 50% system redundancy
- System is 460mm wide and is sealed with water cooling for control room installation.

M/Y Jubilee

- 1MW Shore Power Converter with dual independent shore cord inputs
- At sea the system is used to power the bow and stern thruster
- With active front end technology, there is no ship supply disturbances when the thrusters are in operation
- System is fully sealed and is cooled by an external fresh water supply.





S/Y Hetairos

- 80kVA Shore Power Converter
- Integrated in the bow anchor locker space to improve hull performance
- System is fully sealed and water cooled to maintain compartment space temperature.

M/Y Double Haven

- Combined Shore Power with CleanNet™ operation at sea
- System modularised for engine and tool room installation.



For full details and more case studies, visit magnusmarine.com



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